Reflections 7

Preface

This publication is the result of another year of developing research by/through design and related activities within the Sint-Lucas School of Architecture (W&K). It can be seen as the successor of *Reflections +3* (2006) which reported on the RTS (Research Training Sessions) that took place during 2006. The RTS activities have been further developed into a full research programme which has been receiving growing international response.

This publication starts with a series of introductory texts:

- a text discussing connections to similar developments in the fields of Art, Music and Design;
- a text describing the context and the development of RTS;
- the results of a collective two-day seminar in which we attempted to further develop the research mission of the Sint-Lucas School of Architecture in relation to research by/through design. This text should be seen as 'work in progress' and is intended to stimulate further discussion and debate.

All these contributions are attempts to help develop a shared vision for RTS, and to clarify some of the background issues related to the research programme.

Furthermore there are contributions from the 'batch' 1 and 'batch' 2 participants. There are also some very valuable contributions from the team of tutors.

I want to use this opportunity to thank all the participants in RTS for their energy and efforts. Together they constitute a true 'community' of practice, which continues to exert its influence on the direction(s) that the School is taking in all its research efforts.

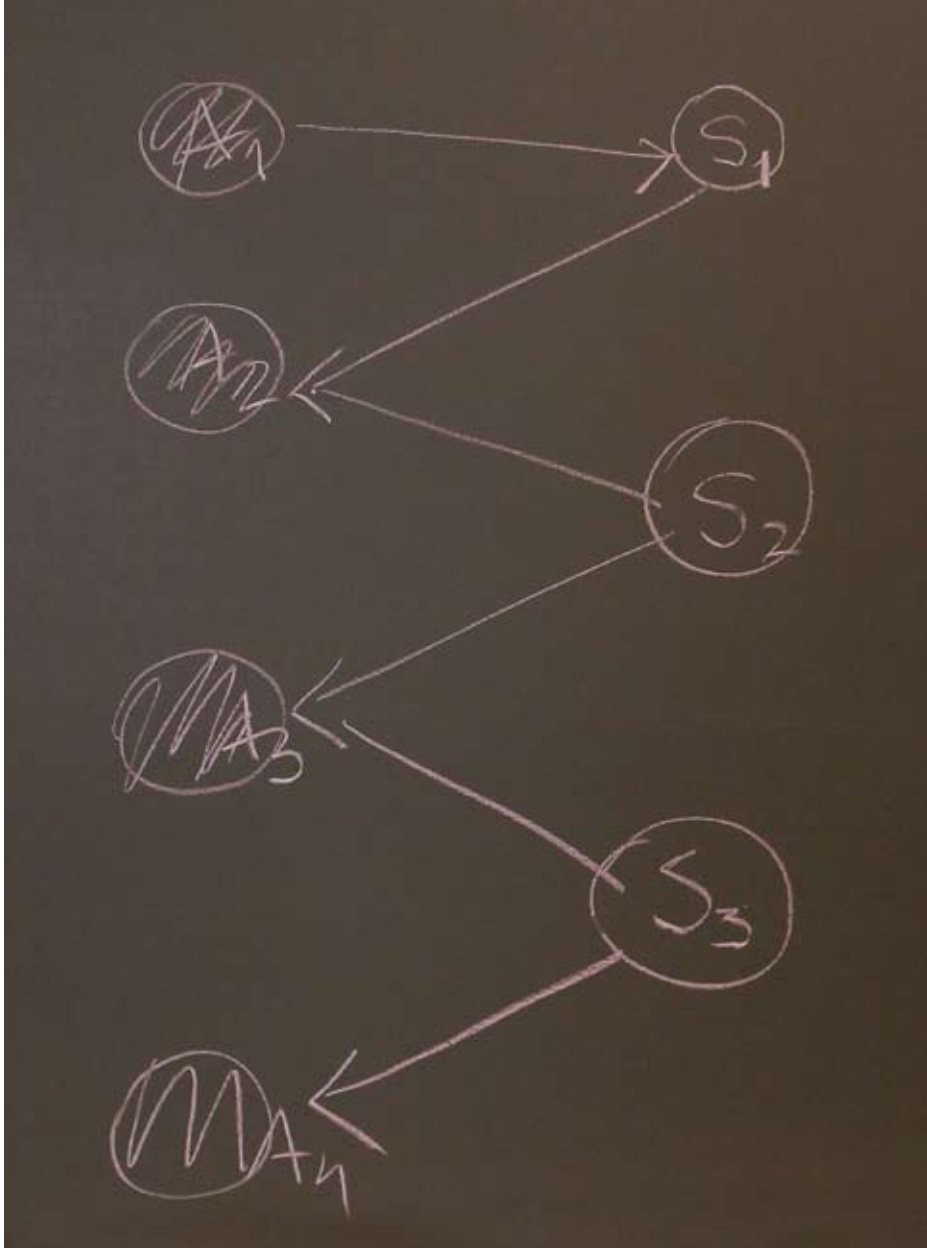
Furthermore I want to thank all the tutors for participating in our 'experiment' and for bringing their expertise and knowledge into the Sint-Lucas School of Architecture. I always enjoy and value the discussions I have with all of them and look forward to our next meetings. The RTS programme would not be what it is today without the enormous efforts of our administrative staff without which it would not be possible to create the necessary conditions for success!

Finally, I want to share the following reaction I received from Richard Sundahl, who improved many of the texts and nicely formulated his impressions (as a complete outsider) as follows:

"My overall impression is that this whole process of creating a PhD programme is a great challenge and adventure. And your task with this introduction is to draw together all the loose threads of these twenty sometimes highly creative, sometimes rough and so 'personal' texts into a coherent unity – to situate them within a context. You speak of the 'seed' and 'embryo' stages of the process. I assume you are the midwife. Reflections *is a series of images of embryos/foetuses at different stages of development. Voyeuristic, perhaps. Fascinating in their own way. Promising. Just my impression…"*

It nicely illustrates the enthusiasm of all people involved as well as the collective exploration of the field which takes place. I hope you enjoy this fragment as well as Reflections 7.

prof. dr. Johan Verbeke
Head of Sint-Lucas School of Architecture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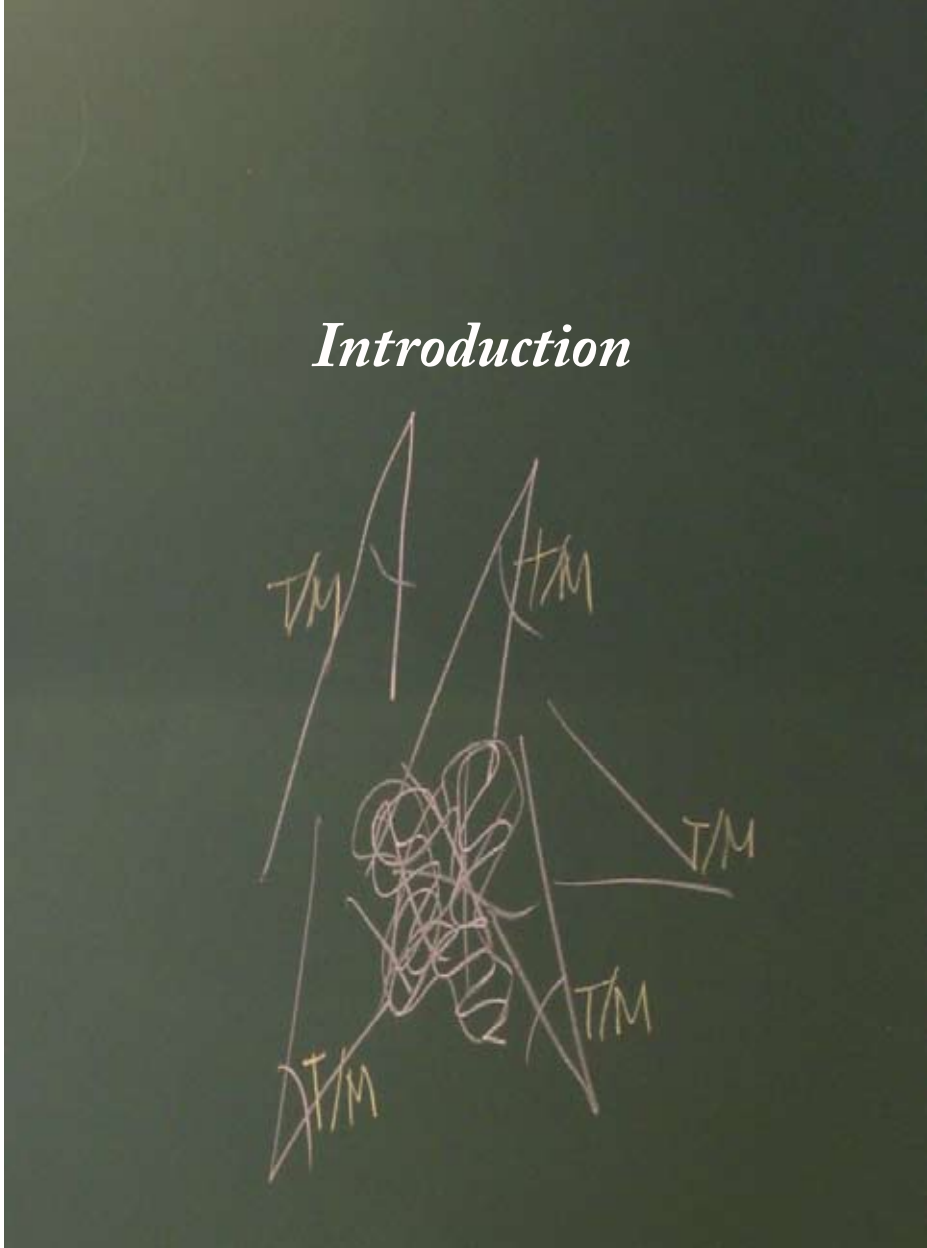
Introduction



Research by Design in Architecture and in the Arts

(This text is a slightly modified translation of the presentation given during the 'Dag van het Artistiek Onderzoek' at Sint-Lucas Ghent, 11 May 2006.)

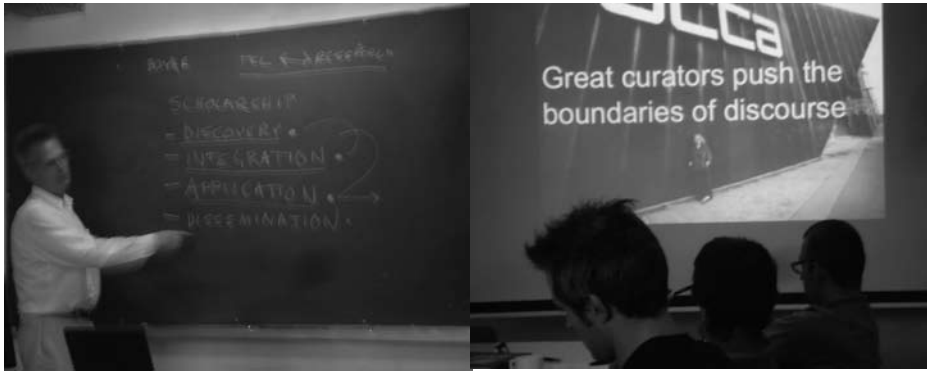
In 1862 and 1887, the Sint-Lucas Schools were founded in Ghent and Brussels. A good hundred years later, in 1987, the two Schools of Architecture merged. Both in Brussels and Ghent, there has always been an important and intense association with the visual arts. It was therefore logical for the School of Architecture to support the founding of the IvOK (Instituut voor Onderzoek in de Kunsten, Institute for Research in the Arts). In this paper I will try to reflect upon the place of architecture in an institute for research in the arts. This was not an easy task. Let us first explore in depth the place and role of architecture in the IvOK and then attempt to look at international developments.

1. Issues

The curricula and vision on the field of Architecture (and by this, within the context of this paper, I mean the four programmes offered by the School of Architecture, namely interior design, interior architecture, architecture and Urban Design and Spatial Planning) are founded on the development – both amongst students and staff – of a vision on society, on cultural advancement, on social integration and processes, on the evaluation and creation of social impact and on a conceptual research and design attitude; all this combined with outstanding three-dimensional thinking and insight in building technology. The spatial quality of the built environment is the main focus. Syncretic and holistic thinking form the motor of the design process and the research.

Sint-Lucas views Architecture (in its broad meaning) as culture – not as a purely technocratic business – and Architecture is also often viewed by society as such. Cultural awards, cultural subsidies and suchlike increasingly contain an architectural component. In this sense, Art and Architecture link up and are closely related: they shape the culture and are themselves simultaneously shaped by it.
The course 'exploration fo forms' (expression, mixed media, beeld!studio) support the students in their subjectivisation, radicalisation and formal dislocation with the aim of propelling students further forward with their research and shifting their boundaries. In Architecture, Art and Science enter into a dialectical relationship, not a contradictory one. Both must be present in the curriculae in order to allow architecture from within itself to fully establish and develop.
The curriculae are based upon an integrated approach to the complex field of Architecture. Design requires an interdisciplinary approach and the integration of past and present, theory and practice.

The skills and competences acquired in the design studios (in both education and research) are exceptional and are founded upon the aforementioned tradition and research of many years and the accumulated knowledge and insights. The importance of the praxis is especially strong here. These aspects are closely tied in with the situation in the Arts.
For disciplines in the field of Architecture, it is the space of human action and experience that is their domain of research and practice. They deal – both in theory and in practice – with the relationships between man, object and space. These relationships are extremely diverse and in many cases reciprocal. Human action and human thought always take place in a physical environment. This physical environment is an inextricable part of human feeling, thought and action. Architecture contributes to the creation of our physical living environment. And it is precisely in this aspect in which it differs from the Arts.



The creation and materialisation of our living and experiential environment makes Architecture different from the Arts. Through its materialisation, Architecture always has a social responsibility to fulfil. Traditionally, three large subdomains are distinguished: (1) designing and the creation of form, including praxis and creative processes; (2) building techniques and (3) history and theory. Whereas design is linked to artistic processes and History and Theory are part of the Humanities, Architecture also needs a technological input.

It is therefore clear that as far as (building) technology at Sint-Lucas is concerned, the ability and potential for designing is of central importance. The creativity or inventiveness of the field is supported and enriched by technical know-how and other practical aspects. In this sense, within the history and the context of Sint-Lucas School of Architecture, technical research has been specifically developed and coloured by the holistic vision on the discipline and praxis. This is at the same time the power of

architecture. The field therefore needs technical research so that technical and exact knowledge can be translated into design-based added value.
The technological component is more a matter of providing potential and is aiming to facilitating and supporting the design process rather than specific technical research (in a lab or elsewhere) is needed (although this is not excluded). Permanent input from the exact sciences is certainly important. Accordingly, we believe that, in addition to participation in and collaboration with the IvOK for design-based research, Architecture needs to have a meaningful interaction with the Exact Sciences. Sint-Lucas has therefore gone ahead with founding an Institute for Design-Oriented Technical Research (IvOTO, Instituut voor Ontwerpmatig Bouwtechnisch Onderzoek). As such, Architecture is therefore not an Art, but its own specific individual field of enquiry and praxis.

Finally, there is great affinity within the field of Architecture with the way in which the Humanities engage with research indicators, as well as with the construction of the indicators themselves. Indeed, an analogy can also be drawn from this for the Visual Arts. For this reason, the IvOK is an appropriate meeting place for the Arts and Architecture.
Research at Sint-Lucas School of Architecture clearly gives a central position to a syncretic and holistic approach ('designing' as a verb; the process is important after all) and fuels it in a multidisciplinary manner from theoretical and analytical perspectives. The development of social standpoints and design proposals for the present and for the future are of essential importance in this. The how and why of designing as part of culture and a social vision are important points of interest.

The research in the School of Architecture Sint-Lucas is developing as a reflection of this integrated approach, without also excluding rigorously defined research within

the specialist fields of the staff involved. The emphasis in the School is currently on strengthening designed-based research. This research direction has not been sufficiently developed in an explicit way in the past and it fits in perfectly with the history and vision of the School. It can also build on the specific knowledge and insights developed in the past. During 2006, a series of seminars took place in which thirteen young designers took part and the results of which have been recorded in the book *Reflections 3*, which is available upon request[1]. The more rigorously defined research in the specialist fields of the theory staff has been going on for a long time in collaboration with fellow professionals from departments in and outside Flanders; I have not focused on them in this text since it was not part of my assignment to do so.

2. International position

On an international level, there is a wide range of profiles of School of Architecture. From a tightly-knit integration with the arts such as at the Macintosh School of Architecture in Glasgow to institutions with a highly technical orientation. It is obvious that each profile has its own optimal context and specific cultural seedbed; this also determines the research emphases, which are often coloured by the application of different paradigms. As previously mentioned, Architecture has three important areas which require nurturing: design, including practical and creative processes; building techniques (part of the Exact Sciences) and history and theory (connected to Humanities). Internationally, the core of the field in which these areas overlap and nourish each other's research is under serious development. In the last five years, there have been several international conferences on developments in the field of research in architecture and design. For example, in April 2005 Sint-Lucas School of Architecture, together with NETHCA, organised the international conference 'The Unthinkable Doctorate'[1]. The proceedings were published at the beginning of 2007. From the proceedings of this conference, it becomes clear that there is a whole range of perspectives and paradigms being applied within the field. Furthermore, it seems that interpretations and standpoints have often been coloured by the history and the context of the specific institution. It is precisely this diversity of perspectives and developments which currently makes the field so fascinating. It is therefore of utmost importance to give as large a space as possible to developing design-based research in the field of Architecture.

Just as in the Arts, we see all sorts of evolutions at the international level. For example, in the United Kingdom, a survey is being carried out by the Arts & Humanities Research Council (http://www.ahrc.ac.uk/) which certainly deserves our attention. An overview is being drawn up of the various perspectives, complemented by a databank of good examples of 'research by design'. In particular, great emphasis is being placed on the specific knowledge that is present in practice, based on praxis and how it can be validated.

At the same time, there is also more and more research taking place into the specific knowledge processes and their qualities within architecture and the arts. Knowledge creation and the various sorts of knowledge and insights have all become important fields of research. This is extremely relevant in relation to the design process which, on the one hand, demands specialist knowledge and experience and, on the other, generates new insights and knowledge. There are arguments to apply concepts such as 'the making disciplines'[2] and 'mode 1 and mode 2 knowledge'[3] in the context of research in the fields of Architecture and the Arts. Both fields can learn from one another here.

Ranulph Glanville often argued that the field constructs a specific form of knowledge. 'Knowledge for' is much more prominently present than 'knowledge of'[4]. Furthermore, he often argued that 'research' is a specific form of 'design'[5], as a result of which he speaks in favour of giving specific design-based research its own space instead of shackling it.

In many universities, PhDs by design, through design, in design etc. are appearing for Architecture. Emphases were placed in many directions, depending on the history and the individual character of the institute in question. Innovation in research orientations and processes is in full swing.

Existing PhD courses are changing or being reviewed.

The discussions indicate various tendencies in which different paradigms are being used. It therefore seems to me of essential importance that sufficient space be created within the IvOK for exploratory interpretations and projects. A lot of things are in motion and this must be given the space and the possibility to develop. It is an exploratory process for the field of Architecture, just as it currently is for the Arts.

3. Conclusion

The School of Architecture Sint-Lucas believes it's important, for an essential and critical part of its research, to contribute to the development of the IvOK, both on the basis of the general discussions and developments and through the IvOK's doctoral commission. As previously indicated, from within the field of Architecture there are many affinities and parallels with, on the one hand, the Arts and, on the other, the Humanities. We are convinced that reciprocal cross-fertilisation will give rise to important impulses. At the same time, there is the understanding that many discussions in the Arts and Architecture are extremely similar and can strengthen one another by operating in synergy.

On the other hand, it is also about establishing Architecture as a specific discipline. Architecture needs strong input from the Humanities in the areas of history and theory, social vision and culture. However, as already explained, there is also a need for essential input from the technical fields, although this must be coloured by the ultimate nature of the discipline and therefore be design-orientated. It is for this purpose that Sint-Lucas did set up the IVOTO.

The IvOK, which provides artistic and design-based research with a good breeding ground, is viewed as an important asset for the field of Architecture, without it becoming or being capable of becoming the only focus point.

Johan Verbeke

(Endnotes)

1 By e-mail: sarah.martens@architectuur.sintlucas.wenk.be

2 Halina Dunin-Woyseth and Jan Michi, Towards a disciplinary identity of the making professions : an introduction, in *The Oslo Millennium Reader*, Research Magazine 04, 2001, Oslo School of Architecture.

3 Michael Gibbons et al., *The New Production of Knowledge,* London: Sage, 1994.

4 Ranulph Glanville, Design Prepositions, in *The Unthinkable Doctorate*, Sint-Lucas, Brussels, Belgium, 2007.

5 Ranulph Glanville, Researching Design and Designing Research, *Design Issues*, 1999.

sint-lucas research

In October 2007, both groups of RTS participants (batch1 and batch2) gathered with the members of the staff and the head of the department in Parike for a two-day seminar. The goal of this intensive brainstorming session was to discuss the vision of design-based research that has been developing rather implicitly within RTS over the past two years, and as a group to try to explain in a more explicit way what our vision of design-based research actually is (or at least what it was at that point in time). Future developments, regarding research in Sint-Lucas (both with respect to content and organizationally) were also discussed.

After intensive debates in smaller teams about the theme 'Vision of design-based research', we jointly 'threw together' a (tentative) definition based on the different notions/ideas/visions that were put forward in the preceding discussions.
Why have we tried to express the formulation of a vision initially through a definition (or call it a 'description'), and how have we interpreted it?
- A definition seemed useful for keeping the constantly evolving 'fleeting' thoughts together.
- A definition seemed necessary, on the one hand, to describe the research very 'logically' (not deviated, artistic, special, abnormal) and, on the other hand, to describe it in the broadest way possible, so that the definition would not 'restrict' any of our visions
- Every attempt to formulate an explanatory definition seemed too limiting in Parike, too cramped, too narrowing: because of this, the idea to create an explanatory word list grew (see asterisks *¨below).
- By explaining each notion separately, a different emphasis can be made for the reader, and each separate part – in and of itself – can become the subject of debate.

As usually happens with definitions, so did also this definition become once again the subject of discussion, thus proving the legitimacy and flexibility of the group in its efforts to form a vision.
The following text will first give the Parike definition of design-based research as it was formulated during the seminar.
This represents, in the most authentic form, the consensus the group reached at that time regarding design-based research. The definition is given in its original formulation (in Dutch), accompanied by an indicative (because nearly impossible) translation in English.
The Parike definition is the most fully synthesized representation so far of the discussion regarding design-based research, and it comes from the group as a whole.
Contrarily, a text made by two participants in the seminar will follow in which they make a few 'statements' quoting the richness of the material with respect to the content that was generated in Parike for the purpose of reopening the debate.

Whereas the Parike definition represents a necessary moment of consolidation and explication from within the group, the other more personal text ('Sint-Lucas research...') is mainly intended to keep the discussion going and to nourish the further development of our own proper vision of design-based research here at Sint-Lucas.

Academisch* onderzoek in en door*
Academic research on and by* designing*
ontwerpen behandelt een aan 'ontwerpen'*
deals with a 'design'-related subject*
gerelateerd onderwerp of oeuvre dat beter
or oeuvre that becomes better or more*
of duidelijker aanduidbaar* wordt door er
clearly focussed by thinking* about it*
oorspronkelijk*, bewust* over na te denken*
in an authentic, conscious* way and*
en de resultaten op een expliciete* wijze te
by communicating the results in an*
communiceren*.
explicit way.*

***academisch: om juist niet het (gefrustreerde) verschil met ontwerpmatig onderzoek te beklemtonen**
***in en door: vervangt de moeilijke 'through' design, de 'en' verruimt**
***'ontwerpen': al dan niet architecturaal (dus inclusief mixed media, kunst …)**
***onderwerp of oeuvre: (deel-)thema of een (eigen of gekende) praktijk, voor, tijdens en/of na het onderzoek**
***nadenken: mogelijke combinatie van handelen, testen, ontwerpen, bouwen, analyseren, onderzoeken,...**
(vrijer dan 'reflecteren')
***aanduidbaarheid: zie het engelse 'focus', duiding, vrijer en anders dan 'aantoonbaar'**
***oorspronkelijk: zachter en juister dan innovatief (wetenschappelijk) of creatief (kunstzinnig)**
***bewust: vanaf de start intentioneel**
***expliciet: helder, afgesproken, peer-review, challengers, ...**
***communiceren: op zijn breedst, kan zelfs een gebouw zijn, wel doelpubliek voor ogen houden**

**academic: in order not to emphasize the (frustrated) difference with design-based research*
**on and by: replaces the difficult 'through' design, the 'and' expands*
**'designing': whether or not architectural (thus including mixed media, art…)*
**subject or oeuvre: partial theme or (one's own or a known) practice, before, during and/or after the research*
**thinking: possible combination of acting, testing, designing, building, analyzing, researching…*
(more free than 'reflecting')
**focused: focus, different from and more free than 'demonstrable'*
**authentic: milder and more correct than innovative (scientific) or creative (artistic)*
**conscious: intentionally from the start*
**explicit: clear, agreed, peer-reviewed, challengers…*
**communicating: in the broadest sense, can even be a building, though one does need to keep the target audience in mind*

** Participants of the 'Parike-weekend'.*
(participants RTS 'batch' 1:) Livia de Bethune, Karel Deckers, Anthony Duffeleer, Marc Godts, Michiel Helbig, Nel Janssens, Thierry Lagrange, Robin Schaeverbeke, Erik Van Daele, Joris Van Reusel (participants RTS 'batch' 2:) Dag Boutsen, Sandy De Bruycker, Arnaud Hendrickx, Sanne Jansen, Laurens Luyten, Jo Liekens, Mario Matthys, Marjan Michels, Tomas Nollet, Bruno Peeters, Jo Van Den Berghe, Kristien Vanmerhaeghe, Kristiaan Van Weert, (Head of Department Sint-Lucas Architectuur:) Johan Verbeke, (Members of board of supervisors:) Guy Mouton, Frank Delmulle, (Head of research and education service (admin):) Ellen Goeleven, (chairman research council:) Bernard Vandermarcke.

sint lucas research

a (personal) characterisation that is intended to stimulate thought, to keep the debate alive, and to nurture a vision in full development.

(according to) Arnaud Hendrickx and Nel Janssens

After the two-day seminar on future research developments (Parike oct 2007), Arnaud and Nel on a number of occasions continued the discussion initiated in Parike on how design-based research ought to or can be conceived and, more specifically, in the context of Sint-Lucas. In searching for an answer to that question, we did not so much take the general interpretations and definitions of design-based research as our starting point, as the peculiarities and specific characteristics of Sint-Lucas. It seemed logical and necessary to us that the design-based research being developed takes as its starting point the characteristics of the design culture which are being developed within Sint-Lucas. We single out and bring to the fore those individual traits which are (or were, or should be) of high quality as characteristics which must also guide the research (and determine its specific nature).

The provisional outcome of these discussions is not a definitive, clear-cut and substantiated presentation, nor a so-called 'provisional text' which is submitted for negotiation. What we are conveying is a conglomerate of ***characteristics*** which we then qualify, i.e. ascribe a quality to. They are individual traits or attitudes which, in our opinion, determine the quality of the design culture and which we therefore deem important in the light of research at Sint-Lucas.

We relied on our own experience as teachers/researchers at the school and as designers, and on our own individual insights into the general discourse concerning design-based research.

Image: "singling out, articulating (Verbijzondering)" GRAUWELS LARISSA - 2nd year student 0708 architecture

IN CONTINUOUS (RE)SEARCH FOR ARCHITECTURE

1

(re-)construct the question and contest the answer

From 'education through architecture' to 'research through architecture'…

At Sint-Lucas, architecture is taught by doing architecture. The students must make the medium their own through practice, whereby the principle is applied that no single style or method is viewed as obligatory. [1] The enforcement of 'education through architecture' [2] has thus developed a proper character.

Explicitly explorative, experimental and speculative – these are a number of characteristics that we deem to be of essential importance in the design training (architecture, interior architecture and urban planning) that Sint-Lucas offers. These characteristics point towards a research-orientated institution and an inquisitive underlying attitude. This is an attitude one chooses consciously since it is not evidently part and parcel of the design activity. It is an attitude that one chooses and which one then consistently develops. This has a number of educational consequences. In addition to the pure teaching (instruction) of design skills (methodologies), students are encouraged to actively and continuously question the subject matter (architecture), the manner in which one engages with it and every supposedly self-evident aspect throughout the design process. Essentially, this is a culture of design-based research.

The developments concerning so-called design-based research which have gained important momentum in recent years now offer Sint-Lucas the opportunity of further developing and strengthening the aforementioned attitude as an essential feature of the school in a research context.

The challenge thereby is to monitor and make more explicit the singularity of design-based thought and action in order to establish forms of research which are focused upon the permanent and fundamental questioning of the essence(s) of architecture and which, by so doing, can qualify as 'research through architecture'.

1] It seems obvious but, in itself, it is not so self-evident. It is part of the tradition which, from a historical perspective, forms the difference between the art academy and the university. After all, the Academies were founded during the Renaissance as a reaction against the universities and wanted to free themselves from the paternalistic cavilling of scholastic life. See also: Wim De Temmerman, Onderzoek in de kunsten, Dag van het onderzoek - Associatie Gent – 15/10/2003

[2] See also Herbert Read. In 1944, he was already making a distinction between 'teaching through art' and 'teaching to art'. (Herbert Read on Education through Art)

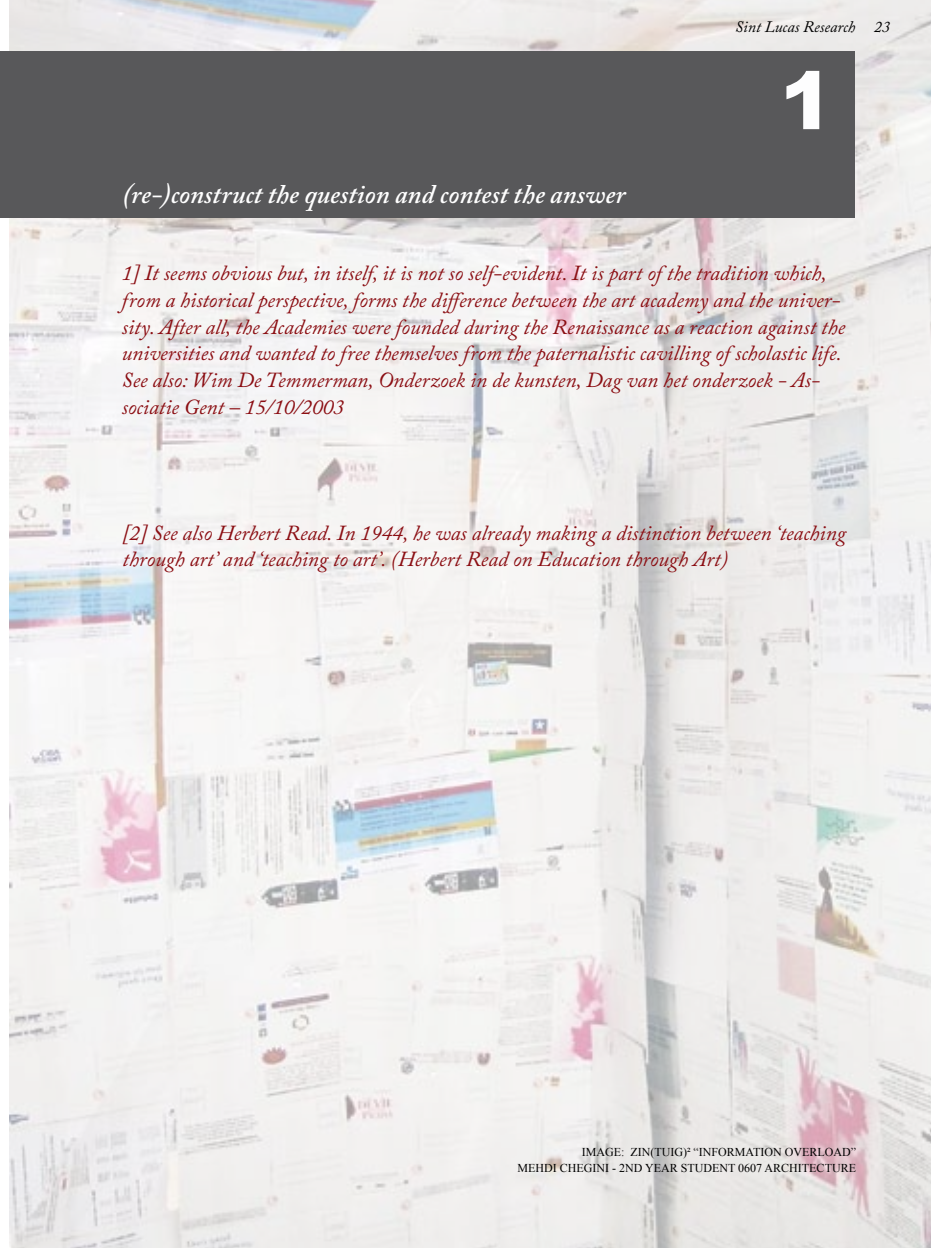


IMAGE: ZIN(TUIG)² "INFORMATION OVERLOAD"
MEHDI CHEGINI - 2ND YEAR STUDENT 0607 ARCHITECTURE

ARCHITECTURE = A STATE OF MIND

2

before (besides) thinking of a profession and a product, think of architecture as a medium

Sint-Lucas chooses to develop thought on architecture in essence through the designing of architecture (in contrast to, for example, architectural sciences where thinking on architecture is primarily developed through the study of architecture). This standpoint places the core of the course in the design studio. In the studio, spatial and also social themes and issues are principally researched by means of the design itself. Architecture (used here as an umbrella concept for interior architecture, architecture and urban planning) is not just the object about which knowledge is acquired and taught on the course, but is also the medium through which knowledge is created.

Architecture is not just the product that must be made and nor is it merely about the acquisition of the knowledge and skills necessary to practise the profession of architect. Architecture is above all a way of thinking which can be employed to approach a wide variety of issues, not just buildings. The architectural design is the medium through which both the question which poses itself and the answer which presents itself are researched. It is precisely by conceiving of architecture as a medium that the foundations emerge upon which design-based research can be conducted; that is to say, not research about architecture but through architecture.

Architecture is conceived as a medium to explore its own field, but also others. The medium of architecture therefore becomes an instrument to give feedback to the field and to generate questions which can also be researched within other fields. Or, in other words: in design-based research, the architectural design as a medium can be both subject, method and knowledge. It can question itself or other domains and provide evidence in a way that no other medium can.

This is an important starting point for the research. Architecture conceived of and deployed as a state of mind gives the specificity to the research which leads to its characterisation as 'design-based research'.

On architecture as a medium -- Marc Godts:

'Architecture is a [mixed] medium to be explored. A permanent demand for the development of vision, for the development of [open] models, for the futurity of Architecture. What is the next step for Architecture? How far can you / must you go? How does Architecture relate to technicity (objectivity), to perception (subjectivity) and to society (collectivity)?'

On architecture as a medium -- Arnaud Hendrickx:

Explore the limits of architecture! - The specific limitations of a medium, often more than its obvious possibilities, play an important role in the awareness and the definition of the autonomous qualities of a medium. When an artist embraces these limitations in an artwork, his work contributes to the identity and autonomy of the medium. When at a certain moment in time the obvious possibilities become functionally redundant, this process of searching for the limits of the medium seems to intensify.

Examples are the confrontations of architecture and cyberspace, or painting and photography. It would seem that new evolutions make some aspects of an existing medium redundant and that this is as a consequence reducing its autonomy. Paradoxically the inverse is often true when the existing medium reconfigures its limitation as a quality. This is a fertile ground for research and specifically for research through a medium.

In Painting, the Canvas is traditionally flat. But when Lucio Fontana decided to make a small cut in it, the canvas became spatial. In his painting the canvas isn't just supporting the image, it is the image, it has become autonomous. Paradoxically, cutting into the flat canvas to turn it into a spatial object intensifies one of the specific properties of canvas in painting: its flatness.

IMAGE: ZIN(TUIG)² "FEATHERS"
KAREN PELLENS - 2ND YEAR STUDENT 0607 ARCHITECTURE

ACADEMIC BY PRACTICE, NON-CONFORMIST BY NATURE

3

consider academia a perfect (safe) environment (lab) to develop informed critical and experimental thinking and acting (attitude)

The research at Sint-Lucas is academic research. De facto because it is conducted at a 'higher education level' (ref. Van Dale dictionary) but more fundamentally because - in practice - the existing design culture has created a climate in which the designerly state of mind and the basic questioning attitude can now further develop and articulate themselves in a proper form of 'academic scholarship'.

A basic attitude of permanent and fundamental questioning of (the essence(s)) of architecture (see above) is characterised by a non-conformism which guides thought on design and architecture like a second nature.

This non-conformism makes an important contribution to the character of the intended design culture. However, non-conformism is a trait which can come into conflict with the academic approach. After all, a generally accepted definition of 'academic' is 'working according to customary examples, based on scholastic rules, a stylistic school based on traditional, borrowed principles'(ref. Van Dale dictionary). This is squarely at odds with the design culture at Sint-Lucas.

However, in design-based research the academic approach and non-conformism can be reconciled. Academic is the scholarly quality which puts research to the fore and non-conformism is the manner in which we – by analogy with designing – aim to obtain quality in design-based research.

IMAGE: WITRUIMTE "LIGHT PATTERN STUDY"
EMMA DIRICKX - 1ST YEAR STUDENT 0708 ARCHITECTURE

DESIGNERLY INQUIRY, CREATING A FIT BETWEEN A PATTERN AND A PURPOSE

4

don't choose 'pattern follows purpose' or 'purpose follows pattern', choose both

A design is a pattern with a purpose, it's the result of a goal-directed human action. To design is to create a pattern with a purpose.

This pattern is a man-made or artificial construct, an artifact. Traditionally we distinguish conceptual artifacts, material artifacts and hybrid artifacts. In material artifacts (like cups and tables) material characteristics are more prominent whereas in conceptual artifacts (like scientific theories) immaterial and conceptual aspects are more important. A hybrid entity is an artifact that simultaneously has conceptual and material characteristics, i.e. a physical object which is simultaneously a carrier of ideas. In architectural design we create hybrids.

The purpose of a design can be defined externally to the designer (commissioner, society, funding organizations, cultural standards, etc.), by the designer himself or most likely both of them at the same time. This purpose is a desired configuration, a configuration that doesn't already exist in the specific situation addressed. This goal gives design a future oriented aspect, the purpose is situated in the future. It's only necessary to design something when it's unavailable or non-existent in a specific context. We buy (duplicate) a kitchen when the desirable configuration is available, we design it if this is not the case. (or we change our desires, of course).

Marcel Duchamp has through his 'objets trouvés' shown us that in a specific context even the minimal act of displacing an existing material artifact can have an important impact. Urinals existed in museums but not as art pieces. By displacing them he consciously ('on purpose') gives the material artifact a conceptual aspect and transforms the material artifact into a hybrid.

From these general statements about artifacts, their environment and their purpose, we derive the following triggers, formulated in **DESIGNERLY TASKS** to be applied in research.

On purpose in design -- Taeke de Jong:

'Some futures can be predicted, others must be designed.'

On purpose in design -- Herbert A. Simon:

'Certain phenomena or entities are 'artificial' in the sense that they are contingent to the goals or purposes of their designer. In other words, they could have been different had the goals been different (as opposed to natural phenomena which are necessarily evolved given natural laws).'

On purpose in design -- Herbert A. Simon:

'Fulfillment of purpose involves a relation between the artifact, its environment and a purpose or goal. Alternatively, one can view it as the interaction of an inner environment (internal mechanism), an outer environment (conditions for goal attainment) and the interface between the two. In this view, the real nature of the artifact is the interface. Both the inner and outer environments are abstracted away. The science of the artificial should focus on the interface, the same way design focuses on the 'functioning'.'

IMAGE: ZIN(TUIG)² "NETWORK CARPET "
LAURA MUYLDERMANS - 2ND YEAR STUDENT 0607 ARCHITECTURE

DESIGNERLY TASK: GENERATE EXPERIENCES BY MAKING THINGS

Statement: The core of the architectural object lies in its hybrid character, in the relation between the physical (matter, structure) artifact and the conceptual (meaning, experience) artifacts. It lies in the interaction of the object with its context, of the intrinsic construct and its external impact. This means that its design is at the same time inwardly and outwardly oriented. Simultaneously the impact defines the object and the object defines the impact. It is not possible to explicitly reproduce or describe it using another medium, it's a tacit quality of the singular combination of both artifacts. The tacit knowledge represented in this way is fundamental to research through architecture. It can be the subject, knowledge and method of it.

When design focuses almost exclusively on the creation of a conceptual artifact it becomes science and the result will be theory (a generic principle, a historical, social or mathematical statement, a law, a formula, etc.), when it focuses almost exclusively on the physical artifact it becomes engineering and its result will be technology. Architectural design always needs to be concerned with the creation of both artifacts at the same time.

Architects generate experiences by making things. In other words, architecture articulates conceptual artifacts by means of a physical artifact. This physical artifact can be reduced to very minimal material (light, sound waves, pixels, etc.) but even then it remains immanent in communicating experiences, in expressing concepts. It seems evident that the conceptual artifact needs its physical counterpart.
Less evidently, the inverse is equally true. Even when matter is the only concept one wants to express, this expression will generate an experience that is embedded in this specific materiality. This experience or, more generally, this conceptual counterpart, cannot be neglected and is an intrinsic part of the medium of architecture. So the

A

focus on the relation between the conceptual and the material artifact, the object and its context

relation between the conceptual and the physical artifacts embedded in every architectural object is fundamental and bidirectional.
This relationship partly conforms to the distinction between the formal aspect and the functional aspect of architecture. Rather, the formal aspect conforms to the subject matter and the structure (physical) and the functional aspect can, in a broad sense, be conceived as the impact on the environment, i.e. the context (conceptual).
This hybrid nature of design means that, in design-based research, the two sub-aspects of design can be the subject of the research if they are ultimately brought into relation with each other. It is therefore perfectly possible, for example, to research a technical aspect of architecture according to a design-based approach, provided it is not isolated from the perception of it in a specific context. Conversely, a general theory must respect its grounding in a specific materiality.

Henk Borgdorff:

'Research in the arts now focuses on both aspects: on the materiality of art, insofar as it makes the immaterial possible; and on the immateriality of art, insofar as it is grounded in its subject matter.'

Herbert A. Simon:

'An artifact can be thought of as a meeting point - an 'interface' in today's terms - between an 'inner' environment, the substance and organization of the artifact itself, and an 'outer' environment, the surroundings in which it operates.'

IMAGE: MAQUETTE ALS INGREEP "ROTATING ISOMO GATE"
SHANA SEVRIN & MELINDA JANSSENS - 3RD YEAR STUDENTS 0708 ARCHITECTURE

DESIGNERLY TASK: GENERATE NEW POSSIBILITIES BY MAKING THINGS.

B

focus on the relation
between what is and what's possible

Statement: Design is future-oriented, it is focused upon possibilities.

Possibilities are located in the space ('gap') between what is and what could be. As many people have stated, it is in that space that also design is located: 'between what is and what could be'

Thus, it is precisely here that we locate design-based research.
It is in this 'gap' that the outcome of design-based research ultimately crystallizes. That which goes beyond the individual concrete design (activity) and becomes the carrier of a possibility-generating question. We open up the problem-space by searching outside of what already exists.

This space is researched by continuously jumping back and forth between what is and what could be. This to-ing and fro-ing from problem to proposition/projection, from solution and back again, brings about a delineation/bridging of the gap and causes a pattern to emerge. This is a typical design-based procedure which is also deployed in design-based research.

Design-based research uses the same method in research as it does in design: research-ing a problem by continuously proposing/projecting solutions, evaluating, adapting problems and repeating the process over again.

Chris Rust:

'If the gap between our existing situation and the new world which we wish to inhabitat is made wider by our inability to conceive of what that world is like, that, I suggest, is where designers can help.'

DESIGNERLY TASK: DEAL WITH THEORY BY MAKING THINGS

C

design-based research can form the bridge between the specific and the general

The architectural design process is focused on the specific. It can question, show and even generate universalities, but the process itself remains specific. The design process therefore has no problem engaging with theory, but it can never become theory itself. That is to say that the design process cannot (or should not) be analysed or theorised in order to mould it into a fixed, universal design method.

Furthermore, it is a misapprehension to believe that architectural theory and even other theoretical domains cannot be part of the subject or purpose of design-based research. design-based research.

DESIGNERLY TASK: DESIGN THE RESEARCH

D

be aware of prevailing (generalised) research formats, then forget them and design the research to fit the specific

Henk Borgdorff:

'What is unique to the arts – and therefore also to the associated research – is precisely that they avoid strict classification and delineation and that instead, they themselves create the criteria that are to be fulfilled for each individual art project and do so over and over again, both from a methodological perspective and with regards to the way in which the research is justified and documented.'

CONCERNED WITH PROPOSITION DEVELOPMENT

5

focus on the construction of strong propositions in order to find the utmost possibilities (maximum)

What is the result of this sort of design-based research thinking? The result of such a design process can be both architecture in the 'traditional' sense – a building – and architecture in the original sense – a concept.

The point is that a problem has several answers on various levels.

Nigel Cross states that the 'humanities' are concerned with 'justice' and 'science' with 'truth' (Cross). A fair number of nuances can be applied to this very strict division. However, when we do not view it as a strict means of classification but rather as a statement which is intended to generate possibilities and interpretations, then it seems to succeed. If we take this statement, namely that the 'humanities' are concerned with 'justice' and 'science' with 'truth', as a starting point, then in our view design is concerned with 'possibilities' and their creation.

The focus upon 'truth' entails a concern about verifiability, and it appears that moral processes are important in understanding whether a statement is 'just'. The concentration on 'possibilities' therefore seems implicitly to contain a concern regarding the 'fulfilment of purpose'. The danger in this statement is obviously the interpretation of 'fulfilment of purpose' as a quantitatively and functionally measurable factor. Clearly, and certainly in the case of architecture, 'purpose' must be viewed in a much wider sense. These are also the different objectives a designer sets himself at various levels. It is therefore a qualitatively and contextually determined purpose rather than a quantitatively and universally applicable purpose.

The breeding ground for 'possibilities' is in the strength of the 'problem design'. Not just generating an enduring building but, above all, pushing forward an enduring problem which inspires many possible answers. Design-based research focuses on this generation of possibilities.

As many have noted, design-based thinking is situated between what IS and what COULD BE. It is precisely here, therefore, that design-based research is also located. This space between what is and what could be is, in fact, a space of possibilities.
Design-based research is not located in this space with the intention of explaining it, as if the ultimate aim were to surgically open the 'black box' of design-based thought (= conventional research, e.g. in Design Cognition). In design-based thought, this space is explored by continuously traversing it (in the leap from what is to what could be). An aspect (which is located in the 'is') is explored by casting forward (projecting to the 'could be') a proposition (a possible answer/theorem) and checking back (to the 'is'). It is the strength (quality) of the proposition which ensures that possibilities become visible. The to-ing and fro-ing between problem and proposition and back again gradually demarcates the space of possibilities. The aim of this to-ing and fro-ing is not so much to discover the one true solution or to establish the pattern of the to-ing and fro-ing as a law. Rather, through this process design-based research seeks to distil a strong proposition which makes a multitude of possible solutions conceivable/visible.

RESEARCH PROCESS = SELF-SIMILAR TO DESIGN PROCESS.

6

conduct research using a designer's mode of thinking as your expert asset. (make sure the research process reflects a design process)

Due to its basic non-conformist attitude, Sint-Lucas is distrustful of a priori notions and imposed methods. For example, we do not want to teach, let alone impose upon the students any fixed or rigid design methodology (or style discourse). This is also reflected in the research, which does not postulate any assumed methods and formats but rather a design-based attitude which serves as a guarantee for the specific quality of the research.

The demarcation and definition of categories of research subjects or methods is therefore not initially of essential importance to design-based research. What, conversely, must be installed and developed with great care and attention is the self-similarity between the research process and the design process. It is therefore important to recognise the characteristics/singularities of design/design-based thought as capabilities which are to be actively and consciously deployed in research. Design-based research does not claim any well-defined subject (e.g. the 'design process',…) or any well-defined methodology (e.g. the 'realisation of a subsequent work in the oeuvre',…).

What design-based research does assume is that the characteristics of the design culture in which it operates are not just reflected in the research but that in this research these characteristics are also (essentially) explored in depth. The self-similarity is hereby located on twin levels: between design and research in their more general characteristics and between the Sint-Lucas design culture and Sint-Lucas research with regard to the more specific characteristics.

However, self-similarity in no way means that there is complete equalness between design and research. Both have a different intentionality and finality.

On self-similarity versus the harmony of design and research. Henk Borgdorff:

'The notion that all artistic practice is by definition research can perhaps be useful in highlighting the reflexive nature of art and has possibly been inspired by the uncertain quest that is the creative process, but it is unproductive if the concern is with bringing any clarity to the debate on research in the arts. If everything is research, then nothing is research anymore.'

PUTS IN EVIDENCE DESIGNERLY WAYS OF (NOT) KNOWING

7

draw forth ideas from design practice (particular/individual) and feed them back into the design discipline (general/wider community)

Design-based research starts from the premise and the experience that there is a 'designerly way of knowing' which can be distinguished from other ways of knowing or understanding. This designerly way of knowing has arisen from the practice of design itself and continuously develops through this practice into its own individual way of acting and forming ideas.

We are now employing fully the specific intellectual expertise that this designerly way of knowing represents, in order to conduct research. The fundamental qualities of the design process are thereby reflected in the research (self-similarity). In a design process, a designer employs many varied forms of knowledge but also many forms of not-knowing and uncertainty (working with something which does not yet exist – in the 'gap'). Each individual and concrete design embodies situated, implicit knowledge and is an expression of a designerly way of (not) knowing.

In design-based research, this designerly way of (not) knowing is consciously activated; the design(ing) is deployed with the intention of expanding our (and other people's) knowledge and understanding of a particular subject. Ideas are generated and distilled from design practice and are then reworked (via a new design process) into questions which are relevant in a research environment. The design-based research process that follows and the outcomes of this process make the designerly way of (not) knowing self-evident, puts it in evindence…

This means that the research, irrespective of (but also through) the subject, says/reveals something about the essence of the knowledge which has been acquired. Put in terms used in the philosophy of science, this means that ontological, methodological and epistemological aspects are present. Or, to put it simply: what? (which subject) how? (which method, which approach) and why? (what do you want to learn about?). The research object/subject, situated in a context, can be both a design-based product and process and the research can address both its material and immaterial content. Design-based research approaches the research object from various possible angles (performative, expressive, emotive, aesthetic, etc.) and in so doing can employ both conventional and experimental (non-conformist) methods (for example, the design process can itself be deployed as a research method). Ultimately, the outcome of the research embodies an understanding (ranging from tacit, experimental knowledge to explicitly formulated 'foundational' knowledge) of the research object and hereby contributes to a further development of the designerly way of (not) knowing.

Design-based research originates in the design practice/design experience (professional, conceptual and/or academic) and from this it extracts the ideas (subject) and the approach (method) as well as the knowledge (designerly). But however much the research is embedded in the particular individual design practice, its outcome is always intended to have a wider effect than the mere further development of, or acquisition of, more insight into the individual design capabilities and design practice.

The research takes place with the intention of developing fresh insights and challenging propositions from one's own experience which transcend the singular design and, in so doing, nurture, inspire and further develop the practice of design as a discipline.

On designerly ways of knowing. Nigel Cross:

'There are things to know, ways of knowing them, and ways of finding out about them that are specific to the design area.'

On knowledge and design. Wolfgang Jonas:

'Design is aiming at single phenomena that fit various unforeseeable conditions. Design has to intentionally create variations, differences, because the 'fits' dissolve, fade away, get old-fashioned. Design environments change too fast to talk of true or false design knowledge / facts. The archive of design knowledge is like a memory, a growing reservoir of variation as well as restriction. Expertise in design is the art of dealing with scientific and non-scientific knowledge, with fuzzy knowledge, with outdated knowledge and with no knowledge at all, in order to achieve these value-laden fits.'

On the legitimacy of designerly ways of knowing. Wolfgang Jonas:

'Design thinking is different from scientific thinking (analytic, reductionist, aiming at explanation), it is different from engineering thinking (aiming at efficient functionality), and it is different from artistic thinking (taking the artist's self as primary criterion). For all these reasons design thinking has to claim theoretical and methodological autonomy.'

ATTESTS TO AN ARTICULATED AND SHAPED UNDERSTANDING

8

contribute to a wider understanding by externalising and unlocking your interpretations

Design-based research has a number of features in common with qualitative research (as opposed to quantitative research). For example, the aim of design-based research is to generate an 'understanding' rather than giving/looking for an 'explanation'. The researcher assumes a highly personal (subjective) role in the research and the research is concerned not so much with the discovery of knowledge but rather the construction of knowledge.

'Interpretation' occupies a very central position in the construction of knowledge and meaning.

These qualities must find their own expression in the way research processes and research outcomes are externalised and communicated. However, they are of such a nature that an unequivocal, straightforward explanation, commentary or argument remains inadequate. They require more complex formulations.

The challenge for the designer-researcher is to attest to his/her acquired insights and to imagine them in such a way that a sort of 'empathic understanding' is created within the reader. The research outcome, as the embodiment of a particular understanding, must be given a form which conveys the constructed knowledge and provides insight into the interpretations which underlie it. Knowledge can thereby acquire the form through which it was created or can be reconceptualised in another form.

The imaginative force and the inventiveness which makes the research accessible increases the quality of the contribution to a broader understanding of the research object but, more importantly, also stimulates the imagination of the reader as the result of which several more or different interpretations may arise.

On 'rich', 'subjective' description versus 'objective scientific' description. Robert Stake:

'Thick description is not complexities objectively described; it is the particular perceptions of the actors. Can readers accept subjective description? Often, the researcher's aim is not veridical representation so much as stimulation of further reflection, optimizing readers' opportunity to learn.'

On 'understanding' versus 'explanation'. Georg Henrik von Wright:

'Practically every explanation, be it causal or teleological or of some other kind, can be said to further our understanding of things. But 'understanding' also has a psychological ring which 'explanation' does not. This psychological feature was emphasized by several of the nineteenth-century antipositivist methodologists, perhaps most forcefully by Simmel, who thought that understanding as a method characteristic of the humanities is a form of empathy or re-creation in the mind of the scholar of the mental atmosphere, the thoughts and feelings and motivations, of the object of his study. … Understanding is also connected with intentionality in a way that explaining is not.'

CULTIVATES PEER PRO-MOTION

9

invest in SHOWTIME! events

Together with the design-based research culture, a specific form of 'promotership' is also being developed. We sum up 'promoter', 'pro-motion' literally as propelling, moving forward … promoting. This has a slightly different emphasis to the more familiar supervision, guidance, follow-up…

The driving force behind this 'promotership' is a strong peer group. This peer group is created in the RTS programme. This is where designers/fledgling researchers, in collaboration and confrontation with each other's visions and ideas and through feedback from various tutors, develop a perspective on research in the design disciplines that gradually transcends the individual research project. Through the discussion, formulation, design and concrete elaboration of individual research proposals and interests, a vision forms of what research at Sint-Lucas means, and knowledge is also generated about the specific nature of design-based research in architecture, interior architecture and urban design.

In this bottom-up approach, an important role is necessarily given to the peers in propelling the research. In a strong peer-group culture, research groups naturally emerge out of a sort of intensified interaction between a number of peers.
'Pro-motion' demands constant stimulation. Therefore, great attention is devoted to arranging occasions when the research work is shown to the full peer group, tutors and the college community (including students). These occasions stimulate alertness and involvement with and critical reflection on the research carried out (both in the general and specific sense).

We deliberately call these occasions 'moments to show' (rather than 'seminars') because the individual nature of design-based research must also be able to be reflected in the way the research is shown and discussed before a wider audience (e.g. exhibition and performance instead of/besides paper and lecture).

These presentations have the atmosphere of an event. One might literally label them as 'Showtime!'

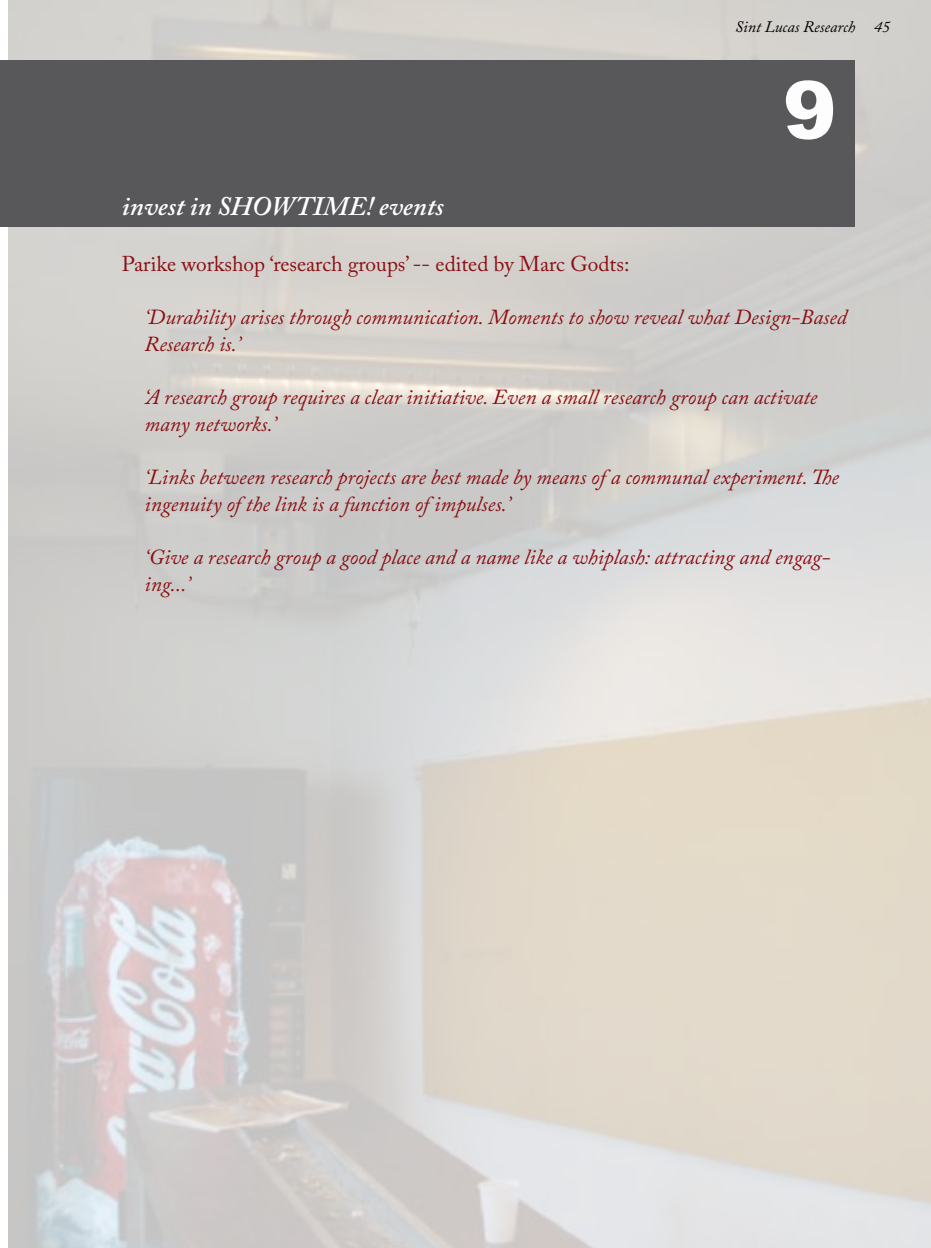
Parike workshop 'research groups' -- edited by Marc Godts:

'Durability arises through communication. Moments to show reveal what Design-Based Research is.'

'A research group requires a clear initiative. Even a small research group can activate many networks.'

'Links between research projects are best made by means of a communal experiment. The ingenuity of the link is a function of impulses.'

'Give a research group a good place and a name like a whiplash: attracting and engaging...'



VAN DAAG NU

TODAY = SHOW

PRESENTATIE

Onderzoeksgroep vandaag
Hoe functioneert een onderzoeksgroep vandaag?
In een "onzekere" omgeving, na het modernisme en he
In een netwerkmaatschappij, in een reflexieve maatsch
In een evoluerende maatschappij, waarin verantwoordel
context, begrip en participatie anders klinken dan pakweg

ONDERZOEKSGROEP

EXTERNE COMMUNICATIE

DE TOON-

RES-SETS

LABS

....

TEXTUELE PREVIEWS

CHALLENGERS

DE DUUR ZAAM HEID

Duurzaamheid van een onderzoeksgroep
Maakt een resultaatsverbintenis deel uit v
Bepaalt één of andere officialisering van e
Of heeft dit te maken met een input van g
Hoe standvastig kan een onderzoeksgroe
Hoe onstandvastig ?

TIME

CRASH-TESTS

"DAT IS ONTWERPMATIG ONDERZOEK"

IN MOMENTS

IDENTITEIT = ONTWERPMAT. ONDERZOEK [NOEMER]

MOMENTEN 3-4x/jaar [JURY'S]

MEMORIES

Van Dale Online Woordenboek

DOOR COMMUNICATIE

BINNEN EEN TOONMOMENT

OVERHEEN TOONMOMENTEN

KEEPS THE (ARCHITECTURAL) DESIGN FOUNDATIONS OPEN AND ALIVE

10

In view of the fact that in the design programme Sint-Lucas does not follow any uniform stylistic discourse or methodology, it seems logical that it should not do so in its research either, but instead develop research through the adoption of a self-willed, questioning attitude and to perpetuate this attitude through the research. The parallel with the general philosophy of the institution also holds true with respect to research. First-year students come into the studio demanding and expecting to receive a clear explanation of what architecture is, how you fit it together and trace it out. In doing so, they have a preconceived idea (often conventional) of what architecture is and assume that, by definition, it results in a building. Throughout the course, students must be stimulated to question all preconceived and generally accepted ideas about architecture and undermine them in order to arrive at their own vision. The same strategy also applies to research. We are attempting to go back to the fundamentals of research and to free ourselves from the self-evident in order to develop a new vision.

Each of the characteristics highlighted here originates, in a particular way, from this questioning attitude. On closer inspection, one might say that each of the characteristics summed up here in essence can be considered qualities which apply to research in general. In itself, this merely shows that design-based research is a fully-fledged form of research.

Nevertheless, it is important to make one's own selection and articulation of 'general' characteristics from within a specific (unique) context (the school/the design culture in which the research takes place).

The core of the matter remains, both for the institution and even more for the research, to continuously and fundamentally question the essence of architecture, its characteristics and possibilities and to keep them open to new interpretations.

On the necessity of questioning the evident and freeing our minds for new interpretations. Rolf Hughes:

'For, crucially, if we lose our capacity to be surprised, to be taken aback, to be astonished (with all the reversals of expectations this implies), we have also lost the means of escaping the monotonous repetition of our disciplinary and discursive heritage. It is our capacity for astonishment that brings about change in the dawning of an aspect.'

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RTS as a programme

Setting up the Research Training Programme: the General Context

Abstract

Architecture is a field of enquiry that is characterised by a multi-disciplinary and holistic scope. It is influenced by knowledge and methodologies from the Humanities as well as from the 'Exact' Sciences. Moreover, the design activities have traditionally had a strong link to the arts, inspiring and stimulating the creative conceptual work. Because of this situation, different methodologies are being applied in research. The design process is seen as the core process during education, as well as later in practice. Most current research activities, however, are related to either the 'Exact' Sciences or the Humanities. Focus on the design process as the core process and methodology in research seems to be underdeveloped, though recently it is receiving a great deal of attention.

Architectural practices have up till now been the place for real life experiments and innovations. Critics have been stating that current academic research has very little relevance for these design practices. For more than a decade now, discussions and conferences on research in the field of architecture have seemed to focus on research by/through design. Consensus seems to be growing that these types of research (although still under discussion itself) merit more focus and support by academia. The ideas and concepts are spreading in papers and discourse. However, it seems that examples of good practice are still difficult to find.
The context and climate in which research activities in the field of architecture are developing have not been studied extensively (especially when compared to other fields). Especially how the interaction between academia and practice plays a role in innovation and the growth of insight and new knowledge deserves more research attention.

This paper will report on recent developments in the Sint-Lucas School of Architecture (W&K), where international experts have been brought together to contribute their specialised knowledge to develop research by/through design and to make design knowledge more explicitly available. The programme[1] builds on and connects to design experience from practice as well as from design (studio) activities. It places the focus on extracting and developing knowledge from design activities. It uses designing (the activity) as a research methodology for research through and by design. It has been running for three years now. This contribution is an attempt to describe the local context and conditions, the aim, and the general direction of the new research training programme.

The research in this paper is based on individual and group discussions with participants, as well as on discussions with the tutors.

Introduction

Recently, there has been a growing focus on developing research in the field of Architecture (and Design). Many conferences have been organised. These include, for example: 'The Unthinkable Doctorate' (2005) Brussels, Belgium (eds. M. Belderbos and J. Verbeke, 2007); 'Design Enquiries' (2007) Stockholm, Sweden; 'Research into Practice Conference' (2008) London, UK; EAAE/ARCC Conference, 'Changes of Paradigms in the Basic Understanding of Architectural Research' (2008) Copenhagen, Denmark, and many others.

It is also interesting to note that in May 2007 in Tallinn a conference entitled 'Towards Strong Creative Disciplines' was jointly organised by EAAE (European Association for Architectural Education), ENHSA (European Network of Heads of Schools of Architecture), Polifonia (the Erasmus Thematic Network for Music) and ELIA (European League of Institutes of the Arts). During this conference it became clear that all the above mentioned disciplines face similar problems in developing research and PhD programmes all over Europe. Moreover, a European Commissioner emphasized the importance of Culture as a field of research to the European Commission and promised that there would be more emphasis by the European Commission on cultural issues in the future. Parallel to this, a number of different partners in Flanders created the IvOK (Institute for Research in the Arts) in order to facilitate the development of research in their 'creative disciplines'.

Within this changing and developing international context, several PhD programmes in Architecture have been developed. Each of these is establishing its own position and priorities. Examples include the PhD by practice at RMIT (Royal Melbourne Institute of Technology, Australia) run by Prof. Leon Van Schaik and recent developments at the Bartlett School of Architecture (UCL) in London, UK.

In line with these international developments, the Flemish Government created by decree in 2004 new PhD degrees in Arts, Product Design, Music and Architecture. Many Schools in Flanders were being faced with the challenge of making their research activities more explicit and visible and of generating explicit and tangible research output. This development created plenty of discussions, formal and informal, between representatives of the traditional academic fields and established designers, musicians and architects.[2]

Within these developments, Sint-Lucas School of Architecture faced the challenge to build on its history and specific design competence in order to establish an appropriate research structure and programme. Sint-Lucas School of Architecture has two campuses, one in Brussels (since 1887) and one in Ghent (since 1862). The School offers programmes of study leading to the following degrees:

Bachelors
Architecture (academic, 6 semesters, 180 credits)
Interior Architecture (academic, 6 semesters, 180 credits)
Interior Design (professional, 6 semesters, 180 credits)
Masters
Architecture (academic, 4 semesters, 120 credits)
Interior Architecture (academic, 2 semesters, 60 credits)
Urban Planning and Spatial Design (academic, 4 semesters, 120 credits)

The Sint-Lucas School of Architecture, a partner in the Hogeschool voor Wetenschap & Kunst has a long tradition and high reputation in architectural education. It derives its uniqueness from this long tradition, from its design competence, from the collaboration and interaction between courses in integrated study fields and from the interaction between the design studios and the theoretical courses. A large number of leading architects in Flanders have been educated at Sint-Lucas, and some of them have returned to teach as well. Many of its staff are running important architectural firms in Flanders.

The School also has a long-standing tradition of research in the fields of History and Theory, Universal Design, CAAD and Building Technology. The former 'Sint-Lukas Werkgemeenschap' is a good example of its research culture. Besides these important research activities, which have been strengthened and which will not be further discussed in this text, plenty of other research activities in the field of design (although mostly invisible and not leading to registered formal research output), together with the school's highly competent and internationally recognised staff, form the basis for the School's excellent educational programme.

This research tradition at Sint-Lucas received a further impulse in 1999 through the organisation of a research forum guided by Prof. Gerard De Zeeuw. A group of researchers participated in this forum. Many interesting concepts and ideas were generated. Discussions following this forum led to a long-term policy document on architectural research which gives some important focus points for the future. All of this contributed to the creation of a fertile environment for research. Johan Verbeke (2002) reported extensively on these developments.

Moreover, a growing number of international activities (workshops and mobility) contributed to a rising awareness of international developments in research and education.

The preparation process

In 2004 the Sint-Lucas School of Architecture decided to start building on its own qualities, vision and mission in the field of Architecture and Design for its future research developments. It set for itself the ambition to create an international research programme in the field of Architecture and Design by utilising 1) the research processes and the qualities of creative and design processes already existent within the school, 2) knowledge from (architecture, design and art) practice, 3) the competences available within the School, which have been developed over the past 140+ years.

The underlying theories for this development go back to research in the field of management and philosophy of science. The ideas of Donald Schön (1983) are well known in the field of Architecture. Since then, these ideas have been further developed by others. R. Glanville and J. Verbeke stated in 2006:

> *Nonaka and Takeuchi (1995) claim (and we generally agree) that 'explicit knowledge can be expressed in words and numbers and can be easily communicated and shared in the form of hard data, scientific formulae, codified procedures or universal principles… Tacit knowledge is personal, context-specific and hard to formalise and communicate… Subjective insights, intuitions and hunches fall into this category.'*
>
> *In the field of Architecture and Design, explicit knowledge is available in the form of codes used to draw plans, sections, etc…, theory of Architecture, information on how to contract, how to develop structure…. Implicit knowledge is knowledge used in the initial stages of the design process to develop the first design concepts, it is the knowledge of how a specific design office works…. It is clear to us that the field can only perform when using both types of knowledge.*

In addition, we wish to introduce the distinction between Mode 1 and Mode 2 knowledge as introduced by Gibbons *et al.* (1994). Mode 1 knowledge is defined as 'The complex of ideas, methods, values and norms that has grown up to control the diffusion of the Newtonian model of science to more and more fields of enquiry and ensure its compliance with what is considered sound scientific practise.' Mode 2 knowledge, on the contrary, is 'knowledge production carried out in the context of application and marked by its transdisciplinarity; heterogeneity; organisational hierarchy and transience; social accountability and reflexivity…. It results from the parallel expansion of knowledge producers and users in society.'

Mode 1 knowledge includes the scientific knowledge developed in university labs, concepts from architectural theory, etc. Mode 2 knowledge is the knowledge which is transferred by architects from practice in the design studios and which is crucial for the development of the field.

Cook and Brown (1999) distinguish between tacit and explicit knowledge, combining this with a second distinction between individual and group knowledge. In the field of architecture and design it can be noted that especially individual implicit knowledge is very well developed. Explicit knowledge, however, especially related to design and creative processes, is much more difficult to develop. We propose this issue for further future investigation as the interaction between explicit and implicit is crucial for the development and innovation of a discipline and/or field of enquiry (Cook and Brown, 1999).

As a consequence it was the intention to develop the notion of reflection as well as knowledge production in the field of Architecture in the new training programme, as we believe this will help researchers to focus on the core process in the field of Architecture and Design.

As a basis for future discussions, the School (in collaboration with NETHCA) organised in April 2005 the international conference 'The Unthinkable Doctorate'. In the proceedings, edited by Marc Belderbos and Johan Verbeke (2005), the focus was on the organisation of research programmes, the use and impact of media, the validation of research efforts and the development of epistemological issues.

In 2005 a process of consultation and preparation was organised within the School of Architecture. Design staff and young designers were involved in these preparatory discussions. Important background work consisted in monitoring international research developments (Nel Janssens, 2004), looking for and analysing experiences with design-based research and doctoral programmes in other universities. As a consequence of this consultation phase, the School tried to ensure that the final programme was appropriate for and supported by potential participants, but that it also measured up to high international standards. The programme was designed to foster diversity of vision and opinion, and not to reflect the vision of a single person or methodology. This fostering of diversity of vision is a basic philosophy of the school which also underpins the compounding of the teaching staff in the education programmes.

In accordance with the history of the school, it was decided to focus on architects and designers who are in the initial phase of their research (by or through design) and to open up the programme for researchers with fine arts and/or design backgrounds.

After the consultation phase, the goals for the RTS programme were formulated as follows:

- Facilitate discussions on research directions in the fields of architecture and design (priority);
- Develop the research focus for Sint-Lucas (long-term goal);
- Support researchers at Sint-Lucas (and others);
- Establish international collaborations between schools of architecture;
- Create input for research within the different domains of research and education;
- Prepare researchers for design-based research projects or a PhD in architecture (or design).

The idea was and still is that the content of the programme modules has to be situated on a meta-level and must relate to research/design methodology and culture rather than to the specific content and/or focus of each specific research project undertaken by the participants. Individual guidance however was not excluded, but expected to take place on an individual level.

The main idea of the programme can be found in the following questions: What is research by/through design? And how may this approach lead to a research project? How will this eventually lead to a PhD? What is the context and what are the requirements for research by/through design?

During the preparation phase there were plenty of informal contacts with visiting professors, staff and potential researchers. It is very difficult to describe or understand the impact of these discussions. However, it is clear that they formed a forum for cross-checking the chosen direction, as well as for confirming and checking the compatibility with international paradigms. Especially informal but valuable discussions by e-mail with Prof. Ranulph Glanville have to be mentioned here.

The implementation

As a consequence of the consultation and preparation phase described above, a full programme was implemented in the course of 2006 for the first group. 'Batch' 1 (as they were called by one member of the tutor group) consisted of 11 participants. In 2007 this was repeated (with minor changes) for a new multidisciplinary group of young designers/researchers ('batch' 2, with 13 participants including someone from product design). Because of the positive reactions and experiences after the first year (2006), the first group continued for another 4 modules, numbered 5 through 8. Modules 5 through 8 will be slightly reorganised in 2008. Moreover, it is expected there will be one or two international participants for 'batch' 3.

The content

Modules 1 to 4 are organised for designers and architects who join the research programme. Modules 5 to 8 are intended for those who have already finished the first four modules. We first briefly describe each of the modules as they were implemented in the course of 2007. (They have already been reported in more detail in *Reflections +3* (2006), as well as in other chapters in the present publication.)

- Module 1: Research methodologies and Communication (Gerard De Zeeuw and Rolf Hughes)
  This module deals with methodologies for furthering the knowledge acquired from research, design and practice and with methods for supporting the communication of knowledge. The thread running through these is the inherent tension between 'content' and 'media'.

- Module 2: Knowledge (Halina Dunin-Woyseth and Fredrik Nilsson)
  This module treats different forms of knowledge and how these forms originate. There will be a specific focus on the forms of knowledge present in the domain of architecture and design and on the underlying knowledge processes.

- Module 3: Reflection (Ranulph Glanville and Adam Jakimowicz)
  Module 3 focuses on forms and processes that support and stimulate reflection, and that further knowledge through the development of insight. Specific attention will be given to practice and design activities.

- Module 4: Design Cognition (Ömer Akin and Burak Pak)
  This module focuses on the 'design process'. It is designed to help

participants to develop a better understanding of how they design and the factors that influence it, through high level inquiry and research. What constitutes the tenets of the field of "design cognition;" and what are the approaches to demystifying it? What can we learn from the field of practice that can illuminate the models of the design process? Are the forms of design knowledge different from that of other domains; and might this influence design cognition?

- Module 5: Consolidation of past experience (Paul Cruysberghs, Volkmar Mühleis and Yves Knockaert)
  This module follows shortly after the publication of *Reflections +3* (2006) and is intended to create a point of reflection on the previous research training modules as well as to trigger the development of a detailed research project by the participants.

- Module 6: Practice-based research (Chris Rust, Nicola Wood and Simon Bowen)
  Module 6 introduces examples of practice-led and –based research (also from other disciplines) and discusses the interaction between research work and work in practice.

- Module 7: Design and arts (Koen Wastijn and Georges Petitjean)
  In response to participant demand, this module involves input from research in arts disciplines, as well as from some anthropological methodologies and experiences.

- Module 8: PhD by practice (Leon Van Schaik and Richard Blyth)
  In module 8, the RTS participants are introduced to the underlying principles of the PhD programme by practice at RMIT (Royal Melbourne Institute of Technology).

The context

In order to fully understand the underlying processes, we believe it is important to have an understanding of the way the modules have been organised.

An invitation to apply to the programme was posted internally. The candidates were asked to formulate a goal and at least their initial ideas as to what direction their research might take. The first group (batch 1) consisted of 11 colleagues from the School, mainly young design studio staff with a practice, who had very little or no contact with one another. It was stated in the beginning that there would be no formal implications in relation to employment. The first module also started with a presentation to the tutors of the participants' own work (in practice) and interests. This was the start of mutual communication and exchange of experience, a process which continued and further developed through the various modules of the programme. It was the beginning of a dynamic process and the seed for a new research group. It is believed this was very important as it created a neutral and mutually non-threatening context between the participants. The participants could thus be very open with one another and the tutors; they also learned a lot from one another. They could explore and experiment.

Each module consisted of two full consecutive days of work. Each module was preceded by e-mail communication. Most tutors required some preparatory reading, which in the beginning meant a lot of effort by the participants. Later on, the RTS participants did acknowledge that they had learned a lot by doing this reading, especially as some tutors also asked them to do an assignment (e.g. a short paper), which was discussed at the beginning of the module and usually related to the theme of the module.

Each module started on a Thursday evening with a short 2-hour session and continued through Saturday afternoon. After the 2-hour session on Thursday evening, an informal diner was scheduled. This allowed the tutors and participants to informally exchange background information, personal interests and experiences.




Each module was chaired by two people. In the beginning, these two people were selected by Sint-Lucas to form a complementary team, but later on this strategy was slightly changed, with the two people being selected on the basis of their having worked together in one way or another in the past. They all had international academic experience, a design practice and a positive vision of research related to praxis.

It turned out that the participants and tutors stayed in contact by e-mail after each of the modules (and, indeed, after the conclusion of the entire programme). In some cases this developed into intensive mutual distance collaboration. After their module, some of the tutors have been asked by participants to become the supervisor of their PhD project.

Experiences and results

First of all, it is worth stressing that when this collective experiment and exploration started, there were many questions and uncertainties. Also, the general attitude towards the new research developments (by or through design) within the School was very uncertain and cautious. After three years of programme modules and research experience, it has become clear that the programme led to the creation of several groups whose members work together to develop research related to and based upon designing, both as a methodology and as related to the experience and knowledge gained from practice.

The RTS groups (both batch 1 and batch 2) collectively developed a common vision, (although it remains difficult to formulate it explicitly). Together, all these participants currently form a highly interesting group of researchers who are developing research projects that places designing in the centre of their projects and try to develop designing as a research methodology.

Evaluating the first two years, it can be noted that the participants appreciated the following activities:

- For most of the modules, the tutors forwarded papers and texts to be read by the participants. Although some of the texts were sent to them only a short time before the start of a module, on the whole they appreciated the content of these papers.
- The formal presentations and following group discussions have been highly valued.
- After a module, typically several of the participants stayed in contact for further discussion and development of their research ideas. The positive and stimulating comments and reactions by tutors were very much appreciated and valued by the participants.
- For several modules, the participants were asked to prepare a short paper or to give (brief) answers to a question and/or problem. These exercises or assignments required some effort, but they also speeded up the learning process in the module itself, and they encouraged collaboration between the participants, a fact which was highly appreciated.
- Finally, during most modules there was also (some limited) time for individual discussion between participant and tutor. This made it possible to have a more focussed discussion. This helped some of the participants to test and develop their own research project.

Although it has been mentioned very few times, I personally believe that the importance of informal moments should not be underestimated. One essential part of each module was the joint dinner on Thursday evening. This allowed for informal contacts between participants and tutors, but also among the participants themselves. Besides this, there were also informal contacts between the tutors and myself as head of the School. This all contributed to the overall 'social engineering', as it was called by one of the tutors. Additionally, the small group exercises and discussions also stimulated collaboration and mutual interaction.

The tangible research output can be seen on different levels:

- There has been an increased participation in international conferences.
- Between 5 and 7 PhD projects have been formulated, each of them with a clear focus on using design as a methodology and connecting to practice.
- The embryo of a research group (and especially research culture) has been growing and maturing.
- Initial ideas and a first proposal for distributing the research efforts of researchers combining their research activities with architectural practice during their PhD by design programme has been developed to help individuals scheduling their efforts.

Another very important result of the first year was the publication of *Reflections +3* in the fall of 2006. First of all, the preparation phase for the publication functioned as a trigger to produce a proposal for personal research as well as developing a joint understanding. The publication made it possible to communicate the experience and understanding to a wide range of readers, both inside and outside of Sint-Lucas. It can also be observed that the second 'batch' (because of reading *Reflections +3*) started with a better understanding and vision of RTS. For the tutors, as well, *Reflections +3* provided an insight into what had happened in the other modules, thus increasing the consistency of the overall approach.

Another aspect which was important in the beginning and is still crucial, is the mutual trust between participants. The group consisted of a mix of individuals from both campuses and from all disciplines involved (interior, architecture and urban design).

Mutual trust and openness were key factors for profound discussions and a collective learning. In fact, the RTS group can be seen as a Community of Practice (CoP). The importance of the sessions was stressed by the head of the School, who attended the start of each module, as well as being present during the Thursday evening diner.

Only after a year did it become clear that different tutors had brought different (but always very valuable) opinions and points of view to the participants. This required great maturity and insight on the part of the participants, first to distinguish, but then also to develop their own individual perspective on research. Through their positive attitude, the participants were stimulated to look for new developments and paths to explore in the field and to frame and value their own experiences.

The future

In November 2007, all participants from both batches spent a full two days in Parike (a small town in Flanders with a nice seminar location) together with the management team of the School and the chairperson of the Sint-Lucas Research Council. The goal was to reflect on the previous experiences, as well as to develop a vision for the future. During the Parike seminar, the group also developed a proposal for the future research strategy of the School, (which is discussed in another section of this book). Moreover, plenty of ideas were generated, which are now being further studied and developed in terms of concrete actions. For example, how to individuallyschedule and organise the research time over the full length of PhD work in combination with practice; how to distribute the research time when the research project focuses on designing and has an important connection to practice; how to further develop the seminars and improve the overall consistency; how to facilitate further developments; etc.

In Parike, the group also discussed how a third year (for the first batch) could be organised. It became clear that this group did not need further formal tutoring, but was much more in need of personal coaching. So, for this group, during 2008, the School will organise time slots for individual discussions between participants and incoming tutors. Moreover, the participants also expressed the need for discussions in small (trusted) groups and possibly some more open discussion/presentation sessions.

It was also proposed to introduce 'toonmomenten' (literally translated from Dutch: 'moments to show'): some kind of public seminars during which some of the RTS participants can show their research project developments in a trusted group to receive comments and feedback. It is expected these activities will work as moments of group learning and self-tutoring by participants although also external feedback and comments are clearly welcome and valued by the RTS group.

After the publication of *Reflections +3* (2006), the School received plenty of positive international reactions. Because of this, it was decided to open the seminars to other

disciplines currently experiencing similar developments within Flanders (music, arts, product design, …). For the 2008 group ('batch' 3), the School also launched an international call for participants and (in order to keep the group number limited) a few of the international respondents to this call were selected.

During the discussions there also emerged two new projects: 1) to organise a follow-up to 'The Unthinkable Doctorate' conference; 2) to prepare for a journal focussing on research by/through design and the research issues emerging from the interaction between practice and research.

Finally, it is worth mentioning that in order to strengthen the current research developments in the Sint-Lucas School of Architecture, from 2007-2008 on, six senior professorships have been created in order to help guide and supervise the emerging research and PhD projects.

Conclusion

In this paper we have reported on research developments since 2005 in the Sint-Lucas School of Architecture. The RTS (Research Training Sessions) research programme has been organised. The results of these efforts seem to be very relevant and promising, as is described elsewhere in this book. We have described the context and the organisation. We have also tried to highlight issues relating to the local context and organisation which we believe will be of importance for similar future developments. Some future developments have also been mentioned.

Johan Verbeke

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(Endnotes)

1 The organisation of research training by Sint-Lucas is known (within but also outside the School) as RTS (Research Training Sessions). RTS will be used as the overall reference. Within this paper we use 'research training programme' to refer to the sequence of all 8 two day activities, 'module' to refer to each two days of tutoring and finally 'session' for each of the shorter activities and seminars constituting a module.
2 Examples include the paper by Johan Pas (2007) and the following discussions: the debates organised by the Sint-Lucas School of Fine Arts in Ghent in 2006 and 2007; the '*Dag van het Artistiek Onderzoek*' in 2006 and 2007, organised by the K.U.Leuven Association; the debate '*L'ABC de Paris - Over de academisering van het hoger kunstonderwijs*', organised by Prof. dr. Bart Verschaffel within the context of the '*De Avonden in de Greenwich*' (12 October 2007), and many other activities.

contributions

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Simon Bowen returned to academia in 2003 following eight years working with audio, video, photographic and web technologies. His initial research in the human-centred design of digital products resulted in a Master of Arts in Industrial Design and a broader research interest in alternative strategies for engaging 'users' in the design of novel products. His subsequent work has developed this interest via an award from the UK's Arts & Humanities Research Council for PhD research. In this research he is developing a methodology for engaging with users via "critical artefacts" (provocative conceptual designs), due for completion in late 2008.

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Nicola Wood is an interactive media designer and researcher based at Sheffield Hallam University investigating applications for multimedia in learning.
She has developed an active role in the preservation of rural crafts through working in partnership with her husband, who has been a pioneer in rediscovering lost woodworking skills. This provided the background to her doctoral research project; using a practice-led approach to explore, from the perspective of an interactive media designer, the problem of how to understand and transmit the practical knowledge of skilled craft practitioners.
In her current research she is using an 'expert learner' to assist with elicitation and transmission of the skills of traditional custom knife makers in Sheffield which was once the centre of the UK's knife making industry, but has now declined to just a few master craftsmen. The learners taking part in the evaluation of the learning resource come from a new generation of creative metalworkers whose interests lie in adapting old skills to new craft practices.

Georges Petitjean - g.petitjean@aamu.nl
Georges Petitjean is a Belgian art historian who wrote his PhD on Western Desert Art at La Trobe University, Melbourne. His field of interest is the transition of Indigenous Australian painting from its sites of origin to the wider art world. He has lived and worked in Australia for many years and since 1992 has closely followed the work of a number of artists in Central Australia and in the Kimberley. He was appointed curator at the Aboriginal Art Museum at Utrecht (AAMU) in the Netherlands in 2005.

Koen Wastijn – koenwastijn@skynet.be
Koen Wastijn (°1963) is a visual artist living and working in Brussels.
He has been working for a long time in an artistic collaboration (Wastijn-Deschuymer). Their research mainly stressed on the duality nature-culture inspired by organic shapes and elements realizing video-sculpture-drawing and installation in a very direct language.
After their artistic split they both still pursue a solo career, developping their own priorities in the work.
The latest developments in the work of Koen Wastyn show a growing interest in resituating the earlier developments in a broader variety of filmic, literature and sound contexts.
See also: www.koenwastijn.eu

Leon van Schaik - vanschaik@rmit.edu.au
Leon van Schaik AO, LFRAIA, RIBA, PhD, is Professor of Architecture (Innovation Chair) at RMIT, from which base he has promoted local and international architectural culture through practice-based research. His latest books are Mastering Architecture (2006) and Design City Melbourne (2007), both by Wiley Academy, who are also publishing his next book, 'Spatial Intelligence', in 2008.

Richard Blythe - richard.blythe@mit.edu.au
Professor Richard Blythe currently holds the position of Professor inArchitecture and Head of School of Architecture and Design at RMIT University. Blythe is a founding director of the architecture practice Terroir. The work of Terroir has been recognised through exhibitions and publications, both nationally and internationally and their first book Terroir: Cosmopolitan Ground was published in August 2007 by DAB Documents, UTS Sydney. Richard is currently serving his second term as Chair of the National Education Committee of the Royal Australian Institute of Architects.
Richard 's academic passion is in exploring research in the medium of design. Prior to taking up his position at RMIT Richard had lectured at the University of Tasmania for 14 years where he served as Deputy Head of the School of Architecture until mid 2007. Richard gained a B.EnvDes and B.Arch from the Tasmanian State Institute of Technology and an M.Arch (research) specializing in Australiann architectural history from the University of Melbourne. Richard served one term as President of the Society of Architectural Historians Australia and New Zealand.


Tutors RTS 1

Aesthetic Research

Several weeks ago I was sitting talking to one of my students about their thesis. He was very much opposed to the notion of 'research in the arts' and claimed that 'critical design' could not exist. So I said, 'Let the arguments decide.' He will hand in his thesis after the Easter holiday, and I am curious to read his reasoning. Because of course I also ask myself: 'Which arguments will decide?'

In her article for the Architecture Department's publication *Reflections +3*, Nel Janssens *did* discuss 'critical design'. Critical as a consequence of an awareness of the range of design to be found in society and what is relevant to it, in order to demonstrate meaningful, future-oriented alternatives that are not only aesthetically but also ethically sound. As her inspiration she cites the Critical Theory of Max Horkheimer, accompanied with him we can of course mention Theodor W. Adorno, both thinkers from the first half of the twentieth century. The aversion shown by later postmodernism towards any teleological vision also implied an aversion to dialectical thinking in terms of opposites, which Adorno and Horkheimer still favoured. However, opposites often characterise ethical situations: whether one will have a child or not, whether one apologises or not, whether one keeps one's word or not. In addition, it requires ethical responsibility, an initiator. Who in his turn has a vulnerable body. I only mention these seemingly obvious things because they would be inappropriate after the postmodern discourse and its emphasis on differential nuances and the deconstruction of the self: meaning polarisation, the acting subject and the non-contingential. Whereas in their dialectic – along with all the criticism of the Utopianism of such Marxists as Ernst Bloch – Adorno and Horkheimer in a certain sense do not exclude an ultimately 'possibly better',[11] the godfather of *la condition postmoderne*, Jean-François Lyotard, proposed a consistent non–teleological *different*. This issue also appears implicitly in Janssens' argument, in a quote from the architect Oswald Mathias Ungers with which she agrees: '... if society is imagined and made then it can be re-imagined and re-made.'[22] Is this *re-made* in line with 'the better' or 'the different'? 'The better' would require far-reaching criteria, and the word *Utopia*, which Janssens mentions here, comes up for consideration once again. 'The different' might be sought tentatively from situation to situation, with an eye to what in the 60s Michel Foucault designated as in-between places, the heterotopias.[33] So the lesson of the postmodernists would be that dialectics – in its negative form too[44] – is no royal road to the truth; there is no single special way of thinking that leads there. But counter to what they otherwise say, this implies that not even they have the last word, too. It is senseless to be for or against dialectic opposites, because one finds oneself in nothing other than a classic oppositional situation. It is much more a question, liberated from hierarchy, of being able to apply a set of conceptual approaches to various subjects and objects, in order to continue to explore the potential of interpretation: with dialectics and circularity just as much as with paradoxical thinking or by way of reflection on what appears manifestly, what is opaque and present.

What does this have to do with architecture and design? In their article in *Reflections +3*, Chris Younès and Philippe Madec pointed out that architecture is traditionally identified with rationality, but in fact it is equally a matter of poetry.[55] The identification of architecture with reason bears the name *dialectic* and was dealt with in exemplary fashion in the book of that name by the philosopher Friedrich Schleiermacher in the early 19th century. He distinguished two methods: a) how do I arrive at something?; b) how do I develop this? The first he called heuristics, the second architecture; reference is made to an *idea-building*. This building is seen as a system, an entity, in which each concept clarifies the other and makes the whole visible as in a puzzle. As a starting point, one has to be aware of the problematic nature of a thing and then arrange it dialectically in a construction founded on mathematics, because arithmetic enables a coherent system of laws to be formulated. We here encounter a number of core concepts regarding knowledge: the unity of a system, conceptualism, clarity, order, computability and laws. In short, objectivity, a building that no longer reveals signs of its architects, but is autonomous. Nevertheless, it is not only the subjects, but also their objects that can hardly be considered autonomous, as one encounters in other intellectualistic theories. It reminds me – in passing and by way of illustration – of a sketch of a German cabaret artiste in the role of a cleaning lady. After she had cleaned the whole kitchen, she stood happily in the middle and said proudly, 'now everything is clean!' *Everything*? This question arose in her conscientious mind. No, of course not! 'I am dirty!' So she went outside in order to look through the window into her kitchen. Which was now finally really clean. In a comparable way, Niklas Luhmann looked into the kitchen of his social system theory, beyond the subjective, as if into a machine that ran on its own power. Friedrich Schleiermacher used for this the metaphor of architectonics. But kitchens, and inner workings, are usually untidy too and also the most atmospheric place in the house. So where does the poetic remain?[66] Which other ways of thinking can we apply to architecture?

Science does not *inhabit* the world – it was with this that Maurice Merleau-Ponty set the tone of his 1964 essay *Eye and Mind*. Habitation questions the quality of the design for the person who experiences it. In his 1990s essay *The Eyes of the Skin*, the Finnish architect Juhani Pallasmaa argues for an 'embodied architecture', an architecture that takes account of the one, single body of the occupant. As an example he gives the buildings of Alvar Aalto: '(His work) exhibits a muscular and haptic presence. Aalto's architecture incorporates dislocations, skew confrontations, irregularities and poly-rhythms in order to arouse … bodily … experiences. His elaborate surface textures and details, crafted for the hand, invite the sense of touch, and create an atmosphere of intimacy and warmth.'[77] People like to accuse Merleau-Ponty and his followers of accentuating intimacy, warmth, sensitivity, etc. They refer to their 'soft' approach. But we are simply holding on to the practical advantages of a physical responsibility, with regard to an artificially isolated visual and mathematical design. One everyday example of design, one of architecture: at home we have a chic thermos flask by Guzzini, which we never use because the spout is a perfect triangle; you have to hold your arm entirely straight and in line with the spout so as not to pour to the side. And also: some time ago I was working in the new and visually superb building of the VPRO in Hilversum, designed by the MVRDV firm (Winy Maes, Jacob van Rijs and Nathalie de Vries), with its large spaces, brilliant colours, gigantic windows and so on. However, due to its cold materials the acoustics are a disaster, and this is a building for a broadcasting company, where the radio journalists and technicians work mainly with sounds and voices. Pallasmaa also mentioned the key word 'atmosphere', as a coherence one experiences but which cannot be computed. In such a case, what way of thinking leads to a sort of knowledge? Merleau-Ponty used the notion of 'opacity', untransparency, to label the experienced compactness of a visual object. The term 'reflection', also to be found everywhere in *Reflections+3*, refers to making the visible transparent, structuring it. According to this French philosopher, we thereby miss the manifest nature of the appearance, which is precisely what stimulates the experience of it. It was for this reason that Martin Heidegger, who was his great inspiration, tried once again to approach the poetic element of thought. A conflict arises here, which was exemplified by the Swiss art theorist Philippe Junod's critique of his French colleague Louis Marin in the 70s. According to Junod, the opaque cannot be worked out by means of signs[88], while Marin formulated a visual semiotics with precisely this aim.[99] The semiotician would then again be able to criticise the poetic quest: what, in a metaphorical way, is actually said specifically and comparable to the appearance in question? In the view of the semiotician Umberto Eco, someone like Heidegger stood open-mouthed when faced with the appearance of a work of art.[10] But does one not, in the required positivity of naming, overlook firstly one's own asymmetrical relationship with every subject and secondly the deficiency of one's own means, language, so that the ideal of its suitability to the object is necessarily split, which may even be *external* to language, starting with the phenomena of perception and imagination? The Parisian art philosopher Georges Didi-Huberman would say that even that which is put forward as presence and actuality, with the slogan 'what you see is what you see', implies this split.[11] The asymmetrical relationship with the object brings us back to the mirrored hall of reflection, in search of the different or better. And in order to find our way through this we again have to differentiate and structure. But what if we thereby hinder the *experience* of a phenomenon, as Heidegger, Merleau-Ponty and Junod saw it? Then all we can do is name it, without thereby doing justice to it. Just as in the beginning dialectic ensured knowledge, when it comes to the question of the experience and the effect of an image, a landscape or a building, we end up in a struggle for knowledge. It is perhaps precisely here, where research in the arts (such as design and architecture) can give rise to 'cases' which productively fuel this struggle. Because it is the struggle for aesthetics itself, the fundamental contribution made by the sensual, poetic, intuitive, physical, etc. Since all thought is reflexively mediated, the following question immediately arises: is there actually anything to be said about what is called prereflexive and external to language? Or shown? Are we able to study

the circularity and interaction of perception, visualisation and thought and should we not content ourselves with the postulate of language alone? *Reflection* and *language* are the two most popular concepts in *Reflection+3*. But perhaps they do not take us into the critical dimension that someone like Kant, as the founder of Critical Philosophy, had in mind.

So I return to the question of critical design. Research in the arts offers the opportunity to breathe new life into the old question of aesthetics and to place the conceptual in a reciprocal relationship with material directions and manifestations. Perhaps future courses in aesthetics will no longer be given only in lecture theatres, but also in studios, and be based on both practice and reflection, for students not only of the arts but also art studies and philosophy. The opportunity offered by academising the subject is that it can be introduced into the university and realised by means of the collective structure. In my outline of various patterns of thought, I have taken a closer look at only two, dialectic and confrontation with the opaque. Other aesthetic concepts require additional consideration: thinking under the tension of, for example, the distasteful, absurd or unremovable, as Gilles Deleuze characteristically attributed to art in his study *The Logic of Sense*.[12] Or, for example, the vitalistic term 'intensity'. When Aristotle talked about opposites, he was already thinking of four different variants of them.[13] It might turn out to be a syllabus with many facets, in order to analyse the core concepts of aesthetics (in the spectrum of perception/imagination/thought) collectively by means of research projects in the arts.

At the same time, this sort of argument reminds me very much of something Goethe undertook, when in the early 19th century he asked several painters to study the shape of clouds together. Caspar David Friedrich lacked any awareness of the unfathomableness of nature and refused his request, while continuing to paint clouds without looking for any pattern. And what if my thesis student comes back after the Easter holidays with superb images of clouds rather than any form of reasoning? Then I will think of what Goethe said after he had spent 13 years trying to classify clouds in vain: 'The weather is as it wishes to be.'[14]

Volkmar Mühleis

(Endnotes)

1 On this, see for example the passages on the so-called 'reconciliation' in THEODOR W. ADORNO's Aesthetic Theory.
2 JANSSENS, NEL, 'Research by Critical Design' in *Reflections+3*, published by Hogeschool voor Wetenschap & Kunst Sint-Lucas Gent, Department of Architecture, 2007, p. 155.
3 The Leuven anthropologist Filip de Boeck, for example, uses this Foucaultian terminology for his description of Kinshasa. Cf. DE BOEK, FILIP, *Das lachen Kinshasas*, Lettre International, no. 76, spring 2007.
4 See ADORNO, THEODOR W., *Negative Dialectics*.
5 YOUNÈS, CHRIS & MADEC, PHILIPPE, 'Session Three' in *Reflections+3*, published by Hogeschool voor Wetenschap & Kunst Sint-Lucas Gent, Department of Architecture, 2007, p. 44.
6 The Norwegian filmmaker BENT HAMER depicted the kitchen as a place of scientific research in contrast to its poetical side with exceptional subtlety and playfulness in his 2003 film *Kitchen Stories*, referring to the domestic research carried out by Swedish scientists in the 40s and 50s.
7 PALLASMAA, JUHANI, *The Eyes of the Skin*, London, 1996, p. 49.
8 Cf. JUNOD, PHILIPPE, *Transparence et opacité*, Nimes, 2004.
9 Cf. MARIN, LOUIS, *Opacité de la peinture*. Essais sur la représentation au Quattrocento, Paris, 1989.
10 Cf. ECO, UMBERTO, *Segno*, Milan, 1973, 4.2.2.
11 Cf. DIDI-HUBERMAN, GEORGES, *Ce que nous voyons, ce qui nous regarde*, Paris, 1992.
12 Cf., for example, MERSCH, DIETER, *Was sich zeigt*, Munich, 2002.
13 Cf. PERNIOLA, MARIO, *Wider die Kommunikation*, Berlin, 2005, p. 42 (orig. Contro la communicazione, Turin, 2004).
14 Quoted from BEYER, ANDREAS, 'Die 'Physiognomie der Atmosphäre'. Zu Goethes Versuch, den Wolken sin zu verleihen' in *Wolkenbilder. Die Entdeckung des Himmels*, exhibition catalogue, Munich, 2004, p. 177.

Unlocking the knowledge of others:
Knowledge elicitation in practice-led design research

Introduction

Whilst on the surface my research deals with issues regarding learning craft skills, on a deeper level it addresses communication problems that can be encountered in many areas of design and reveals methods for unlocking the knowledge of others. Whether negotiating with other members of a design team, soliciting information from different users or consulting expert opinion, tapping into the unspoken knowledge of other people has the potential to reveal a richer and more complex picture than taking their spoken word at face value.

In my doctoral research (Wood 2006) I developed methods for eliciting knowledge: adapting recognised techniques to provide both an environment and forms of questioning that were capable of uncovering and recording a rich depth of knowledge. The elicited knowledge in its raw form was the observational video of the carefully stage-managed interviews, but these were open to multiple interpretations as my understanding developed. The interpretation was assisted by a process of event logging that provided a written summary for each session and helped to set an agenda for the next.

The writings of Michael Polanyi and Donald Schön led me to understand that transmission of knowledge in this context occurred by the person being questioned seeking to find explicit concepts to articulate their tacit knowledge. Such elicited knowledge could not be seen as right or wrong, but open to many interpretations and the person receiving the knowledge needed to test that their understanding matched the intended meaning through a process of reciprocal reflection. The meaning negotiated between the two parties formed a bridge across the knowledge gap between them and enabled one to appreciate the tacit knowledge of the other.

I would speculate that the understanding of craft learning and the model of apprenticeship I have developed could have applications not purely in the immediate area of the crafts, but also in any area where a tacit understanding needs to be developed.

Practical work

The central problem for my research has been, from the perspective of a designer of interactive media, how to understand and transmit the expert knowledge of skilled craftspeople, with particular interest in craft skills that may be disappearing even though there are people interested in preserving those skills and learning them. For example, many traditional rural skills are essential for preserving our heritage of buildings and other aspects of rural life, but there are few people left to pass on the knowledge and learners do not have the time for traditional apprenticeships (Heritage Lottery Fund 2002).

My main aim has been to develop a body of knowledge to assist with the development of interactive learning materials that support learning of craft skills. In this research I have used a practice-led approach to explore the craft skills of both expert and novice

practitioners in the fields of traditional bowl turning and clog making.

In my first practical project I experimentally used a systems-orientated approach to explore the tacit knowledge within the practice of an experienced traditional bowl turning practitioner. This involved a series of interviews and observations to elicit craft knowledge from him, using a low-fidelity prototype learning resource as a means of representing that knowledge, and observing learners applying the knowledge through using the resource to support their learning.

I concluded that, whilst elicitation via purposeful interviews and observations provided much useful material, it triggered a defensive attitude in the craft practitioner that limited the knowledge elicited. Involving the practitioner in the subsequent work with the learners and the developing learning resource revealed more, and this led to an adaptation of the techniques for the following elicitation session.

In the second project I undertook a series of video-recordings with a traditional clog maker during which I developed a less intrusive elicitation technique based on increasingly focussed observation and interviewing. To help with contextualisation, the interviews were nearly all based in the workshop whilst the craftsman was undertaking his regular practice. The process of gradual immersion enabled me to come to a wide-ranging understanding of the craft without the difficulties encountered in the first, tentative stage of practical work, showing that this stage was effective in refining and developing elicitation methods.

The nature of craft knowledge

Re-examination of the outcomes of this practical work through a review of the writings of Michael Polanyi and Donald Schön provides insight into the nature of craft knowledge and the ways in which it can be transmitted.

Michael Polanyi (1966:6) described the difference between the skill of the novice and that of the expert as "a gap to be bridged by an intelligent effort". He only viewed this from the perspective of the expert explaining, "Our message had left something behind that we could not tell, and its reception must rely on it that the person addressed will discover that which we have not been able to communicate" (ibid:6). The onus in his terms was on the novice to understand through intelligent effort.

Donald Schön (1987:101) similarly referred to "an apparently unbridgeable communication gap" between novice and expert, however he suggested the solution was in "reciprocal reflection-in-action" implying that the expert needed to make as much effort as the novice in the process of bridging it. The expert needed to view the novice's actions in response to instruction as revealing the meaning they had constructed for that instruction. They needed to observe the novice's actions reflectively and respond back until they felt there was a convergence in meaning (ibid:104).

My understanding of this process is illustrated in Figure 11. At the top there is the personal knowledge of the expert practitioner and below is that of the novice who is seeking to bring their craft skill at least up to the level of the expert. Initially, however, there is a 'knowledge gap' between the two where the novice struggles to imitate the expert's practice, being unable to interpret their own observations. To assist, the expert

attempts to articulate their tacit knowledge through use of explicit concepts. These might be adapted and refined through reciprocal reflection until the novice and expert are in accord, the novice gains experience which enables them to dwell in the actions of the expert, and the gap is bridged.

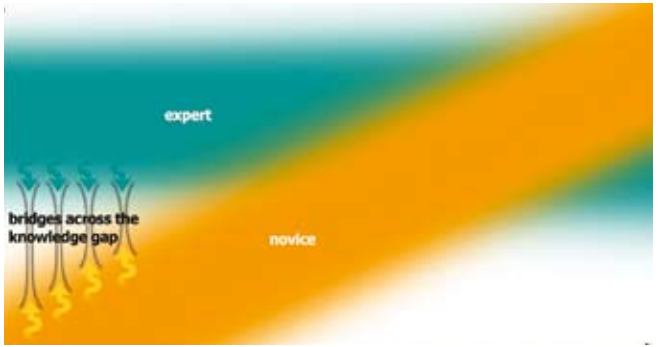

Figure 1: Bridging the knowledge gap between craft expert and novice.

My role in this version of knowledge elicitation has been both to encourage the articulation, helping negotiate reciprocal reflection between expert and novice, and to design the 'bridges': the explicit concepts that could help a novice access the expert's tacit knowledge.

The concepts of 'true' and 'false' cannot be applied to such elicited knowledge and in their place 'helpful' and 'unhelpful' are more appropriate. The bridges are not necessarily the way to undertake the task, but a way that the expert feels to be helpful to get started. As their skill develops, the learner might find some of these to be the foundations upon which their skill is built, but some might be just stepping-stones on the way. Deciding which is which requires the learner to increasingly learn from experience, the feedback from their own actions, and this is achieved through developing the ability to think and act reflectively. This is where it is important that as much of the material generated during elicitation as possible should be also made available in the learning resource. It should retain its original context wherever possible so more advanced learners can form their own judgement and make their own interpretation as their skill level advances.

As the learner progresses they are increasingly likely to influenced by other practitioners, both within their own craft and other related crafts. This was traditionally the journeyman phase where, upon completion of their apprenticeship, they would travel to work away from the area where they had learned their skill, both gaining the benefit of other craftsmen's skills and spreading their knowledge (Epstein 2004). Here too they might experience a knowledge gap (see Figure 2) that might need bridging as they develop ways of communicating outside their direct sphere of experience:

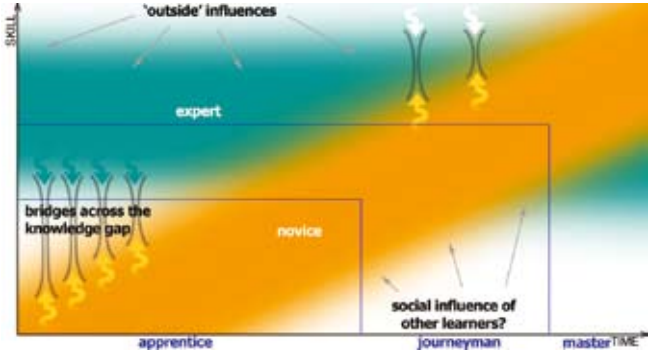

Figure 2: phases of a novice's learning and possible routes of received knowledge.

I would speculate that this understanding of craft learning and the model of apprenticeship I have developed could have applications outside the area of the crafts, in any area where tacit understanding needs to be developed. It leads people to attend to the tasks and activities of professional work, not purely as a means to a practical end, but as bridges to a richer understanding of the practice.

Nicola Wood

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(Endnotes)

1 Whilst this may look like a graph, it is not intended in any way as a mathematical representation, but merely as an illustration of the concept.

Practice in research

Responsibility, knowledge, contribution and criticality

Academic responsibility

For us, the issue that the Sint Lucas Research Training Workshop has brought to the fore is that of academic responsibility. Whenever one considers the questions and ideas that emerge in debates about "practice-led" research in the creative disciplines, it seems that there is a tension between two powerful forces: On the one side the individuality, and highly prized "originality", of the creative practitioner and on the other side the collegiate values and expectations of the academy.

At face value these are compatible. Originality, individuality and creativity seem to be hallmarks of leading academics in all disciplines. However those terms seem to take on a new intensity in an "artistic" arena and many individuals seem to find it much easier to frame their work as "distinct from" other work than to see it as part of a continuum. The principle of a collegial project, in which we all add to a growing shared understanding of the matter in hand, is a difficult one for individuals who are "fixated on difference"1.

Academic research, on the other hand, requires us to set our work in the wider framework of knowledge and show how it relates to the whole field. It also requires us to do rather than speak. "Theory" in the academy, is a product of action rather than of "theorising". Whatever we undertake in research, even when engaging in "reflection", we are required to be methodical and to make our methods clear. This leads us to two challenges for new researchers who are also experienced practitioners in a creative field.

Firstly, if they propose inquiries, or ideas for investigation, they must attend to other research or thinking that informs that idea. It is not sufficient to say that "nobody has investigated this before" because that is probably not true, or may only be true for the narrowest version of a proposal. There will always be relevant work to study, from investigations of related questions or from similar questions arising in other fields.

This is demonstrated by the work presented at the workshop by Simon Bowen, on the subject of critical artefacts. The ideas and practices that he is developing arose directly from techniques originated in his own practical work as a Masters student. However, by taking an open view of what might be relevant he discovered strong connections to other work, in various fields of design, which has quite different aims but similar principles at work. From there he also found that there was a parallel body of theory and practice in sociology that had informed several of these researchers including Nel Janssens, another participant in the workshop.

Secondly the researcher must have a method and they must be able to explain and justify their method. One of the biggest challenges for new researchers is to make the mental shift from naming or describing things to proposing actions. It is tempting and engaging to discuss ideas and things in clever descriptive ways, for example a

PhD student recently described to us an artefact that he planned to design as part of his research: "It will provide a means to reveal X." however he could not describe the procedure he would use or what role the designed object would have in the moves he would make. It was therefore not clear how the artefact would perform the role he had given it or even what form the artefact should take in order to support the research. It is not possible for researchers to be completely confident that a plan of action will be successful, but it is necessary to have a starting plan if any progress is to be made.

So by academic responsibility we mean the need to pay attention to the whole spectrum of relevant work going on and also the need to have and explain methods of action that will allow you to make your contribution to our shared knowledge or understanding. That provides an operational framework for launching a research project but it does not explain how the work might be undertaken. Practice-led research is extremely diverse and it is not possible or reasonable to provide a single prescription for how it might be done, but we will set out some principles that seem to have value to researchers across the creative disciplines. We have grouped these under the headings of *Tacit Knowledge, Unstated Contributions and Critical Practice.*

Tacit knowledge

The term *tacit knowledge* was first use by the philosopher of science, Michael Polanyi (1958, 1966), who also used the expression *personal knowledge* to describe the insights that can guide our actions in the absence of "explicit" knowledge. This may be because the task in hand requires subtle interpretation of a complex situation or because we do not have sufficient explicit knowledge to support a reasoned decision, for example when a scientist or mathematician decides to pursue an avenue of inquiry that "feels right" although they cannot prove that it will be successful.

Polanyi used the term *indwelling* to describe the way we learned skills and insights through action, for example as we move from having to think explicitly about a skilled task, such as playing a musical instrument, to performing the task freely and "intuitively". That personal knowledge is a very powerful force in people's lives and it cannot be revealed or employed straightforwardly through explicit descriptions. However we do reveal and use personal knowledge in our behaviour. Designers or researchers can provoke and employ these revelations.

Simon Bowen demonstrated this in the workshop through his description of a design method that used provocative artefacts. These "crazy objects" were designed to stimulate a group of stakeholders to discuss and "perform" responses that would not be revealed in a "normal" context. Bowen then makes a further tacit move by using his experience of, and reflections on, these group sessions to feed directly into his succeeding cycles of designing increasingly relevant artefacts. He does not attempt to analyse the stakeholders' responses, or identify explicit "requirements" since that would break the chain of tacit transmission. His work is not an alternative to more conventional approaches to discovering design requirements, instead it allows him to uncover potentially useful concepts and needs that will not be revealed by more conventional social research techniques. (Bowen 2007)

Chris Rust (2004) has provided further examples of tacit knowledge in action including cases where creative or artistic practice has created environments for others disciplines to advance their research. This has led on to the second issue of the *Unstated Contribution* to knowledge or understanding.

Unstated Contributions

One of the most vexatious problems in the debates on practice-led research has been about the forms of outcome or thesis that would be relevant to such research. It is tempting but not productive to make a simplistic claim that, if artistic practice is a form of inquiry, a work of art is a valid conclusion of that inquiry. However there is a genuine and perplexing contradiction between the academic requirement for researchers to "own" their inquiries, making an explicit claim of their contribution to knowledge, and the artist's practice of allowing audiences to find their own meaning in the work.

Chris Rust (2007) has discussed this problem in the light of a number of examples from different disciplines. He proposed that we should be prepared to look for ways to validate "unstated" contributions, especially when we can see a channel for a work of "creative" inquiry to play a direct role in interdisciplinary research. The designer or artist may not have the expertise to bring such an inquiry to a conclusion, or identify what is significant in the material of the research. Nevertheless there are situations where the "artistic" contribution is both highly directed towards the research aims and, through a deep understanding of the inquiry, brings about a fundamental transformation of the material to enable the investigation to proceed (eg Lyons 2007).

This general case may be persuasive but the individual researcher must still justify their own research as a valid inquiry. That may be done partly by demonstrating their methods and methodology but critics will always return to the contribution and, if it is not possible to describe the contribution itself, then we must be able to say how it is achieved, who will form it and where it is relevant. Beyond that we should consider how we might come back and examine the consequences of our work later on to understand better where it has made a contribution and how.

The question of how our practices might contribute to knowledge draws attention to the role that artefacts and practices have in stimulating others to reflect and change their position. That is also evident in the discussion of tacit knowledge bringing us to the third issue, of *critical practice* in our disciplines.

Critical practice

While the idea of *practice-led research* asks more questions than it answers, *critical practice* is much more explicit and arguably a more straightforward way of framing research that employs professional or creative practices. It changes the proposition of

practice-led research (the practice comes first) to an imperative that the practice must be critical. This is demonstrated by Simon Bowen and the people that he draws on: Dunne and Raby, Human Beans and Phoebe Sengers (Bowen 2007) who share the general proposition that artefacts can induce critical reflection. This in turn leads to the idea that practice can be framed with the intention of providing critical reflection on, or a critique, of the matter under investigation. The practice is no longer the end but the means.

In such a scheme the practice itself is unlikely to be the subject of the research whereas some of the ideas emerging from schemes for "practice as research" can make the researcher's practice both the subject and the instrument of the research, a challenging concept for experienced researchers, let alone novices. *Critical practice*, in contrast, gives the researcher complete freedom to manipulate their practice as an instrument to examine more general questions, whether limited to the study of practice or some wider purpose.

In this paper we have set out some issues that we believe to be important to success in practice-led research including the suggestion that *practice-led* might be usefully replaced with the expression *critical practice*.

For new researchers in creative disciplines the biggest challenge is often to marry their professional expectations to the different expectations of the academic community and the imperatives of scholarship. We have indicated a number of concepts that may be useful for such researchers including the importance of acknowledging the responsibilities of an academic role, the opportunity to mobilise tacit knowledge in our inquiries and the possibility of *unstated* or *generative* contributions to knowledge that allow creative disciplines to play a part without compromising the idea that audiences make meaning. For those starting out in research perhaps the most immediate advice is to focus on the actions that you will take rather than the objects that you will work with, it is only through carefully considered actions that research can proceed and methods develop.

Chris Rust & Simon Bowen

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(Endnotes)

1 Terry Purcell and John Gero (1996) have carried out research indicating that designers are "fixated on difference" and will be inclined to avoid any solution that already exists, in contrast with engineers who are likely to focus mainly on existing solutions. The authors have encountered similar issues in conversation with artists who appear inclined to differentiate their work from others, rather than acknowledge similarities.

Arts Studio, Kununurra, Western Australia, 2002 - Photo: Georges Petitjean

Paddy Bedford' s hands, Kununurra, Western Australia, 2003 - Photo: Georges Petitjean

Icons assembled: corrugated iron and Aboriginal art

During the Research Training Session held at Sint-Lucas Hogeschool voor Wetenschap & Kunst in Brussels on 30 August, 31 August and 1 September, 2007, I jointly gave a seminar with Koen Wastijn. The audience of architects was at first puzzled about the odd content of this session: a visual artist and an art historian with a speciality in Australian indigenous contemporary art joined hands to bring a seminar about haunted houses and Aboriginal art. Taking these two elements as points of departure, we interweaved themes that were inspired by our respective interests and fields of research. This paper is based on tentative links made during the Research Training Session between Aboriginal art and the position of corrugated iron in Australian architecture.

Icons assembled: corrugated iron and Aboriginal art

In Australia the oldest traces of 'art', on rock paintings, go back some 20,000 years. The first inhabitants of this island-continent, the Aborigines, believe that these early examples of art were made in the so-called Dreamtime, a still continuing parallel time dimension. Stories of these mythical times – journeys of the ancestral beings during the Dreamtime – constitute, next to occurrences derived from daily life, the themes in contemporary painting of the desert regions of central and western Australia, the so-called 'Western Desert Art'. These acrylic paintings testify to the enormous capacity of adaptation of Australian indigenous culture to changing times that are marked in particular by unavoidable contact with western society and culture. The position that they assume within the international art world allow for controversial – and even burning – debates on contemporary art.

Western Desert Art, a contemporary indigenous painting movement from the central and western desert regions in Australia, finds its origins both in conventional ceremonial art forms and in expressions of art that have occurred perhaps as a consequence of extended contacts with European culture. Both in form and in content, the modern acrylic paintings resemble rock paintings and engravings, ritual body and object decorations, sand drawings and ground paintings. Of these, ground paintings are one of its most important and direct sources. New materials and new contexts found expression in the *toa* production from the Lake Eyre region, in the drawings made for anthropologists and ethnologists, and in the watercolours of Albert Namatjira and followers. All these art forms occurred in recent times that are marked by forced cultural exchanges between Aborigines and non-Aborigines. The production of these art forms, moreover, has challenged classical canons of 'authenticity' in 'ethnological art' and, with that, views of assumed cultural stagnation (and ultimately cultural extinction). New materials such as synthetic polymer paints (acrylic) on canvas or board, and brushes were also adopted for the production of Western Desert Art. An extraordinary ability

to renew and transform their culture through new developments is not only reflected in the adoption of these new materials but also transpires in the intellectual and religious life of Aboriginal people. Since its instigation at Papunya in 1971, a number of changes in painting materials, iconography and in styles have occurred in Western Desert Art. These developments, generated by an older generation of painters adapting to interactions brought about by the painting production, were largely due to the dispersal of the painting movement to other communities during the 1970s and 1980s. Yuendumu, Balgo, Lajamanu, Utopia and Haasts Bluff each had its own distinctive development and each has differing styles which partly reflect certain demands in the art market for Western Desert Art through the agency of art coordinators and dealers.

The oldest surviving art forms in the desert go back some thousand years. These art forms include rock paintings and engravings, ground paintings, body paintings, and carved and painted designs on objects such as spear throwers, shields, *coolamons* and *tjuringas*. These traditional or 'classical' forms of art from the centre region of Australia are the direct sources of Western Desert Art. This contemporary painting movement does not necessarily constitute a rupture with these older art forms but rather embodies a continuation and development, an adaptation of the rich art tradition in the desert.

Toas as precursors of the modern

In many aspects *toas* can be considered precursors of the contemporary acrylic painting movement in the Western Desert. The origin of these sculptures is to be found in traditional 'conventional' art, but they do not really belong to this category. *Toas* are the earliest known examples of radical innovation – 'adaptation' to the changing times and needs – in the desert art and of public art intended for sale.[1] *Toas* are small composite sculptures, which basically consist of a carved wooden object whereupon ochre colours and other natural materials are applied. Related to the *toas* are small-sized wooden carvings of dogs. The length of the *toa* may vary, but in general it is not less than twenty centimetres and not greater than fifty centimetres. All existing exemplars were made between 1890 and 1905/1906 by the local *Diyeri*-speakers and other members of that language group at the Lutheran mission of Killalpanina (founded in 1867) near Lake Eyre in South Australia. They were made for the missionary, Pastor Johann Reuther, who tried to finance the mission partly through the sale of these objects. By the time Reuther left the mission in 1906, the production of *toas* had already ceased. In 1907 Reuther's personal *toa* collection was bought by the South Australian Museum as being examples of 'authentic' Aboriginal artefacts with a primarily ethnographic value. With this the question of 'authenticity' has arisen. This question also comes up at several stages in the development of Western Desert Art. The fact that leading international anthropologists from that era assumed that what was being dealt with was 'authentic' traditional and conventional pre-contact art arose from the invariable belief that Aboriginal culture was static or even fossilized and thus unable to change.

Much research has been done to unveil the significance of the *toas*, but as yet no consensus has been reached. The Diyeri themselves described the *toas* as signposts that were left at camps to inform later visitors about the ancestral nature of the landscape or to indicate the direction in which the previous party had travelled. However, everything seems to point in the direction that *toas* were innovative works with no direct antecedents. For the decoration, artists appealed to the already existent iconographic repertory, namely that of the design-symbols from the southern central desert region. The context in which these artefacts developed may give an indication as to their meaning. It is known that two men who might have played a role in the origin and creation of these sculptures were present at the mission at the time of their production. Theodor Vogelsang was a blacksmith and a gifted carpenter who instructed the Aborigines on the mission in the art of carpentry. The other man, the Englishman Harry Hillier, was a teacher and watercolourist who helped sell *toas* to museums and collections in Germany and Australia. Both could have had a considerable influence on the local production of artefacts, which in turn could have resulted in the creation of the *toa*, just as Geoffrey Bardon influenced Aboriginal art some seventy years later.[2]

Whatever the case may be, the *toas* form important precursors of the Western Desert Art paintings in different ways. They are the first examples of the portable Aboriginal art of the desert specially made for sale in the public domain. On the iconographic level, these *toas* have links with both traditional art forms and Western Desert Art.

Papunya Tula, a place in time

The place where the contemporary painting movement began was a small settlement called Papunya. Papunya, 250 km west of Alice Springs, was established in 1959 and opened officially in 1961 as a settlement by the Commonwealth authorities to accommodate the remaining Aboriginal nomads of the desert. This policy of imposed assimilation entailed a number of problems, which are still evident almost forty years later. The settlement of Papunya in the early 1970s seemed not particularly to be a place that eased the lives of its inhabitants:

> The Aboriginal settlement of Papunya always looked desperate through its wild red dust: a vague, ramshackle coming-together of ugly corrugated-iron transitional huts, stilt houses, a hospital, a white-painted school and a police station. It had graded symmetrical streets without names, and barbed-wire fences in front of each house. There was a small desolate red path of parched sand in front of each house for a garden. Mostly I remember that strange desert settlement as a silent and oppressive convergence of red hallucinatory white-people's roads emerging from the surrounding spinifex and acacia desert, to stare at that lost settlement, and then to go sadly on.[3]

In some early Papunya boards, painted between 1971 and 1974, the painter does not recognise the idea of the square or rectangle as a transport. Instead he makes use of painted figure or object onto which he transfers the, until then, sacred-secret symbols and patterns. In other pictures, patterns of western desert iconographic elements are loosely scattered in the composition, but obviously do not acknowledge the rectangular format of the transport. It is as if the painter is alien to the concept of a perfect square of rectangle. Indeed, in pre-contact Aboriginal society, the geometric square and the rectangle were indeed almost completely absent. Yet, these forms are omnipresent in the architecture and occidental material culture at Papunya. They symbolise the clash between pre-contact Aboriginal society and the wider Australian society.

In his observations of the settlement of Papunya, Geoffrey Bardon comments on the housing for Aboriginal people. Interestingly, the housing consists of 'ugly corrugated-iron transitional huts' in an eerie, out of place environment. Corrugated iron stands for an oppressive system in which the nomadic people from the Australian desert are put through in their 'transition' to a world dominated by western rules and law.

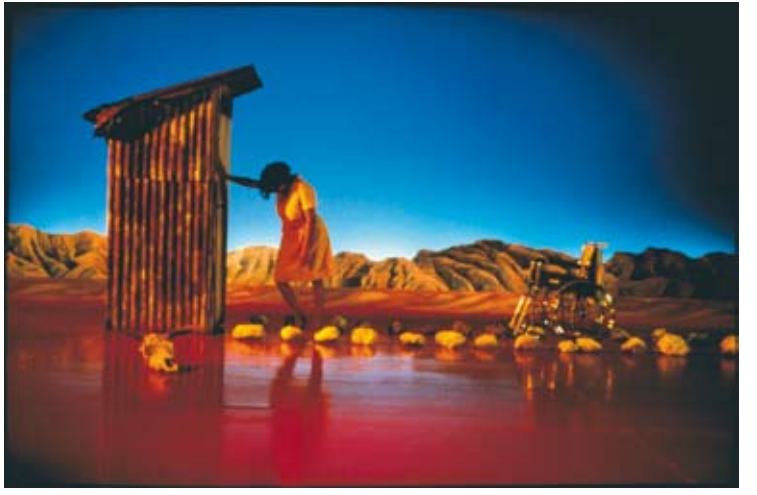
Tracey Moffatt and the haunted house

An odd link between Aboriginal art and the haunted house – the idea of a house is alien to most Aboriginal people of remote communities – can be found in the work of the Australian Aboriginal artist Tracey Moffatt.

Perverted role patterns are enacted in *Laudanum* (1998). *Laudanum*, a series of nineteen photogravures, takes us back to the beginnings of photography. The images of Julia Margaret Cameron (1815–79), the Victorian photographer who, in the trail of the Pre-Raphaelites, pursued ideal beauty, count as one of the main sources of inspiration here. The series is laden with references to literature (*L'Histoire d'O*, Edgar Allen Poe), early photography and the German expressionist film (especially Robert Wiene's *Das Cabinet des Dr. Caligari* from 1919/1920 and F.W. Murnau's *Nosferatu* from 1921). The images are endowed with a fetishist value, literally and figuratively speaking. Moffatt applies the desuetude photogravure technique to intensify the representation of the opium derivate laudanum-induced madness. The play of dominance and submission has strong lesbian-erotic, even sado-masochist undertones, but there remains a lack of need to pass judgment. *Laudanum* also refers to a particular mood, a state of mind stripped of any emotion and moral sense of duty, and as such illustrates Moffatt's own emotional and moral detachment in the recording of her subjects.

The underlying themes in the work of Tracey Moffatt are multifaceted and diffuse, referring to the hard, sometimes brutal existence in the Australian outback, to relations between whites and non-whites, and between men and women.

In 1989 *Night Cries: A Rural Tragedy*, a short film of seventeen minutes' duration that was selected for the 1990 Cannes Film Festival, was released. Defragmented narration is combined with a magic-realist atmosphere that is achieved through an exaggeratedly artificial studio setting and a Fassbinder-like light plot. A forced love–hate relationship between an older white woman and her adopted Aboriginal daughter forms the core of the movie. Moffatt, herself of mixed descent, grew up in a white foster family but maintained contact with her Aboriginal mother. The degree to which autobiographical elements inform the film is carefully veiled. This obfuscation of a possible reality for which Moffatt's personal life served as a motive fits the artist's strategy to transcend the local. Yet, almost unnoticed, she inserts some elements that may stimulate socio-political interpretations. For example, the role of the daughter is played by Marcia Langton, an Aboriginal anthropologist and advocate of Aboriginal rights. This seemingly innocent *clin d'oeil* is loaded with politically sensitive material for the informed Australian spectator. In Europe or the rest of the world, however, little is known about the 'stolen generation', Aboriginal children of mixed descent who were taken from their parents to be placed in white foster families as a consequence of the assimilation policy followed by the Australian government until the 1970s.[4]



Tracey Moffatt 'Night Cries – A Rural Tragedy', 1989 (still)
35mm film, 17 minute short film
Courtesy of the artist and Roslyn Oxley9 Gallery, Sydney, Australia

Corrugated iron as an Australian icon?

One of the most remarkable props in Moffatt's video is a tin shed, a toilet. Corrugated iron has made an indelible mark on the Australian landscape. Moreover, it has become an icon, an Australian icon. The choreographed performance with dancers clad in bush outfits waving and bending sheets of (fake) corrugated iron during the opening ceremony of the Sydney Olympics in 2000, illustrates the iconic status of this building material. The message was clear: Australia was built with corrugated iron. It was patented in the 1850s and has since been used in the construction of fences, humpy's, houses, homesteads, factories and even churches. Corrugated iron found its way to Australia as a cheap, easily transportable building material. Improvements on the original design, making it lighter, stronger and more attractive, are making corrugated iron a primary source material in Australian architecture once again. In recent years corrugated iron was used in the construction of buildings. In August 2007 the new Warmun Artists arts centre in Warmun (Turkey Creek) in the East Kimberley (Western Australia) opened its doors to the public. Corrugated iron sheets feature prominently in this characteristic building. Yet, the negative aspects connected to this material, such as being too hot in tropical temperatures, remain. Anno 2007, this material has become not only obsolete, but also unnecessary.

About 220 kilometres east of Warmun, on the outskirts of the old port town of Wyndham, the hottest port town in Australia, another new arts centre was being constructed. This time the initiative was taken by Jirrawun Arts, an artists-run organisation which promotes the artworks of the artists it represents in very much the same way as the promotion of contemporary Western art. In the imagery used by the artists, and in their production and marketing, Jirrawun Aboriginal Art presents significant differences from other 'schools' of Aboriginal art. The corporation consciously chose to work only in a mainstream art world context, following universal professional conditions, outside the confinement of the 'Aboriginal art industry' ghetto. In this, the operation of Jirrawun contrasts with that of most other Aboriginal art corporations (e.g. it is self-funded, only a small group of painters is involved). A new, exiting visual art form emerged out of Jirrawun, an art form that does not compromise Gija (language group) law and tradition, and which resists comparisons with modern Western art canons. Indeed, the Jirrawun paintings are pictures that are uniquely Australian in their visual language and representation of the world. In this they succeed in establishing a powerful connection with the country in which they are produced. Each of the artists currently involved has developed over the years a different, highly individual and recognisable style of painting.

This new arts building brings us back to the point of departure of my contribution to this seminar, namely indigenous Australian art. The Jirrawun artists are highly successful in the contemporary art world. Paddy Bedford, for example, had a retrospective of his work at the Museum of Contemporary Art in Sydney in 2006-2007. One could argue that in this case innovative building techniques complement innovative developments in Aboriginal art. The building was designed by Australian/American/Argentinean

architect José Alfano. Yet, Alfano based his design on high-tech military desert hospitals used in recent wars in the Middle East. The Jirrawun studio and gallery made use of for the region new building techniques and materials. These 21st century materials – a lightweight but solid steel frame cloaked with a tight skin of plastic composite, and glass – put at a distance the use of corrugated-iron in colonial architecture. The inside of the building, with its concrete floor slabs and white walls, resembles that of mainstream commercial galleries in the cities of the south, Melbourne and Sydney. According to Tony Oliver, artistic director to the Jirrawun artists, "The idea was not just to have something beautiful and worthy of the artists, and of international studio standard, but also to place the bulk of our economy in country, so we no longer have to give commissions to galleries. Aboriginal people will run their own space up here and dealers in the south won't have control of the product. To be truthful, if we're going to sacrifice work for galleries, we think it's better to do that in Europe and Asia, where we're building an international market."[5] The new building is presented as nothing less than a declaration of autonomy from the provincial Aboriginal art industry. The studio is not only a symbol for new innovative and successful ways in which to market indigenous Australian art. It is also a place that collaborators and guest artists, both Aboriginal and not, Australian and international, will visit for workshops and residencies. Innovative architecture in outback Australia has become a symbol for the recognition of Aboriginal art in the wider Australian and international art world.

Georges Petitjean

(Endnotes)

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4 PETITJEAN, Georges, *Tracey Moffatt: een beeld van het onbestemde/Tracey Moffatt: an image of the undefined*, in *Tijdschrift van de Sint-Lukasgalerij, nummer 1 – december-januari-februari 2005*, Brussels, 2005, p.10-p.13/p.14-p.17
5 Tony Oliver quoted in ROTHWELL, Nicholas, *A dream of a studio*, in *The Australian*, 21 July 2007

1,3,4 : Construction of the Jirrawun studio, East Kimberley, Western Australia, 2007.
2 : Interior Jirrawun studio with works by Rammey Ramsey, East Kimberley, Western Australia, 2007.

"L'Art est un mensonge qui est vrai." (Picasso)

On failure, chance and preconception in works of art

The following piece consists of a number of thoughts in connection with RTS, in which I deal mainly with 'failure' and 'preconception'.
This is not a theoretical pamphlet, more a stream of consciousness.
Whatever else they may be, they are the elements to be found in my work, with equal portions of seriousness and irony.

The failure of a work of art lies hidden like a felicitous potential in the work of art itself (we assume that the artist himself has faith in it). So it is in fact the unconscious but pure will that makes the work of art function on and end up in its own failure. We shall take the inevitability of catastrophe as one of the fundamental conditions to which the maker himself must adhere – since absolute creation and absolute destruction are the only conditions that can apply.
Absolute should be read as an 'internalisation', or the confinement of the idea in order to subject it to a rigorous regime and then throw it out into the street once again.
Everyone who has ever ended up involved intensively in creation is aware of this.
When the result is a situation that contains the work in itself, this is the zero point from within which one has to climb up out of the negative and scramble over it until some sort of equilateral triangle arises from where one can move in any direction. A triangle whose every side is a shortcut between two extremes.
Whatever it is it's the same, any scenario is possible, because there is a story everywhere – even if it is about the failure of a 'plan' (the finest film about a bank robbery is probably the great Dog Day Afternoon, where a variety of motives accentuate the human element of the situation and something seemingly 'predictable' ends up awash in a sea of complications).

1. Het kunstwerk ***'Beluga, the seacanary'*** is een voorbeeld waaruit blijkt dat het uiteindelijke doel eigenlijk in zichzelf ondergeschikt blijkt aan het proces. Want wat is een proces (en niet enkel in een kunstwerk) méér dan de koord gespannen tussen twee palen op een te hoge afstand van de begane grond (anders loont de overtocht niet eens de moeite).
Het doel was een kunstenaar te volgen die in Groenland een gietvorm zou maken van een Beluga; een witte walvisachtige dolfijn. Die gietvorm zou als onderdeel verwerkt worden in de tentoonstelling *'Fatal Attraction'* in het Museum voor Natuurwetenschappen, in Brussel.
Er werd overeengekomen dat ik een kleine film zou maken over het gebeuren die dan eveneens werd opgenoemen in diezelfde tentoonstelling.
We zijn via Kopenhagen (enige reisroute vanuit Brussel) helemaal tot in Groenland afgereisd. We hebben een enorme berg adminsitratie moeten verzetten om ons materiaal (moulage material zoals: silicone, aceton en andere zaken) vanuit Kopenhagen naar Groenland te laten overvliegen).
We hebben als enig spoor van een Beluga twee schedels gevonden in een diepvriezer bij een visser. Die schedels zijn nadien het onderwerp geweest van een wanhoopsdeal, en hebben achteraf Groenland nooit verlaten … .
Tijdens ons 10-daags verblijf is de migratie van de Beluga's in open zee op een verre afstand van de baaien gebleven. De jacht van de Inuits is uitgebleven en wij zijn zonder gietvorm en zonder de verwachte beelden naar Kopenhagen terug afgereisd.
De film toont uiteindelijk hoe wij op zoek zijn, afwachten en per helicopter naar bepaald plaatsen overvliegen waar er misschien op beluga's gejaagd kan worden. Allerhande verhalen deden de ronde, vooral als er weinig Engels gesproken werd, door de Inuit vissers.
Die beluga kreeg op de duur mythische proporties, hetgeen het filmpje in de richting van een micro-schalige 'Moby Dick' duwde.
De film zelf begint en eindigt met een interview van de schilder *Fillip Francis*, die ooit een beluga opgemerkt heeft in de streek van Duffel, hij heeft in de jaren '60 met een paar vrienden het afgedwaalde dier opgemerkt. (Hetgeen historisch ook daadwerkelijk klopt) ik heb als practical joke dat interview afgnenomen voor ons vertrek naar Groenland.

'beluga, the seacanary' videostills'

Het ironische is dat wij helemaal tot Groenland afreizen terwijl de schilder een beluga heeft opgemerkt op 50km afstand van Brussel. En het worden dan specifiek die beelden met de schilder die de prent de noodzakelijke ironie en fictief karakter verlenen.De prent wordt een trendy anti-filmpje terwijl het enkel werkelijk aantoont dat er eigenlijk niks te mouleren viel in Groenland.
De kijker weet helemaal niks van de *prent-maken*, de kijker heeft de indruk dat men praat en heen en weer telefoneert over het onderwerp, de beluga wordt enkel sculpturaal, auditief en als reductie tot data (op het net en op tv) weergegeven.
Van het reeële dier is niks te zien, enkel naar het einde van de film toe een geslaagde jacht op een paar narwals, de verre speciesverwanten van het witte zeezoogdier.
Het kunstwerk, in dit geval het filmpje, stelt dat alle informatie, informatie is, alle scenario's een scenario zijn, het eigenlijke onderzoek soms mijlenver van het vooropgestelde plan kan leiden, met alle consequenties (ook financieel) als gevolg.
Het kunstwerk moet absoluut een vertrouwen in het failliet van zichzelf hebben, moet openstaan voor het Vreemde, het Andere, dat diametraal kan staan op de meetlat van de zekerheid.

2. Een tweede illustratie van een toevallig mislukken was de moulage in Israël (in een crocodile farm aan de Syrische grens) van een reuzegrote alligator (4m). Het dier moest afgemaakt worden (vaak worden dieren afgemaakt om als voedsel te dienen voor de kleine crocs en alligators) en we maakten gebruik van zijn dood om deze te recycleren in een sculptuur, te starten met de gietvorm.
Door het feit dat we geen bacterie-afremmende substantie in de maag van het overleden dier hadden gespoten, is het enorm opgezwollen en is de silicone dusdanig vervormd dat het dier er ledematen "bijkreeg" en het als sculptuur zijn eigen sarcofaag geworden is, zoals een heilig omhusel op zijn dode lichaam. Een soort moedeschip. Een alligator met een enorm opgezwollen buik en extra tenen aan elke poot.
De moulage gebeurde op twee dagen en twee nachten, het lichaam stonk en begon de eerste sporen van ontbinding te vertonen.
Het eerste afgiestel is een soort groteske geworden. Mijlenver weg van de artistieke intentie om beslag te leggen op de dood zonder daarvoor een prijs te moeten betalen, die doorgerekend wordt in het finale, definitieve kunstwerk ervan.
De sculptuur is de vertaling van het "niet controleren" van alle parameters, het negatieve dat in het positieve vervat zit, de basculering in een afgrond van zekerheden.
Hier ook heeft de natuur op een simpele manier aangetoond dat het zich niet op een zilveren plateau laat opdienen, de beluga's wachten niet op ons evenmin als de bacteries in de maag van de alligator.

3. Een derde illustratie was het mouleren in Noord-Australië van een vijftal termietenheuvels van het kathedraaltype (Deze zijn Noord-Zuid gericht, in tegenstelling tot de Franse kathedralen die oost-west gericht zijn.). Die moulages werden in de Australische bush gemaakt (gietvorm met silicone, tegenmal in polyester enz) en pas 2 jaar nadien werden opnieuw fondsen gevonden om de positieven te realiseren in de galerie *Grantpirrie* in Sydney.
Door het stockeren in moeilijke omstandigheden (vooral temperatuur) is de gietvorm van de grootste van de vijf heuvels sterk vervormd geraakt. Na enorme inspanningen werd de vijfde in de galerie in Sydney dan toch uit de mal gehaald
De stukken die op en in elkaar moesten passen vertoonden grote verschillen en na het opeen zetten van de stukken, bemerkt men de veelal grote naden zoals een enorm geïmproviseerd bouwwerk. (Vaak ziet men bouwwerken in Afrika of armere gedeeltes van Azie met heel weinig cement tussen de stukken.) Het resultaat glijdt zo van een natuurlijk afgietsel (bijna een biologische replicatie) het register binnen van de sculptuur zelf. Een sculptuur dat een eigen leven gaat leiden.
Het merkwaardig is steeds dat wanneer het werk zelf de teugels in handen neemt, het ook de mooiste sprongen maakt, de maker is enkel de aanzetter van een vaak turbulent proces.

'More Termites' ('termite one')
(in progress, Arnhem Land, NT, Australia)

'Termite One'
afgietsels van termieten-heuvels, fortonplaaster, afmetingen verschillend.
Ijspaleis, Den Haag Sculptuur 2007
(foto: Tineke Van Veen)

4. Tenslotte over "toeval" nog dit :het oudste werk dat een samenwerking aanging tussen de maker en het toeval (potentiële mislukking) was de reeks 'Brussels Boogie Woogie'(1991) waarbij levendige ratten gefotocopieerd werden op de canon colorcopier. Door het feit dat lichamen een volume hebben, moest het deksel openblijven en wanneer men het deksel openlaat, is de achtergrond donker, daarom werd een extra lichtbron aangestoken met als resultaat dat de diertjes gesandwiched werden tussen 2 lichtbronnen (copier en halogeen van 500w)
9 ratten op een A3 openingsvenster van een copier in een openbare copytheek met in de rug wachtende klanten, creeërt een stress-situatie die zich onherroepelijk in het werk vertaalt. En dat is de werkelijke delfstof van het kunstwerk, het moment dat uniek is en het daarbij horende resultaat.
Geen enkele van de posities kon op voorhand bepaald worden, enkel de copierparameters en onze beïnvloedende aanwezigheid, (een beetje zoals in de deeltjesfysica de aanwezigheid van de wetenschapper het verloop van de deeltjes bepaalt en het proces krachtig beïnvloedt).
Het resultaat was een barokke gemuteerde groep ratten door de machine enerzijds en door hun bewegingen anderzijds gemultipliceerd.
Een krioelende massa die voor eeuwig op je netvlies blijft lopen.

5. Over "het vooroordeel" tot slot de volgende mail .

Dag Koen,

Van de voetstappen dachten wij ook dat ze denkbeeldig waren.
Niets is minder waar, de voetstappen zijn de laatste tijd op de trap te horen, naar beneden, en ze worden gevolgd door het geluid van lopend water.
Als we gaan kijken in de keuken is er echter niks te zien.
Onze eeste EVP (electronic voice phenomena) opname op de zolder was angstaanjagend.
Je vindt ze in bijlage. Er was niemand aanwezig op dat moment, enkel een recordertje met sound detection.

De namen die Wim noemt komen niet voor op zijn school, geen vriendjes die zo noemen, geen tekenfilms waar ze in komen,...
Victor slaat op Victoor. De stichter van de nabijgelegen abdij, die van het bekende bier (Westvleteren).
Waar wij nu wonen was vroeger een klooster blijkbaar.

Het grafkruis was in hout, ong. 1m80 hoog, en de naam G.Rooryck.
Zelfs in de gemeentearchieven is niks te vinden over die man.
Ik hoop van binnenkort het Rijkarchief in Brugge te kunnen raadplegen.

Met overgaan bedoel ik naar het licht laten gaan.
Blijkbaar als je doodgaat zie je een licht waar je naartoe moet.
Dit komt uit honderden getuigenissen en een vriend die uren dood

is geweest (ook een paranormaal onderzoeker sindsdien) vertelt hetzelfde.
Er zijn echter verschillen, normaal sterven betekent het licht zien, plots sterven (ongeluk, zelfmoord, moord,...) betekent dat je niet beseft dat je dood bent en het licht niet zichtbaar is, misschien door het ongeloof van dood te zijn. Mensen die in niets geloven beleven ook nooit iets omdat ze het niet willen zien of horen. Een soort indische doofheid.
Door telkens te herhalen, nachtenlang, dat ze boven hun een licht konden zien waar vrienden en familie op ze wachtten, zijn ze overgegaan.
Victor is nog maanden gebleven en op een nacht is hij komen vertellen aan Wim dat hij hem nog één keer mocht bezoeken en hij dan naar de hemel ging.
Wim is negen en autistisch, wel in lichte mate en aan de beterhand wegens de goeie school en therapie.

Ik zet in bijlage ook het filmpje (de eerste vrouw die je ziet is mijn vrouw Nadine) en een paar foto's.
Stuur ze niet naar vrienden of familie ofzo om verspreiding op internet te voorkomen. We hebben er immers, wegen de authenticiteit, rechten op genomen.

We hebben tientallen EVP's, honderden foto's en tientallen filmpjes van paranormale verschijnselen.
Tot in Engeland worden de beelden onderzocht. Ciaran O'Keefe is één van de vooranstaande onderzoekers op dat vlak.
Een medium uit Engeland, David Wells, heeft eveneens bevestigd dat entiteiten aanwezig zijn en moeten geholpen worden.
In de schuur zit echter ne gefrustreerde geest en bij het doorbrengen van een nacht daar voor onderzoek, wordt een "leuke tijd" voorspeld!
Mij niet gezien...Aan mij heeft hij al duidelijk gemaakt dat ik er niet welkom ben. Gestommel, dingen die naar mij gesmeten worden, gevoel van verstikking, misselijkheid (uren nadien nog).
Gisterennacht is hij mij een bezoekje komen brengen terwijl ik buiten een sigaret aan het roken was. Opeens was het koud en de manier waarop hij dichterbij kwam...brrrr!!!! Ik kon het niet zien maar soms zie je dingen met je gevoel he...Toen ik vroeg om mij iets te tonen is hij terug weggegaan. De warmte was er weer.

Ik kan nog bladzijden lang doorgaan maar ga dat niet doen.
Ik wil je niet vervelen met onze spookverhalen.

Geniet van de fragmentjes, je bent één van de weinigen die ze hebben (op één hand te tellen).

Laat maar weten wat je ervan denkt, eerlijk en rechtuit.

En de volgende mail.

Geen idee, we kwamen altijd op sites terecht waar dit huis bleek op het hand is naar ons is gekomen?

Is al raar op zich he?
En we waren echt op zoek naar iets in West-Vlaanderen waar we met eventueel drie gezinnen konden wonen, nl. ons gezin, Nadine's ouders en mijn ouders.
Kwestie van hun hun oude dag niet in een oudmannekeshuis te laten slijten maar iets terug te doen voor de jaren die zij ons geschonken hebben qua zorg en opvoeding...
Het was heel raar om ineens voor de poort te staan van een huis dat we al kenden (bij wijze van spreken) en dat ideaal zou zijn en ondanks niet te koop toch nog van ons zou kunnen worden.
Ik heb er verder geen utleg voor buiten dat we misschien hier en daar wat bijgestuurd worden op ons levenspad door ???

De verkoper heeft ons niks verteld over rare dingen die zouden gebeuren.
Het huis werd verhuurd en buiten dat de huurster en haar vriend dikwijls ruzie hadden en hij dan een paar deuren heeft kapotgeslagen enzo wisten we niks.
Later hoorden we van torenhoge verwarmingsrekeningen maar ja... wie denkt er aan zoiets dan?
Uitleg : het huis is kouder en door entiteitenaanwezigheden soms bijna onverwarmbaar. Koude plekken zoals ze ze noemen.
Heeft dit ermee te maken? Geen idee.

Over Wim zijn broertjes hebben we niks van info.
Geen Jens, Tobias of Victor bekend. Nergens.
We hebben eventueel een link naar de abdij van Westvleteren via Rooryck (kruis) en Victoor (stichter van de abdij).
Beiden zijn verbonden met de abdij, Rooryck als onderhouder van de tuinen en Victoor als stichter.
Hier zijn we niet zeker van en het zou straf zijn moest het zo zijn.

In de schuur huist waarschijnlijk de geest van de vader van een vorige eigenaar.
Die vader werkte vroeger voor een oud koppel en tijdens het werk hier is hij verongelukt.
De zoon heeft nadat ze hier beiden waren overleden de eigendom geërft. Een soort schadevergoeding?
Ik weet dat ik niet welkom ben omdat sinds het begin ik het gevoel krijg gewurgd te worden in de schuur, een koude die dwars door mij gaat en ik soms letterlijk wordt tegengehouden door "niks".
Daar komt bij dat hij mij soms de stuipen op het lijf jaagt door bonken, dingen naar mijn hoofd te smijten,...
Ik vraag tegenwoordig toelating om binnen te gaan en dan is het ok. Straf he? hahaha

Wat het geluid aangaat : er worden namen genoemd.
Ook bij opnames op Wim's kamer. Namen van ons.
Wim kan er blijkbaar mee praten. Wij ook blijkt later maar aan de hand van vragen en antwoorden krijgen door klopjes.
Ik zet een kort gesprekje tussen Wim en Victor hierbij...

Wim denkt eerst dat het Nadine, "ja mam..." is en zegt dan "ja victor?"
Het zijn zeker niet de buren.

Wat de verschijning betreft, hierbij wat foto's met aanduiding.

We leefden in het begin in isolatie qua vrienden en familie.
Ze zouden ons gek verklaard hebben.
Na alles te hebben verteld en bewijsmateriaal te hebben voorgelegd geloofden ze ons.
Oef!!!

De vrouw op de foto zou volgens Wim een Engelse zijn.
Ze is ook al bij hem geweest, samen met zijn broertjes, maar hij verstond ze niet omdat ze engels praatte.
Kan dus wel he, aangezien de 1ste WO hier het ergste was en deze streek veel hospitalen herbergde.

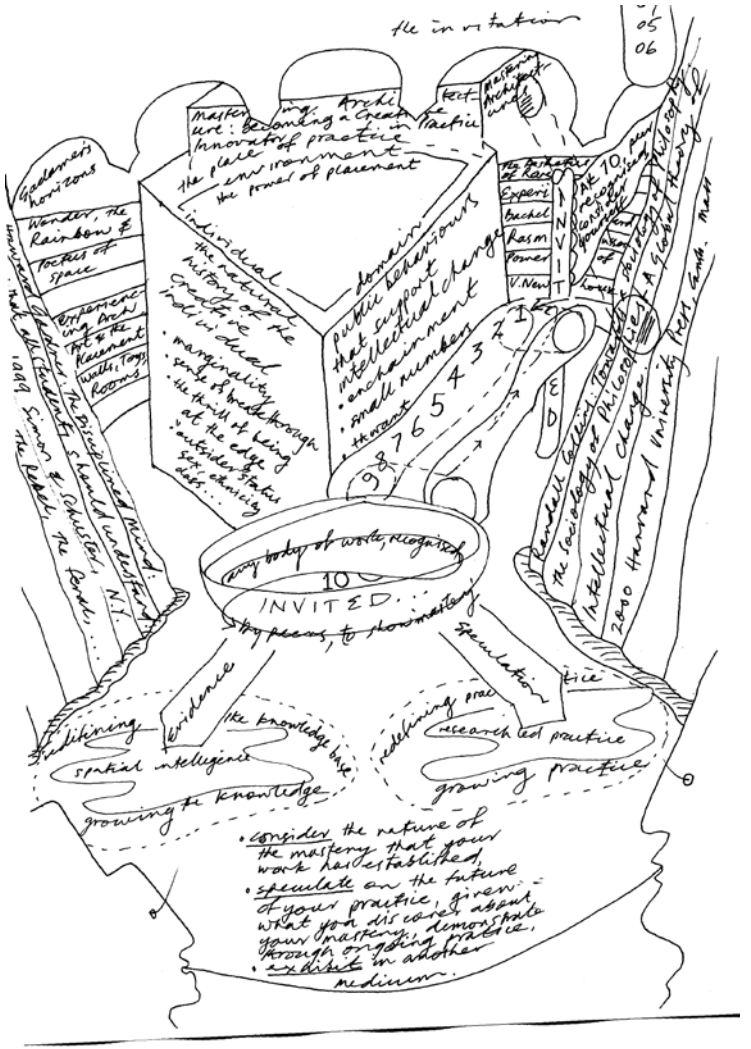
In Engeland is het onderzoek van de film nog altijd bezig.
Ze nemen het wel serieus denk ik, hoop ik.
We zien wel...

Die twee mails verkoos ik integraal hier weer te geven. Er werden plannen gemaakt om een kleine film te maken over iemand die me na een stilte van 20 jaar gecontacteerd heeft met de vermelding dat hij nu gelukkig hertrouwd ergens in W-VL een huis gekocht heeft waar hij tot op heden nog altijd woont.
Na een aantal mails doet het personage me uiteen dat hij in een 'spookhuis' woont … .
De lectuur van dergelijke zaken botst bij het overgrote deel onder ons op een vooroordeel, dit "vreemde instinctief cultureel aangeboren gevoel" dat uiteindelijk maar een soort afweermechanisme is voor zaken waarmee men eigenlijk meer verveeld dan gelukkig is tenware de afgesproken context het beschouwen ervan toelaat .bijvoorbeeld wetenschappelijk (pseudo dan) of door de ervaring van een soortgelijk verhaal.
De film (het 'script' dan) heeft al vlug het accent verlegd van het spookverhaal naar het personage die het verhaal vertelt, naar zijn verbeelding, zijn 'tableau' of misschien zelf zijn mentale constructie. (Zie ook werken van Böcklin, Fuessli, Capar David Friedrich en eind 19-eeuwse literatuur Poe, Bram Stoker, Wilde)

Het werk had als voornaamste bedoeling het vooroordeel tov zijn eigen inhoud open te breken.
Een soort onderzoek eerder naar een portret toe, een portret van een man die zijn eigen leefwereld ge(de)construeerd heeft, een wereld die wankelt tussen de residu's van subcultuur, media, verhaal en film of omgekeerd evenredig juist helemaal niet begrepen wordt door de buitenwereld, dat sociale gedeelte dat dat soort ervaringen precies niet deelt en dat niet wilt ook, hoewel dat soort gegevens tot een collecief (waan)beeld altijd behoord heeft en zal blijven behoren (zie ook in dat verband de interessante passages van Jung over UFO's)

De film zou ook een onderzoek geweest zijn naar het vooroordeel en vooral naar het oordeel vellen zelf, die limieten aftasten.
De film zou tevens een onderzoek geweest zijn naar de 'architectuur' van het spookhuis. (Zolder, kelder, hangar en dergelijke meer met verbanden naar het gedrag van mensapen en hun angst voor kruip en roof-dieren bij het maken van hun nest in de hoge bomen … .)
Niet het waarheidsgehalte heeft ons aangespoord het onderzoek naar de film te starten want iemands verbeelding is onkreukbaar, hoeveel hij of zij er ook aan sleutelt, maar het obsessionele van de wil om het verhaal te delen met iemand die bereid is om te luisteren, te kijken en te horen.
Immers, ons personage had allerlei zaken geregistreerd (beeld,geluid enz).
De film is nooit gestart omdat het personage alle contact verbroken heeft toen er voor de vierde keer een poging ondernomen werd om de eerste opnames) in zijn huis te laten doorgaan. Ik heb sindsdien nooit meer iets van het personage gehoord, en dat heeft me nog méér aangespoord om met dit project door te gaan …vreemd detail: hij had een copy-right op al zijn beelden en geluid genomen … .

Koen Wastijn



The establishment of a proposition from a body of work is achieved through investigating the natural history of the creative individual (left hand side of cube) and the support that the individual creator receives from peers (right hand side of cube).

Report on Research Training Sessions

Introduction

Following a visit to the School of Architecture and Design Graduate Research Conference (GRC) at RMIT (accompanied by G. Mouton), Johan Verbeke (the Head of the School of Architecture at St Lucas) invited Leon van Schaik founder and chair of the GRC at RMIT to participate in a research seminar at St Lucas. It was agreed that a participant in the RMIT research conferences would also be invited, and Richard Blythe, partner in the architectural practice Terroir – now Head of the School at RMIT and about to complete his PhD.

The GRC at RMIT grew out of invitations issued by Leon van Schaik to the profession in Melbourne when he arrived there twenty years ago. The invitation was in a sense a challenge. It stated that during several years of practice many architects in the city had manifestly established bodies of work that were acknowledged by critics and peers to demonstrate 'mastery in architecture'. The challenge was to bring those bodies of work into a critical framework and to surface evidence on the nature of the specific masteries that had been established; to review their ongoing work in the context of this evidence; and then to speculate through design on possible future practice. In the course of this investigation the architects would become explicit about their 'enchainments'[1] to mentors, peers and challengers. They would contextualise their specific mastery within the international community of learning concerned with that form of mastery – with a particular emphasis on the projects completed by others that seemed to pursue the same goals.

The process involves twice-yearly presentations of these three stages of investigation to a panel composed (usually) of a local practitioner, an interstate practitioner and an international practitioner academic. The presentations are in a forum open to all comers and the audience always contains many of their peers. Some sixty participants have now completed this process. Most practitioners have completed research at the Masters level, and the practitioner academics have completed research at the PhD level (12 of these completions to date have been PhDs, with another twelve in the final stages of completing).

In the course of the twenty years, the program has grown to cover several streams of practice-based research, and there are 200 candidates enrolled. In the course of the period, the outcomes in the invitational stream have been published in four volumes.[2] A fifth volume is due soon. Much that has been learned is documented in the book Mastering Architecture,[3] which formed the basis for the lecture on the opening evening of the seminar at Sint-Lucas. The relationship between what is known about the 'natural history of the creative innovator' and the social structures that support 'intellectual change' was highlighted. This covers career profiles, informal associations,

means to encouraging and to thwarting mastery, and the process of becoming a self-aware curator of one's career.
Richard Blythe described how the process of research into one's own practice changed that practice by causing the proponents to state the propositions underlying their design process; by challenging the accuracy of those statements and thus refining them as tools through (usually) three tranches of stating and testing in design. The specific history of his firms use of the concept of the line was traced from an early formulation as an orange tape through a landscape, to a series of zigzag plans, to a non-vectored use of the line in the landscape, to a fully spacialised and temporalised analysis of a site in Hobart that will be the field of the firm's next big design challenge.

This account exemplifies the process: the identification of a proposition that lies in the work; research into its provenance (here as a tool for dividing the civilized environment from wilderness – a distinction drawn that defines both simultaneously; and a series of subsequent designs that use the line proposition in an increasingly nuanced and critiqued way. It concludes with a design project that challenges these findings in new, more complex environments (China and Hobart); and a proposal about future practice. This is the model underlying the PhD and masters level research at RMIT.

Finally, Leon van Schaik presented a study of the Design City phenomenon, the complex of curatorial approaches that builds the design culture of a city, and asked that candidates consider Brussels in this light.

Comments on reviews of work presented by candidates.

On Thursday, Leon van Schaik and Richard Blythe were introduced to the research proposals of candidates in both of the commencing cohorts of the Sint-Lucas program.

- All the bodies of work presented demonstrated 'mastery' and merited investigation at PhD level
- There was an unfortunate tendency to believe that a theoretical position had to be applied to the bodies of work – a belief that we are convinced s deleterious to practice-based research and to research in the medium of design.
- There was a less prevalent belief that the work should illustrate a theoretical position – a belief that we also are convinced is deleterious to practice-based research and to research in the medium of design.
- We encouraged candidates to derive propositions from their bodies of work, examine these positions in the context of the communities of learning (local and international) that are engaged in similar pursuits, and then examine in greater detail the propositions that they discerned to underpin their practices, observe how that greater clarity impacted on their ongoing practice – and demonstrate this shift. In our experience it usually takes three tranches of such observation and practice to be able to demonstrate how refining the propositions resulted in a more aware and tailored practice.
- Questions of replicable results were raised. In our view, the replicability lies in the demonstration of how becoming clearer about the propositions (the research questions) underpinning the work impacts on practice. This process – usually carried out in three tranches of defining the proposition, identifying the 'gaps' (the term used as defined by Gerard de Zeeuw) between actual practice and what is needed to fulfil the proposition, conducting work in the practice to narrow the gap, evaluating, refining the proposition and restating the gaps, doing more work in the practice, evaluating and so on…
- The contribution to knowledge that is new lies in the way in which these PhDs grow our understanding of how design practice works.
- It follows that an account of such research may well include tales of failed propositions, failed refinements, and so on…

Diagrams:
In the course of the critiques of the presentations, the following three diagrams were drawn on the blackboard.

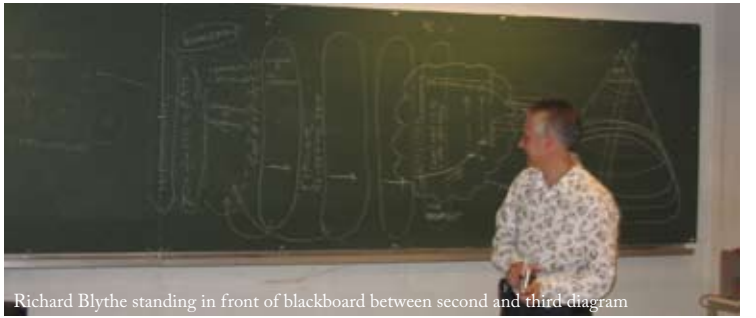

Richard Blythe standing in front of blackboard between second and third diagram

Diagram 1: This illustrated the three poles of 'enchainment' that most of us encounter – mentors, peers and challengers.

Diagram 2: This described the typical format of a PhD by project at RMIT.

- To the left is a container that introduces the reader to the journey that has been undertaken by the candidate. Typically, this is the last part of the PhD to be written.
- To the right of this is a container that collects the first and subsequent (usually two more) definitions of the propositions identified in the candidate's body of work.
- To the right of this is a container that collects the first and subsequent (usually two further collections that coincide with the further evaluation and refinement

of the proposition and the gaps to be filled through further design work) definitions of the 'enchainments' of the candidate. (Note the arrow from the first diagram that enters this container.) This process is referred to as a 'literature review' in a written PhD. Here it may contain such a review, but it is more importantly the identification of design projects by others who have addressed the proposition identified by the candidates as underpinning their body of work. Importantly here the candidate must identify the gaps between what these other designers have achieved and what the candidate is striving to achieve. This is the community of learning that the candidate's research addresses, and against which it must be assessed. This is a crucial aspect of the process. Without it, the candidate may be called to account for failing to address works that – in their definition – lie outside their sphere of research. Examiners must be given the boundaries within which the research takes place.

- To the right there are now three large containers, each for the collection of a tranche of work carrieed out in the candidate's practice under the influence of a definition of a proposition that underpins their work. Between these containers are spaces in which evaluation of the work in terms of that proposition as then defined is conducted, and in which the gaps between actual practice and desired practice is defined.
- To the right of the last of these three containers is a space labelled "REFLECTION". This is a period in which the candidates assesses whether they have attained what we call "the PhD moment." That moment is the subject of the third diagram, and will be described later.
- To the right of this is a container described as "CONCLUSION." This container collects and refines a description of the entire journey of the research, ordered as in the diagram overall.

Diagram 3: This illustrated the PhD process as a cone. Each layer of the cone from the base up maps onto the linear description in Diagram 2.

- The base of the cone is the body of work of the candidate, usually built up over several years before commencement.
- Above this is a layer of work conducted in the practice after the base has been subjected to scrutiny, and a first definition of its underlying proposition(s) has been made, a community of learning has been identified and gaps between previous practice and practice more attuned to the newly identified proposition have been identified.
- Above this are two more layers in the cone, representing the next two tranches of work following on from evaluation of the work conducted in the first tranche, the subsequent redefinition of the propositions and of the community of learning, and a restating of the gaps between achievement and desired outcomes.
- Above this is a space – the space of reflection. Many candidates find that this period takes six months of off-line thinking.

- At the apex of the cone is the 'PhD Moment.' Striking down through the cone from the apex is a core sampler. The PhD moment is characterized by the candidate realizing how to represent the journey by inserting the core sampler through the cone in such a way that the conclusion can be completed, and the introduction written. It is as if the candidate is able at this moment to view the entire process from above the cone, and is able to give a succinct account of what has been achieved.

Finally, in this kind of research it is useful to bear in mind the Boyer Scholarship Model.bvc [4]. This model clears up many confusions about what is or is not 'research'. In developing the 'by project' PhD research mode at RMIT, we do not intend to devalue other modes of research. But we do intend to assert the need for a research mode that is rooted in the medium of design itself.
The scholarship model distinguishes between four modes of research:

- Discovery – finding new knowledge. We argue that the PhD by project does this by opening up new understandings of design practice, firstly within the practice of individual designers, but secondly – when conducted as described above – with reference to more aware and conscious design practice in general. There are also instances where new knowledge emerges from design itself.
- Integration – relating new knowledge to existing knowledge. New knowledge may be 'new' per se, or it may be new to a field or a domain of practice. Such integration takes place in design and in the critique of design.
- Application – this involves finding new ways to apply knowledge, and it is almost always present in an act of designing.
- Dissemination – this involves the creation of effective ways of communicating knowledge.

As soon as this nuanced approach is adopted, most of the bi-polar arguments about what is or is not 'Research' become irrelevant. We believe that any innovative design practice is engaged in all of the four modes above, and they simply need to be identified and articulated, because they help to inform the definition of the 'propositions' that need to be derived from practice for this kind of research to proceed and to succeed.

Leon van Schaik

(Endnotes)

1 This term is used by Randal Collins to describe the intellectual linkages between people engaged in a common discourse. See Mastering Architecture, footnoted below.
2 Leon van Schaik, Day, Elliott, Katsalidis, Powell, Raggatt, Rijavec and Selenitsch & Trudgeon (1993). New beginnings in Australian Architecture. In Leon van Schaik (Ed.) Fin de Siecle and the twenty-first century: Architectures of Melbourne. RMIT A+D. Melbourne pp11-15
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3 Leon van Schaik (2005). Mastering Architecture: Becoming a Creative Innovator in Practice. Wiley Academy. Chichester
4 Ernest L. Boyer (1990). Scholarship Reconsidered. Priorities of the Professoriate. The Carnegie Foundation for the Advancement of Teaching. Princeton

Tutors RTS 2

Adapting research to new areas of interest

Introduction.

Everyone who has read at least one book on research and on research methods will be aware that there does not appear to be a single definition of what research is or what it may contribute. This has made it attractive to think of research as defined by a class of tools, or if one wishes, methods, from which one may choose – dependent on what type of research one is interested in. This has led to approaches with fancy names such as multi-method, or mixed-method. The difficulty is, of course, that this approach pre-empts the possibility of dealing with new forms of research.

This consequence clearly is not very attractive. It suggests that the argument is wrong and that the notion of multi- or even pluri- methods may not be coherent. This seems indeed easy to argue. If there would be no single definition of research, then how would one decide what the class of methods is to consist of? There must be some common ground if one is to choose. In the same vein one may argue that being able to choose one from among a class of possible methods suggests that it is defined by the type of activity its elements are to be used for.

There are other ways of thinking of research. Unfortunately they show the same kind of incoherence. One might think of 'great men' in research. But how do we recognise great men? Or one might think of 'great achievements'. But how do we recognise great achievements. Or one might think of curious incidents in research, or anecdotes – like the (apocryphal) story of Archimedes in his bath. But how do we recognise that his was an experience similar to that of Newton? What is needed is something that links the various approaches but does not depend on a dominant similarity.

A genealogy.

An example of this kind of link is a developmental sequence. One may think of an acorn – the seed that via a series of transformations is linked to the mighty oak. Or of a series of species – each born of a previous species, but different in what its instances are able to do and in the challenges it needed to respond to. What links various forms of research may be similar. Each may be different but share the constraints of the acorn, each may be what is needed to develop the next form. One would need to know its constraints, or its DNA, to be able to speed up or guide the arrival of innovations.

This ability would be useful to deal with new areas of study. The search for what is expressed in the various developments of research even appears to be about as old as the research itself. Familiar examples are contained in the works of Descartes (1637), Kant

(1788), Popper (1959), Churchman (1971) and many others. They seem to depend on a similar image of what researchers might aim for such that later activities can be seen to instantiate similar ideas as previous ones, and to include additional elements and structures to allow for more species of research.

1. Naming.
In this description the core of research is seen as the naming of experiences. A typical example would be the name planet ('wanderer'). For thousands of years it was used to refer to the (experience of the) moving lights such as the sun and Mars. In the 17th century, a new criterion was introduced: that names may function as recognition systems. It was recognised that the sun was not a planet, and that the earth was. This ushered in what nowadays is called the Copernican Revolution: the awareness that a name may be wrong and that it is possible to test for this.

2. Prediction.
Whether a name is wrong does not show up, of course, when what is named consists only of what was recognised before. The naming defines the name as well as the named. Difficulties creep in when it is tried to recognise new instances of what is named. The earth does not seem to move or wander. Recognising it as a planet or wanderer thus implied a leap of imagination. The new form of naming became a tool to help predict what could not be identified before. It allowed leaps of imagination to become testable and when shown acceptable, to become knowledge.

3. Scientific.
Observer It was noted that testable names were restricted to observations, or to reports of observations – to what Descartes (1637) referred to as primary experiences as opposed to the secondary experiences of smell and touch. This suggested the notion of a scientific observer as an alternative to naming as the core of research. A scientific observer is an individual hemmed in by what helps remove whatever may characterise any observation as made by a psychological individual, i.e. someone biased by being in the here and now, male or female, with sharp eyesight or not, etc.

4. Scientific.
Object A further formulation of the core of research emerged when it was realised that it has to start out from what can be named in the present. As naming is intended to help recognise new experiences, new names are to refer to a class of experiences that is 'wider' than what was named first. This class is called the scientific object. It identifies the boundary to what the naming is to include. Testing then is defined as an attempt to identify whether the object is wide enough to allow for recognition of all its instances – in particular those introduced by the naming.

5. Free Results.
Some authors have taken this class to be observable in that observations on the class are needed to identify what first observations belong together. Others see it as a 'thing in itself' or Ding-an –Sich (Kant, 1788), that is not observable. Both possibilities (and those in between) imply that there is an end to the 'widening' of the class. This has suggested as a core characteristic of research that the need for further testing becomes increasingly reduced (Rosen, 1993). When research is successful, testing should require fewer efforts. Its results should be mainly 'free'.

It is claimed at this point that the five formulations of the 'core' (naming, predicting, observing, identifying a scientific object, reducing research effort) are mostly equivalent – if not in details then in the fact that they can be named 'core'. What is not claimed, of course, is that this name has not been shown yet to lead to a recognition system. A demonstration of this kind is what will reveal the intended genealogy. It involves showing that later forms of what still is recognised as research constitute instances of the name, c.q. of at least one of the five formulations.

Instances.

The elements in the core emphasise different aspects of what seem to be the seeds of the genealogy of research. Characteristically they appear to be still in use as recognition systems – albeit in different areas (for example, naming in statistics (Hacking, 1990), reduction of effort in systems research. Many other forms of research have been introduced meanwhile. They can be recognised as modifications of the elements of the core. To do so it is explored first what might be modified in the core, if one would wish to adapt to new challenges, but stay inside the genealogy.

The concept of naming (and of recognising what can be named via the name) restricts the experiences involved in it to (reports of) observations. The same holds for the other core elements. Modifications can be expected to concentrate on extensions of such experiences, therefore. Examples include a focus on the experience of groups of events rather than of single events (like observing planets), and on intentions (as the experience of future and desirable events), as in the case of a number of agents interacting (cooperating or fighting) to achieve a collective task

An example is statistical theory. Although it is used in many ways, of interest here is its part in the process of knowledge acquisition, where it constitutes one of the first extensions. The scientific object is the population. It is attempted to test whether a particular sample is an instance of the population, just as one may wish to test whether a single event (like an observation of the earth) could be an instance of planets. The elements in the core are still with us, therefore; what is modified is that knowledge now refers to naming experiences of a population rather than of a class.

Another example is the development of operational research and of cybernetics as ways to include not only observations, but also aims. A typical illustration is to think of one actor aiming to manipulate another and vice versa. Neither may be able to predict what the other will do, as both may try to prevent prediction by the other. Both together may constitute a scientific object, however, the collective future of which may be predicted even if individual behaviour is not. This means that, again, the core is still with us, but modified to include intentions – apart from observations.

Originally the aim of hermeneutics was to interpret religious texts, but over time it was expanded to include the interpretation of nearly any behaviour. It can be considered a form of research (although its claim on being such a form sounds a bit gratuitous: having an 'orderly system of rules' (Vinkler, 1990; quoted in Wikipedia)). What can be more like naming than interpreting? It is a modification, however, as recognition via a name is to be achieved only from some point of view (e.g. of a first person, thus allowing for some individual characteristics to enter the observer).

A fourth example involves the building of a dam to irrigate crops in Tanzania. The aim was not knowledge acquisition, but an evaluation. The latter does not name via an observation, but via the attribution of a value – such as successful, or good for the community. The attribution was achieved by organising a collective of those using the dam, and supporting them to interact and maintain the dam. It was thought that if the members would not spend the necessary effort, the dam would be considered a failure. The organisation of the collective was seen as a form of research.

There appear to be two reasons for this. Firstly, the design of the evaluation was quite different from more easily recognised instances of the core, e.g. those implemented by astronomers and statisticians. Hence, it may indeed be something different (it recognises other experiences than observations – such as values and long term commitments), or it may be a modification. The latter may be argued by recognising the collective as an attempt at creating a scientific object and as designed to minimise the effort of having to recreate the dam and as including the experiences of all those involved.

Conclusion.

In this contribution, an attempt has been made to name approaches to research by identifying their genealogy – a series of adaptations of core of approaches. It deviates from the more popular approach, therefore, in which various forms of research are distinguished and where it is assumed that these are incommensurable but can be combined in some multi- or pluri-method. It recognises that developments in research adhere to constraints in a core set of elements. This facilitates adapting research to new fields, via the systematic modification of these constraints.

The aim of this paper has been to convey the idea that research builds on previous experiences – both in terms of how it may achieve what yesterday appeared impossible and of how it may build on yesterday's discoveries and inventions. The latter may be its most central message: that it is possible to design research as an activity that does not lose its identity, even when having to respond to new challenges. This message emphasises its own tenets: that the core characteristic of knowledge is the ability to recognise new elements of what is named via the name.

Gerard de Zeeuw

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Experience and Communication

Intelligent practice is not a step-child of theory. On the contrary theorizing is one practice amongst others and is itself intelligently or stupidly conducted.
Gilbert Ryle

Still, what would theory be worth if it were not also good for inventing practice?
Gérard Genette

Introduction

Western thought has supposedly favoured the life of the mind over the life of the body since Plato, leading to a marginalisation of experience and its subordination to 'purely' *intellectual* pursuits. Artistic practice, during a comparable period, has not infrequently relished the excavation of sensory, or sometimes visceral, *experiential* content. So do we need *theory* to precede a work of art in order to *recognise* it as art (as, for example, Arthur Danto has argued)[1]. Or does practice, experience's 'semaphor', itself generate a form of knowledge that mere critics and academics struggle to put into words? These kinds of questions are implied in our current interest in forms of knowledge based on *practice-based research, reflective practice* – or *knowing how*, as distinct from *knowing that* (in Ryle's terminology).[2]

The pairing of the terms *practice* and *research* – not infrequently through Christopher Frayling's oft-cited prepositions (1993) research *into/through/for* practice; but also *research by practice*, *practice-led research* etc. – implies a central role for *communication* (a more peripheral role would, after all, condemn design to the shadowlands of research, beyond the reach of *analysis* and *understanding*, incapable of addressing an *audience* outside its own professional practitioners, and, accordingly, its research *significance* significantly diminished). In staking a claim that practice is capable of articulation as a form of research, we are forced to confront the consequences of our chosen mode(s) of expression, its material, technological, political and epistemological assumptions, its generic, grammatical and philosophical implications – and, not least, its *appropriateness*. Thus if we must consciously design our modes of communication, communication itself becomes a core consideration in undertaking both design *and* research.[3]

Yet communication can be said to be central to *all* research activities – without appropriate articulation and effective *dissemination*, research *results* would have little or no *value*. Why, then, should communication be particularly challenging in practice-based research?

Theory as performance

Unlike the architects of the library of Alexandria (and some contemporary internet obsessives), we suspect that knowledge today resides less in a collection or archive (library or database), than in how a person *actualises* – performs or expresses – their knowledge *in practice*. There is both a private (silent, reflective) and a public (expressive, performative) dimension to this performance.[4] It may include an element of interpreting, adapting and applying the information stored in various collection systems (historical, methodological, educational or technical archives), but it equally involves a range of emotions related to our desires to connect and communicate while simultaneously acknowledging the unavoidably partial, limited or situated nature of our cultural, disciplinary, biological and historical perspectives.[5] This (emphasised through the use of the spatial term *perspective*) reminds us that research is typically *purposive* and thus *positional* – we set out to *investigate* or *explore* from a particular point of *origin* (or set of origins), orienting ourselves *towards* a particular concern, with particular *goals* (*outcomes* and *audiences*) in mind. So the ways we choose to conduct our inquiry, the nature of our questions and ethical purposes, as well as our behaviour towards colleagues and collaborators in the research process, all influence our supposedly "objective" research perspective.

Knowledge is thus not only situated, embodied, personal, but also (being communicated) *connective* and *performative* in a particular kind of way. These aspects cohere within the concept of *experience*. "To be knowledgeable," Churchman writes, "one must be able to adjust behavior to changing circumstances."[6] The capacity to adjust behavior to uncertain or changing circumstances arises from familiarity with a repertoire of practices. As Thomas Kuhn has shown, for science to advance, emerging scientists must acquire not merely a methodology but also a "way of seeing" – an ability, that is, to identify the salient features of a problem situation and evaluate their significance in the appropriate context. What is acquired is the ability to directly discern the parameters of a situation in a manner analogous to what is involved in the appreciation of a work of art. Kuhn's analysis of the role of "exemplars" in effective scientific problem-solving illustrates the centrality of reliable judgment, acquired through practice, to scientific inquiry and research.[7] Trained judgment involves the ability to recognise the relevant features in a situation, the appropriate combination of operative factors and patterns, their harmony or disharmony, and the weight they should have in a particular context. This "way of seeing" is thus a skilled performance achieved only after exposure to a range of problems and the types of strategies employed for their resolution. It shares much in common with the Aristotelian notion of *phronesis* (practical wisdom); like phronesis, it is acquired through training and practice, and the development of a given level of skill creates the conditions for still more skilled performances in the future. And as practical wisdom becomes second nature to the *phronimos*, so good judgment – an essential attribute of a successful designer and researcher – becomes second nature, or so we hope, to the person who can reason in an innovative and useful manner.

But is "problem-solving" (with its associations of intervention in localised situations of intellectual spillage or accident) an adequate description – or even a desirable goal – for practice-based researchers? The problem-solver works within prescribed limits – fix it and be gone. Yet practice-based design research typically involves synthesising a broad range of information from a diverse range of knowledge traditions. Even a 'simple' architectural project, for example, would likely involve research-related activities spanning behaviour that can be classed as teleological ("goal seeking"), explorative, conceptual, analytical, evaluative, quantitative, qualitative, hermeneutical ("interpretative"), generative, explorative and so forth. Each activity produces its own class of outcomes which needs to be syntheised without damaging the integrity of the findings or the coherence of the design project as a whole.

Representing the practitioner's knowledge

If the practitioner's knowledge is partly or largely rooted in *experience*, then the consequences of adopting an inappropriate form or inauthentic language for *giving an account* of such experience (out of insecurity, perhaps, or an ill-conceived desire to rhetorically construct an authoritative tone of voice), are potentially damaging.[8]

Michael Biggs has characterised practice-based research as i) prioritising some property of experience arising through practice, over cognitive content arising from reflection on practice and as ii) able to be communicated or disseminated ("this being more desirable than research that cannot be communicated or disseminated, because it will have greater impact in its field.")[9] It follows that practice-based research involves an experiential component that is communicable to others; the core of the problem, Biggs claims, is precisely this communication of experiential content – the meaning of an experience, its significance, and how it might be related to a shared context. It is a problem inseparable from considerations of *representation* and thus of *form*.[10] For Biggs, a philosopher and sculptor, the "most intractable problem" of research in this area underpins exactly this – the representational challenge of experiential knowledge:

> The problem is that the experiential feelings that represent experiential content are private to the experiencing individual. Experiences must be expressed in the first person; "I feel...". While they remain private experiences they cannot reasonably be regarded as research because they do not meet the criterion that research should be disseminated (assumption 2). But the problems of identifying and communicating first person experiences to second and third persons is notoriously difficult. For example, it has come under sustained attack from Wittgenstein in his so-called private language argument (Wittgenstein 1953: §§243-315).[11]

Hybridization

The development of any field of research or professional practice involves privileging particular cultural metaphors and analogies, references and examples, and, in the process, cross-pollinating, hybridising (or repressing) existing assumptions and methodologies[12]. We might explore forms of practice that demand more than the formal properties of reason alone by appropriating strategies, methods and concepts from other material and discursive regimes. This places particular emphasis on our capacity to discern connections across diverse discourses, changing language games, shape-shifting input, and material or non-linguistic data. Herbert Simons writes of Method being replaced by "variable, creative, non-algorithmic" methods, of generalised laws being displaced by "contingent, historically situated truths, reflective of values and interests, and found more or less useful by cultures and communities which are themselves symbolically constituted". Furthermore, he writes:

> there are faint suspicions that scholarly communities are no less influenced by "fuzzy" logics than by formal, deductive, "closed-fisted" logics: by arguments from sign and analogy, by anecdotes and exemplars; and even by appeals to authority, tradition, convention, intuition and aesthetic goodness-of-fit.[13]

This is particularly the case in contemporary contexts of interdisciplinary or transdisciplinary ways of working. The many convergences taking place today – between biology, technology, economics and the arts, for example – are symptomatic of a more generalised reconfiguration of cultural, national, and political boundaries, all of which contribute, as Klein argues, to reversing "the differentiating, classificatory dynamic of modernity and increasing hybridization of cultural categories, identities, and previous certainties. […] All cultural categories, identities, and certainties have undergone de-differentiation, de-insulation, and hybridization. All boundaries are at risk."[14] Since there are as a result a growing number of problems "without a discipline", this skill in *seeing connections* – a skill that blends creative and critical (or design and hermeneutical) modes of inquiry (or curiosity) – will become increasingly important.

It may be that practice-based research similarly acknowledges alternative, competing or even contradictory belief systems that nonetheless organise diverse and variable (culturally, professionally and historically) conceptions of reason. In this sense, practice-based research may serve not merely to *deconstruct* systems of logic which depend on a process of self-validation for their support, but also to *reconstruct* the question of how we might investigate, make reasonable comparisons, judgements and evaluations, and use language in contexts where there can exist no "proof" as such. If this is so, the need to explore forms of argument appropriate to identifying and representing the elements of our practice, and the expressions of our shared and evolving professional knowledge,

becomes for practice-based researchers a central challenge, if not *the* central challenge. Accordingly, we arrive at an account of practice-based research as an architectonic strategy for orchestrating, enacting, or curating, the interplay of discourse, material practices, and experiential content in forms that represent arguments for artistic and scientific signicance beyond the relatively narrow concerns of an audience (or readership) limited to fellow practitioners. And so the work begins.

Rolf Hughes

Further Reading

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(Endnotes)

1 See, for example, Arthur Danto (1981) *The Transfiguration of the Commonplace: A Philosophy of Art*, Cambridge, Harvard University Press.
2 See Gilbert Ryle, *The Concept of Mind* (Harmondsworth: Penguin Books, 1949), 26-60. In regards the question of order between theory and practice, Ryle is emphatic: "Efficient practice precedes the theory of it; methodologies presuppose the application of the methods, of the critical investigation of which they are the products." 31.
3 *Communication* is here understood, after Richard Buchanan, not in accordance with semiotic or grammatical theories of communication, nor dialectical theories that treat communication in relation to an economic or spiritual truth, but in the context of rhetoric – i.e. "the inventive and persuasive relation of speakers and audiences as they are brought together in speeches or other objects of communication." (Buchanan 1989, 91). *Design* is understood in its generic sense, denoting a family of concepts that include architectural design, engineering design, industrial design, planning, operations research, systems design and related activities dedicated to changing ourselves and our environment in order to enhance the quality of our lives.
4 The silent, solitary aspect of thinking is, of course, historically and culturally contingent. Ryle, for example, points this out while inadvertantly using an already-dated analogy: "Theorizing is an activity which most people can and normally do conduct in silence. They articulate in sentences the theories that they construct, but they do now most of the time speak these sentences out loud. They say them to themselves. Or they formulate their thoughts in diagrams and pictures, but they do not always set these out on paper. They 'see them in their minds' eyes'. Much of our ordinary thinking is conducted in internal monologue or silent soliloquy, usually accompanied by an internal cinematograh-show of visual imagery." Yet Ryle also emphasises that this internal dialogue is acquired with some effort, and only after we have learned to talk intelligently aloud and heard and understood other people doing so. In a salutary reminder to those of us concerned with research communication, he adds, "People tend to identify their minds with the 'place' where they conduct their secret thoughts. They even come to suppose that there is a special mystery about how we publish our thoughts instead of realizing that we employ a special artifice to keep them to ourselves." Ryle (1949), 27-8.
5 Churchman writes, "Knowledge is being at once at ease with a subject and deeply engrossed in it. Knowledge carries with it both a tremendous joy and a great despair—a joy at being at one with a whole area of living human activity, and a great despair at recognizing how little this oneness really is compared to what it might be." C. West Churchman (1971) *The Design of Inquiring Systems: Basic Concepts of Systems and Organization* (New York: Basic Books Inc.), 10-11.
6 Churchman, 11.
7 See Kuhn (1970), 187-91
8 A point illustrated by Caliban's retort to Prospero "You taught me language; and my profit on't/Is, I know how to curse. The red plague rid you/For learning me your language!" in William Shakespeare's *The Tempest*, Act One Scene 2.
9 Biggs (2004) writes, "Artistic enquiry is not just artistic enquiry about the nature of the physical world but is also artistic enquiry about the artistic world. Nearly all research in Material Culture could be described in this way, and that is what makes it different from enquiries concerning the same objects in physics or engineering. Therefore the observation that questions about experience arise through the process or as a consequence of experience, is valid." 8-9.
10 Biggs (2004) remarks, "Experiential feelings do not have the same form as experiential content, i.e. experiences present themselves as experiential feelings whereas we reflect cognitively upon the content of those experiences, hence my claim that experiential feelings represent experiential content. With some experiential feelings the experiential content represented may be trivial, e.g. pain. However, other experiential feelings represent significant aspects of human experience, e.g. the aesthetic response. Thus there are both sensory and cognitive elements to experience, although I do not mean to imply that the cognitive element is necessarily synonymous with linguistic form." 10.
11 Biggs (2004), 10.
12 See Rolf Hughes and John Monk (eds.) *The Book of Models* (1998, reprinted 2003), as well as Rolf Hughes and John Monk (eds.) *Hybrid Thought* (2003).
13 Herbert Simons, "Rhetoric of Inquiry as an Intellectual Movement" in Simons, Herbert W., ed. (1990) *The Rhetorical Turn: Invention and Persuasion in the Conduct of Inquiry* (Chicago and London: University of Chicago Press).
14 Julie Thompson Klein (2004) "Interdisciplinarity and complexity: An evolving relationship" E: CO Special Double Issue Vol. 6 Nos. 1-2 2004, p.8

Some notes on practice-based architectural design research: Four 'arrows' of knowledge

There are broad and intensive discussions going on about design and architectural research around the world today. These discussions have been going on for quite some time, but there is still a lot of confusion about it both in the milieus of the practitioners and of architectural researchers themselves. This confusion is mainly caused by the core activities of the discipline – design and architectural practice.

There is a long tradition of studying architecture "from outside" by researchers from other disciplines. An example of such studies is the well-established discipline of art history. But even art historians themselves have recognized that a perspective "from within" has been missing in their studies of artefacts and the production of these artefacts. E. H. Gombrich has been perhaps the one most preoccupied with the question of skill as a missing aspect in the discipline of art history. He believes that the focus of academic inquiry should be placed on the craft of art (Gombrich, 1991:68). He refers to the 16th century Italian art historian Giorgio Vasari, who provided such focused knowledge and made the growth of representational skills the standard account of the development of Italian art from the thirteenth to the fifteenth century. This craft approach to art (of which architecture was one), however, ceased to play the central role after the Romantic period. Gombrich has gone so far as to claim that "we do not yet have a history of art worthy of its name", and argues that the missing "technological approach", or the "craft aspect" of the academic inquiry, has to be restored in order to secure this inquiry a renewed viability (Gombrich, 1991:68; Gombrich, 1993:177; also Abrams, 1989).

During the last forty years there have been ongoing debates on the importance of the "craft aspect", or the "making aspect", as a core focus of the design-related research addressed by designers qua makers of design. One way of doing it was the attempts to develop a discipline of architecture or a discipline of design. The British philosopher Gilbert Ryle delineated two categories of knowledge, "knowing that" and "knowing how" (Ryle, 1945-46). And just as with the field of the contrasting knowledge that has been maintained by the established academic disciplines, the architectural and design scholars submit that there was a case for sustaining and maintaining the field of "knowing how" through a discipline of its own (Dunin-Woyseth and Michl, 2001:2).

Ideas about disciplinarily viable design knowledge have been considered by several scholars. Already in 1969, Herbert A. Simon introduced the concept of "the science of design" in his seminal book *The Sciences of the Artificial*. To the science disciplines, the exploration of natural things, he opposed the science of design, which deals with "…artificial things, how to make artefacts, that have desired properties, and how to design" (Simon,1969:55). In 2001 Piotrowski and Robinson edited the seminal

publication *The Discipline of Architecture* with the contributions of several prominent architectural scholars such as Sherry Ahrentzen, Stanford Anderson, Carol Burns, Russel Ellis, Thomas Fisher, Linda Groat, David Leatherbarrow, Donald Watson and others (Piotrowski and Robinson, 2001). In the Scandinavian context, two works that followed upon these ideas can be mentioned: *Artifacts and Artificial Science* (Dahlbom, Beckman and Nilsson, 2002) and *Towards a Disciplinary Identity of the Making Professions* (Dunin-Woyseth and Michl, 2001).

These attempts at constituting architecture and design as disciplines on their own could be discussed in the light of existing research cultures of the academia. John Ziman mentioned that newcomers to research enter a self-perpetuating "tribe", where their behaviour is governed by many unspoken rules. These rules differ with regard according to discipline, country and decade, but the sub-tribes of academia span a common culture (Ziman, 2001:31). In 1942, Robert Merton, the famous American sociologist and philosopher of science, maintained that the 'prescriptions, proscriptions, preferences and permissions' that scientists feel bound to follow could be summarized into a small number of more general norms (Merton, 1973). These norms were institutionalised into what later became known as the CUDOS mechanism (Ziman, 2001:45). The initial letters of the Mertonian norms define the criteria for recognition of the scholars from their international research community. These criteria are: Communism – meaning common ownership of scientific knowledge; Universalism – standing for the inclusion of all knowledge producers, regardless of origin, age, colour, sex etc; Disinterestedness – understood as the absence of bias with regard to special non-academic interests or values; Originality as the demand for novelty with regard to scientific insights; and organised Scepticism, meaning the systematic and critical inquiry into all knowledge claims (Ziman,2001:31-46).

After several decades of academic research in architecture, the community of interest for this kind of architectural practice is still limited, and the interest of the traditional "building practitioners" for the results of the scholarly production is rather weak. Merton's "sub-tribe" of architectural academic researchers is mainly constituted by university teachers of theoretical subjects in architecture. The notion of communism with regard to architecture as a discipline is questionable because of the still lacking "critical mass" of those carrying out architectural research as an academic inquiry.

Universalism as another criterion for viability of an architectural or design discipline seems to be dependent on the verbal mode of communication of the research results. The language of publications produced by academic architectural researchers and accepted for dissemination by peer-reviewed academic journals is often highly esoteric, and therefore less accessible for practitioners of architecture, who most often express their work in non-verbal modes of communication. Another aspect of the language as a hindrance for universal communication can be that the majority of peer-reviewed research journals are published in English, which often constitutes yet another barrier

for the communication of more nuanced issues – even for those who master the esoteric language of academic architectural research in their mother tongue.
Disinterestedness seems to be a very difficult criterion to satisfy, even for the traditional academic disciplines (Ziman, 2001:156). "Nobody imagines that scientists are bloodless robots, indifferent to the reception of their research claims. They have the strongest possible interest in gaining public recognition of their discoveries" (Ziman,2001:159). But the "sub-tribe" of academic architectural researchers should be able, as well as are other researchers, to build a reputation for reliability where credibility is the prime personal asset of the individual researcher and of all of them as a collective body.

Originality is that criterion which seems to be most innate in an architectural or design discipline. As Gombrich and Abrams pointed out, there is a latent demand for supplementing the traditional perspectives on architecture and design, i.e. those "from outside", by a perspective "from within", the perspective of the practitioners themselves, the "craft" perspective. And this is in order to gain a more whole understanding of the object of joined studies, i.e. of architecture and design, both as products and processes.

Organised scepticism with regard to academic research in architecture seems to be in a process of "acculturation" in the architectural and design discourses. The growing number of research journals in architecture, the new demands of the Bologna process in higher education for developing more knowledge-intensive professional fields, are creating new opportunities for organised scepticism to evolve as a younger cousin of the professional criticism that constitutes the core of architectural practice and its tradition.

This brief glimpse at the five Mertonian criteria for academic viability of the evolving disciplines of architecture and design shows that there are some serious obstacles for establishing these disciplines, both with regard to the professions of architecture and design and to academia. On the other hand, some potentials of such development have also been observed. The professions do not seem to have any interest in the academisation of the professions. The academic "tribes" of the established disciplines might be interested in a perspective "from within" of the profession-based researchers, but they would demand stronger academic standards on the part of the architectural researchers in order to engage in a dialogue of equals. The architectural and design researchers are still a small academic community, still building a critical mass in order to survive as a new academic "sub-tribe", robust enough to win in a competition for research funding.

It seems that it is necessary to support the development of architecture and design as disciplines of their own and to be equipped for a qualified dialogue within academia, while at the same time, searching for new forms of architectural research which could more strongly engage the practitioners who have the strongest potential to develop their own field of expertise. While the former strategy would depend on developing

a discourse on the premises of academia in order to make the object of studies "academically researchable", the other one should generate a new mode of research based on the premises of the field of the expertise itself. Then another challenge within this strategy will be how to engage in a dialogue with other knowledge producers, those from academia and otherwise.
Basarab Nicolescu has formulated the three fundamental postulates that modern science was given to extend the quest for law and order on the plane of reason as: (i) that there exist universal laws, of a mathematical character; (ii) that these laws can be discovered by scientific experiment; and (iii) that such experiments can be perfectly replicated. In spite of an almost infinite diversity of methods, theories, and models that have run throughout the history of different scientific disciplines, the three methodological postulates of modern science have remained unchanged until our day. But only one science – physics – has entirely satisfied the three postulates, while the other scientific disciplines only partially live up to the three methodological postulates. In other words, there are degrees of disciplinarity, even in the traditional sciences (Nicolescu, 2002:9-10).

The philosophers of science like Ziman, Gibbons, Nowotny and others talk about the advent of post-academic science (Ziman, 2001:67): "…this term indicates continuity as well as difference. The continuity is so obvious that many people assume that nothing has really changed. Post-academic science was born historically of academic science, overlaps with it, preserves many of its features, performs much of the same functions, and is located in much the same social space – typically universities, research institutes and other knowledge-producing institutions." (Ziman, 2001:68). But although the academic and the post-academic sciences merge into one another, their cultural and epistemic differences are sufficiently important to justify the new name.

What the advent of post-academic science can mean for architectural and design research "from within" the practice and for its search for new modes of generating and communicating it within the context of an equal dialogue with other knowledge producers are interesting questions. Not least since one might imagine a fruitful development. Because when trying to grasp, explain and legitimise in a scientific context the way architectural practice generates knowledge, it becomes clear how immature our field is in relation to more traditional forms of research and other scientific disciplines. But during the last decade new means and tools have been developed to conceptualise and use the potential of design in knowledge production.

The concept of design as an approach, a way of thinking and managing the complex, transient situations of today has been stressed as a key factor in dealing with our contemporary post-industrial "world of flows", just as technology and science were in the industrial era. A world of flows favours those who are capable of seeing patterns among disparate things and underlying relationships between apparently unrelated functions – which is the trained capacity of the designer (Fisher, 2000:12). Also the

now widely discussed new form of knowledge production – called Mode 2 – opens for a search for knowledge through design. The main feature of the new mode is that it operates within a context of application where problems are not set within a traditional disciplinary framework – it is transdisciplinary rather than mono- or multi-disciplinary. The approach is to focus on and follow research problems as they emerge in contexts of application and where the heterogeneity of knowledge producers introduces additional criteria of assessment, apart from scientific quality. The process is dynamic, and consists in specific clusterings and configurations of knowledge brought together on a temporary basis according to the specific problem at hand and context of application. There is an orientation towards problem solving, but it involves the strong feature of an experimental, innovative attitude (Gibbons et al., 1994; Nowotny et al., 2001).

Bryan Lawson has argued that from this we should be encouraged to see that the bigger picture appears to be changing in our favour. The description of this new form of 'in practice model' of research, that according to Gibbons et al. has emerged and is becoming increasingly important, has great similarities with design. Lawson states that it is possible that we unknowingly "are just ahead of the game rather than behind it after all" (Lawson, 2002:114).

In 1997 Christopher Frayling led a group that presented the seminal report *Practice-Based Doctorates in the Creative and Performing Arts and Design*. Here it is argued that the development of research methods in the social sciences and humanities, as well as in the more eclectic approaches now adopted within traditional science, has led to a situation where a substantial amount of research, though not practice-based, does not conform to a narrow (and probably mythical) definition of a traditional 'scientific' model of research. It is no longer possible to polarise research efforts as either conforming or not conforming to the 'scientific method', which previously was the guarantor of 'real research'. "There is already a continuum from scientific research to creative practice" (Frayling et al., 1997:15).

Frayling and his group argue for a set of definitions of standards framed in such a way that they are sufficiently rigorous to secure the quality of research, but sufficiently inclusive to allow all subjects to find expression within them. This inclusive model would involve either demonstrating that the activities and outcomes could be seen as consistent with a traditional scientific model, or broadening the model so as to encompass the entire continuum from scientific to practice-based research. The creative process involved in practice-based research could then be seen as a form of research in its own right and, as such, equivalent to scientific research.

In the report three principles are delineated, that would be applicable to all research at the doctoral level: (i) the submitted work must make a recognisable contribution to knowledge and understanding in the field of study concerned; (ii) the research must demonstrate a critical knowledge of the research methods appropriate to the field of

study; and (iii) there is a submission – whatever its form – which is subject to an oral examination by appropriate assessors.
The above then involves mastery of the existing knowledge-base of the subject, a critical and analytical attitude towards it, an ability to apply it so new knowledge or understanding is generated, and an ability to communicate all this within the 'contribution' itself.

Lawson has made some valuable reflections that could be put in relation to this. He cites Bruce Archer's formulation "Research is systematic enquiry whose goal is communicable knowledge" (Archer, 1995) and also the definition of research used by the Higher Education Funding Council (HEFC): "Research is to be understood as original investigations undertaken in order to gain knowledge and understanding." He notes that while both Archer and HEFC refer to 'knowledge', HEFC also includes 'understanding' – which is also the case in Frayling's report – and that the phrase 'contribution to knowledge' is a good choice since it seems to carry less baggage than the word 'research'.

Some interesting reformulations have been done by Lawson concerning how we should assess research when we no longer can rely on a 'scientific method'. The central question is then: "To what extent has the work driven the field forward?" In other words, "how has the work contributed to what is considered good and useful knowledge by those working in the field?" (Lawson, 2002:110). He also argues that it would be very dangerous for anyone – even in a research assessment exercise – to be telling each field too specifically what it should regard as good knowledge. What has driven the field forward must be judged by those working in that field – a "from within" perspective is needed.

For some years now, the term transdisciplinarity has been spreading around the world, appearing in different discussions and places, and giving rise to new insight, conceptualisations and perplexity. At the heart of the transdisciplinary approach is a quest for a deeper understanding of our present world, and with a palpable direction towards the future. According to the theoretical physicist Basarab Nicolescu, the term transdisciplinarity first appeared three decades ago almost simultaneously in the works of such varied scholars as Jean Piaget, Edgar Morin, and Erich Jantsch. It was coined to give expression to a need to transgress disciplinary boundaries. Up until a few years ago, however, the term was virtually unknown, and it is still confused with two other relatively recent terms, multidisciplinarity and interdisciplinarity (Nicolescu, 2002).

The need for bridges between the different disciplines in science led to the emergence of the concepts of multidisciplinarity and interdisciplinarity around the middle of the twentieth century. There are some relationships and similarities between them, but some crucial differences between the two approaches also deserve attention.

Multidisciplinarity relates to studying a research topic not just "through the lenses" of one discipline but of several disciplines at the same time. Any topic in question will ultimately be enriched by incorporating the perspectives of several disciplines, and multidisciplinarity brings, thus, something extra to the discipline in question. But we must, according to Nicolescu, remember that this "extra" is always in the exclusive service of the home discipline. In other words, the multidisciplinary approach supersedes the disciplinary boundaries, while its goal remains limited to the academic framework of disciplinary research.

Interdisciplinarity has a different goal than multidisciplinarity. It concerns the transfer of methods from one discipline to another. Like multidisciplinarity, interdisciplinarity overrides the disciplines, but its goal still remains within the academic framework of disciplinary research, as is the case with multidisciplinarity.

In contrast, transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all disciplines. Its goal is the understanding of the present world. From the point of view of classical thought, transdisciplinarity appears absurd because it has no object. In contrast, within the framework of transdisciplinarity, classical thought does not appear absurd; it simply appears to have a restricted sphere of applicability (Nicolescu, 2002:44).

Disciplinary research concerns, at most, one level of reality – or, in most cases, only fragments of one level – but transdisciplinarity relates to the dynamics engendered by the action of several levels of reality at once. To see and make use of these dynamics, it is necessary to master disciplinary knowledge; transdisciplinarity is nourished by disciplinary research, and from this, disciplinary and transdisciplinary research should not be seen as antagonistic, but rather as complementary.

Just as there are degrees of disciplinarity, Nicolescu argues that transdisciplinary research generates different degrees of transdisciplinarity. Transdisciplinary research – which has the primary goal to understand present situations and solve life-world problems – will in some stages be closer to multidisciplinarity; research that corresponds to another degree will be closer to interdisciplinarity; and that corresponding to yet another degree will be closer to disciplinarity. "Disciplinarity, multidisciplinarity, interdisciplinarity, and transdisciplinarity are like four arrows shot from but a single bow: knowledge" (Nicolescu, 2002:46).

The descriptions of "a continuum from scientific research to creative practice" and transdisciplinarity in relation to disciplinarity all seem very interesting for a conceptual development of design and architectural research. Here there are possibilities for more equal dialogues with more traditional disciplines at the same time as the practice of design – the "craft aspect", the making – would be the point of departure. But how

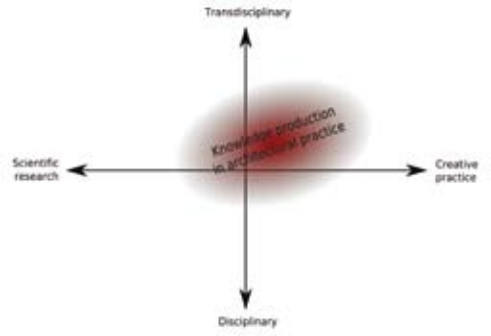
can we "map" the contributions to knowledge made by practice-based research? Where in the field of different forms of knowledge production can the specific knowledge generated in architectural practice be positioned and "mapped"?

Let us make a tentative exercise. If we place scientific research and creative practice as two poles of tension on a continuous horizontal axis, and disciplinary and transdisciplinary research as two poles of the vertical axis, we get a field or matrix in which we can position and "map" different research approaches. We would argue that research related to architectural practice moves in the area where creative practice and transdisciplinarity overlap, even though a lot of efforts are involved in more scientific and disciplinary approaches. In its relatively short history, architectural research has many times attempted to move the field towards the scientific and disciplinarity.

Knowledge production in the area around transdisciplinarity and creative practice has earlier been seen as completely outside of research and scholarship. During the last decade we have experienced an ongoing discussion, an interest even from the scientific world, that has made it possible to start conceptualising the knowledge field of design and architecture in new ways. A more inclusive model of scientific research is actually developing where more practice-based approaches are possible, and it is on the way to achieving academic recognition as well as gaining the vital interest of the practitioners.

But there are still important questions to be addressed, conceptual developments to be formulated, and arguments to be legitimised for the specific knowledge field of architecture and design. We must still find better ways to take care of and utilize the knowledge produced in architectural practice, as it constitutes the core of architectural knowledge. In any case, we are now better prepared to start exploring the present world with other methods, approaches and even 'hunches'.

Halina Dunin-Woyseth and Fredrik Nilsson



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Reflecting and Acting: reflecting on acting and acting on reflecting

I

In this volume, Adam Jakimowicz writes with great poetic intensity about the experience of being in reflection, of how it is, and where you are, when you do it.
In *Reflections + 3*, I also wrote about reflecting on reflecting (Glanville 2006).
My text was more prosaic. It arose from the strange circumstance that Adam and I were asked to run the very first seminar in the Research Training Seminar series on the theme of reflection, yet, since it was the first workshop and the participants were just beginning their journeys, there was no material to reflect on. All we could do, then, was to introduce the notion of reflection and use this introduction to reflection as the material on which to do what we were describing: we introduced reflection and we reflected on it. In this manner, reflection was treated as a reflexive, second order subject—both its self, and the subject of its investigations and explorations through reflection. Such circular, recursive systems that "apply themselves to themselves", are the subject matter of cybernetics.

This year we were invited to present our workshop on reflection much later in the sequence of seminars. The contradiction that made the workshop in 2006 seem absurd (but which also drove us to present reflection reflexively) was recognised by the participants and organisers, and we were invited to work with the new participants at a time when they were not absolutely new to the processes of research that are being explored and developed at Sint-Lucas.

But, as is so often the case, there were unforeseen side effects. I will point to two of them.

The first was that the richness of the concept of reflection as both something to talk about and something to do, and its recursive nature in reflecting on reflection, would no longer be central: reflection becomes more of a tool applied to other material than a subject examined within its own terms.

The second was that 2007's participants in the workshop, no longer being new to the processes of research, had a different, and impatient question. It is this question, the question of how to act, of finding a research theme, that we will come to consider in this short essay.

II

Reflective Practice is a term given by Donald Schön to describe how he learned to describe his understanding of the way that professionals proceed in their professional activity. Schön studied representatives from several professions (including architecture and psychotherapy) and concluded that they way in which they maintained and developed their professional competence was through the central act of reflection.

Here is Schön describing the key actions he has observed in professionals, especially architects, in his 1983 book, "The Reflective Practitioner":

> *The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation. (Schön 1983.)*

Reflection, which we might think of as a way of "being-in-thinking" is, in Schön's use, a way of generating action—the experiment "to generate both a new understanding … and a change in the situation". The intention he attributes to reflection is that the practitioner should catch his practice and expertise so as to value it and amplify it (improve on the practice). To reflect is not to dream gently, but to act through a form of deep, possibly meditative self-criticism.

Here, by way of elucidation, is the second definition from the Oxford Dictionary of the American Language that comes with Apple's Tiger O.S. 10.4:

> **2** serious thought or consideration: *he doesn't get much time for reflection*
> • an idea about something, esp. one that is written down or expressed : *reflections on human destiny and art*.

Perhaps this is a difficult concept? Perhaps the overtones of the term reflection, its use in context, have become tied up in dreamy interpretation—for the group of participants in the 2007 workshop were concerned that they didn't have anything to work on as their research theme, that they needed to find such a theme or project: and it seemed that they did not envision our workshop on reflection as providing this. They did not imagine the connection between reflection and action.

Thus, our workshop acquired, at the last minute, a secondary theme. As well as reflection, we undertook to help with explicit moves towards action. And, even though I would argue that reflection is a type of action and that it should lead to action, it seemed that this view is far from obvious.

III

In a recent Hewlett Packard advertisement, Samuel Johnson, the great dictionarist, is quoted as follows:

> *Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it.*

For some time I have also argued that there are distinct types of (research) knowledge, two of which I distinguish and contrast as "knowledge of" (what is) and "knowledge for" (action).

Knowledge of (the world as it is) is the province of, for instance, science. Designers, in contrast, are interested in changing the world rather than in the world as found: they are interested in what might be and in how to bring that about. In contrast to the scientist, they are interested in what is not (yet). (Glanville 2007) Thus, the shape of knowledge (whether of or for) is a matter of purpose (it is cybernetic): knowledge is neither fixed nor untouched by intention.

Making such a distinction between kinds of knowledge (or, better, knowing) is scarcely original. Scholars have, for millennia, distinguished different types of knowledge that serve different intentions. Here, for instance, is the doyen of design theorists, Nigel Cross, writing with Naughton and Walker in 1981:

> *In his book "The Concept of Mind", Ryle (1949) offered a useful distinction between two categories of knowledge: knowing how and knowing that. The philosophical tradition behind this distinction stretches back a long way. For our purposes it surfaces in English philosophy in Russell's (1910) distinction between "knowledge by acquaintance and knowledge by description".*

Others, such as Michael Polyani (1967), have written about tacit knowledge, a type of knowledge that we hold, almost unknowingly, that allows us to perform tasks, and which may be making a come back today under the name of embodied knowledge. Polyani follows in a tradition that (of course) we can chase back to the Ancient Greeks and Aristotle. Aristotle talked of types of intelligence that help us understand and act in different ways, including the intelligence that is to be found in the hands of specially gifted practitioners (an early precursor of Polyani's tacit knowledge).

Even Herbert Simon, whose work, I fear, may have done more damage to our understanding of design than anyone else's in recent times, wrote (Simon 1969) of two categories of learning, that concerned with "what is" and that concerned with "what might be", identifying the first with (the type of knowledge associated with) science, the second with (the type of knowledge associated with) design.

Of course, there are differences in these characterisations. Mine is merely the latest in the line, but I like it because it is simple and to the point, at least in English. Prepositions are magical![1]

The point is that we have known of different types of knowledge intended to fit different purposes for a long time, but seem recently to have almost forgotten this, so powerfully do we support (my) knowledge of. And, for designers, the type of knowledge we seek is not knowledge of what is, but knowledge for action.

IV

What are we trying to do in the RTS programme?

The point of the RTS programme is, in the end, to help designers (learn how to) improve their ability to act—as designers. Our part is to introduce the notion of reflection, and the thinking that goes with it: not as a briefing, but as a way of acting. Gerard de Zeeuw, another contributor to the RTS programme, has worked on action and its importance for more than the 30 years we have known each other, and I mainly owe to him my slowly developing understanding of action, and how special and yet how critical it is.

I maintain that, because it is "knowledge for" which is the knowledge designers seek and use, and because so much of (design) research is interested in producing "knowledge of", much of the knowledge that derives from research turns out to be so singularly unusable by and unfriendly towards architects, who, when forced to use it, produce such poor outcomes. Knowledge for is not much studied, and has been left relatively underdeveloped. There is a need to develop it as a field of study in its own right.

But, by definition, this knowledge does not generally come from an approach derived from science—or, at least, science as it has come to be understood since the Enlightenment. It comes mainly from elsewhere, from different approaches, some of which may be very old.

I maintain reflection is one of these. The cybernetic act of reflection leads us to understand our work in manners that suggest ways forward (amongst other things). When done well, and in accord with Schön's description, reflection is itself both an action, and leads to action (it is second-order): and that action is both based in and a basis for designerly research. The knowledge reflection generates is not knowledge of, but knowledge for.

So that, while we did show some of the participants how they had created knowledge for (how there might be research actions in the outcomes of their reflections so far), that

was part of the reflection (the act of reflection); it was a reflection on their reflections, and takes us back to the recursiveness of our first session in 2006.
Thus: what I have written above, and the activities it describes, are a kind of reflection, showing what I claimed earlier: "reflection is a type of action … that … should lead to action."

And, for the participants, although we did indeed intervene to help them find themes, the practise of reflection, properly undertaken in accordance with Schön's description, will lead to the discovery of paths of action, anyhow.

Ranulph Glanville

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(Endnotes)
1 Changes in preposition, such as Frayling's (1993) research through design, research in design and research by design, or my distinction between types of cybernetics through whether the observer is an observer of, or an observer in the system (Glanville 2005), are currently in vogue.

Reflection within and not

…between you and me…

I am entering the moment of emptiness, of silence, of asking myself questions which are about what my knowing is and what is within it. Searching for the pattern, even singular (possibly repeatable), by which I could begin an essential conversation within, which could eventually go outside to involve others' themes, influence them or to be influenced, informed. This is the 'stretched' moment of getting open, when the eyes are able to get views which are beyond sight, and at the same time cutting off all the irrelevant flows.

To get open this way is to go beyond the fear of sharing and showing the momentary truth. The fear of being judged within or from the outside. The risk is multifold – it involves uncertainty, confusion, unwanted silence (of not-knowing, of going wrong, going backwards). The issue then, not pretending to know the way, is to start
- the monologue,
- the dialog,
- the 'multilog'

and carefully play with the possibilities which appear. Proceeding the conversation patiently, catching the signs, noting how you transform them into meanings, accepting or rejecting, listening, trying to describe the process and mutually grasping its content, you somehow locate yourself on the stage, which you construct yourself.
It will be your world.
It cannot be done easily as it is not a mere playground, although it involves playing. Quite delicate when initially constructed, will always behave the way you do (think, choose, design, make, decide). Distinct, recognizable, named. However, it will involve a paradox, a contradiction, which probably will never be solved. Well, to have it and to be there you need:
- to be within (to experience) and
- to be without (to control).

This process is a snake eating its tale. It is a Mobius strip. It is a pyramid.

Let me think of pyramid. Let me recall the pyramid metaphors. Let me convince you to imagine this: it is both the frame and the content. It is one of very few constructs, whose name indicates directly its nature. Outside: the pyramid, inside: the labyrinth. To have a view of the frame you must be outside. To experience it, you must be inside. So when you really experience the content – is it yet possible to be outside? On the one hand you can quickly say which follows which, but you'll never be sure if your choice is absolute – the real answer can be the structure you create.
On the other – this paradox can be called madness – but please be careful – it happens only when both the frame and the content are taken and perceived on the same level (then the cloud of seeming disorder covers a very precise order, which is unrelated, not referenced and self-internalised, a constant interpretation of received data, without evaluation).

This infinite richness and uncertainty may repeatedly bring you back to the points which you met or did before, but each time is different, you are different, as well as the stage you build, and maybe the pyramid will show you another trace in the labyrinth. With your eyes more widely open you notice more. You are able to note more and name it.

Silence again – by accident or by choice, the only way is to listen – to search again.
Re-search. Going there again, doing it again, but always on a new level.
Facing and interpreting the signs which are imposed or chosen, you continuously complete the stage. Design your repeated search by
- listening and telling,
- taking and sharing,
- learning and giving name,
- questioning and answering
- creating maps (even of what does not exist yet),
evaluating the ways and points which these ways connect.

So creation by repeated and evaluated searching also involves destabilization of structures, which seemed to be stable and solid. It is some kind of destruction, but to the extent, which allows that the pieces of the old destructed whole can be re-united into a new being – recognizable, readable, disputable, interpretable. A being that builds and tells: a new pyramid or at least new labyrinth within the existing one.

Now: can you see the circles? …the cycles ruled by strange attractors of interest, inner or outer musts, passion, the awareness of lack and the need for completeness? …and guided by the knowledge being developed (emerging) from the continuous searches and findings. They always are your discoveries, and sometimes – your inventions.

The cycles close at the moments of your self-actualisation, mediated by sharing. Then the labyrinth encloses within a frame, you are able to put it in context and you name it. You are outside to reflect on the process which made it possible. You easily go in to explain each trace.

Adam Jakimowicz

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The RTS Session on Design Cognition

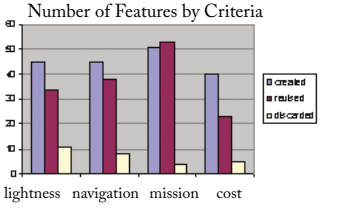
A few years ago, the College of Architecture in Sint-Lucas Brussels instituted the "RTS Sessions" which may yet prove to be one of the most strategic approaches to innovating in the area of design research. These sessions involve the infusion of expert knowledge into its intellectual milieu than can potentially provide sufficient foundation for sound and fruitful investigation of the state of the art in the given area of design expertise.

The motivation for this initiative stems from a diverse set of constituents. Those who study in design fields, including faculty, staff, and students of architecture, graphic design, and industrial design are principal instigators. They are the true producers and consumers in the knowledge exchange enabled by the RTS Sessions. They are the prime candidates for engaging in and benefiting from the novel investigations of the field of design.

The administrative staff of the College of Architecture in Sint-Lucas in Brussels deserves the credit for "inventing" and organizing this novel approach to jump starting credible inquiry into design. Clearly they stand to benefit from it because of the incubation of new research venues into design. Lastly, those who create and deliver the RTS session in designated areas of expert knowledge draw benefits customary in cases of knowledge dissemination, namely honing one's skills and knowledge of research and deliberation.

I was fortunate enough to be involved in the RTS Sessions, as an instructor, along with Burak Pak, during August 2007. The session was intended to cover "design cognition" as the specific area of expertise.

We asked all participants to complete a design charrette before they arrived at the sessions. The design problem was deliberately chosen in an area unfamiliar to the participants: a robotic moon rover to explore the poles of the moon as part of a space shuttle mission of NASA (National Aeronautics and Space Administration) in the USA. The design process of each participant was recorded using periodically refreshed design media (sheets of paper in this case) and reported to the group by the authors themselves. In order to demonstrate to the group one of the time honored ways of researching in design cognition: namely protocol analysis, these records obtained during the charrette were analyzed during the Session. The results confirm some of the reliable findings of previous research done in the area: that experienced designers generate many design alternatives and features, seemingly unwarranted by the problem (figure); that they revise more frequently for those criteria central to their area of knowledge; and that the frequency of use of words vs. measured drawings are inversely correlated.



The true accomplishment of the Sint-Lucas RTS Sessions is neither in these findings nor in the generalized design cognition knowledge disseminated to the participants. The real accomplishment is in the promise of redefining design research through the discourse and dialogue generated in these sessions. In the 1960s, design research was framed as the science of design (Simon, H, "The Sciences of the Artificial," 1969) and the psychology of design (Akin, "The Psychology of Design," 1986). Today we are asking if the act of design itself should be considered research. Today, these approaches invite a shift of paradigms in design research, by redefining its methods, premises, and findings.

In my book entitled A Cartesian Approach to Design Rationality (Akin, 2006, pp. 75-77), I described this potential in the following way:

"The sciences are engaged in their quests with a sense of ingenuity and courage, bordering on audacity. They assume that the truths underlying nature can be discovered. All of the difficulties [of this challenge] have not deterred scientists from pursuing this quest. If anything, both the energy and the results of scientific research have intensified. The one characteristic of this search, which remains unblemished by the intellectual skirmishes of the past, is the absolute rigor that must be applied to testing assumptions and hypotheses before they are admitted into the company of accepted theories.

In examining the field of architecture and its practices, we find approaches which are both sympathetic and in opposition to this position." "First of all, architecture is an interdisciplinary field of practice, which includes the results of many disciplines of the natural sciences. In determining the integrity of architectural structures, for instance, the law of gravitation and its effect on the equilibrium of building materials brings into consideration theorems from the area of building physics. In determining the thermal comfort of occupants in buildings, practices based on laws of thermodynamics are indispensable.

Furthermore, there are areas of application in architecture, particularly in decision-making during design, construction, and operation of buildings, which employ concepts and methods of the information sciences. This includes techniques of Operations Research from mathematics, computer graphics from the field of computer science, and systems analysis from the field of management sciences. It is in this latter domain that architectural design becomes, at least, a potential contributor to the growing corpus of knowledge, rather than remaining a mere consumer.

In pursuing these ends, the field of architecture displays some similarities to the natural sciences. First, the principal pursuit of architects is that of creating new designs. These designs, in addition to responding to the behaviors of physical contexts and occupants also have to respond through stylistic expression to the psychological needs of both occupants and designers. These stylistic choices become

fashionable for architects' practice in cycles very much like the paradigm shifts that have been described by Kuhn (The Structure of Scientific Revolutions," 1972).

Second, architects are motivated to find tools that are as robust as those in the natural sciences for accurate explanation and prediction of behavior of buildings, whether these are manifested in occupants or natural materials and elements. Finally, architects are direct users of the sophisticated tools and technologies developed for the sciences in order to reach these ends. All of these factors indicate an ongoing if not a mutually beneficial relationship between architecture and natural sciences.

At the same time, there are forces that push the natural sciences and architecture apart. First, the fundamental posture of the architects, in practicing their 'trade,' is one of advocacy as opposed to the skepticism of the scientist. When the architect proposes a 'correct' solution to a given problem, at best she is looking for a good enough solution. Consequently, the motivation is to defend this position and persuade others to accept its merits. Before reaching this point of advocacy the architect of record has to consider alternative solutions as well as weaknesses of these alternatives. But the fundamental posture still remains as one of advocating a solution.

Given the constraints of time and cost, it is not feasible to search for the absolute "best." A 'satisficing' solution is often selected by the architect; whereas, the scientist cannot remain content with such a solution. She is fundamentally skeptical of any solution until there is absolute assurance that all degrees of skepticism are completely eradicated. A similar distinction exists in the object of the architect's search as opposed to that of the scientist. The scientist is ultimately interested in knowing what is, while the architect is interested in what ought to be.

Another distinction is the public nature of the context of the architect's solution. As opposed to the selective audience of the scientist, architects' solutions are intended for the general public or at best a small group of individuals, particularly in the case of residential design. This places rather different sets of constraints on the architectural problem [from the sciences]."

The most worthwhile debate that I expect to come out of the Sint-Lucas Sessions is the one about the nature of design as research, and how closely this will resemble the characteristics of scientific research.

Omer Akin

The Cognitive Diary: What did I learn as a co-tutor?

As a young researcher, I have been fortunate enough to be invited to assist Professor Omer Akin during the research and training sessions organized by Sint-Lucas School of Architecture in 2007. I want to share my own experiences in this essay, as a small addition to Prof. Akin's eloquent narrative.

The subject of our research and training session was "Design Cognition". There were 13 attendants from different disciplines: architects, urban planners, a civil engineer and a communication scientist.

Following the introductory presentation by Prof. Akin, we discussed research findings on expert and novice architects. We learned that more experienced architects use different strategies compared with novice designers or non-architects. As expertise is a function of domain knowledge, questions started to come up:

What are the types of design knowledge?
What types of strategies and reasoning do we use during the design process?
What are the properties of a design problem?
How do we (re)structure a design problem?
How do we learn to design?

During the first lecture, we attempted to advance a "multi-hatted" way of thinking. We were both designers and researchers at the same time, questioning everything we have ever thought about the design process.

We re-realized that we regularly perform a large number of activities like riding a bicycle, reading a poem or drawing a sketch, but that we do not understand how hard it is to define the dimensions of the required knowledge or the variables involved in them. Without a doubt, architectural design is definitely one those complicated activities.

At the end of the lecture we noted that architectural design is a complex process in which the designers generate and represent ideas, make decisions and solve problems. In contrast to the performance of puzzle-type problem solving activities, a designer rarely identifies all the alternative solutions to the task at the same time. Moreover, the initial state and the goal state are not clearly defined and there is no criterion for knowing when the problem is solved. So, if we want to understand, predict and develop the design process, we need to perform serious studies using appropriate methodologies.

The next day, the attendants made short presentations about their research intentions and previous studies. Altogether, the group covered a wide range of research areas.

We discussed the topics in depth and Prof. Akin gave valuable suggestions on how to narrow the research question and how to keep our research focused. Later, Prof. Akin gave a short lecture on how to research complex problem solving situations and introduced us to different paradigms in design science.

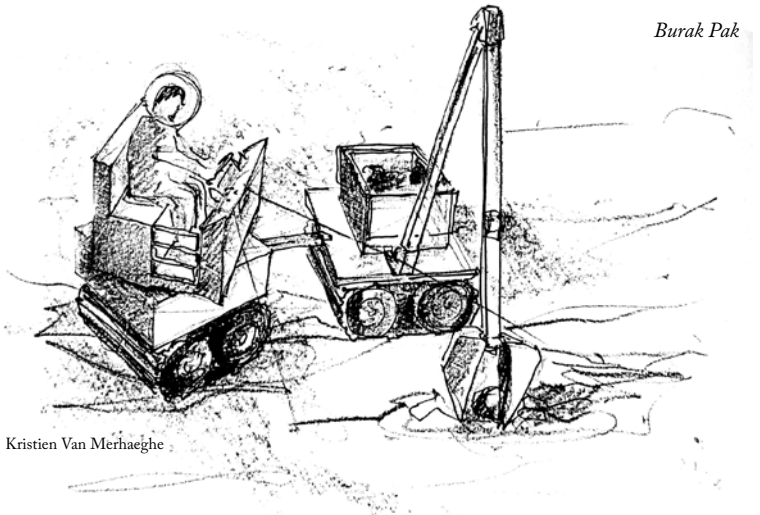
On the last day of the session, we reviewed the analysis results of the design charrette. As Prof. Akin has reported these results in his narrative, I do not want to go over them again in this essay.

Taking everything into account, the research and training sessions provided an excellent medium through which novel approaches could be discussed, evaluated and developed for further use in practice. Addressing a broad range of views on design research, the sessions allowed the participants to develop and frame new research questions.

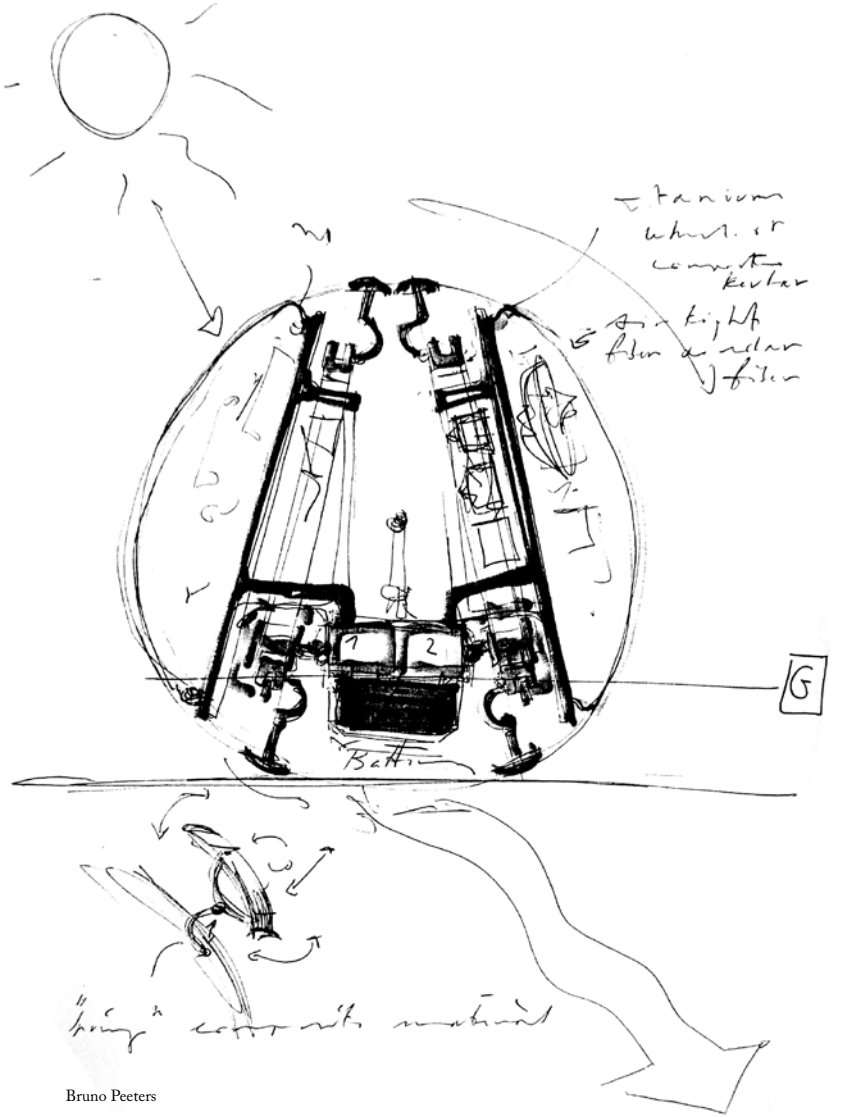
In a world dominated by information and communication technologies, research and innovation is becoming more and more crucial in all disciplines. Besides being an acknowledged institution in architectural design education, I am certain that Sint-Lucas School of Architecture is ready to take the lead in architectural design research and innovation.

Finally, I would like to express my gratitude to the organization committee and administrative staff for arranging such a valuable event. The research and training sessions instituted by Sint-Lucas are exceptional for their harmonious mix of different approaches and they represent an ideal model of supporting research and innovation for other schools of architecture.

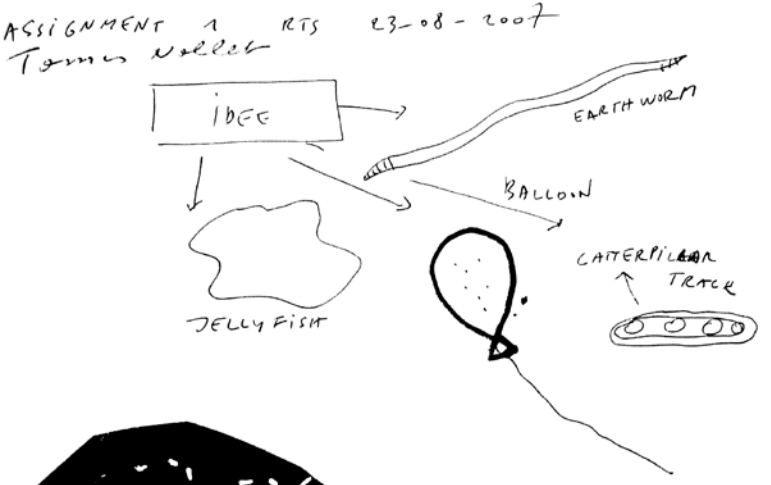
Burak Pak

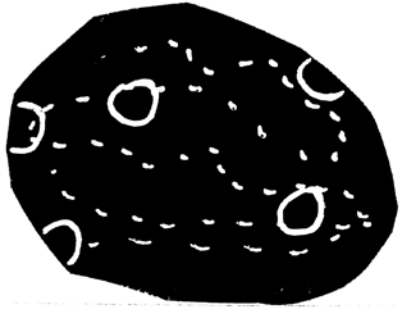


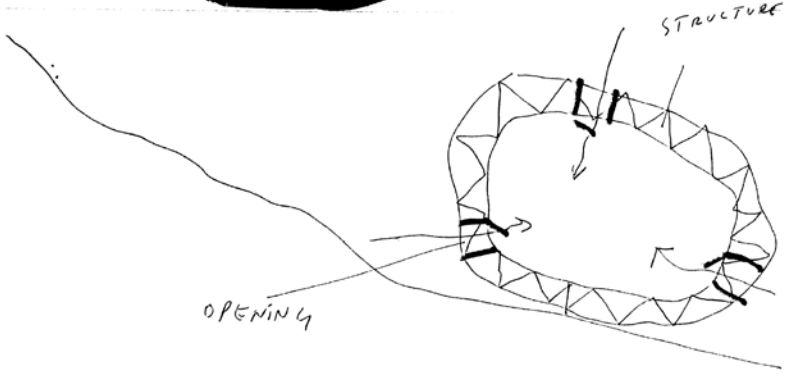
Kristien Van Merhaeghe



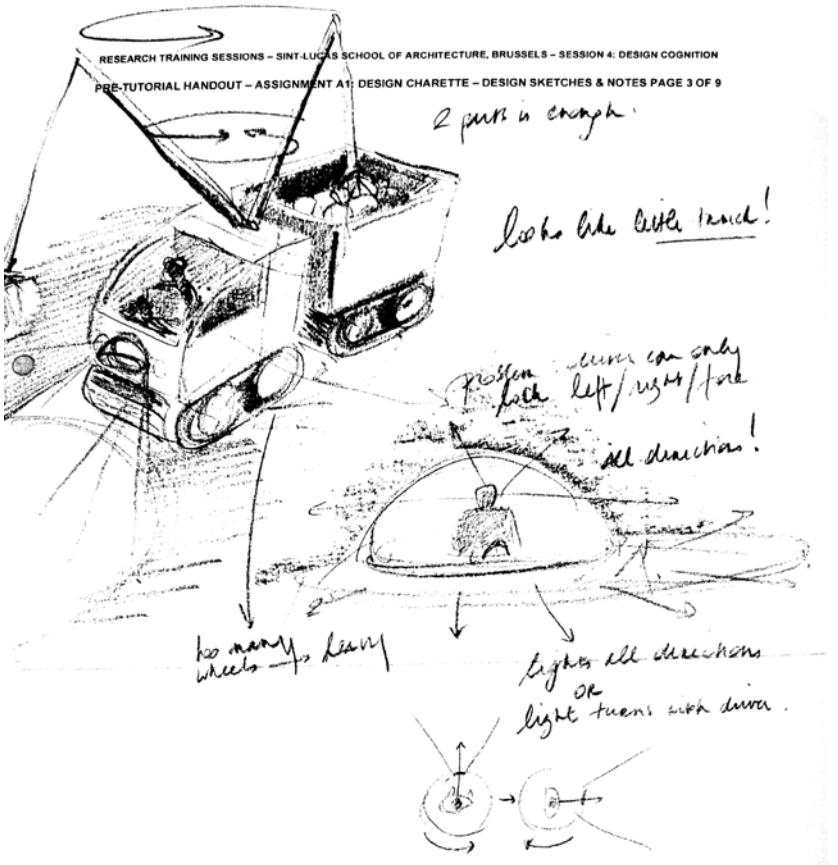
Bruno Peeters



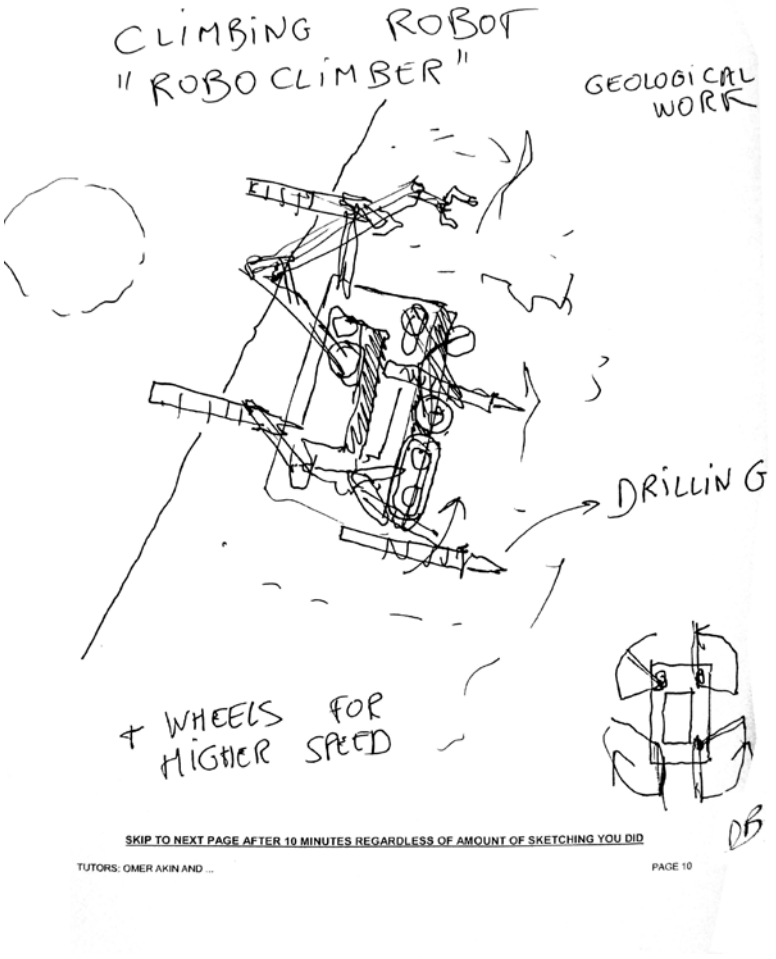




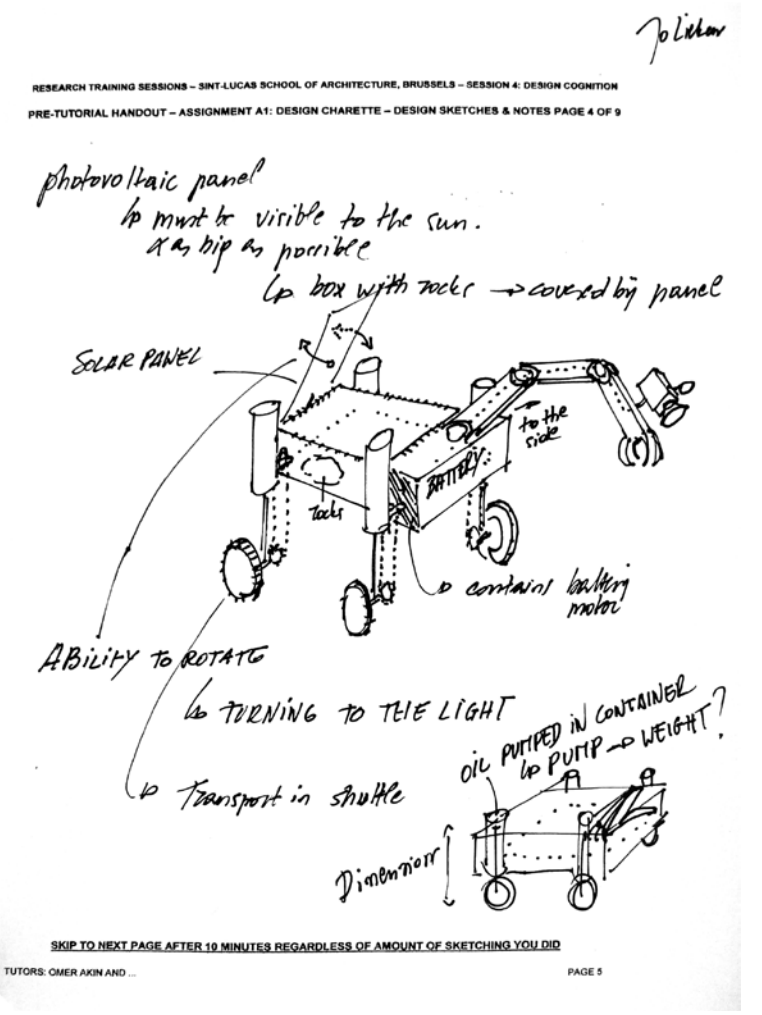
Tomas Nollet



Kristien Van Merhaeghe



Dag Boutsen



Johan Liekens

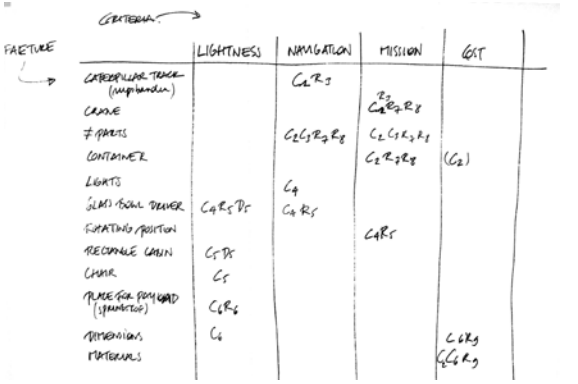
FEATURES V / CRITERIA >	lightness	navigation	mission	cost
Transport to Moon	C1-C2-D1		R-9	C1-C2-C8-R8
Movability-all-terrain	C2-D2	C3	C3-R4-R5	
Independent Hybrid Energy Consumption-Generation	C2-C5	C3	R7	D8-R8
Research Performance / Utility Platform	C3-C4		R5-R6-R7	C8
Endurance	C5	C3	C5	C5-C8-R9
Materials	C4-C7		C7	C7-C8-R8

Bruno Peeters - analysis

FEATURES	lightness	navigation	mission	cost
Solar energy	C1			C1
solar power satellite	C1			C1
light materials	C2			C2
landing	C2			C2
slope-wheels		C3, D4		
dance - turning system		C4		
unfolding system	C5			
overturning system		C6, D7		
climbing system		C7	C7	
grips		C7	C7	
mapping system		C8	C8	
sensors		C8	C8	
drilling mechanism			C9	
roboclimber			C9	

created
revised
discarted

Dag Boutsen - analysis



Kristien Van Merhaeghe - analysis

Features / Criteria	Lightness	Navigation	Mission	Cost
gravity propulsion	$C_1 R_3 D_4$	$C_1 R_3 D_4$	$C_1 R_3 D_4$	$C_1 R_3 D_4$
Solar Panels	$C_1 R_{2,3,9}$			$C_1 R_{2,3}$
Batteries	$C_1 R_2 D_3$			$C_1 R_2 D_3$
Retrieving samples from Moon to O.U.	$C_3 R_{5,7,8,9}$		$C_3 R_{5,7,8,9}$	$C_3 R_{5,7,8,9}$
Mirror → moon	$C_3 R_9$	$C_3 R_9$	$C_3 R_9$	$C_3 R_9$
Rover eye		$C_4 R_{7,9}$	$C_4 R_{7,9}$	
O.U. eye		$C_4 R_9$	$C_4 R_9$	
decision making (CPU)		$C_4 R_9$	$C_4 R_9$	$C_4 R_9$
O.U. + R (basket)	$C_4 R_{5,6,7,9}$	$C_4 R_{5,6,7,9}$	$C_4 R_{5,6,7,9}$	$C_4 R_{5,6,7,9}$
Anchor		$C_5 R_{8,9}$	$C_5 R_{8,9}$	$C_5 R_{8,9}$
Retrieving arm			$C_5 R_{6,7,9}$	$C_5 R_{6,7,9}$
closing basket	$C_7 R_8$		$C_7 R_8$	$C_7 R_8$

Laurens Luyten - analysis

contributions

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Abstract : phobic spaces – fear as a creative factor

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Paper - gathered thoughts - June 17th 2007

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Opening up, consolidating, thinking about the next step…The KILL SPACE project researches by design what is needed to transmit a direct and energetic, precise and yet open experience of the conceptual space that exists inside a three-fold body of work (conceptual, experimental en pedagogical) and to what degree physical space is needed in the process of its transmission.

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This article is a translated and revised version of the article 'Van ontwerpmatig denken naar onderzoek' by Charlotte Geldof and Nel Janssens, first published in ACHTERGROND 03, Architect/ontwerper/onderzoeker? Casus: Mare Meum, toepassingen op de zee. Publisher: The Flemish Architecture Institute (VAI) (www.vai.be), Antwerpen, 2007, p 11-19.

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Concepts for architecture. Dialectic of matrices, texts and the x-factor. PhD proposal / doctoraatsvoorstel

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"Messing With Media" situating an enquiry into the blending of different modes of media

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Hybrid Urbanity, A design research into new configurations of open space in hybrid urban areas – research proposal

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RTS-sessies & de Academisering van het architectuuronderwijs – enkele bedenkingen – deel II. Mijn bijdrage tot deze bundel is niet zo zeer een concreet voorstel voor een onderzoek maar eerder een persoonlijke, (kritische) reflectie over de 'doctoraatsopleiding' RTS 1+2

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"Participation"…pardon my French! - some thoughts

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A reflection for a better integration of technology in the design process

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Interactive architectural Design, Paper for a three-day conference on the theme "The Virtual interaction". Date: September 20-22, 2007. Location: Almåsa conference center near Stockholm, Sweden. Organised by the research programme Man Medium Machine [M3] and the School of Communication, Technology & Design at Södertörn University College
http://m3.sh.se/

Sanne Jansen - sannejanse@gmail.com
/ KHLIM – Media & Design Academy
'Designing design research' is a reflection of the Research Training Sessions. Different visions of (design) research are placed side by side to combat a mystification of both science and design. A more nuanced vision of both disciplines can clarify the debate on design research

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Dit artikel focust op de tendens waarbij de architect-ontwerper steeds minder bij machte lijkt te zijn om bouwtechnische aspecten te integreren in zijn ontwerpproces: de architect is niet langer meester over het volledige ontwerpproces, maar laat het technisch gedeelte van het bouwen vaker over aan de expert

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Research as an alibi for unbridled travelling.
What follows is a brief review of personal headlines, noted in the course of one year of Research Training Sessions

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De implementatie van 3D-GIS ter bevordering van ruimtelijke kwaliteit in stedelijk beleid" is een doctoraatsonderzoek in samenwerking tussen de Stad Gent, de Universiteit Gent en de Hogeschool Wetenschap en Kunst

Marjan Michels – marjan.michels@architectuur.sintlucas.wenk.be
Architect / atelierdocent departement architectuur Sint-Lucas, afdeling interieurarchitectuur
Studenten leren ontwerpen is boeiend maar hoe doe je dit optimaal? Kan je wat Schoonheid is overbrengen, in woorden vatten? Deze bijdrage belicht heel wat vragen en bedenkingen als een start om tot een concrete vraagstelling te komen binnen een onderzoek

Tomas Nollet - tomas.nollet@architectuur.sintlcas.wenk.be
Architect, zaakvoerder Tomas Nollet en Hilde Huyghe architecten, auteur en illustrator van kinderboeken / atelierdocent en onderzoeker departement architectuur Sint-Lucas
Design Processes. Between Brief and Building - Case Study: Terraced Houses. Research proposal, December 2007

Bruno Peeters - bruno@exoot.be / bruno.peeters@k.u-tokyo.ac.jp
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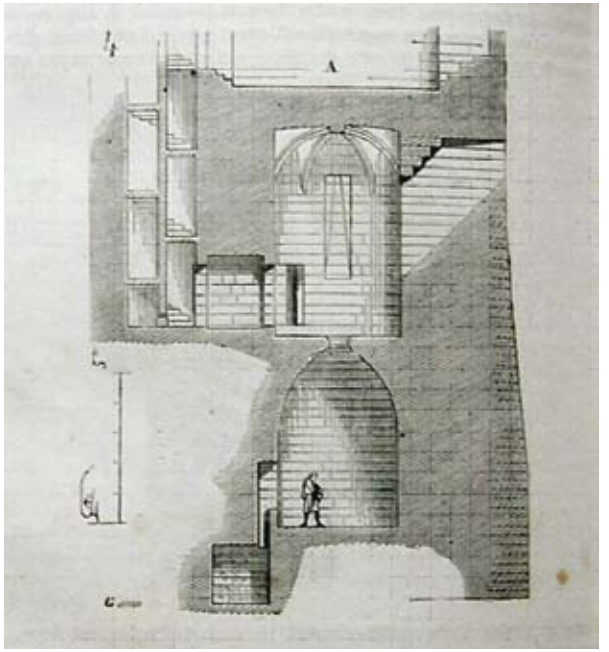
'Sprawl Revisited'. The current abstract outlines the context of an ongoing research project aimed at developing aleternative urban planning strategies for the Belgian urban fringe, inspired by the Japanese practice of urban planning

Jo Van Den Berghe - ship@jovandenberghe.be
Architect y.e.AH!-architecten bvba / atelierdocent en onderzoeker Departement Architectuur Sint-Lucas
'State of Mind of a Practitioner becoming a Reflective Practitioner turning into a Researcher: a stream of consciousness'

Participants RTS 1



Dictionnaire raisonné de l'architecture française du XI^e au XVI^e siècle, Viollet-le-Duc, (1854–1868), *'oubliette'*

PHOBIC SPACES: an abstract
Fear as a creative factor in the design process

"Life and death are just things you do when you're bored
Say fear's a man's best friend " - John Cale, 1974

Introduction

Can fear be a creative factor in the design process? Psychology has described 'spatial diseases' such as fear of certain situations / sounds / mirrors / depths / heights / speed / gravity / open spaces / sunlight / small spaces / walking / sounds / vertigo. It has even managed to prescribe strategies for eliminating them. It is remarkable to see that the objects of these phobias touch upon some of the essential ingredients of architecture – light, depth, open spaces, public space,….

Although this is the case, and although architects ought to be the specialists of space, architecture seems to leave the field of space related diseases to other disciplines. So can an investigation into phobic spaces offer new insights into the discipline of architecture? What is the implicit link between architecture and these space related diseases? Is it possible to create / transform spaces into phobic spaces and, more importantly, how can this investigation enhance the quality of the space?

The experiencing of architecture leads to a complex set of paradoxical sensations: wonder and amazement, comfort and joy, but at the same time a certain tension, perhaps even a certain terror. In a way, the word 'terrific' is the most apt description of this paradox. It has a double meaning, incorporating two states of being into one concept - a state of astonishment, but at the same time a state of fear.
In other words, architecture incorporates these paradoxical qualities – a sense wonder and of fear – into a single discipline. What I want to achieve in my research project is the recognition of the sinister and fearsome side of architecture, lying dormant in our imagination and the world of phobias.

Structure:
1Starting with Jenner
2 Pre-architectural state of mind: origin of phobia?
3 Psychology — Body of knowledge
Origins of phobia
Specific treatment of phobias
Specific implications for human behaviour
4 Relevance for architecture
5 Aim of the doctoral thesis
6 Proposed timing and planning

1 Edward Jenner (17 May 1749 – 26 January 1823)

The revolutionary findings of the English country doctor **Edward Jenner** have always fascinated me: the injection of a weaker virus into a body provides immunity against a stronger virus. "*On May 14, 1796, Jenner tested his theory by inoculating James Phipps, a young boy, with material from the cowpox blisters of the hand of Sarah Nelmes, a milkmaid who had caught cowpox from a cow called Blossom.*"
Jenner's inoculation procedure produced immunity to the pox virus in Phipps. In a way, we can say that an object of fear was injected into man's veins. Luckily, it proved to be a most suitable means of fighting the object of this fear. Can we learn from Jenner's finding? **Can we inject fear as a creative factor into the body of architecture?**

2 Pre-architectural state of mind (1975- 1994) versus post-architectural state of mind (1994– 2007)**: personal context and origin of phobia**

In my opinion, the body of architectural practice is not the only point of reference in starting a research project dealing with phobic spaces.
For me as an individual person, doing research means retracing the body of **32 years of experience and existence.** Within this period of time I can distinguish a pre-architectural state of mind – the time before studying architecture – and the post-architectural state of mind, which could be called the period of "objectivity", of getting slowly acquainted with the basics of architecture, of detaching oneself from the pre-architectural state of mind.
Are the origins of spatial thinking directly linked to studying and making architecture? Or is there a more fundamental knowledge or experience obtained before studying or practising architecture?

What I would like to achieve with design through research, is to find out what my **key spaces or places are that I believe were decisive in the pre-architectural state of mind**, and then to redesign them, to implement them into daily design practice, and to learn from them. Understanding and implementing the characteristics of these spaces will enable me to fathom the importance of phobic spaces.

3 Context of knowledge: psychology

As stated above, the science of psychology has already described the 'phobias', which are irrational fears. What follows is a small list I picked up from Wikipedia[1]: fear of certain situations / sounds / mirrors / depths / heights / speed / gravity / open spaces / sunlight / small spaces / walking / sounds. This selection reveals the strong inherent link to space and the way we perceive space. One could even argue that the qualifications of architectonic spaces are in fact strongly connected with these phobias. From the psychologist's point of view, we can speak of **phobias or, more specifically, space-related diseases.**

3.1 **Origin of phobias**
Phobias can develop through subjective association after a traumatizing experience. This association is an improper connection: it usually generates a distorted relationship between an event/space/object and the subject. Especially when the subject starts to show signs of **avoidance behaviour** towards certain spaces, the intensity of the phobia increases.

3.2 **Specific treatment of phobias**
But as phobia is a learned response in certain situations, it can be un-learned, as well.
The **treatment** of phobias is described by many psychology practitioners: a traditional treatment usually involves taking medication combined with **confrontation therapy**.

4 Architectural relevance of phobia: phobic spaces

4.1 **Specific implications for space: parallels between space and psychology**
The central theme regarding phobias in psychology is (the lack of) **control of the mind and of situations**. The question here is whether the concept of **phobic spaces** can be useful for developing a deeper understanding of architecture. Does a certain type of architecture consciously embody a **power** (political, economic, etc.) to control movement, mind and thought?
If we assume typical phobic spaces exist, are they, like phobias, exclusively mental constructions or are they physical, measurable and reproducible? Can we thus use fear as a creative factor in the daily architectural practice?

4.2 **Provocative function**
Themes such as height and sunlight are essential for understanding architectural wonders such as medieval gothic architecture. The considerable ceiling height of the Notre Dame in Paris and the influx of light perplexes many still today. Did the building master deliberately exaggerate the dimensions in order to provoke a reaction?

4.3 **Sense of wonder**
There is a quality in some architectonic spaces that is hard to describe in words or even images: "l'espace indicible". Maybe the amount of phobic content partly explains the sense of wonder an architectonic space can provoke.

4.4 **Importance of interior architecture**
Arguably, the only space that serves as a refuge for somebody phobic is the realm of privacy. In public social spaces we see it is easier to pick up a phobia! By studying phobic spaces, one can characterize, for instance, the differences between interior architecture and architecture in general, or between public and private spaces.

4.5 **Therapeutic qualities of phobic spaces**
In order to prevent certain kinds of phobias, one can contemplate producing specific design guidelines. Can a regular guided visit to a purposefully and specifically designed space – with for instance certain ceiling heights – help a subject to fight fear of claustrophobia?

4.6 **Architecture and political implications**
If we assume architecture and political power are intertwined, what phobic mechanisms play a role in this process? For instance, did Albert Speer, architect of the Third Reich, consciously design fearsome spaces because of their phobic qualities?

4.7 **Link to current architectural practice**
As a professional architect, my personal experience and work reveals the existence of 'healthy' and 'unhealthy' space. An architect must perform a specific role as a specialist of space: the architect regulates and anticipates certain types of spaces as being phobic. Can we use fear as a creative factor in daily architectural practice?

5 Aim of doctoral thesis: design goals

- My proposal is aimed at discussing and finding out whether or not certain architecture can be enriched by provoking slight phobic reactions (dizziness, hyperventilation, etc.). In this way the architectonic space can be qualified as 'terrific.

- On the basis of my practical work experience, I assume the existence of a mechanism by which architecture vaccinates itself with phobic qualities. In other words, by incorporating phobic spatial qualities into a design or building, the architect can make the design or building better or more 'healthy'. Can we describe these phobic qualities and extrapolate them into a specific design?

- Research by design: Experimental designs of phobic spaces (vertigo space, claustrophobic space, etc.), including inquiring into the reactions of different users.

- Research project: Checking historical precedents, evaluating these precedents from the perspective of 'phobic spaces'.

- Research into key spaces or places that were decisive in the pre-architectural state of mind and redesigning them, implementing them into daily design practice, and learning from them. Understanding and implementing the characteristics of these spaces will enable me to better understand the importance of phobic spaces.

6 Proposed timing and strategy for the doctoral thesis

Pre-production design of PhD thesis
Design Brief - a statement of the design goals
Analysis - an analysis of current design goals
Research - an investigation of similar design solutions in related fields
Specification - specifying the requirements of a design solution
Problem solving - conceptualizing and documenting design solutions
Presentation - presenting design solutions

PhD design during production
Development - continuation and improvement of a designed solution
Testing-in-situ - testing of a designed solution

Post-production design feedback for future designs
Implementation - introducing the designed solution into the environment
Evaluation and conclusion - summary of process and results, including constructive crticism and suggestions for future improvements
Redesign - any or all stages in the design process repeated (with corrections made) at any time before, during, or after production.

Doctoral thesis proposal by Karel Deckers, submittal date 28/11/2007

(Endnotes)
1 http://en.wikipedia.org/wiki/Phobia

Gathered thoughts: questioning questions

Introduction

The difficulty I am confronted with is to define a question when it is possible that the answers (plural) arise constantly as evolving intermediate results. This happens within a trajectory.
I have the impression that the answers are generating questions, other questions, new problems. So I look for a driving force, a catalyst, and I distil a research question out of it. Probably there is more than one driving force. If I could define these forces, then I presume that, in my case, a research question would arise almost immediately. Nevertheless it is interesting for me to reflect on the trajectory I have experienced until now.

Evolving to a question to question

The process of defining a research question is specific and it relates to the acting individual. The question itself has to generate answers with the capacity to be communicative to the public (in a certain field or even outside that field).

I look at the process of defining a research question as follows. It is a trajectory.
I prefer to use the word 'trajectory' instead of 'track'. In this context I understand the word 'track' as something that one is predestined to follow (comparable with rails for trains). 'Trajectory', on the other hand, I understand as the result of constantly arising, evolving coordinates (in a direction) chosen by and resulting out of former and constantly gathered information (empirical and reflective). Information that has become available within that evolving process and information that is not the result of 'forced contamination'. I don't want to exclude serendipity and intuition (which is a subjective matter).

A question

Can we define a result of a generating process as shareable knowledge? In my opinion, I cannot talk about 'the' result. When I talk about 'the' result, I deny the evolving characteristics of knowledge.
For example: the term 'contemporary' fascinates me. Maybe because I always had problems understanding why some people confuse the term 'modern' with 'contemporary'. The first term appears to be well defined and clear (in terms of being an objective term), while the definition of the second term is evolving and open for interpretation. The subjectivity (in interpretation) of terms is something we cannot avoid when we share thoughts, visions, etc. How are rationalism and universalism related? What is the mutual proportion? In response to the question posed, two additional questions arise. First; is it possible to reconstruct (as in reconstructing a crime) the process a posteriori? Or, in other words, is the process clear, understandable

and sharable or re-usable? Secondly, is it possible to observe and explore the effects on a generating process?

Non-fenced fields

As a professional working in different fields I asked myself how I could clearly define a particular field in which to position my research. Because of the overlapping between the different disciplines in which I am working, I have to look for a common denominator. I will explain the title of this paragraph using a question that in a way is related to the concept of overlapping. Can we clear the generating process of scale? Does scale define the result of a generating process like architecture or product design? I would like to refer to the following paragraph, more specifically the passage about dynamic frameworking. In my opinion, dynamic frameworking (as also explained in *Reflections 3*) in this case is not only an opportunity, but a necessity.

The gateway through vagueness (static and dynamic vagueness)

When I was talking with Mr. Verbeke (January 24th 2007- Brussels) about the research subject, he mentioned that I was vague. It was rather confronting to hear someone say that I was vague and that maybe it was a primary characteristic of mine. Some seconds later - maybe as an instant defensive reaction - everything (in this context) became clear. I understood that vagueness is not necessarily a pejorative term. Because I experienced this, I took the opportunity to write following paragraph.

In general, "you're vague" is taken to be a pejorative thing to say about an individual. "It's vague" as a statement means "not clear", "not complete". In the present context it would suggest a lack of competence and the involuntary creation of a void in discourse relating to the field of expertise. To synthesise the above, I will use the term 'static vagueness'.

When the researcher cannot define a final result or final statement because the research is constantly evolving, this could be perceived as vagueness. On the other hand, the researcher can profit from such a situation because it creates a gateway of opportunity for him to adapt or change directions without taking the consequences of any existing academic discourse. Thus he has the opportunity to move the framework in other directions (dynamic frameworking). Therefore in this context vagueness has nothing to do with "not being clear" or with "the aim to hide". Being vague requires a constant alertness to avoid dogmas or dogmatism. Vagueness creates a gateway through which to move on in an efficient way. Being vague in this case is an active action and not a passive fact.

Being vague or the condition of vagueness can be a tool for the researcher, but it will always be looked at with a certain scepticism. To synthesise the above, I will use the term 'dynamic vagueness'.

Format(ting)

If a potential researcher (in this case me) manages to define a research question and to do research, the question that arises is: How to communicate the research work? This is a question which is very present in my trajectory. The communication has to be revealing and may not consist of any ballast in the processes the researcher is going through. It must make the gathered knowledge shareable. To avoid static vagueness, I will explain my vision in the following paragraph.

Unforced Communication

So, how can I communicate my research work?
In my opinion, a book (created a posteriori as a static report of actions resulting in a final conclusion or statement) is much too limited because it is very difficult to get a (visual) overview. On the other hand, it is a well known and generally accepted format. Mostly it is linear: it has a beginning and an end. It is recognizable in the way it is structured.
I see a challenge here: How can we communicate a non-linear process in or by means of a linear format without setting or using formal limits?
The 'search' for a new format to communicate could be part of the research project itself. In fact, I hope it will be processed during the processes which are and will be generated and are or will be the subject of my research. In that case we cannot speak of 'the search', but we can be alert and observe the format(s) generated during the process. In this way I believe that we even don't have to speak about creating a format as an 'a posteriori' action. So, I don't have to write a text, but maybe I can generate a result as an example to clarify (my) thoughts and make them shareable. The result(s) – which have an intermediate status in a process – of the generating processes can have the ability to communicate to a wider public; (here is where the contribution starts). So, communication (in terms of a PhD) can be sequential, reflective, and not fixed or limited in time. I presume (this is my opinion) that a PhD contains a minimum number of evaluated or validated sequences within a generating process.
I like to describe this way of communication as 'unforced communication'.
Raising a question: does the contribution to 'the public' have to be clear, or is it more important that the results should be the catalysts that enable the process (where the results have an intermediate status) to evolve without being emphasized through a certain format?
Or, in other words: can our personal knowledge move into public knowledge through results when those results are intermediate results within an evolving process? In fact this is a reformulation of the research questions mentioned in the above paragraphs.

Anthony Duffeleer

OPPOSITE PAGE >

MARC GODTS (WORK IN DIMENSION ZERO) 1994:

B², the bungalow to the second degree project at Werchter, BE / TEAR UP THE CITY (the afterimage of) / A LOAD OF LIGHT, studio piece switching a 2-room apartment to 8800WATT/24H a day / video still from the RETRIEVING AN IMAGE FROM THE BODY performance

01 KILL SPACE BLOG / the chaos theory theme

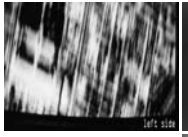
Incredibly sophisticated architectures are being built and documented. They make up today's main events in Architecture.

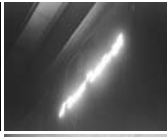
I do not want to argue about the value of well performing buildings or discuss the value of accompanying the building processes in skillful ways – the main occupation of most contemporary architects. I want us to reflect on the fact that most of the time Architecture loses its critical stance when merely focusing on building. The reasons for this that are quite simple. Building architecture needs approval, permission and collaboration. Architecture needs consensus. And the consequences of this fact are simple. Architecture is (not) made because architecture is (not) asked. Architecture is slow, mostly retroactive and hardly proactive. Architecture is elusive, evading the understanding of that which it uses as metaphor. Architecture is for architects and for architecture's sake. Architecture is consumed and experienced as a product. Architecture is offered as a service, marketed as an experience, cherished as an object and propagated as an image - most of the time by architects in the first place.

Mainstream architecture has an enormous focus on the building, which pushes Architecture to the foreground, like a set of objects.

What is? What might be? I decide to see Architecture as a subject. And one that is not necessarily built or to build. Architecture is, like all creative processes are, basically about what might be. Artist Bruce Nauman says about his work that it is not about making art but about making a point. And I feel that should go for all creative processes – they are about making a point. And for architecture to make a point it might be necessary to build. Yes. But it is pointless for architects to build without the search for making a point.

For me, the function of architecture is questioning.





KILL SPACE - architecture between daily life and quantum physics

Kill as in Kill Time. It seems to me that nothing is more enjoyable than doing the nothing. Making time. Making space for every possible thing else. Kill Space. Kill Time. Fulfil - bring into actuality, bring into effect, carry out, measure up to, satisfy, and bring to an end, complete - Life. Kill space to make space. Space for something else. The space of possibilities.

in short

The KILL SPACE project opens up the body of my work. The essentials of this work could only grow through what probably most people might consider as being an off-track praxis in architecture. Favouring the exploring of contents, working fields, ways of working and collaborations. Working more and more conscientiously along 3 parallels and with growing attention for what they mean one to another: experimental work, conceptual work, pedagogical work.

A particular idea keeps playing my mind. Space must die for new space to exist. You have to kill space to make space – space for something else. This idea is not so strange. It reflects a basic condition of life in general and a human condition in particular, that of giving and taking life. Designing space time opportunities might require weighing life and death of space time possibilities.

KILL SPACE resonates with that other human condition. The one of ongoing conquest of space and search for new space. With their searches, architects and designers have the double task to question what they see and to disturb what they make. To question what they see through as personal as possible explorations and experiences of possible and not yet as impossible proven space time. And to disturb what they make into future conflicts.

Architecture as design and research activity should connect the specialised intelligences with the collective intelligence. Architecture is a [mixed] medium. Architecture should mediate between - say - quantum physics and daily lives…

The following sums up KILL SPACE in its content, convictions and concerns.

at nanorate

The world as it is, at any given moment, is the best that joint intelligence and collective behaviour can produce. It should be considered as being the longest running open source project ever. A self regulating, generative system fuelled by the crazy mix of innumerate desires and needs. An environment oscillating between catastrophe and singularity and not necessarily with mankind in the pilot seat.

CO-CREATIVE WORLD

If we assume that artificiality is inherent to human nature, then design and planning are a natural expression of that very human nature. But what is there for a designer to design and to plan inside a dynamic system of dynamics, with non-predictable sets of parameters and in the light of possible disaster or rescue?

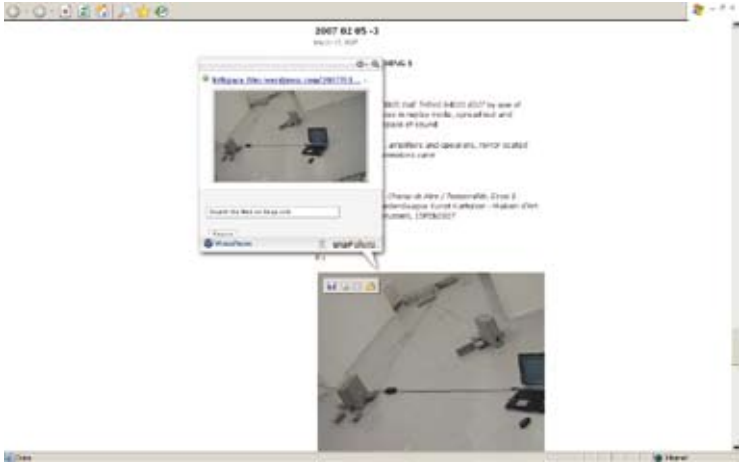
DESIGN DISCOURSE DISASTER

Design in every field has to shift. From imaginative analysis to pro-active reverse engineering. From consensus to intuition. From bringing forward solutions to producing problems. From producing things to producing possibilities, and further and further still. From design as a critical meeting point between model and mould, to design as the critical meeting point between daily life and quantum physics.

02 KILL SPACE BLOG / the freshly theme

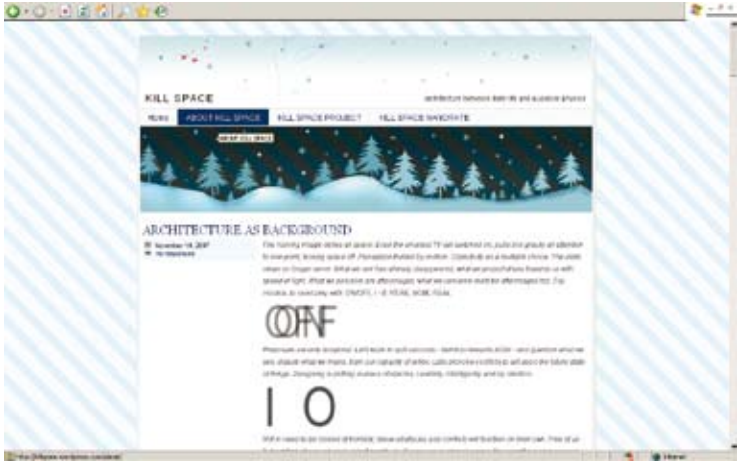
OPPOSITE PAGE < 00 FLC2007 for COASTOMIZE!

03 KILL SPACE BLOG / the white as milk theme



05 KILL SPACE BLOG/ the hemingway theme

06 KILL SPACE BLOG / the iceburgg theme



PREFIGURATION AND AFTERIMAGE

What we perceive has already disappeared, and what we project is driving towards us with speed of light. What we see are afterimages, our designs are afterimages, too…

FUTURE CONFLICTS / FUTURE FACTS

Nobody, nothing has the exclusive rights to earth, air, food, life, death and the like. Space is something you negotiate. Space is the temporary meeting of parallel but differing worlds. Rather than to come up with the design of spaces of compromise or with short-lived solutions for short-term profit, what is needed is to set up interesting problems. Carefully designed time bombs creating joint focuses amidst otherwise counterworking opposite interests. Problems kicking off new games to be played and whole new sets of rules to be imagined.

DESIGNING FOR THE MIXED REALITY CONTINUUM

To act upon a future state of things, we can only provoke conflicts. Design is putting in obstacles, carefully, intelligently and by intuition. Unlike most pictures, movies, paintings and objects and no longer in need of being looked at frontally, these obstacles and conflicts will function on their own terms. Terms which are free of us, but not free of a rough and violent quality. Killing the space of compromise and agreement with (the revealing of) the space of possibilities.

KILL SPACE MATERIAL / NO PROOF

The personal encountering of this space of possibilities in a combined field of experimentation, conceptual design and design pedagogy is a way for me to triangulate and explore the conceptual, ethical and methodological issues at stake. The expression of these encounters (through WORK IN DIMENSION ZERO, through the associative work with FLC and with the initiation of EXPLORATIVE ARCHITECTURE) is in the first place a transmission or emission of material and energy. It is not a proof.

REVEAL AND PROVOKE

To experience in trying to understand the always new conditions of life, human being, space and time. And to design conflicts that mirror possibilities. To question what you see and to disturb what you make are the 2 essential responsibilities of the designer.

a contribution

KILL SPACE wants to contribute to a stronger awareness of the changes going on. With emphasis on space and as interpreted by an architect from within the discipline with the understanding, skills, sensitivity and environment to do this, to develop and communicate a convincing, more adequate discourse for our times.

on line

The KILL SPACE project takes on different shapes, depending on the angles. The one above – a manifesto or public declaration of principles, policies and intentions within the given field of action and knowledge. A glossary or list – part of which you can find at the end of this article – with definition and designation of newly introduced or obsolete terms regarding that same field of action and knowledge. A reasoned catalogue – a

tool for representation, listing, argumentation and illustration of the entire body of work, of its actions and knowledge …. All with the particularity of on-line updating and constant retraceable re-formulation. The KILL SPACE project uses therefore the tools, possibilities and restrictions of the ready-available web-log. Its pages and articles, visuals and text, links and tags make up a continuously re-edited and commented edition: http://killspace.wordpress.com

KILL SPACE refuses the historical approach. It will have to try and escape categorisation and scientification of its content. It will have to deal with the problem of endlessness (how to frame, how to conclude, maybe from within) and it will have to deal with issues of dialogue (how to filter, how to integrate comment). It will have to take stands on manipulation, conditioning, speculation (or is there a possibility for a non-speculative attitude). It will have to clarify without losing its poetics.

to architecture

KILL SPACE is about communicating progressive insights starting from emotional spatial contexts, either generated by or explored through the processes of design. How can space time possibilities become apparent? Through design and without loss of openness, dynamics or energy? Without the 'kill' of space if space – like in daily life and in quantum physics – is the space of possibilities?

Ready to fight any agreement on space, territory and the like, establishing a dimension zero of architecture, KILL SPACE talks about a new and more useful architecture. Not by defining this architecture. But by putting the emphasis in Architecture on the ethics evolving out of a questioning, inquiring, and explorative attitude. A 'holistic' architecture. Hardly distinguishable from philosophy, climatology, spirituality…

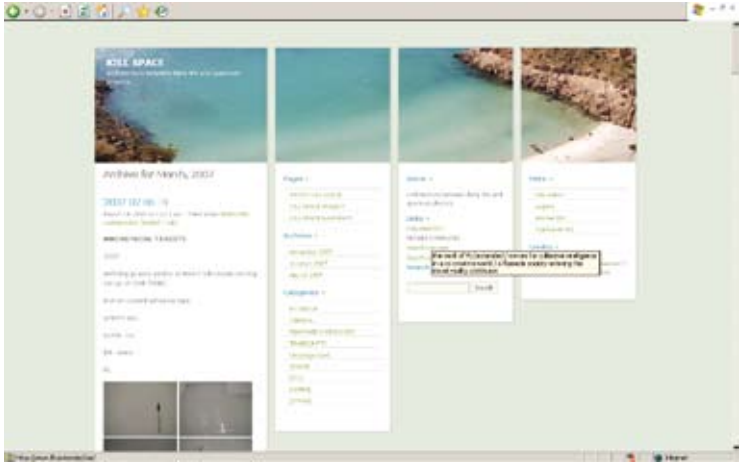
and consistency

Marc Godts, November 2007.

With thanks to Herman Daenen, Raf De Saeger, Halina Dunin-Woyseth, Nel Janssens, Mario Pandelaere, Robin Schaeverbeke and Sven Vanderstichelen for recent discussions.

06 KILL SPACE BLOG / the girl in green theme

07 KILL SPACE BLOG / the sweet blossoms theme



08 KILL SPACE BLOG / the fjords04 theme

09 KILL SPACE BLOG / the fjords04 theme

[afterimage] *(FLC adaptation 1998)* **0.1** if what we see is an ~ then what we project must be an ~ too

[conquest of space] *(EA adaptation 2007)* **0.1** moments of insight and inspiration about 'space' and 'spatiality' **0.2** the conquest through the senses or the arts of that which is on the edge of the perceivable or of that which is beyond perception because of for instance its highly technological, scientific, political or other foundation **0.3** the imagination and understanding of space and spatiality beyond perception, through sensitive and radical mediation

[Work in Dimension Zero] *(DIM.0 1992)* **0.1** to ~: experiencing the impact of dimension zero on commonly defined dimensions **0.2** doing the nothing

[Explorative Architecture] *(EA 2003)* **0.1** architecture as mixed medium **0.2** ~ is about the futurity of architecture: what is its next step? ~ is an attitude not a style **0.3** *(P.Labarque, 2005)* the ~ trajectory investigates those forms of architecture that are not yet proven to be impossible

[FLC] *(FLC 1997)* **0.1** short for fucklecorbusier **0.2** ~ is a ongoing sequel of designers in free association and has everything to do with the clashes between individuals, the clashing of individual aims, experiences, desires and intuitions into something more interesting than the unique expression of a unique identity and into something more flexible, workable and exciting: a collectivity, not a compromise. **0.3** ~projects evolve around crucial points where everything meets: shared territories no matter size or medium. **0.4** ~ emphasizes in each job, commission or project, possibilities to turn conflicts into positive energy, introducing the imagination of future conflicts over which space can be negotiated, mirrors for collective intelligence. **0.5** ~ produces future conflict orientated design. **0.6** part of this flip-mode society where networking outsmarts bipolar routines, where reality and fiction merge, where references go tactile or extra-sensory but stop being simply visual.

[Future Conflicts] *(FLC 2003)* * REVEALING PROBLEMS **0.1** pro active revealing problems**,** free of us but not

free of a rough and violent quality. **0.2** designing ~ instead of short-lived solutions for relative problems out of short term profit. **0.3** the imagination of ~ ; the opportunity of ~; the designing of ~.

[Future Facts] *(FLC 2007)* * FUTURE CONFLICTS

[Kill Space] *(DIM.0 2004)* **0.1** as in 'kill time': ~ to make space for something else **0.2** as opposed to 'space kill': the kill of space and space time possibilities **0.3** to challenge the definitions and agreements on space

[provocative instrument] *(FLC 2007)* **0.1** (design) project that inspires through a consequent magnification of reality. **0.2** a challenging manifesto that stimulates imagination and triggers discussion. **0.3**. the strategy of the visionary pamphlet that used because daring to think beyond what is thought possible is a prerequisite to achieve fundamental innovation. **0.4** a ~ is used to get beyond the barriers of the rational 'no's'.

[question what you see / disturb what you make] *(DIM.0 1992)*

[violent quality] *(DIM.0 2002)* **0.1** things free of us but not of a rough and ~

Marc Godts °1961, experimental designer and conceptual architect / author, 1992, of the ongoing experimental Works in Dimension Zero (DIM.0) / co-author, 1997, of the ongoing free associative designers FLC extended (FLC) / initiator, 2003, of the Explorative Architecture trajectory (EA) / author, 2007, Kill Space, doctoral project

All illustrations: Marc GODTS, 2007

00. Space as the space of possibilities – all possibilities now, and: 01>10. the Kill Space Blog in its various themes provided by wordpress.com

10 KILL SPACE BLOG / the neo-sapiens theme

*Designerly thinking & research**

Reflections on some characteristics of designerly thinking and how they can be put to use in research

In recent years there has been much debate within the different fields of design – both in Belgium and abroad – about 'design' and its relationship to 'research'. The association of 'design' with 'research' is not new, but this time it seems to be happening in a convincingly persistent and increasingly acknowledged way. Why and how these two terms are being brought together is in many respects a quite intriguing matter. Irrefutably this issue is of great importance for designers and therefore they should be at the forefront of the developments taking place in this 'merging' of 'design'and 'research'. This article enters the discussion from a particular designer's point of view.

DESIGN AND RESEARCH

The terms 'design' and 'research' are currently often mentioned in one breath. All possible combinations are used, such as 'design research', 'research by design', 'researching design', 'practice-based research', 'research in design' and 'research through design'. In recent years these terms have become a true hype that has persistently penetrated into all fields of design, from the arts up to urban planning.

As often happens more with hypes, this new 'trend' does not seem to clearly reveal what the essence of the phenomenon is. The multitude of names and attempts to come to a definition show that a general consensus about the terms has not yet been reached. We are clearly dealing here with a 'concept in the making', with lots of speculation but, as of yet, little transparency.

There are many reasons for the recent interest in the relation between 'research' and 'design'. Without any doubt, certain social developments have been playing an important role, such as the overhaul of the education system (i.e. the 'academization' of schools) and the surge of the knowledge economy (with its demand for innovation and creativity[1]).

Also remarkable in the development of 'research and design' is that with the rise of 'Artificial Intelligence'[2] in the late 1950s and the beginning of the 1960s, cognitive scientists have been showing interest in 'Design Cognition'.[3] How the mind of a designer functions has increasingly been the subject of research for some decades already. In that sense, designers have not only gained popularity as researchers, but also as the objects of research.

The interest in design seems, on first sight, to be a positive development for designers because of the apparently greater (social) validation it gives them. But this harbors also a certain danger. In the whole hype around the subject there is a risk that only those aspects of 'design' will get validated that are immediately usable and operational (design

as an instrument). The more essential capacity of design as a particular 'way of knowing' tends to get overlooked. Nigel Cross argues that there are forms of knowledge peculiar to the awareness and ability of a designer. He states (quoting the Royal College of Art report from 1979) that Design has its own distinct "things to know, ways of knowing them, and ways of finding out about them".[4] These, of course, are potentials that go beyond mere instrumentality.

Designers are increasingly confronted with the question whether what they are doing is 'research by design' or not. A project, it seems, is only appreciated these days if in some way it contains some 'research by design'. This is not only the case in the academic world, but increasingly also in professional practice. Particularly in the (larger) public commissions, the designer is asked through project clauses to commit him/herself to a process of 'research by design'. Through the repeated and ongoing references to it in the public discussion and in the literature, the term 'research by design' has become rather fuzzy. Thus a clear vision still needs to be developed of the specific relevance of designerly thinking and acting for research.

The discussion about the what, how and why of 'research by design' is taking place in academic circles and design offices, as well as within the government agencies concerned. The link between 'design' and 'research' in the terms 'research by design' is not as innocent as one may think. From the designer's side there is a (true) fear of an evolution towards 'scientific' design, as well as a fear of the imposition of certain predefined and fixed 'methods', which could then function as a kind of control mechanism in the design process.
Therefore it is important that, in a very explicit way, designers define for themselves the specific relation between design and research activities. What are the specific qualities and values designing can have as a way of doing research?

THE POWER OF 'DESIGNERLY THINKING'

Or… How the 'dream' inspires something new to come into being.

It is impossible to summarize and compare all possible definitions and interpretations of 'research by design' within the context of this article. The objective here is rather to facilitate the specification of some substantial core capacities of designing. The particular combination of these capacities, to our mind, contains both the power of designerly thinking and the basis for connecting design and research.
Therefore we first want to explore designerly thinking and specify its essential characteristics, in order to further examine how these can be utilized within research.
As architects and urban planners, we focus here on the role of designers within research about socio-spatial matters. With this central question as our backdrop, three essential characteristics appear on stage: 1)designerly thinking is very much focused on

the future, 2)it searches meticulously for alternatives and 3)it stimulates imaginative abilities. Differently formulated, we could say that designerly thinking 1)prepares us for the step into the unknown, and it does this 2)from a critical perspective and 3)with a view to renewal.
The most particular thing about these three characteristics is that they create and illustrate a potential for fresh ideas and new perspectives. In this sense they are core competencies that can be utilized in research.

Focus on futurity – the step into the unknown

"Certain futures can be predicted, others have to be designed." (Taeke De Jong)[5]
"In cultural processes we have to acknowledge that concepts regarding the result can precede the cause of changes = anticipation."(Taeke De Jong)[6]

Designerly thinking happens de facto with an outlook on the future. Surely designers always conceive things that (physically) do not yet exist. With the act of designerly thinking, they project, or literally make a 'pre-view' of what yet has to become, and they articulate the possibilities and conditions to realize that future (i.e. the building plans for a house or the master plan of a certain site).
By doing so, designers make it possible to explore different possibilities, unknown so far in the existing reality, or sometimes even never assumed.
With its strong focus on the future, designerly thinking articulates itself in a 'different' reality, unlike the everyday reality. Designerly thinking situates itself in a future reality. Most of the time, that future reality is understood as a more or less 'predictable' future. By analyzing current trends and explaining them, extrapolating them, we can get a grasp on expected trends. This future reality is developed with rational, analytical thinking (scientific). That future has a certain probability, because it has been conceived within a certain framework of existing ideas, ideologies and knowledge. The practicality of this future makes it a beloved basis for executive authorities and officials to verbalize design projects. It carries on existing visions, agendas and developments. In that way the future is an evolved and rather controllable stage of the present. On top of that, it is based on available data (that can be extrapolated). Projects staged in this reality do not substantially deviate from existing and accepted thinking patterns. This is what we call 'affirmative design'.
However, designerly thinking does not reach its full capacity in this 'probable' reality. Taeke de Jong says it clearly: "Design starts where the probable ends."[7]

The strange capacity of designerly thinking is that it makes the future as a 'space of possibilities' available for exploration and consideration. Possibilities appear that have not yet been recognized or discovered, as well as all the potential realities that are linked to it. This opens up for research not only the probable, but also the improbable

and unexpected. The reality we are dealing with here is literally 'different', because it is located outside known and accepted thinking patterns. Since this future develops from within those possibilities that have not yet been recognized, little data about it are available, a fact which causes this possible future to be perceived as not 'probable'. To detect and design these implicit possibilities, hidden behind explicit questions or problems, designerly thinking has developed a particular sensitivity. The world of latent possibilities that, so far, has not yet emerged - hidden by current ideologies – we call, as Bo Dahlbom does, "The Space of Possibilities".[8] The exploration of this 'Space of Possibilities' is best expressed in the 'conceptual design practice', where answers to a problem are formulated that go sometimes far beyond the actual problem. It is here that designerly thinking can 'leap' from the predictable to the unexpected, from the variation to the alternative.
Designerly thinking makes it possible to explore the 'Space of Possibilities' and to gather knowledge about future realities that are not fully in line with (general) expectations.

This exploration of the 'Space of Possibilities' makes the step into the unknown imaginable and to a certain extent also conceivable by the formulation of alternatives.

Focus on alternatives – the critical perspective

"Innovative thinking is changing the question one asks oneself."(Gerard De Zeeuw)[9]

The alternatives developed through designerly thinking are prospective. They formulate possibilities that go beyond the generally accepted knowledge and expectations. These alternatives challenge the common principles of general practices and daily reality. In that sense we can say that a prospective alternative is substantially different from a variation (one possibility out of a range of solutions).
Designers are often specifically trained to almost obsessively and continuously search for these alternatives, which are intended to make the improbable (not to be confused with the unreal) imaginable. Ömer Akin observed in his research about 'Design Cognition' that architects painstakingly continue their search for alternative solutions for a project, even when a good solution is already known. One of the examples he mentiones dealt with the interior design of a rectangular space that was conceived to bear only one, good, functional plan organization. Despite this fact, each of the participating architects generated on average four different plan organizations. This means that designers (architects) try to restructure the problem so as to generate alternatives (instead of variations). In the example above we could assume that it was quite impossible to conceive alternatives without, for instance, redefining the issue of 'functionality' (or without developing another concept for it). Akin called this "redefining the constraints of the problem space".[10]
This approach is very different from just creating different solutions for one problem.

The tendency of designerly thinking to redefine and restructure problems through projection (pre-view) and conceptualization (formulated in terms of alternatives) is specific to the core competencies of designing. This kind of thinking actually requires a critical perspective that questions the proposed problem. In a certain way the reverse is happening: the prospective alternative becomes the framework for new questions, while in the case of a variation within general thinking patterns, questions indicate the limits of the (acceptable) solution (design).
It is here that designerly thinking gets fully highlighted as a form of critical thinking. Designing is actually focused on change, not on explaining, and thus it is in se an act of critical thinking.
To come to the redefinition of a problem and the formulation of an alternative, it is essential to accept and nurture the free and boundless association and play that is so specific to designerly thinking. The 'homo ludens' in the designer, liberated of 'methodological' boundaries is capable to proceed beyond general thinking patterns. Hence, it is from this enlightened, critical position that designers can observe a problem. Accepting coincidence, risks and unorthodox use of rules (methods) and means (data) – as it is similarly done while playing – is in many cases very productive. Designerly thinking accepts this and engages in this kind of play as a form of intense thinking and working.
Free and uncontrolled association, limitless comparing of the incomparable, often triggers the 'déclique' that is necessary to jump out of limited thinking patterns and 'closed' problem spaces. That is the moment when problems can be redefined and new visions can develop into prospective alternatives.

Focus on stimulating imaginative abilities: renewal in sight

"And in this flip-mode era of reorientation in planning and politics some very big problems and contradictions emerge. That is why there is a need for more imaginative design." (Marc Godts)[11]

"It is imagination, the capacity to see the world as it is not, but as it could be, that makes it possible for us to change the world." (Bo Dahlbom)[12]

Alternative futures essentially need an expression, an image. This image is not the expression of a new reality, but of new potential for reality. Designerly thinking is thus not aimed at the creation of "science fiction"; rather, it develops a preview of a future reality by showing its latent possibilities. These possibilities are hidden behind the reality as we know it. Prospective alternatives, expressed in images, but also three dimensional models, are therefore the vehicles that move our thinking forward and stimulate imaginative abilities.

Designerly thinking therefore aims at reinforcing imaginative abilities. In this process, diverse representations are being used. However, too often these representations are merely considered and used as lay-outs of a thought or idea that preceded the image. Cognitive science however has shown us that (the making of) a representation fundamentally affects developments in thinking. It is therefore important for designerly thinking (and its relation to research) that representations not (only) interpret one's thoughts, but also shape them.

The power of imagination and representation is located on (at least) three levels of knowledge production. Firstly the representation, realized through imaginative abilities, is not only the expression, but rather – and especially – it is the "genesis" of an idea or concept.
Furthermore, the representation (design or artefact) also incorporates a wide variety of accumulated knowledge. The artefact is therefore often called "a body of knowledge". In a "holistic" way, an artefact (drawing, building or artwork) contains a wide diversity of knowledge. It ranges from the knowledge to conceive and make something, to the knowledge of the context in which the design emerged, and even to the designer's tangible environment.
Thirdly, the representation, rather than merely facilitating the communication about a certain subject, opens the unconscious, untouched and silent knowledge, both of the designer and of the public. This rather unarticulated knowledge is activated during the confrontation with a representation and seems to be in many cases an essential stimulus for generating new insights.

Consequently, the power of imagination and representation can be found on clearly more and other levels than just the "visualization" and "communication" of ideas. There is a growing awareness of this power, and this is articulated in the more and more frequent collaborations between scientists and artists, in which both groups are developing perspectives about certain topics, both working on equal footing and sometimes even in the same lab, but each on the basis of their own particular intellectual identity.[13]

As we said earlier, designerly thinking can be characterized by its capacity to 'project' (pre-figuration) and its stress on the imaginary, the ability to reflect about what is absent, what can hardly or not at all be made explicit or what not yet exists. All this can be summarized in the concept 'Imagineering', as it is called by Moyersoen and Segers.[14] The special ability of 'Imagineering'is that it can make prospective alternatives part of anticipating reflections about the future.

To recapitulate, we can state that the three core powers – 1)focus on future, 2)development of alternatives and 3)stimulation of imaginative abilities – are all three closely related within designerly thinking. They are conjoined and form a particular set of cognitive functions. Designerly thinking challenges our concept of reality and the "it-can't-be-helped" syndrome that threatens to control all our personal and social relations. In fact, designerly thinking provokes our ruling ideologies and principles of reality. It makes the possibilities hidden behind our current (perceived) reality visible and gives us a way out to a different and new reality. Therefore, we can state that the 'dream' influences the creation of the new.

THE ROLE OF DESIGNERLY THINKING FOR RESEARCH

"It is the epistemology of design that has inherited the task of developing the logic of creativity, hypothesis innovation and invention that has proved so elusive to the philosophers of science." (Glynn)[15]

"If the gap between our existing situation and the new world which we wish to inhabit is made wider by our inability to conceive of what that world is like, that, I suggest, is where designers can help." (Chris Rust)[16]

How can all these specific characteristics of designerly thinking be utilized in research? The urban design practice seems to find 'research by design' relevant because of its possibility to scrutinize both environment and project by developing different scenarios. Especially when citizen participation is used in the design process of bigger architectural and urban design projects, 'research by design' is used as an – almost physical – tool to analyze a problem while designing. It aims to come to a better definition of the project and to create a wider base for favourable reception of the project.
By supporting communication and executive decision making, as well as by 'drafting' scenarios to achieve an accepted program, we can say beyond any doubt that design research contributes to these benefits. However, focusing only on these aspects would lead to a narrow approach to designerly thinking and leave its fundamental capacities unexposed.

'Research by design', as it is described in many urban processes, is actually nothing else than what we can expect from a normal qualitative design procedure. By adding the term 'research' to it, one tries to stress the collective exploration throughout the design and realization of the project.

But as we approach the relation between designerly thinking and research, we have to ask ourselves how designerly thinking can generate specific knowledge that contributes both to the formation of socio-spatial visions and the fundamental development of

design disciplines themselves.
We mentioned earlier that by focusing on future, developing alternatives and by stimulating imaginative abilities we can generate renewal and innovative thinking patterns. We think this is one of the keys to describing the role of designerly thinking in research.
The combination of anticipation, free association and (pre)figurative thinking is an intrinsic property of designerly thinking. This specific ensemble of thinking patterns generates knowledge that otherwise would stay out of reach.
The combination of the earlier mentioned three characteristics of designerly thinking opens up the opportunity in research to develop innovative questions. Through 'Imagineering' and the development of alternatives, designers are opening the future for anticipating reflection. This is an important step in the process of recognizing and engaging in other possibilities and ideas.

Towards research

In these times of ever more complex problems, doing research with a designerly state of mind is becoming more significant then ever. Only through the formulation of alternatives, the redefining of problems (and, consequently, re-*designing* the problems) and the conception of other realities, are we able to prepare ourselves for the future in a fundamental way. Only thus can we make it imaginable (and valid for scientific research) and redraw the frontiers of the possible. The role of designers in this process is very important, since they are the critical interpreters of what is suggested as a problem.
Therefore it is important that designers be able to engage in research, starting from their own, specific, intellectual identity, as to engage fully in all the characteristics of designerly thinking, as mentioned above. Eventually, certain forms of research that fully reflect the culture of designing will have to be accepted. We thus plead for the creation of a productive research environment for designers in which 'designerly thinking' can fully develop itself and develop a fruitful dialogue with other 'ways of knowing', such as the humanities and the sciences.[17] Only by doing so, can we create a breeding ground where design visions with full impact on the study of socio-spatial questions can systematically find their articulation.

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Co-author Charlotte Geldof

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(Endnotes)

1 For example the work of Richard Florida, professor of Regional Economic Development, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life* (Basic Books, 2002), where he explains that in the new millennium the 'creative class' will be the most influential group in society.
2 Artificial Intelligence: "The term Artificial Intelligence (AI) was first used by John McCarthy, who considers it to mean "the science and engineering of making intelligent machines". AI is studied in overlapping fields of computer science, psychology and engineering, dealing with intelligent behavior, learning and adaptation in machines, generally assumed to be computers." Source: www.wikipedia.org
3 'Design Cognition' is the study of cognitive processes that are active when designing. Source: W. Visser, *Dynamic Aspects of Design Cognition: Elements for a Cognitive Model of Design*, in: *Report No 5144*, INRIA,Rocquencourt, 2004
4 N. Cross , *Designerly Ways of Knowing*, Springer-Verlag London Limited, 2006, p 1
5 T.M. de Jong, *Kleine methodologie voor ontwerpend onderzoek*, Meppel, Boom, 1992
6 Idem
7 T.M. de Jong, *Ontwerpen begint waar het waarschijnlijke ophoudt*, transscript of lecture TU Delft, 1998
8 Bo Dahlbom, *The Idea of an Artificial Science* in: B. Dahlbom, S. Beckman & G. Nilsson, *Artifacts and Artificial Science*, Almqvist & Wiksell, Stockholm, 2002
9 Gerard De Zeeuw in: Nel Janssens, The Sint-Lucas Research Training Sessions, in: *Reflections+3*, Hogeschool voor Wetenschap & Kunst, Departement Architectuur Sint-lucas, Sintjoris, 2006
10 Ö. Akin, *Knowing and Learning to Design, Variants in Design Cognition*, paper, www.andrew.cmu.edu (retrieved Jan 2007)
11 M. Godts, in: The FLC presentation, www.flcextended.be (retrieved jan 2007)
12 Bo Dahlbom, *The Idea of an Artificial Science* in: B. Dahlbom, S. Beckman & G. Nilsson, Artifacts and Artificial Science, Stockholm: Almqvist & Wiksell, 2002
13 Example of such a collaboration is for instance de SymbioticA Research Group, established in the School of Anatomy and Human Biology, University of Western Australia. Source: www.symbiotica.uwa.edu.au
14 J. Moyersoen, & J.Segers, , *Urban Interventions and Generalized Empowerment*, in: *Booklet of the Generalized Empowerment Urban Forum*, London, 18 June 2006
15 S. Glynn, *Science and Perception as Design*, in: Design Studies, 6 (3): 122-126, 1985
16 C. Rust, *Design Enquiry: Tacit Knowledge and Invention in Science*, in Design Issues, 20 (4), 2004 , p76-85
17 Bruce Archer, in the very first issue of Design Studies in 1979 argued for "Design" to be considered a 'third area' of education. Nigel Cross attempted to further develop an understanding of this 'third area', this 'designerly way of knowing', by contrasting it with the other two – the sciences and the humanities. See: N. Cross, *Designerly Ways of Knowing*, Springer-Verlag London Limited, 2006, p V

Concepts for architecture

Dialectic of matrices, texts and the x-factor

Context – problem setting

Practicing architecture today is more than ever a complex process. The architect functions either as an individual or as a member of a team within this process. The layering that is typical for this kind of complexity introduces a tension between those different specialities (such as urban planning, finance, security …). When architecture has to handle all these questions and problems, each of these specialities becomes indispensable. This way architecture functions as a discipline, disciplined more than ever through its own laws.[1] An architect takes a position against this situation. In doing so, the architect must situate himself in a field with extreme and explicit positions, a tension between those different specialities. If he knows nothing about the mechanism, then the only possibility at that moment is to function as an ignorant architect. Or else he is conscious about it, but from a certain indifference he does not want to be involved with it. In the end, there is the architect who knows that if he loses his concentration for a second, then he risks becoming a part of that disciplining mechanism. A mechanism where the control of the self shrinks to a footnote in the larger system. For a conscious architect this is always happening more or less. For him/her it is important to generate attitudes, instruments and strategies which can manage the disciplining laws.

Is this attitude of an ignorant and indifferent architect really so problematic? He is still functioning, isn't he? There are enough reasons to assume that this situation is not as evident as we might like it to be. The ignorant architect, working on his project in which he might find some kind of freedom, is perhaps a plaything of several seemingly unverifiable factors. He is then one of the pawns, lonely on the chessboard. His so-called individual point of view is reduced to a detail in the margin. The indifferent architect, focussing too much on one issue, one specialization or one project, or simply acting without any interest, cannot get a real overview of the ongoing mechanisms. He is struggling against the supposedly well known laws without having any real insight and oversight. A lack of sight usually means a lack of vision. A vision which is necessary for a practice. Not only for that individual practice, but also for formulating a vision on more global issues such as sustainability, ecology, timelessness, … This vision is not necessarily linked with a specific project. In these circumstances the researcher is implementing themes with an impact that is stronger than that of an architect who is involved in a single project can ever achieve. At that moment there is a so-called 'social impact'. At that moment the attitude of the ignorant and indifferent architect becomes problematic. Then it becomes necessary to better understand where the disciplining mechanisms can lead to.

Experiment – goal

The corpus of this proposal has all the characteristics of an experiment.

The experiment starts from the work realised by my practice and all the experiences built up over a period of ten years. The offices (architettura, changed to ALT in October 2007) realised projects with very different programs. It is also important to mention the interest in themes such as *the image*, *photography, art,* …[2]

The central issue in the experiment is the design and the content of a matrix. The notion matrix is partially correct. The ultimate goal is a table, a plane geometry, a framework, … For the sake of simplicity, it is called a matrix.

The matrix consists of different fields. The precise quantity is not defined. In an initial trial, we made an attempt to quantify and qualify a number of these fields. The matrix is divided into three larger fields (facts, impressions/thoughts, abstractions). A second division was made in the field of impressions/thoughts. A number of pairs were introduced:

- image & architecture
- texture & materiality
- typology & commonplace
- old masters & new masters
- strategy & subversion
- puzzles & splinters
- intensity & unclearness

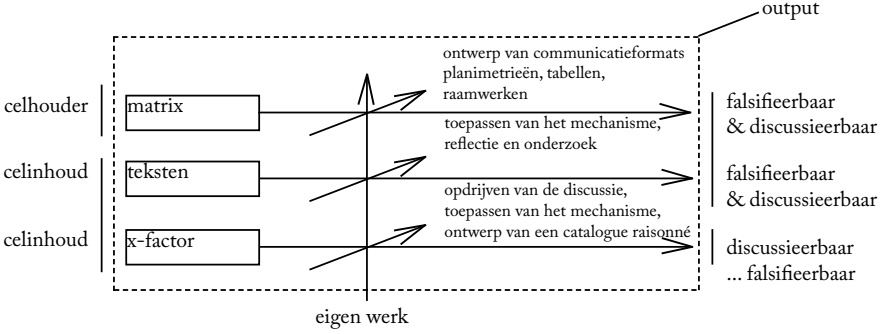
The making of this division is done by using a specific mechanism. The filling in of each field started with clear facts. This is the starting point of a discourse with several media (text, images, film, …). When, at a certain moment in this development, thoughts are made which are not really testifiable or verifiable, then new fields are created. This mechanism is going on for instance in the first fragment of the catalogue *raisonné.* In this catalogue images are introduced to rethink thoughts that are almost unspeakable in words.[3] This mechanism is also expressed in the basic hierarchy of the matrix (facts, impressions/thoughts, abstractions). We could postulate that the work is transferred into impressions/thoughts, which are also transferred into abstractions.[4]

This mechanism is an effort to better understand the x-factor of an act or a thought in the context of a certain discipline.[5] More precisely, by x-factor is meant that which is difficult to communicate in a precise and correct way but is nevertheless present in a discipline such as architecture.[6]
Beside a first sketch of a matrix, the tryout resulted in three articles, a lecture and the first part of the catalogue *raisonné*.[7]

The form and the content of the matrix determines immediately the plan and the goal of the experiment.
The goal is to get a better view of the way we think and play with ideas while the design process is ongoing. A mental process that is very conscious of the disciplining situation. This view is created by three communication forms

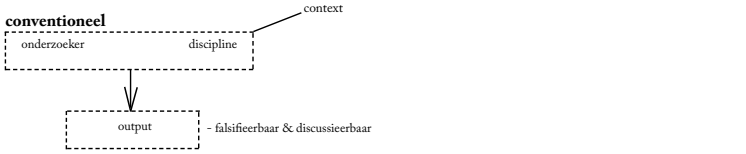
- the matrix
- the texts
- the x-factor

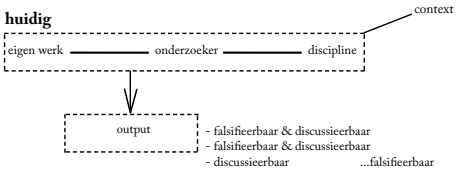
These three forms are elucidated by a cross-pollination with the architect's own work and experiences. The consequence is that matrices lead to different communication formats. These formats are visual systems that can be used to communicate and to 'think' exercises, patterns and ideas. The matrices function like stimulators and flywheels. The texts lead to reflection and research. In a certain way they are the result of the mechanisms introduced by the matrices and they aspire to a theoretical vision of the design process. The x-factor leads to the introduction of a particular discussion. It shows the relativity of our thinking performance. This unclear zone will be explored by designing and mapping out fragmentarily.[8]



The first two communication forms (matrix and text) are up to a certain point falsifiable and definitely discussable. The last one (the x-factor) is discussable in an intense way, which might lead to a partial falsifiability.
From this we note a clear difference with the genesis of a result from a conventional scientific experiment. In the latter the researcher is focused on his materials, and in this case on the architectural discipline.[9] Researcher and discipline are situated in a social context which influences and orientates the research. Finally there will be a result, a text, a project and an artefact. The whole constellation is falsifiable up to a certain level. It is certainly discussable and the object for new research. The evolution of research and social development defines the relevance of the result. The present

approach is different. The researcher not only focuses on the architectural discipline. His own work, experiences and documents are essential. The researcher, his own work and his discipline are situated within a social context which also influences and orients the research. The first results of the tryout in which the researcher's own material was introduced seem to lead to new visions. It is crucial to distinguish this special layered structure and trace and situate it from the beginning.





Situating the experiment within a historical context

In a certain way, the experiment reverts to thoughts and actions which are currently less convenient. It is about the thought that architecture is imaginable and at the same time communicable with the same medium. Can we in a concrete way design a mental framework that literally can be written and drawn and thus communicated? Like Filarete, who wrote down his imaginary city of Sforzinda as his vision of architecture. Or Alberti, who wrote his *de re aedificatoria* before he built even one single thing. This points to the fact that he had already developed a holistic vision of architecture without any physical experience.

It is essential that the research should lead to tools and instruments that are useful for better understanding the disciplining context,[10] rather then being merely the expression of an ambition for fullness or immaculateness.

Output

The format for communicating this research on designing and filling the matrix will be a digital script. Concretely, a blog or website will be developed. The more text and images, the more scripts. The more scripts, the further we get in realising our goals.

The script will be called *script-schrift*. It is becoming the central medium of the research project.

script-schrift is a digital script, a virtual booklet and a handwriting, and therefore it is unique. It is a document, a writing... *script-schrift* is a script, a plot, a scenario, a shooting-script. *script-schrift* is a strategy to manage the discipline. It has the ambition to write forward and beyond, and thus it can tell about the discipline. It is naked because nothing else is as bald as the written word. And a written word on one's own architecture is always confronting and obligate somehow a bit wrong. It is English and Dutch at the same time … and it is not. It generates a dialectic in which the last word is unspeakable, because too far away. It embodies for a few seconds the soul of the content, the *concepts for architecture*.

The script suggests multiplicity; there are always more scripts, more kinds of script. More parts and more scripts in a script. The stacking of scripts suggests a stacking of ideas and concepts which is an attempt to describe and understand architecture.

The script is a translation, a re-translation of thoughts, architectural, literal, artistic, social, … all of them already evaporated into another medium: the building, physical and virtual.

script-schrift is a piece of a puzzle. Only at the end, when all the pieces are laid out on the table, might there appear a complex, a whole; or else it shivers before it becomes clear as to what represented. With writing on architecture, architecture risks disappearing into a haze of words and declarations. Will architecture be scratched in sharp words or thrown down in spotted and skittish sentences? From which position can architecture derive its benefit? In this way *script-schrift* is already an (im)material version of one of the possible subjects: puzzles and splinters.

script-schrift will be essential in the communication. The research project will use this medium to communicate with the outer world and in particular with a selection of architects who will be invited to start a debate. This debate will deal with the content of *script-schrift*, its matrices, its texts, its images. This dialogue will be developed in a following stage. It will be an integral part of the research project.

The ultimate result is a script of the scripts. This script is an outlining of the whole process. This output starting from the scripts becomes a different script, which also derives its inspiration from the experiences and reactions. Concretely, the result will be a book and a website linked with an exposition. This exposition will provide an insight into the spatial context of the matrices and the problematical position of the x-factor.

Timing

Script-schrift 1	academic year 2007-08
Script-schrift 2	academic year 2008-09
Script-schrift 3 – 4	academic year 2009-10
Ph D	academic year 2010-11

Thierry Lagrange

(Endnotes)

1 Architecture is also disciplining. For instance, architecture involves defining and handling public and private space. Architecture is a fragment of a larger complex of disciplines, each of which discipline other disciplines.
2 This relationship with images, photography and art is made clear in a portfolio of my activities over the last ten years.
3 The catalogue is *Raisonné*, set up with a reason. This enables us to realise an intellectual link between the two media (text and image). In the trial, shown on the poster, this is the case with the first pair: image & architecture.
4 This mechanism refers to the mathematical principle of convergence. This mechanism is the first in a series. The matrix can transform into a table, a geometry with real dimensions and typical graphics.
5 The case of the x-factor will be developed in this research project. Therefore it will be necessary to study analogous themes in philosophy and psychology.
6 Communication can vary as well. It has a complexity in which we situate the designer, the observer, the expert, the project, … This subject will be further developed in the research project.
7 Articles:
Oase no. 72, Portfolio: *Under Pressure/Methodiek en strategie versus scholenbouw: enkele bedenkingen*, p. 98-107, Nai Uitgevers/Publishers, Rotterdam
Reflections 3, *Scherpe randen en bochten, enkele bedenkingen bij het ware en het interessante*, Sint-Lucas, Hogeschool voor Wetenschap & Kunst.
Posters:
Opmaak poster n.a.v. de dag van het artistieke onderzoek georganiseerd door het IVOK. Thema van de poster was *het architecturaal idee.* Deze poster was de aanleiding tot het schrijven van de tekst *Onduidelijke beelden, enkele bedenkingen bij de relatie beeld en architectuur.*
Lezingen:
02.05.07, UGent, Vakgroep architectuur & stedenbouw, *de foute lezing.*
Een uiteenzetting over juist en objectief lezen en net niet juist en objectief lezen. Daaruit volgt een beschouwing over de invloed van de foute lezing op ontwerpmethodiek in het algemeen en op de eigen praktijk in het bijzonder.
8 The *research by design attitude* is situated in the design of the matrix and in the way images are handled in the catalogue *Raisonné*. In this catalogue, the researcher will anticipate lacunas, plies and cleaves in the texts by handling the image.
9 Examples include: an oeuvre, a social development related with architecture, a technical or physical problem, …
10 The disciplining context refers to the mutual interferences and influences of the architect, the architectural discipline and the social context. This theme will be studied and anticipated.

Messing With Media

The theme of Messing With Media is to be situated within mixed-media courses as treated within our community (Sint Lucas' Architecture Department). As such, the research project intends to feed and (re)direct the courses in order to get in line with current graphical phenomena and insights. Architectural graphics figure as a focal point within Messing With Media (from now on referred to as MWM), which, more specifically, is the process of blending digital drawing aids and traditional drawing techniques into integrated mutant media forms. Rather than overstating the theoretical connotations behind architectural representation [1] *and the (r)evolution of Computer Aided Design, the investigations search for practical information and knowledge on contemporary drawing intended for designers in order to (re)define contemporary architectural drawing. The main subject concerns 'designerly drawing', though excursions outside the field of architecture will not be excluded.*

When fifteenth century renaissance architects shifted their attention from constructing buildings to architecture as an intellectual activity, architects turned to drawing as a means to communicate and direct building activities. As a consequence fifteenth century artists reinvented themselves as draughtsmen rather than as master masons. For over 200 years architects, mathemathicians, painters and universalists studied and refined the drawing methods (projections, perspective theories , curvilinear theories, triangulations, anamorphosis,...). Those studies and refinements eventually culminated in an architectural drawing system. A practical and normalized set of rules and tools architects could follow in visualizing their ideas for clients, contractors, engineers, etc. At the wake of the twentieth century industrial and technological innovations, within specifically the graphical and printing industry, followed each other rapidly and began to shake century old graphical traditions. Artists and designers constantly researched the possibilities of the innovations which again started to change the structure and organisation of many artists' working spaces. Not before long the graphical changes also started to infiltrate the architects' studios. Where as architects used to design around big drawing boards producing unique artifacts [2], the introduction of innovative architectural drawing aids changed design-production drastically. The development of more economical printing processes helped to speed up drawing processes and new and affordable media helped to spread new ideas widely. Technological novelties started to proliferate : blueprints through contact printing, photomontages through offset-printing, copy-machines, faxes and eventually computers. Computers remodelled our whole society to the extent that living without them has become unimaginable for most of us. Digitalization flip-flopped professional relationships drastically and attempted to ease life for everyone.

MWM questions digitallization. Digital novelties are hyped as tools that send the very traditions which gave birth to the new technology to oblivion and beyond. The novelties are being branded as equal tools augmented with controlable parameters, ever faster, more performing and ultimately of a level higher. If we find ourselves claiming that the digital version of a traditional process will produce 'better results', we must remember that digital painting, for example, is quite simply a different medium than an oil painting on wood. From a representational point of view, different media can be alike –it's about a subject being represented-, but from a practical point of view, the two are completely different tools with inherent logics and qualities. Is it defendable to state that traditional drawing skills are to be discarded in favour of their digital counterparts? Is there actually anyone who believes laptops are the sole and only designing tools for the future?

MWM asserts that the gradual infusion of digital tools within our practices creates a fuzzy relationship between tradition and novelty. From this assertion *MWM* assumes that designers and draughtsmen create a series of possible alliances between newly introduced digital novelties and already embodied techniques. As such, draughtsmen mix and blend different media-types to produce mutated media-types. *MWM* intends to study those blending processes from within. To do that *MWM* "infiltrates" a variety of design-processses to analyse the graphical tools which have been abused, during the designing process, in order to get a scope of graphical methods which found their way to practices . Tracing the steps towards the design of an architectural project means we have to acknowledge the unique-ness of that process. Designing is considered as a non-linear-activity which is ruled by different actors and their properties which alltogether influence the final outcome architeral projects. Schematically, one can designate

three actors: the architectural subject, the designer and the "client". On the level of the architectural subject, one can agree that spatial ideas/design questions call for specific media strategies. Be it designing cities, appartment blocks, rows of houses, construction detailing, a villa, a table, a dinner set and so on. Every object and scale has an inherent internal logic towards a representational strategy governing the final outcome of the final architectural presentation. Our second actor -the designer- is solely responsible for the final outcome of our graphical blending process. Design-teams design, draw and direct the production process of our architectural subject. With our designer comes personality, signature, form, volumetric approaches, designerly-concepts, office-organisation and so on. These secondary, subjective designing-properties are governed by the designer's personal trajects and intrests and compel designs towards unique architectural solutions. Finally, juxtaposed to our designer, there is the person or entity whom we are communicating to: our "client". And our "client" has many hats: contractor, technician, craftsman, scientist, user, functionary, anyone… Their unique-ness calls for different graphical linguistics. Needless to say that our "client" arranges the architectural subject and ultimately directs our designer towards a communal goal. Departing from previous schematic description of actors and properties governing designs, *MWM* focusses on the graphical language of embryonic design stages. The embryonic is considered as the preliminary intellectual phase where design-studios are pregnant with creativity, where the designing trajectory and the final outcome of the project is an undesignated cerebral figure and working spaces are filled with conceptual debris concerning the architectonic qualities of an achitectural subject yet to be conceived: sketches, pictures, printouts, models, plans, texts, references, whatever nourishes designers in the designing of architectural subjects. On a timetable,

MWM envestigates the narrow stretch of undesignated design within a process towards building and is specifically looking for the "graphical in-between", i.e. drawings forged somewhere on a thin line between analogue and digital activities.

MWM is aware of the fact that "media-blending" indicates a time-tied phenomenon, depending on the unpredictable forces new media insertions bring to the scope. The innovative drive of digital technologies is a constant factor for change, so are the draughtsman's intentions with any (new) technology. Any new drawing environment introduces unforeseen possibilities and fusions for designerly drawing and pushes (architectural-) drawing into a constant state of adaptation and the adaptation works in two directions: analogue activities adapt to digital possibilities and vice versa. *MWM* specifically searches for drawing techniques which have already found their way into our designerly acts. That, in order to see how certain techniques graft themselves onto already incorporated drawing methods to become an integral part of the individualized set of drawing tools designers call for while conceptualizing their architectural subjects.

MWM studies interactions between different media-possibilities through analyzing sketches, drawings and media from different surroundings (design offices, architects, draughtsmen, students, artists, publications, movies…) in order to map contemporary modes of graphical representation. The idea is to analyse these modes and put them into a drawing "perspective" and translate the study into an annotated drawing manual serving as graphical research. Ultimately, the findings can be used as reference material within our courses and our thinking on new directions for representational courses [3]. MWM -studying contemporary drawing techniques- can provide

us with knowledge of valuable methods, tools, insights and what not to implement in graphical education and beyond. If drawing finds itself in a state of adaptation, constantly reinventing itself through the crossbreeding with cutting edge media aids, we should embrace this state as being a contemporary way of drawing and analyzing some of the opportunities this so-called hybrid [4] state presents to us in order to get in line with ongoing graphical developments. Designing spaces - and the representational language that comes with that act – incorporates a tacit understanding of spatiality which is visualized through a graphical language serving the intended spatiality. For too long architectural representation has been treated as a minimum set of rules and/or media modes with strict divisions between analogue and digital, geometry and morphology, pictorial and abstract and so on. Within contemporary practices, fast-design communication is the main concern, by any means necessary. Within the designing process designers do not consciously draw borders between the different media modes. They stack mode upon mode to suit swift design representations. The artificial schisms towards our representational modes may be close to non-existing. *MWM* sincerely hopes the study can contribute to an alternative, individual training model for architectural representation. A trajectory in which one can discover certain ways to express creative thoughts and pick a few out for a personal pleasure and, more importantly, their communinicative performance.

MWM is considered as a public space that serves a wider community. Texts, images, movies, interviews, features will serve as a pool of information to draw from. One can read the study in many directions: for the shear inspiration of it, graphical knowledge, practical tools and eventually pedagogical goals . Exhibitions, workshops, web-

information, happenings and presentations in “zine”-publications will inform a wider public on the proceedings. The studies are equally meant for practitioners, students and tutors. The main concern is to present an inside view of the working methods designers and offices have created for themselves in order to generate new insights and new possibilities to talk about architecture, graphically. As already stated, the research should offer a praxis-based background to rework our representational training. Since little or no material is to be found on the subject of mixing designerly media-systems, the inquiries should provide working tools that can be implemented our representational curriculum. The aim is to redirect views on analogue, digital and morphological courses into an integrated volume of representational possibilities based on equality. Within this model, the final representation of our previous “architectural subject” should be our main concern. As *MWM* is intended to function as designerly research, the study will be larded with examples from architect’s practices , approaches and examples from other architectural/ design schools, artists’ presentations, literature and other topics covering contemporary mixed media modes in order to provide valuable information on contemporary architectonic graphics.

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(***1***) Defining representation is study on itself, I would like to refer to Dalibor Vasely's "architecture in the age of divided representation" where representation is tackled on page 13: «*The problem of representation is closely linked with the process of making (poiésis) and with creative imitation (mimésis). Each project, however small or unimportant, begins with a program–or at least a vision of the anticipated result. Such a program or a vision is formed in the space of experience and knowledge available to each of us. The result can be seen as the single actualisation of an infinite number of possibilities. The formation of the program can be modified or improved through words or drawings because they make the potential field of possibilities present and available. Under such conditions, the actual result becomes a representation of the latent possibilities, bringing into focus their typical characteristics and enhancing their presence. Such focus takes place each time we succeed in grasping what is essential to a performance space, a concert hall, a particular urban space, and so on in a project. Thus, as Hans-Georg Gadamer points out, in contrast to the conventional understanding, "representation does not imply that something merely stands in for something else as if it were a replacement or substitute that enjoys a less authentic, more indirect kind of existence. On the contrary what is represented is itself present in the only way available to it."*»
"Architecture in the Age of Divided Representation", Dalibor Vasely, MIT-press, London-Massachusetts, 2004
(***2***) the idea of (architectural) artifacts is a concept borrowed from "Architectural Representation and the Perspective Hinge" where the writers state that architects do not "make" buildings, but, rather than that, they make mediating artifacts that make significant buildings possible.
"Architectural Representation and the Perspective Hinge", Alberto Pérez–Gómez and Louise Pelletier, MIT Press, Cambridge/London, 1997
For a view on disappearing drawing aids I refer to "tools of the imagination (drawing tools and technologies from 18th century to present)", Susan C. Piédmont-Palladino, Princeton, New York, 2007
(***3***) Our Architecture Department is currently studying a transformation of the representational courses wherein all representational courses would be integrated in a «mixed-media» course.
(***4***) see "Hybrid Drawing Techniques by Contemporary Architects and Designers", M. Saleh Udden, John Wiley and Sons, New York, 1999

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Hybrid Urbanity

A design study of new configurations of open space in hybrid urban areas

[I.] Scientific objectives

1. State of the art

In Flanders, as in large parts of Western Europe, more and more areas on the map can no longer be defined either as urban or as rural. They are both urban and rural. We are speaking here of little pockets of "rural urbanity" not necessarily related to a historic town core or an urban agglomeration. Think of fragments of major roads, think of strategic points in the infrastructure network such as Golden Crossroads in St Joris Winge (Belgium), think of the peripheral built landscape in the north of Antwerp[1] and of large recreational programs such as soccer stadiums and multiplexes in the middle of nowhere…
These spaces are new hybrid configurations of contemporary urban life where aspects of the historical city and the countryside mutually influence one another. This tension between city and countryside results in new types of public and semi-public open spaces. Spaces of contrast where urban programs are put in a rural setting and where urban and rural types are redefined: spaces such as park and ride stations, large scale recreational spaces, enclosed wastelands, over dimensioned building blocks, car-parks of cultural centres or libraries,…

Although these open spaces play a vital role in contemporary urban life, they are hardly to be found in any comparable spatial configuration in the historic inner-city. In contrast to the spatially well defined inner-city public spaces, hybrid open spaces are often purely functional and "weak" open spaces, spaces with an unclear structure and no identity.
Within the field of architecture and urbanism, theoreticians are showing a wide interest in the characteristics of these hybrid spaces. Several research projects have been started up to describe and understand hybrid urbanity. In "Op zoek naar nieuw publiek domein" ["In search of new public domain"], Maarten Hayer and Arnold Reyndorp (Hayer & Arnold, 2000) list the structuring elements of contemporary open spaces by means of a critical analysis of open space structures. In "USE, uncertain states of Europe" (Wise, ed.) Stephano Boeri reveals the tensions and differences within the European urban structure by exploring local open space structures. Thomas Sieferts describes in "Zwischenstadt" ["In-between city"] (Sieferts, 2003) the urbanized European landscape as an "in-between-city", for which no clear spatial image exists, as for now. In "De eeuw van de stad - over stadsrepublieken en rastersteden" ["The century of the city – about city states and grid-cities"] (Kesteloot et al, 2003), the hybrid urban structure in Flanders is described as a "grid-city". And in "City Edge Contemporary discourses on urbanism" (Charlesworth, 2005), key elements in the evolution of the

city edge are explored by means of case studies. In all of these research projects, the urban field is explored from an architectural, spatial perspective. I, too, will focus on the spatial configuration of hybrid areas.

2 Objectives

The objectives of this project are twofold. On the one hand, I want to contribute to a better understanding of the contemporary urban space structure in Flanders. On the other hand, I want to couple this analytical comprehension of hybrid space with a design perspective. In this way I want to develop viable strategies and a design instrument to imagine contemporary, strong and characteristic open spaces in hybrid areas. Coupling a scientific analysis of hybrid urbanity with the invention of design tools and strategies is progressive, both in approach and in content. The research projects cited above document hybrid urbanity. The authors focus on understanding the actual spatial patterns. The components of hybrid spaces are dissected and isolated in order to describe them and to indicate their characteristics. The authors are mainly interested in the past and present, in the way hybrid spaces have evolved into their present configurations. In this research project the accent will be on creation. This means that the research perspective will mainly be mainly future oriented. Interpreting the existing hybrid space will be complemented with imagining its future possibilities.

[II.] Research method

In his "Atlassen of Zuid-West-Vlaanderen"[Atlasses of South-West-Flanders], Professor Bruno the Meulder has already introduced a research method in which urban analysis is coupled with design strategies. In order to describe the processes of urbanization in South-West Flanders, De Meulder does a multi-layered reading of the area: the historic evolution, the topography, the infrastructure networks, the social geographical context, etc.
By confronting the different layers, he characterizes the processes of urbanisation in South-West Flanders and formulates possible design themes. In this way De Meulder looks at Wevelgem as an "incomplete" city. He suggests rethinking this city landscape by intervening in its fractures, its nodes, its major roads (steenwegen) and farms.

In my research project on hybrid urbanity, such an accurate reading of the space will go hand in hand with an ethnographic observation. Ethnographic observation is an approach in which one tries to find out how inhabitants use and experience their environment. The goal of this observation is to find out what kind of spatial traces they leave. The shifts and deviations between the way a space was designed and the way it is inhabited are interpreted as suggestions of future patterns.
We understand a given space by making an accurate spatial reading. We explore its future and formulate design themes by making an ethnographic reading.
By combining a multilayered reading with an ethnographic analysis, we jump from an interpretation of spatial configurations, imbedded in scientific research, to design research.

The research projects mentioned in I.1. have mainly a European or international character. I will focus on Flanders – on the specificity of hybrid spaces in the nebular urban constellation of Flanders. In the first phase, a screening will be made of different hybrid spaces in Flanders. Next, a selection of the sites will be made on the basis of their illustrative character and on the basis of their complexity, the diversity of the inhabitants and users, their historic layers, etc. I will make an accurate spatial and ethnographic reading of the selected areas, and for key spaces different design proposals will be developed.
The 'proof of principle' is the confrontation of these designs and concepts with inhabitants and actors, on the one hand, and with visions of hybrid urbanity developed in photography, fine arts, video art, etc., on the other.
This confrontation could take on different forms: a confrontation of inhabitants with a one-to-one simulation of a project; a discussion with administrations involved, promoters, researchers with an alternative research perspective on hybrid urbanity, inhabitants, etc.; an exhibition where mappings and design diagrams are confronted with photographs, installations or videos of hybrid urban spaces.

With this research project we can understand the Flemish urban constellation better by reading it differently. At the same time, we can ask questions about different aspects of urbanism and strategic planning: Can we use this research in structure planning to introduce categories of hybrid urban spaces different from the built peripheral landscape? In the actual process of delimiting the administrative zones of city versus country, should we keep on working with the contradiction between these two terms or do we need to introduce hybrid zones where a different policy is needed? Do we need to think of an alternative system of management for hybrid open space structures? A design research project on hybrid urbanity, an alternative reading and projects in which the potentiality of these hybrid spaces is imagined can evoke and guide these discussions

Erik Van Daele

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RTS-sessies & de Academisering van het architectuuronderwijs – enkele bedenkingen – deel II.

Mijn bijdrage tot deze bundel is niet zo zeer een concreet voorstel voor een onderzoek maar eerder een persoonlijke, (kritische) reflectie over de 'doctoraatsopleiding' RTS 1+2. Naast de fundamentele twijfels (als architect/ontwerper, als lesgever), en de praktische bezwaren (tijd, middelen, anderen) maken vooral twijfels omtrent de intellectuele en maatschappelijke relevantie van het 'academisch onderzoek in en voor ontwerpen' het zingeven aan en de onzekerheid van een eventuele 'temporary shift in lifestyle' een moeilijke zaak. Wat zet er mij toe aan, of waarom blijf ik er af en doen we gewoon verder? (Maar dan nog beter).

Deel 1
'n STILLE WENK

Beschouwing over het eigen werk, en hoe een bewustzijn in cirkels kan draaien
Toen ik samen met mijn partner/makker Oscar Rommens eind jaren negentig startte met Import.Export Architecture (IEA), wat nog steeds de naam is van ons architectenbureau, was dit met de bedoeling een gezamenlijke architectuurpraktijk op te zetten waarin we op een vrije manier onze eigen ideeën en opvattingen omtrent architectuur konden exploreren.

We wilden niet afhankelijk zijn van 'de markt' of van een economische noodzaak om te bouwen, maar vooral conceptueel en theoretisch kunnen werken, en kunnen denken op een grote schaal. We wilden onderzoeken. Om naast de klassieke paden van de vlaamse architectuurpraktijk, een nieuwe benadering te creëren.
Om te overleven en onszelf van een inkomen(tje) te voorzien, leefden we van een onderwijsopdracht in het kunstsecundair en wat karweiwerk.
Na onze opleiding architectuur in Sint-Lucas Gent, een postgraduaat in Archeworks Chicago en stageplaatsen bij diverse markante bureau's in binnen- en buitenland, was immers de eerste ervaring met de bouwpraktijk tot dan beperkt gebleven tot enkele kleine verbouwingsopdrachten waarin we onze ambities maar zeer moeilijk konden realiseren. Minimale budgetten, beperkte interesse bij opdrachtgevers in ruimtelijke kwaliteit, frustrerende ambtenarij en regelgeving... Ondanks keihard werken hieraan leverde het amper resultaat op. Bovendien werden ons enkele eerste grotere opdrachten ontfutseld door marktgerichte, grote en

machtige architectenbureau's.
Gelukkig groeide al snel het besef dat er nog wel wat anders was. Onder meer door de deelname aan enkele wedstrijden – nog voor het tijdperk van de Vlaamse Bouwmeester – konden we op een aantal thema's een eigen verhaal ontwikkelen op een andere schaalniveau (sociale woningbouw, wonen in overstromingsgebied, landschapsontwikkeling, stedenbouw, ruimtelijke planning) en vonden we aanknopingspunten tussen het domein van de architectuur en domeinen daarbuiten die ons zeer boeiden zoals ecologie, politiek, kunsten, mode.... Zo ontstonden enkele onderzoeksprojecten – we noemden het alleszins zo – o.a. Amfibisch wonen, Stichting Dakschaap en Welcome To The Promised Land. In diverse ontwerpen, installaties, posters, filmpjes, teksten, kaarten, brieven, maquettes en 3D-modellen konden we onze ideeën en concepten uitwerken. Door enkele publicaties en kleine tentoonstellingen hierover, voornamelijk in Nederland, werden we uitgenodigd als gastdocent in Tilburg (Fontys Academie voor Architectuur en Stedebouw) en Maastricht (Academie voor Bouwkunst), waar we een zgn. Actualiteitenprogramma ontwikkelden voor studenten architectuur en stedenbouw, met internationaal gerichte workshops, lezingen en een publicatie onder de naam Territory, Tourism, Terrorism (1). Het was dus, met dank aan Martine Demaeseneer en Pnina Avidar, een vraag om op basis van ons 'ontwerpmatig onderzoek' in onze praktijk, een bijdrage te leveren aan het hoger architectuuronderwijs.
Na een drietal jaren veranderden opleiding en directies, en hielden we de academies voor bekeken. Oscar zou kort daarna een nog een tijdelijke job als studiobegeleider starten aan de TU Delft. Ik koos ervoor om een tijdje voltijds met IEA bezig te zijn, er liepen immers ondertussen enkele ernstigere bouwopdrachten in Antwerpen en Gent. De herbestemming van oude panden en de problematiek van het hedendaags stedelijk wonen bleken daarbij boeiende inhoevalshoeken te zijn, en uit dit werk konden we ook een bescheiden inkomen konden overhouden.
Zo verving voor een deel de klassieke bouwpraktijk deze van de onderwijspraktijk – als bron van inkomen. Maar gaandeweg verving ze ook deze van de 'onderzoekspraktijk' (lees: de eigen gestarte theoretische onderzoeksprojecten), daar zo goed als al onze tijd werd opgeslokt door de organisatie van het bureau en de uitvoering van bouwprojecten. Op een bepaald moment, na weer een nieuwe faxoorlog met een

aannemer en de vaststelling dat onze onderzoeksprojecten stillaan onder een dikke laag stof verdwenen, stelden we onszelf de vraag: 'Willen we dit wel? Gaan we verder met 'het bouwen' en de dagelijkse confrontatie met problemen met aannemers, wetgevers, te beperkte budgetten en bouwheren met andere verwachtingspatronen? En welk resultaat levert ons dit op? Kortom: is het de moeite waard?'
Het was ondertussen ongeveer 2002/2003, en beiden waren we bijna tien jaar afgestudeerd als architect, toen we de bewuste keuze maakten om toch door te zetten met dat bouwen, om gebouwde resultaten neer te zetten. Deze beslissing had er ook mee te maken dat we, door de publicaties van eerder conceptueel/theoretisch werk, en heel wat reacties hierop, er voor vreesden om al snel het etiket van niet-bouwende architecten/kunstenaars opgespeld te krijgen. Een etiket dat niet strookte met onze ambitie.
Terzelfdertijd formuleerden we ook scherper onze visie op onze praktijk, deze keer o.a. gestimuleerd door de formule van de Open Oproep waarin een duidelijk bureauprofiel werd gevraagd bij de kandidaatsstelling voor diverse openbare opdrachten. Eén van de basisprincipes van IEA, die tevens schuilt in de naamkeuze van het bureau, was (en is tot op heden nog steeds) een diepgaande onderzoeksmatige aanpak van elk ontwerpproces voor elke opgave, steeds opnieuw vertrekkend en zonder enige vooropstelling van wat zich aandient als opgave. Elke opgave vormt een input voor een langer onderzoeksproces, dat in feite de architectuurpraktijk is. En elk ontwerp, wat dan al dan niet wordt gerealiseerd, is een output of een unieke resultante. De dagelijkse praktijk vormt dan een permanente onderzoeksactiviteit, soms helder methodisch, soms impulsief en improviserend, aan de hand van zeer uiteenlopende cases.
Nu, alweer enkele jaren verder, zullen zich, door de opzet van deze praktijkwijze, doorheen een aantal gerealiseerde projecten langzaamaan al wel enkele grotere lijnen gevormd hebben in ons werk die de resultantes van de afzonderlijke cases overstijgen en mogelijk van betekenis zijn op het niveau van architectuurtheorie of de vlaamse/belgische/internationale architectuurpraktijk. De aandacht voor recente projecten als het Ruihuis/Ruimte, Fragile lab, ANYC, Kijkpunt en Ter Pitte (allen in Antwerpen) bevestigd ons vermoeden daarin.
Misschien is het nog een beetje te vroeg, misschien ook net niet, maar een zogenaamde reflectie over het werk van IEA,

zou toelaten dit vermoeden zelf te toetsen en een nieuwe tussentijdse evaluatie op te maken, om zo weer opnieuw krijtlijnen te trekken voor het verder verloop van het ‘onderzoeksproject IEA’ . De vraag is of wij hier zelf het best geplaatst voor zijn, en of we dit niet beter aan een externe beschouwer overlaten. Of kan het in een dialoog met zo’n buitenstaander?.

Dit hele verhaal van mijn/onze praktijk binnen IEA acht ik op deze pagina’s op zijn plaats, aangezien het illustreert hoe ik/wij toch al lang bezig zijn met het nadenken over onderzoek, de relatie onderzoek-praktijk en het begrip ‘ontwerpmatig onderzoek’ ook een bepaalde invulling hebben gegeven – en hier nog elke dag in een bouwende architectuurpraktijk intens mee bezig zijn. Allicht geldt dit ook voor heel wat “jonge” collega’s/architecten, die meestal vanuit hun ervaringen in het buitenland en bij gerennomeerde architecten, een groot bewustzijn hierrond hebben ontwikkeld en dit vandaag in hun eigen praktijk in Vlaanderen trachten te expliciteren (alhoewel het nog steeds een grotendeels marginale groep is, die o.m. door een deeltijdse taak in het onderwijs kan overleven). Zeker zijn er ook wel wat “oudere” collega’s/architecten, die een permanent en geïntegreerd ontwerpmatig onderzoek als praktijkwijze hanteren, en hierdoor een œuvre hebben weten te ontwikkelen dat wel gerespecteerd wordt binnen een klein milieu van academici, maar dat verder maatschappelijk amper gevalideerd wordt.

Vandaar mijn gemengde gevoelens en twijfels bij de recente ontwikkelingen op het vlak van de academisering van het kunst- en architectuuronderwijs, waarmee ik nu sinds twee jaar (dus sinds ik opnieuw in het onderwijs ben beland) bijna dagelijks geconfronteerd word op school. Als regelmatig bezoeker van de lezingen en workshops van de RTS-reeks kon ik kennismaken met het fenomeen van de onderzoekshype die sinds kort de internationale onderwijswereld, en dus ook onze school aandoet, en de hiermee gepaard gaande stille Wenk aan het praktijkpersoneel om een research by design project te starten – al dan niet in de vorm van een doctoraat/phd, groepsproject of een didactische werkvorm. Enerzijds biedt het geweldige kansen aan mensen die hoofdzakelijk werken in het onderwijs en zich willen verdiepen en bekwamen in een specifiek onderwerp. Maar

anderzijds, voor hen die hoofzakelijk als zelfstandige in de praktijk staan, is een practice based research project (or whatever you name it) in de eerste plaats een zaak van het eigen werk, het eigen bureau, het eigen œuvre.
De relatie tot het academisch onderwijs hiermee zou er één moeten zijn waarin de school op basis van de praktijkgerelateerde resultaten de architect/ontwerper/kunstenaar (of het gehele bureau) uitnodigt om zijn of haar kennis te introduceren in een opleiding, en hier al dan niet een academische vorm of titel aan wenst te geven.
De school als cliënt, afnemer.
De vraag richten aan het onderwijzend personeel (met tevens praktijkwerk) om een ontwerpmatig onderzoek op te zetten in functie van de school (wat inhoudelijk en didactisch interessant kàn zijn, maar toch vooral een strategisch belang heeft in het kader van de academisering), of om in het kader van RTS een onderzoeksvoorstel te schrijven en hierbij om het even welk thema als onderwerp voor onderzoek kan aanvaarden, lijkt me daarom dubieus. Met andere woorden: indien een ontwerper door de school wordt bezoldigd om zijn ontwerppraktijk in te bouwen in een academisch onderzoek, verlaat deze tijdelijk de wereld van de dagdagelijkse praktijk (het atelier, de werf, het bureau...) en wordt hij/zij tijdelijk een academicus, de hogeschool, associatie of universiteit zijn opdrachtgever en werkgever.
Dit is mijns insziens een paradox, omdat die praktijk nu ook net op een essentiële manier door het zelfstandig, vrij en onafhankelijk handelen en werken wordt gekenmerkt. De ontwerper-onderzoeker zou dus een absoluut onafhankelijke ‘academische kunstenaar’ moeten kunnen zijn, die aan niemand behalve aan zichzelf en zijn werk verantwoording moet afleggen. Maar hoe kan dit in de praktijk, waarin moet worden gevochten voor elke opdracht, voor elke schuine lijn, voor elke afwijking van de normen, voor een morzel erkenning en een armtierig ereloontje, en waarin dus soms door de architecten/kunstenaars jarenlang persoonlijk (of met het hele gezin) wordt geïnvesteerd, risico’s genomen, gebatterd en geöfferd, omdat zij nu eenmaal geloven in de meerwaarde van goede architectuur en hier steeds opnieuw naar op zoek gaan? Hoe zit dat dan wanneer dit alles, dit werk geheel of gedeeltelijk plots ook zou gaan behoren tot een school? Ik denk hierbij nog niet eens aan de juridische consequenties of auteursrechten, die bij een

reëel, praktijkgebonden maar door de overheid bezoldigd ontwerpmatig onderzoek opduiken, indien dit zowel fantastische resultaten (prachtige beelden, succesvolle publicatie, een meesterlijk bouwwerk) oplevert als wel een fiasco zou zijn (een mislukt bouwexperiment, een niet genoeg geverifiëerd resultaat, een ethisch geladen discours, een misrekening).

In elk geval is het zo dat ik doorheen de lezingenreeks een behoorlijke aanvulling van mijn vocabularium heb kunnen noteren, en onder de indruk ben gekomen van de inspanningen die een nog kleine groep van ingewijden in het discours leveren om er voor te zorgen dat de positie van het hoger kunstonderwijs (architectuur-, design-,...) binnen een alsmaar meer internationaler gedirigeerde en door schaalvergroting tot het rationaliseren van de middelen gedwongen onderwijslandschap ondersteund kan worden door het ontwikkelen van een eigen academisch niveau. Dat in die eigenheid, met name het verstrekken van onderwijs voor en door kunstenaars/ontwerpers/architecten ook een bijzonder grote moeilijkheid ligt, is duidelijk. Maar allicht schuilt hierin ook de grootste potentie. Ik hoop dat het vinden van een performante relatie tussen kunstenaar en school snel tot andere modellen kan leiden dan deze die ons vaak worden voorgesteld vanuit de universiteiten. (Zo strookt bijvoorbeeld het doktoraat als éénmanszaak niet langer met het actueel praktijkmodel van vele architectenbureau's die werken als een duo, collectief, of zelfs interdisciplinaire groep).

Wat ik reeds lang voor deze onderzoekshype als een compleet duidelijk en helder begrip zag en ook hanteerde in mijn/onze praktijk binnen IEA, namelijk een onderzoeksproject, heeft het voorbije jaar aanvankelijk eerst een flinke deuk gekregen. Samen met begrippen als reflectie, kennisproductie, research by, research through, practice based,... en door de overvloed aan lectuur en modellen, schema's en theorieën over hoe het aan de praktijk gerelateerd' onderzoek er zou kunnen uitzien, dorste ik het woord onderzoek al haast niet meer in de mond te nemen uit schrik misschien iets anders te zeggen dan dat ik simpelweg bedoelde; laat staan dat ik het eigen praktijkwerk nog zo zou durven te omschrijven.
Maar dit was tijdelijk dus. De twijfel verdween, nadat die eerst nog ten top werd gebracht, tijdens de ontmoeting

met de Australische architect en research-by-design-paus dr. Leon van Schaik. Stond ik daar mijn 'reizende mens' traject-project toe te lichten waarvoor hij eens een spreekwoordelijke wenkbrauw fronste. Terwijl hij even later via een blik op de website van IEA een oprecht enthousiasme vertoonde en woorden van aanmoediging klonken, waardoor iederéén plots zo iets had van 'Ahja, wij hebben allemaal ook nog ons eigen werk, dat is dus ook een vorm van research!' Maar evenzovele ervaringen uit de dagelijkse praktijk en werking binnen IEA, boeiende gesprekken met collega's en buitenstaanders later, ben ik er nu wel zeker van: ik/we zijn goed bezig. Misschien is het niet onder de vorm van een docoraat-in-de-kunsten of een phd of een manama of een manamana (tut-tuut-turutut!), maar het ontwerpmatig onderzoek beoefen ik/wij reeds! (U kan ons steeds bellen dus.)
Dankzij deze sessies is dit bewustzijn eerst verstoord, daarna herwonnen en uiteindelijk zelfs versterkt. Ik denk dat Leon van Schaik hiervan een prachtige tekening kan maken!

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(1) IEA en P. Avidar, TTT Territorium Toerisme Terrorisme, Actualiteitenprogramma 2002-2003, uitgave door FAAS, Tilburg, juni 2004

Deel 2

INTIEME MIJMERING n°0372 [02-12-2007 1:43]

Beschouwing over het ontwerpmatig onderzoek & wc-tegels

Na één van die lezingen kwam ik moe thuis. Toen ik even later op het toilet zat bekeek ik voor de vijhonderdste keer de toiletwand, maar nu plots vol bewondering voor de egale voegen van dit eerder banaal ogende tegelvlak daterend uit 1934. Ik dacht:
'Het voegen van de tegels is een 'kunst'; het vereist een techniek. Dé techniek, om het juist en goed te doen (dus stevig, regelmatig, glad, met gelijke voegbreedtes, in het lood, vlak, waterbestendig...). De tegelzetter gebruikte misschien een koord in de plaats van die plastic kruisjes. Welk patroon volgde het koord? Hoe hield men rekening met de uitzetting van het koord als het nat werd door het cement en het voegsel? Welk type koord gebruikte hij, vlas, katoen,...? Hoe diep zijn de voegen?'
- 'Kan ik dit ook? Dacht ik. Allicht wel: à l'improvist. Bricolerend. Dus niet echt goed. Je zal het blijven zien, dat het amateuristisch is gedaan. Ik ken immers de échte juiste en goede techniek niet. Wie nog wel? Is het aan te leren, of zit het in de hand? Ach, de techniek is immers maar een methode. En de beschrijving 'Hoe te voegen' een WERKWIJZE, welliswaar met zijn eigen wetmatigheden: niet te snel, stap voor stap, enkel met goede materialen en geschikte instrumenten. Dus, ik kan het ook! Maar alleen wie ervaren is kan die techniek verfijnen, variëren, speels hanteren, naar zijn hand zetten, naar zijn eigen aard zetten, naar iets persoonlijks verheffen. Zelfs zo dat die hand herkenbaar is in de voeg. 'Dat kon enkel hij zo!'
Wie dit vervolgens nog met passie, liefde, doorzicht, verbeelding, gevoel (voor kleur, maat, ritme...) in het werk (in het toepassen van de techniek) weet te hanteren, kan het tot een kunst maken. De kunst van het tegelwerk. Azulejo's!
Is het ontwerp voor een gebouw net zo een voorschrift? Hoe het gebouw te bouwen is. Het plan is een werkwijze, een methode. Het is het resultaat van een onderzoek, naar de mogelijkheden die er zijn om iets goeds te maken, als antwoord op een vraag. Het is hét antwoord, om de juiste en goede oplossing te bieden.
Het ontwerp (the design project) is een voorafspiegeling van de werkelijkheid: hoe het zal worden, hoe het zal zijn. Het is een pre-present-atie (voor-aanwezig-heid). Het is een product, een ding op zich. De waarde of kracht van het ontwerp zal zich laten afmeten aan de kwaliteiten van de uiteindelijk gerealiseerde architectuur, of aan de mate waarop het als een voorschrift staat voor een idee, concept, model en zo betekenis krijgt als bijdrage tot een rijkere waaier aan bedenkbare gebouwen, aan mogelijke antwoorden.
Het ontwerpen is het maken van de methode, een lange activiteit die leidt naar een voorschrift (bijvoobeeld grafisch genoteerd als een plan).
Het ontwerpmatig onderzoek (research by design) is dus al voorschriften makend, al technieken verzinnend, al zoekend en denkend over de vraag 'Hoe gaan we dàt doen?', een oplossing of antwoord zoeken op een vraag, een uitdaging, een opdracht, een vraagstuk.
Het is dus per definitie testend, experimenterend. Al doende. Het veronderstelt een juiste vraagstelling (wat moet het worden? = resultaatsomschrijvend; een unieke en nieuwe vraag = het bestaat nog niet, het is voorafspiegelend), een kennis van aanverwante vraagstukken en hun methodes, oplossingen, technieken (= voortbouwend op wat al is), en een ruimte (tijd, middelen, vrijheid) om te creëren, om creatief te kunnen denken omtrent de mogelijkheden (het maken van hypothesen) en deze te testen (empirisch onderzoek, observatie, of via een model, een theorie, een theoretisch model, een these, een antithese). Hieruit kunnen nieuwe ontwerpen, voorschriften volgen. Hét ontwerp is de synthese, wat volgt uit het geheel proces en wat voldoet aan de gestelde eisen/vereisten/opgave, wat dus een voorschrift is om iets goed te gaan doen.'
Sindsdien is geen enkel bezoek aan dit toilet nog zoals voorheen.

Deel 3
Jehàn & Jehàn, en Jehàn!
Brief aan een collega / de nieuwe architect, hij bestaat

Dag Dag,

Sta me toe er even wat knipsels bij te nemen.

"Het doctoraat niet als doel maar als middel dus. De uitdaging bestaat er dan ook in het doctoraatsonderzoek volledig te integreren in de artistieke praktijk, het te beschouwen als een volwaardig artistiek project en, waarom niet, als een kunstwerk op zich. Daarvoor is wellicht een min of meer conceptualistische attitude vereist. Een doctoraatstraject is immers niet enkel een hoogstpersoonlijk onderzoek maar krijgt vorm via een permanente dialoog met meerdere kunstenaars en theoretici." Johan Pas (1)

"Johan Pas zegt overigens in zijn paragraaf 'Doel versus middel' interessante dingen over het goede effect dat onderzoek zou kunnen uitoefenen op het kunstonderwijs. Hij richt zich terecht tot de jeugd. Het is inderdaad bijna misdadig om veertigers die zich ooit in het onderwijs genesteld hebben wakker te schudden met de mededeling dat ze vlug even een doctoraat moeten maken, willen ze hun job niet verliezen. Dat de jong afgestudeerden alvorens te doctoreren best even participeren aan de (kunst)wereld lijkt me een goede suggestie, die, wat mij betreft, ook geldt voor de universiteiten. Wat de geschreven tekst betreft, maakt Johan Pas, vrees ik, terecht de opmerking dat 'een kunstenaar die schrijft, op dat moment geen beeldend werk maakt. Bovendien beschikken weinig beeldende kunstenaars in Vlaanderen over schrijfervaring, dit in tegenstelling tot hun Angelsaksische collega's'. Het eerste deel van de opmerking is pure logica: als men a doet, doet men b niet. Ik raad elke succesvolle kunstenaar in volle creatieve bloei ten zeerste af tijd te verliezen met een doctoraat. De tweede bewering is precies dat waar academisering volgens mij over gaat. Als de Angelsaksische kunstenaars dat kunnen, waarom zouden de Vlaamse kunstenaars dat niet kunnen leren? Het doctoraat als deel van de academisering veronderstelt uiteraard een geacademiseerde opleiding die het schrijven van een doctoraat mogelijk maakt" Willem Elias (2)

"Meeloper of vedette, wie naast het lijntje piest, zal me tegenkomen", Johan Boskamp (3)

"Een nog dwingendere vraag is deze: hoe kan voorkomen worden dat de profielomschrijving van docenten artistieke vakken in de toekomst een doctoraatstitel bevat? Op dit moment bestaat daar in het hoger kunstonderwijs duidelijk geen draagvlak voor. Maar wie garandeert dat de overheid zo'n vereiste binnen enkele jaren niet gewoon oplegt? Creëert men dan geen klasse van academisch verantwoorde, maar voorspelbare artistieke middelmaat? Loert een nieuw academisme, zoals dat in de 19de eeuw bestond, om de hoek? Deze voorlopig eerder retorische vragen maken duidelijk dat academisering van het kunstonderwijs, het onderzoek en het doctoraat in de kunsten minder onschuldige vernieuwingen zijn dan ze op het eerste gezicht lijken. Ze hebben namelijk niet alleen pedagogische, maar ook artistieke en zelfs maatschappelijke consequenties. Uiteindelijk is een en ander terug te brengen tot de verstarde verhouding tussen kunst en wetenschap onderling, en beider al even verstarde verhouding tot de maatschappij. Waar in de huidige academische wereld de kunst te rade moet gaan bij de wetenschap, lijkt het omgekeerde me minstens even zinvol. Misschien ligt het nut van doctoraten in de kunst er dus wel in dat zij het klassieke academische doctoraat, dat in de meeste gevallen nog steeds uit een corpulent proefschrift bestaat, nieuw leven inblazen door andere formats (tentoonstelling, interventie, installatie, film) als eindproduct toe te laten." Johan Pas (4)

Niet toevallig dat bovenstaande kritische bedenkingen bij de huidige ontwikkelingen omtrent academisering, onderzoek en doctoraten in, met of voor de kunsten, uittreksels uit artikels van Johan Pas en Willem Elias in Rekto:Verso, komen uit de hoek van het kunstonderwijs, en dat de beleving van en de discussies over deze onderwijsontwikkeling onder kunstenaars die zij hier verwoorden, mij bijzonder raken. Voor een heel groot deel illustreren ze een aantal van mijn persoonlijke gedachten bij dit alles.

Niet toevallig werden deze teksten door jou, Dag, getipt en doorgestuurd, naar ik vermoed ook met enige vorm van herkenning. Je bent immers ook een zielsmens, een artiest, een plusveertiger die verwonderd de 'onderzoekshype' beleeft en er o.a. via RTS verwondert naar kijkt.

Niet toevallig, Dag, ben jij ook een kunstenaar, ontwerper, vader, stadsdier en voormalig kantjesloper, en een architect die in zijn praktijk en projecten 'de mens' actief laat participeren aan het maken van architectuur. (Niet dat ik zelf zo'n participatieprocessen in architectuur voorsta, maar toevallig ben ik wel verwikkeld geraakt in projecten rond buurtontwikkeling en natuurbescherming, waarbij heel veel input van 'de mensen' komt).

Niet toevallig weet ik dit alles zo'n beetje door de recente gesprekken tijdens RTS bijeenkomsten, wat korte babbels met jou, of gewoon via collega's, en natuurlijk de poster die je maakte.

En niet toevallig waait dit debat Pas-Elias hier op mijn buro binnen op het moment dat ik twijfel over mijn bijdrage voor Reflections, en over de toekomstplannen omtrent onderzoek.

Niet toevallig viel het me tijdens die RTS-sessies meermaals op dat sprekers en tutors van een ander type waren dan het mijne of het onze. Zij spraken een academische taal, waren bijzonder belezen, brachten een theoretisch discours dat mij wel eens serieus boven de pet ging. Verder waren zij steeds keurig gekleed en op tijd, eigenaar van een kleine Apple notebook en zeer bekwaam in Powerpoint. (Wat ik hen allen benijd.) Het is niet zo dat ik hier mee iets wil zeggen over de zin en waarde van hun relaas, wat ik telkens erg boeiend en leerrijk vond. Het is maar: zij stonden zo ver af, en ik herkende geen architecten in deze mensen.

Het is dus niet toevallig dat ik mezelf wel wat meer terug vond in de ontmoetingen met mensen uit de kunst, zoals die met beeldend kunstenaar Koen Wastyn die ons meenam op reis door Australië en op jacht naar de baluga in Groenland – bloedernstig 'belezen' en heerlijk absurd kunst makend tegelijkertijd, of die met Ronny Delrue (tijdens een avond op Sint-Lucas Beeldende Kunst in Gent), die uiteenzette hoe of hij er min of meer in slaagt zijn werk als beeldend kunstenaar gewoon te blijven doen terwijl hij hierover systematisch dagboeknotities bijhoudt en reflecteert, enkele eenvoudige methodes aangrijpt om zichzelf en zijn werk te kunnen positioneren (zoals het drievoudig interviewen van collega-schilders met steeds dezelfde vragen) en zo ook zijn eigen traject ontwikkelt wat dan als een doktoraat in de kunsten kan worden voorgesteld. Of zoals in de ontmoeting met Luc Deleu, die vorige winter aan mijn studenten 4ia en in een exclusieve wereldpremière zijn nieuwe onderzoeksproject 'Orban Space/De wereldlijke ruimte' voorstelde, een zeilreis om de wereld, en hiervoor zijn klassiek kreukig pak had geruild voor een Hawaiihemd; hij wàs al onderweg!

Met andere woorden: ik heb in de RTS-sessies de architect gemist. De architect die bezielt en inspireert, die uitdaagt en confronteert, die het heeft over ideeën, over problemen, over visie (om de problemen aan te pakken) en frustraties (over visies die niet uitgedragen worden). Architecten die al 'onderzoekend' zijn, die permanent in hun praktijk ontwerpmatig onderzoeken en reflecteren, en dus sowieso een doctoraatstmodel belichamen, en die een leidraad kunnen zijn. Het was interessant, maar veel te weinig inspirerend.

Maar misschien ben ik al te melancholisch en oubollig in mijn beeld van een architect, ontwerper, kunstenaar, onderzoeker, en zag ik de nieuwe architect nog niet. De 'academische' architect, die leest en lezingen geeft, schrijft en publiceert, e-mailt en reist, congressen en bibliotheken bezoekt, fondsen zoekt, reflecteert en denkt in modellen, methodes en theoriën. En die via zijn laptop ver van huis een bureau beheert en projecten leidt.
Misschien ben ik zelf wel in staat om zo'n 'nieuwe architect' te worden, of ben ik er al één? Of ben ik beide, oud én nieuw? Joris en Joris?

Deze vragen komen in se overeen met de vraagstelling die Johan Pas formuleert vanuit de positie van de kunstenaar. Heeft de kunstenaar een academische pet nodig om zich professioneel te kunnen ontwikkelen, of dient de academisering van het hoger kunstonderwijs vooral het onderwijs zelf? De kritische houding van Pas, reeds van treffend wederwoord voorzien door Elias, hoor ik weinig of niet meer binnen Sint-Lucas Architectuur, niet bij collega's en zeker niet onder de veelal erg jonge RTS-deelnemers. Ook al is zij misschien te beschouwen als een uiting van meningen in de achterhoede, ik vind het erg waardevol om hierbij ook bij ons te blijven bij stilstaan: het belang van de artistieke praktijk zelf en het kunstwerk, de creatie, het ontwerp, het gebouw, de interventie…als een resultante, versus de universitaire modellen voor doktoraten (met een geschreven document en eventueel ook een aanvullend praktisch deel als resultaat).

Weet wat zo vreemd is, Dag? Dat ik me als mens, als kunstenaar, met mijn ziel en emoties zo verwant voel met de mening van die Johan Pas. Heb jij dat ook? Zouden er nog velen dat zo voelen?
Maar wat nog vreemder is is dit: met al die begrippen als onderzoek en doktoraten, die ons zogezegd worden opgedrongen van bovenuit, hebben wij mensen van de praktijk, architecten en kunstenaars het allemaal zo moeilijk, dat het ons beangstigd en beklemd, waardoor we terugvallen op de klassieke betekenissen en inhouden ervan. Mijn indruk is dat wie het net langs die andere kant heeft meegemaakt (dus als universitair heeft gedoktoreerd), de potenties om van die klassieke modellen af te wijken veel beter

ziet dan wij. En véél artistiekere onderzoekspaden ziet dan wij. Dat is toch straf, dat een 'academicus pur sang' ons, de creatievelingen, de weg komt wijzen? Kommaan, ni bang zijn, géft er een lap oep! (Het accent klopt niet, maar het zou van die deksele voetbaltrainer Johan Boskamp kunnen zijn.).

Niet toevallig heet onze coach ook Johan. Misschien zit er dus allemaal niet zo veel verschil op, op voetballers, kunstenaars en wetenschappers. Op Jehànnen. Ik ben ze allen dankbaar!

Joris Van Reusel.

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(4): idem

Participants RTS 2

image 1: Participation process in Hellersdorf, Berlin, 1998

image 2: The Zilvervloot, Dordrecht, 2005

Losing control, capturing the popular in architecture

The ethical dimension around the role of architects

How shall I make this clear?
Why do I think architectural design in urban renewal has to incorporate an emancipatory orientation?
In what way is 'effective participation in the shaping' a necessary condition for emancipation?
And how can one weave this into a cohesive research question improving the debate?

In this paper I will argue, referring to others' thoughts, why answers already exist, though they are mostly labelled as marginal, and secondly I will try to situate the misleading and obstructing elements in the eternal question for 'innovative' architecture and research within this context.

Situating urban architecture

Urban renewal is not merely a physical matter. The restructuring of neighborhoods in most European cities is too much dominated by a physical approach.
A strong majority of architects / urbanists believes in the autonomous value of architecture, but another – perhaps minority – group believes in a dialogue between various parts. I seem to belong to the latter group.
The social problems are begging for solutions, whenever a successful urban renewal is to be realized. The abstract thinking has to be replaced by local participative actions and a search for "practical" handles.
According to the "autonomy group", social problems should not be of interest for those who are shaping the physical environments. This should be the responsibility of people other than the architects / urbanists.

Research question?

Participation processes and communication are strongly related. This point is highlighted in the previous *Reflections (+3)* on research by Nel Janssens.

"…In architecture and urbanism, 'research by design' has become a commonly used and misused term. In these disciplines, especially in urbanism, 'research by design' is predominantly presented as an almost physical instrument for exploring a given situation and developing scenarios for solving the problems at hand. Particularly in participation processes, as occur in urban planning projects, this understanding and use of 'research by design' has become a hype ('workshops by design', 'communication by design', 'negotiation by design', 'action by design', …).
It goes without saying that design plays an important role in participation and

communication processes. But in my opinion, it certainly is not the only role design has to play, and it perhaps is not even the most essential..."[1] The article continues on 'Critical design' and 'tentative design'.

Participation and communication are joined in a direct way, as Nel Janssens clearly states, and remarkably, the logical relationship between participation and research is understandably put forward as a hype.
This hype is due to different reasons.
On the one hand new investigations on 'everyday architecture' are needed and, on the other hand, nothing is being resolved on the questions of the necessary esthetical conditions in these matters.

Self-actualization of an existing answer

"Participation"…pardon my French!

Isn't that something from the previous century?
Something a little bit vulgar?
A polemical device for defending cultural pluralism?
Denying the architect's professionalism?

I strongly believe that participative design has everything to do with 'everyday architecture', as opposed to symbolic architecture. Both are necessary, says Patrice Goulet, but 'the quotidian' is a disaster nowadays.[2]

Qualitative Architecture of the Everyday!
More precisely in this point of view: architectural results passing through work penetrating the others, smooth transitions without any shock from the commission into the architecture, mixing the roles of the strategist, the creator, the mediator and the decider.

I certainly do not want to refer to the sometimes nostalgic and sentimental qualities of the ugly and the ordinary in the representation of the everyday, although Venturi and Scott Brown took these insults for a compliment and adapted "ugly and ordinary" as a code phrase for their attempts to incorporate the forms, data and communication structures of postwar America into their architectural theory and practice.[3]

In 1988(!) Johann Albrecht made a disputable but interesting observation concerning the strange perceptions of participatory design:

"Participatory design, also referred to as community design, has reached a stage where it is no longer an activity practiced only by architects who operate outside the conventional realm of architecture. Participatory design has extended its base, and such proponents as Giancarlo de Carlo, Ralph Erskine, Lucien Kroll, and Charles Moore, to list a few, have helped to secure public recognition. But over time, participatory design has changed its character significantly. It is now, to a large extent, used to legitimize architectural populism without acknowledging its initial social program.

Architects became involved in participation by the end of the 1960s –the sterile and alienating built environment demanded reaction. A small number of architects were convinced that by working with the community in which their projects were located a more humane environment could be created. As a total disinterest in social issues had become the norm in the aftermath of the Modern Movement, these architects felt that participation could be used not only for building a better environment but once again also for addressing social issues.

In other words, the practise of participatory design was imbued with social awareness and consciousness. When participation in architecture had reached a certain level of acceptance, architects who were less concerned about social and environmental issues started to experiment with it. Participation since then had been seen as a means for tapping cultural pluralism which, in turn, has been considered to be a potential for achieving diversity of form in architecture and an answer to late-modernism and classicist tendencies in post-modernism.

Actually, it would be closer to the truth to state that participation has become a polemical device for defending cultural pluralism and for attacking elitist positions, originally the assumed elitism of modernism, now eclecticism and any kind of revived classicism.

There is no doubt that participatory design has enjoyed successes, nonetheless the high expectations which accompanied its inception have proven illusory. It appears as if participatory design has not been able to create an environment which is better than one created through conventional design approaches. The reason for that could lie in the trivializing developments just described or in fact that participation has frequently been applied in a token manner, simply to implement a project which otherwise may not have had much chance. Or, in the fact that participation in design is not an activity people readily embrace or practice."[4]

Patrice Goulet's question on the necessary change of the angle of architectural approach and Johann Albrecht's statement on the incapacity of people to 'readily' embrace participation are screaming for (re-)new(ed) investigations in true participatory design.
Not in the sense of further development of participatory design as a discipline, neither as an artistic search for 'internal' methods and knowledge.
But rather in linking esthetical dimensions and participation, and thus sustainability: two items rarely linked to each other.

Irritant

The specific design characteristics needed for 'effective participation in the shaping' and the direct involvement of people in the co-design of things they use, need to be defined.

Because true participation concerns real engagement rather than a grazing of the image, it can provide a counterpoint to the image-fuelled world of the media. Participatory design is not just a catalyst for transformation of the role of users and their desired images, but also for the transformation of architectural practice. It comes as no surprise that many architects working in this way – Peter Hübner being probably the best example - have been consistent irritants to the architectural establishment, insofar as they have consistently highlighted the limits of that establishment. Unfortunately, the normal reaction is to marginalize or dismiss the actions of the irritants as perverse behavior and, with this, participation, by association, is also labeled a marginal activity.[5]

Courage

A more positive reformulation, in which participation can be seen as a means of making architectural practice more relevant to, and more engaged with, the everyday world needs to be accomplished through descriptions of design characteristics. This will implicate politics and values: categorizing visual forms in different themes and situating them in an appropriate field range will bring proof to be unavoidable.

In many respects this research into capturing the popular in architecture, will reveal the learning process of its author(s).
It is about an editorial design that sees communication primarily as the production of meaning. That design is more interested in its functioning, in what it brings about, than in the success of a structural and formal innovation. It is an attempt, through the process of doing and thinking, to keep redefining messages in the light of present-day conditions and experiences. The result will be an inquiring, exploratory approach that adjusts and redefines as it goes along. It is more a question of overstepping than of maintaining barriers. And sometimes showing more courage than ability, or vice versa, and without the prospect of a definitive answer.[6]

Off the record: Last week in Kerkrade (The Netherlands)

Rob Hagens, Trevor James and myself presented the 'Foyer+' concept to the City Council of Kerkrade in Parkstad Limburg on November 6, 2007. Hogeschool Zuyd and Arcus-college (higher education) and Xonar (Youth Care) were present, as well.

The Foyer+ concept involves the transformation of different locations and old buildings

in and outside Heerlen and Kerkrade into a housing concept that serves the needs of young starters. It provides them not only with housing but with educational workplaces as well, to stimulate future employment. The residents can attend crafts and restoration courses or get care-sector training. Entrepreneurs are invited to participate.

The Foyer+ opens up perspectives for:
1. young families and single mothers who have difficulty finding and/or affording suitable housing;
2. young people who are not eligible for social benefits, who nonetheless need guidance and financial support;
3. school dropouts who still have to finish their education.

In the course of the presentation we took time to show numerous examples, but almost no(!) results of participatory design processes (cfr. earlier projects and activities with AUAI). In our opinion, these examples did the job for us. The city council accepted the concept by a large majority.

A perfect approach for participatory design is to start a "living work studio" in the existing buildings. This living work studio operates as a project-office: everybody inside and outside the council of Kerkrade can visit the studio and voice their opinion. This generates word of mouth and attracts 'the market'.

The next day, I scribbled a few thoughts on a piece of paper:

Participatory design is necessary for the acceptance of new and/or relatively complex program concepts.
Participatory design serves as bribe, as a pass, as a permit.
Don't present a final design. Propose something that can evolve, propose a prototype.
Participatory design is introduced as a process for developing existing relations or starting new ones. Social encounters create opportunities.
Participatory design builds identity and identity creates a market.
Participatory design serves open projects that are equally beneficial to private stakeholders and public users.

In this participatory design, everybody is in the driving seat.

Dag Boutsen

(Endnotes)

1 Nel Janssens in "Work in progress: Research by Critical Design* The implementation of designerly thinking on research in the field of (urban) design disciplines", *Reflections+ 3* , 2006
2 Patrice Goulet, « Avant >> Après – Architectures - Au fil du temps », Actes Sud, Mars 2007, ISBN 978-2-7427-6648-2
« …Disons que Jean Nouvel se situe plus dans le symbolique, et Patrick Bouchain plus dans le quotidien. On pourrait considérer le quotidien comme plus facile, mais c'est évidemment faux, c'est même là que le bât blesse aujourd'hui.
Le symbolique, aujourd'hui, marche finalement assez bien. Depuis le premier Guggenheim de New York de Frank Lloyd Wright, de l'opéra de Sydney de Jorn Utzon, la Philharmonie de Berlin de Hans Scharoun et, plus récemment, le Guggenheim de Bilbao de Frank Gehry, les monuments de nos villes ont retrouvé le goût du féerique (on attend avec impatience le siège de la télévision de Pékin de Rem Koolhaas et la Philharmonie de Hambourg d'Herzog et de Meuron).
Mais le quotidien est un désastre. Le nombre de réalisations de qualité a certes augmenté, mais elles sont de plus en plus minoritaires. Y aurait-il eu une erreur d'aiguillage? Nos efforts ne conduiraient-ils qu'à des impasses? Ne faudrait-il pas changer d'angle d'attaque?... » (p.34)
Patrice Goulet
3 Deborah Fausch in "Architecture of the Everyday" edited by Steven Harris and Deborah Ferke, Princeton Architectural Press, 1997
4 Johann Albrecht, "Towards a Theory of Participation in Architecture: An Examination of Humanistic Planning Theories",
Journal of Architectural Education (1984-), Vol. 42, No. 1 (Autumn, 1988), pp. 24-31, doi:10.2307/1424997
5 Peter Blundell Jones, Doina Petrescu and Jeremy Till, in 'Architecture and Participation', Spon Press 2005, ISBN 0-415-31745-2
6 Jan van Toorn in "design's delight", 010 publishers, Rotterdam, 2006, isbn 978-90-6450-522-5

English summary

This reflection is a plea for the better integration of technology into the design process through reformulating the description in terms of 'comfort and energy'. Creating energy-conscious comfort leads to a (new) challenge for the designer in the primary phase, as a condition for better integration.

A design exercise interpreted by means of dialogue between the student and the teacher demonstrates the evolution in the design process, in which the (new) technology that is needed for energy-conscious comfort becomes architecture and is designed by the designer, and not by an expert in the secondary phase.
The exercise is intended to stimulate a (new) design attitude in which technology participate in the design process, not as a problem-solving tool, but rather as a tool for creating an energy-conscious architectural shelter... .

Over bouwtechnieken en ontwerpmatig onderzoek, over integratie van technieken in het ontwerp

Deze denkpiste heeft de intentie onderstaande vragen te behandelen en eventueel te verduidelijken dat bouwtechnieken, technische uitrustingen in het bijzonder, deel kunnen uitmaken binnen het ontwerpproces op voorwaarde dat het begrip 'technieken' opnieuw gedefinieerd wordt.

1. Kan ontwerpmatig onderzoek handelen over bouwtechnieken?

of

2. Kunnen bouwtechnieken mogelijks *deel* uitmaken van het ontwerp?

Dikwijls is de zoektocht naar de gelijk(w)aardigheid tussen bouwtechnieken en architecturale expressie een uitzichtloze tunnel met als gevolg dat technieken omwille van hun groeiende complexiteit binnen het architecturaal ontwerpproces letterlijk naar een non-design-fase worden gedegradeerd en bovendien veelal worden uitbesteed aan derden die op hun beurt beschouwd dienen te worden als verdienstelijke oplossers en niet als ontwerpers. De spanning die bestaat tussen architecturaal ontwerp en techniek vindt zijn oorsprong in een ontsporing sinds de industriële revolutie.

Een oplossing kan worden gezocht in het herformuleren van bovenstaande twee vragen die ons moet toelaten de essentiële vragen makkelijker beschouwbaar te maken, vandaar :

3. Kan ontwerpmatig onderzoek handelen over de integratie van energetisch doordacht comfort?

of

4. Kan de integratie van energetisch doordacht comfort mogelijks *deel* uitmaken van het ontwerp?

Vragen 1 en 2 bieden weinig perspectief, hun antwoorden zijn producten gegenereerd vanuit de ontspoorde industriële revolutie waarbij de ontwerper overspoeld wordt (werd) door complexe en/of technische informatie en het dan maar aan derden overlaat. De bouwtechnieken, hier in het bijzonder nodig voor het creëren van comfort, worden dan logischerwijs door deze manier van handelen niet meer meegedacht in de primaire fase van het architecturale ontwerpproces.

Gezien veelvoudig voorbehoud en vele axioma's i.v.m. (bouw)technieken waarbij zij als tweederangs en mogelijks losgekoppeld van het architecturaal ontwerp worden gezien, is dit schrijven een pleidooi voor een éénduidige en simultane aanpak van beiden doch vanuit een ander standpunt.

Een vernieuwde missie.

Vragen 3 en 4 vervangen het begrip bouwtechnieken door 'integratie van energetisch doordacht comfort'. Daardoor zal de geprikkelde ontwerper een ontwerpmatige meerwaarde genereren en hiertoe een strategie ontwikkelen… in primaire fasen enerzijds, door hemzelf en niet door derden anderzijds. De vernieuwde missie voor de ontwerper is duidelijk : comfort creëren voor het individu (of bepaalde processen) en deze maatschappelijk aanvaardbaar uitwerken waarbij energetische efficiëntie de voertaal moet zijn. Deze manier van werken stelt de mens meer centraal in de architectuur.

Er is hoop, de ontwerper ontwaakt uit zijn industriële-revolutie-slaap en merkt vandaag dat technieken niet alleen architecturaal geïntegreerd kunnen worden maar zij het ontwerp zelfs versterken en/of verantwoorden. Dit heeft enkel een kans van slagen wanneer het inzicht wordt verkregen dat technieken losgekoppeld dienen te worden van hun dogmatisch en weinig boeiende misgroeide taak.

Een inhoudelijke omwenteling, namelijk technieken vervangen door energie en comfort, biedt nieuwe perspectieven en stimuleert de architecturale integratie waardoor het initiële dispuut, ontwerp versus technieken, vervalt. Hierdoor wordt de aandacht verschoven van een spanning naar een evenwichts-oefening tussen comfort en energie. Technieken, nodig om dit evenwicht te bereiken en/of te bestendigen, kunnen nu als eersterangs beschouwd worden, ontwikkeld door dezelfde persoon die het architecturaal ontwerp voorziet of… hoe technieken mogelijks een architecturale expressie zijn geworden.

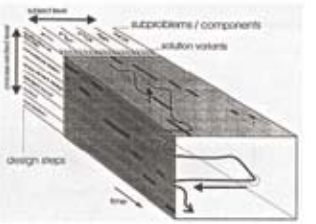
Een schitterende ontwerp-oefening gegeven aan master-studenten architectuur werd hier als *tool* aangewend om het antwoord op bovenstaande vragen in beeld te brengen. Een dialoog tussen studenten en hun begeleider demonstreert het ontwerpproces startend vanuit het louter vormelijke over een bouwtechnisch parcours. Hierbij kan het inzicht en de overtuiging gevonden worden in het feit dat de technieken werden geminimaliseerd *of zelfs* tot architectuur werden gemuteerd. Het gevraagde gevelvlak overstijgt zijn dogmatische functie doorheen het ontwerp-proces en wordt geactiveerd in het voordeel van het comfort van en voor de aanwezige gebruiker of… hoe techniek architectuur wordt.

Opdracht-omschrijving :
Ontwerp een (dak)structuur boven de binnenkoer gevormd door de pandgang van de abdij en doe dit in functie van een zelf te bepalen programma.

De acteurs : *S. (Student) en D. (Docent).*

Om het proces zo volledig mogelijk te duiden, worden geen beelden gepresenteerd. Het neerschrijven van het dialoog weerspiegeld dan ook beter het af te leggen traject. Het risico bestaat immers dat een opeenvolging van beelden enkele cruciale momenten (beslissingen) zou kunnen overslaan. Een grafische vertaling van het ontwerpproces op zich, zonder het in beeld brengen van het ontwerp zelf, werd besproken tijdens een RTS-bijdrage door Ömer Akin (Variants of Design-cognition).

Cfr. Frankenberger 1997, Description of a design-proces by sub-problems, variants and design-steps.



Onderstaande dialoog heeft dan ook de intentie van bovenstaande figuur in tekst om te zetten.

S. Ik dacht aan een metaalstructuur met daarop een glazen afdichting.
D. Mooie structuur, welk glas?
S. Stilte.
D. Welke parameters hanteer je bij jouw glaskeuze?
S. *Aarzeling.* U-waarde?
D. Ja en?
S. Lichttoetreding?
D. Zontoetreding? ZTA-factor?
S. Ja.
D. Heb je reeds het gewenste of geëiste binnenklimaat bepaald?
S. Ja, 21°C.
D. Welke antwoord biedt jouw ontwerp op het fluctuerend buitenklimaat?
S. Hoezo?
D. Het contrast tussen zomer/winter en dag/nacht?
S. Neen (?).
D. Beeld je wintersituatie in, 0°C, en binnen verlang je 21°C. Problemen?

S. Warmteverliezen?
D. Ja. Hoe deze transmissieverliezen compenseren? Hoe energetisch efficiënt aanpakken?
S. Superisolerend glas!
D. Welke U-waarde heeft die?
S. 1.1
D. Wat?
S. ja, W/m²K
D. Is dat energetisch optimaal? Je weet dat wanden palende aan buitenomgeving de maximale U-waarde ten bedrage van 0.6W/m²K moeten respecteren. Tien centimeter isolatie resulteert makkelijk in een U-waarde ten bedrage van 0.20 W/m²K of lager. Bijgevolg veroorzaken glasopppervlaktes ongeveer 300% meer warmteverlies dan een eenvoudig maar degelijk geïsoleerde muur… jouw glazen dak is dus een energetische ramp in vergelijking met ietwat degelijk geïsoleerde buitenmuren in wintersituatie. Trouwens, een comfortparameter houdt in dat het oppervlaktetemperatuur-verschil tussen de ons omhullende warmteverliesoppervlaktes niet groter mag zijn dan 3°C : de wartetransmissies van de verschillende warmteverliesoppervlaktes dienen dus t.o.v. elkaar afgewogen te worden.
Hoe kunnen we ons glasoppervlak optimaliseren om warmteverlies te beperken? Bovendien is super-isolerend glas een misplaatst superlatief : iedereen gebruikt vandaag glas met U-waarde 1.1 W/m²K… dit is dus middelmaats en niet super, zeker niet in vergelijking met de U-waarde van bijvoorbeeld muren.

D. Hoe kunnen we ons glasoppervlak thermisch toch optimaliseren met als doelstelling het warmteverlies in de winter te beperken?
S. *Stilte.*
D. Bijvoorbeeld ; een thermische luchtlaag (thermisch kussen) ontwikkelen door ontdubbeling van de huid.
S. Dan wordt lucht tussen de twee glasplaten in wintersituatie opgewarmd via zontoetreding?
D. Stilstaande of bewegende lucht?
S. *Stilte.*
D. In wintersituatie zou eerst kunnen onderzocht worden of de luchtlaag voordelen biedt door eventuele stilstand waardoor het de kans krijgt opgewarmd te worden via zontoetreding doorheen de bovenste glaslaag. Tegelijkertijd mag dit voordeel in winterperiode niet ombuigen tot een nadeel in zomerperiode : beeld je zomersituatie in, 35°C en volle zon, en u verlangt 21°C. Problemen?
S. Serre-effect? Oververhitting?
D. Inderdaad. Hoe kan dit vermeden worden?
S. Zonwering.
D. Waar?
S. Aan buitenzijde boven het glasvlak?

D. Welke werking zou rechtstreeks aan de dubbele huid kunnen toegevoegd worden die zomersituatie ten goede komt?
S. *Stilte.*
D. Naast zonwering kan eventueel ervoor gezorgd worden dat de bovenste glaslaag de evacuatie van de te warme 'spouwlucht' bevordert. Hiertoe moeten mogelijks enkele evacuatiemogelijkheden voorzien worden.

D. Je voelt wel aan dat een dergelijke 'dak'-opbouw enige flexibiliteit vereist om de fluctuaties zomer-winter, dag-nacht of plotselinge weersveranderingen op te vangen. De flexibileit moet bijna rechtstreeks afleesbaar zijn van uw plannen, details… kortom uw architecturaal ontwerp.

D. Geeft de toevoeging van een eventuele zonwering, een screen, geen aanleiding tot een vermindering van het visueel comfort daar de lichttoetreding mogelijks verhinderd wordt?
S. Een aan de situatie aanpasbare zonwering? Alweer flexibel?

D. Dankjewel. Ik hoop dat je inziet dat onze dakgevel ondertussen geactiveerd werd en zijn clichématige of bijna dogmatische functie, het louter regen- en winddicht zijn, overstijgt. Bijkomend dient te worden gezegd dat ondertussen architectuur wordt gegenereerd en geen loutere technieken. De technische middelen om comfort te creëren zijn architectuur geworden, ontworpen binnen één en dezelfde fase. Althans zo zou het kunnen.

D. De boodschap luidt dus: activeer het gebouw via zijn schil, in casu dakgevel, en turn het vastgeroeste dogma 'warmteverlies' om tot 'warmtewinst'. Ga creatief om met uw bouwfysische kennis en vervang binnen uw ontwerpmatig denken bouwfysica om tot bouwenergetica. Een flexibele ontdubbelde huid kan hieraan voldoen waarbij het initiële concept van een glazen dak in haar essentie niet dient gewijzigd te worden maar haar functie oplaadt en meer betekenis geeft. Zover het thermische luik.
S. De student knikt gemotiveerd en lijkt geprikkeld.

D. Welk comfort aangaande de luchtkwaliteit wens je de gebruikers aan te bieden?
S. Wij hebben ons dakvlak onder helling geplaatst om het schoorsteeneffect aan te spreken zijnde het feit dat warme lucht stijgt en daardoor ter hoogte van bovenste dakpunt de vervuilde binnenlucht makkelijk kan geëvacueerd worden.
D. Wat wilt u dat het schoorsteeneffect presteert? Weet dat een doordachte ventilatiestrategie een basisventilatie of hygiënische ventilatie veronderstelt via een gecontroleerd systeem (gecontroleerde debieten) en in tweede fase een intensieve ventilatie om bij piekmomenten, wanneer het basissysteem faalt, te kunnen ingrijpen. Ik vrees dat uw schoorsteen slechts kan optreden voor het tweede luik van de strategie, de intensieve ventilatie. Ik herhaal de vraag hoe je de luchtkwaliteit in zijn basisvorm

garandeert?
S. Wij opteren voor een natuurlijk ventilatiesysteem.
D. Je bedoelt een systeem die u niet onder controle heeft wat debieten en temperatuur betreft? Zoals reeds gezegd is een basisventilatie pas gecontroleerd wanneer ofwel de toevoer of de afvoer mechanisch gestuurd wordt (en bij voorkeur beiden) wat ons leidt tot een volledig mechanisch systeem.
S. Maar is dit energetisch rendabel?

D. Opnieuw is het hier uw taak om vanuit uw maatschappelijke verantwoordelijkheid dit systeem energetisch te optimaliseren. In eerste instantie zouden hierbij passieve technieken kunnen geïmplementeerd worden, om de bouwenergetica te optimaliseren. Voorziet je impulsie op basis van ongekende buitentemperaturen (mogelijks in winter aan 0°C en in zomer aan 30°C)?
S. Wij dachten aan warmterecuperatie via een warmtewisselaar.
D. Zekerlijk maar een warmtewisselaar start met een vast gegeven, zijnde de temperatuur van de buitenlucht die mogelijks door interne warmtelasten (een weinig) opgewarmd wordt maar dit is geen absolute garantie. In wintersituatie dient in een basisopwarming voorzien te worden en in zomersituatie in een basisafkoeling, telkens op een energetisch efficiënte wijze. Hoe?

S. Grond-lucht-buis.

…
We zetten enkele stappen verder in het dialoog om de essentie van dit schrijven verder te zetten..
…

D. Hoe zien de impulsie-openingen eruit in het dakvlak? Hoe groot? Hoeveel? Zijn zij ontworpen? Esthetisch? Maak je de werking van je dakgevel zichtbaar? Hoe en via welke weg verdeel je de impulsie? Zijn zij geïntegreerd in vloeropbouw of in meubilair? Waar?
S. *Stilte.*
D. Hoe zien de extractie-openingen eruit in uw dakvlak? Hoe groot? Werden zij gekozen vanuit een catalogus of werden zij wel degelijk ontworpen?

S. *Stilte*. Doch de student lijkt geprikkeld zijn opdracht verder te zetten maar met nieuwe perspectieven die veel verder reiken dan zijn eerdere dogmatische vooroordelen. Zijn opdracht werd plotseling vergroot : er werd een inzicht ontwikkeld dat zijn ontwerp meerdere facetten kan bevatten… ook de technische uitrusting hetzij via de nieuwe omschrijving ‘comfort en energie’.

Besluit.

De grijze aanduidingen in bovenstaand dialoog verwijzen naar ingrepen in het ontwerpproces die bijdragen tot het architecturale dak-ontwerp, naar beslissingsmomenten waar architectuur kan worden ontwikkeld ten dienste van comfort welke op een energetisch doordachte wijze werd ontwikkeld en dit binnen een primaire fase.

Dergelijke ontwerp-oefening demonstreert dat bouwtechnieken via een aangepaste omschrijving een attitude stimuleren waardoor de initiële bouwtechnieken deel kunnen uitmaken van het ontwerpproces.

Sandy De Bruycker

Interactive architectural design:
[Virtual 3D game engines in real life projects]

As an architect I entered the academic research world only recently (01/07). Until now my research has been practice based (in the context of the RAUW architectural firm in Brussels), being applied in concrete situations such as exhibitions and architectural projects, all of them executed prior to 2007. Over the past ten years I have also had a part-time involvement in Sint-Lucas, teaching digital presentation techniques to student architects. This paper is intended to present an overview of applications, both in my architectural practice and in teaching architecture, of an interactive three-dimensional environment, as found in first person shooter computer games. The text will focus on the potentiality of this medium for communicating architecture and for participating in architectural design. It is a paper about a medium for communicating architecture and, more specifically, this medium's basic components: space and movement.

Keywords: architecture, design, game engines, interactive media, first person shooter.

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Architectural references: RAUW (www.rauw.org)
Media production references: Amplify (www.amplify.be)

All technical refinements depress me. The perfection of photography, the big screens, the stereo sound, all of it makes possible a servile reproduction of nature, and that reproduction bores me. The artist's personality interests me more than the copying of an object. (Jean Renoir, 1959) [1]

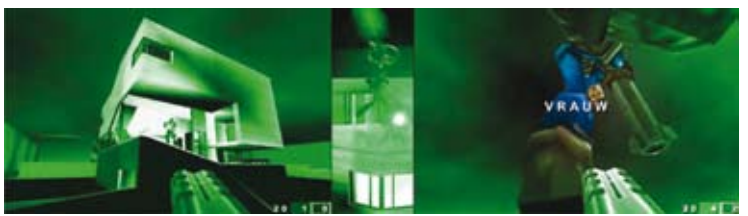
1. Structure of this paper

As an architect I am active in the RAUW architectural firm in Brussels. The firm was established about ten years ago and consists of a partnership between architect Thierry Berlemont and myself. In the same period I have also had a part-time involvement in Sint-Lucas, teaching digital presentation techniques to student architects. In both situations there have been projects in which an interactive three-dimensional environment, as found in first person shooter computer games (FPS), was used. The purpose of this paper is to take a closer look at these projects.

By describing a number of cases from my own practice as an architect and a teacher, I will show how virtual 3D gaming can be implemented in architectural projects and what role the medium can play in the development of such design projects. For most projects I will sketch some of the intentions that I had in setting up the project, then describe the project itself (implementation) and finally draw some conclusions.

Rather arbitrarily, I've decided to structure the paper by using three categories of applications of FPS: interactive presentation, interactive design and media experiments.
Firstly, I've grouped projects based on the communicative role we intended the application to have in a project. Did we intend to use the medium as a presentation or design tool? Did we use its interactive component to interact with the representation or to interact with the design parameters?
Evidently these two aspects are closely interrelated. Every representation of an architectural project will provoke direct or indirect (through the reaction of others) feedback to the designer and provide him information for reshaping and restructuring elements of his design. Every physical design act (excluding thinking) results in a representation of a concept that could be used for presenting the project. The only real difference lies in the intention with which the artefacts are created. Considering this thin line between the two, the distinction is somewhat artificial, but it is a widely used way to classify tools. I will also use this division in my paper because it offers a simple way to structure the text. It also relates to the chronological evolution of the use of the medium in the projects. Presentation, being the most evident application of this medium, was the first intent, and only later on did we start to use it for interacting with the design parameters.
The other projects that did not fit into one of the two categories described above form the third category. They consist of applications that isolate elements proper to architecture or the interactive medium itself, and they specifically focus on partial elements such as flatness and texture. They are experiments with the interactive medium itself.

2. On the representation of architectural projects: FPS as a presentation tool



Example 1. VRAUW (1999) - A networked virtual interactive exhibition of our architectural projects. Most of our building projects are focused on the spatial sequences and scenarios that one experiences interacting with them. Representing our architectural projects in a first person shooter (Quake II arena) gave us the means to communicate this specific aspect to a broader public. The image above shows some screen shots from the VRAUW exhibition.

2.1. The Trigger

Space is real, for it seems to affect my senses long before my reason. The materiality of my body both coincides with and struggles with the materiality of space. My body carries in itself spatial properties and spatial determination: up, down, right, left, symmetry, dissymmetry. It hears as much as it sees. (Bernard Tschumi, 1975) [2]

Almost ten years ago I was having an animated discussion with a friend (not an architect) about an interactive 3D adventure game we both had played. The vivid and detailed descriptions of the trajectories and actions that led to the solution of the puzzles we had encountered while playing the game made it clear to me that we both 'knew' this world from within. We had not explored this world form a safe distance, but rather by performing actions within this world. Like most inhabitants of a real city, we could not give correct dimensions or draw an exact map of the environment in which we had been acting, but we could give a 'topologically' correct description of spaces and relations between them. We could talk about how to get from here to there, which reference points or landmarks one encountered on his way, and where the cool places were to hang out. Terms like left/right – top/bottom – near (to)/far (from) – in front/behind – light/dark – high/low – inside/outside – ... made sense.
The activities of designing and presenting are both based on communication. The discussion described above is evidently a form of communication, but it is clearly not this communication that is interesting in this context. The discussion proves that the game provided us with a mental image/space/world, a virtual space that we could visualize and talk about. We shared a mental model based on our experiences in the interactive three-dimensional world. So, apart from other things, interactive three-dimensional games seem to posses the ability to communicate about space. It seems that playing the game transferred tacit knowledge about its world with its spatial sequences and scenarios to the receiver.

The second remarkable issue that can be derived from the discussion described above relates to the receivers. I'm an architect, a person who is trained in reading spatial representations and combining fragmented and partial representations to form a coherent mental model. My interlocutor was a layman in the domain of architecture and the reading of space. At the same time he did share an almost identical mental model about the virtual world with me. This convinced me that this medium has a very low threshold or access level, and therefore it could possibly be used to communicate rather complex spatial situations to a much broader public than traditional architectural presentation media such as plans, sections, etc. Of course some restrictions apply here. The receiver needs to be familiar with watching computer screens, and controlling a mouse and other interface elements.
In a way, the discussion triggered the idea that a FPS might have a possible application in the field of architecture. It might prove to be a useful medium for representing aspects of architecture that are hard (or maybe even impossible) to represent with other media used by architects.

2.2. VRAUW

Our office was invited to participate in an exhibition that would give an overview of young architecture in Belgium. It was held in Brussels to celebrate the year 2000.

The ability to share a topological, mental model of a complex spatial situation was the first of two reasons that encouraged us to use a FPS for this exhibition. This way of presenting our architecture closely matched our interest in architecture as a place for active exploration, as a scenario for the unfolding of space.

Most of our building projects are focused on the spatial sequences and scenarios that one experiences interacting with them. Spaces are put in an interesting relation to one another, and the spaces between them are not considered to be merely functional elements, a way of getting from here to there, but also as inherent and structuring parts of the whole. Moving around in a building reveals an interesting spatial sequence. Since every medium an architect uses has its specific merits, he should always look for a medium that matches his intentions. We considered a FPS to match ours.

The ability to reach a broader public of layman (in relation to architecture) was the second reason. It was a response to a criticism many people have expressed regarding architectural exhibitions. They tend to be hermetic, hard to understand. The fact that people often found architectural exhibitions to have a high threshold in accessibility could maybe be addressed in a new way.

For an artist, an exhibition is the final stage for his work. Even when the work represents something else, the representation has an autonomous character. The representation is the final result. In contrast to art exhibitions, exhibitions of architectural projects are (most of the time) presentations of architectural projects that exist outside the exhibition. It is not the architecture itself that is exhibited, but different representations of the non-present project. (In the best case, the exhibition itself is an architectural or artistic end product, but as soon as projects outside the exhibition are presented in drawings, pictures, films or models, these representations have a functional aspect in referencing to another work, one that lies outside the exhibition, namely, the architectural project they represent.)

The information on plans, sections, perspectives and scale models should all be combined to form a mental image of the space that is represented in other media.

Even though most people *like* the graphics of plans and sections, the represented space is not understood. Perspectives, photo, film and scale models do a better job at this, but still the combination of different elements to form a mental image of the whole is quite a task. In scientific exhibitions for the large public, interactivity seems to be accepted as a way to lower the barrier to understanding. Interacting with and acting in space can achieve this for architecture.

All this considered, we decided to make a new level for the Quake II arena game (called a MOD [3] or modification). This level would put the normal game play in a custom made environment. A powerful three-dimensional engine with collision detection, gravity simulation and network support were at our disposal. We only had to add our content.

The level editor Radiant was, in a 'pre-Sketch up [4] time', an incredibly easy and flexible tool that made a direct interaction with the model possible. A powerful addition, that at this date still is not available in other modellers, is the direct link to the game environment with its gravity, collision detection and ultra fast real time response time to movement. By pressing a single button, a not too complex model was compiled in a few seconds and opened in the Quake II environment. For someone interested in space, this was quite some discovery – a discovery that consequently led to a lot of experimenting and amusement that consumed more time than foreseen. In later projects we will specifically make use of this functionality in a more controlled way.

2.3. After the show.

In a FPS (First person shooter), as the name implies, one shoots, one tries to kill one's opponent. At first we were somewhat bothered about the aggressive acts that were carried out in our game level. We anticipated the possible critics by stating: "We are just using an existing medium to our advantage. We didn't develop the software ourselves. We're just using it as it is, with all its advantages and flaws." We didn't really pay any more attention to this topic. Afterwards we were a bit more confused.

The fact of shooting and hunting down opponents turned out to be more important than we had expected. It seemed to have a positive effect on the perception of the spatial scenarios. The player did not focus on the architecture; he did not take the time to scrutinize the digital artefacts in a static and detailed way. Rather, in a game the player is running around, looking for a hiding place, listening to steps in an adjacent room to determine an opponents' position. The player needs an overview of the environment, he must to look for a fast way to get to another place, he has to know where the spare bullets are when he's out of ammo. In a way, these actions reduce the digital architecture to a decor. A scenery for game play. We are *using* space, not studying it.

Example 2. PDG (1999) - A private house for a family with three children – This project incorporates the possible impact of FPS on the communication with clients: e.g. the children chose and evaluated their rooms themselves. The image above shows the house evolving from a conceptual model in a FPS (LEFT) to a built reality (RIGHT).

Example 3. Czar (2006) – First presentation made using the more recent and more powerful Half Life-2 engine with the Hammer editor. The image above shows the near photo-realistic high quality images the 3D rendering engine delivers.

3. On the conception of architectural projects: FPS as a design tool

3.1. God's perspective - Example 4. OCMWz

OCMWz is the name of a small architectural project carried out by RAUW, which involved adding an extension onto an existing building. It is simply used here as an example. The following text has nothing directly to do with the project itself, but is rather an explanation of why this particular project was used as an example.
Looking at a plan of the Acropolis, we see that well defined axes are absent. It is assumed that the positioning of the different buildings was not composed from 'God's perspective', but by walking around the site and focusing on sequential spaces and the viewer's perspective and interaction with them. Using an interactive 3D environment, we were able to use this interactive approach in the design of a small architectural object.

The Acropolis of Athens could just as well be called the perfect example of one of the most ancient films…… (Sergei Eisenstein, 1991) [5]

This quote is taken from "The Theory of Montage", an essay written by Eisenstein in the late 1930s about the experience of space in movies. It links space in movies to space in architecture by linking the terms 'sequence' and 'montage', as they apply to the two disciplines, respectively. Walking around the Acropolis, we see that it is designed as a sequence of spaces – we feel that the voids or negative space are handled with the same care as the volumes themselves. When we enter the Acropolis from the Propylaea, we approach the Parthenon not frontally, but from somewhat below it and obliquely. It is from there that we discover a perspective of the Parthenon at its most expressive angle. It seems that the architects and sculptors were walking around on the site and organizing the spaces based on the perspectives that could be seen by the man on the ground and the sequences that he experienced as he walked.

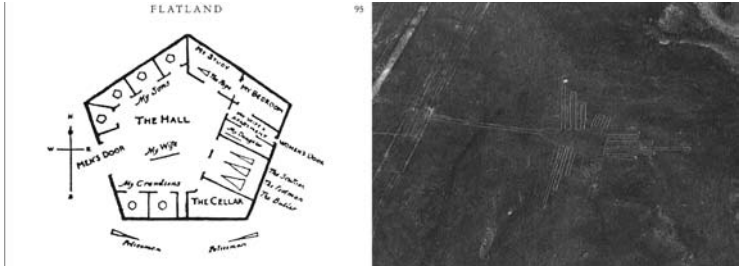


Figure 3: Left: The inside of the forms in Flatland lie open to Spaceland, but not for someone inside Flatland. Right: The nazca drawings were never experienced as two-dimensional drawings by those who made them. People in those days 'had their feet on the ground' and they had to construct the message to their Gods (the planar oversized drawing) as it would have been seen from 'God's perspective', mentally. In a way, this the exact opposite of what architects are used to doing these days. We draw plans, and we have to imagine how it will look when we are there 'with our feet on the ground'.

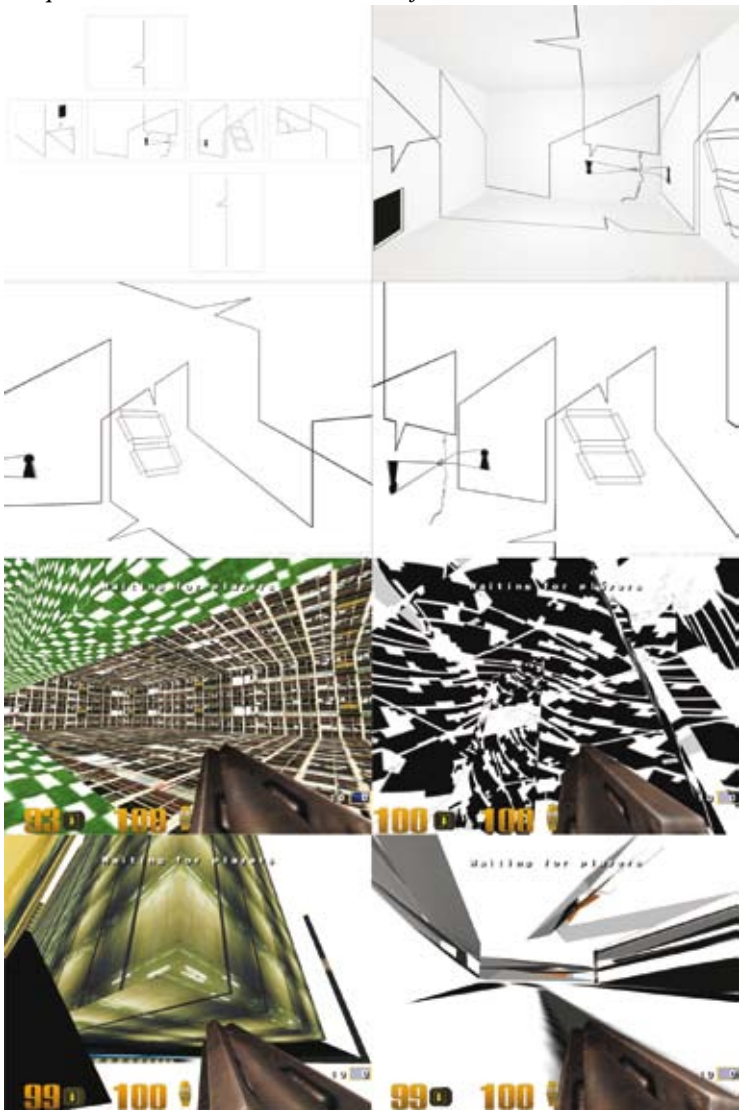
Remember: You are inside an enclosed space with equal height and width. Do your eyes instruct you about the cube merely by noticing it, without giving any additional interpretation? No. You don't really see the cube. You may see a corner, or a side, or the ceiling, never all defining surfaces at the same time. (Bernard Tschumi, 1975) [6]
Today we are accustomed to using plans all the time when designing. Plans seem to tempt us somehow to organize space in an orderly fashion. When we give a plan a balanced graphical quality, we sometimes lose sight of the fact that some of these lines are never experienced when one is standing with one's feet on the ground. A harmonic plan does not necessary result in a harmonic space. The way we designed OCMWz was a way to avoid this risk and to dive directly into the space as a sculptor.

The client, a home for the elderly, had asked us to design an extension, a glass veranda, for their closed ward for demented persons. It was going to be their recreational and relaxation space. We felt that in a completely glass construction the inhabitants would feel much too exposed and it would be hard to attain a reasonable level of heat comfort due to the partially problematic orientation. We thought it necessary to close parts of the facade.
There was no obvious concept that came forward. We decided that we wanted to close certain parts based upon the relation of the inside to the outside and vice versa, taking into account the fact that most of the patients were sitting and the nurses were standing. We modelled some of the environment and textured it with images from and of the real environment. When this was completed, we started interacting with the envelope of the projected veranda. We easily could test the effect of closing certain parts and replacing them later on with glass. We could sit down and walk around and look at the result immediately. We were working on the three-dimensional model by standing inside the space or by standing at a distance from the building. By pushing a single button, we would be inside the Quake II Arena engine and see better rendered images, and experience light, gravity and collision detection.

3.2 FPS as a teaching laboratory

Example 5. MM_IRO. This is the name of the course *Mixed Medium Interactief Ruimtelijk Ontwerpen* (which translates as Mixed Medium Interactive Spatial Design). This course for architectural students involves the exploration of interactive spatial design. Recent developments such as hardware accelerated real time physics simulations are making this environment an even more fascinating explorative laboratory and have resulted in some more recent test cases that are currently under construction.
In this project I proposed the use of a FPS engine as a laboratory in which students could do spatial experimentation. The students had to take some of the basic formal concepts of architecture and turn them into an interesting spatial sequence. The only programmatic issue (i.e. the functionality of the spaces) that had to be taken into account was walking and looking around and, of course, the sequence, space itself.
Even though the students had a lot of fun with the freedom the medium provided, it also seemed very difficult to refrain from adding functionality and programme to the spaces they conceived. It was a very interesting exercise to make students aware of the importance of writing a scenario for the unfolding of space.

4. Experiments with the interactive medium itself



Example 5. FLAT_SPACE! – A networked interactive virtual exhibition which shows the textures designed by 30 invited architects and artists. They were asked to submit textures which explore the possibilities and impact of 2D textures on 3D virtual space.

4.1. Skin as an interface, the newly accepted ornament.

An engineer once told me that architects are only interested in the layers of paint on both sides of a wall, while engineers are only interested in the part between these two layers. I disagreed: the in-between space is also a space. Through carefully created openings, a wall reveals its double sided character and its thickness. When we pass through a wall, we experience the space between rooms. Structural elements are an integral part of the general form and functionality of architecture. However insulting I found his remark at the time, I realized that there is some truth in it. If we generalize and simplify things, the paint, or outer layer in general, is the place where the materials show themselves to the world, to the senses, while the elements underneath, which are needed to support this layer, are only visible to reason.
Lots of topics in the architecture of recent decades seem to support this statement: for example, modernism, with its emphasis on transparency and pure forms (*"le jeu correct et magnifique des volumes sous la lumière"*), and its formal twin brother, minimalism, where every detail is designed in a way to make details seem absent. Reflectivity and the superposition of images, the pursuit of evanescent spaces, and the immateriality of spaces are all in a way exploring the sensorial perception of space in which the spatial boundaries possess flatness. Only the High Tech movement seems to counter this focus on the surface, this search for a formal flatness of space boundaries.

The "neo-modernist project", on the other hand, is perhaps about the compression of all depth clues to the surface of the building. While the buildings are quite visceral, they also touch on a strangely mediated experience that is characterized by the search to embody the ephemeral.
(Alicia Imperiale, 2000) [7]

The surface is constantly examined and its potentiality explored. Prints, bas-reliefs and other images and patterns are applied to the surface. We see buildings that seem to be 'badly' textured with seams, as in a computer visualization. This rediscovery of wallpaper is, in a way, ornamental and aims to influence and enhance the spatial experience of spaces.

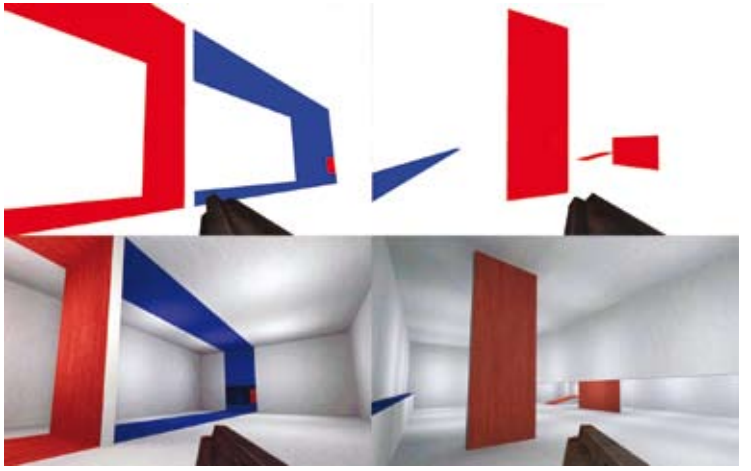
In 2000 a successful exhibition showing the work of young architects in Belgium was held in Brussels under the suggestive name 'Supernova'. (It was for this exhibition that we decided to make the VRAUW project.) Due to its success, two of the organizers of the exhibition (Jan Verheyden & Kristof Vermeir) were asked to rethink the exhibition on a much smaller scale in a gallery in Ghent. Since funds were very limited and ambitions high, they had to start looking for alternatives.
The fact is that organizing an exhibition in digital space can cost a fraction of what its counterpart in 'real' space would cost. For this reason, we were asked to join the team and to help with the development of an architecture exhibition in an interactive digital

context. We quickly decided to use the same game engine once again (Quake II) that we had used for VRAUW.
The general idea was to let a group of architects and artists 'think' about surface and texture. We asked them to submit textures and, if they preferred, they could suggest a space in which they should be applied or provide some rules as to how they could be applied.
We decided not to use shows and an omnipresent 100% light to get an interactive flat image in which the textures had more impact.
The textures would be presented in a virtual space that could be visited by eight people at a time, because eight networked computers gave access to our world. These eight people would explore the different rooms and spaces that were decorated with the artists' and architects' vision of compositions, wallpapers, trompe l'oeils, patterns, and so on.
We started with the modelling of the spaces. But, because most of the time only textures were submitted without any directives for their spatial application, we had no directives for the spaces in which to present the textures. This left us with lots of interpretation. We classified the textures in different categories and started making spaces 'around' the textures. For this purpose, the level editor 'Radiant', with its interactive way of modelling and its direct link to Quake, proved to be a real asset. We applied the texture and could interact easily with the scale, form and concepts of the space it needed.

4.2. Games in games

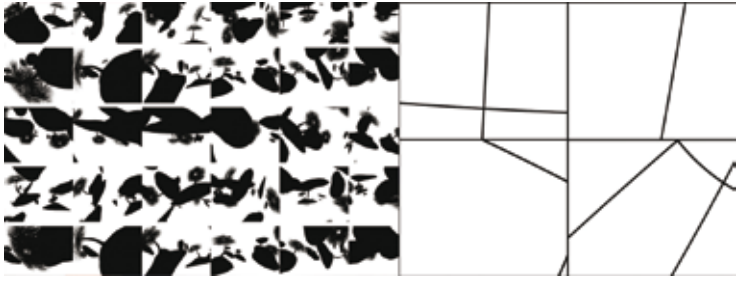
While making *Flat_Space!,* Jan Verheyden and myself started experimenting with abstract representations of space. We started to make puzzles for each other in which we wanted to test how far we could go before totally losing the notion or understanding of space on the flat screen of the computer. It seems like a macho architects game like those contest C programmers hold in which someone tries to make the most illegible code and others get rewarded (a lot of money) when they can 'guess' what the code does...

In the classic science fiction book *Flatland: A Romance of Many Dimensions* [8]? Edwin A. Abbot describes the life of A. Square, a flat square figure living in a plane, his flat two_dimensional world. At a certain point in his life, the square finds himself talking to a voice from outer space (outer plane in this case). It turns out to be the voice of a Sphere, a spheric solid inhabitant from Spaceland. The Sphere tries to explain the third dimension to the square by introducing height. He succeeds in this by moving from above the plane of Flatland to underneath it. While the Sphere slowly passes through Flatland, the Square perceives first a point, then a tiny circle that slowly grows bigger and then slowly starts becoming smaller again until it becomes a point and finally disappears.
Thus the Square comes to understand a solid sphere as a stack of circles, and a cube is later on explained as a stack of squares. But when the Square leaves Flatland and sees a perspective view of a cube, he sees the contours as a Plane. Light, shade and perspective are new to him, so he just sees a Plane and not a Solid.



Example 6. NOPERS. This is a 'Flatland' inspired interactive puzzle. When textures are reduced to graphical elements and lights are omitted, the 3D world becomes a flat 2D composition. Only by moving around, by changing the graphical composition, does one grasp space and solve the puzzle.

In Nopers we try to explore the adventure of A. Square in Spaceland, not by letting the spectator touch, but by letting him move. This game of grasping space seems to generate interesting interactive graphics and it tests the viewer's spatial insight. This game has also been made in a FPS (Quake II). We removed the shadows and put 100% omnipresent light everywhere and reduced the textures to a minimum. The three-dimensional engine produced a completely flat graphical image that changes constantly when one moves around. At first it just seems like an interactive graphical image, but after a while we begin to grasp the image as a flattened representation of space. We are not moving the graphics but we are moving ourselves. How the coloured planes move, how they become bigger or smaller, and how one plane is obstructing the view of another gives us clues about the form of the space.



Stills taken from the video animation 'Archipellago' (left) 'Shpere' (right) – Michaël Van Den Abeele and Arnaud Hendrickx.

5. Grounds for applying 3D gaming in architecture

By describing and partly analysing existing architectural projects that make use of virtual 3D game engines, I showed that 3D gaming can play a role in different aspects relating to the field of architecture. Practice itself demonstrated that there were possibilities that could be explored. The examples used are not randomly chosen; they incorporate the subjective interpretation of one designer, and they are closely related to the personal definition that this designer gives to architecture. In the following chapter I will try to filter out some of these subjective aspects and focus on the more general principles that make the implementation of gaming engines relevant to architecture.

5.1. The importance of the communication medium in Designing.

Finding ways to make the computer truly participate in designing and not just be a glorified drafting tool, has been a long-term concern for me. The problem is not primarily one of programming. It is one of knowing about designing. (N. John Habraken, 1998). [9]

Designing is an iterative optimization of a concept. It is a form of personal, reflexive communication which classifies, organizes and gives shape to information in a medium that offers a way to represent this transformed information adequately. Knowledge is converted into another form – and, quite simply, into a *concrete form* (i.e. a building, a project). This enables the designer to react to and learn from this representation. This representation can be used to communicate to others involved in the project. The designer can learn from their reactions. This process is repeated until the design is satisfactory or until the funds are exhausted.

The medium that is used to represent a concept defines the form and the range of information it can communicate and has a defining role in the design process. A project designed on tracing paper or on millimetre paper will differ in certain aspects. The transparency of the tracing paper, as well as the 'snap magnets' on millimetre paper, offer specific possibilities.
Designing is communicating by making use of a medium that should be chosen carefully for its specific merits. The cases described above show the merits of an interactive three-dimensional environment as an unusual but useful medium to communicate about architecture. It is clear that the medium has its limitations and will not replace traditional media, but in every project I have used it in, I have tried to localize and accentuate the added value, i.e. the specific aspects that were particularly enhanced or different than if we had used a more traditional way of communicating architecture. These aspects include the communication of the scenography of space (VRAUW), the lowering of the threshold of an architectural exhibition (VRAUW), enhancement of the communication to clients and even children (PDG), true interactive design based on context (OCWMz), an easy and interactive spatial test area for student architects (MMIRO), etc.

5.2. Does designing architecture involve tacit knowledge?

In Artificial Intelligence we speak of mundane tasks when they are very easily executed by humans (we do them every day) but are very difficult for a computer to execute. People can spontaneously recognize other people's faces (even if you have not seen them for years) and they have no difficulty navigating though a crowded space (and anticipating the movements of others). People do all these things spontaneously. When we consider a simple task, we can divide this task into subtasks that we do almost automatically, and yet each of these tasks requires a very complex reasoning to explicitly describe it or to implement it on a machine. Most of these tasks require personal experience and intuition. It is hard to express the knowledge required to complete these tasks in formal language. So there are a lot of similarities between the knowledge required to complete a mundane task and the definition of tacit knowledge. We can conclude that for a lot of mundane tasks we need at least some tacit knowledge to carry them out.

Expert systems apply reasoning capabilities to reach a conclusion. An expert system can process large amounts of known information and provide conclusions based on them. Most of the time, these tasks are difficult for humans and easy for a computer. When you give a computer an adequate amount of the right information, it can process this information and come to a correct conclusion. It takes more than five years to produce a doctor who can diagnose patients, but using the right database a computer can easily connect symptoms with diseases. (This is of course an oversimplified image of the medical practice, but it is a widely used example of an expert system – for example the diagnosis of some psychosomatic diseases is not always possible using this system.) The database contains data and information which adequately describes symptoms and the diseases associated with them. We could consider this database to be explicit knowledge.

Some aspects of Architecture are clearly expert systems that are based almost exclusively on explicit knowledge that is valid all over the globe. When we think of building systems, material properties, economics, ergonomics, functional requirements, stability and so on, most of these elements, even though essential to architecture, do not seem to require tacit knowledge to be implemented in a logical way.
When we combine this explicit knowledge, we can get a functional building, but will it automatically result in architecture? Architecture contains other aspects that also have to be taken into account. When we think about rhythm, light, atmosphere, a spatial sequence of open and closed, public and private, high and low spaces, there is no easy way to say more of that is better, or less of that is better.
Imagine an architect who visits the site of a competition he is going to participate in. He is absolutely convinced about the concept this specific site requires. Some time later we find him defending this concept to a jury. Since his PowerPoint is loaded with very communicative images, he easily convinces the jury of his option. He had no clue that the architect who had presented a project just before him, had made it absolutely clear that the site needed exactly the opposite. Because their task was one

of great importance, the jury members took their task seriously and found themselves making concentric verbal declarations to motivate their preferences explicitly for hours. The jury seemed to like both designs equally. Making architecture also requires the execution of mundane tasks.
If architects apply tacit knowledge to take important decisions in a design, this specific type of knowledge is equally important to an architect or a researcher in architecture as is explicit knowledge. Hence, the medium chosen to aptly communicate about research in architecture should at least be able to communicate or translate tacit knowledge. Can a FPS game environment do this?

5.3. 3D gaming, an appropriate medium to communicate tacit knowledge in real-life architectural projects?

As stated above, similar to many other disciplines, architecture involves a lot of tacit knowledge. Architecture builds its knowledge and expertise mainly through practice. Since the knowledge in a practice based approach is derived from the individual practitioner's own personal experiences, it is often acquired through a trial and error approach. Because of this, the knowledge tends to be situational. It is based on individual experiences and involves intangible factors, such as personal beliefs, perspective and the value system. These are all properties of tacit knowledge.

Before tacit knowledge can be communicated, it must be converted into a communicative medium (traditionally words, models or numbers) that can be understood. But it proves difficult to articulate tacit knowledge with formal language, especially because tacit knowledge involves subjective insights, intuitions and hunches. The choice of the right communicative medium to express your intentions is critical. It should be able to express the information proper to the knowledge one wants to communicate. The interactive three-dimensional environment that FPS offers can be used to communicate issues that other media cannot.
This inexplicit evocation, without describing any of the actual facts and processes, is very subjective and highly situational, but it gave me a means to create my own personal image. So we could consider his writings a medium to communicate tacit knowledge. Tacit knowledge is translated into literature, and the reading of these writings translates back into tacit knowledge on the part of the receiver. Nonaka & Takeuchi [10] call this the process of "*knowledge conversion from tacit to tacit socialization*".
Socialization is the sharing of experiences for the purpose of creating tacit knowledge, such as shared mental models and technical skills. This also includes observation, imitation, and practice. However, "experience" is the key, which his why the mere "transfer of information" often makes little sense to the receiver. The socialization process could probably not be achieved by a 'mere' descriptive text about actual facts. The ability to express a mental image – a personal impression – seems necessary. This definition shows the importance of a good medium for communicating knowledge.

There is a parallel between the communication of tacit knowledge and the communication of explicit knowledge: each has its own medium (descriptive, not exact versus scientific, exact) and the receiver who is learning the new knowledge needs to understand that medium and to posses the specific knowledge to is required for understanding this new knowledge. The scientist must, for example, understand statistics and be able to put this knowledge of statistics into the proper context to use it for understanding the new explicit knowledge. He needs to be an expert in his field. It is the same for tacit knowledge: the receiver needs to understand the medium (e.g. image, poem, design…) and what its message means in the broader light of his (tacit) knowledge: he also needs to be an expert in this particular field of tacit knowledge. A certain (tacit/explicit) knowledge is required to understand the message: most of the time only a practicing architect will be able to gasp the tacit knowledge that is involved in designing buildings.

It is clear that knowledge is not the medium, but rather the understanding of the medium. Knowledge is in the mind, not on the paper. You need to understand what is written down before it can become knowledge. Hence the receiver plays a very important role in transmitting knowledge.
IN the VRAUW exhibtion project, for example, we found that the usage of FPS games can communicate tacit knowledge about space to a non-professional public, i.e. to laymen in the field of architecture. This capability can be exploited to add links and relations between other representations of space expressed in other media, and to combine and link them to help the receiver form a mental map space more easily.

6. Addendum

The cases that are used for this paper are not randomly chosen. They relate closely to a specific designer with his personal interests and subjective interpretation of architecture. The motivations for using FPS in these cases are closely related to the way I see architecture. This is why I want to include this addendum about aspects that define architecture for me.

6.1.RAUW

As an architect, I am a partner in the RAUW architectural firm in Brussels. The firm was founded 10 years ago and consists of Thierry Berlemont and myself. RAUW is both a word and an acronym at the same time. RAUW is the Dutch word for 'raw', while RAUW also stands for 'Realisatie van Al Uw Wensen' (Realization of All Your Wishes). The name was chosen to be a constant reminder of the task that lay ahead of us when we founded the office. To respond to a duality, a short-term and a long-term view, a problem solving and an explorative approach, a smooth, rational, politically correct side and a rough, 'uncooked' spontaneous side...

6.2. About the hidden agenda of an architect.

A building, an architectural object, has a functional part, i.e. a programme. This programme can have a wide scope of meanings, from symbolic to technical functionality, but without a 'client' who expects the programme to be fleshed out and implemented, the architecture would not become a reality. Thus architects must be able to respond to this expectation flawlessly. This is a prerequisite for becoming a building architect. Architects help to bury the dead, they represent the nation, they house the nation's families…
But a fascinatingly built reality outlives its original programme. Buildings are reprogrammed all the time. A programme results in events that will take place in the spaces that are built. But these events can also take place in a space that is not specifically designed for these types of events. You can visit tombs as artworks, eat in your bathroom and dance in churches. Unplanned events can either result in a more static and permanent reprogramming of a building or they can remain unique and unplanned. I believe that both cases can apply.
Events, whether anticipated or not, are independent of the spatial setting in which they occur, and they can be either enhanced by it or hindered by it. We should take them into account insofar as we can predict them, but we should also provide a scene or context for unanticipated events. In most buildings, regardless of the programme, one might expect both more public and more private spaces, lighter and darker spaces, and one or more interesting ways to enter. Concepts like dark/light, repetitive/monotonic, high/low, open/closed, public/private, symmetric/asymmetric... are the elemental building blocks of architecture. Besides responding to programmatic demands, these concepts can also trigger events that are alien to (or add to) the programme. This is the first (not in order of importance) entry in the hidden agenda of the architect.

Architecture has an aspect that surpasses the functional. Buildings are sometimes reprogrammed before they are completed. Even badly functioning buildings sometimes receive much publicity and are awarded architectural prizes. People invest proportionally enormous amounts of money in buildings that do not fit their functional demands, just because they like them. All of which suggests that there is another quality to architecture than its mere functionality. I do not want to go into the endless discussion about whether this aspect can exist autonomously and, if so, then would it still be called architecture… But I *am* convinced that if this aspect were not present, then we would not call it architecture either. "

"A l'intérieur: on entre, on marche, on regarde en marchant, et les formes s'expliquent, se développent, se combinent. A l'extérieur: on approche, on voit, on s'intéresse, on aprécie, on tourne autour, on découvre" (Le Corbusier). [11]

This aspect is more intuitive and harder to pin down, but on the other hand the sensorial experience and the rational understanding of spaces is nearly constant through time and much less prone to the personal style of the individual architect. Different architects make different accents and use other materials or new technological means, but the main elements remain similar. Spaces are put into interesting relationships to one another. A film sequence made from the point of view of an observer moving around in a building should reveal an interesting spatial sequence. One should orchestrate the basic architectural building blocks (dark/light, repetitive/monotonic, high/low, open/closed, public/private, symmetric/asymmetric) to build a spatial sequence. Architecture is a matter of writing a scenario for the unfolding of space. In experiencing space, we are not stationary, we participate. Experiencing space means interacting with it. This is the second entry (not in order of importance) in the hidden agenda of the architect.

Arnaud Hendrickx

Endnotes

1. Renoir, Jean (1959). This is a quote taken from an interview that took place in 1959.
2. Tschumi, Bernard (1975). "Questions of Space: The Pyramid and the Labyrinth (or the Architectural Paradox)", in *Studio International*, Sept-Oct 1975.
3. 'Mod' or 'modification' is a term generally applied to computer games, especially first-person shooters and real-time strategy games. Mods are made by the general public, and can be entirely new games in themselves. They can include new items, weapons, characters, enemies, models, modes, textures, levels, storylines, music, and game modes. They also usually take place in unique locations. They can be single-player or multiplayer. Mods that add new content to the underlying game are often called partial conversions, while mods that create an entirely new game are called total conversions. (From *Wikipedia, the free encyclopedia*. http://en.wikipedia.org/wiki/Sketch_Up)
4. SketchUp is a 3D modelling program designed for professional architects, civil engineers, filmmakers, game developers, and related professions. It is also widely used by teens and pre-teens as an entertainment software. Most people, however, use it to design buildings to be displayed on Google Earth. It was designed to be more intuitive, flexible, and easier to use than other 3D modelling programs, which often have steep learning curves. Several features allow designers to 'play' with their designs, unlike what is possible in other 3D CAD programs. It is marketed as an easy-to-use conceptual tool with a simple interface. (From Wikipedia, the free encyclopedia. http:/ http://en.wikipedia.org/wiki/Mod_%28computer_gaming%29)
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Designing design research

'Have you ever drunk H2O? Well, I haven't, I wouldn't want to either. Have you ever swum in H2O + NaCl? You swim in the North Sea, the Atlantic Ocean, the Pacific,...' (van den Berg in Verbeek, 2000).

'Designing design research' is a reflection of the Research Training Sessions. Different visions of (design) research are placed side by side to combat a mystification of both science and design. A more nuanced vision of both disciplines can clarify the debate on design research.

Science as a model

Our daily environment is saturated by science, in the news, in advertising, in discussions claims are put forward that are either explicitly or implicitly based on a scientific world view. This dominance of science ensures that we immediately identify research with scientific research. When science is considered the model, it seems a logical approach to approach design research and even design scientifically. Design researchers try to think up different contexts which scientific models and methods can be used in design research (Glanville, 1998). There are different opinions about the place of science in design disciplines. In this way there is the trend of scientific design that wants to base the design process on objectivity and rationality in order to develop more general rules. 'Design science' follows this but in addition sees design itself as a scientific activity. However these visions do experience some opposition, in this way various design theoreticians state that 'the act of designing itself is not and will never be a scientific activity, designing is a non-scientific activity' (Cross, 2006). Moreover some consider all artistic practice by definition research to emphasise the reflective character of the discipline. This vision also fails to bring clarity, because if everything naturally becomes research, the added value of carrying out 'real' research disappears (Borgdorff, 2005).

The research assignment higher art education is wrestling with is caused by the European educational reform that links research to every master's course. Within this framework a first doctorate in art was awarded at the KULeuven in 2006. Maarten Vanvolsem linked his photography work to research into camera techniques[1]. His doctorate comprised the traditional written thesis with an additional exhibition of the photography. The question is whether this is the only and most suitable way to reconcile science and artistic practice. Not only design research has a difficult relationship to science. In the history of science there are numerous examples of disciplines that have experienced problems in their attempts to model themselves on an existing discipline. In this way the social sciences developed in the first instance according to the model of the natural sciences. However this paradigm later proved too rigid for studying certain aspects of human behaviour. Moreover science cannot be implemented as a model without the unique quality of artistic practice suffering. Designers and scientists have

different training and experience, when designers are obliged to carry out scientific research, this will very probably result in a lesser version of the 'original' research (Cuypers, 2000).

Science as inspiration

The fact that design and design research cannot simply fit into science, does not mean that scientific research has no value for design research. Design theoretician Viktor Margolin maintains that design researchers should in the first instance use the scientific research tradition as a source of inspiration (Margolin, 2000). The main argument for studying science is that it ensures a more accurate image of scientific practice. Science is generally represented as though it is located in a world without human intervention. This ensures a kind of mystification of science. However the philosophers of science Thomas Kuhn and Imre Lakatos showed that scientific practice is in fact very different to science as described and theorised. Science is always a social construction. Scientific research is an activity carried out by people. A person collects and orders the data, a person defines the framework within which the data is presented and analysed (Glanville, 1998). The concept of science as a social construction encourages putting the own research methods into perspective. By rejecting a one-sided scientific image, a researcher can moreover become aware that he/she as a designer and researcher is exposed to social influences (Veerman & Essers, 1988).

The study of scientific method may also be useful to realise that there is no universal scientific method but that various methods of approach are beside each other with their own merits. The philosopher of science Paul Feyerabend puts scientific rationality as one possibility amongst different metaphysical methods for explaining the world. His mottos 'against method' and 'anything goes' emphasise that it is not sensible to consider scientific rationality as the only valid method of explanation or solution independent of the nature of the problems or events and that the possibility to choose form multiple methods requires a much greater responsibility. Pluralism makes the arbitrary character of each decision in research clear. Studying science may moreover clarify the choices behind the proposed approach. In order to make choices on a proper basis in research, knowledge of the possibilities is interesting. In this way 'helps to inquiry' are generally accepted aids that make research more effective and more efficient. However there is no suitcase full of methods from which the 'right' method can simply be chosen. It is a challenge for design research to integrate methods and adapt them to the needs of the design field (Klukhuhn, 2005).

Design as model

Asking whether we should import models any way is worth the effort. Ranulph Glanville goes even further, he states that design is the model itself. According to Glanville designers must ensure that design is recognised as a fundamental human activity. Design is how people think and order their thoughts. Our interaction with the world is realised by means of the construction of concepts (of this world). In his opinion

constructivism can describe how we think about the world and our relationship with it. We create concepts, test these concepts in the world and adapt them if necessary. In that way we design our thoughts and knowledge. Design reflects how (we think that) we think and how we act and learn. Designers work in a circular pattern: usually they will refine their design, expand it, reassemble it or sometimes reject it and start a new process. In fact the design question follows the design answer (Glanville, 1998).

According to this vision science can be considered a special type of design whereby the actions of the designer are limited according to certain rules. The power and uniqueness of science is shown through all kinds of procedures to guarantee an 'intellectual hygiene'. This reality of science is constructive: in scientific research concepts are developed that are both refined and reinforced by means of a continuous circular (design) process, Until they are considered invalid and are replaced by other concepts. According to Glanville it is inappropriate precisely for that reason to approach design as science or to demand that design research be scientific. He turns matters around and claims that scientific research is in fact a limited form of design. This design approach to science can be enlightening because the characteristic terminology of the design discipline is used to emphasise the concept of science as a social construction. 'We should recognise design for what it is, for where it is and for its importance, and we should research and report it accordingly', says Glanville. For this we must take account of the uniqueness of design and science and the relationship between the two (Glanville, 1998).

Design versus science

When a discipline wishes to show its uniqueness this is usually realised through opposition to other disciplines. Knowledge is generally situated outside the creative disciplines. But research as it is carried out in science is not the only source of knowledge (Downton, 2003). According to design theoretician Nigel Cross design has its own knowledge and ways of gathering and expanding knowledge. Cross researches inherent design knowledge by comparing the methods of designers and scientists. According to him various studies show that the methods of design are fundamentally different from typical scientific practices. In this way Lawson compared the problem solving strategies of designers and scientists. In an experiment the participants had to order coloured blocks according to certain rules that they were not given beforehand. The scientists studied the pattern in order to find the underlying rule. The problem was the focus of their strategy. The designers immediately sought to order the blocks, the solution was the focus of their strategy. Lawson repeated the same experiment with first year students, among whom no significant differences were discovered. The education must ensure the development of these strategies[2]. But the type of design task also plays a part. Design problems are often badly defined and structured. Designers immediately look at a problem within the manageable limits because they have to find a satisfactory solution within a relatively short time span. Scientists on the other hand can postpone their judgement until more is known, or decide that further research is necessary (Cross, 2006).

Moreover, for a long time there was limited thought on thinking, only induction and deduction were seen as proper methods. But, according to Cross, design has a constructive way of thinking: designers define, redefine and change problems with a view to reaching a creative solution. Science is occupied with how things are, whilst design is occupied with how things could be. Design is therefore a process of pattern construction (synthesis) as opposed to science, where a process of pattern recognition (analysis) is used[3]. The scientific method is also based on repeatability of results. As defined by Kuhn this is 'normal science', the daily routine of laboratories. The designing method falls outside the boundaries of verbal discourse: design processes are literally not describable in linguistic terms. Designers translate problems into a visual design. This method depends on a visual logic and not a literary or scientific way of thinking and communicating, as in science (Cross, 2006). In a tradition dominated by the verbal the danger exists that design researchers are obliged to translate their visual logic, which distorts their story and sometimes even destroys their logic (Glanville, 2005).

Design versus science?

According to Cross there is growing acceptance of design on its own terms and a growing recognition and articulation of design as a discipline. Design terminology exists and is comparable to mathematical foundations and learning (Cross, 2006). A valuable element of Cross is that he tries to show the uniqueness of the design discipline. In doing so Cross challenges the mystification of design as an unintelligible art form. Yet this is not without risk. Just as philosophers of science set up demarcation criteria in order to separate science from non-science, design theoreticians try to draw the boundaries between design and science, and consequently between design and scientific research. Both definitions form a claim for each discipline's special status. Design and design research would be characterised by a lack of strict classifications and that designers generate the criteria that are to be met for each project individually, methodologically as well as in argumentation and documentation. The most important difference to science would then be the principle of openness for the unexpected. This understanding rests on the misunderstanding that scientific research always begins from a set protocol and that there are universal criteria for the validity of research. Not only are adequate research methods often only arrived at during the process, but the reliability of results is not given by an external, and therefore independent, measure, but is defined within the field of research (Borgdorff, 2005).

Another difference is the idea that scientists 'write'. Science is filled with examples of the importance of the translation of the visual. An example of this is Dmitri Mendeleev's construction of the periodic table of the elements being seen as a key factor in understanding the chemical elements. Images are also used in the transfer of information. A playful example is that of the physics professor James Kakalios, who used comic book heroes to introduce the laws of physics. There are even excellent examples of scientists who frame their ideas in magical constructs. Johann Ritter lived his experiments by testing electricity on his body (Zielinski, 2006). Another difference would be intertwining design research with artistic praxis. But this necessity is not exclusively connected to design research, although not every type of scientific research is connected to praxis. These examples do not convincingly show a fundamental difference between design and scientific research and demonstrate the diverse and innovative character of science. Attempts to separate design and science sell both science and design short. Science is less rigid than some parties in the debate wish to believe. Discussions on the diverse character of research also exist in other disciplines. This does not mean that design research doesn't have a particular identity with its own methods and output, but other forms of research have the same (Borgdorff, 2005).

Design research culture

When the prevalent scientific paradigm of knowledge being gained through scientific research is insufficient there is a need for an alternative. The term paradigm in its present sense is borrowed from Thomas Kuhn's theory of science[4]. A paradigm shows what is researched and how this is done. The underlying paradigm within the design discipline would then, according to Cross, be that knowledge exists which is unique to the skills and capacities of the designer. This inherent design knowledge is independent of the various domains within the design discipline (Cross, 2006). This design knowledge must be studied through the creations themselves. That is why it is interesting to study the formal language and history of one's own medium as a designer. Research can then also be in service of the artistic praxis and deliver tools and knowledge to be used during the creative process (Groat & Wang, 2002). Design praxis as research is the most controversial way of doing this. The interwoven nature of research and praxis is shown explicitly here. It deals with research where artistic praxis is itself a substantial part of both the research process and the result (Borgdorff, 2005). Design is traditionally seen as a discipline with a technical and meaningful dimension. A primary object of design research is knowledge of creation, of the techniques of creation and production. However, designers don't work in a vacuum, but stand rooted in the society for which they design. Design is always done for and by people. The second object of design research is therefore the garnering knowledge of how creations function as a part of the social world, the experience that people have of design (Margolin, 2000). Before anything else design is about people, about our lives, our hopes and dreams, our loneliness and joy, our feeling of justification and beauty (Overbeeke, 2003). There are no design practices that are not saturated with experiences. Design research must consequently remain naïve when these roots in society and daily life are not accounted for.

The methods in design research must be 'designed' appropriately for the research being carried out, in which imagination plays an important part. There is no single method sufficient to meet the diversity of goals of the design and the people for whom the design takes place. There are simply too many possibilities, media, target groups, aims and means in design. The methods used must be rooted within design praxis and may be stimulated and inspired by research methods from scientific disciplines (Lunenfeld,

2003). We can only deal with our society's complex questions by integrated research, since no single discipline knows more than all disciplines. Research shows that people who stay within the same social sphere have the tendency to think and act in the same way. In the long term this means that homogeneity is deadly to creativity (Erard, 2004). Margolin pleads for an open research culture for this reason. Research can lead to unusual problem definitions by encouraging openness towards other disciplines and research methods. A dynamic of design knowledge may be created by criticism within the same discipline and from science; a multidisciplinary forum must be created for exchanging knowledge (Margolin, 2000). Besides being a source of inspiration science can fulfil an important task when scientists give input into design and design research. When designers and scientists both take an active part in the discussion a fruitful reciprocation between design and science can emerge.

Despite the fact that design research is constantly redesigned various design theoretician feel that research must meet certain requirements. Research must be carried out so that new knowledge can be gathered. This means that we are dealing with an original contribution, work that has not been carried out by others previously, and that brings new insight to existing knowledge. Research must also be 'intended', coincidental contributions to knowledge are not seen as the results of research (Borgdorff, 2005). This is why research must informed with knowledge of older, related research. Design research is a way of avoiding design procedures by which warm water is reinvented (Lunenfeld, 2003). Research must also be based on a subject that can be researched and is worth the effort of being researched. Communication also plays an essential part, the research process and results are documented and published for the research community and the general public. If the impact of research is limited to the oeuvre and has no meaning to the greater field of research we cannot speak of research in the strict sense. In order to speak of research there must be a reflection of the researcher on the design and the results must be communicated as 'research'. Transparency plays an important part here. Research is ideally planned, by setting up a 'route map' for instance (Cross, 2006).

Conclusion

Design research can and wants to be different from scientific research. This is not obvious as research that is set up, articulated and documented discursively as well as artistically cannot easily be taken seriously. The big problem would be that the quality of such research cannot be judged objectively. Two arguments may be raised against this. In the first place scientific objectivity is not a concept without its own problems. This is in fact the same conclusion that was (and is) used in the emancipation of the social sciences: the right of the established party that believes itself to be in possession of the measure of quality, as opposed to the right of the new party who change the concept of what research is by beginning a new area of research (Borgdorff, 2005). Besides, a design forum on the content of design disciplines may emerge beside the scientific forum. When a real debating culture is developed design research may grow

to be a research community (Margolin, 2000). Just as knowledge of scientific practices can contribute to a better understanding of science, design research can contribute to a better understanding of design. Research helps us subvert similar attempts to mystify design and science. Design research can encourage and stimulate thoughts to reach unexpected viewpoints. The practice of design and design research are an important generator of knowledge. Design is a way of looking at the world and transforming it, just as science is (Overbeeke, 2003).

Sanne Jansen

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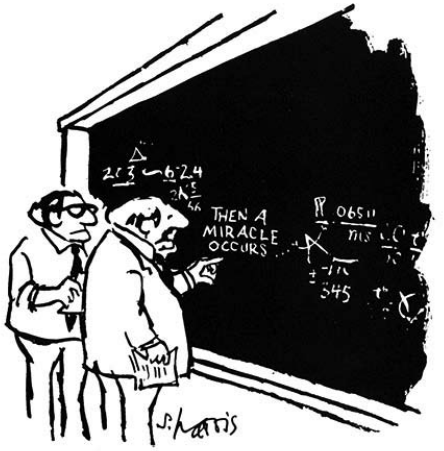
(Endnotes)

1 Vanvolsem builds his own cameras and photographs with a strip and split technique, to show an object throughout the period on a single photograph.
2 The experiment was repeated with other designers with the same results (engineers (Marples, 1960); urban designers (Levin, 1966); architects, (Eastman, 1970)
3 Inductive reasoning for example: the more frequently phenomenon A occurs simultaneously to phenomenon B, the greater the chance that A and B will always occur together.
4 A paradigm refers to the entire set of scientific rules, beliefs and practices that are seen as setting the standards in a specific discipline at a particular moment and thereby function as the framework in which people work scientifically, and by extension culturally, socially and artistically.



"I think you should be more explicit here in step two."

Sydney Harris

Content

Because the efforts made by modern science are more focused on exactness than on usefulness, many of its findings never come into practise. Because of its strong connection with the design practice, 'research through design' may play an important role in obtaining useful results for this practice.

One of the problems in the Belgian context is the gap between the architectural design process and the technical knowledge: the architect-designer passes on the technical side of the building to the expert-engineer and is no longer master of the entire design process. This technical input, however, needs to be taken into account as early as possible in the design process in order to enhance the quality of the architectural project. In this contribution a major reason for this problem is sought in the (scientific) way this technical knowledge is brought to the architect: for the non-expert it is hard to see its essence.

In order to integrate the technical knowledge more into the design process, research needs to be carried out in an effort to translate this accurate scientific knowledge into relevant design oriented knowledge formulated in the language of the architect. This involves defining what 'relevant knowledge' is for the designer and determining how to formulate it so that it will enrich his design process. Perceiving this technical knowledge from the viewpoint of the architect-designer, new knowledge will inevitably out. And if this new knowledge possesses enough richness and universality, it will enable the architect to create a technical world that is new to the engineer.

"Then a miracle occurs…"

(ontwerpmatig onderzoek in de bouwtechnieken?)

Dit artikel focust op de tendens waarbij de architect-ontwerper steeds minder bij machte lijkt te zijn om bouwtechnische aspecten te integreren in zijn ontwerpproces: de architect is niet langer meester over het volledige ontwerpproces, maar laat het technisch gedeelte van het bouwen vaker over aan de expert.
De schrijver gelooft dat dit deels veroorzaakt wordt door de sterk wetenschappelijke manier waarop deze bouwtechnische kennis overgemaakt wordt: voor de niet-expert is hierdoor de essentie niet steeds eenvoudig te vatten.
Er wordt een pleidooi gehouden om deze (wetenschappelijke) bouwtechnische kennis te vertalen naar ontwerpmatige kennis geschreven in de taal van de architect-ontwerper. Dit houdt in dat er onderzocht moet worden welke bouwtechnische kennis relevant is voor de architect-ontwerper en hoe deze kennis overgemaakt dient te worden zodat deze een verrijking kan worden voor het ontwerpproces.

Natuurwetenschappelijk onderzoek

Gerard De Zeeuw[1] stuurde de 'Research Training Session'-groep een cartoon op (zie fig.) die voor hem in een notendop de essentie van (wetenschappelijk) onderzoek samenvatte: iedere stap moet verklaard kunnen worden in het proces zodat elke stap getest kan worden op zijn juistheid. Hier is geen plaats voor een mirakel.

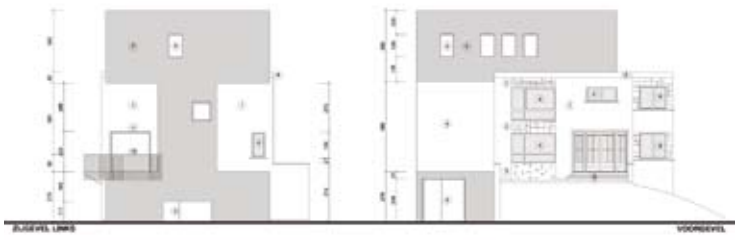
De (natuur)wetenschappelijke wereld heeft steeds nood gehad aan duidelijke regels en formules met de bedoeling deze 'natuur' te kunnen beheersen en voorspellen. Ten tijde van Isaac Newton was men er vast van overtuigd dat de wereld te vatten was in eenduidig beschrijvende natuurwetten: de natuur gehoorzaamt aan een aantal wetten en het is aan de wetenschap om deze te ontdekken zodat iedere gebeurtenis exact voorspeld kan worden.
Door de kwantummechanica weet men nu dat er toch steeds onzekerheden blijven bestaan: de eigenschappen van de kleinste deeltjes kunnen slechts met een waarschijnlijkheid begroot worden (en dus niet langer met zekerheid).Toch blijven deze onzekerheden een moeilijk punt; zo kon Albert Einstein deze kwantummechanica niet aanvaarden (ref.1) omdat er volgens hem nog niet hard genoeg gezocht was geweest naar eenduidige wetten die deze deeltjes met zekerheid konden beschrijven.
De (wetenschappelijke) mens heeft een sterke drang om de wereld te vatten in wetten en liefst in eenduidig beschrijvende wetten. Hierdoor lijkt het evident dat het ontdekken van een nieuwe (natuur)wet alleen maar zinvol kan zijn. De vraag of deze nuttig zal zijn wordt hierdoor bijkomstig.

De weergegeven cartoon geeft indirect aan dat de inspanningen van het huidig wetenschappelijk onderzoek meer gericht zijn op exactheid dan op bruikbaarheid. De te volgen weg moet vooral juist zijn –zonder mirakels toe te staan- eerder dan ergens naar te leiden.
Hierdoor is al veel kennis vergaard en verzameld in wetenschappelijk werk zonder dat deze op de werkvloer toegepast raakte.

Toegepaste wetenschappen en ontwerpmatig onderzoek

Wanneer de wetenschap zich meer richt op het oplossen van 'reële' problemen in plaats van het verrijken van zijn 'theoretische' kennis, spreekt men van toegepaste wetenschappen. Hier duiken termen op als 'nauwkeurigheid' en 'model' in de beschrijving van de 'reële' wereld.

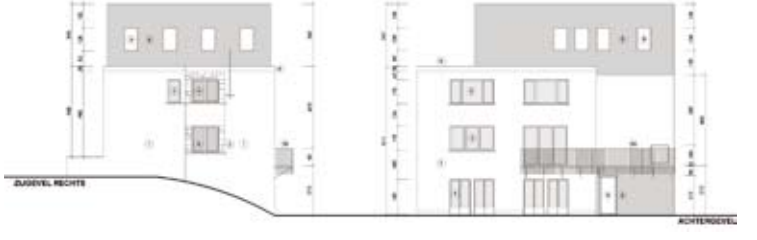
Hoewel stabiliteitsingenieurs vaak gebruik maken van rekenmachines en berekeningssoftware, bezitten ze lang niet de exacte nauwkeurigheid van een wiskundige: het gaat er in de eerste plaats om die nauwkeurigheid (gekoppeld aan een rekenmodel) te kiezen die nodig is om een relevant resultaat te verkrijgen.
Wanneer de ingenieur geconfronteerd wordt met een structureel probleem maakt hij van de realiteit een model waarin enkel de relevante informatie behouden blijft: dit betekent zowel het kiezen van een relevant model voor het structureel probleem als het bepalen van de nodige nauwkeurigheid om tot een bruikbaar resultaat te komen. Zo zal hij van een man die op een voetgangersbrug over een rivier staat, een model maken van een balk (= de brug) op 2 steunpunten (= de 2 oevers) met een puntlast (= de man). De kleur van het hemd van de man wordt bijvoorbeeld niet in rekening gebracht.
Wanneer dezelfde man op een terrastegel op tegeldragers staat, wordt het model een plaat (= de tegel) op 4 steunpunten (= de tegeldragers) met een verdeelde belasting (= de man). Niet alleen wordt het model aangepast aan de situatie, maar ook de nauwkeurigheid: de man is voor de tegel niet meer te herleiden tot een puntlast, maar moet nauwkeuriger omschreven worden als een verdeelde belasting. Het einddoel is het verkrijgen van voldoende nauwkeurigheid om tot een praktisch resultaat te komen: is de brug of de tegel al dan niet sterk genoeg?



Binnen het ontwerpmatige onderzoek dat zich richt op de realiteit van de ontwerppraktijk van de architect, kan men stellen dat de bouwwereld op eenzelfde pragmatische wijze benaderd dient te worden: met de juiste nauwkeurigheid, gekoppeld aan een adequaat model, om zo tot een bruikbaar resultaat te komen voor de ontwerper. Hierbij dient men voor ogen te houden dat wat bruikbaar is voor de architect-ontwerper niet noodzakelijk samenvalt met wat bruikbaar is voor de ingenieur ('architect-ontwerper' en 'ingenieur' worden hier als archetypes gebruikt.) Deze benadering moet het mogelijk maken om een soms moeilijk te doorgronden materie te herleiden tot wat voor de architect-ontwerper essentieel is, zodat deze materie beter begrijpbaar en beheersbaar wordt.

De problematiek van de bouwtechnieken voor de architect-ontwerper

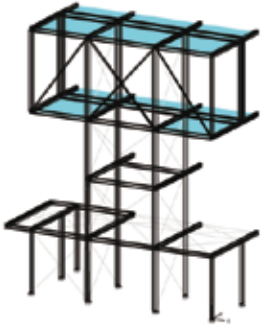
Binnen de wereld van de bouwtechnieken (structuur, bouwfysica, ventilatie, verwarming, licht, constructie,…) is er veel kennis opgebouwd op een klassiek wetenschappelijke manier. Deze kennis is nodig om architecturale projecten te kunnen oprichten. Zonder deze bouwtechnische wereld blijven de ontwerpen virtueel. Iedere architect die wenst te bouwen dient deze bouwtechnieken voldoende onder de knie te hebben. Het vormt een onderdeel van zijn praktijk.
Vooral bij het begin van het ontwerpproces, wanneer er nog veel keuzemogelijkheden zijn, is de insteek van deze technieken essentieel: de keuze van de oriëntatie van het gebouw in functie van de gewenste zonabsorptie, het bepalen van de grootte van de lokalen in functie van de structurele dimensies, het inschatten van het bouwvolume in relatie tot de gevraagde ventilatiekanalen,…
Toch kan men in de huidige Belgische bouwwerkelijkheid merken dat sommige architectuurstudenten en (jonge) architecten de moed niet meer opbrengen om deze wereld in te stappen: de bouwtechnische problematiek dient door een expert opgelost te worden. Hierdoor worden deze technieken vaak pas geïmplementeerd nadat het voorontwerp gemaakt is: het wordt dan eerder een kwestie van behelpen dan van het ontwikkelen van een doordacht totaalconcept. Nochtans is de essentiële kennis van deze technieken bevattelijk. Waarom staan dan zoveel architect-ontwerpers weigerachtig tegenover het toepassen van deze kennis vanaf het begin van het ontwerpproces?



Een belangrijke reden volgens de auteur is dat deze kennis niet gebracht wordt in de taal van de ontwerper, waardoor deze het moeilijk vindt om die wereld binnen te treden. De architect wordt geconfronteerd met bouwtechnische wetten en definities die door hun exactheid en uitvoerigheid niet meteen hun essentie naar voren brengen. Zelfs de bouwtechnische software, gemaakt om het rekenwerk aanzienlijk te vereenvoudigen, kent een te grote gebruikscomplexiteit voor de meeste architect-ontwerpers omdat deze programma's onvoldoende rekening houden met de eigenheid van hun (ontwerp)wereld. De huidige software en normen zijn er op gericht om de expert exacte berekeningen te laten uitvoeren. Hiervoor dienen alle parameters correct ingevoerd te worden, zelfs deze die weinig relevant zijn bij een voorontwerp.
Vele softwareprogramma's geven bij een foute of onvolledige ingave van deze parameters een foutmelding, zonder aan te geven waar het probleem ligt, of erger nog: helemaal geen foutmelding, waardoor verkeerde resultaten gebruikt worden. (Een programma om staafstructuren te berekenen kan beter tonen waar er zich een mechanisme bevindt in een vakwerk, dan enkel vermelden dat er te veel vrijheidsgraden zijn).
In voorontwerpfase zijn doorgedreven berekeningen voor de architect-ontwerper niet aan de orde, wel een idee van de impact van deze technieken op zijn ontwerp en dit vraagt een andere aanpak.

Ontwerpmatig structureel onderzoek

Vanuit het standpunt van het bouwtechnisch onderdeel 'structuur' is er ontwerpmatig onderzoek nodig dat gericht is op het vertalen van exact wetenschappelijke kennis over deze 'structuur' naar relevante ontwerpgerichte kennis geformuleerd in de taal van de ontwerper. Dit onderzoek is tweeledig: het bepalen van wat nu relevante kennis is voor de architect-ontwerper en hoe deze te formuleren zodat hij deze effectief wil gebruiken als een verrijking van zijn ontwerpproces.



Relevante kennis

Zoals reeds eerder gemeld is veel kennis aanwezig, geformuleerd in een wetenschappelijke exactheid bedoeld voor experten. Deze kennis is zeer specifiek en ze is er niet op gericht het relevante van het irrelevante te onderscheiden voor de architect-ontwerper. Bijvoorbeeld bij het begroten van een betonbalk zijn veel invoergegevens nodig om de berekening te kunnen uitvoeren: betonkwaliteit, staalkwaliteit, omgevingsfactoren, brandweerstand, overspanning, belastingsgeval en opleggingstype. Al deze parameters lijken even cruciaal te zijn voor de begroting. De niet-expert heeft hier onvoldoende zicht op, hoewel hij aan de hand van eenvoudige ontwerpregels die enkel de voornaamste parameters in rekening brengen (belasting en overspanning) toch de hoogte van de balk (met voldoende nauwkeurigheid voor een voorontwerpfase) zou kunnen schatten.

De architect-ontwerper kent andere gevoeligheden dan de stabiliteitsingenieur: voor een architect is de kennis van de hoeveelheid wapening in de betonbalk meestal niet belangrijk. Parameters als kostprijs, afmetingen, massa(activatie) en duurzaamheid zijn echter veel relevanter. De architect moet de consequenties van zijn keuzes met betrekking tot de structuur kunnen inschatten op het vlak van de kwaliteit van zijn ontwerp. Hierin spelen andere factoren een rol dan deze van de zuivere bouwtechniek. Deze verschillende gevoeligheid vraagt een andere manier om de kennis over 'structuur' aan te bieden. Deze kennis moet met andere invoerparameters benaderd worden (bv. gebruiksfunctie van het lokaal i.p.v. gebruiksbelasting in kN/m2) en de uitvoerresultaten moeten op maat van de architect-ontwerper aangereikt worden (bv. kostprijsverhoging per m2 ipv beugelpasverkleining).
Dit betekent dat de huidige structurele kennis bekeken dient te worden in functie van zijn relevantie voor het ontwerpproces van de architect.

Hoe formuleren?

Een tweede luik in dit onderzoek is het vertalen van deze nieuwe kennis naar de taal van de architect-ontwerper: op welke manier dient deze kennis aangebracht te worden zodat de architect dit als een verrijking kan ervaren voor zijn ontwerpproces en niet als een noodzakelijk kwaad?
Dit luik loopt voor een deel samen met het eerste luik omdat het te maken heeft met het definiëren van wat zinvolle parameters zijn voor een architect-ontwerper en welke niet. Maar naast de keuze van deze parameters is de manier en het ogenblik waarop deze aangebracht dienen te worden in het ontwerpproces een belangrijk deel van het onderzoek. Deze input kan in de meest interactieve vorm geleverd worden door de ingenieur zelf, waardoor dit onderdeel van het onderzoek de communicatie tussen architect-ontwerper en ingenieur behandelt: hoe kan het ontwerpconcept van de architect overgemaakt worden in termen van een structureel probleem aan de ingenieur en welke input wordt er van de ingenieur verwacht om het ontwerpproces te verrijken?

Wanneer er geen ingenieur voorhanden is kan deze input op verschillende manieren gebeuren met elk hun eigenheid en invloed op het ontwerpproces. Men kan informatie verschaffen via cijfers of met beelden, weinig of sterk interactief, digitaal of analoog, met weinig of veel keuzemogelijkheden…
Door onder andere het ontwerpproces van de architect en de communicatie tussen architect en ingenieur te analyseren, dient men te komen tot het ontwikkelen van een ontwerpgerichte taal die de structurele wereld beschrijft.

O brave new world

Samenvattend kan men stellen dat de structurele kennis van de ingenieur dient benaderd te worden vanuit het ontwerpmatig standpunt van de architect om zo tot een herformulering van deze kennis te komen. Zo kunnen eenvoudige ontwerpregels opgesteld worden voor de reeds gekende typologieën om de architect-ontwerper een voldoende beeld te geven over de impact van de structuur op de kwaliteit van zijn ontwerp[2]. Deze insteek in het ontwerpproces zal er voor zorgen dat er een beter totaalconcept ontstaat, waarbij het voor de ingenieur evidenter zal zijn om tot een structurele optimalisatie te komen.
Dit proces zal zeker tot nieuwe kennis en inzichten leiden voor zowel de ingenieur als de architect.
Door een beter inzicht te verkrijgen in de wijze waarop de structurele input verloopt in het ontwerpproces zal de (directe of indirecte) communicatie tussen ontwerper en ingenieur versterkt worden. Deze samenwerking is cruciaal voor de kwaliteit van het eindontwerp en dient zo vroeg mogelijk in het proces aanwezig te zijn.

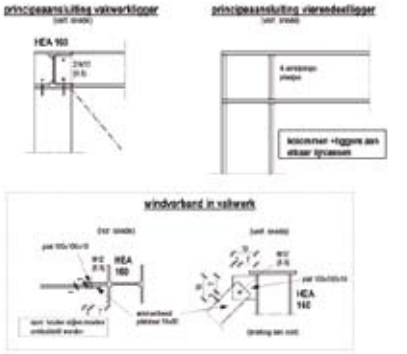
Indien deze ontwerpmatige kennis voldoende rijk en universeel opgebouwd is, dan is het niet denkbeeldig dat vanuit deze andere manier van denken en communiceren de architect-ontwerper nieuwe structurele vormen zal aanreiken aan de ingenieur waardoor er een nieuwe wereld zal opengaan.

Laurens Luyten

Ref.1: Greene, Briane R. (2004). *De ontrafeling van de kosmos*. Utrecht: Het Spectrum

Beelden:
Copyright architect Bruno Poelaert (gevelzichten)
Copyright Babel ingenieurscollectief bvba (3D structuur + doorbuiging + details)
Beelden (3D structuur + doorbuiging + details) aangemaakt met programma 'Powerframe' (copyright BuildSoft NV)

(Endnotes)
1 Gerard De Zeeuw was een van de tutors van de 'Research Training Session'
2 Het ontwikkelen van een structureel inzicht bij de architect-ontwerper is een belangrijk aspect dat in dit artikel niet uitgewerkt is geweest.



Research as an alibi for unbridled travelling

What follows is a brief review of personal headlines noted in the course of one year of Research Training Sessions. First, I will approximate the fields of interest that most occupied my mind while following the sessions. Subsequently, I will dedicate a few words to the possibilities in research through design as they present themselves to me at this stage and to the concept of 'novelty' in research.

fields of interest•

manned & mediating space•
interior/in-between/exterior•
concept place•
multiple readings•

Figure 1: persiennes in-between inside and outside as an actor in Marguerite Duras' 'L'Amant'

Elle est très attentive à l'extérieur des choses, à la lumière, au vacarme de la ville dans laquelle la chambre est immergée. [1]

...

Le bruit de la ville est très fort, dans le souvenir il est le son d'un film mis trop haut, qui assourdit. Je me souviens bien, la chambre est sombre, on ne parle pas, elle est entourée du vacarme continu de la ville, embarquée dans la ville, dans le train de la ville. Il n'y a pas de vitres aux fenêtres, il y a des stores et des persiennes. Sur les stores, on voit les ombres des gens qui passent dans le soleil des trottoirs. Ces foules sont toujours énormes. Les ombres sont régulièrement striées par les raies des persiennes. Les claquements des sabots de bois cognent la tête, les voies sont stridentes, le chinois est une langue qui se crie comme j'imagine toujours les langues des déserts, c'est une langue incroyablement étrangère. C'est la fin du jour dehors, on le sait au bruit des voix et à celui des passages de plus en plus nombreux, de plus en plus mêlés. C'est une ville de plaisir qui bat son plein la nuit. Et la nuit commence maintenant avec le coucher du soleil. [1]

...

Reading this passage of 'L'Amant', we are placed in a subtly defined space, although this space is never exact. We are somewhere between day, when the city is bludgeoned by the sun, and night, when the city finds itself once again, when the city comes alive. We are somewhere between the evolving, bustling city outside and the static, confined space of the inner room, where a story is about to unfold. The tension in the story, what is and what has to become, is situated in and between the actors. Not only the two mute lovers (me, you) and the anonymous city outside (them) play their roles. An even more important and vivid role is played by the architecture itself. A thin wall -there is not even any glass, air flows through it- forms the interface, on which sound, light and movement are projected. Not only are these physical entities projected, the tension and meaning of the storyline itself are situated within this architectural element. Architecture forms the condition for the story to be told.
Architecture is mediating space. Architecture is narrative space.

Exploring and **Mapping** mediating spaces in traditional, mostly abandoned settlements in Turkey, from an architectural-anthropological* point of view, my fellow student colleagues and I were confronted with a social testimony, coagulated in architecture.[2] This mute architectural testimony had to be researched, layer after layer, it had to be reconstructed, it had to become inhabited again, even if only virtually, to communicate its essence, its meaning. Architecture here was a language but there was no living creature left in these settlements to speak it, to speak the hidden stories. And alas, as we all know, re-enactment is a fake. Social life had ceased to accompany the formed architectural space here. Only the architecture remained as a mute and passive actor. The inhabitants who had 'manned' the architecture, had long since deserted and had moved on to a new future (without a past?).

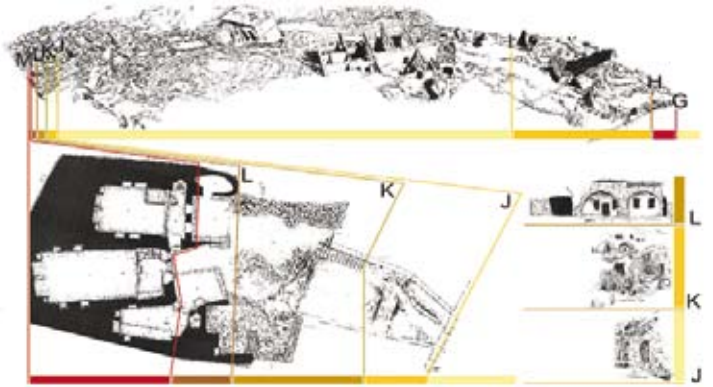


Figure 2: successive thresholds or mediating spaces in traditional architecture in Urgüp, Capadocia, Turkey

In his publication 'Het Huis en de Baan, Moderniteit en Wonen in Kabilië', André Loeckx manages to depict for us a traditional settlement in Kabylië, Algeria, where the traditional architectural form is still 'manned' by its inhabitants, where the meaning is still tangible.[3] Traditionally, the village is considered a 'machine of reversal' for the outside world. Through a series of mediating thresholds (road, communal gate, villageroad, blind alley, family gate, yard or courtyard, house), each with its characteristic formulation and expression, the outer world and its connotations are reversed into an interior world, from male to female, from peripheral to central, from exterior to interior, from public to private, from economical and political to communal, from place of honour to place of sensuality. Even more important than forming a tool for binary opposition, this reversal machine consists of a linked chain of fragmentary interpositions. Mediating architecture still forms the necessary décor for staging and affirming the roles played by its human actors.
Things become even more interesting when this architecture is confronted with modernization and globalization. The architectural schemes do not get abandoned as was the case with the settlements in Turkey and they also do not give way to apparently meaningless non-places, as described in Marc Augé's book 'Non-Places: Introduction to an Anthropology of Supermodernity'.[4] They are adapted to the new external challenges, and the mediating spaces move from their traditional location inside the village walls to the motorways that link the village with the world.
Naturally, the roles played by the inhabitants move along with them.
The notion that mediating spaces not only separate social entities, but also tend to mediate in space, time and meaning between those entities, is of key importance. They form coded passages from one entity to another.
Manned architecture is such a mediating space.
Manned architecture is narrative space.
Narrative space is an invitation for multiple readings.

*Anthropology is the study of human behaviour. When anthropology meets up with architecture, then human behaviour is studied in correlation with built form. Modern anthropology is based on the statement that human nature is 'culture'. Humans have cultivated the capacity to perceive the world through symbols. These symbols can be socially learned en taught.
We, as humans, can transform the world using and interpreting these symbols.

Designing architecture in everyday practice is in essence a matter of establishing borders and mediating spaces. It involves considering what these spaces mean and to whom and it involves considering the potential of multiple readings in architecture.

Living architecture in everyday life, as a layman in architectural matters, means participating and travelling, whether consciously or unconsciously, in this architecture of borders and mediating spaces and therefore giving it multiple readings. Anthropologically and architecturally, there is (hopefully) a lot to learn from the layman's everyday tourism into architecture.

Teaching designcourses to future interiorarchitects at the Sint-Lucas Architecture Institute, as an architect, gives rise to the question as to what the boundaries between disciplines such as interiorarchitecture and architecture (and, by way of extension, of urban planning) may be. Is it possible to create or design in a non-synthetic way in one of the two disciplines with complete disregard for the other discipline? Or are they at their best in a subtle natural coexistence? If the latter is the case, why are these two disciplines separated in our educational system? Since there is a separation, it is necessary to define both disciplines and how they are separated and/or linked together. A simple answer seems to be lurking around the corner, but we have to leave it there, just around the corner. Again, as in the passage of Marguerite Duras' 'L'Amant', the field of tension, the place of interest seems to lie in the in-between between Architecture and Architecture of the Interior. Exploring this in-between is the challenge.

research through design: possibilities

In the discussions that accompanied the RTS sessions, questions were formulated concerning the format of the output of a research project through design. There seems to be a search for a balance. On the one hand, there is the necessity of a classical textual and overall communicable output. On the other hand, there is the desire for an output that is more closely related to the specific language of the 'artist', a very personal approach.

An even more important question for me, at this stage, would be what the format of research itself in architecture could be and what the balance between different approaches should be.

In the text above, the paragraphs touch some possibilities that seem interesting and challenging:

Reading
Exploring and **Mapping**
Designing
Living

Research through design thus becomes very appealing. It presents itself as an architecturally inspired travel agency. As a new Marco Polo, straight out of Italo Calvino's book 'Le città invisibili', we would perform research through de-composing and re-composing manned architecture.[5]

Travelling as always being in-between. Travelling as a process of discovery, wonder and insight.

Travelling through architecture as a form of research ... who wouldn't settle for that!

Teaching

Research has to have a goal. Considering the trident teaching-architecturing-researching, the goals seem obvious. As stated during one RTS session, the goal could be a sublimation of the personal architectural practice and therefore a contribution to the general practice of architecture as a whole. In my opinion, the goal could be and has to be broader. The student environment not only seems to be an obvious target group, but it also has great critical potential!

the concept of 'novelty' in research (through design)

During the RTS sessions, the notion of 'novelty' regularly sneaked into the conversation. It was stated that the creation of novelty is a condition for research to be successful. But what is this concept 'novelty'. And what is the weight of this concept? Is it the creation of something brandnew, something that never existed before? And if so, do we have to tread the path of the great and brilliant discoverers?

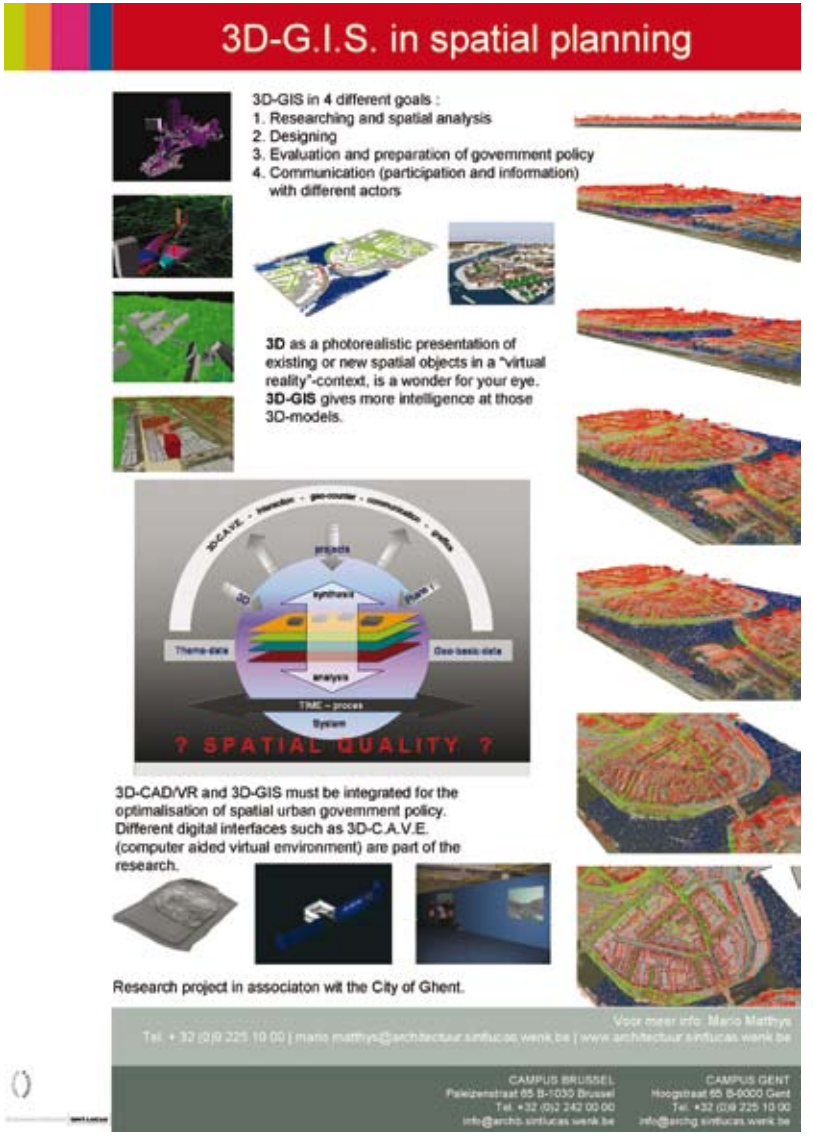
Or is 'novelty' more similar to the concept 'mimesis', formulated by the philosopher Theodor W. Adorno, who sees this 'mimesis' as the creation of little shifts in the existing, that reinterpret and affirm the existing, without overthrowing the strong and necessary link with tradition?

Architecture cannot always strive for the 'totally new', because the 'totally new' will always end up being meaningless and/or just a superficial fashion. The weight of the concept 'novelty' needs to be relativized and carefully measured.

Jo Liekens

quotes and relevant bibliography:

1 Duras, Marguerite (1984). L'Amant. Paris: Les Editions de Minuit, pp.47-52.
2 Liekens, Johan; Matthys, Koen; Vanmerhaeghe, Karolien; Waerlop, Liesbeth (1996). Turkije, een onderzoek naar ruimtelijke beleving van traditionele concepten. Gent: Sint-Lucas Architectuur Instituut
3 Loeckx, André (1993). Het huis en de baan. Moderniteit en wonen in Kabylië, in Hilde Heynen (ed.), Wonen tussen gemeenplaats en poëzie. Opstellen over stad en architectuur. Rotterdam: 010, pp. 37-66.
4 Augé, Marc (1995). Non-Places: Introduction to an Anthropology of Supermodernity. London & New York: Verso Books
5 Calvino, Italo (1972). Le città invisibili. Torino: Giulio Einaudi Editore



3D GIS used to optimize the 'spatial quality' in an urban context

"De gustibus et coloribus non disputandum est" – One cannot argue about colour and taste. The Romans already knew this. What is "spatial quality"? Can we come to an agreement about "spatial quality"? What is "spatial quality" in an urban context? Is it enough that a group of experts (architects, landscape architects, urban planners) decides that something has a high spatial quality, or are there rules? Is the opinion of any citizen worth less than the quality judgment of the experts? If one manages individually or together with others to make a judgment on 'spatial quality', can a "digital expert system" come to this judgment too?

I. Spatial quality in perception

In the 3th century B.C. Euclid declared the "golden ratio" to be the aesthetically perfect relationship, for example, between the length and height of a rectangle. This relationship is also seen in other aspects of "spatial quality". On the basis of this golden ratio, Corbusier created the "modulor" as a measuring instrument.
In the experience of urban spaces we will analyse which parameters influence and determine the spatial value. To keep it simple, we start with a single point of view, namely that of the camera (or the eye).
At each moment of viewing an object or a group of objects, it is not only the spatial ***composition*** that determines the spatial quality, but also many other factors:

> *Space, orientation, distance, eyesight, eye altitude, level/floor, human activity, traffic, noise, panoramic point of view, relief, colour, build-not build area, water, scale, building height, height of green growth, kind of green grown, density, association, hierarchy, land use, function, non-function, quality of building techniques, etc.*

The urban composition (the spatial design itself) that is to be judged is not the only thing that specifies "spatial quality". The experience and the judgment of spatial quality is determined by different personal aspects of the ***juror***.

- physical characteristics: age, sex, height,…
- social characteristics: cultural luggage, social context, socio-economic background, intellectual capabilities, degree of schooling, type of schooling, …
- psychic factors: state of mind, religion, biorhythm,…
- external factors that impact on the juror: environmental factors such as climate, temperature, moisture, light, shadow,… But even certain trends and social tendencies such as fashion have their impact on spatial judgments. The surrounding sound and atmosphere are also important. But even the people one keeps company with and society in general have their impact on one's spatial judgment.

Finally, what is the impact of changes in ***time*** on the juror's spatial judgment concerning spatial objects. Is nostalgia also an issue? Does the foreknowledge or memory of a spatial environment play a role? What is to be done concerning associations with earlier decisions or experiences?

An urban object, a spatial composition will always have a story. It is the designer's story of becoming somebody, or the story of the user, or the story of the owner reaching his goal…

II. Depth vision

What is the impact of the ***stereo image*** on the perception and experience of spatial quality? We look and see with our two eyes, so we can see "depth" and "distance".

Is it possible for someone with only one eye to give the same criticism of spatial quality as someone who sees a stereoscopic view with his two eyes? We detect the space in another way when we shut one eye, but what impact does this have on the perception of "spatial quality"?

The spatial analysis of a 3D composition with our eyesight is possible because the stereo system in our eyes and brain has the same effect as scanning a 3D space with xyz coordinates from each point in the field of vision in relation to the camera point of view. This stereo vision can give us crucial information as to distance and depth that is fundamental for being optimally 'immersed' in the space. The information about the points of objects in the composition scanned by our eyes is computed by our brains. The composition is reconstructed in our brains, using billions of points to reconstruct the object.

III. Algorithm

If we look at a composition from one point of (camera) view without moving the eye (or the camera), we can judge a scale of spatial quality. So doing, we can translate the definition of the spatial quality of a 3D space into a mathematical model, using the projection of a 3D composition onto our retina. Or does the whole process of observing an urban object or panorama in such a way (including the way our brains give a quality score) follow such a complex course with so many influencing parameters that the judgment of quality cannot possibly be carried out in an objective manner?

Moreover, we must also realize that spatial perception happens not only from a single camera point of view, but rather is usually a continuous process of changing images and perspectives, a fact which makes it much more difficult to analyze.

IV. Form of cities in a changing experience

Normally speaking, any view of a city scene is dynamic and ever changing, rather than static. Not only are the objects in motion, but also the subject is in motion, whether moving by foot, bike, bus or train. Perception is dynamic. Our retina receives many different images, even in the course of a single second. Someone moves in the space and the sequence of spatial images produces an extra dimension. The camera path determines the quality that the jury is able to perceive.

What is the impact of "changing images" on the experience of spatial quality? And because of the time interval between observation A at place X and observation B at place Y, it is also the factor of time that influences the judgment of spatial quality.

Kevin Lynch has analysed and studied the city in a special way. He has analysed the perception and experience of the city in terms of size, density, grain, form, internal pattern, space, light, shadow, texture, orientation, etc. The perception is determined by the individual and collective memory of the city.

Thus the whole experience of feeling satisfaction with one's spatial perception of a city can be translated as "city satisfaction".

V. Interdisciplinary image making

We use different parameters of spatial quality. In our examination of the perception of the space in which we live, it is necessary that we look at things from the point of view of the different scientific and design disciplines. In this way we achieve a synergy in the question of spatial quality.

Different disciplines look at the space in which we live in a different "visual" way. This means that different experts look at the spatial environment with different "glasses" on. A building may be seen by the architect as a "beautiful" design, whereas the landscape architect may have a problem with the fact that the building is in an open landscape. And there is the possibility that the urban planner may also give a negative opinion because the specific urban function of the building is probably not the best choice for that particular location. Thus the judgment of spatial quality is influenced by the type of expert doing the judging, not only looking to the design quality, but also other parameters.

1. Architecture: designing of buildings. Most of the architects look at the space from outside the building or they take the building as the focus.
2. Landscape: open space. The landscape architect looks at the space that we live in, from the "open" and "un-built" point of view. Because of this, his

perception of space is totally different from that of the architect.

3. Spatial planning: the structure of space. The spatial planner thinks and looks at the 'big picture' – the overall structures. A single building, in itself, is usually not so important. Only landmarks or buildings of exceptional quality draw his attention.
4. Urban planning: The urban planner abstracts the spatial qualities of an "environment" and deals with the harmony of the urban composition, by analysing all the objects and processes within that urban space.
5. Geography: Its primary task is to describe the earth and the objects that are on its surface. The geographer looks more at the characteristics of an object and less at the design composition.

In addition, there are also other disciplines that in one way or another are linked to the problem of spatial quality. Certainly they look at the object through a different pair of 'glasses', searching for and examining spatial quality. For instance, psychology describes the methods and techniques for looking at an object or a composition.

And what are we to do with the citizens who are not experts in any particular discipline, but only in their own lived experience…?
The world of informatics has developed digital techniques for spatial analysis and synthesis.

VI. Towards a digital expert system

If it were possible to make an algorithm that describes the process of quality judgment of spatial perception from a single point of view, then could we perhaps translate it into a dynamic system in which the point of view is changing? How much data do we have to store and manipulate until there is enough information about spatial quality? That is one of the questions.

Different families of software provide partial answers to this question.

A. Multimedia software
The group of software featuring functions for layout, photo adaptation, the making of presentations, etc. provide easy tools that include visual presentation techniques for symbols, maps, design and photos.

B. Computer Aided Design (CAD)
With the introduction of the PC in the beginning of the 1980s, it became possible for architects to make their drawings digitally. In the mid-1980s we got the first 3D drawings made in a CAD system on a PC in DOS. Unix had earlier solutions, but those were too expensive for architects. Today there are sophisticated CAD possibilities with big vector or raster based functionalities.

C. Geographic Information Systems (GIS)
The first GIS systems within the government context in Belgium were introduced in the early 1990s. While architects started with the CAD systems, the governmental urban planning agencies started with the GIS systems on PC. In the early days, GIS was running exclusively on UNIX, and this was a barrier. But with the stand-alone GIS solutions on PC, there was a new digital world to discover. But there was no link between the CAD systems of the architects and the GIS systems in the governmental urban planning agencies. Today the CAD drawings have been integrated by most architects. Many of whom draw mostly in 2D and still they are using the pencil rather than the computer.

A GIS system integrates the alpha-numeric data into a digital map. So we can do different analysis. Even designing can be augmented using the functionality of the GIS characteristics of buildings that are registered in a GIS. The numbers of citizen, the owners, how many floors, the function, building license, physical qualities, etc. are characteristics that can be integrated into a GIS system. With a GIS we can also interact spatial quality in urban systems

D. Virtual Reality (VR)
The first real VR applications in architecture and urban planning were introduced in Belgium in the 1990s. In 1996 the first part of the city centre in Ghent was designed as a 3D VR model, in detail and full of texture. It was the first 3D-VR municipal project in Flanders. Today you can even use a CAD program to make beautiful 3D models. But when you need a real animated 3D project, you have to use specialized VR programs. And the game and film industry is leading in 3D applications…
Light, shadow, textures, atmosphere, fog, people, street furniture, animated elements, … these are all things that cannot be handled in an optimal way in basic CAD software.

E. Three-dimensional Geographic Information System (3D GIS)
The First 3D GIS applications were built in the beginning of the present millennium and they combine the functionalities of CAD, VR and GIS. A new technology was born. A side analysis tools, there are also visualization tools in this software. We can predict that this technology will grow much more in the world of architecture and urban planning. In future all the functionalities of CAD and GIS will be integrated!

F. Spatial Quality System (SQS): in development
CAD systems are the ideal instrument for making technical drawings. VR is the best thing for animated visualization, (3D) GIS is an expert system for analysis, registration and computing of the characteristics of spatial objects.

However, even when we backup all details of a building, a landscape or an urban environment in a raster or a vector format, nevertheless there is no system to automatically interpret the spatial quality research.

The Spatial Quality System (SQS) could be a new instrument in efforts to optimize spatial quality. The question is, whether the many unknown and mostly personalized parameters are not a deadly handicap. And we have to store and compute a gigantic mass of data!

G. Coming from stand-alone, moving towards the network environment

Every development of the informatics environment we are describing started out as a stand-alone application. Network systems and network data are currently hot items. Geocounters, web services and central databases are becoming a closed worldwide network. When complex computing becomes necessary in the new SQS applications, perhaps we will be able to use network computing time….

VII. 3D scanning

When we build a SQS, we will analyse the process that people go through in making judgments, and we will simulate it. This means that we will have to analyse the process that people go through in seeing, computing data and making a decision regarding quality status.

A certain technology is very interesting – and even necessary – for this research, namely 3D scanning. This technology is used by geometrics. Dedicated fields of work include, for instance, "in situ" hard screen copies of monuments and archaeological objects.

The result of 3D laser scanning is a point cloud in an X,Y, Z system. This point cloud is converted with certain software into a 3D vector model. In combination with a digital photo, every scanned point is assigned a colour in space.

Our eyes scan the space at which we are looking. The eyes work as an interface, the signals of which are sent to our brains. These signals determine a quality judgment.
Our brains make a quality judgment based on what we see in an objective screening incoming shot in combination with a large amount of parameters, even in stereo.
So, can we use the technique of 3D scanning?
The question is: Starting from the digital analysis of a scanned 3D space, whether it is a spatial state of the art or a digital model (i.e. a new design), can we simulate the spatial judgment that is made by our brains?
In other words, can the technology of 3D scanning be used for measuring spatial quality judgment?
If this is possible, then it is possible to improve and to augment the spatial quality of a perspective, of a composition, or of a 3D image. Therefore a virtual composition or a digital model is a kind of helping technique.

VIII. 3D analysis and synthesis

When we scan a 3D object, each point is registered with colour and depth-distance. All these pixels together produce a raster image, from which we can construct a vector model.
This brings us to 3D mapping.

The detection of a form in a digital environment, in a window by scanner or by eye, is one thing. But the 3D analysis of an image can only happen when there are enough scanned points. The technology gives us only a few possibilities today, in comparison with what our eyes and brains can do. But with the expansion of computer technology in the future, it will certainly become possible to do it.
Nevertheless, we make the judgment mostly based on the "texture" of an object. The question is: Can we make classes of texture in order to make it much easier to validate the texture. The impact of the material texture on visual perception and spatial quality remains important, along with the surface relief of the texture (e.g. bumps).

IX. Spatial quality digital evaluated and funded

Can we predict the spatial quality of an object or a composition using a digital expert environment?
3D GIS gives us the new technology of a design, evaluation, communication and management system for spatial models.
We are looking for a Spatial Quality System that uses different digital techniques. With a kind of X-rays we will interactively intervene in the process of digital designing. Can the computer give us some hints on the improvement of spatial quality? This is the final question that possibly can only be answered through the trans-disciplinary efforts of architecture, landscape architecture, town and urban planning, geodesy and psychology … using informatics.

Mario Matthys

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teaching architectural design.
a part of it is teaching aesthetics.
it is about harmony.
forms.
notion.
sense.
proportion.
beauty.
intersubjectivity.
objectivity.
emotions.
... .
the difficulty of teaching aesthetics.
finding the right words.
the question is.
are there words.

the unspeakable in architecture.

thinking about learning and teaching.
how to explain the unspeakable.
there are words.
there are examples.
showing.
imitation.
trial and error.
do and reflect.
from understanding to live it.
... .
is there more.
searching for, develop other methods.
linked to personalities.
linked to the capacity of persons.
linked to psychology.

experiment with students.
laboratory.

mm.

The unspeakable in architecture

Reflectie.
Taal spiegelt de werkelijkheid volgens de wetten van de logica. Ze doet zinnige uitspraken, die aantoonbaar waar of onwaar zijn (de deur is open). Maar ze kan geen uitspraken doen over het onfeitelijke (de deur is mooi) en is machteloos ten aanzien van mystiek.
'Wovon man nicht sprechen kann, darüber muss man schweigen.'
('Tractatus logico-philosophico', 1922 Wittgenstein)

Architectuur is een combinatie van techniek, het maatschappelijke en vormgeving. Een ontwerp is volledig als deze 3 mekaar omhelzen in dat ene project in zijn specifieke context. Een ontwerp is het resultaat van een proces van blijven zoeken naar wat beter is en nooit af zal geraken.
Zoekend en onderzoekend kan je als architect je weg vinden binnen deze 3 werkruimten tijdens het uitwerken van een welbepaald project.

Mijn persoonlijke interesse binnen architectuur gaat uit naar de 'Schoonheid' binnen een project.
'Aesthetics', wat het ook kan zijn …
harmonie
proportie
schaal
mooi-lelijk
gevoel
vorm
ruimtelijke kwaliteit
licht
belevingswaarde
objectiviteit
subjectiviteit
…
Onderdelen binnen een project die wel toonbaar zijn maar niet zegbaar, die wel voelbaar zijn maar niet te verwoorden, of slechts deels.

'Er bestaan zeer zeker onuitsprekelijke zaken. Dit toont zich, het is het mystieke.'
('Tractatus logico-philosophico', 1922 Wittgenstein)

Ik wil denken over aanleren en doceren binnen architectuur, over ontwerpen en het proces ervan.
Er is inderdaad meer dan gesproken taal. Er zijn voorbeelden, dingen worden getoond, studenten imiteren. Trial and error, do and reflect. Een weg van "de zaken begrijpen" tot "de dingen beleven".

Maar begrijpen we niet pas echt als we de dingen onder woorden kunnen brengen? En doceren we niet pas als we de dingen begrijpbaar maken? Of tenminste proberen?
Iets wordt alleen begrepen door wie de gedachten die hierin worden uitgedrukt – of gelijksoortige gedachten – zelf al eenmaal gedacht heeft. Gedachten zijn onuitgesproken woorden.

'Van een antwoord, dat men niet uitspreken kan, kan men ook de vraag niet uitspreken. Het raadsel bestaat niet. Wanneer een vraag zich überhaupt laat stellen, dan kan zij ook beantwoord worden.'
('Tractatus logico-philosophico', 1922 Wittgenstein)

Studenten hebben vragen. Een docent probeert te antwoorden, maar wat als de woorden tekort schieten? Laten we het erbij? Of blijven we zoeken naar meer woorden, of woorden die beter benaderen.

Het onderzoek.
Doceren in ontwerpen is soms een zoektocht naar woorden, een manier vinden om een bepaalde vormentaal om te vormen naar een gesproken taal.
Door het volgen van de Research Training Sessions in 2007, ontstond er voor mij een opening om hierover te reflecteren: te denken rond ontwerpprocessen en het expliciteren ervan. En 'ontwerpend onderzoek' leek me hiervoor de meest geschikte methodiek.

Onderzoek benaderen via het ontwerpen. Het ontwerp niet als produkt beschouwen, maar als een integraal deel van onderzoek zelf, geeft vrijheid binnen een onderzoek. Deze methode is niet gebonden aan een strakke procedure.
Het toeval en de intuïtie, eigen aan ontwerpen, geeft dezelfde mogelijkheid door aan het onderzoek. De mogelijkheid om toevallig te ontdekken. Ontwikkelingen, resultaten en inzichten in het onderzoek kunnen zo ontstaan gelijklopend aan ontwikkelingen binnen de aangewende ontwerpprojecten.

Om 'doceren in ontwerpen' te onderzoeken, moeten de eerste onderzoeksvragen zich richten op het ontwerpen zelf:

- Hoe verloopt een ontwerpproces, welke beslissingen worden genomen en wanneer? Wanneer verschijnt toeval ten tonele, hoe speelt intuïtie en aanleg een rol? Kanttekeningen, interpretaties van beelden, achtergrond. Wat beïnvloedt de ontwerper?

- Wanneer voldoet een ontwerp? Wanneer voelt een ontwerp aan als volledig, waarbij de dingen mekaar aanvullen. Wanneer klopt het en hoe beschrijf je dat? (of the record: Wanneer beantwoordt een ontwerp aan Schoonheid, in de ruime zin van het woord.)
Onderwijzen betekent 'iets aanleren'.
Wanneer ik bovenstaande vragen op onderwijs projecteer, stel ik mij de vraag of en hoe iedereen de competentie kan aangeleerd krijgen die hier nodig is. 'Het zien of het niet zien', 'het voelen of het niet voelen', en het besef hebben dat ontwerpen over 'zoeken' gaat.

Het observeren van studenten en hun leerproces met betrekking tot ontwerpen zal centraal staan. Via ontwerp wil ik onderzoeken wanneer studenten bepaalde wegen inslaan. Via ontwerp wil ik onderzoeken tot hoever woorden reiken en wanneer niet meer. Via ontwerp wil ik toetsen of verschil in de persoonlijkheid van een student een andere aanpak vergt. Het ontwerpatelier dient als laboratorium binnen mijn onderzoek en op die manier tracht ik onderwijs en evaluatie aan te vullen.

Zoals je bij de start van een ontwerp niet helemaal weet wat het resultaat zal zijn, zo is veel van de inhoudelijke maar vooral de feitelijke weergave van dit onderzoek nog niet bekend. Het onderzoek zal samen met het middel 'het ontwerp' evolueren tot een weergave dat mijn resultaat zal verbeelden; het ontwerpend onderzoek in gedachte.

Marjan Michels

Design Processes. Between Brief and Building

Case Study: Terraced Houses

1. Introduction

My interest in design-based research arose when we were compiling the book *Jonge architecten in Vlaanderen*, Tomas Nollet en Hilde Huyghe, Stills from a design process. (1) For this publication we had to take sketches, drawings and models from our own archives to illustrate the design process behind our own home.

Because of this interest I enrolled for the Research Training Sessions, organised by the architecture department at St Luke's, and for the 'Into Research' sessions organised by the IVOK (Institute for Research in the Arts). I have always been captivated by the notion of obtaining a PhD 'through architecture' and having been to these sessions I have found that interesting means of achieving this ambition are provided. It offers the young designer the opportunity to reflect on their own practice, to examine it in an ordered manner and put it into a broader context.
By obtaining a PhD I would also make a contribution to the institution, by acquiring an insight into the design methods conveyed to the students by the lecturers.

2. Between brief and building

When we look through glossy magazines and other such books it would appear that architects have a very easy and attractive profession. You receive a brief for an interesting project and several years later the building is handed over, and if all goes well articles on it are published and it is mentioned as a fine example of its genre. When it is shown to a broader public, consisting mainly of colleagues, you receive criticism and draw lessons from it. After a time, or in the meantime, this process starts all over again.

However, not a great deal of thought is given to the years of intensive research. You have had to learn a programme and take account of changes to it over the years. You have

collaborated with engineers and you have presented the project several times to clients, population groups, local residents and so on. You have examined several options, done a 1000 drawings. I want to write about the period between the brief and the building.

Research Issue(s)
By what are our design strategies influenced? Does intuition play any part in the design process or does it take a highly structured course? Where do we architects acquire the ability to design? Is it in our genes?

3. Designing: reality – abstracting reality – reality

A brief starts with the interpretation of a programme and a visit to the site. We see, hear, feel and smell the characteristics of the site involved. Empathy with the surroundings plays a major part in this. After the visit we return to the office and start our work in an abstract world. The atmospheres and images are in our minds. We draw an initial line or a combination of lines and a perspective, a diagram or a sketch takes shape. The paper is a screen and our hand and pen project the film that's showing in our minds. The first few lines contain an entire world. They contain a huge amount of knowledge and information. The strength of these lines is that they enable a deeper examination, since one can either reject them or follow them. Breakthroughs in the design process occur when a balance is found between the programme, the location and one's own ideas.

Research Issue(s)
What fuels our ideas and how does one make them concrete? What form do discoveries take in a design process? How is it that we sometimes take thousands of decisions at the same time without restriction and integrate feelings from the past and present and thus take a step towards a new reality?

I am convinced that there are several points in a design process where we forget time and space. They are islands we should cherish. They are moments of synthesis in the research when all our skills and knowhow come together and fuse. A design process is not linear. It is a succession of **repetition, intuition** and **serendipity**. In music the harmonies are defined. In musical compositions no one can deny the beauty of a triad. But where do you find the equivalent of a triad (or its justified rejection) in architecture.

Repetition: we design on the basis of a history. We interpret the past. When designing, the ambition is not to reinvent the wheel. We build on what others have already done. So repetition does not have a negative connotation. Repetition is to be found in the other arts too: sampling music, creating an interpretation of a painting in a contemporary form, and so on. In the sciences repetition is also an interesting means of arriving at a new discoveries.

Intuition: in my view, intuition is founded on experience. When you have built up sufficient skills, intuition makes its appearance. Just as a chess player spends years memorising different combinations, it is possible to make intuitive moves without much reflection and without making an error. It has to do with the possibility of keeping a general view of the whole while working intuitively on changing particular aspects.

Serendipity: in science, coming across a solution while looking for something completely different is a well-known phenomenon (e.g. the discovery of penicillin). Allowing chance into a design process creates the opportunity to suddenly gain other insights into particular problems.

4. Case study: the terraced house

Our firm, Tomas Nollet and Hilde Huyghe architects, has had the opportunity to design several terraced houses. The subject of the terraced house will be used as a means of gaining greater insight into the research issues mentioned above and to acquire an insight into the design processes. The design strategies based on our own practice can be thoroughly unravelled. After all, the housing programme is clearly defined and in these smaller projects political forces often play a lesser role, which means my research can take place in a less adulterated setting.
It is to my advantage that, on the basis of this commonplace thing – the terraced house – I can situate the design of our own house and of other projects described below in the context of the rich tradition of terraced houses in Belgium (Horta, Huib Hoste, Esselynck, Marie José Van Hee, Eugeen Liebaut, etc.). The design of the terraced house forms a clearly delineated and recognizable framework within which I can realise my research ambitions.

Our own house in Bruges

In 1999 we bought a small plot of land on the outskirts of Bruges. Our programme was a house for a family with two children, to include a multipurpose space. Before we submitted the final planning permission application, we examined several possibilities for more than a year. We learnt from examples from history and the present which had already been built and praised, but also from the commonplace elements of this typology. The design process went slowly but was highly intensive. The Flanders Architecture Institute published a monograph on the house and the entire design process, which was revealed in a series of 'stills'. This book caused us to reflect on the way architecture is ultimately created. A number of 'key' sketches were selected and we analysed the crucial points in the design process. (1)
I would like to add to this publication by exploring in greater depth the sequence of sketches and stating more clearly the design decisions linked to them.

Project for Ramen in Ghent

In 2000, Ghent city council held a competition for the construction of an underground car park and 15 housing units in the city centre. (2) From the moment we made an abstraction of the site we opted to restore the outline of the demolished block and to go for terraced houses, which is what had previously been on the site. The design for this competition project, which was created while our own house was being built, has a lot in common with the location of our own house.
Four firms were selected to develop a full design. (3) For the definitive design we submitted a masterplan without showing the architecture. We drew up conceptual frameworks within which the project might develop. As far as the terraced houses were concerned, our intention was to cooperate with young and talented firms. (2) Each firm would design one terraced house, giving rise to differentiation in the street frontage. To examine the practical feasibility of this we travelled to Amsterdam and elsewhere to ask the municipal officials concerned how Borneo Sporenburg was conceived and developed.
Our project won the competition because of the opportunities it created to develop the sustainable and ecologically sound terraced-house typology. A number of workshops were held with other architects so that collective arrangements could be made. The layout of the plan for each house was determined by the individual architects and in

the end there was a great deal of difference because the teams had varied backgrounds. The project has now been built and the houses are to be sold at the end of 2007. In my study I shall examine the entire design process of the terraced houses both we and the other architects designed. The strength of this project is that several typologies arose for the same place at the same time.

I would also like to apply the above methods to new projects our firm will be researching so that certain constants may be found that clarify the way we work. By finding these ways of doing things it may also be possible to compare them with the design methods of the great examples from the past and also to present them to peers and challengers.

Vicognelaan in Bredene

In addition to the analysis of existing projects I would also like to launch a 'through design' study. This will enable me to extend my research. This study requires a different method (see below). The site is in Bredene. The street is on the outskirts of the borough in the transitional area between residential estates and open land. The situation is comparable with our own house and the Ramen project in Ghent: a group of about ten houses interspersed with several unbuilt sites. These open gaps will be occupied by three houses. While for the previous projects I shall have to adopt an analytical approach in order to show developments in the design process, in this project I shall be involved in the design process itself.

5. Method for the new design in Bredene

The method I shall use here is almost psychoanalytical. I divide myself into three alter egos: the client, the designer and the reporter.

The client: for the purposes of my research I looked for a site in Flanders that comes very close to what we have already studied in practice. On my travels around Flanders I came across an interesting location in Bredene and defined the brief for the building of three sustainable terraced houses.

The designer is the architect: just as in other designs I use my skills to analyse the location, to gain an insight into the programme and the preconditions, to contact consultant engineers and thereby to arrive at a sound preliminary design. The project is worked out fully down to the technical specifications and details.

The reporter notes down every step and decision in the design process in a diary. A report is drawn up of every arrangement made. But the reporter also notes down the influences which may indirectly be of significance to the design process. For instance, it may be that particular music, a mood or the weather when visiting the site may have an influence on design decisions. It goes without saying that the text formed in this way will be closely linked to literature and poetry. Purely scientific and academic writings often falls short when it comes to expressing particular explicit and implicit feelings.

'How should the object of research be represented for the reader? Is writing involved already in the process of investigation? How does one translate the insights drawn from a map or architectural discours? When staking claim for our practice to be regarded as a form of research, we are obliged to consider the consequences of our chosen mode(s) of expression, its appropriateness to our inquiry, its generic assumptions and epistemic implications.' (4)

'Thinking in words' will be transposed by the reporter in 'writing with words'. Experiments in language can help to reveal the implicit inspirations.

Ian Mc Ewan, atonement p19-20
"She went indoors, quickly crossed the black and white tiled hall – how familiar her echoing steps, how annoying – and paused to catch her breath in the doorway of the drawing room. Dripping coolly into her sandaled feet, the untidy bunch of rose-bay willow-herb and irises brought her to a better state of mind. The vase she was looking for was on an American cherry-wood table by the French windows which were slightly ajar. Their south-east aspect had permitted parallelograms of morning sunlight to advance across the powder-blue carpet. Her breathing slowed and her desire for a cigarette deepened, but still she hesitated by the door, momentarily held by the perfection of the science – by the three faded Chesterfields grouped around the almost Gothic fireplace in which stood a display of wintry sedge, by the unplayed, untuned harpsichord an the unused rosewood music stands, by the heavy velvet curtains, loosely restrained y an orange and blue tasselled rope, framing a partial view of cloudness sky and the yellow and grey mottled terrace where camomile and feverfew grew between the paving cracks. A set of steps led down to the lawn on whose border Robbie still worked, and which extended to the Triton fountain fifty yards away.
All this – the river and flowers, running, which was something she rarely did these days, the fine ribbing of the oak trunks, the high-ceilinged room, the geometry of light, the pulse in her ears subsiding in the stillness – all this pleased her as the familiar was transformed into delicious strangeness. But she also felt reproved for her homebound boredom." (5)

It is probably not possible for the various alter egos to be completely independent of each other but I shall nevertheless endeavour to be objective. In this respect I find the opinions of peers and friends very important because they may point it out to me when a particular form of objectivity has been neglected.

6. The terraced house in the historical context

In addition to the practically oriented research, I also want to situate our own work, and more specifically the designing of a terraced house, in the rich tradition of this type of house both at home and abroad and in a more theoretical way. It will be a quest for the sketches and design processes for these houses, which will enable us to interpret our own design sketches in this broader context.

7. Children, students, architects, engineers and artists

I would also like to involve students in this study. I am working on an assignment in which a masterclass given in the first year will in the course of my PhD project be followed up as far as the fifth year. In this way I shall be able to unravel and study ways in which education influences students' design processes. Children can through their drawings also provide interesting viewpoints regarding the abstraction of spaces. As part of the study I would also like to interview contemporary architects, engineers and artists.

Tomas Nollet
November 2007

Tomas Nollet (b. 1967)
Tomas Nollet has an architectural practice together with Hilde Huyghe in the centre of Bruges. In addition to large-scale briefs (Huis van de Mechelaar, Project Ramen in Ghent), they also continue to dedicate themselves to smaller briefs in which they try to come into direct contact with ambitious clients and craftsmen who contribute to the conception of the project. This duo has won numerous competitions, including the Belgium Architecture Awards (twice) for a CM branch in Maldegem (2002) and their own house (2003). The latter also won them the 2003 Provincial Prize for Architecture. Their work has been published in both Belgian and foreign periodicals (A+, de Architect, A+U, etc.).

(Endnotes)
(1) Tomas Nollet and Hilde Huyghe, Stills from a design process, young architects in Flanders, Flanders Architecture Institute and A16, See also A+ no. 180 and A+U no. 392.
(2) Architectuurwedstrijd Ramen (Gent), gedurfde vanzelfsprekendheid, Kristiaan Borret. See A+ no. 177. Terraced houses in association with Jan De Muynck and Sabine Van Meerbeek, Tania Vandenbussche and Els Claessens, and Karel Vandenhende. Stability: Guy Mouton.
(3) The other firms who took part in the competition for Ramen in Ghent were Stéphane Beel architects, architectenbureau Dirk Koopman and GWM architects.
(4) Room within a view: A conversation on Writing and architecture, Katja Grillner and Rolf Hughes.
(5) Ian McEwan, Atonement p 19-20

The current abstract outlines the context of an ongoing research project aimed at developing alternative urban planning strategies for the Belgian urban fringe, inspired by the Japanese practice of urban planning.

Fertilized by the crosscurrents of diverse cultures, this frontier region was the home of some of the greatest painters, but strangely enough, not of great architects (…) This seeming disadvantage was a blessing in disguise. It resulted in the subordination of individual buildings to the urban landscape as a whole.

E. A. Gutkind, Urban Development in Western Europe, Volume V, France and Belgium. The Free Press, New York

Sprawl Revisited

For some time now, urban planning has been firmly rooted in the management of the landscape in Belgium. Within a larger perspective, it is striking that all recent urban planning methods in Belgium have been distinctively devised and directed exclusively by and through the administrative authority. However, when evaluated from the viewpoint of the main historic and determinant user, the small private property holder, the traditional 'Belgian' liberal attitude in regard to urban and spatial planning ideology seems to have been collectively condemned as the wrong urban model. Though perhaps unplanned, it remains a fact that the larger part of the Belgian territory is still being defined by a particular form of 'atomized' sprawl, which, in the analysis of fiscal policies since Belgian independence, could well be defined as the consequence of an intentional policy, thus contradicting the common tendency to define Belgian sprawl as the result of a kind of civil anarchy.

The resulting total urbanization has been actively countered since the 1990s in Flanders by a 'scientific' spatial planning ideology, disguising the failing (?) attempt to redirect urban settlement in Belgium, so to speak, backwards and often very much in conflict with the longstanding tradition of individual development by private property holders.

One of the important legal domains where, after the initial Belgian federalization, the (Belgian) regions were effectively able to exert their powers, 'scientific' spatial planning, has become one of the principle domains with which the increasingly autonomous region of Flanders has identified itself. As a result, the current planning ideology often seems to be a form of 'political correctness'. Though arguably an example of a quality driven policy, translating good governance intentions into a concrete and effective policy, a more sinister aspect here is that in the eyes of the administration it is also the emanation of an almost 'princely'[1] urban policy, depending essentially on concepts such as visual order, 'centre' and the idealized contrast of the rural and the urban, thus symbolizing a different and 'new' Flemish identity. Simultaneously, the urban planning directives are being heralded as the concrete and measurable result of the Flemish government's policies, thus incarnating a new governmental structure and administration that is keen to justify its existence.

Nearly totally lacking any precedent in Belgium, let alone in the Flemish urban planning tradition, the mental framework within which this spatial planning developed has often been inspired by – or based on – Dutch urban practice, legislation and, perhaps most intriguingly it seems, its value system. However, probably no two countries that share such an extensive historical, cultural and linguistic background can be found to be more different when it comes to their urban and spatial lay-out. Within this context, the concept, or idea itself of the current urban planning directives often seems alien

to the present (sub)urban conditions. The strong incentive to 'restore' the distinction between countryside and city, and to re-enforce the city centres and curb urban sprawl, are based on deeply ingrained cultural images, and they might, as such, intuitively be supported by society in general. Unfortunately, such a conceptual model fails a real-term confrontation with the urban fringe as an existing condition, and it renders impossible the attitude of liberal accommodation so typical of the past decades. In fact, it seems to be based on the denial of this very tolerant tradition. Its implementation directly opposes the aspirations of a great number of interests, thus undermining initial intuitive public support.

In addition to such attempts to 'retro-actively' retrace the current situation to a model based on a very straightforward interpretation of the open landscape and build-up cores, the urban planning methodology is still too often mainly based on an expansive growth model that is inclined to tackle any demand from society by adding urban infrastructure and inventing new solutions and developments. Such strategies largely ignore the question of how to improve the existing conditions of the urban fringe. This difficult to define semi-urban-rural environment, home to a very substantial part of the Flemish population and perhaps best exemplified by the commericial and especially residential 'strip' development' (Dutch *lintbebouwing*, or 'ribbon development') to be found all over the Flemish territory, seems to defy all planning attempts.
Remarkably, at least from the viewpoint of the urban planner, these conditions are nonetheless regarded by most property holders as desirable to the best of their knowledge. The loose, laissez-faire conditions allow for the realisation of the still very prominent dream of the individual house and garden while simultaneously allowing for a certain level of self-expression, and maintaining and fostering a tradition of self-reliance in regard to urbanity.

Obviously, the unplanned dynamics which continuously defined the Belgian landscape up to the 1990's are clearly insufficient when it comes to tackling the contemporary and future challenges, such as the ageing population, the ecological footprint, the shifting mobility, increased problems of traffic safety, and so on. While urban development in modern society will not survive the stress imposed by pressures emanating from private property holders and market forces alone, the individual aspirations of small property holders might, if guided appropriately, be applied as a very powerful tool to re-orient Belgian sprawl from within.
In view of such a positive appreciation for these existing (unplanned) dynamics, the question in relation to the urban fringe should no longer be one of planning in terms of clear conceptual rural-urban models,[2] but should perhaps rather be aimed at strategies from within the given conditions, as it were, to 'edit'[3] the given situation. In this regard, one primary condition is the ability to appreciate and value the current situation, and especially to understand the generating mechanisms and, perhaps most importantly, to become aware of the pluri-potentiality of the Belgian Sprawl. Such a positive appreciation of this sprawl would require a different mental framework for managing

urban conditions in Belgium, based less on the shaping powers of 'authority', operating at whatever level, and more on the potential of the individual stake-holder's actions in the fringescape.
Recuperating from and transcending the existing 'inborn' liberal attitude in regard to the urban environment and planning would require a very different way of thinking about urbanity and planning tools. Such an approach would need to be based on a different institutional or planning value system, highlighting different aspects within the making of the city. From this perspective, European urban planning tradition, arguably narrowly defined here, offers little guidance.

Japan as an inspiration?

Within the European context, there exists a great diversity of planning and political systems, and the grouping together of countries such as the Netherlands, France, Germany and the United Kingdom is hard to justify in view of their obvious differences. If we compare Belgium to these other western European countries to which it is so closely related geographically, then it has to be admitted that the differences are profound. When compared with Japan, however, certain similarities emerge.

This similar pattern of development is closely related to the strongly developed conception of land ownership rights[4] in Belgium and Japan, as opposed to the limitation of the free use of land in other countries. The idea that there is significant social responsibility enforced by the government for maintaining and improving the urban quality of life is strongly established in most Northern European countries,[5] yet for various reasons these concepts are much weaker in Belgium and Japan.
This is all the more remarkable in the case of Belgium, which, in terms of its social security and welfare organisation, is clearly part of a distinctive European model and tradition.[6] In view of certain urban sprawl characteristics that Japan and Belgium share, the question is whether these characteristics could represent a distinctive model of urbanisation and planning.

As outlined above, it is mainly the result of the actual conditions of the suburban environment and sprawl which can be compared in Belgium and Japan. The cultural, historical and political backgrounds are obviously quite distinctive, yet the particular features of both countries that have shaped their respective urbanisation have led to similar problems, which brings us to the most basic question of all: How to appreciate and respond to these urban conditions and mechanisms. Both Japan and Belgium are 'post-capitalist' countries, and it is most unlikely they will never again face such intensive periods of extensive growth, such as ignited the current patterns of urban development. Thus when considering the Belgian urban context as a permanent and given condition, it can be argued that, from this point of view, Japanese (sub)urban conditions might offer an alternative model, not so much in terms of their origin, but because of their underlying value system and resulting urban planning attitudes on the

level of the user and individual owner.

Compared to developed countries in the West, Japan has quite different traditions of land ownership, historical urban development and governance. As in other fields, certain key concepts in regard to urban planning were borrowed from western ideas and techniques very early on in the Japanese modernisation process. Through implementation, these concepts have been transformed and combined with ideas of local invention, thus helping to create an urban environment that is quite different from that of the other mature economies and developed countries. Similarly, from independence onwards, urban development in Belgium has taken quite a different direction compared to its neighbouring countries, and certain historic traditions and a strong sense of local self-reliance[7] have led to an almost unrestrained development without much regard to any form of urban planning models.

The Japanese and Belgian examples of urbanisation clearly show the importance of an effective policy of land development control on the urban fringe, an undertaking in which both countries failed for a long period of time, precisely at the time of their most intensive development and expansion. But such a 'strategy' is not per definition contrary to the wants and needs of the majority of the population. Both in Japan and Belgium, government policies, though perhaps not directly related to the realm of urban planning, did have an enormous impact on urban development. In both countries, and especially in Belgium, even though almost no social housing was ever provided by the government, adequate quantities of housing have nonetheless been available to almost all income categories, an accomplishment achieved mainly through indirect fiscal stimuli. Similarly in Japan, though conditions are obviously more constrained, there has never really been any significant shortage of housing, except in the immediate post-war era.

There are other relevant aspects of this same point, if one regards urban planning as having the goal of achieving a high quality urban living and working environment. Who is then to define the concept of quality? Clearly the substantial individual and even collective freedom inherent in both the Belgian and the Japanese situations is one of the most appreciated features by any citizen in these countries. Especially in the Belgian case, it could be argued that the current pattern of land-use and housing is quite clearly an expression of 'what everybody wants'.[8]

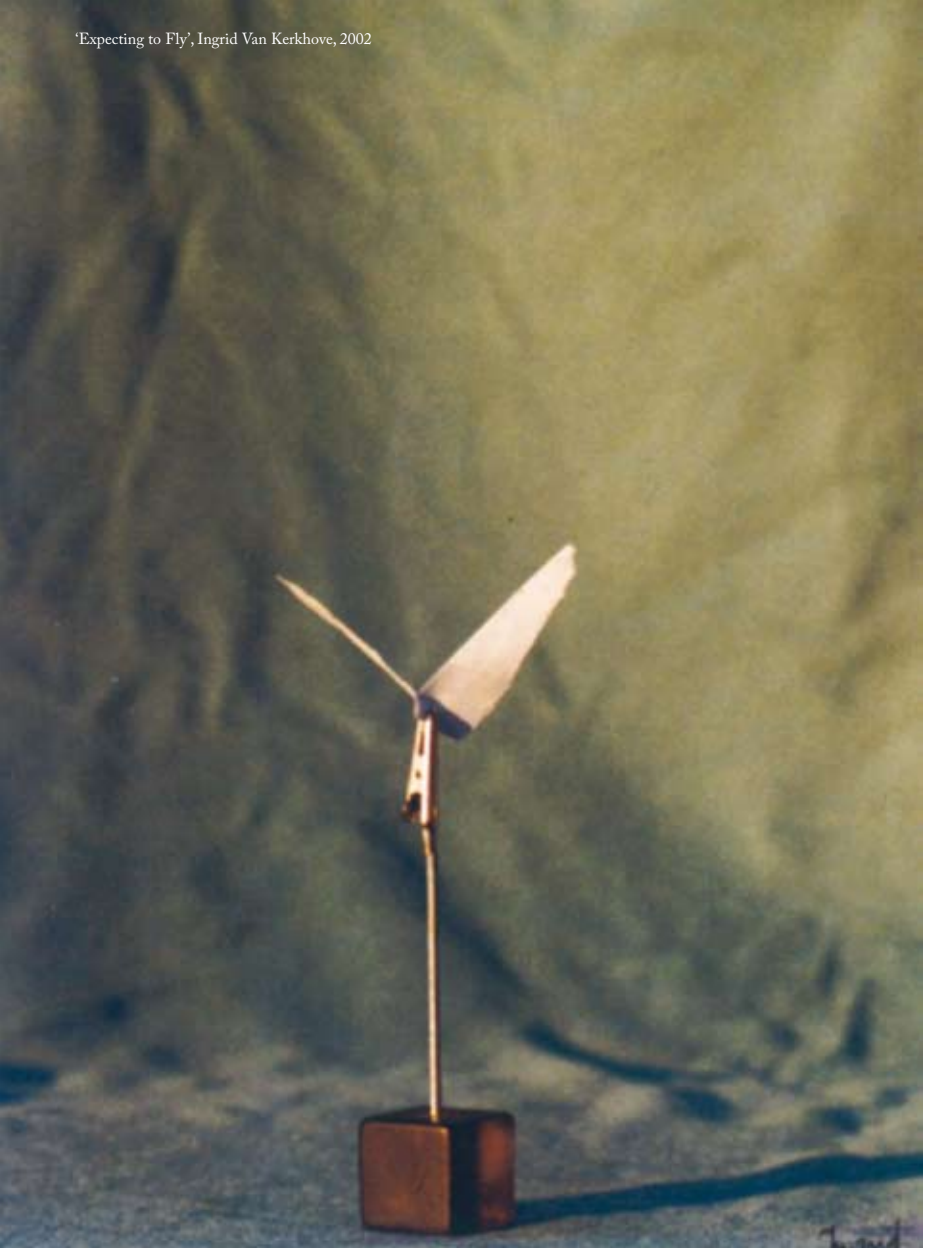
Delegating powers to democratic local governments could be described as another mantra of good city planning. While in Japan the distrust of the central government agencies towards local planning initiative is notorious, the resulting regulatory void is probably one of the main contributing factors to the vitality of the Japanese cities. There simply was no other choice. In Belgium, as well, the remarkable absence of the government in the realm of urban planning resulted in a situation where, when it comes to the individual appreciation of the average living conditions, most of the inhabitants

regard the current conditions as highly favourable. The Japanese experience perhaps suggests that strong and independent local governments are a necessary counterbalance to the central government in city planning matters, yet if no planning know-how is available on the local level, the result, as clearly exemplified by the Belgian experience, is per definition not that different.

Within these similar contexts, a design generated research project has been set up within the integrated international design studio at Sint-Lucas Brussels, focusing on a solution-based design approach to re-evaluating the potential quality of the Belgian urban landscape. Based on the practice, attitude and conditions existing within Japanese urbanity, specifically the tool of 'land-readjustment'[9] and its European predecessor of land consolidation, these are being re-interpreted as a means to stimulate a shift in property 'behaviour'.
Enhancing the overall urban quality while avoiding impossible investments carried only by the government is one of the key aspects of the research project. Another underlying key aspect is the exploration of different strategies for redefining the relationship between private property holders, individual rights, and the planning authority, which currently holds a monopoly on power over the decision-making process.[10] On the basis of a multi-disciplinary approach, different strategies are simulated and tested, thus allowing an experimental implementation of the knowledge and design tools acquired through such an (architectural) design-based research project, with and through design assignments with master's students, both in Brussels and abroad.

Bruno Peeters

(Endnotes)
1 See also'Tokyo & London, Comparative Conceptions of the City, H.D. Smith II, Princeton Univ. Press 1979
2 See also 'The Rural-Urban Dichotomy Re-examined: Beyond the Ersatz Debate', Bruce KOPPEL – The University of Hawaii
3 See also 'Tokyo 2050 fiber city', OHNO Hidetoshi – JA 63 Autumn 2006
4 See also 'The Making of Urban Japan', André Sørensen, Nissan Institute / Routledge Japanese Studies Series 2002
5 See also 'Metropolis 1890-1940', Chapter 15: Metropolitanism as a Way of Life, the Case of Tokyo, 1868-1930 – edited by A. Sutcliffe, Alexandrine Press Book, 1984 London
6 See also 'The Three Worlds of Welfare Capitalism', G. Esping-Andersen, Princeton Univ. Press, 1990
7 See also 'Le Japon, gestion de l'espace et changement social', Augustin BERQUE, 1964
8 See also "Let's build in lines" revisited, M. H. ECHENIQUE – Dep. of Arch., Univ. of Cambridge, 1994
9 See also 'Urban Development Project in Japan' City Bureau, Min. of Construction, Japan Land Readjustment Association, 1996, and 'Stadtplanung in Japan', Uta HOHN, Dortmund, 2000
10 See also 'The Political Institution of Property Rights', Itai SENED, Cambridge Univ. Press, 1997



'Expecting to Fly', Ingrid Van Kerkhove, 2002

State of mind of a practitioner becoming a reflective practitioner turning into a researcher

0. Abstract

This essay firstly states the 'Emergence of the Research Question',[1] which is embedded in a cultural context, metaphorically projected in the subtitle: 'The House and Every Creature in It'. For starting and continuing a PhD only makes sense if the assumed objectives are projected onto the multi-faceted surfaces of (a) society, hoping it will help the world go round (a little bit) further.

Furthermore, the chapter 'Life During Wartime' focuses on the triggers found in the individual context of the writer. There the essay becomes more personal, direct and grim, giving voice to the individual whereabouts and 'whatabouts' in the context of starting a PhD. This chapter is written in a dialogical format which might turn into a prose poem every now and then.[2]

'The Spatial and Temporal Awareness', as a final chapter, brings the discourse back to its assumed relevance in the cultural context and 'the use of it' in an (architectural) society. It makes explicit the intellectual incentives for going on with research and a PhD and how and why to communicate about it.

I. On a clear day you can see forever[3]

Is it the time of the year - the end of the summer - that makes one look back and reflect with a mingling of melancholy and expectation?
I feel the endless acres of the past stretching out behind me. I can see them when I turn my head to look back, and – on the spot and under my feet! – this vast and flat plain curves upwards into the mirroring surface of an enlightened future.
So here I am now, surfing on the ever moving section line of those two adjacent surfaces, simultaneously looking in every direction all the time - no time to sleep! - constantly switching modes of past and future, and at the same time being aware of the 'now', of the 'now' I '(k)now', and the next moment realising I am in another 'now' already, with another 'knowing' (knowledge) as an inevitable consequence.

I am in the middle of a MUTATION PROCESS of a special omnidirectional kind – like a caterpillar becoming a butterfly - with the ever present desire to keep on mutating in both directions at the same time, in order to be caterpillar and butterfly in one, or to preserve the possibility to change from the butterfly mode to the caterpillar mode and vice versa, whenever necessary or appropriate or dictated by circumstance or context...

It was the moment of rebirth of the intellectual self, a Renaissance of the mind, when I learned about the possible existence of more then one mode of knowledge. On a clear day you can see forever. Up till that day, I automatically took 'the one and only' Mode

1 Knowledge of classical (natural) science (which I appreciate very very much – those who know me know very well I am serious about this)[4] for granted. Gradually though, while reading the recommended literature for the pre-session assignments for the RTS session with Halina Dunin-Woyseth[5] and Fredrik Nilsson, I discovered the legitimate existence of Mode 2 Knowledge, and an awareness of possibilities, of 'somthing else' arose. It was as if I had heard music coming out of a room next to mine, but a room whose existence I did not realise before, like in a dream. It was surprising and shocking at the same time. After I had been in that room and after I had decided to move there and to stay there, 'having dinner with the parents of my intellectual self' would never be the same again. At last I began to feel 'at home'. And, finally, I realised that a PhD might be a powerful and very effective joint between the horizons of past and future, linking innocence with experience with expectation.[6] Thus I found myself at the end of 'my' summer, joining the world as it is – as a research subject in 'classical natural science' – with the world as it might be, through design...

II. The emergence of the research question

The RESISTANCE against the 'inhibitive factors of realism' and the SURRENDER to the 'liberating factors of the coincidental' (the collateral spin-off) combine a clearly recognizable characteristic and an ever more present undertone in my body of work.[7]

Or is this undertone becoming more and more an obvious and dominant sound in the foreground, an almost ideological declamation in the Agora, the Virtual Civic Spine,[8] as a result of reflection and research? And by doing this, have we got the living proof that reflection and research DO start up new processes of design and research in/through design, with new unexpected outcomes and a substantially expanded knowledge as a result?
Quod erat demonstrandum?

Within the research question, which in essence investigates a (my) body of work, focusing on a never ending quest for 'THE REAL' in architecture by its own specific processes and the harsh resistance against every obstructing factor on its way, the following characteristics become obvious:

> The *STRATEGY* of RESISTANCE and SURRENDER (cfr. infra) and the *TACTICS* of the SHIFT IN CONCEPTS are the lenses through which I investigate (my) practice (in the broadest sense of the word – as I was already practicing as an architect at the age of three...),
>
> looking for
>
> the confirmation (PROOF) that the REAL can become visible by 'committing' architecture (in opposition to one post-political idea in architecture, firmly convinced of the inevitability of 'ONLY REALISM ', directed and implemented by narrow market mechanisms

and for

> design processes, -strategies and -methods driven by an awareness of the importance and the potential of the CIVICS and the POETICS , both as 'conditiones sine qua non' when it comes to 'committing' architecture, and the TECHNICS, as an instrument and an inevitable competence to make the civics and the poetics materially possible, visibly explicit and experienceable.

> The SHIFT IN CONCEPTS as flexible *TACTICS* in variable contexts plays a serving role in relation to the *STRATEGY* of RESISTANCE and SURRENDER.

As a consequence, one cannot delineate a recognizable 'style' in my body of work. One can rather make mention of reproduced – and thus reproducable – strategies and tactics in conceptions, design processes and (material) realisation processes (on building sites), which in their turn are very specifically and flexibly applicable in giving an answer to the research question of a PhD or a research question which is, basically, the subject of every architectural commission for me, as a practitioner, and for every architect (I sincerely hope so...?) in the context of his/her own practice.

III. The house, and every creature in it
The cultural context

To us women and men of Sint-Lucas - and here only we are entitled to speak on behalf of ourselves - architecture has a mission (impossible?) to fulfil in the cultural landscape. It deals with and goes beyond utility and 'the daily'.
It reaches beyond Realism to attain the Real.

> "La littérature est réelle, elle n'est pas réaliste".[9]
>
> Mutatis mutandis:
> "L'Architecture est réelle, elle n'est pas réaliste".

Sint-Lucas represents a specific 'model of architecture' - although we are not very much 'into models' - as we prefer pluriformity to uniformity, and that's just what we proclaim.
We believe this model has a right to EXIST and a duty to RESIST. Because we are constantly receiving signals from a disappointed world, we know that our provocative propositions of the apparently impossible can heal, because we **K[NOW]** by **NOW** that our *intuition*[10] informs us very well most of the time...
We realise that it is our duty to proclaim it in the Agora, our speakers' corner – some kind of political forum for cultural announcements! Let's indeed call this forum the VIRTUAL CIVIC SPINE! (cfr. supra), because Architecture written with a capital

'A' is about the CIVICS, convincing the world by POETICS, supported by splendid conceptions of the TECHNICS.

So I cannot imagine a cultural policy that would limit architecture to the safe conformity of the centre, pushing any approach that is different from the mainstream into marginality or even into a declared ghetto of illegality, by means of a staccato repetition of the so-called self censorship of 'realism': "you've got to be 'a realist' while designing, otherwise we will...and you will not....and then it will be very hard for you to..."

I cannot imagine a future cultural landscape in which a model of architecture suddenly disappears because of a change of mind in policy, dictated by a change of mind in public opinion with the tarnishing of cultural interest – a public opninion in its turn being ill informed because only driven by small-scale short-term perspectives of market mechanisms - following Milton Friedman and the 'Chicago School of Economics' focusing on monetarism, rational expectations and market fundamentalism - turning into short-term memory and short-time microeconomic perspectives, most of the time translated as: "What's the use of this project? Can I eat it, for instance? Will it give me instant gratification"?
Will I be handsome, will I be rich...".[11]
Can architecture (only) rely on 'economy', as - on the other (economic) hand - the economist John Maynard Keynes states it: "In the long run, we're all dead.... "[12], and at the same time being aware of architects very often wanting to build for eternity... (and I think in some of the best cases they are right to do so, as stones remain and money can evaporate...).

So this is the core of my Reflection and the core of my decision to become a more and more reflective practitioner[13]: it is an ethical commitment to (the cultural) society. It is about keeping architecture, as a cultural actor with substantive impact, in the spotlight of exciting relevance, as it is about the intrinsic power of architecture being in charge of itself, rather than being a 'task force' commanded by somebody or something else.
This is the issue that is at stake here.

IV. Life during wartime
The individual context

Was it the current phase in a lifetime?
Was it life during wartime?
Was it something unknown, feeling like a missing link, a hurting mind gap pushing him towards relief by reflection? And how to make the unknown un-unknown?
Was it reflection? Reflection on reflection on reflection?
Was it the mingling of expectation and despair in the eyes of homeless men and women, teaching us the essence of architecture by vast and wordless lessons in humanity?
Was it the way one couldn't get used to the way he looked at a built environment he couldn't get used to, not by any means whatsoever?

Was it the refusal - even the impossibility - to execute a silly order shouted by someone to someone else's ear, who had already decided to remain deaf a long time ago? Somewhere somehow a warrior was getting tired?

"I want to surrender".
"Surrender? You?"
"Yes. I surrender.... ," he whispered as if he knew this sombre annunciation sounded like the inadmissible breaking of a most precious crystal baby metaphor.
"Don't!", she sneered back. Her lips were hardly moving. Her eyes (black bullets) predicted an angry argument, her words appeared to him like a spreadsheet of unreadable numbers and useless chemical formulas, rolling out of her mouth in a continuous flow of repulsion.
"Why? Why shouldn't I surrender?"
"Because you have to RESIST! Because the resistance is not only in you and all over you but in the whole of humanity, its history and actual behaviour! Because surrender is betrayal. Betrayal to yourself. Intellectual suicide! And that's the second last thing you can do. To yourself. To us. To them"

Hesitatingly, he started to talk back in Dutch. It sounded like speaking in tongues, like a voodoo ritual (surprising, since he had just decided not to be a native Dutch speaker any longer).

'Soms is Architectuur het niet voltooide tafereel dat zich eenzaam afspeelt aan deze zijde van het lege Plein van de Dertigste November, het publieke forum waar vier straten die luisteren naar de namen Geluk, Malchance, Onmacht en Kracht samenkomen.
Onzekerheid heerst onder hen!
Pas op deze plek, op dit moment, komt het antwoord op de vraag welke straten hun namen mogen meenemen naar hun verder verloop vanaf gene zijde van het plein.

.

Ontstellend is de plotse zekerheid van een bang reeds vroeg sluimerend voorgevoel.

.

Onaanvaardbaar ? Godgeklaagd ?
Wie weet het antwoord ?
Verkeerde straat, verkeerd nummer, verkeerd verbonden. No such number, no such zone.

.

Diep maar onafwendbaar is het besef dat elke kans, hoe wazig of scherp of stralend zij zich ook aandient, slechts éénmalig is. Dat zij dus gegrepen MOET worden.

Dat zij geen tweede keer langs komt.
Dat de Stad en de Wereld deze kansen van toen, en evenzo de schitterende kansen van vandaag, en van morgen, niet naast zich neer mogen leggen. Niet negeren.
Om het toekomstig verleden niet met een schuld op te zadelen.
Om de Toekomst niet voor aap te zetten.
Om zichzelf niet te degraderen'.[14]

Next door, somebody had put on the Lou Reed song, which came now very near to my ear:
"How do you think it feels, when you are speeding and lonely?
How do you think it feels, when all you can say is: if only?
If only, if only, if only...."[15]

All of a sudden an irresistible flow of verbal magma was erupting out of his mouth in short, intense sentences, evermore growing into grammatical juxtapositions as an exhaustive description. He realised he couldn't stop himself, almost declaiming a manifesto:

'I oppose the 'if only remark'. STOP. *I resist, so I exist.* STOP. *I oppose the inevitable forces of gravitation.* STOP. *I oppose the smooth and clean surfaces of bright polished architecture in glossy magazines, pretending architecture is about 'en vogue' – a dictate of how one should behave, presenting architecture as silly acrobatics of form and discourse, the fancy decorum of a temporary performance, showbizz entertainment by dandy architects, little strings manipulating them into the role of a figurant in a bad puppet play nobody wants to see.* STOP. *I oppose the 'Good show, Larry'- statements. I refused to learn from Las Vegas.*[16] STOP. *I oppose the 'Do It Again Sam - attitude'.* STOP. *I don't like the way we have to demonstrate how we can walk on our hands – I am more into falling on my face, graciously (or not), including the injuries and the pain afterwards...* . STOP. *I oppose an architecture as an instrument of power and personal status, instead of an architecture as a magnificent autonomous machine, generating genuine wellbeing and cultural awareness for the human beings at stake.* STOP. *I oppose political correctness of a certain kind, translated into oversized legislation implemented by an ever friendly and PR-trained administration, designed as a market oriented machinery and manned with civil servants downscaled to marketeers, who in their turn are downscaling the civilian into a client in a cue in a marketing policy of which the only outcome is surrender to sinister censorship.*[17] STOP. ***I oppose the implicit statement that the real(isation of an architecture) has, by definition, to be the minor version of the dream .***
This is a call for Resistance! STOP.

I embrace the unexpected outcomes of coincidental phenomena popping up like collateral spin-off during the processes of design and material realisation in architecture. STOP. *I embrace the way these phenomena enrich the embryo's possibilities, and the way they protect the embryo's initial (conceptual) brightness from fading into a grey conformity and a disillusioning outcome 'as expected'.* STOP. *I embrace the attention an architect has to pay to the potential of accidents, rule violations, risks, stepping out of the matrix – the rage against the machine....* STOP. *I embrace the attitude that turns a problem into possibilities.* STOP. *I embrace grindnesten.* STOP. *I embrace the human right to doubt.* STOP. *I embrace the attitude of angry young men.* STOP. *I embrace the squatter trespassing into the unknown kingdom of the unknown knowledge.* STOP. *I embrace the unallowed thought in a current domain.* STOP. *I embrace an architecture that is a provocative exposition of the apparently impossible.* STOP. *I embrace the 'what if...!' - question, not being a question really, but rather feeling like an exclamation! [AHA: EUREKA!], a profound and lasting liberation from the dogma, opening up the doors towards the realm of possibility....'* .

STOP.

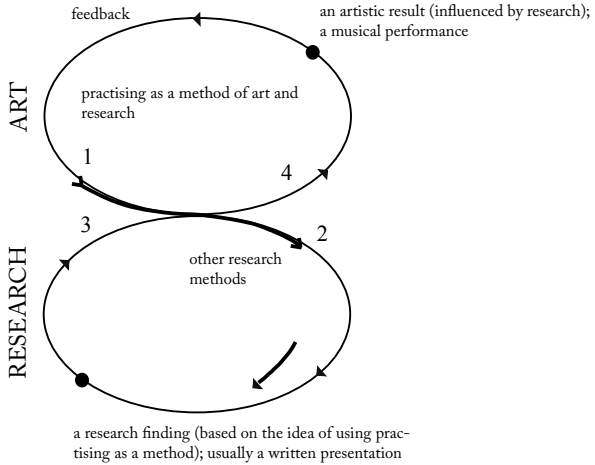
STOP.

STOP!

"Hoe staat het met de stand van je werk tijdens de censuur", vraag ik terloops.
"Niet echt verschillend met de stand van mijn werk voor de censuur", antwoordde jij bij wijze van voorzichtig automatisme, "al weet ik nu wél dat ik toen niet wist dat de censuur er gauw zat aan te komen", voegde je er nog fijntjes aan toe.
"Wat wil je", zei ik, "dit is 1938 en telkens als het 1938 is gaat dat zo".
[De staatsradio meldt zonet dat Oostenrijk is aangesloten en dat vanaf nu alle kunst als ontaard zal worden beschouwd].
"Ik weet het", repliceerde je nu plots heftig en alert, "vier jaar geleden is het ook al eens 1938 geweest. En in 1973 is het zelfs een paar keer na elkaar 1938 geweest. De vraag is alleen - en dit maakt mij een beetje ongerust - als het nu zo vaak en zo kort na elkaar 1938 kan zijn, wordt het dan op de duur gewoon de hele tijd door 1938"?[18]

V. The spacial and temporal awareness of the messenger

So now is the time to explore and to inform, by going into the domain of the activity of architectural design, the domain we are devoted to and in which we spend (spent?) most of our lives. By going in there and by looking intensively, we can observe and make an analysis and a record. We can be a witness, and witnesses have memories. Witnesses can come back from those 'empirical' observations, bringing clear images and a sharp discourse back to the known land of the already attained knowledge, in order to speak out, to witness (as a verb) about what they have seen in the hidden kingdom of the unknown knowledge.



Design-research scheme by Kari Kurkela[19]

How privileged we are!
To proclaim what we could un-hide, to discover by research in/through design, as we are THE MESSENGERS, able to hand over that first-hand design information to society, and to hand it over from within the field: we who are the world's best informants when it comes to architecture, its processes, its endless possibilities to research, to try out, to fail and to doubt, to go beyond the realistic, to start a quest for the real, which can only be revealed through research, most probably also 'within ourselves', our own practices, our everyday processes, our delights and disappointments.

Brethren, I salute you! My fellow statesmen, my friends, my neighbours in the perimeter of the universe of knowledge! Because we are invited to explore the boundaries, an invitation we cannot refuse!

Jo Van Den Berghe

'Am I right? Am I wrong?', photograph by Jo Van Den Berghe, December 1983.

(Endnotes)

1 Hence the essay does not go all the way into the research question itself, which has not been described to the full extent here, as the author wants to focus on the state of mind surrounding the emergence of a research question, the 'conception of the embryo'.and the further 'brooding on eggs'. Or is this a flow of subsequent states of mind coming together in a stream of consciousness...?
2 RTS-session with Rolf Hughes at Sint-Lucas Brussels, 2007-02-08,09,10 and to his Essay 'The Hybrid Muse: Creative and Critical Writing in/as Practice Based Research', in 'The Unthinkable Doctorate', Sint-Lucas Brussels-Ghent, 2005, pp.101-114, in which Rolf Hughes demonstrates a whole range of language possibilities that can help us 'to give voice'.
3 An original musical play by Allan Jay Lerner and Burton Lane, adapted in a Paramount film directed by Vincente Minnelli, released on 1970-6-17.
4 'Scientia non habet inimicum nisi ignorantem', as was written by somebody one day, on the inside of a sixteenth century spinet now on exhibit in the Gruuthuuze Museum in Bruges. A very strong statement in an era of Reformation and upcoming Counter-Reformation, pointing to the importance of 'scientia', science, in opposition to 'wilful' ignorance as a possible product of dogma.
5 Halina Dunin-Woyseth introduced the Mode 2 Knowledge to me in the second RTS session (2007-04-12,13,14). Moreover, different PhD concepts became clear during that session. As a consequence, 'autonomously' writing and designing a 'liberal PhD' [unthinkable?] became more obvious, instead of writing a 'classical PhD' ['research is research' in the fields of Theory, History and Criticism = 'thinkable'] or a 'pragmatic PhD' ['that awkward half-way house', termed by Gillies and as such quoted and stated as 'dialogical' by Halina Dunin-Woyseth on page 86 of her essay 'The 'thinkable' and the 'unthinkable' Doctorates. Three perspectives on Doctoral Scholarship in Architecture', in 'The Unthinkable Doctorate', Sint-Lucas Brussels-Ghent, 2005, pp.81-100].
In that session, Halina Dunin-Woyseth opened up doors that should never be shut again.
So Mode 2 deals with the world of artificial science (as Mode 1 is about natural science), in a world of artifacts rather than in a world of facts, with the actors being more inventors than scientists and dealing more with the world that might be (through design) than with the world that is (by discovery). (I refer to 'The Production of New Knowledge', Gibbons, Nowotny, et al., Sage Publications, London, 1994, and to what Lévy-Strauss in 'Savage Thinking' describes as 'tinkering and bricolage' as a basic characteristic in the 'method' of Mode 2, not always 'gauged, stamped and verified' as 'calibrated method' in classical (natural) science in producing Mode 1 Knowledge.
6 A line of thought which is also made explicit by William Blake's poetry in 'Songs of Innocence' (1789) and 'Songs of Experience' (1794).
7 Presentation of my body of work during the RTS sessions with Leon van Schaik, Design Research Seminar, Sint-Lucas Brussels, 2007-09-13,14,15.
8 From a dialogue between Leon van Schaik and Jo Van Den Berghe, at the end of the lecture given by L.v.S. on September 12th, 2007 in Sint-Lucas - Brussels, mentioned again on September 15th, 2007 after the last tutorial session, in café l'Archiduc, Dansaertstraat Brussels.
9 Peter Handke, Le Monde 04/06/2004: 'Le Regard de Peter Handke', quoted by Marc Belderbos in his introductory essay: 'Introduction: Aborder "L'impensable Doctorat", in 'The Unthinkable Doctorate', Sint-Lucas Brussels-Ghent, 2005, pp.51-77.
10 Intuition: (power of) the immediate understanding, the speeding awareness of deeper *knowing*, often preceding the slower building - by reasoning – of correspondent tacit *knowledge*.
11 Extract from the song 'Qué sera, sera', composed by Jay Livingston and Ray Evans, performed by Doris Day, 1956.
12 The interventionist Keynesian macroeconomic concept does not seem to worry in the long run either... ?
13 Donald Schön, 'Learning, Reflection and Change', Beyond the Stable State. Public and Private Learning in a Changing Society, Harmondsworth: Tenguin, 1973.
Donald Schön, 'Educating the Reflective Practitioner', San Francisco: Jossey-Bass, 1987.
14 Extract from my lecture at the opening of the retrospective exhibition of the work of Architect Juliaan Lampens, at Sint-Lucas School of Architecture Ghent Belgium, on November 30th, 2006
15 Lou Reed, album 'Berlin', Track 5: 'How do you think it feels', New York, 1973.
16 Learning from Las Vegas: Robert Venturi, Denise Scott Brown, Izenour, M.I.T. Press, Cambridge Mass. USA, 1977.
17 in casu: the limitation of the freedom of (architectural) speech.
18 Extract from my introductory lecture for the Arts Project about Martyrship and Censorship, Livinus 2007, with works of Honoré d'O, Matthieu Ronsse, Philippe Van Isacker, Hans De Pelsmacker, Sint-Lievens-Esse, Belgium, July 2nd 2007.
19 Kari Kurkela, Sibelius Academy, Helsinki, Finland.

literature

Literature RTS 2007

Listed below is an overview of the literature that was offered by the tutors. References are arranged by session.

Session on practice-based research led by Chris Rust, Nicola Wood and Simon Bowen

- Bowen, Simon. *Beyond "Uncritical" Design*. Position paper for Sint-Lucas Research Training Sessions 2007. Brussels: Hogeschool voor Wetenschap & Kunst Sint-Lucas, June 14-16, 2007.
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- Rust, Chris. *Unlocking Tacit Knowledge*. Position paper for Sint-Lucas Research Training Sessions 2007. Brussels: Hogeschool voor Wetenschap & Kunst Sint-Lucas, June 14-16, 2007.
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More information and literature can be found on the tutors websites:
- http://www.simon-bowen.com/research/
- http://www.nicolawood.net/
- http://www.chrisrust.net/

Session on Consolidation of past experiences (debate based on Reflections+3 and the participants research proposals)

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