(Re)searching Practice

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"Scientific research is the first, crucial link in the chain of innovation." This message is intended for everyone who wants to engage in scientific research with the support of the Flemish government. It is the opening sentence, in large letters, on the page of information about scientific research on the Flemish government website.[1] At first sight, it seems like a reasonable slogan. After the scientific revolution, with its systematised production of knowledge, a huge amount of verifiable and communicable insights were developed, growing exponentially and leading to progress and innovation with overwhelming success. As a result, research was afforded a major role in our society. Because systematic investigation is associated with such notions as objectivity, systematics, verifiability and innovation, it would appear to a certain extent to present resistance to such concepts as opinion, arbitrariness, ideology and conservatism. The power of research as a lever for loosening petrified conventions cannot therefore be overestimated.

However, there are several things that we should not overlook in our enthusiasm for the success of scientific research. By calling it the 'first' and 'crucial link' in the chain of innovation, the Flemish government is making an explicit link between systematic research and innovation. This direct connection points to two possible misunderstandings. Firstly, it might appear that it is only possible to speak of innovation if scientific research is involved, whereas research does not, of course, have a monopoly on innovation. Secondly, the implication might be that scientific research is involved in every chain of innovation, whereas innovation alone is not a sufficient reason to be able to speak of scientific research.

Stating that innovation can only be achieved through research feeds the misunderstanding that there is a clear hierarchy: that the only source of innovation is in research. In this case, practice would play no substantial part in innovation and would be considered implicitly as an application of the new insights developed through research, or as having inspired them. In reality, and each in their own way, both practice and research contribute to innovation within a given discipline.

In a conversation between Michel Foucault and Gilles Deleuze, published under the title *Intellectuals and Power*,[2] Deleuze outlines the interaction between practice and theory as a non-hierarchical relationship of mutual dependence, within which innovation, like the baton in a relay race, is constantly passed from practice (praxis) to theory and back again: "Praxis is a network of relays from one theoretical point to another, and theory relays one praxis to another. A theory cannot be

1
https://www.vlaanderen.be/steun-voor-academisch-wetenschappelijk-onderzoek (last consulted on 16 March 2020).

2
Gilles Deleuze, 'Intellectuals and Power', in *Desert Islands and Other Texts, 1953-1974* (Los Angeles, CA: Semiotext(e); distributed by Cambridge, Mass.: MIT Press, 2004), pp. 206-213.

developed without encountering a wall, and a praxis is needed to break through."[3] The front line of innovation is therefore a constant back and forth – a reception and transmission of questions and answers – between practice and research.

In the realm of architecture, the close connection between practice and research is easily recognisable. Architectural theory is partly fuelled by practising architects who develop theories outside the academic setting and test how they could be applied in practice. The results of this back and forth, where research and practice take turns in leading the process of innovation in architectural thought and action, can be seen in two specific architectural elements: the lift and the glass column. In *Delirious New York*,[4] Rem Koolhaas illustrates the way in which science passes the symbolic flame of innovation into the hands of practitioners. The technological advances ushered in by the development of the electric motor – which in turn enabled the development of the lift and thus also of high-rise buildings – made it possible for architects to develop previously unknown forms and concepts that could respond effectively to pressing socio-economic challenges. In Giuseppe Terragni and Pietro Lingeri's design drawings for the Paradiso Room in the Danteum, dated 1938, we can see the reverse process: practice passing the symbolic flame of innovation on to science. The Paradiso Room shows the architectural desire to express transparency and structural legibility by means of the glass column. A desire which has yet to be satisfactorily fulfilled through material-technological research.

The above argument for continuing to give the practice its due with regard to innovation also makes it clear that innovation and research – a result and the method by which it is achieved – are not interchangeable. It is to some extent understandable that, in a promotional slogan for scientific research, the importance of research is perhaps slightly exaggerated, but practice must not underestimate its own capacities by taking for granted the implicit appropriation of innovation by scientific research. Innovative practices are nevertheless regularly considered to be research practices only because they are innovative, as if innovation and research were interchangeable. This interchangeability is once again an implicit reduction of the true role that practice plays in the complex area where the continual passing of the baton of innovation between practice and research occurs. Research and practice lend structure to this area like poles that do not exist independently of each other, but which do each have their unique goals and means to force breakthroughs in that area.

Practice focuses in the first place on the production of artefacts which, as material things, can to a certain degree exist and be experienced in their own right. These artefacts, such as buildings, drawings and scale models, are valorised mainly on the basis of the quality of their actual effect within their physical and conceptual context. Practice, in addition to the informal system of street credibility, also has its own formal channels for this valorisation, in the form of, for example, prizes, publications and exhibitions. In most cases, its production depends on a client who makes a budget available in order to create an architectural response to a concrete problem. This dependence, combined with the fundamentally affirmative nature of designing, ensures that the practice spontaneously tends to seek the best possible answer. To this end, it looks specifically for referential works and inspiration to devise and give material form to these answers.

3
Ibid, p. 206.

4
Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan* (New York: Monacelli Press, 1978).

5
Nel Janssens and Gerard de Zeeuw, 'Non-Observational Research', in Halina Dunin-Woyseth, Nel Janssens, Fredrik Nilsson et al. (eds.), *Perspectives on Research Assessment in Architecture, Music and the Arts: Discussing Doctorateness* (London: Routledge, 2017), pp. 147-158.

Everything that is considered fruitful for a high-quality final result can be freely appropriated without explicit justification. This search does not necessarily have to be faithfully documented and, depending on the final result, can be set in a different framework without problem. Practice has extremely versatile means at its disposal in order to achieve its 'goal' (its agency) with great freedom and thereby force innovation. Roughly summarised this means that, in practice, the end justifies the means.

When it comes to research, we could say the opposite: the means justify the end. Research constructs its 'goal' (its results) by employing the means it has at its disposal in a strictly documented and transparent process. The accent thus lies elsewhere. Research is in the first place intended to produce relevant knowledge which, to be usable, needs to be rendered comprehensible in the form of instructions[5] to others who wish to implement it. By taking an open and independent view, it looks for underlying causes and relations and constructs a conceptual model that makes this intelligible and communicable.

PRACTICE-BASED RESEARCH

When architectural practice has its own versatile means of engendering innovation, practising architects do not necessarily need to conduct research to achieve a breakthrough. Of course, this does not alter the fact that each designer is free to do this anyway, for whatever reason. We observe that, in addition to the familiar academic research 'into' and 'for' architecture – such as historical research into special stylistic elements characteristic of a specific period or author (into) or technical research into the properties of a new building material (for) – research 'through' architecture is also seeking a place in the academic world. In research through architecture, expertise drawn from practice, such as devising and/or making architectural artefacts, is actively employed in the research process. On the Flemish architectural scene, we also find a great many practices that build bridges between practice and research by implementing practical expertise in practice-based research methods, environments and outputs.

PRACTICE-BASED RESEARCH METHODS

The first essential step to be able to bridge the gap between practice and research is the development of practice-based methods for producing and distributing knowledge. We find an example of this in the work of the Eagles of Architecture, who make active use of the architectural drawing as a means to gain a greater insight into personal architectural fascinations. While an intern under Peter Eisenman in New York, Bart Hollanders of Eagles of Architecture discovered that the architectural drawing can be a means of gaining an insight into the legacy of major teachers. Both at his office and in his educational activities, Eisenman always ensured that time was made available to redraw influential and inspiring major works. Taking as their motto 'Friday I'm in Love', Hollanders and the other Eagles follow in the footsteps of his former mentor every Friday. As they draw together, they declare their love for an inspiring and major piece of architecture. The work of such masters as Mies van der Rohe, Leon Battista Alberti and

Léon Stynen, and their exceptional views on a particular architectural element, such as the column, are subjected to a rigorous analysis on the basis of drawing and redrawing.

Because of this exceptional drawing practice, Eagles of Architecture were invited to participate in an exhibition at the Flanders Architecture Institute entitled *Drawing Out: Material Dialogues with the Boyarsky Collection*. They were asked to enter into a dialogue, on the basis of their own practice, with one of the iconic architectural drawings from the collection owned by Alvin Boyarsky, which was then on display under the title *Drawing Ambience: Alvin Boyarsky and the Architectural Association*. In response to the drawings by Eisenman in this collection, the Eagles presented *Friday I'm in Love* (2017), an axonometric design drawing of Van der Rohe's unbuilt Convention Hall project for Chicago, viewed from an unprecedented angle. In an interview about this piece, Hollanders spoke with passion and conviction about this fresh perspective and the new insights it had generated into Van der Rohe's thinking on structure. The process of drawing and redrawing appears to be able to reveal new insights and structures that are not necessarily elicited by other methods.

As children, we have all probably experienced, at one time or another, how a material object – an abacus for example – can aid our thinking. In a very literal sense, the abacus can help us grasp an abstract concept. The cognitive scientist Edwin Hutchins has described this sort of aid to thinking as 'distributed cognition'.[6] Distributed cognition is the process whereby, through the constant interaction between the internal process in an individual's brain and external elements in his material surroundings, thinking is, as it were, spatially distributed. By analysing the interactions between pilots, he demonstrated that the physical surroundings in the cockpit play a crucial part in their thought processes.[7] The material environment of the cockpit actively 'thinks' in conjunction with the pilots, so to speak, as a sort of externalisation of the pilots' internal thinking.

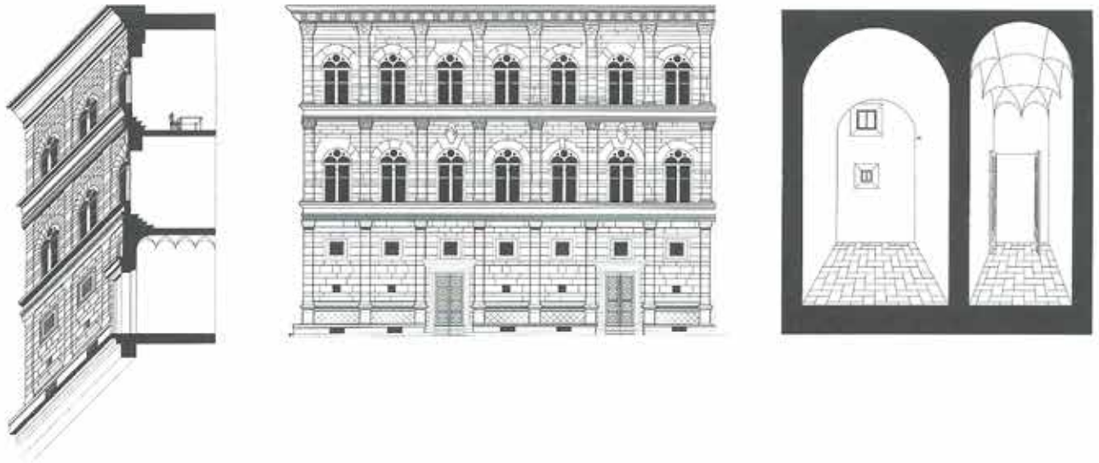
Just as an experienced pilot is trained to think 'through' his cockpit, a great many experienced designers have built-up their expertise in thinking 'through' architectural drawings. The estimation of the possible impact of a not yet materialised reality on a complicated physical and conceptual context is an extremely complex matter. A designer will bolster his thought processes using techniques that enable him to visualise, represent and present aspects of the design. Of all the traditional means architecture has at its disposal, the architectural drawing, among others, is a much-used manner of helping to develop, structure and communicate complex processes of architectural thinking in a distributed way. It is no surprise, therefore, that most design-driven and practice-based research is predicated upon a desire to involve the aforementioned qualities of the architectural drawing in the investigative work.

PRACTICE-BASED RESEARCH ENVIRONMENTS

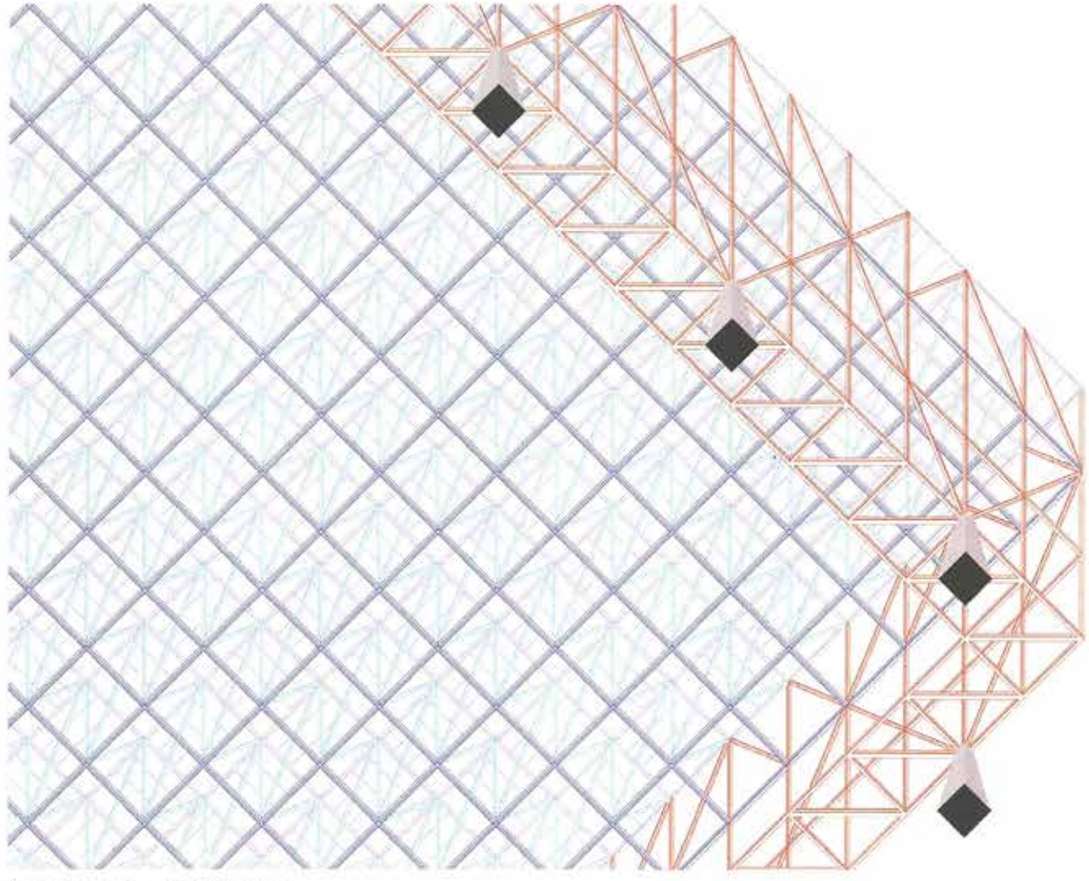
The second essential step to be able to bridge the gap between practice and research is the creation of fruitful environments where symbiosis is possible between practice, education and research and in which practice-based methods

6
Edwin Hutchins, *Cognition in the Wild* (Cambridge, Mass.: MIT Press, 1995).

7
Edwin Hutchins, 'How a Cockpit Remembers Its Speeds', in *Cognitive Science*, 19, 3, 1995, pp. 265-288.



Eagles of Architecture – Façade analysis showing the actual brick joints in the Palazzo Rucellai by Leon Battista Alberti, Florence



Eagles of Architecture – Friday I'm in Love
Design drawing of the unrealised Convention Hall project in Chicago by Ludwig Mies Van der Rohe

can be employed for the production and distribution of knowledge. The common space where practice and/or industry, education and research can meet and fuel each other, created for example by such institutions as university hospitals and technological spin-offs, which are responsible for education and research in medicine and technology respectively, is what institutions responsible for architectural education and research are also seeking. With this aim in mind, projects have been launched at several universities, including the academic design offices in the Faculty of Architecture at the KU Leuven.[8] In the elective for master students entitled '*Bijzondere Vraagstukken*' [advanced topics] in the Department of Architecture and Urban Planning at Ghent University, the curator of the elective, Maarten Van Den Driessche, together with Lieven Nijs of BLAF Architecten, took the initiative of establishing an academic, practice-based and design-driven study entitled 'Brick Wall City'[9] to examine the expertise that BLAF had accumulated in respect of the expressive potential and the structural, functional and building-physics sustainability of brick architecture. At the same time, Barbara Oelbrandt launched Studio Baksteen together with Karen Allacker of the Faculties of Engineering Science and Architecture at the KU Leuven.

An expanding series of award-winning Case Study Houses[10] related to low-energy and sustainable construction and conversion shows that BLAF Architecten is appreciated as a design practice that experiments with the principles of sustainability in, among other things, circular and low-energy building. The pursuit of better environmental and energy performance results in thicker and less compression-resistant insulation packages that make the execution of the outer skins of cavity walls in masonry more complex and expensive. In response to this, the use of brick for façades is increasingly being replaced by a light, non-self-supporting cladding. Building on bOb van Reeth's 'intelligent ruin',[11] BLAF is exploring the reverse direction, whereby the structural independence and the life expectancy of the outer skin can be maximised. In addition, numerous other layers of meaning come to the surface in the firm's designs, which link together the material, the construction and the appearance of brick architecture (tectonics, colour, ornamentation etc.). BLAF Architecten employs the individual house as an instrument in developing and testing strategies to keep architecture 'buildable'. For instance, the firm first constructed a number of houses, including such projects as the dnA house in Asse (2013) and the gjG house in Gentbrugge (2013), with a self-supporting brick façade in header bond into which a wooden frame house was inserted. Under the name 'Big Brick', they later developed a broad façade brick together with the brick industry that made it possible to build structurally and thermally decoupled façades with walls in stretcher bond. Examples of these 'Big Brick pilot projects' include the tmEK house in Erps-Kwerps (2015), the btL house in Lokeren (the home of BLAF architect Bart Vanden Driessche, 2015) and the Nieuwe Dokken project in Ghent. Under the name 'Brick Wall City' – also the title of the entry for the *Biennale Architettura* in 2016, by BLAF together with Maarten Delbeke, Guy Châtel, Kris Coremans and Filip Dujardin – the firm aimed to consolidate this expertise and put it on the agenda as an ongoing project.

In Studio Baksteen and the '*Bijzondere Vraagstukken*' series, the BLAF architects aimed to expand and fuel their research in an academic context. This format turned out to be exceptionally fruitful. Ten students from Ghent University and

8
See, for example: http://www.fieldstationstudio.org/, https://studio-anatomy.org/ or https://primarystructure.net/ (last consulted on 16 March 2020).

9
https://www.brickwallcity.com (last consulted on 16 March 2020).

10
Including the passive houses abA & gbL (Belgian Architecture and Energy Prize, 2009 and 2011 respectively), tmSN (The City of Sint-Niklaas Prize for Sustainable Renovation, 2016).

11
bOb Van Reeth, 'Goede architectuur?', in *Oase #90: Wat is goede architectuur?*, 2013, pp.120-122.

↦ Project file 38

↦ Project file 39

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BLAF Architecten – dnA house, Asse

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BLAF Architecten – tmEK house, Erps-Kwerps

BLAF Architecten – Oude Dokken group dwellings, Ghent

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Ghent University, *Bijzonder Vraagstuk* (advanced topic) design theory (Maarten Van Den Driessche & Lieven Nijs – design: Tommy Messelis) – Brick Wall Ruin Pavilion, Ghent

Alba Tavares Vanhoutte – Design drawing from the *Bijzonder Vraagstuk* (advanced topic) on brick architecture

the KU Leuven have since devoted their theses to this topic. One of them, at the KU Leuven, was nominated for the 2017 Maarten Bouwen Prize. In addition, the first five editions of the elective have created a successful environment for cooperation between the profession, education, research and industry. Each session produced an individual working method with specific results. Insights were gained by analysing existing brick façades, by photographing, redrawing or recombining parts of them and by designing new frontages or pavilions in the 'Big Brick' module. However, what is quite special is that a number of insights arose in the course of creation, during the actual making of an exhibition at the Ploegsteert brick factory and a full-size pavilion built in cooperation with the Vandenbussche building company. The students' work can also be used in future building courses. This combination of practice, education and research appears to create the perfect setting for the development and communication of insights.

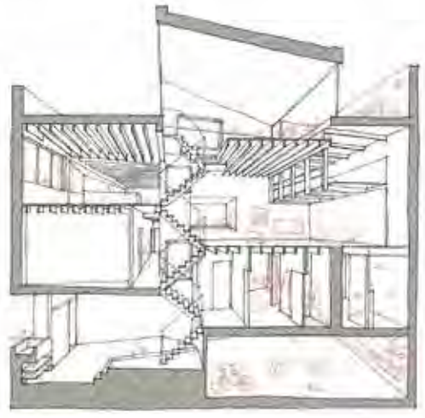
OUTPUT FROM PRACTICE-BASED RESEARCH

The third essential step to bridge the gap between practice and research is the development of forms of knowledge distribution that enable the academic valorisation of design-based output from practice and education. An example of this is *Radicale ensembles* by Koen Van Bockstal, Jantje Engels and Bart Decroos. This publication is the second in the ONTO series published by Academic and Scientific Publishers, in which the results of research by design are given a specific place as academically recognised output. This often also concerns artistic and design-based creations, which are called 'non-written output'. Each publication in this series is intended to provide a platform for a design practice so as to be able to zoom in on its method and deliberately reflect on the various steps taken as part of a design in order to focus on this design strategy and make it comprehensible and usable for others.

This sort of initiative has become even more important since the so-called 'academicization' of the architectural colleges as a consequence of the 1999 Bologna Declaration, which aimed to create a unified European area for higher education. This reform meant that the colleges, which had chiefly been distinguished by their practice-driven education, had to enter into association with universities. The latter organisations would, in turn, make their expertise available to the former colleges so as to help them develop their own research culture. The problem with this reform is that two different valorisation systems began to chafe against each other, one based on merit in practice and education, the other based on merit in research. Whereas the substantive guiding and leading positions had previously been allotted to people involved in the practice, after the Bologna Declaration these functions went to those who had earned degrees on the basis of their research output. Initiatives such as the ONTO series and the concrete example of *Radicale ensembles* are crucial, therefore, in terms of bringing well-deserved academic recognition to forms of education that are driven and based on practice. The space this sort of publication provides also prompts designers to reflect on their practice and the expertise they have developed as part of it and to continue experimenting with forms of research in architecture.

Antwerp University, *Radicale ensembles* studio (Koen Van Bockstael) – Analysis of a residential complex by August Cols and Alfried Defever

Lauren Paynjon and Seppe Verhaegen – Design drawing within the theme '*programma – klein geluk*' (programme – minor delights)



Kate Kerkhofs and Jasmien Schreiber – Design drawings within the theme '*Raumgestalterin*'

Radicale ensembles is moreover also an example of the quest for practice-based methods of knowledge production. By means of photography and drawing (and redrawing), the chapter entitled 'Canon', which makes up the bulk of the publication, offers an inventory of remarkable references to 'composite urban castles'. These urban castles are efficient urban building ensembles that arose through the clustering of individual dwellings. Here too, the power of the architectural drawing is employed as a means of gaining an insight into the legacy of major architects. In the 'Studio' chapter, a group of international students familiarise themselves with certain elements from the inventory in a practice-based educational and research setting. Under three thematic headings – '*Raumgestalterin*', 'cladding' and 'programme – minor delights' – they develop their own architectural reflection on the fundamental and space-defining impact of construction and structure.

When practising designers decide to engage in research, it would seem advisable for their investigation to be driven by skill that has already reached maturity in practice, rather than acquiring academically recognised expertise in great haste only to then suddenly change role from experienced designer to inexperienced researcher. The three above-mentioned examples demonstrate that this practice-based expertise and its methods, which in the practice appear to be fruitful in the production and distribution of knowledge, are relevant to the architectural discipline.

The challenge now is to develop sufficient momentum in practice-based research and research-based practices so that the Flemish government and the Fonds Wetenschappelijk Onderzoek [Scientific Research Fund] can themselves be challenged to be more innovative and provide better recognition and support for these new methodologies, forms of cooperation and types of output. For this reason, it is vital that research practices continue to actively reflect on how to build bridges between practice and research.