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Form making

Three examples of form making from practice

With this paper I would like to present and discuss various forms of form-making processes and methods related to this, which I have identified looking back on my professional practice. Specifically, I wish to present three different ways of making form and contextualise these in relation to current models of practice-based research.

Over the past 20 years I have worked professionally with design. This work has evolved using various materials, methods and techniques; of these, it is methods that I will present, discuss and share here. Sharing appears to be one of the main objectives of this conference, reflecting on the matter of making research and researching making.

Common to the experiences that I wish to share is that they primarily relate to the question of researching making. Or to put it another way; what is it we do when we do it? How do we design?

With my paper I will refrain from making big Claims, but instead reflect upon questions relevant to my practice as seen in retrospect.

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In the unlikely event of a Claim occurring in the paper, it would probably point towards the existence of aspects within the process of form-making which elude the object of research, as it seems to be inaccessible to reflection and rationality. My personal position regarding this will be one of welcoming. Partly because I find it interesting to examine more closely, the objects of research within the field of architecture and partly because I equally find an interest in that, which exists beyond the limits of architectural research.

My experience with form making goes further back than the 20 years I have professionally been involved with design. Actually I do not recall a time in my life where form-making has not been present in one way or another. Growing up on a farm I remember how my fathers' workshop was the focal point of my early form-making experiences. All farmers must have a workshop to repair machinery, equipment and buildings that are always in a constant process of breaking down. Technology is therefore always present at a farm. Another important resource for form-making, that was richly present at my parent's farm was the wide-open fields with their distinct claylike soil. They were hard to plough but represented an indispensable resource of clay for the early design of objects and everyday utensils. In many ways, clay is the "first material" in form-making, as the material requires no other tools or technology than the hand when it is formed. Thus there are no tools interposed between the hand that is in control of the form making and the resulting form. Shaping the material and shape are integral with each other.

In my presentation and discussion of various form-making processes and methods related to this, I primarily will try to present three different examples, which I can identify when looking back on my professional practice. The three examples are in many ways coherent to three roles that I seem to have undertaken in my practice. As a sculptor, architect and researcher respectively. I

am a trained architect and have for many years been teaching as Associate Professor at the Aarhus School of Architecture. As a teacher one is constantly confronted with the discussion of form-making processes and methodologies. This is part of everyday life, which has to be challenged pedagogically as well as within a didactic context. How are students of architecture to be taught various strategies of form-making?

Also, in the role of an architect I have designed a number of smaller buildings, building components and artefacts in which the process of form-making has consciously been discussed and scrutinized. Finally, during my practice as an architect I am directly involved in the research of building materials. My research field is the aesthetic potential of building materials and their ability to influence spatial atmospheres. For my research work I have been awarded a Ph.D. degree. Many of my research results are based on practical experiments with materials using distinct methods of examinations.

Parallel to my profession as an architect, I am a sculptor and have for many years practiced and exhibited at various exhibitions.

With three examples from my professional practices derived from the roles of architect, teacher/ researcher and a sculptor, I will in the following try to identify and discuss three ways of form-making as well as their practical and theoretical implications.

The three form making processes can be categorized under the following headings:

- Form-making based on visual memories
- Form-making based on methodical interventions
- Form-making based on bodily experiences

Form making based on visual memories

As architects, we tend to travel a lot and make extensive use of vision as our primary sense of perception. This happens in relation to the perception of the physical environment surrounding us and in relation to the architecture in particular. Thus the visual sense seems to be dominant in the perception and awareness of the outside world. This bias is scrutinized and well described in recent literature and in relation to the field of architecture in particular by Architect and Professor Juhani Pallasmaa:

"In western culture, sight has historically been regarded as the nobles of the senses, and thinking itself thought of in terms of seeing" Juhani Pallasmaa, The Eyes of the Skin. Architecture and the Senses, 2005, p 15.

One persistent argument seems to be that the visual dominance has been further reinforced through the realm of modernism; especially with an emphasis on the abstract form and space and subsequently less attention towards materials and decoration, which activate our other senses.

Since we as architects are in a constant process of establishing an extensive archive of images, we hold an inner reservoir of images that we can tap into when we design spaces and objects. In the design process, we seem to a great extent to recreate our inner landscape of images, either as pure entities or as composition of imaginary fragments. It is my experience that in this recreation of our inner imagery landscape, we are not in the process of copying what we have visually experienced before, but are on the contrary in the process of interpreting this landscape while incorporating it to the new context we are set within.

The use of the visual memory in the design process does, therefore, not constitute a 1:1 situation, but involves reading, analysis and interpretation. We recognize this fact while educating architects as we often refer to the experience of students having to "learn to see". This phrase captures very precisely that the act of seeing involves a conscious process in different stages.

The key element in establishing a visual memory that can be of use in the design process, is therefore, a conscious awareness of the phenomena experienced. Without this awareness, the visual memory does not seem to be at disposition for the design process. The course of the process is characterized by oscillating from the phenomenon of experiencing to the abstraction of analysis and interpretation and back to re-establishing the design as a phenomenon.

It seems that in architectural education today, the establishment of strong visual memories and references still constitutes a great deal of foundation being taught in design programs while striving for new architectural expressions. It is, however, highly questionable if this should stand alone.

The means of building up an extensive visual memory is still to a large extent is taught through literature, lectures and study trips where students, while being confronted with existing architecture, urban structures, objects, and artefacts expand their visual memory. However, the visual impact of natural phenomena still seems to exceed any other manmade intervention.

This is also to be noticed as we examine the design process among central figures of classical modernism (Frank Lloyd Wright, Alvar Aalto, Jørn Utzon) whose works are created and may be explained by the use of metaphors in nature.

As an example from my own practice, the sculpture Untitled V (Fig. 1, Untitled V, Photo by Anders Gammelgaard Nielsen) can be seen as a juxtaposition of a series of visual fragments that are largely recognisable to the viewer. Thus, the image of the rocket-like object orbiting with high speed over the sky is obvious and recognisable. The same goes for the undercarriage with its wheels that clearly has references to an early industrial culture and celebrates the machine as a phenomenon. Finally the sculpture signifies with its material character an affinity to medieval atmospheres. The juxtaposition of these visual memories from different ages constitutes the sculpture's inner tension. Thus the sculpture is intended to create tension and provoke the viewer, consequently creating an uncanny situation and viewing experience.

The example can to a great extent be seen as practice-based investigation on form-making relating to the research conducted within the realm of the ADAPT-r program. Thus the initial mode of conduct is to place something in the world that leaves an impression and subsequently calls for reflection. On the grounds of this reflection conclusions can be drawn that can give direction for further experiments or artifact to be made. This dialectic process of making/reflecting/making seems to require a strong awareness towards the maker (the subject) who is deeply involved in the act of uncovering and establishing new knowledge. It is my experience that the latter vividly activates an ethic discussion on the conduct of research. This points towards a research practice with a full transparency on all processes and results.

Form making based on methodical interventions

Physical experimentation with building materials formed the basis from which aesthetic potential was exposed and examined within the research framework of my Ph.D. thesis. The reason for this methodological choice was to disclose new aesthetic potential of existing building materials. This seemed implausible within the tradition of empirical studies or case studies that predominately tend to refer to the past. I therefore took departure in a “classical” research format establishing a hypothesis to be confirmed or refuted.

My working hypothesis was that building materials hold aesthetic potential that can be exposed experimentally through the use of various technologies, as well as new methods for the application of these technologies.

Wood was chosen as an example of a building material that could be expected to accommodate new aesthetic potential. Similarly, a number of technologies was initially identified and precisely described. Some of these were well known from processing timber in the lumber industry, others were completely new and “exotic”. Finally, a number of methodical interventions were

described with respect to the application and use of the selected technologies. Overall, the starting points for the forthcoming experiments were that I knew all about how they were to be conducted, but nothing about their outcomes and results.

This situation is well known as a fundamental condition within the realm of research as it follows all researchers as a companion in his search for new knowledge and insight. If we know where we are going there is no need to go. If we do not know where we are going, there are all reasons to go.

Natural scientists are well acquainted with this fact while conducting experiments within experimental physics. Elementary particles are accelerated to the speed of light and subsequently collided with heavy atoms that split with the aim to confirm or refute the hypothesis of atomic nature. This basic research condition seems natural for a scientist who is used to working without visual memories and with objectivity as the key driver. Somewhat more unaccustomed for the artist and architect who largely make use of visual memories and where subjectivity always come into play as an integral part of the creative process.

With the previously described experimental setup as a starting point, the experimental studies were carried out and in this case, with a self-imposed restriction on subjective intervention. However, like the scientist, I was in the comforting situation that I knew that there would be an outcome of my experiments. When something is done, something happens. Whether this would confirm my hypothesis by revealing new aesthetic potential of building materials or not, was unpredictable. Not surprisingly, the hypothesis was confirmed and new aesthetic potential of the examined building material were exposed (Fig. 2, Untitled XIV, Photo by Anders Gammelgaard Nielsen).

However what really surprised and struck me was that the results that were achieved, to a great extent evolved by themselves, without being affected by my own subjectivity nor by a specific form-making. Thus, there was no need to muster an inner motivation in order to carry out the experiments - to a great extent they conducted themselves with an autonomy derived from the initial programming of methodical interventions.



In the creation of artworks, a certain creative power is often described. This creative power is essential to be possessed by the artist in order to create the artwork. The experience of such was noticeably absent during the execution of the experiments because the form making was based solely on methodological interventions.

Moreover, it was remarkably evident that forms arose, that were both surprising and decisively different from those that would occur on the basis of visual memories. Personally it was seminal to be confronted with a new typology of form-making that was revealed through a controlled methodical process. Thus, it appeared that, while we use our visual memories, we are in danger of reproducing the already seen - and hereby architecture can become a reproduction of itself - whilst by applying a methodical approach, we have the chance of reaching beyond our own imagination. Thus, this method offers a unique opportunity to capture the new and never yet seen. It therefore appears to be a very suitable method in terms of the architectural research that aims towards developing new aspects of form, space and structure.

The use of methodical strategies in creative processes has especially in recent years been widely acknowledged within various art forms. Thus, the Dogma concept of the film director Lars Von Trier is based on a number of methodological interventions that radically challenge the director and pushes him beyond his own imagination. This is evident in film like Breaking the Waves, 1996 and De fem benspænd (The five obstructions), 2003.

Similarly, the Icelandic singer and composer Björk is using methodological interventions in the development of her music. In the album Debut from 1993 she develops new and unexpected sound-scapes via techniques of sampling, mixing, distortion, replay, etc. Hereby she establishes at completely new genre.

In the architectural realm, Peter Eisenmann has to a particular degree been an exponent of an architectural formation based on methodological interventions. This is most strongly expressed in the publication House of cards, 1987, where Peter Eisenmann, based on a series of methodological operations, develops a range of unpredictable spatial compositions. A similar interest in the development of architecture through

methodological strategies is to be found within the concepts of de-constructivism, where architecture of a physical structural nature is conceived through a series of methodological interventions.

Form making based on bodily experiences

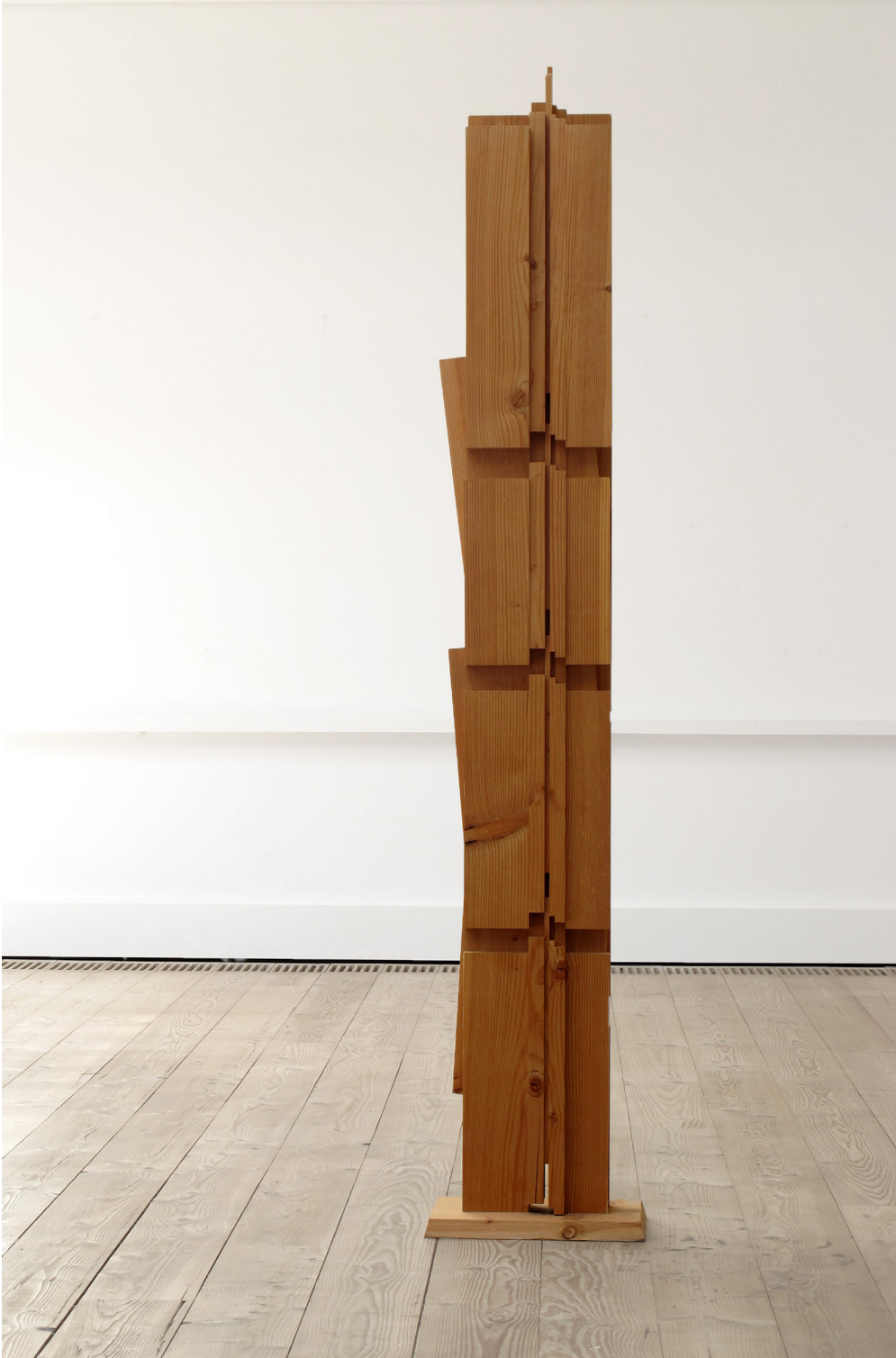
With our physical bodies we seem to establish a direct relationship with the natural world that surrounds us. We are made of substance, just as the world is made of substance.

In recent literature it is thoroughly described how bodily experiences are embedded in our body's encounter with the physical environment. This happens throughout life and within the transformation from child to adult; our interaction with the world is crucial to how we understand space and form making. As the body encounters with the surroundings, a recording is being registered and stored in the body. It is this recording that is being replayed while we interact with the world and design within this world.

The relation between body and environment can be described as dialectical. Our bodies give form to our surrounding environments, which in return shape us - or vice versa. We excavate and change the landscape, which in return makes an impression on us. We design our clothes that in return design us. We chip off the stone and create an expression, which leaves an impression in us. For the child, this dialectic process forms the basis for understanding the world and realising itself within this world.

Along with the recognition of our own existence through the encounter with the outside world it is embedded as a bodily experience. The body records the world in a seemingly infinite archive.

I have previously in the text discussed how we seem to establish a visual archive and how this archive through awareness can be activated in the form making-process. Similarly, it seems to be a possibility for body to re-create embedded experiences. These can be activated and "replayed" as we design the world around us.



However, there seems to be a crucial difference in the use of our visual memories and bodily experiences. The visual memories require awareness and thus an intellectual process, whereas the bodily experience can be activated directly and intuitively without awareness. This diversity is clearly expressed while practicing to become a craftsman. It is inevitable that one can only become a master craftsman through practice and not through seeing or reading. This explains why so many ancient crafts are gradually disappearing; they are based on bodily experience and therefore often rarely documented.

While looking back on the sculptures that I have formed over a number of years, it strikes me as obvious that many of these to a great extent have been formed on the basis of bodily experiences. In this connection I can immediately and with ease describe the environments that have influenced me and resulted in the bodily-embedded experiences, which form the basis of my works. Contrary to this, it is very difficult for me to explain and account for the processes by which the bodily-embedded experiences result in the specific forms. There seems in this relation, to be no immediate rationality that can be subject for any intellectual consideration. The form-making has happened intuitively and in a diverse and complex dialogue between body and sculpture while forming it. Thus, it is only at a general level possible to describe the experience of the process that has taken place and not decisively how the process occurred. It has been my experience, that based on bodily experiences I have been able to leave traces in the substance (sculpture). This has in reverse responded with an expression that has left a sensory impression. The experience of the dialogue has sometimes been intense, as if the boundary between the body and form, between subject and object has been challenged. Likewise, there has been an experience of a flow, which has led to a solution of time and place.

While looking at the form making that has taken place in relation to the sculpture *Untitled III* (Fig. 3, *Untitled III*, Photo by Anders Gammelgaard Nielsen), the above observations and experiences has been present. Thus, I have experienced a complex and diverse dialogue with the sculpture, while it has been given its form. Whatever else

has taken place remains uncertain and beyond communicative range. That is all I can say. It evades conscious reflection and falls within the realm of the artistic process. In many respects, a feeling arises that a boundary has been surpassed. At this boundary rationality ceases to exist and it is no longer possible to engage in a research context. The condition is challenging because it questions the research sphere. It is as if something is going on, that cannot be articulated orally or written – nor should be articulated. At the same time, it seems that we with this mute form, the core of art and architecture that so much evades reflection, arrives at the epic centre of artistic experimentation. We are left with the experience of the work of art and nothing else.



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