The Campfire Design Studio
*Design conversations in landscape architecture
education*

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ABSTRACT

In landscape design education, design studio challenges the type and nature of communication and the sharing of ideas among designers within the design process. Meaningful conversations cannot take place when a group of students with various cultural and educational backgrounds have to produce a consistent design proposal unless they share ideas. These ideas must be based on reasonably well-defined and commonly understood features and communicated in a commonly understood language. Creative engagement with new features of a design situation often falls short of conscious decision-making when *speech* – the verbalised expression – does not match *form* – the designed expression. As researchers and teachers at the MSc Landscape Architecture, University of Copenhagen, we acknowledge this educational challenge and we have thus focused research on the relationship between design communication (conversation), architectural language and the design process. The question of how to enhance these relationships has led us to create a specific physical workspace with the purpose of increasing the common awareness of a design situation within our studio: *The Campfire Design Studio.*

The paper presents and investigates the design conversation method and its capacity as educational space by comparing studio objectives at different stages of a studio design process undertaken at the University. Our findings show that the Campfire Design Studio works as an agency for enhancing creative consciousness among the design students; it augments their ability to see by means of its display of an exhibition-like space and it helps them to navigate confidently in the design process. Finally, the method *connects* the design progress to conscious scriptwriting of spatial form. In conclusion, the paper presents and critically studies the potential and limitations of this new hybrid studio method.

Keywords:　　*Design Teaching, Design Methods, Design Conversation, Vertical Projection, Design Practice and Academia, Landscape architecture, Supervision*

The Campfire Design Studio 2015 ©

INTRODUCTION

Contemporary design practice is conducted by a group of designers and seldom by a single 'author'. In the *Simple Model Method* (Hansen et al. 2014), we found that simple models train us to *see* – to direct our attention– and to address what we see. Using the simple model method students interpret and express themselves, e.g. by use of metaphors, analogies and verbal descriptions of the model. Attention on the design question empowered the design process in group-design when the 'design conversations,' i.e. discussions of design matters (McAvin et al. 1991; Eaton, 1990) were accompanied by working with simple models. Using the *Simple Model Method* we found that design conversations became more focused and decision-making became more conscious. This can be explained by the fact that, "the charm of abstractions and ideas is that they [*the simple models*. Authors' remark] can exist outside the tiresome realm of messy reality, which they ignore to attain the purist ideal" (Glanville, in Ayres, 2012: 43). In this article, we build on top of the *Simple Model Method* and the work on design and education by Cross (2007), Lawson (1997, 2004) and Stenitz (2012) and we focus specifically on the relation between design and conversations within a group of designers.

Design conversations become more *focused* because "to simplify and thus to ignore is a condition for seeing" (Thyssen, 2013:9). Within this process of focusing and directing attention to something, we found it problematic that the *connection* was short-lived and many ideas still got lost before they were shared (Hansen et al., 2014). We find that the creative breakthroughs and the mutation (through skill-based design practices) (Spirn, 1998) can be fostered and enhanced by improved design conversations. The 'campfire' design studio is an attempt to enhance design conversation among a group of designers, sitting close to one another having one 'object' in common that allows for deep conversations. The *campfire* workspace is spatially defined by duct-tape

on the design studio floor and situated underneath a custom-made vertical projector. It combines skilled-based analogue design practices and advanced digital techniques to create a hybrid studio method with multiple authors. Inside the workspace, physical proximity to models, materials, vertical projection and the stop-motion broadcast onto the floor/models support the basic idea that design is grounded on the act of *seeing* and revolves around the ability to connect vocal *speech* and physical *form*.

Working within the *campfire* workspace encourages constant interpretation and transcription of what is occurring. The 'design conversations' are the exchanges of interpretations of what is present, ideas of what to do and reflection on what goals to achieve. They are creative, "in the way that the commentary can reveal new understanding and perspectives upon a work" and, "interpretive criticism contrasts and compares particular projects and may frequently use metaphor and analogy to throw new light upon a design" (Deming and Swaffield, 2011: 42-43). We aimed to study and document the connection between the design, the conversations and the physical environment of these processes and to explore the possibilities to prolong and to trace it with the overall aim of strengthening the quality of the students' design projects. In 1961, Jane Jacobs launched an attack on planners including teachers at universities. Responding to Jacobs, the economist, E. Glaeser, in *Triumph of the City* (2011: 11) argues that, "she also made mistakes that came from relying too much on her ground-level view and not using conceptual tools that help one think through an entire system". Limited by a nine-week studio, our approach in the design studio combines a ground-level view working on -site with simple conceptual tools such as the previously mentioned *Simple Model Method* to navigate in design situations: These situation are *per se* complex because they attempt to resolve ill-defined problems, adopt solution-focused strategies, employ abductive thinking, and use nonverbal, graphic/spatial modeling media to explore what Rittel and Webber (1973) refer to as "wicked" problems. (Cross, 2007: 37-38).

At the University of Copenhagen (UC), we have guided design processes over the years that are based on group design. Creative engagement can be undermined and new features of a design situation can fall short of conscious decision-making when communication does not work and individually fostered ideas are lost because they are not shared properly.

The objective of this paper is based on this design educational challenge: how can we create a physical educational environment within the context of a nine-week design studio that enables a strong connection between the act of what students see collectively, and what they think individually in order for them to reach sound design solutions? The aim of the campfire is to facilitate the act of seeing and thinking simultaneously as the starting point for a design conversation. The paper follows three cases, which are design conversations, from *the campfire*. In order to understand the capacity of the campfire workspace as an educational space, the paper compares objectives at

FIGURE 1:

The vertical projector case is fixed to the ceiling and can be used in combination with horizontal projection

Vertical projection

Wall

Horizontal projection

Floor

different stages of a design process undertaken within the following theoretical framework. Finally, the paper discusses the potential and limitations of the developed studio method.

A THEORETICAL FRAMEWORK

The inextricable relationship between natural science and the humanities presents design educational challenges as we conceive it at UC, due to the complexity of the creative design process. This duality has long occupied scholars and can be framed within one of two opposite positions as described in *Designerly Ways of Knowing* (Cross 2007). One such position supports a *design science* that, "refers to an explicitly organised, rational and wholly systematic approach to design" and, "in some sense is a scientific activity itself" (Cross, 2007: 122). In contrast, the other positionchallenges this approach, as its supporters believe "the act of designing itself is not and will not ever be a scientific activity" (Cross, 2007: 122).

Our point of departure is that the idea that adaptation to both science and humanities prerequisites the landscapes we study and landscape design: that human intentions and traditions, social considerations, aesthetics and human behaviour will always be issues for the work of a landscape architect. Nevertheless, design also relies on the measurability and rationality of science when analysing places, acquiring data, or qualifying information using available knowledge about, e.g. geology, topography and geography. An understanding of both fields, however unmatchable, messy and incomplete they may seem, is the key to successful landscape design.

Complementarity

The Danish landscape architect, Stig L. Andersson, advocates "the concept of complementarity" where everything has two interrelated sides. He refers to science as *the rational,* and the humanities as *the aesthetic* and states that, "[w]e cannot see them both at once. But the understanding of both is necessary if we are to fully understand the given phenomenon" (Andersson, 2014: 9). According to Foxley and Vogt (2011: 7), "the search for the right design for a particular location is a process thatencompasses the given brief, natural conditions, scientific limitations, social questions and creative demands." Andersson's and Vogt's ideas resemble our idea of complementarity in landscape architecture design with the scientific field of "natural conditions, scientific limitations" (Foxley and Vogt, 2011: 7) and the field of humanities "social questions and creative demands" (Foxley and Vogt, 2011: 7). Despite the difficulties of seeing both fields simultaneously as Andersson puts it, we challenge this notion of complementarity and focus on narrowing the gap between its constituting dimensions.

Different kinds of knowledge in design conversations

Glanville (in Ayres, 2012: 44) identifies two aspects of knowledge, "knowledge *of* and knowledge *for*" and help us navigate in the different dynamics of a design conversation using various medias. Paying attention to *of* versus *for* is helpful for students when design becomes complicated. Knowledge *of* can be labelled as rational and drawing on science and reliable information that can be reused in another context if so desired. Knowledge *of* deals with representation and rationality and is associated with the field of science so that, "knowledge *of* is essentiality static in contrast to knowledge *for*" (Glanville, in Ayres 2012: 44). Knowledge *for* is not static and relates to places, problems (including tradition and aesthetics) and time. Thus, knowledge *for* design is how to use knowledge *of* in a smart way. Experience gained from design studios indicates that each of the two dynamics described by Glanville has its own place in design conversations. The rational and the analytical are related to verbal communication, to speech and in a conversation they are often delivered as a matter of fact. The aesthetic, in contrast, associates through form, materials, structure, metaphors and analogies, and in design conversations they are often conveyed with personal experience and thus harder to find appropriate ways to describe verbally.

Design conversations as tools to connect 'speech' and 'form'

Andersson uses "conversation to approach new recognition" (2014: 17), which also means that everyone in a design conversation must be able to contribute to the *change* collectively in an on-going dialogue, but also without suffocating personal artistic expression and integrity. Whereas "conversations cannot meaningfully take place unless there are some shared ideas involving some reasonably well-defined and understood features" (Lawson, 2004: 90) design conversations can come to a meaningful sharing of ideas, and recognise new ideas when the connection between what is said and what is built/drawn (or otherwise visible) is transparent and clear. With the first ideas, the students have a collective goal and negotiations can take place (Bucciarelli, 2002: 220) despite the fact that the early concept models still lack a common understanding of the context of the project site and a clear view based on an analysis of the site. However, the social interaction that occurs during design conversations is working and according to Bruno Latour, workers laying bricks demonstrate that they are connected through their common activity. What makes the workers connected is that, "any human course of action might weave together in a matter of minutes, for instance, a shouted order to lay a brick" or "a movement of the hand" can make the connection possible (Latour, 2005: 74-75). At UC, we have furthermore observed that a design conversation appears to be meaningful for the involved students if the ideas that are exchanged include well defined and understood spatial features such as plantings, roads, paths, access, topography, lawns, houses, and buildings.

THE CAMPFIRE METHOD

The *campfire* workspace can be regarded as dynamic "sampling" due to the continuously adding and removing of effects during the design process. According to Schön and Wiggins, "working in some visual medium, the designer sees what is 'there' in some representation of a site, draws in relation to it, and sees what has been drawn, thereby informing further designing" (Schön and Wiggins, 1992: 68). If "landscape design drawings as a practice that might serve as a powerful means to change the way we see, understand, and therefore the way we make and alter landscapes" (Dee, 2008: 61), *seeing* in the campfire workspace is a collective experience and one that can be altered with the extension of the hand, by simply moving an object or drawing a new line.

The campfire is, therefore, never static. When the students have left the workspace after a design conversation session, the campfire resembles an exhibition of ideas. Using Glaeser's idea of 'home of ideas': "If ideas are the currency of our age, then building the right homes for those ideas will determine our collective fate" (Glaeser, 2012: 15) our campfire is such a home, an ever-changing exhibition where ideas are nurtured, shared and matured. Design conversation may change whatever is within the campfire work area: models, projections and sampled material depending on their capacity together in a process of synthesising and (re) developing design concepts that encompass
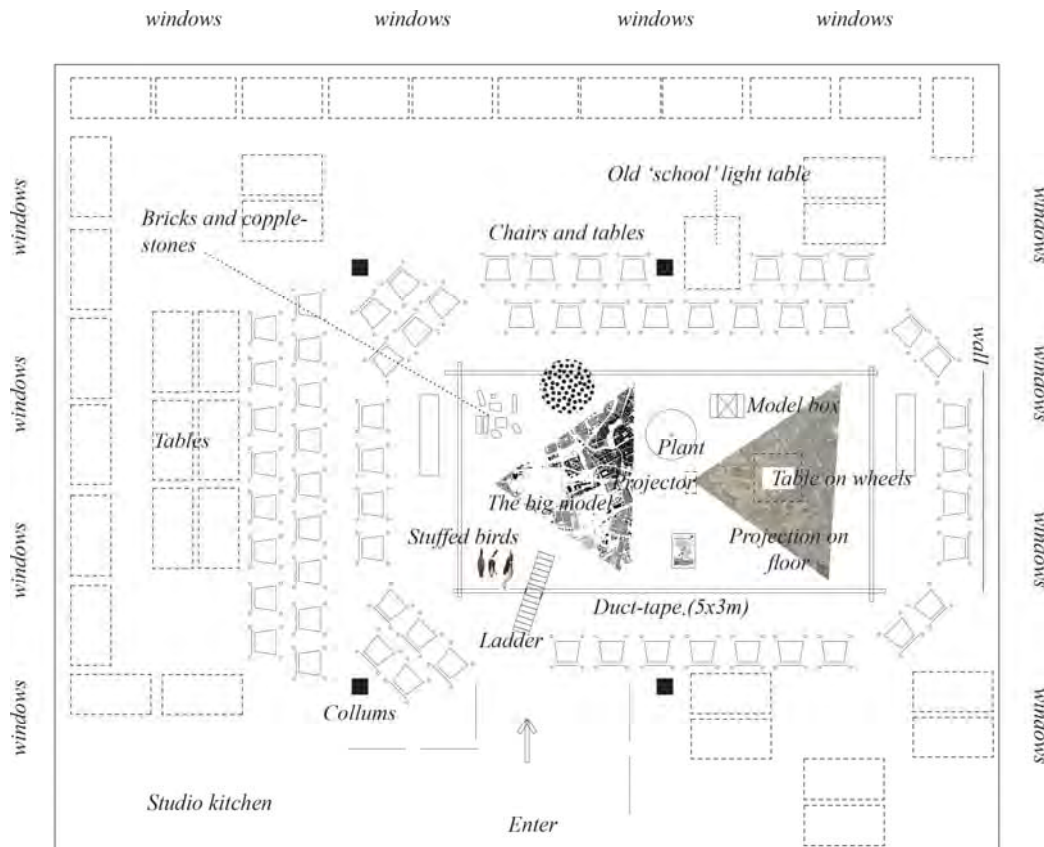
FIGURE 2:
Principle layout of the Campfire in the centre of the studio before a design conversation takes place. After the design conversations, the chairs are moved back to the group tables. ©

diversity. This also means that effects that have been rejected at an early stage of the design process may appear later in a new context because they also have the ability to change the design conversation.

The 'phenomenon of proximity' within the campfire workspace helps designers to see collectively

Setting up the campfire work area we have formalised the effect of being physically together. Glaeser calls this phenomenon *proximity* and argues that even though we have easy 'digital' access to each other, we still get the best ideas when we are physically near people that share the same interests or goals (Glaeser, 2011: 2). Proximity is about being close, but it is also about exhibiting. Inside the campfire workspace, we exhibit what we have collected in a condensed cluster: simple work models, materials and earthly matter, a light table, digital projections of information, stuffed birds and a plant, sketches and plans, sound and stop-motion broadcast onto the floor/and models. If, as Vogt asserts, "the discovery of the unknown requires engagement and proximity to the investigated object," then we collect and study what is there from both a distance and close-up because "it is the searching rather than the finding that creates this proximity" (Foxley & Vogt, 2001: 14-15). As previously discussed, Latour (2005) points to the mere collective action involving humans as well as non-human actors creating a sense of being connected.

The campfire work area's spatially condensed workspace is an attempt to narrow the gap between thinking and doing, and by also promoting action in the visual realm based on verbalisations of the appearing phenomena, it pushes forward the development of a design vocabulary and a common design language used by the group members. Bucciarelli states that, "it is through these artefacts [the effects we have collected] as linguistic elements that designers bridge thought and object, function and structure" and that the key element of dynamic group design, "between thought and object is language, broadly constructed." (Bucciarelli, 2002: 231)

The vertical projection – a matter of 90°

The 90-degree projection adjustment by the custom made vertical projector in the ceiling makes a radical change to the way we work enabling the design students to combine skill-based analogue practices and digital techniques. Simplifying Glanville, we can differentiate the projections in two: projections *of*, and projections *for* – using a prepositional difference. The horizontal projection on the wall "illustrates" and "reports on what is," whereas the vertical projection on the floor is *for* exploration and is "concerned with testing, proposing change, wondering, trying out" (Glanville, in Ayres 2012: 45). We must, however, distinguish between working with projections in the campfire workspace, and Glanville's computer model in that, "the computer modelling tools made for designers rarely, if ever, generate models *for*. Their intention is not to allow, let alone promote, exploration or modification: they report as well as they can what, under certain circumstances, will be" (Glanville, in Ayres 2012: 46).

However, the adjustment of 90 degrees matters and the vertical projection becomes *for* exploration. The imagery that comes from working under the projection is what "generates motivation and informs further designing" (Schön and Wiggins, 1992: 68). While "computer models often exclude the central (conversational) act of design" (Glanville, in Ayres 2012: 46) the projected images in the campfire include actors: everyone can engage and make modifications.

CASE STUDIES – 3 DESIGN CONVERSATIONS

This paper describes 3 design conversations taking place in the campfire workspace and documented throughout the course by photos, film and participation. The actual project site is in Groningen, the Netherlands, some 500 kilometres from the design studio in Copenhagen. Design conversation (1) was held early in the design process after an initial conceptual model had been elaborated and the vertical projector was active. The starting point for design conversation (2) is work on-site and the presentation of a second concept in Groningen. Design conversation (3) takes place in the final stages of the design course as the proposal takes form. Here the vertical projection is combined with a light table. The selected design conversations are to be seen in relation to a design process as a whole and are not representative of the different forms of conversations and

supervisions that the course entails such as lectures related to the project, supervision outside the campfire and day-to-day talks. We only focus on these three design conversations although many more have taken place. As the studio progresses from the programmatic phase to the concept phase (main idea, vision or sketch) and to the proposal phase and the project proposal, the objectives of the design conversations change. Finally, we discuss our design conversation observations in relation to the theoretical framework of the *campfire*: complementarity, purpose of knowledge, proximity and the nature of the 'connection' in the design conversations as focal point.

FIGURE 3: Case 1. Design conversation in The Campfire Design Studio. In the background you can see other groups working and observing. ©

DESIGN CONVERSATION 1

Campfire objective

The objective of the first design conversation in focus is to use the conceptual model to start a design conversation to determine the significance of the concept and help the students move forward together. The conceptual model was studied from a new perspective, through different digital projections on the floor. The 'artificial reality' of analogue models and digital projections in the campfire workspace sometimes make the start position of the surface of the floor/or models unclear– and some participants even feel dizzy.

Campfire setup

When preparing the set-up (figure 2), all the equipment for drafting (model materials, tape and pens) are made visible on the floor. The vertical projector is switched on, the lens focused and connected to a laptop.

Campfire

The group opened an image in which their conceptual model was merged with a colour satellite photo from the laptop (figure 3). After examining the image, all the students except one moved close to the plan on the floor. The session had taken less than five minutes and the conversation was drawn towards the whole campfire scene: the effect of the beam from the vertical projection, the adjustable scale (using the laptop) and that they could walk on the image. No one talked about what the image represented.

Moments later, the conversation changed to focus on materials. This spurred a discussion about how the students could rebuild the structural model with what was available. Everybody got on the floor and started to rebuild the plan while they discussed what each materiel might represent as part of the model. Their initial model changed as they found ways to combine materials with the textural image of the projection. Occasionally, they documented the imagery (the combination of simple models, notations and the projection) from different angels. Over time, the model grew to include the urban context, the trees and green areas and, with it, a conversation of the context and the various areas evolved.

The outcome of design conversation 1

The design conversation altered the workspace. The students used non-verbal and verbal ways to express themselves, and since the activity did not require any specific skills, the group members participated equally. The activities demonstrated the exchange between *vocal* and *physical* aspects; the image with simple models under the projection allowed for a physical exchange that could be observed collectively and a vocal exchange that helped determine its significance. The projection *of what was* became *for* change through the engagement with the simple models and it helped the students become familiar with topography, structures, and landscape elements of the site and its

context for the development of a first concept/idea. The simple model mutation on the floor opened a conversation concerned with identifying structures and relations and naming them: hedges, trees, roads, businesses, canals, centre and periphery, inside and outside. The first design conversation enabled the students to engage in and develop a fundamental and far-reaching collective understanding of the site and its location (from a distance) through the *lens* of their own concept/idea. Hauxner (2009:27) stresses the importance of this phase in the design process thus, "clarification of ideas, concepts, inspiration in this early stage is a great advantage" […] as " subsequent work will be more targeted."

Just because the students saw something collectively does not imply that they all think the same: "[I]n seeing, the designer not only visually registers information but also constructs it's meaning" (Schön and Wiggins, 1992:68). At this early stage, the students conveyed personal expressions of fundamental attitudes towards, e.g. concepts like 'nature' and 'city', 'clear and unclear' and in this way they open up for some of the fundamental questions to be dealt with further in the design proposal. Outside the campfire workspace they could subsequently proceed to develop their idea with a higher collective awareness of the task.
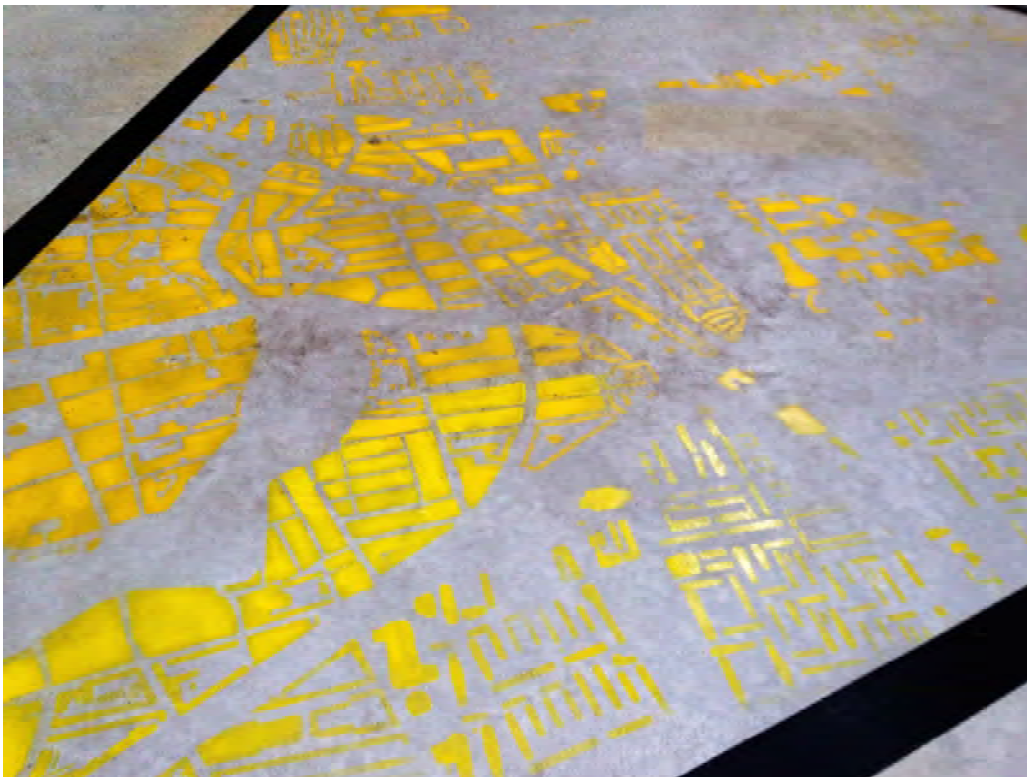
FIGURE 4:
Case 3.
The plan of the project area is sprayed on the floor for the work on-site. ©
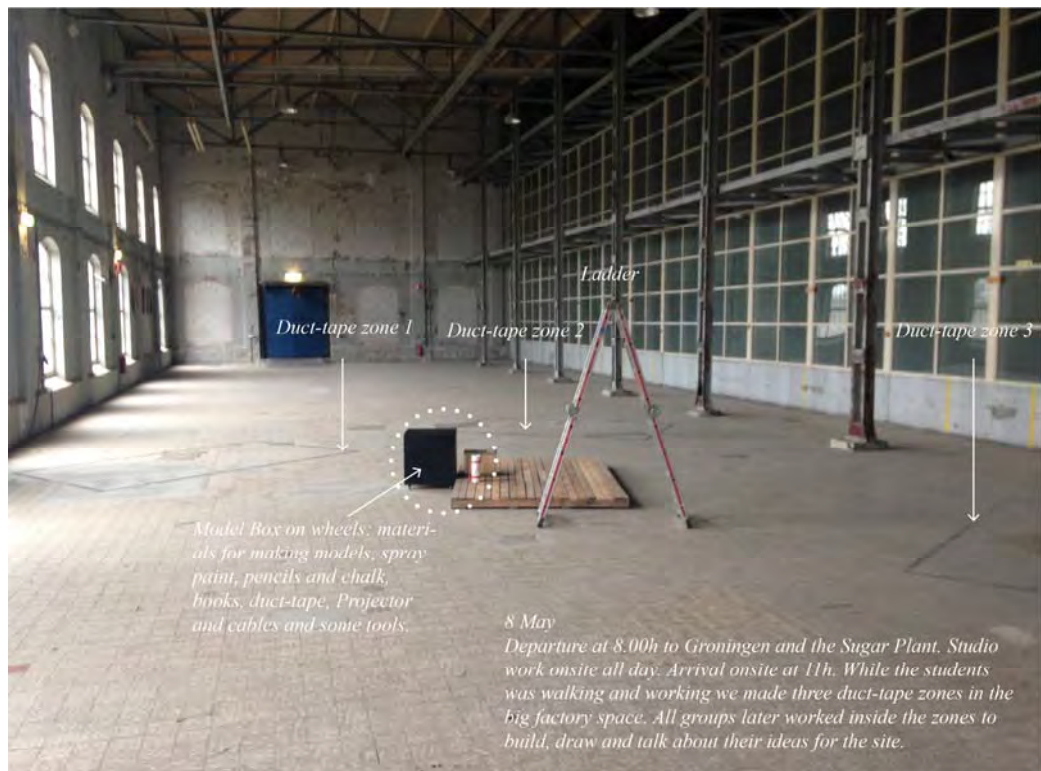
DESIGN CONVERSATION 2

Campfire objective

This design conversation follows two days on-site work in the Netherlands. The objective is to qualify the significance of the groups' design concept by means of a critical review of the conceptual model at first hand. The objectives of the first day were to experience the site itself, its scale and character, and to traverse the site using the idea of the conceptual model as a route (or a lens) to *see* and to get an idea of scale, materials and the context of the site.
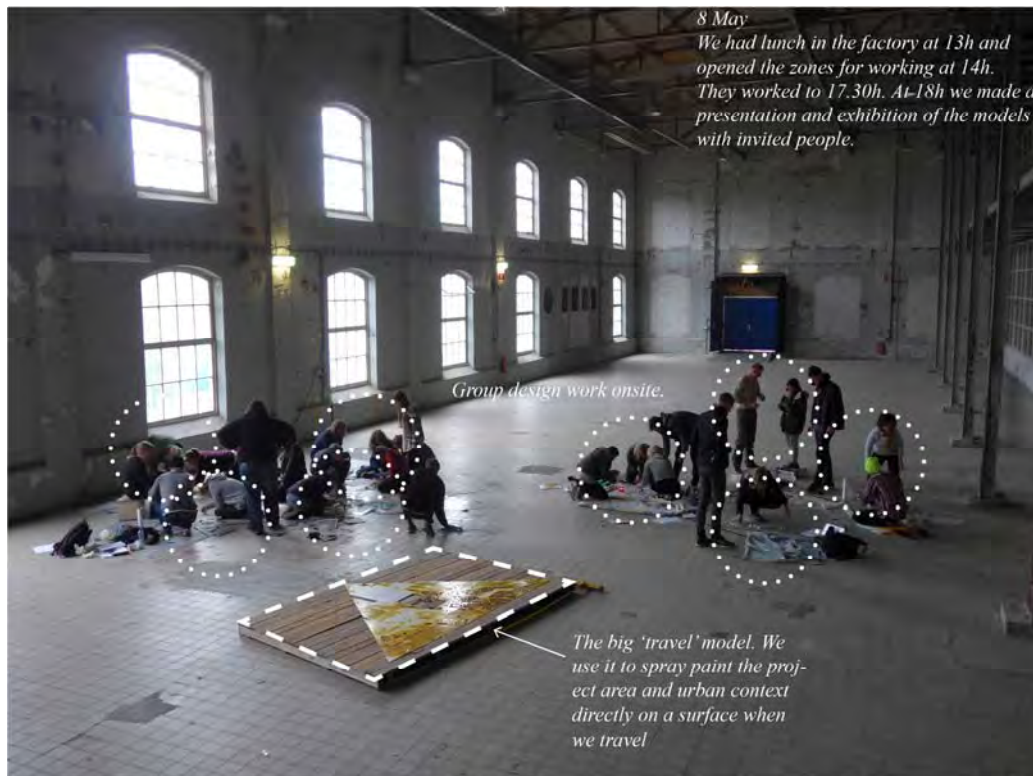
On the second day, the objective is to develop the design further and to benefit from newly gained references of landscapes in the Netherlands. The aim of the subsequent design conversations is to present a revised version of the conceptual model. This work is destined to take place in the campfire workspace that we brought from Copenhagen and reconstructed on-site.

Campfire setup

The reconstruction consisted of a spray painted, scaled silhouette of the big model from Copenhagen (figure 4), framed by three duct-tape spaces on a floor in an old factory building (figure 5) and arranged to provide the groups with a choice of surfaces to work with. For this design conversation, we did not use a vertical projector.

**FIGURE 5:
Case 3.
Three duct-tape
workspaces are
prepared and the
Campfire work is
ready. ©**

Duct-tape zone 1   Duct-tape zone 2   Ladder   Duct-tape zone 3

Model Box on wheels; materials for making models, spray paint, pencils and chalk, books, duct-tape, Projector and cables and some tools.

*8 May
Departure at 8.00h to Groningen and the Sugar Plant. Studio work onsite all day. Arrival onsite at 11h. While the students was walking and working we made three duct-tape zones in the big factory space. All groups later worked inside the zones to build, draw and talk about their ideas for the site.*

Campfire

On the first day on-site, the students could walk, talk and make notations in groups. On the second day they continued gathering new information, making new sketches and adjusted their conceptual model in the campfire workspace. For three hours (figure 6) they had a design conversation, building and rebuilding their models.

The outcome of design conversation 2

The design conversations changed radically from the conversations in Copenhagen (1). Two new paths emerged. Firstly, the design conversations became *less* focused and hence the decision-making became more difficult and the speed decreased. To understand this uncertainty, we may reverse Glanville (2012) and Thyssen's (2013) arguments: when reality becomes messy and impossible to ignore, then it is difficult to attain the purist ideal elaborated in the first conceptual model back in the studio. This may explain why the design conversations became less focused because the students could not *ignore* what was around them; they were situated in the midst of their site, and it was impossible to simplify and it made seeing difficult in terms of establishing a common conceptual understanding. Gathering effects and knowledge of the site manifested itself in the materials used for the models. They consisted of a mixture of materials and effects found onsite.

The second emerging path is connected to the landscapes that had been studied together on the previous part of the field trip. Here the

groups obtained new and common references that supported the vocalisation of specific landscape structures that in 'case one' were still very abstract concepts. Although working onsite initially made the students uncertain, with some experiencing a temporary setback, it meant that they could gather valuable information for the project.
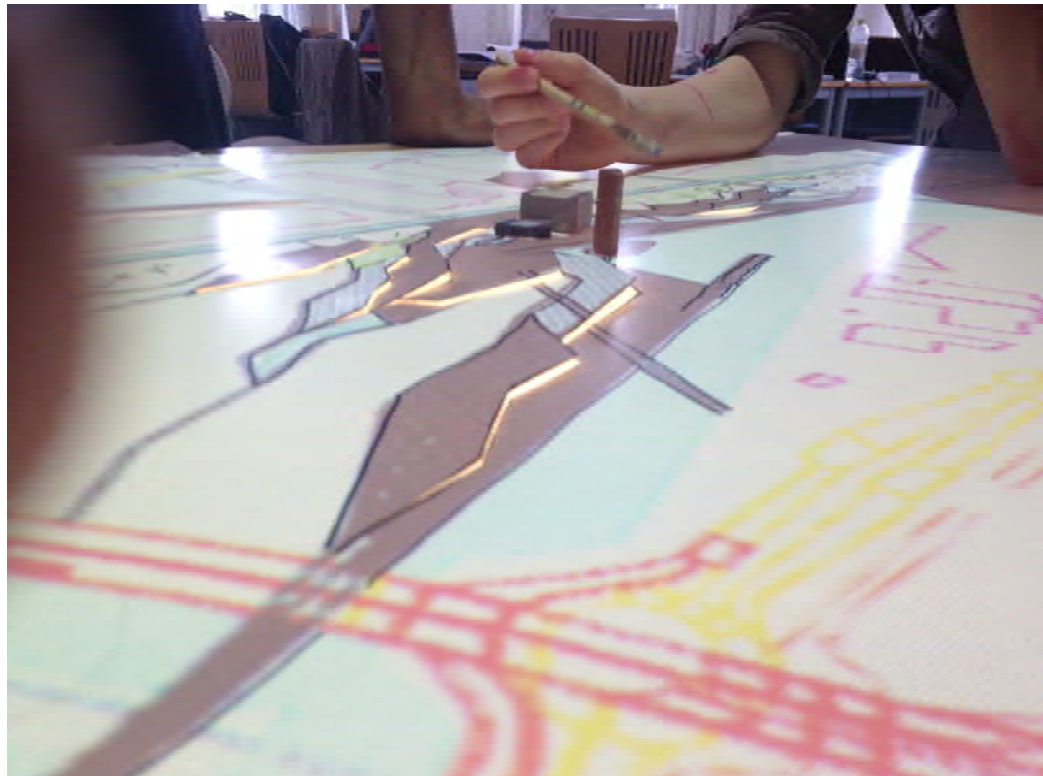
DESIGN CONVERSATION 3

Campfire objective

This design conversation took place back at UC with the objective to arrange, organise, size, shape, and compose individual parts in the context of the plan. For this design conversation the digital drawing of the proposal is used to focus on detailing everything from plantings to surfaces, buildings, edges, infrastructure and access to
the site.

Campfire setup

The physical set-up for this design conversation is the same as in case one with the exception of adding a *light* table to the campfire setup. The light table was placed beneath the beam from the projector and one millimetre thick piece of white cardboard was put on top of it (figure 7). This created a double projection of light: one source of light from below and another from above. The idea was to create a doublesided "sheet of transparent tracing paper" (Spirn 1998) to work on.

FIGURE 7: Case 3. Design conversation in the campfire using vertical projection (top), light-table (bottom) and white cardboard to draw and build on (middle). ©

Campfire

Working around the light table meant that the students are in an upright position looking at the projection and the cardboard. This design conversation was focused on addressing the composition of surfaces, organisation of plant material to the proportions of the individual parts of the overall scheme. When a line on the cardboard was significant for e.g. the terrain it was cut and slightly raised from the surface of the cardboard. This meant that light from below shone underneath and added to the spatial understanding of the surface (figure 7). Reference plans of published landscape architecture projects from the Dutch field trips and elsewhere were spread out and studied in order to further stimulate the development of the proposals. Model material for buildings and plant structures were crafted, discussed, and rebuilt until the group was satisfied with the changes. The new imagery was documented before going back to work in the studio outside the campfire workspace.

The outcome of design conversation 3

The main design challenge in this final stage was to maintain clarity within a more and more complex drawing, as one should still be able to read and understand the main concept of the proposal. By combining the light table and the projection on the cardboard, the design proposal moved towards the transcription of ideas: their concretisation, adjusting structures, elements and their proportions in the project. Recognising significant details at this stage did not just rely on one person's ability to see, but on the whole group's skills to grasp the situation. The set-up helped the group members to share tasks among themselves with some producing AutoCAD drawings while others made sections, visualisation diagrams, text, etc. The proximity inside the campfire made it, "easier to exchange ideas or goods" (Glaeser, 2012:8) and helped the students to think through the strategic system of the proposal. The distance between the students outside the campfire was greater; therefore this design conversation alleviated the pressure on the individual student. By regularly engaging in common design conversations each group member's uncertainty about how the concept should be understood and how to proceed is reduced. The distinction between the knowledge *of*, i.e. which plant material works best in different soils, dimensions of streets and surfaces, and the knowledge *for*, i.e. how to organise plant material in the plan under these soil conditions simultaneously with meeting the overall scheme became consistent at this stage of the design.

CONCLUSION AND DISCUSSION

The chosen three design conversations present three specific moments in a nine-week group-design process. The knowledge that the students use in all three cases is balanced differently. During the early stages of the design, the projection on the floor *is* the site. According to Glanville (in Ayres, 2012), the imagery made on the floor of the studio is as close to any rational understanding *of* reliable information they have at that stage. However, we believe that this is an advantage as the students find it easier at this point to express their ideas and repeatedly think

through this commonly accepted mode of understanding because knowing too much does not constrain them.

The critical review of the conceptual model on-site as reflected in the second design conversation was directly related to the knowledge *of* the site and the new information gained there. Subsequently, the focus became increasingly unclear, as did the imagery in the campfire workspace. The second conceptual model (on-site) often, if not always, takes a step back in terms of conscious decision making because 'reality hits the group'. The campfire workspace did not have a vertical projection when the students worked on site and we acknowledge that this may have influenced the design conversation. However, at this stage, the students are supported by a collective knowledge of additional landscape references from their Dutch field trip prior to visiting the site, which they start to relate to in their own work. This is part of the creative process because, "the process calls for recursive passes until a *mutation* (creative breakthrough) occurs (and is recognised)" (Spirn, 1998: 205).

Spirn, however, does not fully provide us with an insight into the creative process and to how groups work in that regard. When working in groups, students need to discuss and negotiate. Bucciarelli recognises the anguish of this "energetic give and take, decision-making and iteration, negotiation and trade off," but he also believes that it is in these situations that the language of the designers is "shaped, specialised, reformed, [and] extended" thereby "provoking new thought" (Bucciarelli, 2002: 231). If we isolate the design conversations among the students (and the teachers) in the presented cases then they are probably no different from conversations in other design studios. The design conversation, however, goes on whilst we build, draw, switch projections of images, rebuild and document. This constitutes a world of difference. One relates to pedagogy as the attention shifts away from the teacher-student relationship to the design and an action-based conversation. This enables an interpretive approach to design teaching as described by Deming and Swaffield (2011). The group members being close together, working in close proximity to the materials found on site and working inside the campfire workspace compensated for not having the vertical projection because the activity resembled that of a market place where old ideas and new findings could be addressed, shared and turned into new ones (figure 6). The study of the three design conversations demonstrates and outlines a practice based on *exchange* (verbal or non-verbal) instigating change to take place. If there is no exchange or if it is too weak the design process comes to a halt. If there is no exchange, it might as well be any conversation.

The campfire workspace helps the students to see and obtain a collective understanding. It also combines and expresses both artistically motivated intentions and matters of facts. Outside the campfire work area, once the design conversation is over and the projection has been turned off, the space and all the models are motionless and do not utter a word. The campfire becomes evidence *of* a design conversation and the workspace is comparable to an

exhibition area or an excavation site. The exhibition-like nature of arranging artefacts in the campfire work area and sampling them into, "a new unity, a new understanding" and "a new narrative" (Andersson, 2014: 17) conditions an on-going interplay between the human actors and the collection. This interplay acknowledges that the process accelerates through social interactions. According to Bucciarelli, the different participants in a team need "rational, instrumental methods for reconciling differences" because their meanings "are intimately wrapped up with different conceptions and world views" (Bucciarelli, 2002: 227). During the three design conversations various relevant issues were discussed: recognising form, structural presentation techniques (or the craft of making models *for* change), and the students uncertainty of not knowing, the design process, scale, vocalisation of form, building and landscape, using references to achieve a collective understanding and documentation. The activity within the campfire workspace enabled and catalysed exchanges for the design *outside*. Thus, the design conversations were not limited to face-to-face vocal communication because they imply simultaneous combinations of hand-to-object action, seeing and observation, and the transfer of structural form to the workspace outside the campfire area.

Perspectives and limitations

The magic spell *Abracadabra* is believed to mean, "I create while I speak" and this reminds us that the limitations of the campfire as a workspace or a medium lie not in what we can do in it, but rather what we think it can do for us. A critical rejection of this way of working is preferable if the alternative is an unconscious acceptance and belief that this is the only way of working. However, the use of the campfire as a workspace for group designers to explore and experiment in a transparent exhibition like environment has only just begun. The Campfire can teach us even more about group based design processes and about the behaviour of collective enterprise in an educational framework of complementarity, knowledge, proximity (and thus distance), and by turning a projection 90 degrees onto the floor.

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