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Design Process Steps - An intertwined procedure in the context of procedural theory

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Introduction

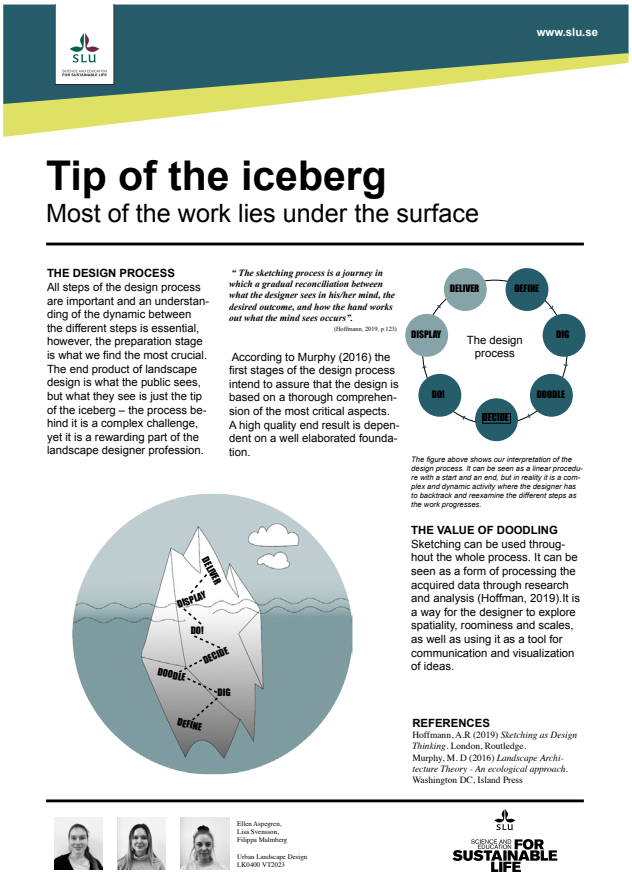
In the work of landscape professionals, procedural theory concerns the essence of phenomena considered during the design process. The transformation during the various phases may move from a broad context to detailed information or vice versa. According to Murphy (2016), a clearly defined design problem increases the likelihood of a successful resolution. The procedural theory or design process is a step-by-step procedure that takes a problem-solving approach to landscape design (Murphy 2016). Procedural theories aim to describe and explain design processes. This factsheet shows some examples of the design process, and focuses mainly on reflecting on and describing useful methods for clarifying the design goals and design problems.

The course *Urban Landscape Design* (LK0400) is a bachelor's level course focusing on design of urban green spaces, offered at the Swedish University of Agricultural Sciences, and run by the Department of Landscape Architecture, Planning and Management (LTV faculty). The course is run as a stand-alone course for national and international students and as a programme course in the Landscape Engineer Programme at Uppsala and Alnarp, and in the Garden Design, Landscape Engineer Programme at Alnarp.

The course considers elements that, in various ways, affect the interaction between analysis and development of methods and concepts through studies of design theory, from sketching to the final design proposal. Landscape visualisation is an important theme throughout the course, and helps to increase the student's awareness of the interplay between contextual relations and concept development. The students are encouraged to apply experimental approaches, where analyses and evaluation are mixed with theoretical reasoning. The main aim of the course is to use different ways of working with design in the urban environment, and – supported by design theory and good examples – apply, document, and present design processes, both individually and in group work.

This factsheet is the product of the students' work with *Procedural Theory* in the course Urban Landscape Design during the spring term of 2022. The aim of the assignment is to reflect on and communicate urban landscape design working processes, by studies of procedural theory. The assignment deals with elements that, in different ways, affect the interaction between method development, analysis and conceptual statements, from sketching processes to the final design proposal.

The following abstracts and poster presentations present the students' thoughts and reflections through visualisations and descriptive text, and show attempts to verbalise the design process steps/phases. The assumptions made and described in this factsheet are based on literature studies of procedural theory, as well as on the students' previous experiences of the design process, and through individual and group reflections and discussions.



Tip of the Iceberg - Most of the work lies under the surface

By Ellen Aspegren, Lisa Svensson & Filippa Malmberg

There are many different interpretations of the design process. Our interpretation can be summarised in seven steps; define, dig, doodle, decide, do, display, and deliver. These steps include everything from defining the purpose of the design, analysing the surrounding context, visualising different ideas

and concepts, to finishing and implementing the design. The process can be seen as linear, although in reality it is not a clear progression from one step to another. It is a complex and dynamic development that involves backtracking and re-examining solutions as the work progresses.

All parts of the design process are important, and an understanding of the dynamic between the different steps is essential, but the less visible parts are what we find the most crucial. Without a solid base and understanding of the project the quality of the finished product will be negatively affected. The first stages of the design process are intended to assure that the design is based on a thorough comprehension of the most critical aspects. A high-quality end result is dependent on a well-elaborated foundation.

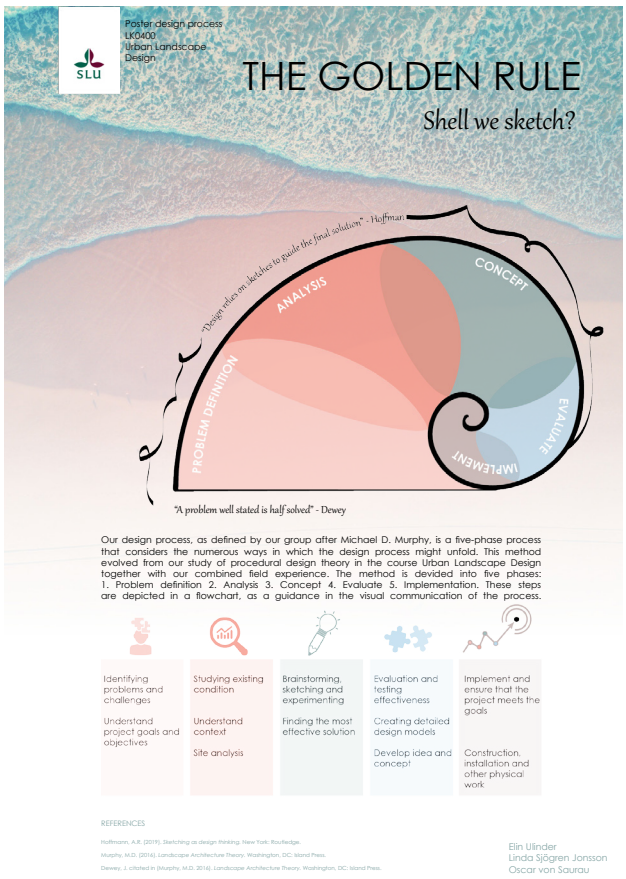
The end product of a design is what the public sees, but what they see is just the tip of the iceberg. The process behind it is a complex challenge, yet a rewarding part of the landscape designer profession. A strong foundation is needed to carry the process – a thorough analysis of the purpose, an understanding of the site and its possibilities and limitations, the people we are designing for and their wants and needs. The designer must have an understanding of their responsibility towards society regarding ecological, economic and social sustainability. The designer must also have the required knowledge to be able to consider those aspects during the design process and make the appropriate choices.

Throughout the process, sketching can be used as a form of processing the data acquired through research and analysis. It can be seen as a dialogue between the designer and the gathered information. The sketching process is important, as testing several different ideas and not being attached to one design solution is crucial. The ability to visualise the ideas through sketching is a way for the designer to explore spatiality, roominess, and scales, as well as using it as a tool for communication. All the work that leads to the end product is not visible to the client, but lays the foundation for a good and thoughtful design that in the end will fulfil its purpose.

Supportive references: Hoffmann, A.R. (2019); Murphy, M.D. (2016).

Design Process - The golden path

By *Elin Ulinder, Linda Sjögren Jonsson & Oscar von Saurau*



The countless ways to design a single site emphasises the importance to landscape architects of a clear model for the design process. The task of the landscape architect is to narrow down the design ideas to the most ideal ones. This requires a methodical approach as well as a thorough understanding of the design process. Scientific procedures are traditionally linear processes. This has been the design theory approach. During the twentieth century, theories regarding the design process emerged, and the design process is now viewed as a more complicated path. It is not always as simple as moving from one phase to the next in a straight line – the phases frequently run in loops.

For instance, Prof. Bryan Lawson argues that actions that occur during the design process are intertwined rather than sequential.

The term "Reflection-in-Action" was coined by the philosopher Donald Schön. By using hyphens between the words, the term demonstrates that the processes during the design process are not separated from one another, but rather that they occur in parallel. The different phases in a model should not be something that forces the user in a particular way, but rather something that guides the user in the right direction. A flowchart can be useful for remembering the important steps in the design process. Although there are certain phases that a landscape architect works through, there is not always a given order. Two processes may even run in parallel at the same time or back and forth. Working through certain aspects in a design process is necessary to enable a good result, so following a flowchart during the process is preferable.

With this in mind, our group has created a flowchart that includes five critical phases defined after Michael D. Murphy's design process:

1. Problem definition

• Identify problems and challenges of the project. It is difficult to find the ideal solution if the problem has not been defined.

• Ask questions, e.g. what problems must be resolved? What are the requirements of the project?

• Understand the project goals and the objectives of how to plan to achieve the set goals.

2. Analysis

• Begin with an examination and analysis of the site.

• Ask questions, e.g. what are the conditions of the site? What context should the location be designed for?

3. Concept

• Work out the ideal and most effective solution to the challenges by brainstorming, sketching, experimenting, and creating a concept for the project.

4. Evaluate
• Test and evaluate the effectiveness of the ideas and solutions. Develop the ideas further and test them again.
• Create detailed models to put the project into perspective.

5. Implementation
• Implement the project and ensure that it meets the requirements and goals.
• Construct and realise the project.

In conclusion, a methodical model for the design process provides a useful understanding of how landscape architects approach design. The ambition of the model is to guide the landscape architect through the design process. By following the suggested flowchart, the landscape architect can improve their chances of developing the ideal solution for a specific site.

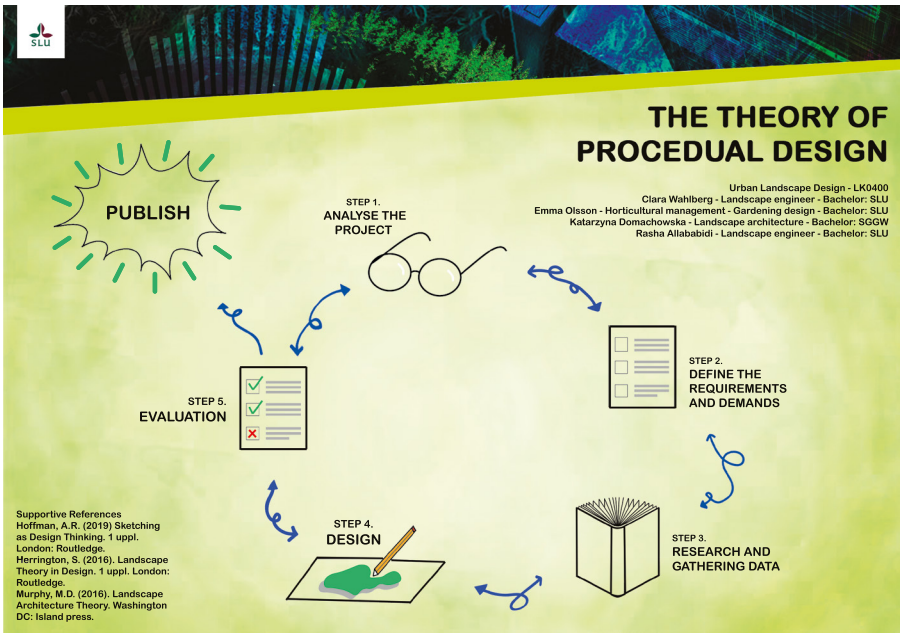
Supportive references: Hoffmann, A.R. (2019); Murphy, M.D. (2016); Dewey, J. 1961

The Theory of Procedural Design

By Clara Wahlberg, Emma Olsson, Katarzyna Domachowska, Rasha Allababidi

The theory of procedural design is divided into six different categories: analyse the project, define the requirements and demands, conduct research and collect data, design, evaluate and publish. According to this theory the designer will go through five steps and evaluate before publishing. The evaluation can continue until the designer is satisfied with the design. When the project is completed, the designer will proceed to publishing. It does not matter where the designer is in the process, going back and forth is always possible to improve the project. The repetition of the different steps helps to solve design solutions, by testing new solutions, verifying, and correcting until the designer is satisfied with the result.

Step 1. Analyse the Project
The first step in the designing process involves understanding the 'problem'. This is not necessarily a problem as such, but something is going to change, such as a new park, a private garden, or a new playground at a school. The designer must understand what and who the design is for, what the surroundings are like, temperature and weather, soil conditions, and wear and tear on the site. These are examples of questions that the designer must consider when analysing the project. The designer also needs to determine what methods need to be used in the process to produce the best predicted result.



Step 2. Define the requirements and demands
Defining the requirements and demands helps the designer know what the project needs, by understanding what the users and the environment need. Clients, along with regulating rules and laws, usually set the requirements and demands for the project. With the defined requirements and demands, a list can be drawn up to show what should be done in the project.

Step 3. Conduct research and collect data
Here the designer must conduct research about the requirements and demands placed by the client. It could also concern plants for a certain place or the most suitable kind of material.

Step 4. Design
The design process is a set of activities and events that take place between the occurrence of a problem and the creation of documentation that will describe the solution to the requirements and demands, and that is rational from the creativity and functional perspective.

Step 5. Evaluation
This part of the process is crucial in working with the design. The designer must evaluate the design to identify what can be improved or changed. Here the designer must look at the requirements and demands and evaluate whether they are fulfilled.

Step 6. Publish
The last step is to put this into print or execute the design. After this step, there is no turning back, so the evaluation must be done thoroughly. The designer gains experience from working with the design, and applies it in future projects. The designed site will evolve and change its appearance over time, so it is valuable for the designer to return to the design continuously to see the change over time.

Supportive references: Hoffmann, A.R. (2019); Herrington, S. (2016); Murphy, M.D. (2016).

Conclusion

In the work of landscape professionals, procedural theory concerns the essence of phenomena considered during the design process. As expected, the students' attempts to visualise a feasible path in the design work show that procedural theory can be interpreted to describe the design process in many ways. According to Murphy (2016), a clearly defined design process increases the possibility of a successful resolution, where the sketch process opens the creative

progression (Hoffman 2019). It becomes clear to a greater or lesser extent that the process, despite often being described as a stepwise development, cannot be tied to a linear working process. It rather has the character of an iterative process, where it is more common for the design work to flow back and forth between the different stages and parts of the process.

In line with a more intertwined process, the groups emphasise that their design process model should not be seen as a static model but rather serve as a guideline in the search for the satisfactory solution of the design problem. This is underlined by the fact that everyone, to some extent, stresses the sketch as an important tool in the search for solutions. The role and importance of doodling as an investigative and communicating tool is interpreted throughout the students' attempts to describe the selected parts of the design process. In this, the sketching process opens up the creative progression thought processes to be tested, valued, and clarified (Hoffman 2019).

The abstracts and posters presented in this factsheet emphasise the importance of each phase in the design process, and discuss various ways of identifying the design problems and their connection with the design goals. As teachers on the course and practising landscape architects, we would also like to take the opportunity to thank the students for interesting and fruitful discussions about identifying design problems and their connection with accomplishing design goals. From the perspective of group activity and the task of working with a personalised process, the students have performed well and been successful in demonstrating the ability to extract the principal ideas of Procedural Theory. Our expectation is that the theories and a critical examination through reflections and discussions in the groups have given all the participants buoyancy in their own assumptions or new signposts in the search for their own personal method.

For further information about the course Urban Landscape Design, see

https://www.slu.se/en/education/programmes-courses/course/LK0400/30239.2122/Urban-Landscape-Design/

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- The fact sheet has been prepared within the LTV faculty's area Department of Landscape Architecture, Planning and Management
- Responsible: Petra Thorpert, course leader and examiner for the course LK0400 Urban Landscape Design
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