

CENTRUM.

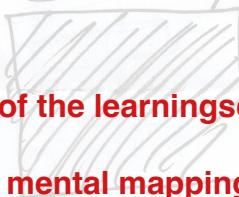


Understanding the experience of the learningscape:

**testing an improved method to mental mapping
through the TU Delft campus**



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the aim of the booklet theory

Exploring the intricacies of mental maps through a case study of the TU Delft campus offers a unique opportunity to advance the theory of spatial cognition in a data-driven manner. By systematically analyzing the cognitive processes underlying individuals' perceptions and representations of the campus environment, we can enrich existing theoretical frameworks with empirical evidence. The nuanced insights gleaned from this research provide fertile ground for refining and expanding upon current theories of mental mapping, shedding light on whether the TU Delfts ideas of interconnection between students and faculties is actually experienced by students through this learning-scape. Furthermore, extrapolating findings from this case study to broader contexts allows for the formulation of more robust models to apply mental maps. Ultimately, this research not only contributes to the academic discourse on mental maps but also lays the groundwork for the development of more effective strategies for spatial design and urban planning.

case study

Embarking on a journey to understand the intricate web of perceptions and cognitive mappings of the TU Delft campus promises invaluable insights, as this is only a first step. By delving into the realm of mental maps, we unlock a gateway to comprehend not only how different students might experience the campus fabric differently but also the nuanced network of the learningscape encompassed by the intangible elements which affect learning and identity.

The key questions to be answered through this research are: Which spaces are mostly used within individuals' learning-scapes? Which spaces are most memorable, in both positive and negative ways? What is the interaction between the learning environments?

Moreover, by harnessing this knowledge, TU Delft can strategically optimize campus design, infrastructure, and services to better influence students towards the schools' aims and ideals; such as of interconnection. Ultimately, this endeavor transcends mere cartography; it lays the groundwork for fostering a more inclusive, engaging, and harmonious campus environment conducive to learning, innovation, and community cohesion.

introduction to mental maps: a literature review

Urban planners rely on mental maps, cognitive representations of spatial environments, to create user-centered urban interventions. This review explores the significance of mental maps in urban planning, drawing from foundational works by Kevin Lynch and recent research by Nasar.

Conceptual Framework:

Kevin Lynch's "The Image of the City" introduced a framework for understanding how individuals perceive and navigate urban environments through mental maps, identifying key elements that shape mental images of cities. Nasar's research further explores the role of mental maps in evaluating what emotions these spaces evoke out of users; as to Nasar a legible and imageable city can be both a positive and negative one. This notion has been used by many professionals across different fields to explore the nuances and individual perceptions of human beings in relation to diverse topics. An example is the founder of the term, Edward Tolman who as a psychologist explored ideas of way-finding by experimenting using rats in mazes. Noam Chomsky has worked with mental maps in relation to our innate nature as humans to utilise language and built up mental representations. Within the geography field, Peter Gould and Rodney White have investigated our human biases when investigating spatial preferences.

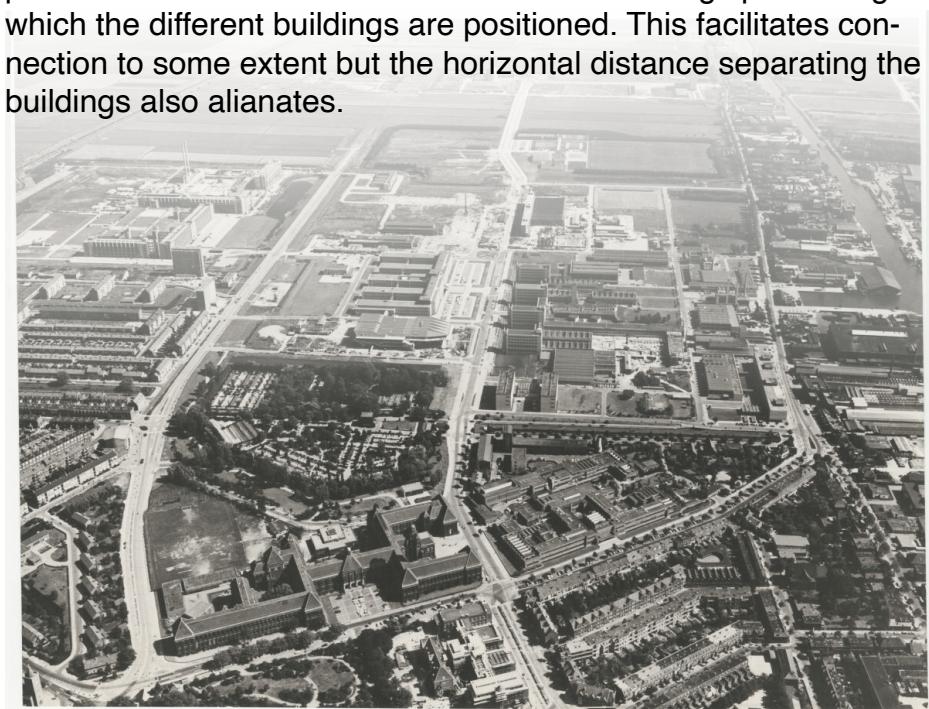
Applications in Urban Planning:

Mental maps serve as valuable tools for urban planners in creating cities that resonate with their inhabitants. Planners leverage cognitive psychology and participatory approaches to create context-sensitive urban environments that enhance wayfinding, promote place attachment, and foster community well-being. Nasar's work underscores the importance of aesthetic and perceptual qualities in shaping urban experiences. By working on Lynch's foundational framework and Nasar's contemporary research, we can formulate a tool which will allow us to grasp on experiences of space on a human level.

introduction to the TU Delft Campus

The TU Delft campus stands as a testament to the post-war reconstruction efforts in the Netherlands and reflects the visionary aims of its architects. Established in the aftermath of World War II, the campus was conceived not merely as a functional educational institution; but a dynamic, collaborative environment that would foster creativity, interdisciplinary exchange, and technological advancement. This vision was deeply rooted in the context of post-war reconstruction, where the rebuilding of physical infrastructure went hand in hand with the renewal of social and intellectual landscapes.

The layout of the campus was carefully planned to encourage spontaneous encounters and serendipitous exchanges of ideas, thereby fostering a sense of community and shared purpose. Examples include green spaces, pedestrian-friendly pathways, and bicycle infrastructure, incorporated humans and cars. Other prominent architectural features include the strong spine along which the different buildings are positioned. This facilitates connection to some extent but the horizontal distance separating the buildings also alienates.



THE MENTAL MAPS

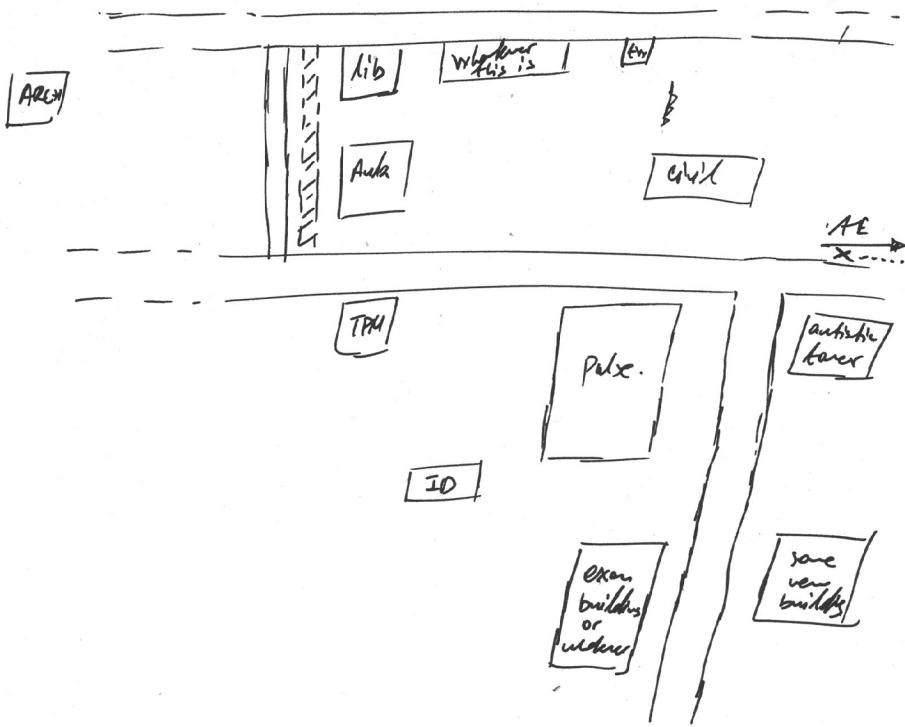


5 mental maps obtained from faculty- specific area

5 mental maps obtained from each general studying area

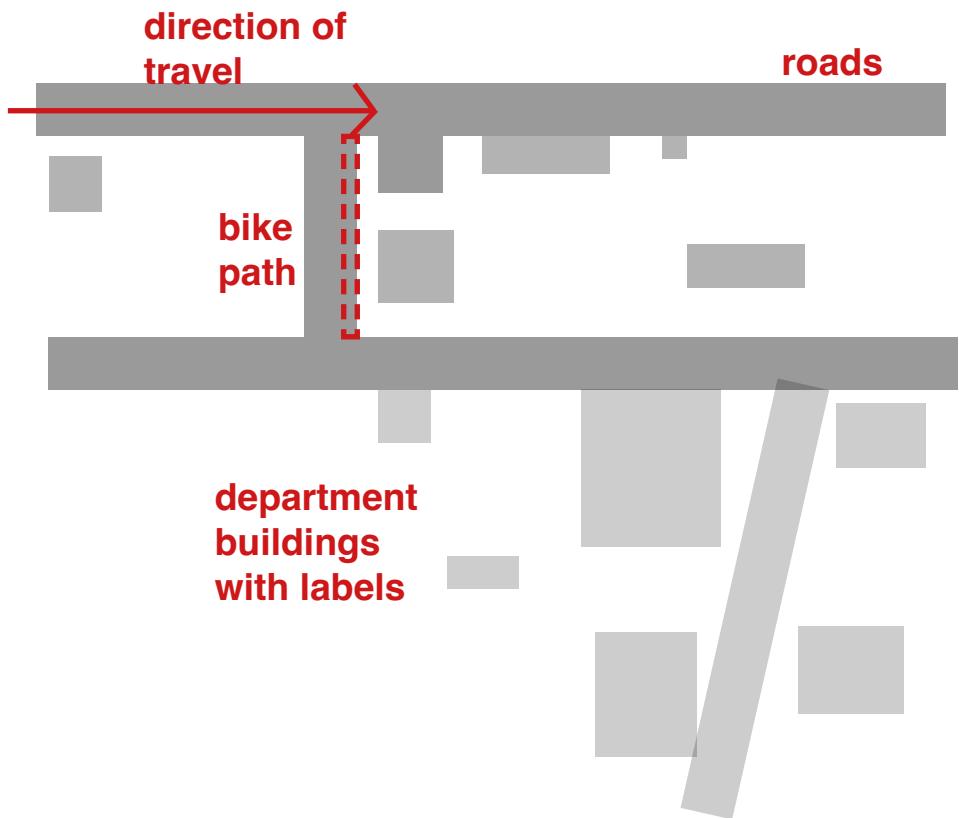
TEST 1

PROMPT: CAN YOU DRAW A MENTAL MAP OF THE CAMPUS?



'I start off from home and go to the Central Station in Rotterdam. I get to Delft and walk from the station to the library. This is where I mainly study and I go the Aerospace faculty for lectures and tutorials.'

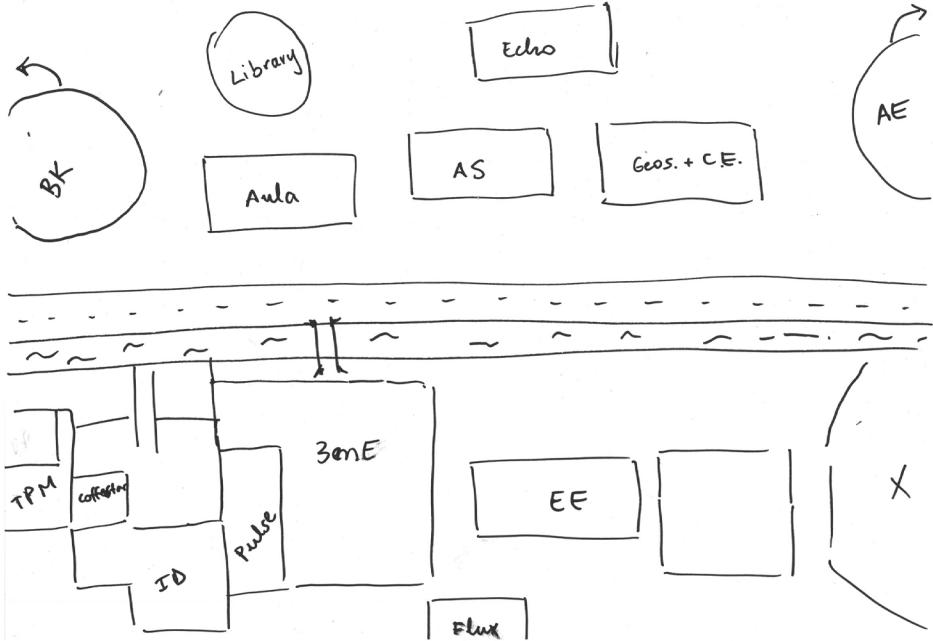
student from faculty of Aerospace
first year of masters (7 months)
lives in Rotterdam, walks from train station
studies primarily in library
man, 23 years old



[darkest grey] first elements to be identified and drawn

[medium grey] secondary additions

[lightest grey] last things to be drawn



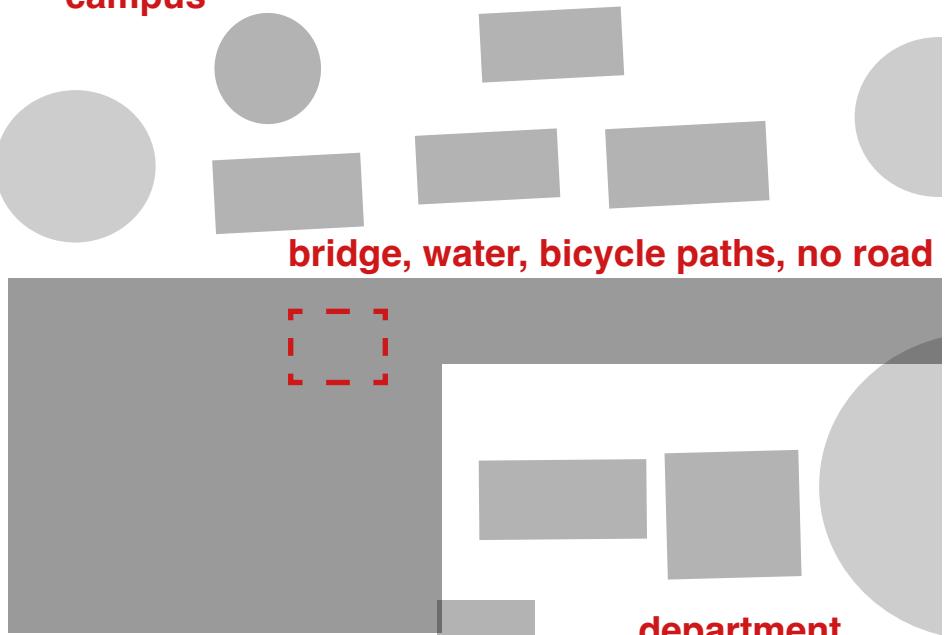
'You are asking for a mental map but why mental? I am going to draw a map.'

'I start off from home and go to the Industrial Engineering building using my bike.'

student from faculty of Industrial Design
 first year of masters (7 months)
 lives in Delft
 studies primarily at the Industrial Design building
 woman, 22 years old

shows center of campus

only labels in terms of function



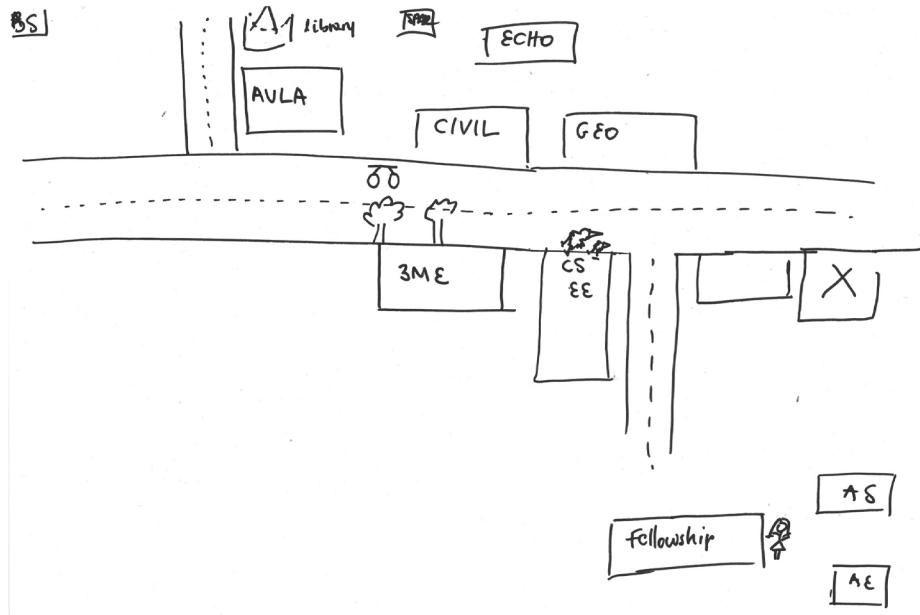
bridge, water, bicycle paths, no road

department buildings with labels

 first elements to be identified and drawn

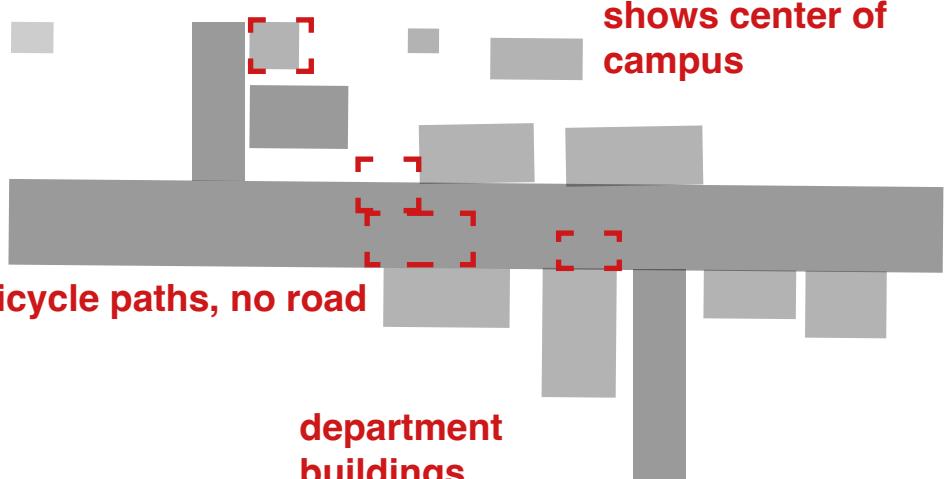
 secondary additions

 last things to be drawn



'I start off from home and go to the library using my bike. I only go to the faculty if I have lectures or tutorials. I usually study alone in the library. I like looking at the trees and ducks in the campus. '

student from faculty of Natural Sciences (Chemical Engineering)
first year of masters (7 months)
lives in Delft
studies primarily at the library
woman, 22 years old



shows center of
campus

bicycle paths, no road

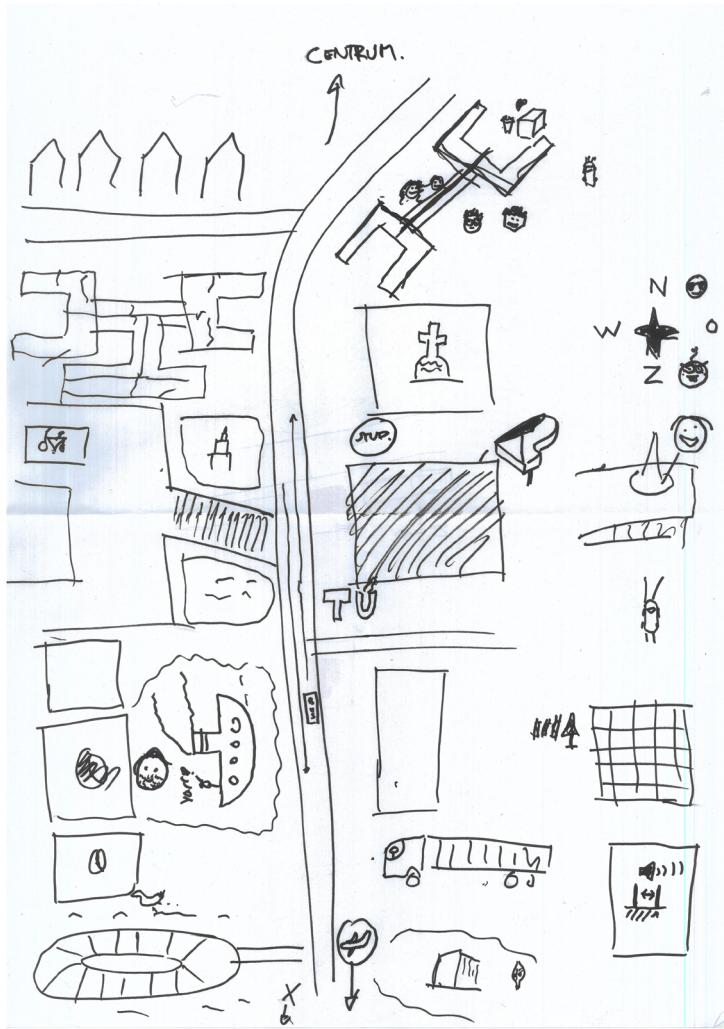
department
buildings
with labels

temporalities
of everyday
life

first elements to be identified and drawn

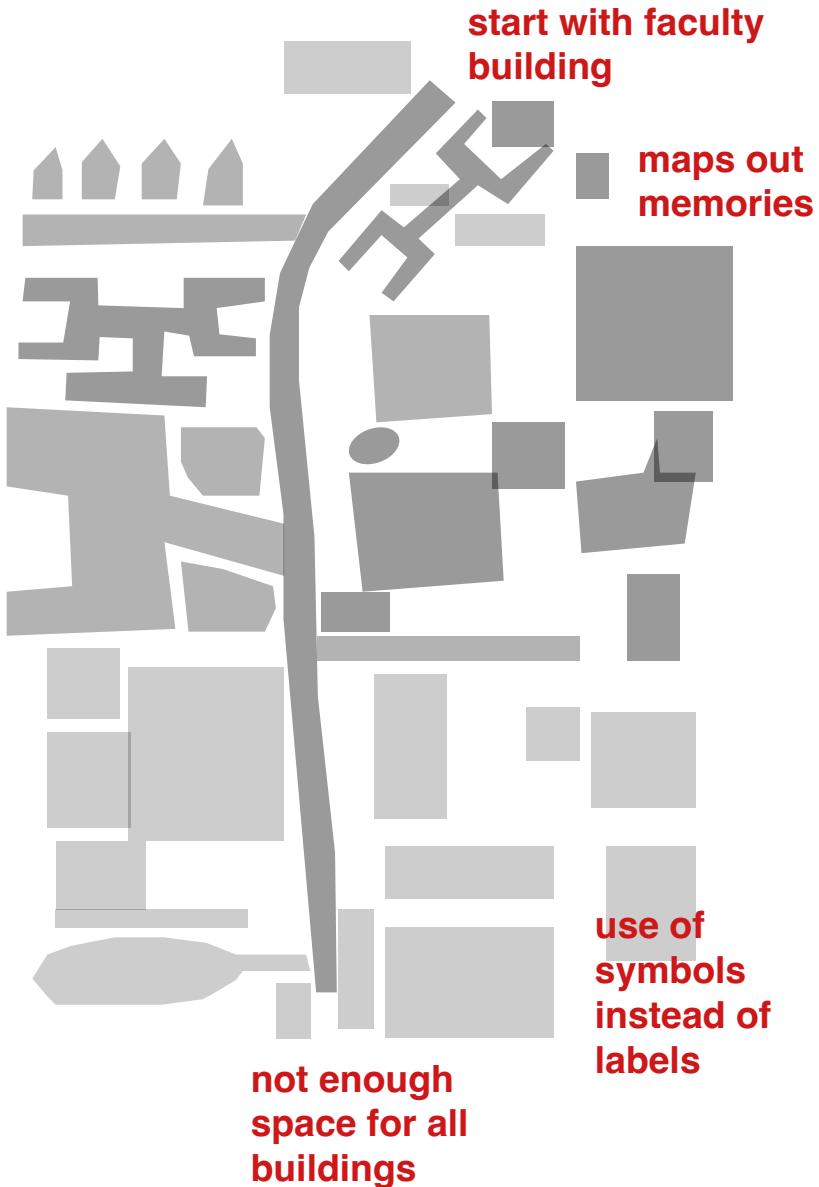
secondary additions

last things to be drawn



I have lived in many areas in Delft across the years. I usually study at the BK unless I have to work on a weekend or I work after the faculty closes. Then I go to the cone at the library. I enjoy meeting my friends at Bouwpub and playing the piano at Aula.

student from faculty of Architecture and the Built Environment
first year of masters (6 years)
lives in Delft
studies primarily at the faculty building
man, 23 years old



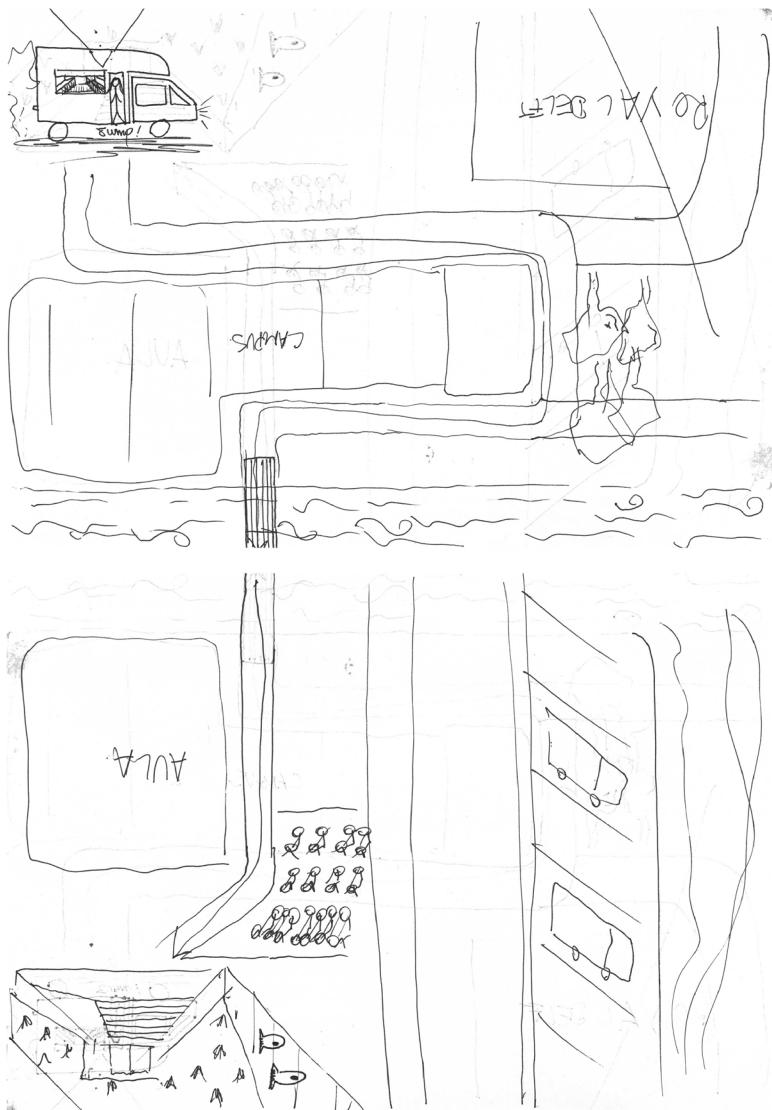
first elements to be identified and drawn

secondary additions

last things to be drawn

TEST 2

PROMPT: CAN YOU DRAW YOUR OWN, SUBJECTIVE MENTAL MAP OF YOUR LEARNING-SCAPE? MEANING THE SPACES YOU USE AND HOW YOU LEARN?



I haven't been here for long so to study I only go to the library. I like studying at home if I need to talk out loud.'

student from faculty of Civil Engineering
started studying at TU in January (2 months)
lives in Delft
studies primarily at the library
man, 24 years old

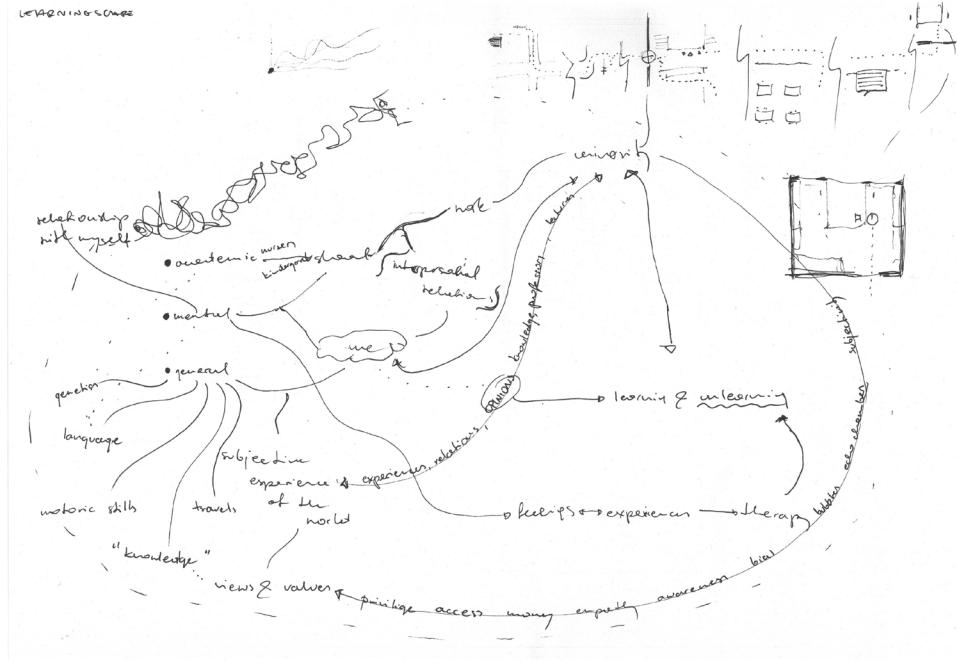


first elements to be identified and drawn

secondary additions

last things to be drawn

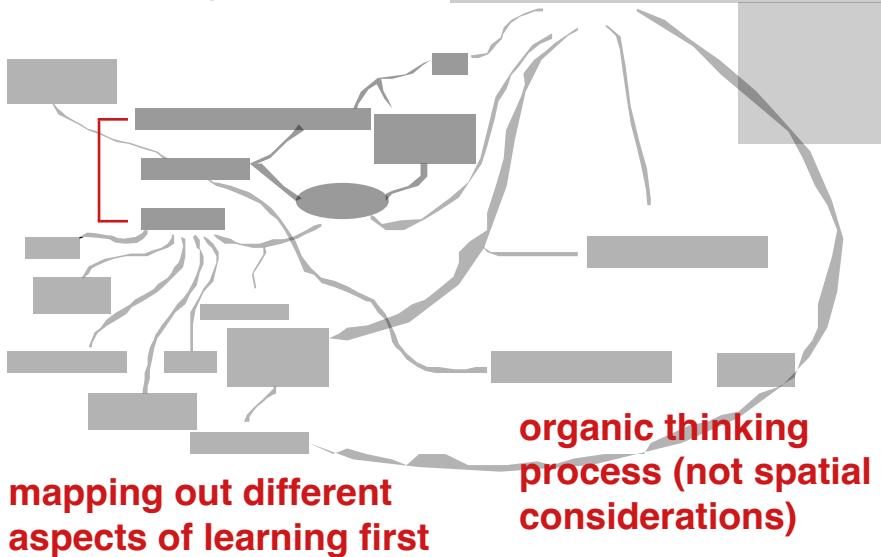
**details in the
surroundings
of the library**



'I like working around people but not necessarily talking. I also like working in spaces with large windows because I like how animated it becomes with the trees and people. I think we learn in many different ways.'

student from faculty of Architecture and the Built Environment
 first year of masters (7 months)
 lives in Delft
 studies primarily at the faculty building
 woman, 25 years old

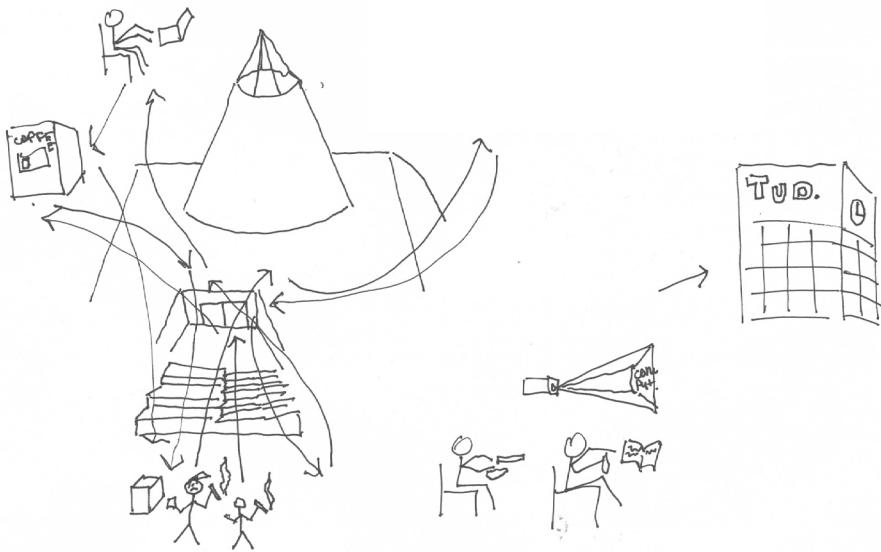
**maps out journey to
her favorite area to
study**



[dark grey square] first elements to be identified and drawn

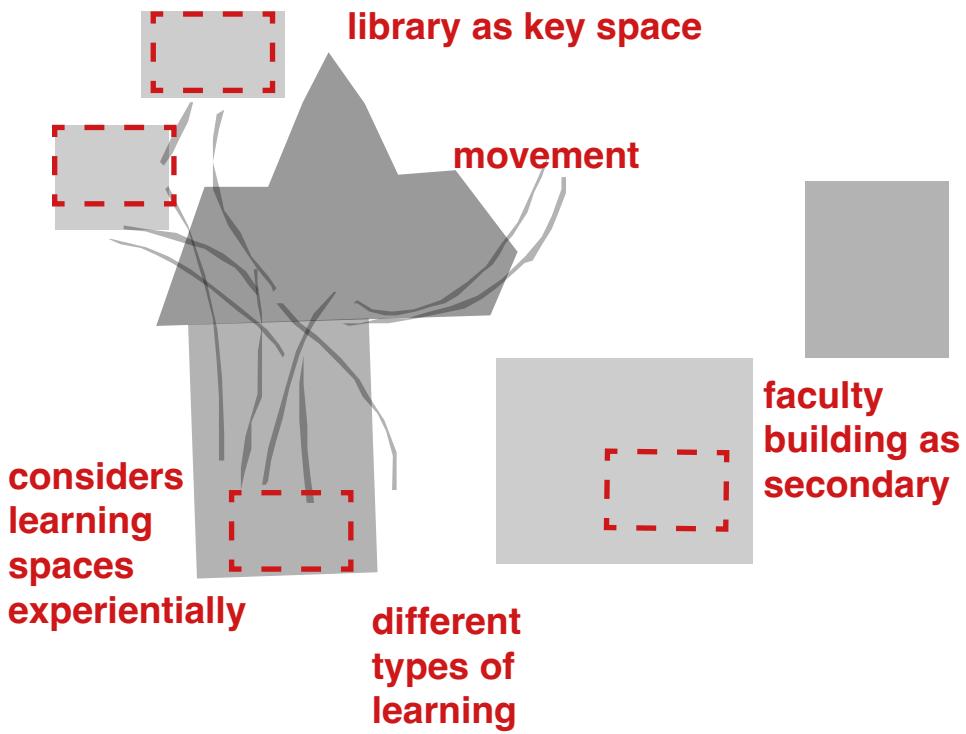
[medium grey square] secondary additions

[light grey square] last things to be drawn



'My learning space is the library. I only go to my faculty building for lectures. Even when I am at the library I have to get a lot of breaks and move.'

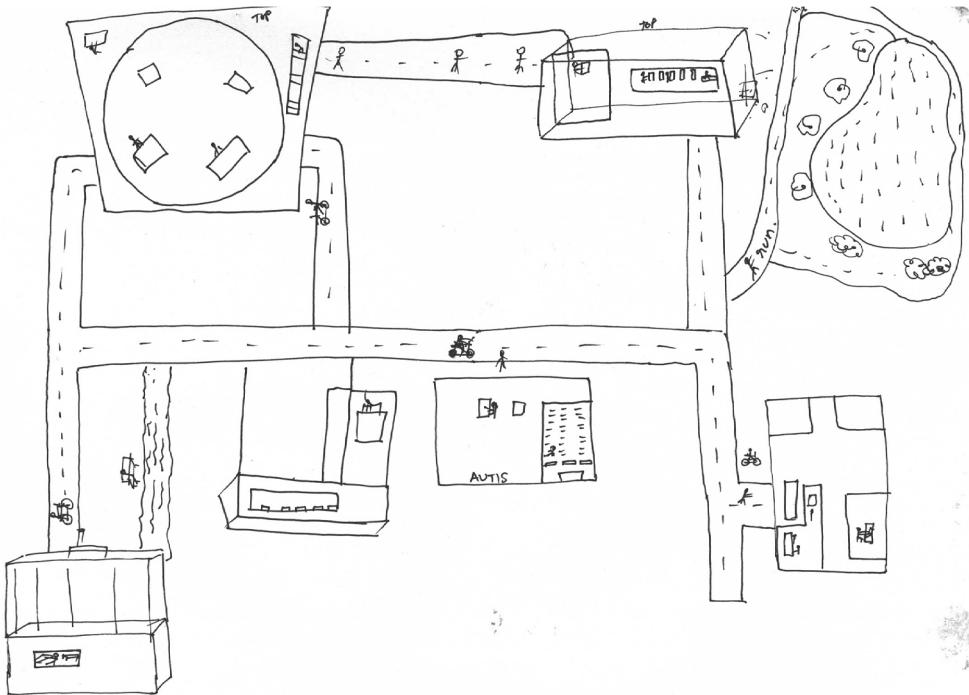
student from faculty of Electrical Engineering (Computer Science)
last year of Bachelors (4 years)
lives in Delft
studies primarily at the library
man, 21 years old



first elements to be identified and drawn

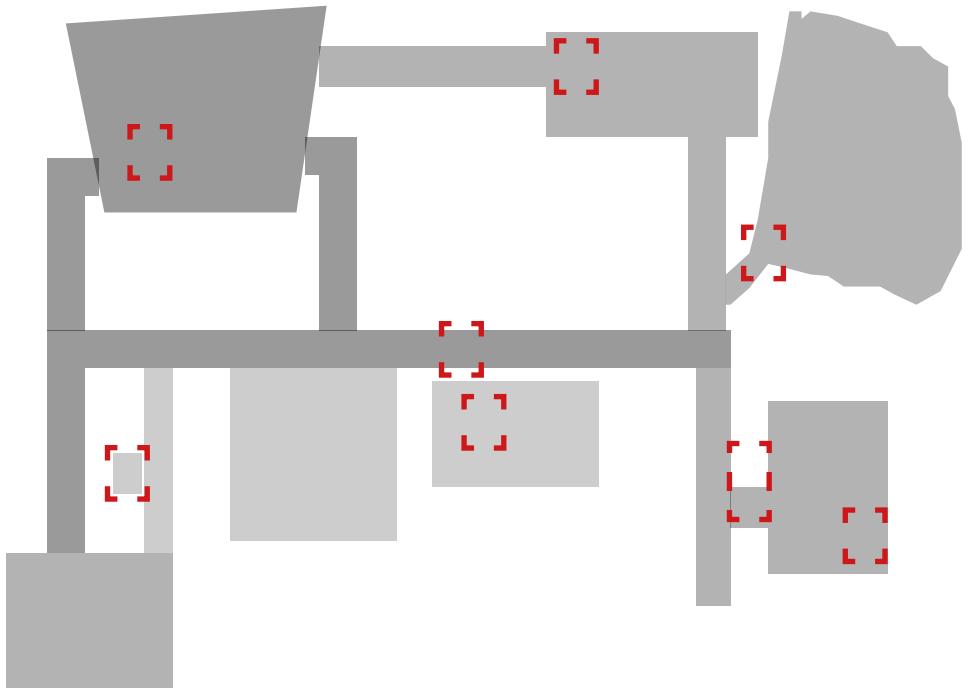
secondary additions

last things to be drawn



'I study in a lot of different places. My favourite is at Echo because of the views. I often run on campus and I like how I have or had classes in different buildings.'

student from faculty of Environmental Engineering
last year of Masters (2 years)
lives in Delft
studies in many buildings
man, 25 years old



■ first elements to be identified and drawn

■ secondary additions

■ last things to be drawn