

Scenario-based mapping of accessibility and way finding



How to collect different user experiences of accessibility and way finding for relevant scenarios in a public building?



I wanted to do an individual assignment with the aim to create a practical method to analyze, map and improve accessibility and way finding in public buildings.

Project aim: Create a simple method for mapping user experiences of accessibility and way finding in public buildings combined with documentation of the physical environment at key spots and an easy-to-understand way of presenting the experiences.

Project method: Use course literature, course exercises and other design theories to make a method for exploring and mapping a public building. Evaluate the method on two public libraries.

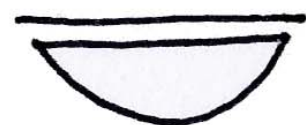
Result: I ended up with a six-step method to use scenario-thinking to map, discuss and suggest design

improvements in public buildings. The method was successfully tested on two libraries in Stockholm, the KTH library and the Stockholm University Library.

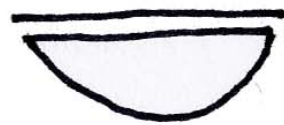
In this presentation I will guide you through the method, the two field studies and a short summary of some key conclusions.



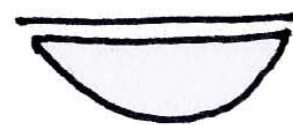
The research method - 6 steps to new inspirational findings



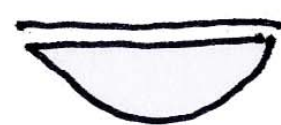
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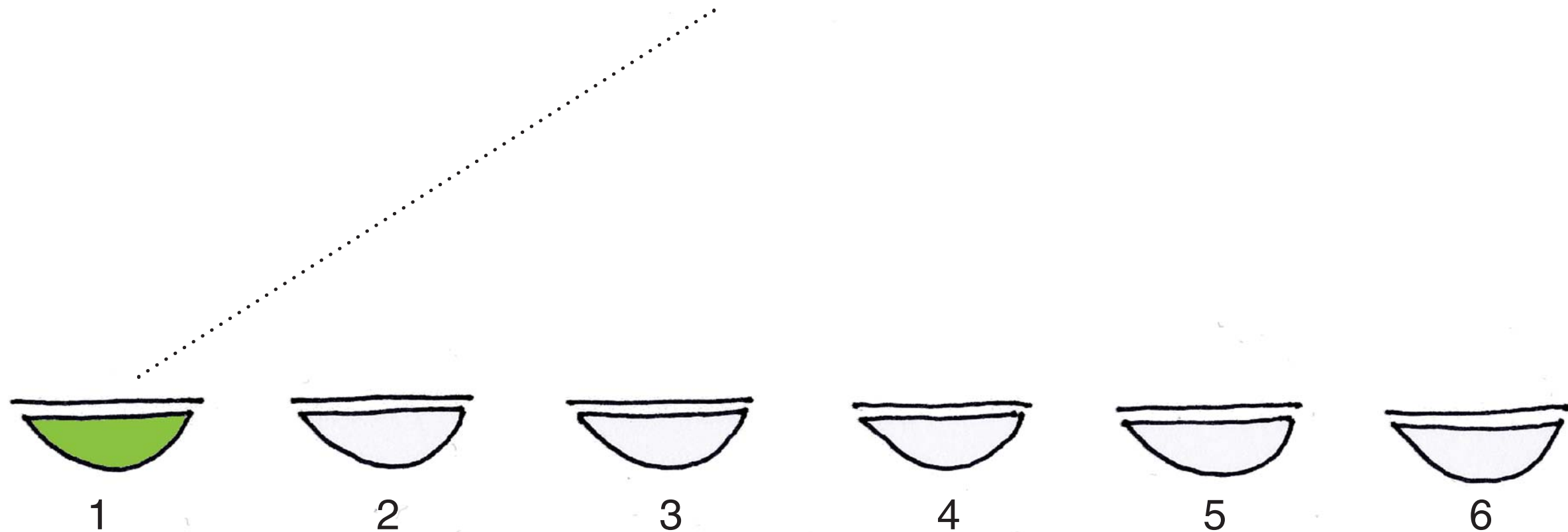
Create scenarios



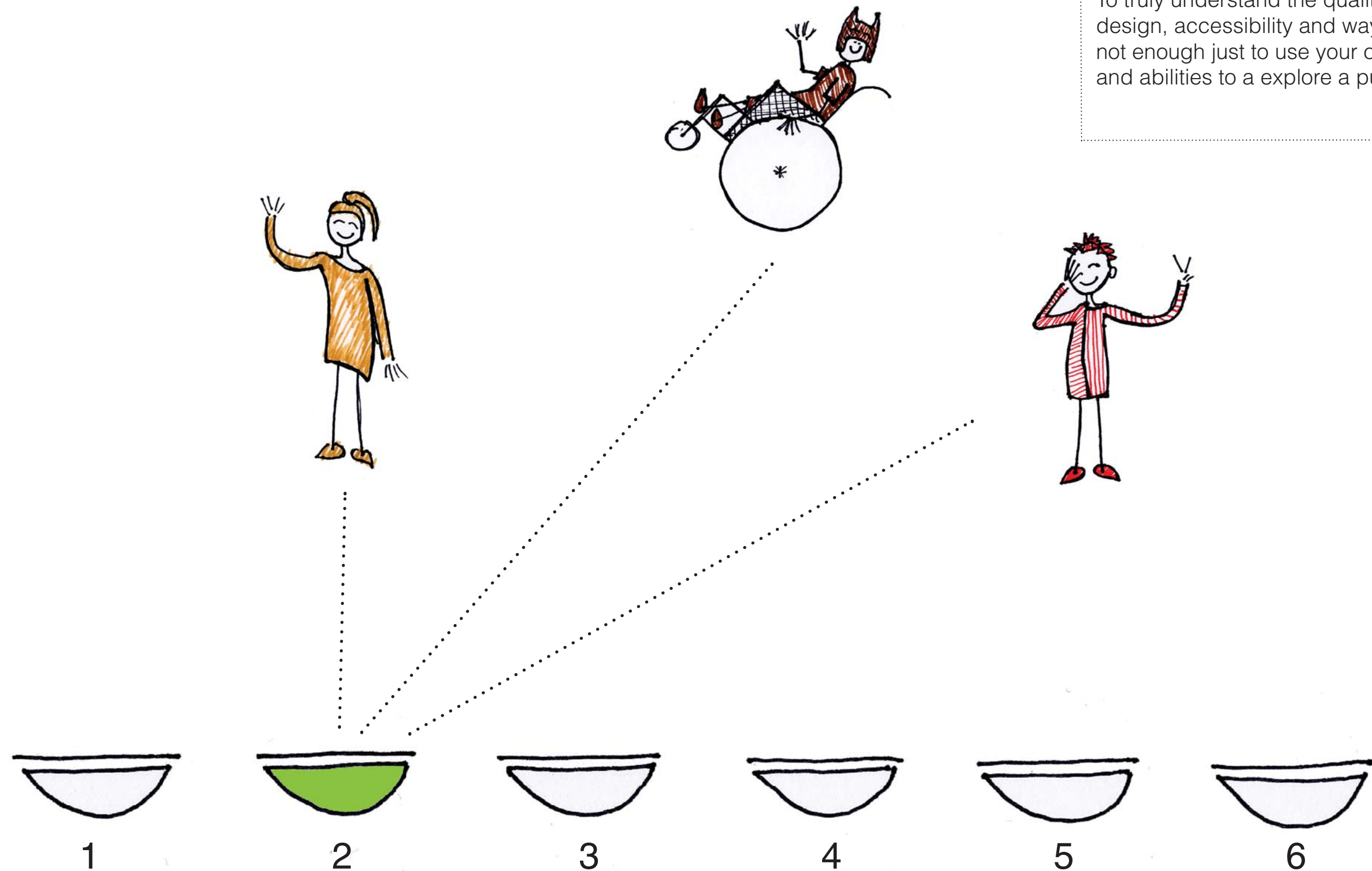
Create scenarios:

1. Observe behaviors at the site or in a similar building. What are people doing? What are the main functions in the building complex that are making people visit the building? Are there any important sub functions? Which are expected scenarios that can be observed and which unexpected scenarios are observed? It is important to have an open mindset while visiting the site and while creating the scenarios.

b. Create a list of important scenarios that should be tested on the study object. The scenarios should include a list of activities that the test persons should try out.



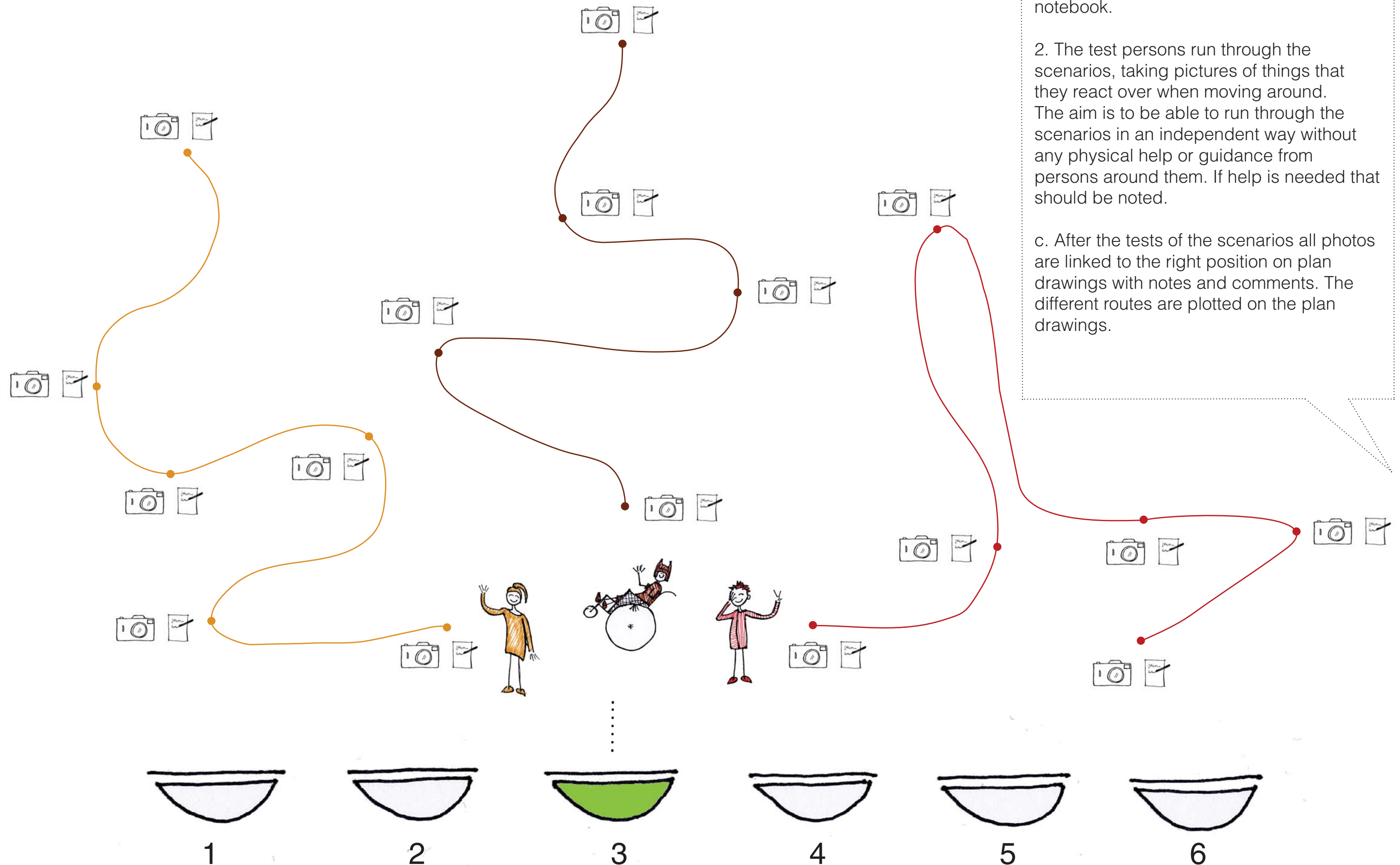
Invite and/or define test persons with different abilities



Define and invite persons/users with different abilities that are willing to be test persons.

To truly understand the quality of universal design, accessibility and wayfinding it is not enough just to use your own experience and abilities to explore a public building.

Let the test users try out the different scenarios



1. Equip test persons with camera and notebook.
2. The test persons run through the scenarios, taking pictures of things that they react over when moving around. The aim is to be able to run through the scenarios in an independent way without any physical help or guidance from persons around them. If help is needed that should be noted.
- c. After the tests of the scenarios all photos are linked to the right position on plan drawings with notes and comments. The different routes are plotted on the plan drawings.

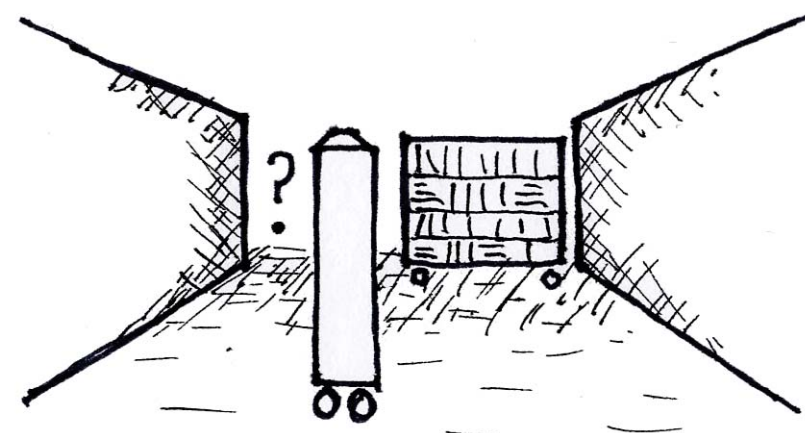
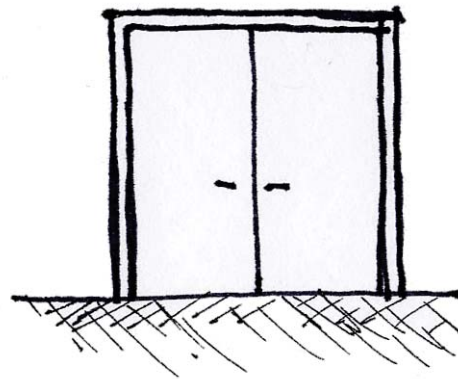
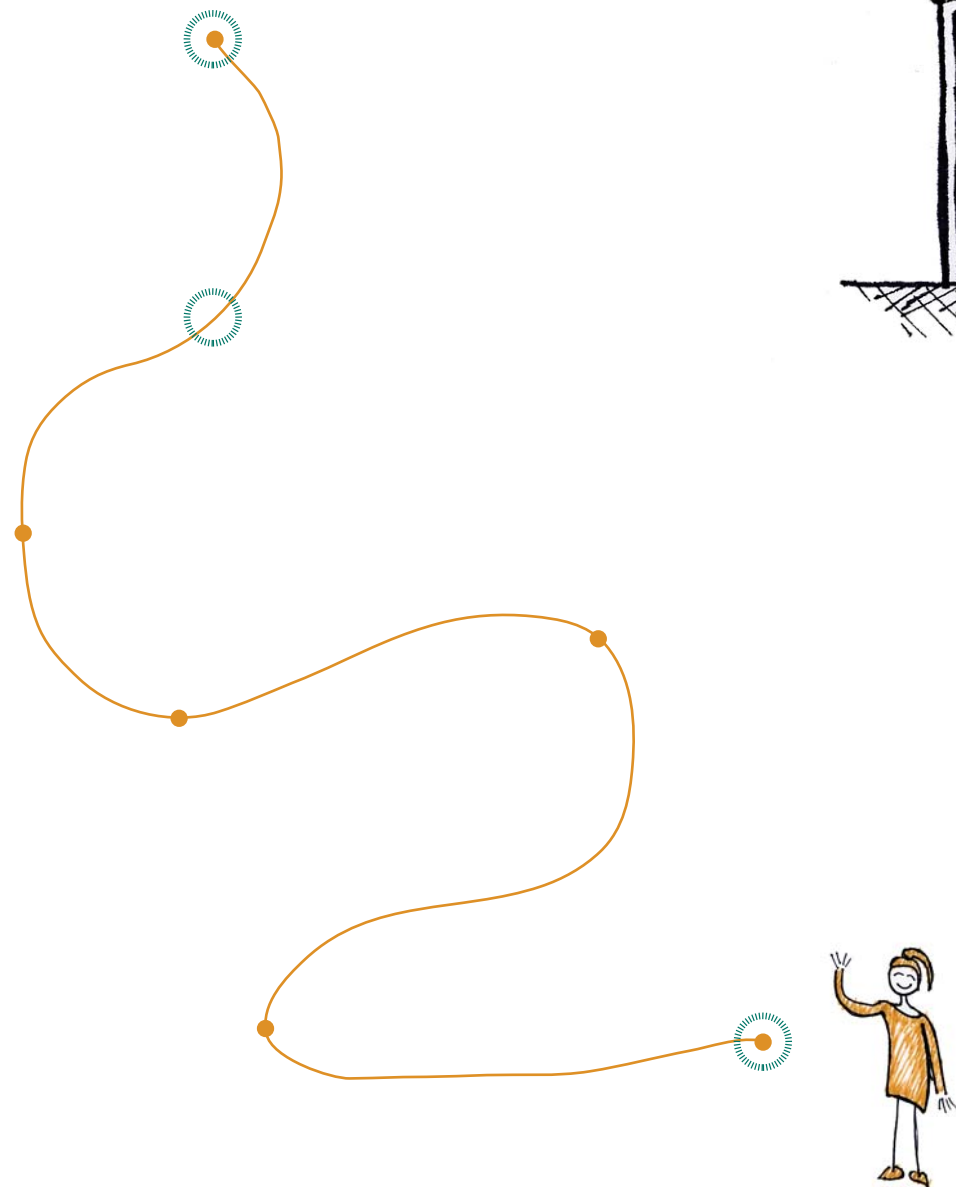
Categorize and discuss challenging key spots

Identification of key spots along the routes where there may be challenges connected to accessibility, where the path changes direction or where an activity take place.

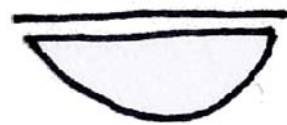
The test leader asks questions about path decisions and experiences.

Use categorization of the key spots to distinguish between different types of challenges or design that have had impact on the test persons experiences.

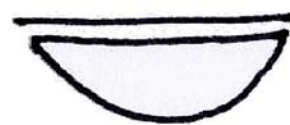
For example: Is the challenge connected to a physical object that have to be open or moved, like a door or moveable inventory?



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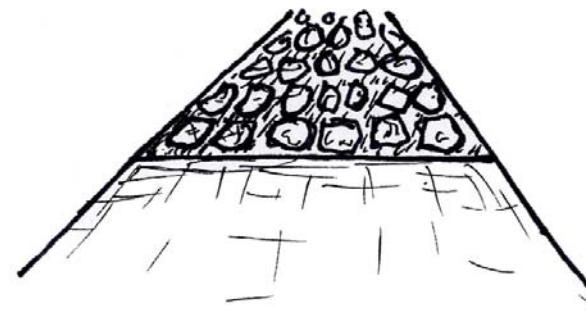
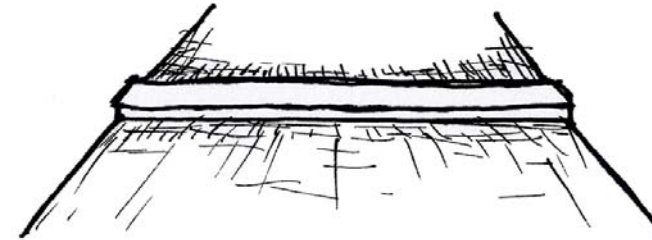
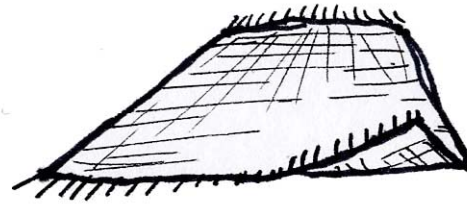
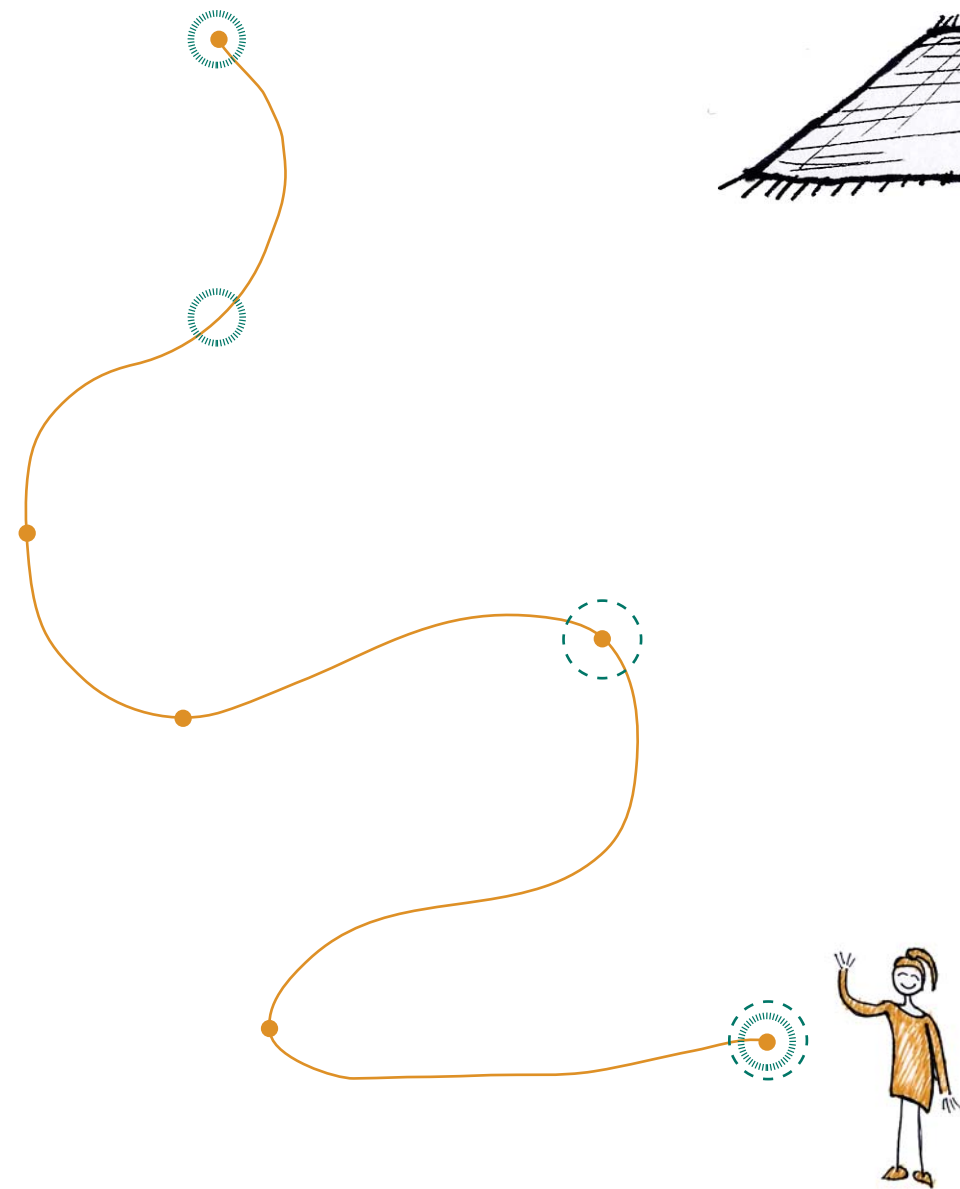


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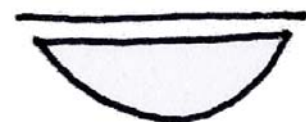


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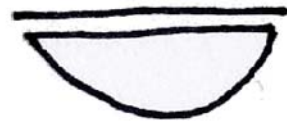
Categorize and discuss challenging key spots



Small floor level differences. Small changes of the floor level or floor material structure that may be a challenge for users of the building. Examples: Thresholds, carpets, surfaces like rough cobblestone.



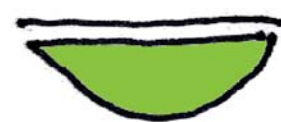
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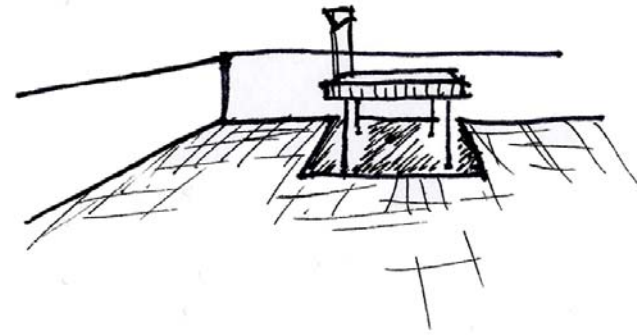
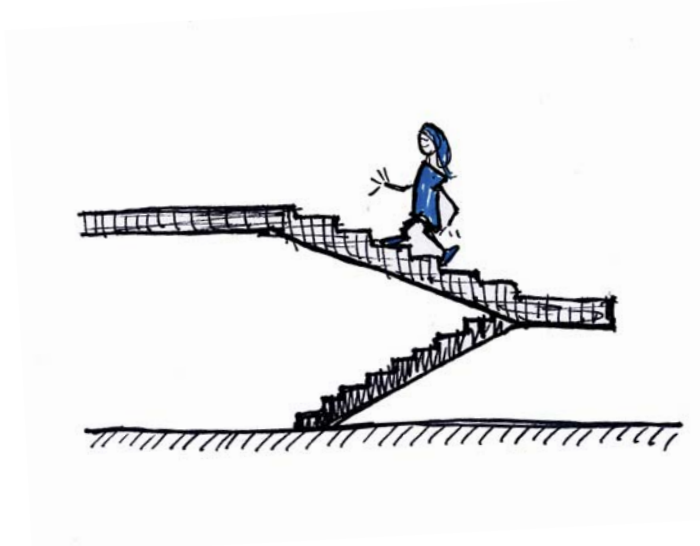


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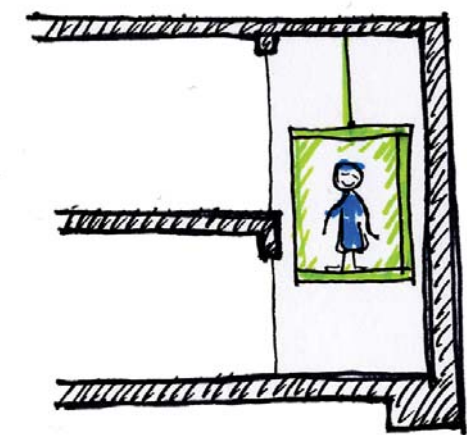
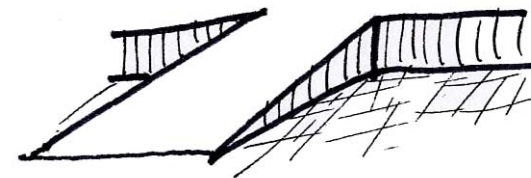
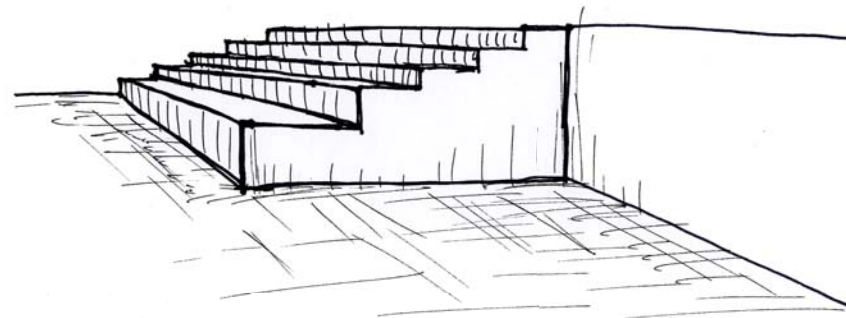
Categorize and discuss challenging key spots



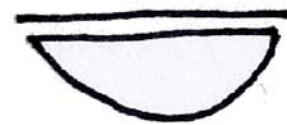
Medium and large floor level differences.

Medium changes of the floor level that requires a stair, ramp and/or elevator and that usually takes you to a level you are already visually connected to.

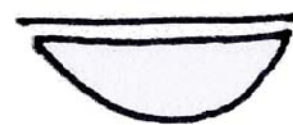
Large floor level differences. Places where there are stairs, ramps or elevators that takes you to another floor.



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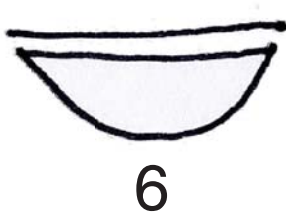
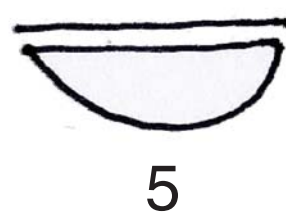
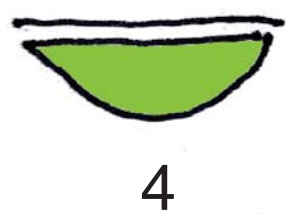
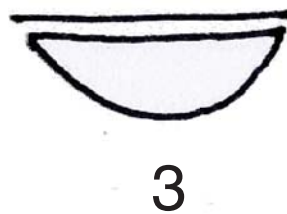
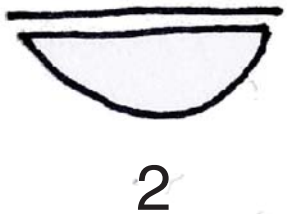
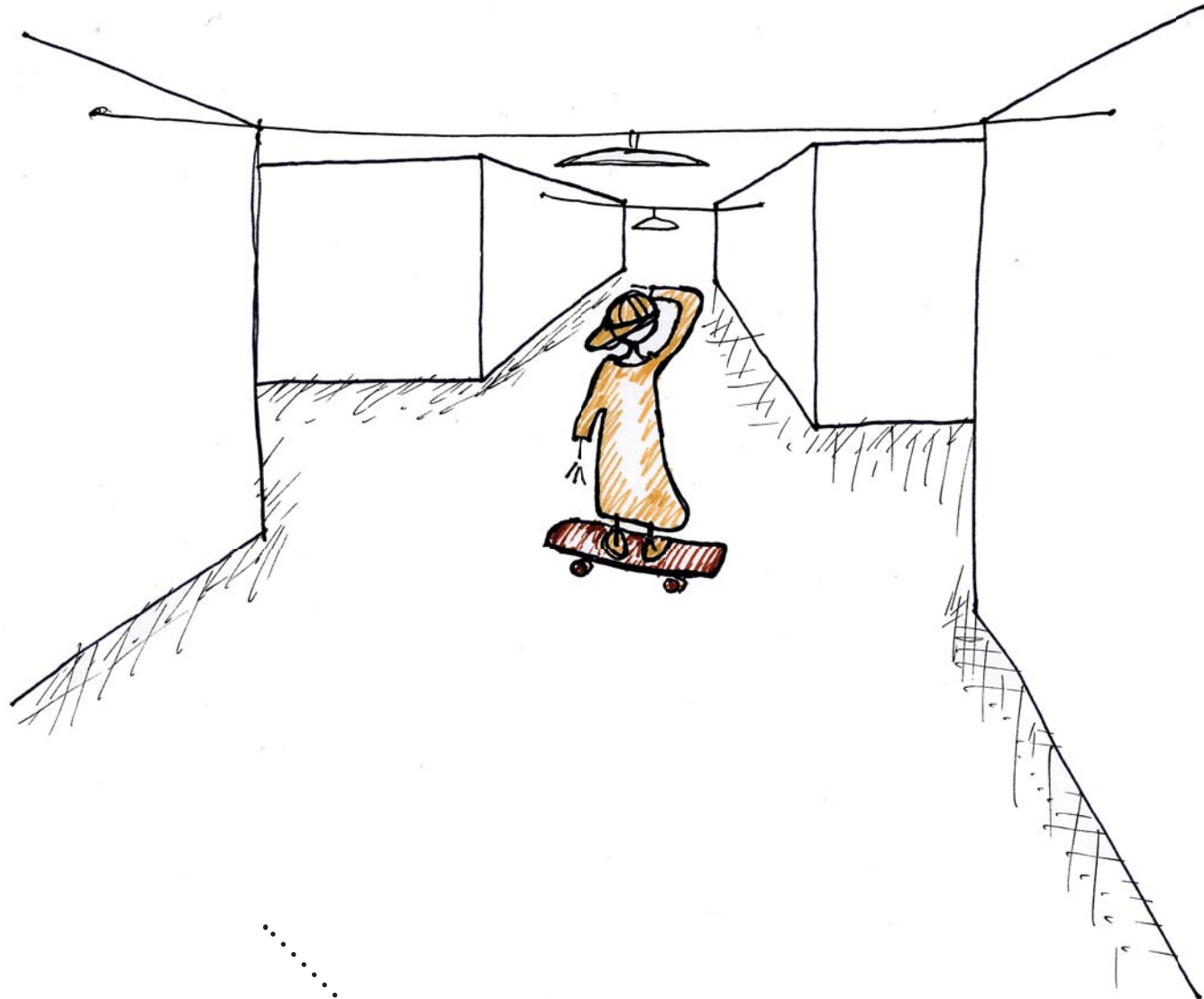
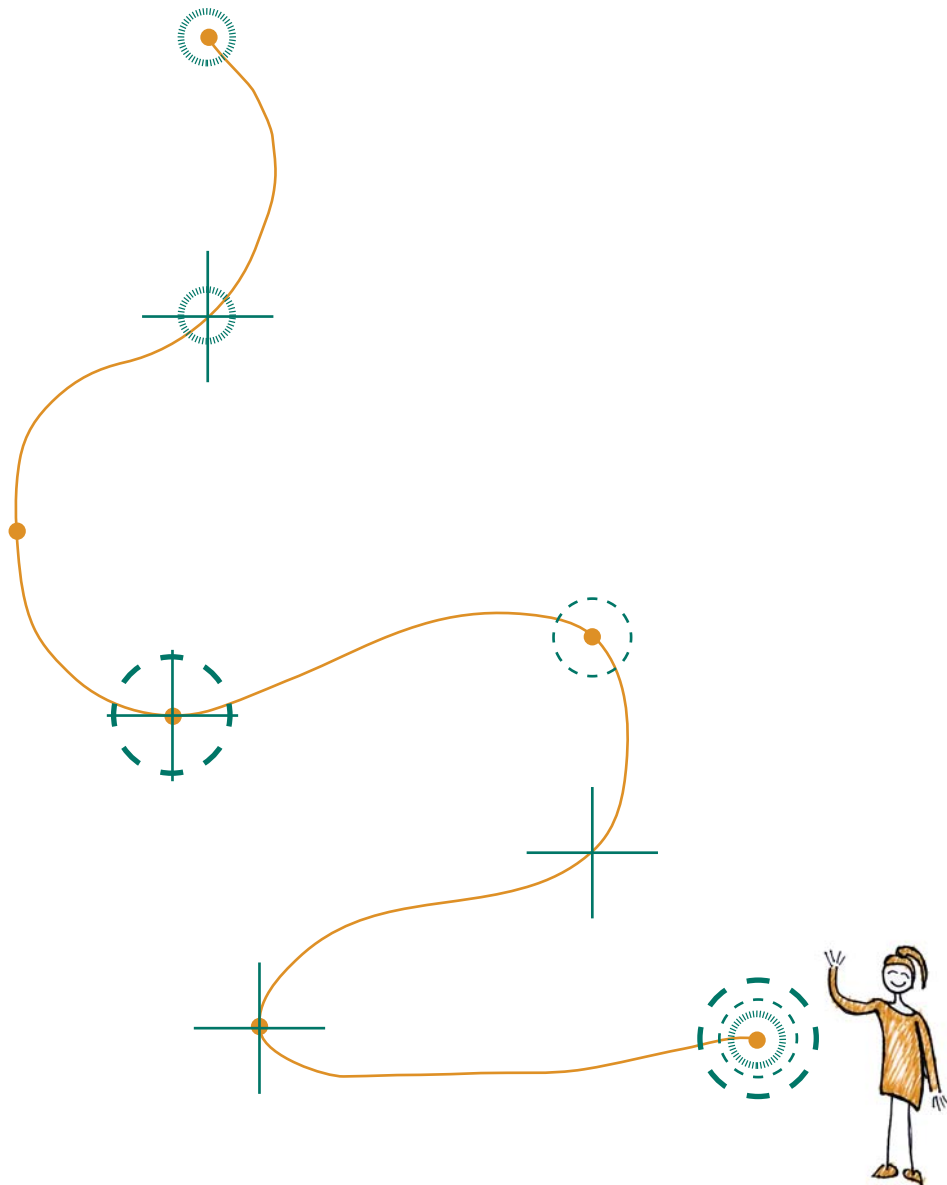
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Categorize and discuss challenging key spots

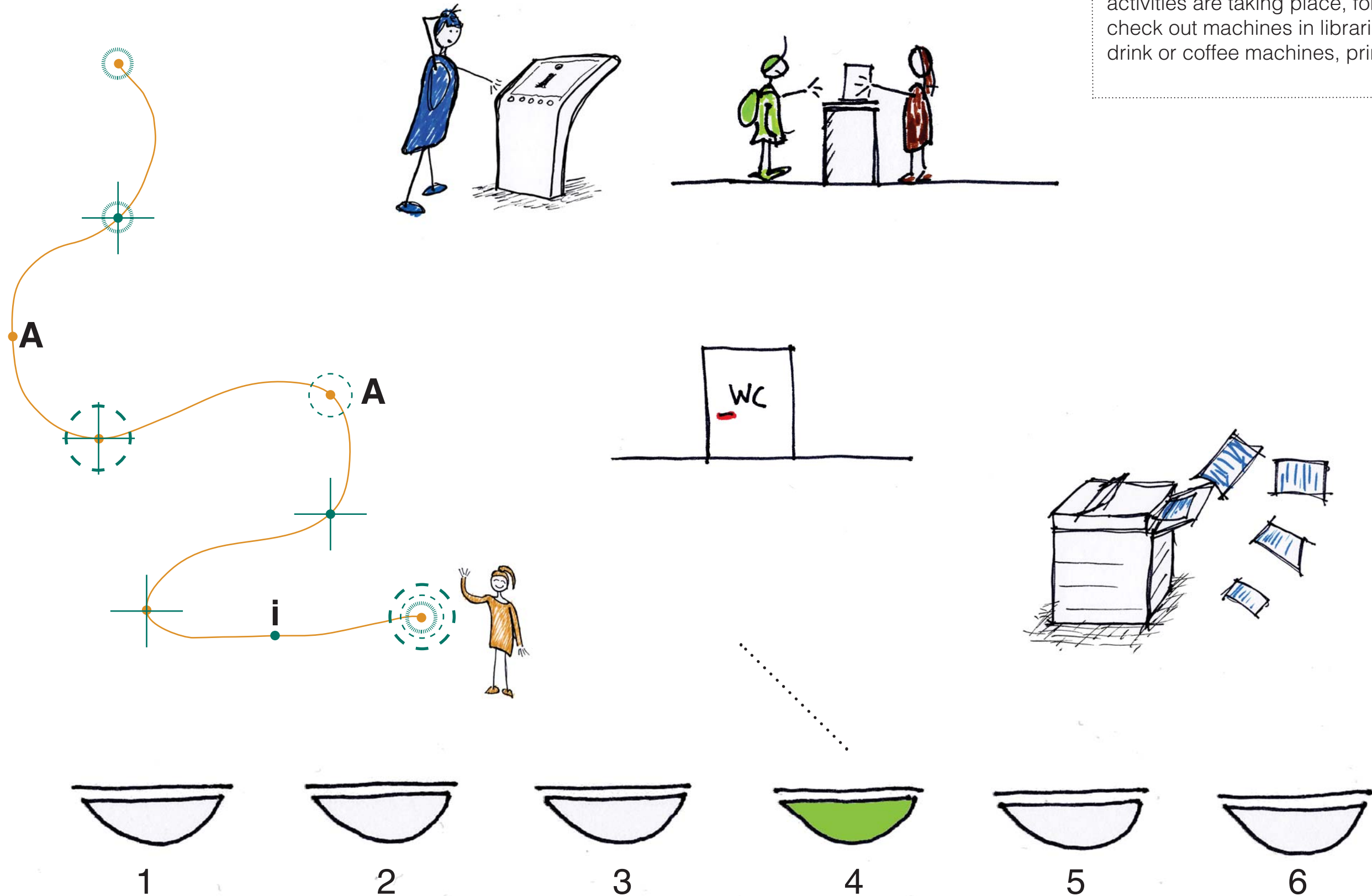
Crossroads where the users of the building have to make decisions on which way to go.



Categorize and discuss challenging key spots

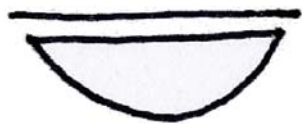
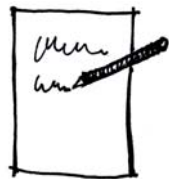
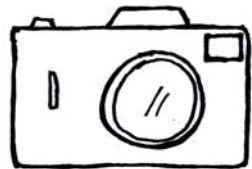
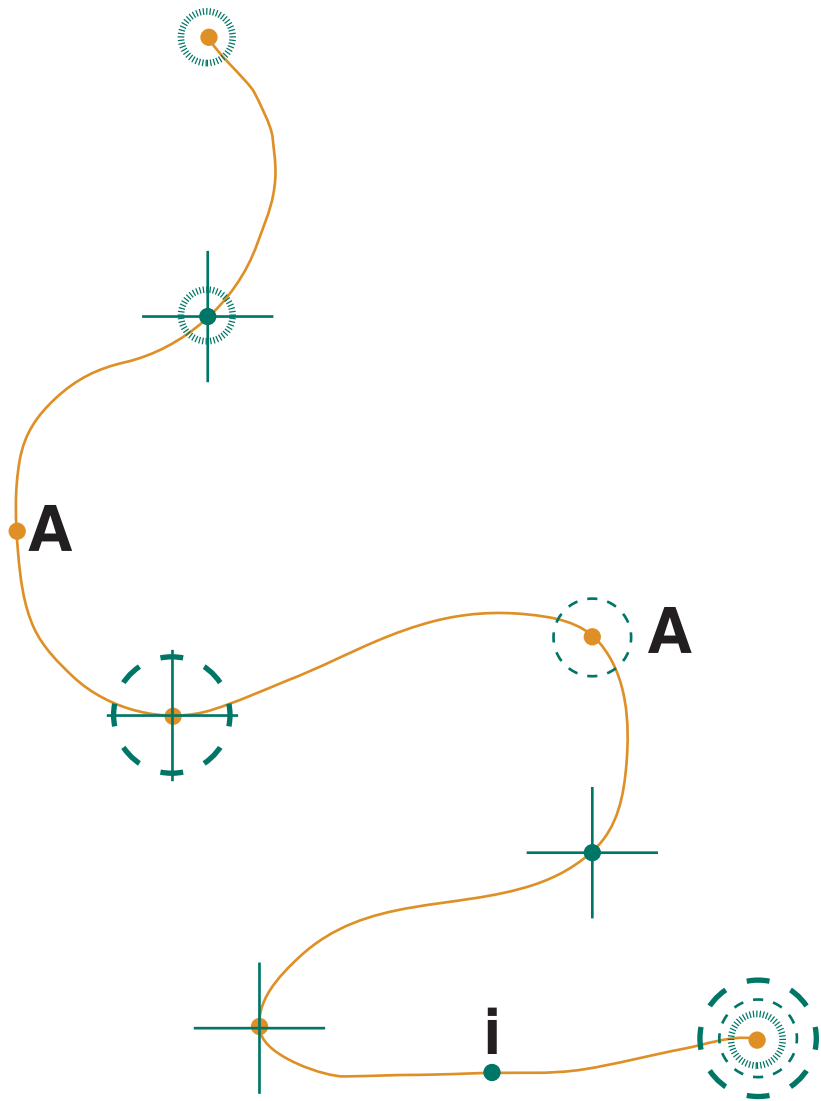
Information spots: Places where there are information centers or similar.

Activity spots: Stations where special activities are taking place, for example check out machines in libraries, toilets, drink or coffee machines, printer rooms etc.

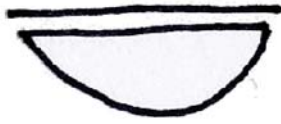


Document design and technical details of key findings

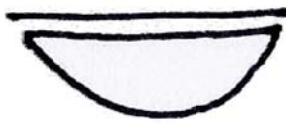
If necessary, the test leader document and measure technical details at important spots.



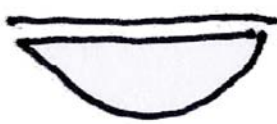
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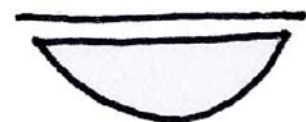
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Summarize key findings and make suggestions of improvement

What can be improved?



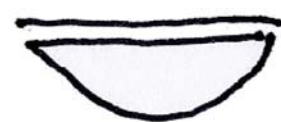
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So let's try it



Study object KTH library



Basic scenarios

1. Borrow a book

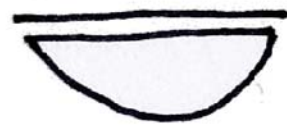
- 1-1. Move from the entrance to an information computer to search for the book.
- 1-2. Find the location of the book shelf.
- 1-3 Take the book and check out the book.
- 1-4 Go out from the library.

2. Stay and read at the library (Not yet tested in pilot study)

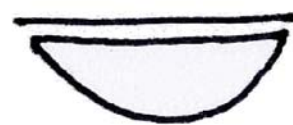
- 2-1 Move from the entrance to a quiet study area with a free place for reading.
- 2-2 Sit down and read.
- 2-3 Go to the toilet.
- 2-4 Go out from the library.



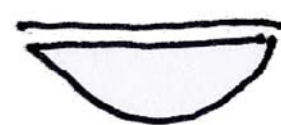
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Define (invite) test persons with different abilities



Miss X

Without any obvious locomotor, hearing or sight disabilities (simulated on site by project author)



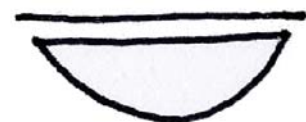
Batman

A superhero in a wheelchair (simulated on site by project author)

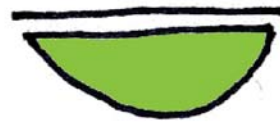


Rainman

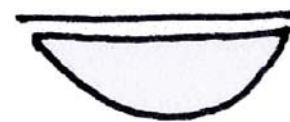
A genius with a peculiar inability to read signs, use a computer and talk to people. (Not tested in pilot study.)



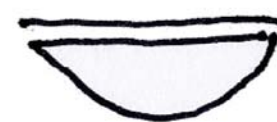
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Though not tested in this pilot study, the test person character “Rainman” can be a really interesting way to investigate the actual space organization and architectural hierarchy.

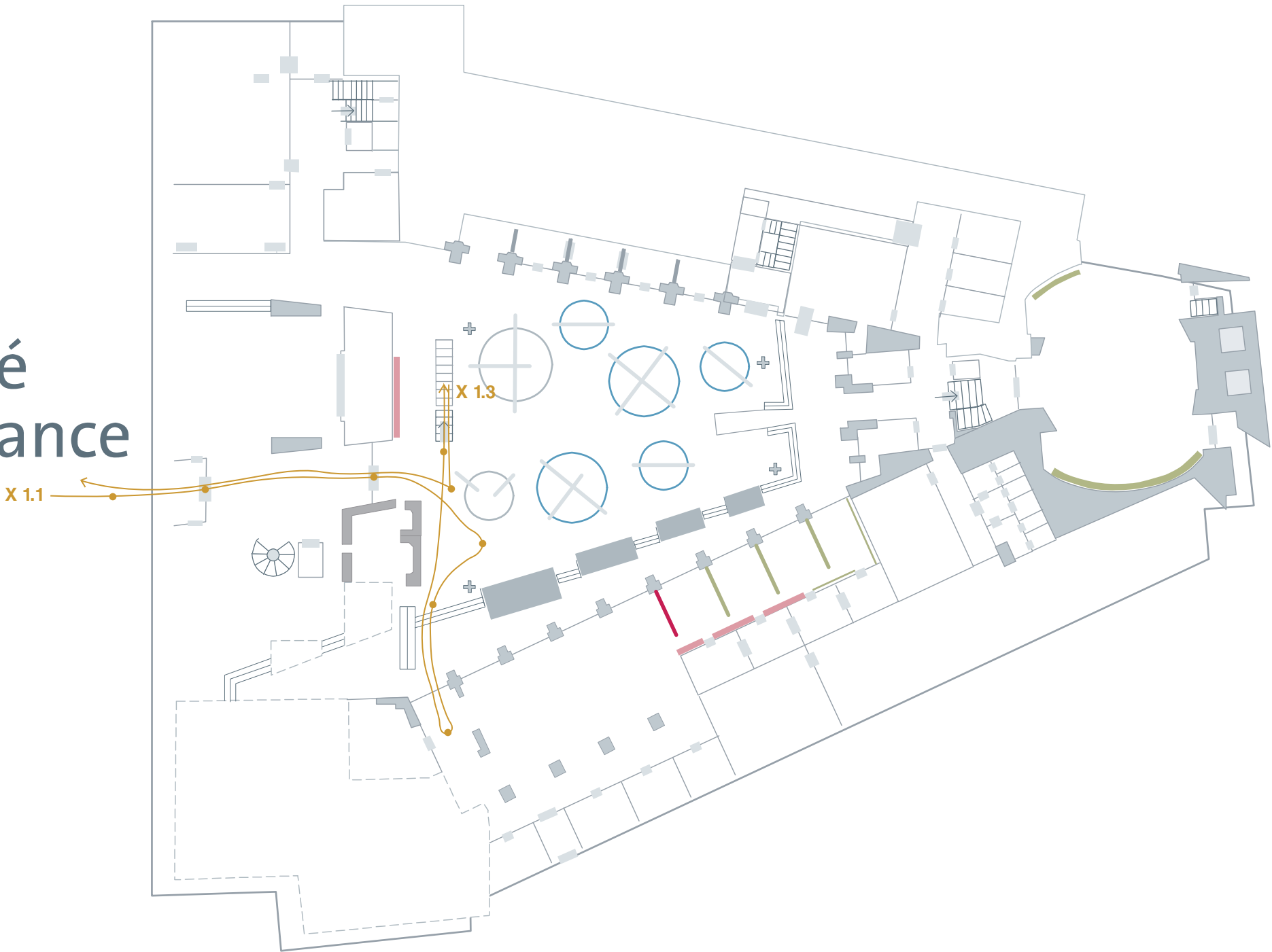
How do we read architecture and space without any signs, maps or guidance from people who know the building?

Study object KTH library - plotted path Miss X



Entré
Entrance

2 | floor
plan



X 1.1



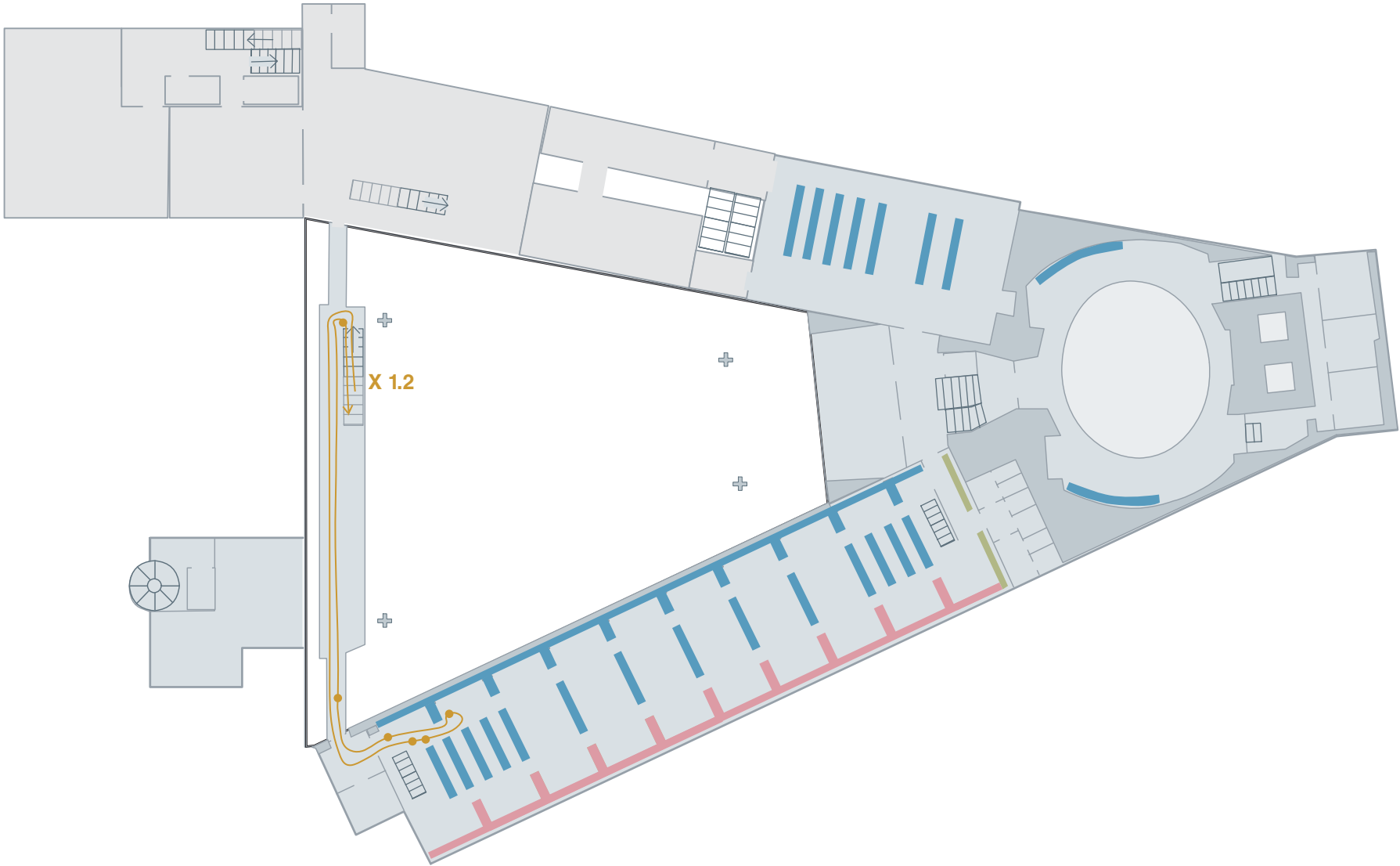
X 1.2



X 1.3

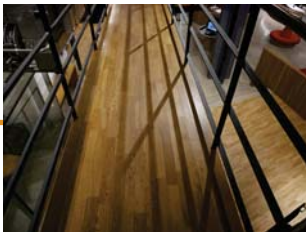
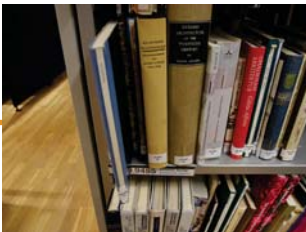


Study object KTH library - plotted path Miss X



3 | floor
plan

X 1.2

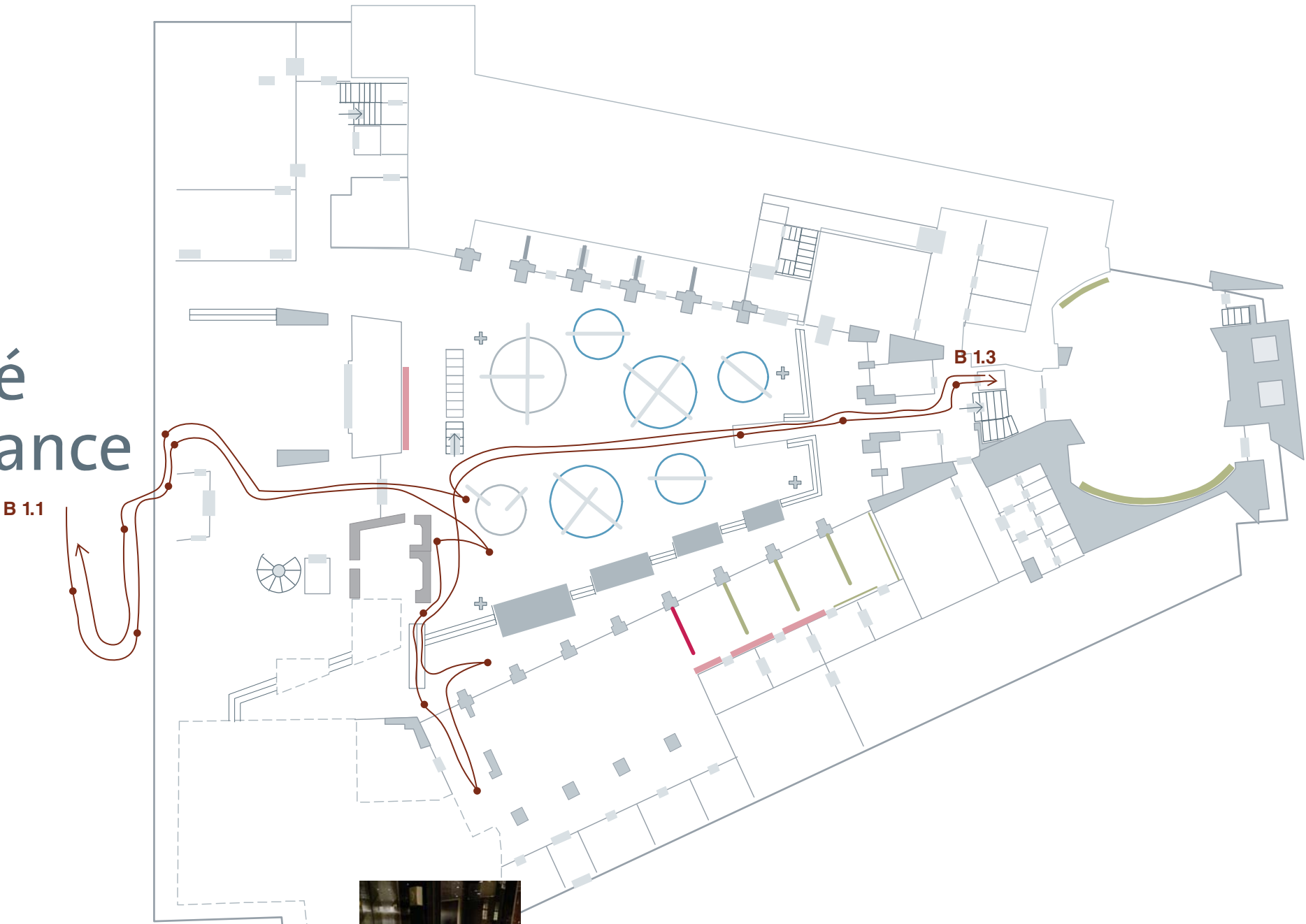


Study object KTH library - plotted path Batman



Entré
Entrance

2 | floor
plan



B 1.1



B 1.1

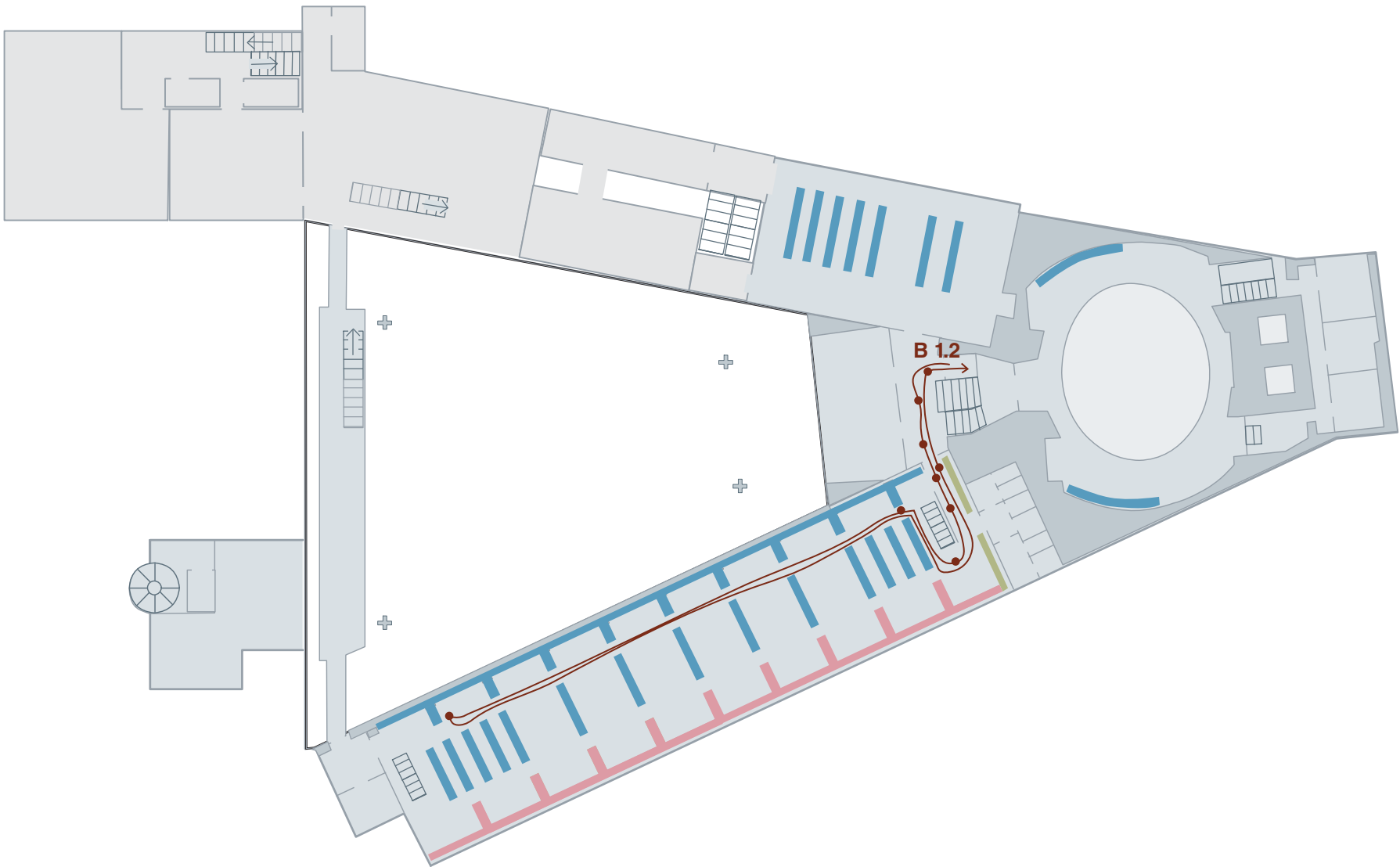


B 1.3

B 1.2

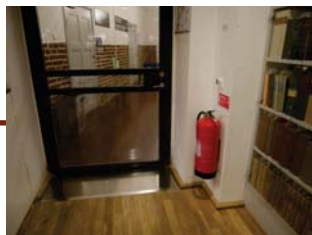


Study object KTH library - plotted path Batman



3 | floor
plan

B 1.2



Study object KTH library - key findings

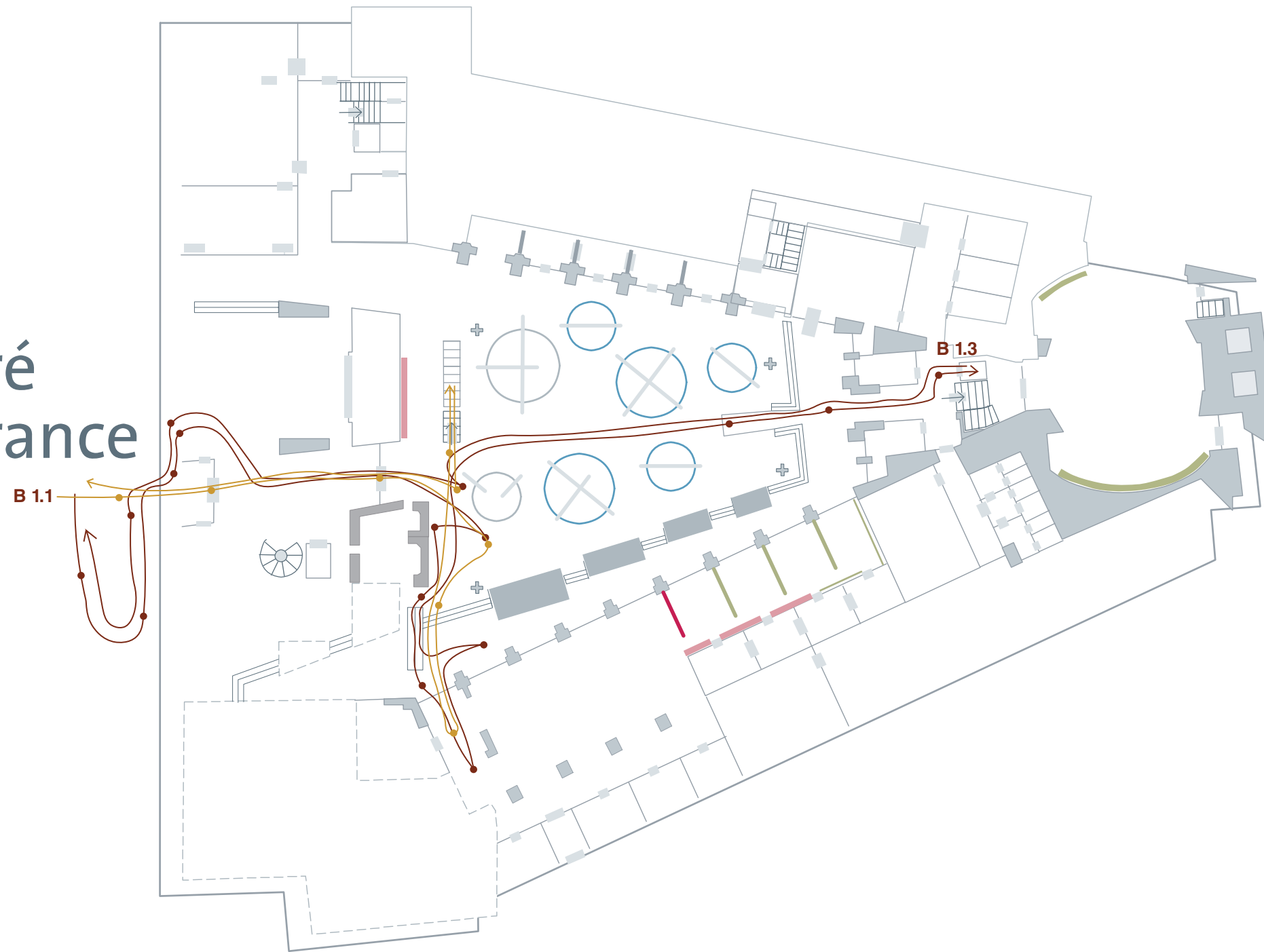


The middle anti-theft plate is placed at the middle of the sliding doors, without any warning on the other side, making it an unexpected obstacle moving through the sliding doors. Redesign suggestions: Either remove the anti-theft frame, or place a fence or rail/frame on the corresponding place on the other side of the sliding doors as well.



Study object KTH library - key findings

Entré
Entrance



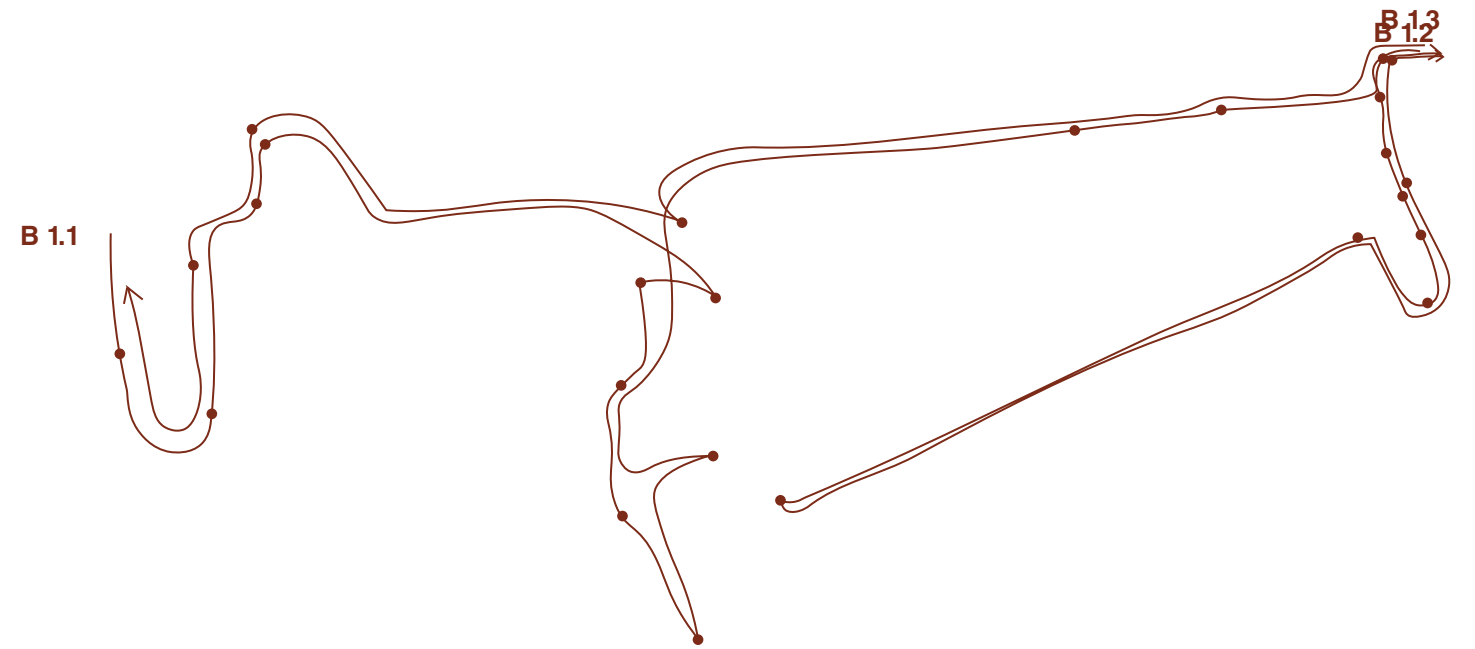
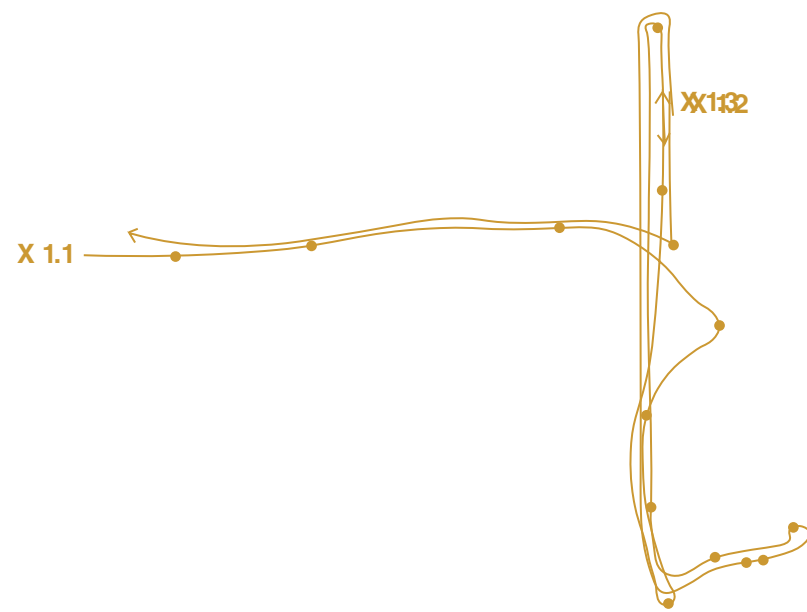
Both test persons took the wrong path to the first floor in the North Gallery, looking for an (non-existing) elevator to go to the second floor. Signs leading visitors to the elevator and stairs to the second floor should be improved and visually seen from the information center, especially considering that the intuitive path to go to the second floor of the North Gallery is a dead end.

2 | floor
plan



Study object KTH library - key findings

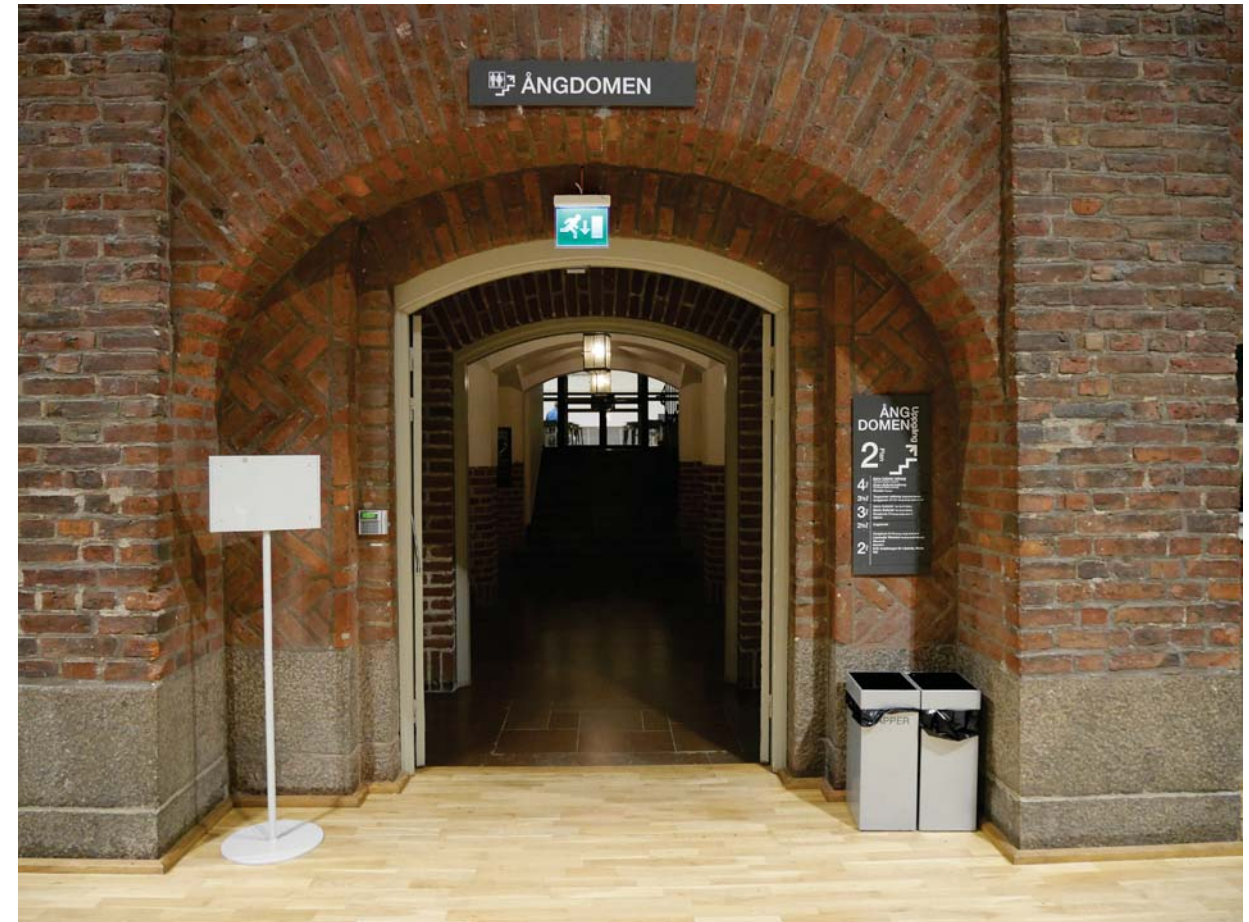
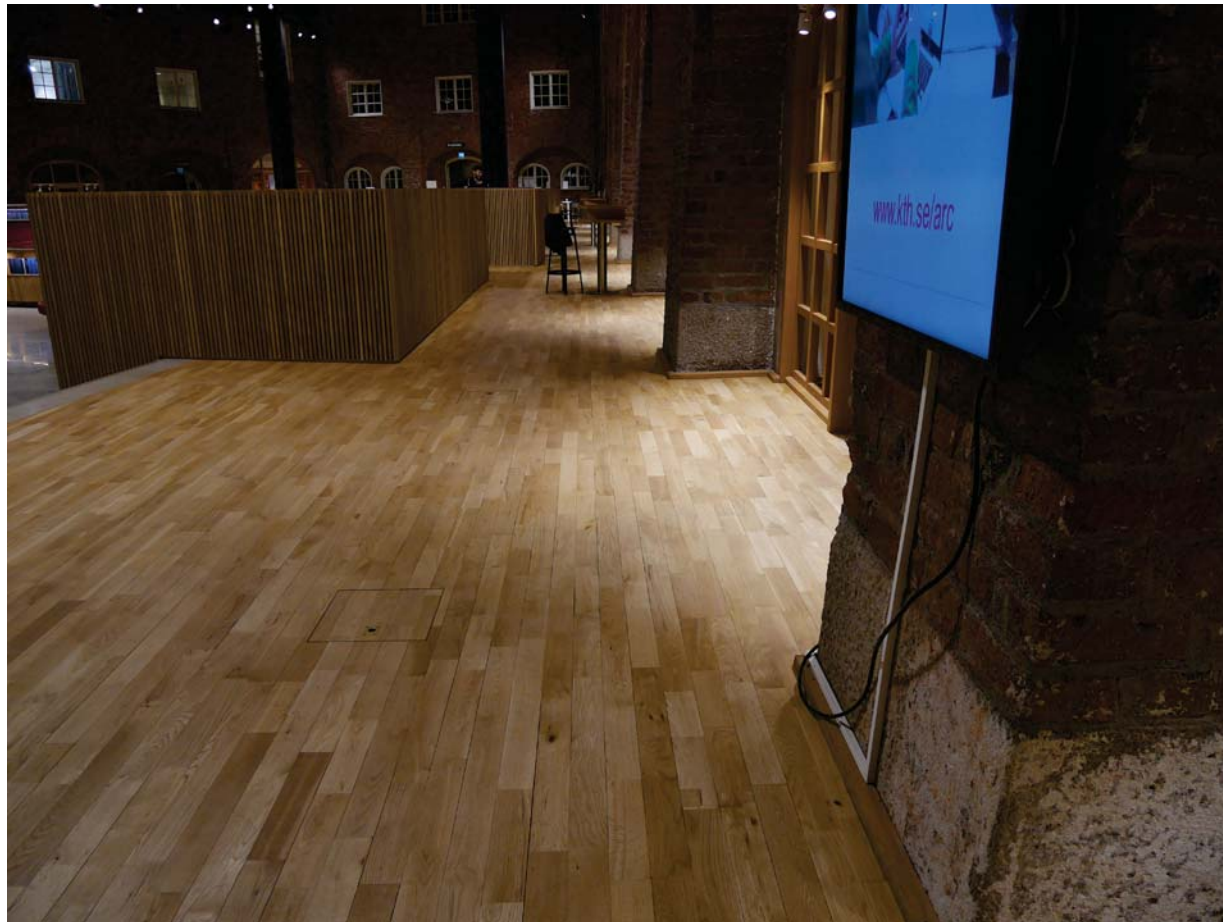
Comparing the path taken by the different test persons, one conclusion is that a person in wheelchair will have to go a much longer path to certain areas in the library. By just having one elevator the possible routes in the library becomes limited and with long dead ends.



Study object KTH library - key findings

Picture 1 shows furniture that blocks the way for the Batman, limiting the possible routes in the library.

Picture 2 shows the signs for the elevator. Suggested redesign is to make them larger and put the elevator sign as a separate sign to make it more readable.



Study object KTH library - key findings

The sign system for the book shelves have to be improved. Even for an experienced library visitor you have to stand close to the paper signs to read and find the right book shelf. Bigger signs are missing.



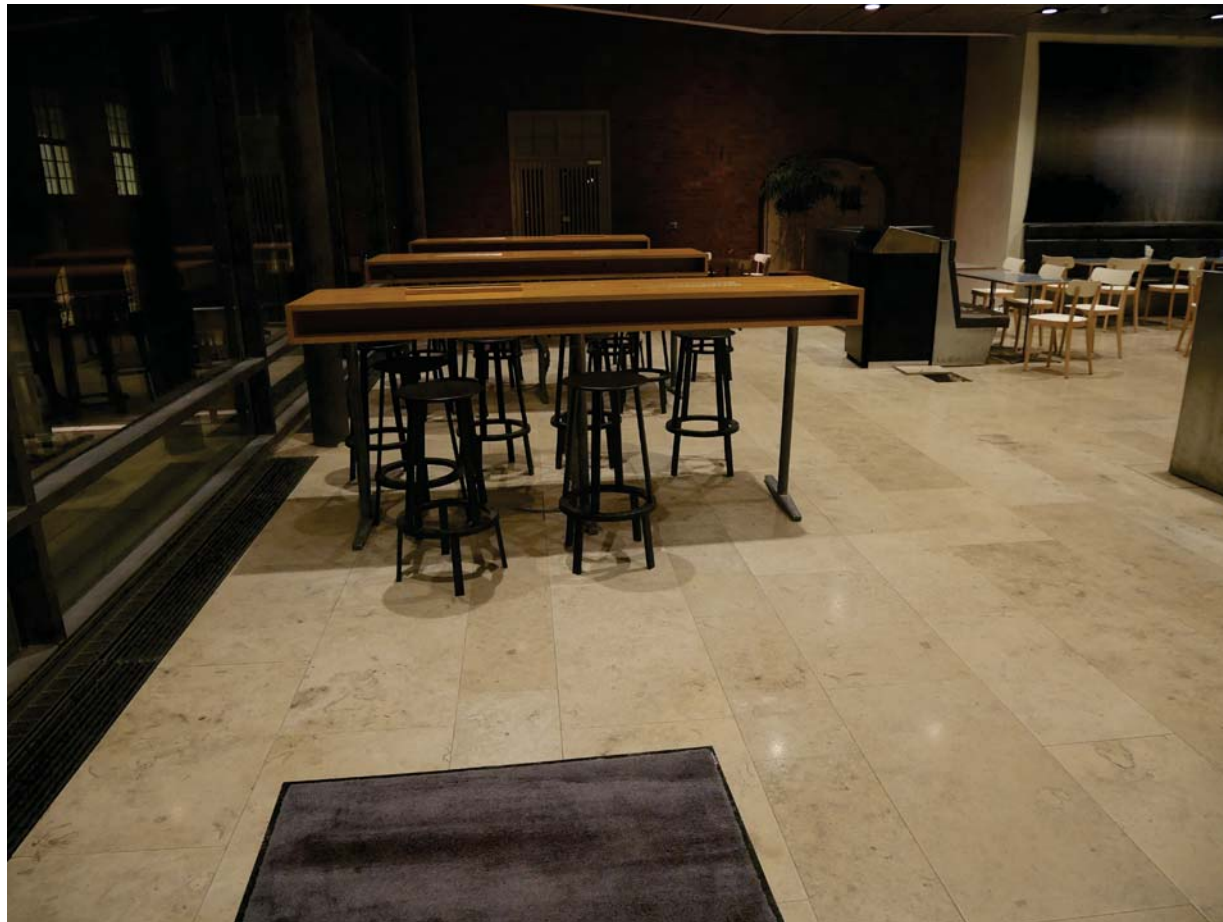
Study object KTH library - key findings

The height of the stand with search computers can't be adjusted making it unusable for some visitors. The check out desk however can be lowered. A suggested redesign is to place the button to adjust the height at a more visible position and add a sign to inform users from a distance.



Study object KTH library - key findings

Architects usually have a concept for how visitors of a public building will be welcomed via the main entrance and the lobby further into the building, a procession of spaces design to inform and set the theme for the experience. However people in wheelchairs sometimes have to take side doors making the experience less well-designed. At the KTH library the difference is not huge, but can be improved.



Study object Library of Stockholm University



Basic scenarios

1. Borrow a book

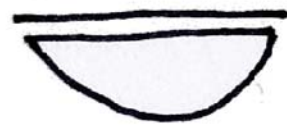
- 1-1. Move from the entrance to an information computer to search for the book.
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- 1-3 Take the book and check out the book.
- 1-4 Go out from the library.

2. Stay and read at the library (Not yet tested in pilot study)

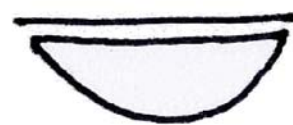
- 2-1 Move from the entrance to a quiet study area with a free place for reading.
- 2-2 Sit down and read.
- 2-3 Go to the toilet.
- 2-4 Go out from the library.



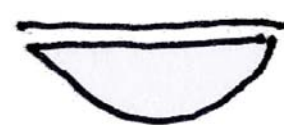
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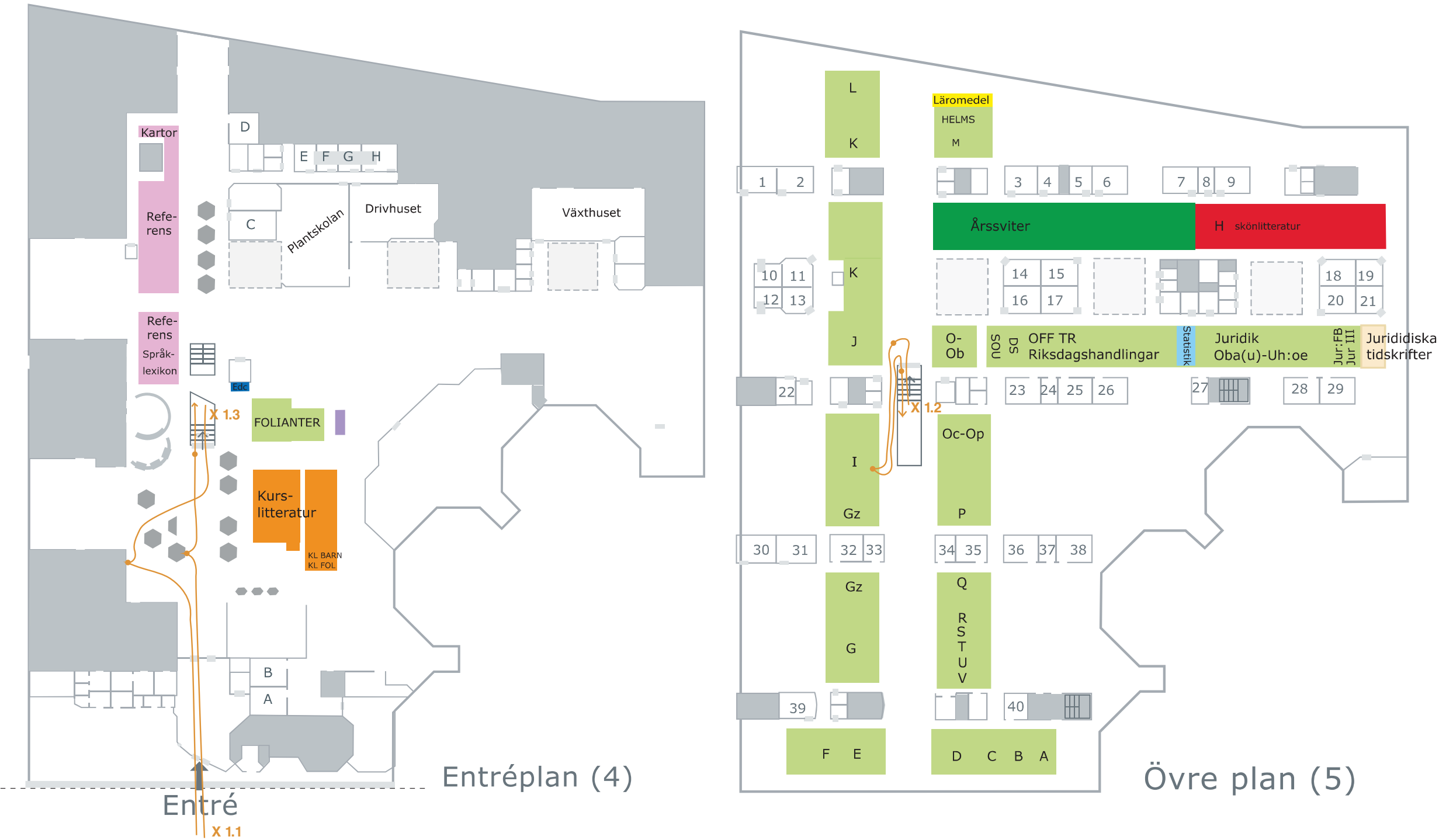


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Study object Library of Stockholm University - plotted path Miss X



X 1.1



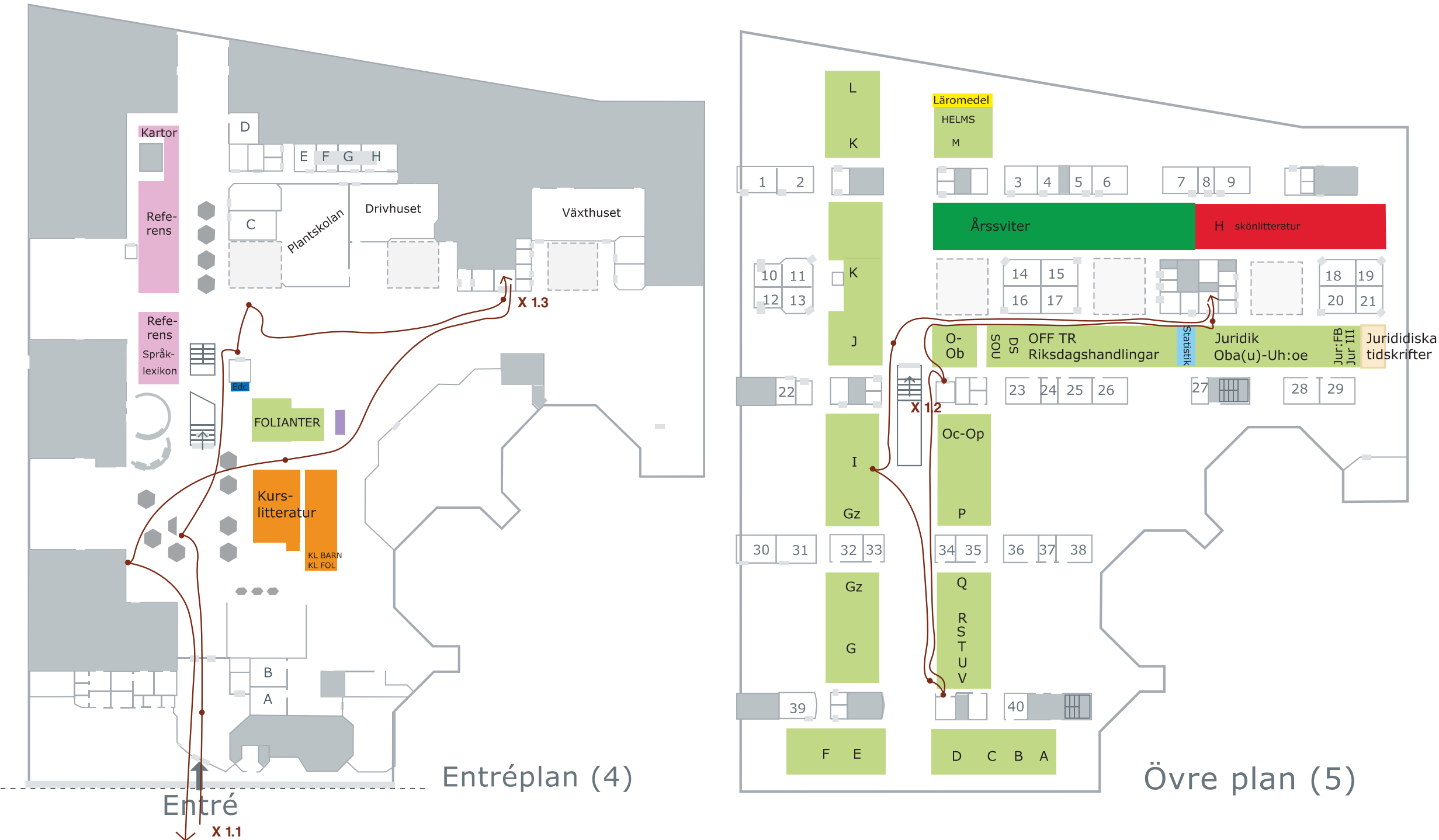
X 1.2



X 1.3



Study object Library of Stockholm University - plotted path Batman



Study object Library of Stockholm University - key findings

A huge information screen blocks the path and view while reaching the second floor. The screen should be replaced to the side of the corridor.



Study object Library of Stockholm University - key findings

The library has an easy-to-understand labeling system of the book shelves, an alphabetical order in combination with a few numbers.



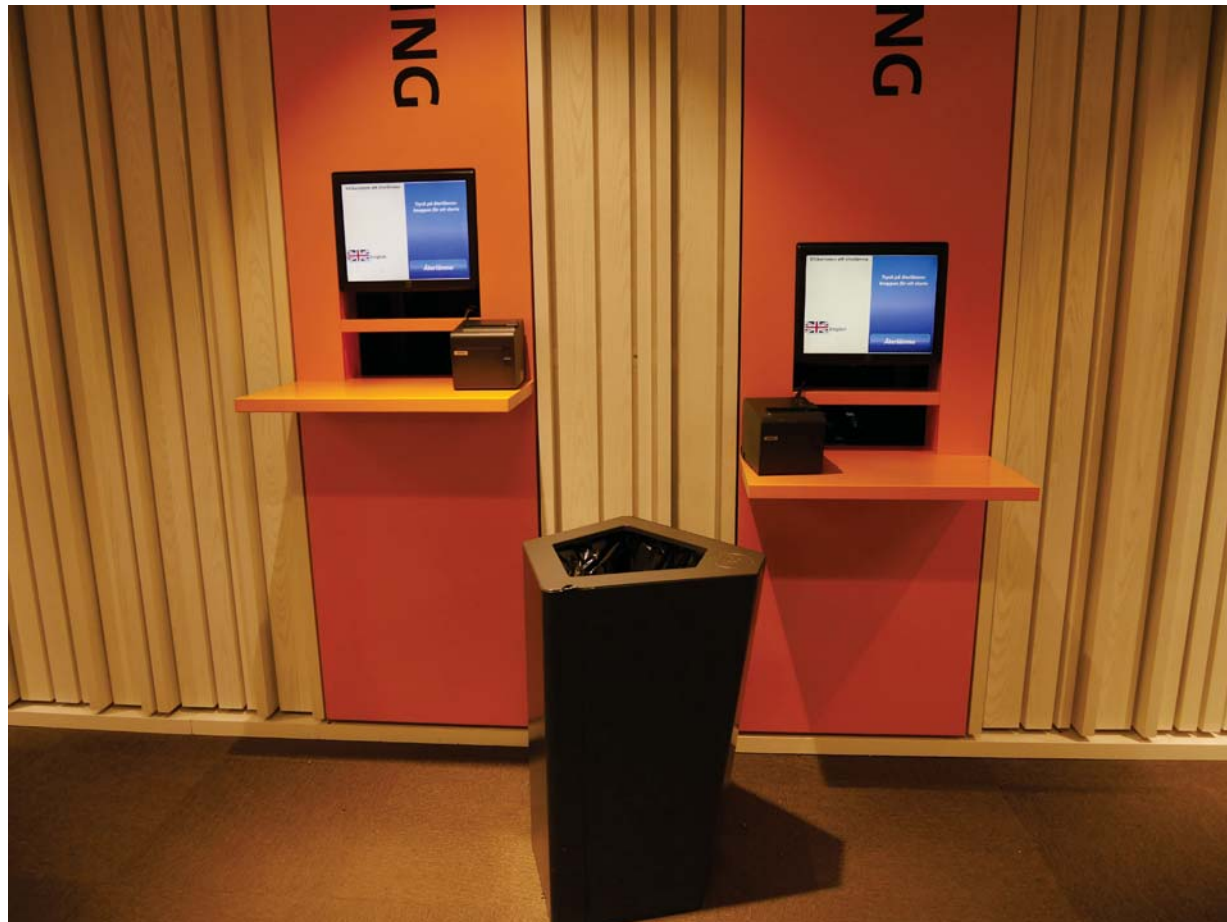
Study object Library of Stockholm University - key findings

The second floor has a well-functioning textile floor carpet, hard enough for wheelchairs but also soft enough to reduce a lot of the usual high note sounds from walking around.



Study object Library of Stockholm University - key findings

The library is a good example when it comes to information and check-out desks. Well designed combinations of tables at different heights. The garbage bin should be removed though, partly blocking movement around the lower check-out desk for people in wheelchairs.



Study object Library of Stockholm University - key findings

The information for navigating through the building is well designed, making it easy to find elevators. Some inconsistent when it comes to signs with braille and information about elevators not in use brings down the score, but overall a well thought-out information system.



Scenario-based mapping of accessibility and way finding - key conclusions

I wanted to create a field study method that changed the focus from checklists and general approaches to more hands on studies of user experiences of moving around in a public building. I think the method worked well for me on the pilot study of two libraries. Instead of just walking around trying to find and evaluate possible way finding and accessibility issues, I got more inspired to think of the actual functions of the building, and almost immediately stumbled on different design solutions that could be improved.

The field study method has to be combined with a more objective method to compare buildings, but as a tool for designers to start working with accessibility and way finding in existing or proposed buildings this scenario-based method can be a good start.

As a side note about the project process I noticed that I spent too much time thinking in my own chamber before trying the method on site. As usual when it comes to design, the faster you get out in real situations testing and getting inspired the more iterations and improvements can be accomplished within the project time frame.

