

# THE COMMON GROUND

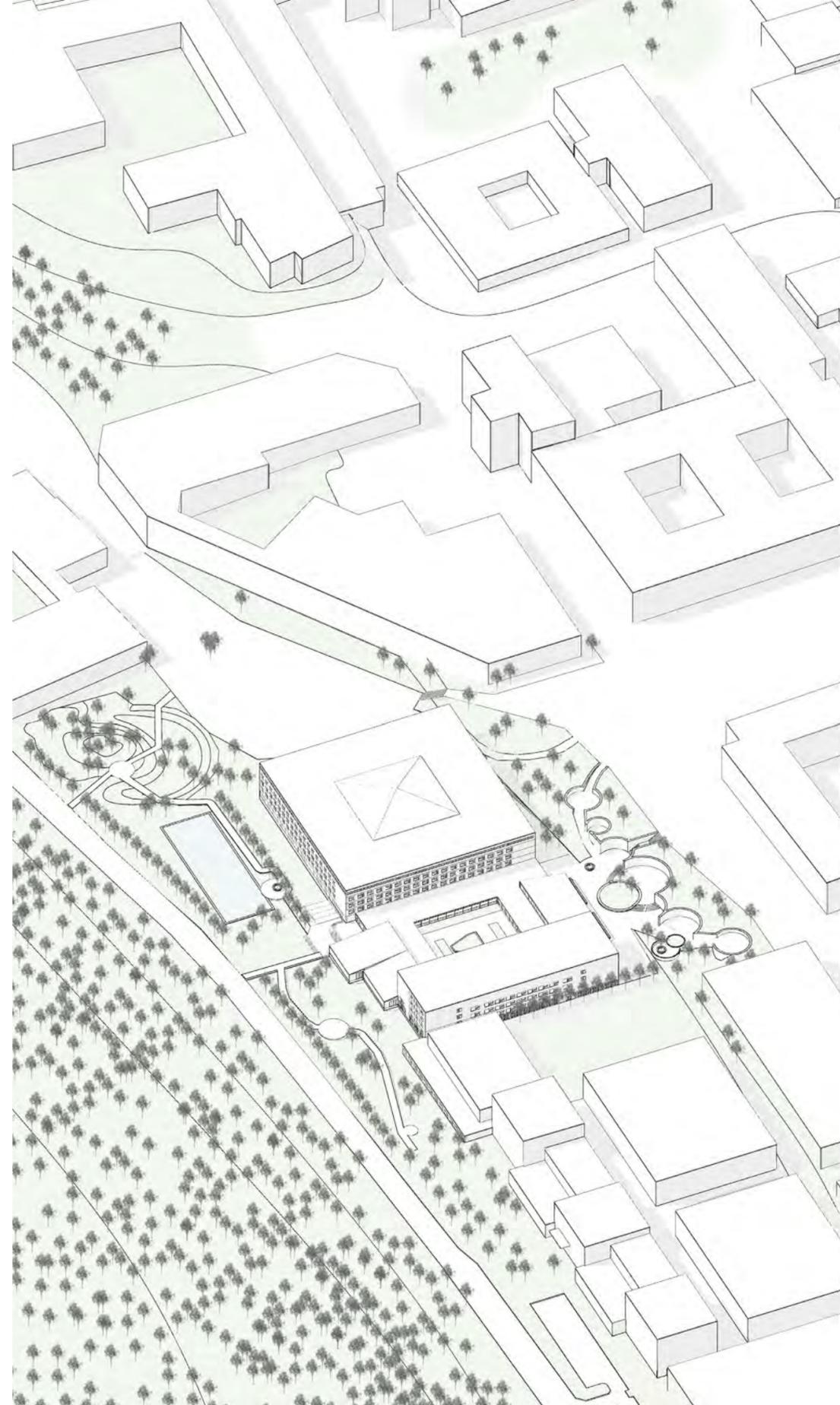
ISALINE POTARD



RECONNECTION WITH PEOPLE



RECONNECTION WITH NATURE



*An entrance linked to the main pathways*



*An attractive park on the slope*



*A calm park connected to the wood*



*An unification of SBI and SBII through facilities*

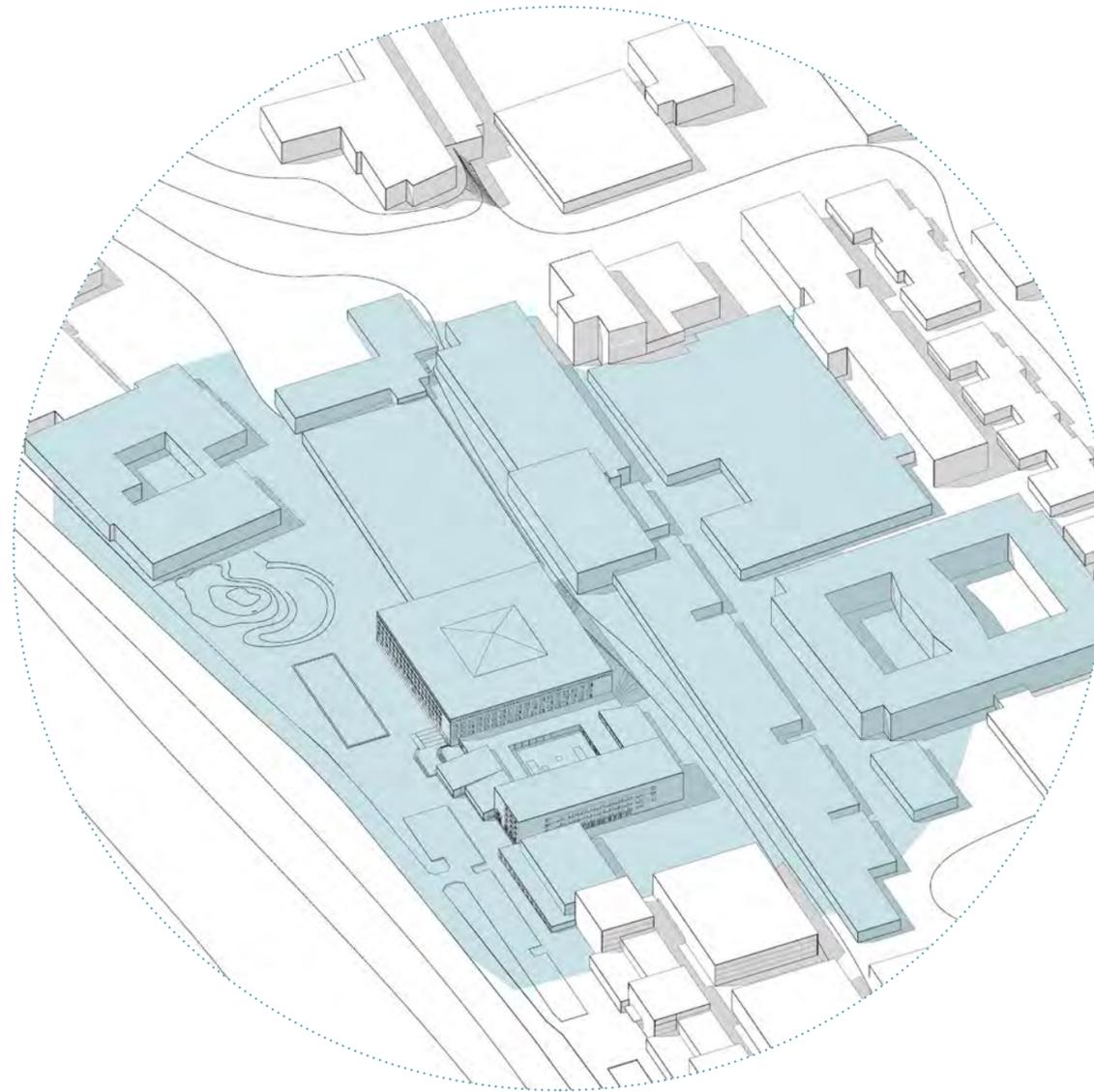
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*This project has been realized for the ARK626 course, spring 2021 led by Elke Miedema, Oscar Carlsson and Isabelle Doucet.*

THE  
**INTRODUCTION**

# PROJECT PLAN



The project takes place on the ground floor of the Architecture and Civil Engineering (ACE) building, especially in the SBI, SBII and the corridor leading to the SBIII. Indeed, according to me, the floors of the ACE building are already good as they are today, given that they have been renovated a few years ago, in 2017 by White Arkitekter. The project is also expanded to the close surroundings, from the Student Union building to the Computer Science building.

The project will impact mostly the Architecture and Civil Engineer students, and the students from other fields on the campus. I hope the public will be also more attracted to come into the building thanks to the facilities.

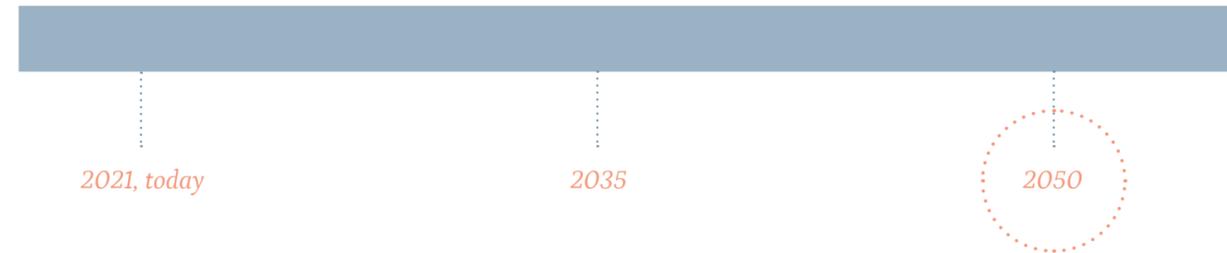
In this project, my vision is to reconnect the humans between themselves and nature. I will use the ACE building and its surroundings as tools to increase the possibilities of meeting places between people and connections with the greeneries, inside and outside the building. I want those architectural reconnections to increase human open-mindedness, especially for architecture students who will have to answers the SDG's challenges of tomorrow.

## WHAT

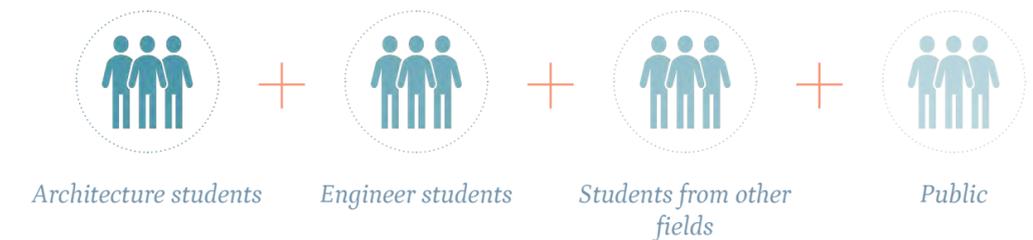
Close surroundings

ACE building ground floor

## WHEN



## WHO



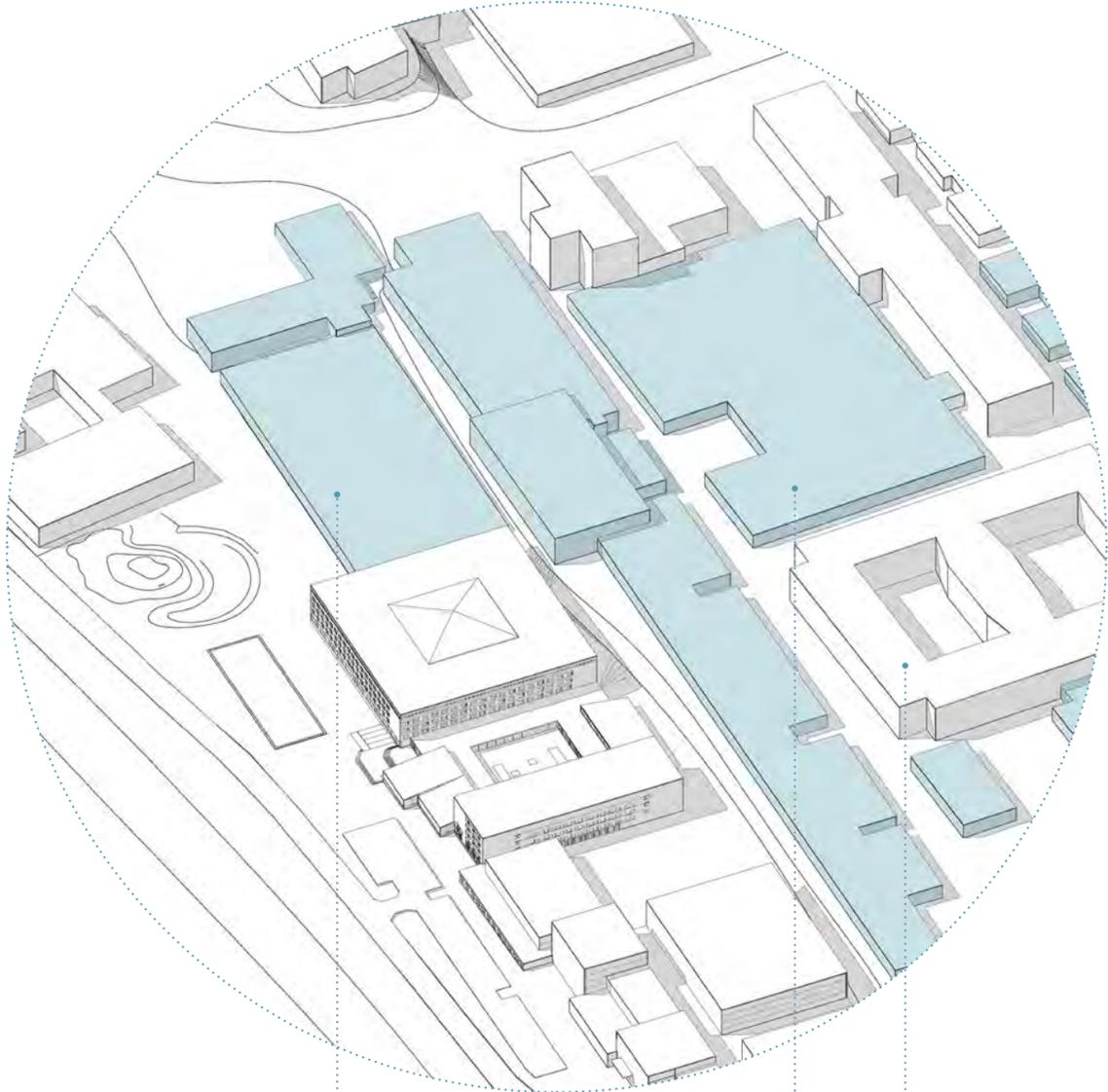
## VISION

Reconnect humans between them and nature, to increase human well-being and open-mindedness of future architects

## GOALS



# CHALMERS FUTURE PLANS - 2050

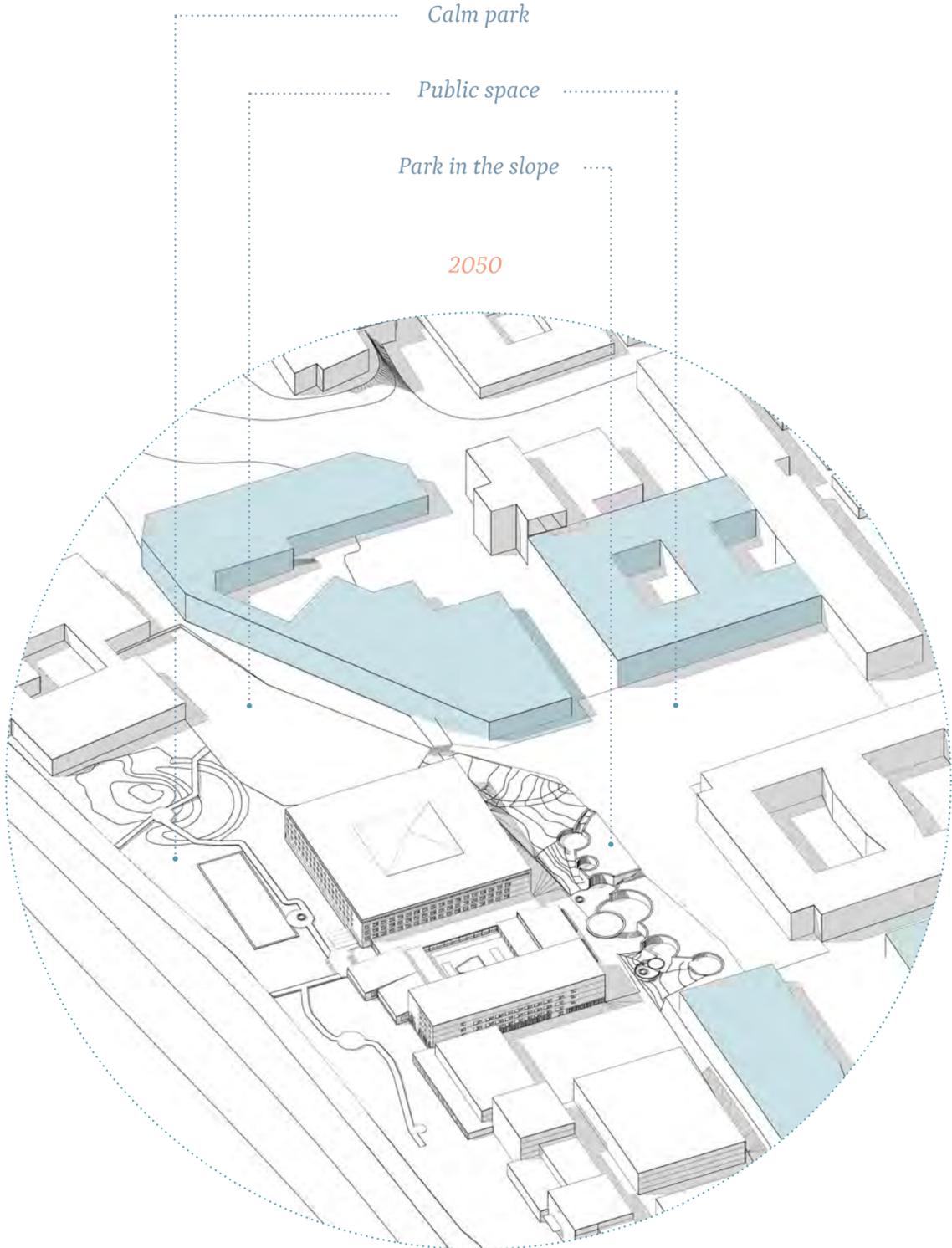


2021

Mechanical building

Physic's pool and pipes

Computer sciences building



Calm park

Public space

Park in the slope

2050

The project will be based on the Chalmers Future Plans of 2050 which plan the demolition of the Physic's pool and pipes buildings and the reconstruction of the Mechanical building. Those two buildings are perceived as barriers today and separate the ACE building from the other part of the campus. This is as well amplified by the natural slope of the topography.

The Chalmers Future Plans will create two public areas that I would like to take advantage of as spaces to reconnect people together and nature. To do this, I will create two parks: the calm park on the western side, and the park-in-the-slope on the eastern side.

This project could be realized in few steps, following the phases of the Chalmers Future Plans which will start in 2035.

THE  
**DESIGN PROPOSAL**

# PROCESS: THE SURROUNDINGS

The process can be divided into two parts: the first one is the development of the surroundings, and the second is the development of the ground floor. I have worked on the process by drawing sketches. Here, I placed some of those.

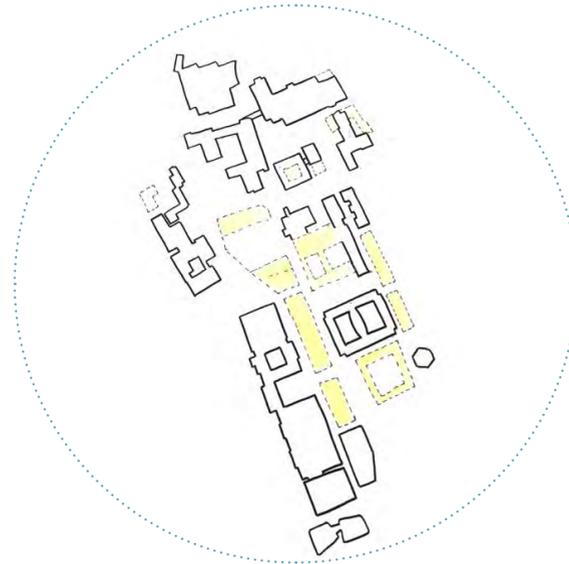
1. The Chalmers Future Plans: where are the future buildings? How will be the future surroundings of the ACE building?

2. Where are localized the attractive areas (Student Union building where all the students use to go to lunch, cafés, cafeterias, parks...)? Where are the entrances of the buildings?

3. What are the pathways created by the Chalmers Future Plans to reach the different attractive areas?

4. & 5. & 6. The different areas to create to take advantage of the public areas and the connections with the rest of the campus. How to influence the users to come to the ACE building? How to redirect people?

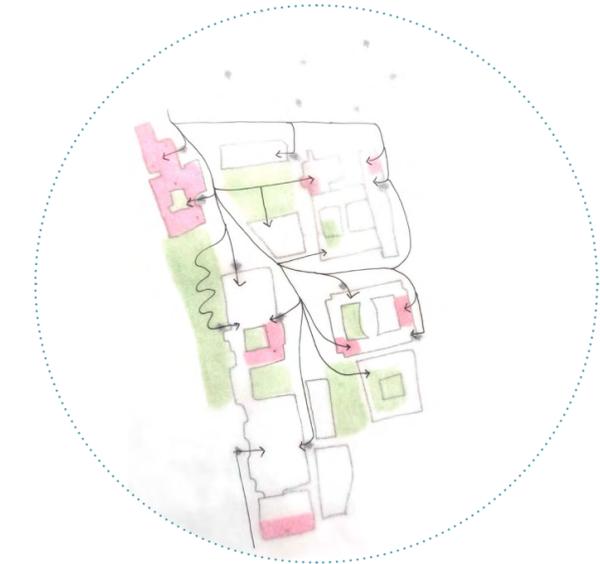
Indeed, today, the main pathway is Chalmers tvärgata which crosses the campus. The main pathway to reach the ACE building is Teknologplatsen which leads only to the ACE's entrance. One purpose to increase the attractiveness of the ACE's surroundings is to make this pathway a way to bring more people to the ACE building and further, to the Computer Sciences building and its future public area.



-1



-2



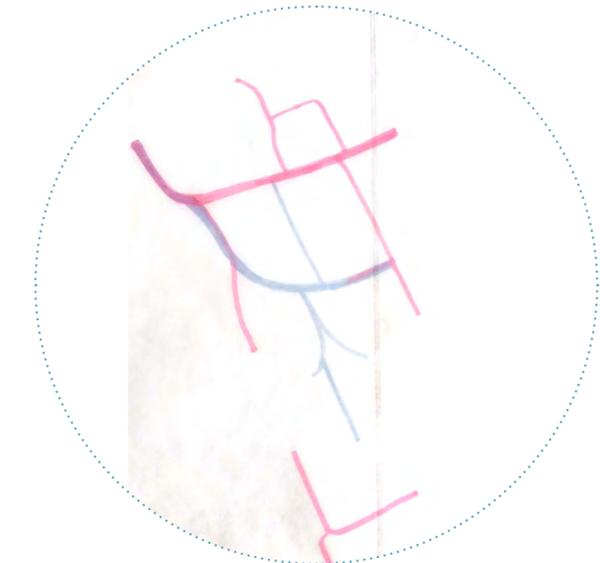
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-4



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-6

## PROCESS: THE GROUND FLOOR

The second part of the process is the re-organization of the ground floor to provide more areas to meet people and insert new connections to nature.

1. Relocalisation of the entrance to the north façade to be connected to the future public area. The existing one will stay as it is but will be secondary.

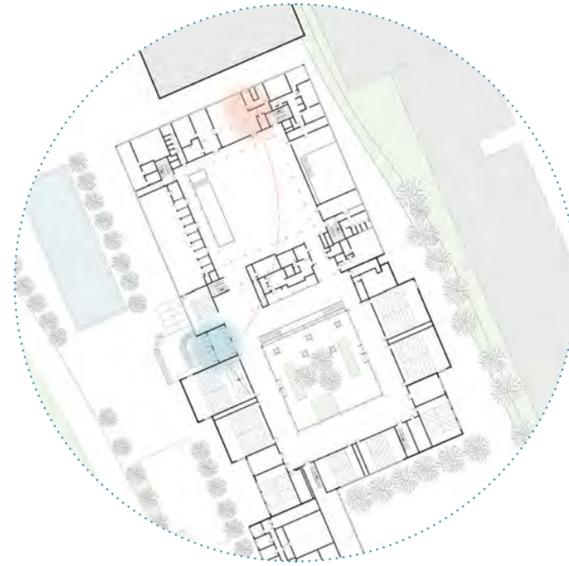
2. As the workshop will be divided into two parts due to the implementation of the new entrance, I relocate the machines-room and the hand-tools room to the actual offices. I also will integrate the Atelier into the workshop to use the whole eastern part of the SBI as the Workshop.

3. Kunskapstrappan is moved next to the new entrance.

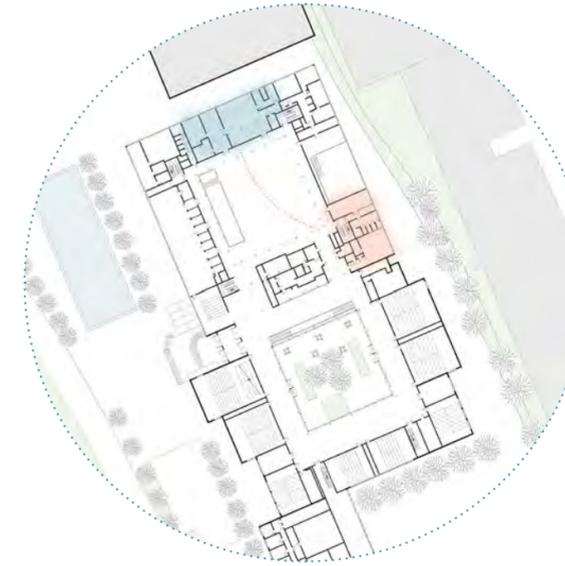
4. The offices are moved to the western part of SBI, to take advantage of the view of the calm park, where Kunskapstrappan used to be.

5. The cafeteria will be removed and relocated on the eastern side of SBII. Indeed, with the Covid-19 situation, both students and teachers learned to use digital tools and I assume that some courses will still be digital in the future. This allows the reuse of three lecture halls to implement the cafeteria. A big area to have lunch will be created, since the one downstairs was a little bit uncomfortable to use, especially during the winter when the basement is quite dark and not connected to the exteriors.

6. The study areas will be expanded to provide new areas to meet people.



-1



-2



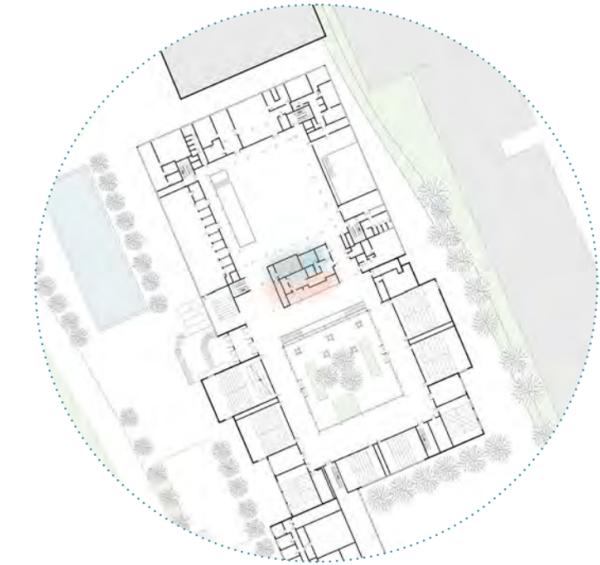
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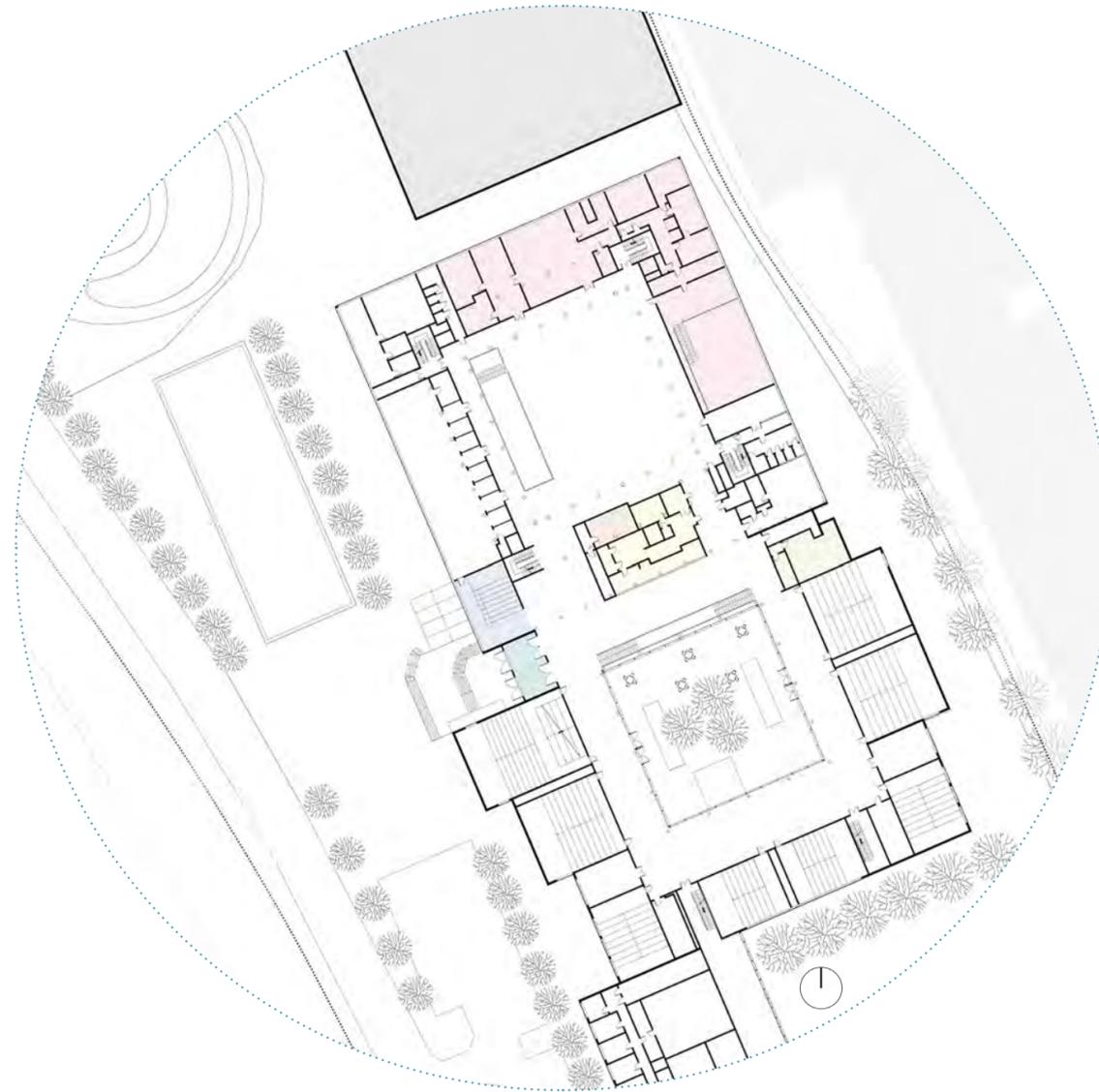


-5



-6

# DESIGN PROPOSAL



2021

Those plans show the existing ACE ground floor and the one promoted by my project.

The entrance is connected to the public areas, the «quiet areas» such as the library and the offices are open on the calm park on the western side of the ACE building. The workshop is visible from the public area and linked to the Atelier. The cafeteria is connected to Trädgården and to the park-in-the-slope, which are two very important places to reconnect with the people and nature.

Main entrance

Offices

Kunskapstrappan

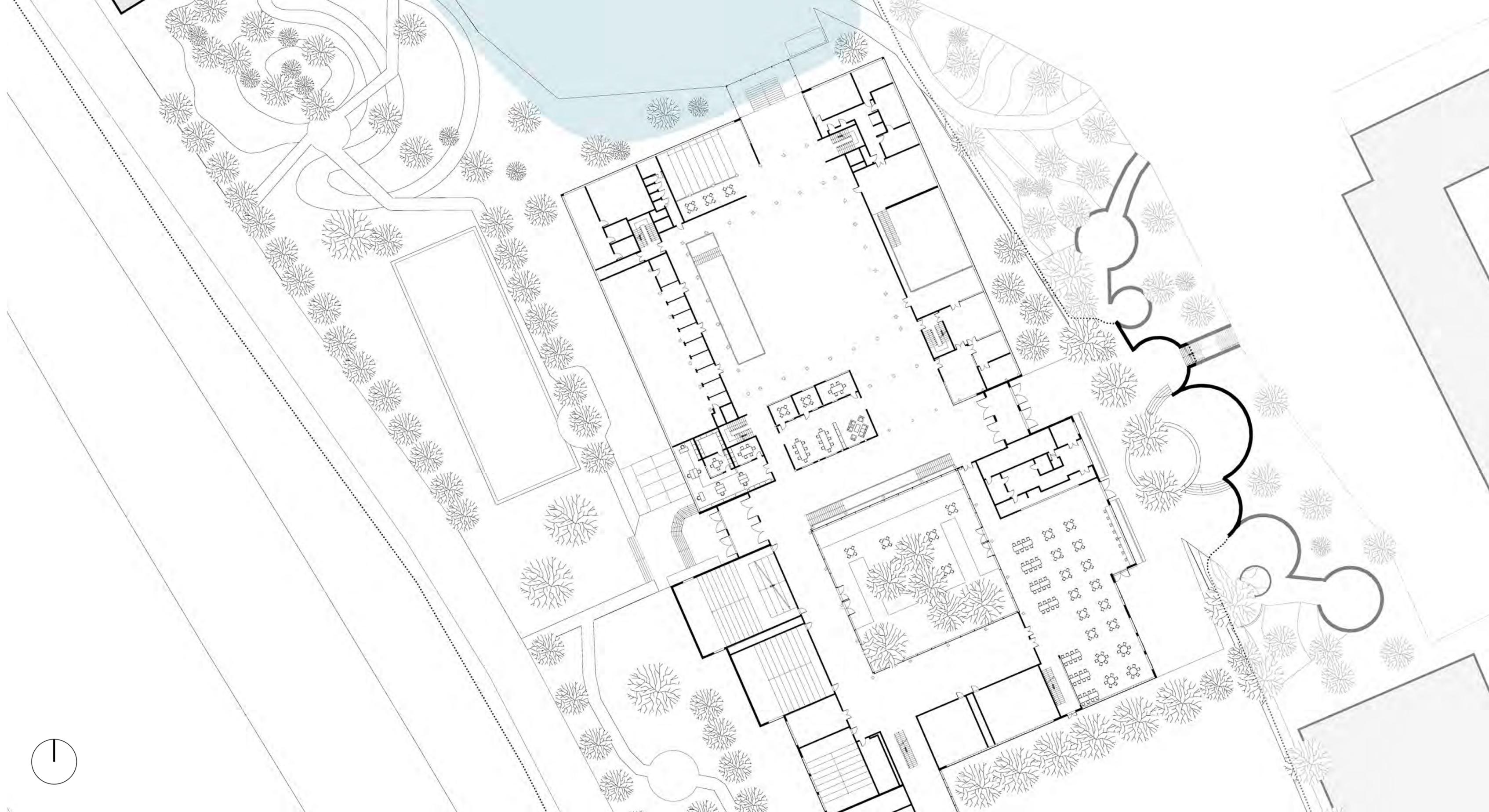
Study areas

Cafeteria

Workshop

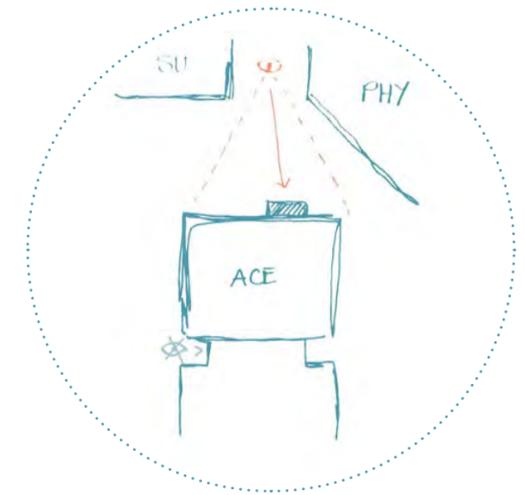
2050



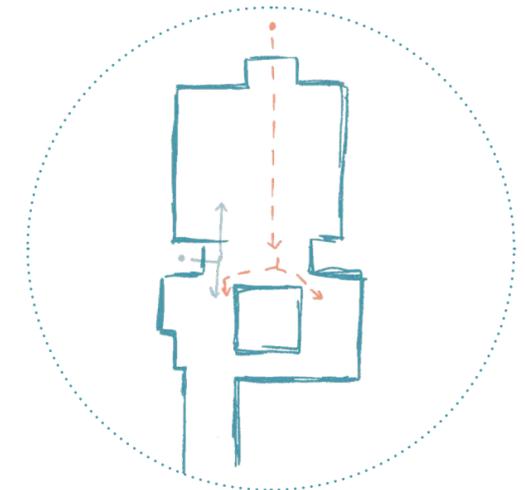




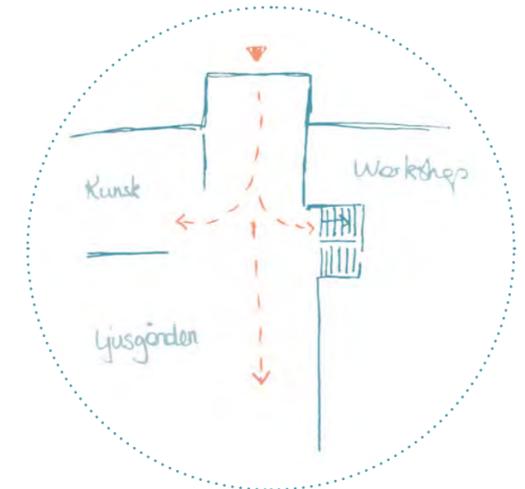
THE ENTRANCE



VISIBILITY



UNIFICATION



CLEAR NAVIGATION

*In my project, the new main entrance is visible from the Student Union building which is a very important place on the campus because all the students use to go there to have lunch. This visibility will attract more people to the ACE building.*

*The entrance is also in the campus-style: a modern glazed volume added to the existing brick-made building. This style of entrance is present all over the campus. Thanks to this, students from other fields of the campus will directly understand where is the entrance of the ACE building.*

*The entrance will also unify the Architecture and the Civil Engineer students. Indeed, today, the entrance divides the two parts of the ACE: Architecture students turn left and Civil Engineering students turn right. This new entrance will reconnect the students together.*

*The navigation will be as clear as it is today, with the proximity of the staircase and an open-space area that provides interesting views until Trädgården.*

*The pavement in front of the entrance will be the same as today, with grey stones, to keep the harmony between the old and the new, and to highlight the entrance as the «new implementation contrasting with the old» when arriving in front of the ACE building.*

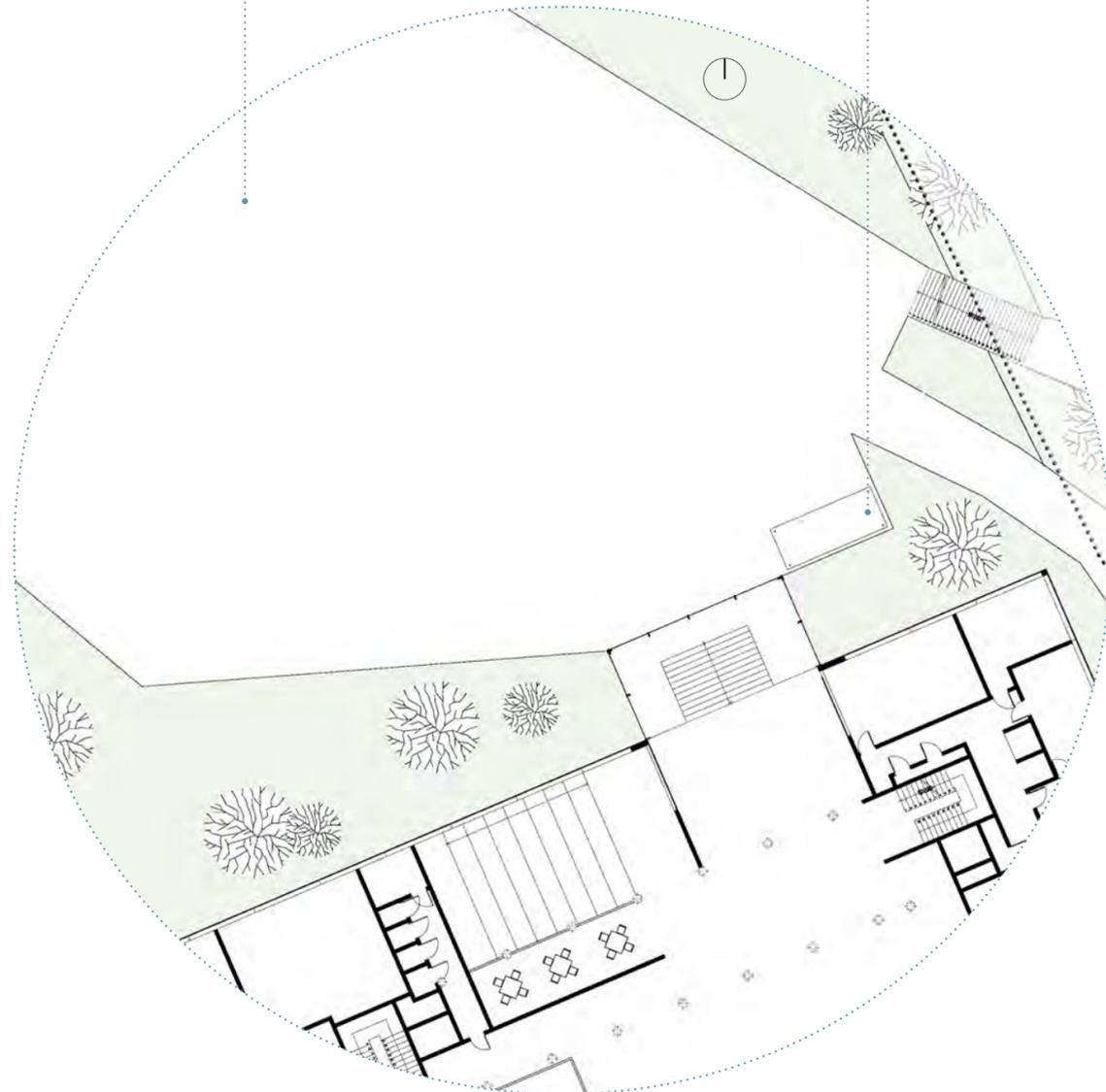
*A weather-protected and green parking for bikes and scooters will be implemented near the entrance to promote sustainable transportations.*



- Existing floor



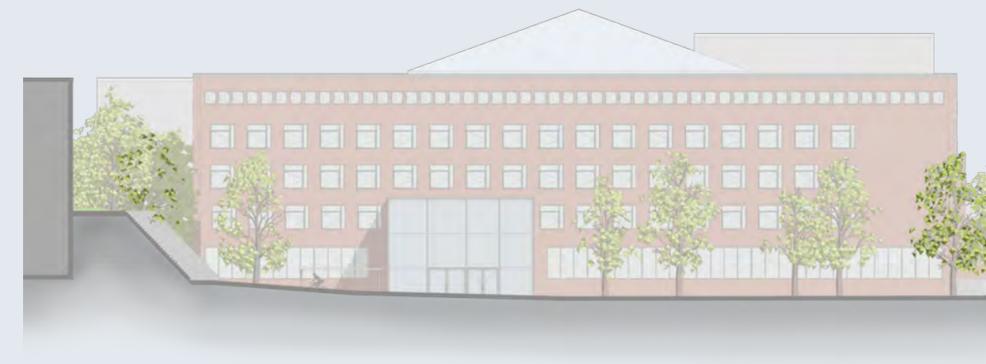
Parking for bikes



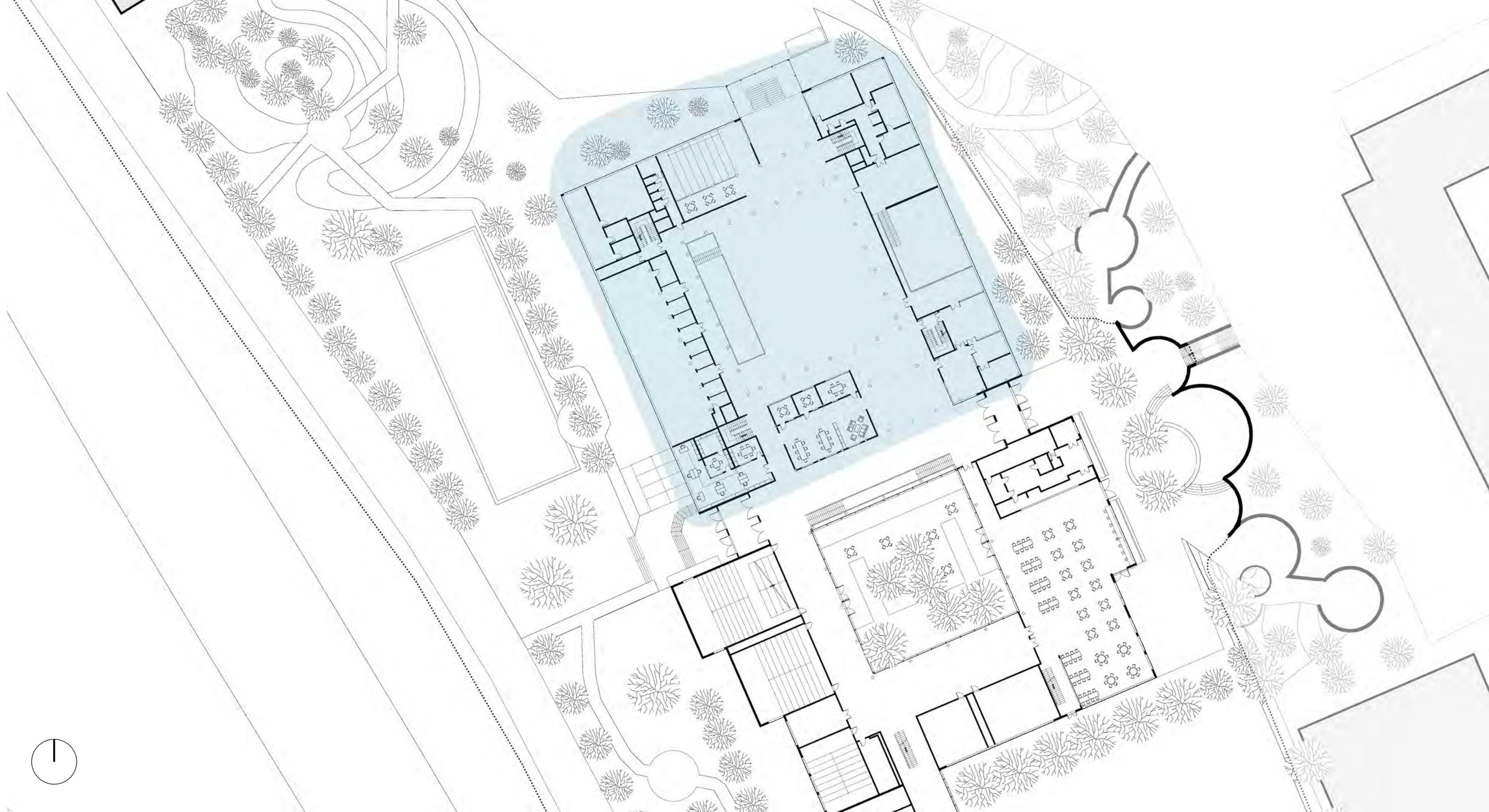
Entrances in the campus, analysis



Section AA' The ground floor as an open space connected to Trädgården

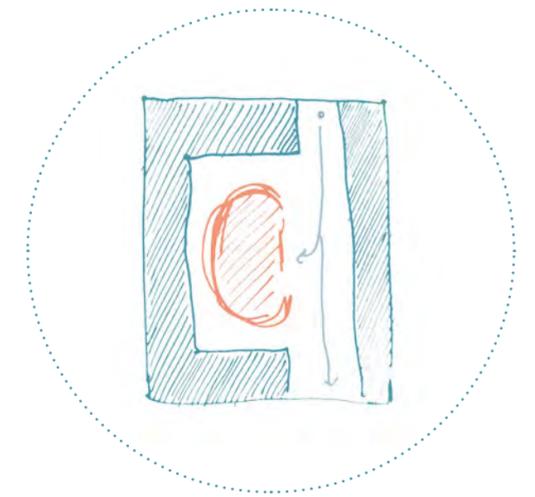


Façade A The new entrance

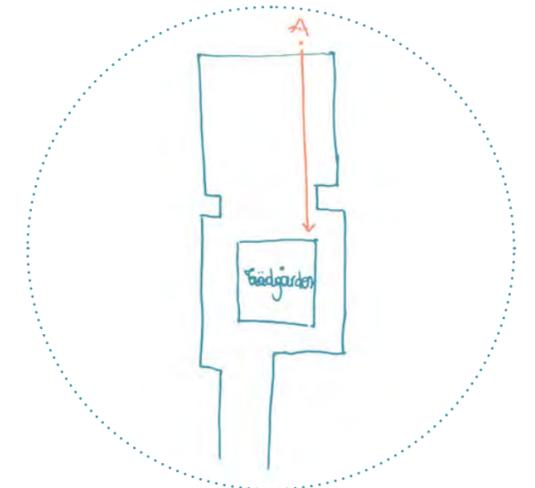




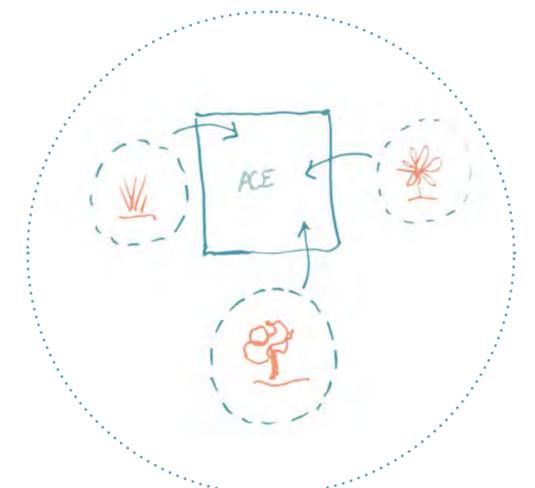
LJUSGARDEN



EXHIBITION AREAS



TRANSPARENCY



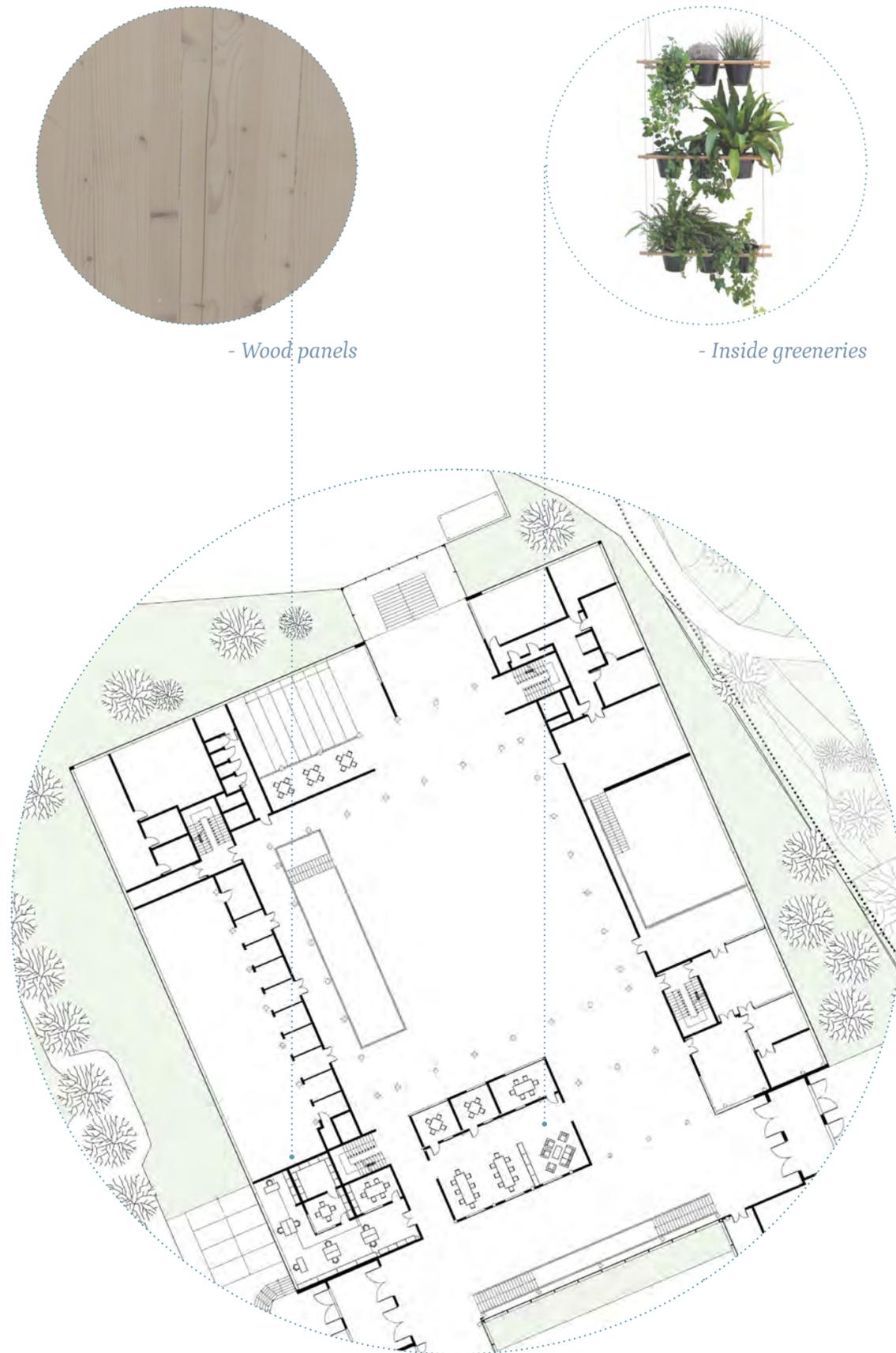
INSIDE GREENERIES

*Ljusgården will still be a place of exhibition. The new entrance will be an opportunity to show the students' works to more people. Indeed, the entrance will be highlighted by the alignment with the study areas, crossing the exhibition area.*

*Kunskapstrappan is relocated next to the new entrance. I thought it was very important to keep this conference room close to the entrance to have easy access for visitors.*

*Offices and study areas will be built with wood panels to be as flexible as possible regarding the evolution of needs. Different typologies of work are provided: areas to work alone or in small groups, areas to work in big groups and areas to have a break time.*

*Greeneries are implemented in the offices and the study areas as plants that people can grow to make their environment as comfortable as possible. Indeed, school is a place where we all spend a lot of time: it is important to feel good to have a good mindset and be inspired.*



- Wood panels

- Inside greeneries



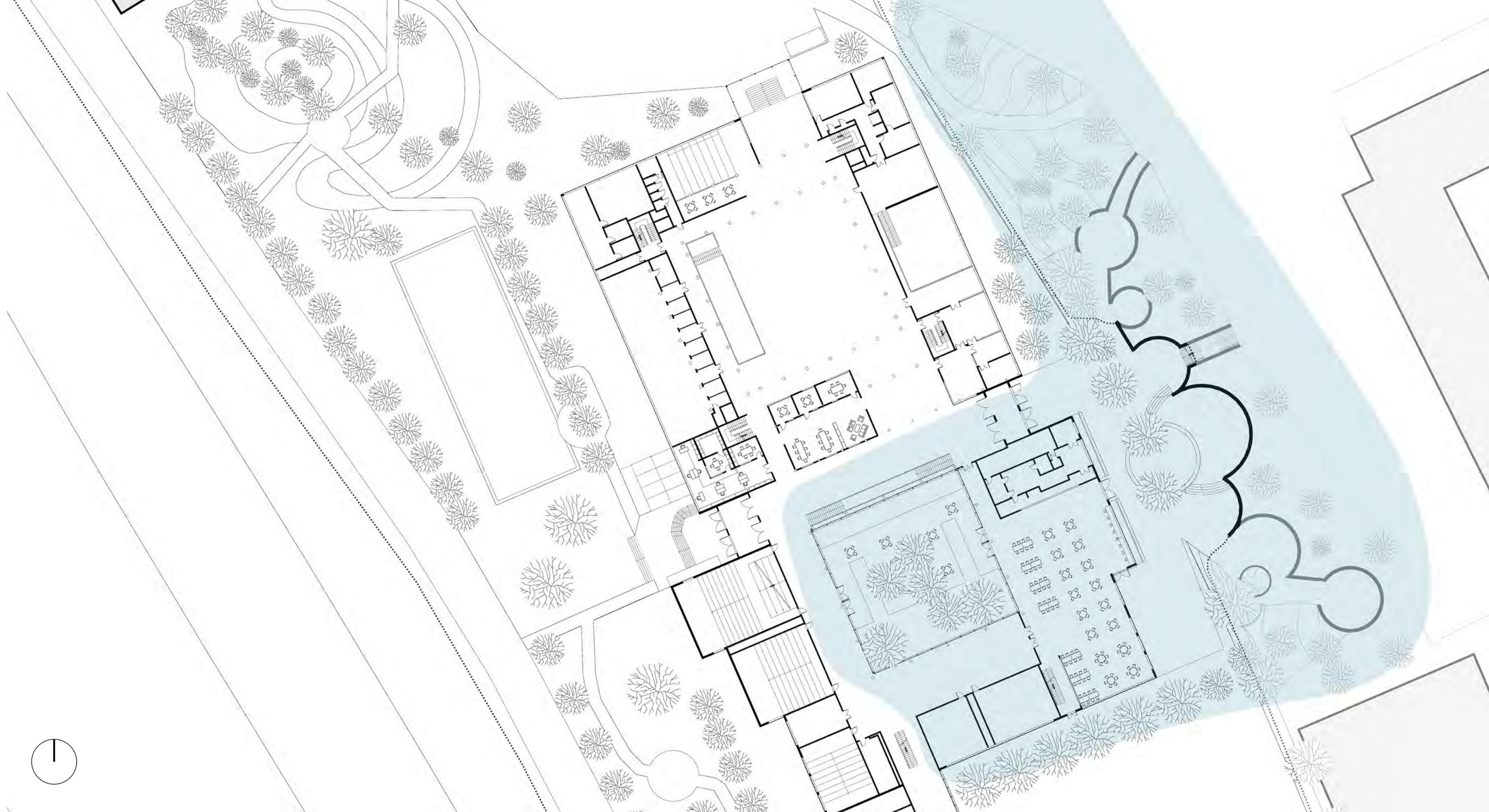
*Kunskapstrappan, next to the new entrance*



*The new offices*

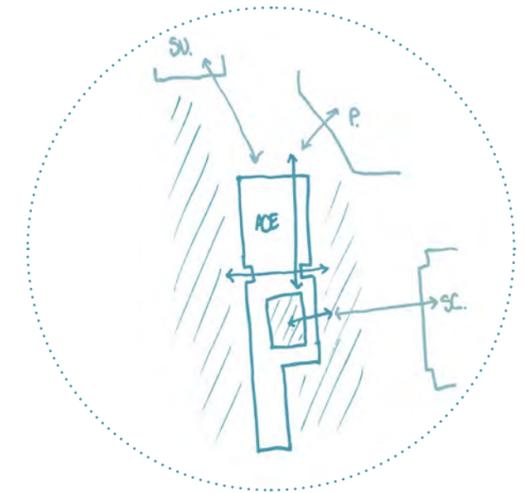


*The new study areas*





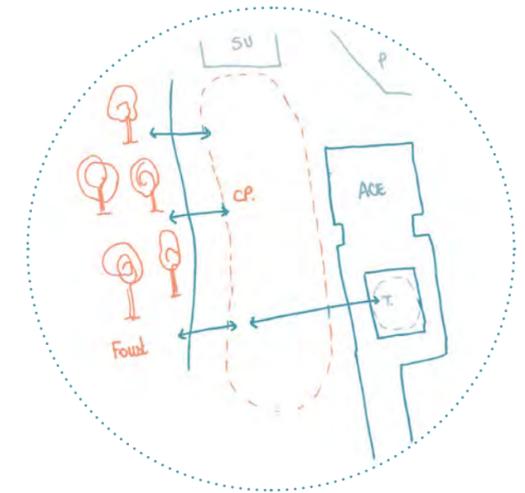
THE PARK-IN-THE-SLOPE



EXPANSION



INCREASE OF BIODIVERSITY



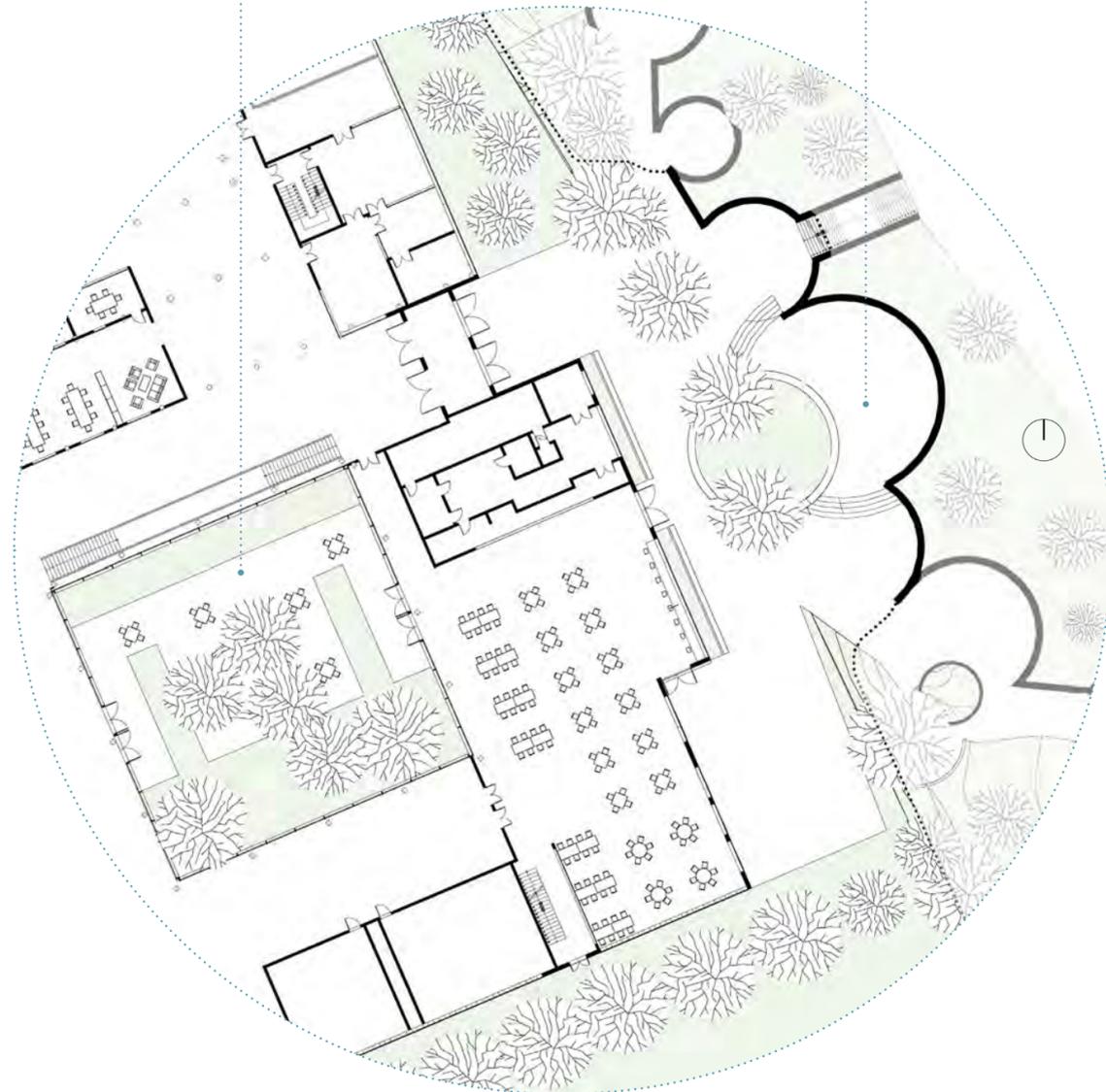
CONNECTION



- Existing floor



- Bench near the greeneries



The new cafeteria will be implemented where we have today three lecture halls. It will take advantage of the interesting ceiling oriented to the south, which will let the sunlight illuminates the cafeteria.

The new cafeteria will be a very important place in the project because it will be a place of reconnection with the other students, from the ACE building and the other fields, but as well a place of reconnection with nature. Indeed, the cafeteria will take advantage of its placement in between the two parks, Trädgården and the new park-in-the-slope.

Trädgården will be renovated to be greener. Some greeneries will be implemented to make the place more attractive. Indeed, today, the lack of vegetation and the omnipresence of stone and concrete make this park quite sad, especially during the winter. The existing stone pavement will be kept.

The second park will be built on the 5 meters high slope on the eastern side of the campus. It will be a series of circular areas where people will be able to have lunch, sit to take a break, do their sport, etc. The park will directly lead to the public area in front of the Computer Sciences building. Some benches will be implemented near the greeneries to enjoy the proximity with biodiversity.



The park-in-the-slope

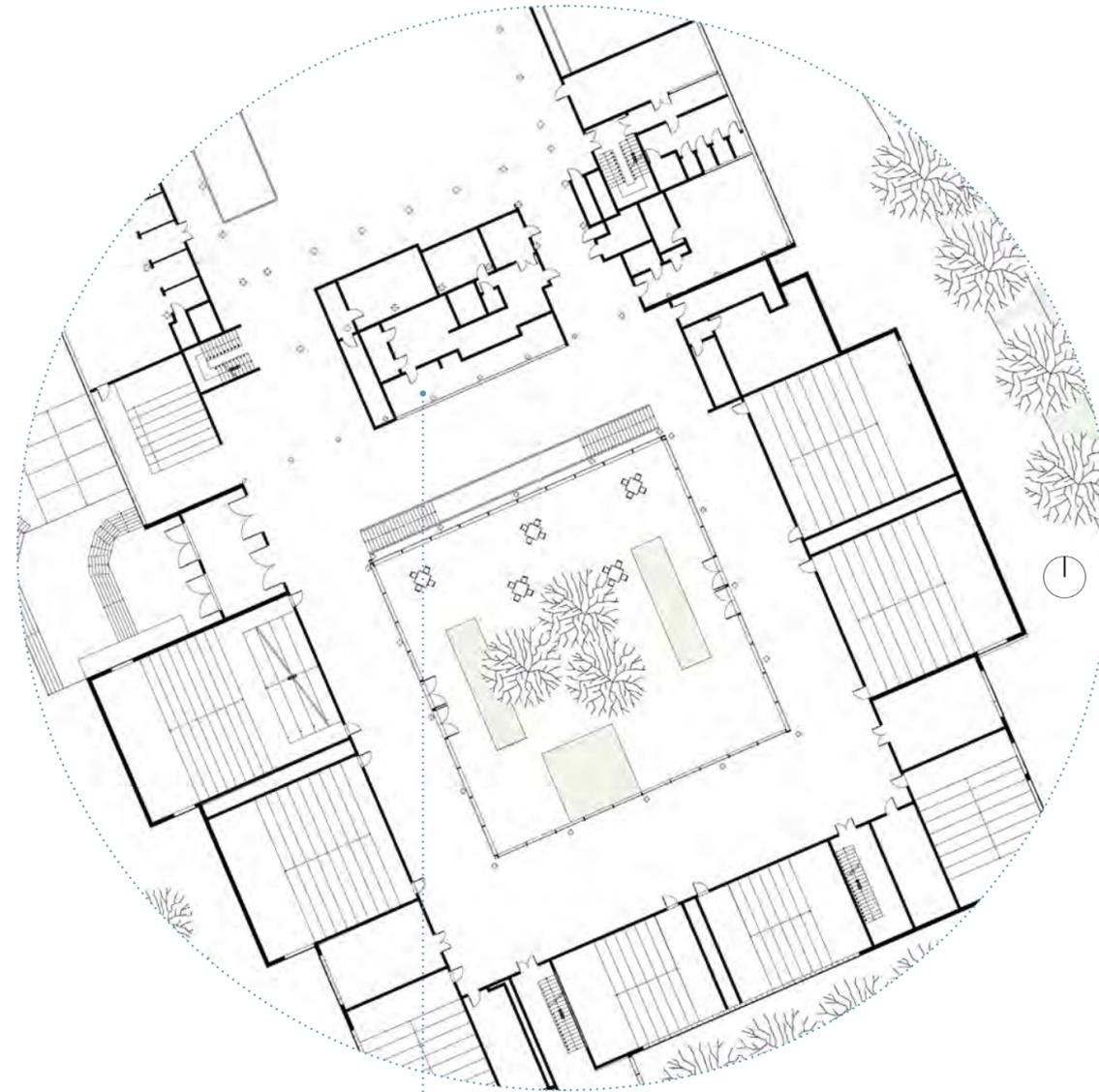


The new cafeteria



Trädgården, greener

# REUSE OF WOOD PANNELS



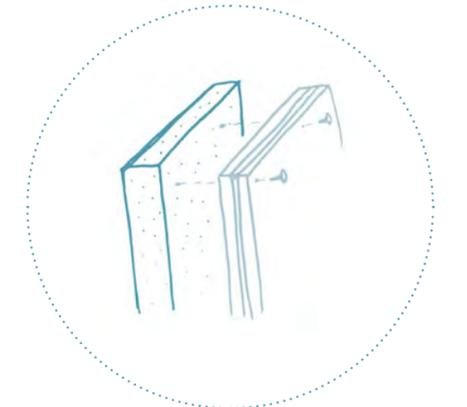
2021

To be as sustainable as possible, all the wood panels from the existing cafeteria will be reused.

The cafeteria is made with plywood nailed together and with structural walls. It is easy to remove everything and replace them in the new localization. This option will reduce waste and costs.

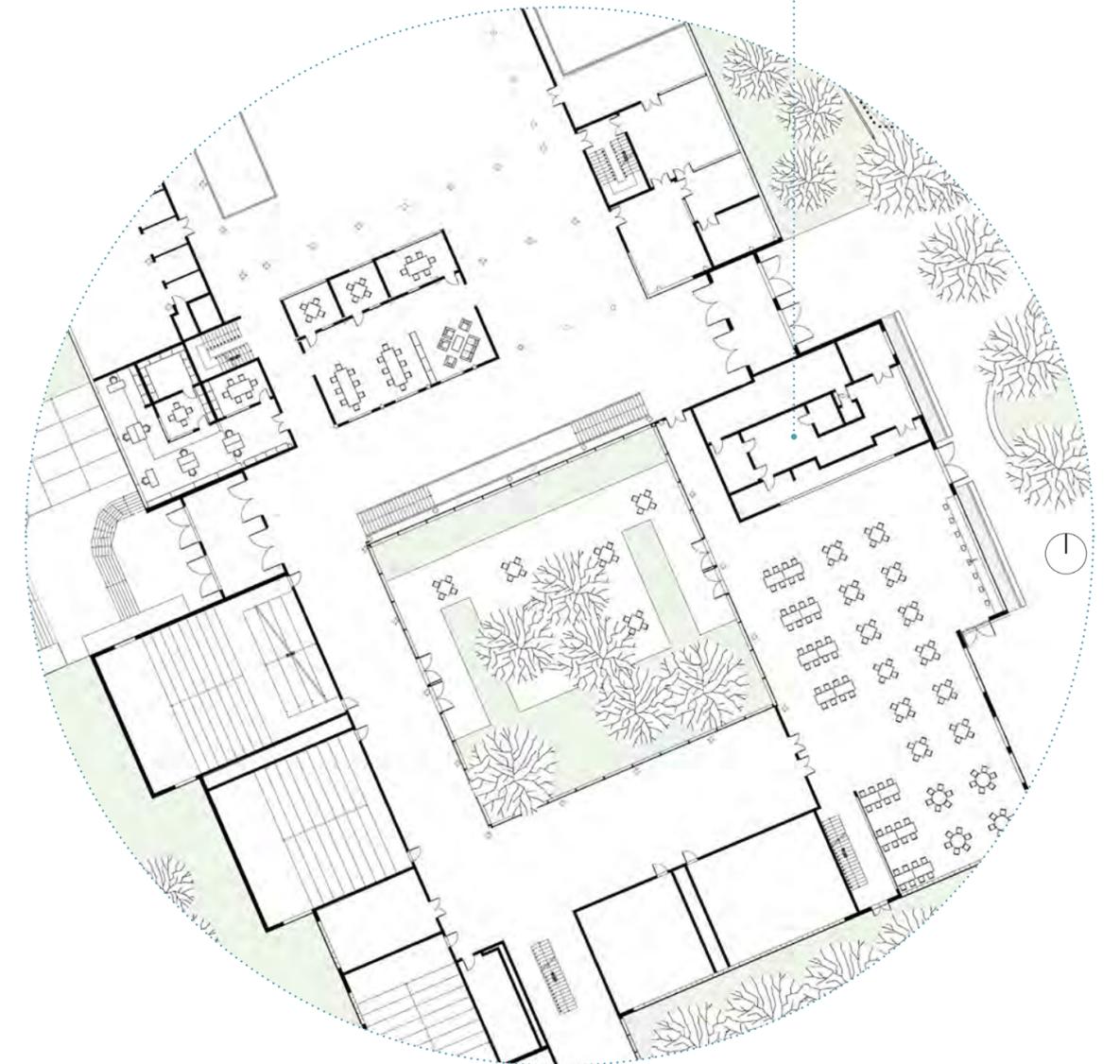


- Existing wood panels



- Wood panels nailed to the wall

2050



## USE OF THE SLOPE



Section BB' High slope of 5 meters between the ACE building and the Computer Sciences building, today



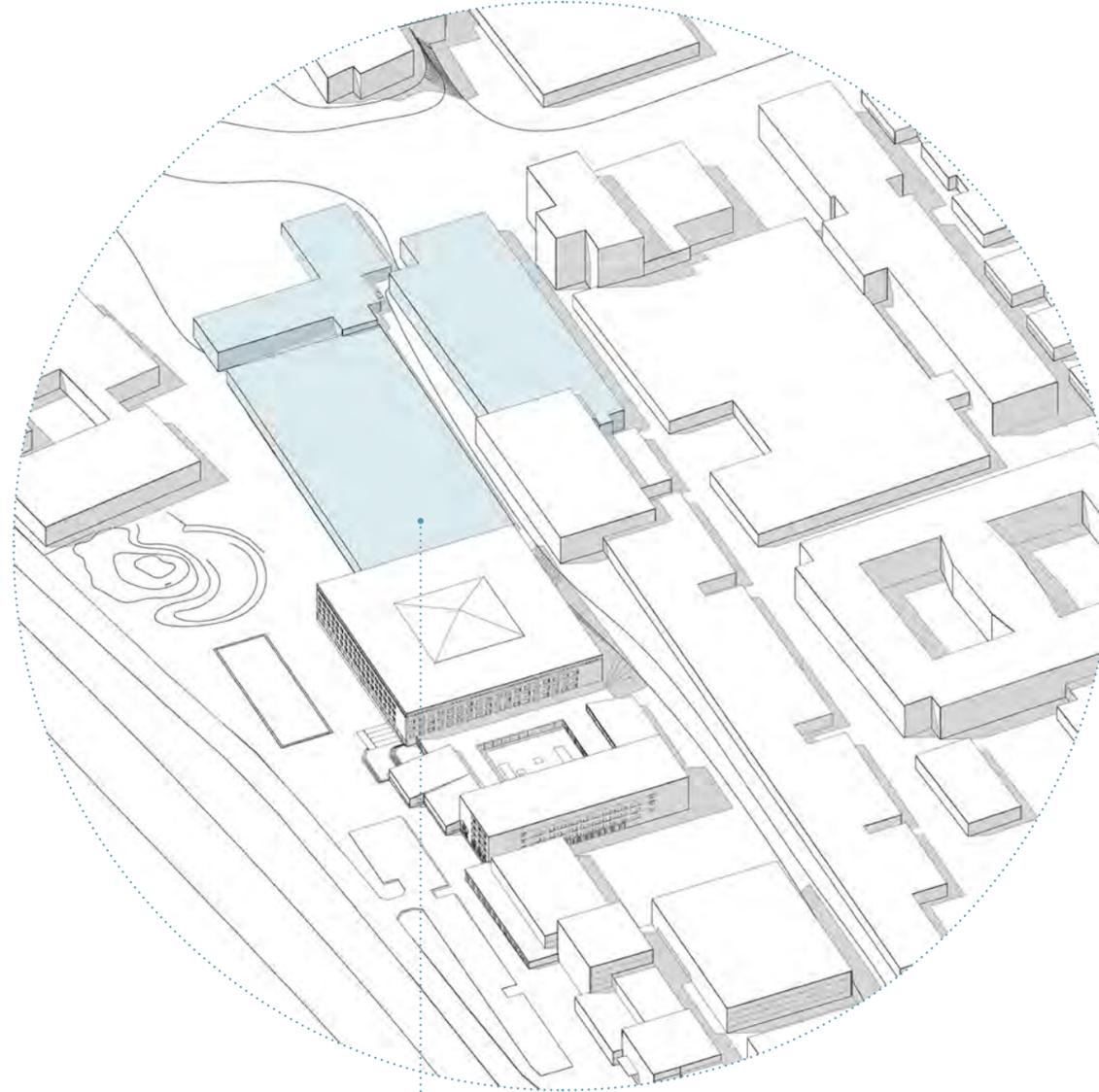
Section BB' Connexion between Trädgården, the cafeteria, the new park-in-the-slope and the Computer Sciences building's public area, future

The sections show the lack of connection between the Computer Sciences building and the ACE building today, due to the presence of the slope and the Physic's pipes building.

In my project, the Physic's pipes building will be demolished, according to the Chalmers Future Plans, which will create an opportunity for reconnection between the Computer Sciences building and the ACE building. The park-in-the-slope will be this connection. It will also increase the biodiversity of the slope.

The new localization of the cafeteria will also be an attractive facility that will be linked to the campus, the public areas and the parks.

# REUSE OF BRICKS



*The park-in-the-slope will be built with reused bricks from the demolished bricks-made buildings.*

*It will be quite easy to remove the bricks from the walls, collect them and replace them. The circular forms of the park will also be an advantage regarding the stability of the structures.*

*A solution should be found to protect the brick walls from rainwater and frost.*

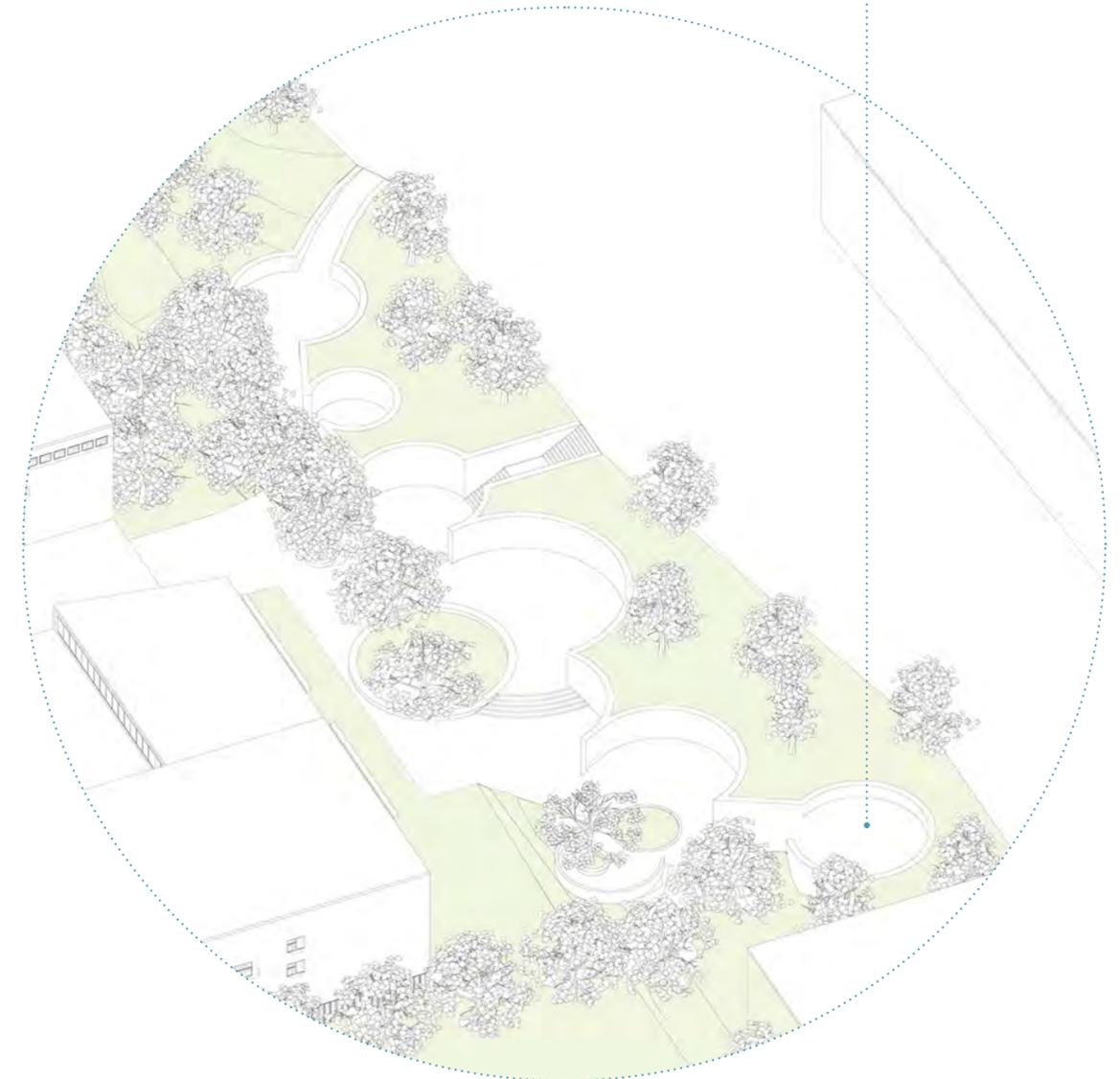


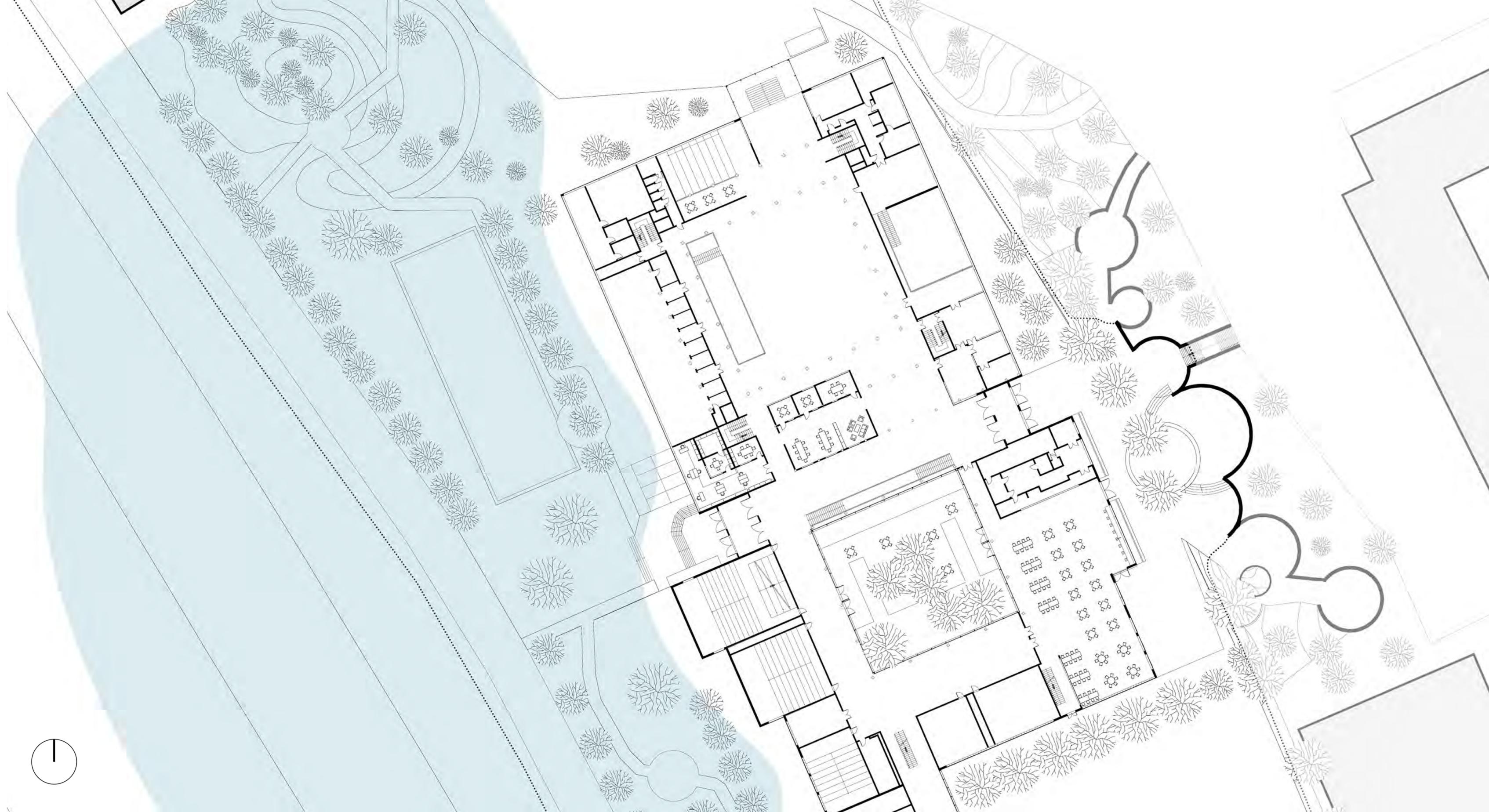
- Existing brick walls



- Bricks reused to build the park's structures

2050







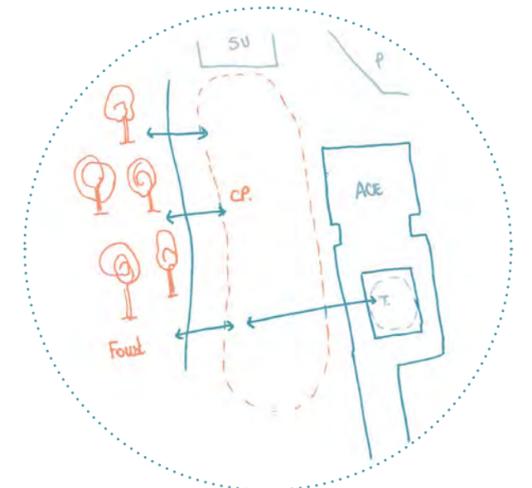
THE CALM PARK



CALM AREAS



INCREASE OF BIODIVERSITY



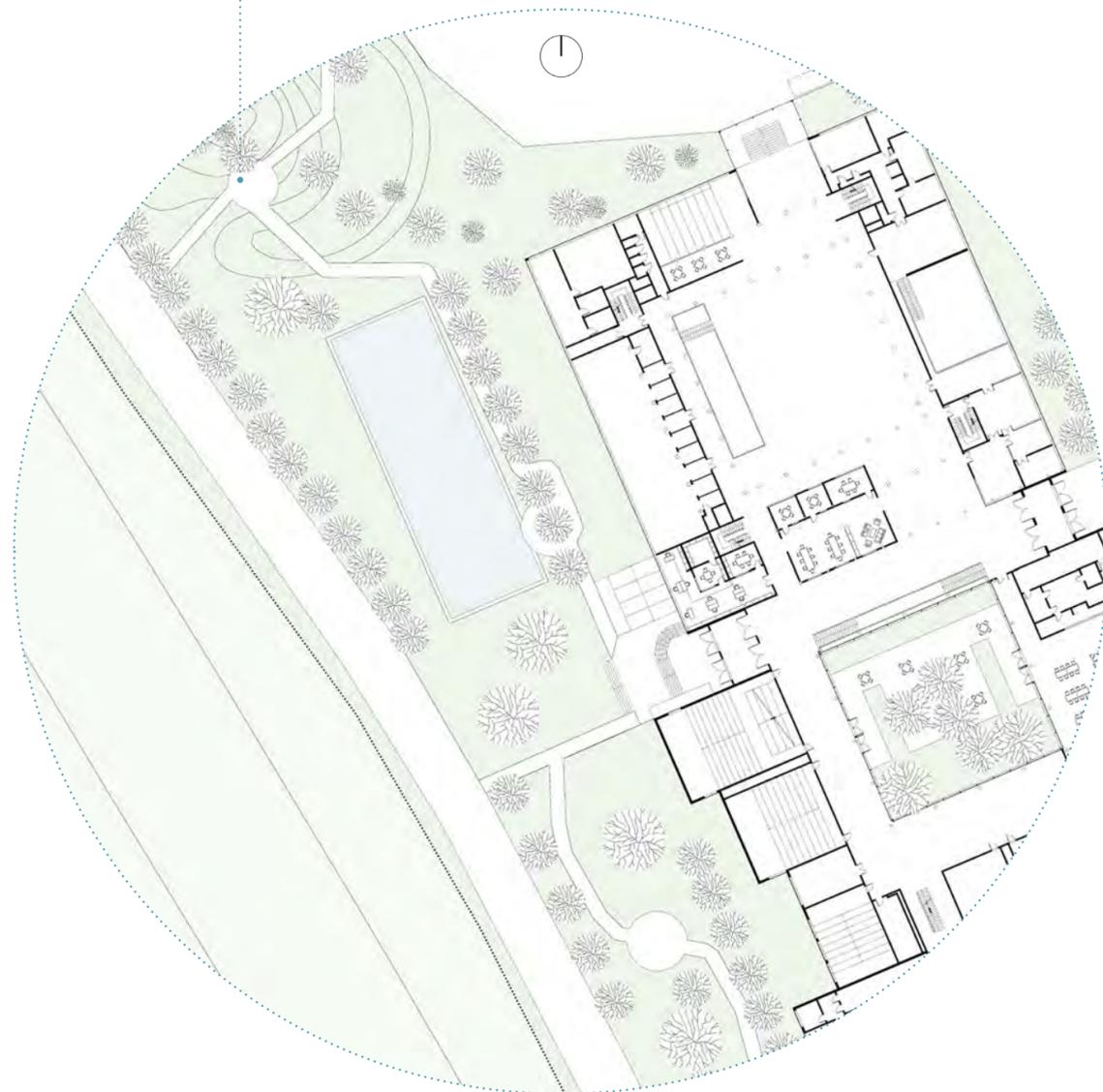
CONNECTION



- Bench near the greeneries



- Resistant wood for the promenade



The calm park will be located on the western side of the ACE building. It will be a place of reconnection with nature mostly. Indeed, this place will promote introspection alone or in small groups, to enjoy the calm and the proximity with nature.

To reduce the crowd, I will implement a unique promenade that will be 1.50 meters large and 50cm high from the ground to let nature grows. Some areas will be built to let the people take a break near the vegetation or the pond. The promenade will be built with resistant wood.

The calm park will also be connected to the existing wood in the west, to expand the park.



The wooden promenade



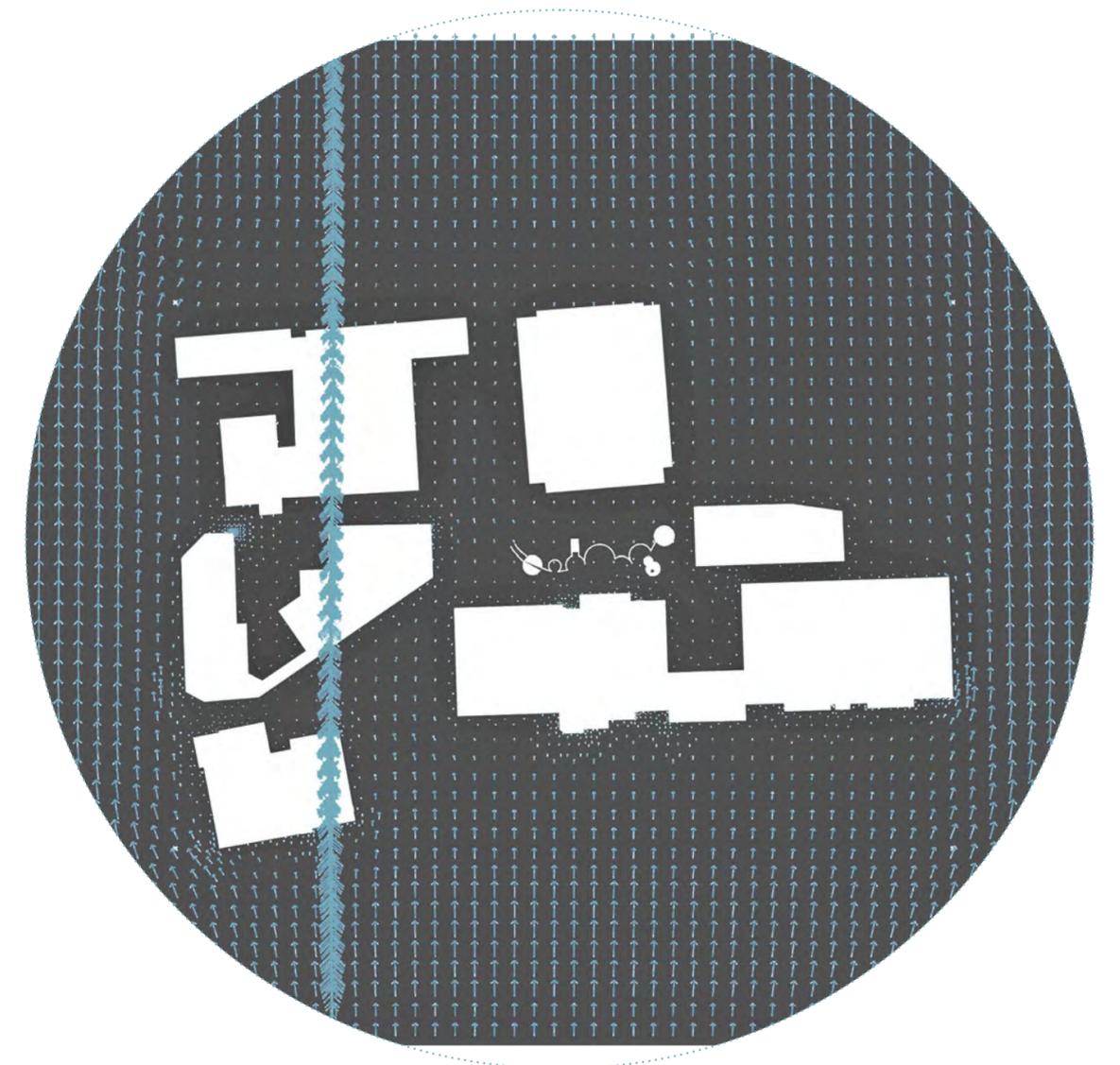
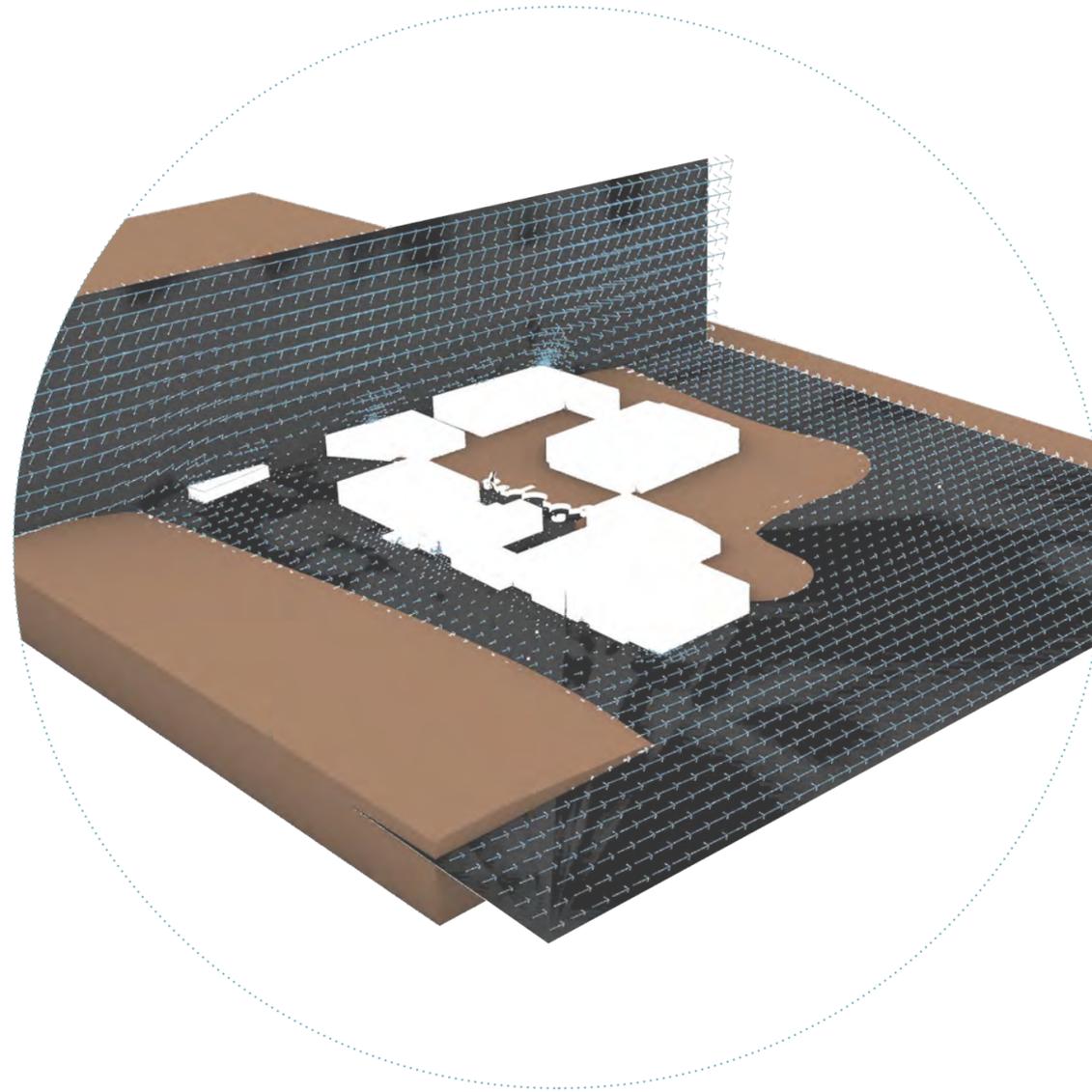
Calm areas



Connections to the western wood

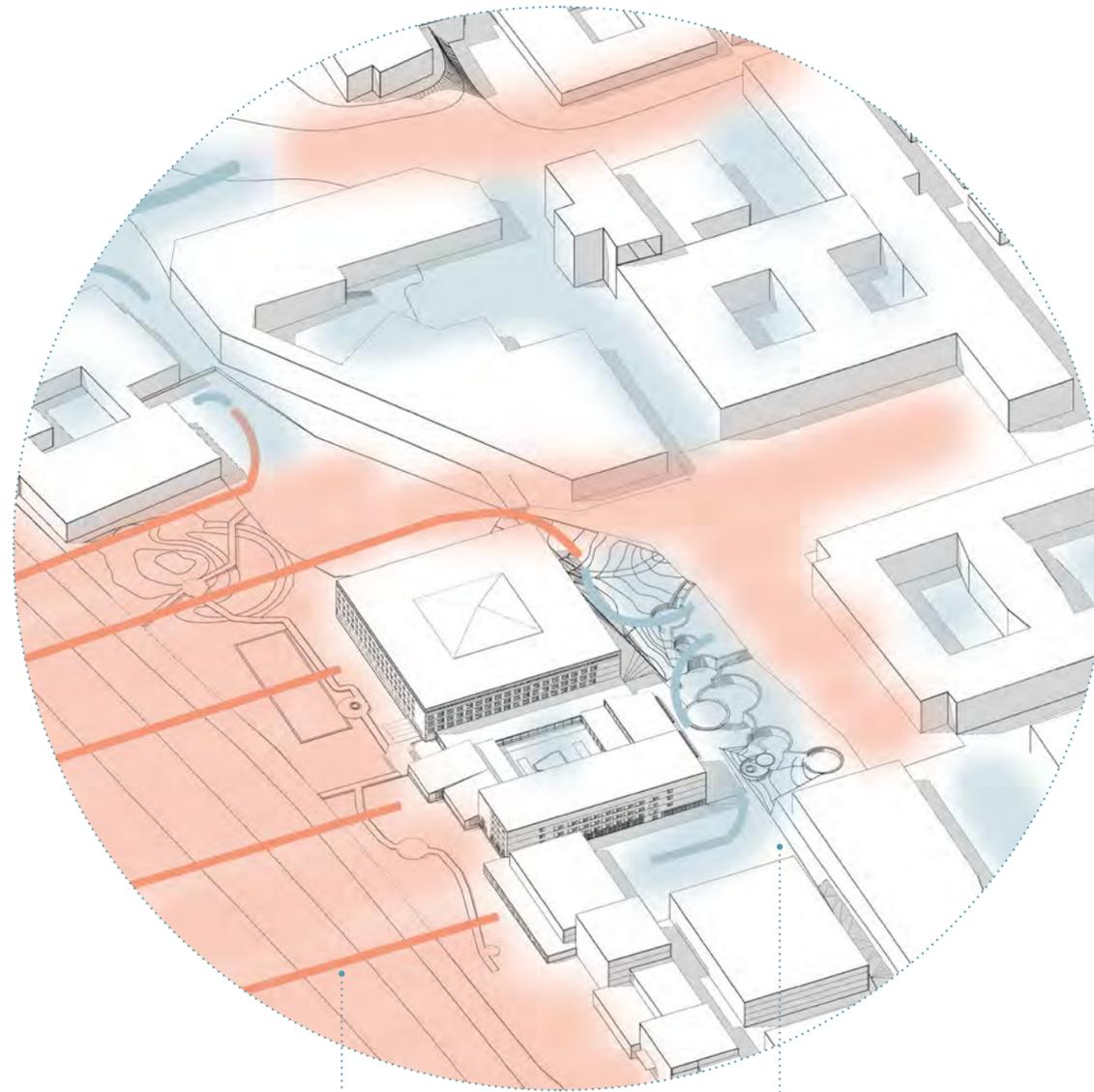
THE  
**REFLEXION**

## WIND ANALYSIS



*Göteborg is a windy place, and the campus is not protected. I made an analysis on Rhinoceros using Ladybug on Grasshopper to determine where are located the strongest winds.*

# WINDBREAKERS



As a result of the analysis on Rhinoceros, the strongest winds come from the western part of the campus.

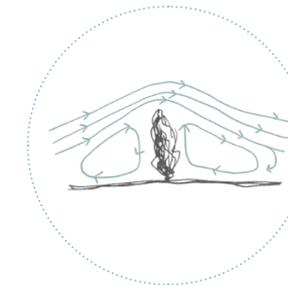
To create wind-protected areas, I want to implement natural windbreakers. To do that, it is important to implement permeable greenery, for example, a high tree and a bush, that lets a small part of the wind pass through the windbreak. If impermeable greenery is implemented, the wind will be redirected and will go faster after the impermeable greenery, which is not what we want.

Permeable high trees and bushes will be implemented all ten meters to create windbreaker barriers in the surroundings. This will create calm areas in the calm park, in the public areas and in the park-in-the-slope.

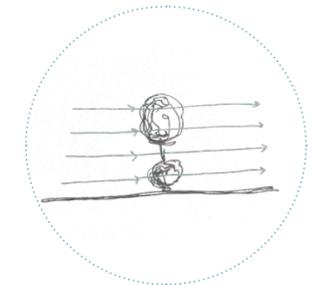
2021

Strong direct winds

Strong indirect winds



- Impermeable greenery

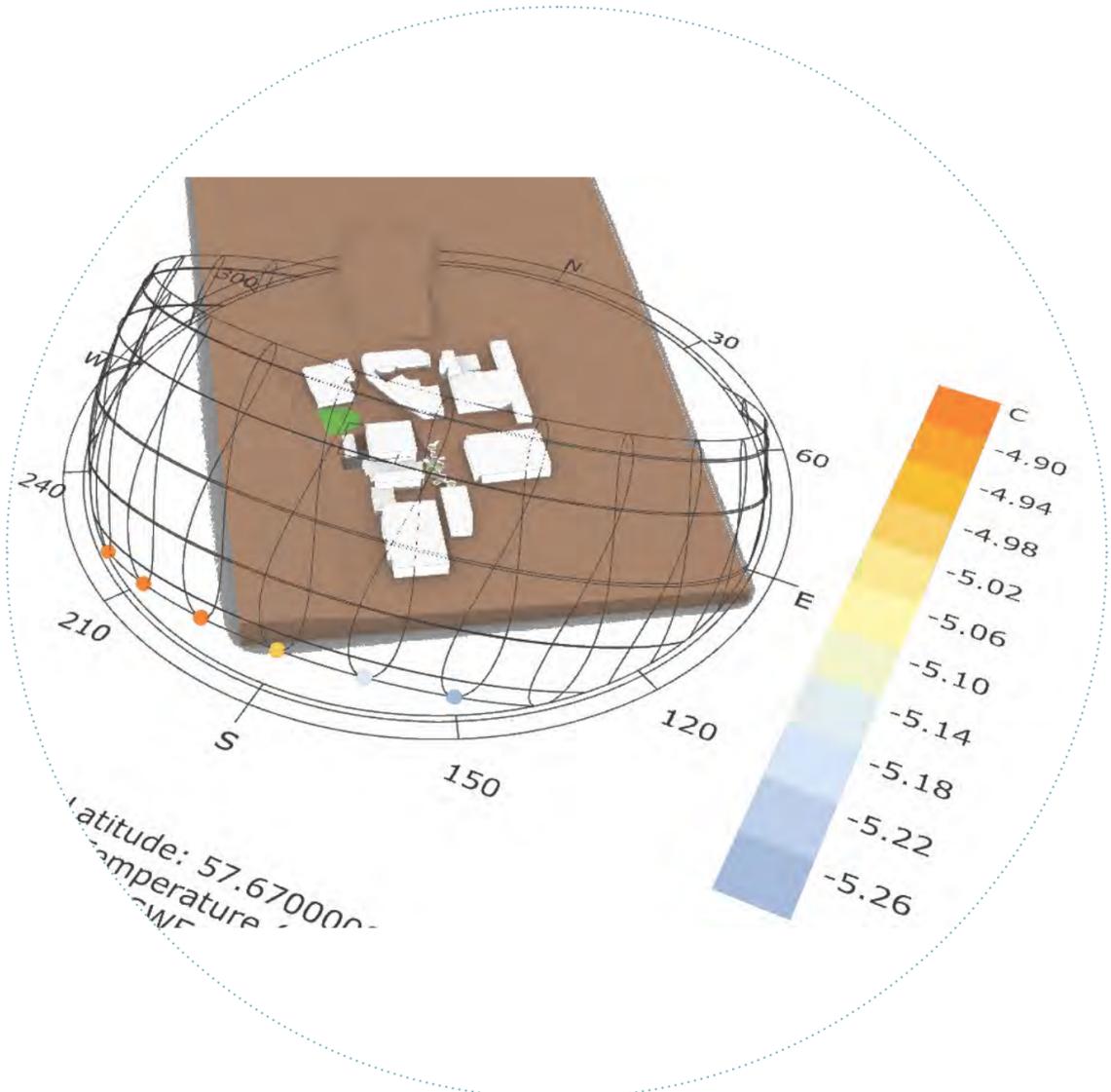


- Permeable greeneries

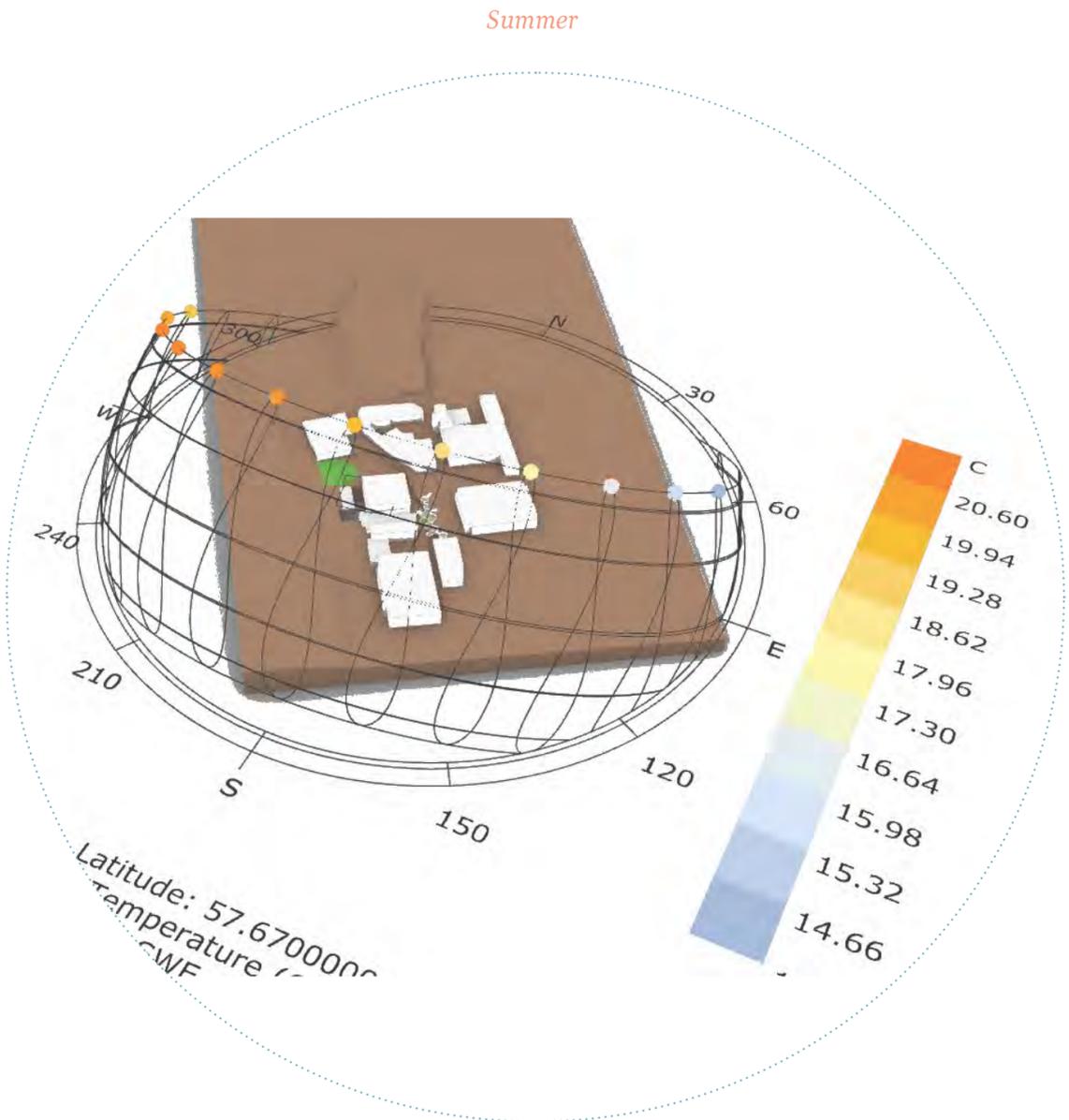
2050



# SUNLIGHT ANALYSIS



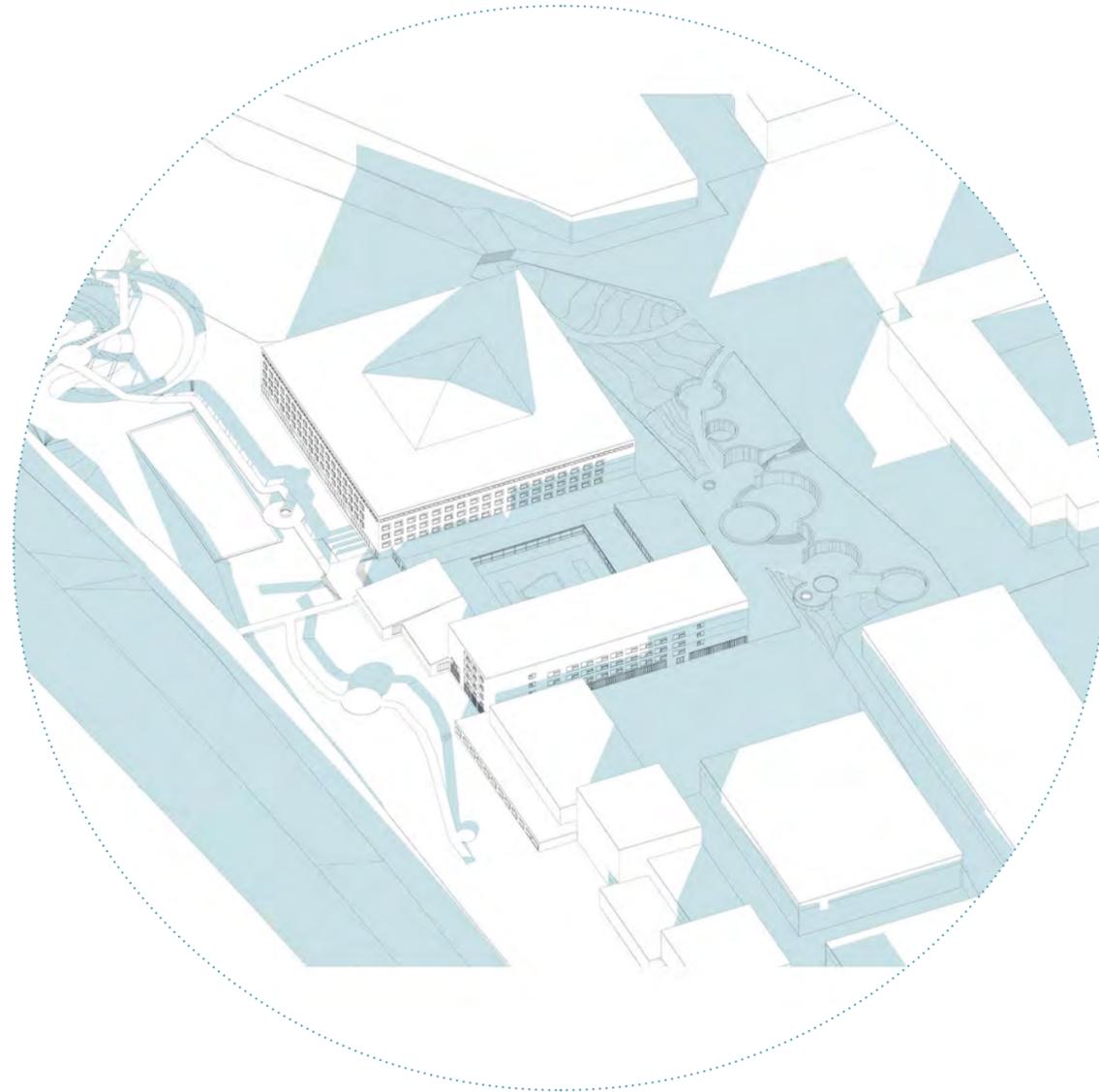
Winter



Summer

The sunlight is very different regarding the seasons. I made an analysis on Rhinoceros using Ladybug on Grasshopper to determine how does the sunlight change between the winter and the summer equinoxes. This shows the angle of the sun and determines the shadows of the buildings.

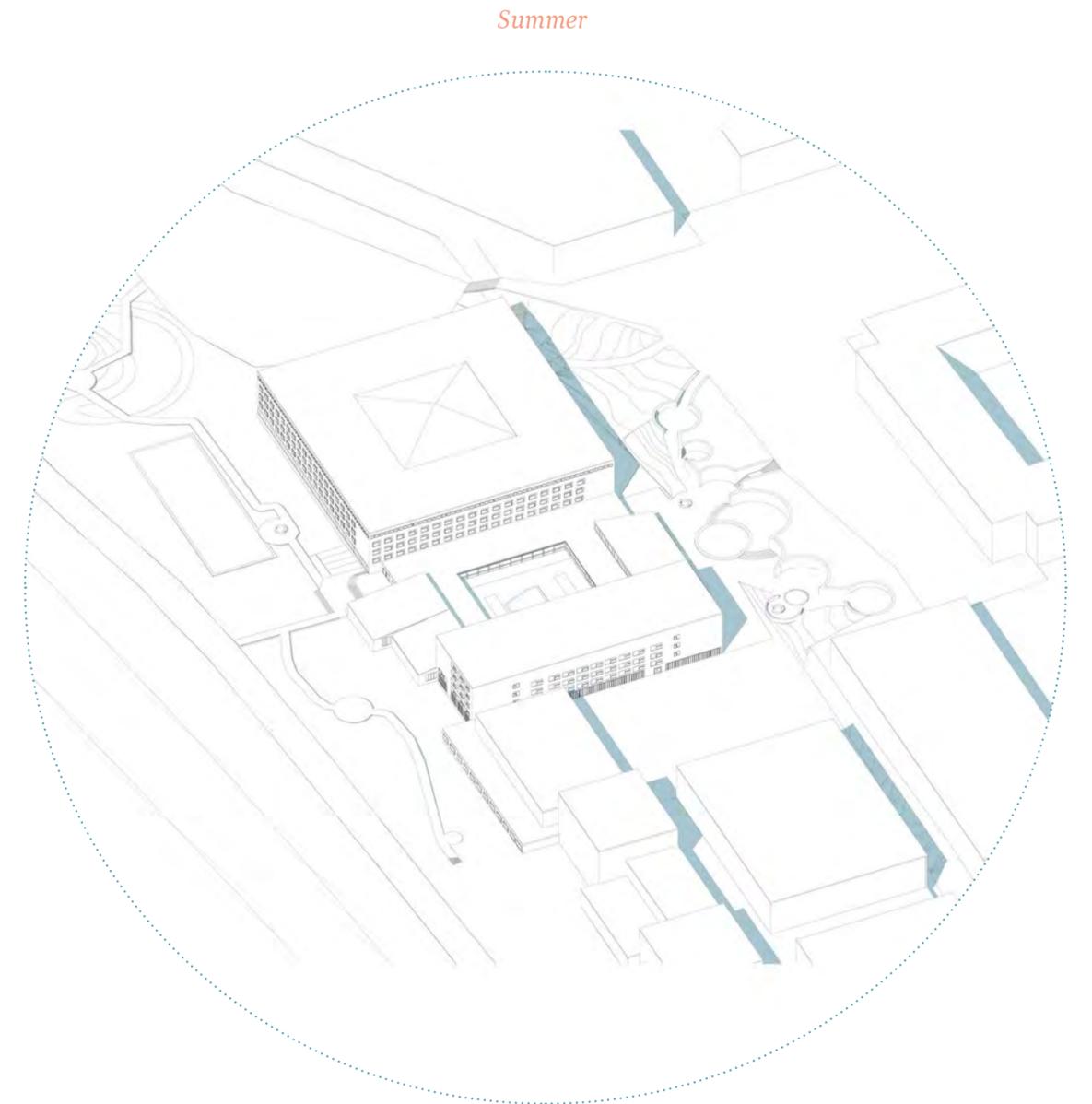
## SUNLIGHT ANALYSIS



Winter

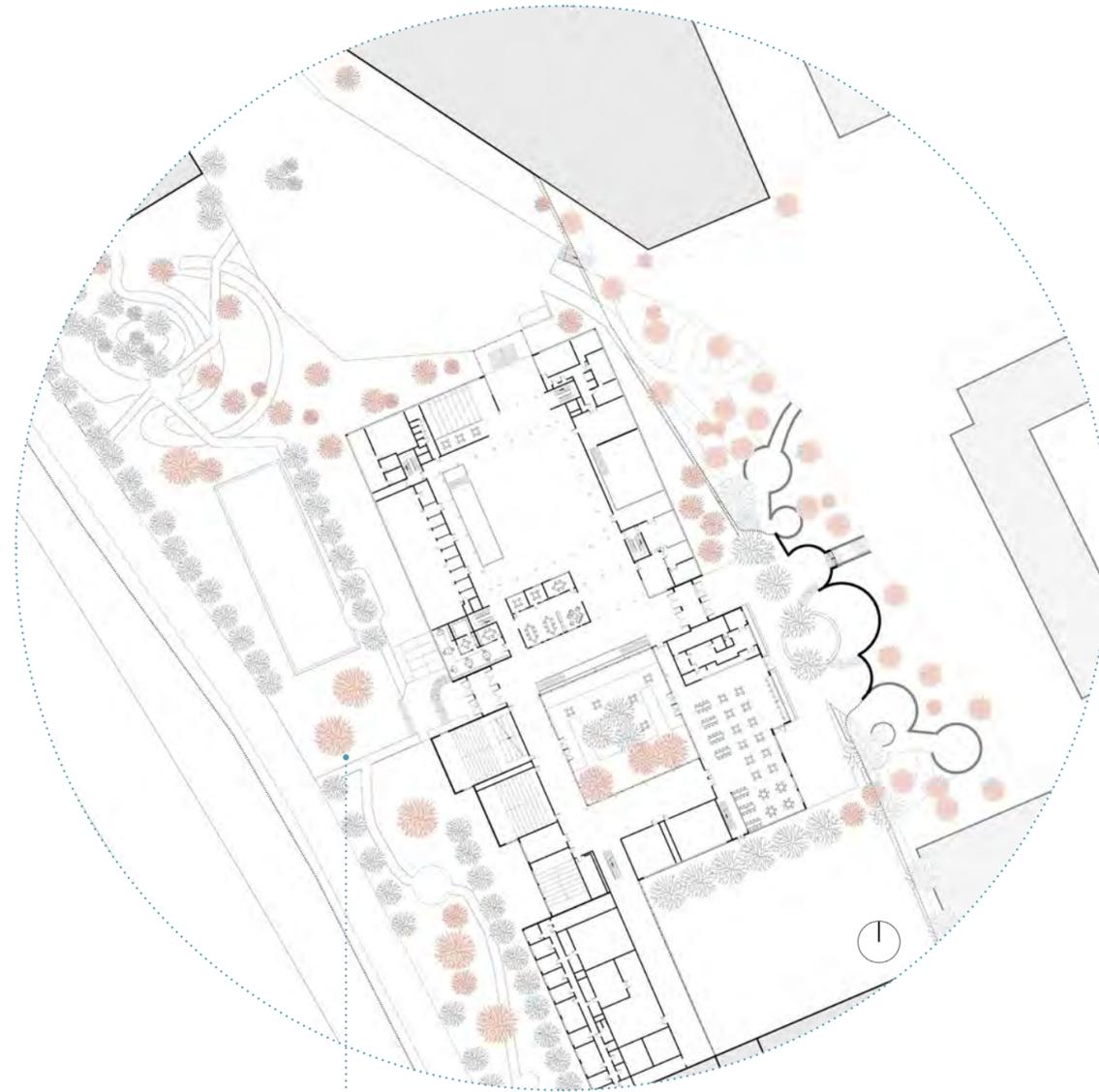
*As a result of the analysis on Rhinoceros, we can see that the ACE building is dark during the winter. Only the calm park on the western side of the ACE will have some sunlight during the winter days.*

*During the summer, the sun is much higher in the sky and illuminates the whole area. People will be able to enjoy the sunlight in all the different parks in the surroundings.*



Summer

# BIODIVERSITY



*New trees and bushes will be implemented to be windbreakers. But seasonality is also very important to activate the surroundings during the winter.*

*Today, there are a lot of hornbeams on campus. Spruces will be added because they are evergreen trees. Some evergreen bushes will be implemented, such as Japanese Andromeda and Cherry Laurel, which will add some red and white colors.*

*Some winter-blooming greeneries will also be implemented, such as Rosemaries and Winter Daphnes, which will provide beautiful blue and white flowers.*

*All those greeneries are persistent to the Swedish weather and are not sensitive to frost.*

*New implanted trees*



*- Hornbeam.*



*- Spruce.*



*- Japanese Andromeda.*



*- Cherry laurel.*



*- Rosemary.*



*- Winter Daphne.*

## SEASONALITY



*Winter*

*During the winter the entrance is highlighted by the cozy lights inviting the people inside the building. The spruces and the winter-blooming greeneries make the area enjoyable with some blue and white colors in the grey weather.*

*During the summer, the public area in front of the entrance is very dynamic thanks to a lot of activities provided by associations. Greeneries are bloomed and all the trees have their leaves, creating some shadows.*



*Summer*

## SEASONALITY



Winter

*During the winter in Trädgården, the spruces and the winter-blooming greeneries make the garden attractive. The lights from the cafeteria make it very inviting. We could imagine some braziers to make the place useable during the cold days.*

*During the summer, Trädgården is a very nice garden to stay in: flowers are blooming, all the trees have their leaves, people can have lunch outside thanks to the proximity with the cafeteria.*

Summer



THE  
**CONCLUSION**

# CONCLUSION

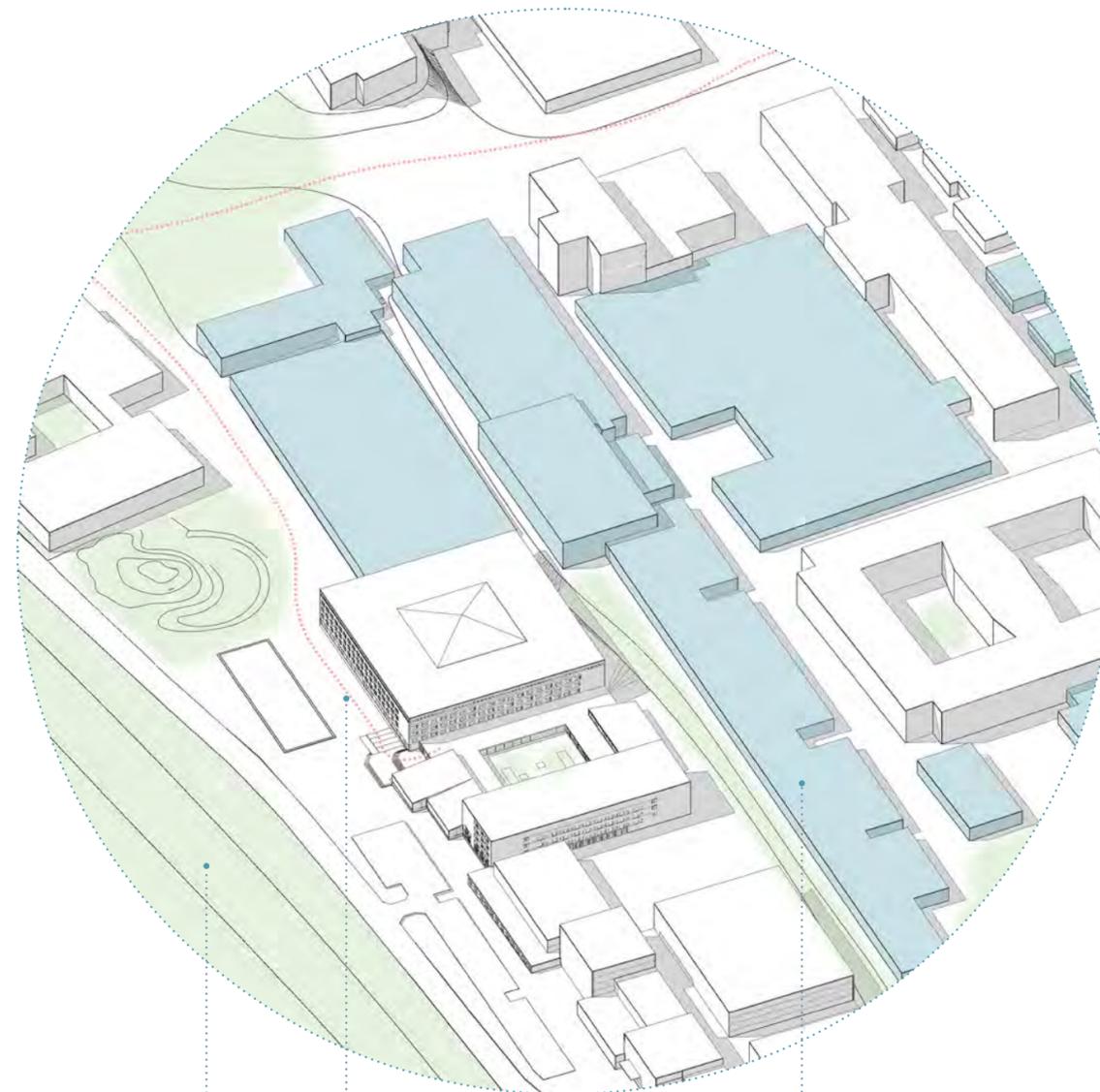
Today, the ACE building is isolated from the rest of the campus due to the high slope and the Physic's pipes buildings which are important barriers. In 2050, the Chalmers Future Plans will demolish those buildings and create two new public areas.

My project is based on this opportunity. I will implement a new main entrance connected to the new public areas to reconnect the ACE building to the campus. The ground floor will be more attractive thanks to clearer navigation and more comfortable facilities such as study areas, offices and cafeteria.

The surroundings are very important as well. I will work on two parks, one on the western side will be a calm park where people can take their time alone to reconnect with nature. The second one will be the connection between the new cafeteria and the public area in front of the Computer Sciences building. This will create new opportunities for meeting new people and increase biodiversity.

My project will also take advantage of the demolition to reuse materials, for example, the plywood from the cafeteria and the bricks from the buildings. Think about how to reuse waste is very important.

Biodiversity will also be very important. It will participate in the activation of the surroundings during the winter and reduce the wind coming from the western side of the campus. Nature can be used to make our environment better. Work with it is better than work against it.

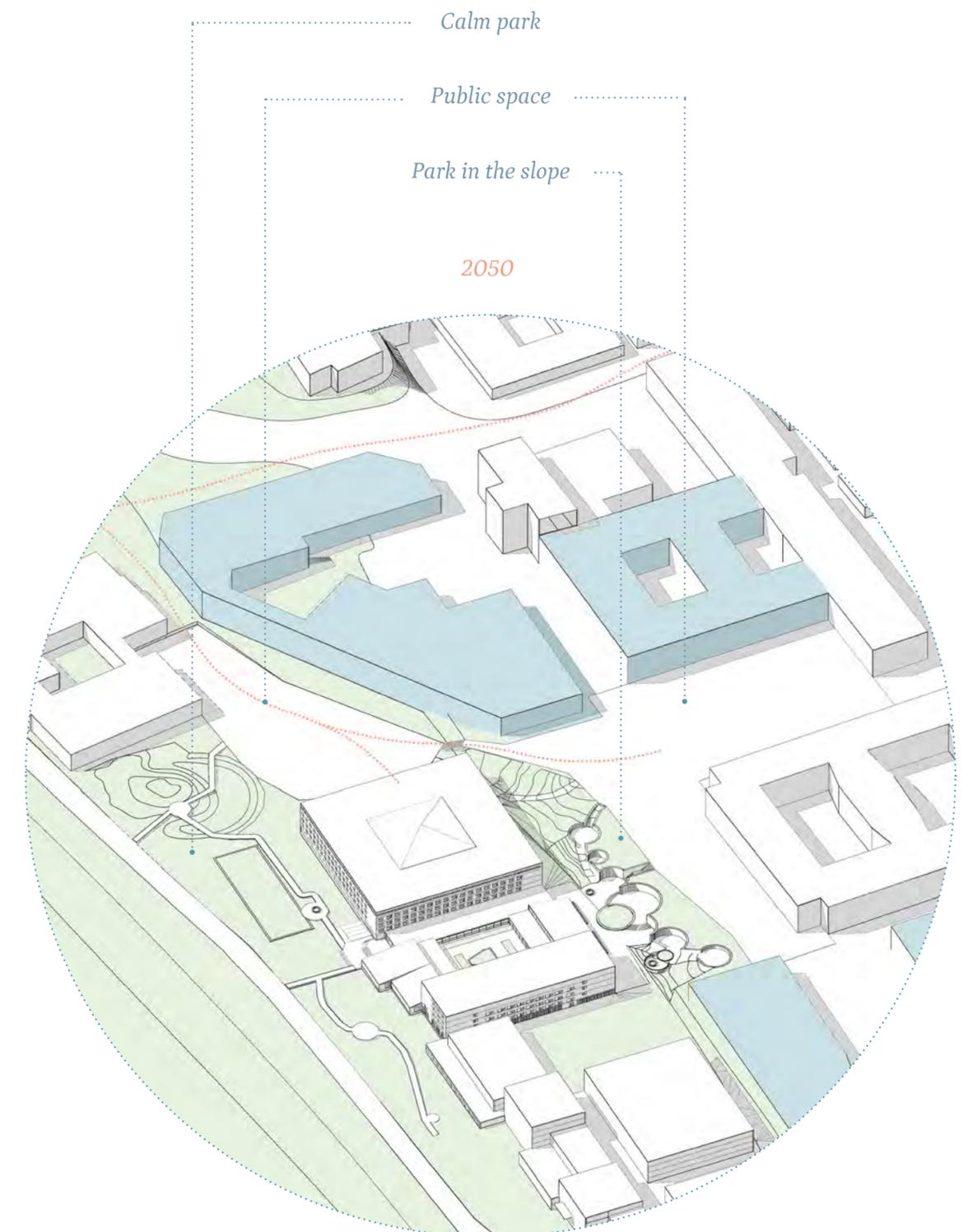


2021

Barriers

Main pathway

Green areas



Calm park

Public space

Park in the slope

2050

THE  
**REFERENCES**

## REFERENCES: THE SURROUNDINGS



-1



-2



-3



-4



-5



-6

1. *Porta Romana Railway Area* \ Diller Scofidio + Renfro, PLP, Carlo Ratti, Arup and OUTCOMIST

2. *University of Milan* \ CRA-Carlo Ratti Associati

3. *550 Madison Garden* \ Snøhetta

4. *Christina Figueres*

5. *Shanghai Houtan Park* \ Turenscape

6. *Delft University*

# REFERENCES: THE GROUND FLOOR



-1



-2



-3



-4



-5



-6

1. Chemo Offices \ Jorge Vidal  
Save this picture!

2. Living Wall \ SemperGreenwall

3. & 4. Headquarter "Haneda Sky Campus" \  
AZUSA SEKKEI

5. UC Casa Central's Student Cafeteria \ OMN  
Arquitectos

6. SNHU Innovation and Design Education  
Building \ HGA

# BIBLIOGRAPHY

## REFERENCES

*Snøhetta's 550 Madison Garden*

*Porta Romana Railway Area in Milan / Diller Scofidio + Renfro, PLP, Carlo Ratti, Arup and OUTCOMIST*

*Headquarters of Doctors Without Borders in Barcelona / Battle i Roig Arquitectura - 2019*

*University of Milan's New Science Campus / CRA-Carlo Ratti Associati*

*Historic Industrial Building into Offices for Acciona in Madrid, Spain / Foster + Partners*

*Shanghai Houtan Park / Turenscape - 2010*

*Lycée La Plaine / Brenac & Gonzalez & Associés - 2017*

*H-FARM Campus / ZAA Zanon Architetti Associati - 2020*

*Living Wall - SemperGreenwall*

*Horticultural Luminaire - Kobe Flo*

*Shanghai train inn / KUU features landscaped public square - 2013*

*Chemo Offices / Jorge Vidal - 2016*

*Taft Freshman Academy / STL Architects - 2019*

*TULIP – Your place at the table / ADHOC architectes - 2020*

*AZUSA SEKKEI Headquarter “Haneda Sky Campus” / AZUSA SEKKEI - 2019*

*UC Casa Central's Student Cafeteria / OMN Arquitectos - 2012*

*Museum Park of The the Polytechnic Museum / Wowhaus - 2019*

*Circular Brick House with Rammed Earth Wall / AST 77 Architekten - 2020*

*L'Industreet Campus / Atelier WOA - 2020*

## REUSE OF BRICKS

Master thesis: <https://odr.chalmers.se/bitstream/20.500.12380/257023/1/257023.pdf>

Article: <https://iopscience.iop.org/article/10.1088/1755-1315/225/1/012033/pdf>

## REUSE OF WOOD PANNELS

<https://chalmerskonferens.se/en/restauranger/johanneberg/smak/>

## WINDBREAKERS

<https://www.sciencedirect.com/science/article/pii/S1470160X17304752>

[http://www.aeu.fr/fr/web\\_noue/noues.html](http://www.aeu.fr/fr/web_noue/noues.html)

[http://documents.irevues.inist.fr/bitstream/handle/2042/33541/AEF\\_1949\\_11\\_2\\_496.pdf?sequence=1](http://documents.irevues.inist.fr/bitstream/handle/2042/33541/AEF_1949_11_2_496.pdf?sequence=1)