

# ON (WOODEN) GROUND FLOOR

*displaying the governance of Bergen*

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The administration of Bergen and its surrounding county has been located in the City Hall quarter for more than 300 years. Individual buildings have and are still housing separate departments of the municipality all around the city centre. This kind of dispersement means allows for another type of transparency as the different departments and the city council are «forced» to move around both inside the quarter and in the city centre.

Now when the City Hall is closed for several years to come due to renovations, meeting rooms and offices are needed and the proposal *On (Wooden) Ground Floor* seeks to combine the need for offices and meeting rooms together with a more visible governing of the city.

In contrast to the rough and heavy existing *beton brut* City Hall, the new proposal will consist of structure and surfaces made out of entirely wood. Bergen is and have always been a city of wooden houses. Even after several great fires, strict prohibitions to prevent new accidents and impulses from the rest of the world on the use of brick, the city continued to favour the material.

*On (Wooden) Ground Floor* continues in the tradition with the aim to strengthen the interaction between the surrounding neighbourhood, the city and the governance.



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	<b>2013 - 2019</b>		
	Receptionist Bergen Kunsthall		
	<b>2013</b>		
	Technician / Driver 1. Bergen Assembly		



## Preface and intention

The outset for the diploma started with a study- and exchange trip to the Department of Architectural Science at Ryerson University in Toronto, Canada. The goal was to understand how wood is used both as structural and functional element in contemporary architecture, combating resource scarcity and severe impacts on the global climate, but also how wood is a material from the past for the future.

Combined with BAS' focus on vernacular and traditional Norwegian west-coast architectural style, studytrips to the Alps and experimenting with 1:1 scale constructions principles in wood, the intentions for the diploma was quite clear.

When talking about wood several properties comes to mind. The warmth, the structure, the smell, the craftsmanship, the touch and feeling. It is considered a luxury to use wood as a visual and tactile element in architecture.

It is still quite common to use it as a structural element from solid logs to timber frames in smaller houses and as interior walls in larger buildings. These are normally clad and there is no visible trace of wood.

My interest lays in the borderline between the "technical wonder" of standardised building elements and the great properties of wood as something flexible, ever changing and as a sustainable resource. Not necessarily flexible in everyday use, but expandable and easy to transform to new uses.

Over the course of the spring I want to look into how modular systems have been used to accommodate both practical solutions and needs, but also how the poetics and grandeur of a space can be obtained.

A commonly stated assertion is that elements in solid wood is advantageous because of quick assembly and that it is uncomplicated to re-use in another structure. So far there are non or few examples of recycled CLT.

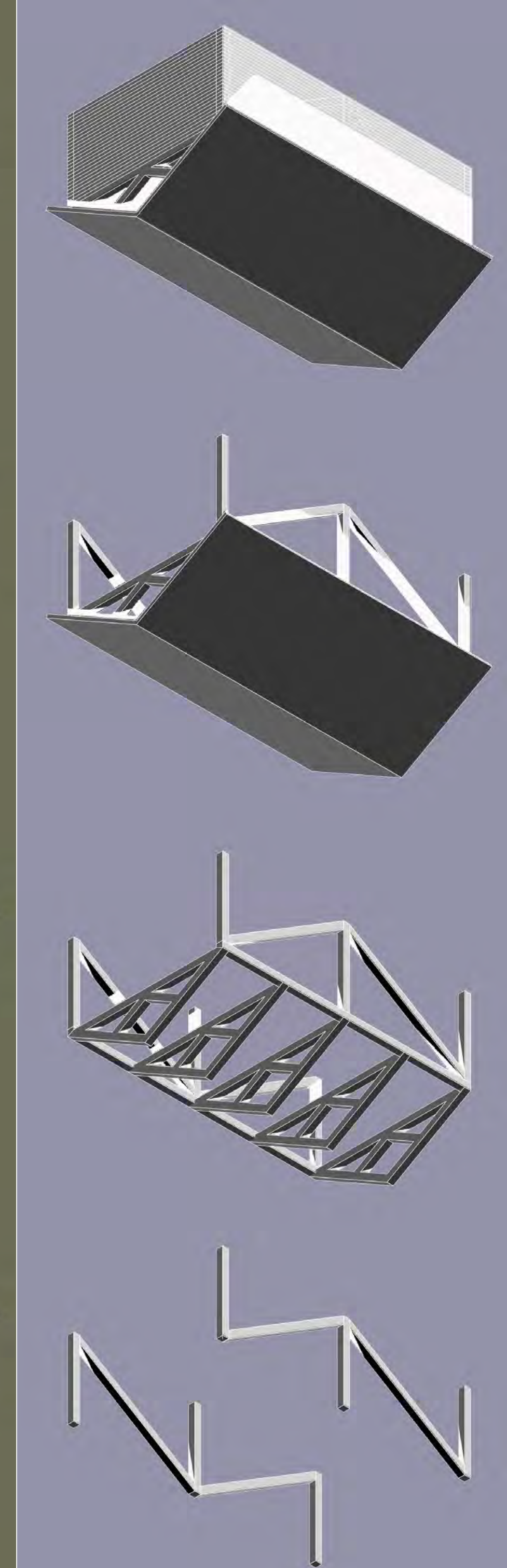
The part about quick assembly is mostly interesting when it comes to the economy of a project and normally not the architectural space itself.

The aim is to show the whole process from the development of a modular wooden system to a possible re-purposing and re-use in a not too distant future.

Can the same elements make great spaces both in a home made for dwelling and a hospital made for recovery? Is it possible to work with universal measures and still maintain the individual expression?

By combining craftsmanship, industrial automation and architectural theory, can wood be the main building material for the future in both smaller and larger structures?

Through investigations around former solid wood-constructions and projects, and by testing the properties of wood and precise spatial studies; there will hopefully be an answer.







Is this the future? A combination between traditional crafts and industrial processed wood. Vorarlberg, Austria

Show Off! Large scale wood-joinery. Media house Tamedia publishing house in Zurich, architect Shigeru Ban







Workshop of Zimmerei Nenning, Hittisau.  
Architect Hermann Kaufmann.  
Great space.



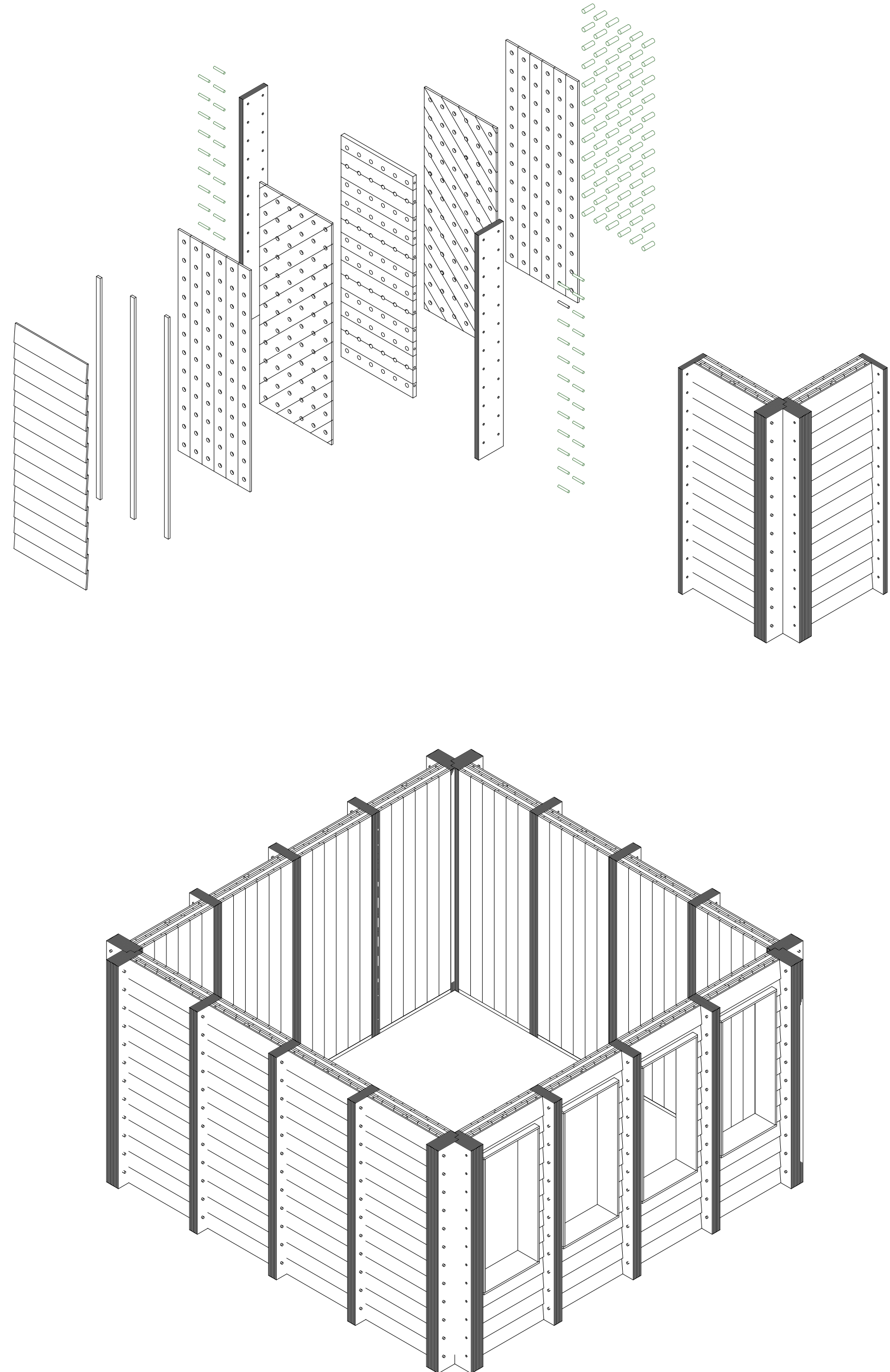
## Mono-materiality and explorations in 1:1

In recent years the technology and interest regarding industrial processed wood known as glulam (glue laminated wood) and CLT (cross laminated timber) has increased seemingly. Moelven and Artec Architects were able to set a record for the world's tallest wooden building in Bergen, but now a 30 meter taller structure is being erected in the eastern part of Norway. China and Singapore has shown a increasing interest and it will probably not take long before we see international skyscrapers made out of wood.

As mentioned in the intro a commonly stated assertion is that elements in solid wood is advantageous because of quick assembly and that it is uncomplicated to re-use in another structure.

To be able to reuse the structure both as modular panels and the wood as a building material the proposal will consist of panels which are cross laminated only using wooden dowels. The panels can then be re-purposed easier because there's no metal or glue used.

Another great feature will be that there is no toxic emission of chemicals from the panels which can be a problem with normal glue laminated timber. And no stubborn metal screws to unscrew or metal nails to be pulled out.







Lumber cut on the portable sawmill. Left to dry.



The timber is cut in different dimensions to accommodate different needs as paneling, structural purposes, stiffening and cladding. The boards are mounted together without adhesives or metal, but with wooden nails.



Two of the total of five layers are diagonal to provide stiffness and the core boards are slightly thicker to allow for better load bearing and thermal properties.





Site - City Hall Quarter

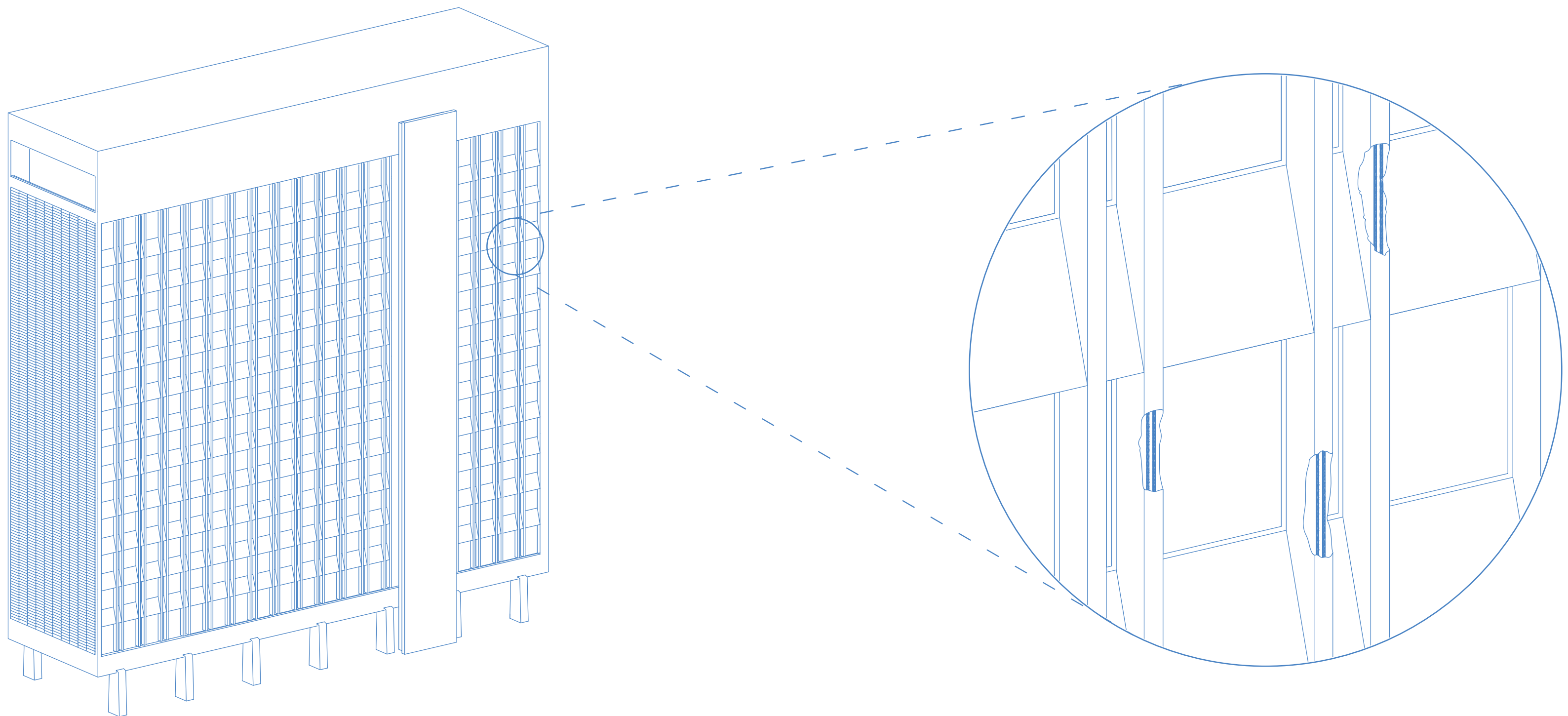




## Is there a need for a new City Hall?

The city hall of Bergen is crumbling away. The facade with small riverbed stones and the concrete structure were predicted to persist several decades after it finished construction in 1974. But already in 2012 large pieces of the facade started to fall to the ground. The decision to refurbish was postponed and by mid 2018 a consultancy revealed that severe mistakes were made during construction. In the columns there are only four ironbars for reinforcement, where it should have been eight.

Large parts of the building were emptied for bureaucrats and a few weeks later asbestos were discovered in the ceilings. 250 persons, both politicians, counsellors and bureaucrats are relocated. There is an ongoing debate whether the municipality should demolish Erling Viksjø's brutalistic high rise or sanitise and refurbish it. Either way both options are likely to extend a couple of years into the future and the former occupants are spread across town.





# The former occupants of the city hall dispersed

- New locations
- Old/New City Hall





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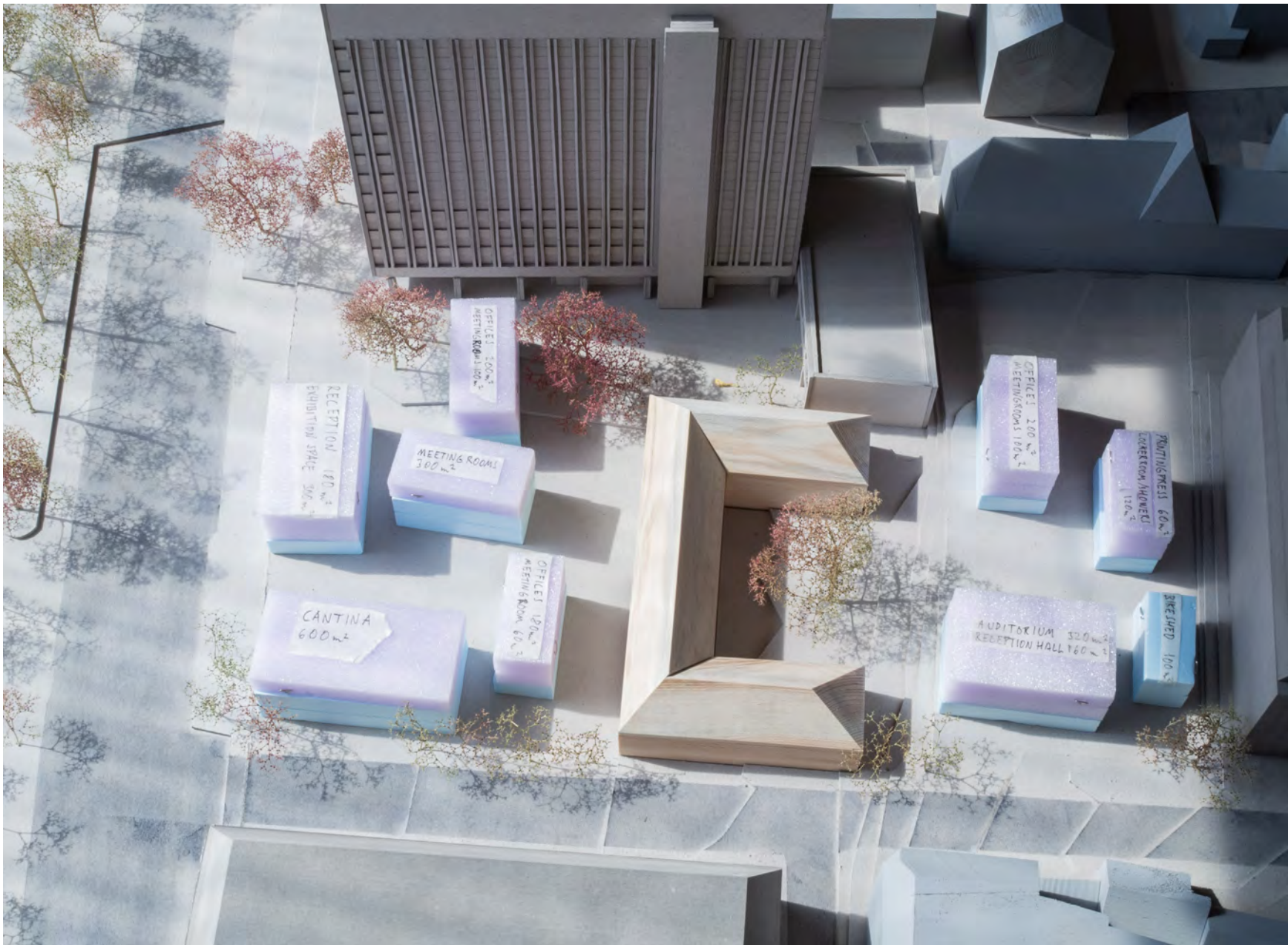
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Model studies





Diploma program  
Tord Øyen  
2018