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Department of Architecture  
The Oslo School of Architecture and Design (AHO)  
Project leader

1. The Oslo Project:  
**INTERDISCIPLINARY TEACHING AND EXPLORATORY BUILDING.**
2. Research project funded by the BIONÆR program of the Norwegian Research Council :  
Increased Use of Wood in Urban Areas - WOOD/BE/BETTER:  
**TEACHING INTEGRATED IN RESEARCH**



Norwegian University  
of Life Sciences

The Oslo Project:

Interdisciplinary teaching  
and exploratory building  
using Norway as a  
climate laboratory

KNØDEN



Skar vacant military  
camp in Maridalen north  
of Oslo

KNØDEN

FAGSKOLEN I OSLO



Byggforsk



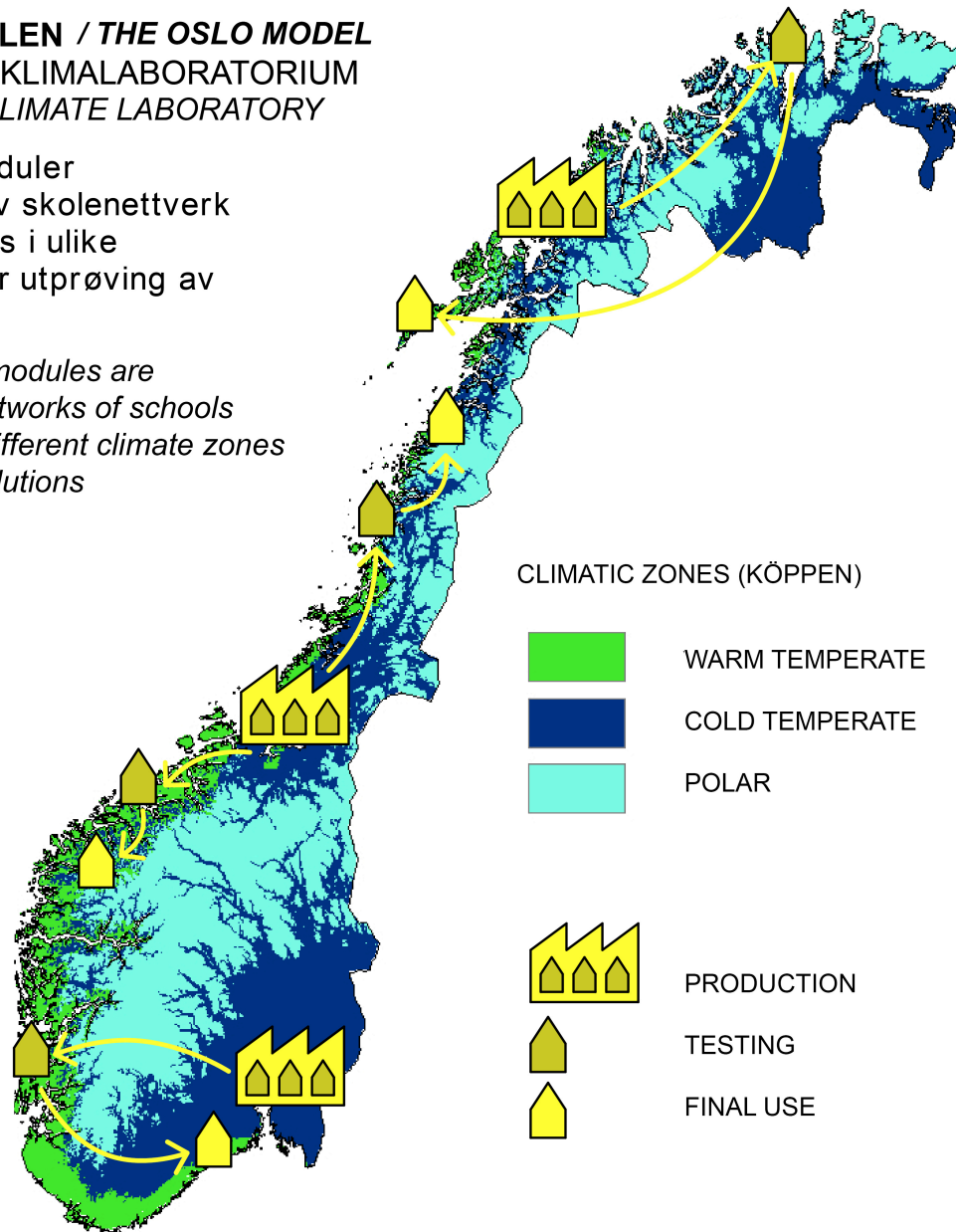
# OSLOMODELLEN / THE OSLO MODEL

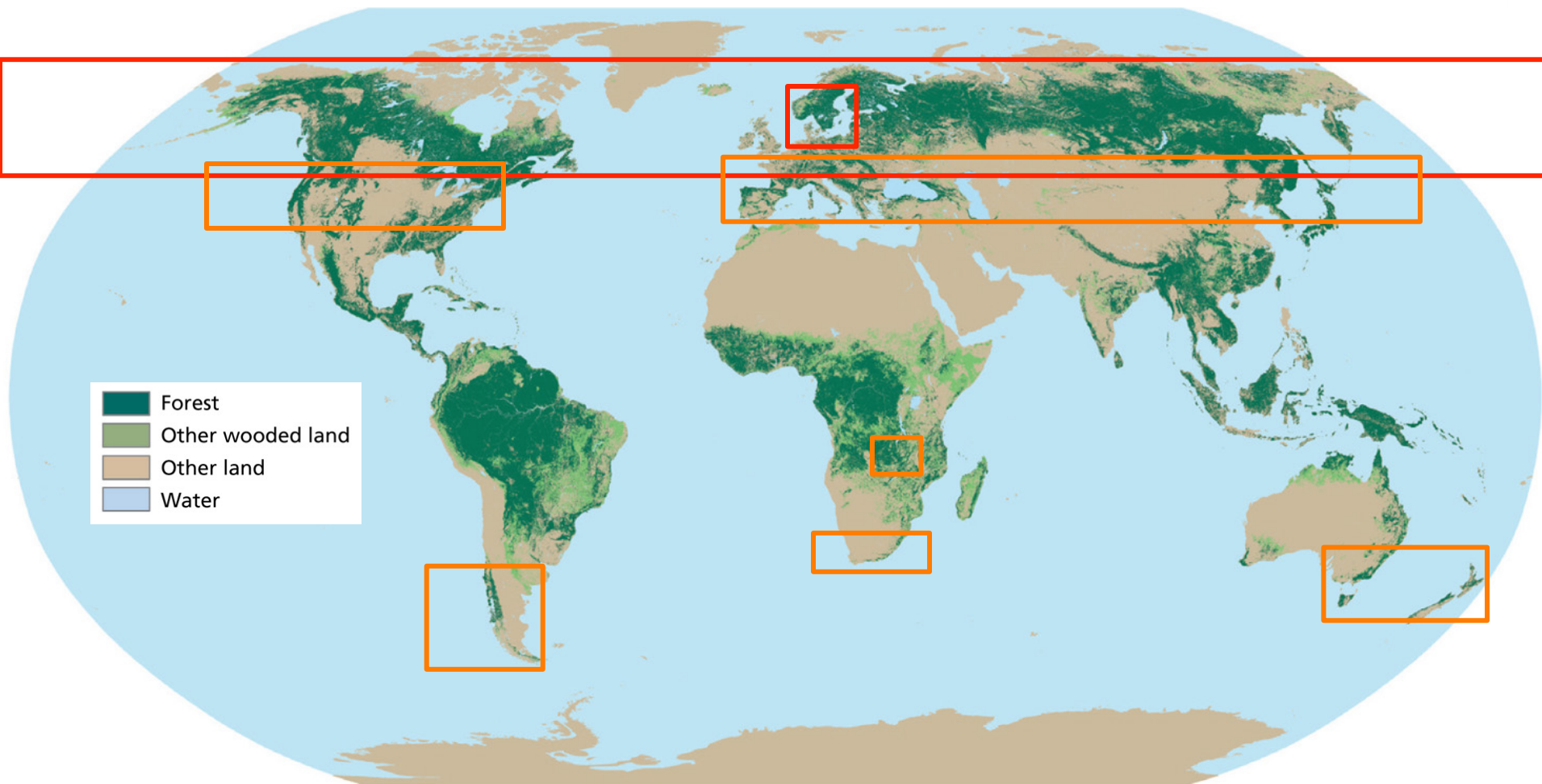
## NORGE SOM KLIMALABORATORIUM

### NORWAY AS CLIMATE LABORATORY

Små byggmoduler  
produseres av skolenettverk  
og utplasseres i ulike  
klimasoner for utprøving av  
løsninger

*Small building modules are  
produced by networks of schools  
and placed in different climate zones  
for testing of solutions*





## Global forest regions

Source: FAO 2006

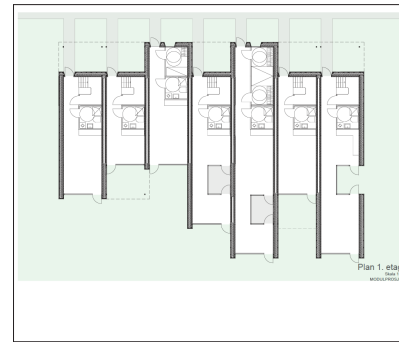
Climatic zones similar to Norway's



DANIEL PETER BARTH



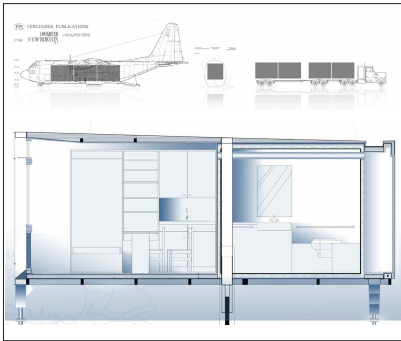
ANDERS SVENDSEN ALMESVEEN



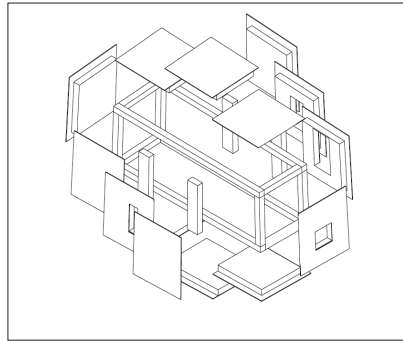
SARA MARIA HAGERUP BILLING



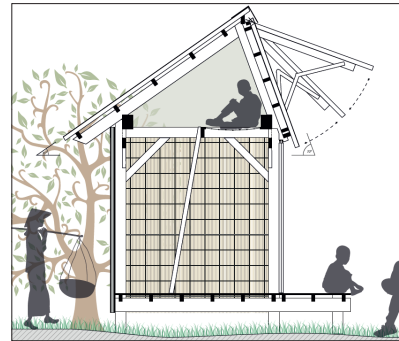
TERJE SANDBERG



TOR-MAGNUS HORTEN



SIMEN LENNERTZEN



EIVIND DANIELSEN



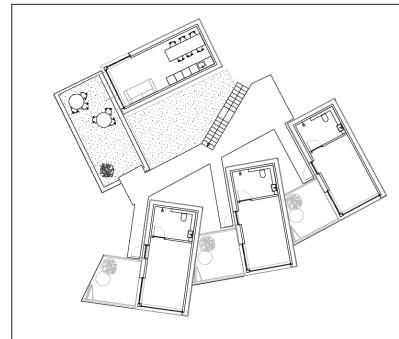
CHRISTIAN HALSE



JAN KRISTIAN ORVIK



BÅRD LINDQUIST



ARNA OSP GUDBRANDSDOTTIR



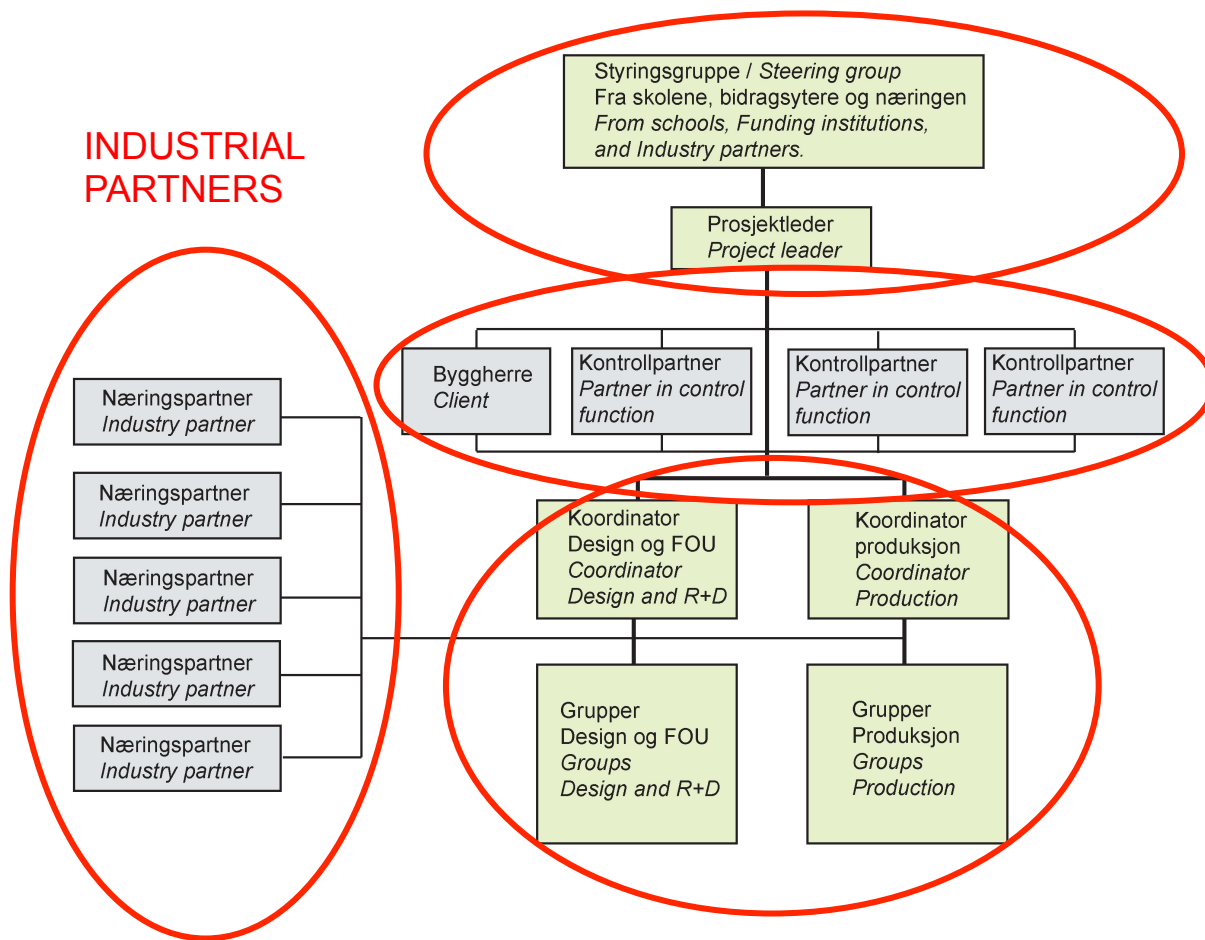
MARTIN KANDOLA

STUDENT PROJECTS ILLUSTRATING DIFFERENT THEMES RELEVANT TO FUTURE BUILDING MODULES  
(Proposal by Stud.ach. Joan Ramon Pastor Planas, Barcelona, was selected for full scale building )

## PROJECT LEADERSHIP

## INDUSTRIAL PARTNERS

## PARTNERS IN CONTROLLING FUNCTIONS



## PARTICIPATING SCHOOLS IN DESIGN AND CONSTRUCTION





Nils Ivar Bovim (NMBU) with a glulam frame



Long screws in corner of glulam frame

## FULL SCALE TESTING OF GLULAM FRAME WITH SCREW-BASED CONNECTIONS





INTERDISCIPLINARY MEETING AT THE SKAR CAMP







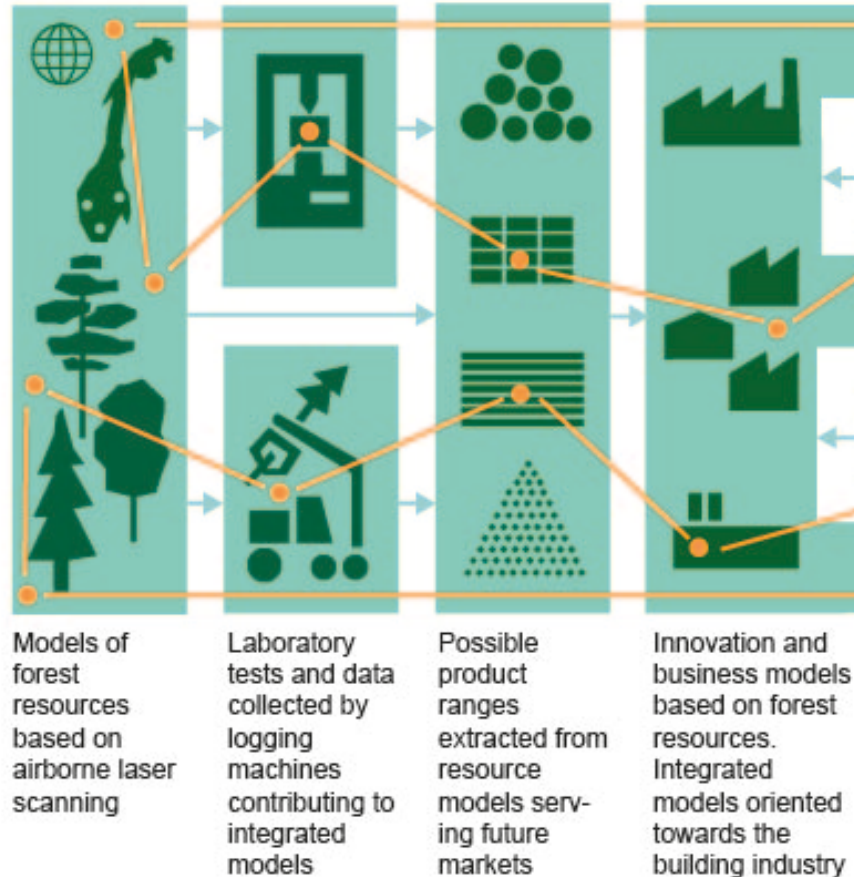
MODULE TRANSPORTED TO KUBEN EDUCATIONAL CENTER 7th of MARCH 2014



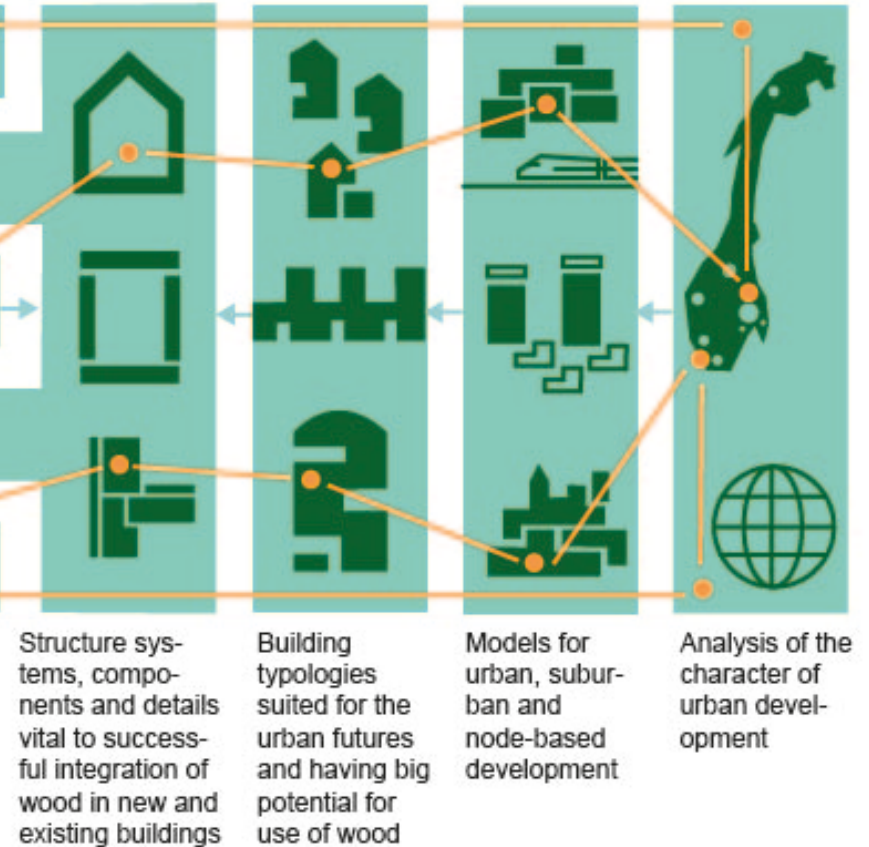


Wood Be Better

### 3b: SUSTAINABLE UTILIZATION OF FOREST RESOURCES IN NORWAY



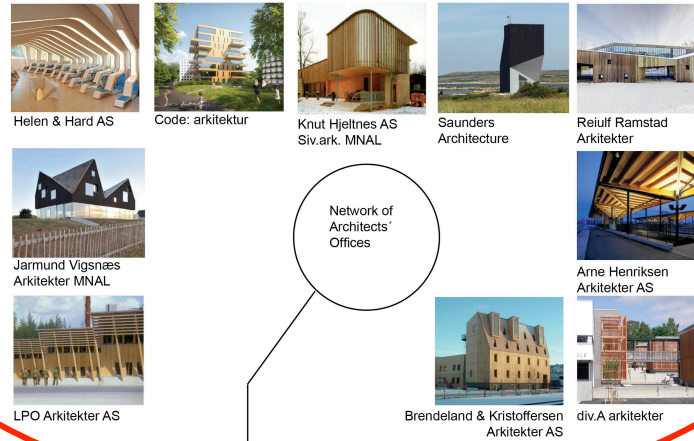
### 3a: INCREASED USE OF WOOD IN URBAN AREAS - WOOD BE BETTER



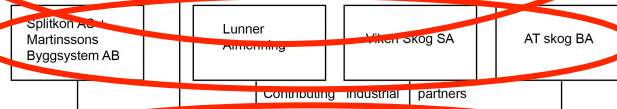
● — ● INTEGRATED RESOURCE / VALUE CHAINS

FIG. 1. OVERVIEW OF INTEGRATED RESOURCE / VALUE CHAINS BRIDGING BIONÆR PROJECT BORDERS

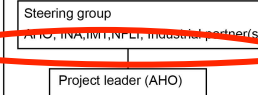
## INCREASED USE OF WOOD IN URBAN AREAS - WOOD/BE/BETTER



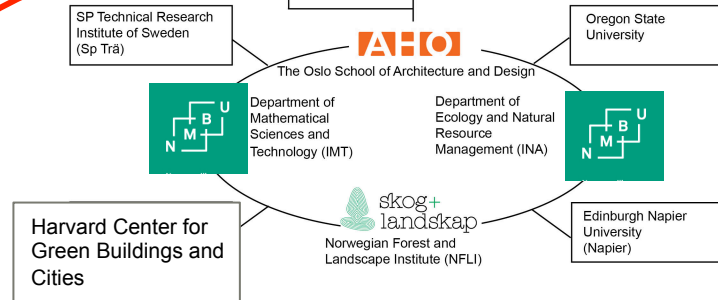
## NETWORK OF ARCHITECTS



## FOREST INDUSTRY

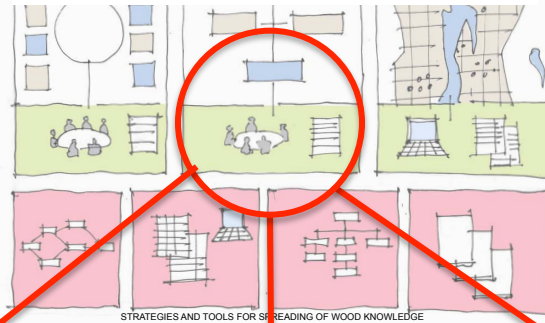


## PROJECT LEADERSHIP



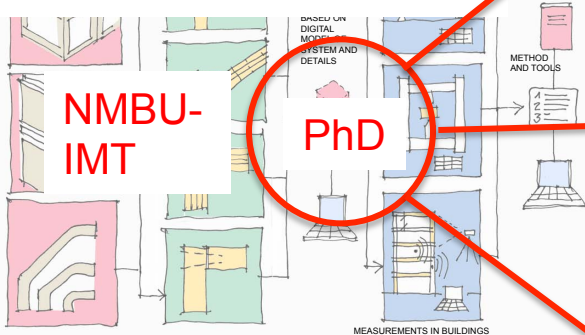
## RESEARCH INSTITUTIONS

## PROCESSES + INFO



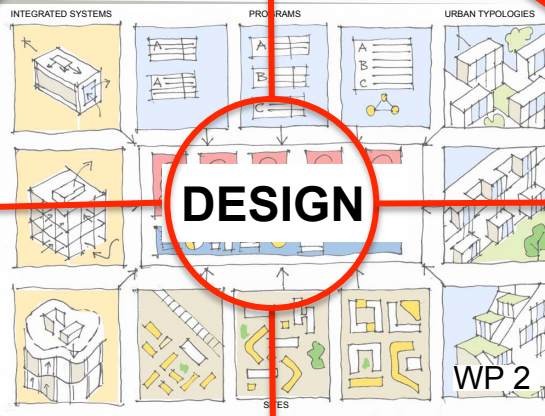
WP 5

## CONSTRUCTIONS

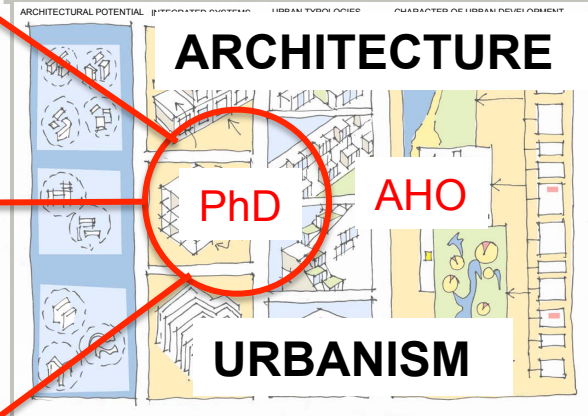


WP 3

## DESIGN

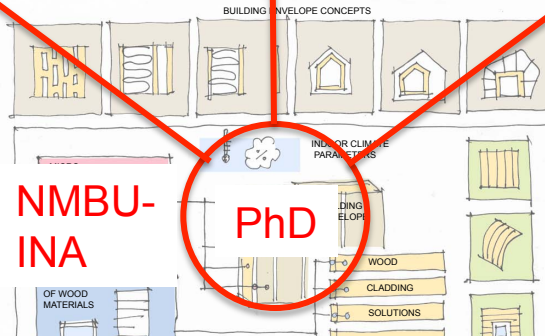


## ARCHITECTURE



WP 1

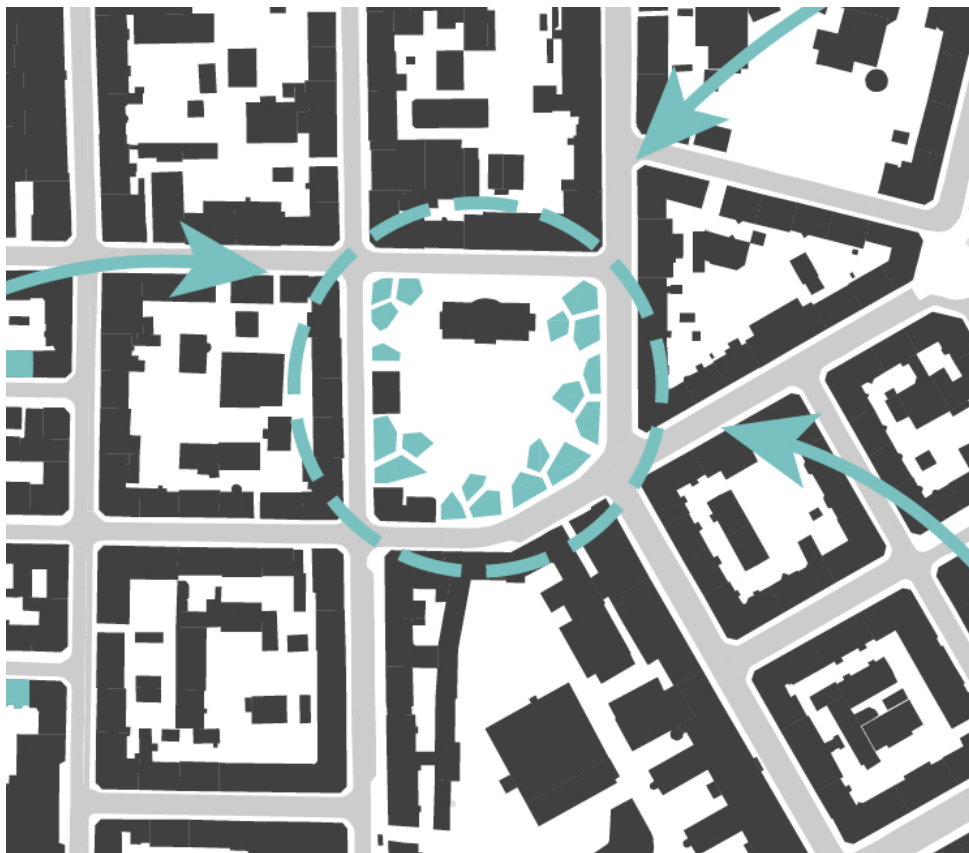
## URBANISM



WP 4

## BUILDING ENVELOPE





## SITE PLAN / URBAN STRATEGY

HOUSING PROJECT FOR FAMILIES WITH CHILDREN (At Schou's square in Oslo)  
Ona Flindall og Katharina Sæbø Dale



## ARCHITECTURAL STRATEGY

HOUSING PROJECT FOR FAMILIES WITH CHILDREN (At Schou's square in Oslo)  
Ona Flindall og Katharina Sæbø Dale



Arkitektur- og designhøgskolen i Oslo  
The Oslo School of Architecture and Design

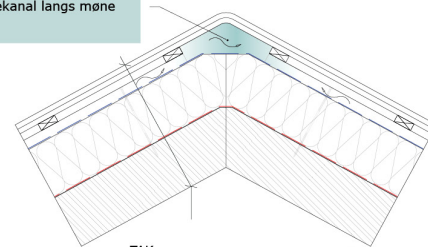
Marius Nygaard  
Research and Teaching







Utlufting med luftekanal langs møne

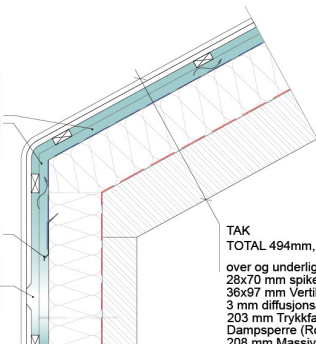


TAK  
TOTAL 494mm, u-verdi 0.13W/(mK)  
19x120 mm "stående" Trepanel  
28x70 mm spikerlekte horisontelt / Luftspalte  
36x97 mm Vertikal lekt holder isolasjonen og fungerer som sløyfe  
3 mm diffusjonsåpent undertak og vindsperre  
203 mm Trykkfast isolasjon (Rockwool FlexSystem vegg, 0.035W/(mK))  
Dampsperre (Rockwool RockTett)  
208 mm Massivtre KLH 5 layer, 128mm, 0.11W/(mK) REI 60

Overdimensjonert utlekting gir større utlufting i både tak og vegg

dryppnese leder  
fukt utenfor isolasjonen

Felter med lufting i fasaden  
gir økt utlufting



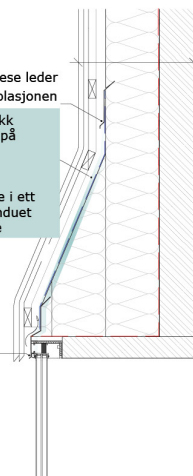
TAK  
TOTAL 494mm, u-verdi 0.13W/(mK)  
over og underliggende 19x120 mm "stående" Trepanel  
28x70 mm spikerlekte horisontelt / Luftspalte  
36x97 mm Vertikal lekt holder isolasjonen og fungerer som sløyfe  
3 mm diffusjonsåpent undertak og vindsperre  
203 mm Trykkfast isolasjon (Rockwool FlexSystem vegg, 0.035W/(mK))  
Dampsperre (Rockwool RockTett)  
208 mm Massivtre KLH 5 layer, 128mm, 0.11W/(mK) REI 60

dryppnese leder  
fukt utenfor isolasjonen

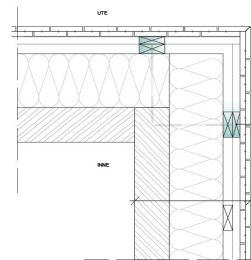
Økt vinkel på vindutstikk  
reduserer tilbakesprut på  
kledningen

Undertak og vindsperre i ett  
reintroduces over vinduet  
som ekstra beskyttelse

dryppnese leder  
fukt utenfor isolasjonen



YTTERVEGG  
TOTAL 402mm, u-verdi 0.15W/(mK)  
2 lag med 19x120 mm Stående Trepanel  
28x70 mm Spikerlekte horisontelt / Luftspalte  
27x97 mm Vertikal lekt holder isolasjonen (Rockwool FlexSystem)  
200 mm Trykkfast isolasjon (Rockwool FlexSystem vegg, 0.035W/(mK))  
Dampsperre (Rockwool RockTett)  
128 mm Massivtre KLH 5 layer, 128mm, 0.11W/(mK) REI 60



Lektene tetter hjørnet for å hindre luften i å bevege  
seg horisontalt, slik at det bygger seg opp et trykk  
som presser luften oppover til utlufting i taket.

YTTERVEGG  
TOTAL 402mm, u-verdi 0.035W/(mK)  
19x120 mm varmebøyd eikepanel, 6 mm knekkradius  
28x70 mm spikerlekt, horisontalt luftspalte  
27x97 mm vertikal lekt holder isolasjonen (Rockwool FlexSystem)  
200 mm trykkfast isolasjon (Rockwool FlexSystem vegg, 0.035W/(mK))  
Dampsperre (Rockwool RockTett)  
128 mm massivtre KLH 5 layer, 128mm, 0.11W/(mK) REI 60

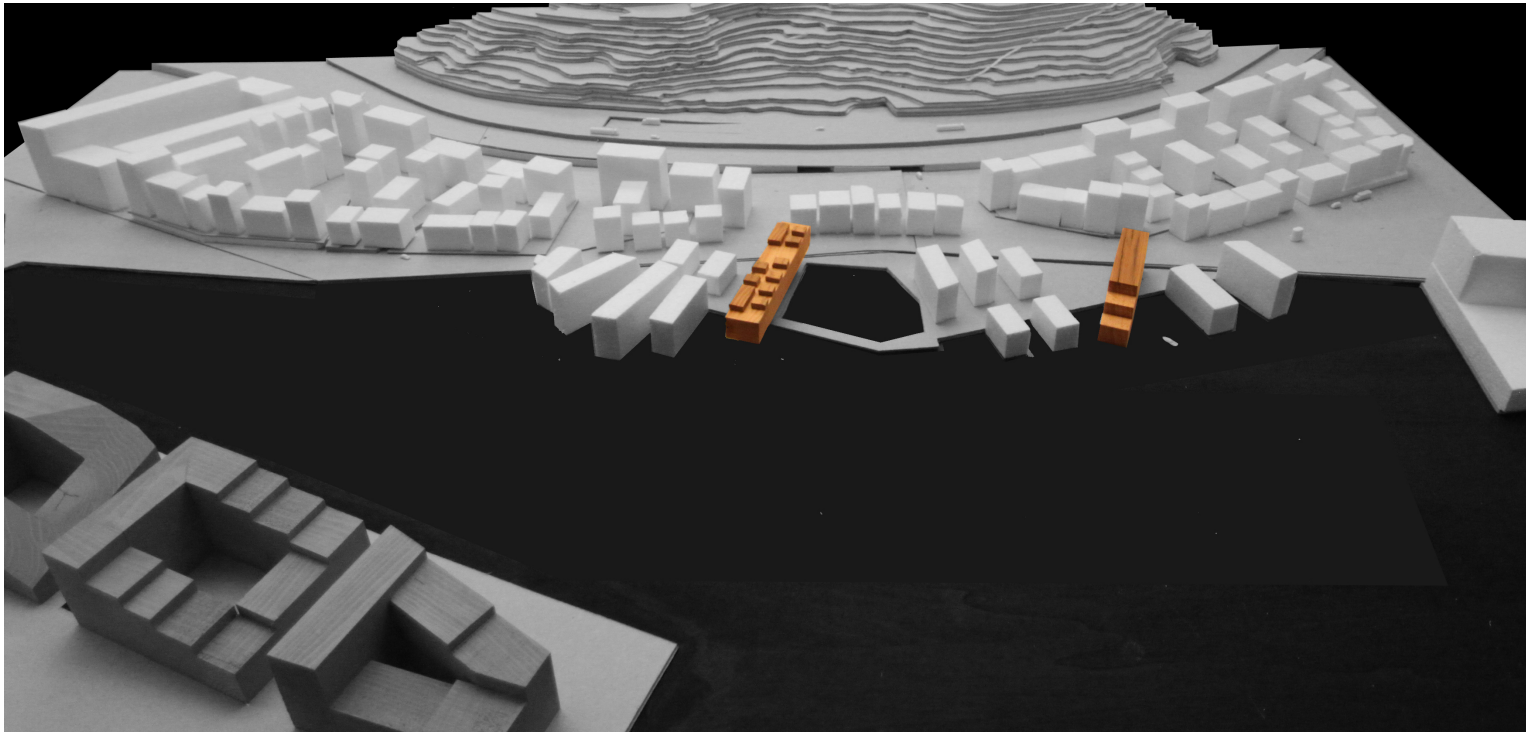
bending studies

construction details: vertical and horizontal section

| 72

## DETAILS

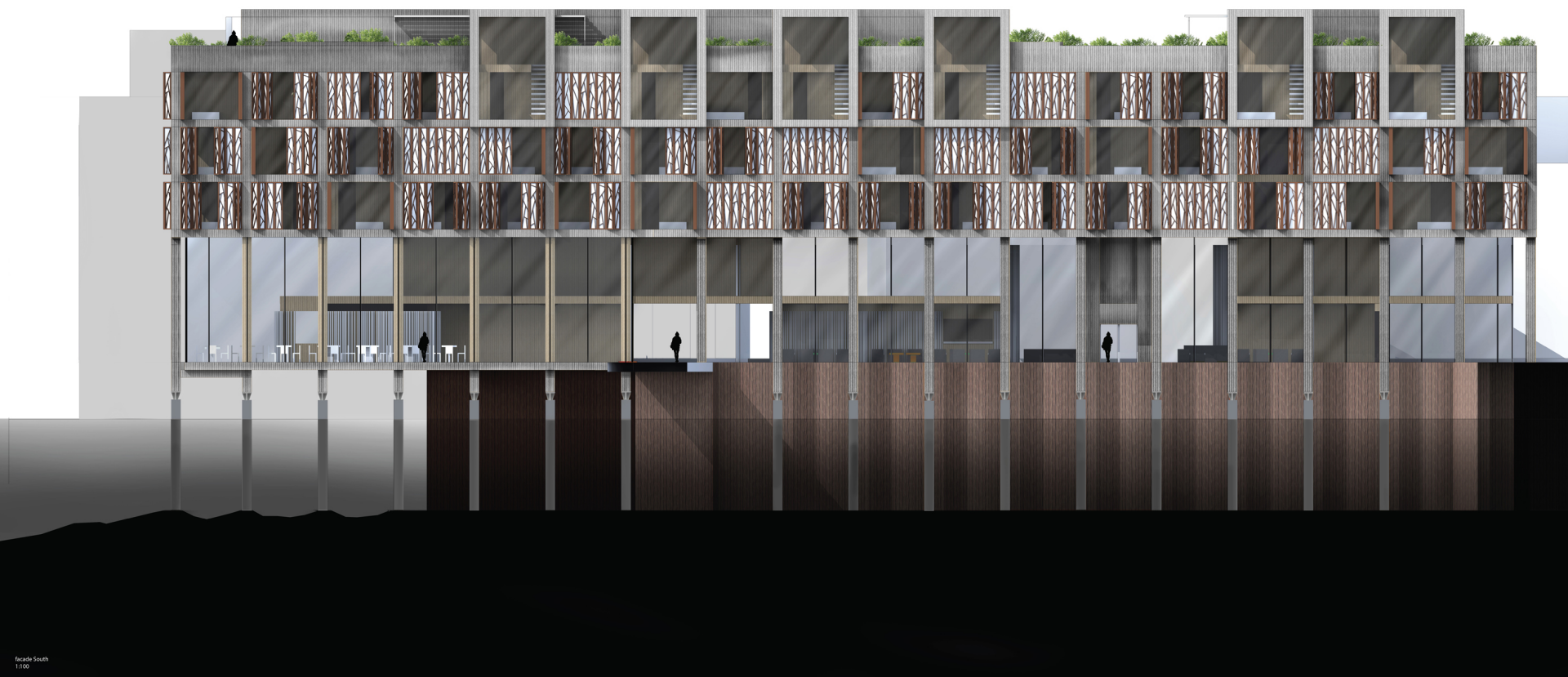
## HOUSING PROJECT FOR FAMILIES WITH CHILDREN (At Schou's square in Oslo) Ona Flindall og Katharina Sæbø Dale



## SITE MODEL / URBAN STRATEGY

HOTEL AT SØRENGA / LOHAVN I OSLO  
Stefan Landøy





## ARCHITECTURAL STRATEGY: FACADE TOWARDS "WATER SQUARE" "

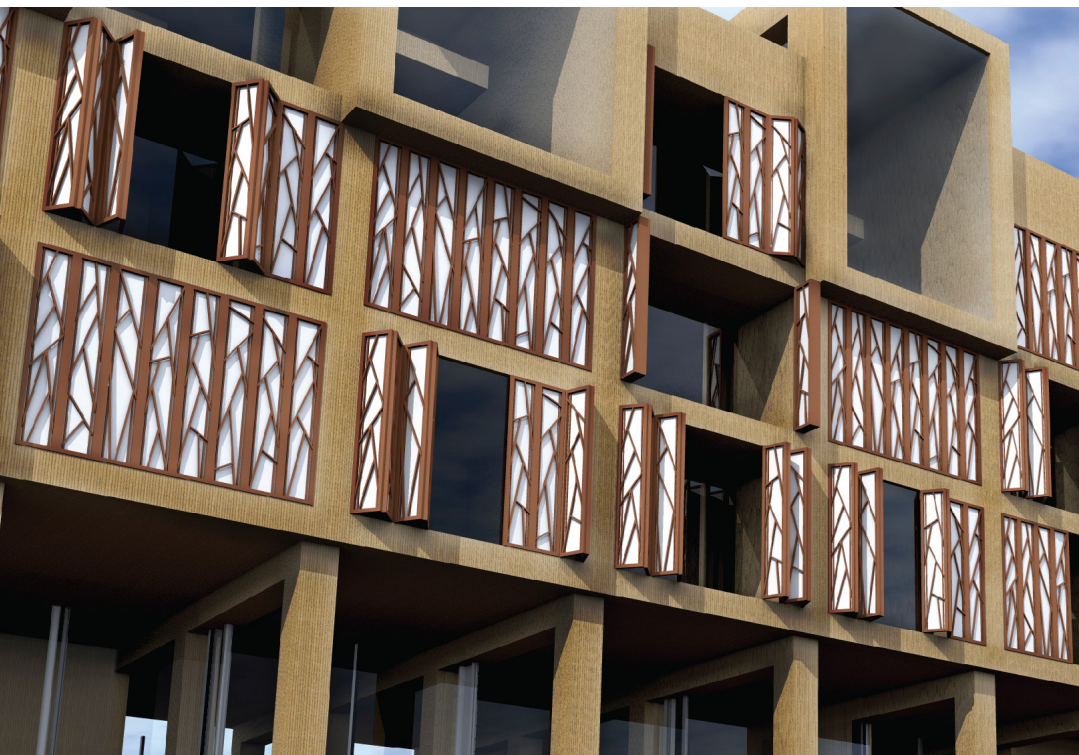
HOTEL AT SØRENGA / LOHAVN I OSLO  
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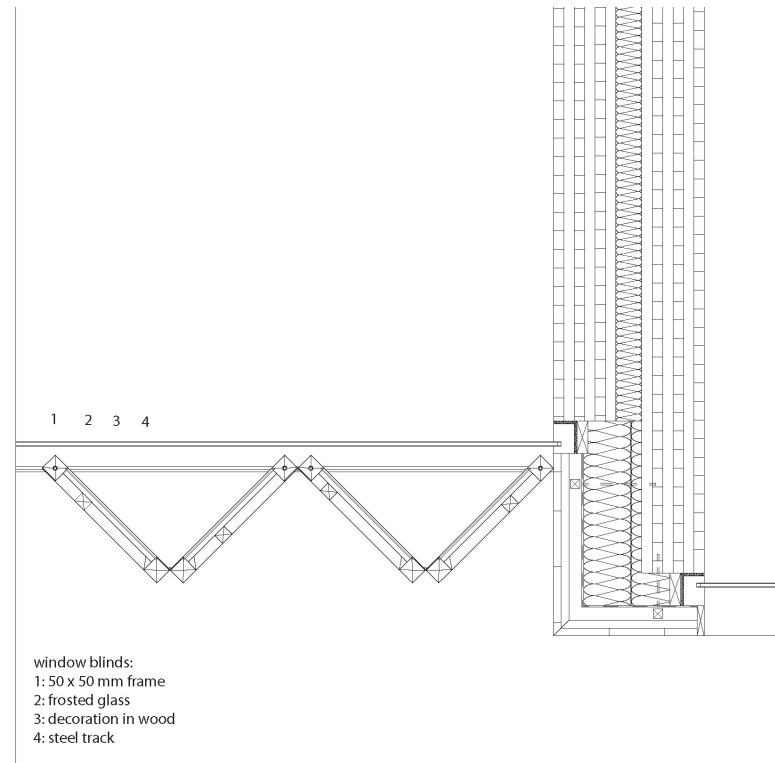


FACADE DETAIL

HOTEL AT SØRENGA / LOHAVN I OSLO  
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Research and Teaching



To reduce energy consumption and emissions in Norway  
500 million m2 of floor space should be built or refurbished to meet improved standards before 2040 \*

We must find the good solutions and implement them

The Oslo Project and the WBB project show that teaching, innovation and research can be combined and save time spent on knowledge transfer

Interdisciplinary teaching and exploratory building may also contribute to

- improve the esteem and reduce the drop- out rates of the vocational education
- thereby improving recruitment to the building trades
- clarify and strengthen common values that prevent spreading of criminal practice in the building industry

\* The Arnstad Ministerial group for energy efficiency in buildings (2010)