



**AALBORG UNIVERSITY**  
DENMARK

**Aalborg Universitet**

## **The Aalborg model of teaching in Architecture**

*- a talk about the Aalborg concept of teaching architectural design.*

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# The Aalborg model of teaching Architecture

Prof. Mary-Ann Knudstrup  
Master of Art in Architecture, Architect MAA  
Architecture & Design, Aalborg University Denmark

At Bern University of Applied Sciences Architecture, Wood and Civil Engineering June 4 200

# In my presentation, I will focus on:

1. A general introduction to the study environment in Aalborg and the study programme at Architecture and Design, Aalborg University.
2. A presentation of the specialisation in Architecture and the challenges that we have had to face when creating this course of study.
3. Giving a more detailed example of a final project dealing with Environmental Sustainable Architecture.



Architecture & Design domicil Gl. Torv



Sydney Operahouse  
By Jørn Utzon

Utzon Centre  
By Jørn Utzon  
& Kim Utzon



# Bachelor education



## Basic studies programme:

- 1. Semester Intro to PBL studies & Ark/Design theory/method + mathematic
- 2. Semester Intro to PBL studies & Ark/Design theory/method + mathematic

## Basic educational programme:

- 3. Semester Main Project: DD/ID + Ark/ Urb Mini Project
- 4. Semester Main Project: Ark/Urb + ID/ DD Mini Projekt
- 5. Semester Main Project: TEMA & -pre. specialization./ optional study activities

6. Bachelor Project.: **Architecture** **Industrial Design** **Urban Design** **Digital Design**







# Architecture & Design Master education



## Architecture master programme

1.1. Main Project: Project Work 23 ECTS /7 ECTS Project unit courses. Mini Project 7/2 ECTS.

1.2. Main Project: Project Work 23 ECTS /7 ECTS Project unit courses/2. Mini Project 5/1 ECTS

2.1. Main Project: Project Work 25 ECTS /3 ECTS Project unit courses. Mini Project 5/2 ECTS.

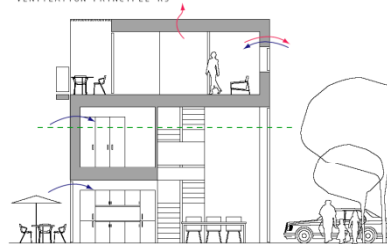
Plus optional study activities: courses and study trips

2.2. Master Thesis 30 ECTS.

PRESENTATION  
PLAN DWELLING TYPE R3



PRESENTATION  
VENTILATION PRINCIPLE R3



PRESENTATION  
SITE SECTION



# Architecture & Design Master education



## Architecture master programme

1.1 . Tectonic Design. Architectural Form and Structure + Minip.: Studies in Tectonic Design

1.2. Architectural Form, space and Environmental Design + Minip.: Conceptual Archi. Design

2.1. Architectural Research and Development + Minip.: Architectural Project Management

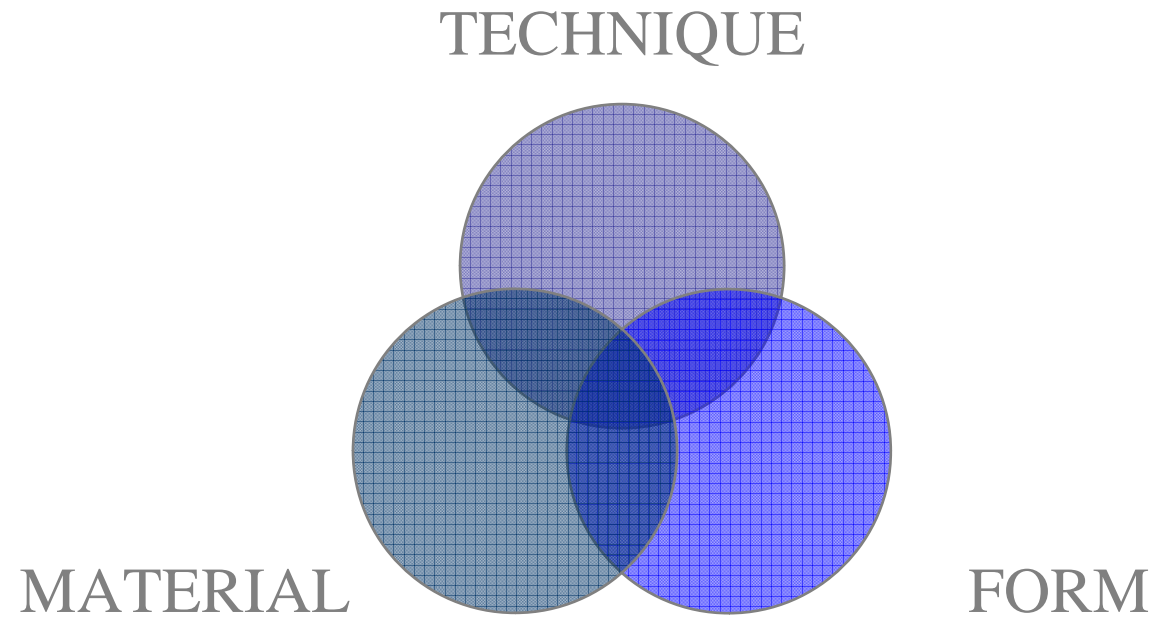
Plus optional study activities: courses and study trips

2.2. Master Thesis

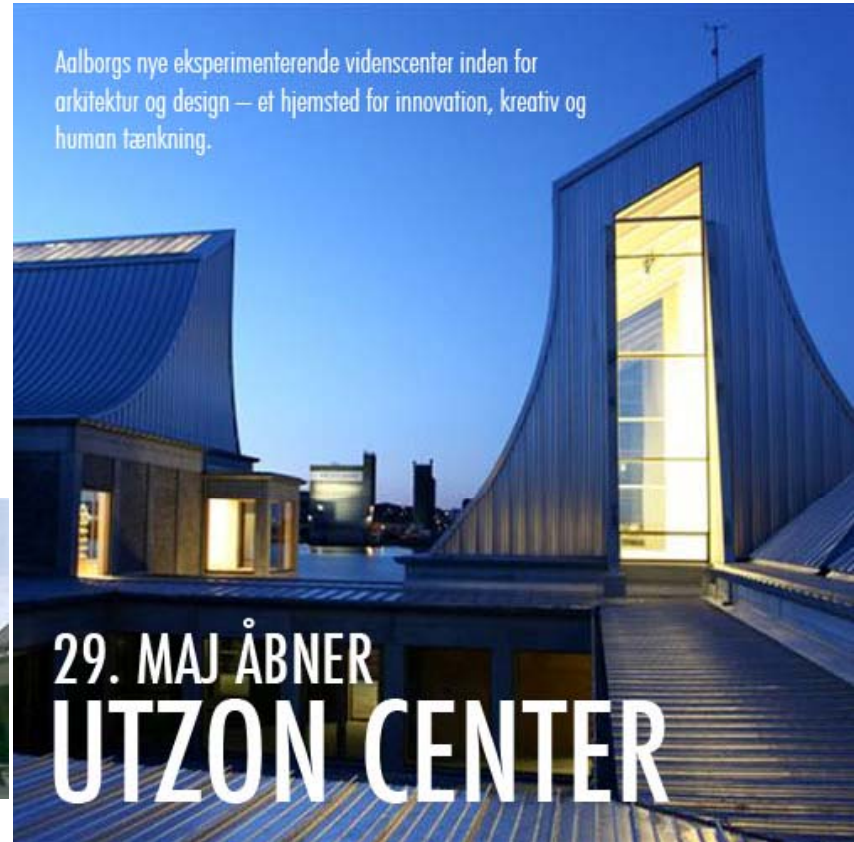
PRESENTATION  
DWELLING TYPE L2 INTERIOR



# Tectonics

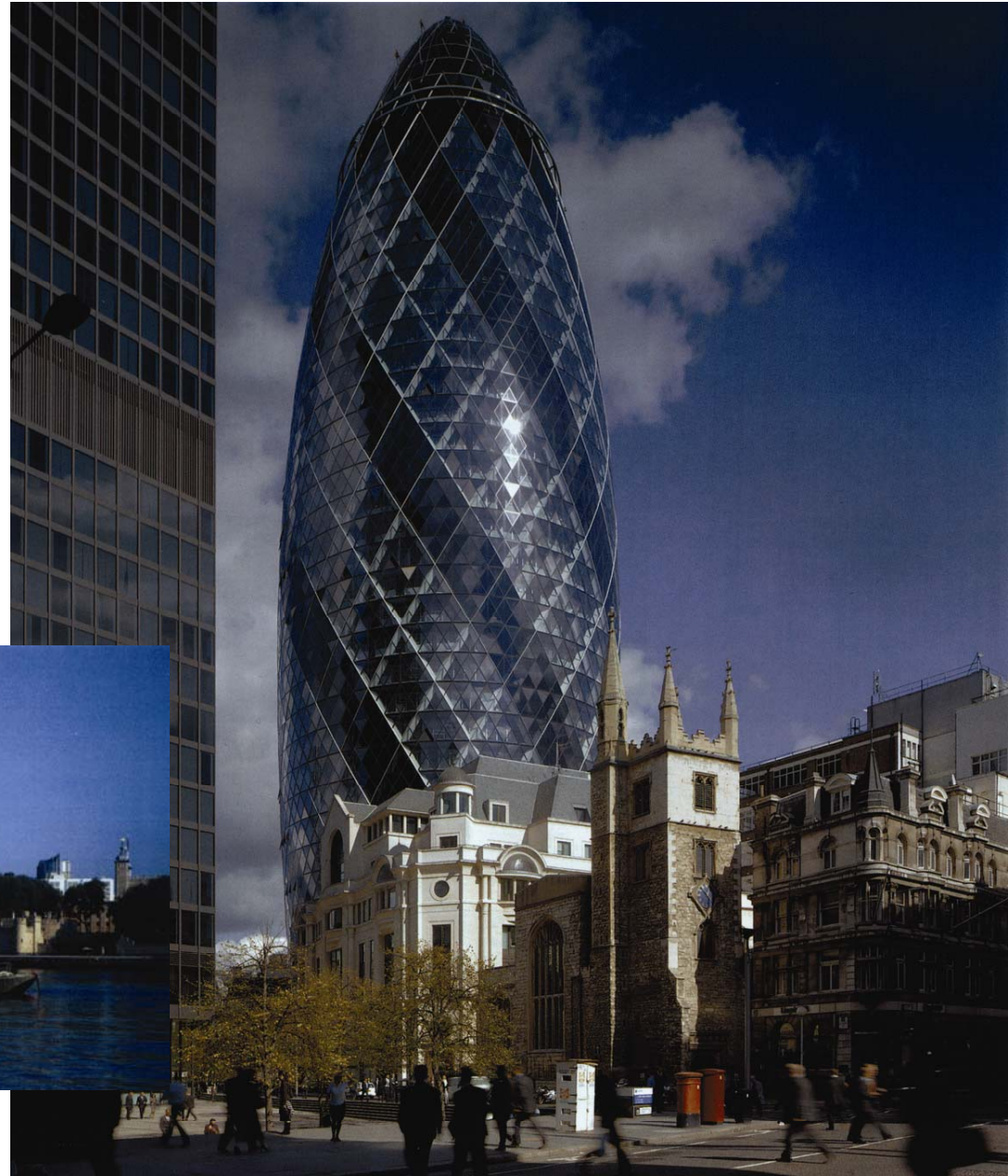


*Frampton proposes that tectonics is a means to reveal the essence of a building. Therefore he suggests logic constructions, in order to clarify the structure of a piece of architecture, and make it immediately understandable.*



Utzon Centre by Jørn Utzon & Kim Utzon  
<http://www.utzoncenter.dk/>

Swiss Re UK  
Headquarters, London  
Foster and Partners



EDITT Tower,  
Singapore  
Ken Yeang



Ecotowers,  
London  
*Ken Yeang*



# Is it important to make sustainable buildings?

- The global environment is in a poor state.
- Over the coming years, building legislation will require energy consumption for construction to be reduced by up to 50-90%.
- To bring down the CO2 level.
- Developing new integrated building concepts is therefore necessary.
- In Europe, today, the "Passiv Haus Concept" is in focus and the ultimate aim is to build energy-producing houses by means of sustainable energy sources.



*“Since 1998, floods in Europe have caused some 700 deaths, the displacement of about half a million people and at least 25 billion Euro in ensured economic losses”.*

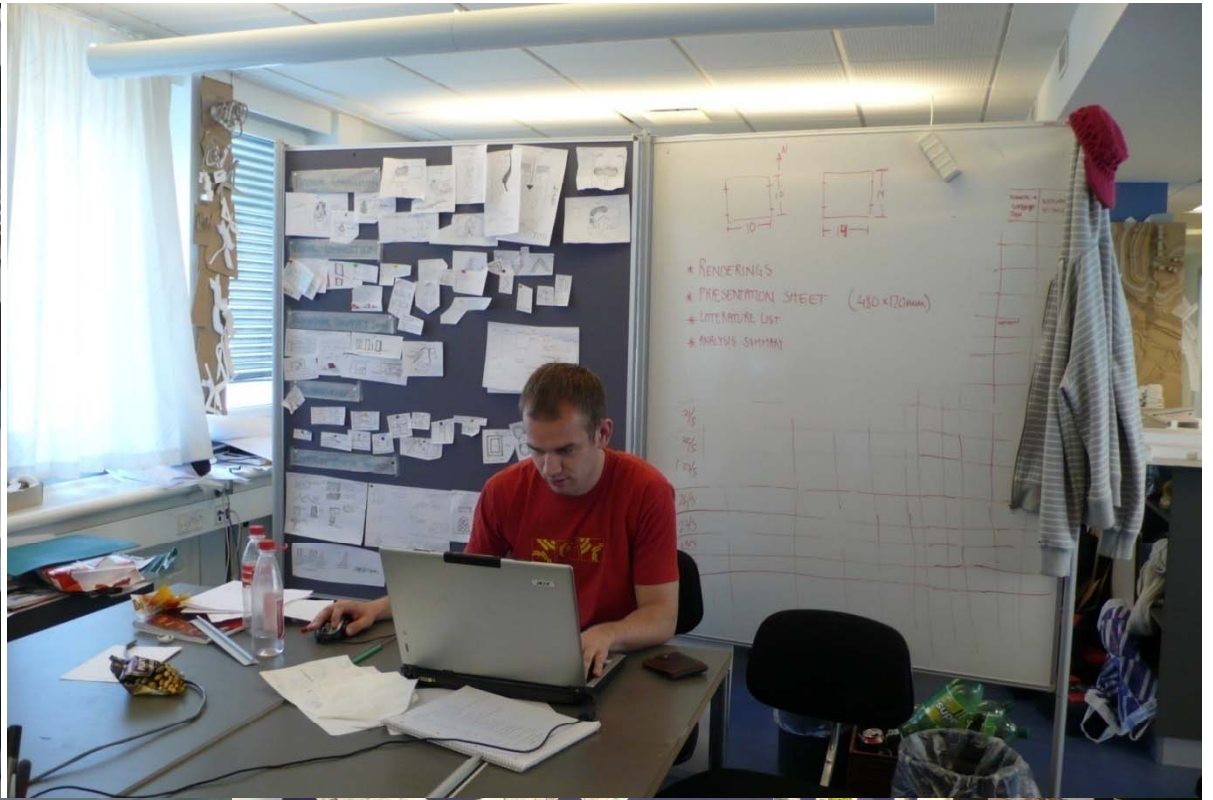
*(From Press Release of the European Parliament April 2007)*



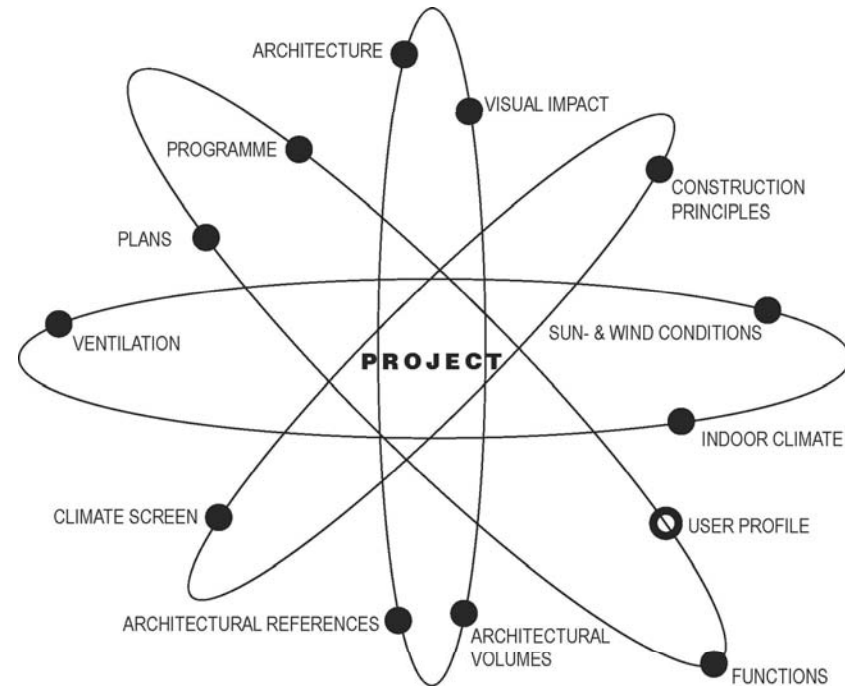


# The great challenge!

- The building and construction industry is today facing great challenges due to the fact that energy consumption will have to be reduced to a considerable degree within the next few years in order to ensure that no further damage is done to the global environment.
- The industry is thus facing major changes in terms of public regulation and in the way building and construction is carried out in practice, whereby “bad habits” seen in relation to an energy optimisation of the building will have to give way to new and better methods.
- It has been a natural challenge for a relatively new university like Aalborg University to develop teaching methods that are tailored to dealing with current societal/technological issues. In terms of both research and teaching, Aalborg University utilises an interdisciplinary approach to a considerable extent.



# The Integrated Design Process (IDP) at A&D



The Integrated Design Process are using the professional knowledge and design method from architecture and parameters from engineering in an integrated process.

The architect's artistic approach to the creation of ideas as well as he or her ability to see new solutions and work strategically and Inter-disciplinary in interaction with engineering parameters is very important.

## **Problem formulation / project idea / aim**



### **Analysis phase**

Analysis of site, urban development plans, company profile, functional diagram, energy and indoor environment principles as well as principles of construction.

( *ideas to the main concept* )

Aim & program



### **Sketching phase**

Through the sketching process, architectural ideas are produced and linked to principles of construction, energy consumption and indoor environment. As well as the functional demands to the new building. In this phase, *the main concept* usually emerges.



### **Synthesis phase**

Architectural & functional qualities, the construction and demands of energy consumption and indoor environment flow together, and more qualities may have been added.

A new building has been created



### **Presentation phase**

The final project is presented in a report, drawings, cardboard model and via IT visualisation.

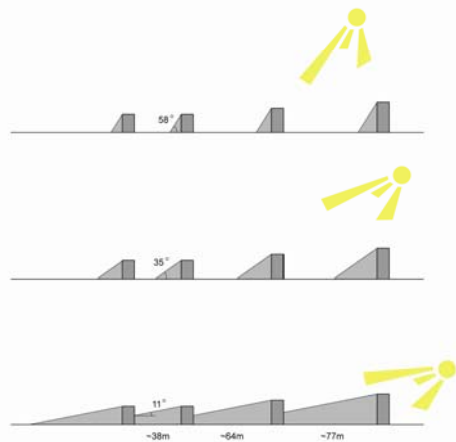
# The barriers and the challenges that appear when you cross the borderland between architecture and engineering

- It is important to combine knowledge from engineering and architecture from the beginning of the process.

By making an integrated approach and collaboration between design solutions of the architects and the technical parameters of the engineers **running into conflicts at later stage can be avoid**

- So it's a good idea to take the technical parameters into consideration early on in the architectural process and to **include technical calculations already in the sketching process.**

# Housing at the old goods railway area in Aalborg



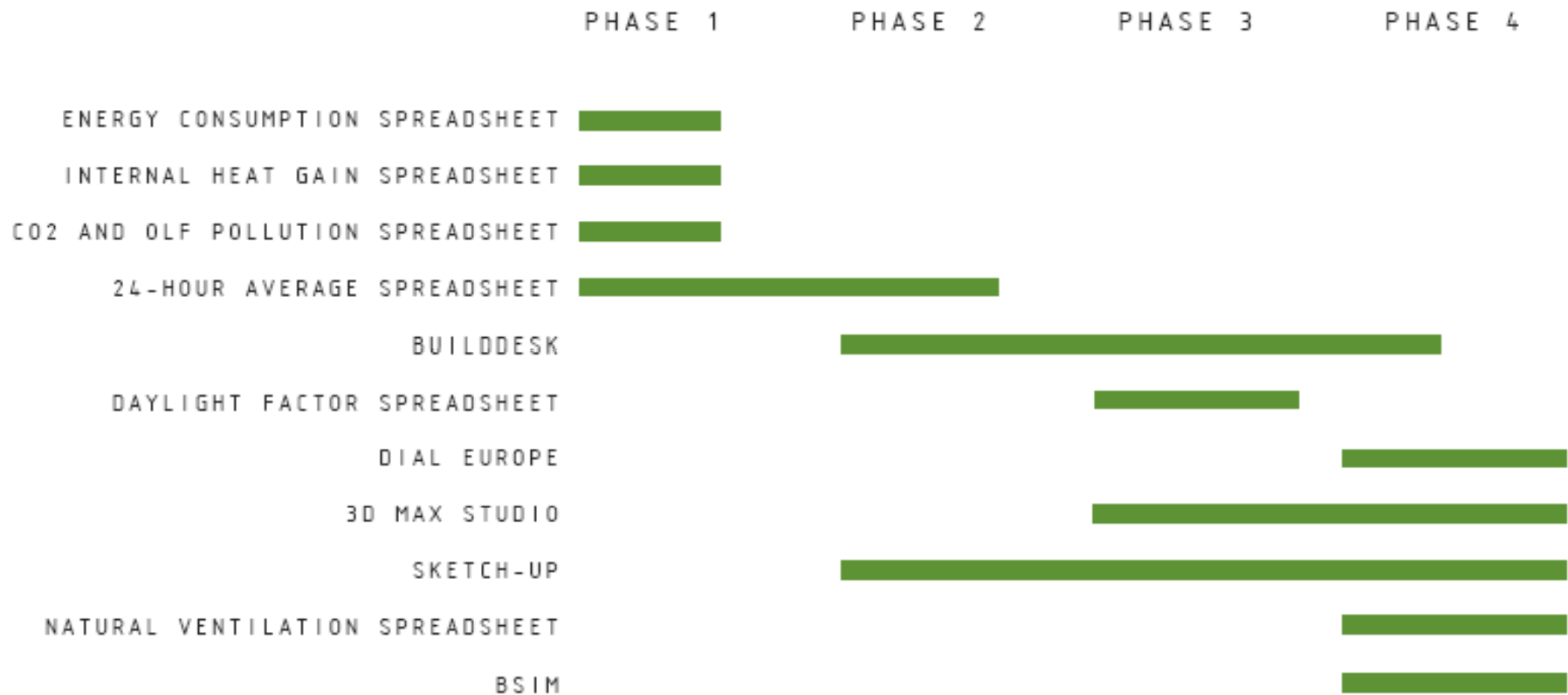


## THE FLAT TO THE VEST

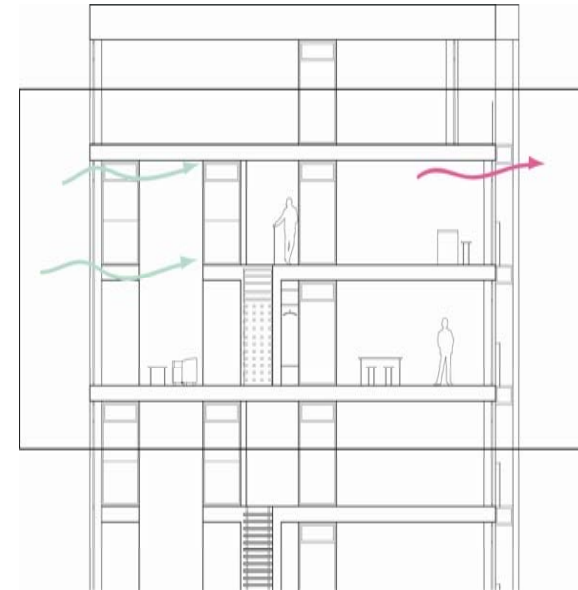


To allow for the integrated design process to function optimally, a number of design and calculation tools are available for use in the different phases. The phases and tools will undoubtedly overlap each other depending on each individual project and process.

# PROCESS

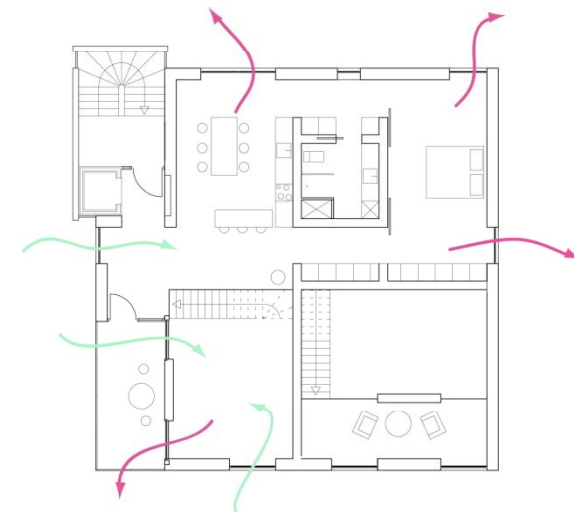
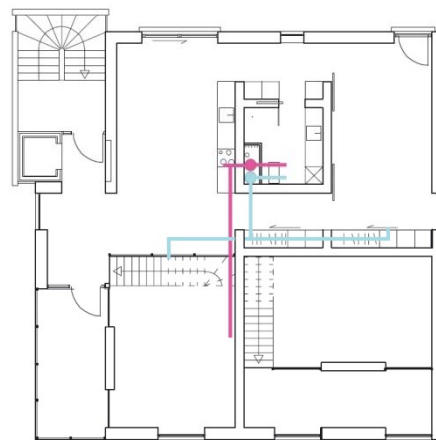


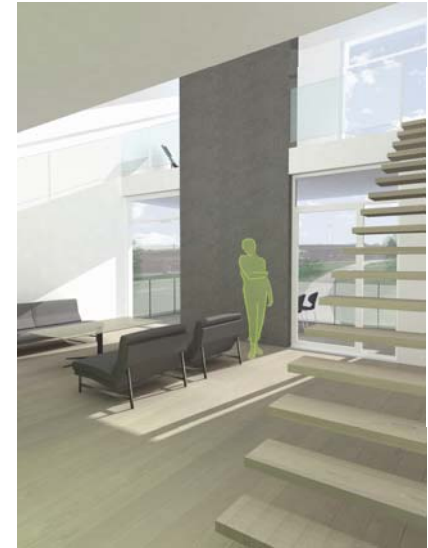




Natural ventilation

Mechanical ventilation

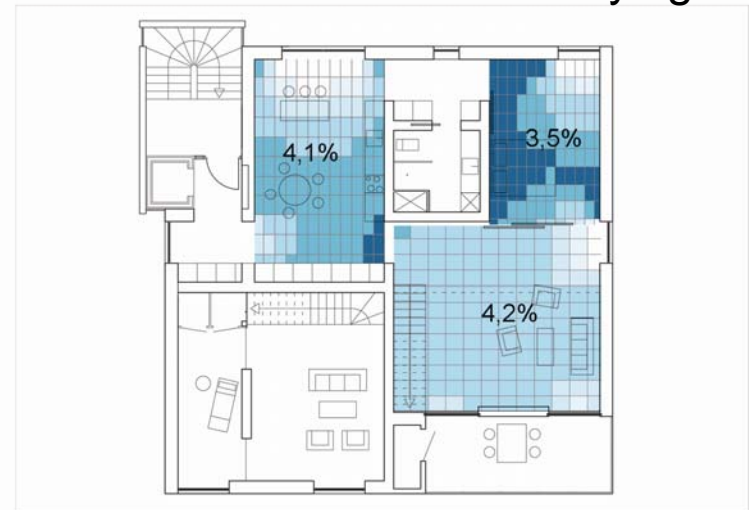




THE FLAT TO THE EAST



Day light



Thank you !