CONSTRUCTING ARCHITECT'S PORTFOLIO

Carina Pronscaia

- 12.10.1995
- Horsens, Denmark

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Technical skills/programs used:

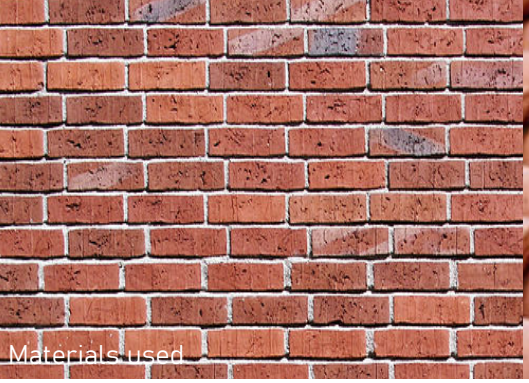
- Revit
- AutoCAD
- SketchUP, LayOut
- Adobe Photoshop, InDesign
- Microsoft Office
- Be 18

Gained competences:

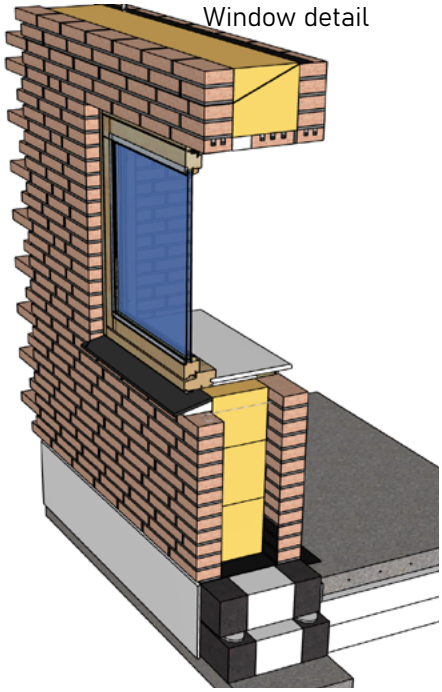
- finding and solving technical and functional problems
- precision and orientation towards details
- drawing-, oral and written communication with professionals and building owners

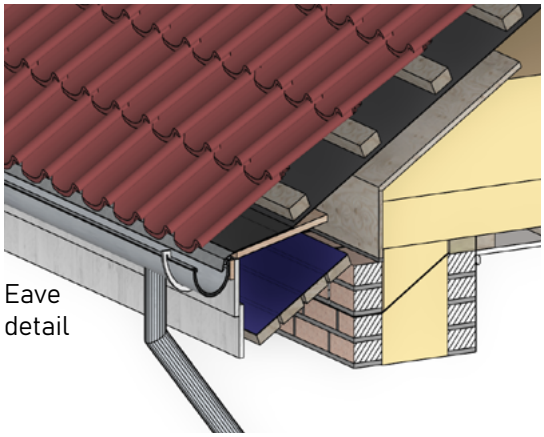
PROJECTS

*All drawings in this portfolio, besides indicated are elaborated by me. To see full sized drawings (A3 and bigger), please, visit my website and download merged PDFs.

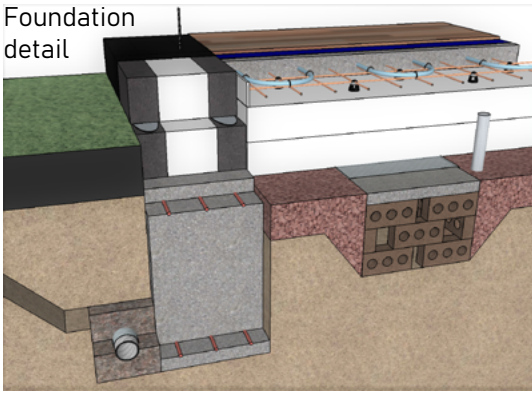

Materials used

Window detail




Eave detail

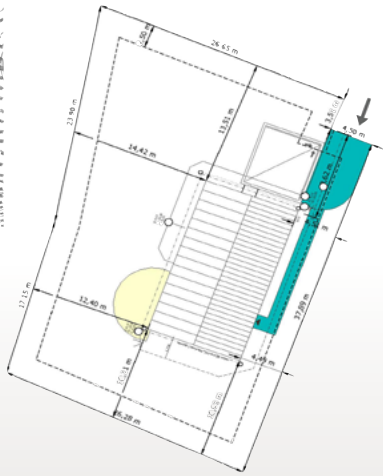
Foundation detail



The idea of building a 120 m² traditional single-family house in a picturesque neighborhood surrounded by fields, grove and a lake belongs to VIA University. The layout, shape and special attributes were designed in a group and followed by detailed drawings of each of the main connections in SketchUp and Layout, general drawings, communications and primary planning and management documentation.

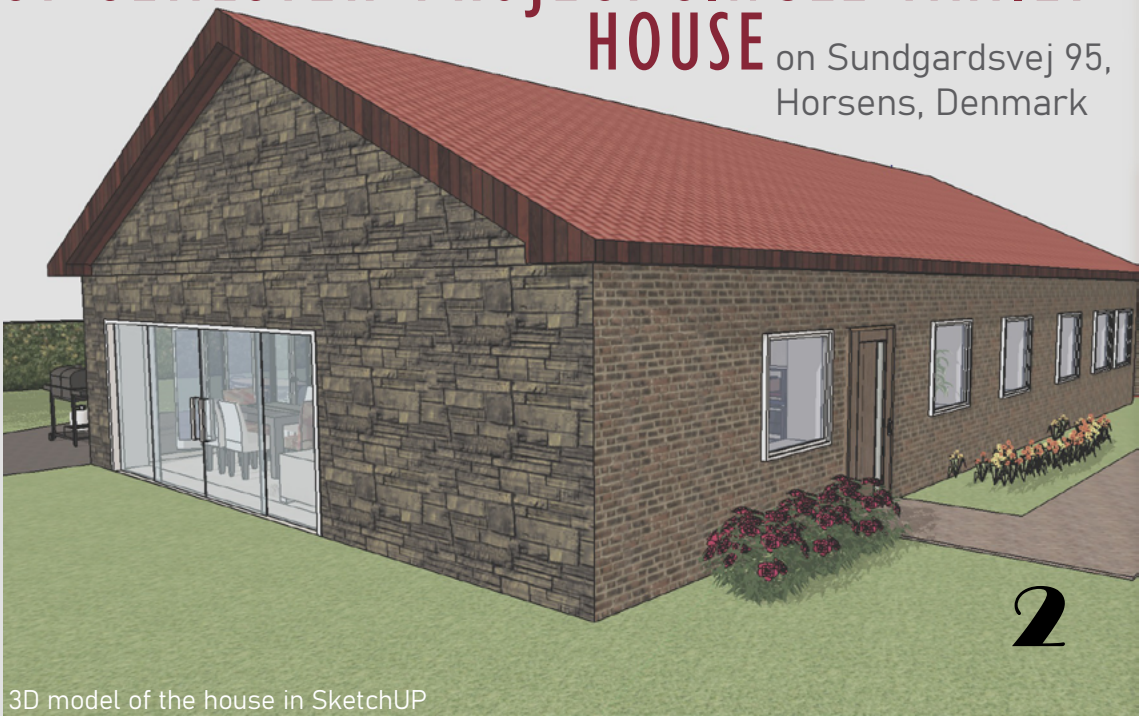
Client's demands: give maximum consideration to the sun and view, separate public and private zones, living and kitchen area should have access to the terrace, sustainable materials, like brick, timber, clay tiles and concrete should be used.

The goal of the fist semester was to get familiar with basic traditional construction principles by creating one-story single family house in bricks with pitched roof with clay tiles. This semester was challenging in many ways: getting familiar with new school environment, speaking professional English, getting to know different learning techniques, working in a group with new and very different people. Owing to nice learning environment in VIA I obtained knowledge about traditional Danish constructions, foundation and ground supported floor, roof, windows; as well as materials, design process and professional communication itself. Moreover, it was important to learn how to get maximum result



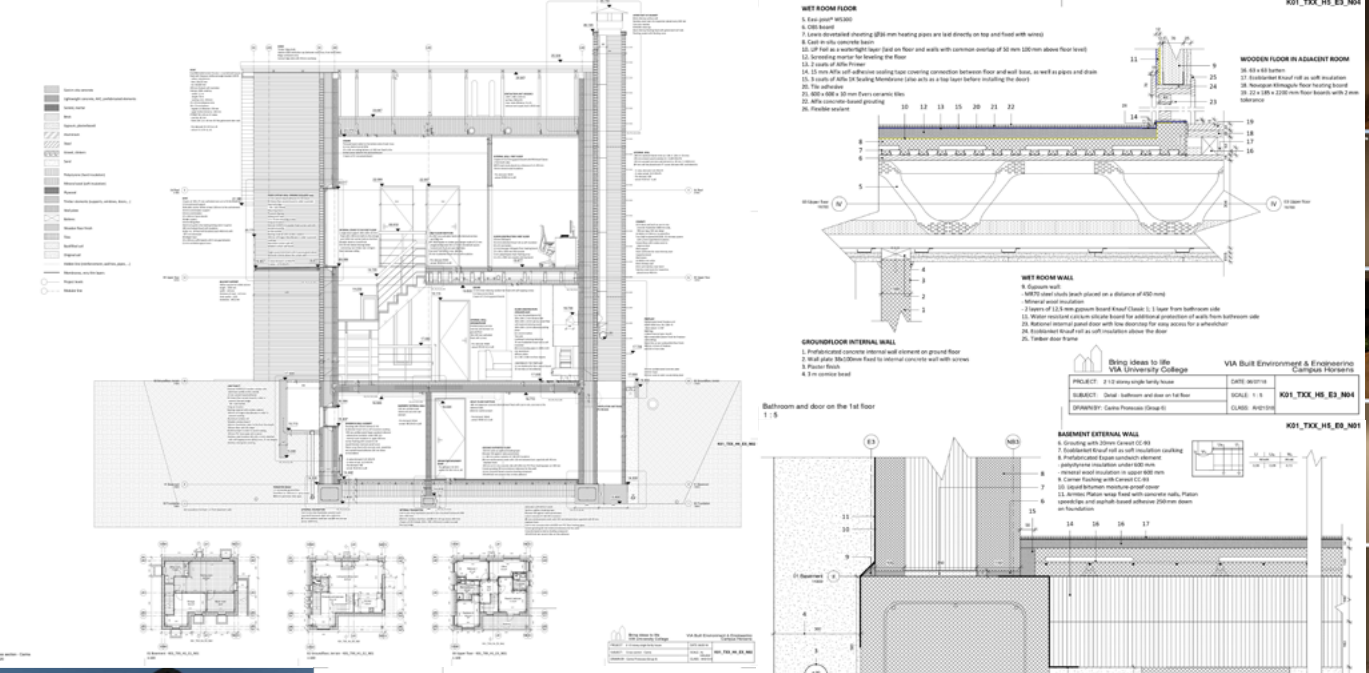
FIRST SEMESTER PROJECT-SINGLE-FAMILY HOUSE on Sundgardsvej 95, Horsens, Denmark

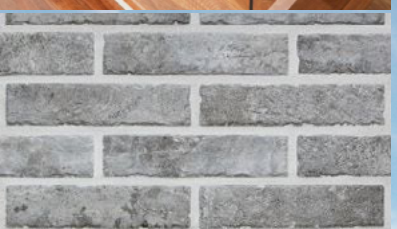

House concept


3D model of the house in SketchUP

SECOND SEMESTER PROJECT-
TWO-STOREY SINGLE FAMILY HOUSE

Sundgårdsvej 95, Horsens





Thinking about family house I always come to a concept of functionality and simple aesthetic in low-maintenance and affordable envelope. The idea behind our house was to create a pleasurable feeling of open space, lightness, comfort and high-quality indoor climate. Big windows became the source of natural heating and allowed the owners to admire picturesque surroundings. Natural materials, prefabrication and modular design helped us achieve sustainable and qualitative living for house inhabitants. Grey brick facade, slate roof, straight and simple forms allowed us to create a highly functional and modern house.

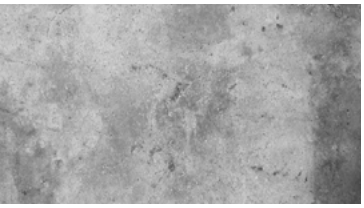
Working in Revit for the first time allowed me to develop detailed and informative drawings and to start learning about the ICT specifications in the field. Worksharing in Revit helped my group coordinate the project much better and ICT manual to standardize all documents which we elaborated. This semester I have begun solving atypical details and finding original solutions to complicated problems. It remains to be my biggest passion ever since.

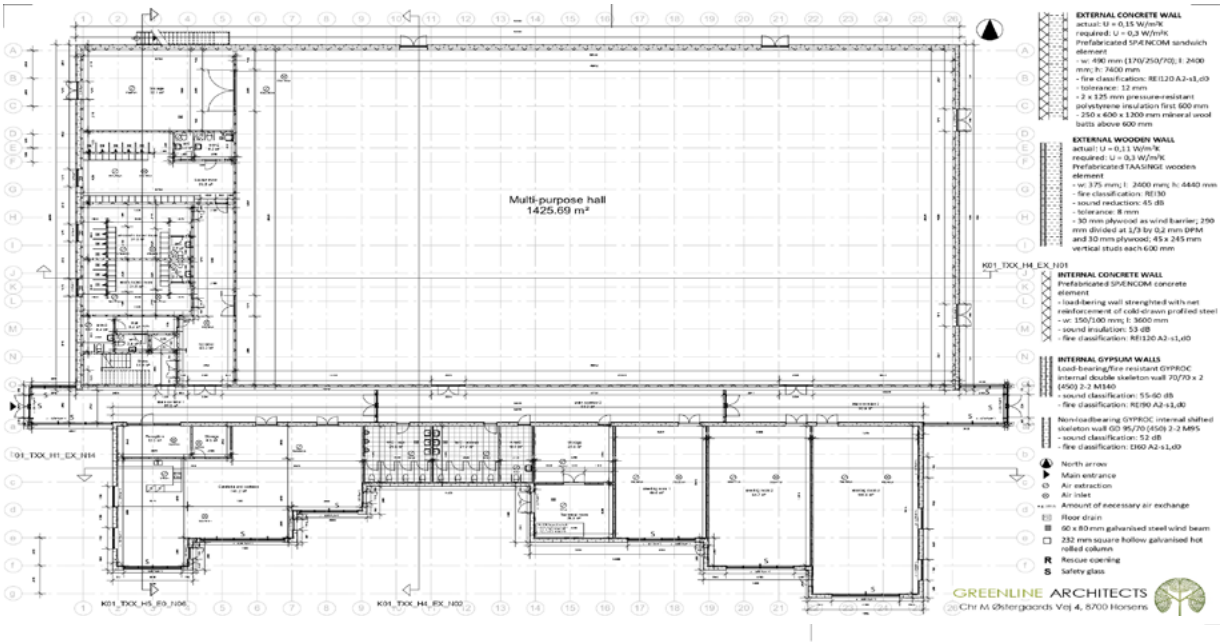
This semester was also the first when I got familiar with Danish market and used provided products in the project and enjoyed it a lot. Since then I love to study the market and find the most advantageous, affordable, sustainable and modern solutions.

Thankfully to this project, my teachers and groupmates I learned a lot, and the most impostant - how to solve architectural technician's tasks in a more professional and efficient way.

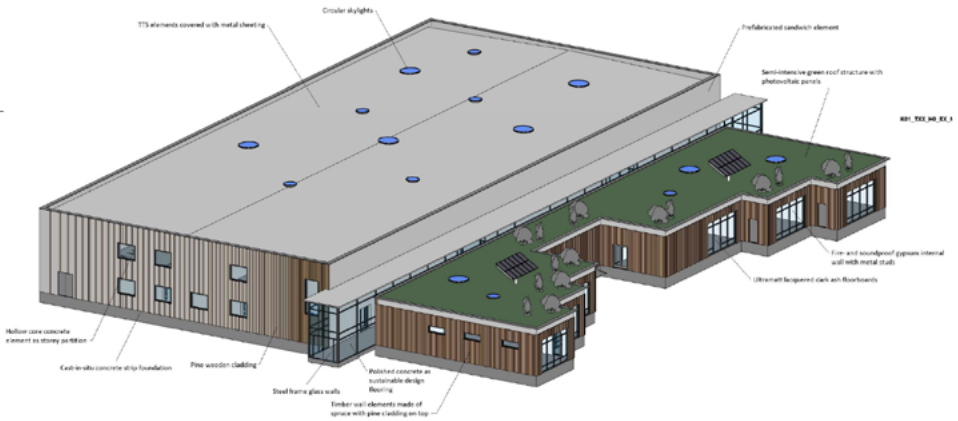
All visualization made by Michaela Machova

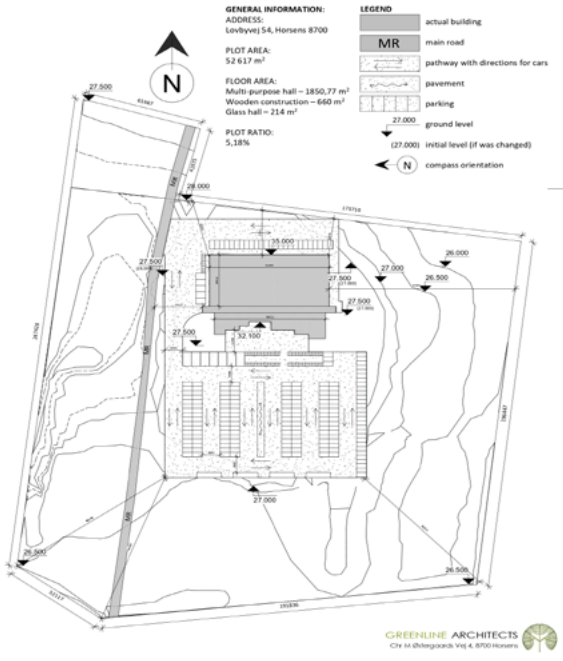
THIRD SEMESTER PROJECT—MULTIPURPOSE HALL MADE OF PREFABRICATED CONCRETE HALL, WOODEN ADMINISTRATION BUILDING AND GLASS HALLWAY, on Lovbyvej 54, Horsens





BUILDING SYSTEM





The aim of the semester was to update an architect's design of a multipurpose hall, that consists of middle-sized sports hall and two-story office part, with commercial unit, that will meet the municipality desires and be buildable, sustainable and accessible in the best possible way. Since main functions, shapes and materials were already set, we were still able and even had to change the layout to meet requirements and bring modular design into the project, choose surfaces, add sustainable solutions.

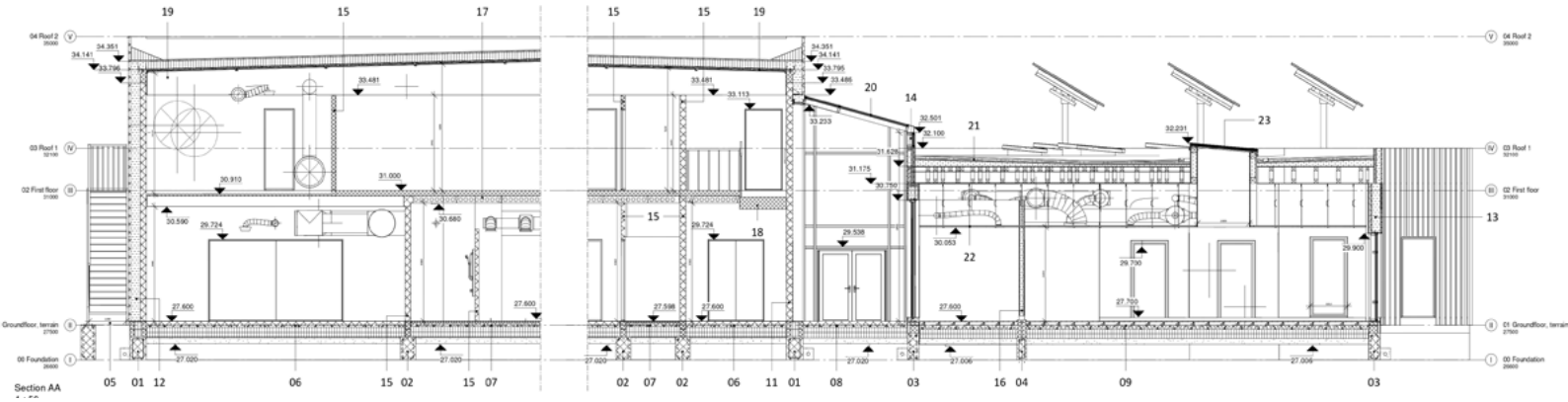
Concrete hall in combination with wooden facade of commercial part, connected with long and high glass corridor created a feeling of diversity, airiness and union with natural surroundings. Variety of skylights both in concrete and green roof provided even more sunshine in common areas.

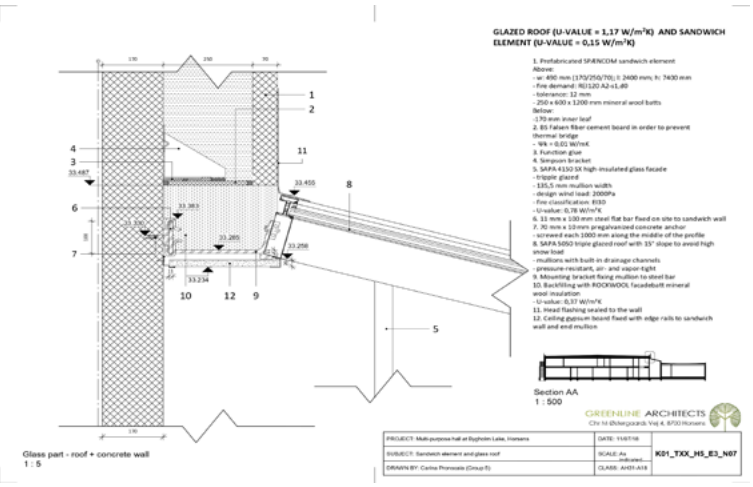
We made sure every component starting from the foundation until the roof makes up a reliable and sound building for all visitors.

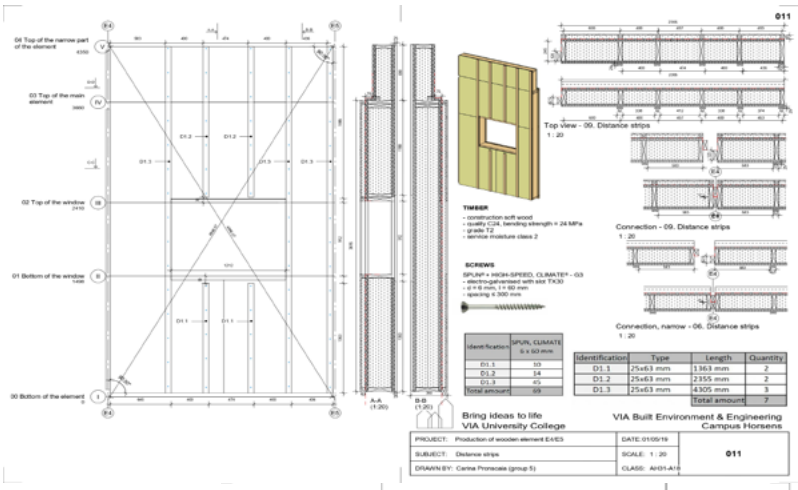
This semester we faced many new challenging tasks and tried to solve them all. Modular system as a great tool for better management (in frames of cost and time) and possible reusable material, therefore we made sure it is well-elaborated in both parts of the building. It is highly important in concrete part, where sandwich elements, TTS roof elements and waffle plates are placed according to necessary connections and tolerances. Extensive green roof with photovoltaic panels and round skylight mounted on top of easi-joists required precise calculations and well-elaborated design. Whereupon, more structural calculations, including building services as ventilation, were made. Stability of glass hall and its connections to neighboring parts was also a priority and a challenging part, that learned me to find unusual ways of solving tasks.

As soon as the budget for the project was limited, we had to plan time, money and other resources as detailed as possible to fit into all the demands from the client, and that taught us to think ahead and to have versatile approach to the project.

Visualization made as a group







Individual part of the semester consisted of production drawings of a prefabricated wooden facade element. We acted as a manufacturer for Aarhus students.

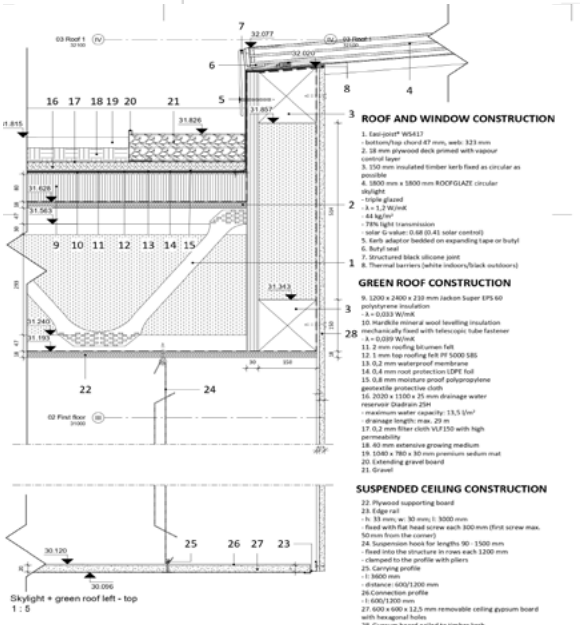
Going in depth of element production requires a lot of attention to details, therefore it is impossible to create well-elaborated drawing without knowing the materials and their properties in detail as well as options available on the market. I especially enjoy working with danish companies and learn about local material and solutions and to implement them on practice.

Being a constructor for Aarhus project have me deeper understanding on how facade elements are delivered and mounted, how quality assurance is held, how health and safety precautions are implemented. All the tasks let me understand working on construction site much better.

In my opinion, this semester has become the most informative of all semesters.

Thankfully to our wonderful teachers I acquired a lot of knowledge about prefabrication of concrete and wooden building components, building of glass, about public buildings and corresponding requirements. Moreover, during execution phase we elaborated a lot of documentation concerning delivery, mounting, specifications, time schedules and more. I enjoyed working with specifications and agreements, which helped me in further semesters. Due to detailed elaboration of wooden elements I understood how enjoyable manufacturing design can be and I can say that I am able to do it with pleasure.

Furthermore, I've got a great group and our common aims and willingness to contribute to the project and elaborate high-quality drawings helped us to solve all building issues, avoid conflicts, have great professional communication and get the highest grades.



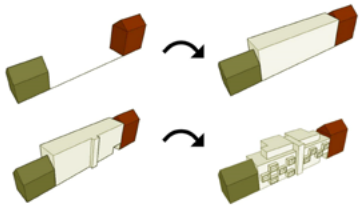
Visualization made as a group

The aim of the semester was to create a mutistory residential building that will fit into authentic surroundings of Vestergade, Horsens. As consulting architects for Q-Housing association we created a modern, sustainable and most advantageous solution for subsidized type of housing. To create a high-quality living, we focused on simplicity and stability, accessibility, environmentally friendly solutions. Sustainable materials as brick, wood, fiber cement boards were mainly used in the project besides loadbearing concrete elements. Big glass façade and curtain walls were inserted to absorb sunlight and provide aerial feeling. Roof terraces and balconies with glass railings allowed tenants admire the surroundings freely. Both access and personal balconies were decorated with wooden studs for growing greenery. Sufficient number of solar panels were placed on top of the upper floor as chosen alternative energy source.

To create a buildable and sound building our group elaborated 23 details of the most important components and connections, as well as plans, cross sections, elevations, room drawings, etc. Building services as sewer and drainage system, water and heating, ventilation and installation shaft plans were designed with precision and consideration to the most advantageous solutions.

Calculations and analysis in static journal were made to prove that chosen timber roof joists, concrete decks, wall elements, foundation, beams and columns will provide sufficient stability of the building for a long-life span. We met some challenges concerning driveway interruption but managed to solve it with precise-calculated beam solutions.

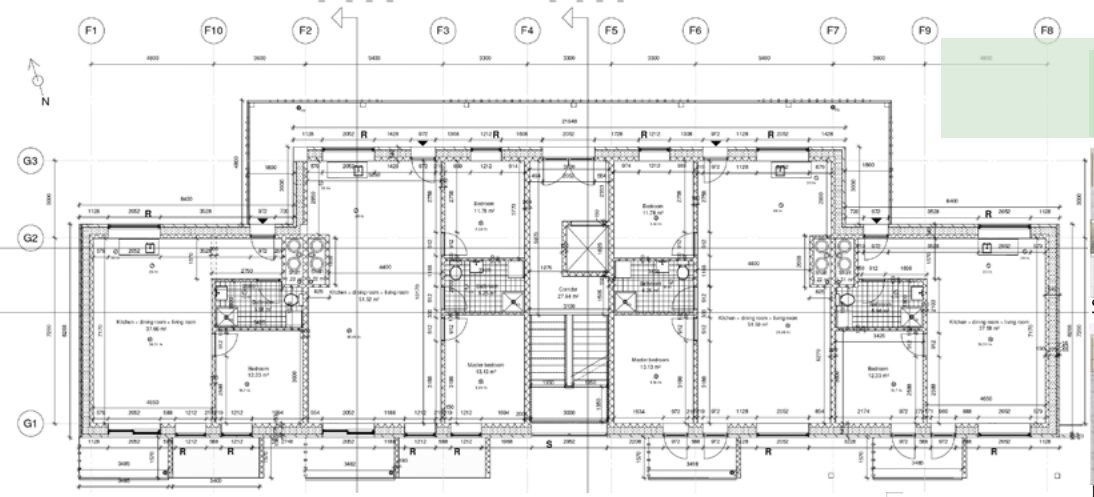
Subsidized housing was a challenge concerning building planning aspects, however we managed to calculate subsidized areas, rent, life cycle cost as well as time schedule for the construction and cost estimation to ensure the project is profitable and will be rented out in time.



FOURTH SEMESTER PROJECT - MULTISTOREY RESIDENTIAL INFILL BUILDING ON VESTERGADE 10-14 HORSENS

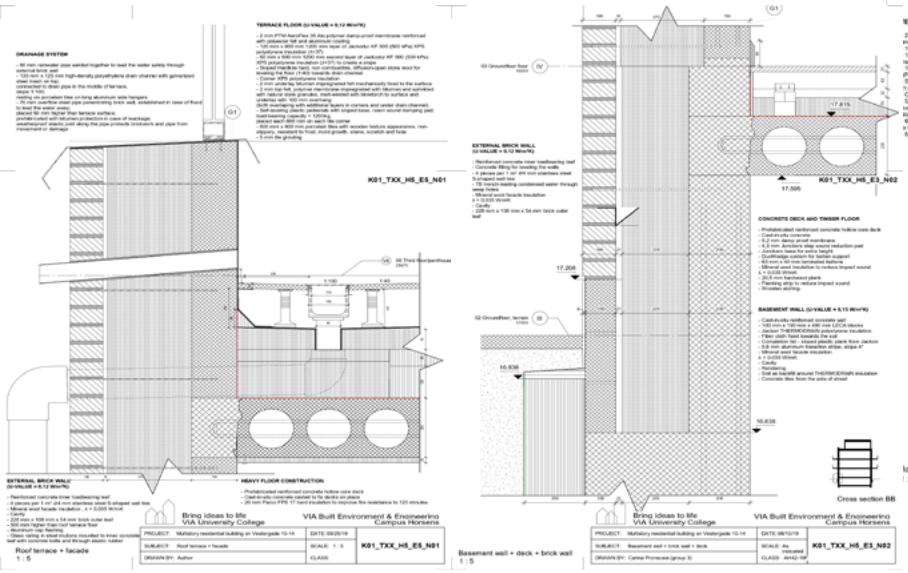
made of brick, prefabricated concrete elements, concrete hollow core deck, wooden element upper floor and roof, timber-decked terrace

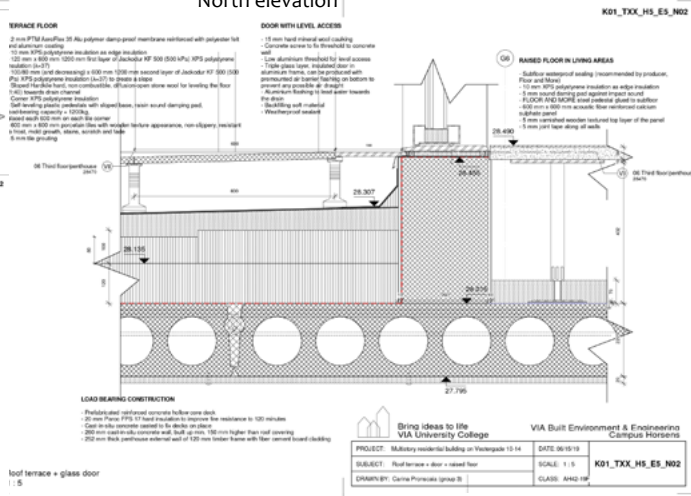
All visualizations made by Martyna Chylinska

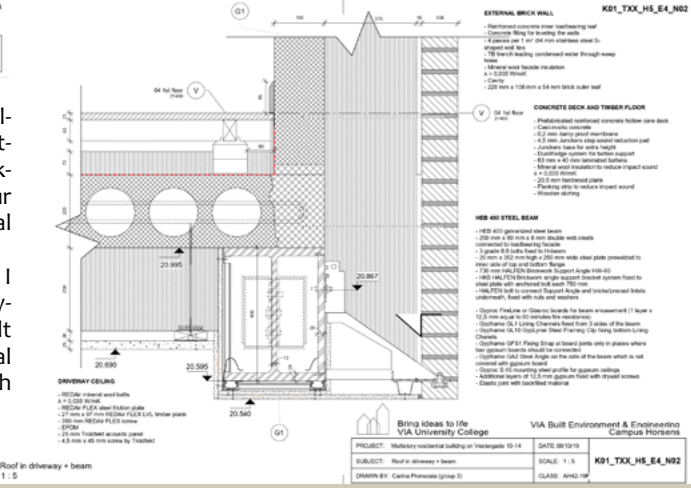


South elevation

North elevation





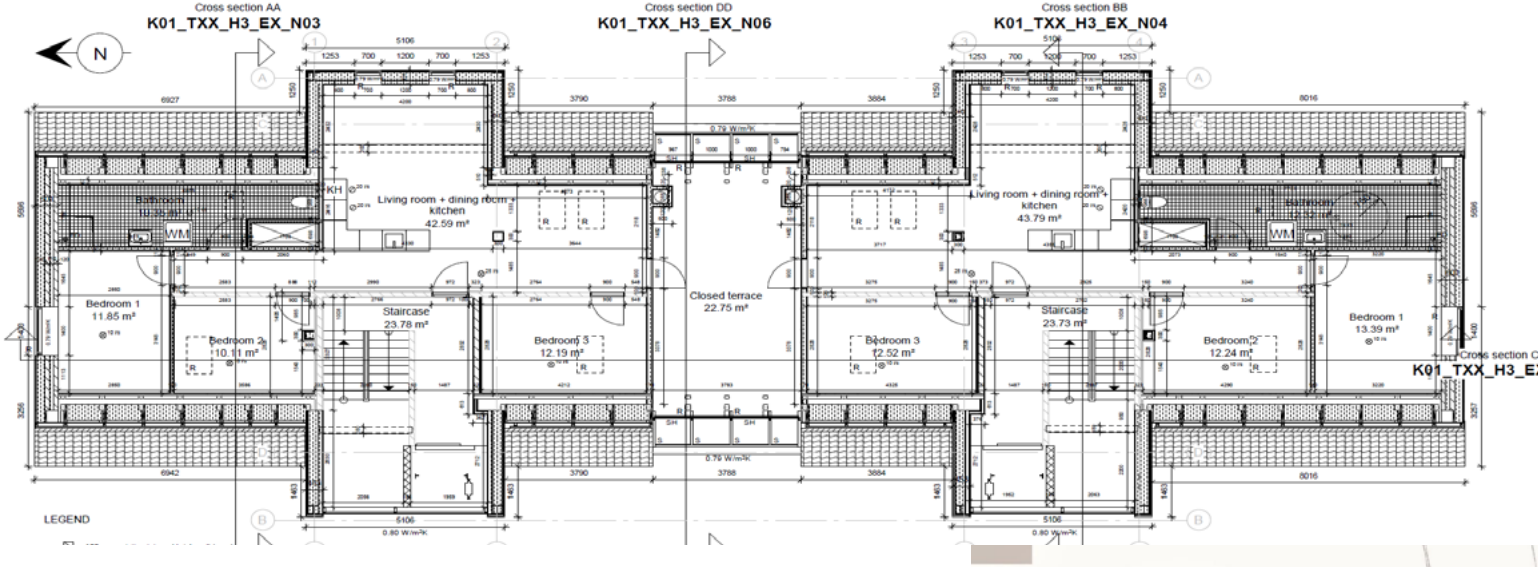


Throughout fourth semester project I deepened my knowledge in prefabrication and learned a lot about multistory housing; doing Local Elective Element (individual research) I learned a lot about roof terraces, suitable solutions on the market and rainwater drainage; writing a report about domestic animals in multistory buildings I learned reasonably much about acoustics, smells, damage and materials which can prevent this.

Coworking with architecture students allowed us to see another approach to outline proposals, material choice and working with surroundings. We deepened our knowledge in visualization and functional design.

I am very grateful that this semester I tried to give up being in control of everything, and the work in the team was built on reciprocal trust, listening and mutual support. It was a useful experience both in professional and personal way.

Visualization made by Martyna Chylinska

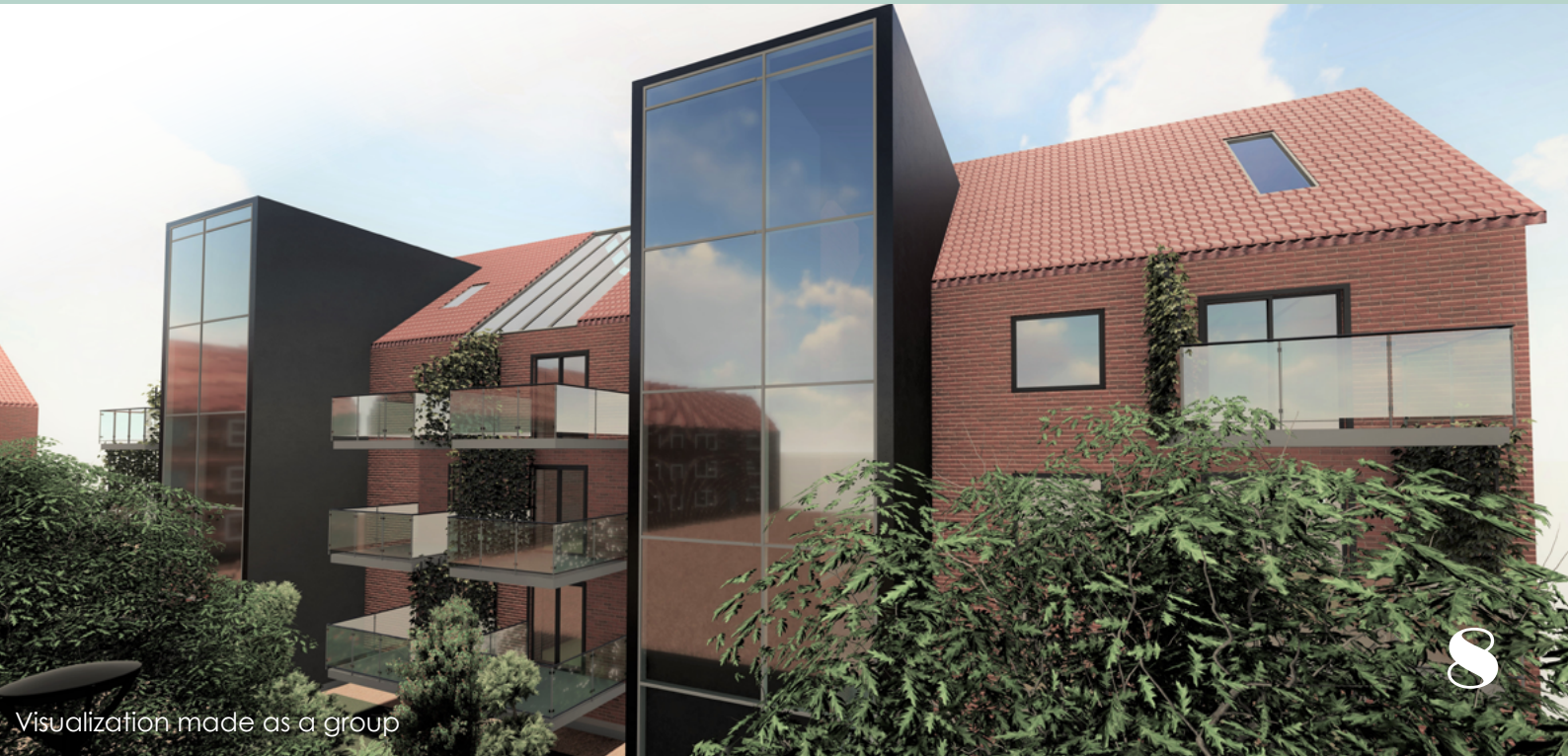


FIFTH SEMESTER PROJECT - REFURBISHMENT OF MULTISTOREY RESIDENTIAL BUILDING on Østerled 3a-3b, Horsens

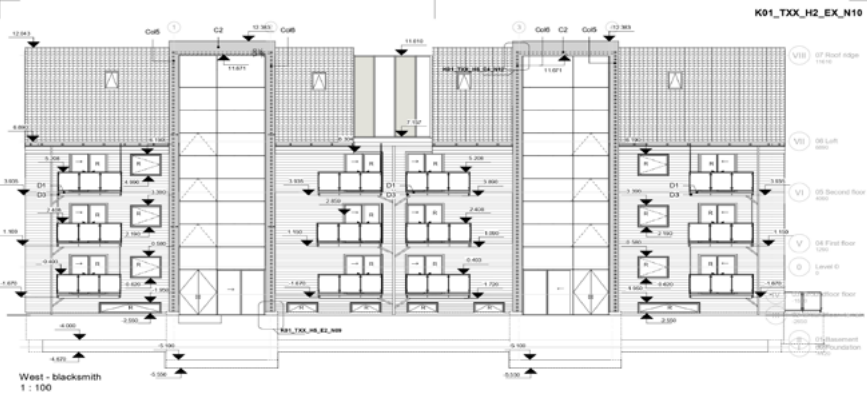
Refurbishment of four-storey classical Danish house on Østerled 3a-3b, 8700 Horsens to renovation class 1 is a challenge in many ways. Our main focus was environmental and economical sustainability, functionality, healthy indoor climate, accessibility and high quality living. To make a nice outlook and comfortable accommodation we provided sunlight through big openings, steel balconies, steel extensions and modern building components. Mechanical ventilation and natural materials assist in permanently satisfying indoor climate. Various apartment types, house surroundings and shared terrace support social sustainability.

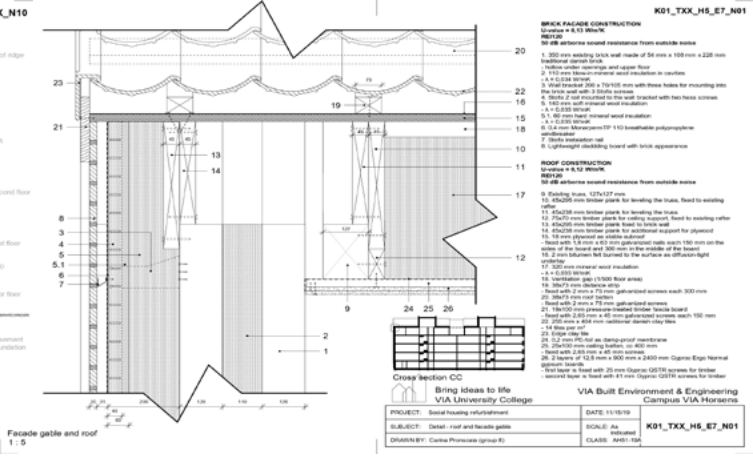
During this semester I continued expanding my knowledge in Revit, including necessary in refurbishment project phases. Worksharing and efficient cooperation between team members was also crucial throughout all project phases.

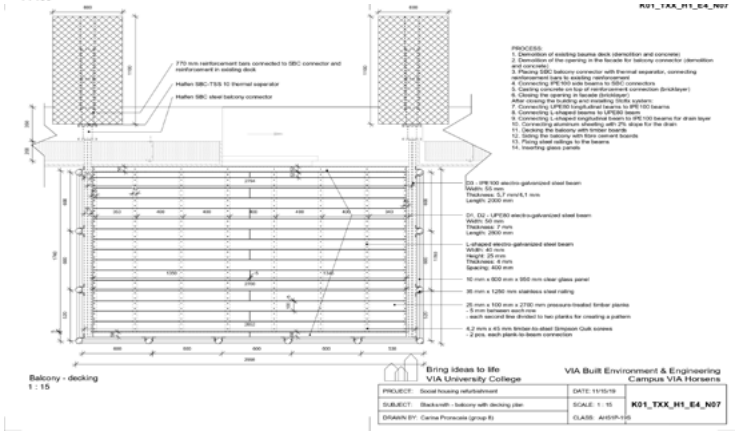
Elaborating drawings and new types of documentation (Case and Work Specifications, Health and Safety plan, etc.) for Tender design phase allowed me to deepen my knowledge in project elaboration, design for Blacksmith trade, professional communication, Revit extensions, legal demands (as ABR18) and Description of Services. Eventually, it was a very useful and informative semester for my BIM skills and for expanding my knowledge in the field. As a result, highest marks as a team and individually were achieved.

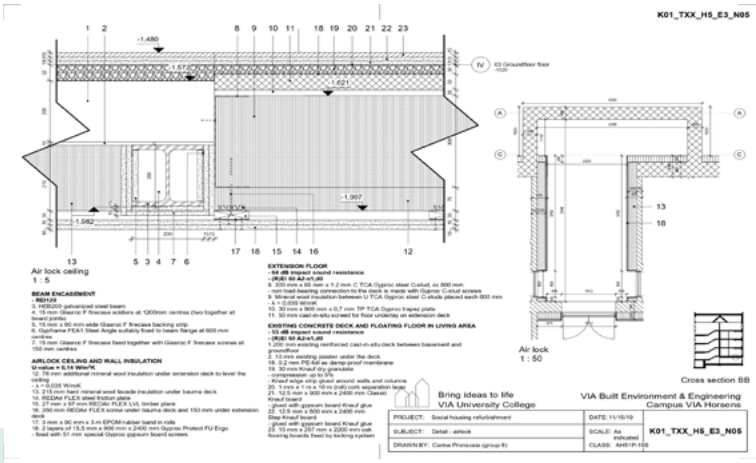


Visualization made as a group





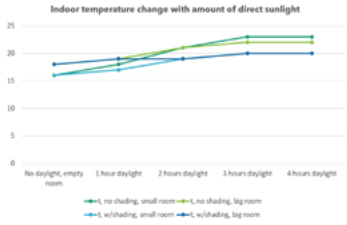


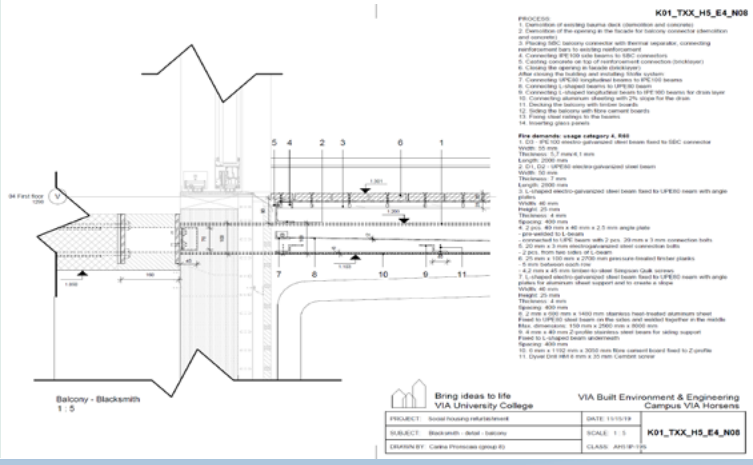


To hold a research that would study a problem connected both to the semester project, relevant to modern world and to myself, I came up with a question of balancing natural heating and overheating in refurbished residential buildings. By setting the synopsis, research and interview questions, I outlined the main direction and frames of research. Afterwards, using Design guide for energy-, daylight- and indoor climate renovation from SBi, by measuring indoor overheating in my own apartment and studying different shading types and their efficiency, I came to conclusion that passive shading (shape of the building) and indoor manual shading (blinds, curtains) are the most effective, easy, cheap and adjustable types of shading for Danish weather.

2.1 Is the problem of overheating relevant to refurbishment of traditional residential buildings in Denmark?

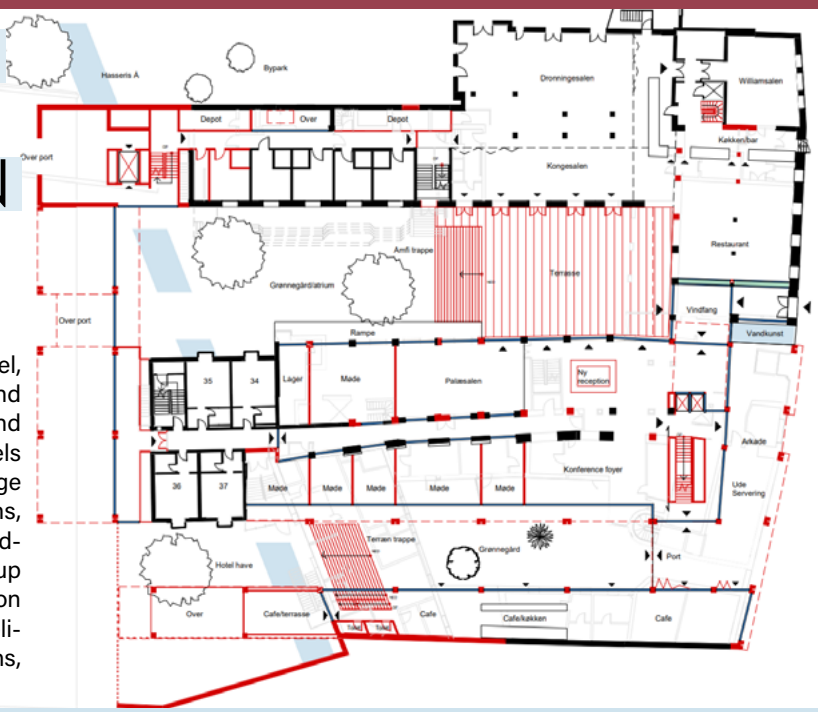
Correlation between amount of daylight and indoor climate, on practice:



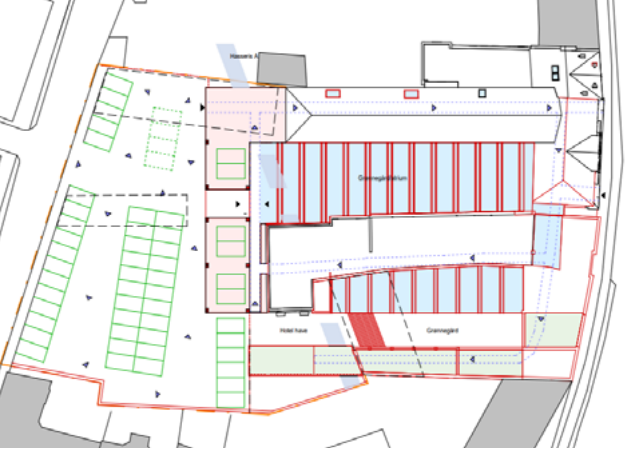


Visualization made as a group

INTERNSHIP PROJECTS- RENOVATION AND EXTENSION OF HELNAN PHØNIX AND HELNAN MARSELIS HOTELS



All 20 weeks of internship I was elaborating 3D model of an old hotel, that was built in XVIII century and renovated throughout its life, and its refurbishment and extension options, based on owner's wishes and architect's ideas. The concept of the main proposals for both hotels was to update existing building to modern building regulations, change the layout to fit modern demands of spacious, open and sunlit rooms, restaurant and meeting spaces. During 20 weeks architect and building owner exchanged ideas and consulted with engineers to come up with the most effective, attractive and feasible renovation and extension ideas. Meanwhile, I also participated in elaborating drawings for applications for building permits, to make partial renovation and extensions, such as terrace and fitness rearrangement in Helnan Marselis hotel.



During the internship I observed how the project was handled and discussed by architect, technical leader, client and engineers; elaborated drawings for Outline proposal phase for both the client and engineers; visited building sites and converted general sketches and architectural ideas into functional and definite 3D models and detailed drawings for engineers. The pandemic and working from home helped me to become better at planning, distributing tasks and chasing deadlines, which allowed me to elaborate a Masterplan booklet for refurbishment project of Helnan Phønix hotel and achieve a highest grade for my reflections upon this saturated and very useful semester.

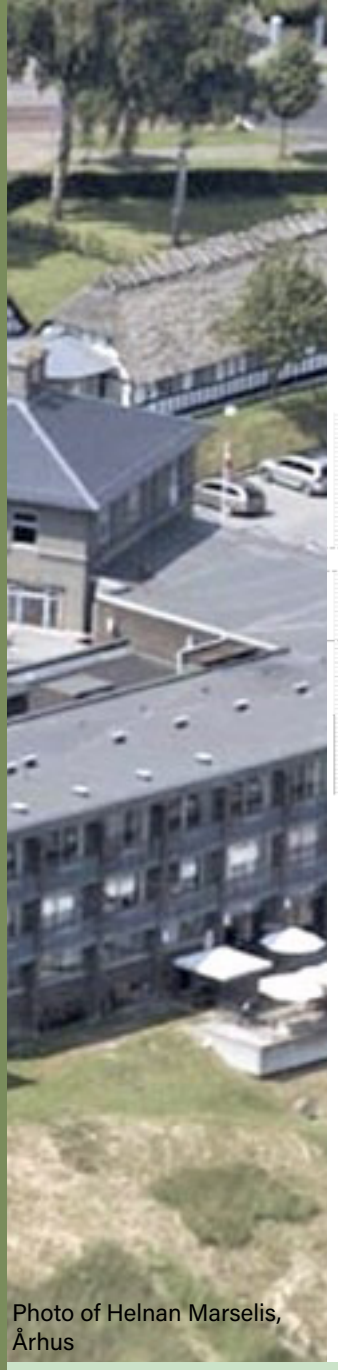
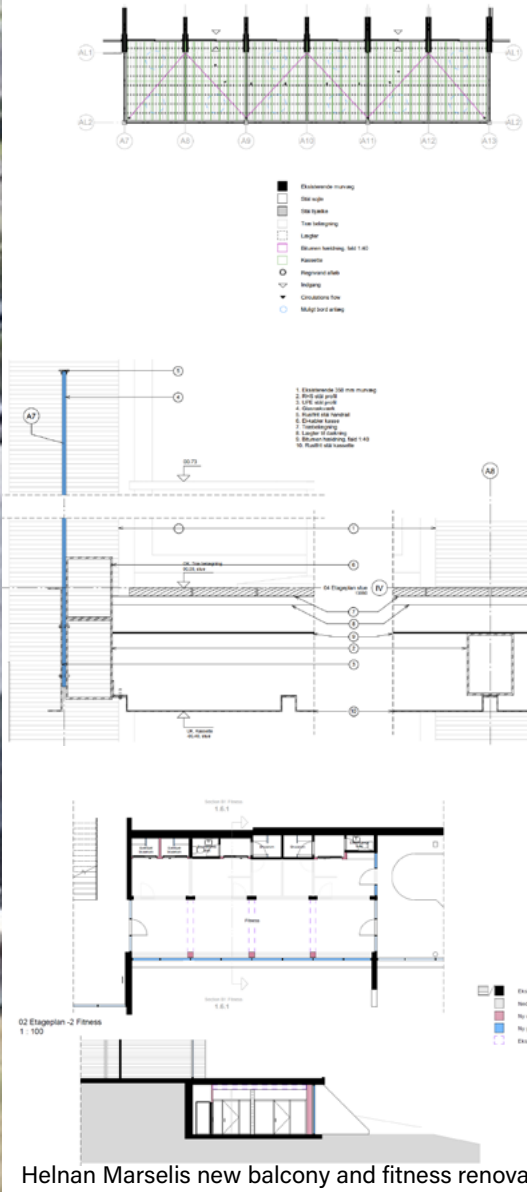
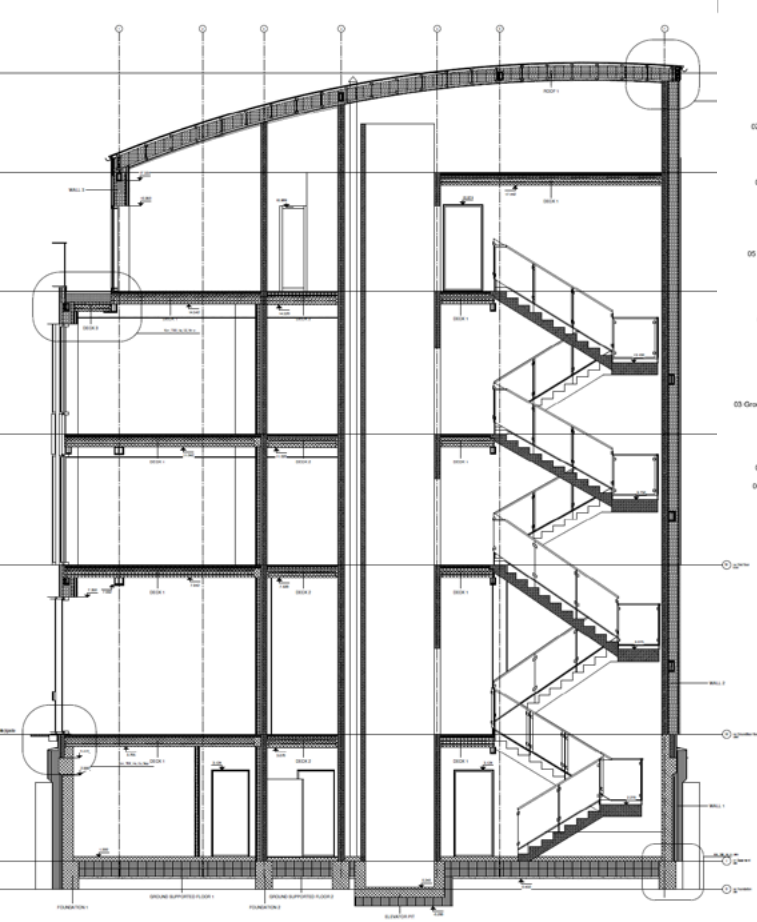


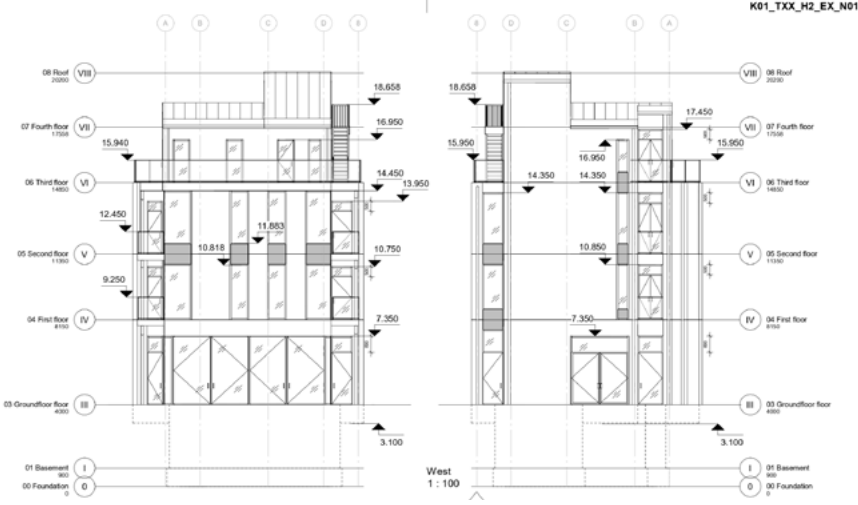
Photo of Helnan Marselis, Århus



Helnan Marselis new balcony and fitness renovation drawings

Helnan Phønix visualization, atrium



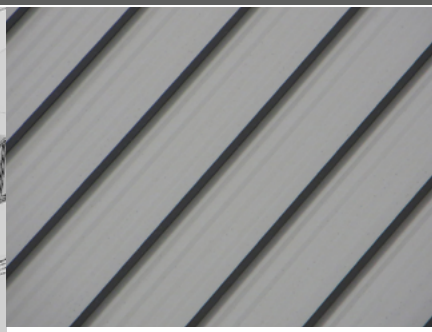


The goal of the seventh semester was to elaborate drawings of the building, designed by architect Jørn Schutze, for Project proposal, Regulatory project and Tender design phases. The main architectural idea is to create a modern-looking city house that would fulfil multiple purposes and combine residential floor, offices and public space (a café or a shop). The shape and choice of materials and surfaces are atypical for Aarhus center and is meant to become a part of a bigger development of a socially sustainable neighborhood with contemporary approach to buildings, their functions and surroundings.

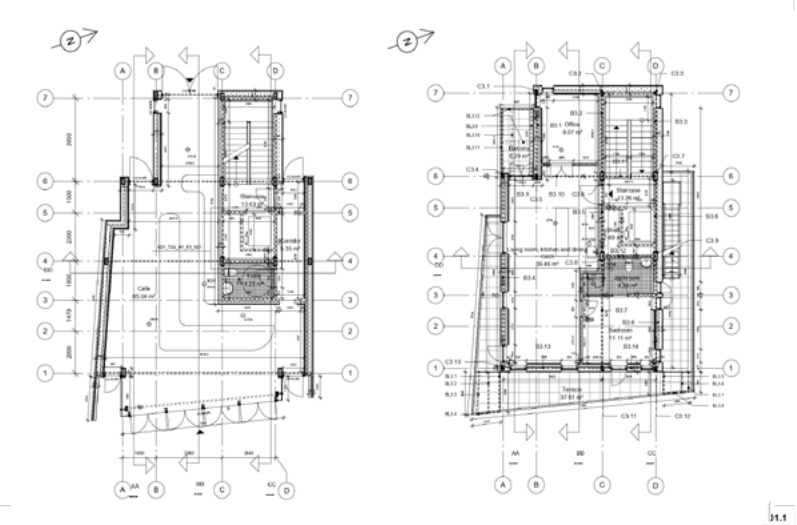
To solve the building and update its proposal from 2011, an Outline proposal scrutiny and building component, fire, sound, accessibility, daylight, static analyses were held. They allowed to find solutions to the most complicated parts of the project: steel load-bearing structure, fire demands, sound isolation, accessibility. Another challenge was pathways for communications and their intersection with steel beams and each other.

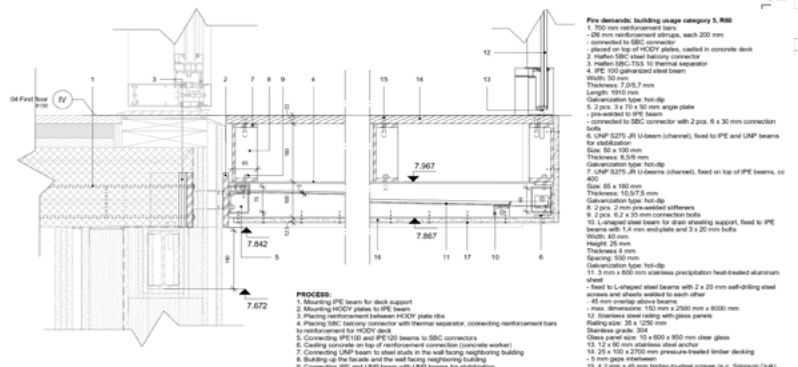
BACHELOR PROJECT - MULTIPURPOSE MULTISTOREY INFILL BUILDING ON MEJLGADE 37, ÅRHUS

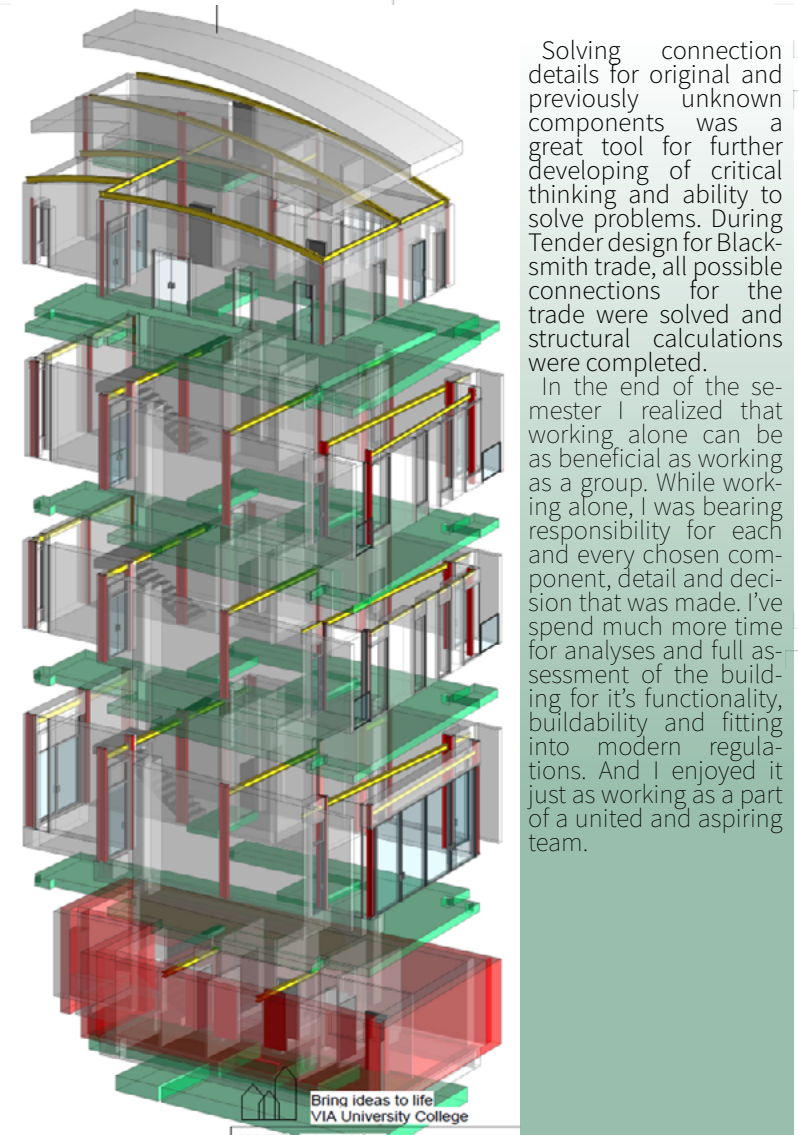
with a cafe, two office floors and a penthouse apartment, made of steel structure, HODY deck, zinc roof



Visualization made by Jørn Schutze Arkitekt company







Solving connection details for original and previously unknown components was a great tool for further developing of critical thinking and ability to solve problems. During Tender design for Blacksmith trade, all possible connections for the trade were solved and structural calculations were completed.

In the end of the semester I realized that working alone can be as beneficial as working as a group. While working alone, I was bearing responsibility for each and every chosen component, detail and decision that was made. I've spend much more time for analyses and full assessment of the building for it's functionality, buildability and fitting into modern regulations. And I enjoyed it just as working as a part of a united and aspiring team.