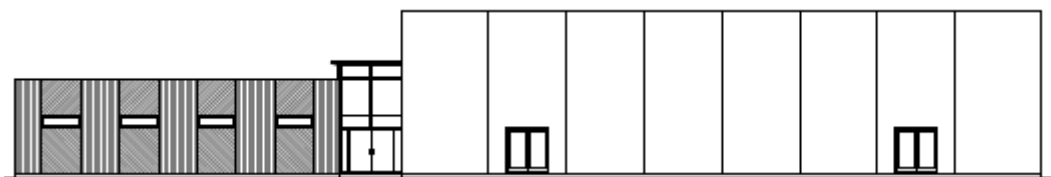
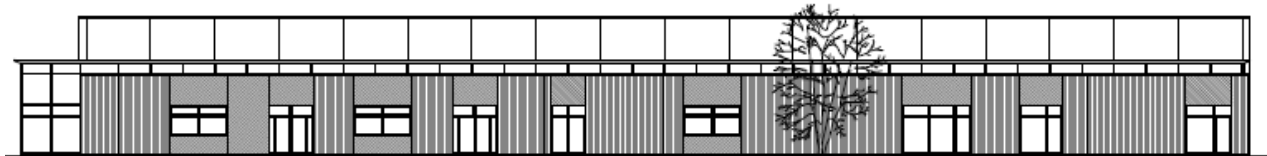
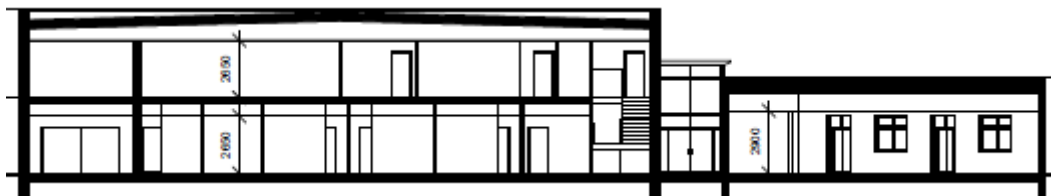




DESIGN MANAGEMENT

MULTI-PURPOSE HALL Industrialized Building Design (IBD)



Group Assignment A2014 3. SEM. INT.
A.T. & C.M. – Business Academy Aarhus

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1. THE ARCHITECTURAL FIRM

The Vitas Architects started 12 years ago as a sole proprietorship. After a few years Vitas had tasks enough to hire a building technician who could manage both the design and supervision. Besides that there were more tasks, the tasks also developed for large buildings, including among other institutions, and cultural centers.

Today the company has 12 employees in the office, 2 architects, 8 construction architects, one accountant and one technical assistant for small jobs. The company is now changed to a private limited company and call themselves Vitas Architects ApS. The partners are the first employees constructing architect Bjarne and architect Hrafnhild who were recruited 8 years ago. Viktor (founder of the company) and Bjarne and Hrafnhild each have a third part of the company.

Organizational they have divided it so that Viktor is the administrative head of the office. At the same time, he has focus on the economic aspects. Bjarne's primary focus is supervision and construction management, and Hrafnhild is responsible for architectural competitions and overall design.

The company is working from the idea that architects are the ones who create ideas, in other words predisposes building and grounds and ends up getting approved outline proposal. In terms of schedules and budgets, they draw on the construction architects' skills. After the outline is approved, the projects are being managed by the constructing architect, who typically follows the tasks to the handover. The client and Bjarne are still involved in the decision, if there are changes in function and design.

Most tasks will have shared consultancy, which means the engineers have their own agreement with the developer (ABR 89). Vitas Architects ApS prefers to be responsible for design management. Through this, it is the three leader's experience, that they have a greater connection to the client, as they have the primary communication with the client about solutions, time and finances. At the same time, however, they are aware that the firm bears a heavy responsibility if something goes wrong. Therefore, they try to get all of their employees to contribute about this responsibility, so there are no weak links in the organization from idea to handover.

All three agree that the quality of the company's tasks is paramount. As they say "things take time and costs thereafter", which means that the fees are supposed to be equivalent to the work to be presented in a task. But it requires that all employees must at all times maintain an overview of expectations for the time and the actual time spent and thus costs incurred held up against the agreed fee .

It is important for the 3 owners that they can constantly keep up with economic development, and Viktor, as the administrative head of the office, - hold regular meetings with managers on budgetary conditions and building accounts. It is not intended to be compromising quality if the fee turns out not to be large enough. The philosophy is that everyone should learn from it, so the company going forward might be better to get the appropriate fees negotiated, but also that employees learn that they also have a financial responsibility.



2. ROLE OF THE GROUP

You are employed at the office of Vitas Architects ApS.

Your job is to safeguard the company's obligations to the client under the contract (contract form ABR 89).

Vitas expects that:

- You live up to the company's vision to clients and partners for effective cooperation
- You live up to the company's expectations for project management, including at any time to have an overview of the company's earnings (compliance with margin) in that case.
- The leadership role rotates between team members
- The focus on labor hours and cost control
- You ensure the quality of the project material sent out (going out of the house).
- All included with a positive attitude towards the company's working methods with respect for each other's work
- You are honest about skills and competencies so necessary time can be devoted to the given tasks. It is accepted as meaning that something takes longer the first time or the need for help in solving the task.

The point is that everyone should learn and the company thereby expands its capabilities.

The firm has so far had sufficient earnings. If the individual projects can hold a gross profit by a factor of 2.0 of net payroll costs. In other words, the selling price of a consulting hour must in average be twice as great as the total salary cost to the studio to cover all its costs for rent and equipment and not least competitive projects that cannot be written a bill.

3. PROJECT CONDITIONS

The city of Skanderborg predicts that the population of the city will grow by 20% by the year 2020. Skanderborg municipality has therefore, chosen to develop the attractive urban area "Fælleden" north of Skanderborg and hopes that future building designs will be both 'sustainable' and 'green'.

The municipality also plans to include a multi-purpose hall with adjoining café and meeting facilities and has contacted "GREENLINE" an architectural and engineering consultancy company to get expert technical advice. The contact architect is Mr. Stig Ilkrone, who has already prepared a basic outline plan.

The municipality and GREENLINE's architects have had their first meeting where they agreed on the following key parameters for both the design and the form of tender for the construction. (See 13 CASE INFORMATION)

The project is then handed over to Vitas Architects Aps for further processing



4. REQUIREMENTS FOR THE PROJECT

After the first meeting with the municipality of Skanderborg (the Client) GREENLINE's architects Prepared a conceptual design / Outline Proposal for the agreed project, which was approved by the municipality of Skanderborg with the following comments and suggestions:

- The multi-purpose hall must be designed as a 'heavy' construction using concrete elements (external walls, sandwich elements) while the café section is to be a 'lightweight' construction using timber elements already clad with external timber cladding in the element factory.
- The multi-purpose hall requires an opening that is suitable for lift trucks.
- Solar panels is a requirement that must be included

YOUR GROUP (Vitas Architects Aps) must therefore prepare a Scheme Design proposal, time and financial schedules etc., and will also be responsible for the on-going development work of the project up to final handover.

Such on-going development work will include:

- Preparation of the scheme design proposal
- Preparation of Detail design 1 project for authorities and as basis for the Tender material project

(Schedules / deadlines for the above can be found in the semester timetable!)

5. AGREEMENT ON TECHNICAL CONSULTING SERVICES

"Form of agreement for agreement on technical consultancy and assistance regarding client consultancy" can be downloaded on www.danskeark.dk

6. LOCAL PLAN REQUIREMENTS

You have to work in the local plan area, as applicable conditions are incorporated in this case. Other factors such as supply lines, base maps and more will be provided by the teacher.



7. BUDGET

Plot & surroundings		4.668.000
Construction costs		30.000.000
Costs in total		4.700.000
- architect fee, in total	1.630.000	
- Proposal phase	500.000	
- Design phase	1.000.000	
- Design management	50.000	
- Supervision	25.000	
- Construction management	55.000	
- engineer fee, in total	1.500.000	
Additional costs	1.570.000	
Total estimated costs		39.368.000

All figures are excl. VAT and currency value is DKK.
Priceindex = 131,7 (dst.dk)

The partial fee is design labor and tender labor of the external wall panels. The work of the group is to estimate those costs and document them.

8. DEADLINES OF THE PROCUREMENT AND TENDER

Tender material upload: **To be announced**

Tender bid upload: **To be announced**

9. FIRE REQUIREMENTS

The Fire Authority has in an advance meeting identified several matters that do not comply with applicable law. These include the following:

The hall should be used for purposes other than sports including bingo halls, school parties and plays with stage lineup. In the hall is projecting a maximum of 950 persons as personal load.

Fire plans and sections should be prepared for the next project meeting, which is the basis for further worked authority project.

As the plan looks at the present time, the emergency exit doors do not meet applicable legal requirements pursuant to the above requirements. Escape routes can only be finally assessed on updated drawings by submitting new proposals.

Hall 1 floor does not meet the requirements for number of escape routes.

Meeting rooms in the low building does not meet the requirements for number of escape routes.

10. STATIC DEMANDS

Multi-purpose hall attributable to CC3 high impact class as it is a building with a large span and there can be a lot of people inside, for example, sporting events and concerts. This means that all loads (including dead loads) must be multiplied by KFI factor of 1.1.

The cafe area attributable to CC2 normal impact class. This means that all loads (including dead loads) must be multiplied by KFI factor of 1.0.

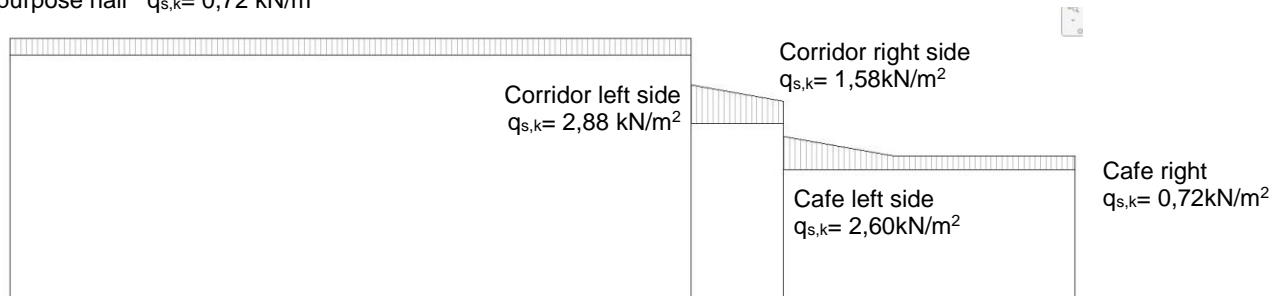
The building is affected by the following variables characteristic loads:

The imposed loads:

1st floor (technical room, meeting room, office, wc ect) $q_k = 2,5 \text{ kN/m}^2$
 Additionally included the load of light partition walls on 1st floor $q_k = 0,5 \text{ kN/m}^2$

Snow load:

Multi-purpose hall $q_{s,k} = 0,72 \text{ kN/m}^2$



Wind load:

Terrain Category III

Multi-purpose hall : $q_p = 0,60 \text{ kN/m}^2$

Cafe: $q_p = 0,50 \text{ kN/m}^2$

Multi-purpose hall I:

Maximum wind pressure on the facade / gable $q_{we} = 0,84 \text{ kN/m}^2$

Maximum wind suction on the facade / gable $q_{we} = 0,66 \text{ kN/m}^2$

Maximum wind suction on the roof $q_{we} = 0,84 \text{ kN/m}^2$

Cafe:

Maximum wind pressure on the facade / gable $q_{we} = 0,70 \text{ kN/m}^2$

Maximum wind suction on the facade / gable $q_{we} = 0,55 \text{ kN/m}^2$

Maximum wind suction on the roof $q_{we} = 0,70 \text{ kN/m}^2$

11. TECHNICAL INSTALLATIONS

The building is heated by district heating.

Design a mechanical ventilation system consisting of one system for the multi-purpose hall and another system for the cafe. The ventilation channels should not be visible in the cafe.



All the installations for the building with exact positions should be shown in the scheme design proposal including solar panels and solar cells. Therefore, you have to make an analysis of how the pipes run through the building and how you allocate sufficient space for the pipes in the constructions.

This means that you have to sketch the analysis for:

- rain and waste water
- domestic water
- heating
- electricity
- ventilation

In design detail 1 all the installations are designed by other consultants.

12. ENERGY FRAME

Buildings are performed by energy class 2015.

13. CASE INFORMATION

Agreed parameters

- The building should comply with current legislation in BR2010 (including supplements).
- The building should – where possible – consist of prefabricated building components.
- Materials should be selected on the basis of environmental loading and recycling potential.
- District heating, mechanical ventilation and heat recycling are specified.
- The building should be quality assured on the basis of the Ministry of Housing's 'Building works Quality Assurance Directive' March 2004.
- Adviser and clients contract made on basis of GCT89
- Planning and design services should be done in accordance with 'Description of service specifications in Building and Planning – 2012'.
- Tender bids should be invited on the basis of the Design detail 1 project, basis on GC92
- The building must be designed with consideration to physically challenged / disabled citizens.
- Tender bids should be invited on the basis of the Design Detail 1 according to BIPS A113 model 5 (Building Information Technology Production Service) which allows the contractor to finalize the planning and design and prepare the final cost calculations.
- Tender material must include descriptions of functional demands for the use of the building as well as functional demands for all of the construction.

Enclosures:

- Finalized Outline Proposal - Revit BIM model (level 2)
- Relevant information about the plot. (drawings)

We have great confidence in you and your team and look forward to you succeed in a professional and convincing manner.