FINAL PROJECT

MOTEL CONSTRUCTION PROJECT IN HALMSTAD

HÖGSKOLAN I HALMSTAD

ESCUELA TÉCNICA SUPERIOR INGENIERÍA DE EDIFICACIÓN

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1. PERSONAL INFORMATION

PROJECT AUTHOR

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PROJECT TUTORS

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2. INTRODUCTION

HALMSTAD

Halmstad is a city in the west coast of Sweden, at the mouth of Nissan River, located about midway between Malmö and Gothenburg. It is the capital of Halland County.

Halmstad is a port, university, industrial and recreational city which in the last years is working on trying to make the zone more attractive for inhabitants and tourists.

The Port of Halmstad is a full service port with vast experience and capacity in the areas of container shipping, RoRo, bulk, liquid bulk, biomass, cars, project cargoes, recycling and forestry products. Nowadays, the port has a great influence on the growth of the city, because it is in an unbeatable location between Oslo and Copenhagen, right in the middle of the "Nordic Triangle".

The population in 2012 was around 63000 habitants.

THE PLOT, AREA AND SITUATION

The plot is located between Nissan River and the railway, and it is limited by the next streets:

- Stationsgatan (East)
- Styrmansgatan (South)
- Strandgatan (West)
- Stuvaregatan (North)

The train central station is 210m far from the site and the port is 800-1000m far.

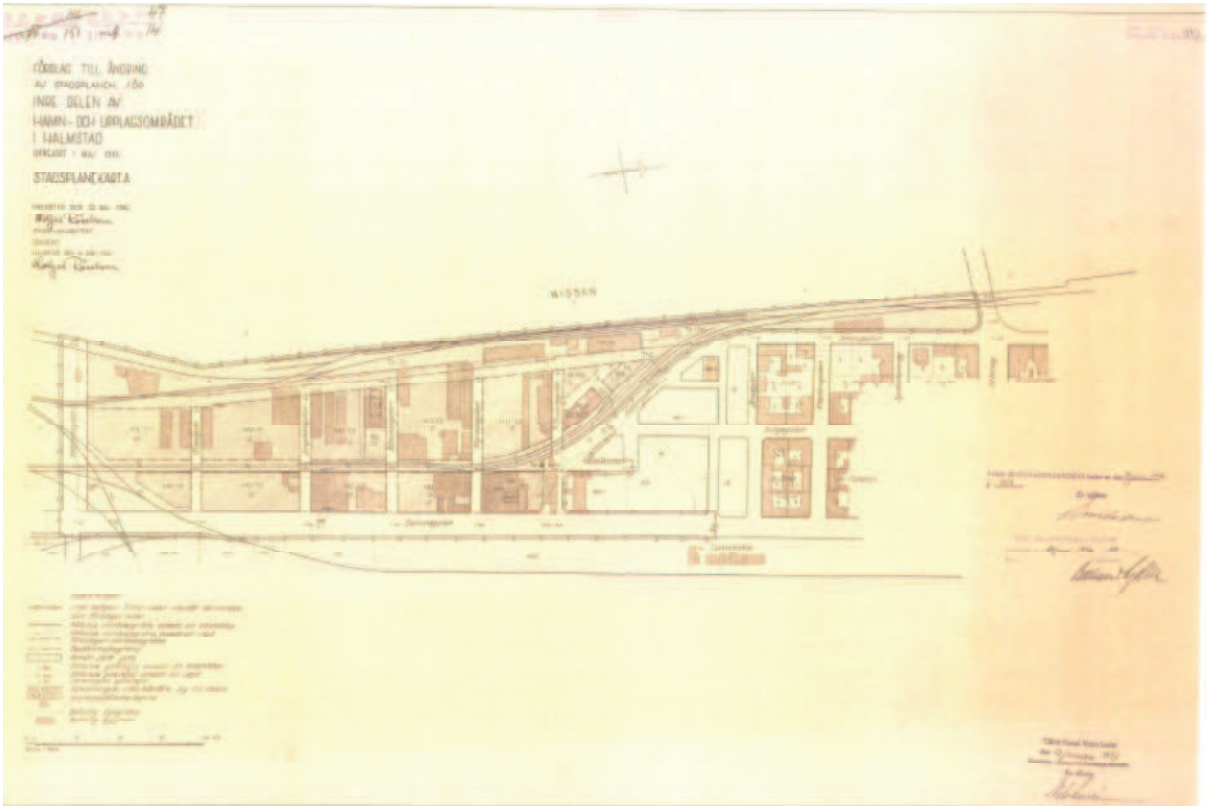
The plot has an almost rectangular surface of 15.000m^2 and it has a flat surface without big slopes or mountains.

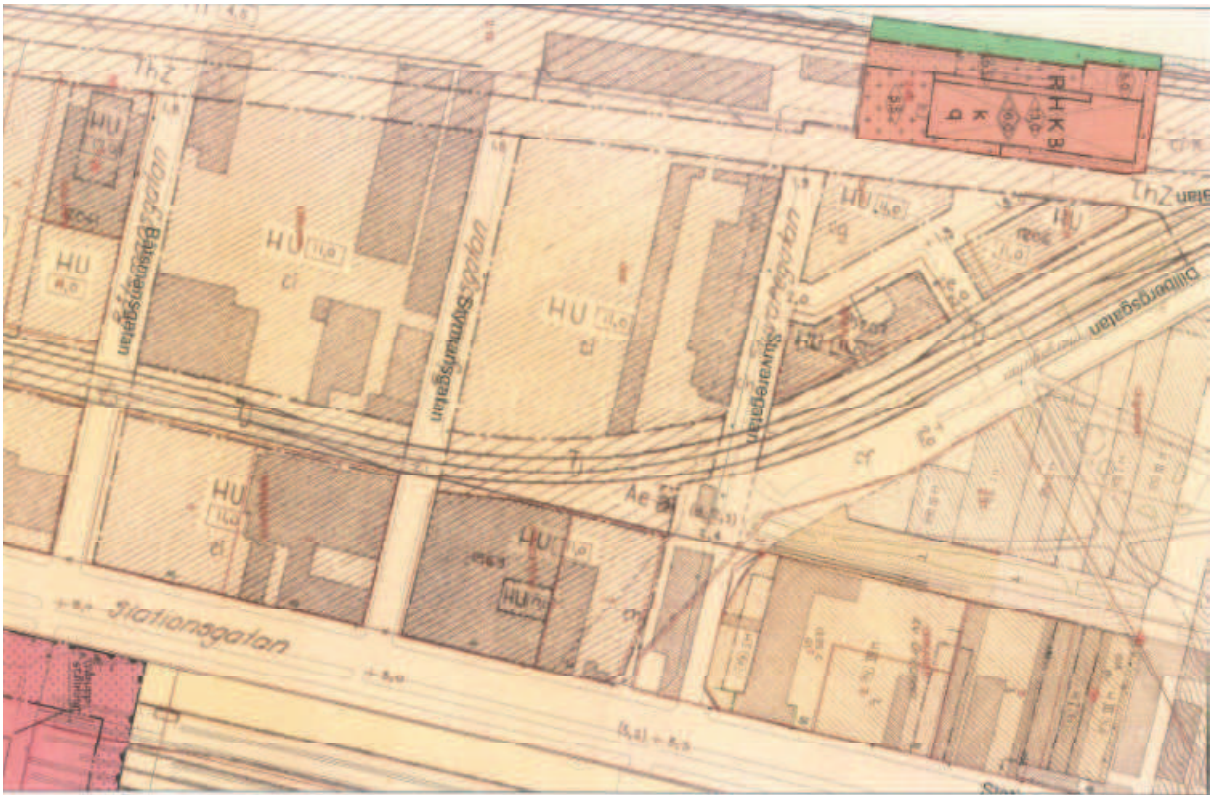
There is only a small building which can be removed easily.

The surrounding buildings are mostly factories with facades of bricks or wooden.

In a visit to the CityHall my colleagues who were also working in their final project and I met with Emma Johansson, Architect of Halmstad CityHall, and she told us the futures plans for the zone where the plot is situated: they want to move some industries of this area to other and build more parks and residential and commercial buildings, this way the city can grow up in this area.

She also gave us some plans, like next, from May 1946, where we can see that the building in our plot is allowed to be 11m high maximum.





Other pictures of the plot:

SHORT DESCRIPTION OF THE PROJECT

The designed building is a motel, not a fancy hotel, just a place where the people can stay and pass a comfortable night. This idea comes from the location of the plot, really close to the train central station (around 200 meters) and to the Port of Halmstad (800-1000m).

This motel has been designed with:
-48 rooms with their respective bathrooms
-Hall and corridors
-Stairs and Lift
-Reception
-Office
-Room for employees with its own bathroom
-Cafe hall with tables, couches and TV
-2 toilets, next to the reception desk
-Cleaning room and Storage room, to keep all the cleaning stuff
-Engine room
-2 emergency steel staircases

All the rooms for guests in the building are quite similar. I decided not to include a bar or restaurant because there is a restaurant called PÅ GAFFELN AB only 2 minutes walk from the motel.
Also a car park will be built with 88 spots, enough for all the guests who could be at the same time in this motel. But this project is focused in the building.
The façade will be made of bricks, this way the building will have an appearance similar to the surrounding buildings.
The building has been designed in accordance with the buildings regulations of Halmstad that City Hall's Architect told us, and according with Boverket's mandatory provisions and general recommendations on the application of European construction standards (Eurocodes). All of this is shown in the point *5.Boverket* of this project.

Finally, disable people will be able to access to any room, because the whole building complies with the accessibility standards.

CLIMATIC ZONE

According with the Swedish Building Code Sweden is divided into three climatic zones:

Halmstad is located in the climate zone III. It means that dwellings must be designed with a specific energy consumption of 55 kWh/m^2/year and the maximum installed power rating for heating must be 4,5 kW.

This is for dwellings, but I think it is better if I take it into account anyway.

3. SURFACES

PLOT TOTAL SURFACE: 15000 m^2

OCCUPIED SURFACE BY THE BUILDING: 1650.69 m^2

		Usable Surface (m2)	Amount	Total (m2)	Total Floor (m2)	Built Surface (m2)
GROUND FLOOR	Reception & Corridors	364,50	1	364,50	1371,23	1597,50
	Office	23,46	1	23,46		
	Worker Room	28,22	1	28,22		
	Worker Bathroom	6,64	1	6,64		
	Toilet 1	35,66	1	35,66		
	Toilet 2	33,92	1	33,92		
	Laundry Room	67,03	1	67,03		
	Cleaning Room	28,58	1	28,58		
	Engine Room	35,82	1	35,82		
	Café Hall	286,02	1	286,02		
	Standard Room 1	25,47	6	152,82		
	Standard Room 2	24,66	6	147,96		
	Standard Bathroom	7,72	12	92,64		
	Big Room 1	26,24	1	26,24		
	Big Room 2	25,40	1	25,40		
	Big Bathroom 1	8,16	2	16,32		
FIRST FLOOR	Stair Hall	32,00	1	32,00	1331,14	1597,50
	Corridor	167,44	1	167,44		
	Storage Room	11,51	1	11,51		
	Standard Room 1	25,47	13	331,11		
	Standard Room 2	24,66	16	394,56		
	Standard Bathroom	7,72	29	223,88		
	Big Room 1	26,24	2	52,48		
	Big Room 2	25,40	2	50,80		
	Big Bathroom 1	8,16	4	32,64		
	Big Room 3	26,42	1	26,42		
	Big Bathroom 3	8,30	1	8,30		

TOTAL	**2702,37**	**3195,00**

USABLE SURFACE: **2702.37 m^2**

BUILT SURFACE: **3195.00 m^2**

4. TECHNICAL DESCRIPTIONS

CONDITIONING OF THE AREA

There is only a small building which can be removed easily, a demolition is not necessary. Then, the only work needed is cleaning the plot.

EXPLANATIONS

The plot has almost a flat surface and there aren't big slopes or mountains.
The vegetal layer (10-15cm) must be retired, by manual or mechanics methods. Later, the removed lands must be transported with machine trucks until the closest garbage deposit or landfill site.

DRAINED OF EARTH

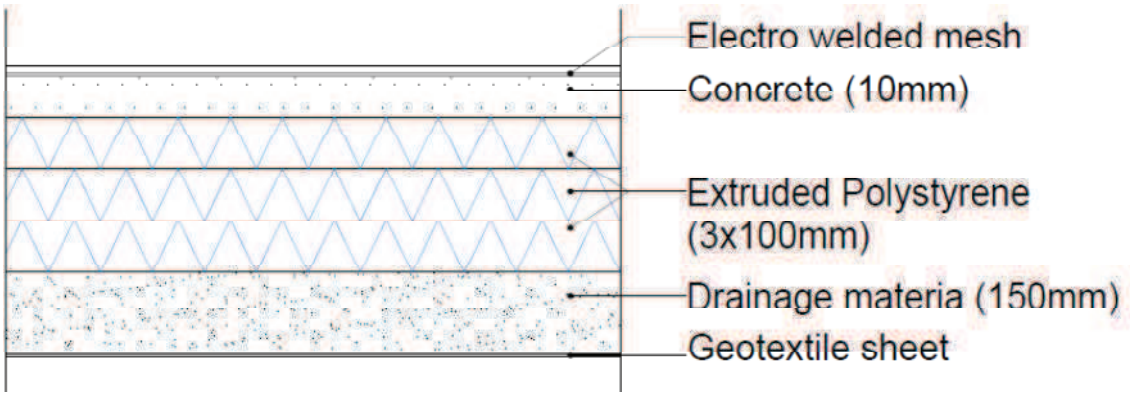
It´s necessary to drain following the shape of the foundation, this will be made by mechanical methods. The removed earth must be transported with machine trucks until the closest garbage deposit or landfill site.

STRUCTURE

FOUNDATION

The foundation is a ground slab with a layer of reinforced concrete HA-30/B/25/IIIb+H with 300kg/cm^2 of characteristic resistance and 100mm thick. This concrete is made to resist properly a marine ambience and the possible frosts that take place in winter. The reinforcement consists of an electro welded mesh of 150x150mm, ø5-5mm and the steel will be B-500-T. There will be also a foundation trench in all the perimeter of the slab with armor (40 Kg/m^3).

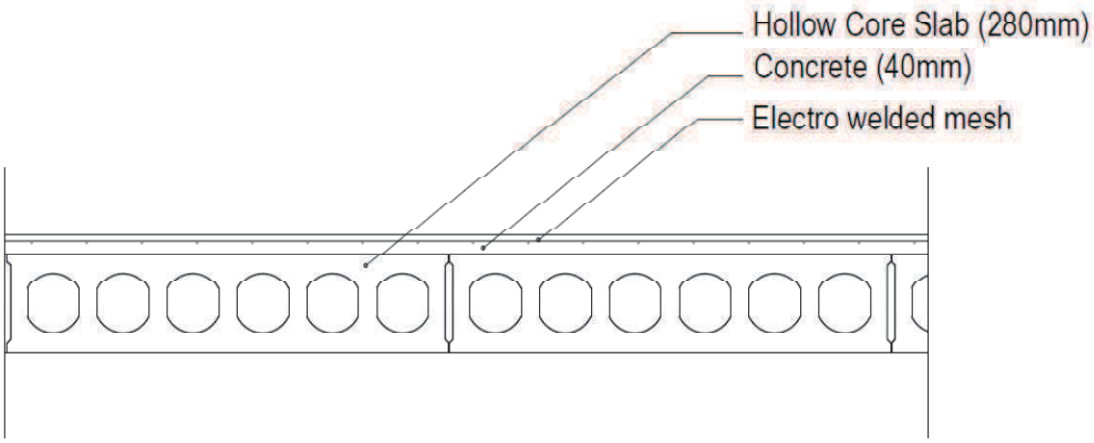
Under the concrete we must place, three layers of extruded polystyrene with 100mm of thickness each one, a 150mm thick layer of drainage material and a geotextile sheet, to avoid the moisture ascent.



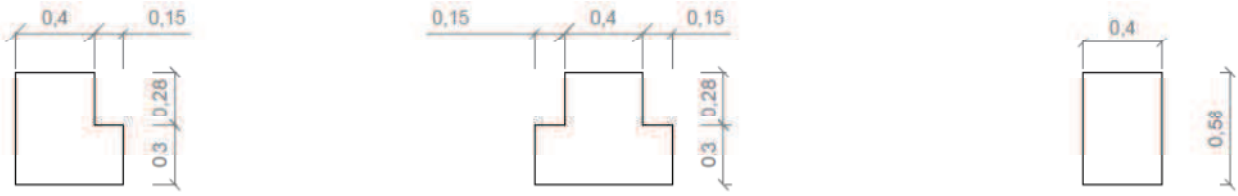
Under the columns, and with a wideness of 1,2m, the thickness of the reinforced concrete will be 200mm, as if it were a footing.

SLABS

The chosen solution is Hollow-core slab, because is one of the most used slabs. The Hollow-core slab pieces are 28cm thick and 120 or 60cm wide, depending of the position.



To support the hollow-core slabs are used precast concrete IT beams and square beams, with the next dimensions (in cm):



The length of the beams depends on the distance between columns.

It is also needed a topping concrete layer of 4cm with a electro welded mesh of 150x150mm covering the slab and the beams. This concrete will be HA-25/B/20/IIa.

PILLARS

The pillars will be precast concrete square columns of 40x40cm. They must be 7.45m high and with a corbel 20 wide to support the beams. The corbel will be place where the beams must been placed.

STAIRS

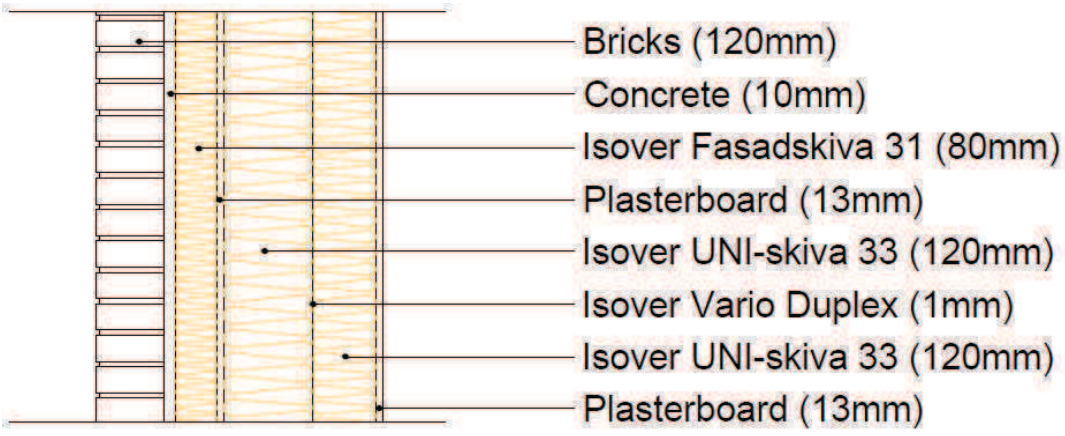
The stairs will be precast staircase and landings made of reinforced concrete. This solution offers significant benefits during the construction phase of a project providing rapid installation and early safe access to subsequent floors for trades and materials.

EXTERNAL WALLS

Before choose the external walls, which separate the exterior and the rooms, you have to take into account the quality, the safety and ,the most important things nowadays, the energy efficiency and the acoustic protection. The last two ones are really important in our case, which is a motel. The façades must be energy efficient due to the surface of the wall, which is quite huge. And you have to be sure to provide an excellent acoustic protection, because the guests will be there to sleep without any kind of noise or perturbation.

Consequently, the facades are based on an ISOVER solution. The external element will be bricks because the most of the buildings surrounding the plot have bricks.

The layers of the wall are:
-Plasterboard of 13mm.
-Isover UNI-skiva 33 supported by a timber studs with a thickness of 120mm.
-ISOVER Vario Duplex layer, 1mm thick.
-Isover UNI-skiva 33 supported by a timber studs with a thickness of 170mm.
-Plasterboard of 13mm.
-Insulation ISOVER Fasadskiva 31 with a thickness of 80mm.
-And finally, the bricks, 120mm thick.



PROPERTIES	
U-Value	0.10 W/m^{2}C
Reaction to fire	REI30
Noise Reduction:	
$R'_w+C_{50-3150}$	53/68/74 dB
$R'_w+C_{tr,50-3150}$	47/60/66 dB
Isolation	370mm
Total Thickness	536mm

This kind of external wall is perfect for a motel, because the minimum Noise Reduction allowed by BBR in Hotels in Sweden is 53dB.

PARTITIONS

As stated previously, in a motel it's really important the noise reduction or the acoustic protection. The minimum Noise Reduction by BBR in hotels in Sweden between two rooms or between a room and a corridor is, respectively, 52dB and 40db. The inner partitions are made with a solution from ISOVER Book. The forming layers of the wall are:

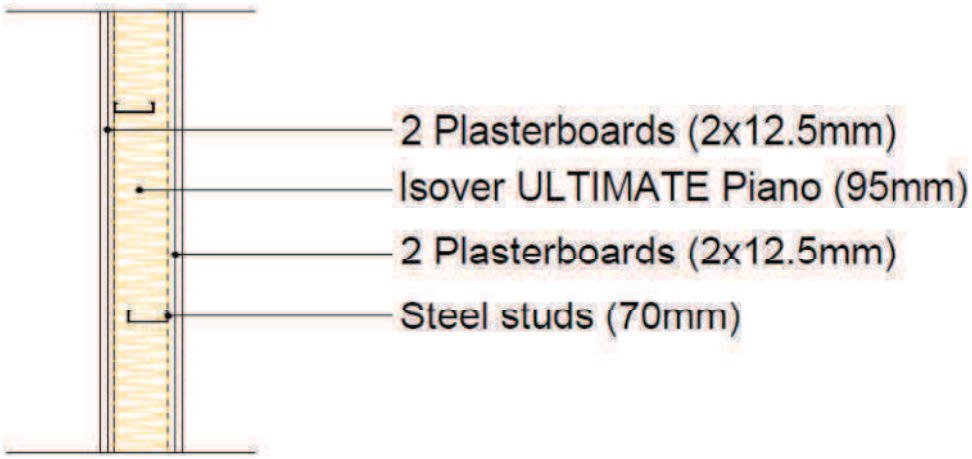
-2 plasterboards of 12.5mm each one.
-ISOVER Piano of 70mm thickness supported by steel studs.
-A 10mm thick air gap.
- ISOVER Piano of 70mm thickness supported by steel studs.
-2 plasterboards of 12.5mm each one.

This solution is more than enough, as we can see in the properties.

PROPERTIES	
Reaction to fire	REI60
Noise Reduction:	
R'_w	60 dB
$R'_w+C_{50-3150}$	55 dB

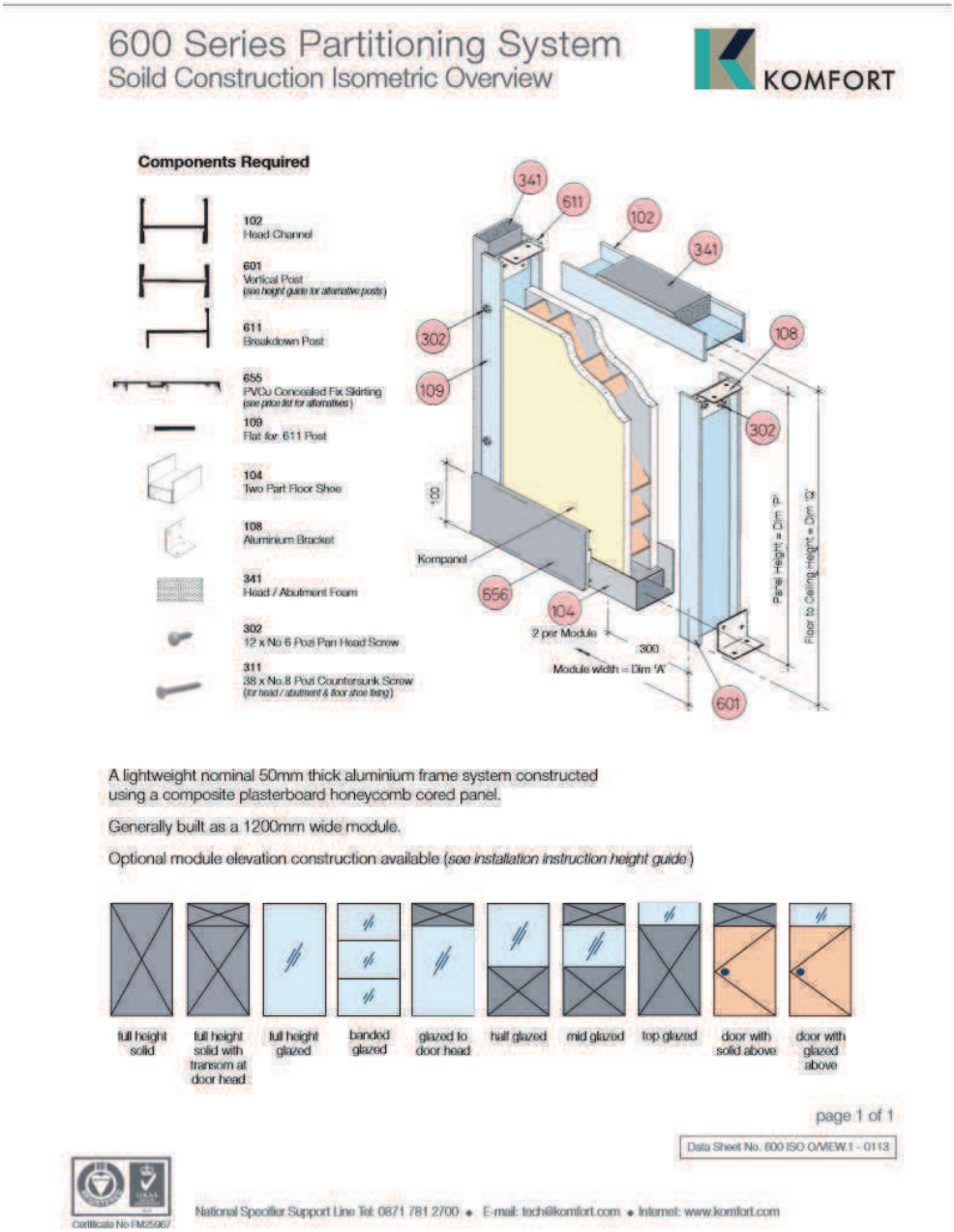
A different inner partition in the building will be the one which split the bathrooms to the rooms, that is composed by the following layers:

-2 plasterboards of 12.5mm each one, water resistant in the face of the bathroom.
- ISOVER ULTIMATE Piano of 95mm thickness supported by steel studs.
-2 plasterboards of 12.5mm each one.



PROPERTIES	
Reaction to fire	REI60
Noise Reduction:	
R'_w	55 dB
$R'_w+C_{50-3150}$	48 dB

And the last different partition is the one which limits the Cafe hall. This partition consists in a framed aluminium glass partition, with a thickness of 50mm.



600 Series Partitioning System
Soild Construction Isometric Overview

KOMFORT

Components Required

102 Head Channel
601 Vertical Post (see height guide for alternative posts)
611 Breakdown Post
655 PVCu Concealed Fix Skirting (see price list for alternatives)
109 Flat for 611 Post
104 Two Part Floor Shoe
108 Aluminium Bracket
341 Head / Abutment Foam
302 12 x No 6 Pozi Pan Head Screw
311 38 x No.8 Pozi Countersunk Screw (for head / abutment & floor shoe fixing)

A lightweight nominal 50mm thick aluminium frame system constructed using a composite plasterboard honeycomb cored panel.

Generally built as a 1200mm wide module.

Optional module elevation construction available (*see installation instruction height guide*)

full height solid | full height solid with transom at door head | full height glazed | banded glazed | glazed to door head | half glazed | mid glazed | top glazed | door with solid above | door with glazed above

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Data Sheet No. 600 ISO O/MEW.1 - 0113

Certificate No FM25967

National Specifier Support Line Tel: 0871 781 2700 • E-mail: tech@komfort.com • Internet: www.komfort.com

PROPERTIES	
Reaction to fire	Non-fired rated
Noise Reduction:	
Solid Panels	31dB
Glazed Panels	40 dB

ROOF

We chose a roof with two slopes due to the wideness of the building. It also has 15 degrees, to calculate this slope we just took into account the maximum height allowed by the Building Regulations of Halmstad, which is 11m, and the cornice height.

I selected a solution from ISOVER Book. It is covered by tiles, that are supported in battening and battens, then, below there is an underlay board. The last layer is the ISOVER InsulSafe (403mm thick) which is laid in the slab with a ISOVER plastic film.

PROPERTIES	
U-Value	0.08 W/m^{2}C
Reaction to fire	REI30
Noise Reduction:	
$R'_w+C_{50-3150}$	48 dB
$R'_w+C_{tr,50-3150}$	37 dB

COATINGS

FLOORS

In the rooms and in the office the floor will be a laminate flooring which simulate wood, with glue backing for ease of installation. Laminate floors must "float" over the sub-floor on top of a foam/film underlayment, which provides moisture and sound-reducing properties. This flooring is laid over a 5cm mortar regulation.
A small (1-10mm) gap is required between the flooring and any immovable object such as walls, this allows the flooring to expand without being obstructed.
Wooden strips of the same color.

Corridors, Cafe hall, stairs and engine room will be flooring with a 3cm thick terrazzo, the dimensions of each tile must be of 40x40cm. The tiles will be laid in a layer of cement mortar 2cm thick and a layer of sand 2cm thick. There must be also a sheet impact resistant over the slab.

All the bathrooms and the laundry room floors must be covered by stoneware tiles with a thickness of 7mm glued with tile adhesive to a layer of 4cm of mortar regulation and a sheet impact resistant.

CEILINGS

All the rooms and corridors of the building will have a false ceiling with plaster boards with dimensions of 60x60cm, sustained with a metal structure and executed with plaster molding in according to the regulations. Finally, the plaster boards will be painted with plastic paint washable at the same color than the inner walls.

INTERNAL WALLS

All the inner partitions have gypsum boards, so they must be painted with plastic paint washable at the same color than the plaster boards of the false ceiling.
In the bathrooms, the painting must be compatible with the water resistant plasterboards that must be placed, getting a proper adherence and a good permeability.

CARPENTRY

INTERNAL

The most of the internal carpentry is made of wood, except the doors of the Cafe hall.
The wooden doors will be blind and made with pine, claws of galvanized steel fixation and lock chromed. These interior doors is 0,97m of width and 2.10 of height.
The doors in the framed aluminium glass partition of the Cafe hall are double hollow core doors in wood veneer finishes with non-standard uprights. These doors are 1.94m of width and 2.10m of height.

EXTERNAL

External doors and windows are metallic. All the windows are sliding and they have a dimension of 2,1m of width and 1,3 of height, composed by two panels. These windows will have a double glazing of 24mm colorless with a dehydrated air chamber of 6mm sealed, with double sealed of butyl and poly sulphur, and they will be made with anodized aluminium profiles with a natural color.

The external doors of the hall and the Cafe hall are Fiberglass Glass Panel Exterior Door, it consists in a double hollow core doors in wood veneer finishes. These doors are 1,94m of width and 2,10m or 2.54m of height.

The fire exit doors have been chosen following BBR regulations. They consist in a fire exit door with panic/crash bars, with panic hardware CE rated and a 2mm Frame with 1mm leaf with inbuilt steel strengthening

The dimensions of the carpentry, internal and external, are described in the carpentry plan.

LIFT

Electric elevator without machine room with 1 entrance 900mm thick. The maximum capacity is 13 people/1000kg. The dimensions of the internal car are 1,10m wide, 2,10m deep and 2,22m of height, while the dimensions of the hoistway are 1,685m wide and 2,40m deep. Sliding door.

Lift datasheet on page 56.

FACILITIES

VENTILATION

The building will have a ventilation system to ensure the air renewal. For technical provisions of this requirement is taken into account the following factors: number of people occupying each room, the used ventilation system, the class of the used external carpentry, heating type, area of each room, number of floors of the building and kind of shot exhaust ducts.

PROTECTION AGAINST FIRE

The FIRE PROTECTION installation will have the necessary elements to comply with the stipulations of the BBR. This part will be developed in *Boverket, Protection against fire*

HEATING

Electric heating. Each room and each bathroom will have its own electric radiator. In the rooms, the radiators must be put above the windows.
The chosen radiators are aluminium thermodynamic radiators, with controls located on the top, energy saving proportional thermostat and a humidifier. The wattage of each radiator is 600W, and the dimensions are 58cm height, 56.4cm width and 10 cm depth.

ELECTRICITY

The building will have electricity supply in low voltage network provided by the electric energy supplier of the zone. It is foreseen a high degree of electrification and a predictable electric energy power between 9,200W and 230 V.

PLUMBING

The building receives potable water from the municipal supply. The plumbing must be designed and dimensioned to provide an adequate water pressure and flow to all areas of the building. The design of the network distribution will be made with electrolytic copper pipe with meetings welded, in dimensions based on the input parameters to be provided by the distributor of potable water of the municipality.

SANITARY DRAINAGE

The canalization will be made of PVC.
All the drain spouts are to evacuate pluvial or residual water, and all the drainages of sanitary apparatuses and sinks will be made with PVC pipe.
The joints and elbows will be performed with their corresponding meetings of union and special pieces. Every water drainage of sanitary apparatuses and sinks will have to settle with their own siphon.
In each slope of the roof there will be a drain spout.

5. BOVERKET

In this part it is showed how building and their different parts have been designed according with Boverket's mandatory provisions and general recommendations on the application of European construction standards (Eurocodes).

GENERAL RULES

1. MATERIAL AND PRODUCTS

Materials and products used in the building shall have known properties in matters relevant to the building's capacity to meet the requirements in these mandatory provisions and general recommendations.

2. ECONOMICALLY REASONABLE WORKING LIFE

The client/owner may select materials and technical solutions, which are economically reasonable and practical to manage, as long as the legal requirements for an economically reasonable working life are met. Working life refers to the period in which a building or a structural element functions as required, with normal maintenance.

Structural elements and installations have been chosen with the intention of having a working life as long as the building's intended service life. Anyway, all those elements will be readily accessible and easy to replace and otherwise be easy to maintain, operate and inspect.

Expected alterations of the properties have been taken into account when selecting materials and technical solutions.

3. GENERAL INFORMATION ON BUILDING WORKS

The building sites shall be arranged in such a way that entry of unauthorized people is prevented and the risk of personal injury is limited. Measures shall be taken to provide protection against the outbreak and spread of fire and against noise and dust.

3.1. Design and construction

During the design stage, normal performance tolerances have been taken into account.

The design is presented in drawings and other documents in such a way that the fulfillment of the requirements of these mandatory provisions can be verified.

3.2. Verification

To ensure that the finished building meets the requirements set out in the main statutes and in these mandatory provisions, the client/owner should ensure that this is verified at an early stage. Verification may be made either at the design and construction stage or in the finished building or any combination thereof.

Verification in the finished building should normally be carried out by testing, measuring or inspection, depending on the property being verified.

The method used as well as the results should be documented.

In order to verify that a completed alteration measure meets the requirements for care, the measure must be related to the building design before the alteration. This often requires that the design of the building has been documented before the measure is taken.

4. GROUND WORKS

No excavation, filling, piling, blasting or other ground works could affect the nearby buildings, roads and external works, underground pipes or other underground installations in a negative way due to the small entity of these works during the construction stage.

An investigation into groundwater conditions is necessary due to the proximity of Nissan River. Then, we can clarify the risk of damage due to subsidence and temporary or permanent lowering of the groundwater and the associated secondary effects such as water shortage and biodegradation. Monitoring of changes in existing levels can be achieved by balancing the persistent reference points. Chemical, physical and bacterial risks should also be investigated

No blasting works will take place.

5. OPERATING AND MAINTENANCE INSTRUCTIONS, ETC.

Before buildings or parts of buildings are put into service, written instructions should be available specifying how and when commissioning, testing, maintenance and servicing shall be carried out, in order that the requirements for the building and its installations which result from these mandatory provisions and from the main statutes shall be met during the working life of the building. When changing existing buildings instructions may need to be supplemented or updated. The documentation shall be adapted to the use of the building and to the extent and design of the installations.

The term commissioning refers to the phase and the activities whose aim is to complete the building and to integrate it and its installations into a fully finished and functioning unit. Coordinated performance tests should be carried out to verify that installations meet all applicable requirements.

The buildings should not be put into service until ventilation systems and technical fire-protection installations are ready for use.
Simple, easy-to-read and permanently displayed user instructions should be available for each device or other part of the installation which is meant to be controlled, operated or cleaned by residents or other users of the building.

When an emergency stop is installed it should be marked to ensure its function is obvious. Emergency stop refers to a device which makes it possible to stop the fans in the building in case of hazardous emissions in the surroundings. The emergency stop can be placed in a central and easily accessible space of the building.

ACCESSIBILITY, DWELLING DESIGN, ROOM HEIGHT, AND UTILITY ROOMS

1. ACCESSIBILITY AND USABILITY FOR PEOPLE WITH IMPAIRED MOBILITY OR ORIENTATION CAPACITY

Every entrance or exit to the building are accessible, there is always an accessible and usable walkway to:
– parking spaces,
– open spaces, and
– public footpaths adjacent to the site.

Accessible and usable walkways have been designed where have been possible without level differences. Where a level difference is unavoidable, I put ramps.
Accessible and usable walkways are
– easy to follow,
– distinguishable from furnished areas, and
– used as a coherent, tactile and visual guide path.
– horizontal
– not slope more than 1:50 laterally.
– Have a width of 5.58m, which is wider than the minimum recommended: have a clear width of 1.5 m, or at least 1.0 m and then have turning zones no more than 10 m apart. No turning zones are necessary in our case.
– for openings in fences, hedges and the like, have a minimum clear width of 0.90 m,
– free from obstacles, and
– levelled out with a 0.9 to 1.0 m wide ramp to 0-level if there are differences in level at the transition between different types of walking surfaces and locations.

There will be a lay-by for cars available and a parking space for the disabled shall be established within 25m walking distance from main entrance to the motel. The surfacing of lay-bys of this kind and parking spaces will be compact, level and slip resistant.
The surface in the lay-bys will be totally flat, without slopes.

The walking surfaces are compact, even and slip resistant, to ensure people with impaired mobility or orientation capacity can get around and ensure that wheelchair users can move around without help.

Ramps:
– have at least a 2 m long landing,
– have a height difference of up to 0.11m between landings, the maximum recommended is 0.5m,
– have a clear width of 5.58m, the minimum recommended is 1.3m,
– are free from obstacles.
–have a slope of 1:14, so they don't slope more than 1:12. This is made in order to minimize the risk of someone overbalancing. A ramp is safer to use if it does not slope more than 1:20.

Parking spaces, lay-bys for cars and open spaces, as well as walking surfaces, stairs, ramps and artificial guide paths and control devices are easy to identify.
To contrast to the surroundings are used different materials and brightness.
It must be used a lightness contrast of at least 0.40 NCS (Natural Color System) between the contrast marks and the surrounding area to enhance the ability of the visually impaired to perceive the marking.

Lighting along the accessible and usable walkways and at parking spaces, lay-bys for cars and open spaces, shall be designed to ensure that people with impaired mobility or orientation capacity can find their way around. To get this, the surface area should be sufficiently and evenly illuminated.

Orientation signs should be easily understood and easy to read, have a light contrast and be positioned at a suitable height to ensure that they can be read/heard by both wheelchair users and standing people with impaired vision. They should be placed where you expect them to be, and that allows you to be right beside them.
The text size will be selected according to reading distance and the surface should not generate reflections. Signs should be supplemented with letters in raised relief and in some cases with Braille and spoken information along with clear, easily understood and easy to recognize picture symbols.

Entrances and circulation spaces

Entrances and circulation spaces shall have enough room to maneuver a wheelchair and be designed to ensure that people who use wheelchairs can move around without needing help.
Circulation spaces, like corridors:
– have a minimum width of 2.19 m, wider than the minimum, 1.30m
– where there are limited obstructions such as columns, have a clear width of at least 0.80 m.

Walking surfaces in the entrance and circulation spaces are firm and smooth. The chosen material, which is terrazzo, is appropriate.

Inside the building there isn't any ramp, to go up to the first floor there are stairs and a lift, big enough to carry wheelchairs.
Important destinations of the building and walkways and stairs, as well as control devices shall be easy to identify and find even for people with impaired orientation capacity. In our cases these important destinations are:
-Entrance doors
-Lift doors and stairs
-Reception
-Rooms
Toilets
-Laundry Room
-Cafe Hall

There must be logical guide paths to guide the people between selected destinations.
The lighting of entrances and circulation spaces shall be designed to ensure people with impaired mobility or orientation capacity are able to navigate.
Floors in circulation spaces should be adequately and evenly illuminated.
The light source should be shielded and the contrast in brightness between adjacent spaces, and between the outside and inside should not be too great.

Orientation signs should be easily understood and easy to read, have a light contrast and be positioned at a suitable height to ensure that they can be read/heard by both wheelchair users and standing people with impaired vision. They should be placed where you expect them to be, and that allows you to be right beside them.

The text size should be selected according to reading distance and the surface should not generate reflections. Signs should be supplemented with letters in raised relief and in some cases with Braille and spoken information along with clear, easily understood and easy to recognize picture symbols.
Electronic signage should be designed to ensure people with impaired orientation capacity are able to perceive and understand it.

All the doors are accessible and usable, and have been designed to ensure they can be easily opened by people with impaired mobility, allow passage by wheelchair and ensure that there is sufficient space for opening and closing the door from a wheelchair. Other openings in the passageways shall also be designed to allow passage by wheelchair. The doors in this building have the Handles, control devices and locks located and designed to ensure they can be used by people with impaired mobility and people with impaired orientation capacity.

There aren't revolving doors. All the doors have a clear passage dimension of at least 0.92m (the minimum is 0.80m), and the can be opened at least 90º.

In the ground floor, the door of the main entrance will be fitted with automatic door opener. The space where the door opens will be indicated. Control device should be able to be handled by people with reduced strength or reduced grip or precision capability.

Lift

The chosen lift has an internal car with the next dimensions: 1.10m wide, 2.10m deep and 2.22m of height. This is enough to accommodate a person using a wheelchair and a helper, or to transport someone by stretcher (minimum dimensions 1.1x2.1m).
This lift is designed to ensure that people with impaired mobility or orientation capacity are able to use it unaided and that people with impaired mobility or orientation capacity can see when the car has stopped at a landing for entering and leaving.

Toilets for the public

Our motel, as public building with more than one storey, must have toilets for the public, at least one toilet should be accessible and usable.

The accessible and usable toilet should have

– minimum dimensions 2.2 x 2.2 m,

– properly designed and installed fittings and equipment;

– contrast markings, and

– security alarm.

2. THE DESIGN OF THE DWELLINGS

This point is not applicable in our building.

3. ROOM HEIGHT

The ceiling height in public premises shall be at least 2.70 m. In rooms designed for a small number of people, this room height may be lower. However, the room height must not be less than 2.40 m.

In rooms or separable parts of rooms in dwellings and public premises for people to accommodate on a temporary basis, the room height shall be not less than 2.10m.

This is not a problem, the room height is always 2.70m.

4. UTILITY ROOMS

This point is applicable in the cleaning room, engine room and the storage room in the first floor.
Utility rooms have been located and designed to ensure that the risk for accidents during usage, inspection and maintenance of the rooms and their installations are limited.
In the rooms are big enough for materials and equipment and for operation and maintenance work. The size of these rooms are:
-Cleaning room: 28.58m^2
-Engine room: 35.82m^2
-Storage room: 11.51m^2

In utility rooms, there are lighting and electrical outlets, and an appropriate waterproof flooring (flooring with terrazzo), hot water installation, floor gulley with evaporation protection, emergency lighting and permanent devices for handling of heavy installations.
All the utility rooms are lockable, to avoid thefts and any risk of personal.

5. REQUIREMENTS FOR ACCESSIBILITY, DWELLING DESIGN, CEILING HEIGHT AND UTILITY ROOMS FOR ALTERATIONS OF BUILDINGS

This point is not applicable in our building

SAFETY IN CASE OF FIRE

1. GENERAL CONDITIONS

Building shall be designed with a fire protection that ensures that fire safety is satisfactory. The design of the fire protection shall be based on the assumption that a fire could occur.
The building fire protection shall be designed with adequate robustness to ensure all or large parts of the protection are not knocked out by individual events or stresses.
The fire protection of building shall be designed, developed and verified through simplified or analytical design.

Documentation

Fire protection documentation shall be prepared. This shall include information about the pre-conditions for the fire protection and how the constructed building's fire protection is designed, along with verification that the fire protection complies with the requirements in this Section and in Section C of Boverket´s mandatory provisions and general recommendations (2011:10) on the application of European construction standards (Eurocodes), EKS.

2. FIRE RESISTANCE CLASSES AND OTHER CONDITIONS

Spaces in building shall, on the basis of the intended occupancy, be divided into occupancy classes. In our case, we have the next occupancy classes:
-Occupancy class 4: Hotels, etc.
The occupancy class includes spaces where residents are not likely to have good local knowledge, but have the ability to make themselves safe and cannot be assumed to be awake. *(BFS 201126)*

Building Classes

Buildings in Sweden are divided in classes: Br0, Br1, Br2 or Br3, based on the need for protection. In assessing the need for protection account shall be taken to a probable fire progress, potential consequences of a fire and the complexity of the building.

Following the recommendations of Boverket, our building should be designed in building class Br1, because it is a building with two storeys and for occupancy class 4.

Fire safety installation

The building will be protected by an automatic water sprinkler system, and it must have fire detectors and evacuation alarm.

The evacuation alarm can be activated manually or by automatic fire alarm. The evacuation alarm must signal immediately through activation by manual alarm button or automatic fire alarm. Evacuation alarms must be positioned to ensure the sound level at the place of a sleeping person's head is at least 75 dB(A).

The sound level have to be at least 10 dB(A) above the ambient normal background level and must not be less than 115 dB(A) at a one m distance from the alarm device. Audibility will be verified according to EN 50849.
The design of fire detectors can be verified in accordance with SS-EN 14604. Fire detectors will be fitted with alarm indicators.
To ensure good coverage, fire detectors will be placed in each room, corridors and stairs

The reliability and capability of automatic water sprinkler systems must be verified in accordance with SS-EN 12845 and the standard series SS-EN 12259.

3. ABILITY TO ESCAPE IN EVENT OF FIRE

Buildings shall be designed to ensure that there is an adequate time for evacuation during a fire. Adequate time for evacuation means that people who evacuate are not exposed to falling structural elements, high temperatures, high levels of heat radiation, toxic gases or reduced visibility that might impede evacuation to a safe location with sufficient certainty.

Every room has access to at least two independent escape routes. Escape routes have been placed as far apart that escape can occur even if one escape route is blocked by fire. In order for escape routes to be considered as independent of each other, the distance between them should be at least 5 m., in our building we have more than this distance between escape routes.

Spaces where people are present other than occasionally in our building are common spaces such as laundry room.

In the ground floor, escape through the windows is possible, these windows have been designed to ensure that the escape can be conducted in a satisfactory manner:

-Can be opened without a key or similar

-Can stay in the open position.

-Have a clear opening of 1m width and 1,3m high.

-The bottom of the windows opening are not more than 1,2m above the floor.

Design of escape routes

The maximum walking distance to the nearest escape route allowed in our case is: 30m, because our case is inside of these preconditions: the occupant load is high, or those concerned cannot be expected to evacuate themselves, or cannot be expected to have good local knowledge, or there is a risk of rapid fire spread.

The route should be measured by assuming that changes in direction when moving are at right angles.

The escape routes take people to the stairways that lead to another floor or exit leading to a secure location

Escape routes have always a clear width of at least 0.90 m.

Escape routes should have a clear height of at least 2.00 m., in our case this height is always 2.70m. Door openings have a minimum clear width of at least 0.92m, wider than the minimum recommended, 0.80 m.

The distance between a door and staircase or ramp should be at least 0.8m.

Spiral staircases are not used in this building.

Doors

Doors in escape routes open outwards in the escape direction and are readily identifiable as exits. The doors are positioned to ensure when open, they do not prevent the escape of other people.

They are easy to open and pass through.

It is possible to open doors with a door handle that is pushed down, or, in the case of the emergency exit doors, by the door being pushed outwards. The opening fixture is placed in the range between 0.80 to 1.20 m above the floor. The maximum door opening force should be evaluated based on the type of opening device used.

– For handles, the vertical opening force should be less than 70 N. The force required to push the door open should be less than 150 N,

– For push plates, the opening force should be less than 150 N.

– For larger opening devices, such as a full door leaf or automatic exit device, a greater opening force is accepted, however, no more than 220 N for the opening function and a maximum of 150 N for the continued opening of the door. This applies for example to automatic exit devices designed in accordance with SS-EN 1125.

In the main entrance there is a buttons with electric opening. In this case, the button will be placed next to the door's ordinary handle and be large enough so that it is immediately apparent it is the opening button. The opening button will be located with its centre 0.80 to 1.20 m above the floor. The button opening will be clearly marked with a sign that is at least 0.10 m x 0.15 m, and is illuminated when people are expected to use the door, that is even during evacuation. The sign should have a suitable shape, such as a stylized key, and the text "Emergency opening". It should be possible to open the door even during power outages.

It will be also possible to open the door with more than just electric push button.

The different escape routes of the building are showed in the plan *23. Escape Routes. Case of Fire*

FIRE SAFETY INSTALLATIONS

Exit signs

Exit signs will be situated to ensure the evacuation is not hindered by difficulty navigating the building, they be fitted adjacent to the doors that are intended for evacuation, at changes of direction. Signs shall be designed as green discs with clear white symbols and shall be easily noticed. Signs should be of such a size and luminance that make them clearly visible from the location and lighting conditions in question and have exit signs designed in accordance with Arbetsmiljöverket´s rules for signs.

The position must make clear where the escape routes are.

The location of the exit signs is showed in the plan *24. Exit Signs. Case of Fire*

Emergency lighting

Escape routes will be provided with general lighting, which can work with a satisfactory degree of safety in the event of escape from the building.

In the event of fire, the emergency lighting will fulfil its role in the parts of the building that are not in the immediate vicinity of the fire. In the event of power outages the emergency lighting will provide the intended illumination for not less than 60 minutes. The exit signs will be provided with emergency lighting.

Electric cables for emergency lighting have fire resistance class EI 30.

Specific requirements for the Motel

Devices for early detection and warning in the event of fire will be available. The building will be provided with evacuation alarms that can be activated manually and with automatic fire alarms. Alarm buttons will be fitted on both floors and they will be placed in readily accessible positions in the corridors and in the reception.

There will be fire detectors and a evacuation plan in each guest room. The evacuation plan should be placed right next to the door to the escape route. The evacuation plan should describe the significance and nature of the evacuation alarm, what the motel guests are expected to do and be supplemented with a drawing that shows the building's escape routes. In our case, the evacuation plan should be designed in accordance with SS 2875.

4. PROTECTION AGAINST THE OUTBREAK OF FIRE

Structural elements and fixed installations are designed to ensure the properties that are necessary are not degraded with respect to the temperature they are expected to be exposed to.

5. PROTECTION AGAINST THE DEVELOPMENT AND SPREAD OF FIRE AND SMOKE IN BUILDINGS

Surfaces finishes

Fire-resistant coatings and linings, fire cells, fire compartmentation, fire resistant installations are examples of protective measures that can restrict the development and spread of fire and smoke in the building.

In our motel which is building class Br1, except for escape routes and special premises the following surface finishes should be selected: ceilings should have surface finishes of fire resistance class B-s1,d0, attached to material of A2-s1,d0 or clad in fire resistance class K210/B-s1,d0. Wall surfaces should have surface finishes of at least fire resistance class C-s2,d0.

In escape routes, ceiling surfaces and internal wall surfaces will have a surface finish of at least fire resistance class B-s1,d0. The surface finish should be attached to the material in fire resistance class A2-s1,d0 or on cladding of at least fire resistance class K210/B-s1,d0.

Fire Compartment Division

All the inner partitions of the building are EI60, the doors, to ensure the fire compartment boundaries are maintained, are designed in the same fire resistance class as the partitions.
Then, each guest room has been designed as a separate fire compartments, which is because the Boverket requires that the separating structure should be designed to no less than class EI60.

The lift is placed in the same fire compartment as the stairway, this ensures that protection against fire and smoke spread between fire compartments is maintained.

Exterior walls

Like a building class Br1, the wall ensures:

1. the separation function is maintained between fire compartments,
2. fire spread inside the wall is limited,
3. the risk of fire spread along the façade surface is limited,
4. the risk of injury due to parts falling from the exterior wall is limited.

The windows positioned above each other vertically have a distance between them more than 1,2m, the distance is exactly 2.58m.

6. PROTECTION AGAINST THE SPREAD OF FIRE BETWEEN BUILDINGS

There is no danger of spreading of fire between buildings, because there is more than 8m to the closest building.

7. POSSIBILITY OF RESCUE RESPONSE

The building is accessible for emergency responses, the street system provide a proper access.
The distance between the rescue vehicles' hardstanding and the building's attack point is less than 50 m.
As a building class Br1, stairways shall be fitted with smoke ventilation or equivalent. I decided to put an openable window on the first floor as smoke ventilation. This window will be possible to open with a fire key designed in accordance with SS 3654.

Smoke ventilation is designed to facilitate internal rescue responses.
The building is shorter than 24m, so fire risers are not necessary in the stairway.
The building has less than ten storeys, so a rescue lift isn't necessary.

8. REQUIREMENTS FOR FIRE PROTECTION DURING ALTERATIONS TO BUILDINGS

This point is not applicable in our case.

PROTECTION AGAINST NOISE

Building and their installations shall be designed so that noise from installations in the building, from adjacent premises and from the outside is attenuated. This shall be achieved to the extent required by the intended use and so that motel guests are not disturbed by the noise.
If a noisy activity occurs adjacent to dwellings, special sound insulation measures shall be taken.
The requirements of the provisions for buildings are met if the requirements related to buildings in sound class C are achieved. If better sound conditions are required, sound class A or B may be selected.
Good acoustic properties are particularly important in rooms intended for sleep and rest.

In hotels the requirements are next:

Type		Sound Class A (dB)		Sound Class B (dB)		Sound Class C (dB)		Sound Class D (dB)	
		R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$
Hotel	Wall between two rooms	56	52	56	52	52	56	48	60
	Wall between room and corridor	44	60	44	62	40	65	35	70

To the external walls, I considered the same minimum requirement than in a dwelling, because I didn't find that value in the case of a hotel.

Type		Sound Class A (dB)		Sound Class B (dB)		Sound Class C (dB)		Sound Class D (dB)	
		R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$	R'_W	$L'_{n,w}$
Dwelling	External Wall	61	48	57	52	53	56	49	60

In our case what is designed is:

Walls	Sound insulation in project (dB) R'_w	Sound Class
External Walls	74	A
Partition between two guest rooms	60	A
Partition between room and corridor	60	A
Partition between guest Room and bathroom	55	A
Partition of Cafe hall	31/40	

SAFETY IN USE

The building must be designed so as to minimize the risk of accidents such as falls, collisions, crushing, burns, explosions, being locked in, poisoning and electric shocks. Sites that are used for development shall be designed so as to minimize the risk of accidents.

1. PROTECTION AGAINST FALLING

Lighting

In corridors, the lighting has been designed with sufficient power and uniformity to enable people to move around safely within the building. The fixed lighting should not be dazzling.

Protection against slipping and tripping

The surfaces have been designed without unexpected small changes in level, irregularities or low obstacles which are difficult to detect.

For dry walking surfaces, the friction factor will be at least 0.30, measured in accordance with SS-EN 13893.

Support handles will be provided in the shower space of every bathroom in every guest room.

Door and gate openings are designed with no changes in level, therefore, the risk of tripping is minimum.

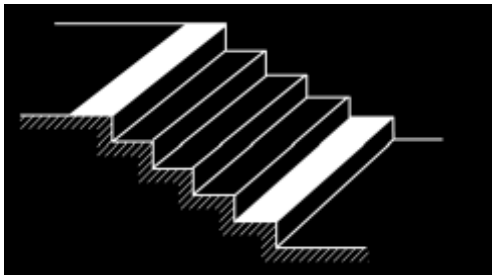
Protection against falling from heights

In all the rooms children may be present, therefore, openable windows with the bottom of the frame lower than 1.8 m above floor level shall have safety fittings, locking devices or other protection which limits the risk of children falling out. Openable windows where the distance between the glass surface and the floor is less than 0.60 m shall have safety fittings and a locking device to prevent children from opening and going through the door or window. In our case that distance is 0.85m, so, those devices are not necessary.

On windows on the ground floor, safety devices are never necessary.

Stairs and ramps in or adjacent to buildings are designed to ensure that people can move about safely.

In order for the stairs to be designed safely account should be taken to the incline and length of the stairs and the relationship between the height and depth of the steps. The incline along the walking line doesn't change within the same flight. There are no treads which have a height that is different from others. The depth of a tread on stairs should be not less than 0.25 m measured along the walking line, that's why in our case it has been designed with a tread depth of 0.32m
The design of the ramps has been justified in Accessibility point.
Stairs should be fitted with contrast markings to ensure people with impaired vision can detect any changes in level. The lowest tread of a staircase and the corresponding part of the front edge of the landing at the uppermost riser in every flight should have a lightness contrast of at least 0.40 according to the NCS (Natural Color System). The markings will be consistent throughout the building.



Handrails don't encroach on the width of the flight by more than 100 mm on either side. The distance between an enclosing wall and the sides of the flight is 50 mm. The handrails are 0.9m high. The lightness of handrails must contrast with the surrounding surfaces.

Balustrades on the emergency staircases are 1.15m high, not less than 0.9 m high.

2. PROTECTION AGAINST COLLISION AND CRUSHING

The buildings must be designed so as to limit the risk of personal injury as a result of collision. The parts and devices of the building that are capable of movement shall be positioned and designed to ensure the risk of personal injury due to being trapped or similar is limited.

Swing doors in the entrance or in the public spaces of the motel have been chosen because it is possible to see through them.

In spaces where children may be present, fixtures, fittings and equipment which are readily accessible to children shall be designed to ensure they cannot tip over and to ensure children cannot be injured by opening drawers or panels or by climbing on them.

The clear height in escape routes, on stairs, through doors and in other circulation spaces is always more than 2.00 m.

Large glazed surfaces in doors and glazed surfaces in the Cafe hall must be clearly marked.

Glazed surfaces in entrance doors and in the Cafe hall must have a tempered safety glass in accordance with SS-EN 12150-2 that meets the requirements of at least Class 1(C) 2 or laminated safety glass in accordance with SS-EN 14449 that meets the requirements of at least Class 2(B)2 in accordance with SS-EN 12600

3. PROTECTION AGAINST BURNS

Readily accessible parts of heating installations shall be fitted with protection against unintended contact if their surface temperature is so high that they may cause burns on contact.

4. PROTECTION AGAINST EXPLOTIONS

Boiler installations or other installations for heating water and other pressurized devices shall be fitted with safety devices which limit the risk of personal injury due to excessive pressure or excessive temperature in the installation.

5. PROTECTION AGAINST BEING LOCKED IN

Doors leading to spaces where someone could be accidentally locked in shall have a closing device so that a bolted or locked door can be opened from both the inside and the outside without a key or special tool.

In spaces where children may spend time, doors to utility rooms shall be fitted with a closing device so that they can be opened from the inside without a key.

6. PROTECTION AGAINST POISONING

To prevent the risk of personal injury due to poisoning have been provided one room in each floor to store the cleaning fluids or other hazardous chemical products. These rooms are lockable.
In the laundry room, for the storage of mild washing up fluids and detergents, a low level unit with safety fittings or a cupboard placed not less than 1.4 m above floor level should be provided.

7. PROTECTION AGAINST ACCIDENTS ON SITE

Ramps on footpaths between a building's accessible entrances and parking spaces and lay-bys for cars are designed to ensure people can move around safely.

The ramp has a handrail on both sides, with a height of 1.00m
The design of the ramp has been justified in the point Accessibility.

8. REQUIREMENTS FOR SAFETY IN USE IN THE ALTERATIONS OF BUILDINGS

This point is not applicable in our case.

6. MEASUREMENTS AND BUDGET

RESUMEN DE PRESUPUESTO

Motel

CAPITULO	RESUMEN	EUROS	%
1	CONDITIONING OF THE AREA	3.123,26	0,17
2	EARTH WORKS	14.111,92	0,76
3	FOUNDATION	80.563,99	4,32
4	STRUCTURE	302.491,59	16,21
5	ROOF	242.461,76	13,00
6	FACADES	417.670,42	22,39
7	PARTITIONS	328.360,24	17,60
8	COATINGS	231.825,89	12,43
9	CARPENTRY	49.539,65	2,66
10	INSTALATIONS	110.679,22	5,93
11	EQUIPMENT	58.258,82	3,12
12	MISCELANEOUS	26.430,80	1,42
	TOTAL EJECUCIÓN MATERIAL	**1.865.517,56**	
	13,00% Gastos generales	242.517,28	
	6,00% Beneficio industrial	111.931,05	
	SUMA DE G.G. y B.I.	354.448,33	
	16,00% I.V.A.	355.194,54	
	TOTAL PRESUPUESTO CONTRATA	**2.575.160,43**	
	TOTAL PRESUPUESTO GENERAL	**2.575.160,43**	

Asciende el presupuesto general a la expresada cantidad de TWO MILLIONS FIVE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED SIXTY EUROS con FORTY THREE CÉNTIMOS

Halmstad, a N.

El promotor **La dirección facultativa**

PRESUPUESTO Y MEDICIONES

Motel

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 1 CONDITIONING OF THE AREA								
1.1	**m2 Removal of the vegetation layer by mechanic methods**								
	Removal and piling of vegetal superficial layer of 100mm by mechanical methods, without charge or transport to the dump and aids.								
		1	77,47	20,58		1.594,33			
							1.594,33	0,81	1.291,41
1.2	**m3 Transport to the dump <10km Mechanical charge**								
	Land Transport to the dump, at a distance shorter than 10 km., Considering roundtrip with dump truck loaded by mechanical method, dump fee and aids, considering also the load.								
		1	77,47	20,58	0,10	159,43			
							159,43	11,49	1.831,85
	TOTAL CAPÍTULO 1 CONDITIONING OF THE AREA.....								**3.123,26**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 2 EARTH WORKS								
2.1	**m3 Open pit excavation hard ground, with breaking hammer**								
	Open pit excavation, on hard ground, with breaker hammer, with removal of land outside of the excavation, in recesses, without charge or transport to the dump and aids.								
		1	77,47	20,58	0,37	589,90			
		2	77,47	0,97	0,15	22,54			
		2	18,64	0,97	0,15	5,42			
							617,86	11,35	7.012,71
2.2	**m3 Transport to the dump <10km Mechanical charge**								
	Land Transport to the dump, at a distance shorter than 10 km., Considering roundtrip with dump truck loaded by mechanical method, dump fee and aids, considering also the load.								
		1	77,47	20,58	0,37	589,90			
		2	77,47	0,97	0,15	22,54			
		2	18,64	0,97	0,15	5,42			
							617,86	11,49	7.099,21
	TOTAL CAPÍTULO 2 EARTH WORKS								**14.111,92**

PRESUPUESTO Y MEDICIONES

Motel

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 3 FOUNDATION								
3.1	**m3 Gravel**								
	Filling, spreading and compacting graded aggregates open by mechanical means, in tiers of 15 cm. thick, to achieve a degree of compaction of 95% of normal proctor, including watering and refining the same slope, and pp of aids, considering the pit walk graded aggregates								
	Foundation	1	77,30	20,60	0,15	238,86			
							238,86	18,57	4.435,63
3.2	**m2 Geotextile**								
	Supply and installation of punched polyester geotextile with a weight of 200 g/m2 and <38 mm. Opening in Dynamic perforation test, extended on the ground with overlaps of 10 cm., for subsequent filling with earth.								
	Concrete slab	1	77,53	20,60		1.597,12			
							1.597,12	0,88	1.405,47
3.3	**m2 Extruded Polyestyrene**								
	Floor insulation, using extruded polystyrene rigid plates of Styrolit Isolerskiva S80 of 10 mm. thick, even cutting and placement								
	Layer 1	1	75,72	18,79		1.422,78			
	Layer 2	1	75,52	18,59		1.403,92			
	Layer 3	1	75,32	18,39		1.385,13			
	Hoistway	-2	2,70	1,99		-10,75			
	Columns Bases	-17	1,20	1,20		-24,48			
	Hoistway Layer 1	-1	3,50	2,79		-9,77			
	Formwork 1	2	77,31	0,97		149,98			
	Formwork 2	2	77,31	0,45		69,58			
	Formwork 3	2	20,39	0,97		39,56			
	Formwork 4	2	20,39	0,45		18,35			
							4.444,30	12,44	55.287,09
3.4	**m2 Reinforced Concrete Slab HA-30/B/25/IIIb+H**								
	Reinforced concrete Slab with concrete HA-30/B/25/IIIb+H with 300kg/cm2 of characteristic resistance and 100mm thick. Reinforced with a electro welded mesh of steel B-500-T of 150x150mm , ø5-5mm. Including concrete pouring, mesh placement and troweling and aids								
	Concrete Slab	1	77,31	20,39		1.576,35			
							1.576,35	10,29	16.220,64
3.5	**m3 Reinforced Concrete HA-30/B/25/IIIb+H**								
	Reinforced concrete HA-30 N/mm2, soft consistency, maximum size of the arid, to the marine environment produced in central, to fill foundation trenches and lift slab, including armor (40 kg/m3). Truck through pump, vibrated and placed.								
	Foundation	2	20,39	0,89	0,35	12,70			
	Foundation	2	75,72	0,89	0,35	47,17			
	Column Bases	17	1,20	1,20	0,20	4,90			
	Lift backing	2	3,50	0,40	0,20	0,56			
	Lift backing	2	1,99	0,40	0,20	0,32			
	Lift Slab	2	0,20	0,97	2,39	0,93			
		2	0,20	0,97	2,70	1,05			
		1	0,20	2,70	1,99	1,07			
							68,70	46,80	3.215,16
	TOTAL CAPÍTULO 3 FOUNDATION.....								**80.563,99**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 4 STRUCTURE								
4.1	**m Precast concrete columns 40x40cm h<10m**								
	Precast column made of concrete HA-35 and steel B-500-S, section 40x40 cm., Maximum height 10 m., With beam accommodations, even formwork, pouring, vibrated, cured, armor, using car-mounted crane, plumb, knot link HA-35/P/20/I concrete, mounting and propping necessary. Measured by actual development of the parts.								
	Columns	40	7,45			298,00			
	Columns	2	3,90			7,80			
							305,80	93,84	28.696,27
4.2	**m Precast Concrete IT Beam. h=60cm, b=60cm L=8m.**								
	Precast Prestressed concrete Beam, inverted T section, up to 8 m. length, 0.60 m. high and 0,60 m. wide, with soul and wings of 30 cm. thick, including transport and final placement. Measurement according to actual development of beams.								
		20	7,80			156,00			
		20	8,00			160,00			
		20	2,40			48,00			
		1	6,40			6,40			
							370,40	198,87	73.661,45
4.3	**m Precast Concrete Square Beam. h=60cm, b=40cm L=8m.**								
	Precast Prestressed concrete Beam, rectangular section, up to 8 m. length, 0.60 m. high and 0,40 m. wide, including transport and final placement. Measurement according to actual development of beams.								
		54	8,08			436,32			
							436,32	140,37	61.246,24
4.4	**m2 Hollow-core concrete slabs. T=28+5.L=8m.Q=800Kg/m2**								
	Hollow-core Slab Farlap II type. Made of precast concrete with a thickness of 28cm and a wideness of 1,20 or 0,6m. With a HA-25/P/20/I concrete compression layer, for a lenght of 9m and a total load of 800kg/m2, including negatives and connectors, shuttering, formwork, pouring, vibrating, concrete curing, using telescopic crane. Measured according to the outside line without discounting gaps smaller than 5m2.								
		18	8,08	7,80		1.134,43			
		18	10,08	8,08		1.466,04			
	Lift Hoistway	1	5,60	4,66		26,10			
							2.626,57	52,60	138.157,58
4.5	**Ud Precast concrete Staircase with angular steps**								
	Prefabricated staircase made by HA-30 concrete and B-500-S Steel and concrete steps. Supported by angular metal which is embedded in the slab. Including transportation, using telescopic crane.								
							1,00	730,05	730,05
	TOTAL CAPÍTULO 4 STRUCTURE.....								**302.491,59**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 5 ROOF								
5.1	**m2 Slope Roof**								
	Formation of the slope. With battening and battens, supported in a underlay board. Wooden props are also included. Placement included. Measured in real scale.								
	Roof	2	77,63	10,77		1.672,15			
							1.672,15	120,30	201.159,65
5.2	**m2 Ceramic Clay tiles**								
	Covering of red mixed ceramic tile 40,6 x28, 2 cm., placed in rows parallel to the eaves, with overlaps. Incl. special parts, ridges, limes, ventilation tiles and finials, aids and safety features. Measured in real scale.								
	Roof	2	77,63	10,77		1.672,15			
							1.672,15	24,70	41.302,11
	TOTAL CAPÍTULO 5 ROOF								**242.461,76**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 6 FACADES								
6.1	**m2 Exterior Walls**								
	Plasterboard of 13mm., Isover UNI-skiva 33 suported by a timber studs with a thickness of 120mm., ISOVER Vario Duplex layer, 1mm thick., Isover UNI-skiva 33 suported by a timber studs with a thickness of 170mm., Plasterboard of 13mm., Insulation ISOVER Fasadskiva 31 with a thickness of 80mm. The external finish is made with facing bricks of 25x18x12cm and M40 cement mortar. Timber studs are made with softwood and includes wall ties. Total thickness of 536mm. This measure includes all materials necesaries as scafflod, cramps, mineral wool panels, timber studs, plasticfolie and labour costs.								
	East Facade	1	77,53		7,70	596,98			
	South Facade	1	20,61		7,70	158,70			
	West Facade	1	77,53		7,70	596,98			
	North Facade	1	20,61		7,70	158,70			
	East-West Facade	1	20,61		2,59	53,38			
	Windows	-56	2,10		1,30	-152,88			
	Doors	-4	1,94		2,10	-16,30			
	Exit Doors	-4	0,97		2,10	-8,15			
	Glass	-1	50,18			-50,18			
							1.337,23	312,34	417.670,42
	TOTAL CAPÍTULO 6 FACADES								**417.670,42**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 7 PARTITIONS								
7.1	**m2 Inner Partition Bathroom**								
	Composed by 2 plasterboards of 12.5mm each one, water resistant in the face of the bathroom, supported by a steel studs (70mm wide) structure 95 cm wide, placed each 60cm over a horizontal channel, and 2 more plasterboards of 12.5mm each one. Measured on one face. Placement included.								
	Rooms	48	2,54		3,48	424,28			
	Doors	-48	0,97		2,10	-97,78			
	Rooms	48	3,40		3,48	567,94			
	Office	1	2,77		3,48	9,64			
	Office	1	2,60		3,48	9,05			
	Doors	-1	0,97		2,10	-2,04			
		52	0,58		2,10	63,34			
		52	0,45		2,10	49,14			
	Cleaning Room	1	2,20		2,10	4,62			
		1	2,40		2,10	5,04			
	Door	-1	0,97		2,10	-2,04			
							1.031,19	57,21	58.994,38
7.2	**m2 Inner Partition General**								
	Composed by 2 plasterboards of 12.5mm each one, water resistant in the face of the bathroom, supported by a double structure of steel studs 70mm wide each one, placed each 60cm over a horizontal channel, and 2 more plasterboards of 12.5mm each one. Measured on one face. Placement included.								
	Corridor 1	1	29,85		3,18	94,92			
	Corridor2	1	34,30		3,18	109,07			
	Corridor 3	1	28,80		3,18	91,58			
	Office 1	1	8,50		3,48	29,58			
	Office 2	1	3,02		3,48	10,51			
	Stairs	1	4,16		3,48	14,48			
	Laundry 1	2	4,08		3,48	28,40			
	Laundry 2	4	3,19		3,48	44,40			
	Partition 1	13	8,57		3,33	371,00			
	Partition 2	7	8,37		3,33	195,10			
	Doors	-26	0,97		2,10	-52,96			
	Corridor 4	1	30,25		3,18	96,20			
	Corridor 5	1	42,77		3,18	136,01			
	Corridor 6	1	76,45		3,18	243,11			
	Room	1	6,95		3,48	24,19			
	Partition 3	16	8,57		3,33	456,61			
	Partition 4	17	8,37		3,33	473,83			
	Doors	-35	0,97		2,10	-71,30			
							2.294,73	62,32	143.007,57
7.3	**m2 Framed Aluminium Glass Partition**								
	50mm square edged aluminium framed system with vertical uprights and 50mm wide solid and glazed modules. Double glazing with 6.4mm laminated safety glass. Fully installation.								
	Caffe Hall	1	7,66		3,18	24,36			
	Caffe Hall	4	8,08		3,18	102,78			
	Doors	-2	1,94		2,10	-8,15			
							118,99	65,20	7.758,15
7.4	**m2 Isover Piano 95mm**								
	Glass wool for airborne sound insulation between walls with a thickness of 95mm. Placement included.								
	Rooms	48	2,54		3,48	424,28			
	Doors	-48	0,97		2,10	-97,78			
	Rooms	48	3,40		3,48	567,94			
	Office	1	2,77		3,48	9,64			
	Office	1	2,60		3,48	9,05			
	Doors	-1	0,97		2,10	-2,04			
		52	0,58		2,10	63,34			

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
		52	0,45		2,10	49,14			
	Cleaning Room	1	2,20		2,10	4,62			
		1	2,40		2,10	5,04			
	Door	-1	0,97		2,10	-2,04			
							1.031,19	26,00	26.810,94
7.5	**m2 Isover Piano 70mm**								
	Glass wool for airborne sound insulation between walls with a thickness of 70mm. Placement included.								
	Corridor 1	2	29,85		3,18	189,85			
	Corridor2	2	34,30		3,18	218,15			
	Corridor 3	2	28,80		3,18	183,17			
	Office 1	2	8,50		3,48	59,16			
	Office 2	2	3,02		3,48	21,02			
	Stairs	2	4,16		3,48	28,95			
	Laundry 1	4	4,08		3,48	56,79			
	Laundry 2	8	3,19		3,48	88,81			
	Partition 1	26	8,57		3,33	741,99			
	Partition 2	14	8,37		3,33	390,21			
	Doors	-52	0,97		2,10	-105,92			
	Corridor 4	2	30,25		3,18	192,39			
	Corridor 5	2	42,77		3,18	272,02			
	Corridor 6	2	76,45		3,18	486,22			
	Room	2	6,95		3,48	48,37			
	Partition 3	32	8,57		3,33	913,22			
	Partition 4	34	8,37		3,33	947,65			
	Doors	-70	0,97		2,10	-142,59			
							4.589,46	20,00	91.789,20
	TOTAL CAPÍTULO 7 PARTITIONS.....								**328.360,24**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 8 COATINGS								
8.1	**m2 Laminate Flooring sim. wood**								
	Laminate flooring which imitate oak slatted 25x5x1 cm., natural category placed with glue, stabbed, sanding and three coats of polyurethane varnish, include clipping and baseboard, measure by the executed surfaced.								
	Standard Rooms 1	19		8,57	4,00	651,32			
	Other Rooms 1	5		8,57	4,20	179,97			
	Standard Rooms 2	22		8,37	4,00	736,56			
	Other Rooms 2	3		8,37	4,20	105,46			
	Standard Bathroom	-41		3,54	2,54	-368,66			
	Other Bathroom	-7		3,54	2,70	-66,91			
	Office Bathroom	-1		2,91	2,74	-7,97			
	Office	1		8,30	3,40	28,22			
							1.257,99	54,27	68.271,12
8.2	**m2 Terrazzo Tiles 40x40cm**								
	Interior terrazzo flooring, 40x40 cm. clear color, with original factory polished to final buffing and polishing work in site. Tested for resistance to sliding / slip, received with cement CEM II / BP 32.5 N and river sand (M-5), i / sand bed 2 cm. thick Put with paste for grouting joints, cleaning included. Measured in surface actually executed.								
	Corridor Floor1	1		76,45	2,19	167,43			
	Corridor Ground Floor	1		76,45	2,19	167,43			
	Caffe Hall	1		34,13	8,41	287,03			
	Hall	1		12,42	12,42	154,26			
	Hall Floor 1	1		8,77	3,63	31,84			
	Room	1		4,24	2,71	11,49			
	Reception	1		8,50	5,15	43,78			
		1		4,00	8,77	35,08			
		1		3,84	2,27	8,72			
							907,06	31,61	28.672,17
8.3	**m2 Porcelain Stoneware Floor Polished 40x40cm.**								
	Flooring of pressed polished porcelain tiles. In tiles of 40x40 cm. granite color, for heavy traffic (Abrasion IV), received with adhesive Flexible White, include screed and grouting mortar cap. Measured at the actually executed surface.								
	Standard Bathroom	41		3,54	2,54	368,66			
	Other Bathroom	7		3,54	2,70	66,91			
	Office Bathroom	1		2,91	2,74	7,97			
	Toilet 1	1		8,57	4,24	36,34			
	Toilet 2	1		8,57	4,04	34,62			
	Laundry Room	1		8,57	8,28	70,96			
	Void	52		0,65	0,52	17,58			
	cleaning Room Btr	1		2,20	2,40	5,28			
							608,32	53,73	32.685,03
8.4	**m2 False Ceiling with Plasterboard**								
	Continuous false ceiling, consisting of a structure based in bars of galvanized aluminium separated 600 mm. Anchored directly to the slab. Plasterboard screws of 13 mm. thick, with proportional tape and screws. Including treatment and sealing of joints. Fully finished, ready to paint or decorate., measured by deducting holes larger than 2 m2.								
	Rooms	3		4,20	4,83	60,86			
		4		4,20	5,03	84,50			
		1		4,24	5,66	24,00			
		22		4,04	4,83	429,29			
		19		4,04	5,03	386,10			
		49		3,55	1,50	260,93			
	Bathrooms	7		2,56	3,40	60,93			
		41		2,40	3,40	334,56			
		1		2,60	2,77	7,20			
	Room	1		4,24	2,71	11,49			
	Stairs	1		5,67	4,44	25,17			

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	Office	1	8,30	3,42		28,39			
	Engine Room	1	4,20	8,57		35,99			
	Cleaning Room	1	4,04	6,23		25,17			
		1	1,50	2,35		3,53			
		1	2,20	2,40		5,28			
	Laundry Room	1	8,28	3,77		31,22			
		1	1,50	4,80		7,20			
		4	3,20	2,20		28,16			
	Toilet 1	1	4,04	8,57		34,62			
	Toilet 2	1	4,24	8,57		36,34			
	Corridor Floor1	1	76,45	2,19		167,43			
	Corridor Ground Floor	1	76,45	2,19		167,43			
	Caffe Hall	1	34,13	8,41		287,03			
	Hall	1	12,42	12,42		154,26			
	Hall Floor 1	1	8,77	3,63		31,84			
	Reception	1	8,50	5,15		43,78			
		1	4,00	8,77		35,08			
		1	3,84	2,27		8,72			
							2.816,50	18,19	51.232,14
8.5	**m2 Interior Plastic Paint**								
	Plastic paint, washable, acrylic, smooth, professional, in matte white or pigmented, on horizontal and vertical surfaces, two hands. Even painted.								
	East Facade	1	77,53		7,70	596,98			
	South Facade	1	20,61		7,70	158,70			
	West Facade	1	77,53		7,70	596,98			
	North Facade	1	20,61		7,70	158,70			
	Windows	-56	2,10		1,30	-152,88			
	Doors	-4	1,94		2,10	-16,30			
	Exit Doors	-4	0,97		2,10	-8,15			
	Glass	-1	50,18			-50,18			
	Rooms	96	2,54		3,48	848,56			
	Doors	-96	0,97		2,10	-195,55			
	Rooms	96	3,40		3,48	1.135,87			
	Office	2	2,77		3,48	19,28			
	Office	2	2,60		3,48	18,10			
	Doors	-2	0,97		2,10	-4,07			
		104	0,58		2,10	126,67			
		104	0,45		2,10	98,28			
	Cleaning Room	2	2,20		2,10	9,24			
		2	2,40		2,10	10,08			
	Door	-2	0,97		2,10	-4,07			
	Corridor 1	2	29,85		3,18	189,85			
	Corridor2	2	34,30		3,18	218,15			
	Corridor 3	2	28,80		3,18	183,17			
	Office 1	2	8,50		3,48	59,16			
	Office 2	2	3,02		3,48	21,02			
	Stairs	2	4,16		3,48	28,95			
	Laundry 1	4	4,08		3,48	56,79			
	Laundry 2	8	3,19		3,48	88,81			
	Partition 1	26	8,57		3,33	741,99			
	Partition 2	14	8,37		3,33	390,21			
	Doors	-52	0,97		2,10	-105,92			
	Corridor 4	2	30,25		3,18	192,39			
	Corridor 5	2	42,77		3,18	272,02			
	Corridor 6	2	76,45		3,18	486,22			
	Room	2	6,95		3,48	48,37			
	Partition 3	32	8,57		3,33	913,22			
	Partition 4	34	8,37		3,33	947,65			
	Doors	-70	0,97		2,10	-142,59			
	CEILING								
	Rooms	3	4,20	4,83		60,86			

Motel

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
		4	4,20	5,03		84,50			
		1	4,24	5,66		24,00			
		22	4,04	4,83		429,29			
		19	4,04	5,03		386,10			
		49	3,55	1,50		260,93			
	Bathrooms	7	2,56	3,40		60,93			
		41	2,40	3,40		334,56			
		1	2,60	2,77		7,20			
	Room	1	4,24	2,71		11,49			
	Stairs	1	5,67	4,44		25,17			
	Office	1	8,30	3,42		28,39			
	Engine Room	1	4,20	8,57		35,99			
	Cleaning Room	1	4,04	6,23		25,17			
		1	1,50	2,35		3,53			
		1	2,20	2,40		5,28			
	Laundry Room	1	8,28	3,77		31,22			
		1	1,50	4,80		7,20			
		4	3,20	2,20		28,16			
	Toilet 1	1	4,04	8,57		34,62			
	Toilet 2	1	4,24	8,57		36,34			
	Corridor Floor1	1	76,45	2,19		167,43			
	Corridor Ground Floor	1	76,45	2,19		167,43			
	Caffe Hall	1	34,13	8,41		287,03			
	Hall	1	12,42	12,42		154,26			
	Hall Floor 1	1	8,77	3,63		31,84			
	Reception	1	8,50	5,15		43,78			
		1	4,00	8,77		35,08			
		1	3,84	2,27		8,72			
							10.752,20	4,74	50.965,43

TOTAL CAPÍTULO 8 COATINGS..... 231.825,89

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 9 CARPENTRY								
9.1	**ud Swinging Wooden Door 097x210cm**								
	Swinging wooden door, blind and made with pine, claws of galvanized steel fixation and lock chromed. These interior door is 0,97m of width and 2,10 of height.								
							112,00	223,50	25.032,00
9.2	**ud Swinging Aluminium Door 2L 194x210cm**								
	Double hollow core doors in wood veneer finishes with non-standard uprights. These doors are 1.94m of width and 2,10 of height.								
							2,00	520,00	1.040,00
9.3	**ud Fiberglass Glass Panel Exterior Door 194x210cm**								
	Fiberglass Glass Panel Exterior Door, it consists in a double hollow core doors in wood veneer finishes. These doors are 1,94m of width and 2,10m of height.								
							2,00	638,00	1.276,00
9.4	**ud Fire Exit Doors 194x210cm**								
	Fire exit doors with panic/crash bars, with panic hardware CE rated and a 2mm Frame with 1mm Leaf with inbuilt steel strengthening. According BBR regulations.								
							3,00	310,00	930,00
9.5	**ud Sliding Aluminium Windows 2L 210x130cm**								
	Sliding aluminium windows with a dimension of 2,1m of width and 1,3 of height, composed by two panels. These windows will have a double glazing of 24mm colorless with a dehydrated air chamber of 6mm sealed, with double sealed of butyl and poly sulphur, made with anodized aluminium profiles with a natural color.								
							55,00	280,00	15.400,00
9.6	**m2 CLIMALIT SILENCE 33.1/16/6 40dB**								
	Double glazed Rw = 40 dB, with total thickness 28 mm, consisting of a sound security and Silence Stadip laminated glass 6 mm. thick (3 +3) and Planilux colorless float glass 6mm and dehydrated air chamber of 16 mm with aluminum separator and double perimeter seal affixed to carpentry coined by Block perimeter and lateral support and seal cold neutral silicone, even placing reeds.								
	East Facade	2	6,86	1,93		26,48			
	East Facade	2	1,85	1,93		7,14			
	East Facade	1	0,50	1,93		0,97			
	East Facade	1	8,08	1,93		15,59			
							50,18	86,92	4.361,65
9.7	**ud Swinging Aluminium Windows 110x130cm**								
	Swinging aluminium windows with a dimension of 1,1m of width and 1,3 of height. These windows will have a double glazing of 24mm colorless with a dehydrated air chamber of 6mm sealed, with double sealed of butyl and poly sulphur, made with anodized aluminium profiles with a natural color.								
							1,00	220,00	220,00
9.8	**ud Fiberglass Glass Panel Exterior Door 194x254cm**								
	Fiberglass Glass Panel Exterior Door, it consists in a double hollow core doors in wood veneer finishes. These doors are 1,94m of width and 2,54m of height.								
							2,00	640,00	1.280,00
	TOTAL CAPÍTULO 9 CARPENTRY.....								**49.539,65**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 10 INSTALATIONS								
10.1	**ud Lift**								
	Electric elevator without machine room with 1 entrance 900mm thick. The maximum capacity is 13 people/1000kg. The dimensions of the internal car are 1,10m wide, 2,10m deep and 2,22m of height, while the dimensions of the hoistway are 1,685m wide and 2,40m deep. Sliding door.								
							1,00	27.459,42	27.459,42
10.2	**ud Electric Radiator**								
	Aluminium thermodynamic radiators, with controls located on the top, energy saving proportional thermostat and a humidifier. The wattage of each radiator is 600W, and the dimensions are 58cm height, 56.4cm width and 10 cm depth.								
							109,00	253,00	27.577,00
10.3	**ud Cold Water Installation**								
	Cold water distribution made with electrolytic copper pipe with meetings welded, in dimensions and diameters according to drawings. Installed, verified and measured.								
							1,00	52.252,50	52.252,50
10.4	**ud Rush**								
	Undertaken in general PVC pipes, 200mm diameter, comprising collar double buttress, key field, male threaded sleeve, fifty feet low density polyethylene tube of 50mm diameter and 10 atmospheres pressure and imput household connection, including registration casket 40x40cm perforated brick 24x11.5x9cm, 5cm slab of HM-20 with drain hole, trench and excavation rights and permissions for the connection, without replacement of flooring, fully installed, connected and in perfect working order.								
							1,00	863,01	863,01
10.5	**ud Deposit**								
	Enamelled steel tank with 500 liter capacity, for installation of hot water up to 10 bar at 90ºC, conical coil primary circuit of high-performance, full control panel that includes thermometer, thermostat and swtch winter/summer safety valve with pressure gauge, automatic power bleeder, shutoff valves, power protection, valves, fittings anbrackets for mounting upright electrificable by electrical resistance in the secondary, with cathodic magnesium protection anode and an indicator of your state, fully installed, wiring and proper operating condition, including tests.								
							1,00	2.240,40	2.240,40
10.6	**ud General Protection Box**								
	General protection box with double insulation scheme, with bases and fuse 250A, equipped with 6--240mm2 terminals for the line deliverer and O in rush, made self-extinguishing material autoventilated, including neutral grounding cable VR0.6/1kV sectionmm2 copper ax, fully installed in civil engineering niche, connected and in a good working order.								
							1,00	286,89	286,89
	TOTAL CAPÍTULO 10 INSTALATIONS								**110.679,22**

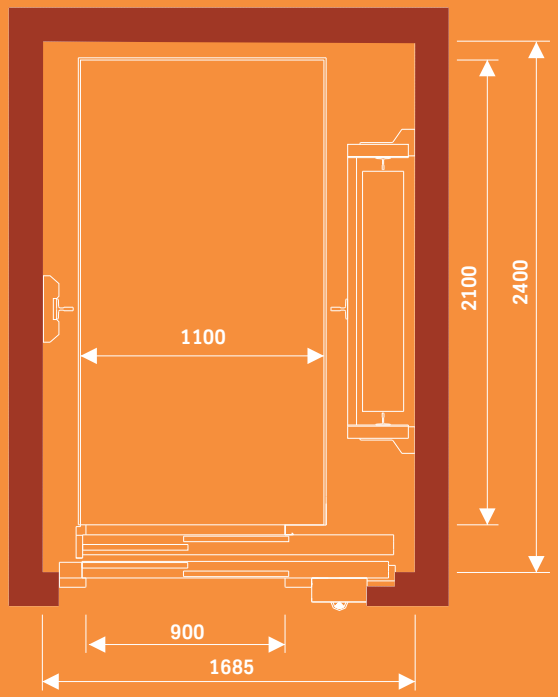
CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 11 EQUIPMENT								
11.1	**ud Bathtub 90x165cm**								
	Acrylic resin Bathtub and reinforced with fiberglass, Sybil 165x90 Metaliberica model with central drain, with external mixer tap faucet with automatic diverter bath-shower, flexible shower hose 160 cm. hinge bracket and chrome, installed and running.								
							48,00	420,25	20.172,00
11.2	**ud White Toilet High Porcelain**								
	Vitreous china toilet tank for high heels and screws placed through the flooring, even sealed with silicone, and comprising: mug, porcelain tank top, PVC pipe and cuve of 32mm, to drop water from the tank. Lacquered seat cover with steel hinges, installedm even with bracket wrench 1/2" chrome flexible hose of 20 cm and 1/2". Placed and working.								
							46,00	154,95	7.127,70
11.3	**ud Dissabled Toilet, low Tank**								
	Special toiled for disabled people with low tank made of white vitreous china, set on the ground with 4 anchor points, equipped with ergonomic seat opened at the front and a white cap and tank drive unit. Installed and running. Even valve 1/2" chrome and flexible hose of 20cm 1/2"								
							17,00	320,00	5.440,00
11.4	**ud Inox Steel Basin**								
	Basin of polished stainless steel-sided. with wall to wall brackets, chrome mixer taps with aerayor, including drain valve 32mm and siphon chrome bracket keys 1/2" flexible chromehose 20cm, installed and working.								
							36,00	360,00	12.960,00
11.5	**ud Disabled Basin**								
	Special lavatory for the disabled people, vitreous china in white, with concave basin, elbows and lift support for splash, fitted top and soap drain side bolts placed through the wall, with single lever mixer tap. With power aerator and flexible, chrome, including drain valve 32 mm., angle valves 1/2" chrome and flexible hose 20cm, and 1/2". Placed.								
							17,00	410,00	6.970,00
11.6	**ud Bidet**								
	Vitreous china bidet in white with mounting kit, including drain valve 1 1/2" siphon tube, placed and mansory support. Placed and masonry support.								
							48,00	116,44	5.589,12
	TOTAL CAPÍTULO 11 EQUIPMENT								**58.258,82**

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	PARCIALES	CANTIDAD	PRECIO	PRICE
	CAPÍTULO 12 MISCELANEOUS								
12.1	**m3 Concrete Ramp**								
	Ramp for disable people made with concrete, includes staking, shuttering and stripping, extended concrete; incorporation of surface layer by dusting (yield 5.0 kg/m2.); mechanical trowelled, smoothing and polishing; concrete curing with colorless liquid (yield 0.15 kg/m2.). Measured of the actually executed surface.								
	Entrance ramp	1	5,68	1,00	0,11	0,62			
	Entrance ramp	1	5,68	1,50	0,06	0,51			
	Caffe ramp	1	5,58	1,00	0,11	0,61			
	Caffe ramp	1	5,58	1,50	0,06	0,50			
	Caffe ramp	2	2,50	1,50	0,06	0,45			
	Emergency ramp	1	2,17	1,00	0,11	0,24			
	Emergency ramp	2	2,50	1,50	0,06	0,45			
							3,38	9,54	32,25
12.2	**ud Emergency Staircase**								
	Emergency metallic stairs 1 floor, maximum height 3 m, one straight sections and two intermediate supports of steel S 275 JR. With a width of 1 m and a overload use of 400 kg / m², made in shop work and assembled in site. Reinforced concrete foundation, made of HA-25/B/20/IIa concrete manufactured in Central and steel pouring from truck and steel B 500 S, amount 50 kg / m³.								
							2,00	6.312,16	12.624,32
12.3	**ud Toiler Paper Dispenser EPOXI.BLA.**								
	Supply and installation of toilet paper dispenser 250/300 m., With metal case, finished in white epoxy. Placed by anchors to the wall, and installed.								
							63,00	31,72	1.998,36
12.4	**ud Electric HandDryer 200W**								
	Electronic hand dryer by hot air, without push control, by hand approximation, with 200W power. and air flow rate 40 l / s, of 300x225x160 mm. Installed.								
							2,00	67,56	135,12
12.5	**ud Mirror 82x100 cm. With Light points**								
	Supply and installation of bathroom mirror of 82x100 cm., Equipped with light sconces with beveled edges, placed, not including electrical connections.								
							51,00	208,63	10.640,13
12.6	**ud Liquid Soap Dispenser**								
	Supply and installation of liquid soap dispenser of 1 l. with push button, transparent deposit and cover ABS white or black, anchors placed in the wall, and installed.								
							51,00	19,62	1.000,62
	TOTAL CAPÍTULO 12 MISCELANEOUS								**26.430,80**
	TOTAL								**1.865.517,56**

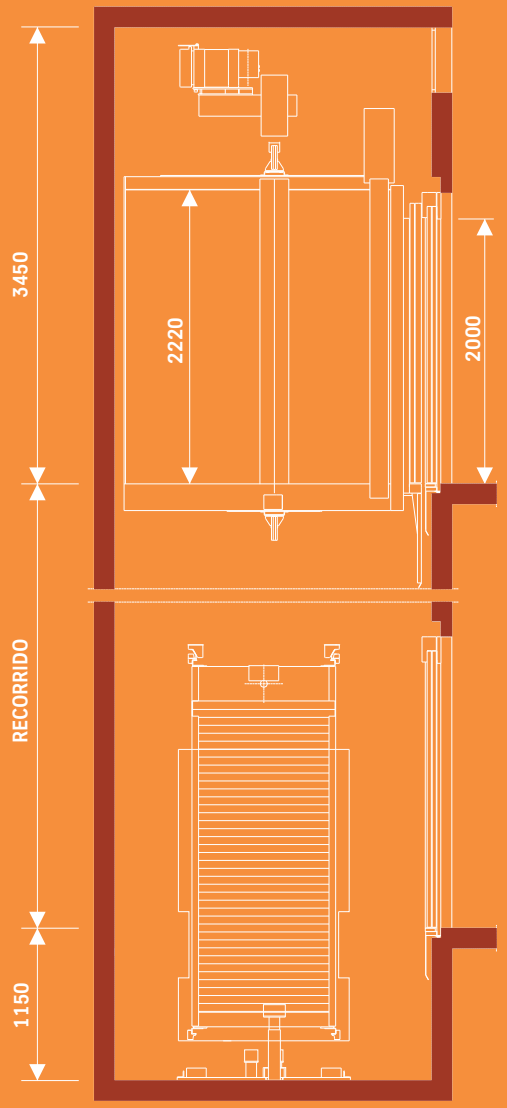
7. LIFT DATASHEET

synergy	Ascensor Eléctrico sin cuarto de máquinas	ThyssenKrupp Elevadores
Modelo: syn1000-01	Un embarque - 1000Kg - 13 personas - Puerta 900	

PLANTA DE PISO



ALZADO



CARGA	CAPACIDAD	EMBARQUES	CABINA			HUECO				PUERTAS
Kg	Personas		CA	CB	A	HA	HB	R.L.S.	FOSO	P
1.000	13	Un embarque	1.100	2.100	2.220	1.685	2.400	3.450	1.150	900

Puerta volada en el fondo del hueco en 50 mm para accesos frontales y 60 mm para accesos a 180º

Para puerta volada totalmente en el hueco, la cota HB deberá ir incrementada en 94 mm para accesos frontales y en 168 mm para accesos a 180º

Consultar medidas de huecos para ascensores con puertas centrales

Para todos los modelos synergy con paracaidas en contrapeso no se necesita un ancho de hueco superior al indicado en tabla (HA)

8. DRAWINGS

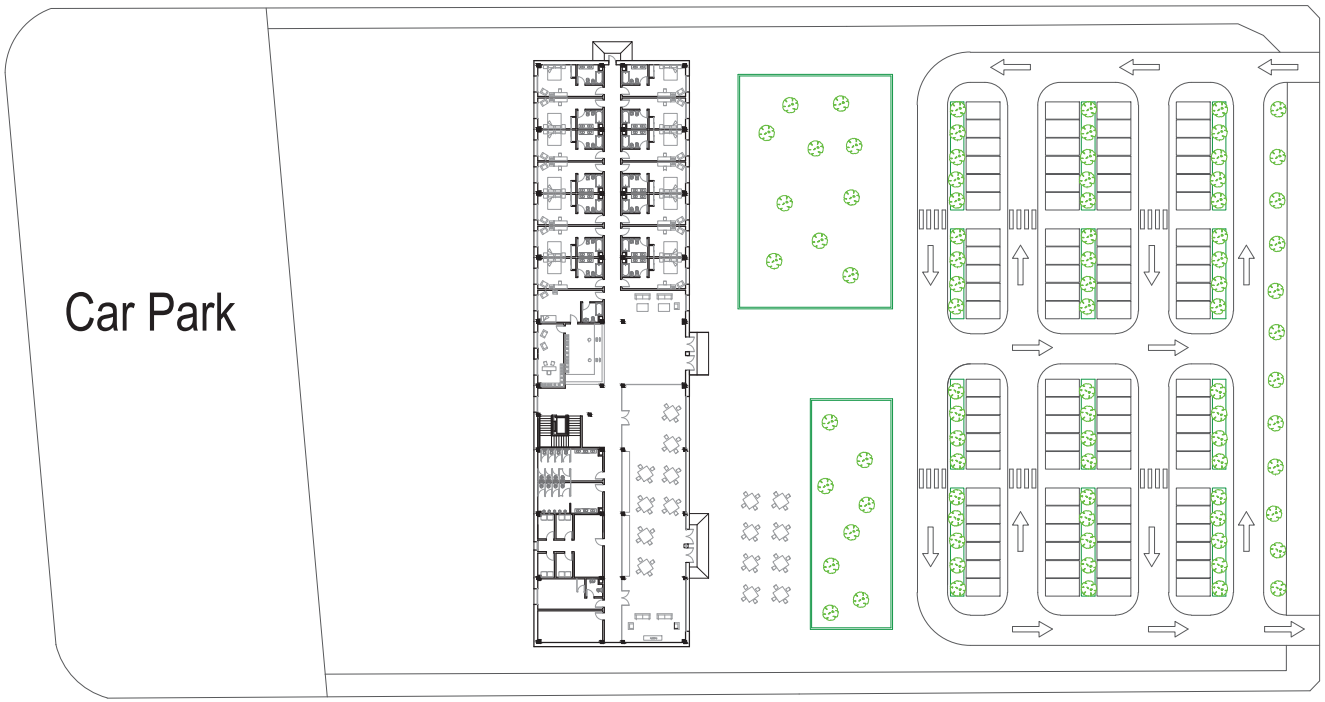
North

East

West

South

STUVAREGATAN



STATIONSGATAN

STYRMANSGATAN

Motel Construction Project in Halmstad, Sweden	Nº: 1
AUTHOR: Victor Collado Sebastiá	SIGNATURE::
DRAWING: Location of the building in the plot	
DATE: June 2014 SCALE: 1:1000	

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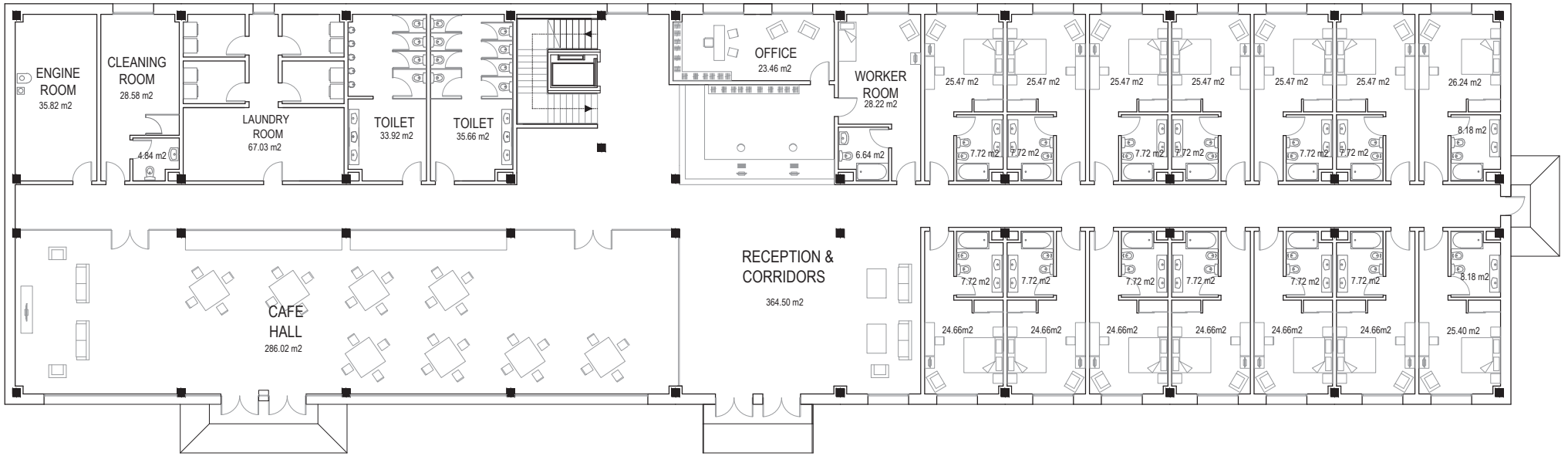

Motel Construction Project in Halmstad, Sweden		Nº: 2
AUTHOR:	Victor Collado Sebastiá	SIGNATURE::
DRAWING:	Distribution. Ground Floor	
DATE: June 2014	SCALE: 1:300	

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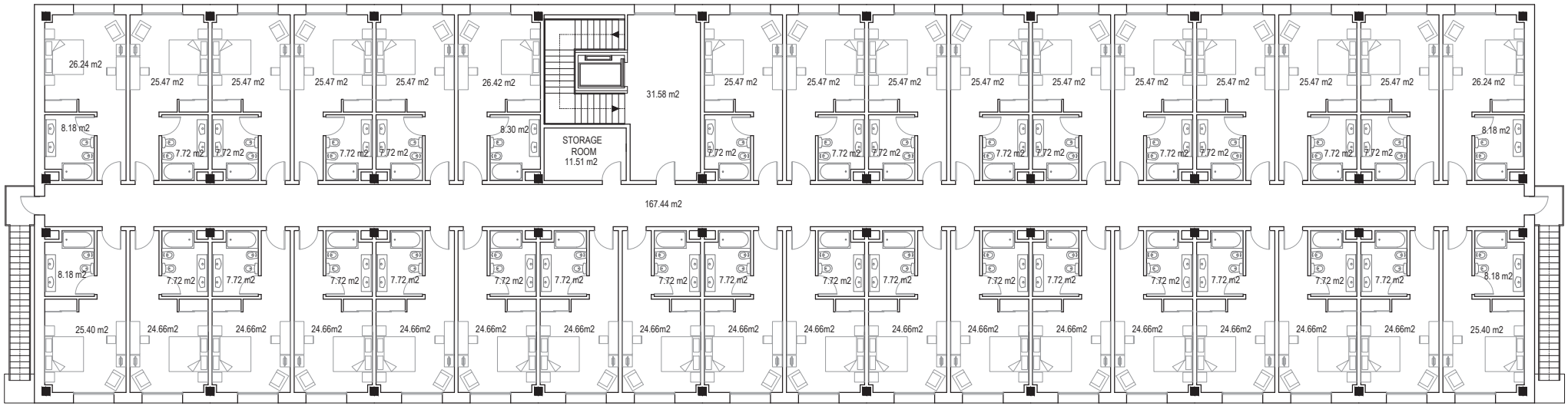

Motel Construction Project in Halmstad, Sweden		Nº: 3
AUTHOR:	Victor Collado Sebastiá	SIGNATURE::
DRAWING:	Distribution. First Floor	
DATE: June 2014	SCALE: 1:300	

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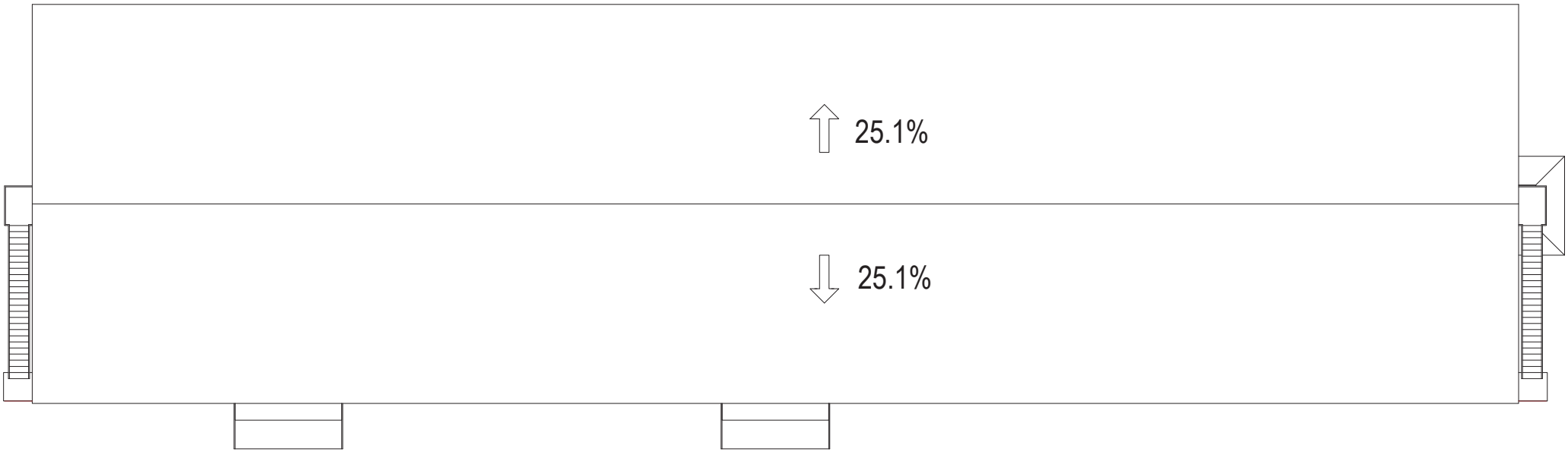

Motel Construction Project in Halmstad, Sweden		Nº: 4
AUTHOR:	Victor Collado Sebastiá	SIGNATURE::
DRAWING:	Roof	
DATE: June 2014	SCALE: 1:300	

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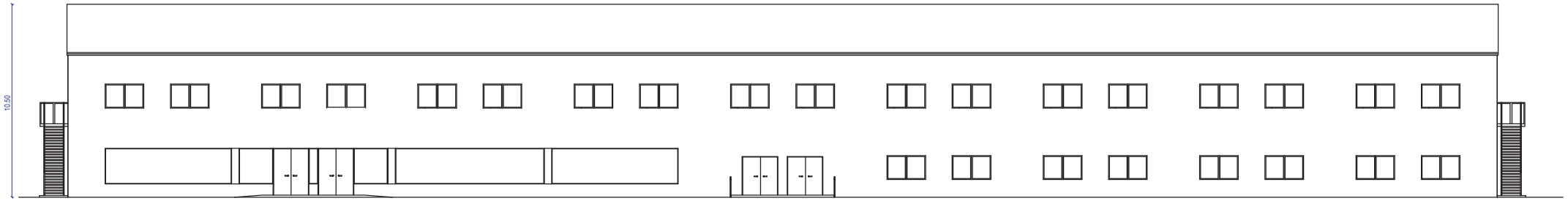
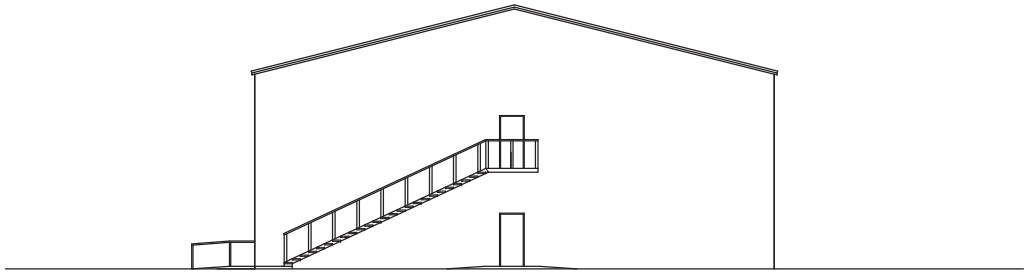
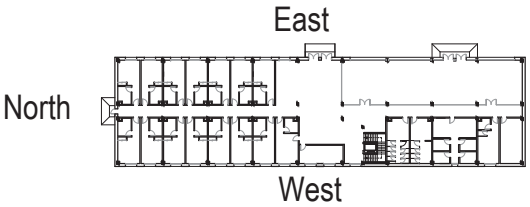


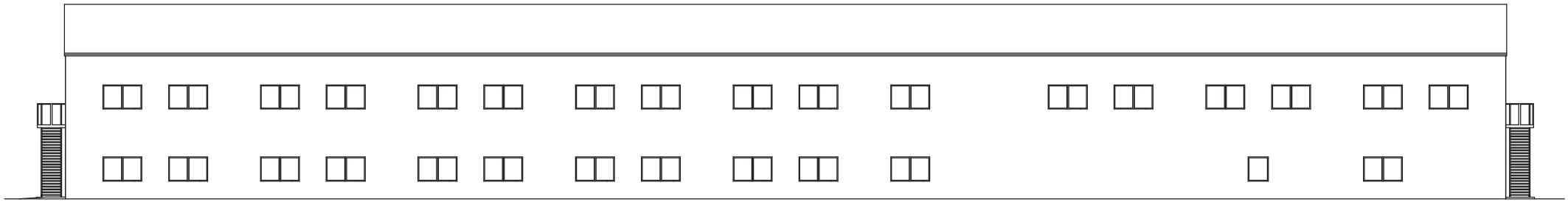
EAST FACADE



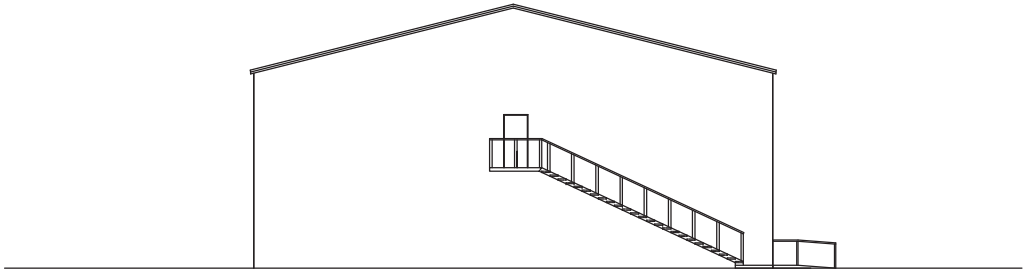
NORTH FACADE



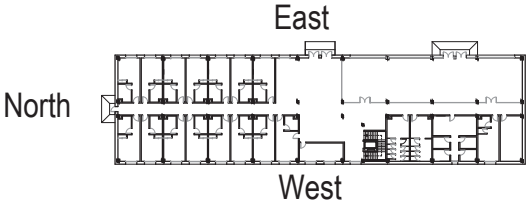
Motel Construction Project in Halmstad, Sweden	Nº: 5
AUTHOR: Victor Collado Sebastiá	SIGNATURE::
DRAWING: Facades 1	
DATE: June 2014 SCALE: 1:300	



WEST FACADE

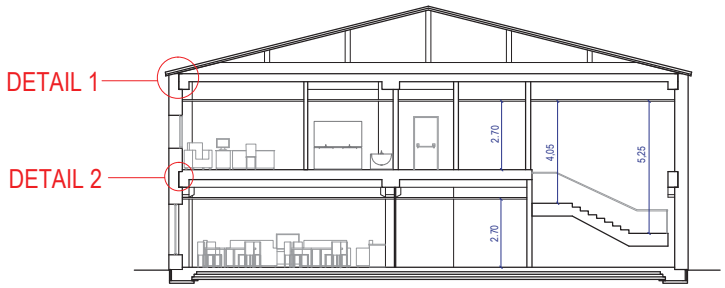


SOUTH FACADE

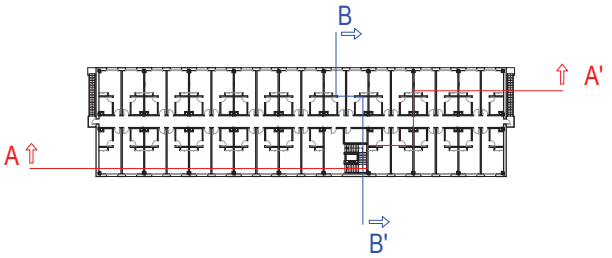


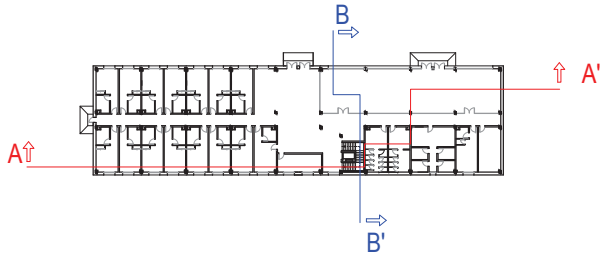
Motel Construction Project in Halmstad, Sweden	Nº: 6
AUTHOR: Victor Collado Sebastiá	SIGNATURE::
DRAWING: Facades 2	
DATE: June 2014 SCALE: 1:300	

SECTION A-A'

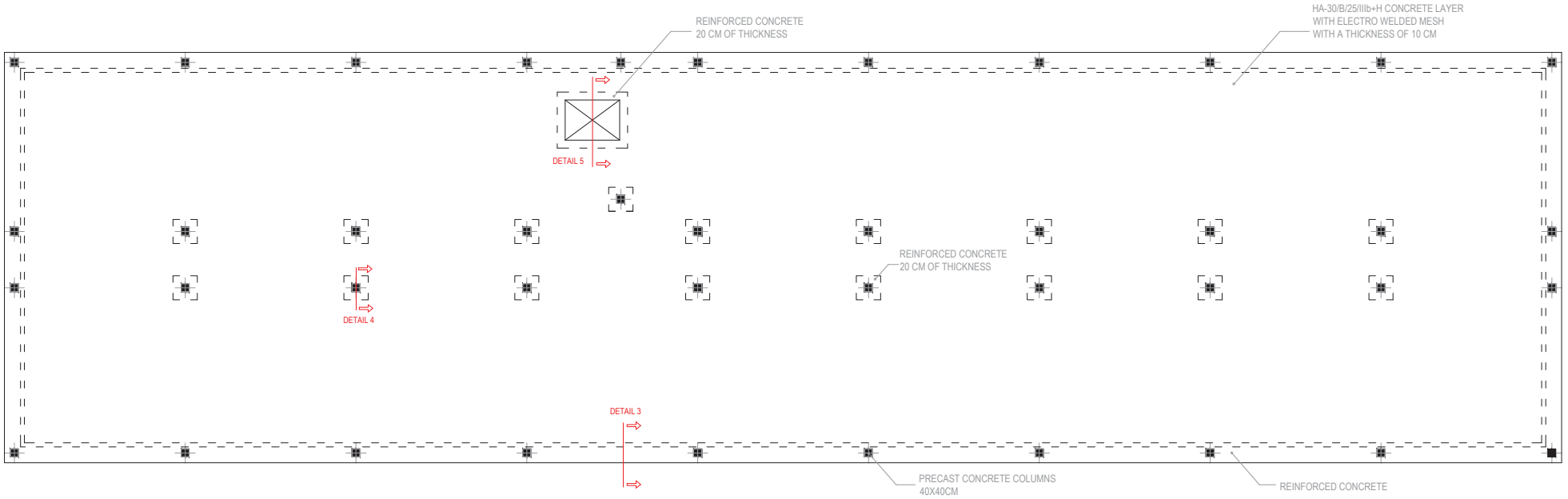


SECTION B-B'

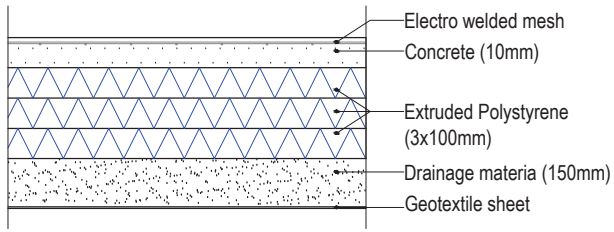




Motel Construction Project in Halmstad, Sweden	Nº: 7
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Sections	
DATE: June 2014 SCALE: 1:300	



GROUND SLAB SECTION



Motel Construction Project in Halmstad, Sweden		Nº: 8
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Structure. Foundation	
DATE: June 2014	SCALE: 1:300	

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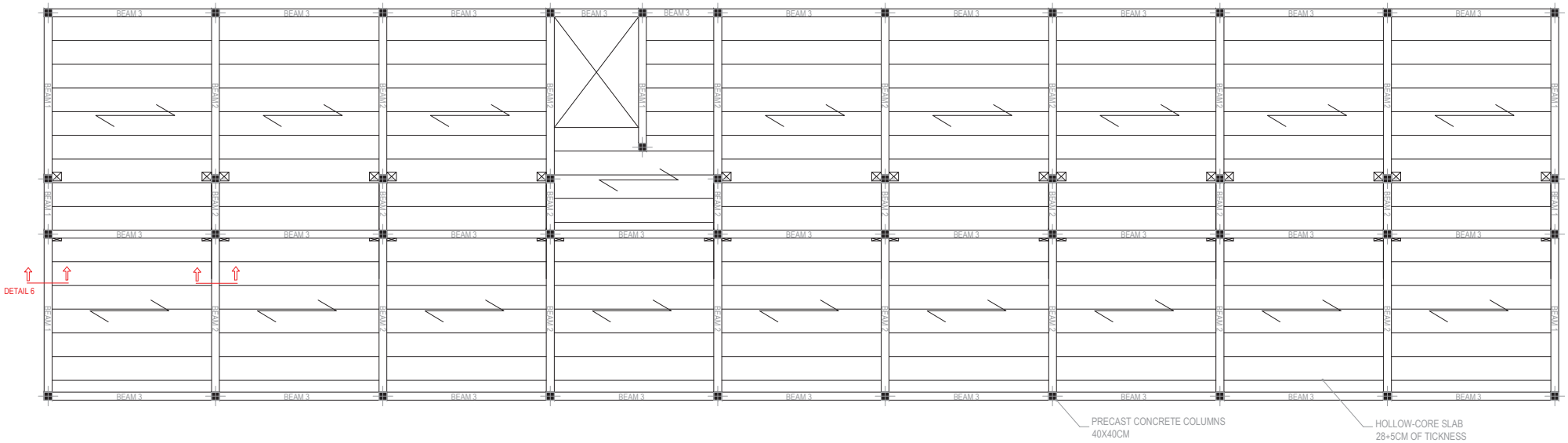
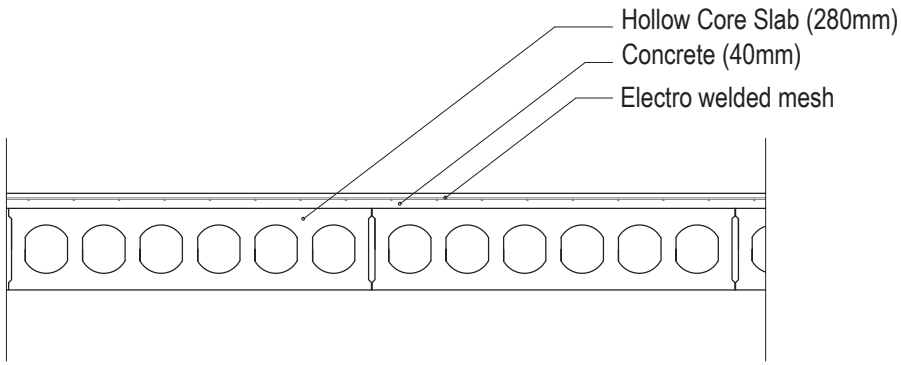
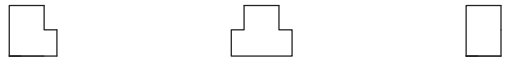


HOLLOW CORE SLAB SECTION



BEAMS SECTIONS

BEAM 1 BEAM 2 BEAM 3



Motel Construction Project in Halmstad, Sweden		Nº: 9
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Structure. Slab 1	
DATE: June 2014	SCALE: 1:300	

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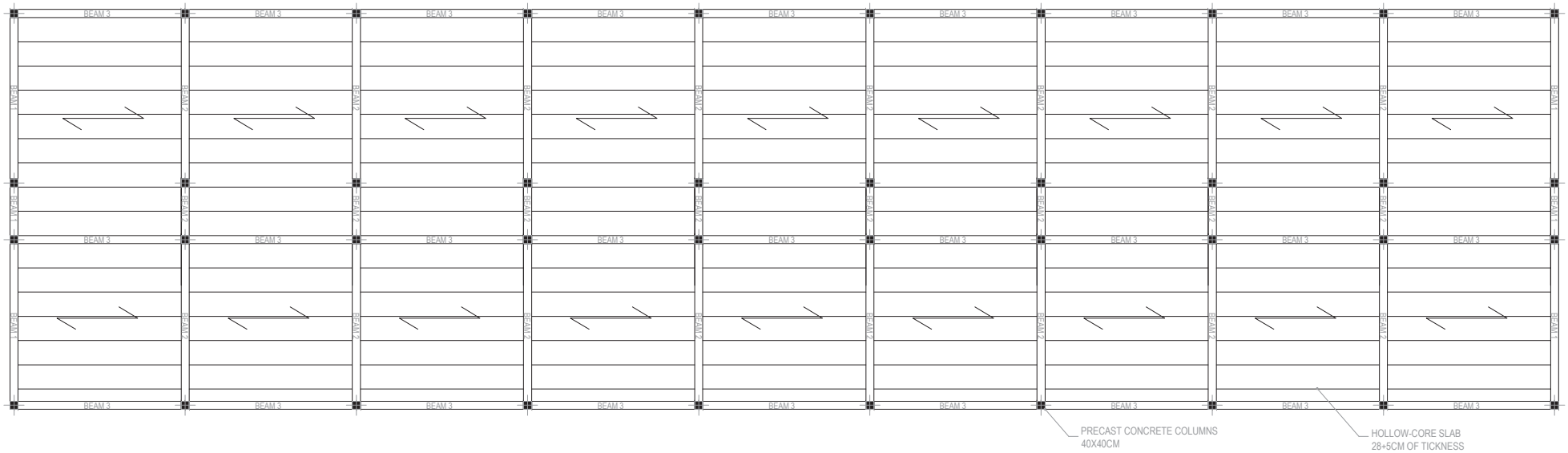
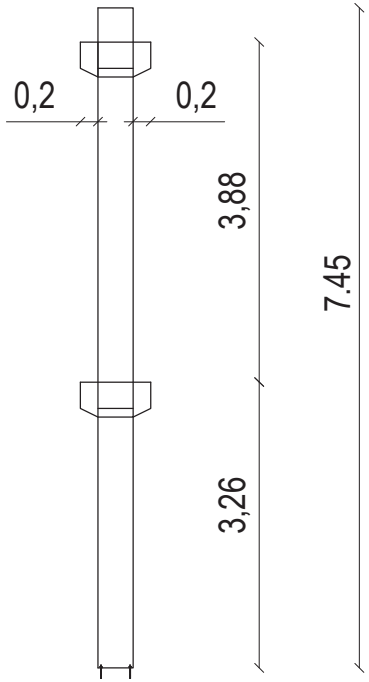
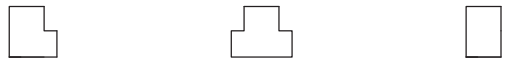


PRECAST CONCRETE COLUMN



BEAMS SECTIONS

BEAM 1 BEAM 2 BEAM 3



Motel Construction Project in Halmstad, Sweden		Nº: 10
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Structure. Slab 2	
DATE: June 2014	SCALE: 1:300	

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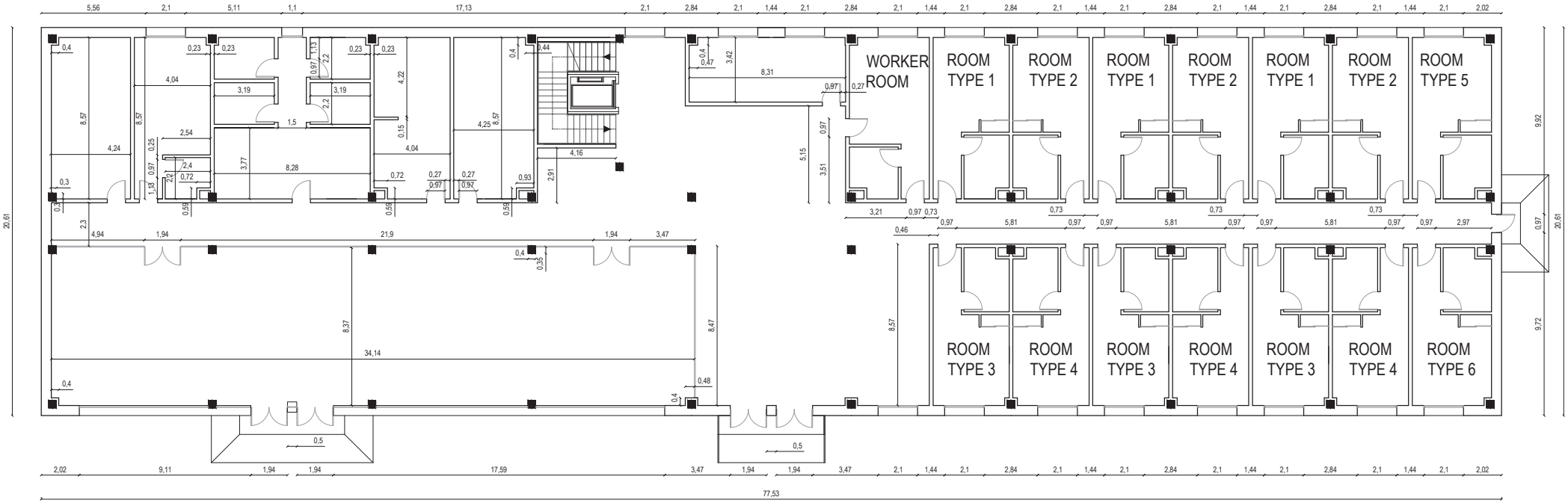

Motel Construction Project in Halmstad, Sweden		Nº: 11
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Dimensions. Ground Floor	
DATE: June 2014	SCALE: 1:300	

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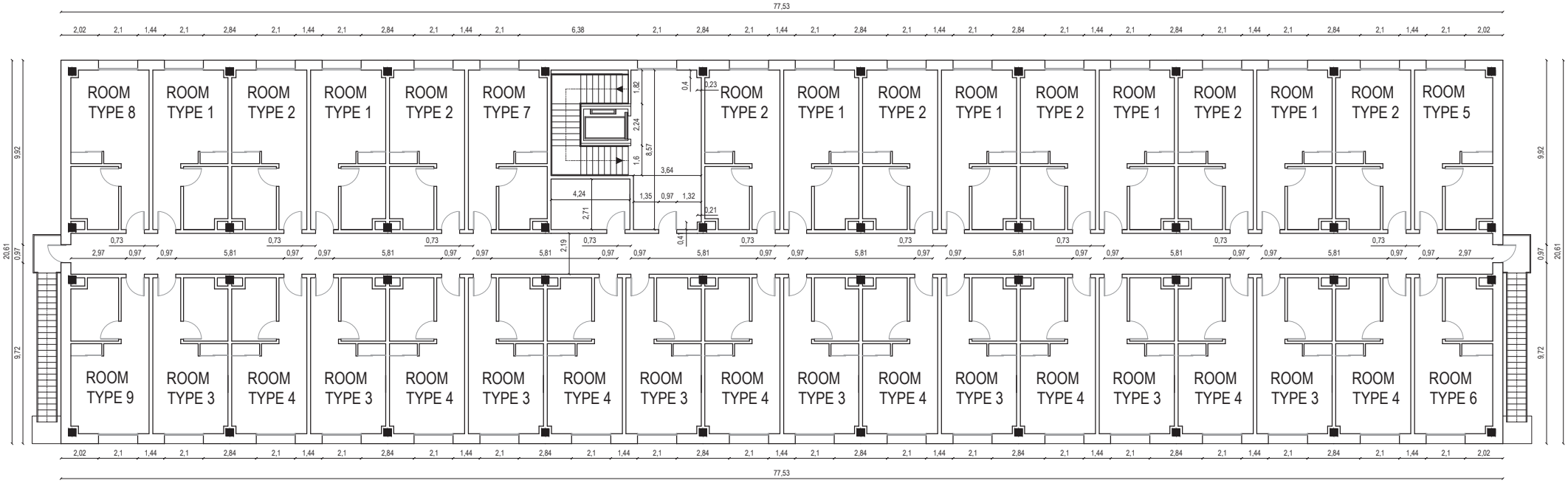
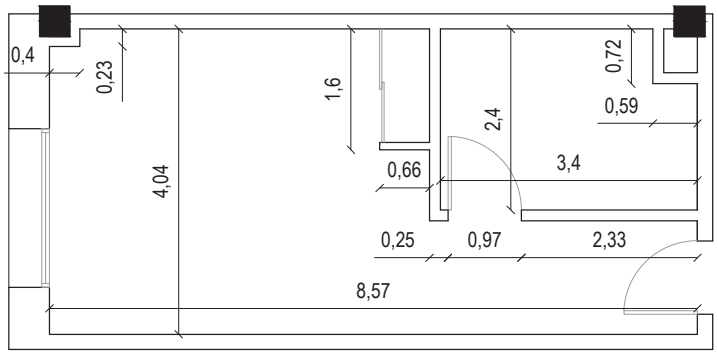
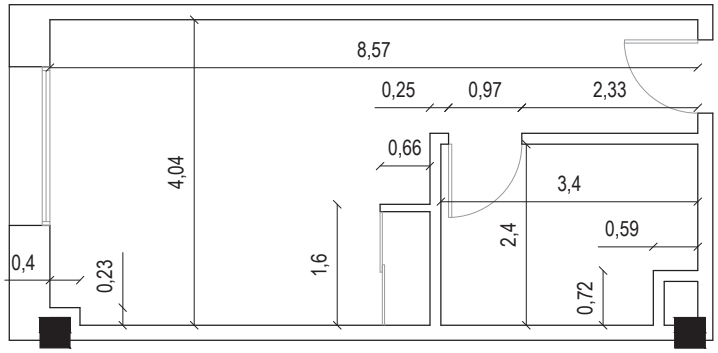


Motel Construction Project in Halmstad, Sweden		Nº: 12
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Dimensions. First Floor	
DATE: June 2014	SCALE: 1:300	

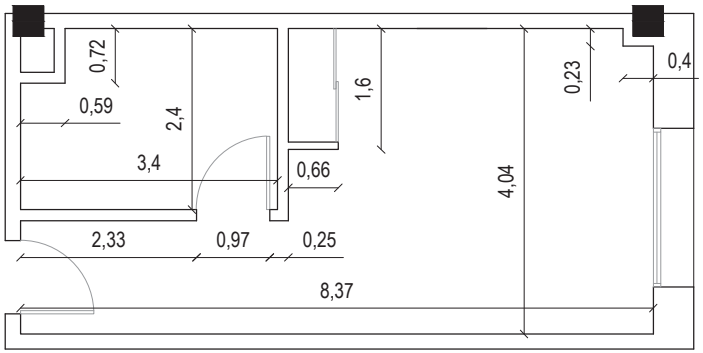
ROOM TYPE 1



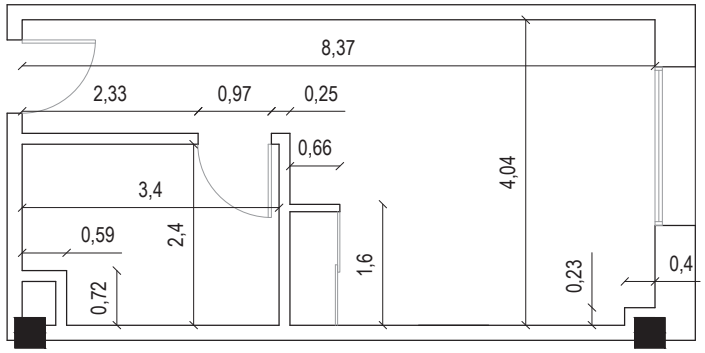
ROOM TYPE 2



ROOM TYPE 3



ROOM TYPE 4



Motel Construction Project in Halmstad, Sweden	Nº: 13
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Dimensions. Rooms 1,2,3 & 4	
DATE: June 2014 SCALE: 1:100	

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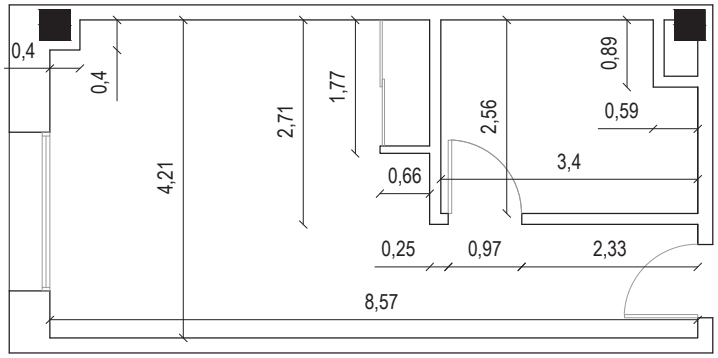
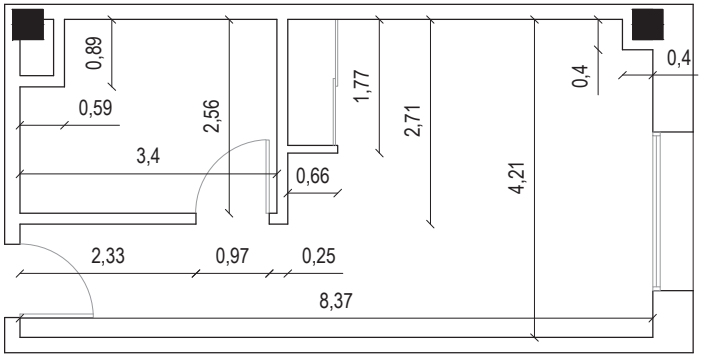
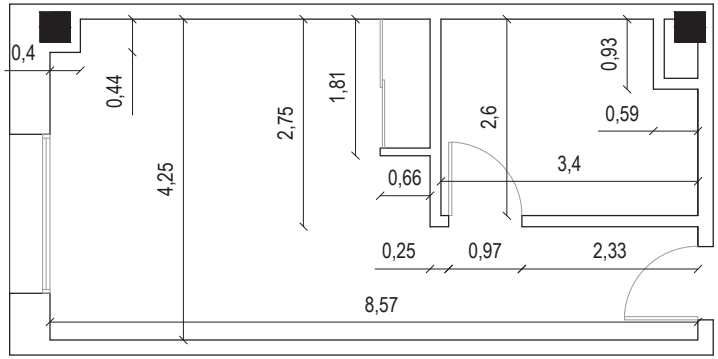
ROOM TYPE 5



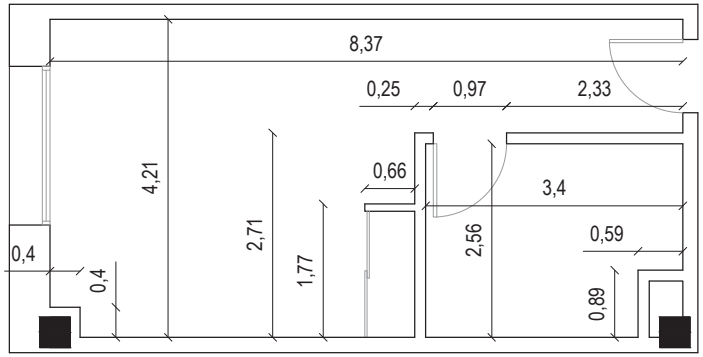
ROOM TYPE 6



ROOM TYPE 7

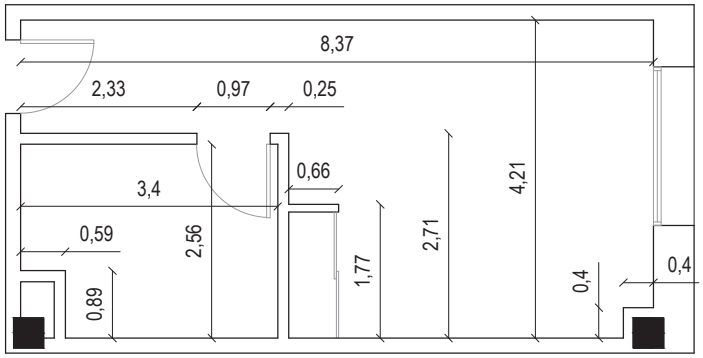


ROOM TYPE 8

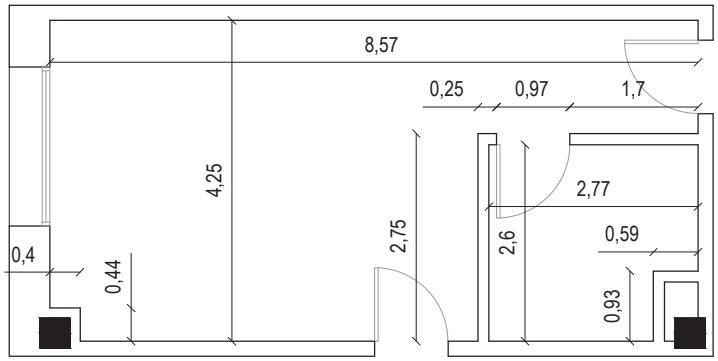


Motel Construction Project in Halmstad, Sweden	Nº: 14
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Dimensions. Rooms 5,6,7 & 8	
DATE: June 2014 SCALE: 1:100	

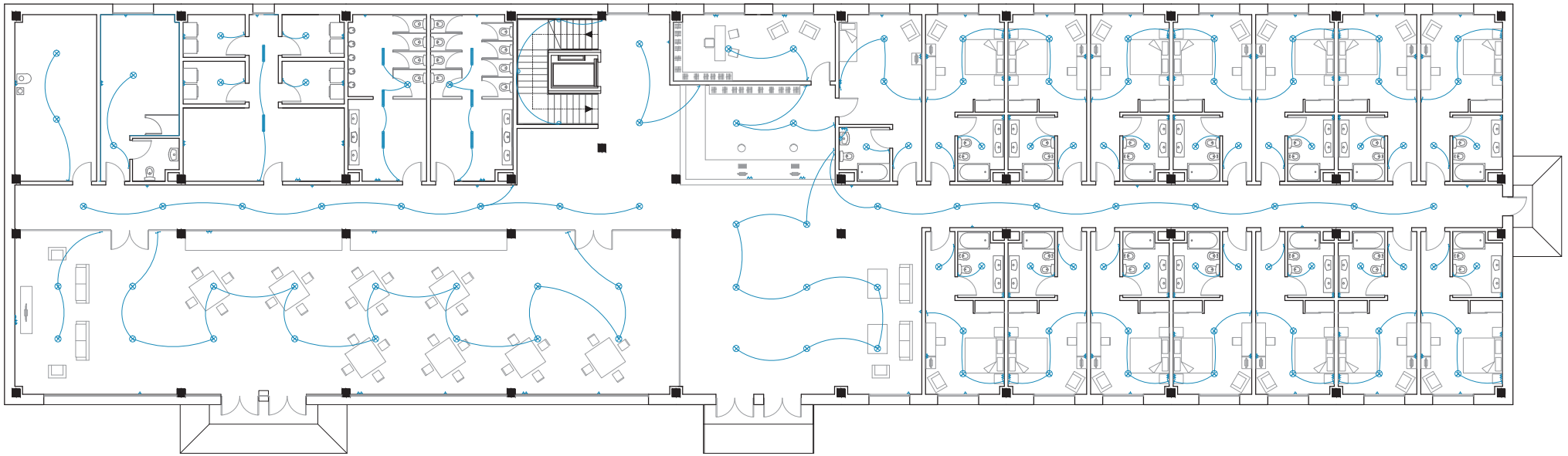
ROOM TYPE 9



WORKER ROOM



Motel Construction Project in Halmstad, Sweden	Nº: 15
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Dimensions. Room 9 & Worker room	
DATE: June 2014 SCALE: 1:100	



LEGEND

- CABLE
- DOUBLE SWITCH
- SIMPLE SWITCH
- SOCKET
- SOCKET ANTENA TV.
- SWITCHED POINT OF LIGHT
- SWITCHED POINT OF LIGHT, IN WALL
- FLUORESCENT 1/40W

Motel Construction Project in Halmstad, Sweden		Nº: 16
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Electricity. Ground Floor	
DATE: June 2014	SCALE: 1:300	

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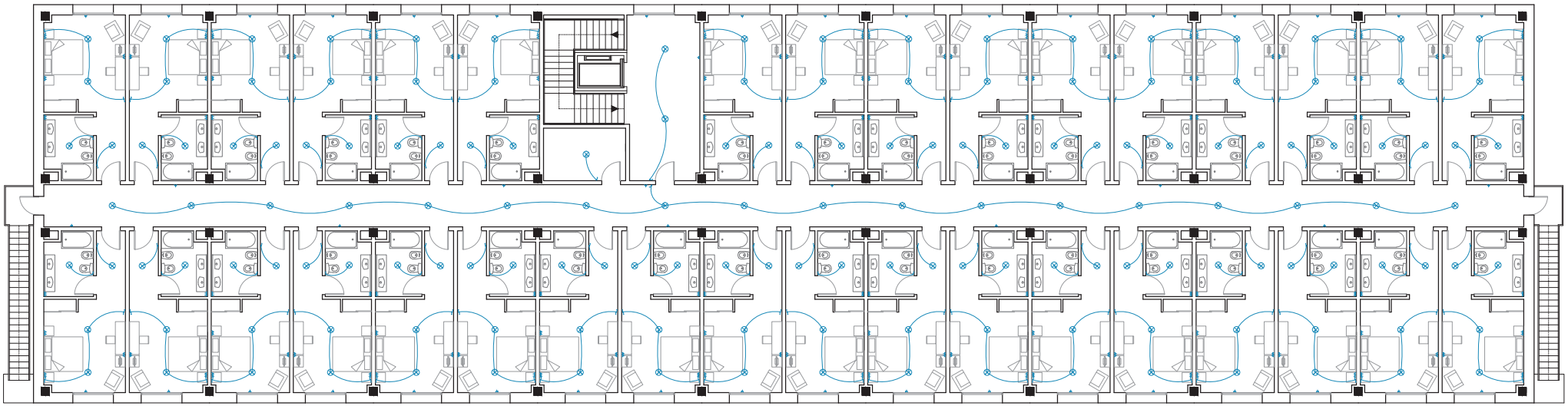

LEGEND
CABLE
DOUBLE SWITCH
SIMPLE SWITCH
SOCKET
SOCKET ANTENA TV.
SWITCHED POINT OF LIGHT
SWITCHED POINT OF LIGHT, IN WALL
FLUORESCENT 1/40W

Motel Construction Project in Halmstad, Sweden		Nº: 17
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Electricity. First Floor	
DATE: June 2014	SCALE: 1:300	

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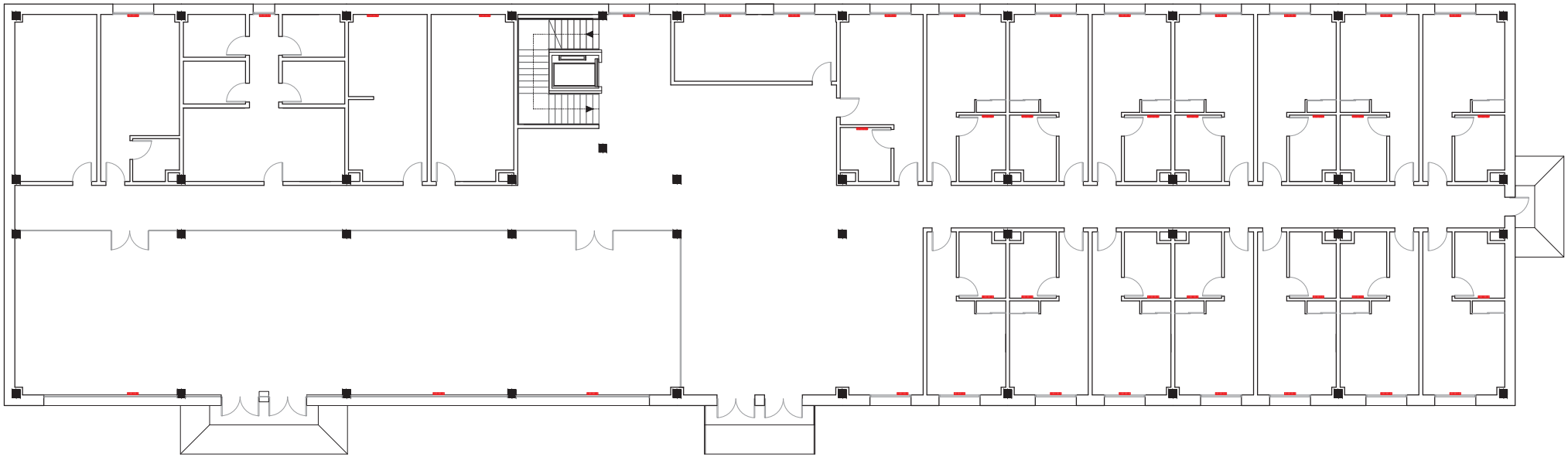

Motel Construction Project in Halmstad, Sweden	Nº: 18
AUTHOR: Victor Collado Sebastiá	SIGNATURE::
DRAWING: Radiators location. Ground Floor	
DATE: June 2014 SCALE: 1.300	

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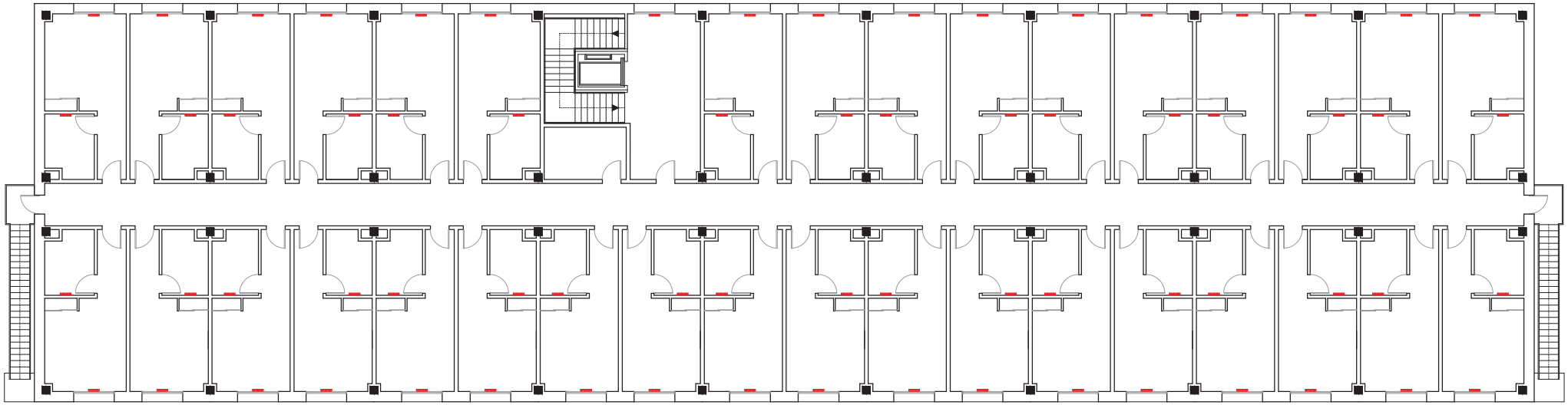
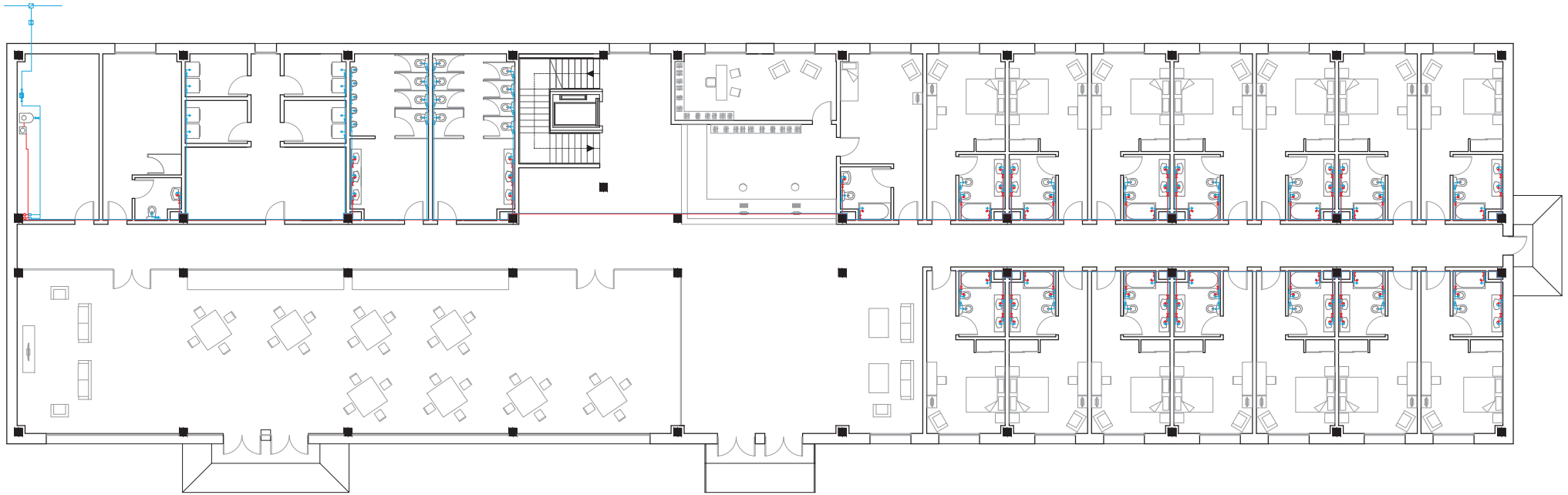


Motel Construction Project in Halmstad, Sweden	Nº: 19
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Radiators Location. First Floor	
DATE: June 2014 SCALE: 1:300	



LEGEND

- GENERAL METER
- GENERAL FAUCET
- COLD WATER PIPE
- HOT WATER PIPE
- FAUCET
- COLD WATER TAP
- HOT WATER TAP
- HEATER
- DEPOSIT
- REGISTRATION CHEST

Motel Construction Project in Halmstad, Sweden	Nº: 20
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Plumbing. Ground Floor	
DATE: June 2014 SCALE: 1:300	

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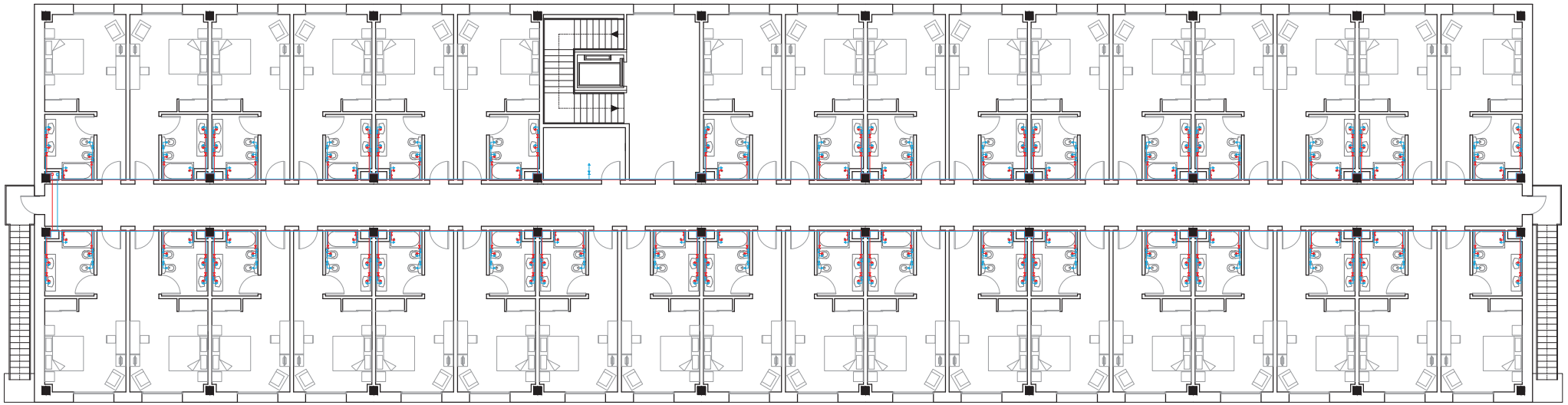

LEGEND

- GENERAL METER
- GENERAL FAUCET
- COLD WATER PIPE
- HOT WATER PIPE
- FAUCET
- COLD WATER TAP
- HOT WATER TAP
- HEATER
- DEPOSIT
- REGISTRATION CHEST

Motel Construction Project in Halmstad, Sweden	Nº: 21
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Plumbing. First Floor	
DATE: June 2014 SCALE: 1:300	

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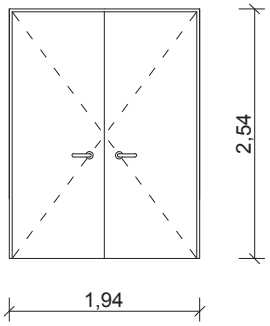
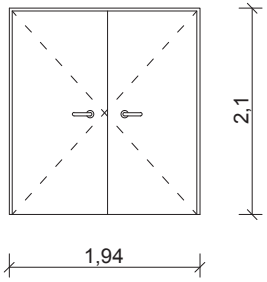
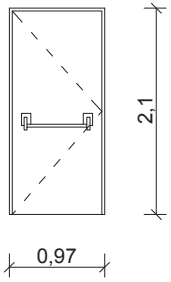
EXTERIOR CARPENTRY



DOOR 1

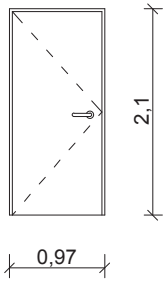


DOOR 2

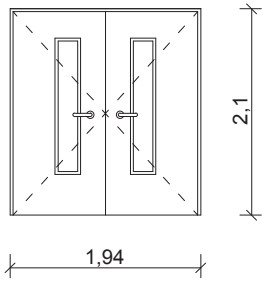


DOOR 3

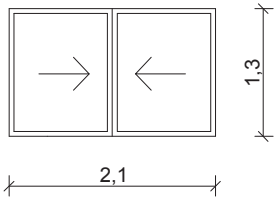
INTERIOR CARPENTRY

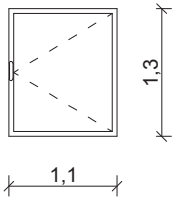


DOOR 4



DOOR 5





	AMOUNT	DIMENSIONS (m)	MATERIAL	MECHANISM
DOOR 1	2	1.94x2.54	Fiberglass	Swinging
DOOR 2	2	1.94x2.10	Fiberglass	Swinging
DOOR 3	3	0.97x2.10	Steel	Swinging
DOOR 4	112	0.97x2.10	Wood	Swinging
DOOR 5	2	1.94x2.10	Aluminium	Swinging
WINDOW 1	55	2.10x1.30	Aluminium	Sliding
WINDOW 2	1	1.10x1.30	Aluminium	Swinging

Motel Construction Project in Halmstad, Sweden		Nº: 22
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Carpentry	
DATE: June 2014	SCALE:	

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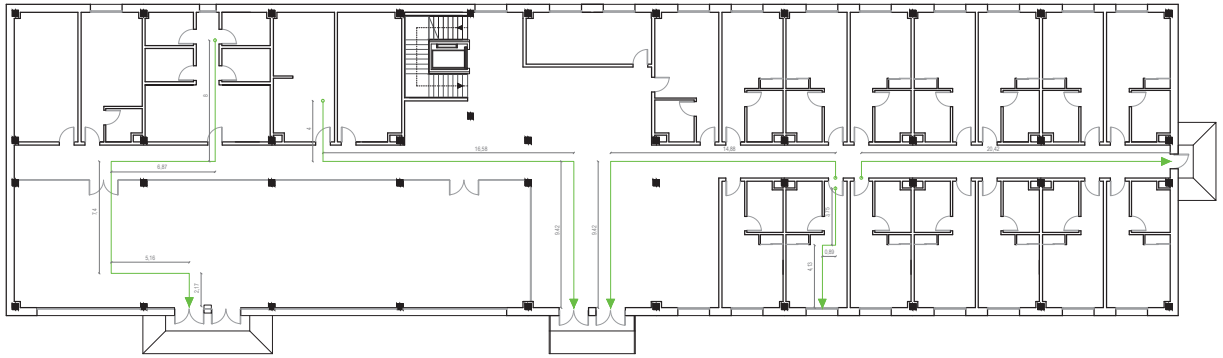
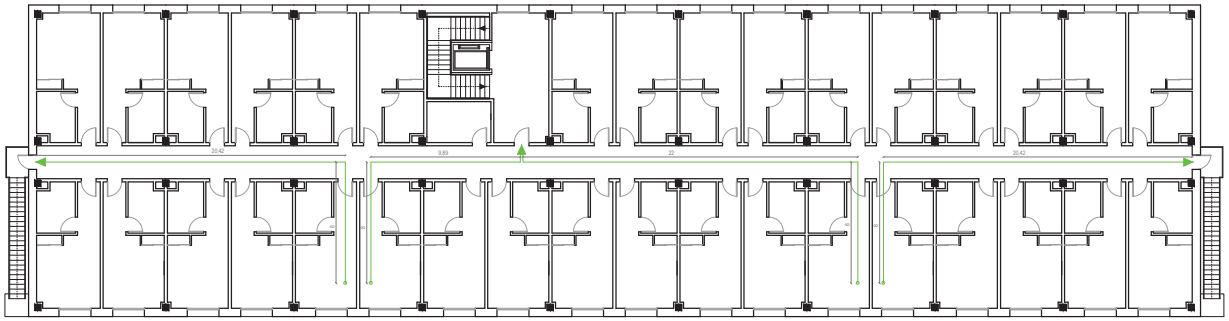
GROUND FLOOR



FIRST FLOOR



Motel Construction Project in Halmstad, Sweden		Nº: 23
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Escape Routes. Case of fire	
DATE: June 2014	SCALE: 1:500	

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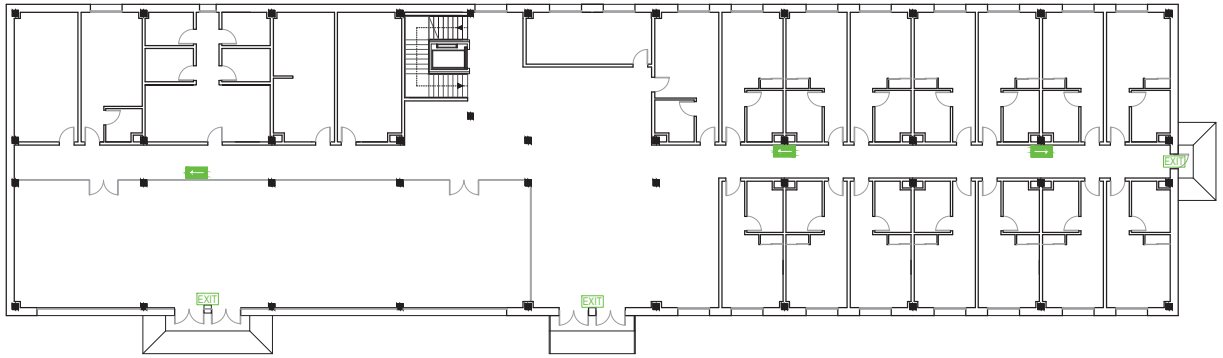
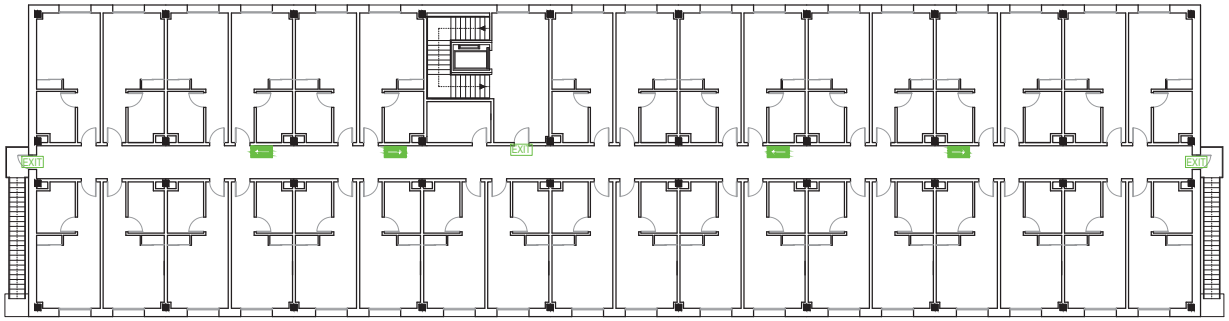
GROUND FLOOR



FIRST FLOOR



Motel Construction Project in Halmstad, Sweden		Nº: 24
AUTHOR:	Victor Collado Sebastiá	SIGNATURE:
DRAWING:	Exit Signs. Case of Fire	
DATE: June 2014	SCALE: 1:500	

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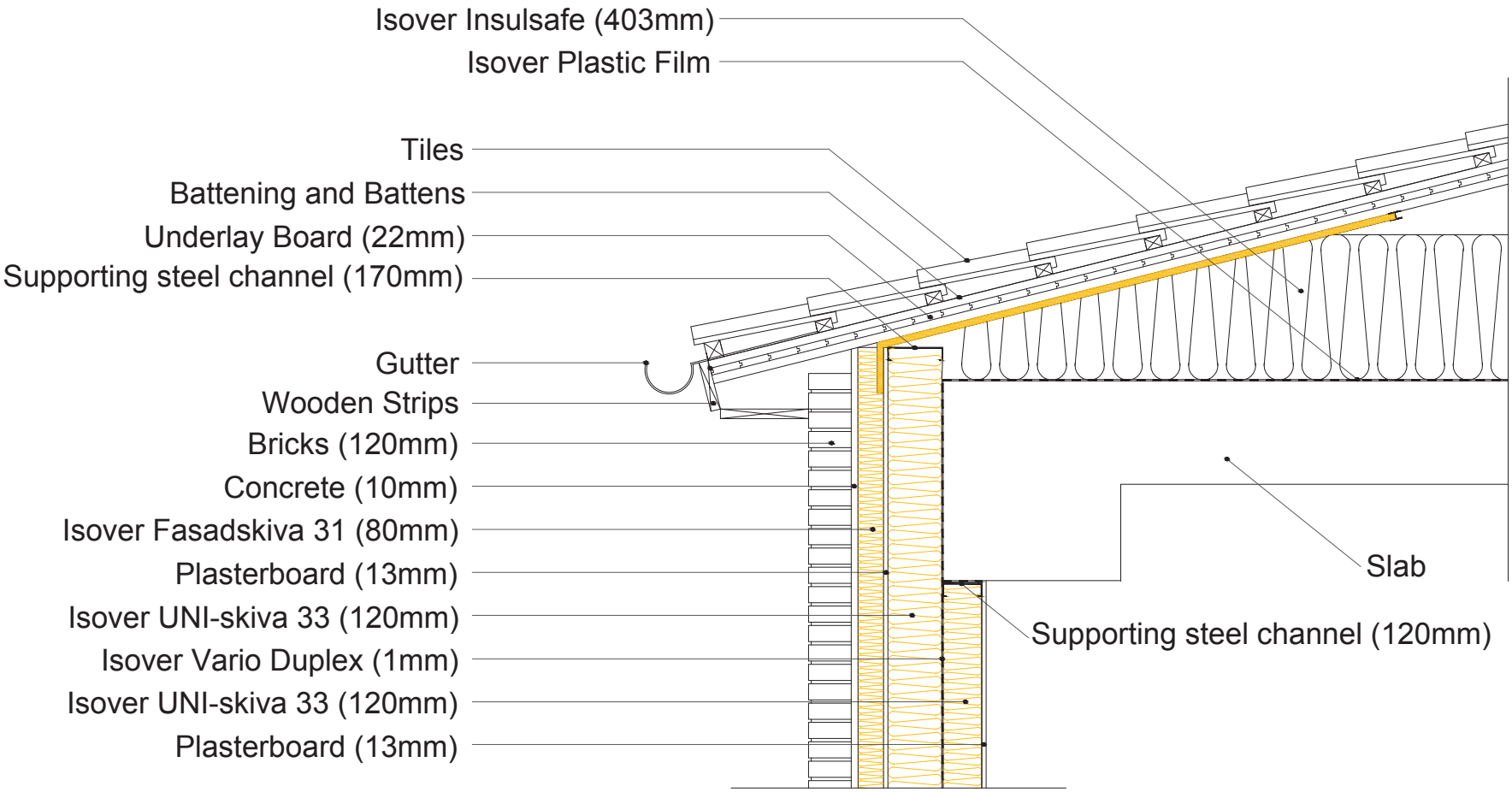
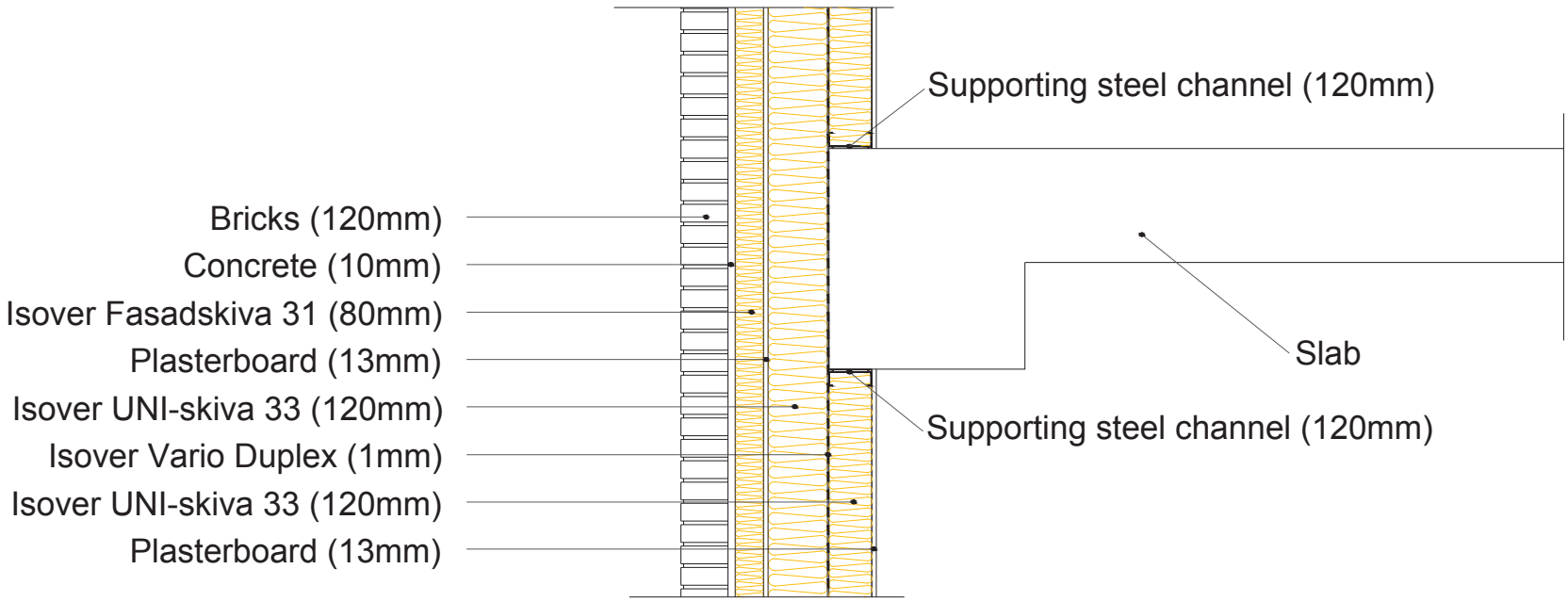
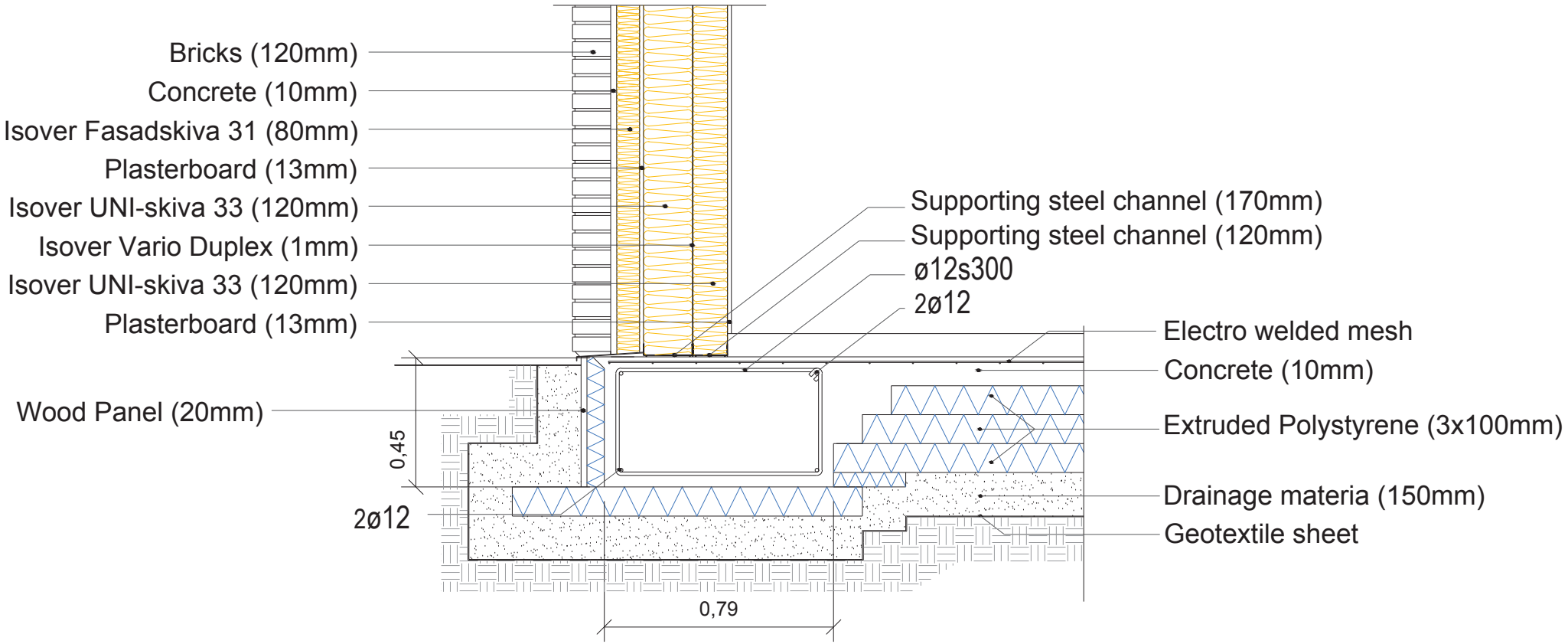


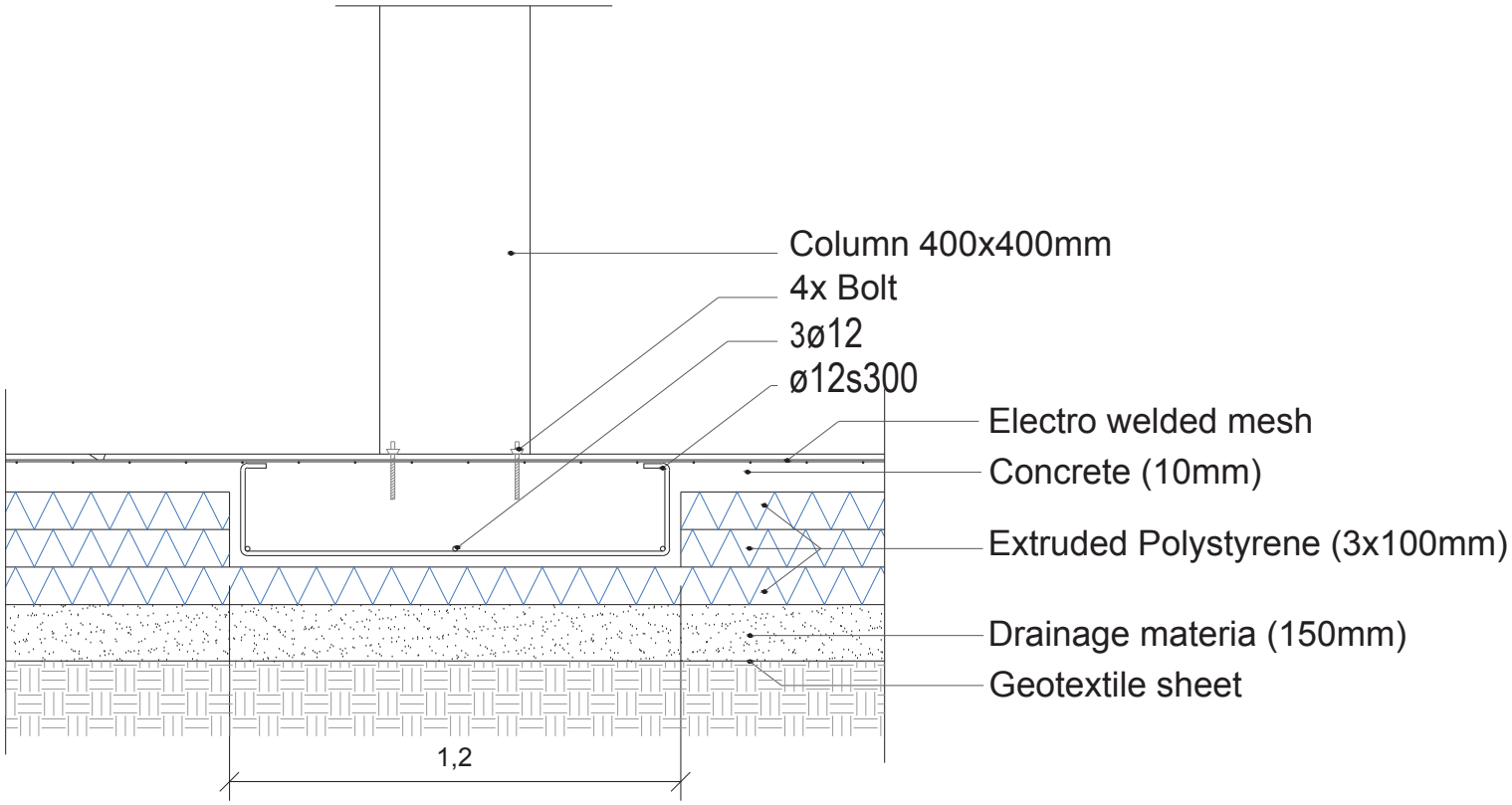
Motel Construction Project in Halmstad, Sweden	Nº: 25.1
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 1: Roof-External Wall	
DATE: June 2014 SCALE: 1:20	



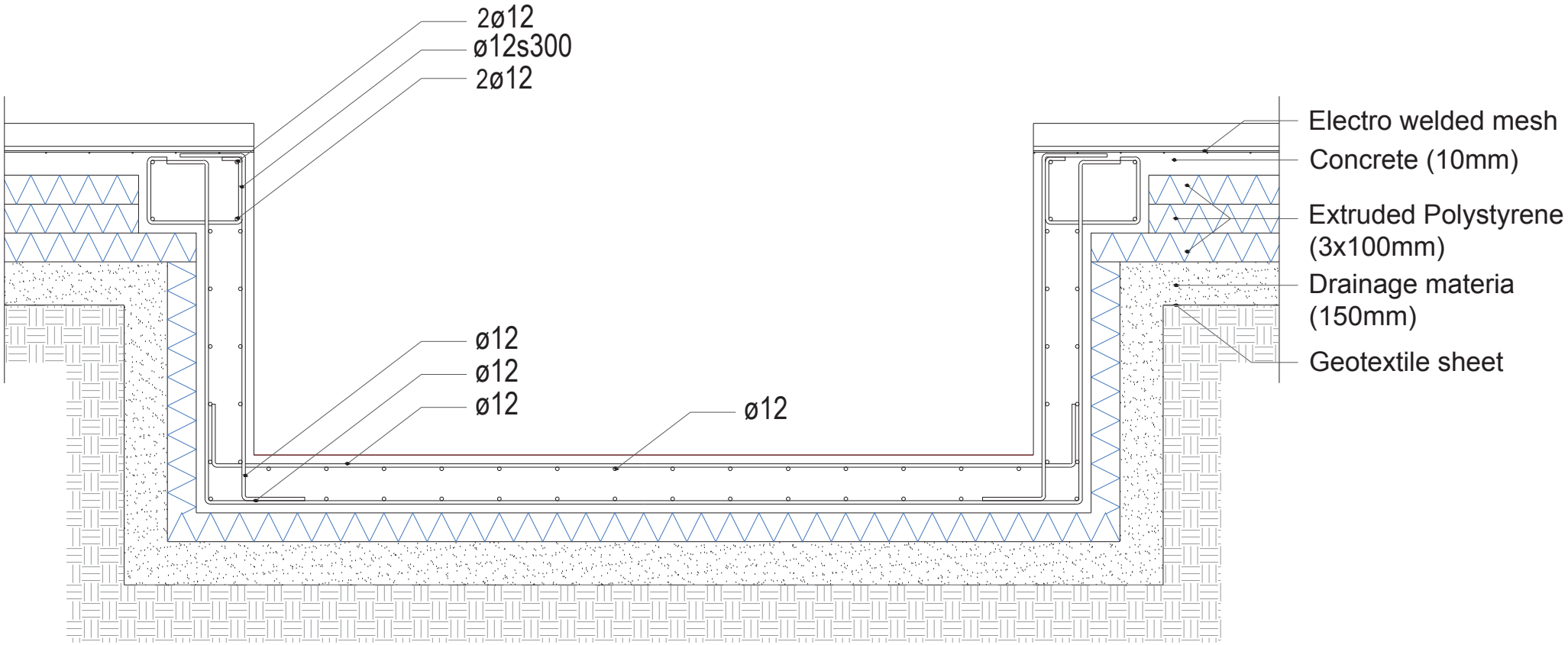
Motel Construction Project in Halmstad, Sweden	Nº: 25.2
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 2: Slab-External Wall	
DATE: June 2014 SCALE: 1:20	



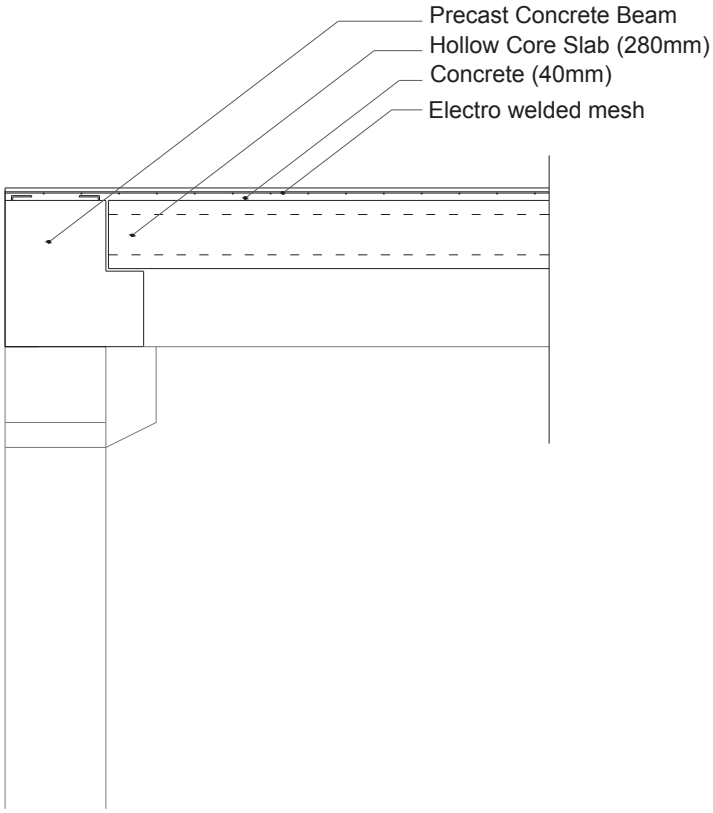
Motel Construction Project in Halmstad, Sweden	Nº: 25.3
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 3: Foundation-External Wall	
DATE: June 2014 SCALE: 1:20	

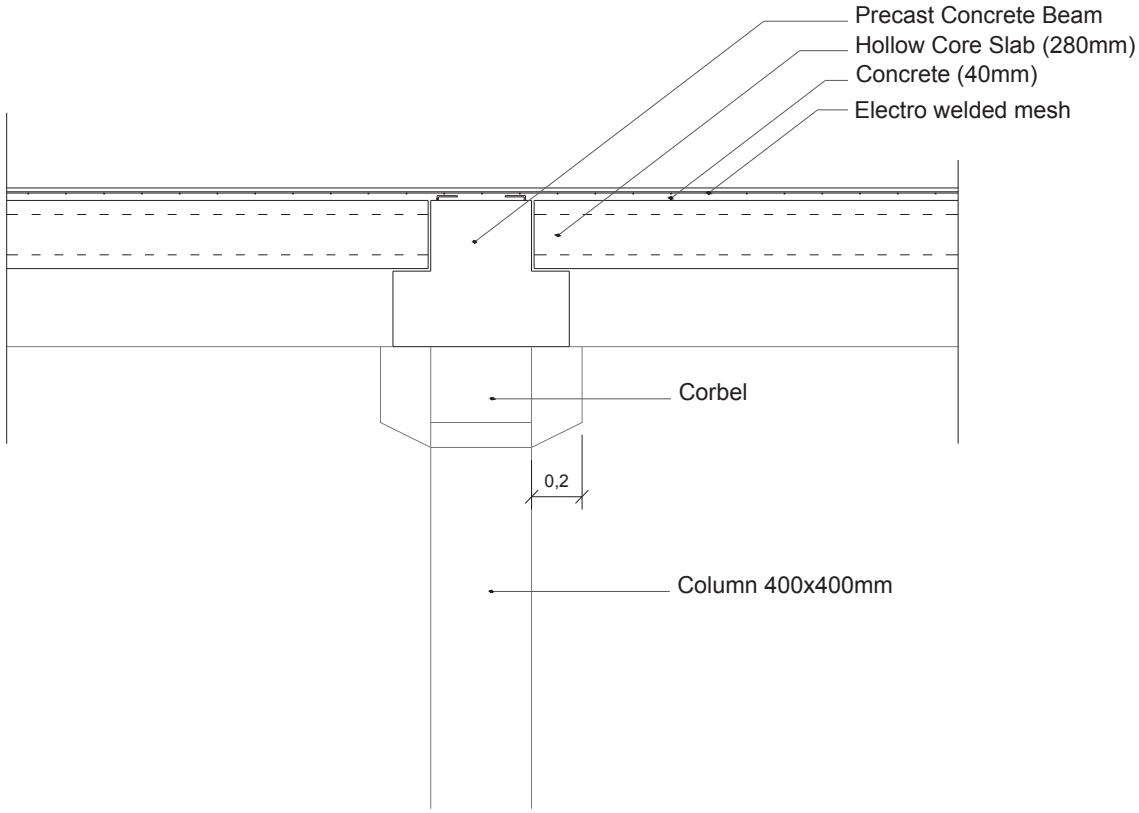


Motel Construction Project in Halmstad, Sweden	Nº: 25.4
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 4: Foundation-Column	
DATE: June 2014 SCALE: 1:20	



Motel Construction Project in Halmstad, Sweden	Nº: 25.5
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 5: Lift Hoistway	
DATE: June 2014 SCALE: 1:20	





Motel Construction Project in Halmstad, Sweden	Nº: 25.6
AUTHOR: Victor Collado Sebastiá	SIGNATURE:
DRAWING: Detail 6: Slab	
DATE: June 2014 SCALE: 1:30	

This project has been written up by Victor Collado Sebastiá in Halmstad, Sweden, between February 2014 and June 2014. The project tutors have been Åke Spånberg (Högskolan I Halmstad) and Carolina Sabina Aparicio Fernandez (Universidad Politécnica de Valencia).

Halmstad, June 2014

Fdo: Victor Collado Sebastiá