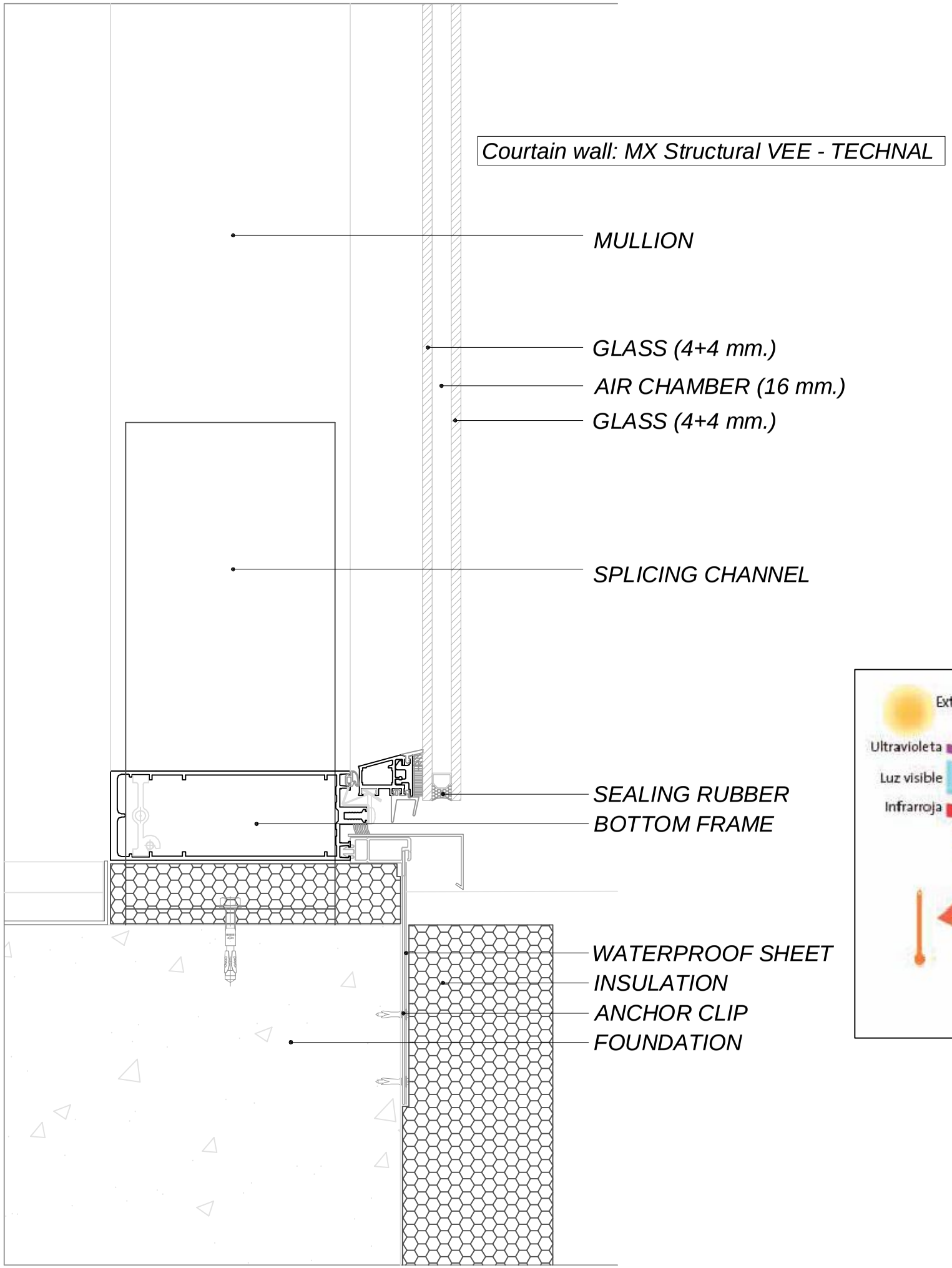
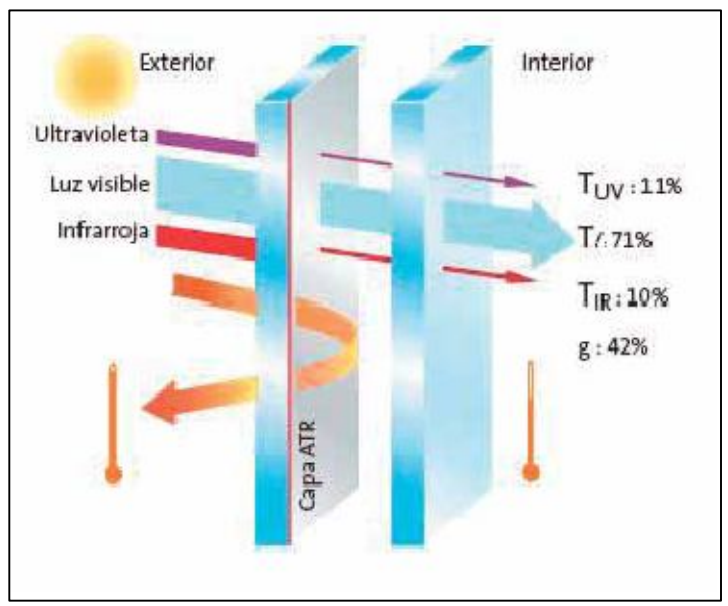
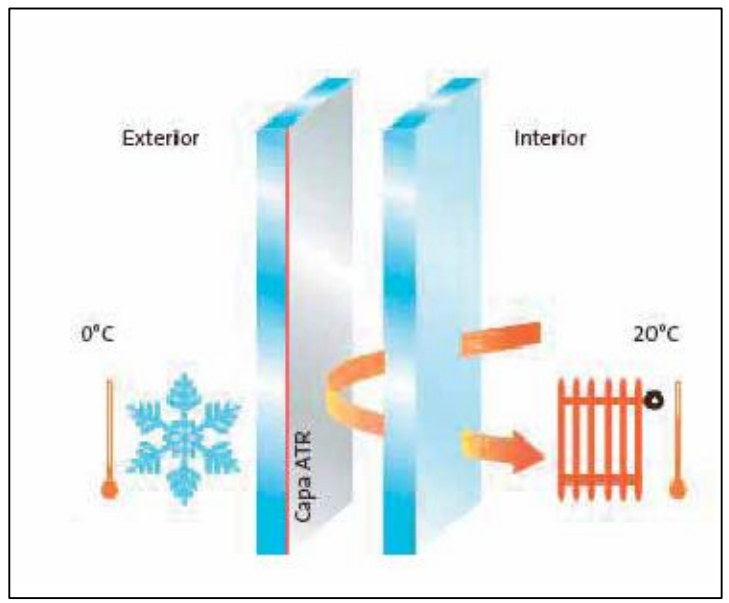



The installation of the glass wall is made by a subcontractor.

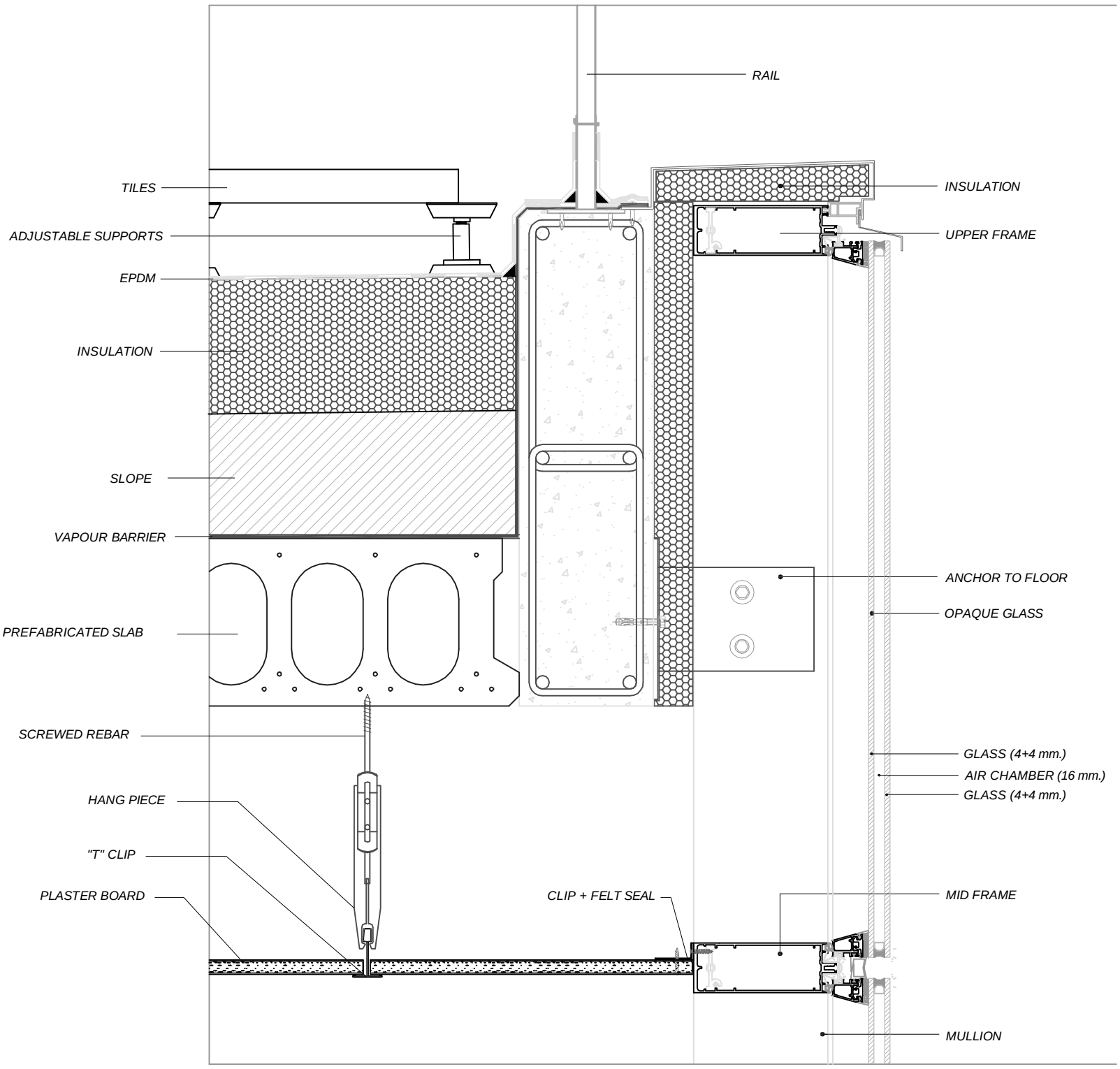
The horizontal structure is going to be fixed to the foundation, like the splicing channels, those are the supports for the mullions who will be put after. For the perfect fixation of the glass wall structure, it will have a fixation on the vertical face of the foundation, with the appropriate waterproofing sheet for preventing damages to that.

For the best thermal conditioning, the glass will have 3 layers, 2 of dobleglass (4+4 mm.) and an air chamber between them (16 mm.).



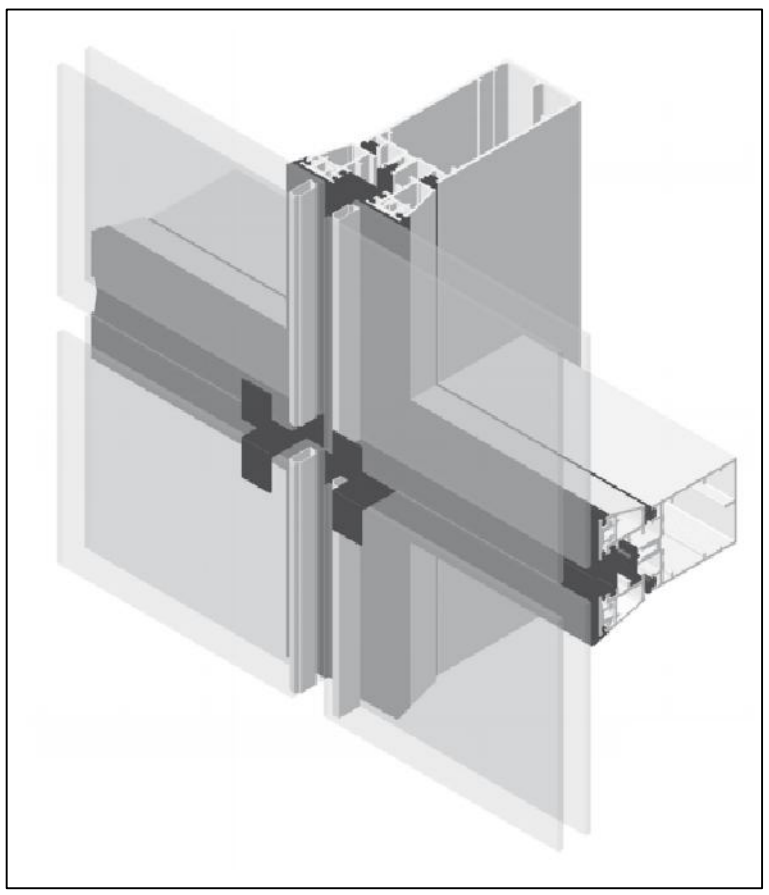

| FINAL PROJECT OF BUILDING ENGINEERING | | |
|---|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent | |
| PLAN: Detail 1 - Glass wall and foundation | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| | Nº DE PLAN: 6 / SCALE: 1 / 10 | TUTORS: Peter Denie, Lieve Weymeis |




On the upper part of the glass wall, it will be fixed to the perimetral beam. The ancher will be made by a "L" profile attached to the mullion and to the beam. At the height of 3.10 m. there's another horizontal profile, the mid frame. On the last part of the glass wall, from the mud frame to the upper frame, the glasses will be the same, but the inside glass is going to be an opaque glass to hide the concrete structure.

For the roof of the classes we are going to put a false ceiling made by plaster boards hanging from the alveolar slabs thanks to the hang pieces screwed to those.

The rail on the top of the perimetral beam is made with 3 pieces, the first one is embedded on the concrete and it is the support for the posts for the rail. The last piece is the screw to attach the other 2 pieces in to one, it has a doble female screw to be well fixed.



FINAL PROJECT OF BUILDING ENGINEERING

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|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Detail 2 - Glass wall and terrace | |
| STUDENT: Devís Sanjuán, Carlos | |
| SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| N° DE PLAN: 6 | SCALE: 1 / 20 |
| TUTORS: Peter Denie, Lieve Wevmeis | |

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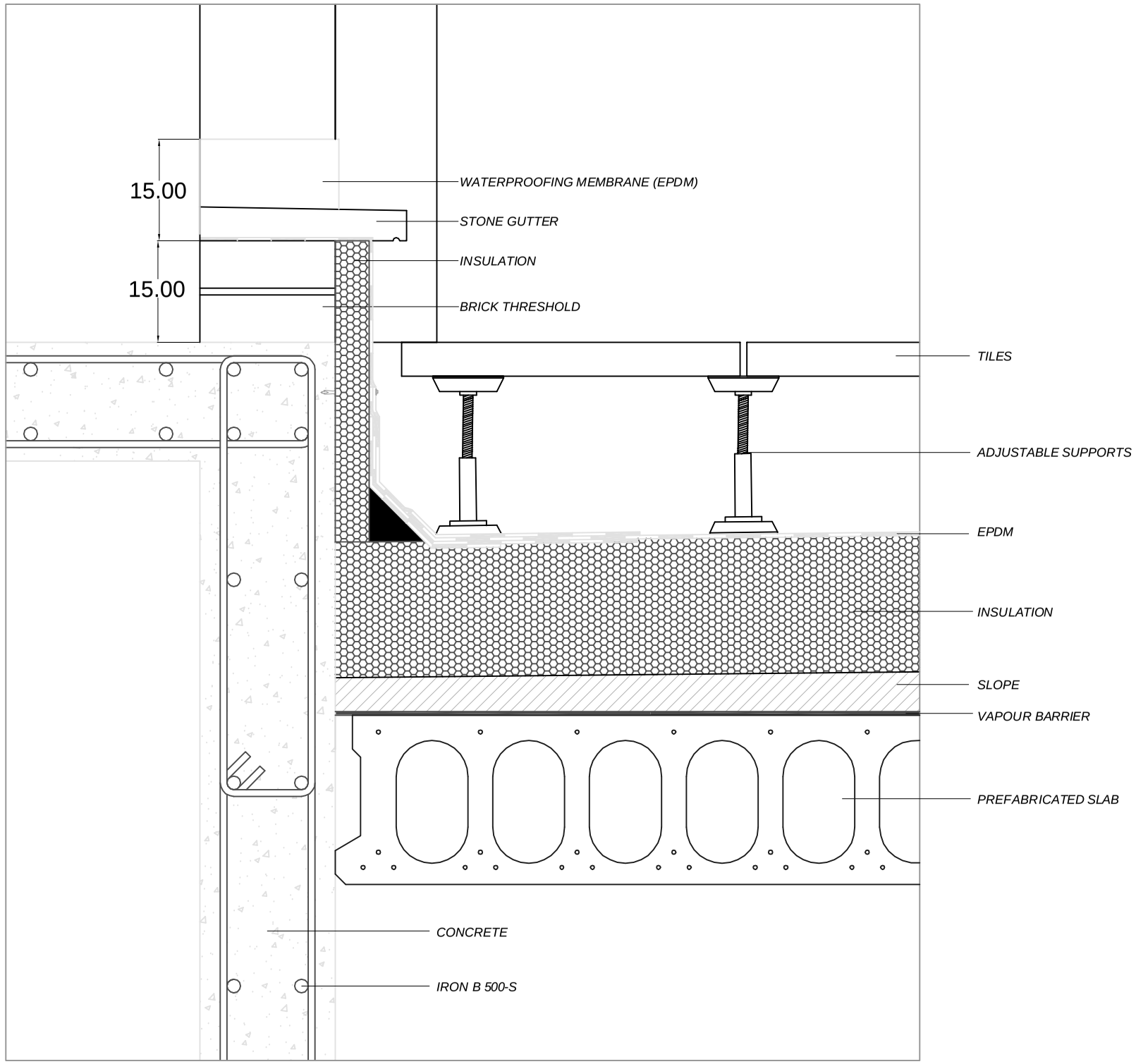


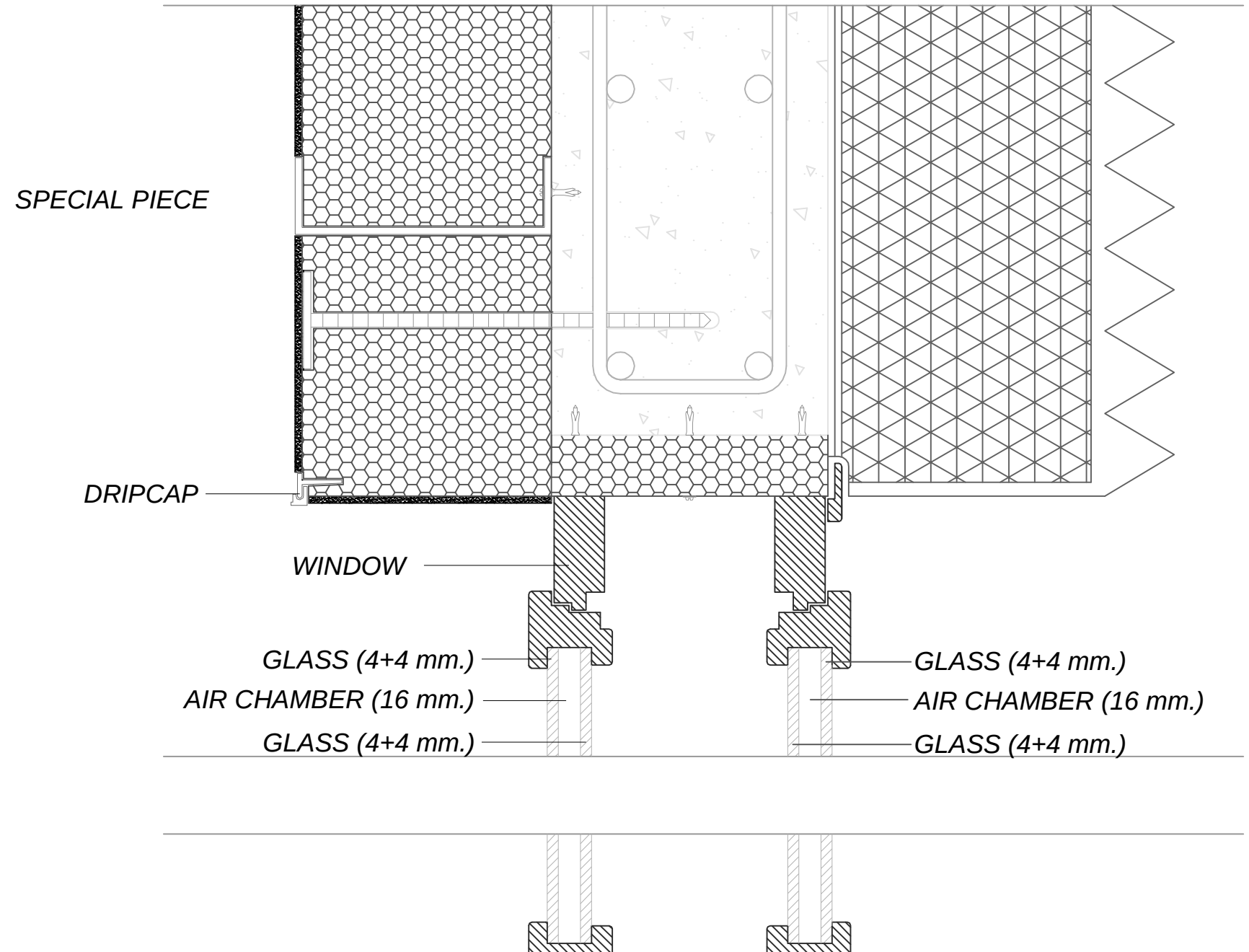

On the encounter of the terrace with the door hole we need to have a continuity of the insulation and the waterproof membrane. For the insulation que put 5 cm. of insulation in vertical, until the end of the threshold, made with brick on the bottom of the door.

The EPDM will need to be continuous until the end of the threshold and 15 cm. on the doorjambs. Over the EPDM in the threshold we put a stone gutter for preventing the wear and tear it could be exposed without the gutter.

For preventing the breaking of the EPDM we make a small slope for the encounter with the vertical parament so it don't have to be folded 90º cause it can break.

The anchor of the EPDM is made by a screw to the vertical parament, and for preventing water penetration another EPDM is overlapping the screw and fixed with blowtorch.

| FINAL PROJECT OF BUILDING ENGINEERING | | |
|---|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Detail 3 - Encounter terrace with door | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| | Nº DE PLAN: 6 / SCALE: 1 / 20 | TUTORS: Peter Denie, Lieve Weymeis |




FINAL PROJECT OF BUILDING ENGINEERING

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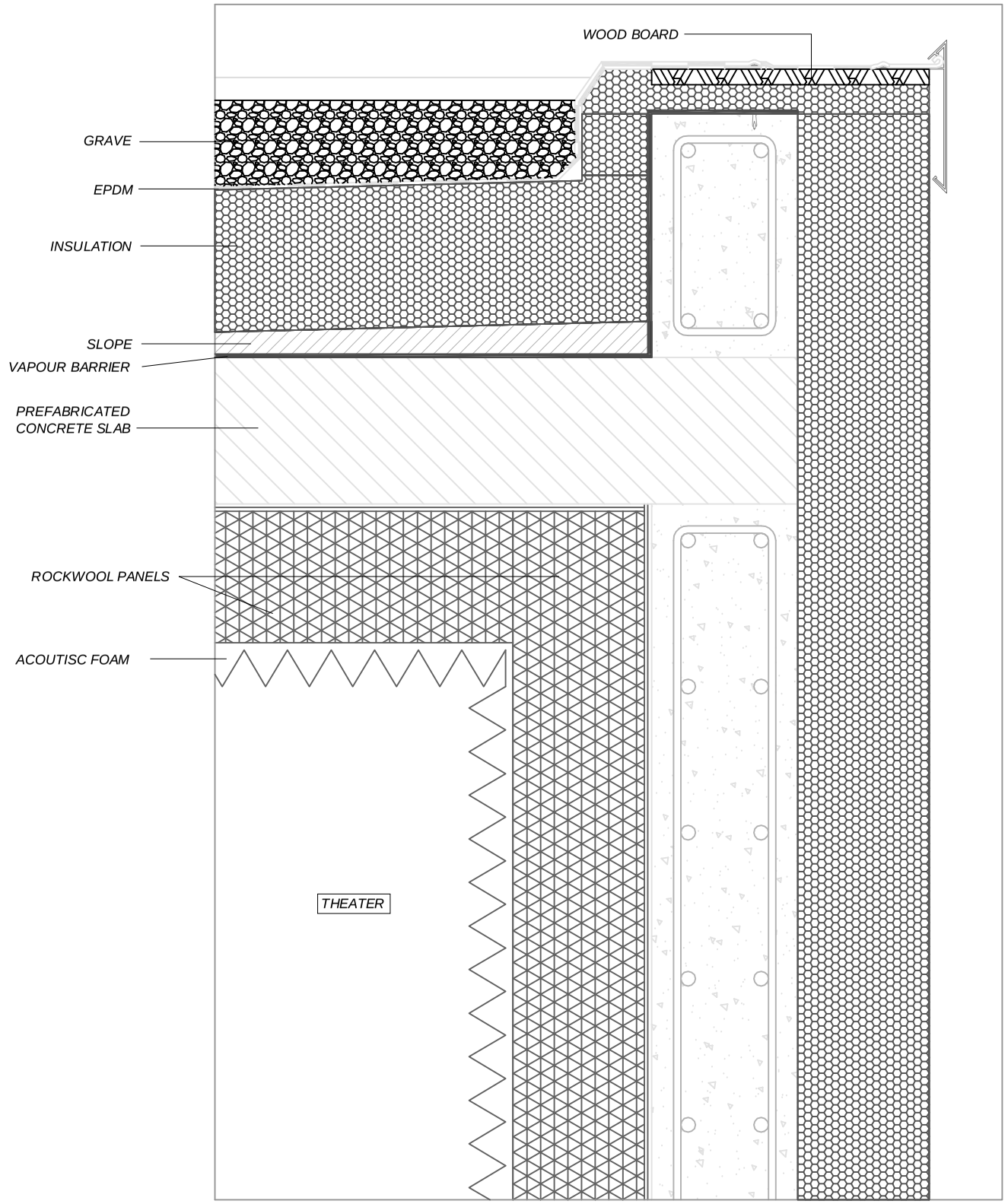
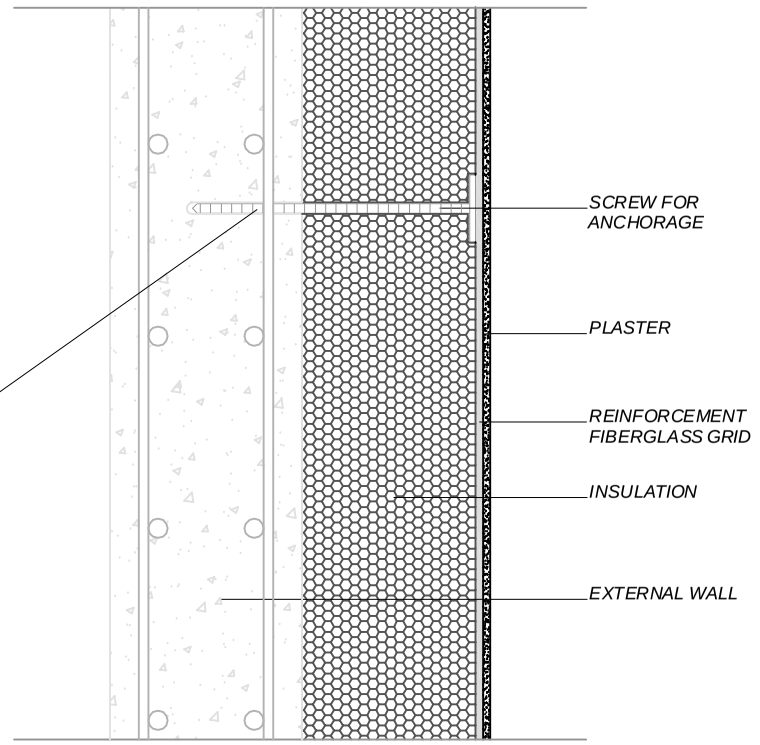
|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Detail 5 - Theater window | |
| STUDENT: Devís Sanjuán, Carlos | |
| SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| Nº DE PLAN: 6 | SCALE: 1 / 10 |
| TUTORS: Peter Denie<br>Lieve Weymeis | |




The roof of the theater is made with prefabricated alveolar slabs who rest in the walls. On the perimeter of the non-transitable roof there's a small beam like in the terrace.
Over the slabs there's a polyethylene plastic sheet as vapour barrier along all the roof, the next layers are the slope formation, made with lean concrete, the insulation (polyestirene rigid panels), the EPDM waterproofing membrane and on the last layer we place gravel. The gravel is too heavy and that's why we don't need to fix the insulation with screws.
On the edge of the beam there's a wood board to fix with struts the aluminum drip, this board is fixed to the beam with some screws too, fixing also the vapour barrier. To prevent water penetration, we overlap the EPDM over the screw head.
Inside the building, for the acoustical conditioning for the theater, there are rock wool panels installated, glued to the wall ans to the floor, and over them, a piramidal acoustic foam is placed to perform the acoustic of the place.




For the fixation of the insulation we use a screw with a dowel, and for the finishing of the external face of the wall, a reinforcement fiberglass grid is placed over the insulation and the fixation screws.
At last a layer of plaster is placed to finish the wall.

FINAL PROJECT OF BUILDING ENGINEERING

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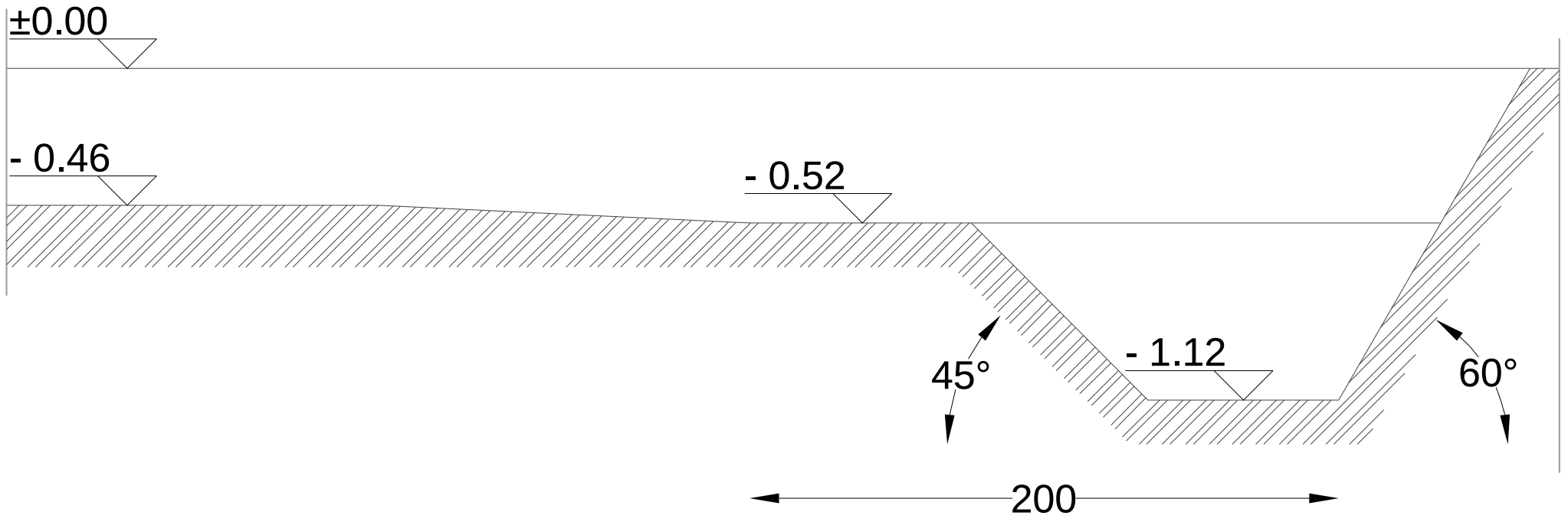
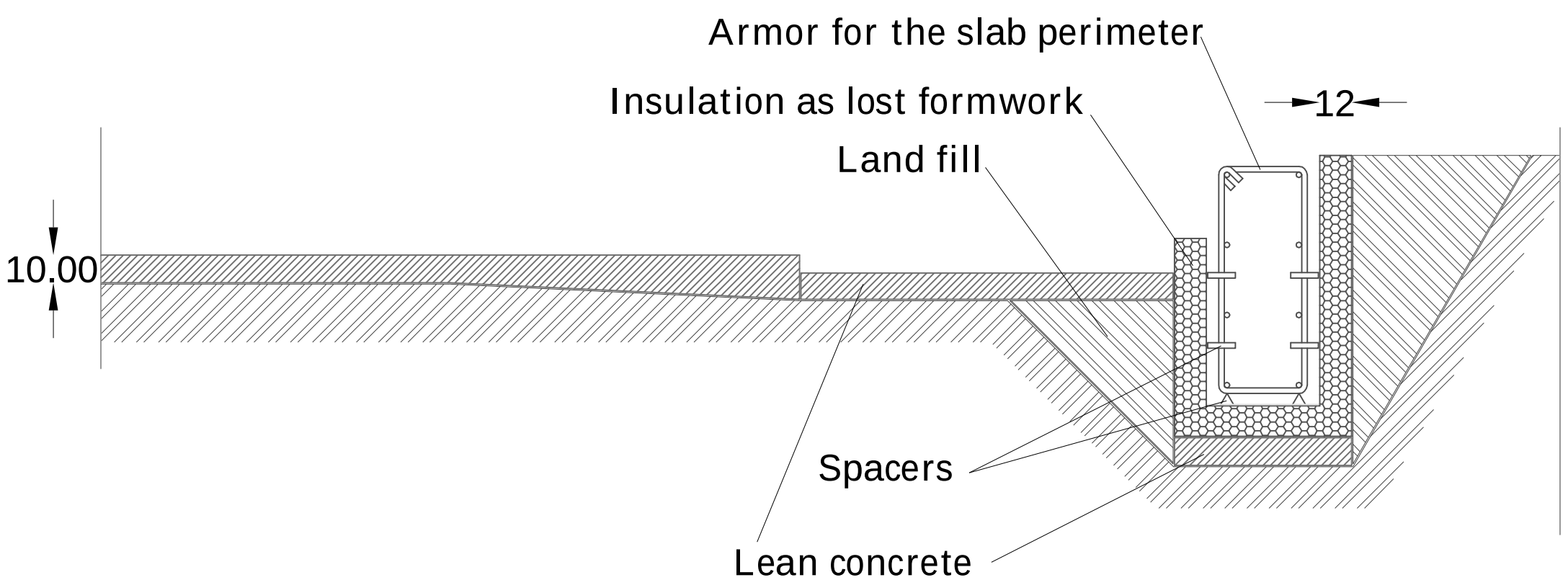
|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Detail 4 - Wall and theater roof | |
| STUDENT: Devís Sanjuán, Carlos | |
| SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| Nº DE PLAN: 6 | SCALE: 1 / 10 |
| TUTORS: Peter Denie, Lieve Weymeis | |

KAHO

After the demolition and the debris transport to the dump we have the ground cleared to start with the foundation excavation in height ±0.00m.
First of all we start with an excavation until -0.46m. for the entire slab. On the last 2 m. to the perimeter, we excavate until -0.52m. and on the perimeter until -1.12m. leaving a 45º of batter on the inside, and 60º on the outside for prevention for landslides.

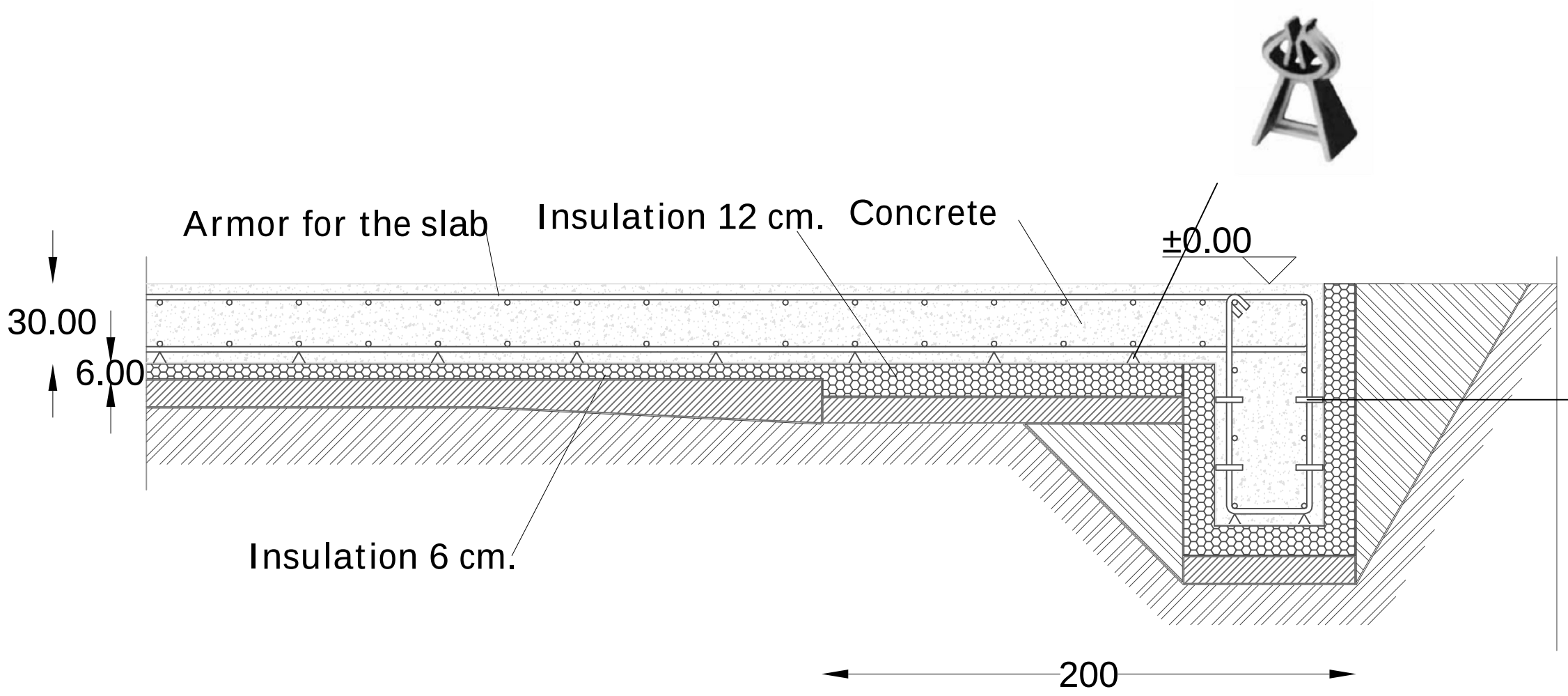



When we reach the -1.12m. we place a 10cm. of lean concrete at the bottom at the trench of the slab perimeter and after the installation of the insulation and the armor for the slab perimeter we fill the holes with the land we excavate and put a 10cm. of lean concrete in the rest of the slab taking care of making the step in the last 2m. of the perimeter.

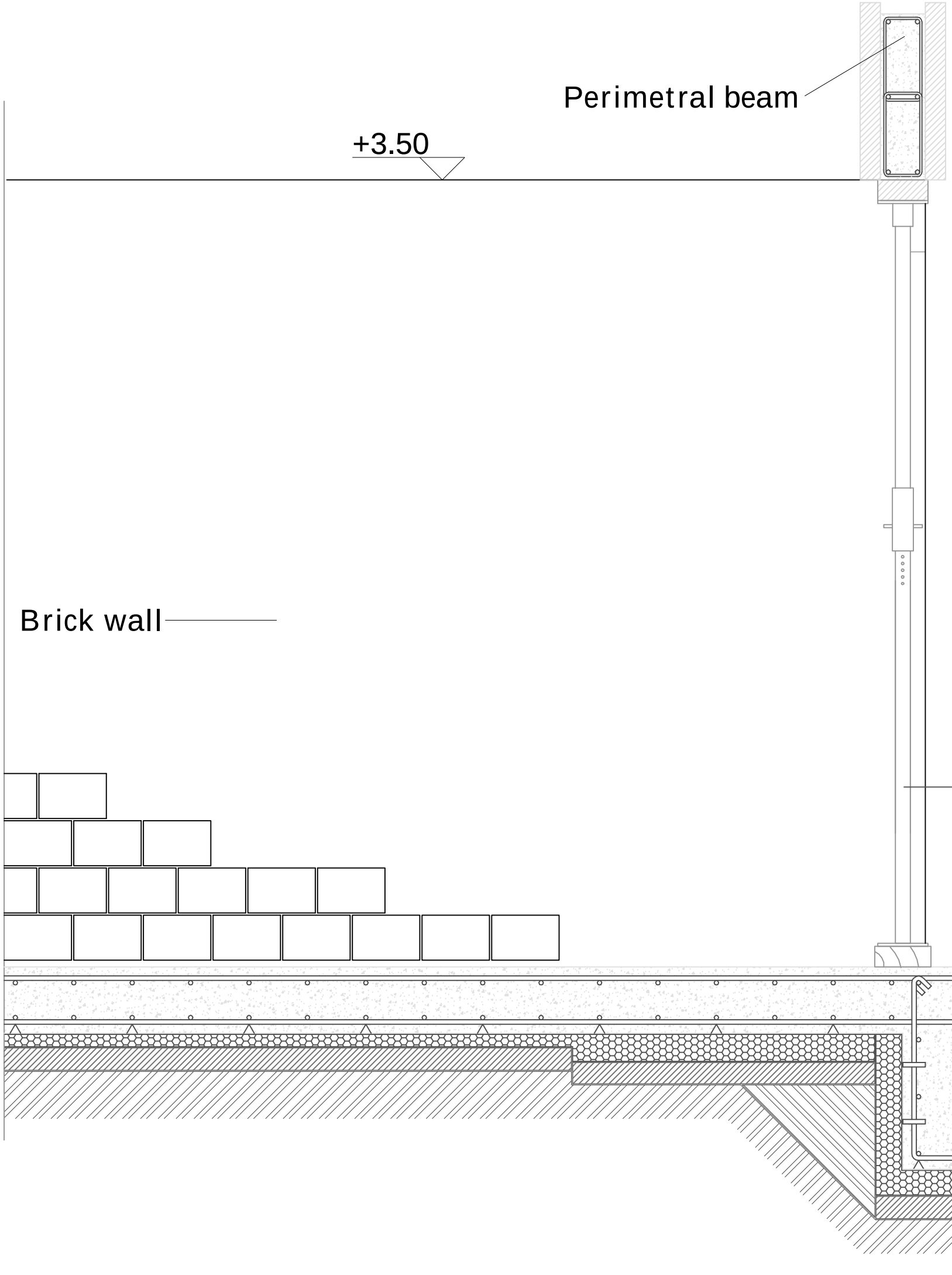
| FINAL PROJECT OF BUILDING ENGINEERING | | |
|---|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent | |
| PLAN: Details of foundation in classes - Part 1 | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| | Nº DE PLAN: 2 | SCALE: 1 / 50 |
| | TUTORS: Peter Denie, Lieve Weymeis | |

When the lean concrete is dry enough, we proceed to the placement of the insulation, on the entire slab we put 6 cm. of that, but on the last 2 meters on the perimeter of the slab, we put 12 cm. for safety.
When the insulation is beeing installated, we proceed to place the rest of the slab armor on the places where the insulation is already installated. The quantity of armor is 75 kg/m³ of iron B-500S , and after the placement of those, we proceed with the pouring of concrete, taking care and vibrating it correctly.
When all the slab is concreted, we wait, at least, for 7 days before starting another work on the top of it.

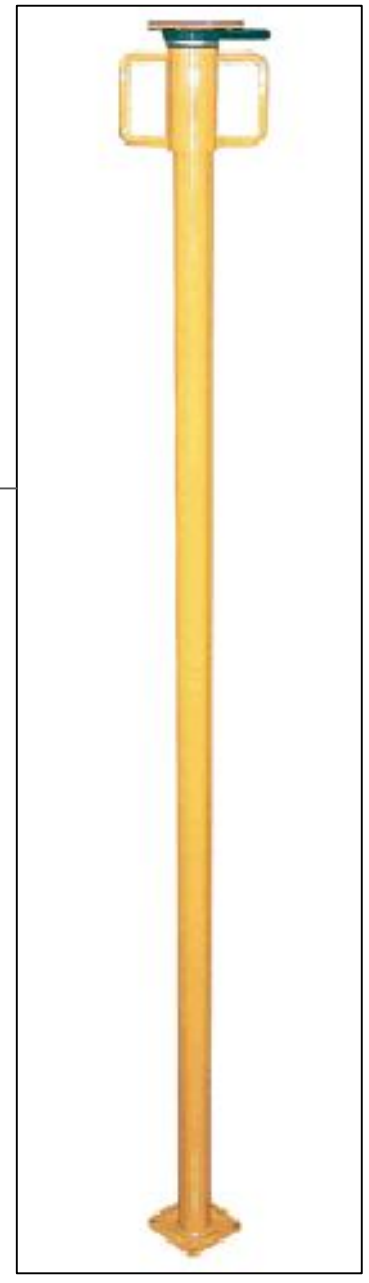


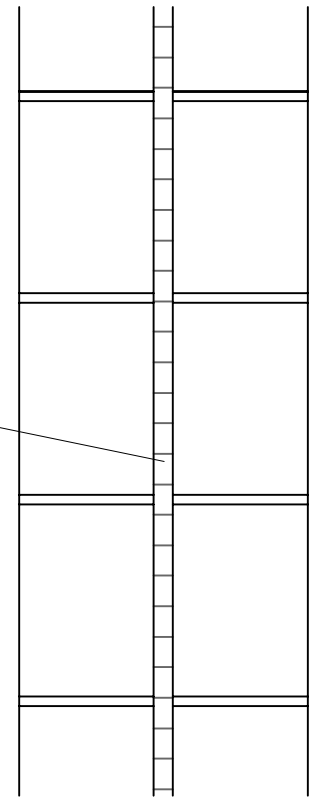



| FINAL PROJECT OF BUILDING ENGINEERING | | |
|---|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent | |
| PLAN: Details of foundation in classes - Part 2 | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| | Nº DE PLAN: 3 | SCALE: 1 / 50 |
| | | TUTORS: Peter Denie<br>Lieve Weymeis |




After 7 days of pouring the concrete, we start with the brick walls for the delimitation of the classes, those walls will be made with perforated bricks, and they will support the slabs of the terrace on top of them.
As a delimitation, we will create a beam along the perimeter, for the construction of it we will use at least 1 strut every 2 meters and the convenient formwork for it.
The walls will reach the 3.50 metres and it will be made by 2 different brick walls separated by 2 cm. of fiber glass for the insulation of them.



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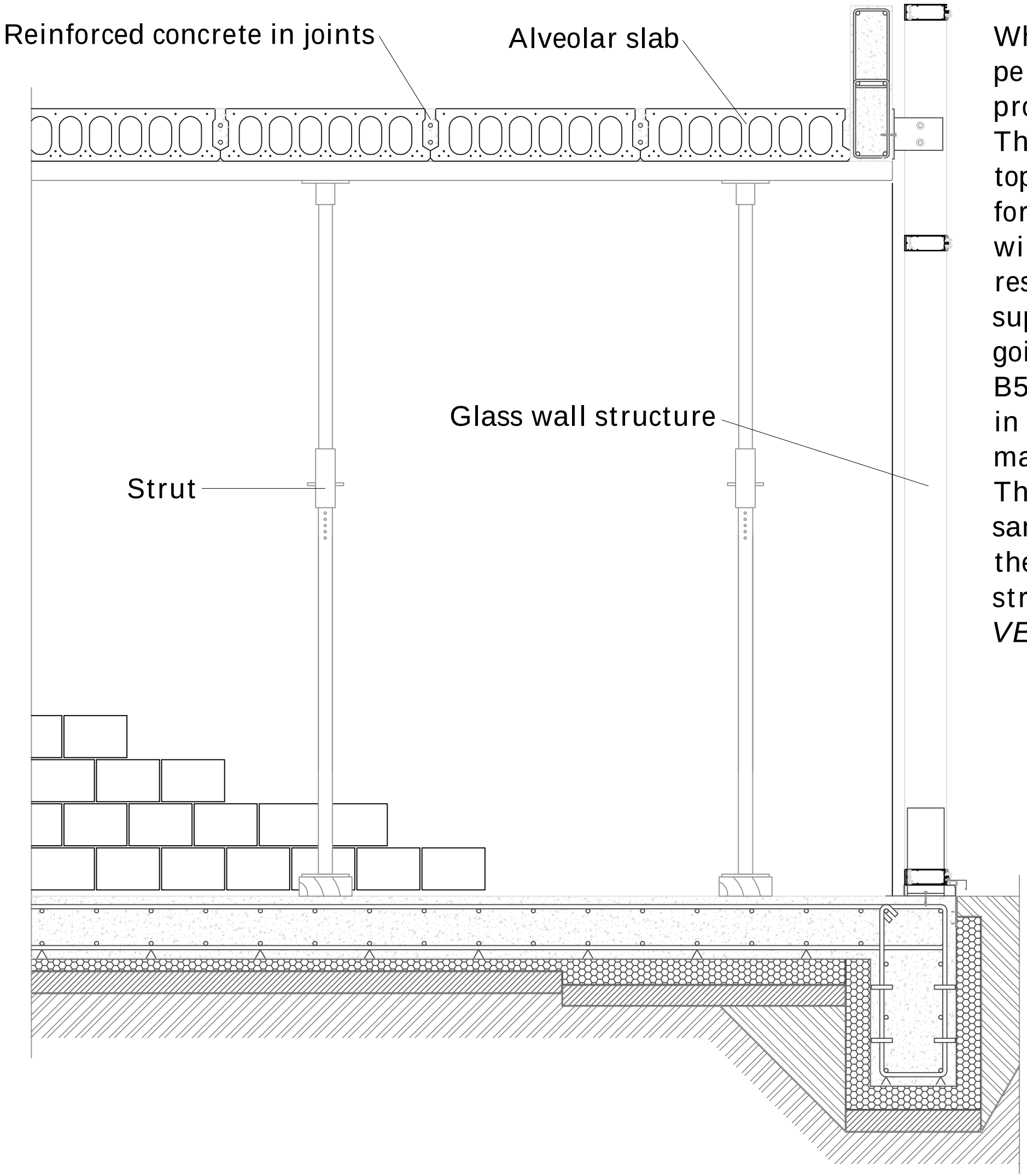
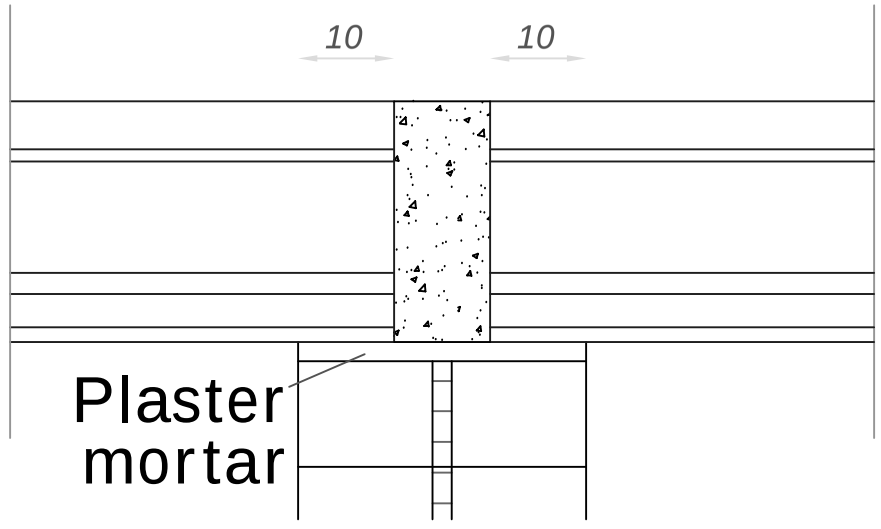
| FINAL PROJECT OF BUILDING ENGINEERING | | | |
| PROJECT: Sint-Barbara College - SITE PARKING | | ADRESS: Savaanstraat 98-100 B-9000 Gent | |
| PLAN: Construction of brick walls and perimetral beam | | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | | DATE: 22/06/2012 |
| | Nº DE PLAN: 4 | SCALE: 1 / 50 | TUTORS: Peter Denie<br>Lieve Weymeis |




When the brick walls are finished and the perimetral beam has his formwork removed, we proceed to the placement of the alveolar slabs. Those slabs are 1 meter wide and they rest on the top of the brick walls, on a plaster morter of 2 cm. for preventing the breaking of the bricks. The rest will have a minimum of 10 cm. and the slabs will rest in the middle of the span on a timber plank supported by struts. The joints between slabs are going to be filled with reinforced concrete with iron B500-S for the negative moments of the structure in the resting places, connecting the slabs and making it like a bigger one.

The glass wall structure will be installated at the same time, anchoring it to the perimetral beam on the top, and to the foundation on the bottom. This structure is the "*Courtain wall: MX Structural VEE"* of TECHNAL.




FINAL PROJECT OF BUILDING ENGINEERING

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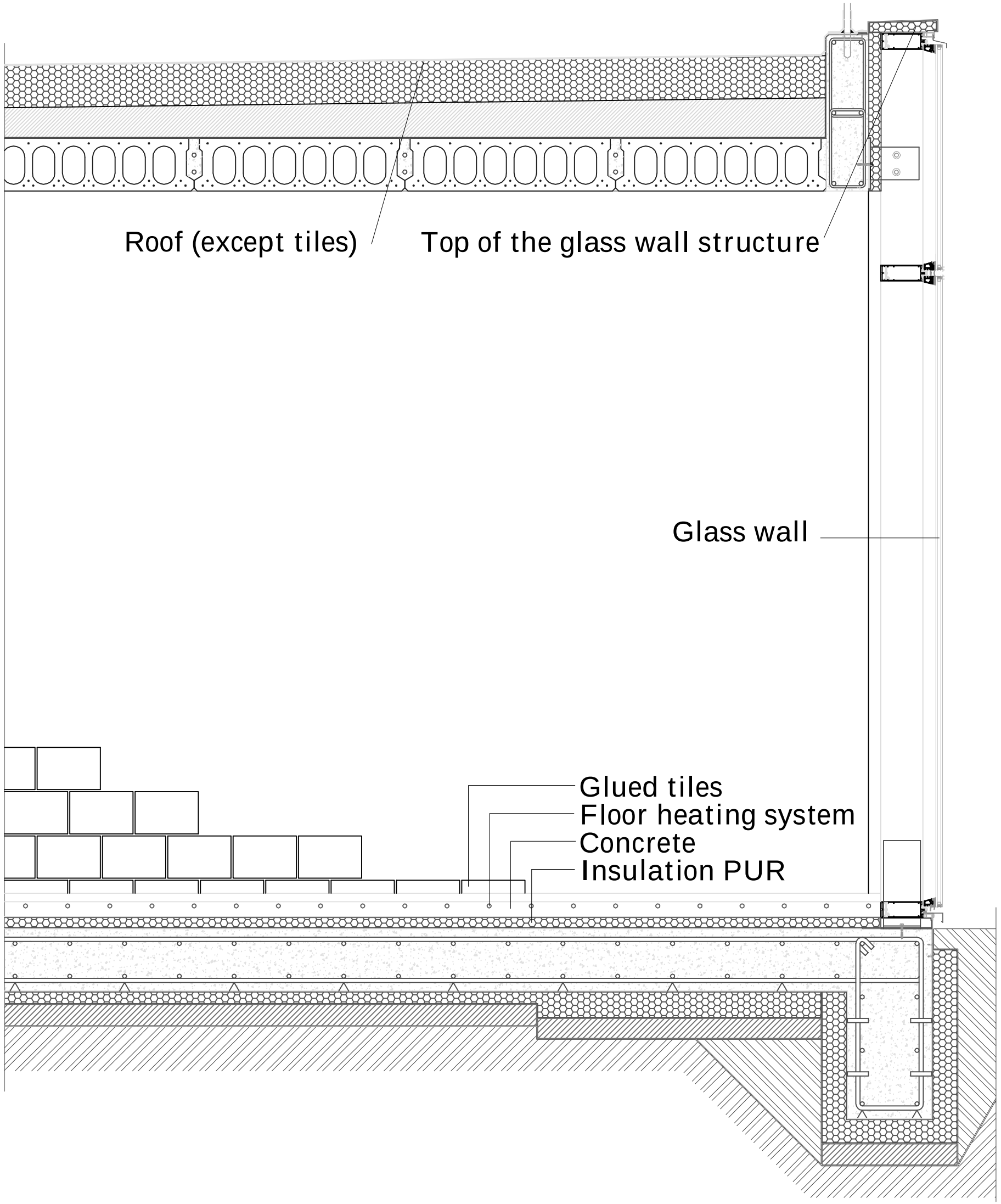
|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Placement of alveolar slabs and glass wall structure | |
| STUDENT: Devís Sanjuán, Carlos | |
| SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| Nº DE PLAN: 5 | SCALE: 1 / 50 |
| TUTORS: Peter Denie, Lieve Weymeis | |

KAHO

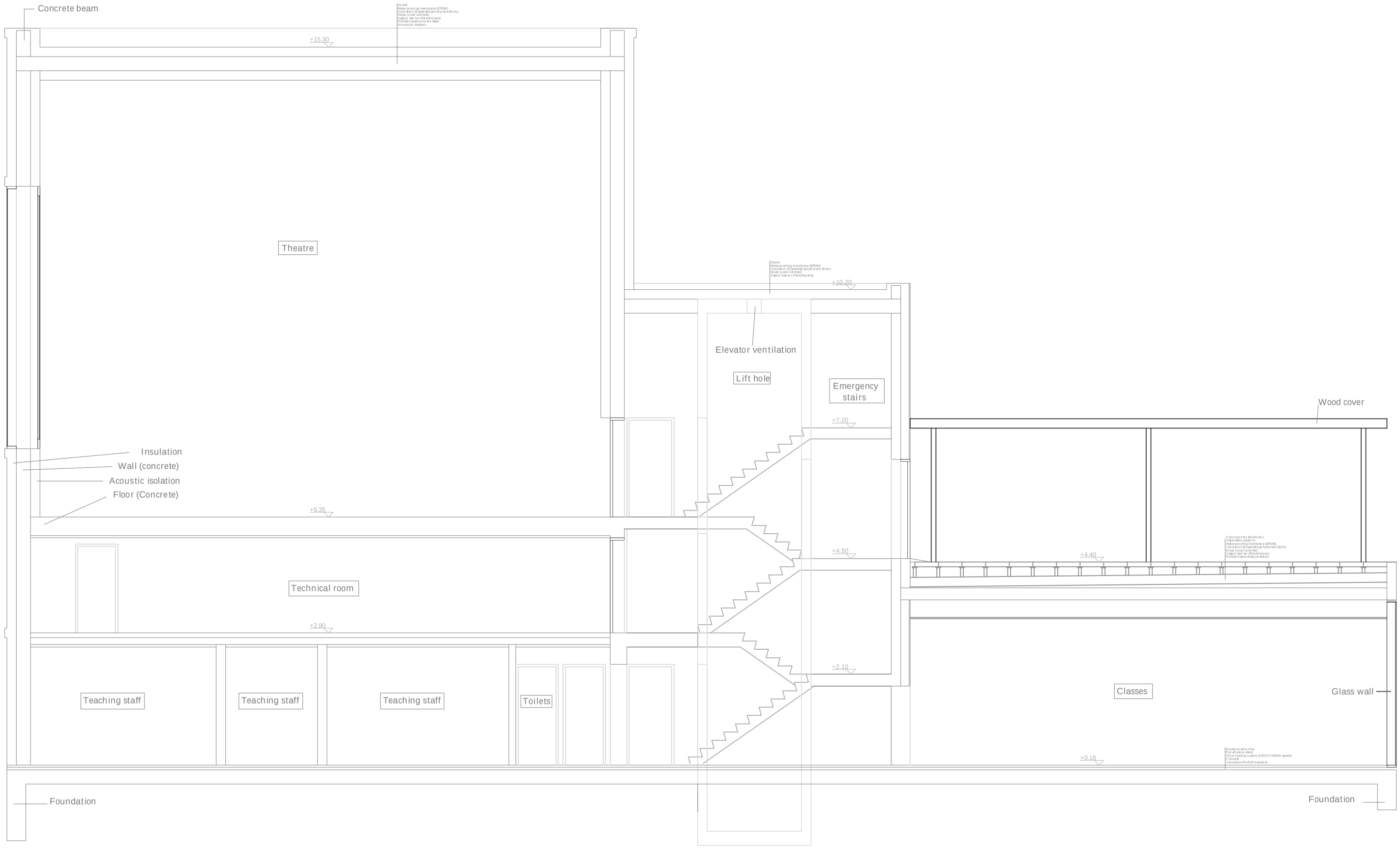



For the construction of the terrace, we start with the vapour barrier, a polyethylene plastic sheet placed in contact with the slabs, on top of it we will place a layer of lean concrete to make the slope for water evacuation, not more than 1-5%. Over the slope formation we will place the insulation, 20 cm. of expanded polyestyrene rigid panels, they will be not fixed because the weight of the comming tiles will be enough to keep them on place in the worst case. The next layer is the EPDM, the waterproofing membrane.

Both the EPDM and the vapour barrier are going to continue along the parimetral beam and they are going to be fixed on the top of it with a screw.

The glass wall and the floor of the classes will be installated when the terrace is done. On the floor, after the placement of the PUR, placed by proyection for preventing the joint and have a better thermical insulation. Over the PUR we place the *"Grupo Cecatherm"* floor heating system, based on a pipe net on the floor between the PUR and the tiles, embedded on concrete. At last, we place the tiles, glued to the concrete.

| FINAL PROJECT OF BUILDING ENGINEERING | | | |
|---|---|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | | ADRESS: Savaanstraat 98-100 B-9000 Gent | |
| PLAN: Finishing of terrace and glass wall installation | | | |
| KAHO | STUDENT: Devís Sanjuán, Carlos | | |
| | SCHOOL: KAHO Sint-Lieven - Aalst | | DATE: 22/06/2012 |
| | N° DE PLAN: 6 | SCALE: 1 / 50 | TUTORS: Peter Denie<br>Lieve Weymeis |




FINAL PROJECT OF BUILDING ENGINEERING

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|---|---|
| PROJECT: Sint-Barbara College - SITE PARKING | ADRESS: Savaanstraat 98-100 B-9000 Gent |
| PLAN: Section | |
| STUDENT: Devís Sanjuán, Carlos | |
| SCHOOL: KAHO Sint-Lieven - Aalst | DATE: 22/06/2012 |
| Nº DE PLAN: 1 | SCALE: 1 / 200 |
| TUTORS: Peter Denie, Lieve Weymeis | |