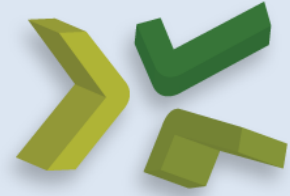
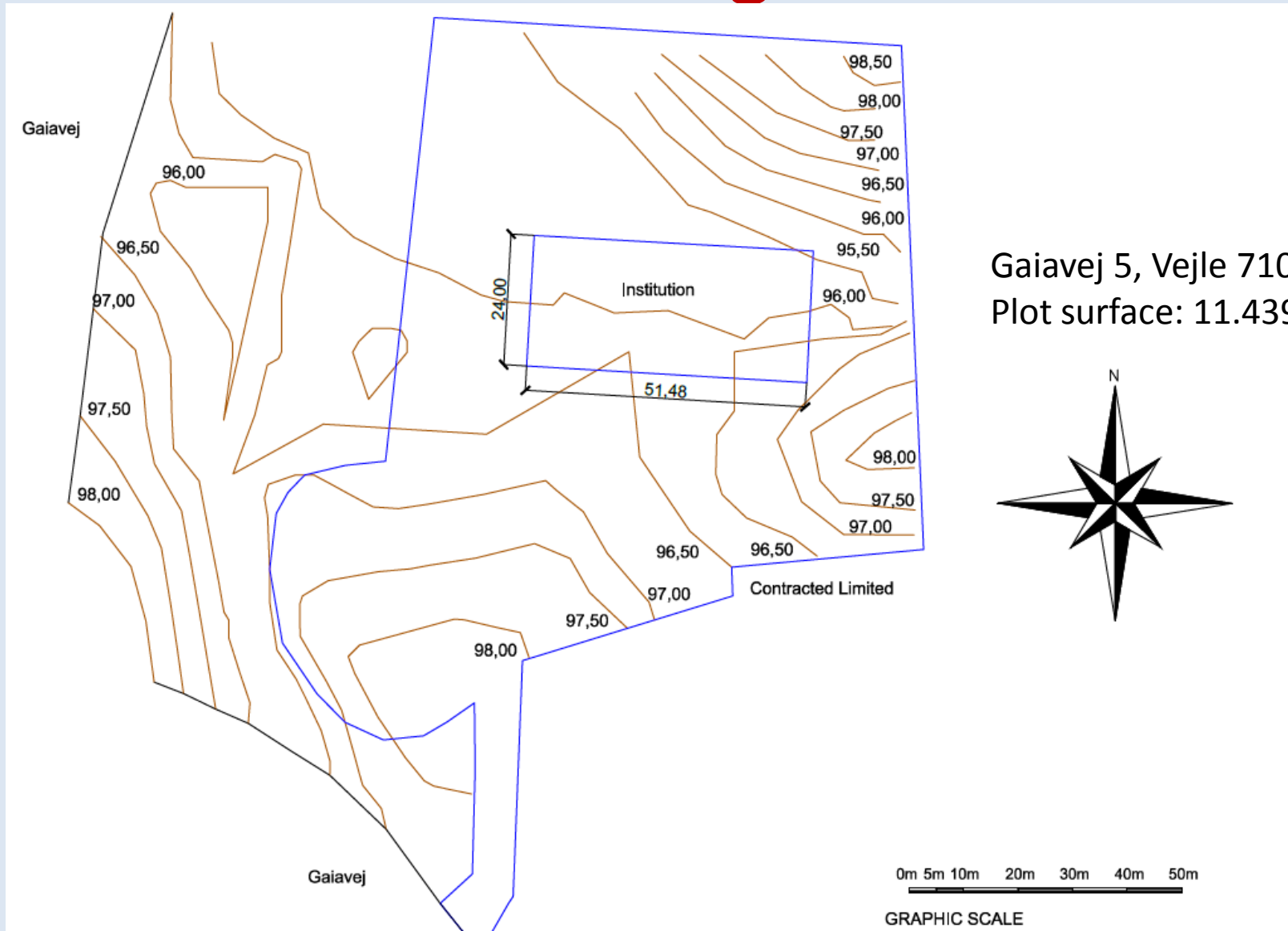




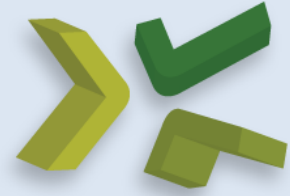
Laura Jiménez Coronado



# Building site



Gaiavej 5, Vejle 7100  
Plot surface: 11.439,04 m<sup>2</sup>



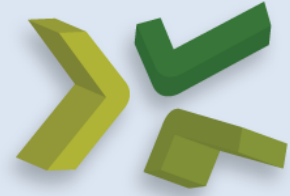
# Design reason

## Function:

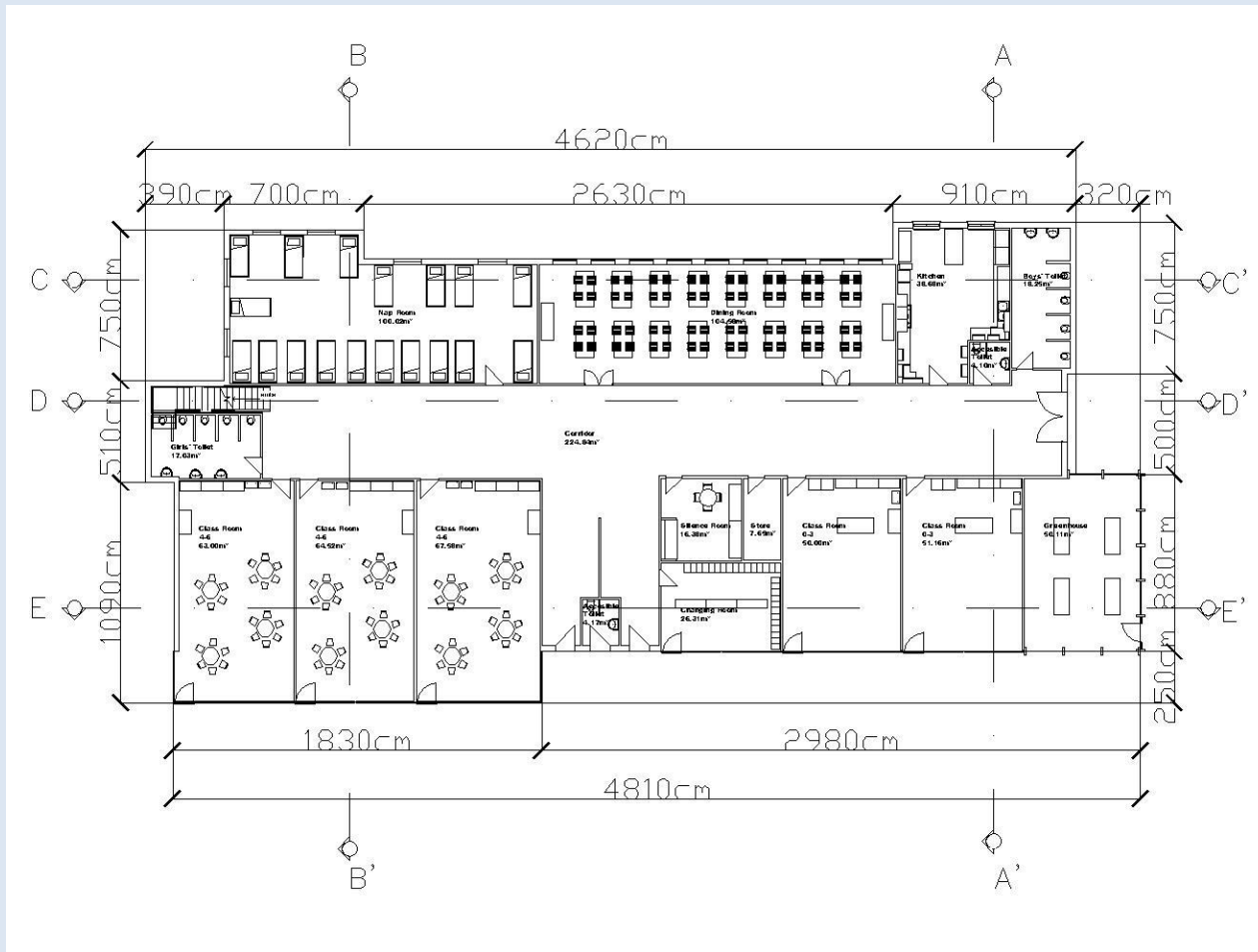
- Try to avoid any domestic accident
- Building welcoming and attractive to the children

## Energy:

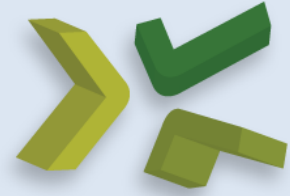
- Use natural light and heat as much as possible



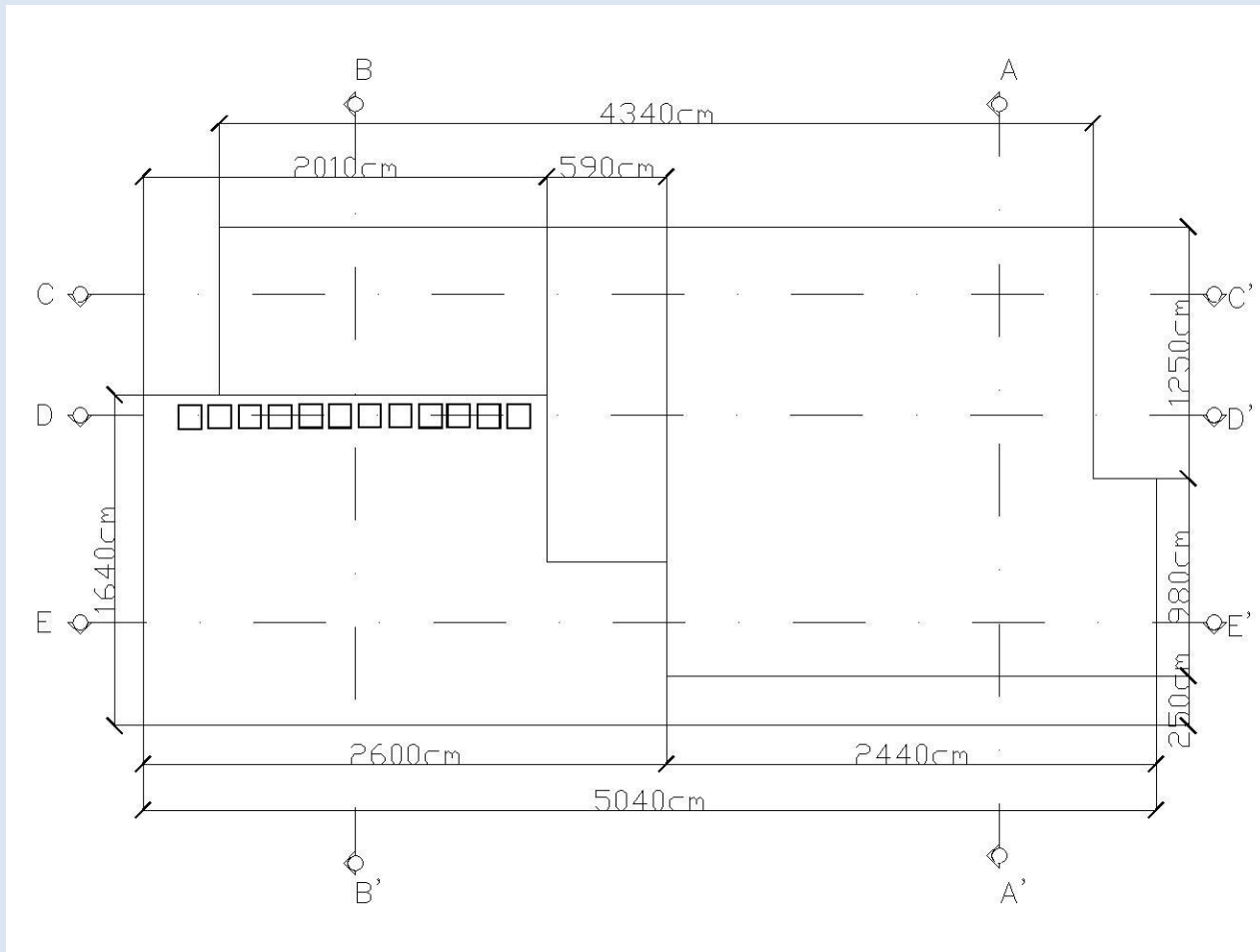
# Groundfloor



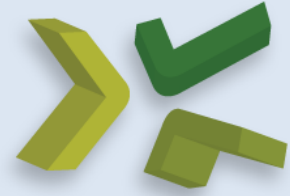




# Roof



Roof slope is 8%  $\approx 4,59^\circ$



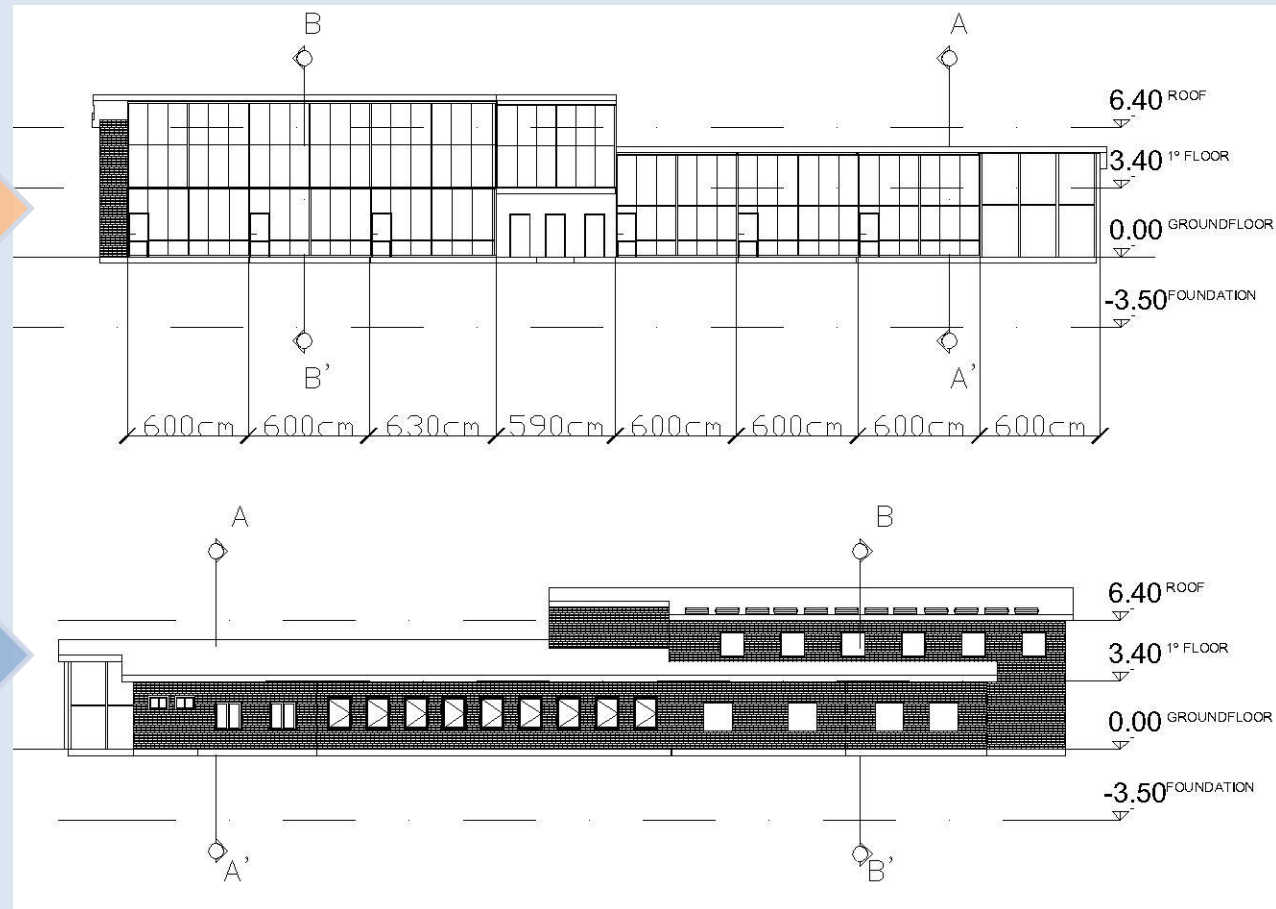
# Elevations

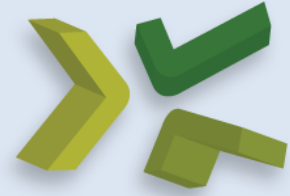
South

- The highest façade
- Curtain wall

North

- The lowest façade
- Blind wall and small windows

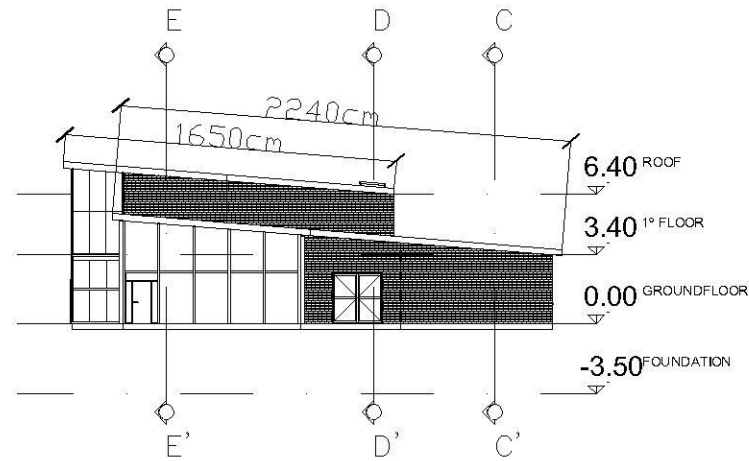




# Elevations

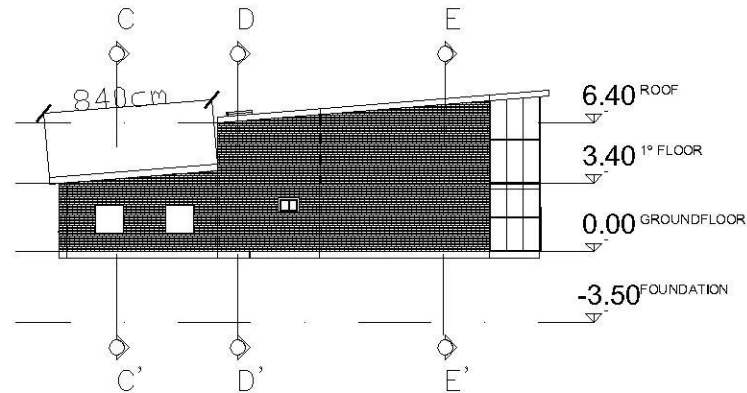
East

- Sunny façade during the morning

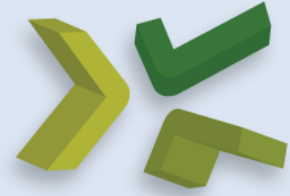


West

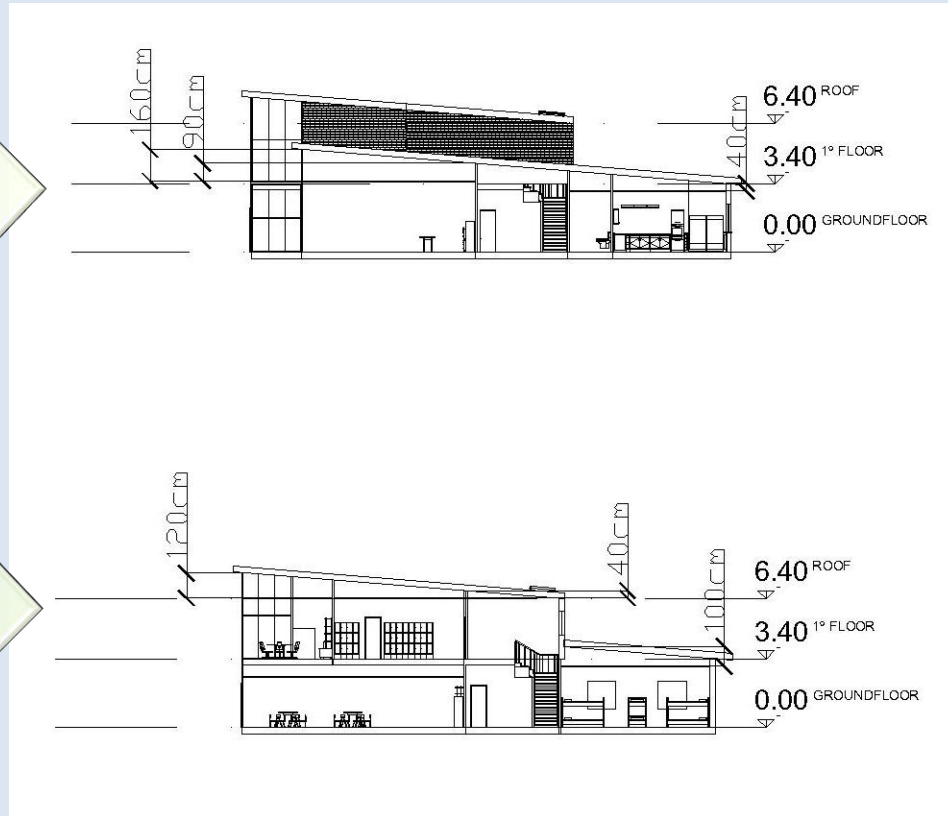
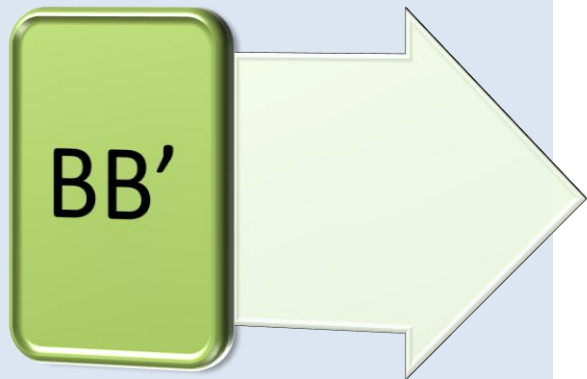
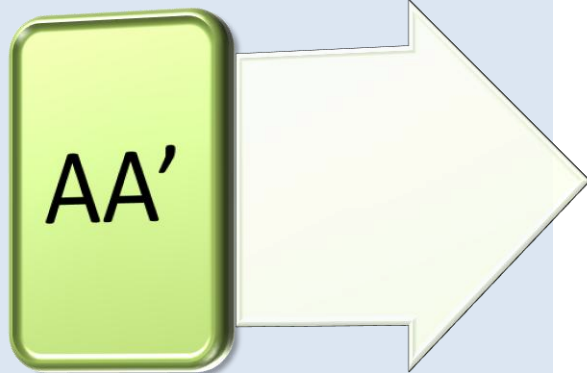
- Sunny façade during the afternoon

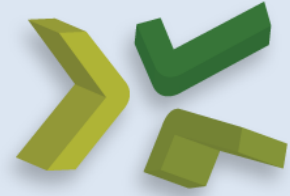




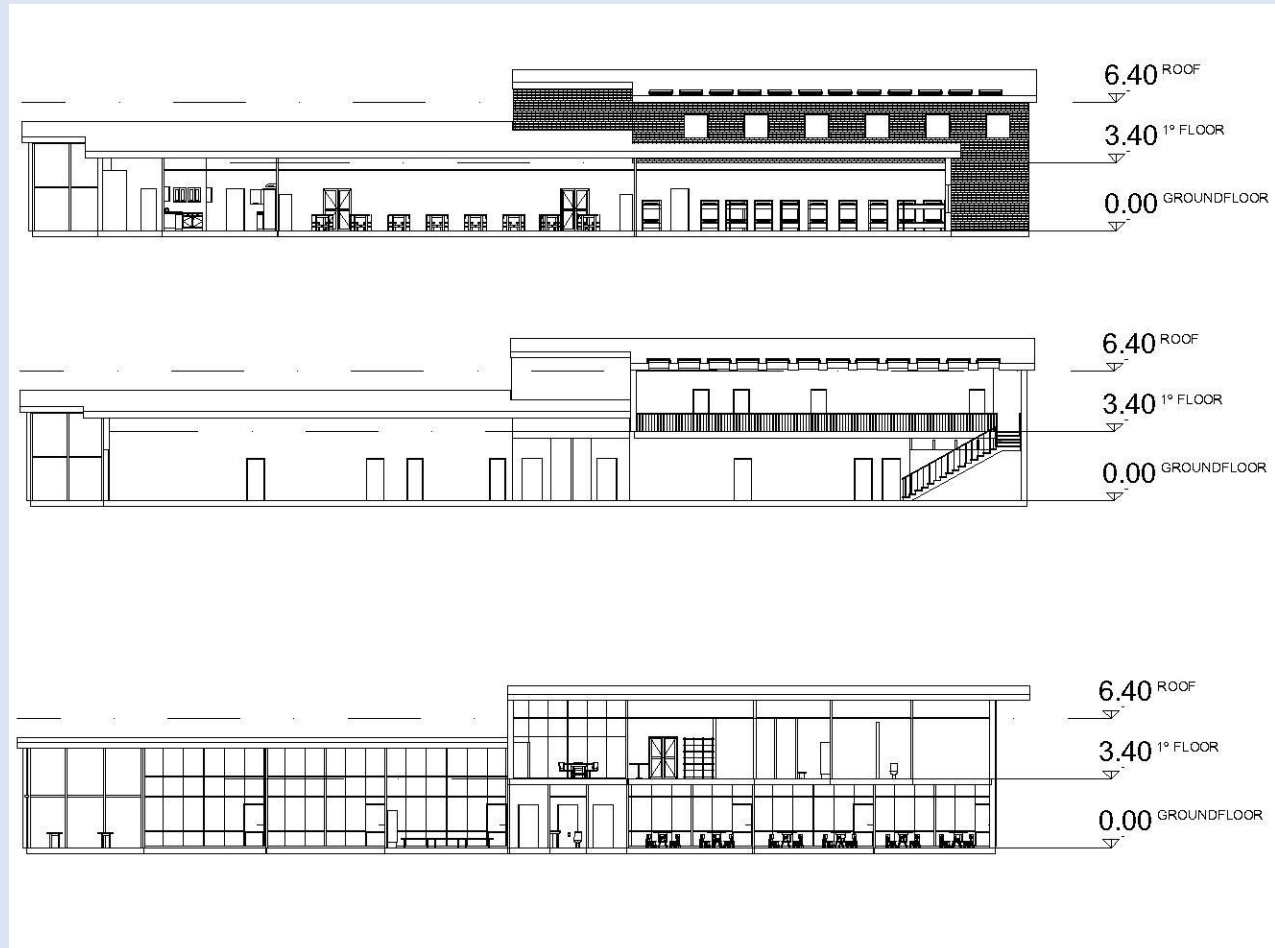
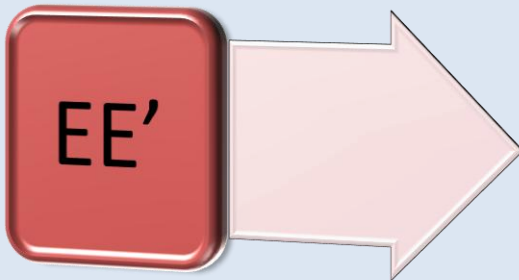
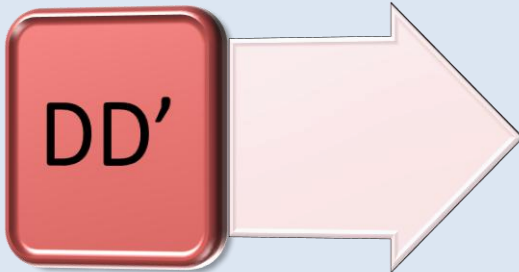
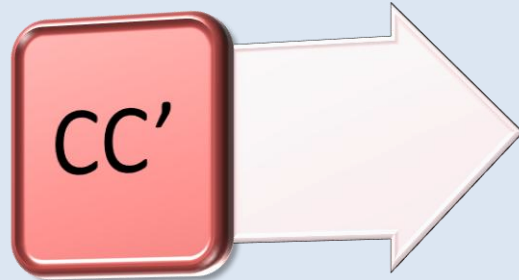


# Sections

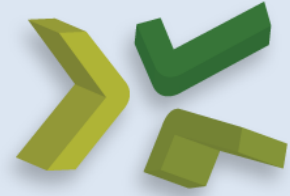


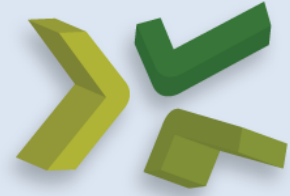


# Sections



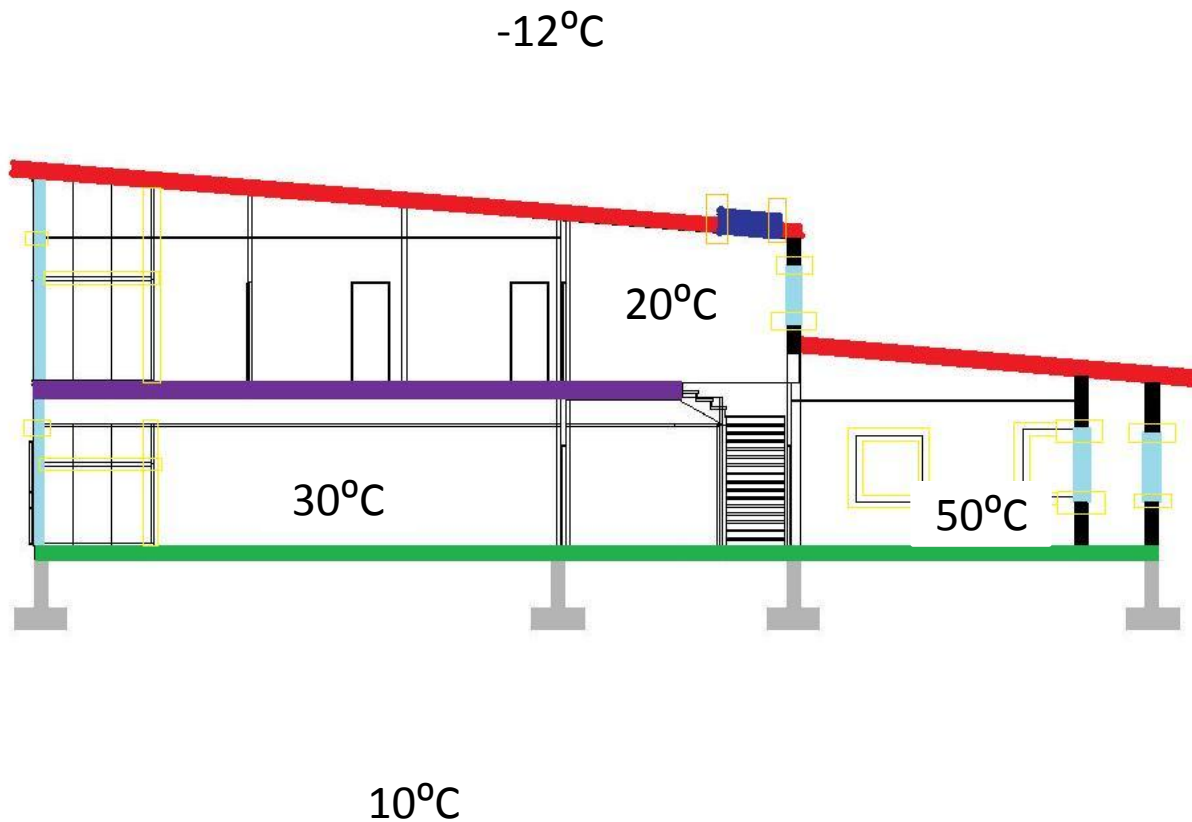
# Outdoor Modeling



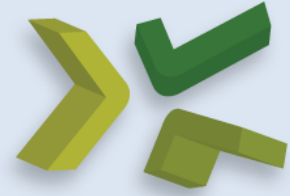


# U-value analysis

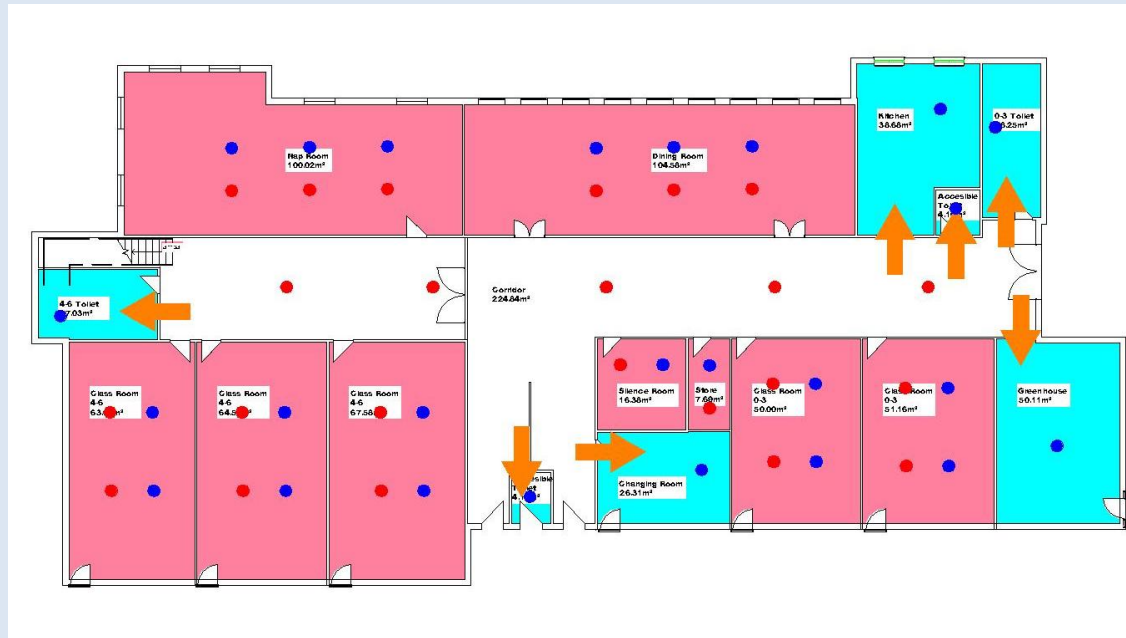
- According to DS 418:2011



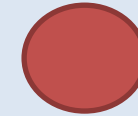
Recom	Max
W/m <sup>2</sup> K	
0,12	0,20
0,15	0,25
1,80	2,00
	0,70
1,50	2,00
0,20	0,40
0,12	0,30
0,03	0,06
0,10	0,20



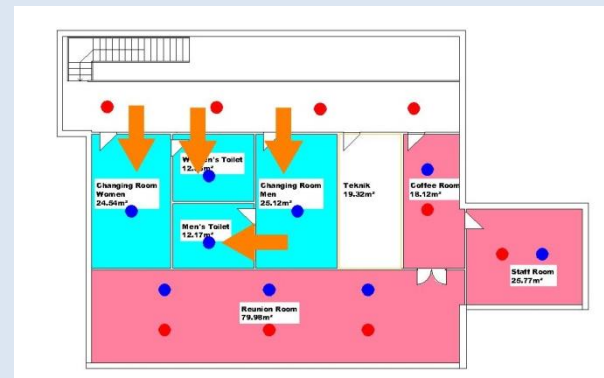
# Ventilation analysis



Outlet



Inlet





# Airborne insulation **Sound analysis**



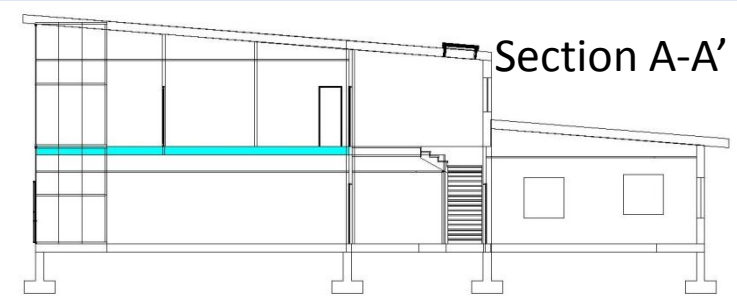
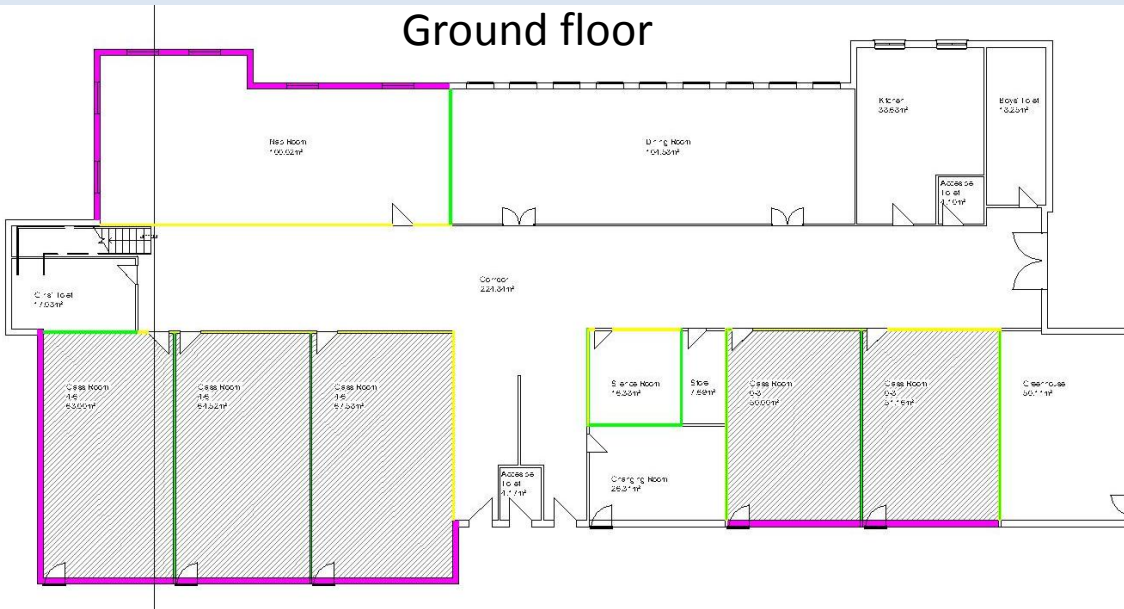
## Impact level(Striped)



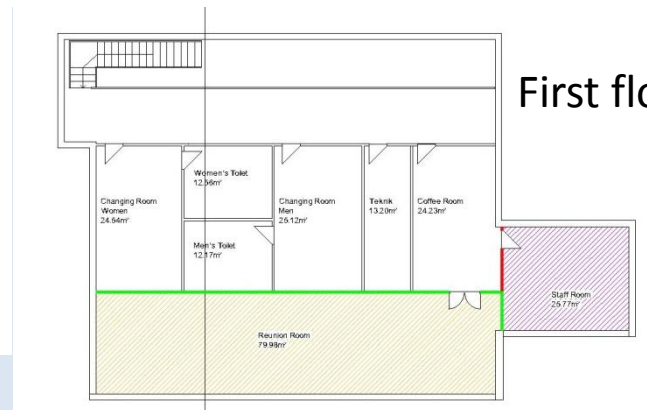
## Noise level



Ground floor

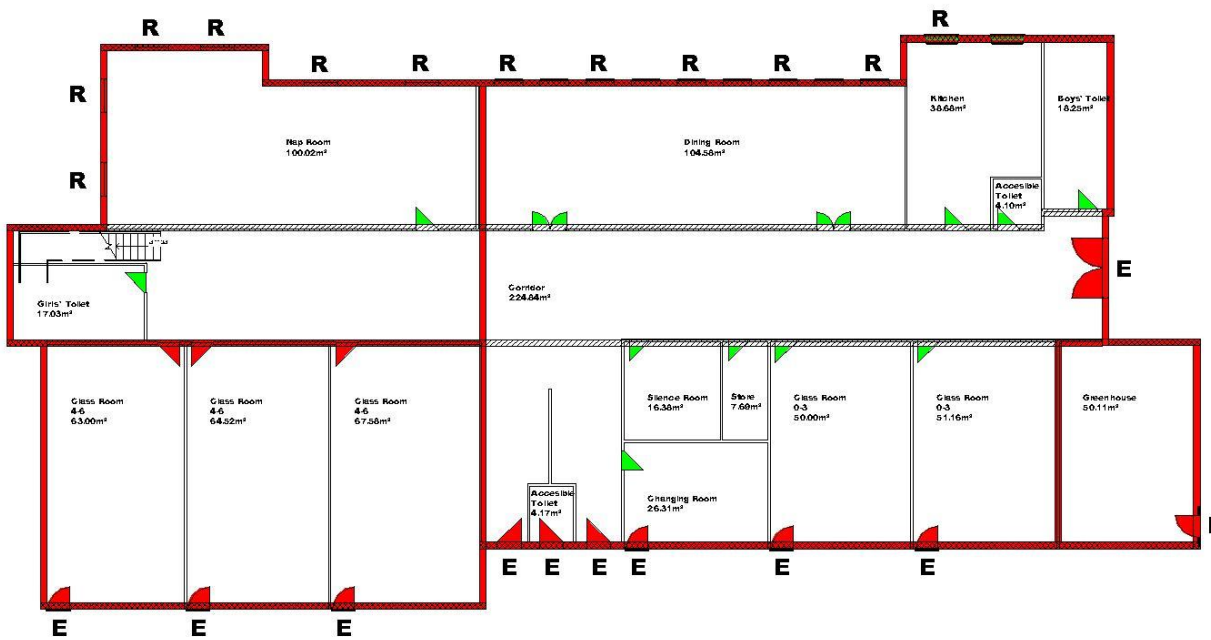
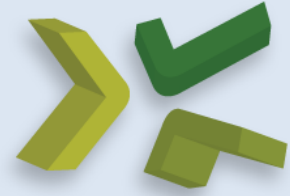


First floor



**According SBI 216**

# Protection against fire



■ EI60

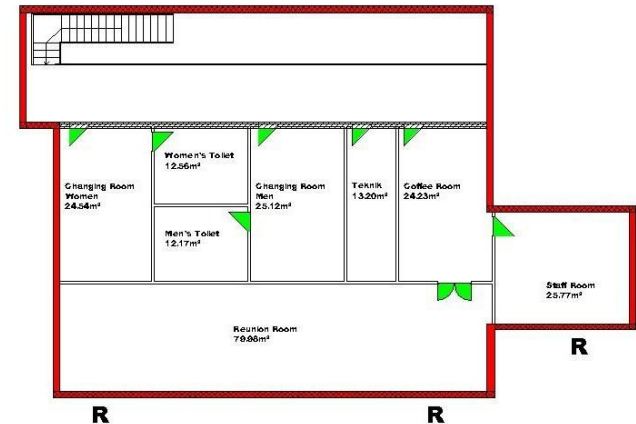
■ EI30

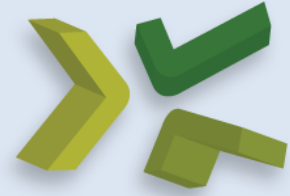
E Escape route level (lower than 5.1m)

R Rescue opening

/// R Load carrying

XXXX REI Load carrying, separating





# Project Cost

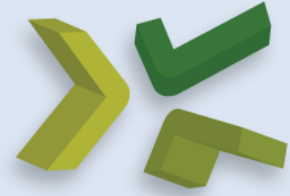
Yield=5% of Project cost

Yield= (700 ) kr/m<sup>2</sup>/yr \* 1265.35m<sup>2</sup> =885,745kr/yr

PROJECT COST=885,745kr/5%= 17,714,900kr

- Yield for the Developer is 885,745kr(5%)
  - Administration costs, contingencies, etc .(max. 5% of total costs= 885,745kr)
- The rest of the project cost are Construction & Design Costs (90%= 15,943,410 kr ),



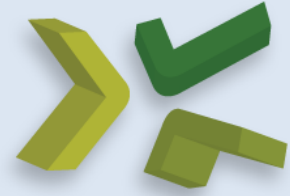


# Construction & Design cost

Construction & Design cost are:

- **Constructions Cost for building** 14,494,009.1 kr
  - Site Costs 2,898,801.82kr (20%)
  - Construction Costs 11,595,207.3kr (80%)
- **Consultant Fees** (10% of Constructions Cost for building) 1,449,400.91kr



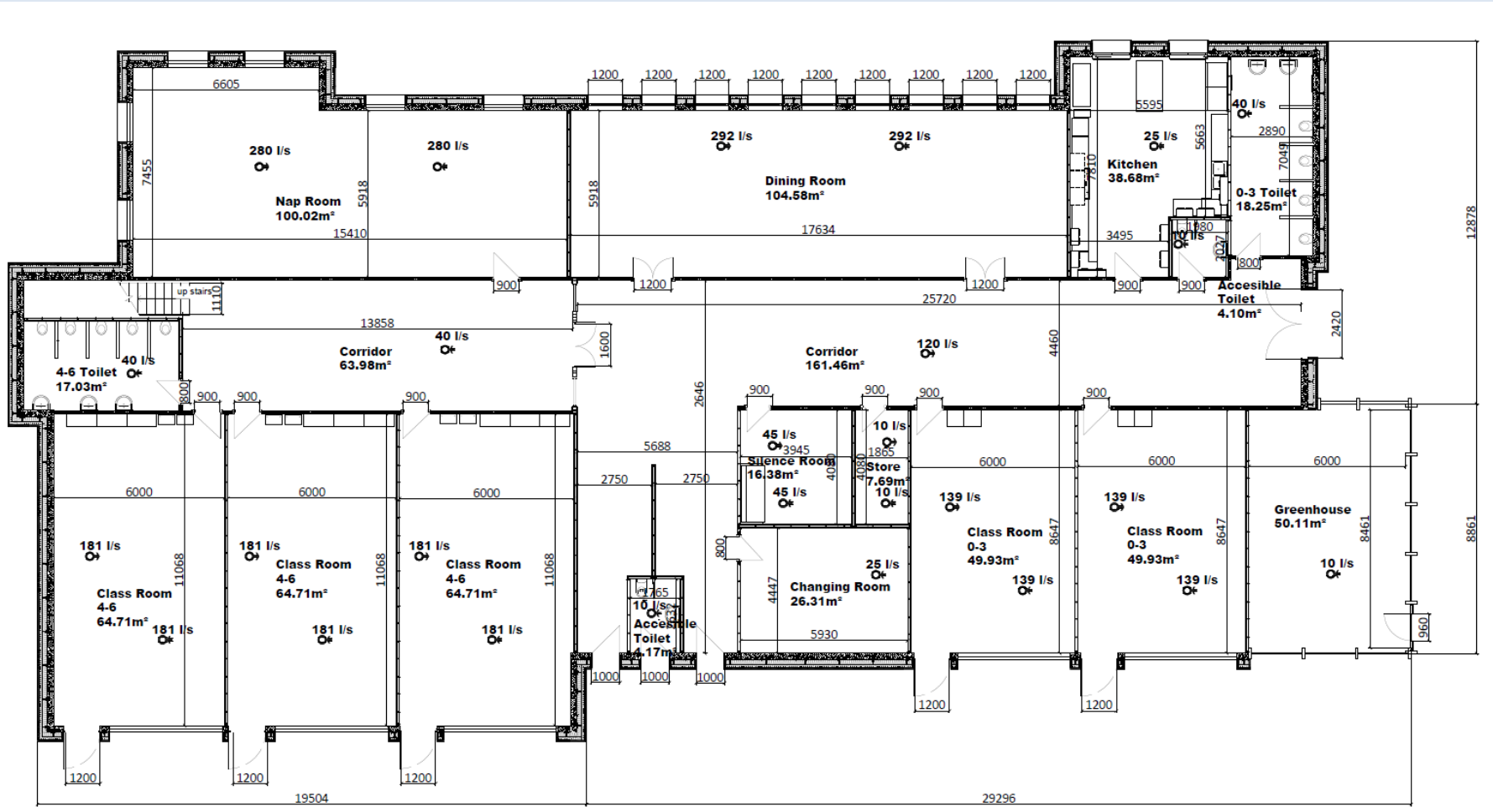


# KINDERGARTEN

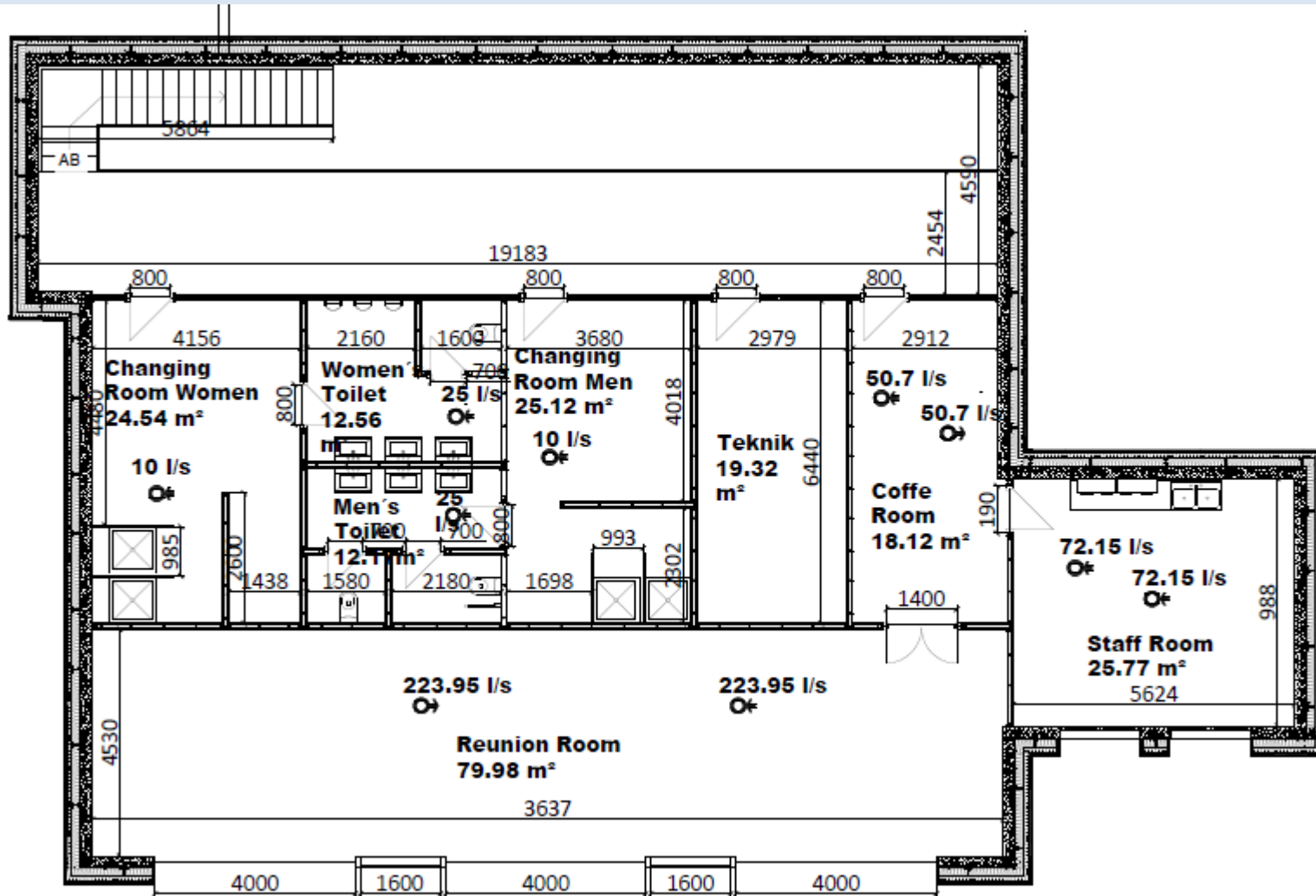
SCHEME DESIGN

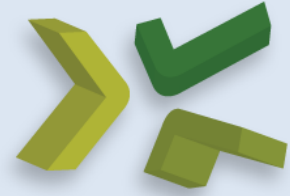


# Ground floor plant

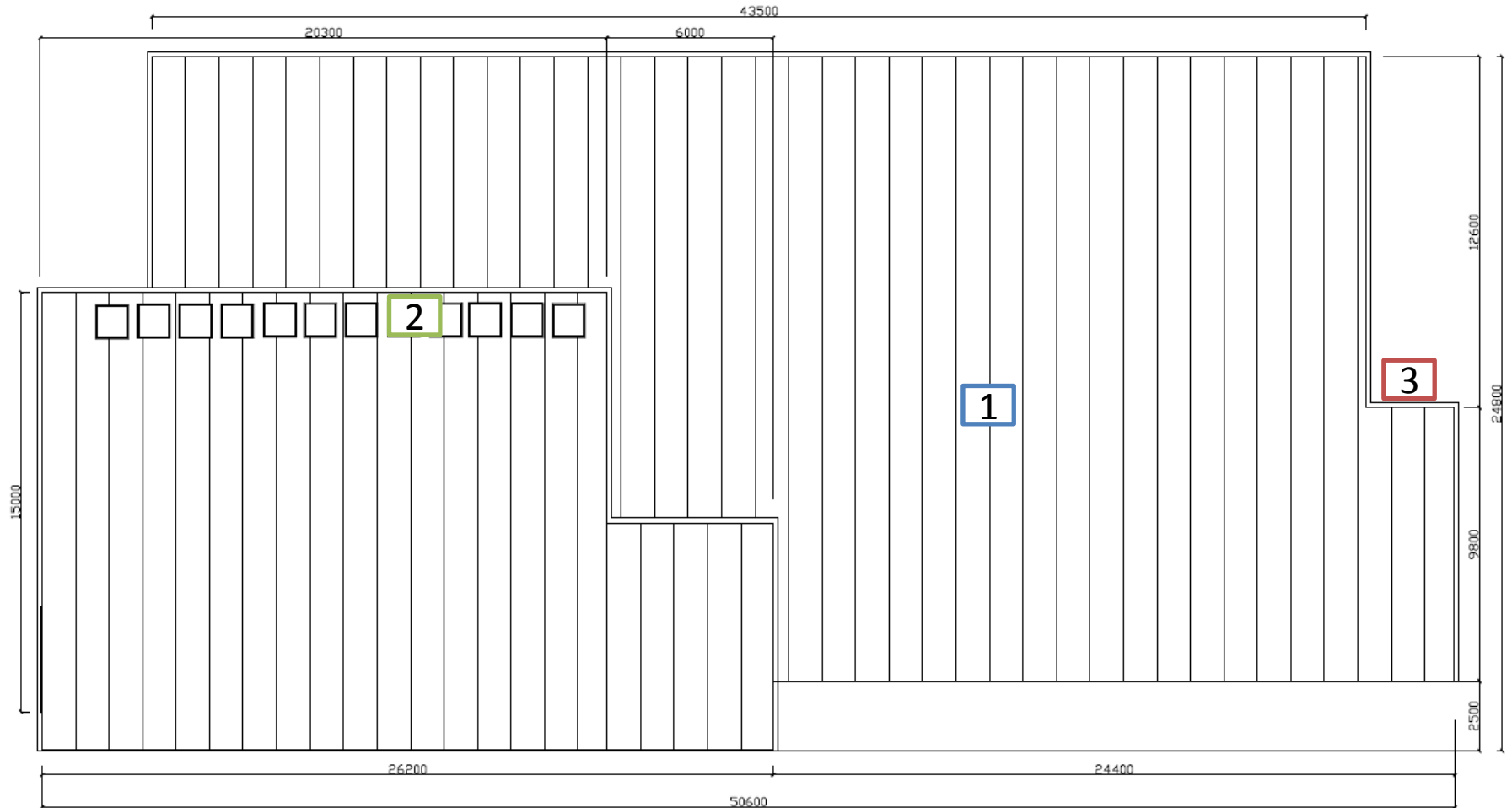


# First floor plant





# Roof plant

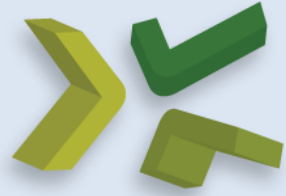


**1** Asphalt sheet

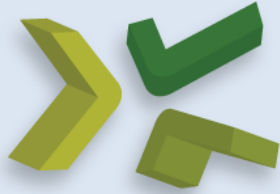
**2** Skylight

**3** Gutter

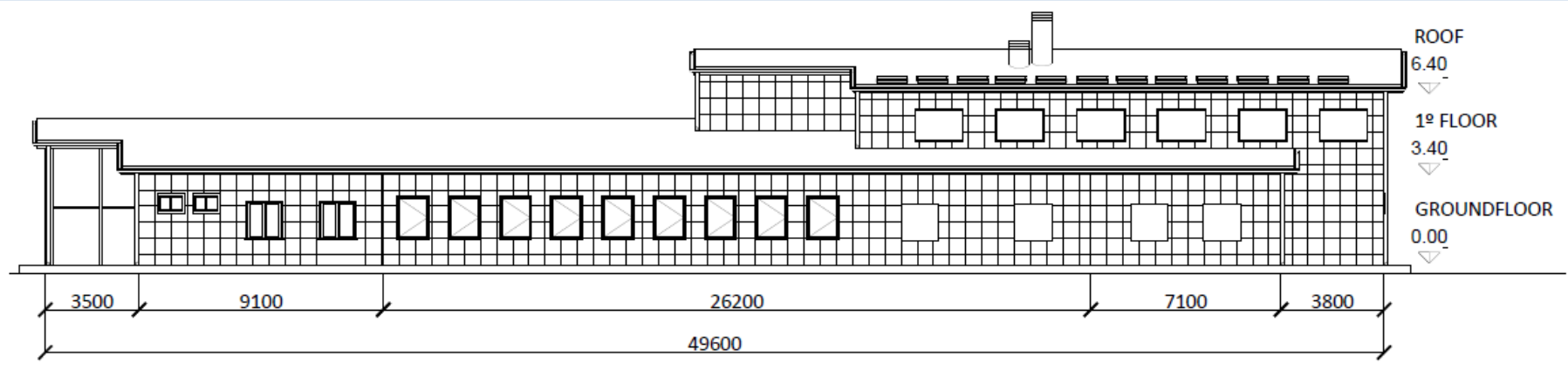
# Outdoor Modeling



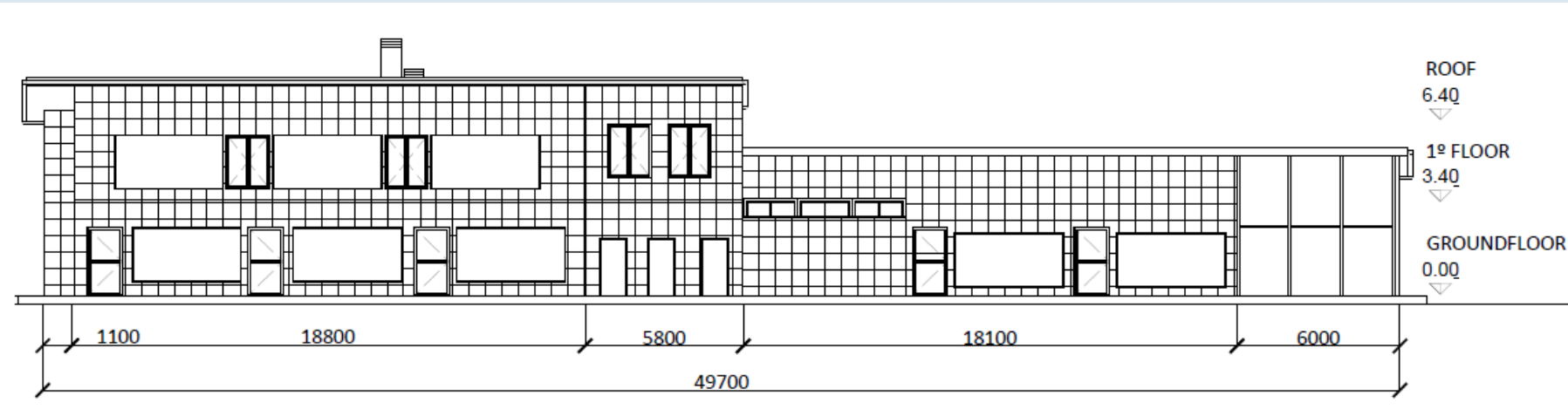
# Elevations



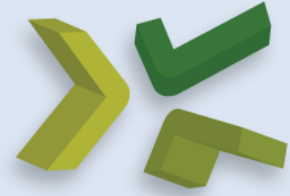
NORTH



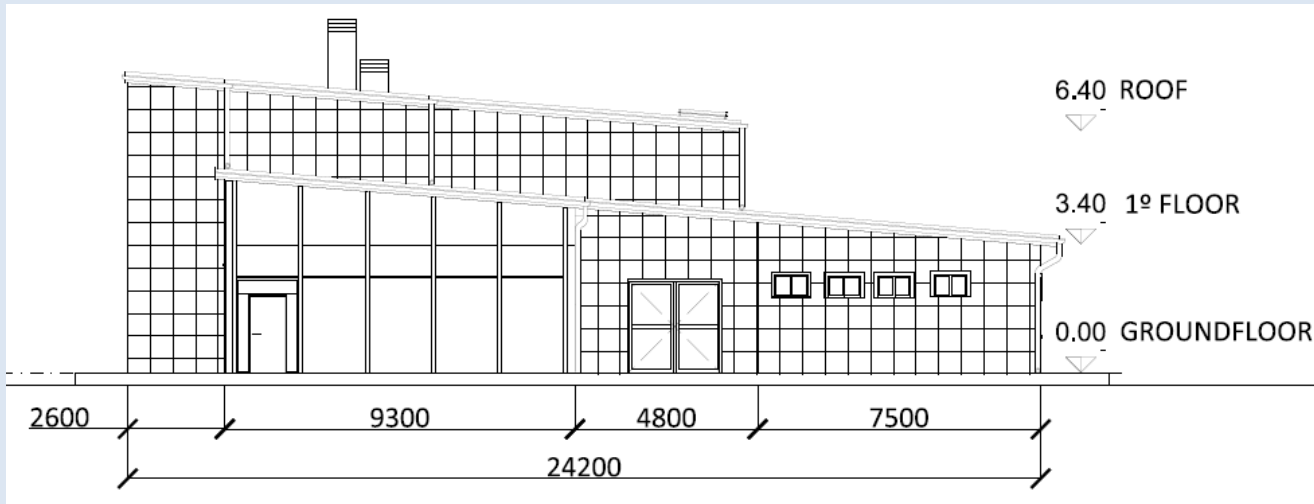
SOUTH



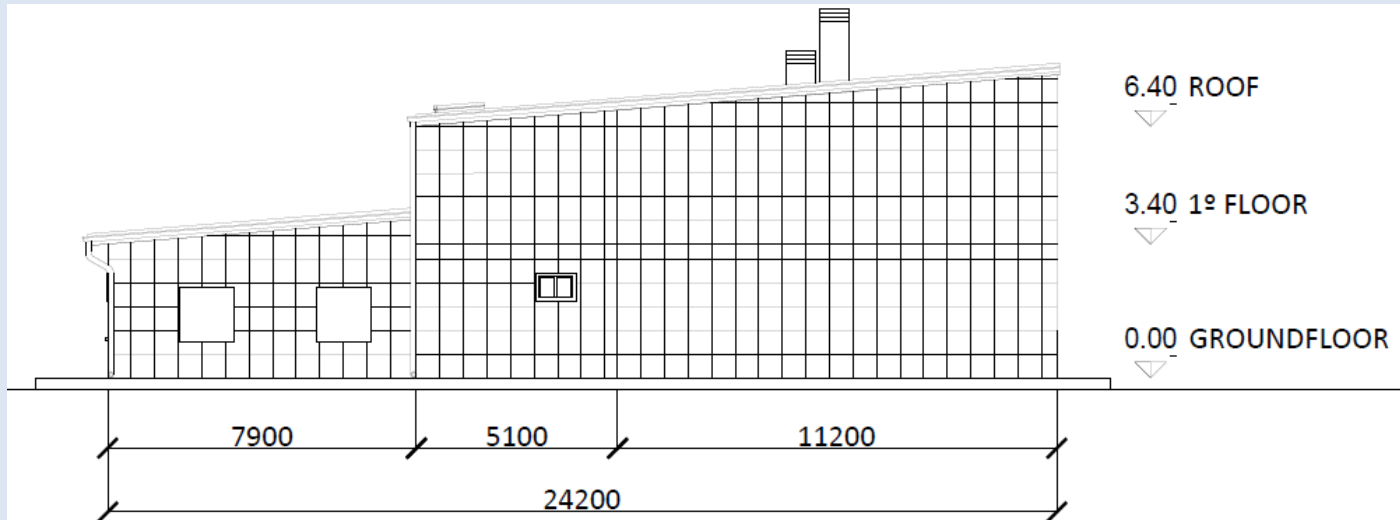


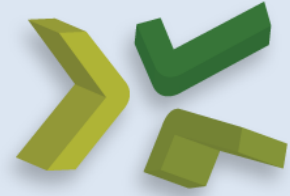


EAST

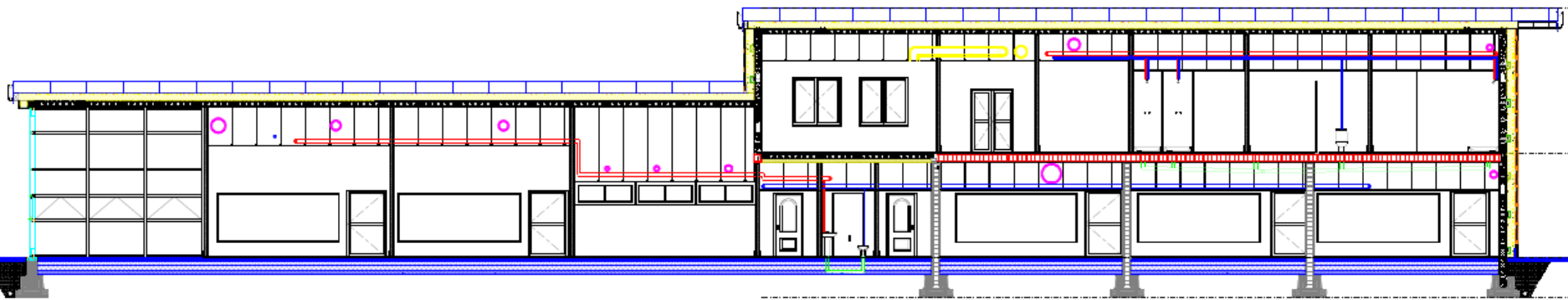
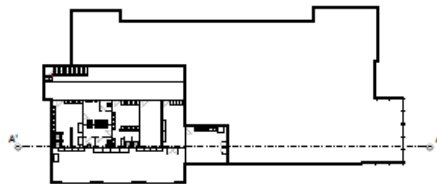
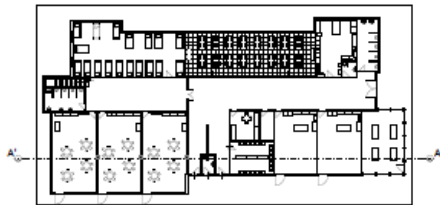


WEST

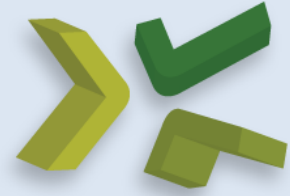




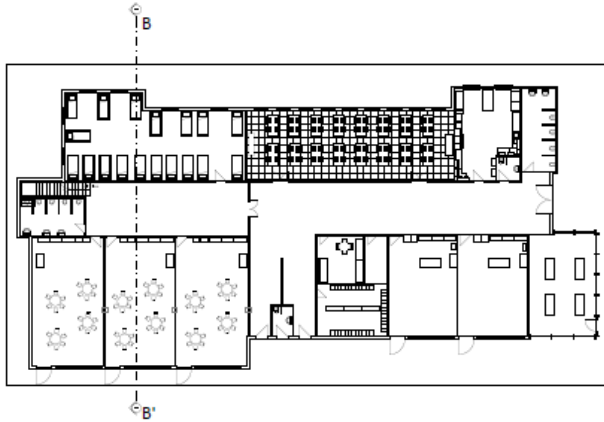
# Section A-A'



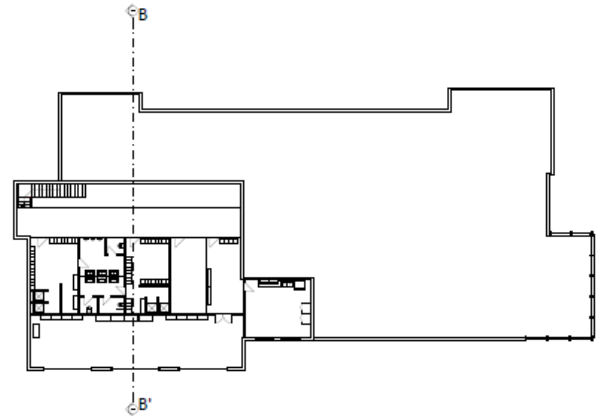
- Hot water
- Cold water
- Ventilation in
- Ventilation out
- Sewer house water



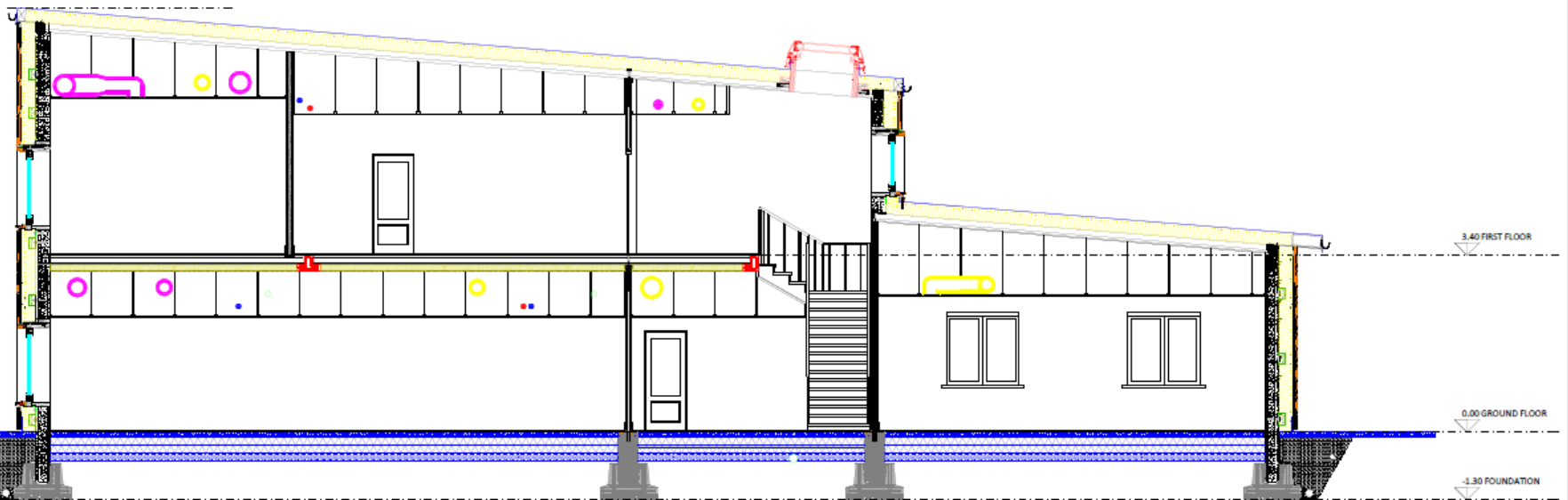
# Section B-B'









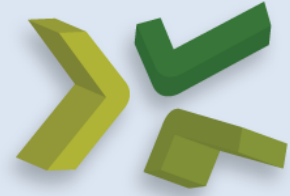
SCALE  
1:200



SCALE  
1:200

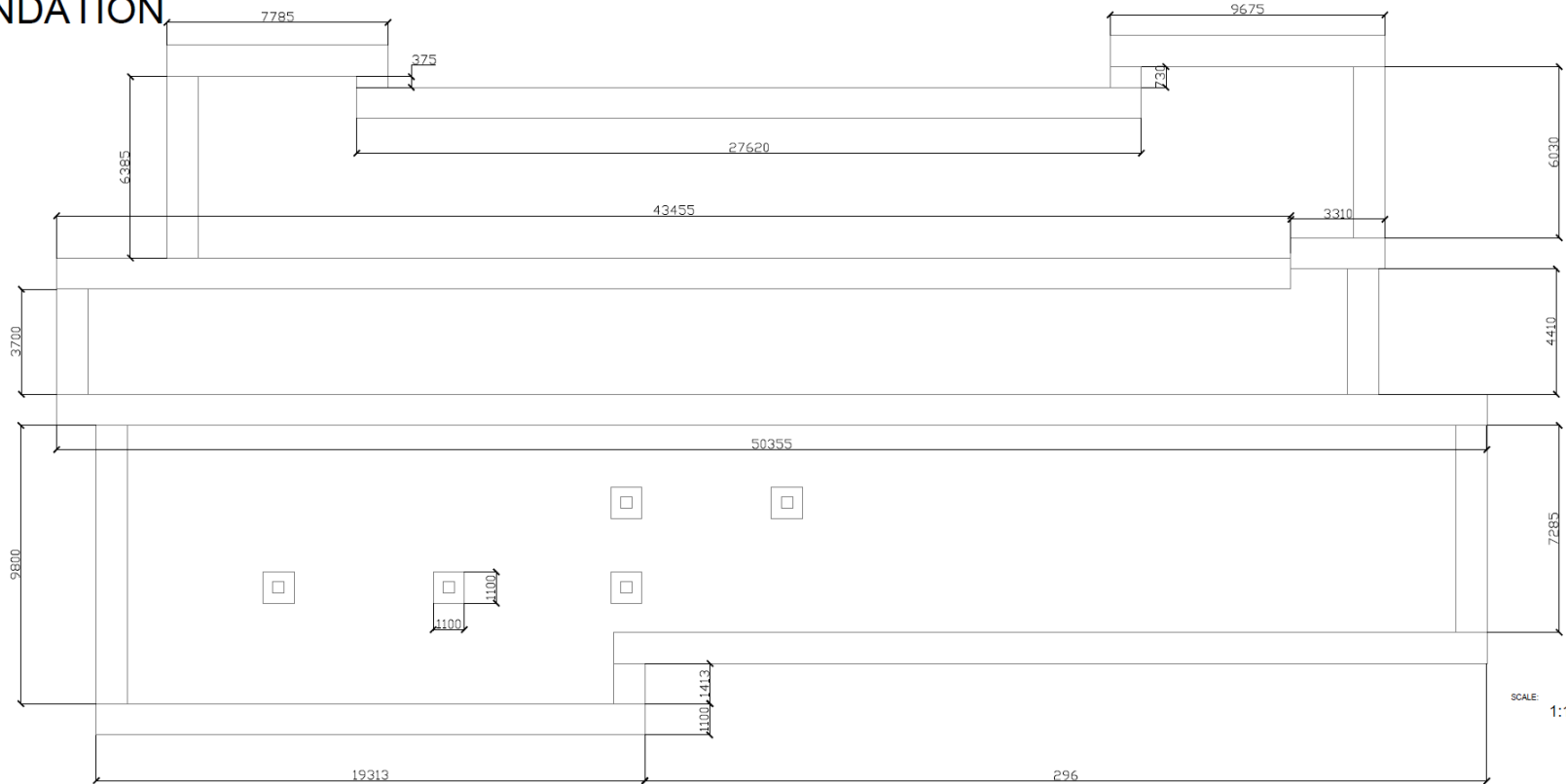


- |   |            |   |                 |   |                   |
|---|------------|---|-----------------|---|-------------------|
|  | Hot water  |  | Ventilation in  |  | Sewer rain water  |
|  | Cold water |  | Ventilation out |  | Sewer house water |



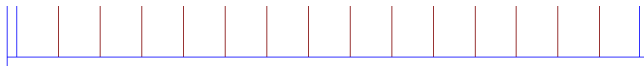
# Structure plant





## FOUNDATION

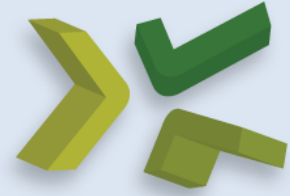


SCALE: 1:100

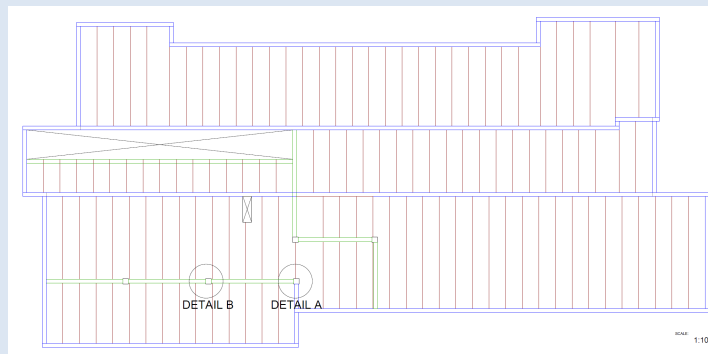
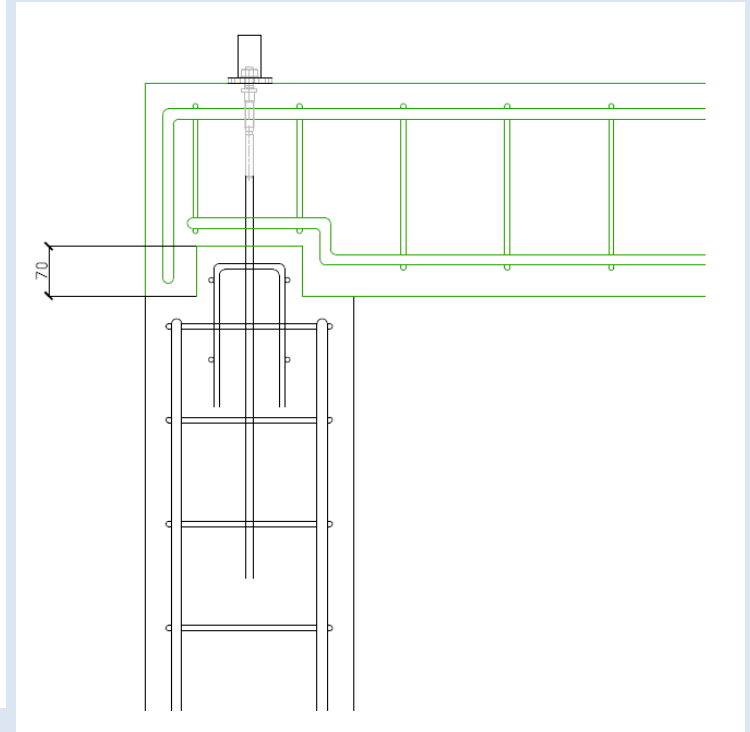
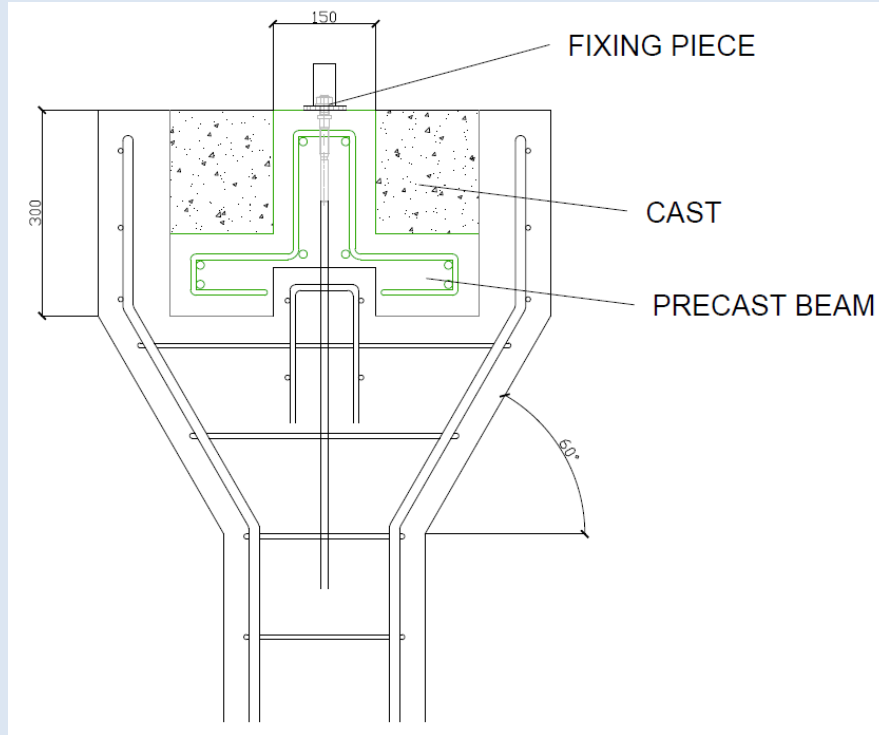
SCALE: 1:100







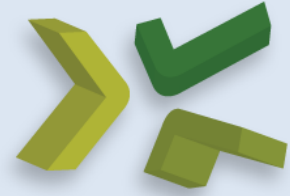
-  beam
-  prefabricated slab
-  load bearing wall
-  foundation



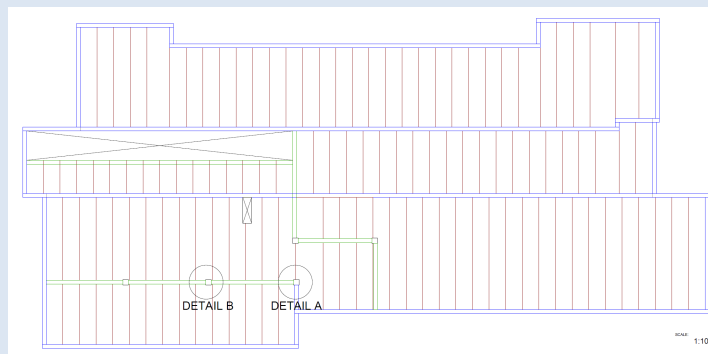
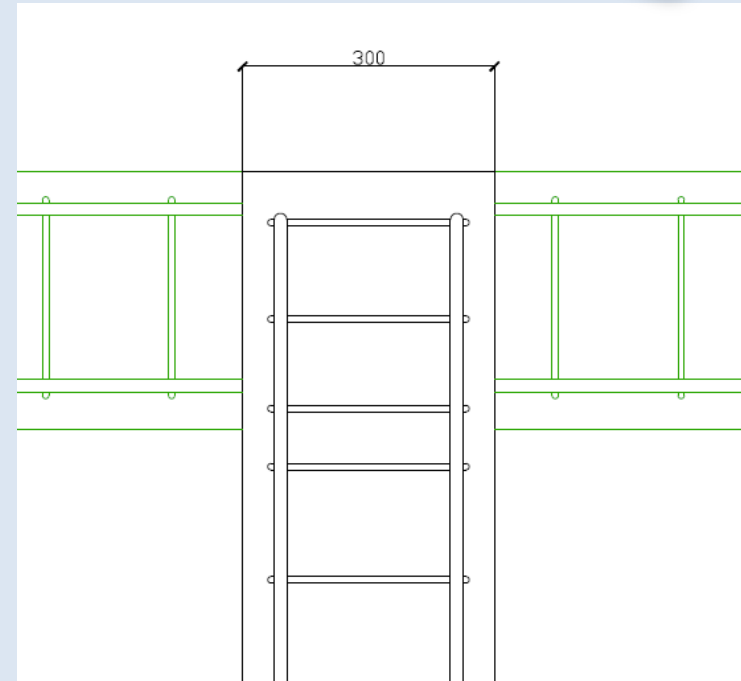
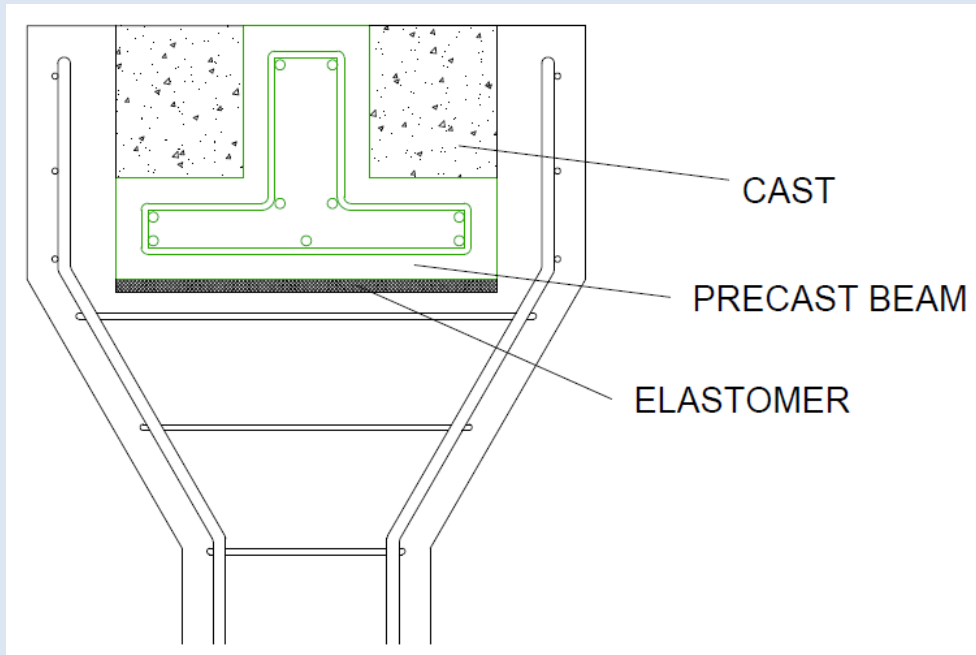
# Detail A







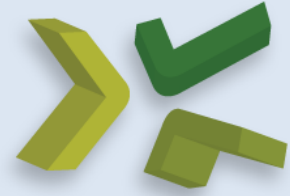
-  beam
-  prefabricated slab
-  load bearing wall
-  foundation



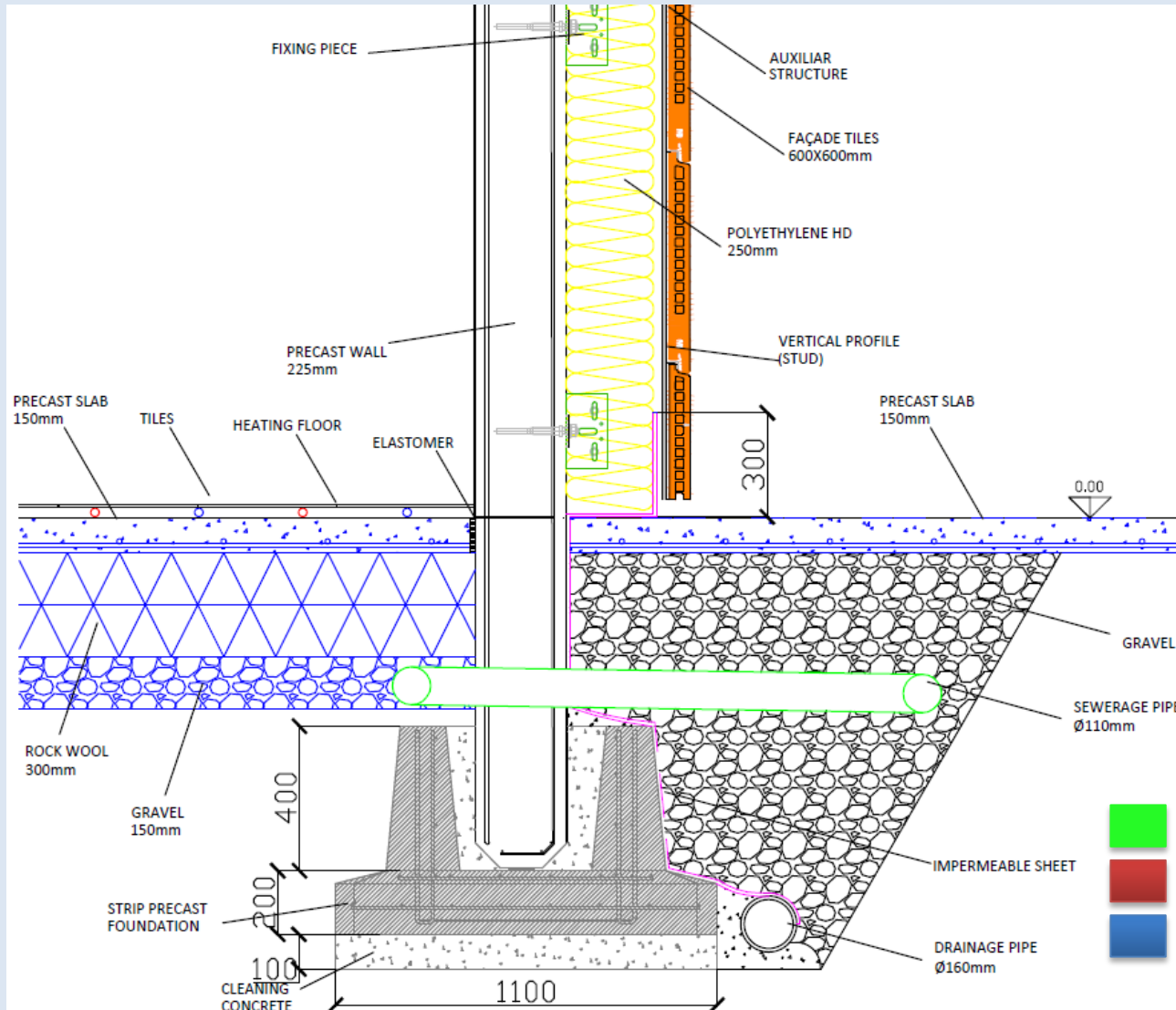
# Detail B






-  beam
-  prefabricated slab
-  load bearing wall
-  foundation

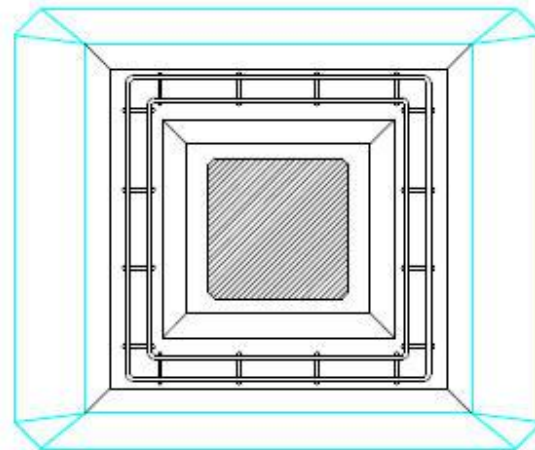
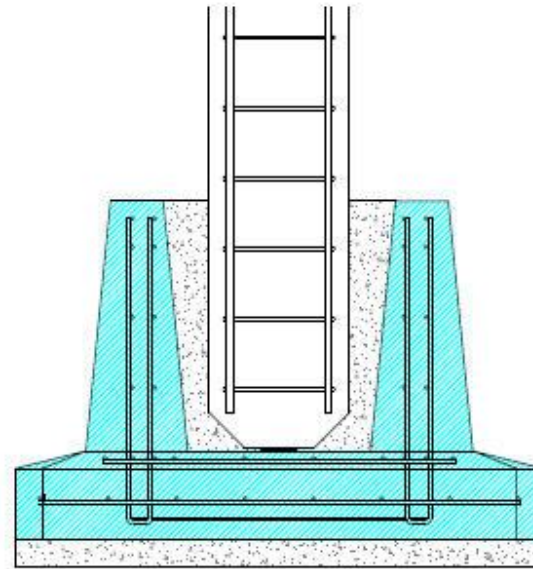
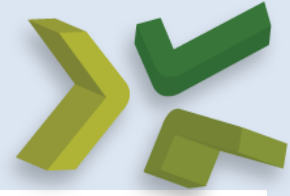


# Foundation detail

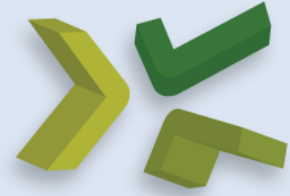


-  Sewer house water
-  Heating going
-  Heating return

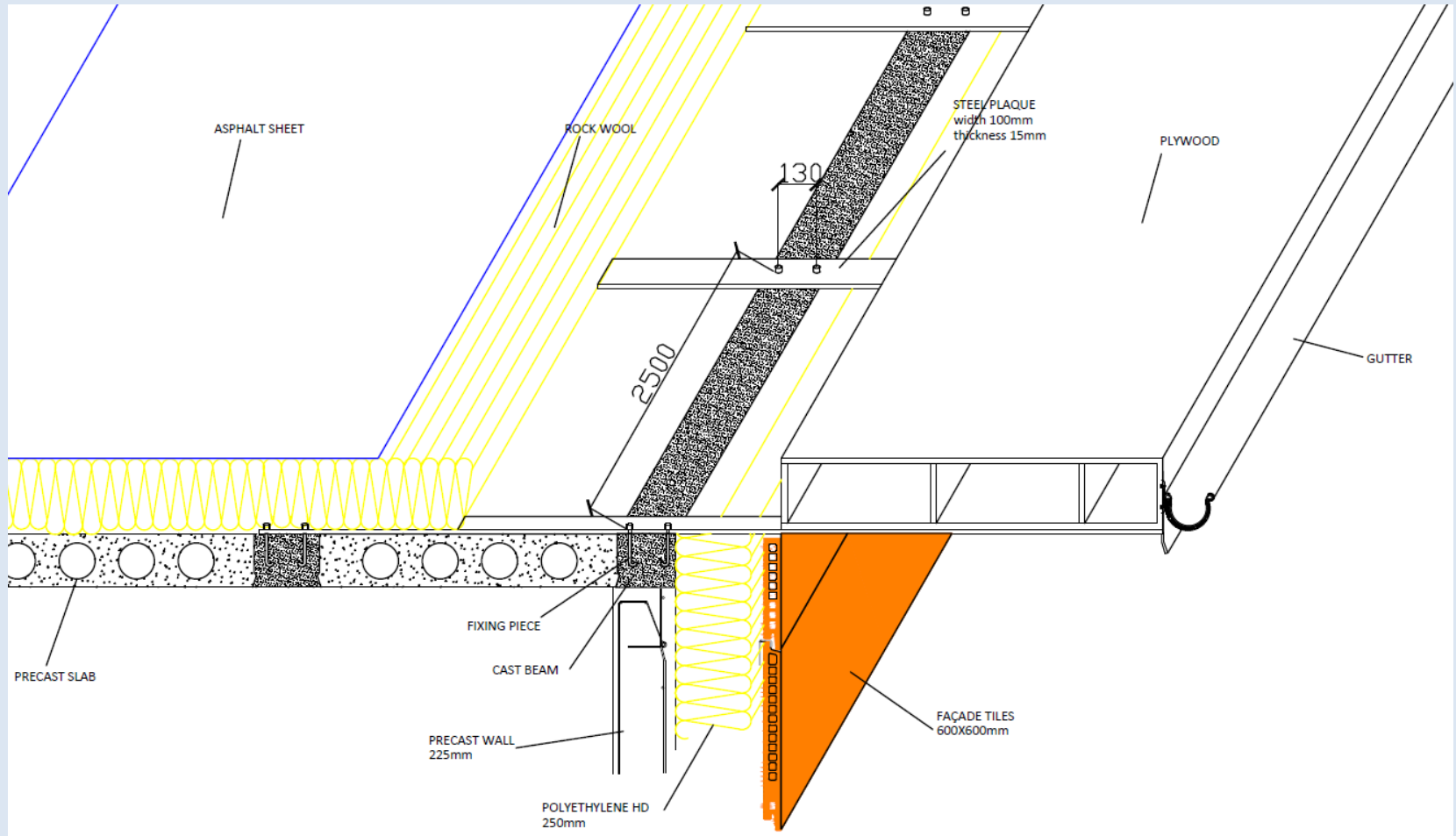
# Foundation detail



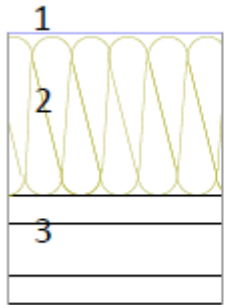
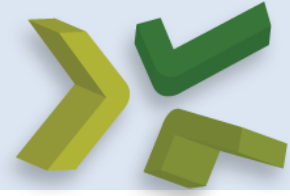




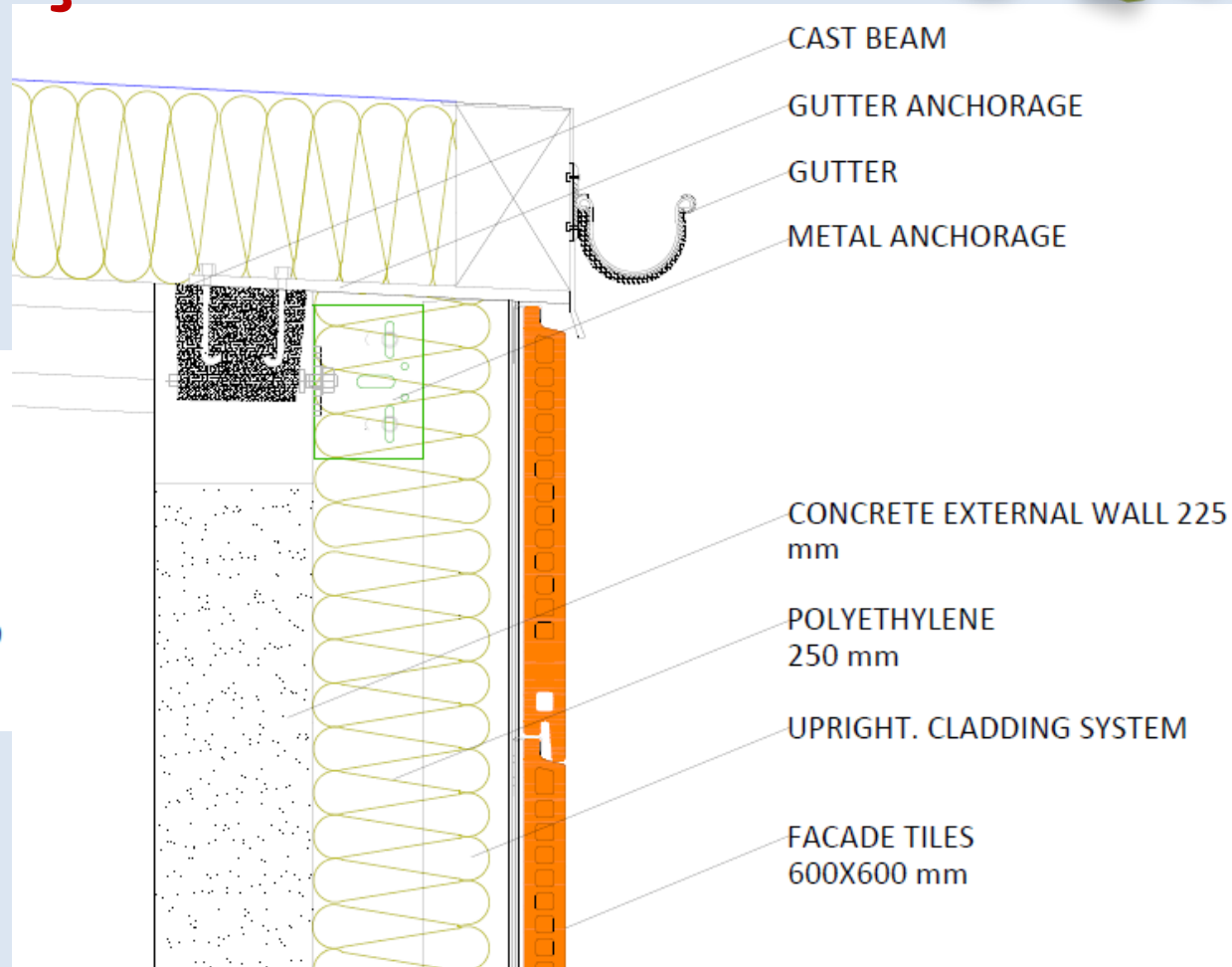
# Eave Detail



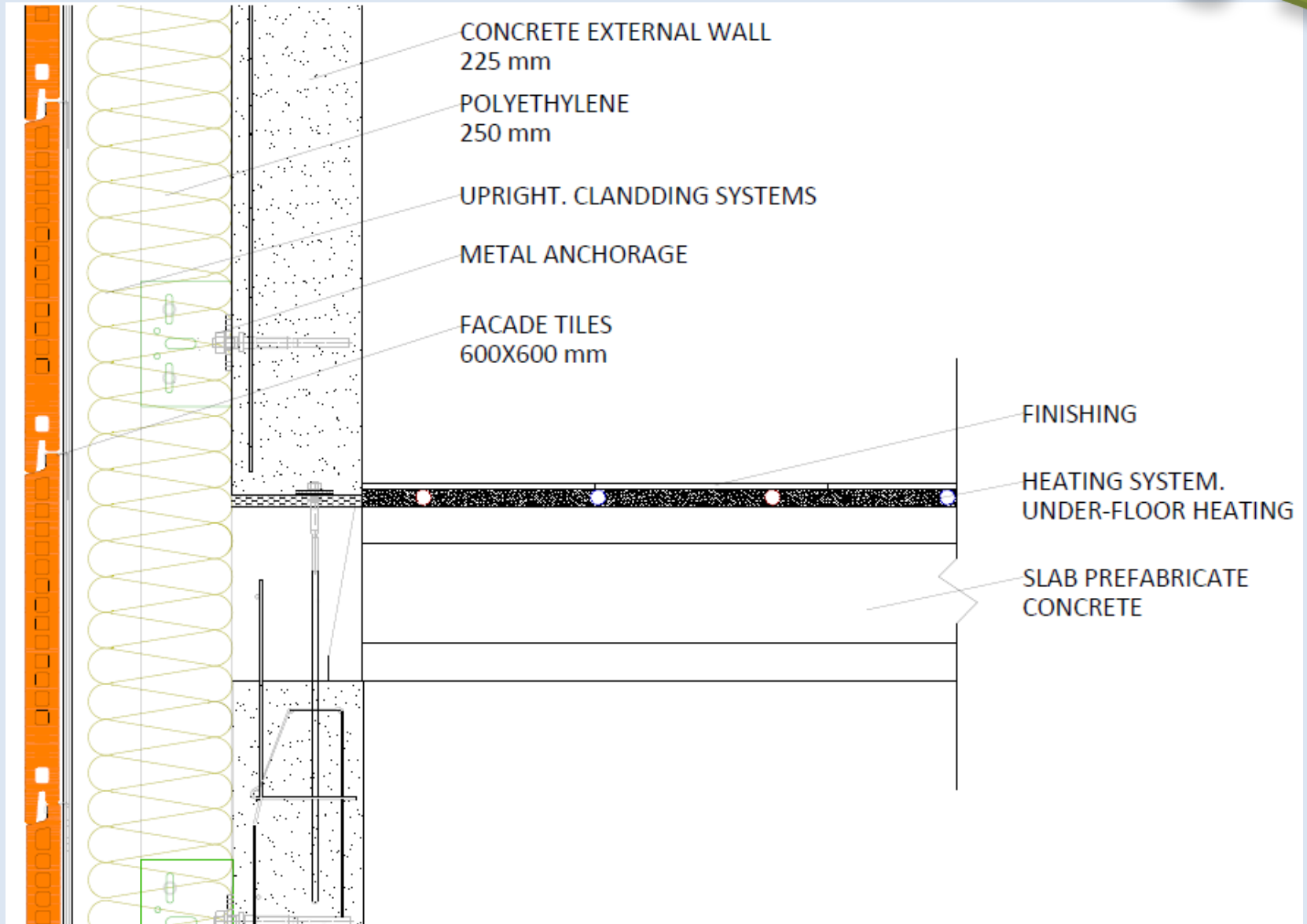
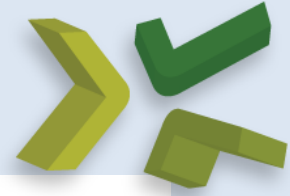
# Façade- Gutter



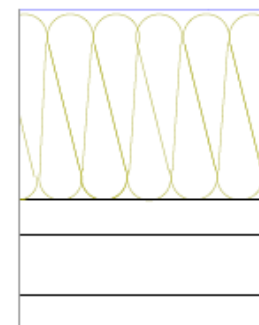
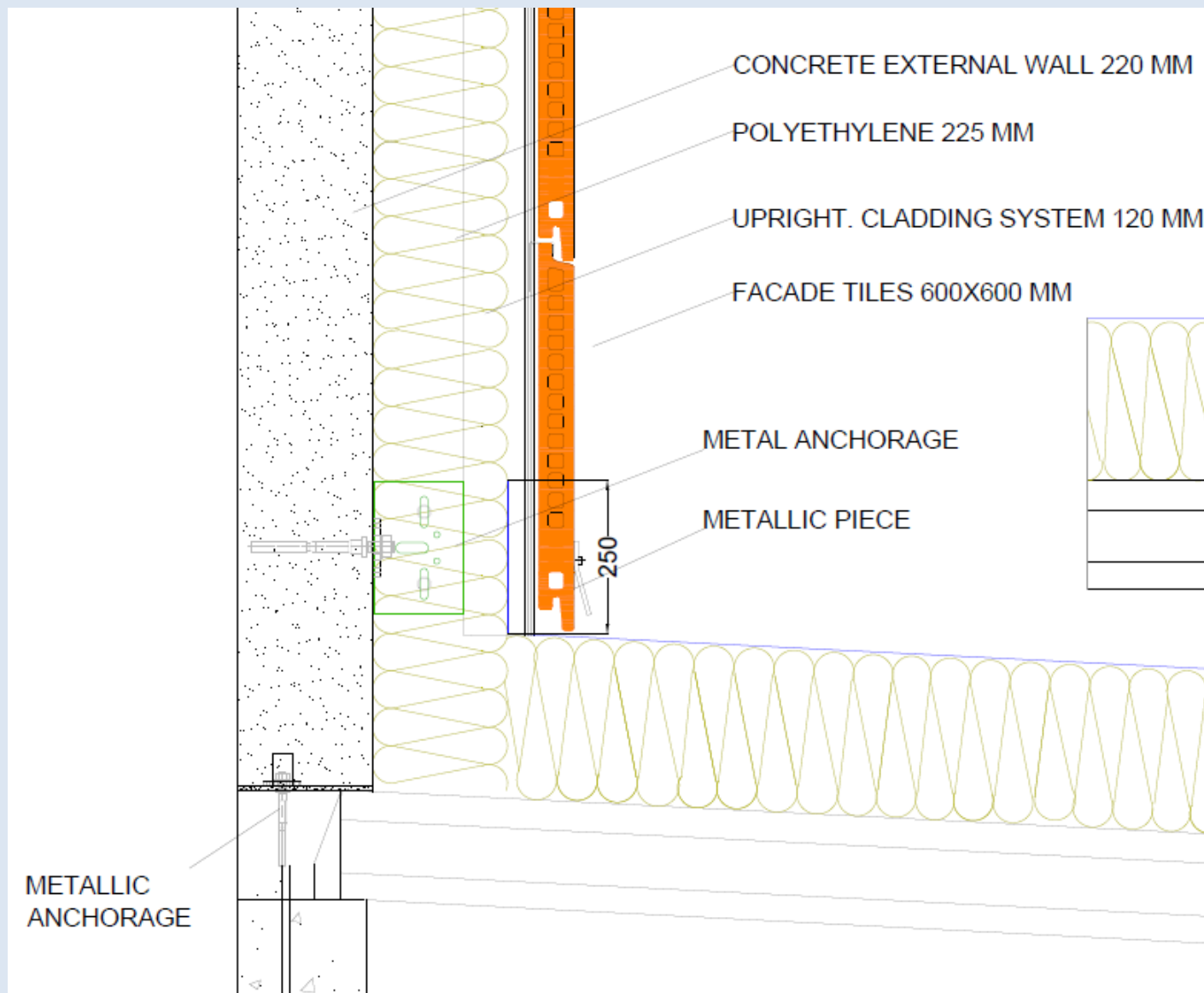
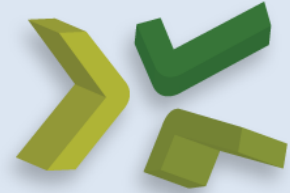
- 1 ASPHALT SHEETS 2 mm
- 2 ROCK WOOL 270 mm
- 3 CONCRETE SLABS 180 mm



# Façade-Floor



# Façade- Roof

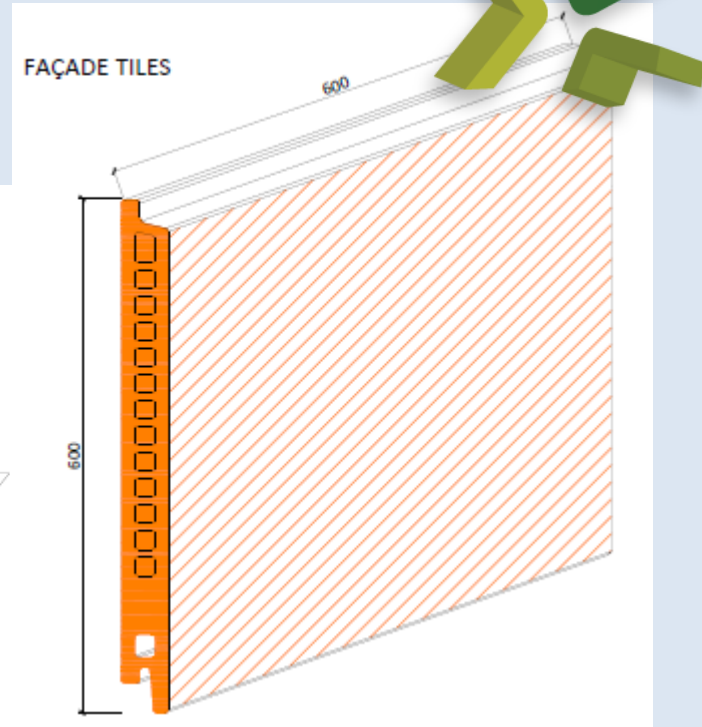
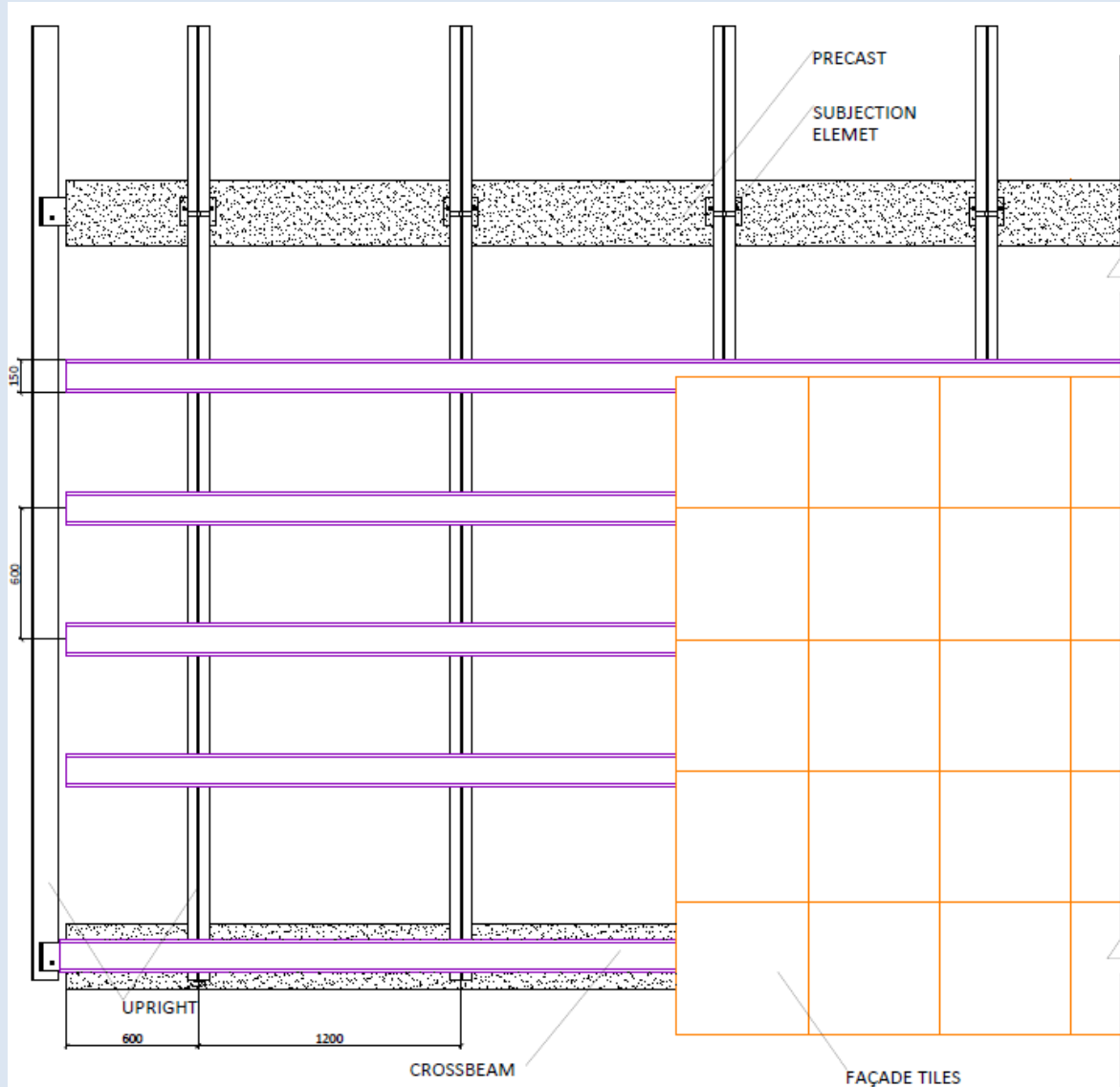


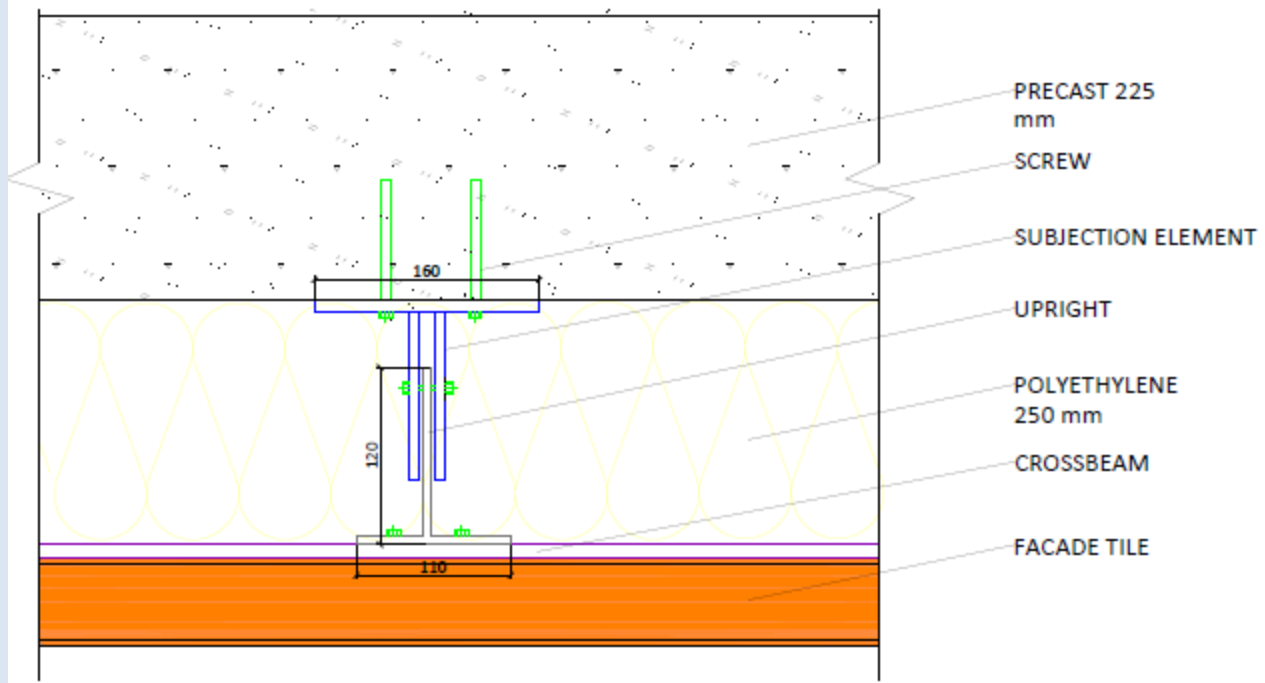
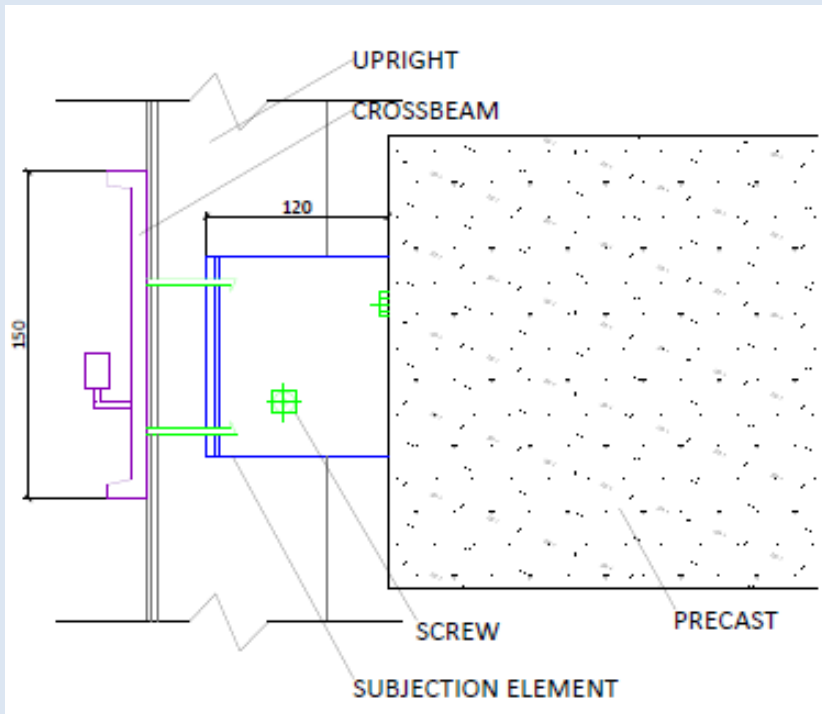
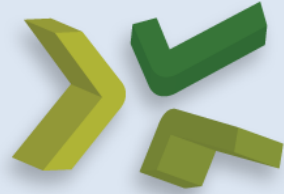
ASPHALT SHEETS  
2MM

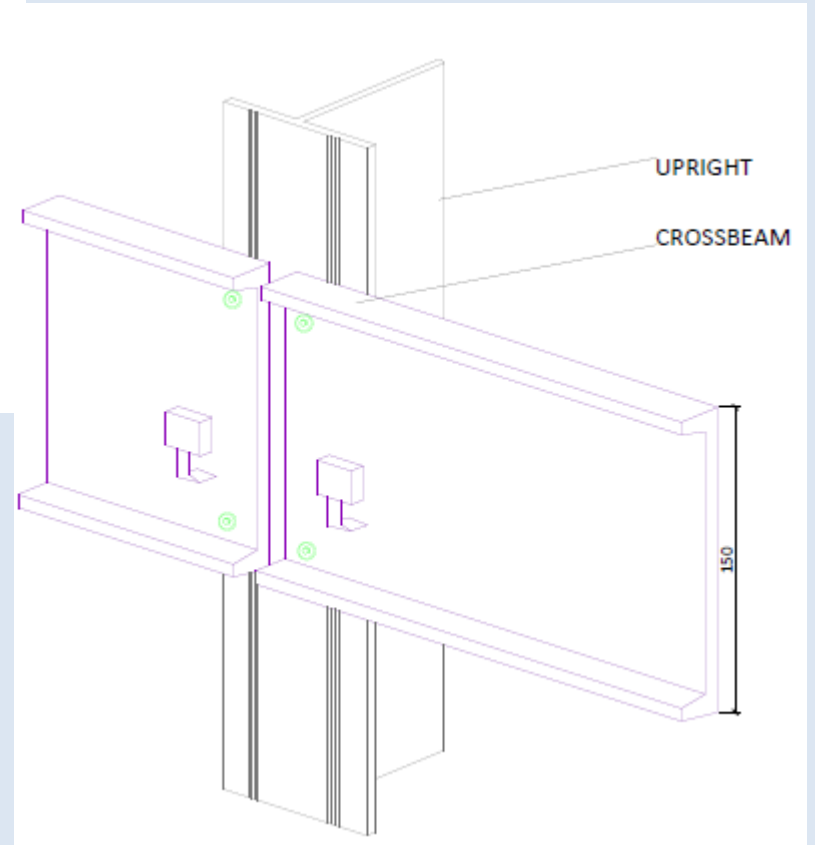
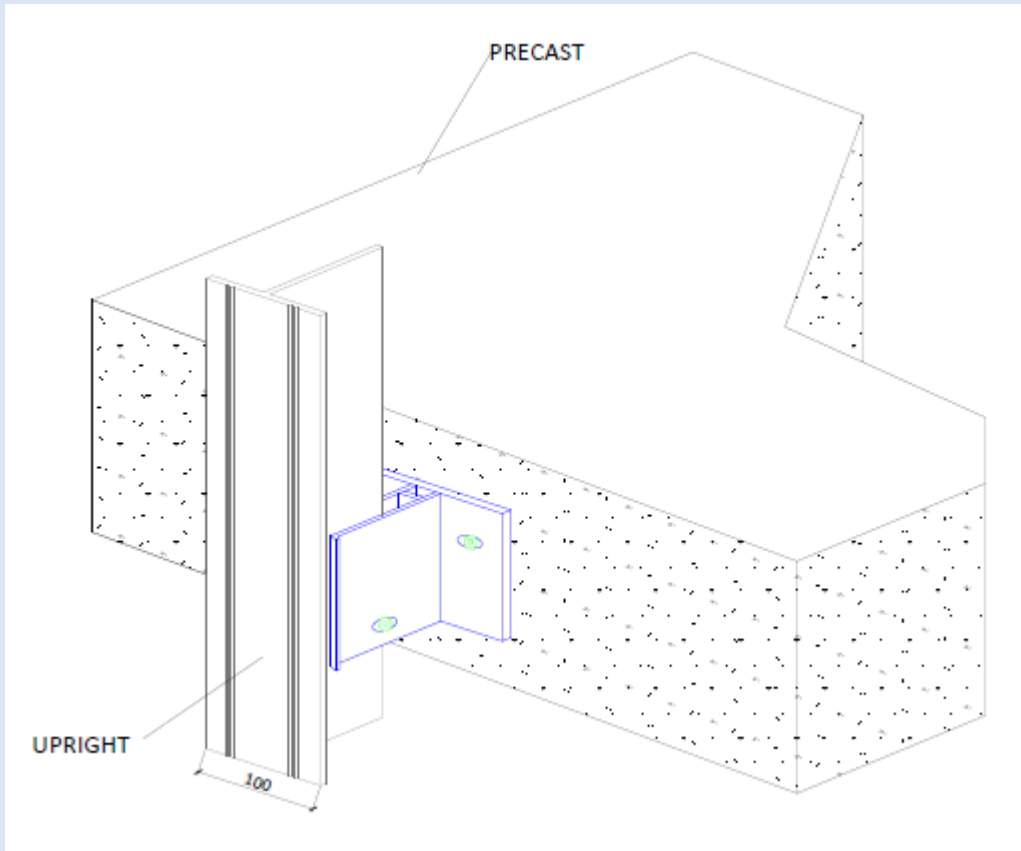
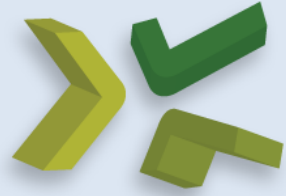
POLYETHYLENE  
270 MM

CONCRETE  
PREFABRICATE  
SLABS 180 MM

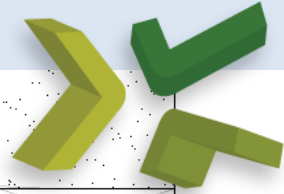
# Cladding Façade







# Windows Details



LINTEL

SPECIAL PIECE

WINDOW PROFILE

GLASS

RAIN GUARD PIECE

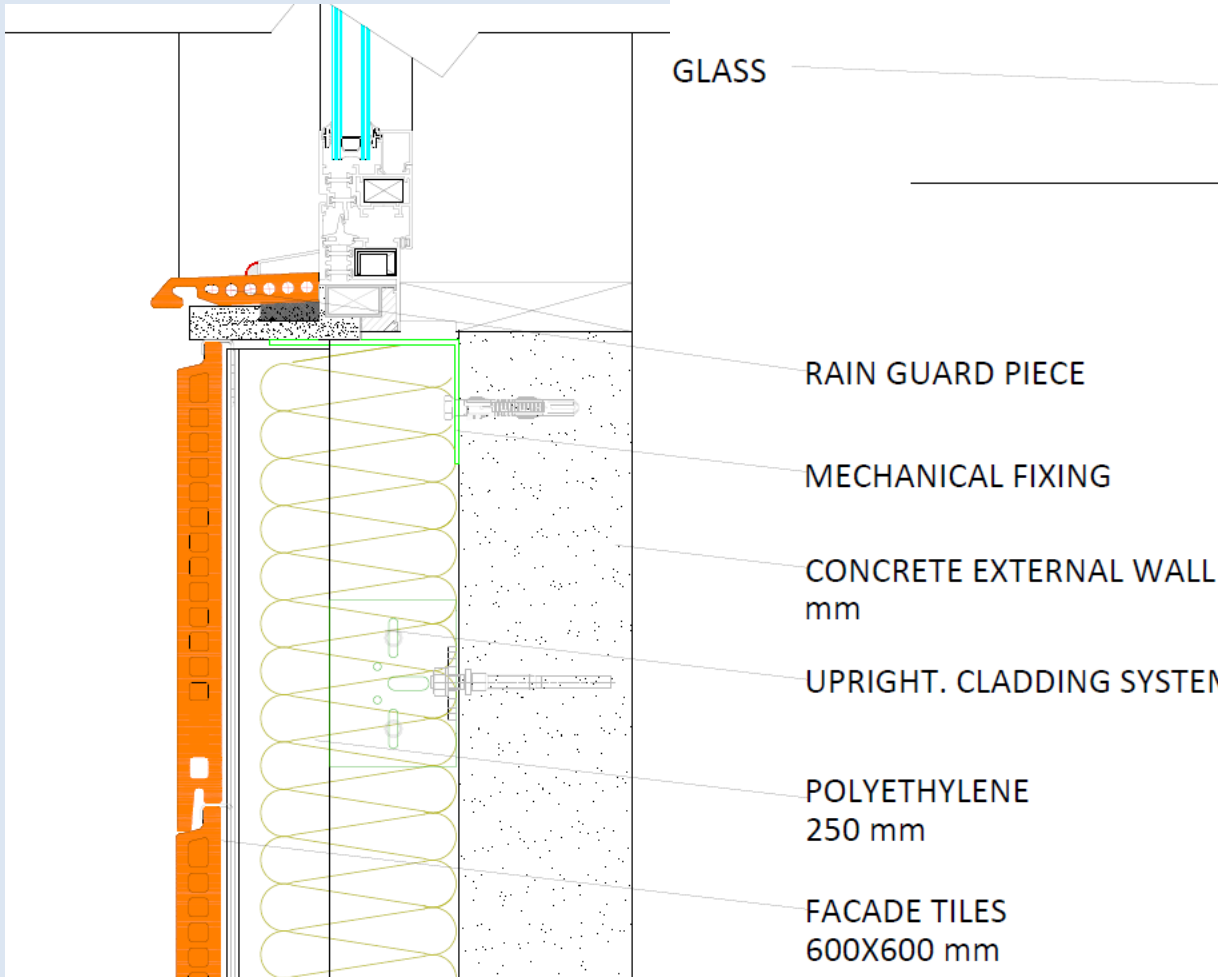
MECHANICAL FIXING

CONCRETE EXTERNAL WALL  
mm

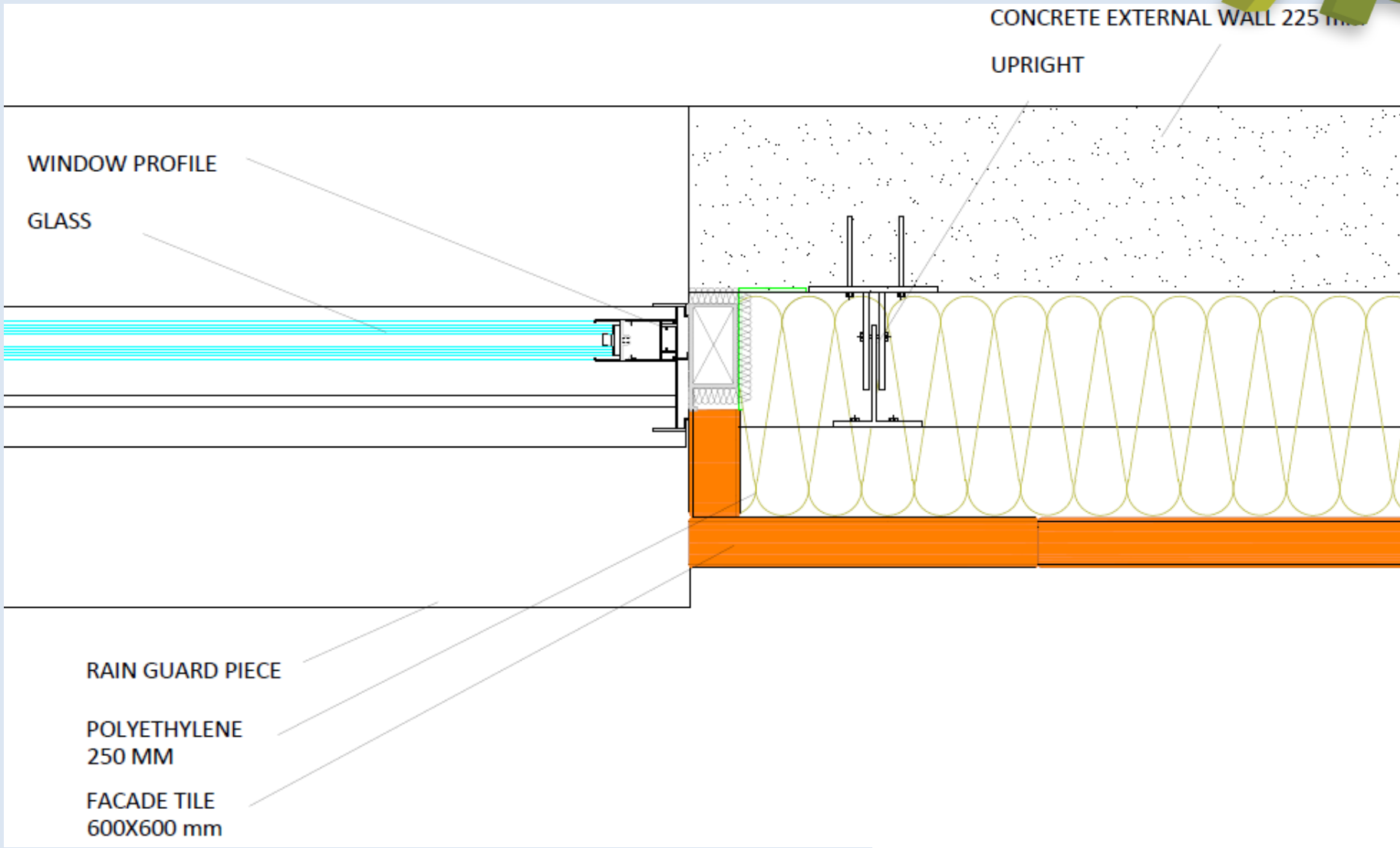
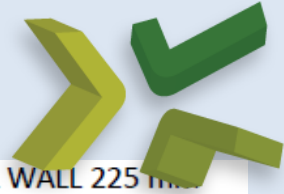
UPRIGHT. CLADDING SYSTEM

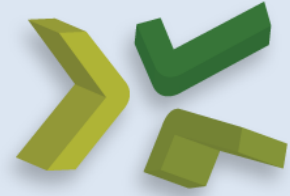
POLYETHYLENE  
250 mm

FACADE TILES  
600X600 mm

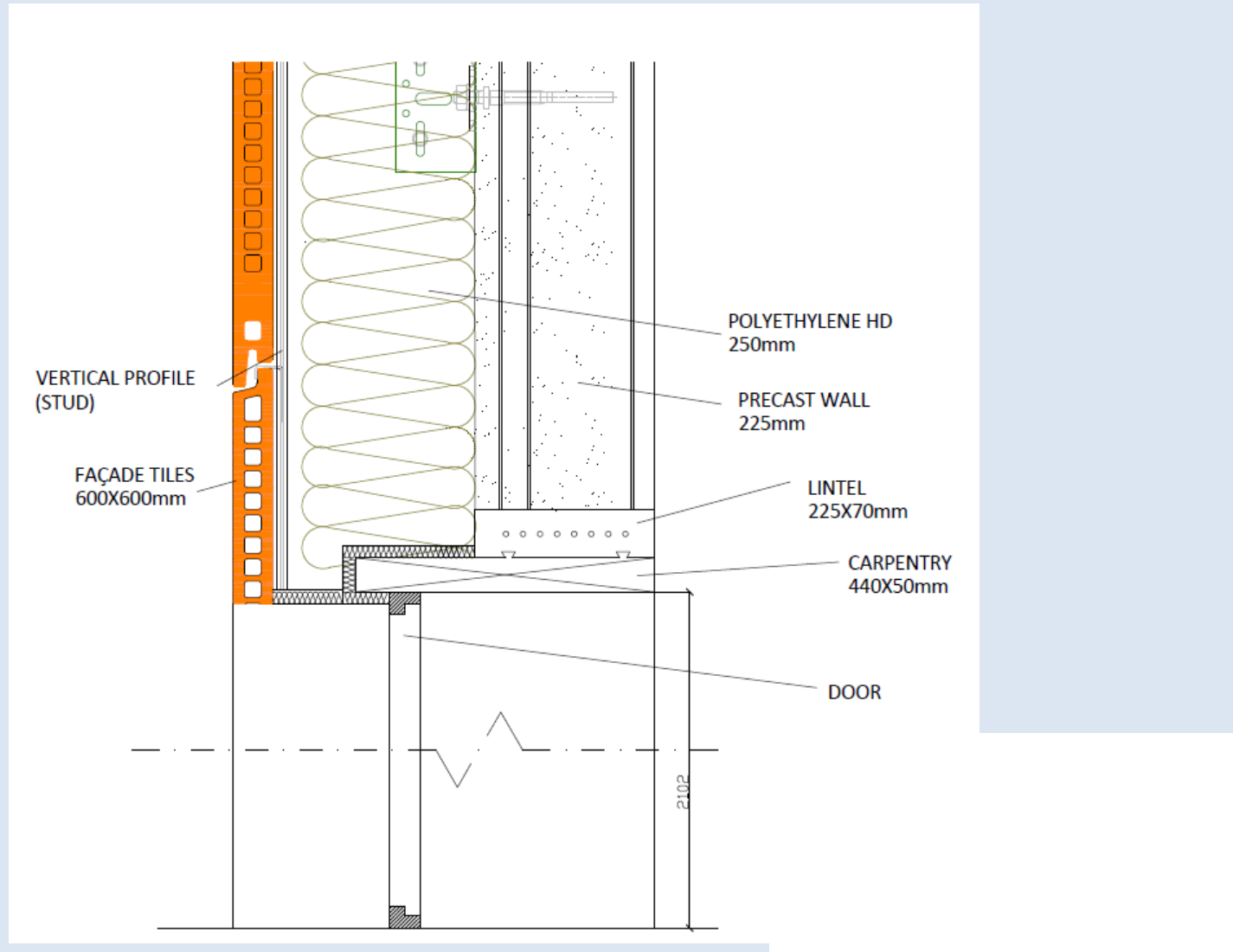


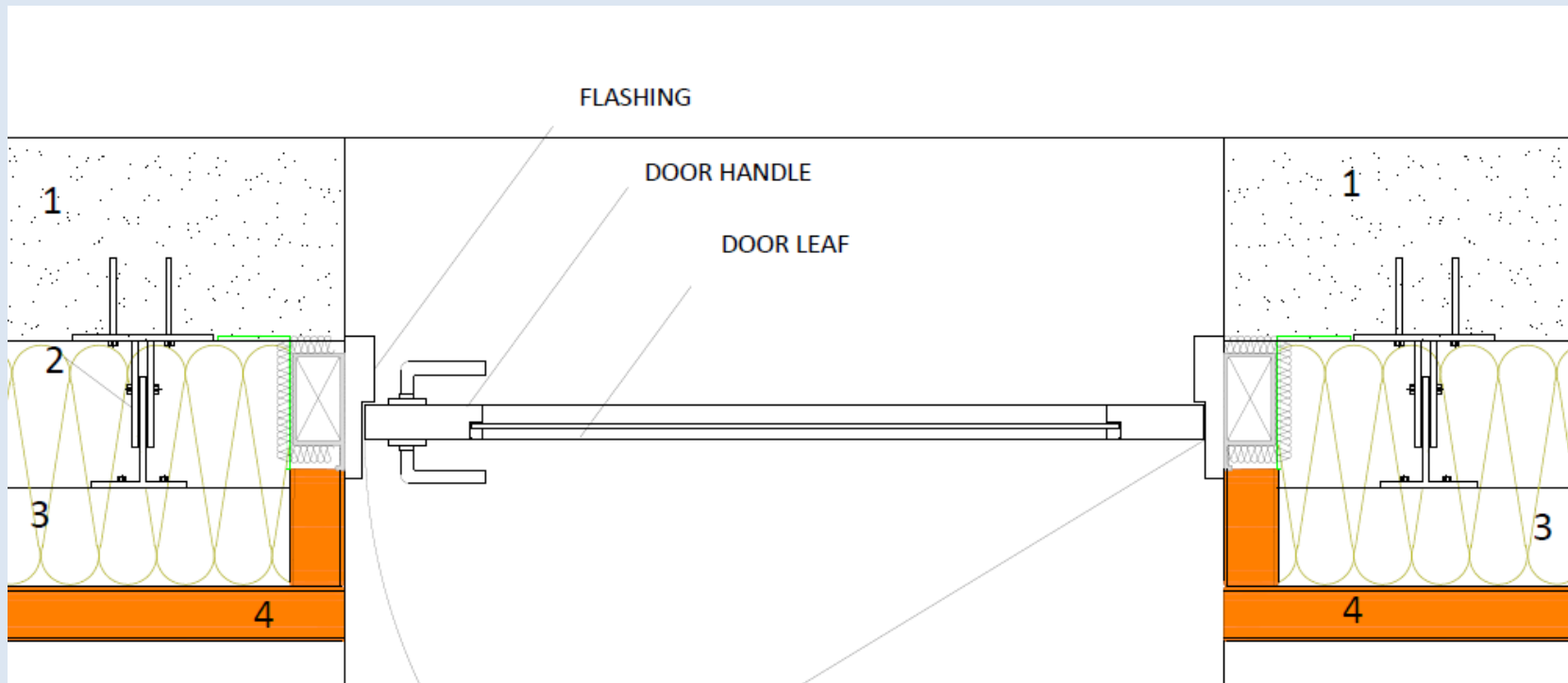
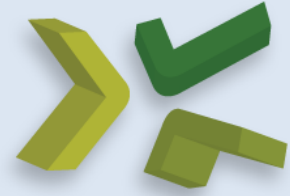






# Entrance Door Detail





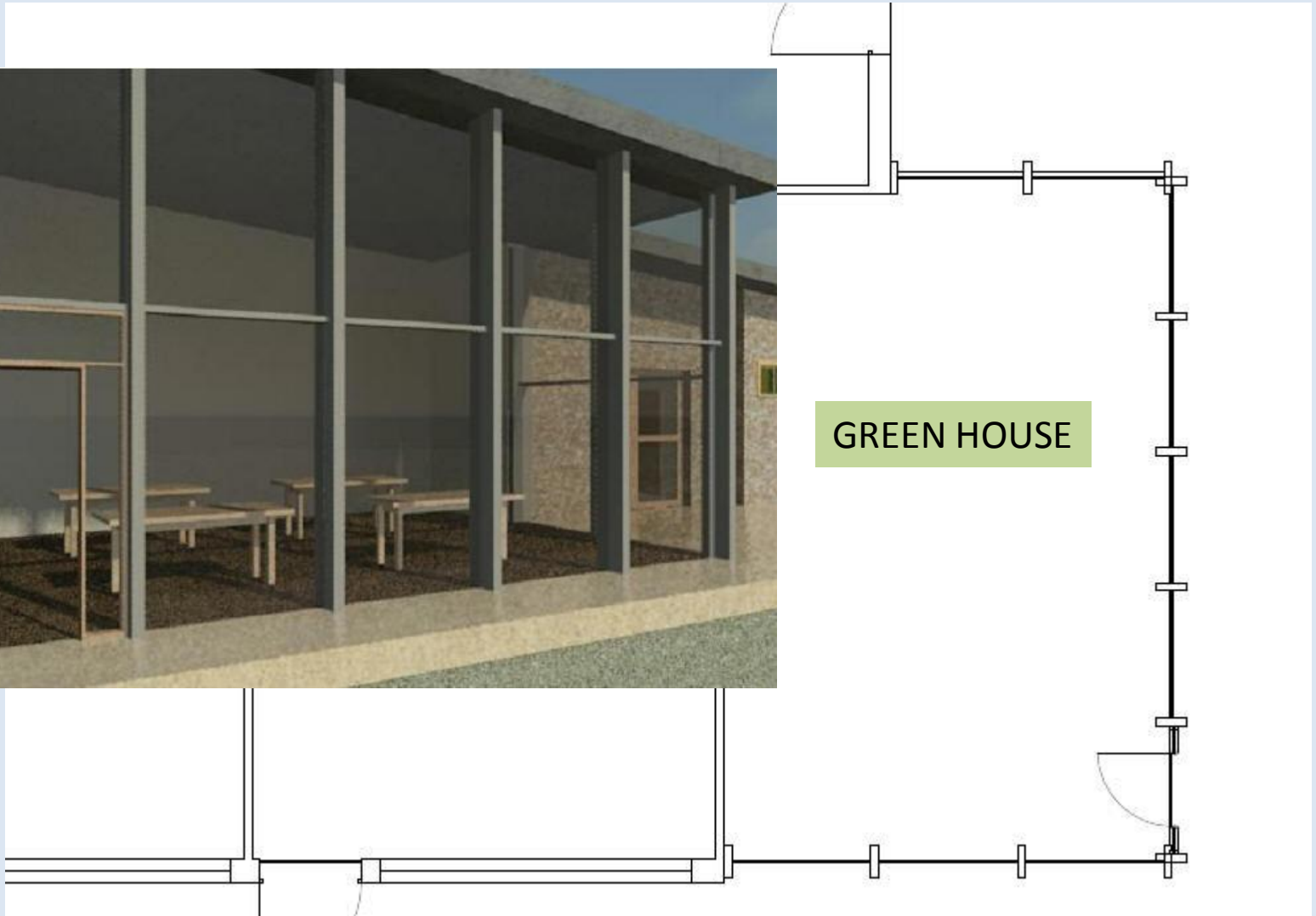
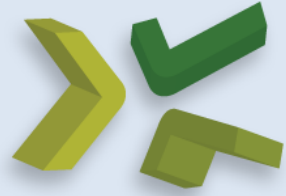
1 CONCRETE EXTERNAL WALL 225 mm

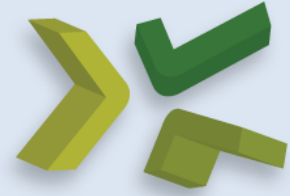
2 UPRIGHT

3 POLYETHYLENE 250  
MM

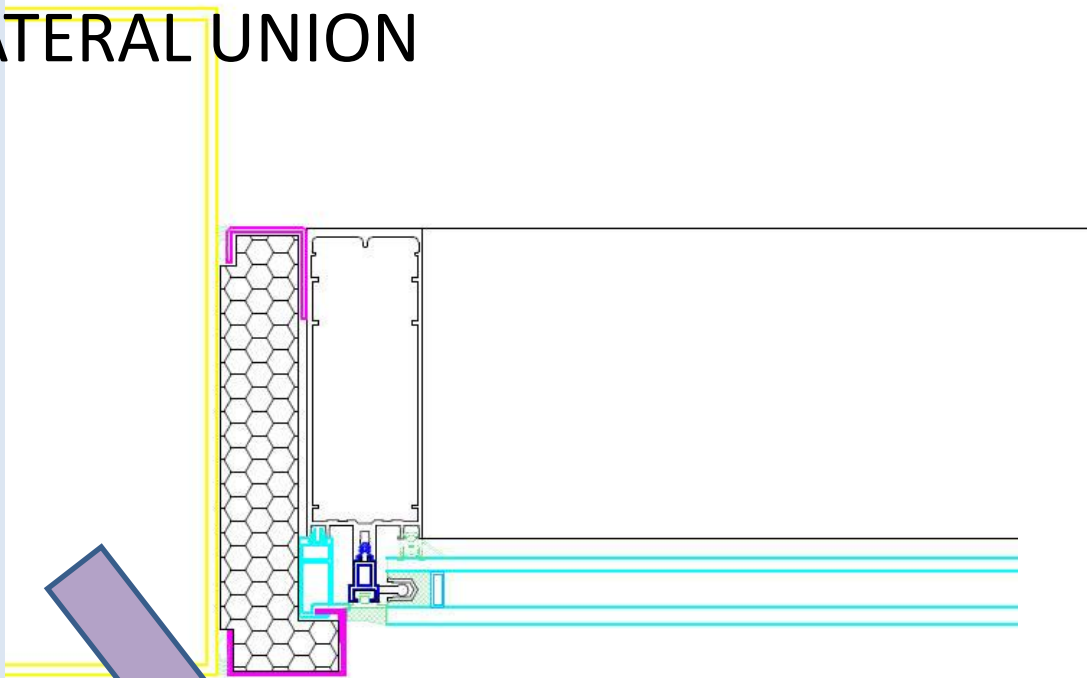
4 FACADE TILE 600X600  
mm

# Curtain Wall

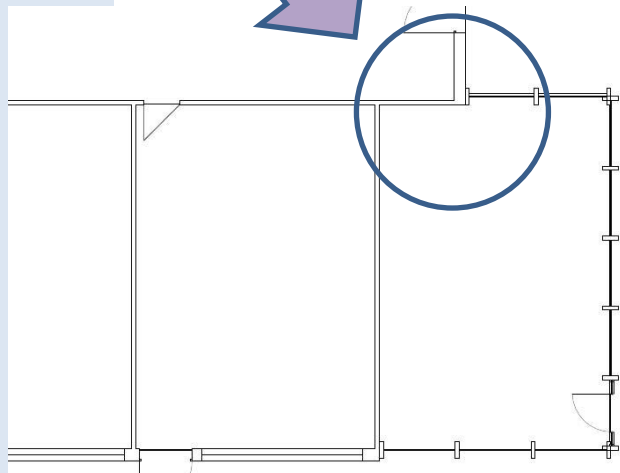
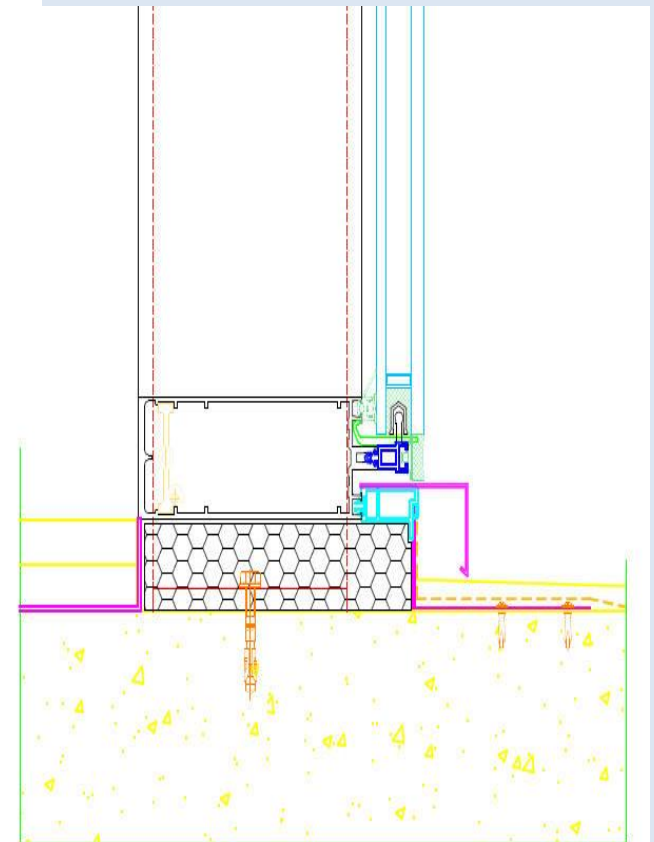




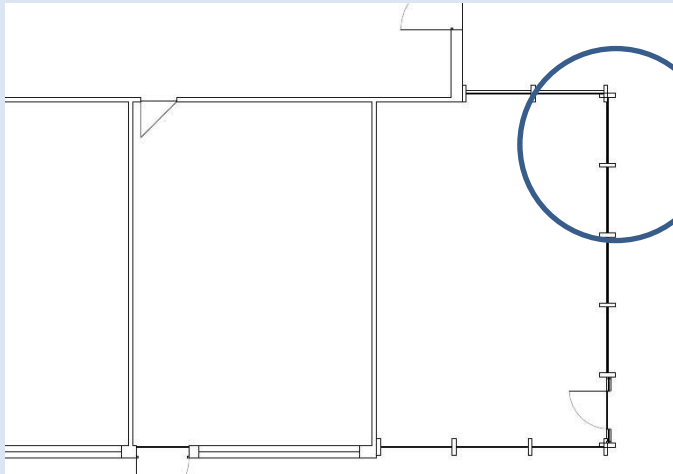
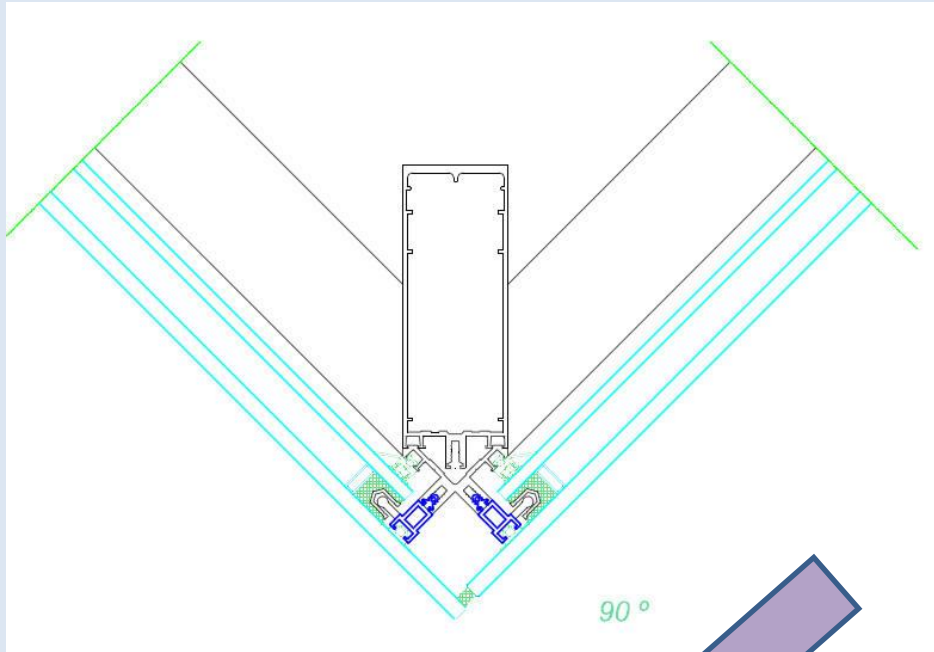
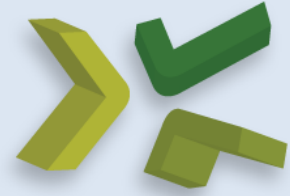
# LATERAL UNION



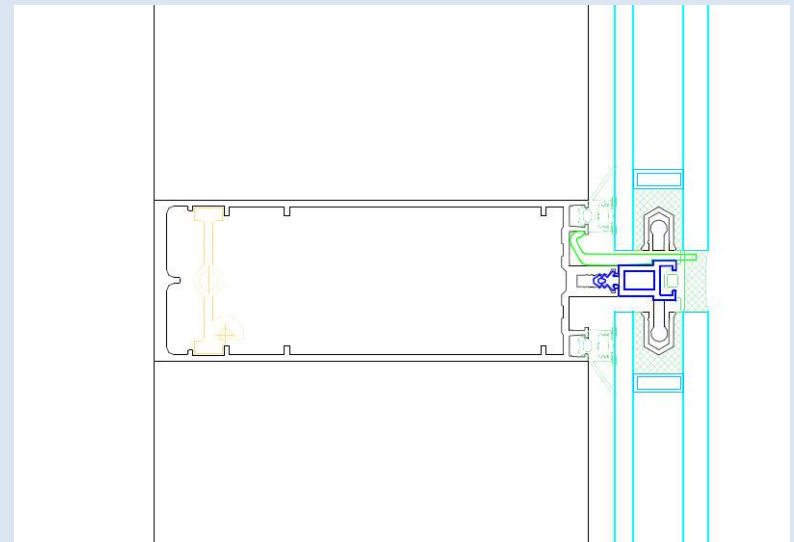
# BASE OF WALL



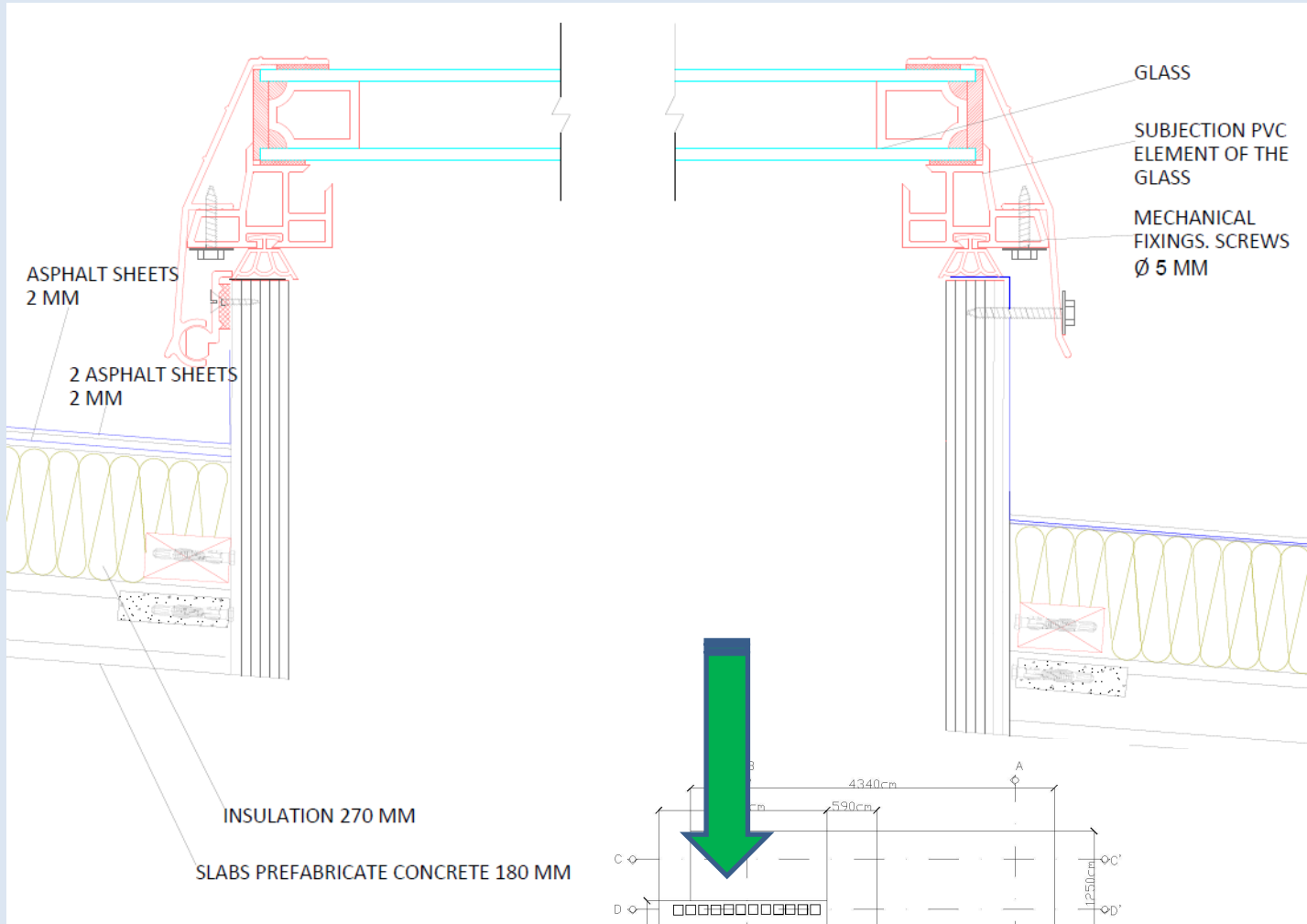
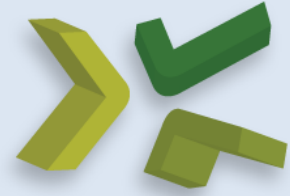
# CORNER



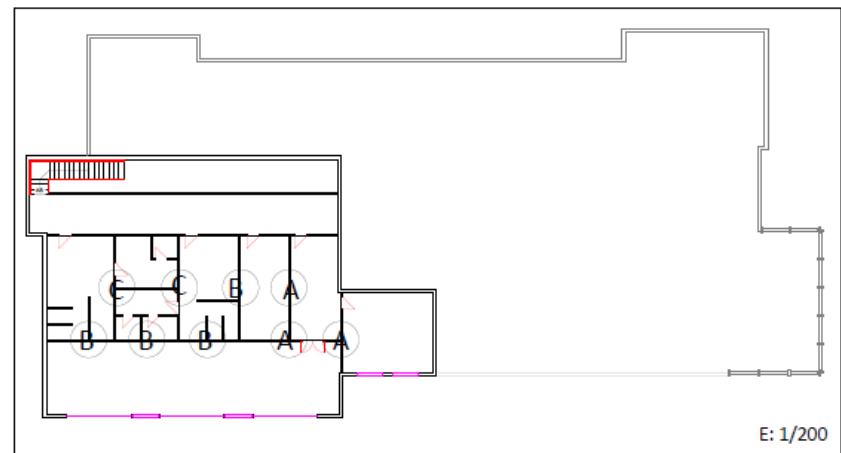
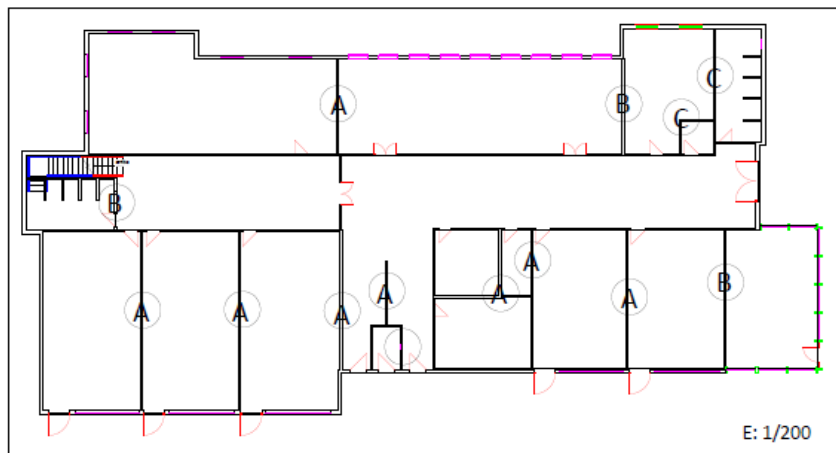
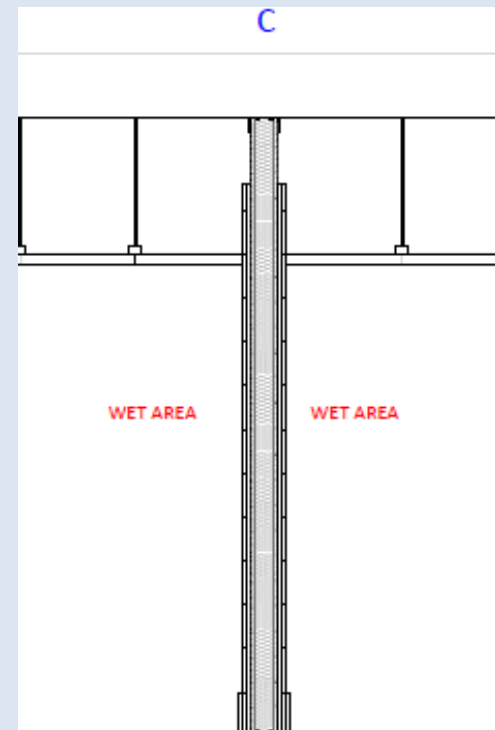
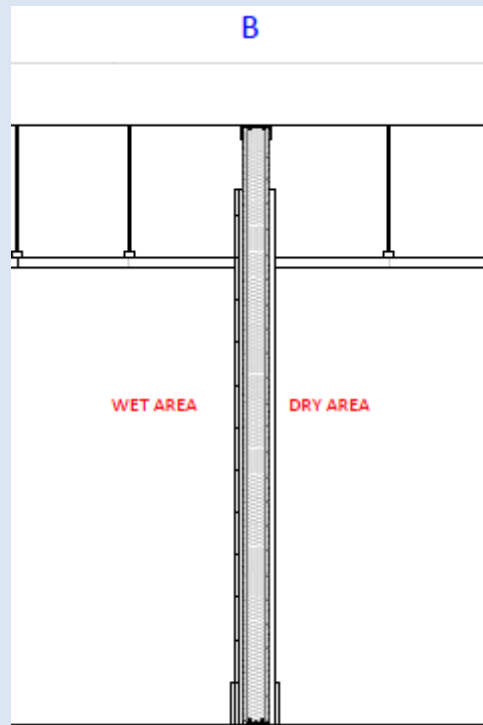
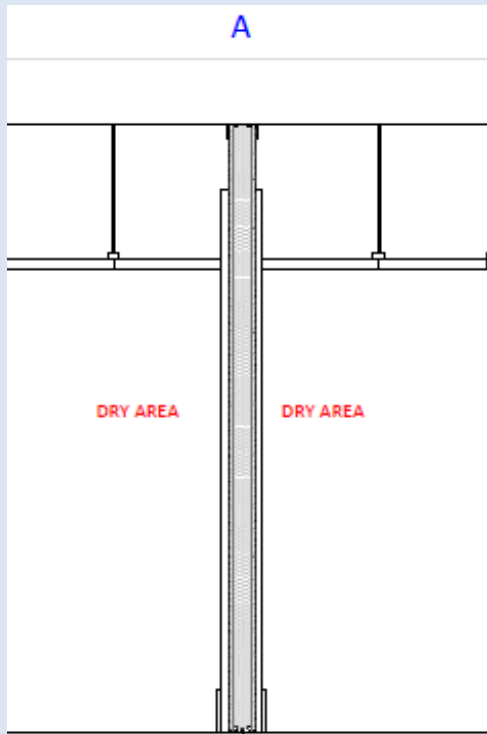
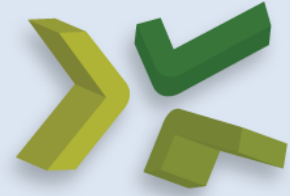
# CROSSBAR DETAIL



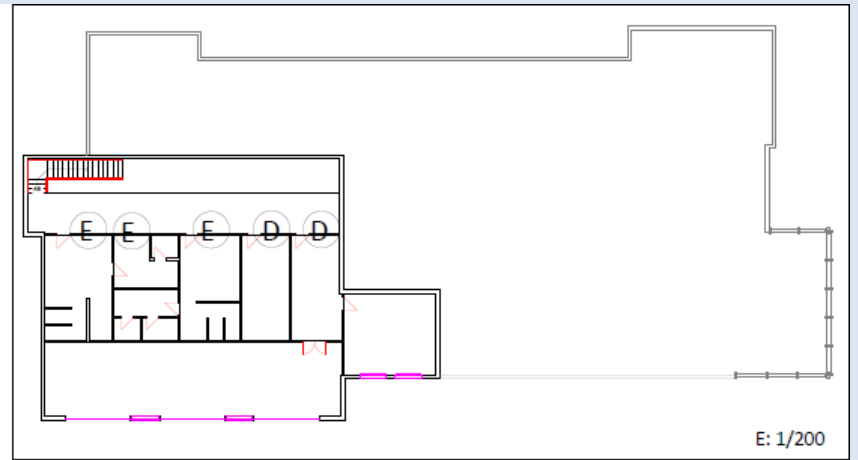
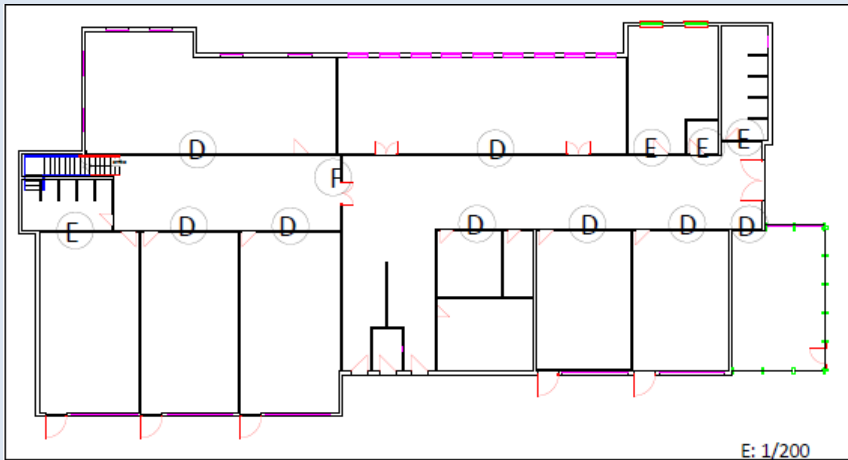
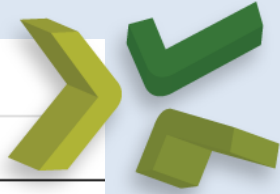
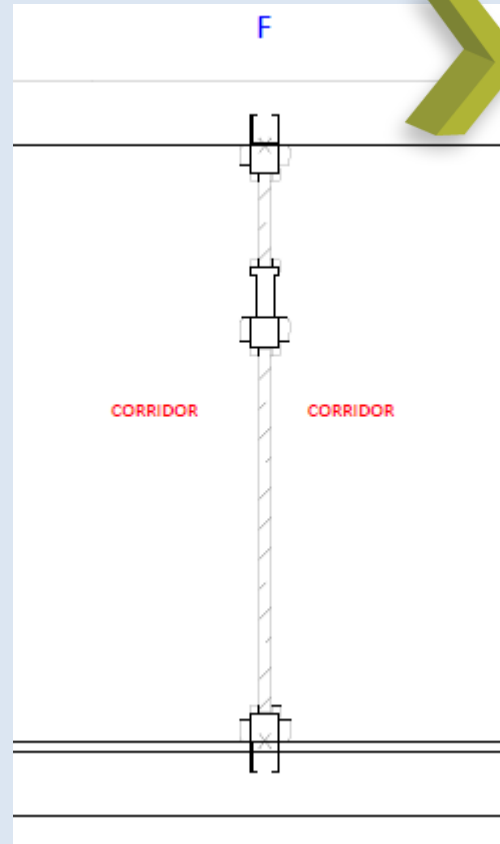
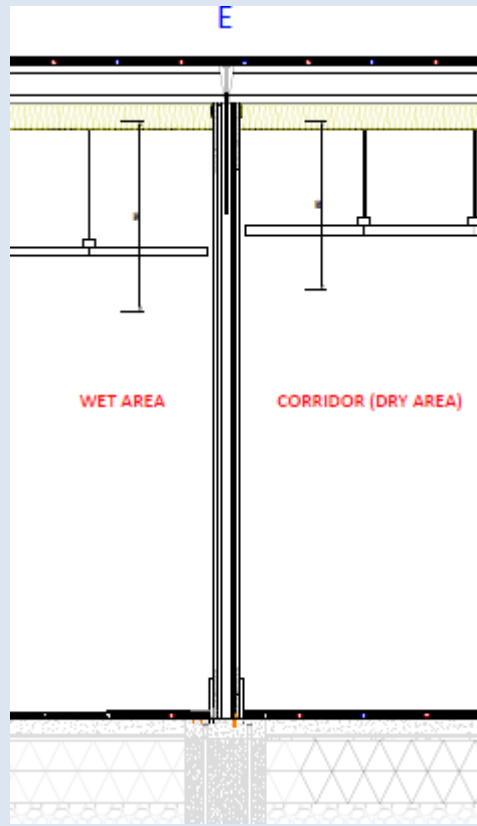
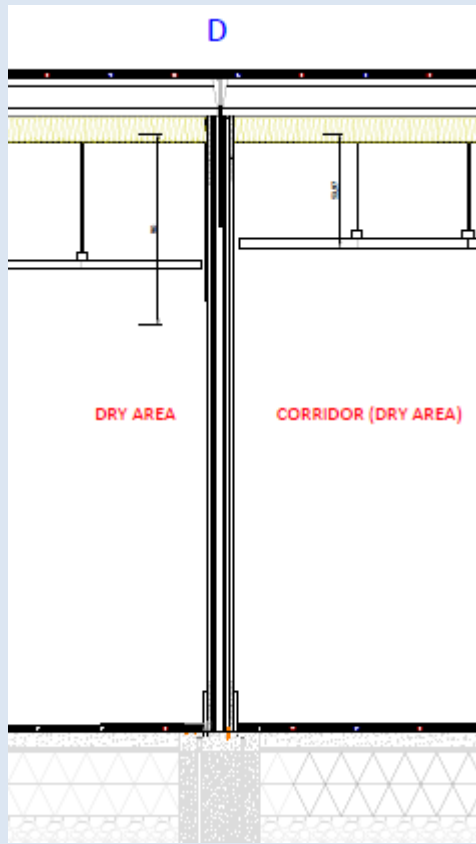
# Skylight



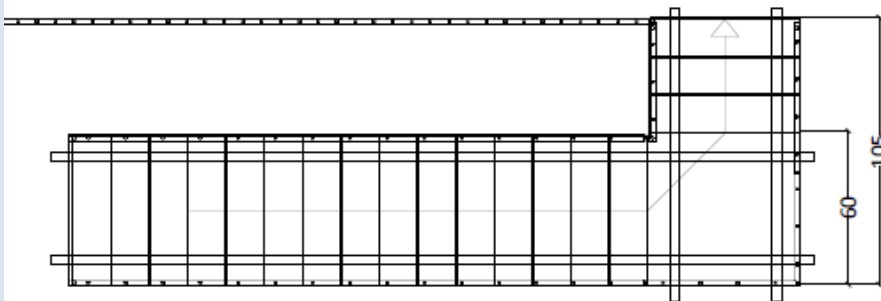
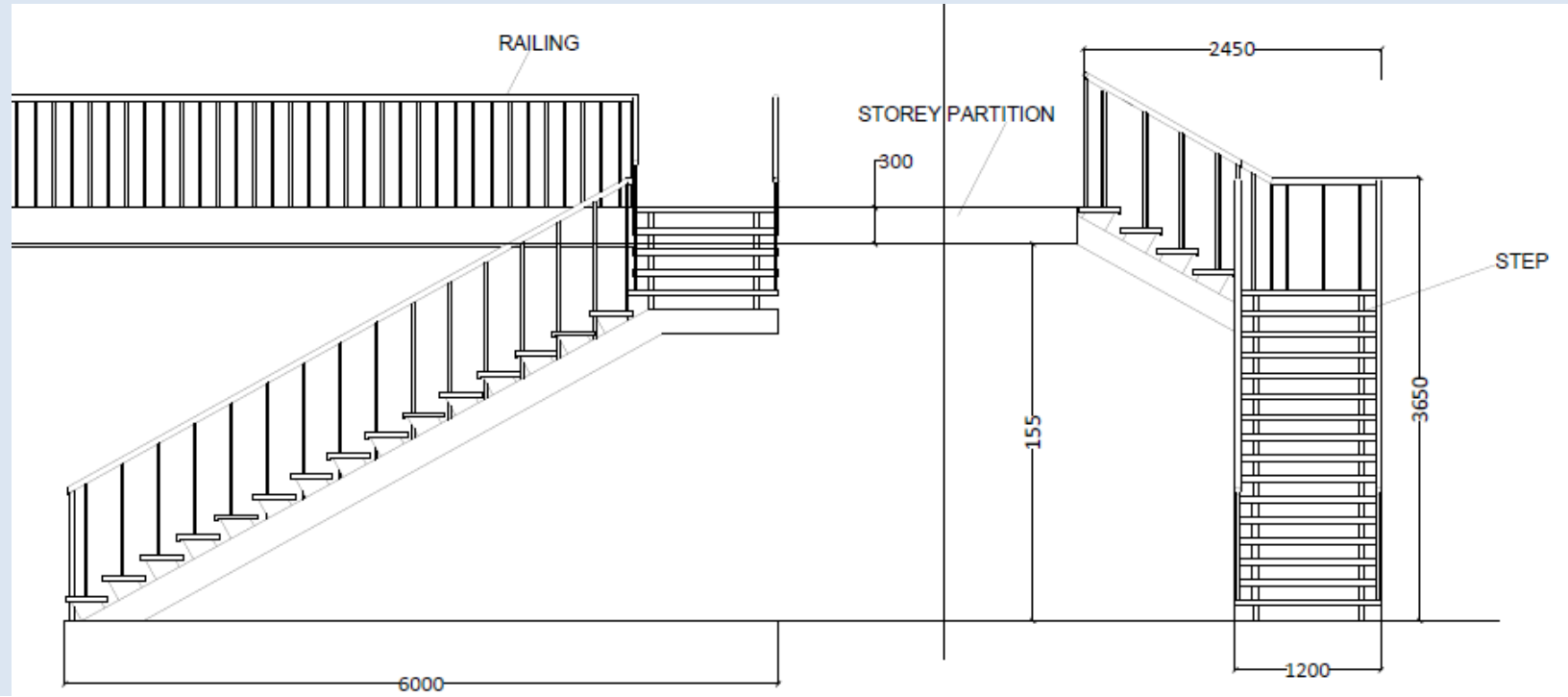
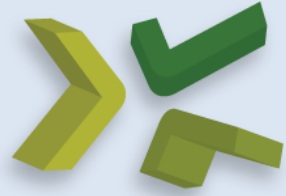
# Internal Partitions



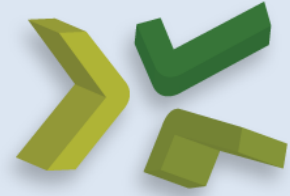




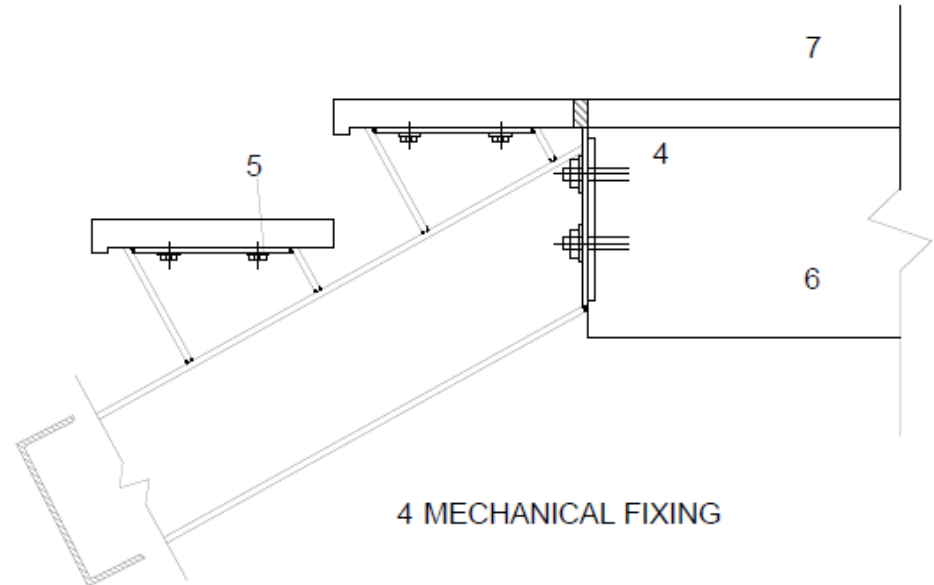
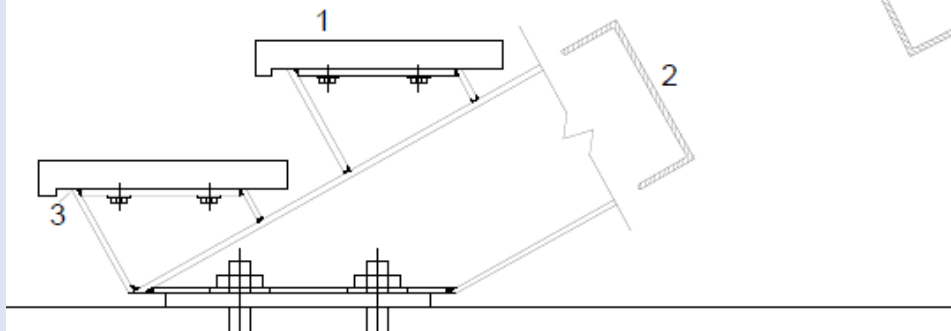
# Stairs



# Stairs Details

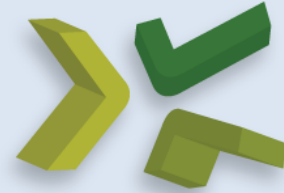


- 1 METAL STEP
- 2 METAL BEAM
- 3 SOLDER CONNECTION

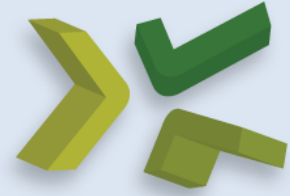


- 4 MECHANICAL FIXING
- 5 SCREW
- 6 STOREY PARTITION
- 7 FINISHING

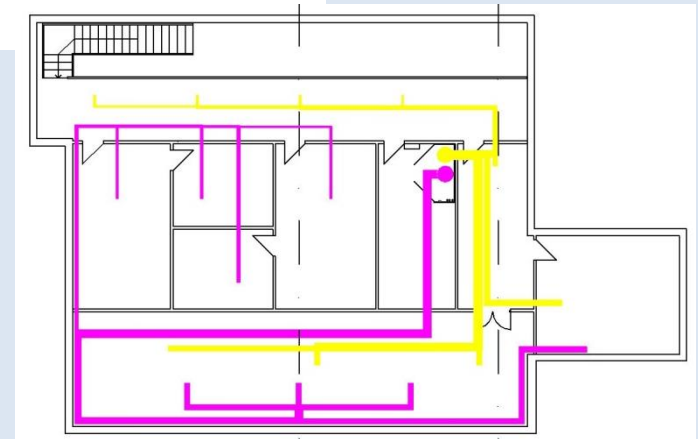
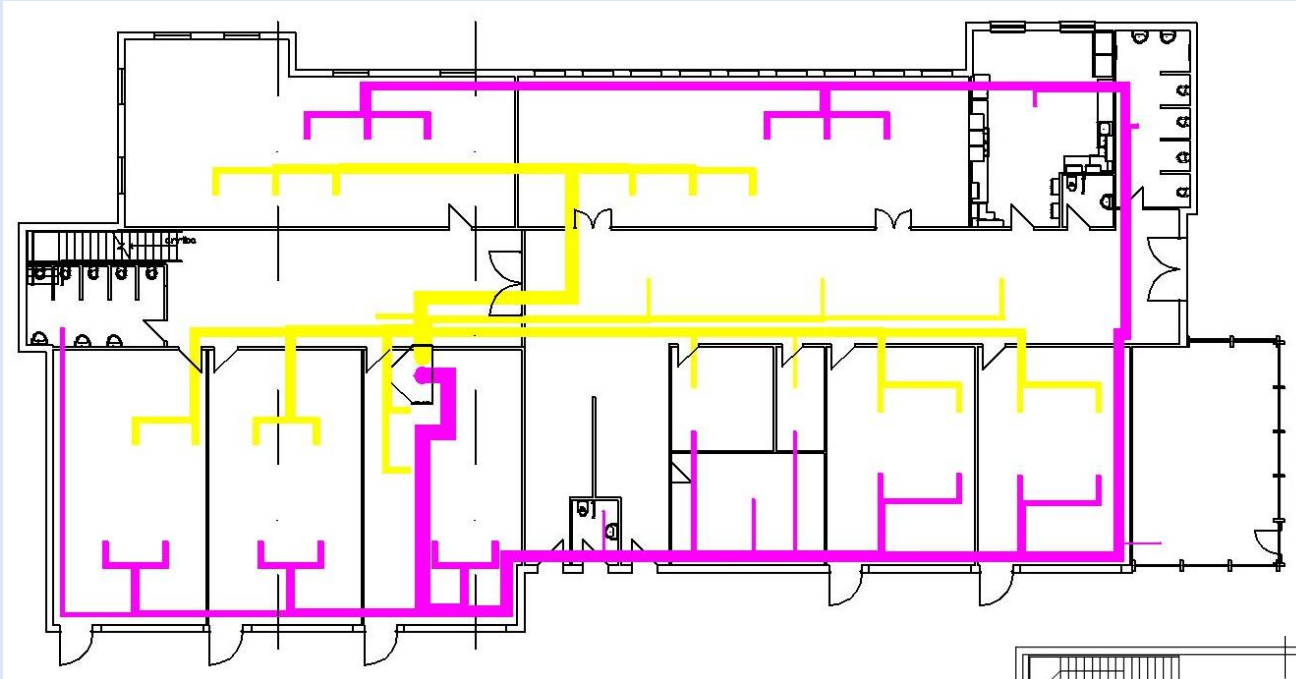
# Ventilation (extration)





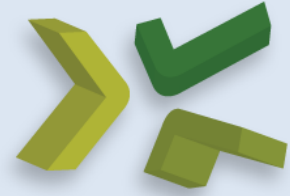
	Room	m2	L/sm2	l/s	m3/s	speed	m2	take	m2/t
First floor	Changing room women	24,54		10	0,01	3,5	0,00285714	1	0,00285714
First floor	Changing room men	25,12		10	0,01	3,5	0,00285714	1	0,00285714
First floor	women toilet	12,56		25	0,025	3,5	0,00714286	1	0,00714286
First floor	men toilet	12,17		25	0,025	3,5	0,00714286	1	0,00714286
First floor	coffee room	18,11	2,8	50,708	0,050708	3,5	0,014488	1	0,014488
First floor	meeting room	79,98	2,8	223,944	0,223944	3,5	0,063984	3	0,021328
First floor	staff room	25,77	2,8	72,156	0,072156	3,5	0,020616	1	0,020616
First floor	corridor	46,97			0	3,5	0	4	0
Groundfloor	corridor	224,84			0	3,5	0	6	0
Groundfloor	4-6 toilet	17,03		40	0,04	3,5	0,01142857	1	0,01142857
Groundfloor	class 4-6a	64,71	2,8	181,188	0,181188	3,5	0,051768	2	0,025884
Groundfloor	class 4-6b	64,71	2,8	181,188	0,181188	3,5	0,051768	2	0,025884
Groundfloor	class 4-6c	64,71	2,8	181,188	0,181188	3,5	0,051768	2	0,025884
Groundfloor	nap room	100,02	2,8	280,056	0,280056	3,5	0,080016	3	0,026672
Groundfloor	dinning room	104,58	2,8	292,824	0,292824	3,5	0,083664	3	0,027888
Groundfloor	kitchen	38,68		25	0,025	3,5	0,00714286	1	0,00714286
Groundfloor	0-3 toilet	18,25		40	0,04	3,5	0,01142857	1	0,01142857
Groundfloor	acesible toilet interior	4,1		10	0,01	3,5	0,00285714	1	0,00285714
Groundfloor	acesible toilet exterior	4,17		10	0,01	3,5	0,00285714	1	0,00285714
Groundfloor	silence room	16,38	2,8	45,864	0,045864	3,5	0,013104	1	0,013104
Groundfloor	store			10	0,01	3,5	0,00285714	1	0,00285714
Groundfloor	changing room	26,31		25	0,025	3,5	0,00714286	1	0,00714286
Groundfloor	class room 0-3a	49,93	2,8	139,804	0,139804	3,5	0,039944	2	0,019972
Groundfloor	class room 0-3b	49,93	2,8	139,804	0,139804	3,5	0,039944	2	0,019972
Groundfloor	greenhouse	50,11		10	0,01	3,5	0,00285714	1	0,00285714



# Ventilation pathway

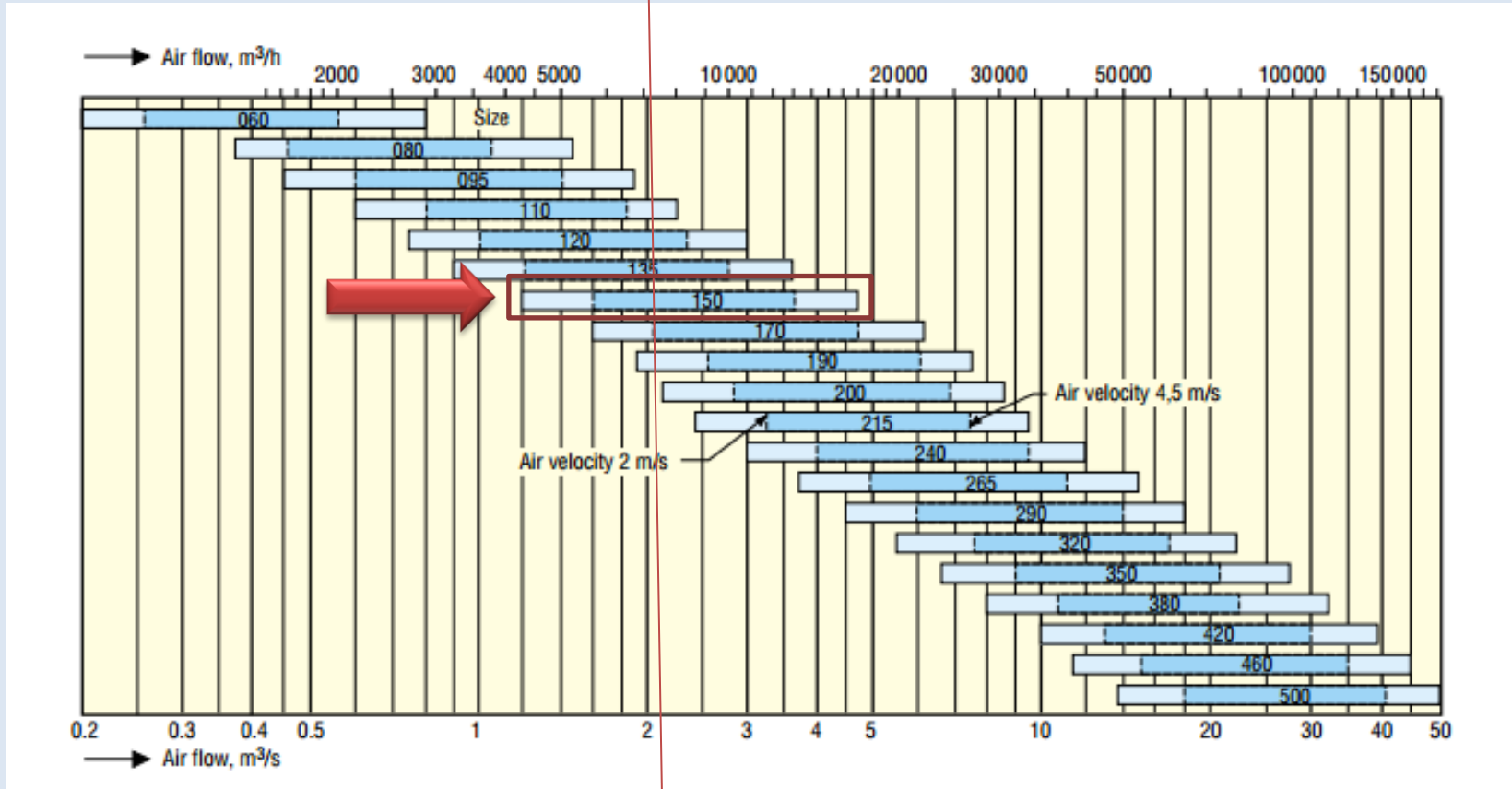


-  Ventilation in
-  Ventilation out



# Choosing machine

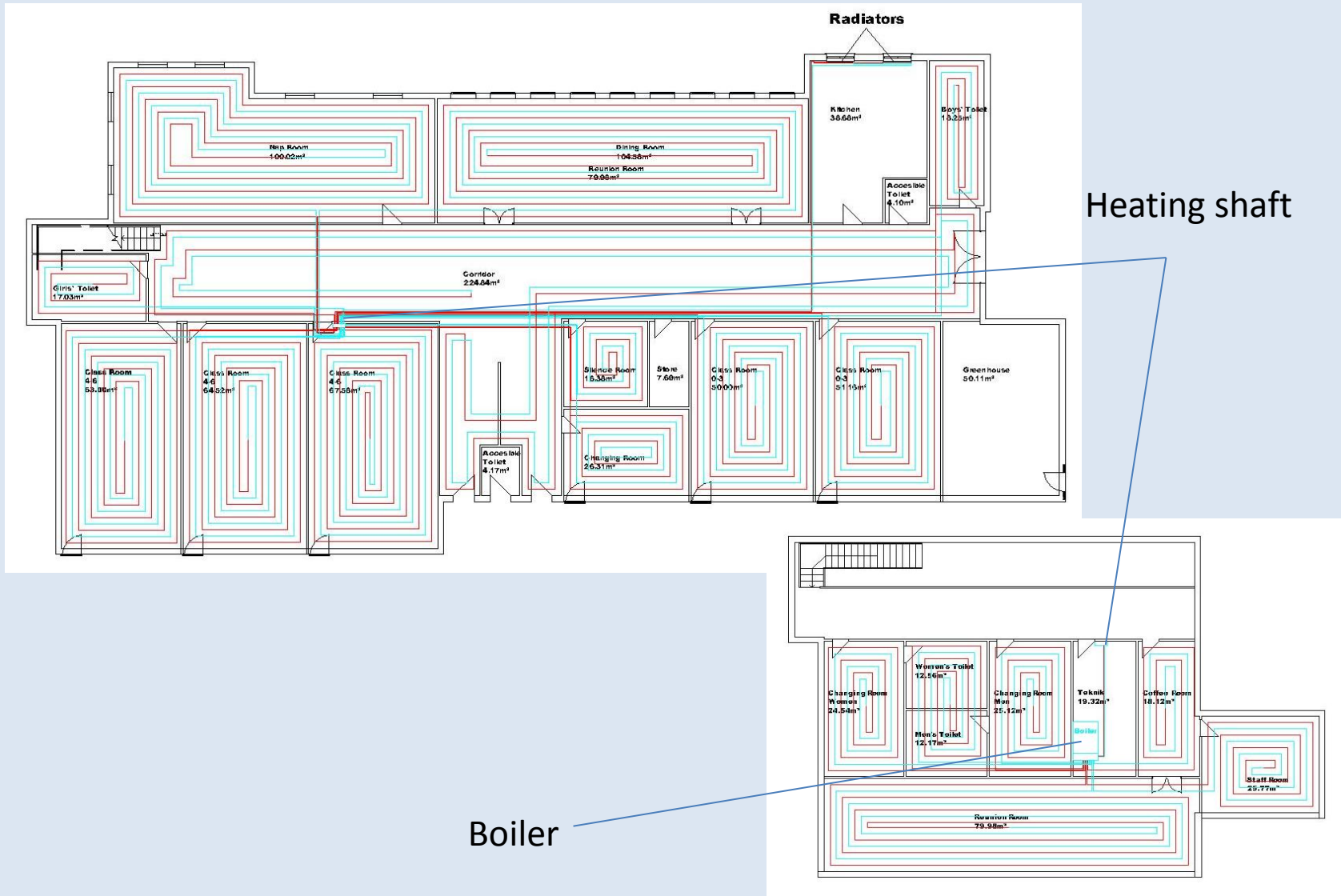
Ventilation system with rotary heat exchanger



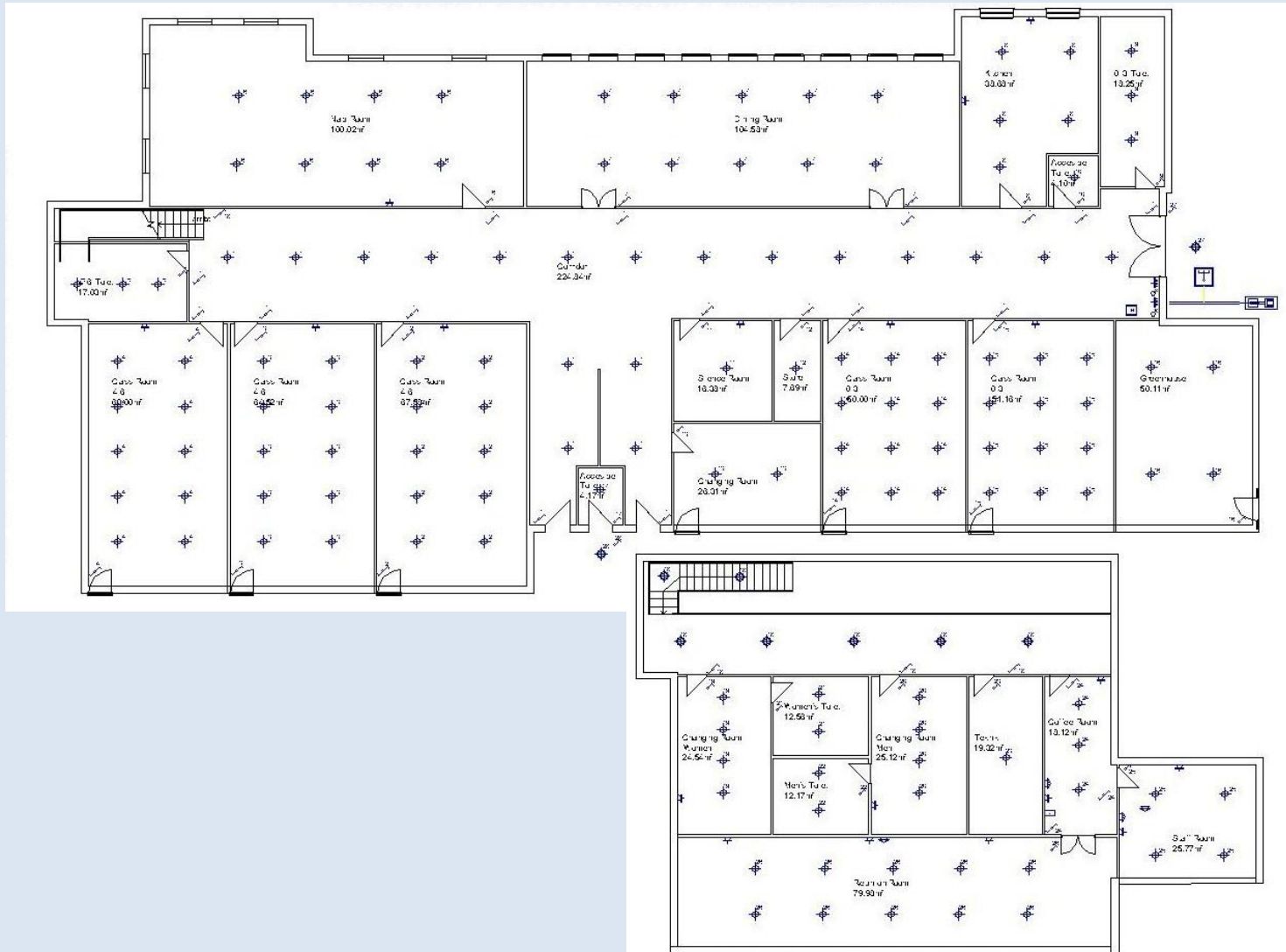
TOTAL M3/S = 2,028724



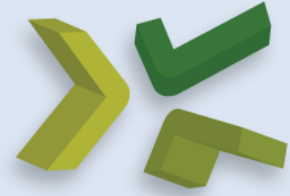
# Heating installation



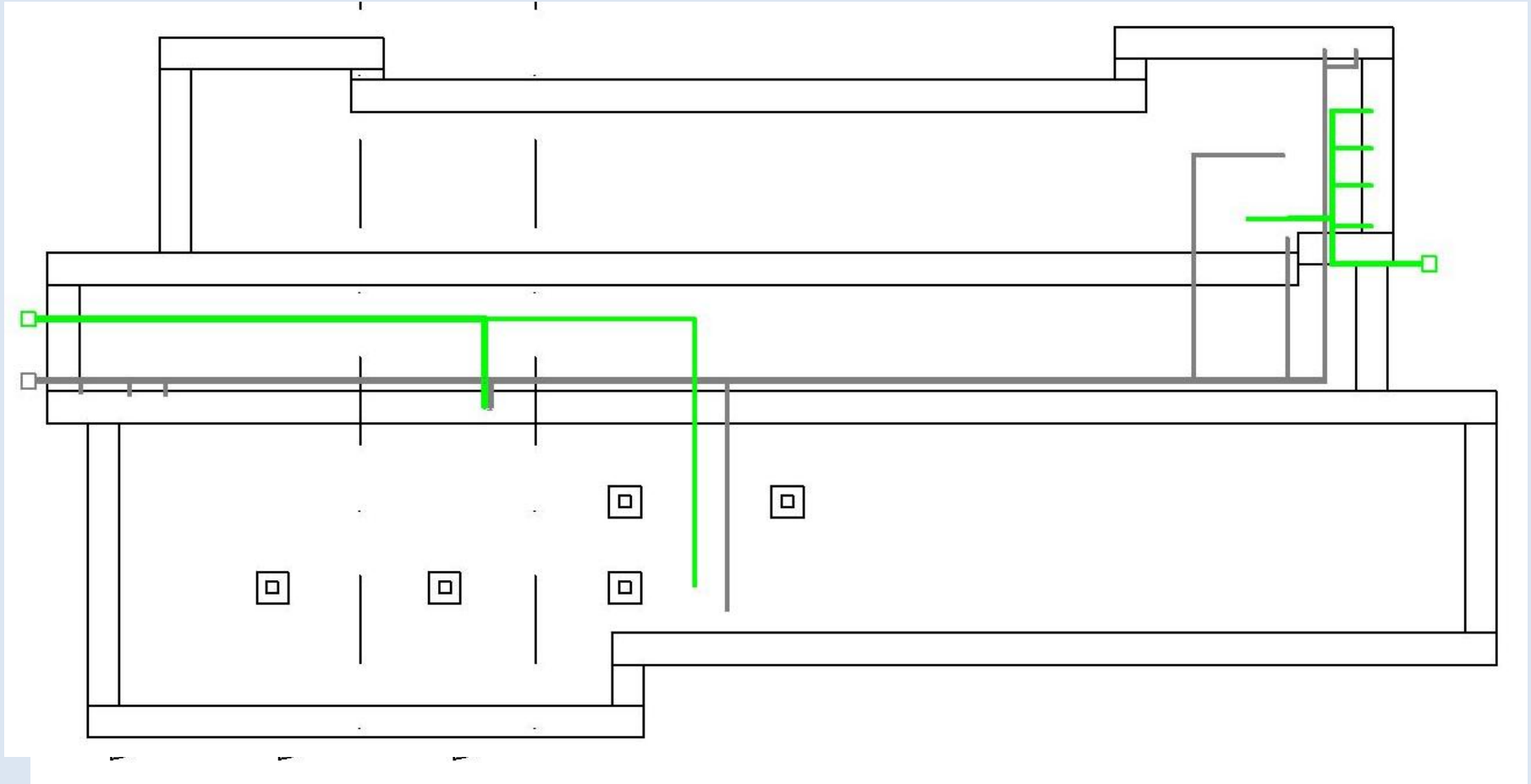
# Electric installation





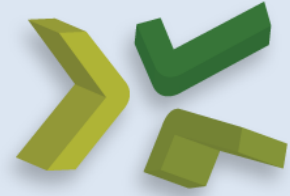




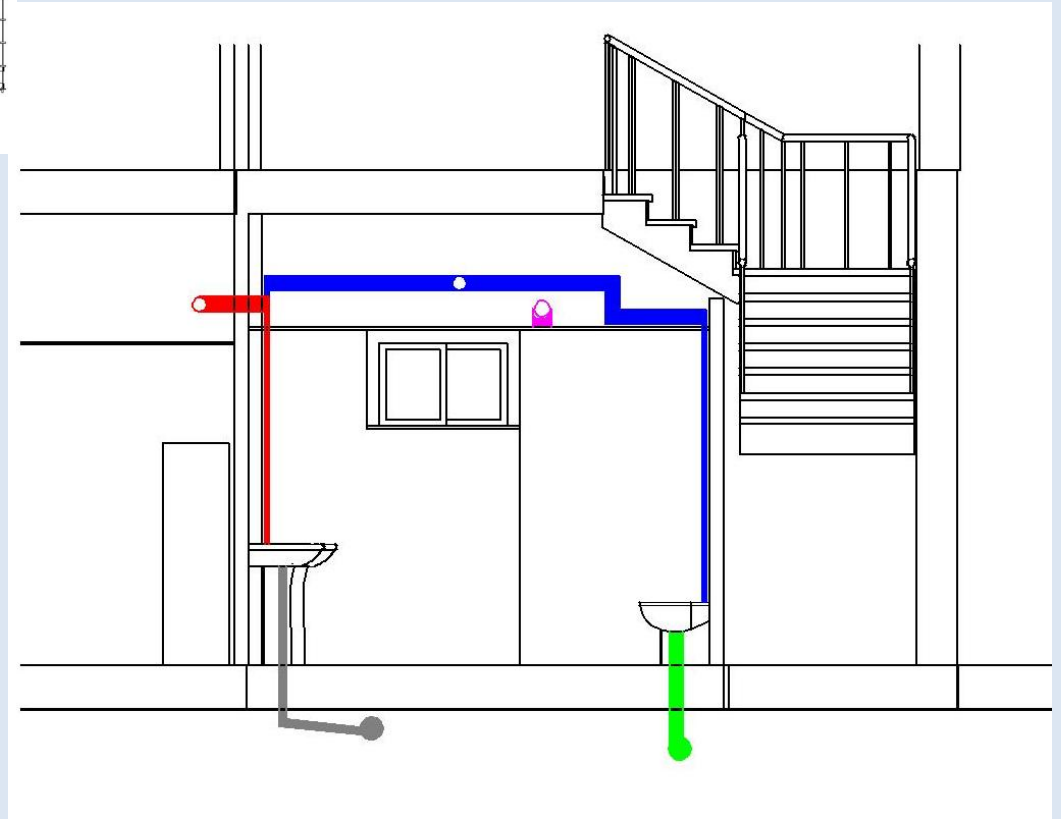
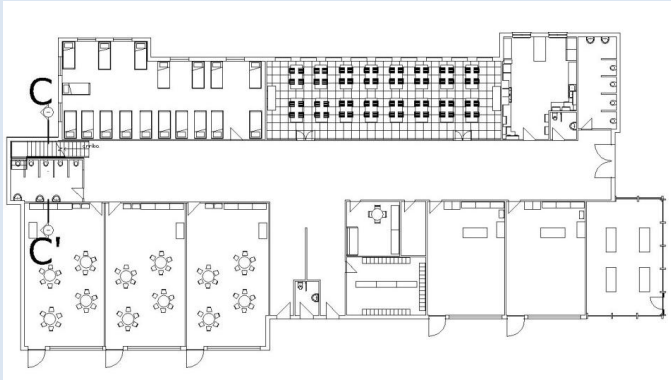
# Sewer pathway








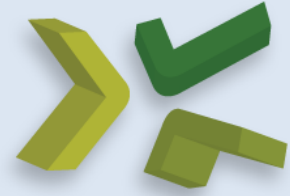
-  Sewer grey water
-  Sewer black water



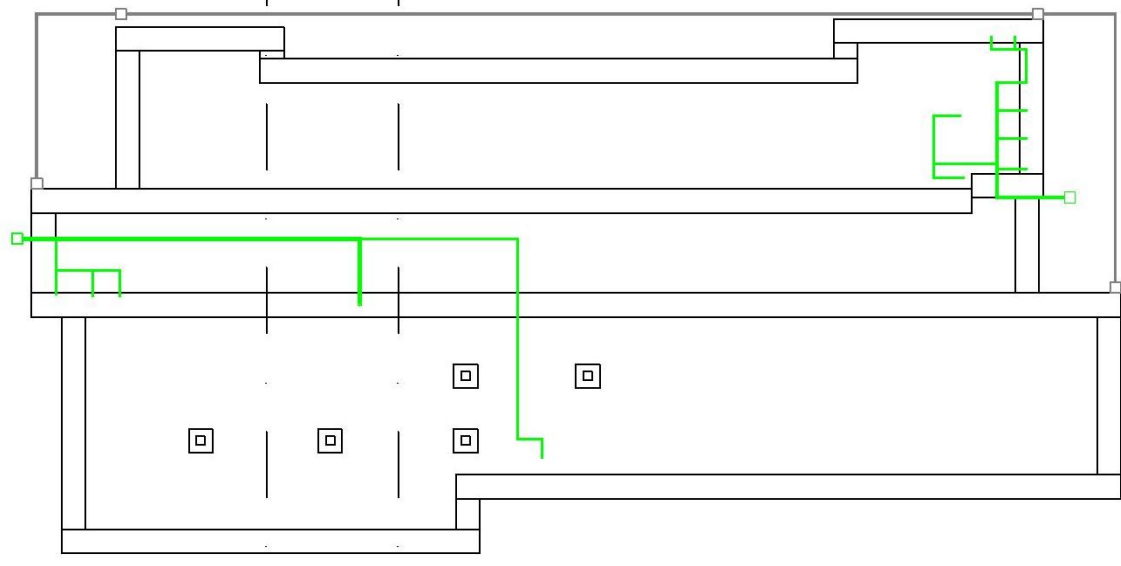
# Toilet section



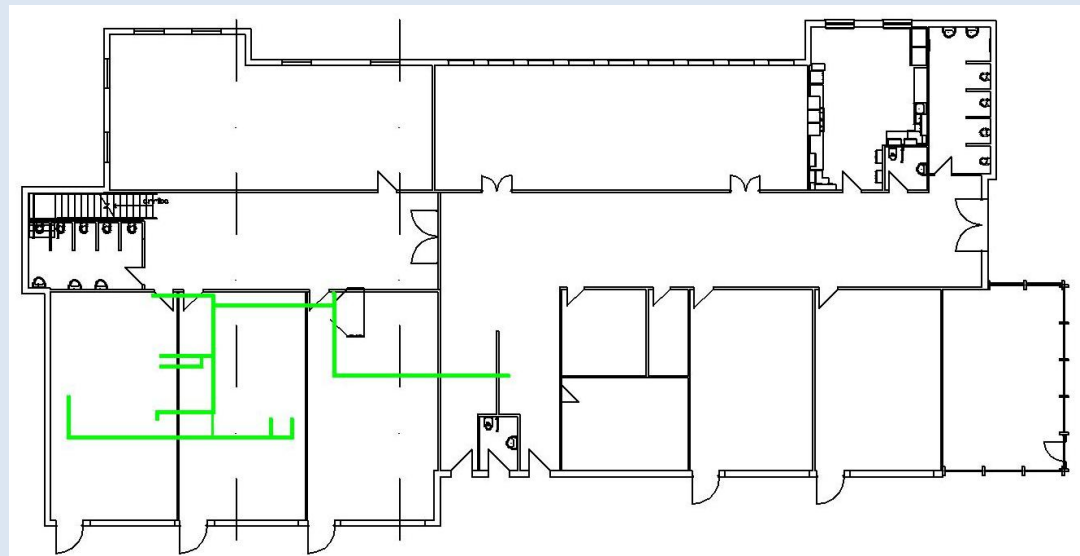
-  Sewer grey water
-  Sewer black water
-  Ventilation out
-  Hot water
-  Cold water

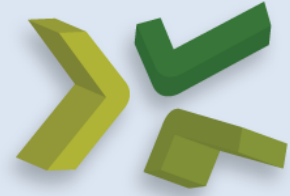


# Sewer pathway

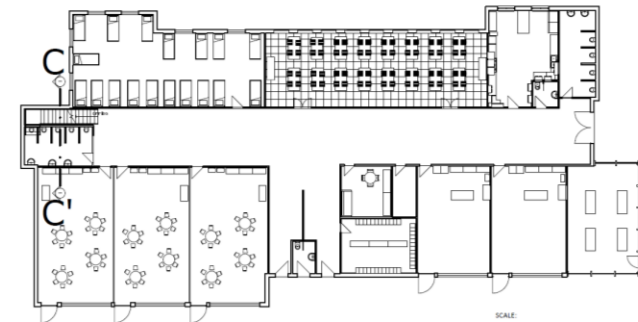
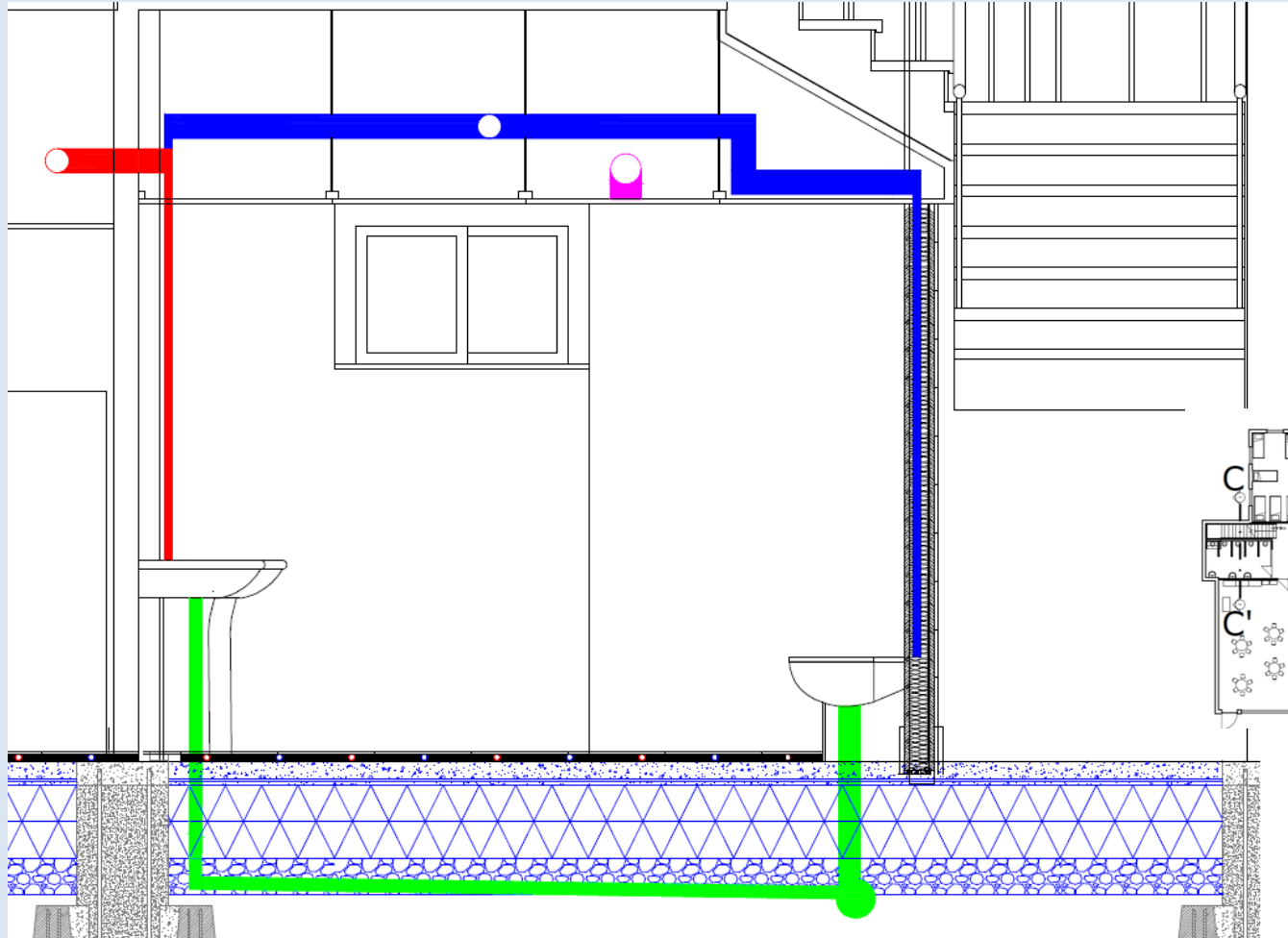






- Sewer rain water
- Sewer house water



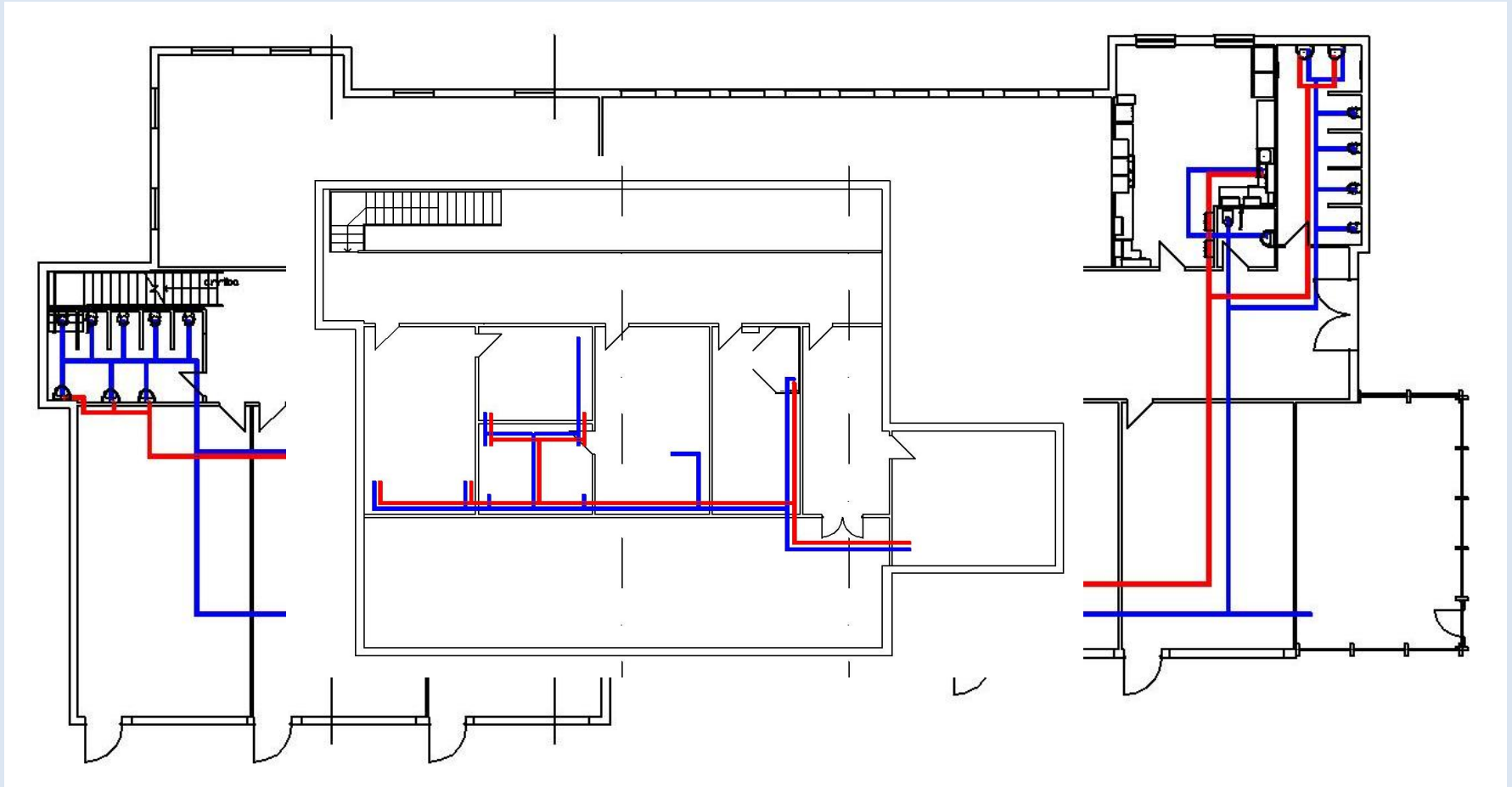
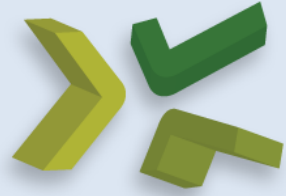




# Section C-C'

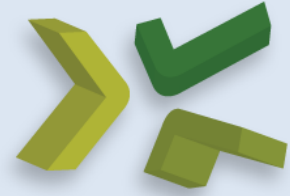


-  Hot water
-  Cold water
-  Ventilation out
-  Sewer house water

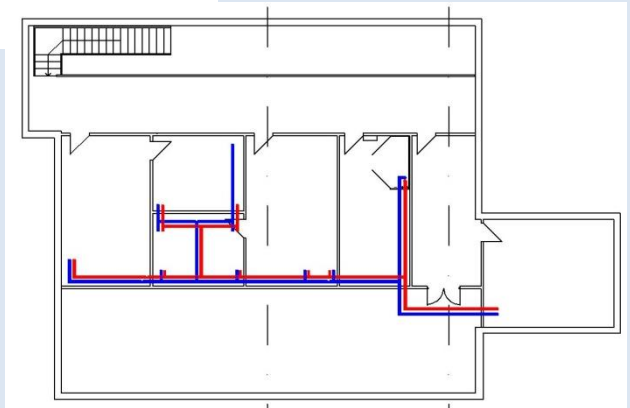
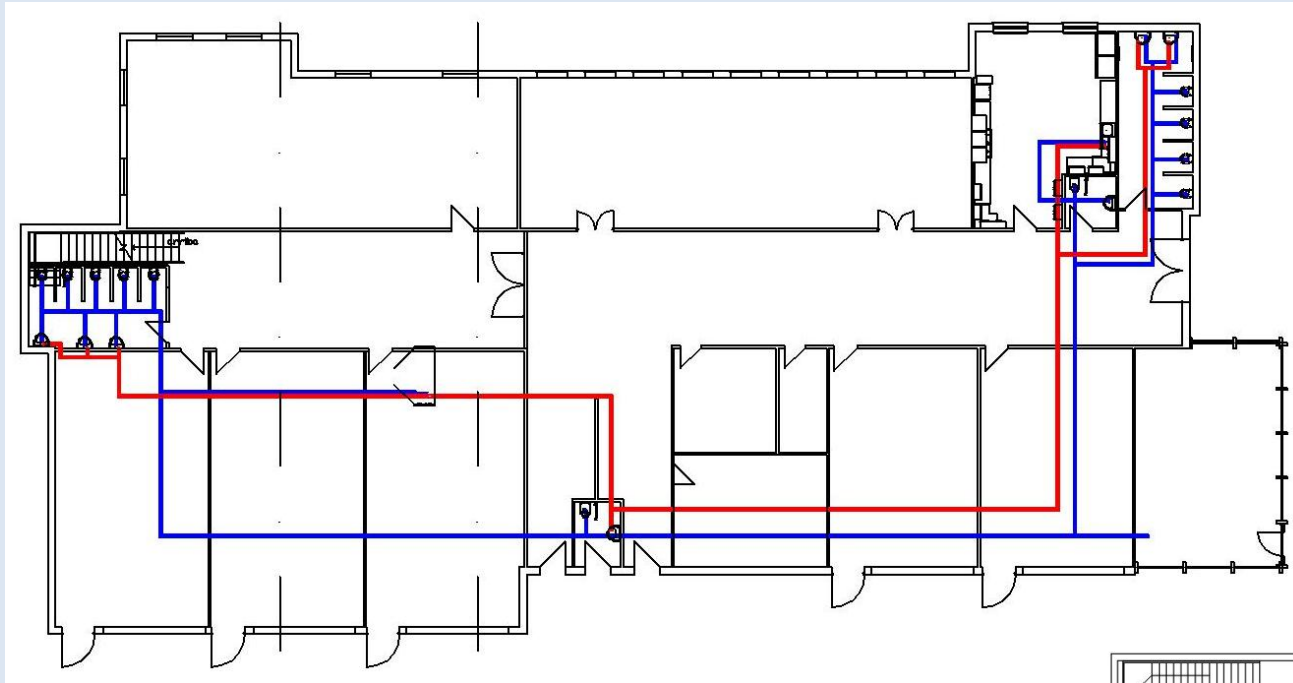
# Water pathway





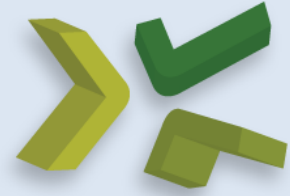
-  Hot water
-  Cold water



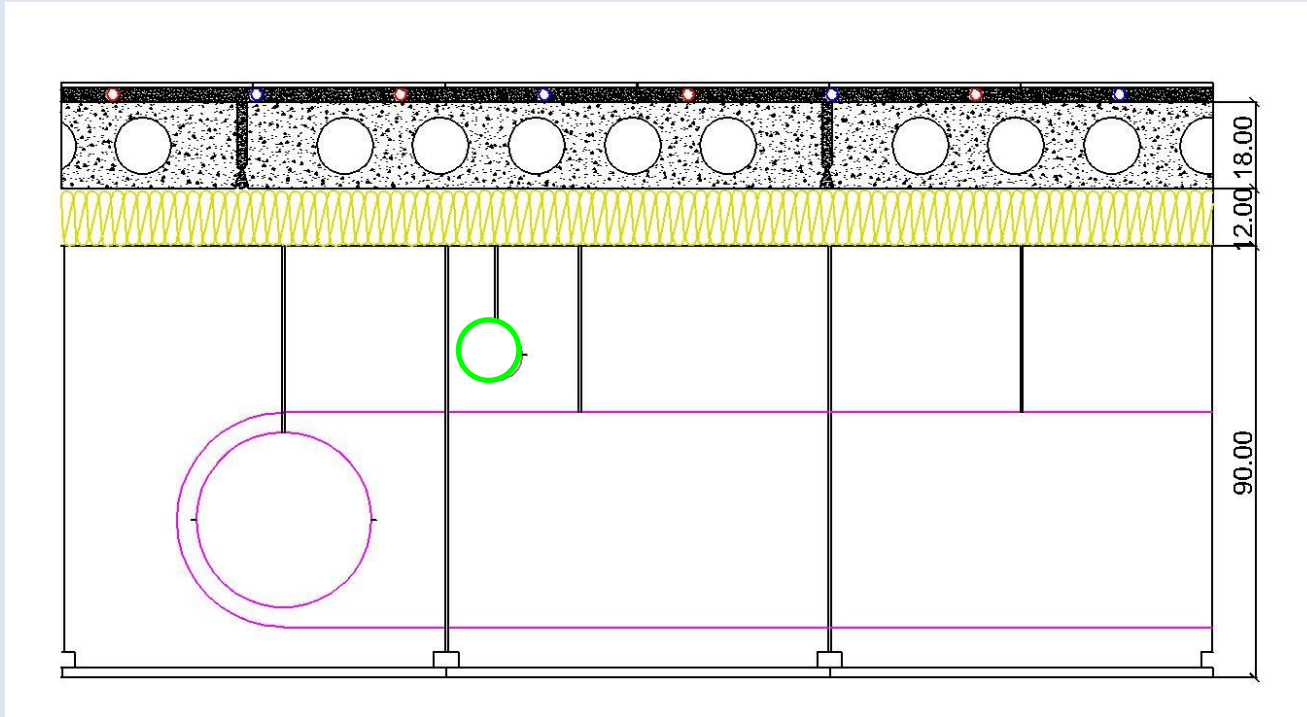
# Water pathway



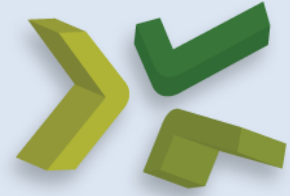
-  Hot water
-  Cold water



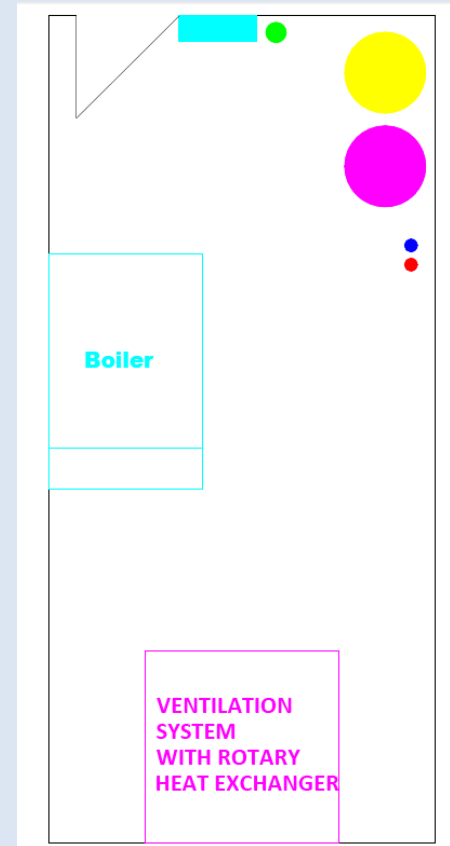
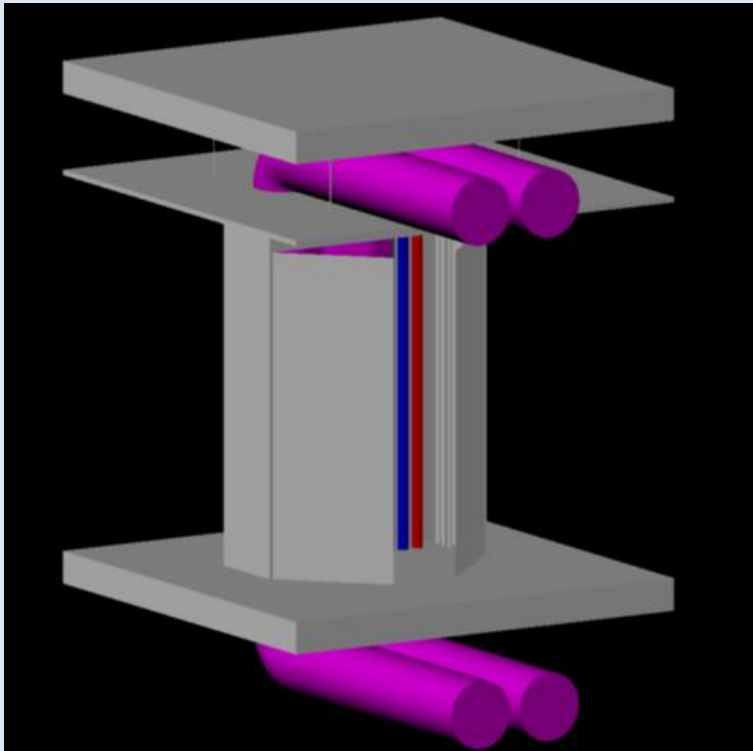
# Pathway detail



- Hot water
- Cold water
- Ventilation in
- Ventilation out
- Sewer rain water
- Sewer house water



# Technique room



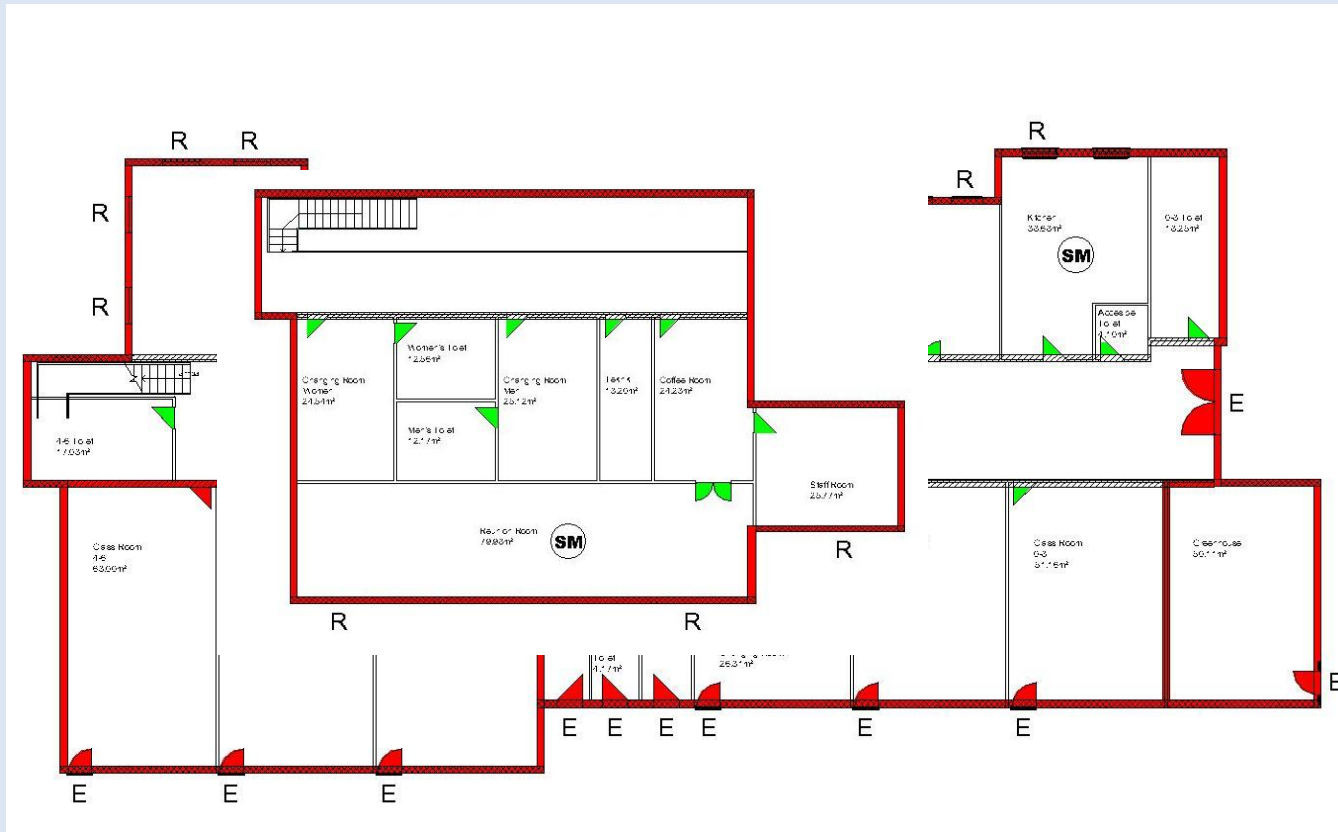
3000 x 6440 mm<sup>2</sup>


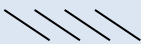


- Hot water
- Cold water
- Ventilation in
- Ventilation out
- Sewerage
- Heating

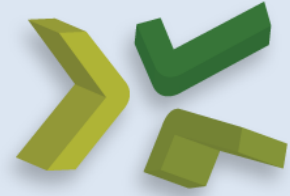




# Protection against fire



- |   |      |   |                |   |     |                           |    |             |
|---|------|---|----------------|---|-----|---------------------------|----|-------------|
|  | EI60 | E | Escape route   |  | R   | Load carrying             | SM | Smoke alarm |
|  | EI30 | R | Rescue opening |  | REI | Load carrying, separating |    |             |



# Solutions against fire

## Plasterboard (interior partition)

FIRE RESISTANCE	(EN 13501-2)
Massive (concrete) wall (100mm)	EI 60/ EW 90 (v <sub>e</sub> i<->o)
Massive (concrete) floor (100mm)	EI 60 (h <sub>e</sub> i<->o)
Flexible wall (metal stud gypsum plasterboard)	EI 60 (v <sub>e</sub> i<->o)
(wooden) door panel (50mm)	EI 60 / EW 60 (v <sub>e</sub> i<->o)
(wooden) door panel (40mm)	EI 30 / EW 30 (v <sub>e</sub> i<->o)

- v<sub>e</sub> (Vertical) = ventilation grille directly installed in wall/door panel
- h<sub>e</sub> (Horizontal) = ventilation grille with build-in frame installed in floor/ceiling
- i (Inside) <-> o (Outside) = results apply for both directions

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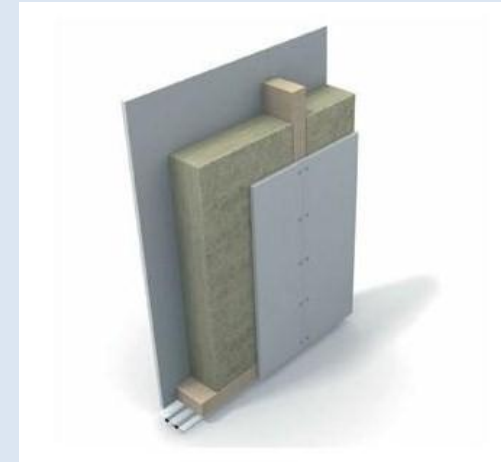
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Conditional technical changes • The most recent edition of the brochure can be downloaded on [www.renson.eu](http://www.renson.eu)

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Tel. +32 (0)56 62 71 11 • Fax +32 (0)56 60 28 51 • [deutschland@renson.net](mailto:deutschland@renson.net) • [www.renson.eu](http://www.renson.eu)



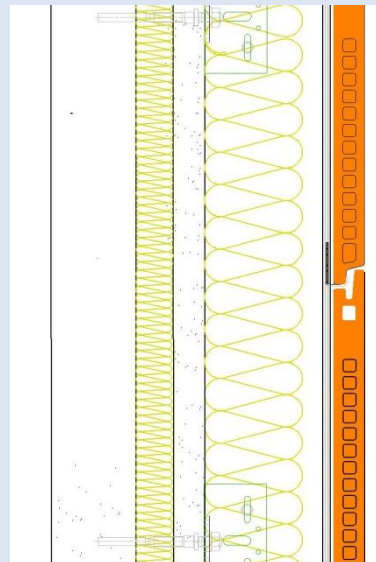
© L2000509 03/10 Engels



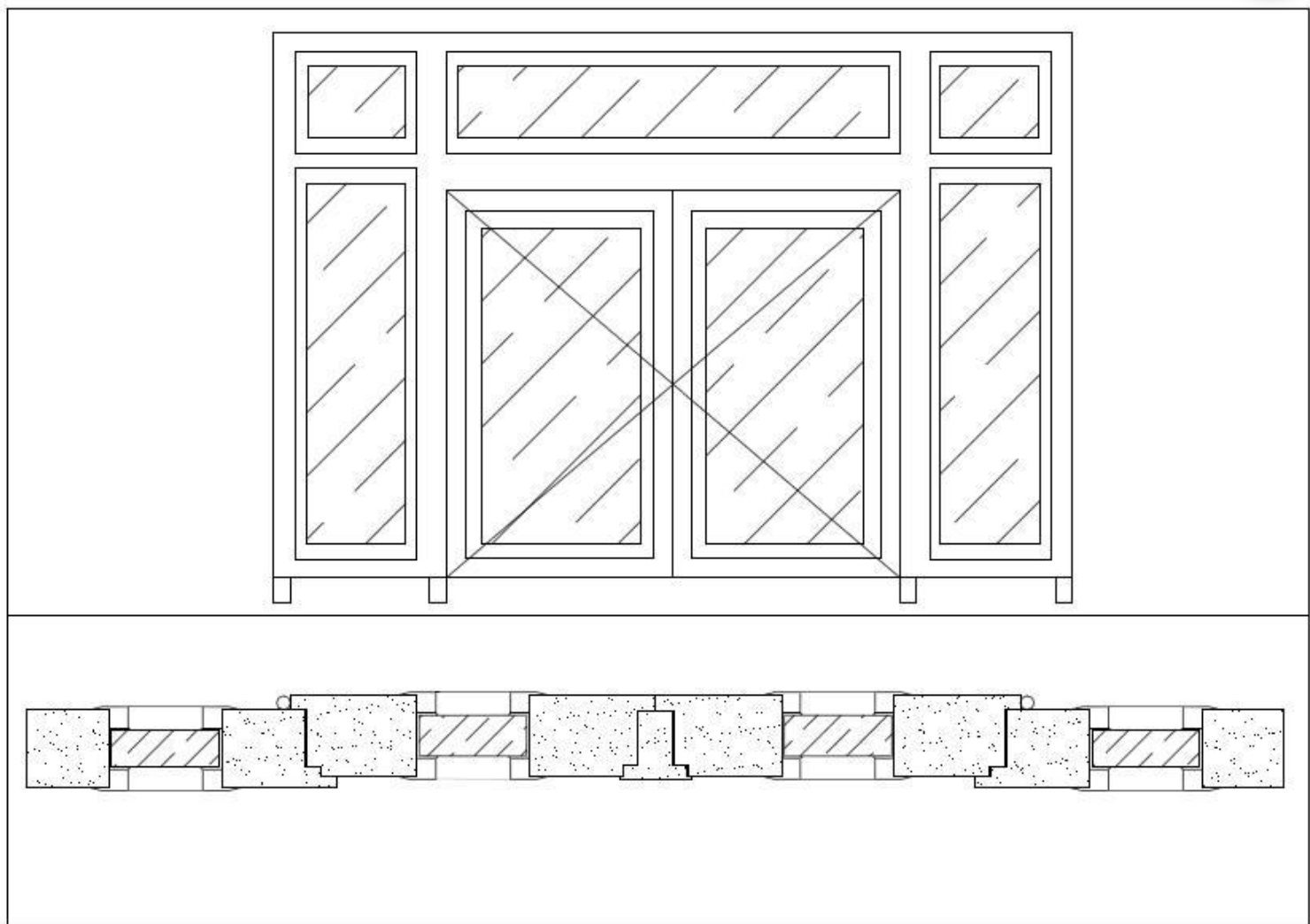
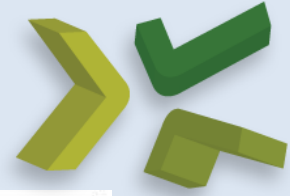
## Sandwich concrete panel (load bearing wall)

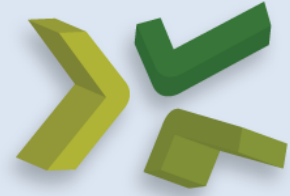
Espesor mínimo (mm)	Resistencia al fuego
60	EI 30
80	EI 60
100	EI 90
120	EI 120
150	EI 180
175	EI 240

Figura 3.5 Resistencia al fuego del panel. Ref:ANFhARQ



# Fire Division Door





# Airborne insulation **Sound analysis**

- >36db
- >48db
- >40db
- >51db

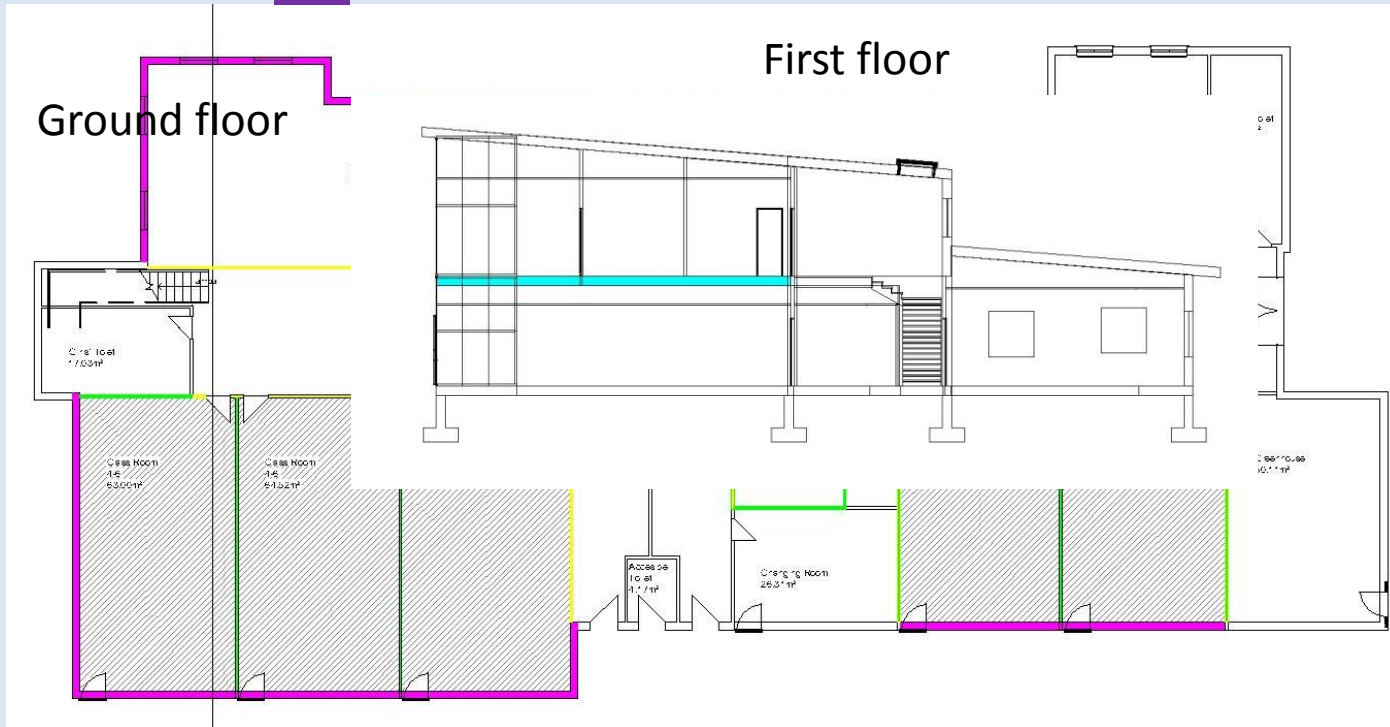
## Impact level(Striped)

- <55db
- <63db
- <58db

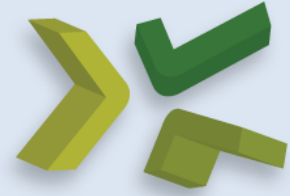
## Noise level

- <33db


Section A-A'



According SBI 216




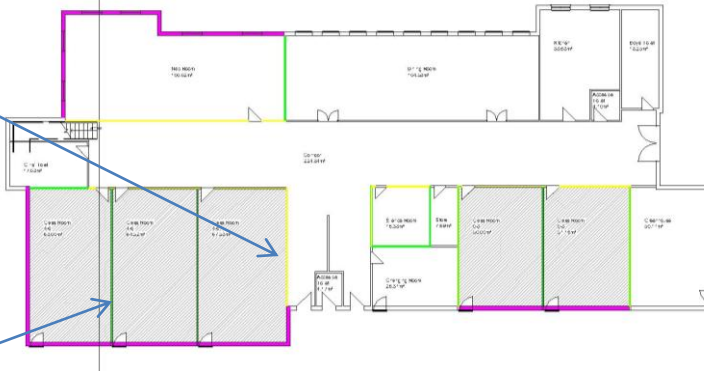
# Airborne insulation



**EI 60**

**40 dB**

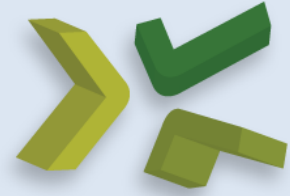
- 13mm plaster board (normal)
- 95mm timber frame, cc 600 mm / 95mm PAROC eXtra
- 13mm plaster board (normal)



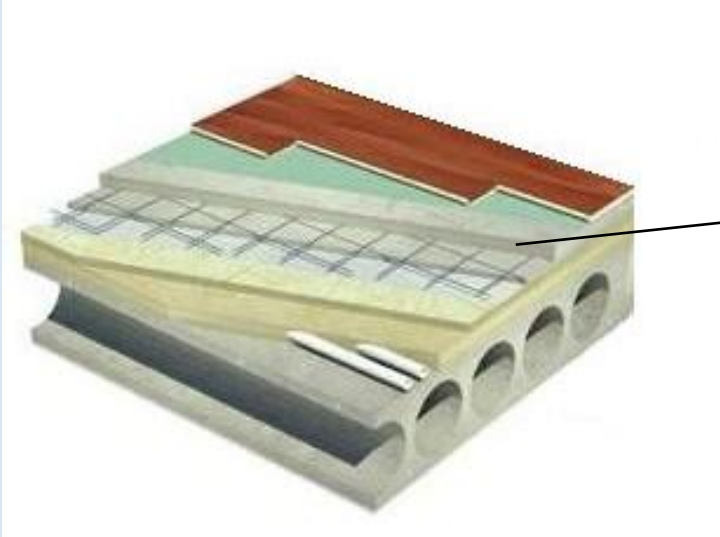
**EI 90**

**48 dB**

- 2 x 12.5mm plaster board (normal)
- 120mm timber frame, cc 600 mm / 120mm PAROC eXtra
- 2 x 12.5mm plaster board (normal)



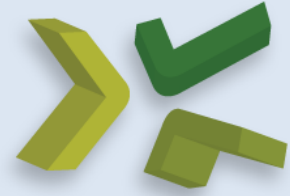
# Impact level <63db



And also 12cm of rock wool are placed under the slabs

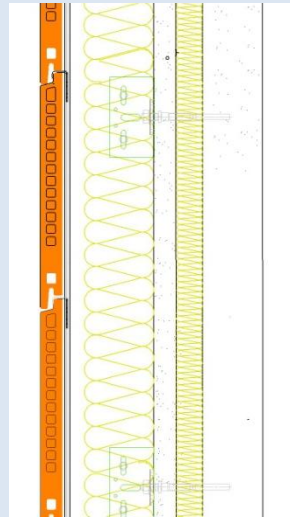
Resilient layer in the acoustic insulation of separating floors

Read more: [Acoustic Floor Slabs](http://www.knaufinsulation.co.uk/products/rock_mineral_wool_slabs/floor_slabs/acoustic_floor_slabs.aspx#ixzz1vPBwDFrk) [http://www.knaufinsulation.co.uk/products/rock\\_mineral\\_wool\\_slabs/floor\\_slabs/acoustic\\_floor\\_slabs.aspx#ixzz1vPBwDFrk](http://www.knaufinsulation.co.uk/products/rock_mineral_wool_slabs/floor_slabs/acoustic_floor_slabs.aspx#ixzz1vPBwDFrk)



# Sound level <33db

Exterior wall



Windows  
Acoustic performance of  
double glazing



type	$R_w + C$ [dB]	$R_w + C_{tr}$ [dB]
4-12-4	30	27
4-16-4	30	27
6-12-6	32	30
6-16-6	32	28
8-12-8	32	31
8-16-8	33	30



# U-value

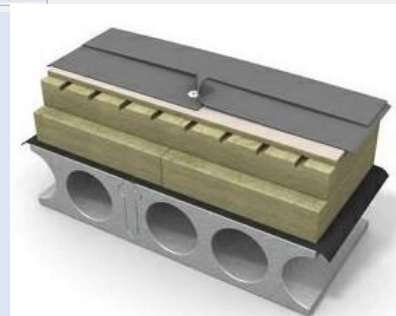
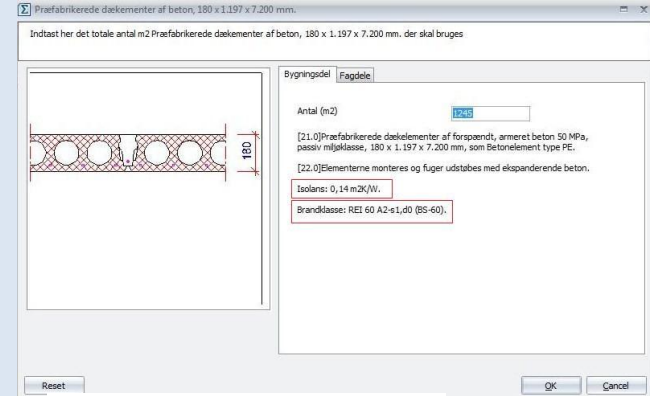
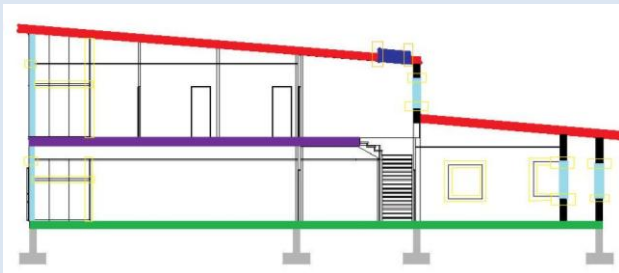
## Requirements

Maximun	Recomended	
0,4	0,2	<b>EXTERNAL WALLS</b>

	d	$\lambda$	$d/\lambda$
concrete	0,225	1	0,225
polyethylene HD	0,25	0,043	5,81395349
rsi			0,13
rse			0,04
<b>Total</b>			<b>6,20895349</b>
		$1/(\sum d/\lambda)$	<b>0,16105774</b>

0,25      0,15 **ROOFS**      0,15698587

	d	$\lambda$	$d/\lambda$
slab			0,14
rock wool	0,27	0,045	6
asphalt	0,01	0,5	0,02
rsi			0,17
rse			0,04
<b>Total</b>			<b>6,37</b>
		$1/(\sum d/\lambda)$	<b>0,15698587</b>



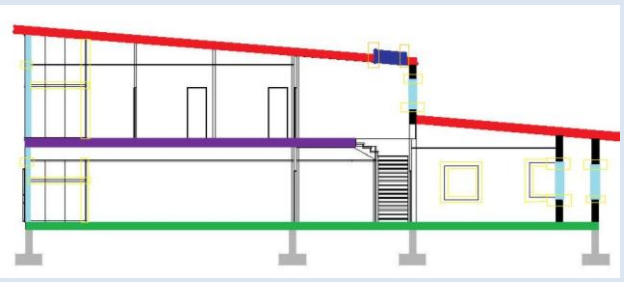
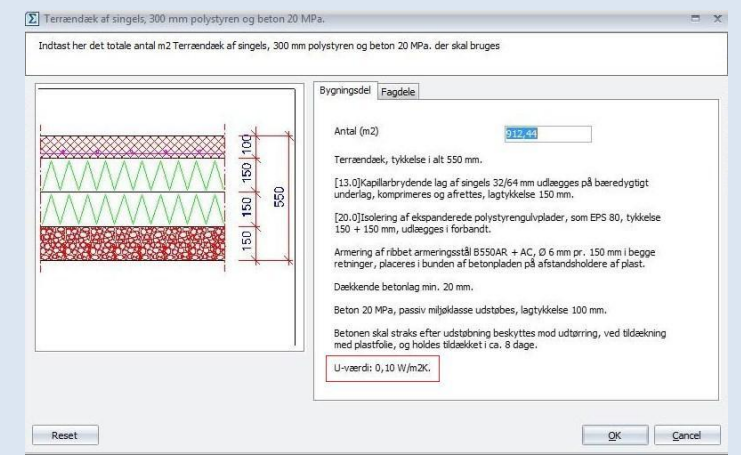
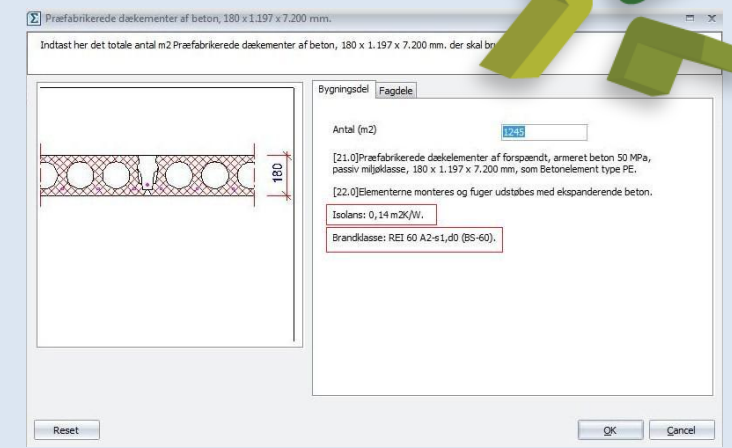


0,7 FLOOR 0,54054054

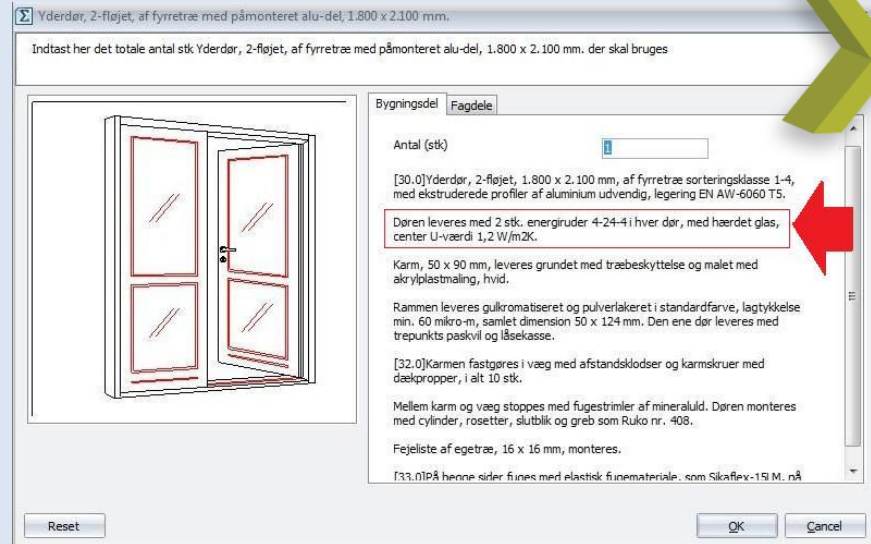
	d	$\lambda$	d/ $\lambda$
slab			0,14
rock wool	0,12	0,08	1,5
rsi			0,17
rse			0,04
<b>Total</b>			<b>1,85</b>

$1/(\sum d/\lambda)$  0,54054054

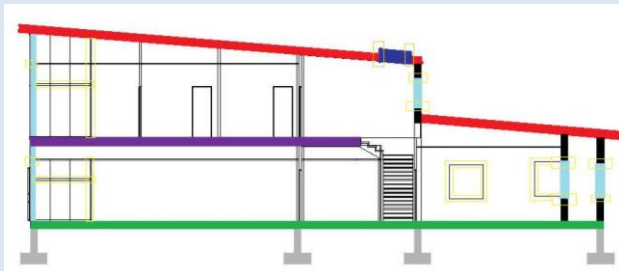
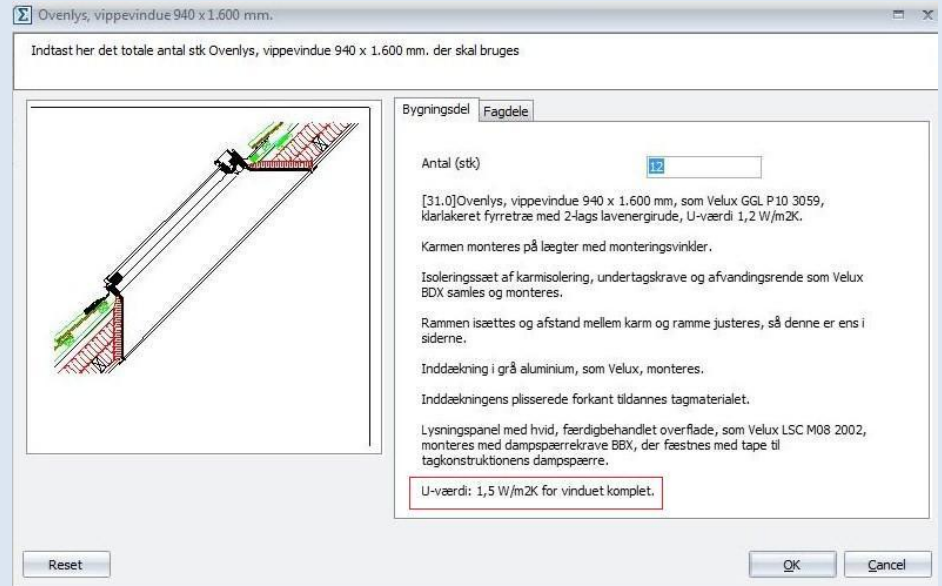
0,3 0,12 GROUND FLOOR 0,1



2 1,5 EXTERNALS DOORS 1,2



2 1,8 SKYLIGHT 1,5

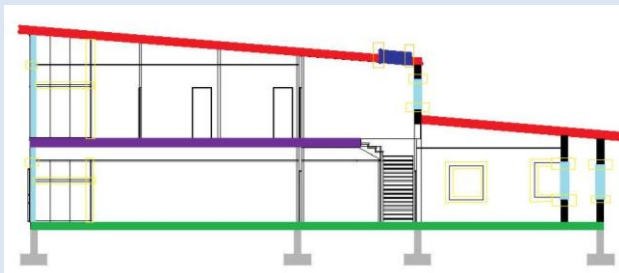
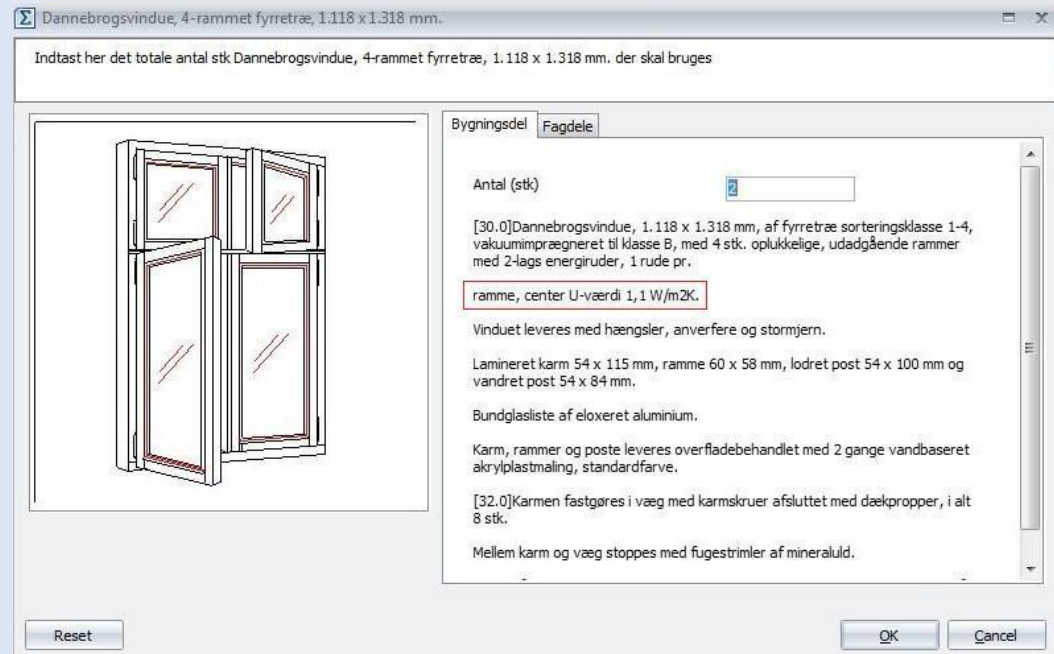


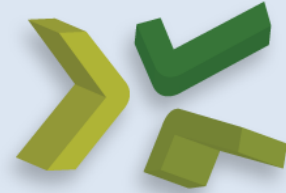


2 1,5 WINDOWS

1,1

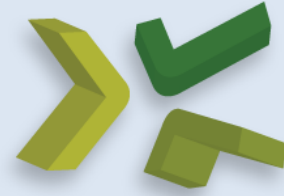
$1/(\sum d/\lambda)$  1,1





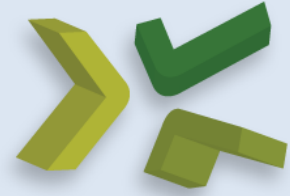
# Cost estimate

No.	Text	Quantity	Unit	Total UC	Total Cost	Cost Incl. Imputed	Unit SP	Sales Price
	<b>Building site</b>							
01.05.31.01	Earhtmoving	1		16.132,51	16.132,51	16.132,49	17.746,73	17.746,73
(19)00.05.03	Fence of hvpl. boards, h = 2.0 m	528,26	lbn	864,31	456.578,48	456.580,40	950,74	502.237,91
	BYGNINGSBA SIS, child care centers, sum.	978,32	m <sup>2</sup>	591,30	578.480,62	578.480,62	650,43	636.328,68
	<b>Total - Building site</b>	<b>1</b>		<b>1.051.191,61</b>	<b>1.051.191,61</b>	<b>1.051.193,51</b>	<b>1.156.313,32</b>	<b>1.156.313,32</b>
	<b>Foundation</b>							
	Strip footing	286,068	m <sup>3</sup>	2.095,18	599.363,95	599.363,95	2.304,70	659.300,00
(13)21.10.00	Isolated footing	12	m <sup>3</sup>	1.573,43	18.881,16	18.881,16	1.730,75	20.769,00
(40)41.15.02	Ground level of the shingle, 300 mm polystyrene and concrete 20 MPa	912,44	m <sup>2</sup>	649,54	592.663,02	592.658,08	714,49	651.926,96
	Concrete paving, gray, thickness 100 mm, to put in gravel base course.	914	m <sup>2</sup>	323,15	295.362,28	295.351,78	355,45	324.877,64
	<b>Total - Foundation</b>	<b>1</b>		<b>1.506.270,41</b>	<b>1.506.270,41</b>	<b>1.506.254,97</b>	<b>1.656.873,60</b>	<b>1.656.873,60</b>
	<b>Structure</b>							
(21)11.04.00	Kælderydervæg of unreinforced concrete, thickness 390 mm, height 2.5 m	362,8	lbn	4.684,85	1.699.663,49	1.699.631,09	5.153,19	1.869.578,39
(23)21.13.00	Prefabricated dækementer of concrete, 180 x 1,197 x 7,200 mm.	1.245	m <sup>2</sup>	529,35	659.041,98	659.040,75	582,29	724.951,05
	Prefabricated concrete support	10	pcs	2.247,86	22.478,60	22.478,60	2.472,60	24.726,00
	Prefabricatel concrete beams	71,6	m	1.379,06	98.740,70	98.740,70	1.516,97	108.615,00
	<b>Total - Structure</b>	<b>1</b>		<b>2.479.924,77</b>	<b>2.479.924,77</b>	<b>2.479.891,14</b>	<b>2.727.870,44</b>	<b>2.727.870,44</b>
	<b>Roof</b>							



# Cost estimate

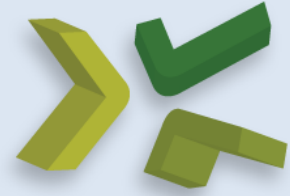
No.	Text	Quantity	Unit	Total UC	Total Cost	Cost Incl. Imputed	Unit SP	Sales Price
(27)15.25,00	Roof, beam rafters of wood, roof pitch 5 °.	1.116,8	m <sup>2</sup>	684,57	764.524,76	764.469,18	752,98	840.928,53
	<b>Total - Roof</b>	<b>1</b>		<b>764.524,76</b>	<b>764.524,76</b>	<b>764.469,18</b>	<b>840.928,53</b>	<b>840.928,53</b>
(24)34.10,00	<b>Staircase</b> Straight Stair made ??of steel with galvanized grating step.	20	stk	36.246,66	724.933,18	724.932,00	39.871,20	797.424,00
	<b>Total - Staircase</b>	<b>1</b>		<b>724.933,18</b>	<b>724.933,18</b>	<b>724.932,00</b>	<b>797.424,00</b>	<b>797.424,00</b>
	<b>Enclosure</b> Curtain wall	55,42	m <sup>2</sup>	3.838,05	212.704,73	212.704,73	4.221,85	233.975,00
	<b>Total - Enclosure</b>	<b>1</b>		<b>212.704,73</b>	<b>212.704,73</b>	<b>212.704,73</b>	<b>233.975,00</b>	<b>233.975,00</b>
(35)12.05,00	<b>Masonry</b> Partitions	1		458.113,03	458.113,03	458.095,40	503.908,56	503.908,56
	Acoustic ceiling of gypsum board 600 x 600 mm, concealed mounting system.	1.245	m <sup>2</sup>	426,89	531.476,26	531.478,05	469,57	584.614,65
	<b>Total - Masonry</b>	<b>1</b>		<b>989.589,29</b>	<b>989.589,29</b>	<b>989.573,45</b>	<b>1.088.523,21</b>	<b>1.088.523,21</b>
	<b>Building services</b> plumbing systems	1		530.097,30	530.097,30	530.097,75	583.110,04	583.110,04
	drainage	1		125.159,85	125.159,85	125.159,85	137.672,10	137.672,10
	heating	1		428.628,60	428.628,60	428.628,60	471.493,95	471.493,95
	ventilation	1		517.222,80	517.222,80	517.222,80	568.952,55	568.952,55
	Electrical	1		696.652,20	696.652,20	696.652,20	766.322,40	766.322,40
	Against fire	1		120.727,65	120.727,65	120.727,65	132.804,15	132.804,15
	<b>Total - Building services</b>	<b>1</b>		<b>2.418.488,40</b>	<b>2.418.488,40</b>	<b>2.418.488,85</b>	<b>2.660.355,19</b>	<b>2.660.355,19</b>
	<b>Finishes</b> internal walls	1		535.965,54	535.965,54	535.992,93	589.593,05	589.593,05



# Cost estimate

No.	Text	Quantity	Unit	Total UC	Total Cost	Cost Incl. Imputed	Unit SP	Sales Price
	external walls	1		560.793,61	560.793,61	560.793,61	616.872,97	616.872,97
	floors	1		477.053,76	477.053,76	477.048,11	524.758,98	524.758,98
	<b>Total - Finishes</b>	<b>1</b>		<b>1.573.812,91</b>	<b>1.573.812,91</b>	<b>1.573.834,65</b>	<b>1.731.225,00</b>	<b>1.731.225,00</b>
	<b>Carpentry and locksmith</b>							
	doors	1		294.388,70	294.388,70	294.391,33	323.830,88	323.830,88
	windows	1		171.179,26	171.179,26	171.179,16	188.297,08	188.297,08
	Skylights	1		105.731,34	105.731,34	105.731,28	116.304,36	116.304,36
	<b>Total - Carpentry and locksmith</b>	<b>1</b>		<b>571.299,30</b>	<b>571.299,30</b>	<b>571.301,77</b>	<b>628.432,32</b>	<b>628.432,32</b>
	<b>Furniture</b>							
(79)05.05,03	Furniture, children's institutions, sum.	1.245	m <sup>2</sup>	731,25	910.406,25	910.406,25	804,38	1.001.453,10
	<b>Total - Furniture</b>	<b>1</b>		<b>910.406,25</b>	<b>910.406,25</b>	<b>910.406,25</b>	<b>1.001.453,10</b>	<b>1.001.453,10</b>
	<b>Total amount</b>	<b>1</b>	<b>Sum</b>	<b>13.203.145,61</b>	<b>13.203.145,61</b>	<b>13.203.050,50</b>	<b>14.523.373,71</b>	<b>14.523.373,71</b>

- Activities duration
- Cash flow



# Project cost

In total Total amount	13.203.053,49	1.320.323,78	0,00	14.523.376,00	0,091	1.320.322,51
VAT (25%)				3.630.844,00		
Total amount incl. VAT				18.154.220,00		

## OUTLINE PHASE

- Construction Costs  
11,595,207.3kr
- Project cost  
17,714,900kr

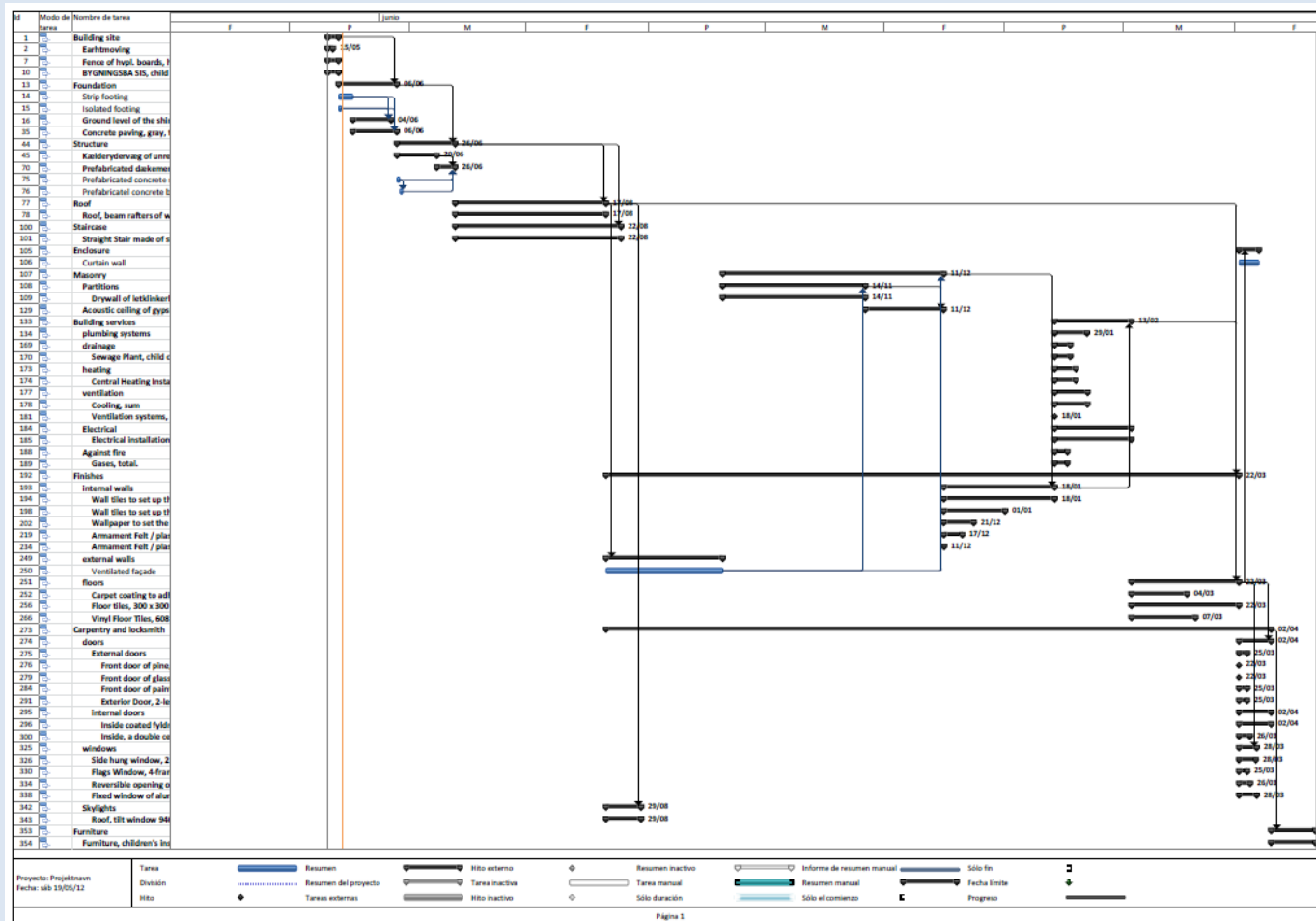
## SCHEME DESIGN

- Construction Costs  
13,203,145.61kr
- Project cost  
18,154,220kr



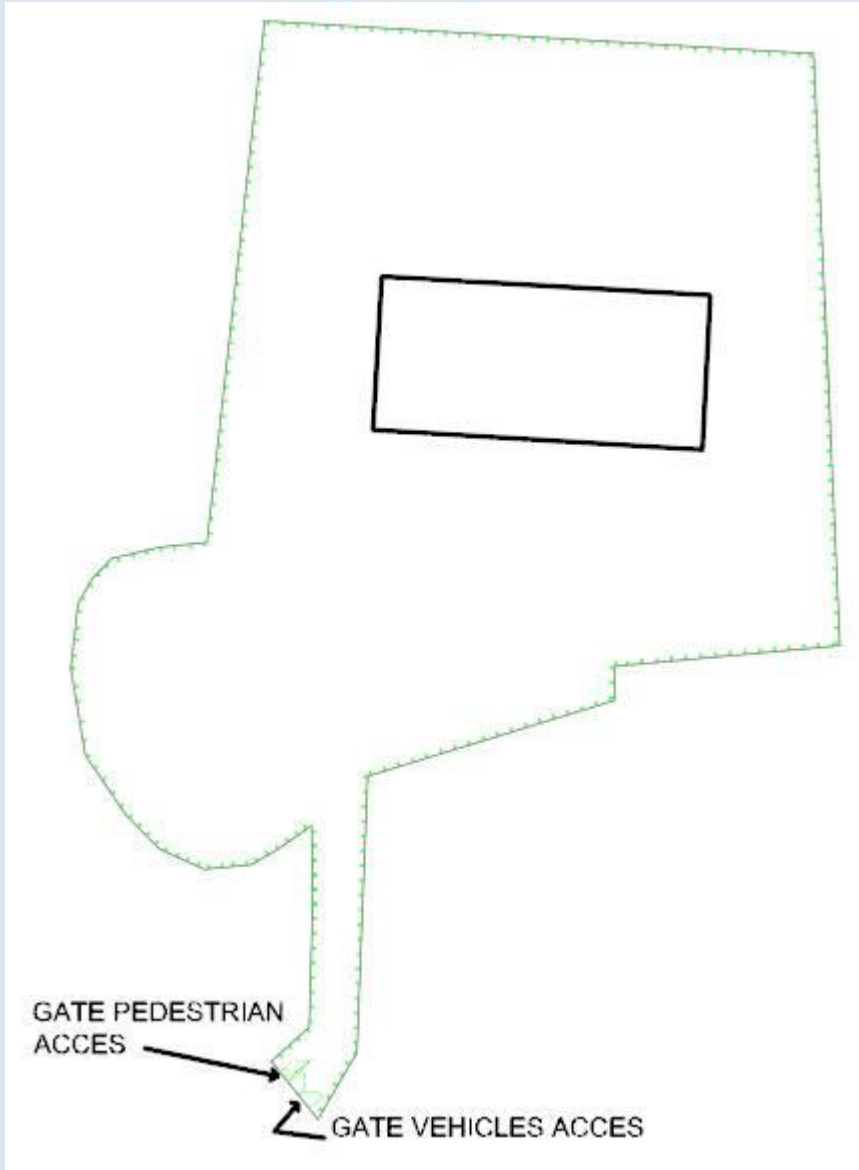
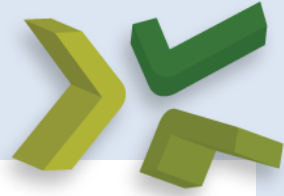
# Gantt Graphic

PDF file

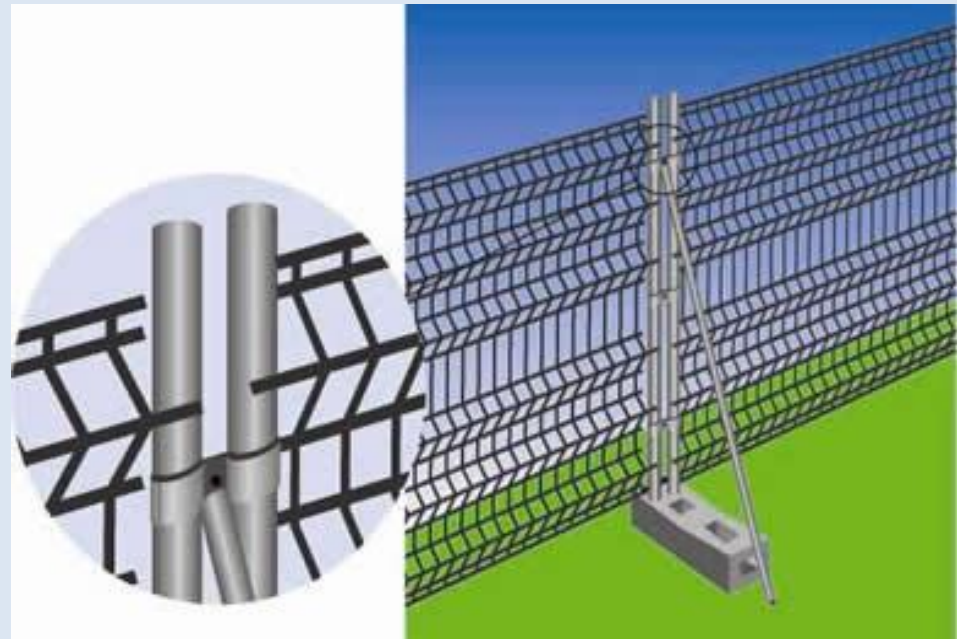
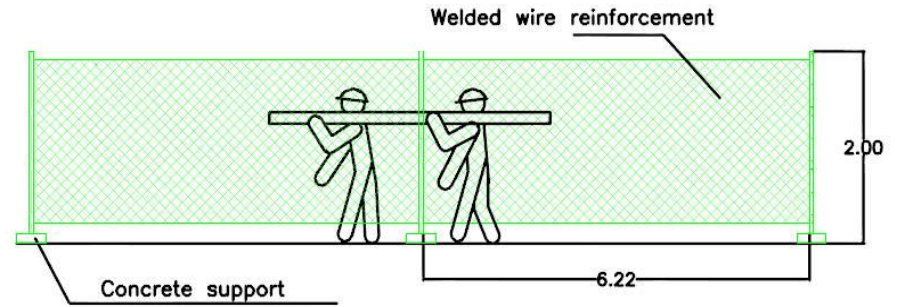


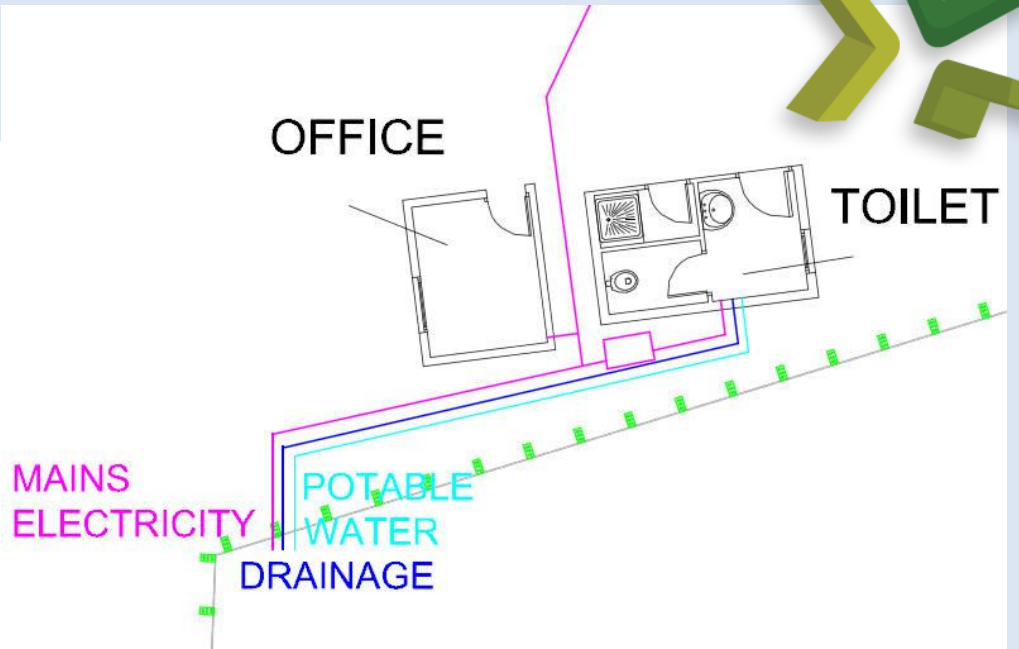
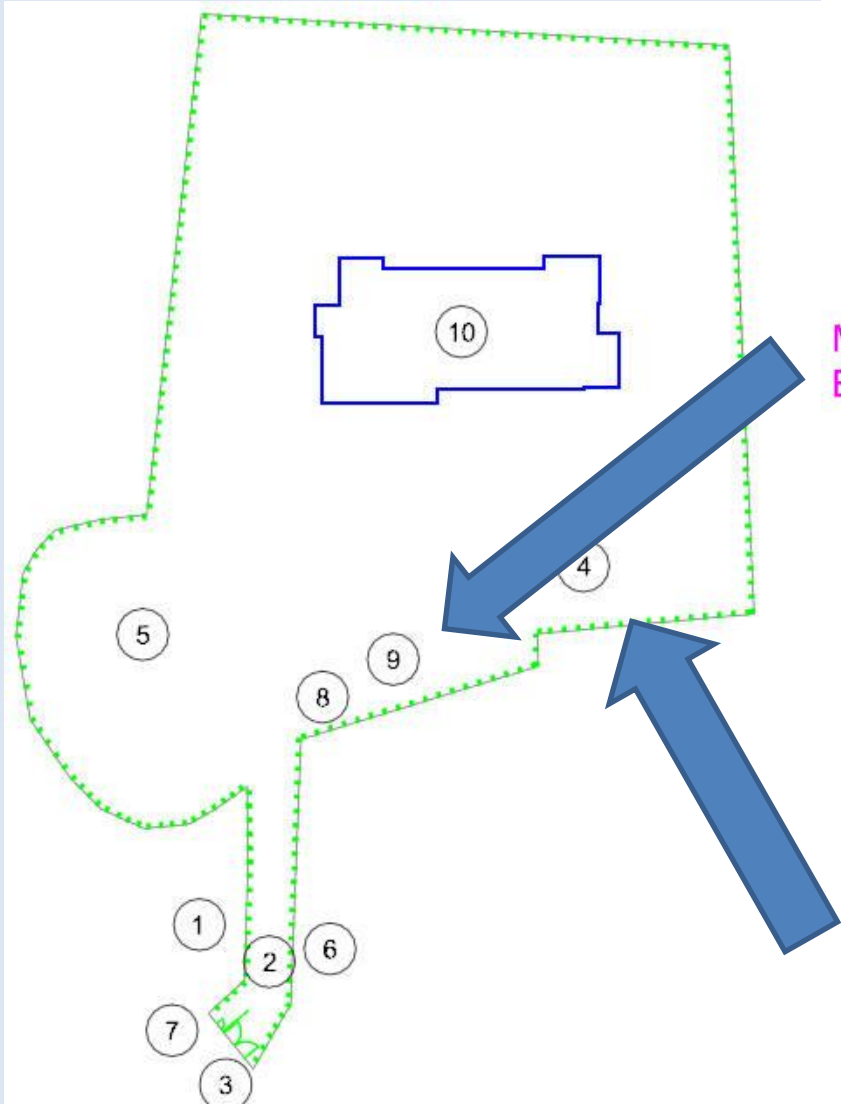
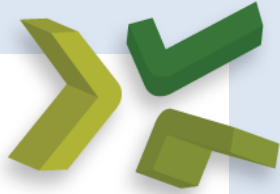


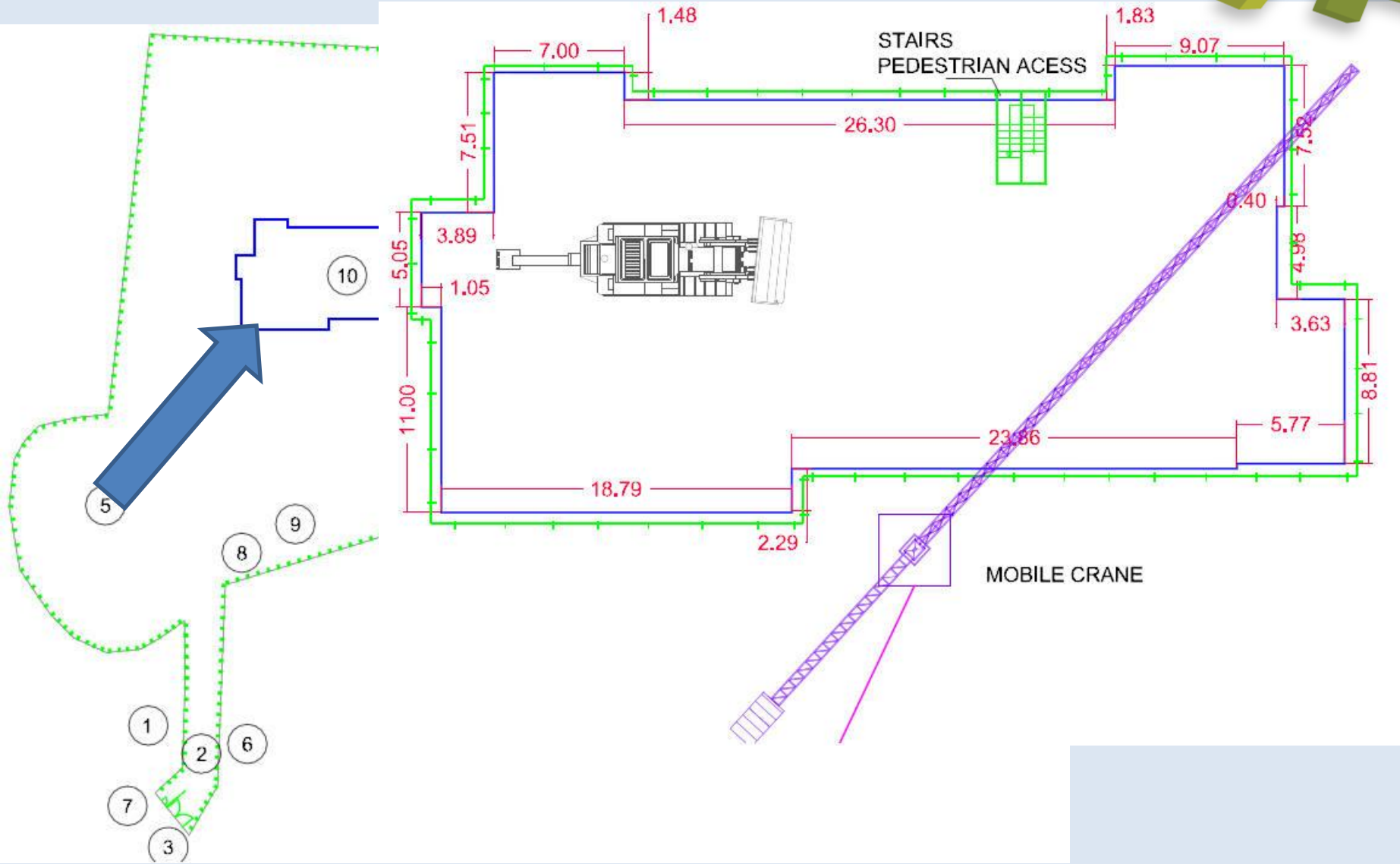
# Building Plannig



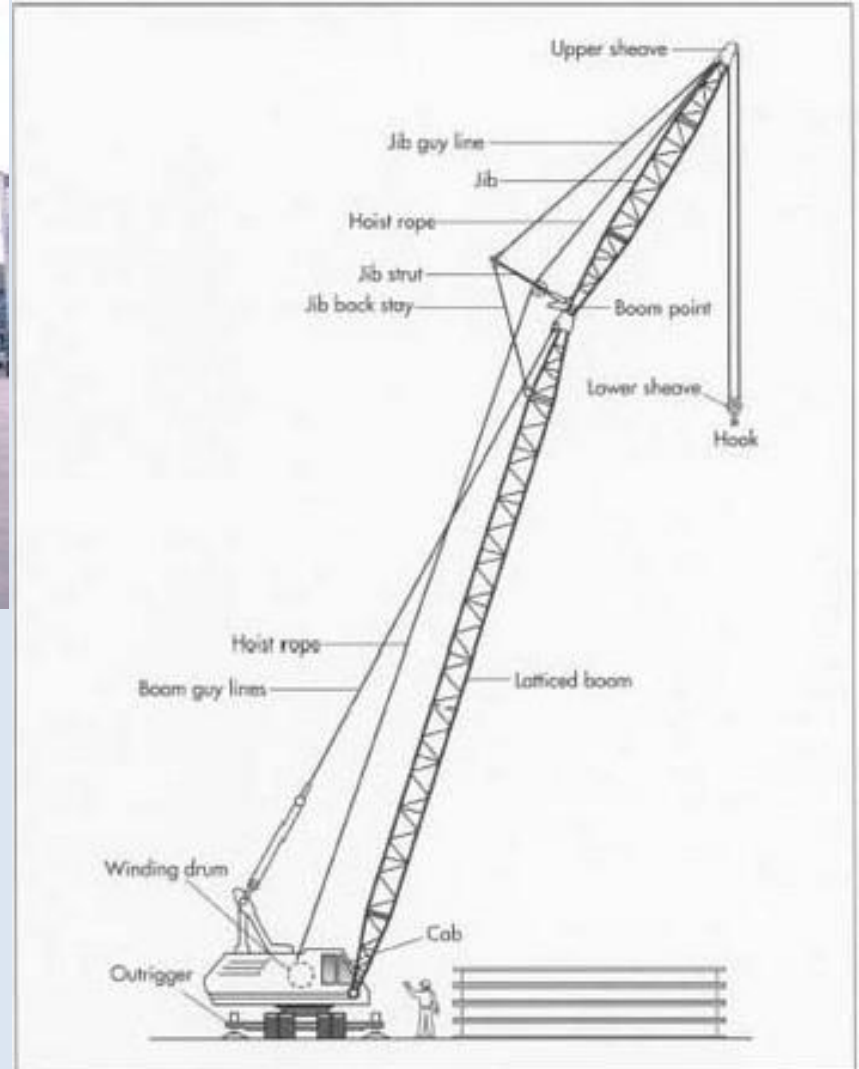
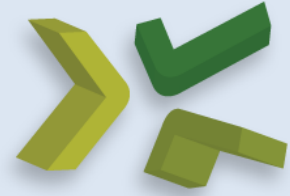
## PROVISIONAL FENCING



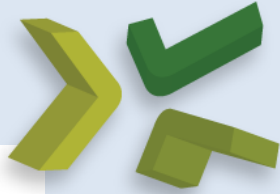




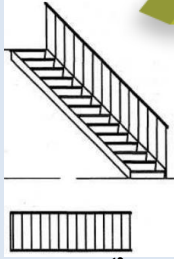
# Mobile Crane



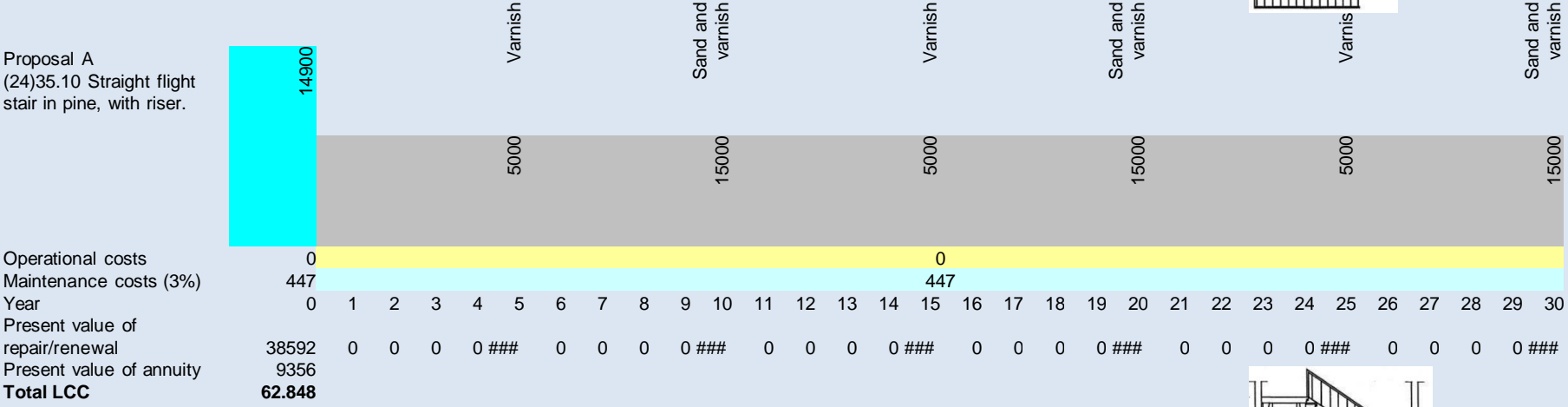
# Life cycle costing



Nominal Interest Rate  
(Calculation Interest Rate) 5%  
Inflation 2,5%  
Real Interest Rate 2,5%

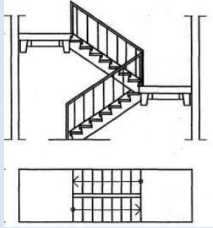
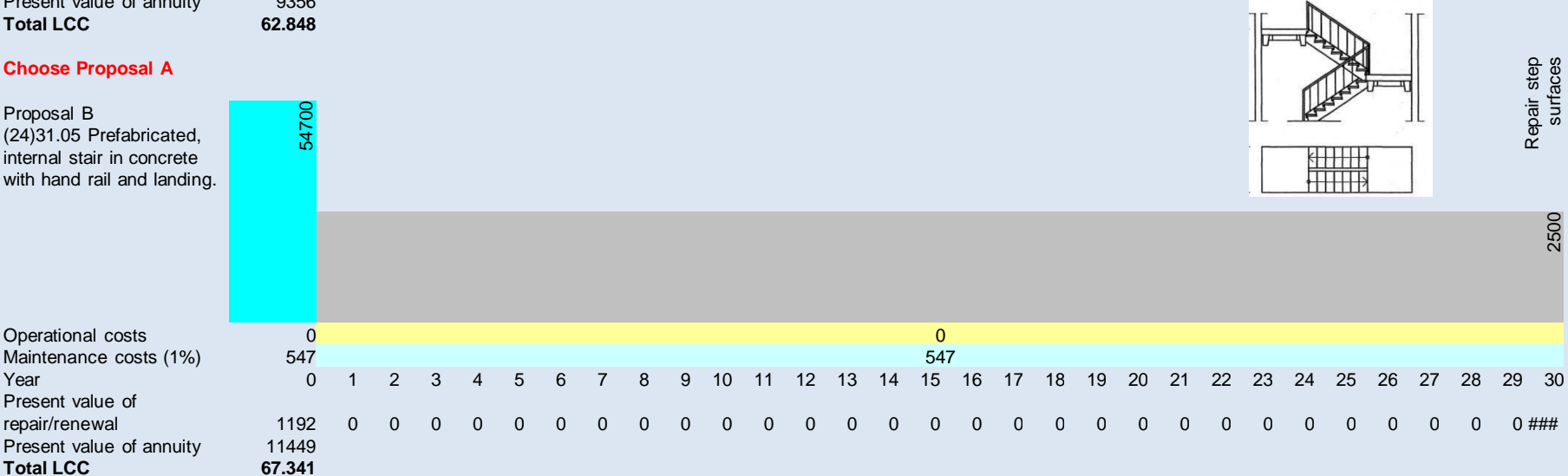


Proposal A  
(24)35.10 Straight flight stair in pine, with riser.



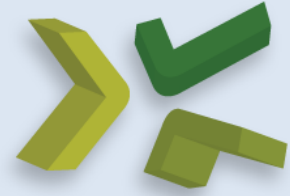
**Choose Proposal A**

Proposal B  
(24)31.05 Prefabricated, internal stair in concrete with hand rail and landing.



Repair step surfaces

# Personal planning: outline proposal



## Personal planning of outline proposal

Wage/Hr 220,8589

Alberto

Activity/ Wr nr		6	7	8	9	10	Total hr	A costs/hr
Sketching	Planned	10	10	15	15	15	65	14355,83
	Actual	16	12	13	14	21	76	16785,28
Details	Planned	15	10	10	10	20	65	14355,83
	Actual	11	10	10	11	13	55	12147,24
3D Models	Planned	5	10	10	10	5	40	8834,356
	Actual	12	10	11	10	9	52	11484,66
Presentation	Planned	0	0	0	0	15	15	3312,883
	Actual	0	0	0	0	18	18	3975,46

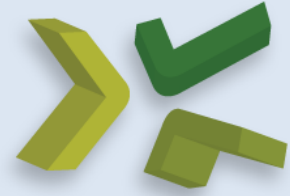
44392,64

Laura

Activity/ Wr nr		6	7	8	9	10	Total hr	A costs/hr
Sketching	Planned	5	10	10	10	5	40	8834,356
	Actual	4	9	12	10	8	43	9496,933
Details	Planned	15	8	8	8	15	54	11926,38
	Actual	11	9	6	8	13	47	10380,37
3D Models	Planned	10	15	15	15	20	75	16564,42
	Actual	12	14	16	13	24	79	17447,85
Presentation	Planned	0	0	0	0	15	15	3312,883
	Actual	0	0	0	0	18	18	3975,46

41300,61

**TOTAL** 85693,25



# Personal planning: scheme design

## Personal planning of scheme design

Wage/Hr 220,858896

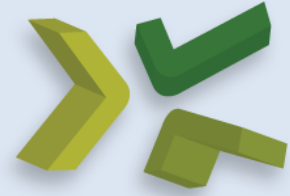
Alberto		WEEK 11	WEEK12	WEEK 13	WEEK 14	WEEK 15	WEEK 16	WEEK 17	WEEK 18	WEEK 19	WEEK 20
SKETCHING	PLANNED	10	10	8	8	10	10	6	6	6	6
	ACTUAL	9	9	10	9	7	7	8	8	9	5
DETAILS	PLANNED	1	2	2	2	2	2	2	2	2	2
	ACTUAL	3	2	2	2	2	1	3	2	3	3
BPM	PLANNED	5	8	10	10	12	12	12	12	10	10
	ACTUAL	5	8	10	12	11	12	10	12	10	7
INSTALLATIONS	PLANNED	5	5	10	10	10	10	10	8	8	4
	ACTUAL	6	8	8	8	9	8	7	8	7	6
PRESENTATION	PLANNED	0	0	0	0	0	0	0	0	0	15
	ACTUAL	0	0	0	0	0	0	0	0	0	15
TOTAL	PLANNED	21	25	30	30	34	34	30	28	26	37
	ACTUAL	23	27	30	31	29	28	28	30	29	36

64269,9387

Laura		WEEK 11	WEEK12	WEEK 13	WEEK 14	WEEK 15	WEEK 16	WEEK 17	WEEK 18	WEEK 19	WEEK 20
SKETCHING	PLANNED	5	8	10	10	12	12	12	12	10	10
	ACTUAL	5	8	10	12	11	12	10	12	10	7
DETAILS	PLANNED	5	5	10	10	10	10	10	8	8	4
	ACTUAL	6	8	8	8	9	8	7	8	7	6
BPM	PLANNED	10	10	8	8	10	10	6	6	6	6
	ACTUAL	9	9	10	9	7	7	8	8	9	5
INSTALLATIONS	PLANNED	1	2	2	2	2	2	2	2	2	2
	ACTUAL	3	2	2	2	2	1	3	2	3	3
PRESENTATION	PLANNED	0	0	0	0	0	0	0	0	0	15
	ACTUAL	0	0	0	0	0	0	0	0	0	15
TOTAL	PLANNED	21	25	30	30	34	34	30	28	26	37
	ACTUAL	23	27	30	31	29	28	28	30	29	36

64269,9387

**TOTAL** 128539,877



# Personal planning: detail design 1

## Personal planning of detail design 1

Wage/Hr 220,858896

Alberto		WEEK 21	WEEK 22	WEEK 23	WEEK 24
SKETCHING	PLANNED	10	10	8	4
	ACTUAL	9	9	10	5
DETAILS	PLANNED	1	2	2	4
	ACTUAL	3	2	2	3
BPM	PLANNED	5	8	10	5
	ACTUAL	5	8	10	6
INSTALLATIONS	PLANNED	5	5	10	3
	ACTUAL	6	8	8	3
PRESENTATION	PLANNED	0	0	0	15
	ACTUAL	0	0	0	15
TOTAL	PLANNED	21	25	30	31
	ACTUAL	23	27	30	32

24736,1963

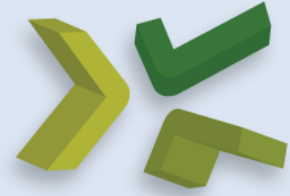
Laura		WEEK 21	WEEK 22	WEEK 23	WEEK 24
SKETCHING	PLANNED	5	8	10	4
	ACTUAL	5	8	10	3
DETAILS	PLANNED	5	5	10	4
	ACTUAL	6	8	8	5
BPM	PLANNED	10	10	8	3
	ACTUAL	9	9	10	3
INSTALLATIONS	PLANNED	1	2	2	5
	ACTUAL	3	2	2	6
PRESENTATION	PLANNED	0	0	0	15
	ACTUAL	0	0	0	15
TOTAL	PLANNED	21	25	30	31
	ACTUAL	23	27	30	32

24736,1963

49472,3926

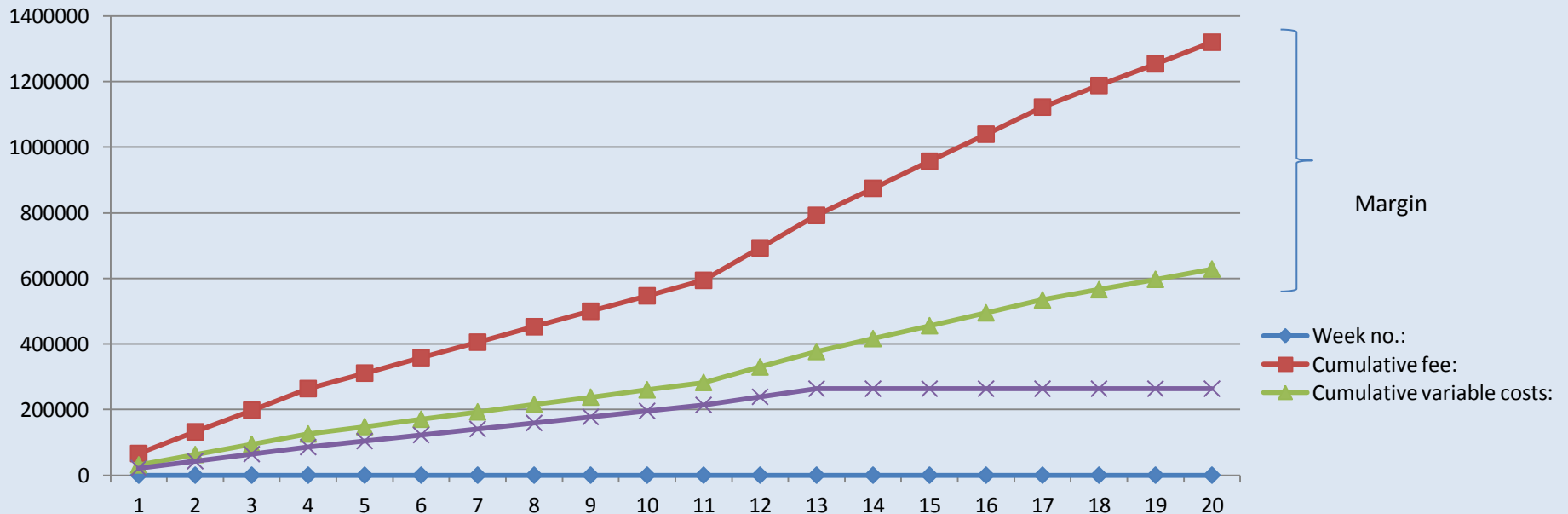
**TOTAL**

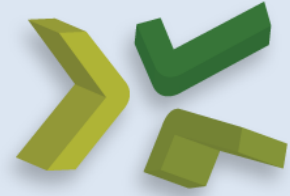




# Fee calculation

Calculation of arch.fee:	
Construction costs	13.203.053
Fee %:	10%
Fee in DKK:	1.320.305
Margin in %:	110%
Variable costs.:	100%
Insert actual variable costs for the following phases:	
Outline phase	85.693
Scheme design phase	128.540
Detail Design 1	49.472





# KINDERGARTEN

DETAIL DESIGN



# Application form



Received, date

Name and address of the Municipality		To be filled in by the Municipality	
Vejle Kommune Skolegade 1 7100 Vejle		5	
Property Number	Buil. no	Street code	House no. B Storey
L/R door no.	Apartment no.	Building reg. no.	
<b>Building Regulations (BR10)</b>			
<input checked="" type="checkbox"/> Application for a Building Permit <input type="checkbox"/> Notification of building works			

The Property	See guidelines
Street name and house number (identification of location)) Galavej 5, Vejle 7100	
Cadastral appellation 6a	

Type of construction

<input checked="" type="checkbox"/> New construction <input type="checkbox"/> Extension <input type="checkbox"/> Other construction
<small>Specify what you want to construct (for example single family house, semi detached house, garage, shop, workshop, demolition of existing building, moving partition walls, change of usage, putting up signs, adding sunblinds, wind mills, farm buildings)</small> The building is a kindergarden which consist of two storeys (ground and first floor). Ground floor: 910,41 m2 First floor: 245,22 m2 Total surface: 1155,63 m2
<input checked="" type="checkbox"/> The construction works do not require a dispensation <input type="checkbox"/> The construction works requires a dispensation (A reasoned application shall be annexed to this application)) Necessary appendices must be annexed (see guidelines)

Construction Insurance

<input type="checkbox"/> Documentation from Insurance broker confirming liability enclosed. (Only applies to buildings meant for habitation)
Method of heating <input type="checkbox"/> District heating <input type="checkbox"/> Electricity <input checked="" type="checkbox"/> Other            In case 'Other' state method Own boiler

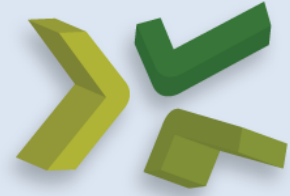
Applicant (architect, engineer or the like)

Name, address, telephone number and Company registration number Alberto André Raña Laura Jiménez Coronado Slotsgade 19, 8700 Horsens Telephone: 0045 50 12 39 21	E-mail 177549@viauc.dk  Date and signature
--	--

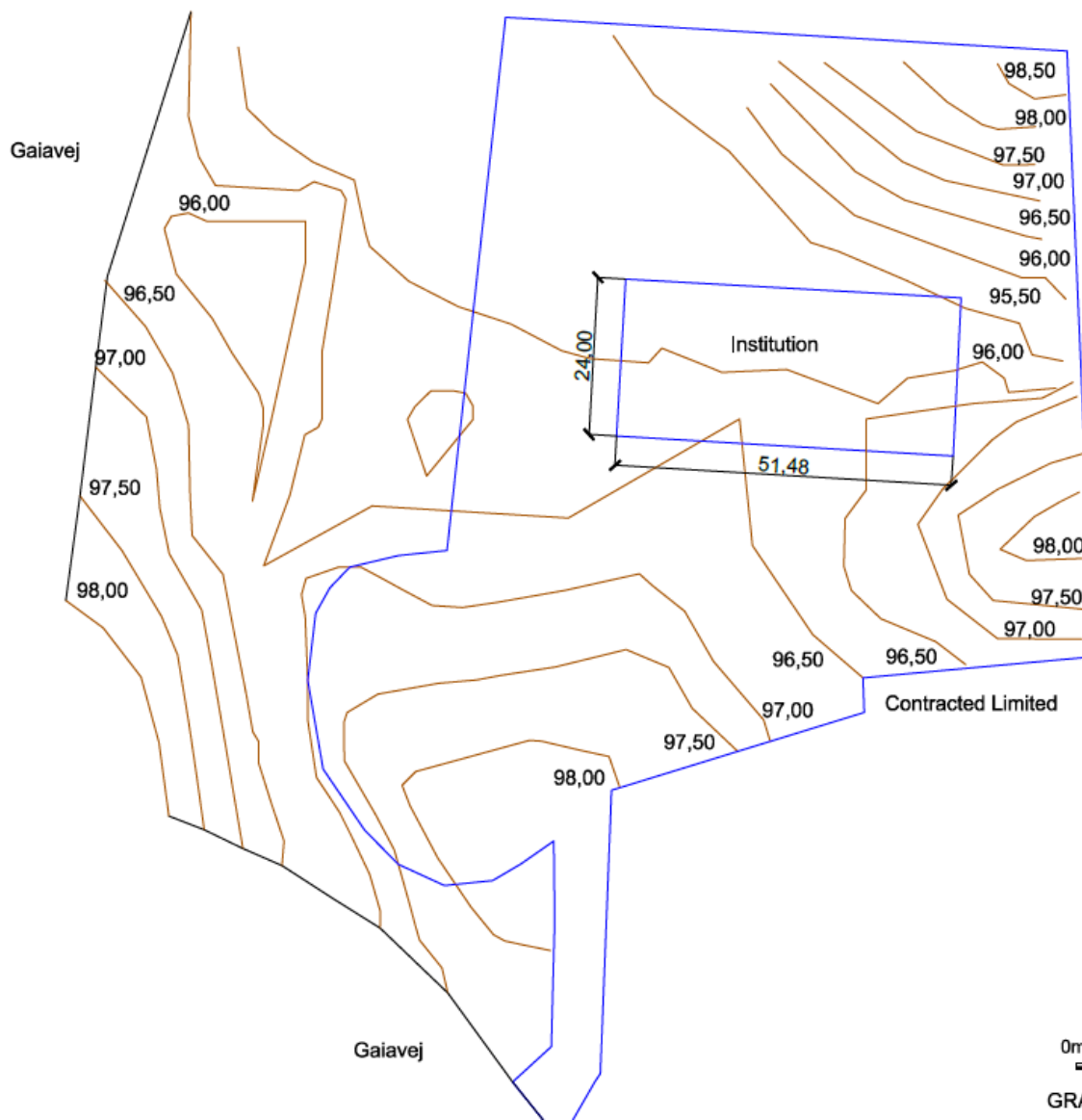
Owner of property according to Land Registry    Owners association

The signature of the chairman of the owners association is required unless the applicant by other means can verify his/her authority to apply on behalf of the owner

Name, address, telephone number and Company registration number Paul Nielsen Office G213 Telephone: 0045 87 55 43 05	Name of owners association, name of chairman, address and e-mail.
Date and signature	Date and signature



# Building site

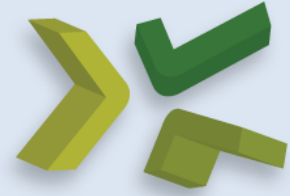


Built surface: 1.237,31 m<sup>2</sup>  
Plot surface: 11.439,04 m<sup>2</sup>

Ratio built/plot: 10,82%

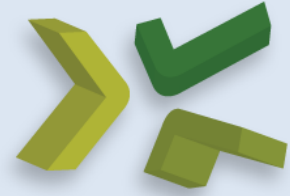
0m 5m 10m 20m 30m 40m 50m

GRAPHIC SCALE



# Detail design

- Building site 1:200
- Ground floor 1:50
- First floor 1:50
- Roof plan 1:50
- Elevation south 1:50
- Elevation north 1:50
- Elevation east 1:50
- Elevation west 1:50
- Section AA' 1:20
- Section BB' 1:20



# Detail design

- Section toilet 1:20
- Staircase 1:20
- Stairs details 1:5
- Technique 1:20
- Structure details 1:5
- Foundation detail 1:5
- Façade-floor 1:5
- Façade-gutter 1:5
- Façade-eave 1:5
- Façade-roof 1:5
- Curtain wall 1:5
- Cladding façade 1:10
- Cladding façade details 1:2
- Window vertical section 1:5
- Window horizontal section 1:5
- Door vertical section 1:5
- Door horizontal section 1:5
- Skylight detail 1:5
- Interior partitions A,B,C 1:10
- Interior partitions D,E,F 1:10