

# Architectural Technologist Portfolio



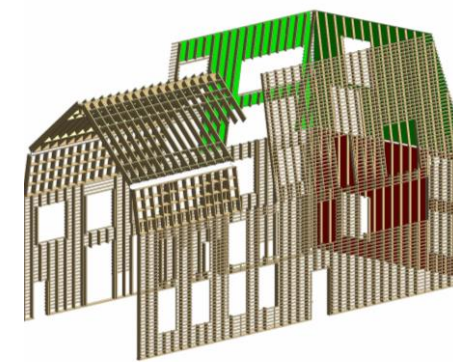
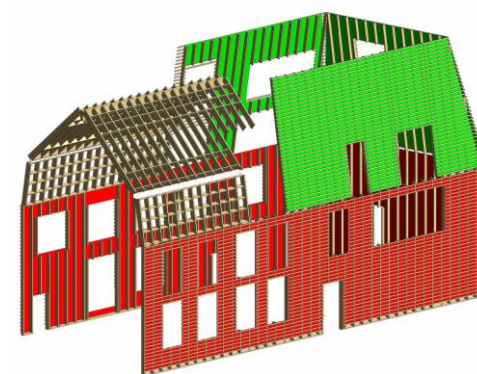
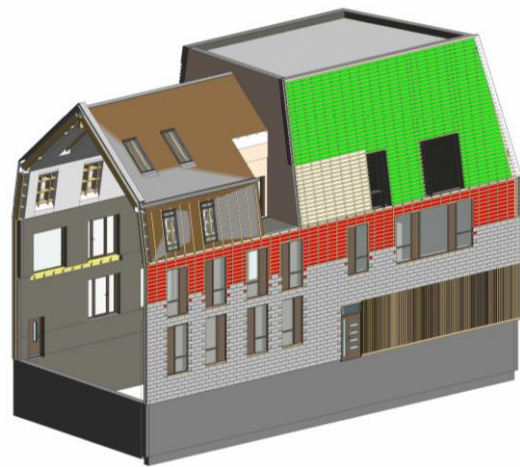
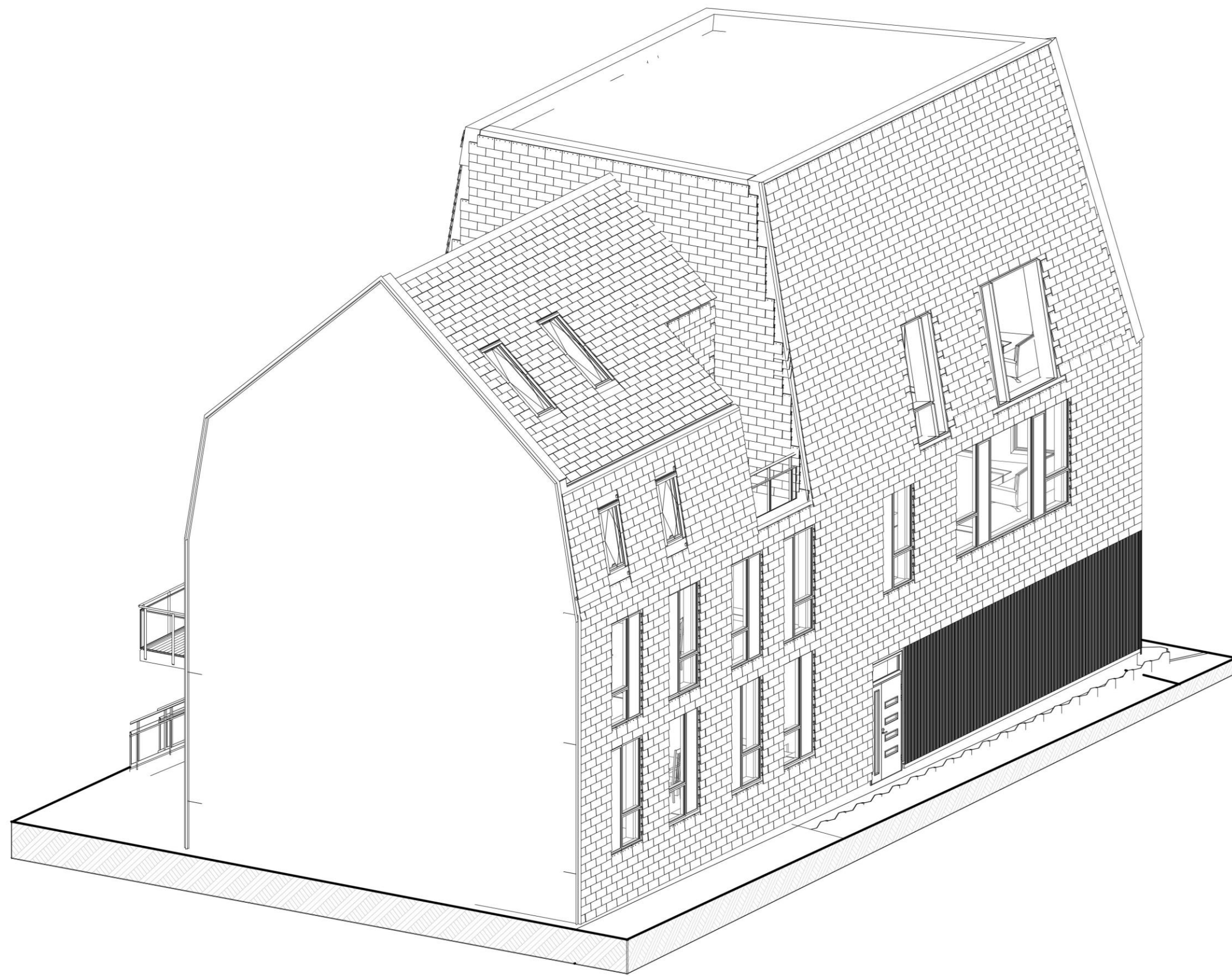
**Timothy Lukolo**

(Copenhagen School of Design and Construction Management)

## Works Presented:

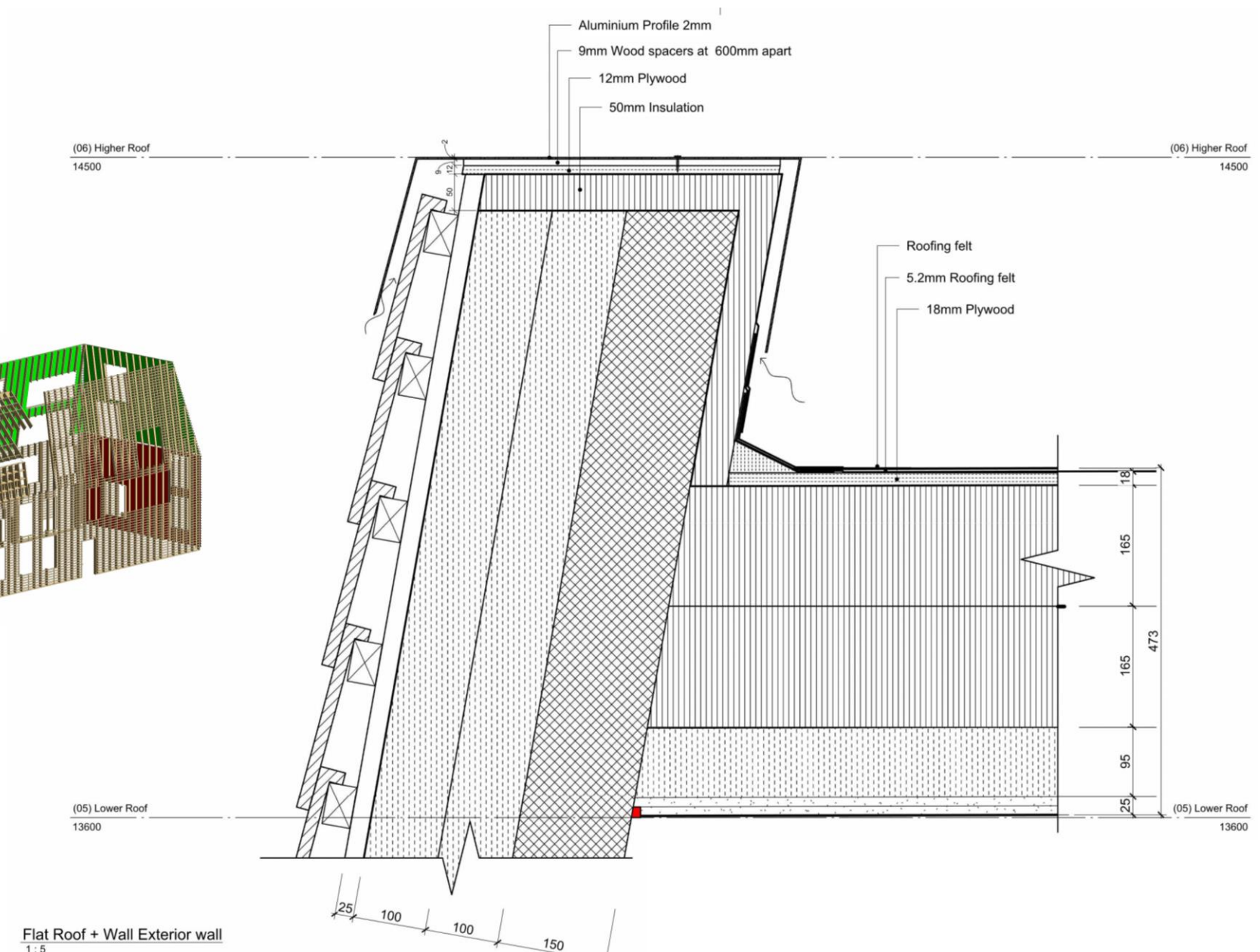
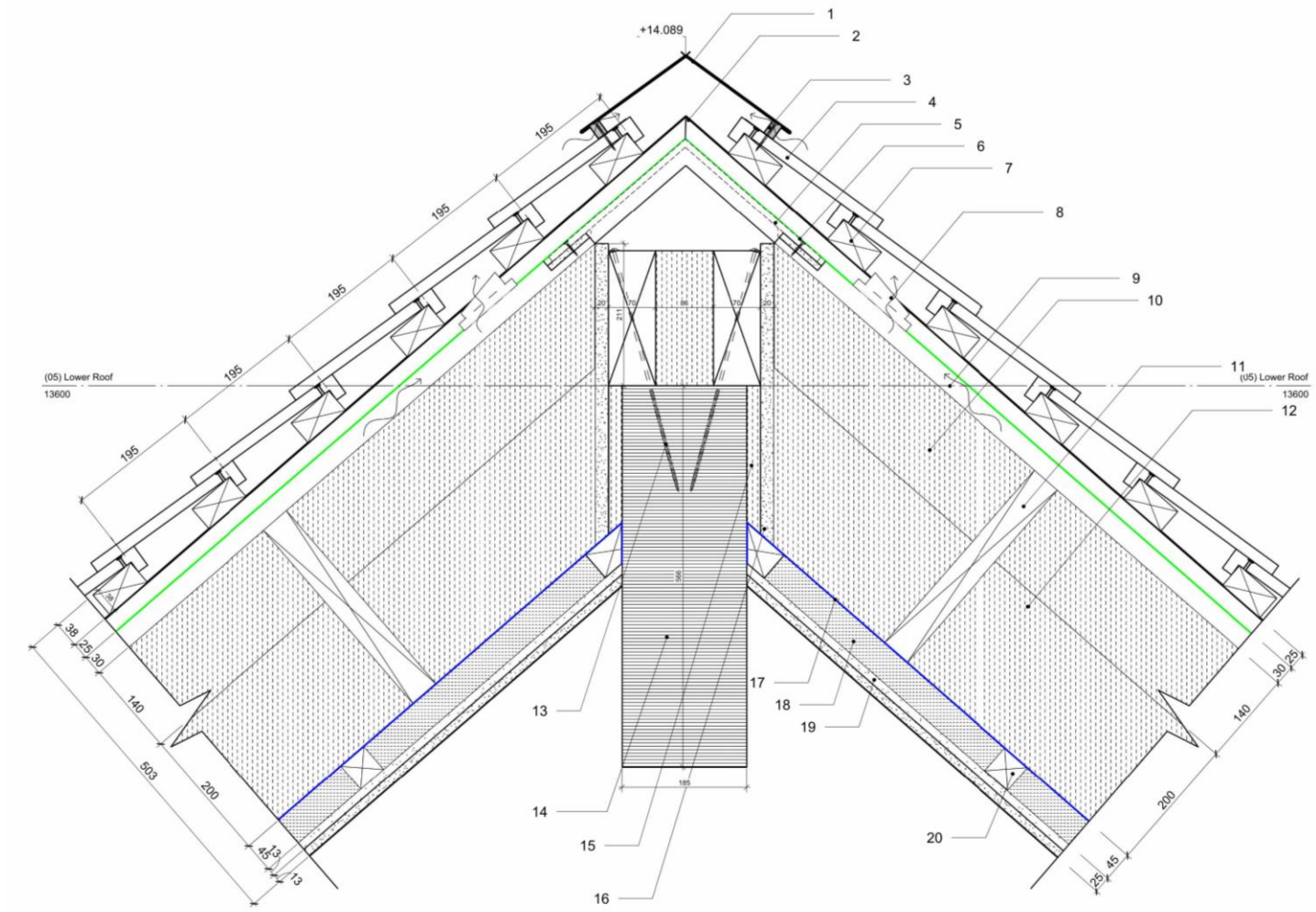
- 7th Semester final Project
- 5th Semester - Refurbishment Project
- 4<sup>th</sup> Semester - Design Consultancy elective  
(Investigative Technology)  
Mylla Cabin
- 4<sup>th</sup> Semester - New Hoje-Taastrup City Hall
- Skills Factory(Trivercity Collaboration)
- 3<sup>rd</sup> Semester Design Consultancy elective  
Urban Forest
- 3<sup>rd</sup> Semester – Reconstruction of Valby Maskin-Fabrik
- 2<sup>nd</sup> Semester – Lisbjerg Bakke (Row Houses)
- Extra works



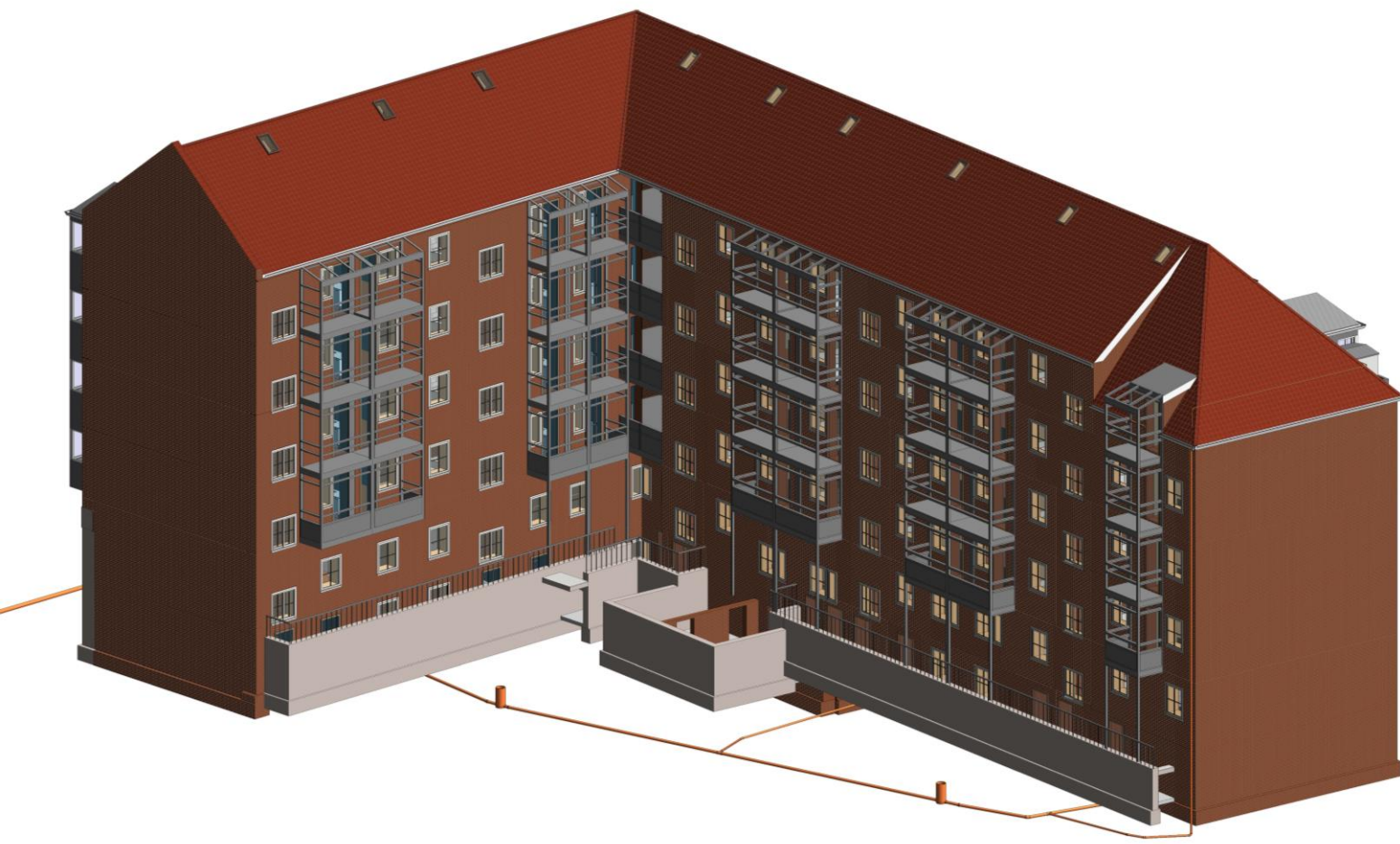


## My Final Project:

- Revit2022 3D model
- Costing with Sigma estimates
- Works planning and coordination with Microsoft Project



# Roofing refurbishment overview

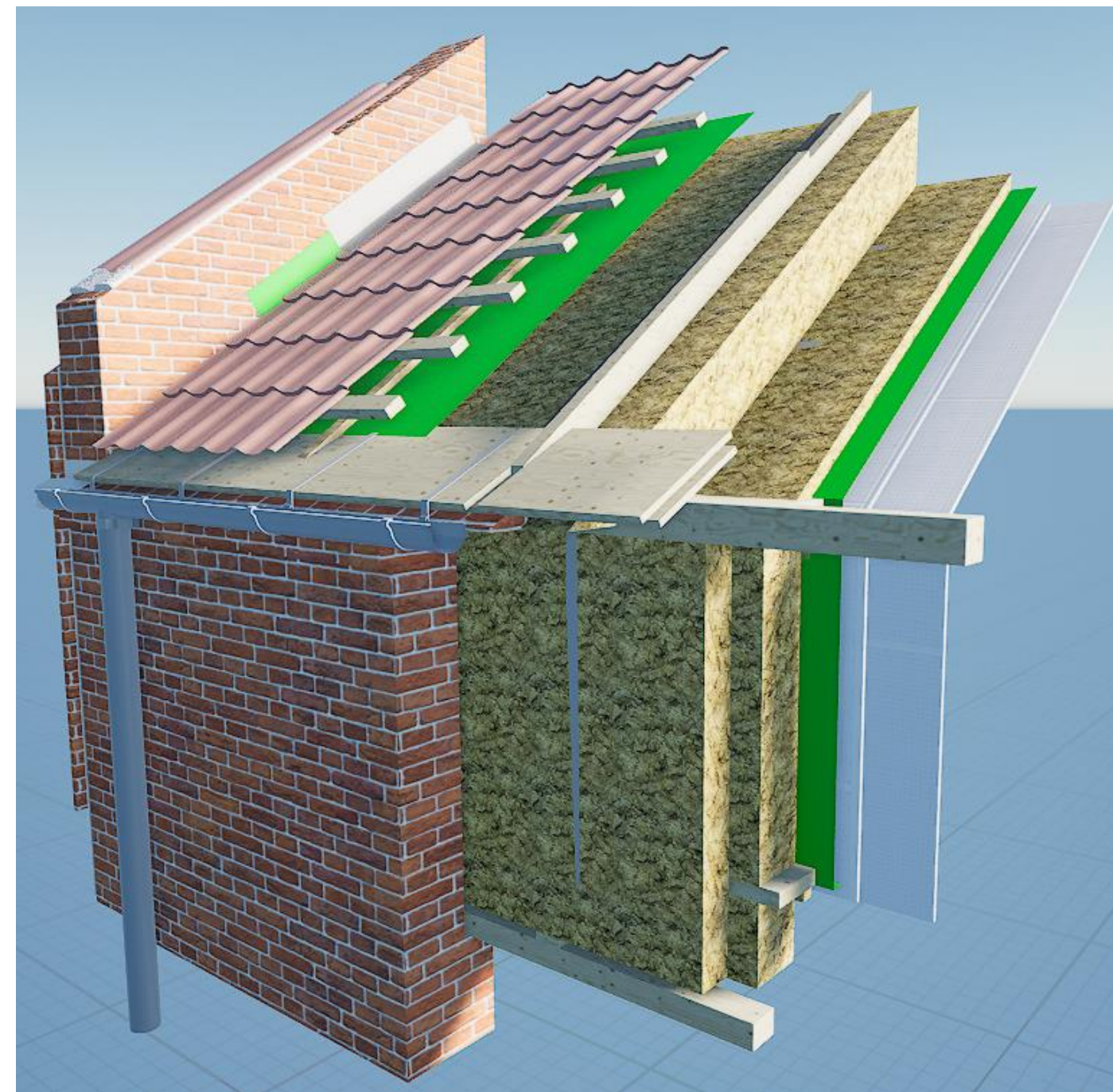


Before Refurbishment



After Refurbishment

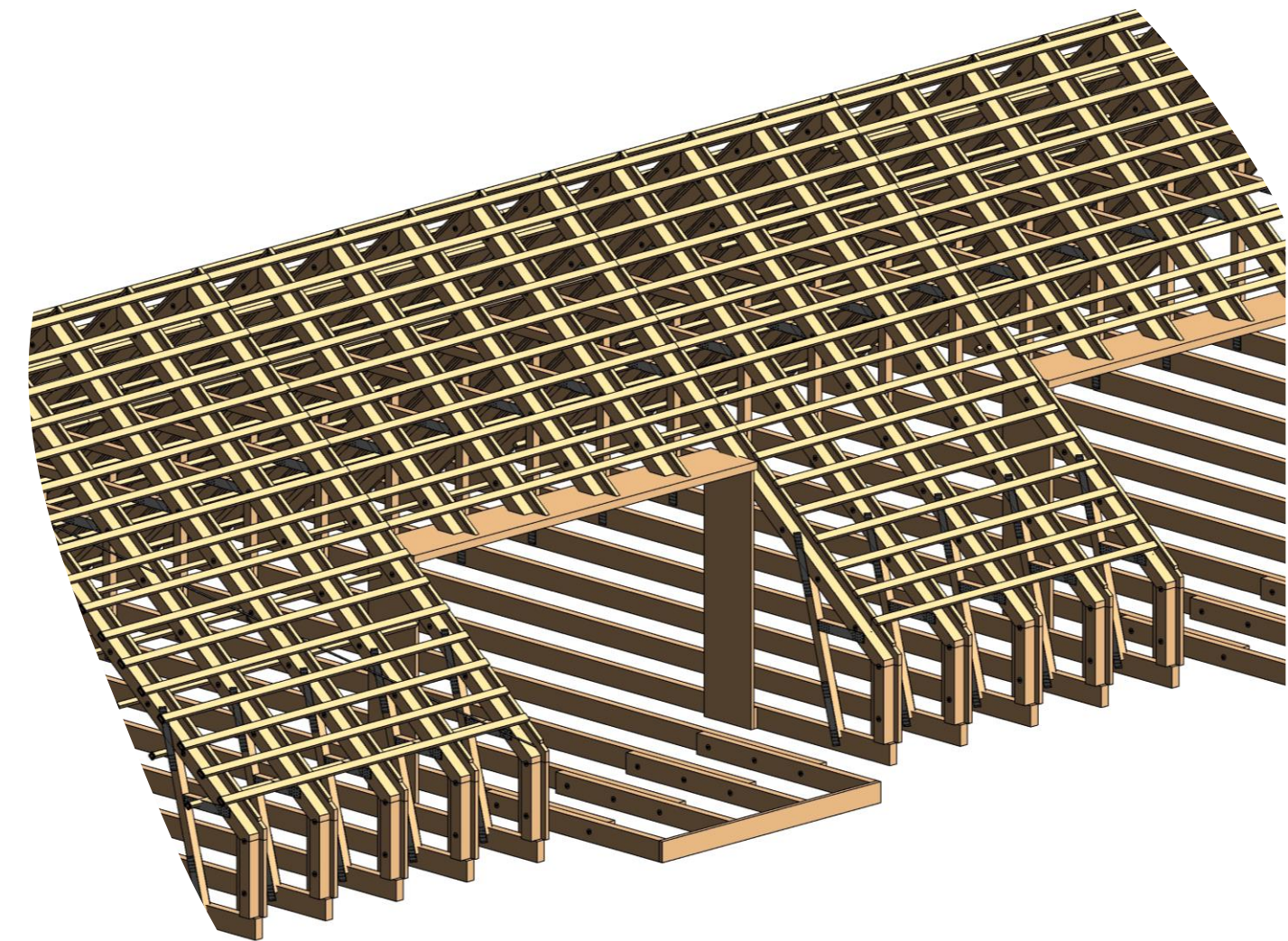
New Eave 3D



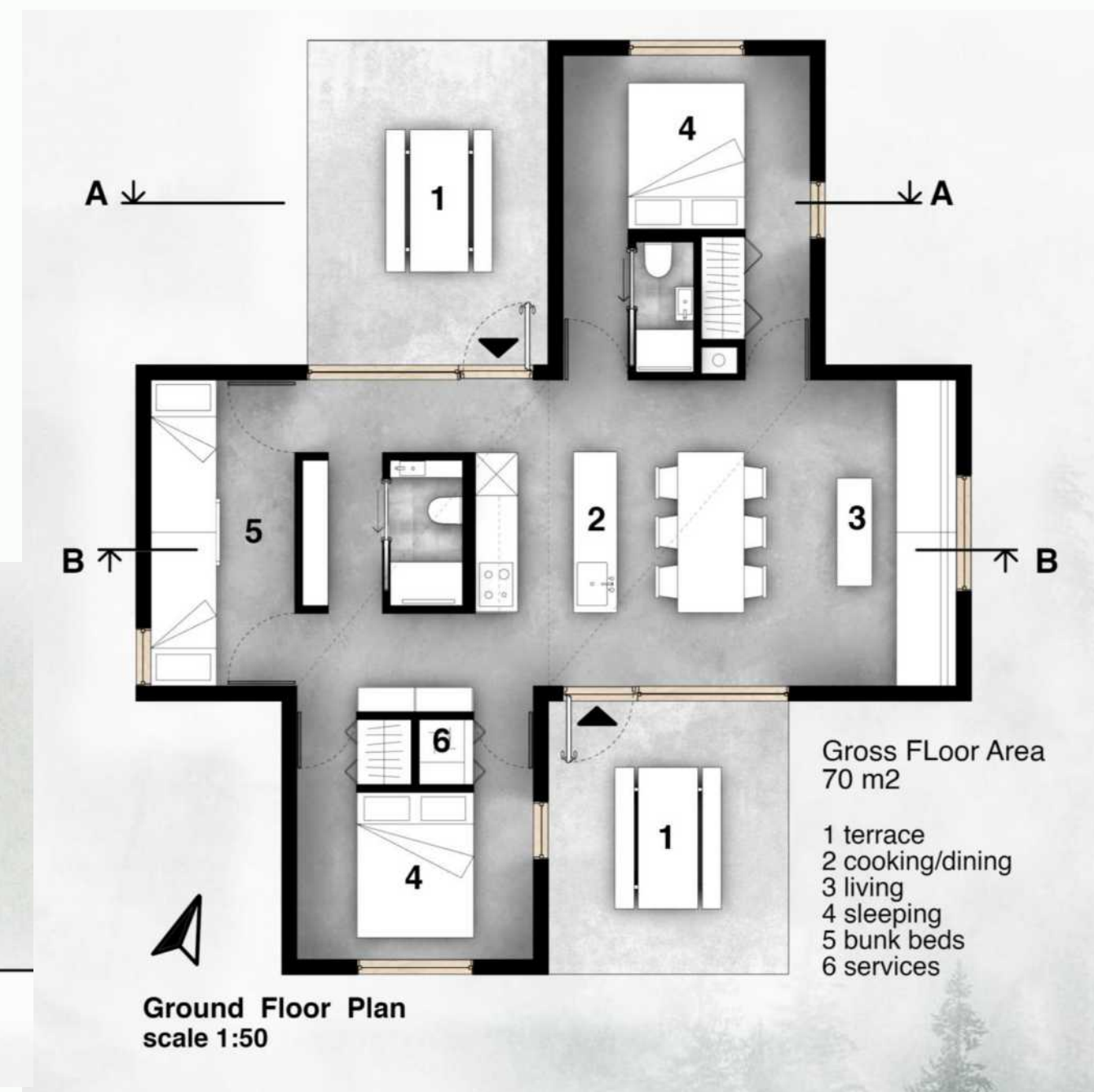
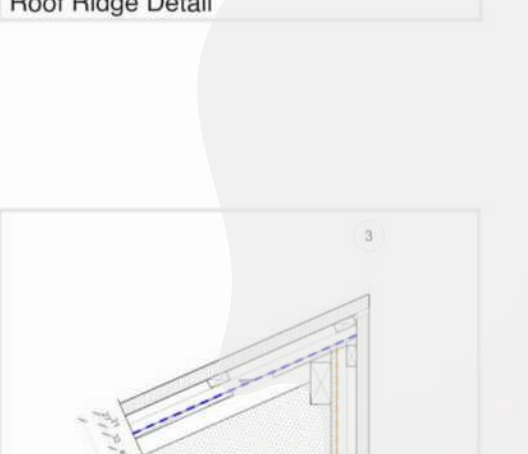
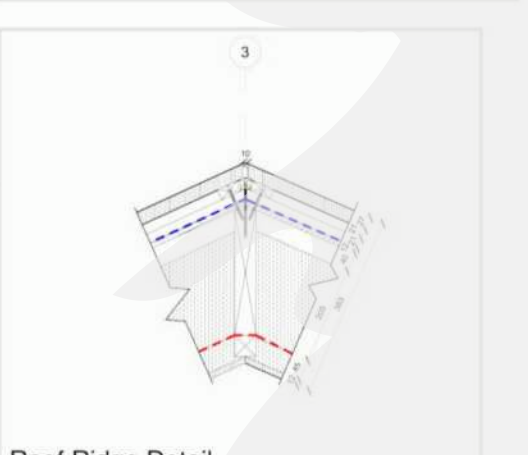
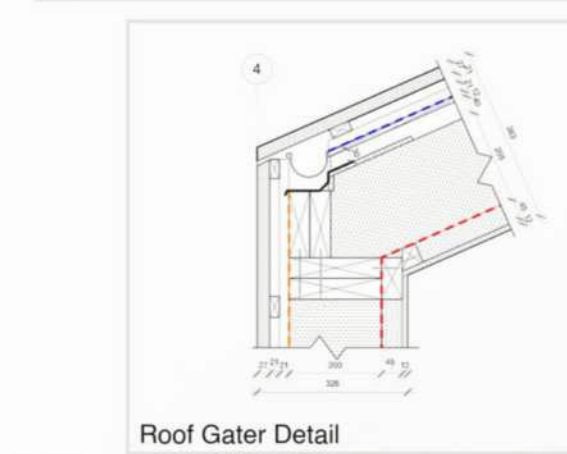
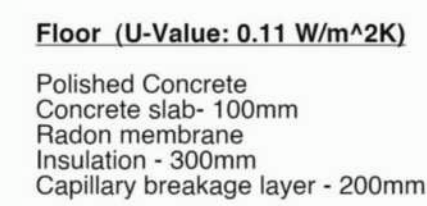
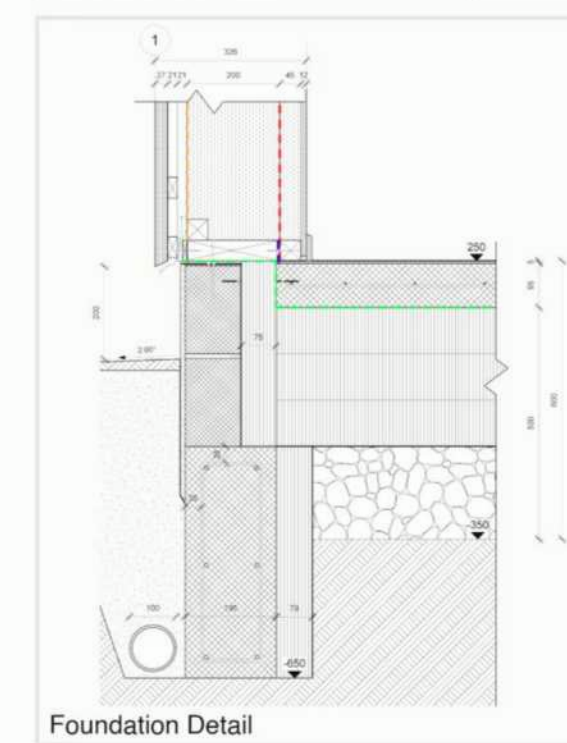
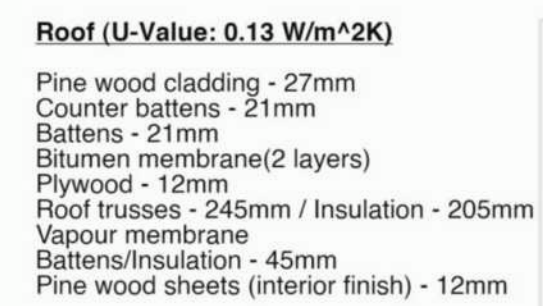
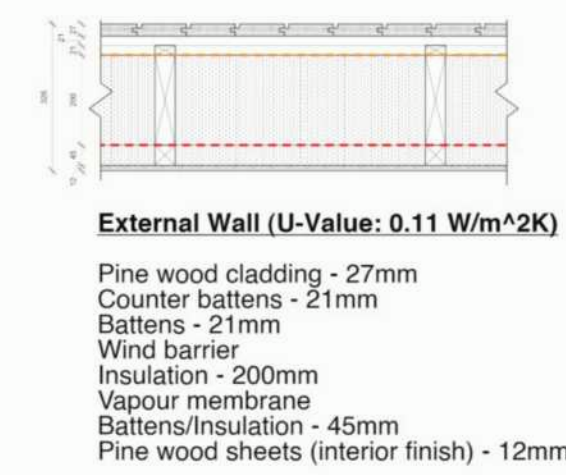
5<sup>th</sup> Semester Project:

Aim:

- Improved energy efficiency
- Create extra living space in new loft



Reinforced Truss system



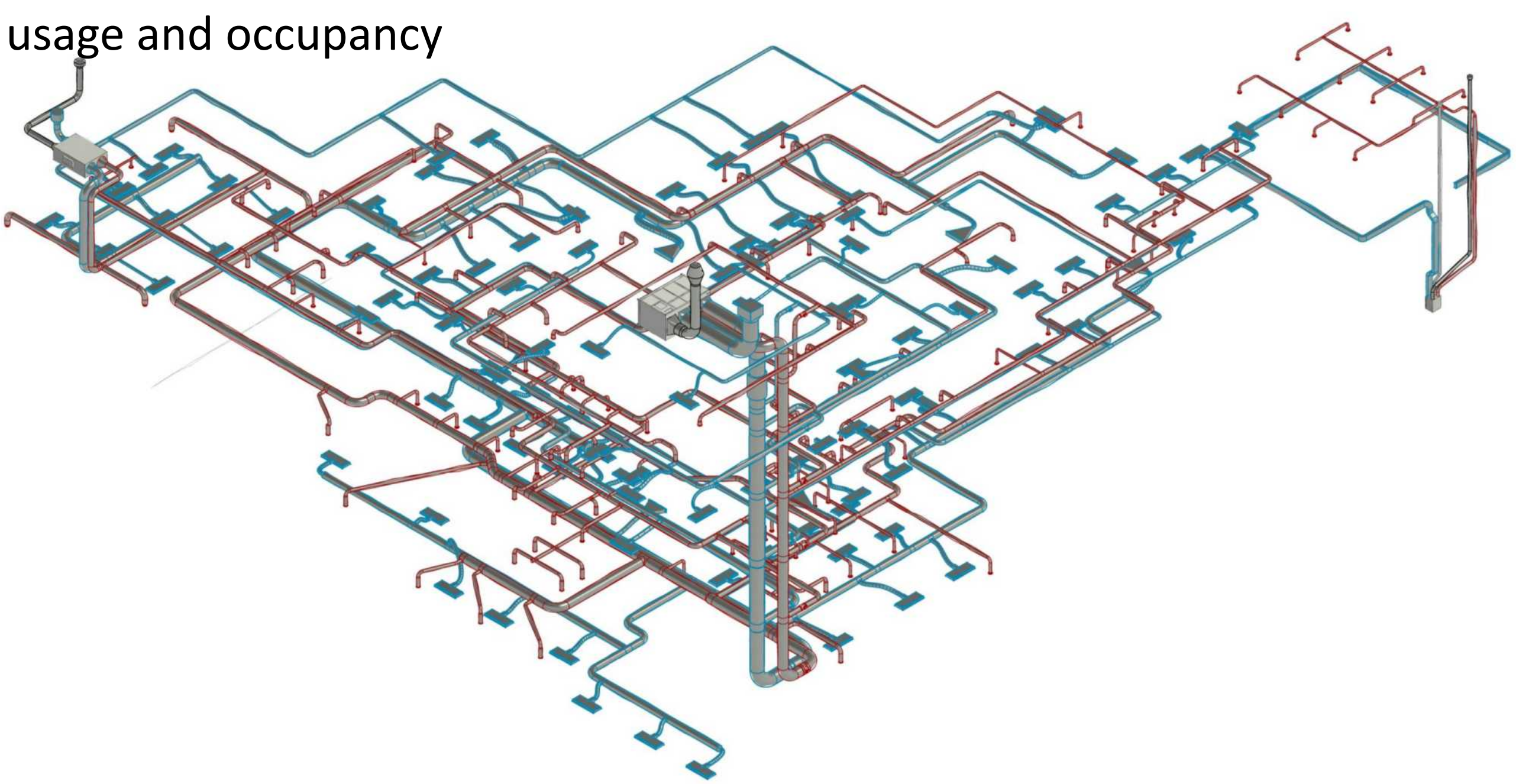


# Proposed Hoje-Taastrup New City Hall

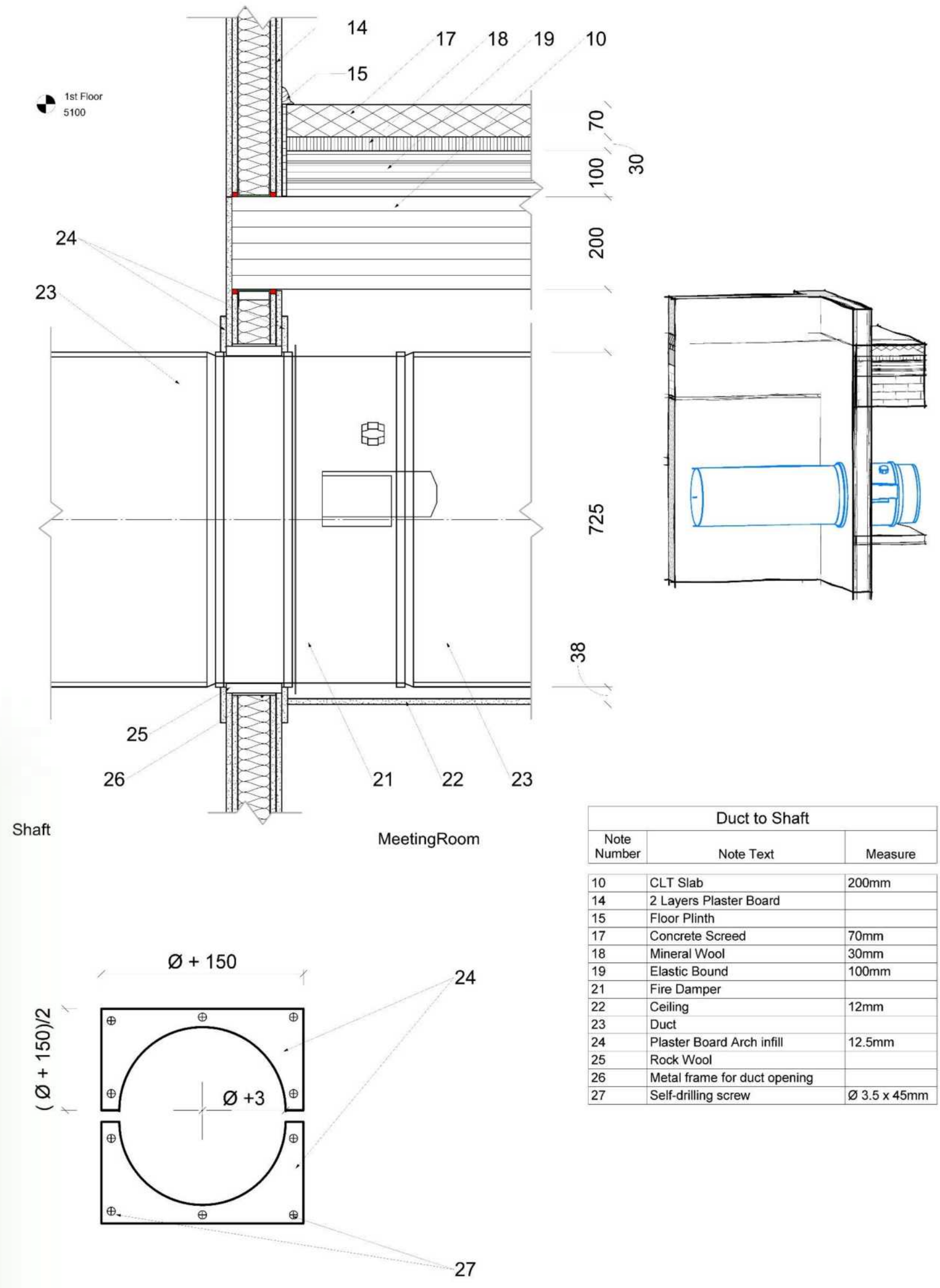
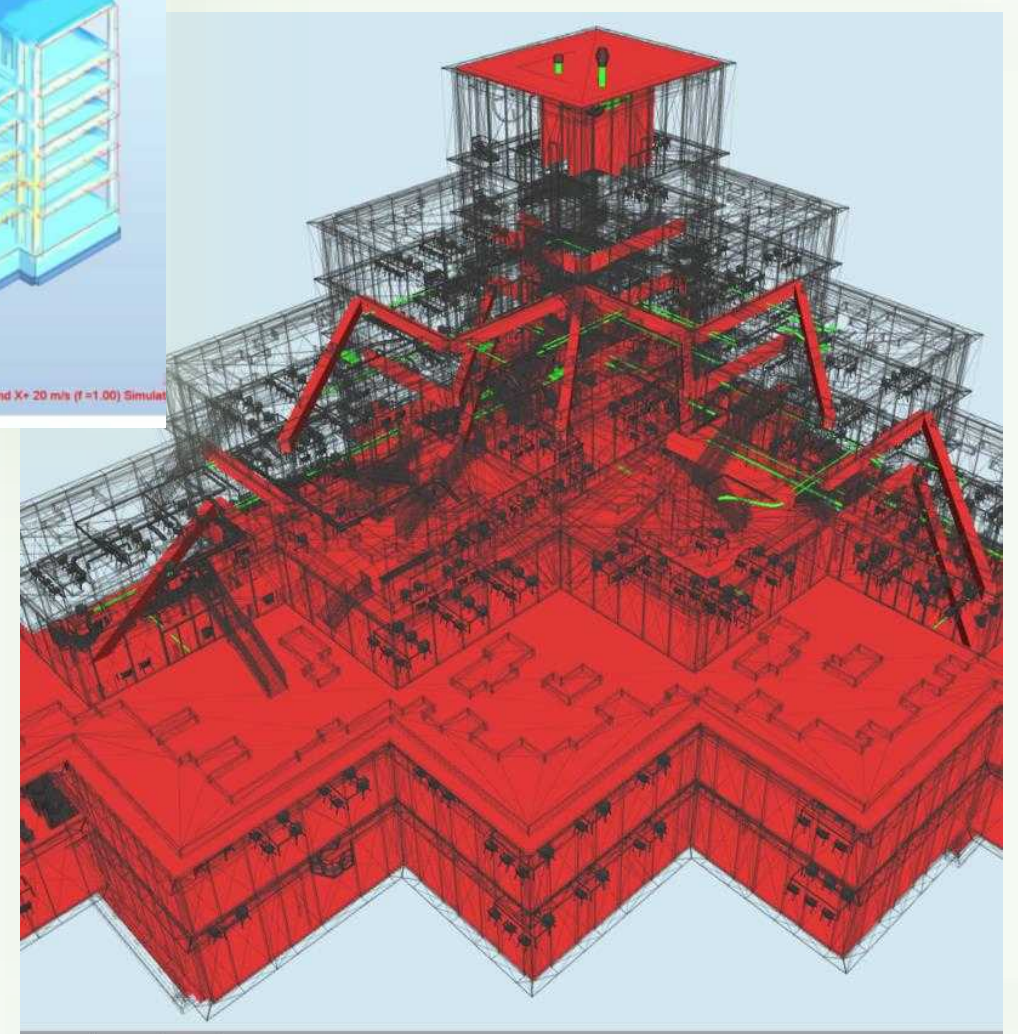
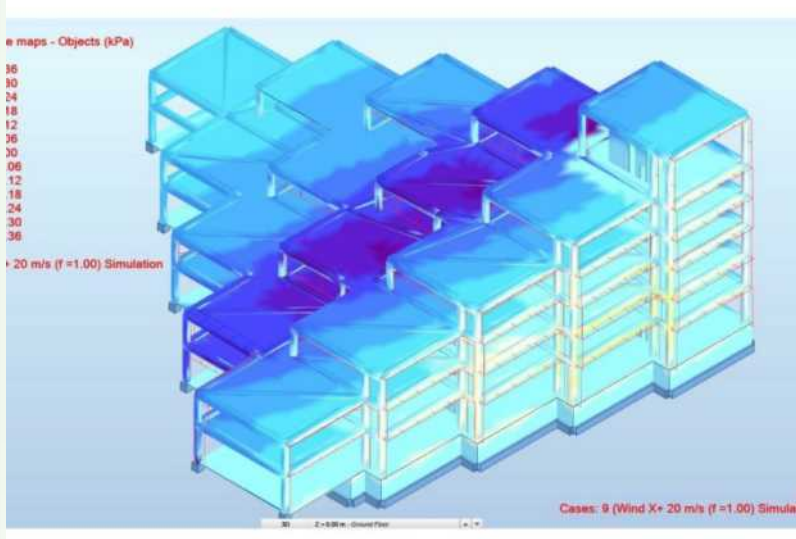
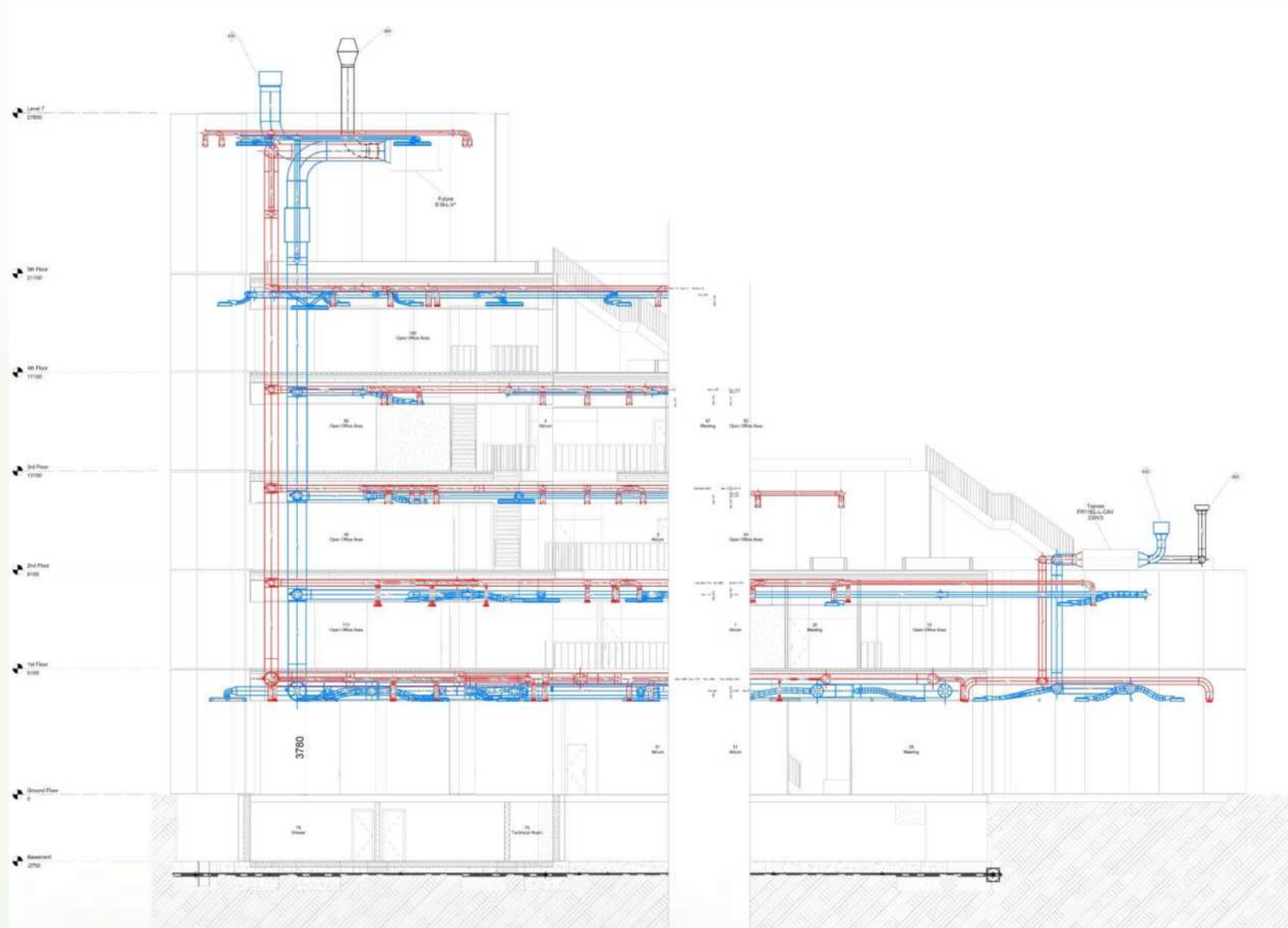
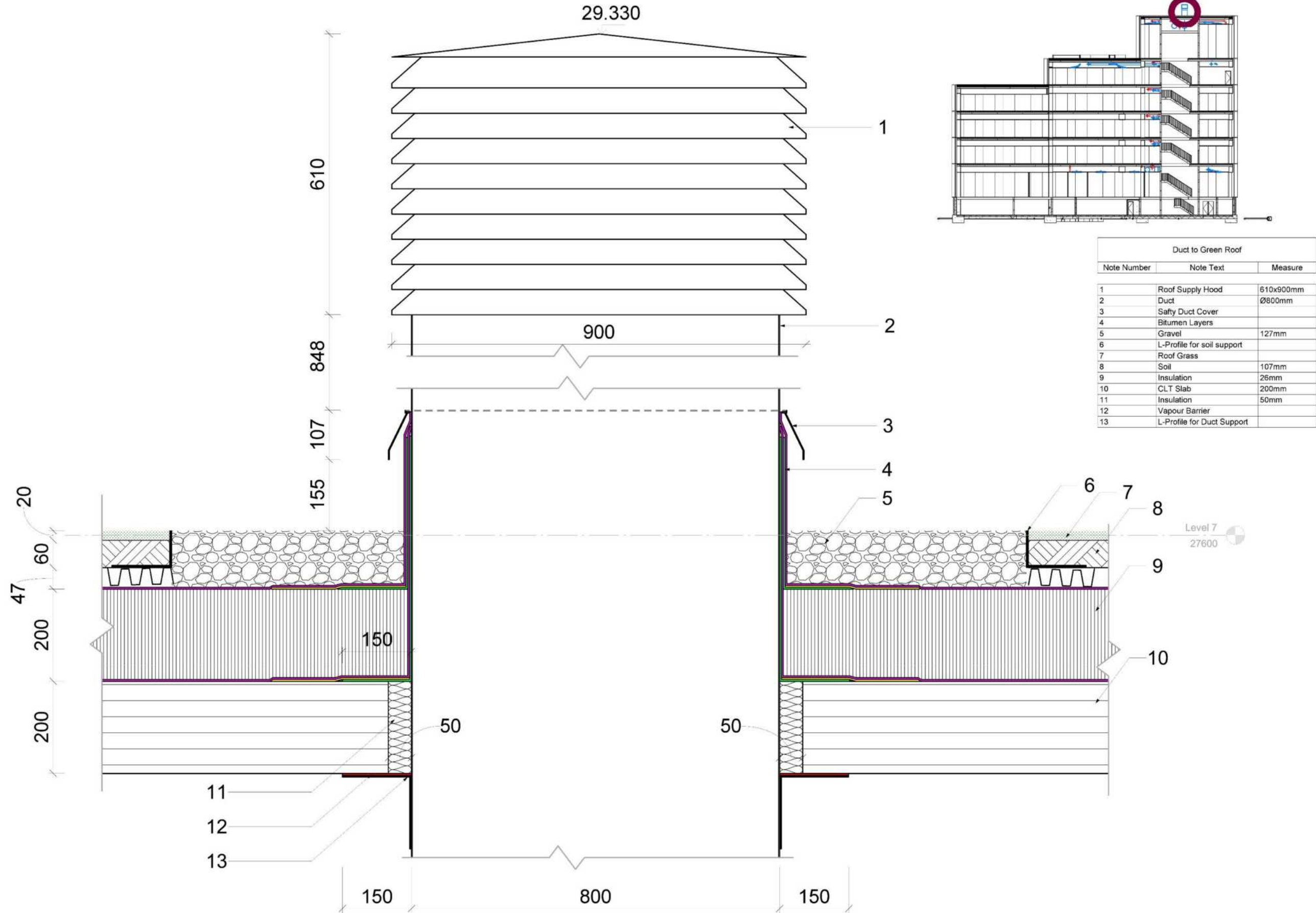
## 4<sup>th</sup> Semester Project

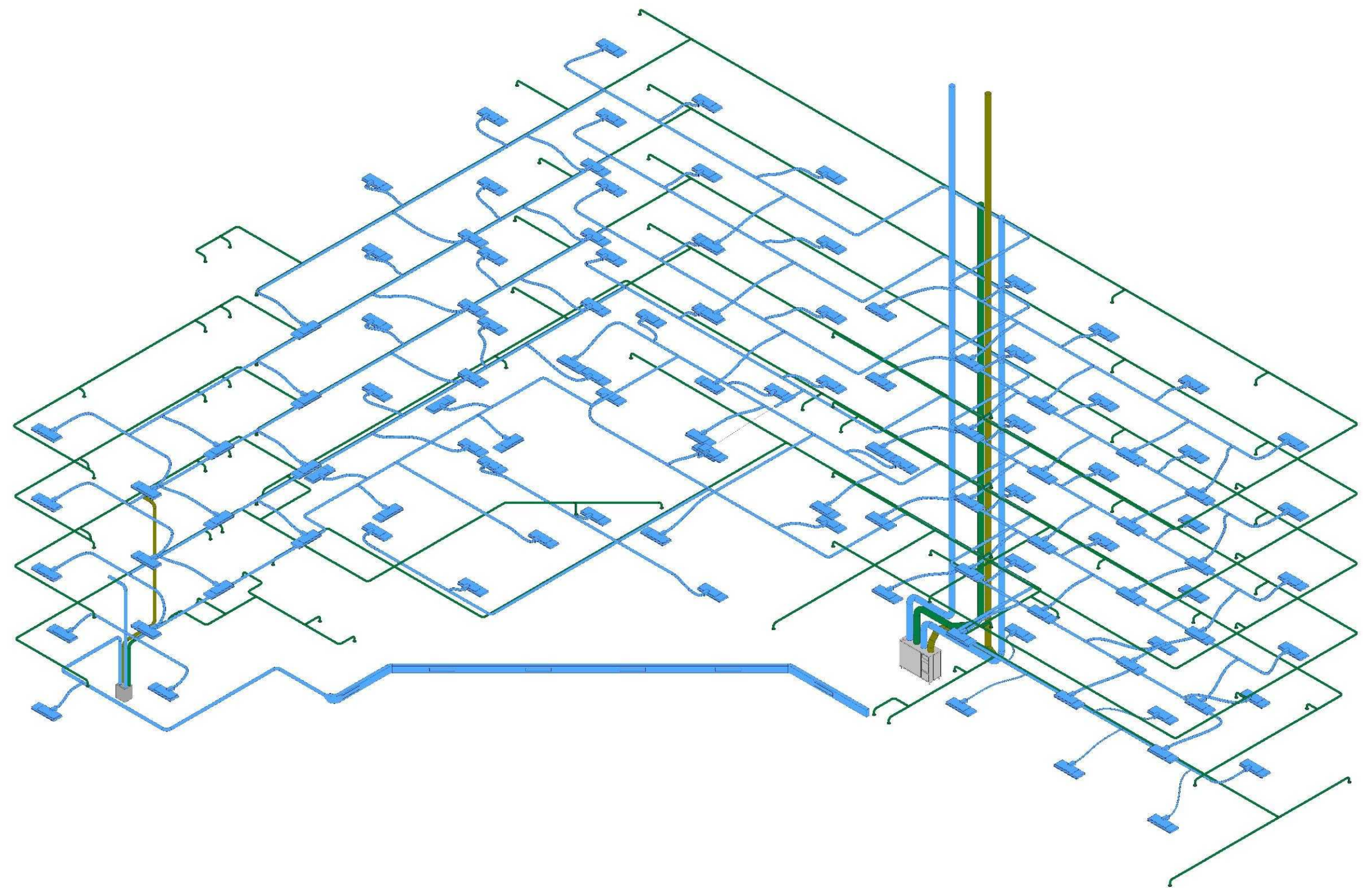
### Project Description:

- Create the new City Hall in HojeTaastrup
- The Structural part and the Interior Walls of the construction was of Wood.
- The exterior was a Curtain Wall of wood and glass
- This was to be a green building and accessible to a multi-cultural public
- I developed the mechanical ventilation system depending on the room usage and occupancy

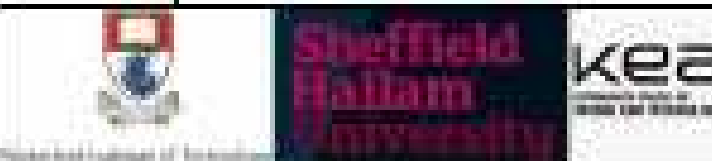


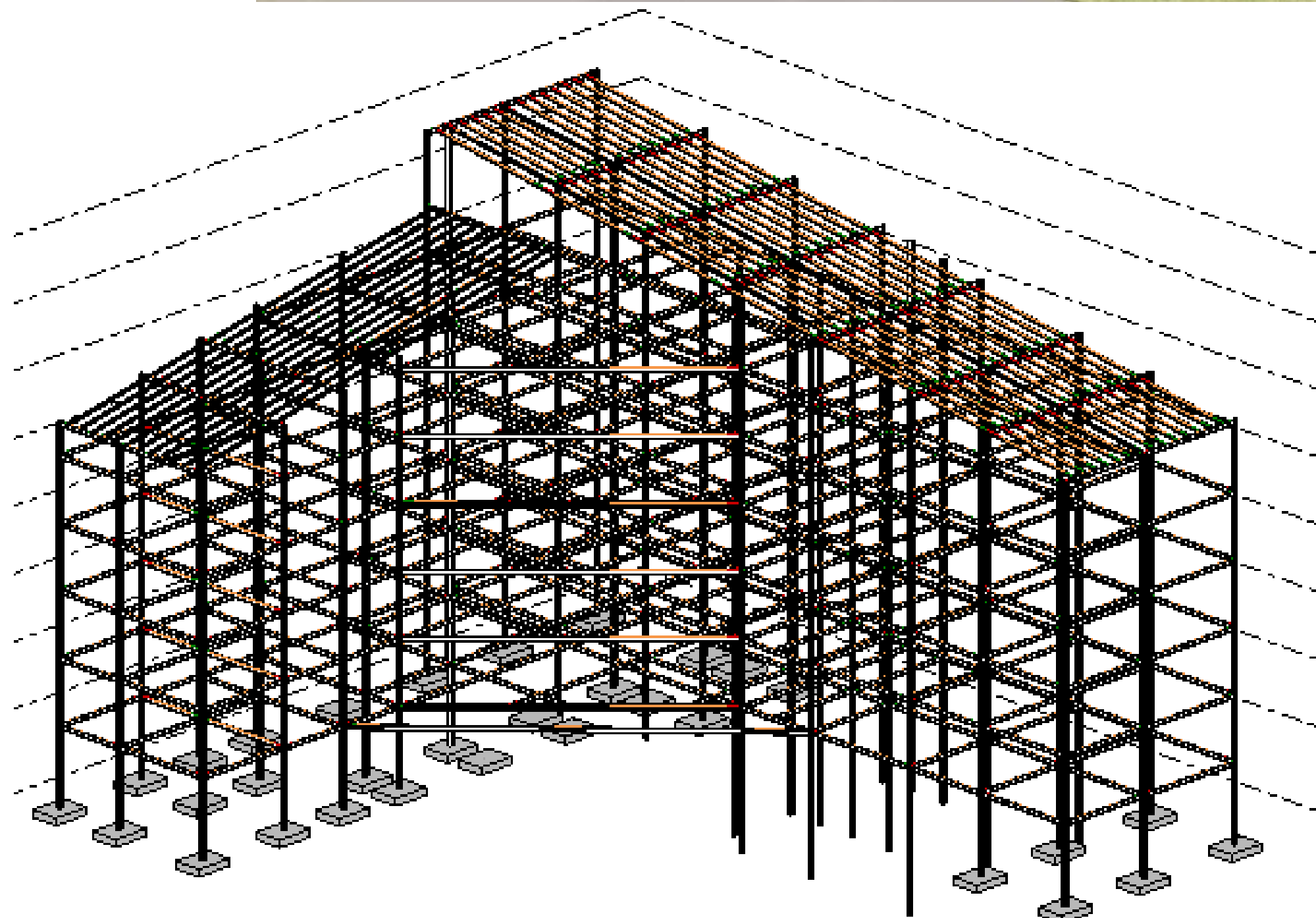
**Software use:**  
Autodesk Revit 2020, Autodesk Infracore 2020,BIM360,Autodesk Robot Structure 2020, Twinmotion, Sigma Estimates, Lindab lindQST simulation





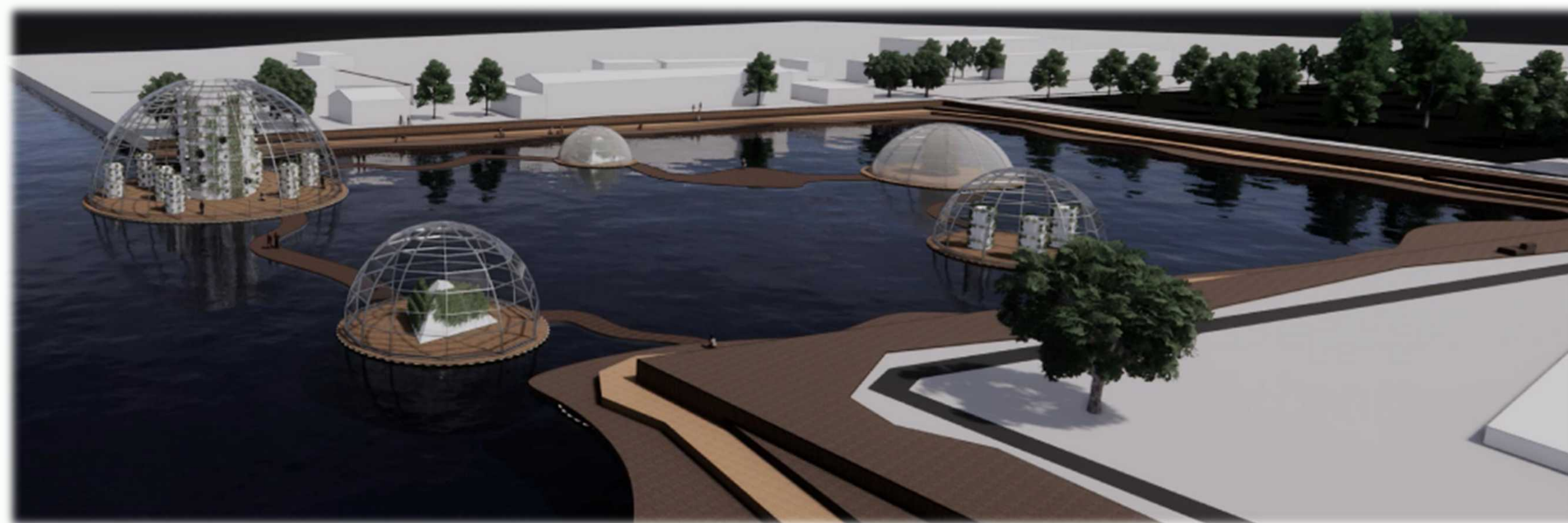
# TRI-VARSITY COLLABORATION PROJECT -G10

|                                                                                     |                         |
|-------------------------------------------------------------------------------------|-------------------------|
| CODE                                                                                | SUITABILITY DESCRIPTION |
| STATUS                                                                              | PURPOSE OF ISSUE        |
|  |                         |
| PROJECT<br>Skills Factory                                                           |                         |
| TITLE<br>Ground Floor GA Plan                                                       |                         |
| CLIENT<br>TVW-G10                                                                   |                         |
| DRAWN BY<br>SC                                                                      | DATE<br>3/11/2020       |
| SCALE (1:100)                                                                       | PROJECT NUMBER<br>TVW   |
| DRAWING NUMBER<br>TVW-G10-XX-00-DR-A-0002-P01                                       | REV                     |



## Project Description:

- Within 3 days, we had to come up with a proposal of a Building that would house a Skills factory.
- My focus in the project was the Ventilation model for the entire construction

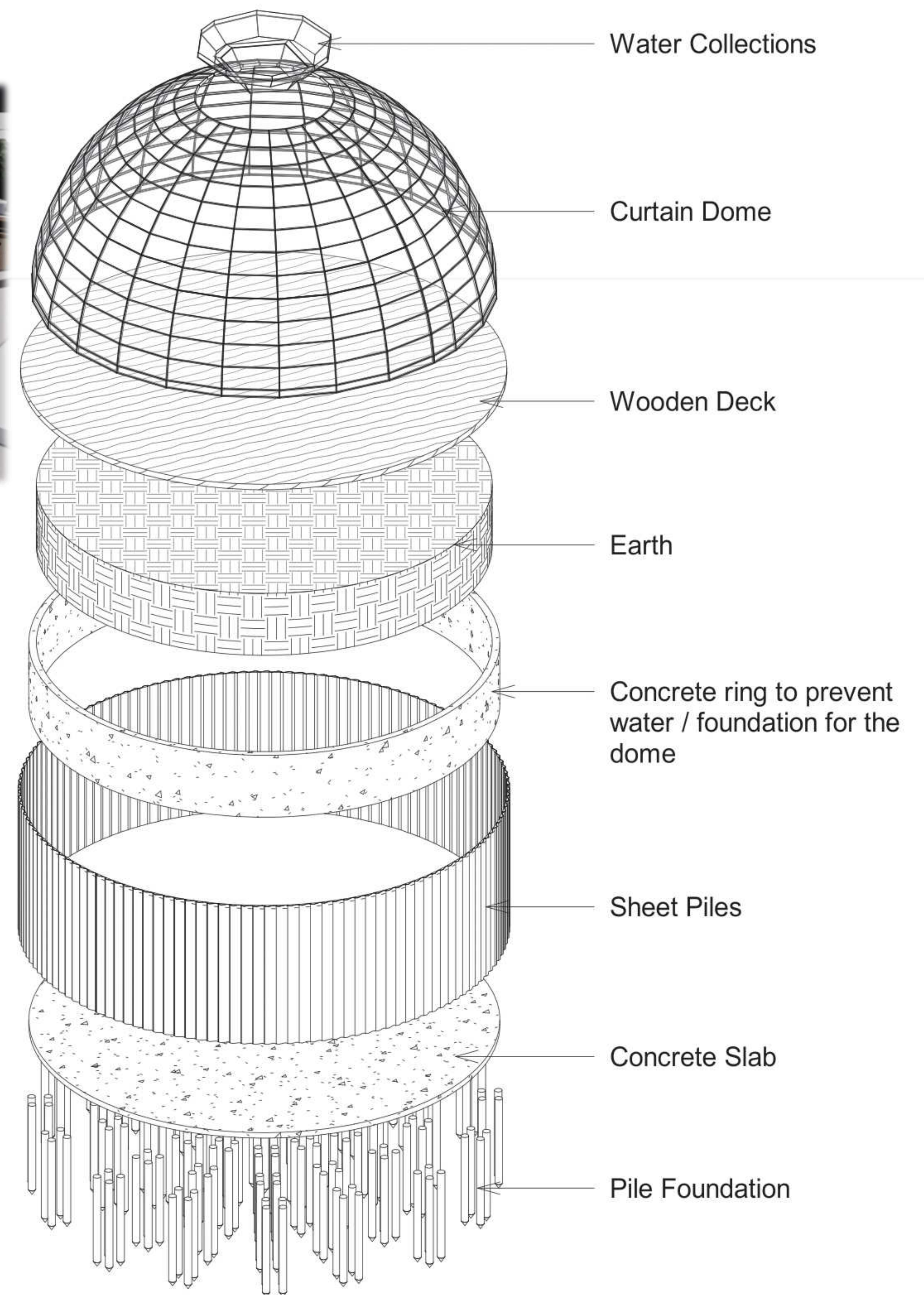
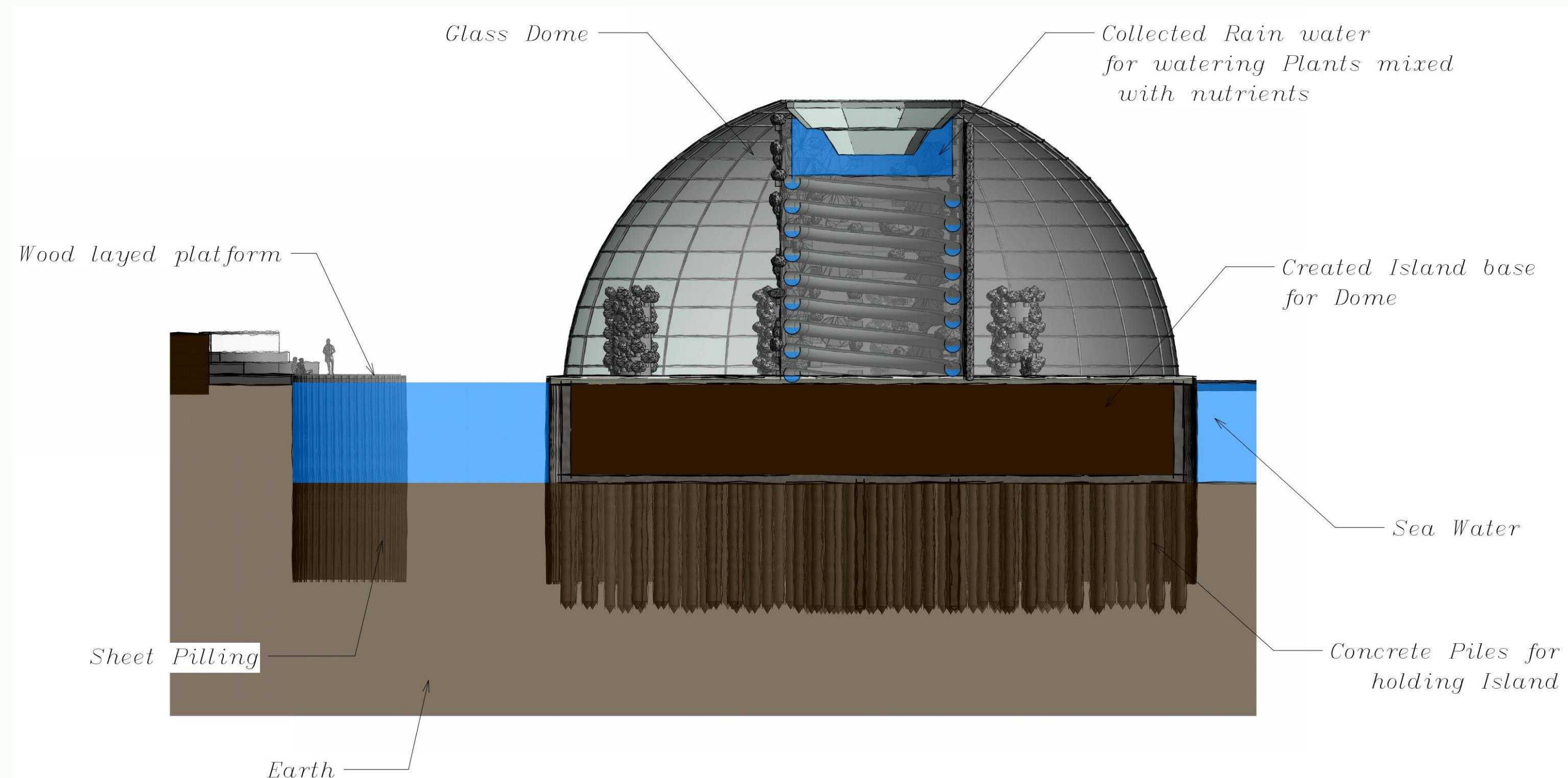


## 1st Semester Design Consultancy elective (Urban Forest)

### Project Description:

The Aim of the project was to create an urban forest and bring sea food close to town.

The project location was Raffan in Copenhagen.



### Software use:

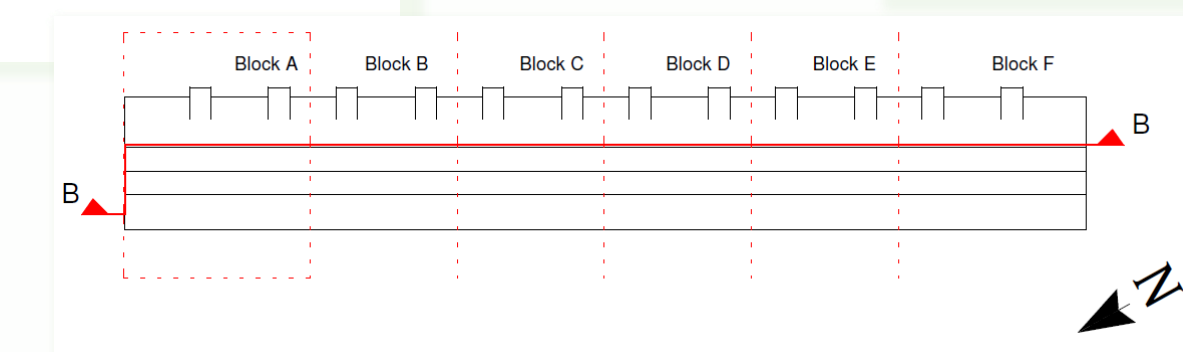
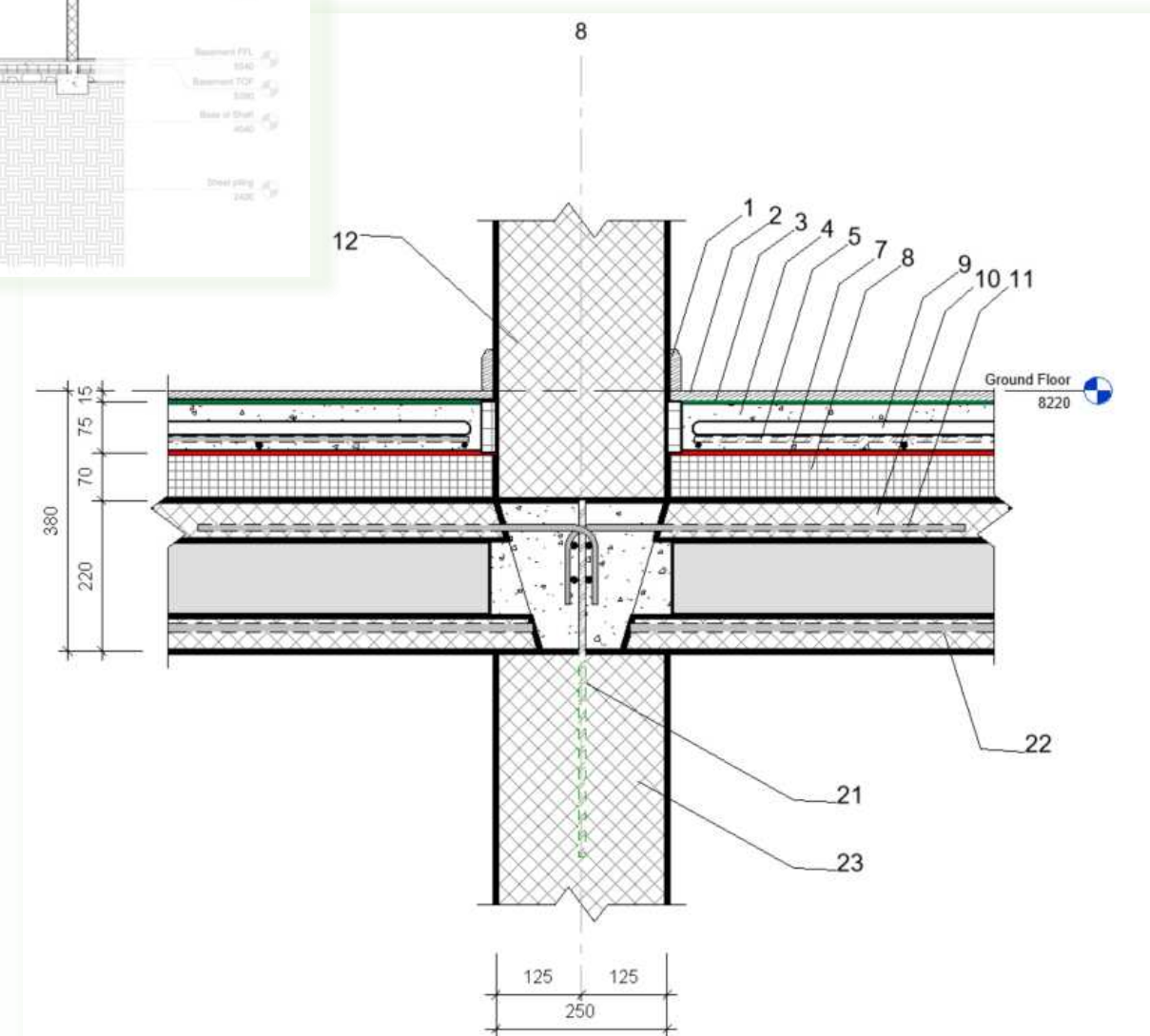
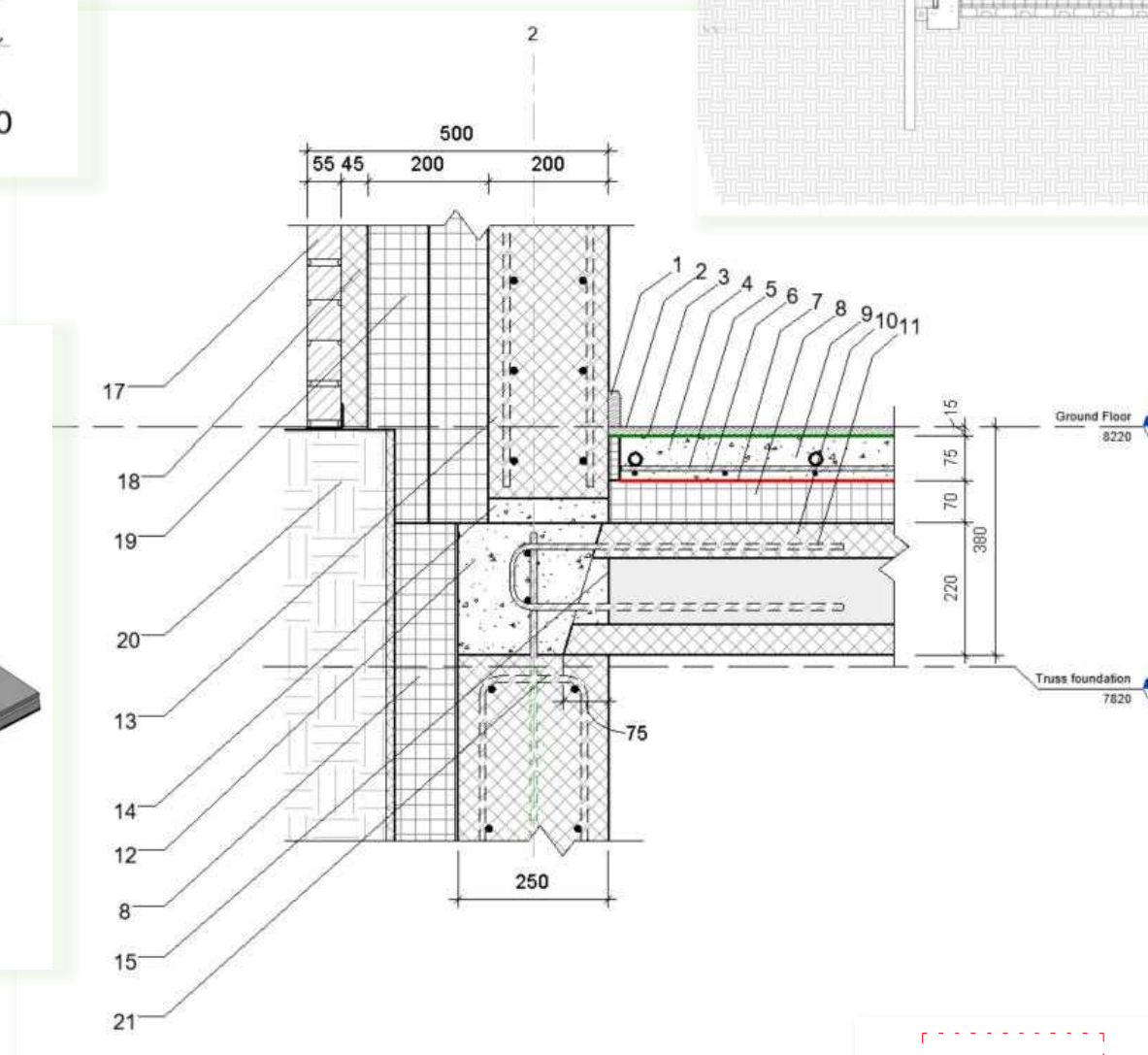
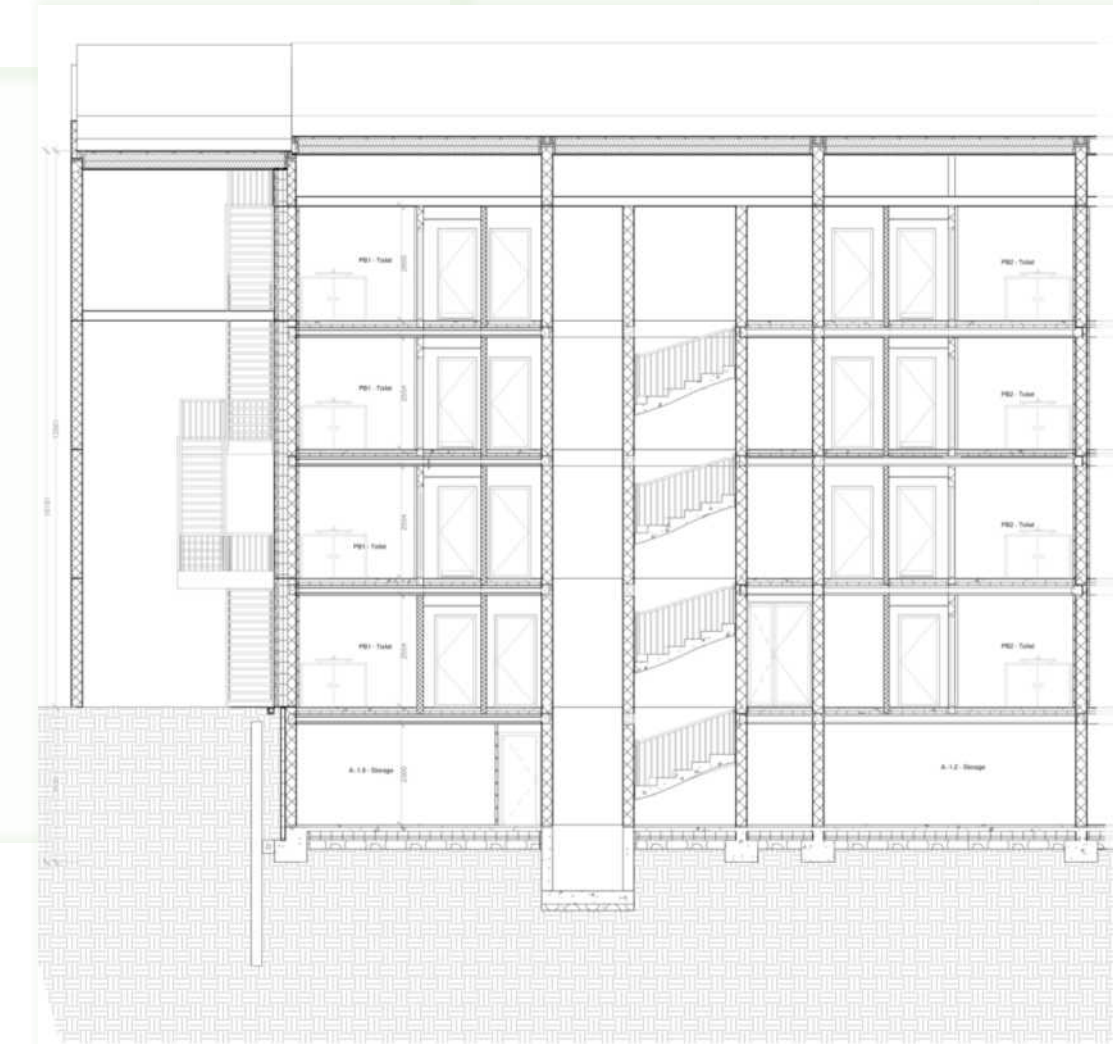
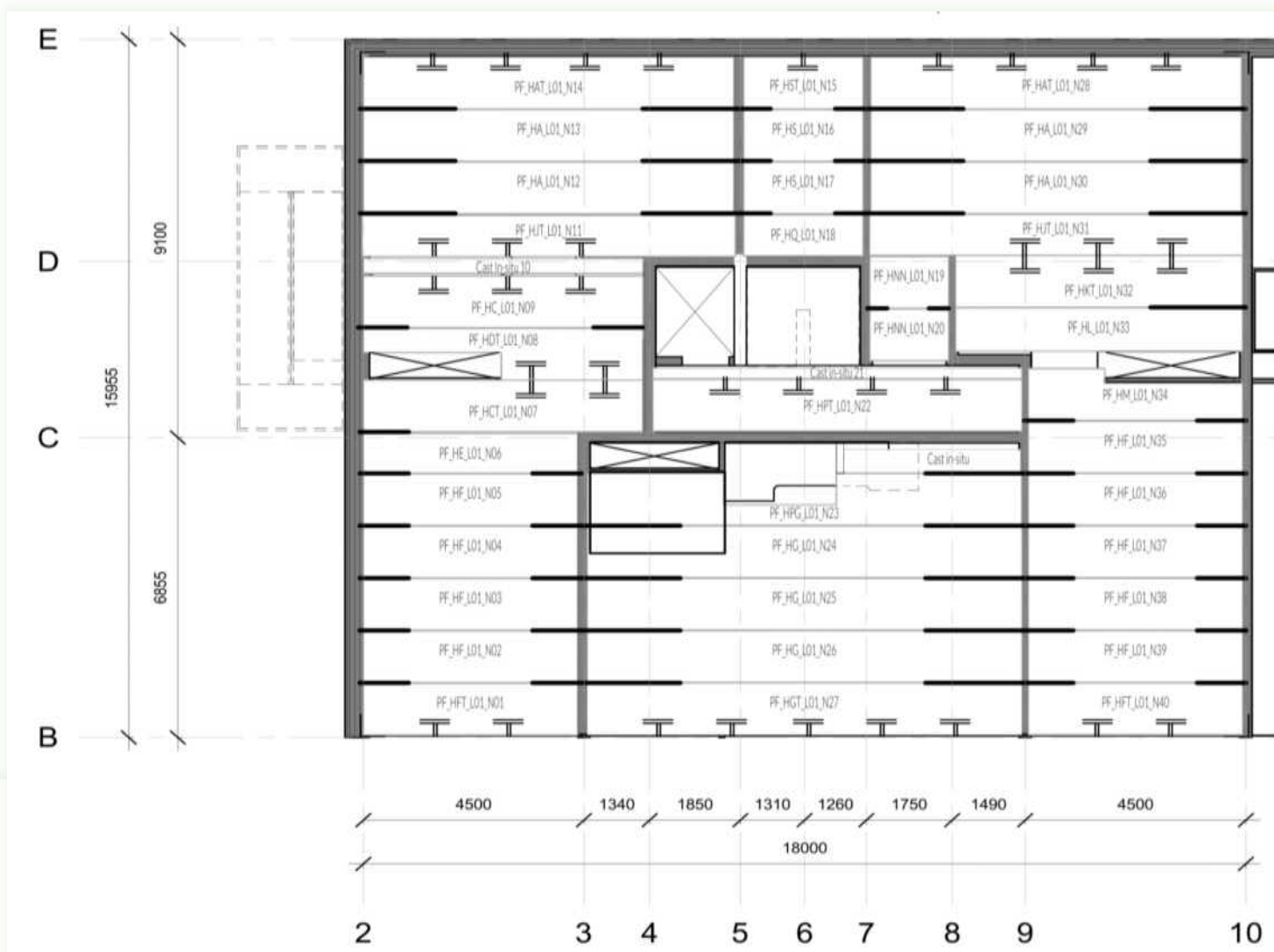
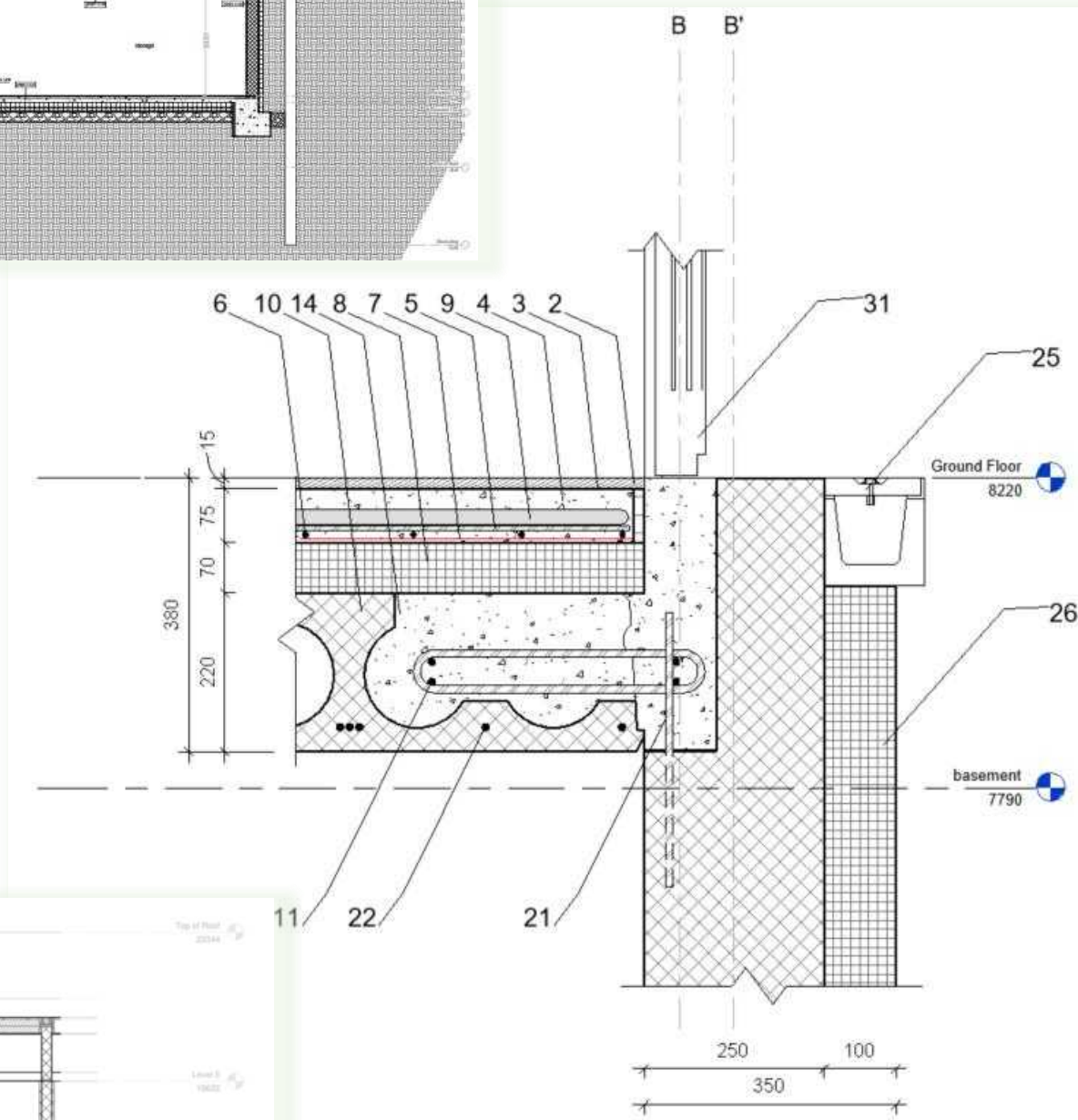
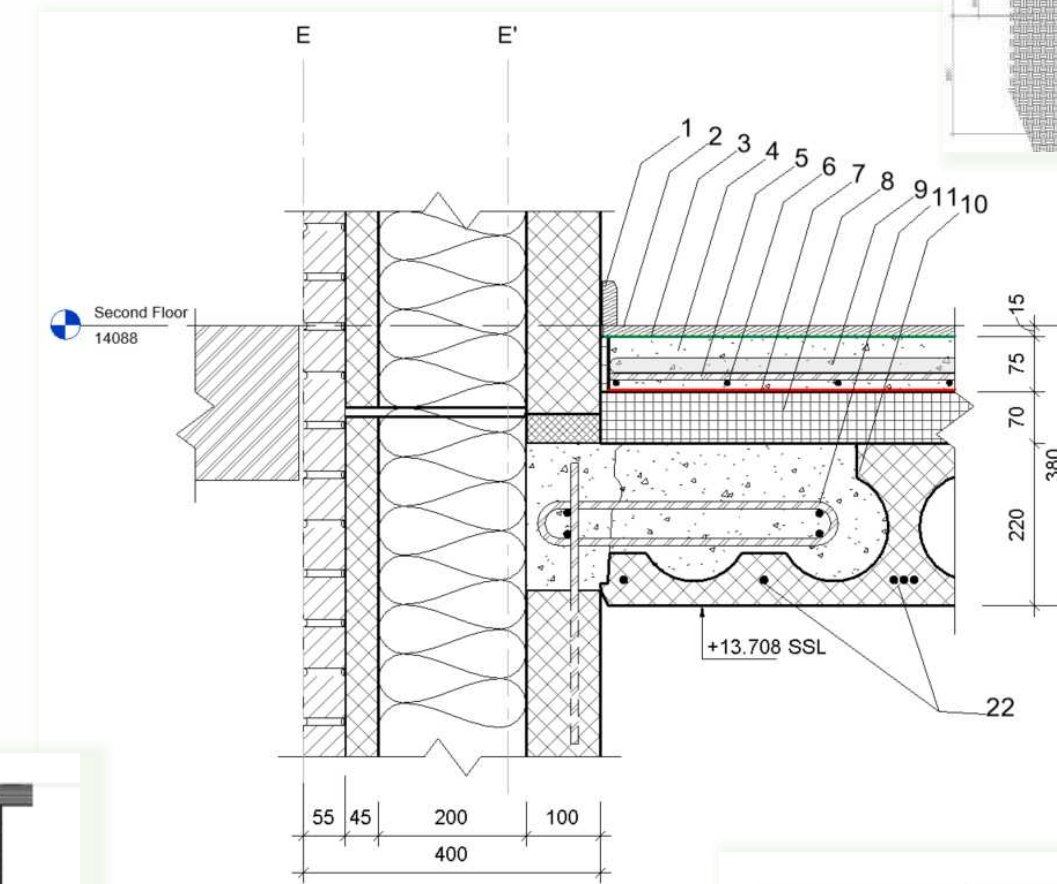
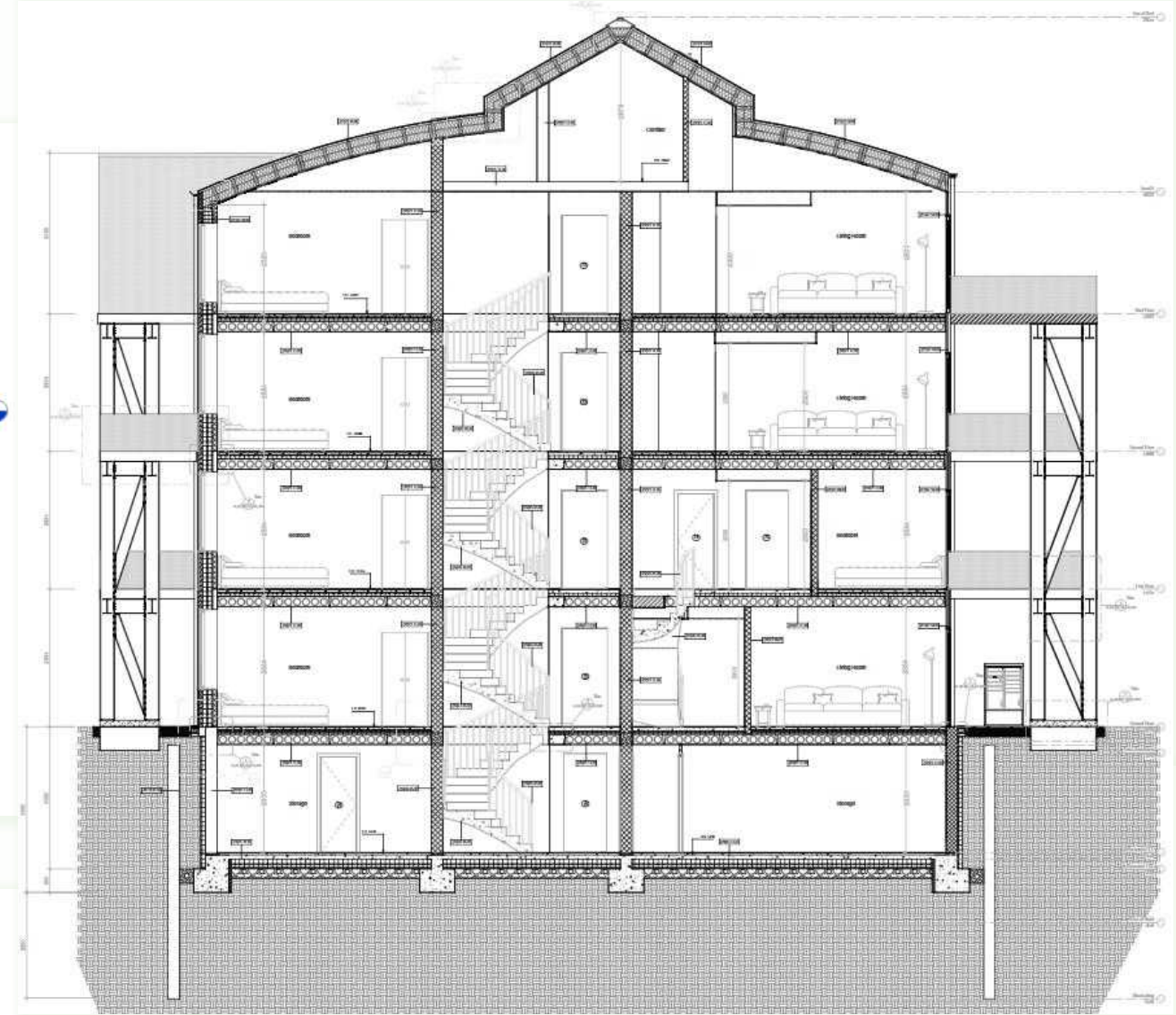
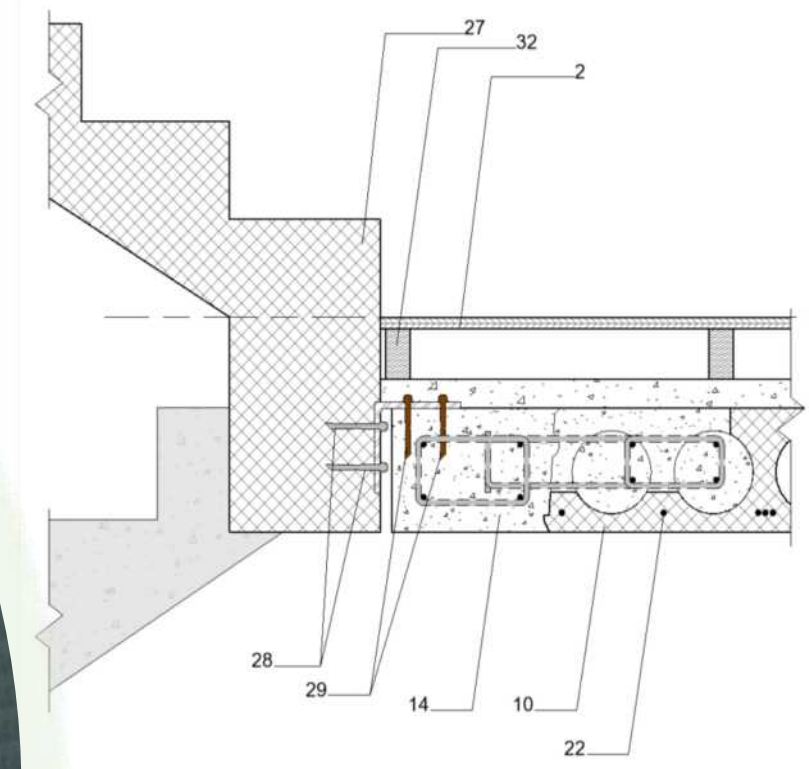
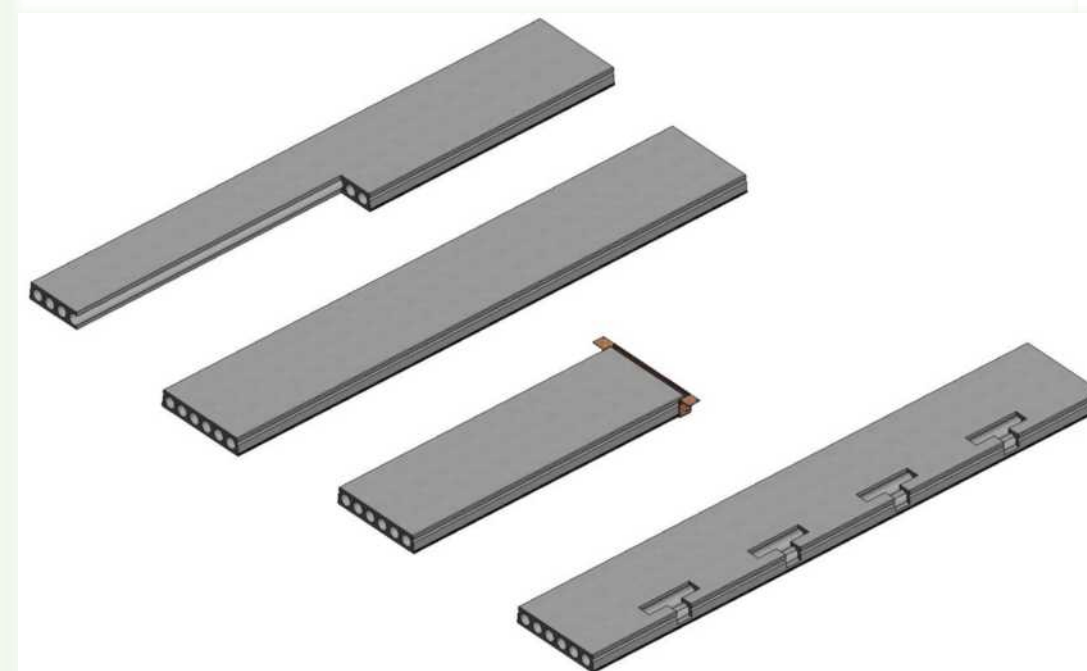
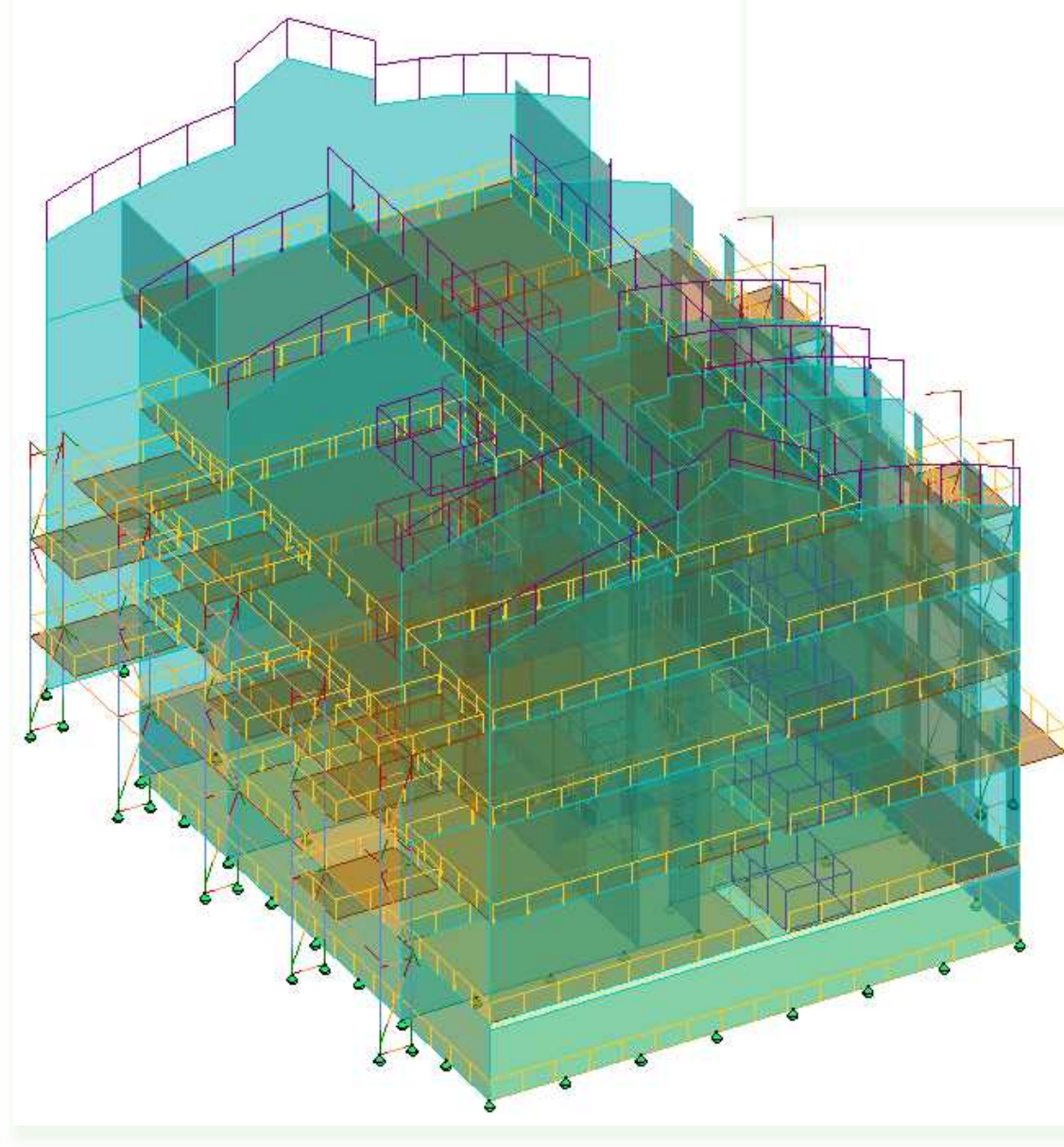
Autodesk Revit 2020, Autodesk Inroadworks 2020, BIM360, Autodesk Robot Structure 2020, Twinmotion, Sigma Estimates, Lindab lindQST simulation



## Valby Maskin-Fabrikken

### Project description:

- Recreating the middle section of the Valby Maskin-Fabrik
- Produce possible architectural solutions
- Create a structural model
- Create a mechanical Ventilation model
- Use Prefabricated construction elements



### Software use:

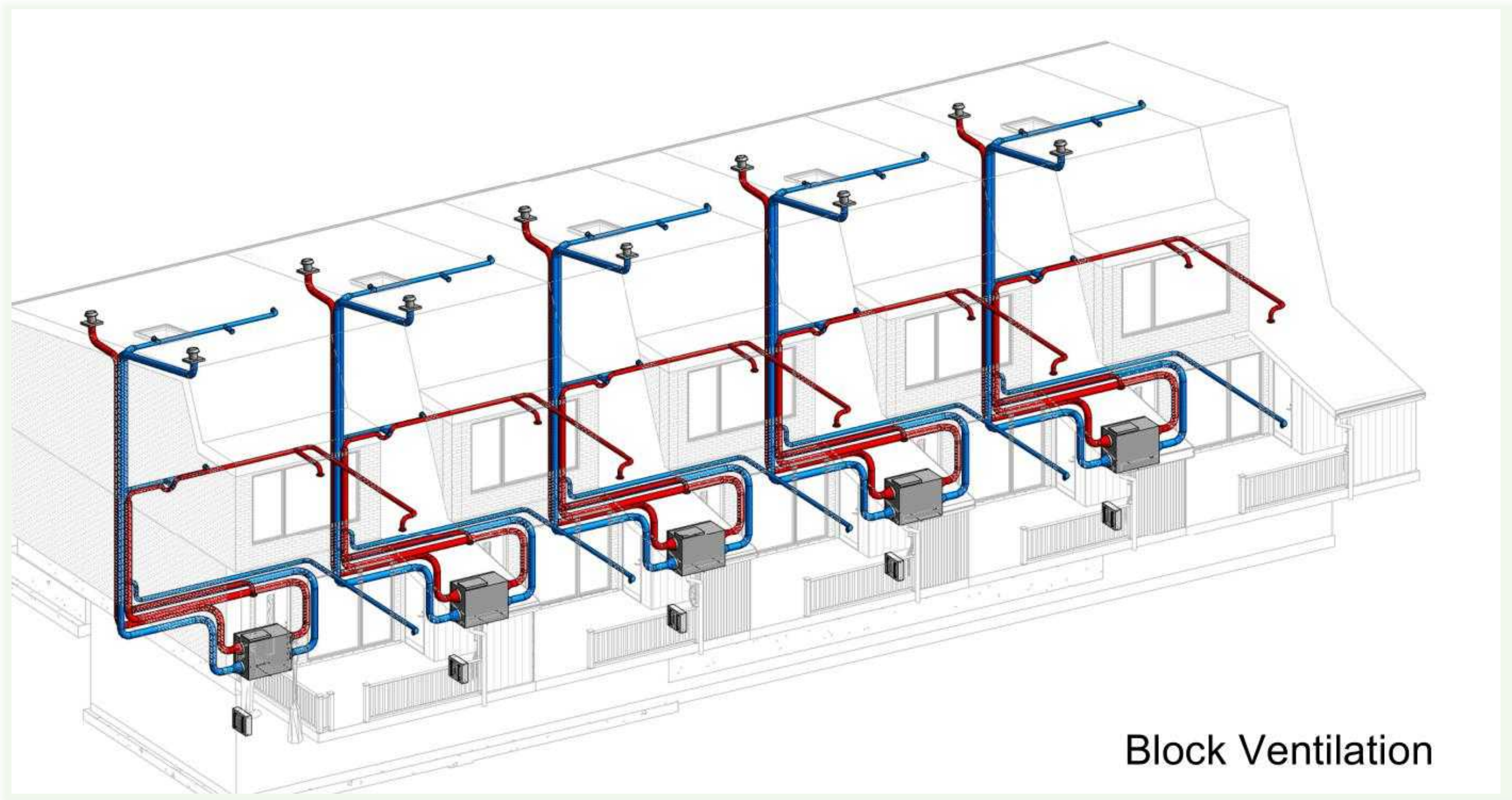
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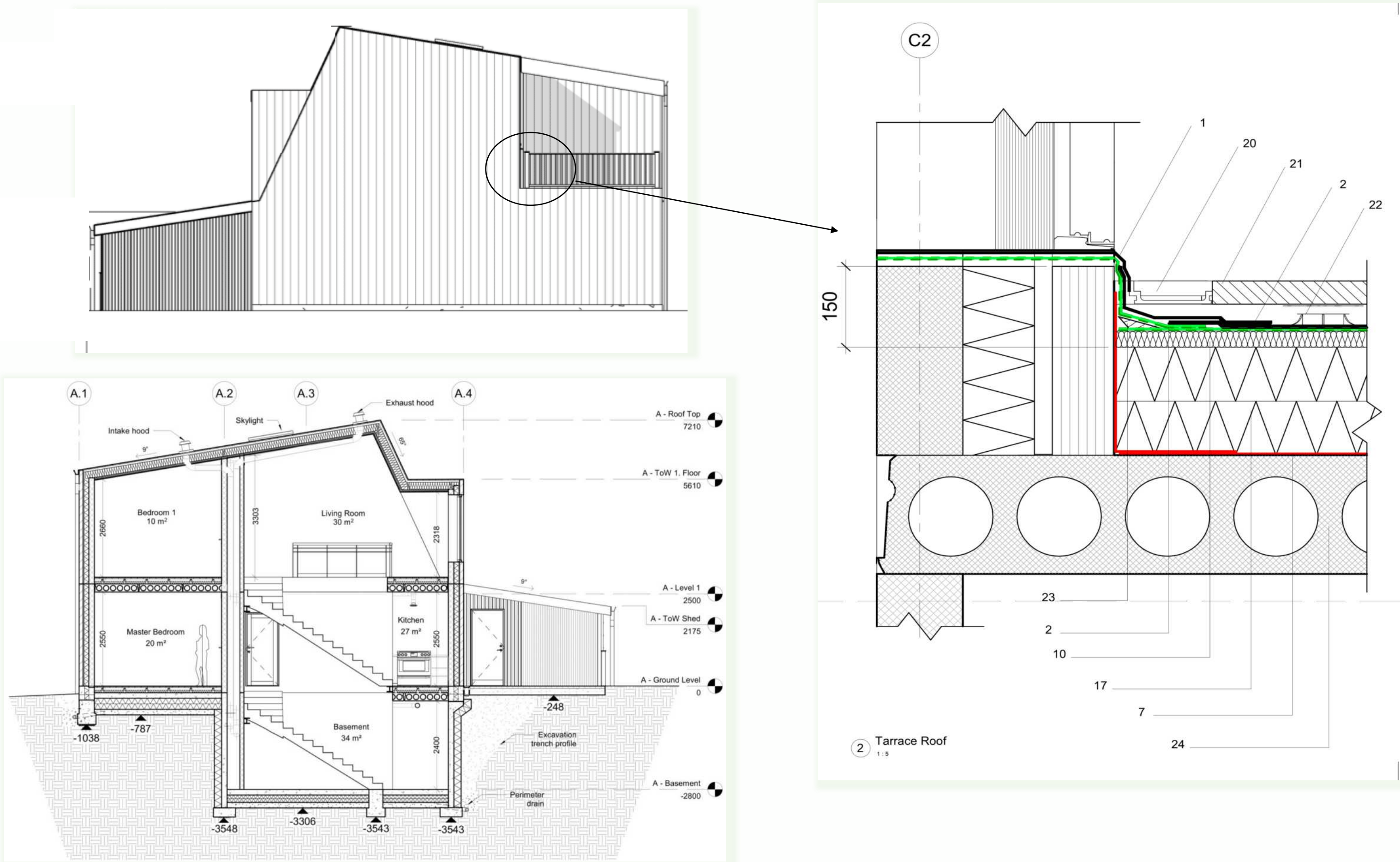
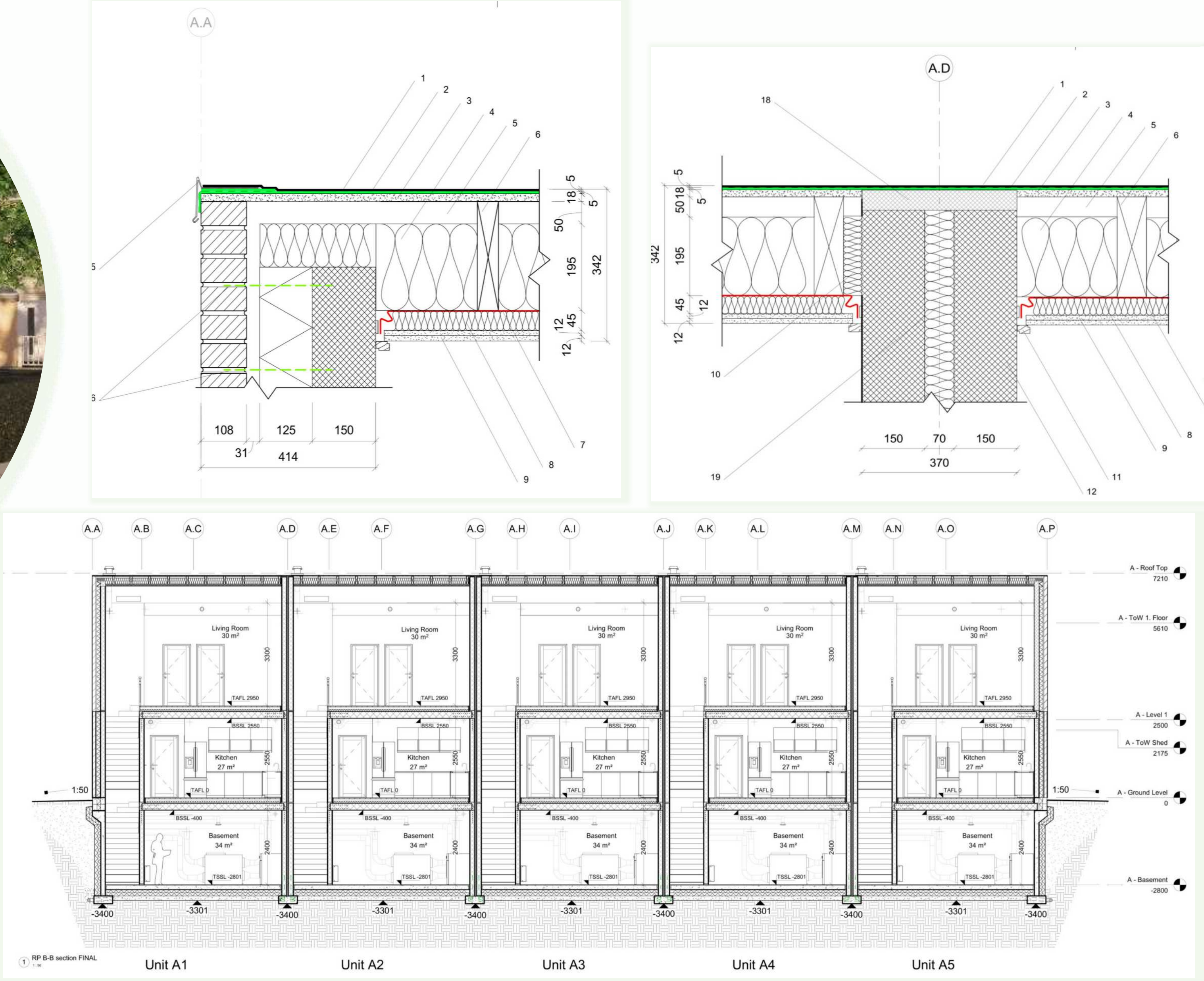
# Recreate Lisbjerg Bakkehus

## Project Description:

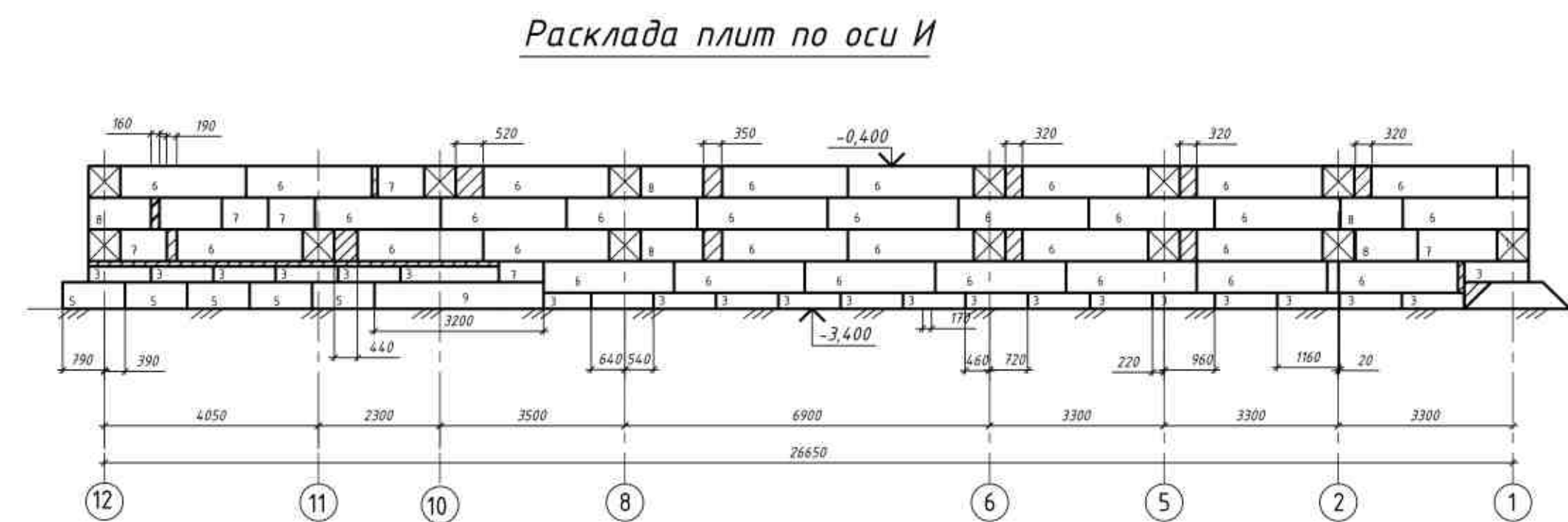
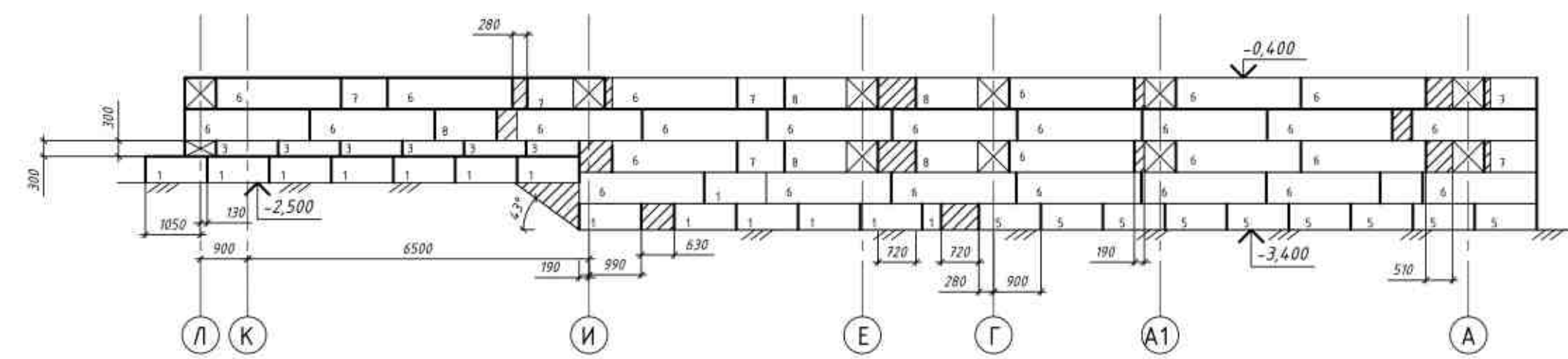
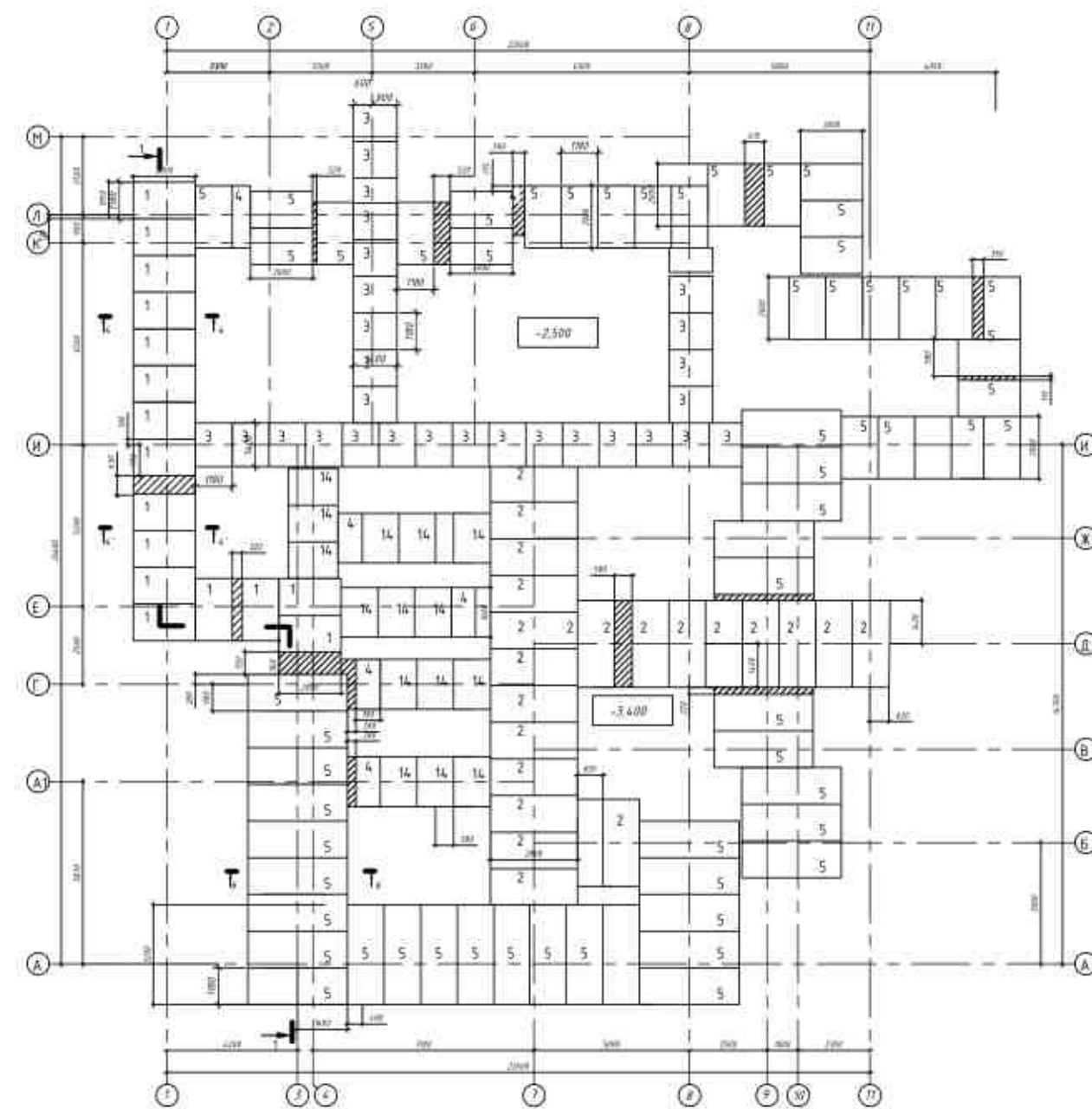
- Add two Rows with brick facade
- Three Rows with wooden cladding facade
- Add Balconies to 10%of all houses
- Add basement to all houses



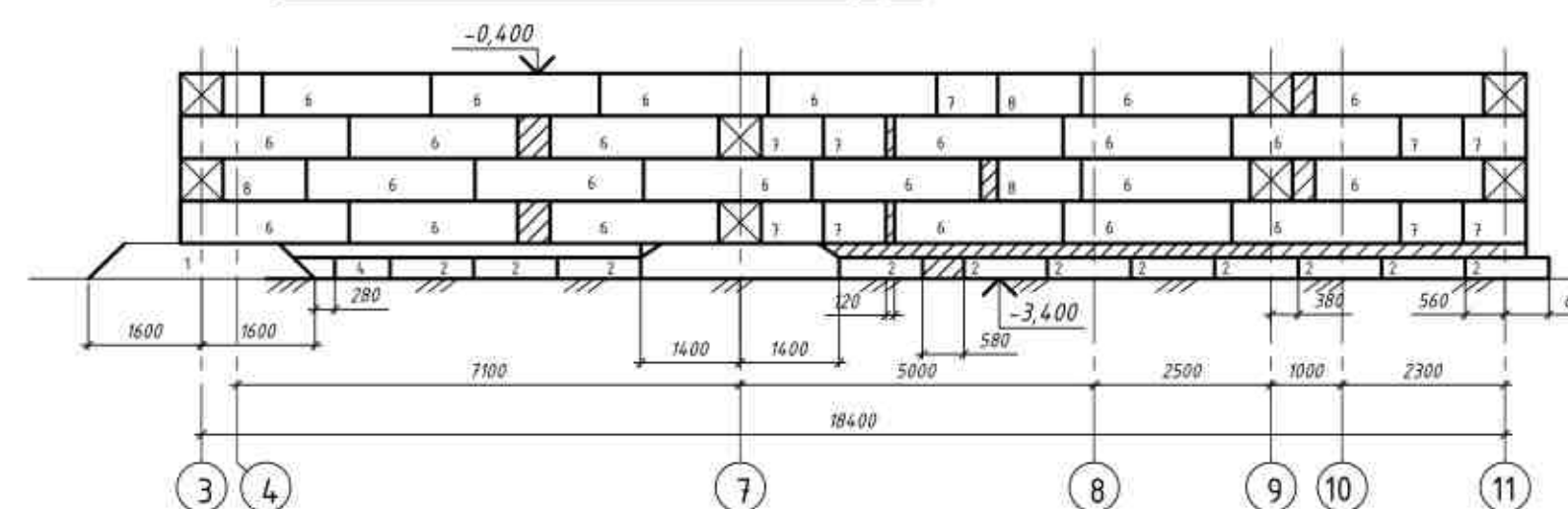
Software use:  
Autodesk Revit 2020, Autodesk Infracore 2020,BIM360,Autodesk Robot Structure 2020, Twinmotion, Sigma Estimates, Lindab lindQST simulation



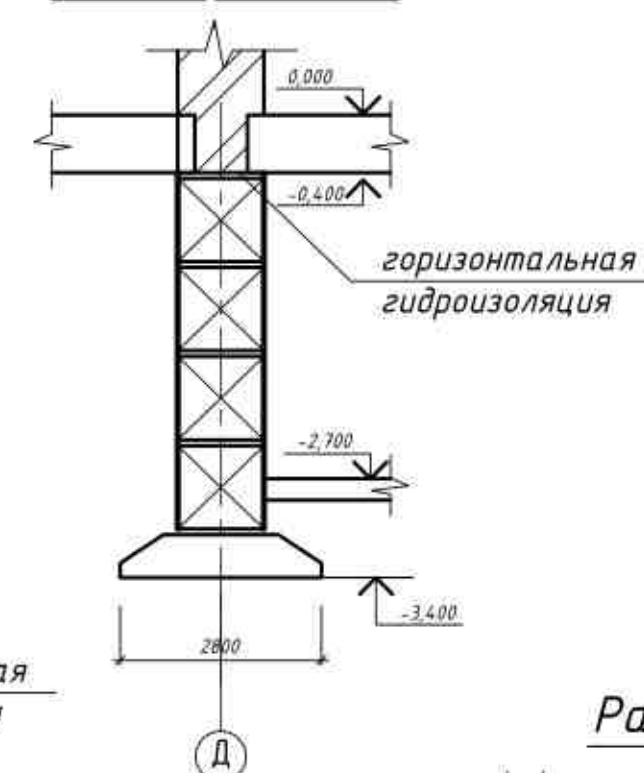
## Спецификация



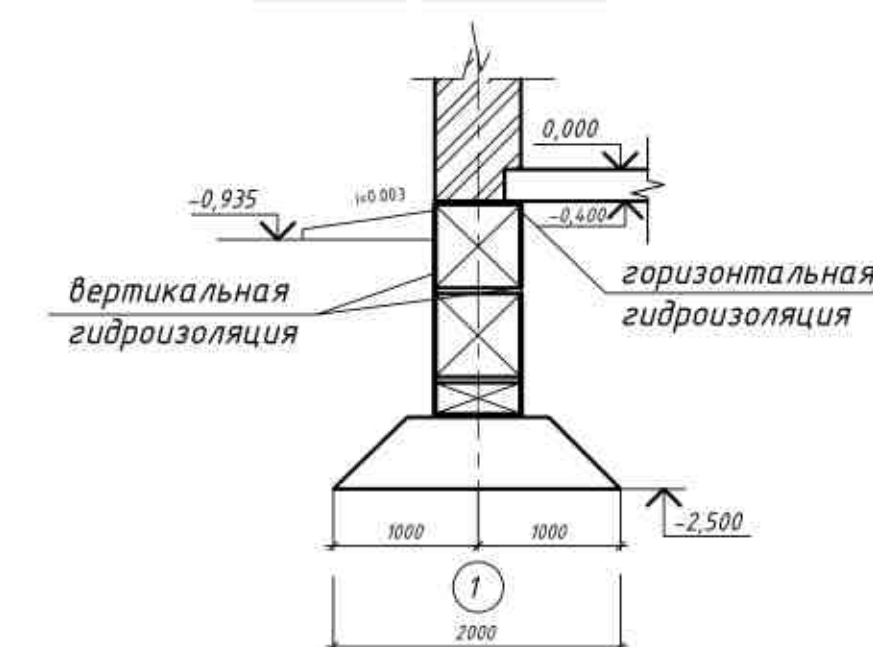
Расклада плит по осям Г 7 Д



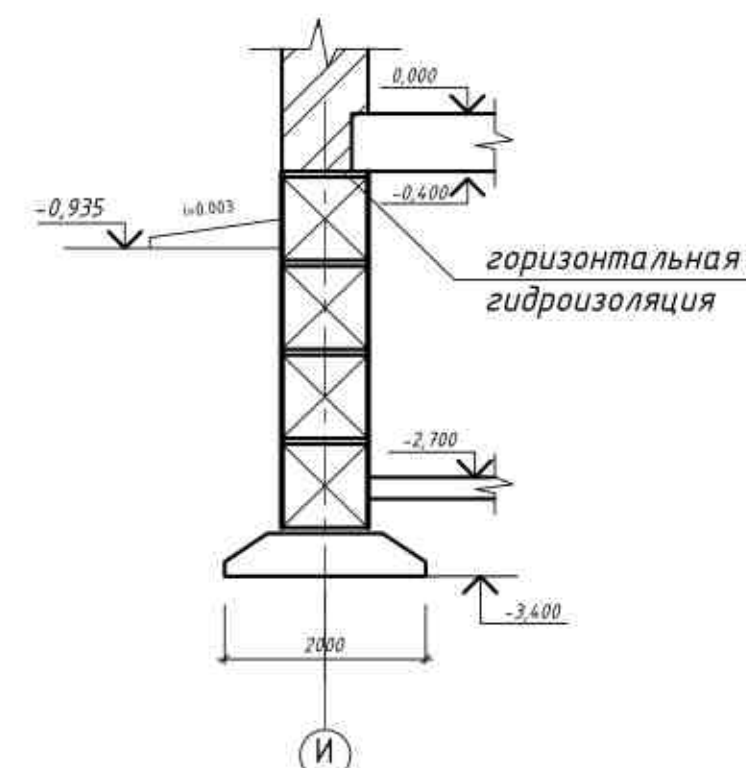
Разрез 7-7(1:50)



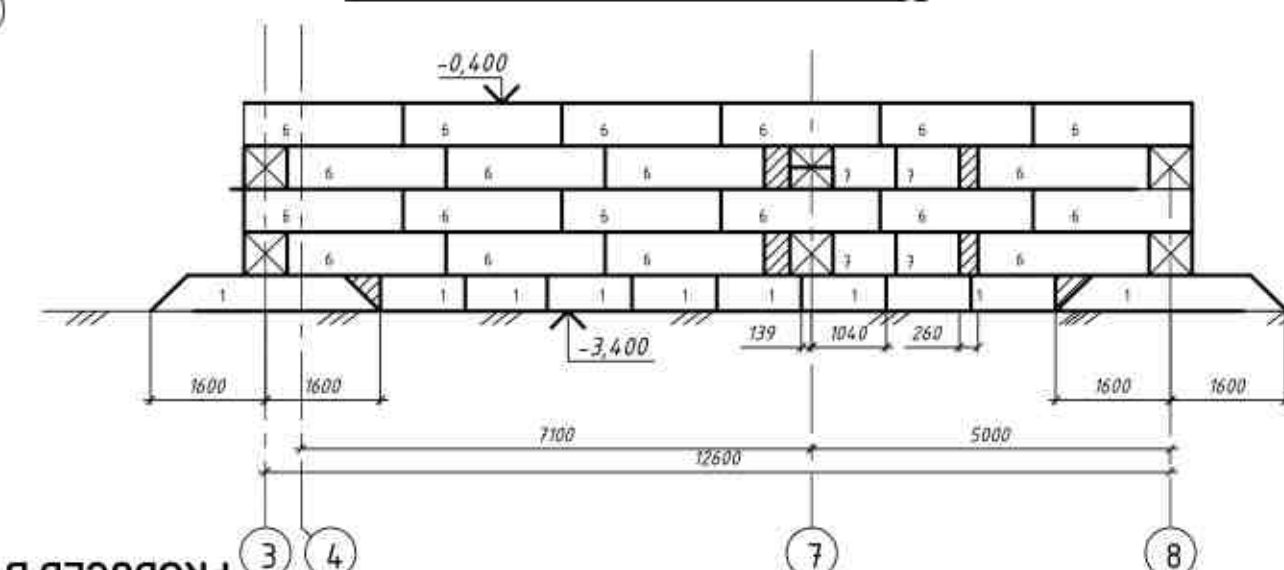
Разрез 4-4(1:50)



Разрез 4'-4' (1:50)



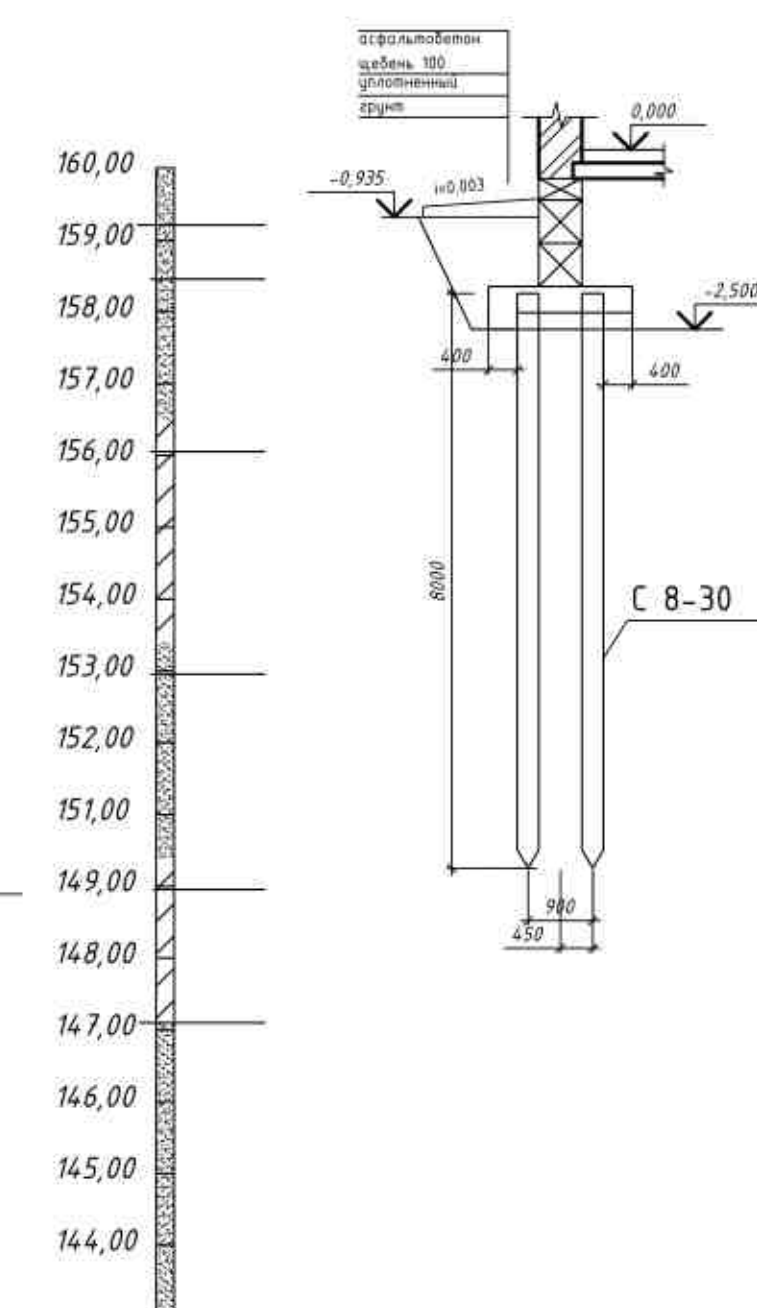
Расклада плит по оси А.



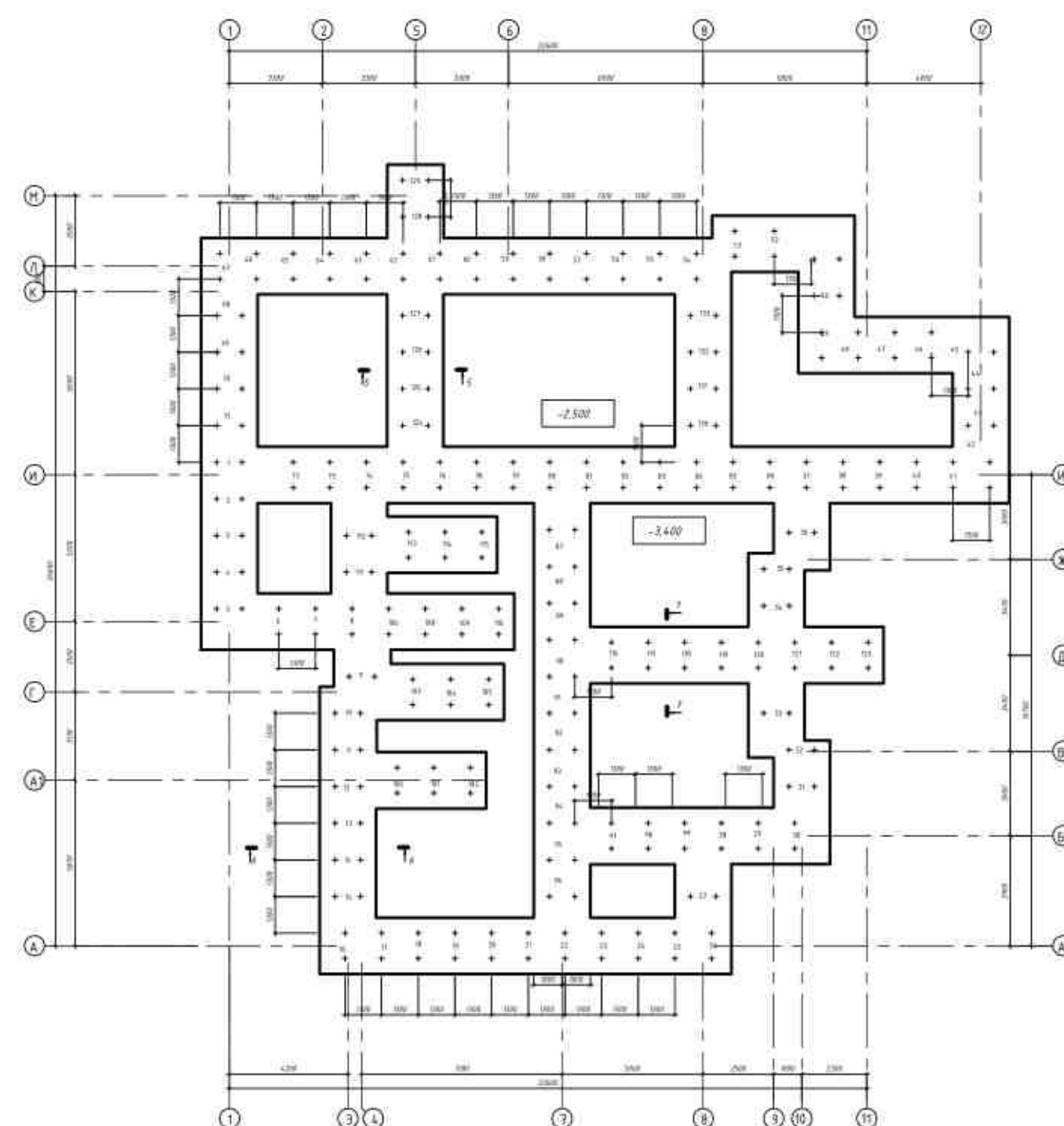
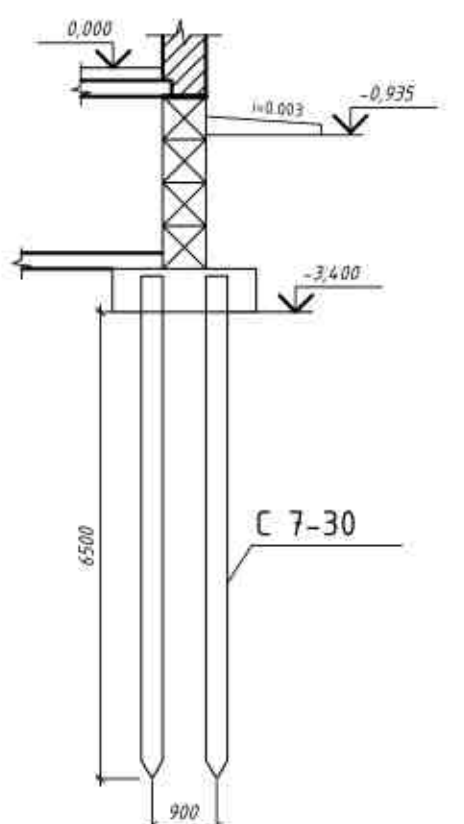
| Поз                                   | Обозначение       | Наименование | Кол                | Масса |
|---------------------------------------|-------------------|--------------|--------------------|-------|
| Ленточный фундамент мелкого заложения |                   |              |                    |       |
|                                       | Сборные единицы   |              |                    |       |
| 1                                     | ГОСТ 13580-80     | ФЛ 20.12     | 16                 | 2,4   |
| 2                                     |                   | ФЛ 32.12     | 20                 | 4,0   |
| 3                                     |                   | ФЛ 14.12     | 28                 | 1,04  |
| 4                                     |                   | ФЛ 16.8      | 4                  | 0,8   |
| 5                                     |                   | ФЛ 20.12     | 61                 | 1,2   |
| 14                                    |                   | ФЛ 16.12     | 15                 | 1,2   |
| 6                                     | ГОСТ 13579-78     | ФБС 24.6.6-Т | 126                | 1,96  |
| 7                                     |                   | ФБС 9.6.6-Т  | 118                | 0,58  |
| 8                                     |                   | ФБС 12.6.6-Т | 68                 | 0,96  |
| 9                                     |                   | ФБС 12.6.3-Т | 158                | 0,46  |
|                                       | Бетон             | В 12,5       |                    |       |
|                                       | Свайный фундамент |              |                    |       |
|                                       | Сборные единицы   |              |                    |       |
| 10                                    | ГОСТ 19804.1-79   | С 7-30       | 217                | 1,60  |
| 11                                    |                   | С 8-30       | 86                 | 1,83  |
|                                       |                   |              |                    |       |
|                                       |                   |              |                    |       |
|                                       | Бетон             | В 15         |                    |       |
|                                       | Кирпич            |              | 3,45м <sup>3</sup> |       |

1. Боковая гидроизоляция выполнена из двух слоев рубероида на битумной мастике
2. Горизонтальная гидроизоляция выполнена из двух слоев рубероида на битумной мастике
3. Заполнения пространства между стеновыми фундаментными блоками используем бетон Б 12,5 и кирпичи
4. Расчетный отказ ствн с 9-30 S=0,035 м
5. Для забивки ствн используется проточный дизель молот С956х

Разрез 5-5(1:100)



Разрез 6-6(1:100)



Плансвайного поля и ростверка (1:200)

|                 |      |      |        |         |      |                                                              |            |      |        |
|-----------------|------|------|--------|---------|------|--------------------------------------------------------------|------------|------|--------|
|                 |      |      |        |         |      |                                                              | 06-11-2899 |      |        |
|                 |      |      |        |         |      |                                                              |            |      |        |
|                 |      |      |        |         |      |                                                              |            |      |        |
|                 |      |      |        |         |      |                                                              |            |      |        |
|                 |      |      |        |         |      |                                                              |            |      |        |
|                 |      |      |        |         |      |                                                              |            |      |        |
| Изн             | Кал. | Лист | Н. док | Подпись | Дата | Курсовая работа                                              |            |      |        |
| Ф.И.О.          |      |      |        |         |      | Жилой 14ч этажный дом в г. Тюмень                            | Страница   | Лист | Листов |
| Имя, фамилия    |      |      |        |         |      |                                                              | У          | 1    | 1      |
| Заб. карточка   |      |      |        |         |      |                                                              |            |      |        |
| Рисунки, схемы  |      |      |        |         |      |                                                              |            |      |        |
| Книжки, таблицы |      |      |        |         |      | Планы раскладки фундаментных плит, (базовое поле, ростверка. |            |      |        |
| Вспомогательные |      |      |        |         |      | Разрезы 1-12-2-3-3-4-4-5-5-6-6-7-7-8-8                       |            |      |        |
| Технические     |      |      |        |         |      | Кафедра Оснований и фундаментов                              |            |      |        |

SOME WORKS FROM MY EARLIER STUDIES

План типового этажа

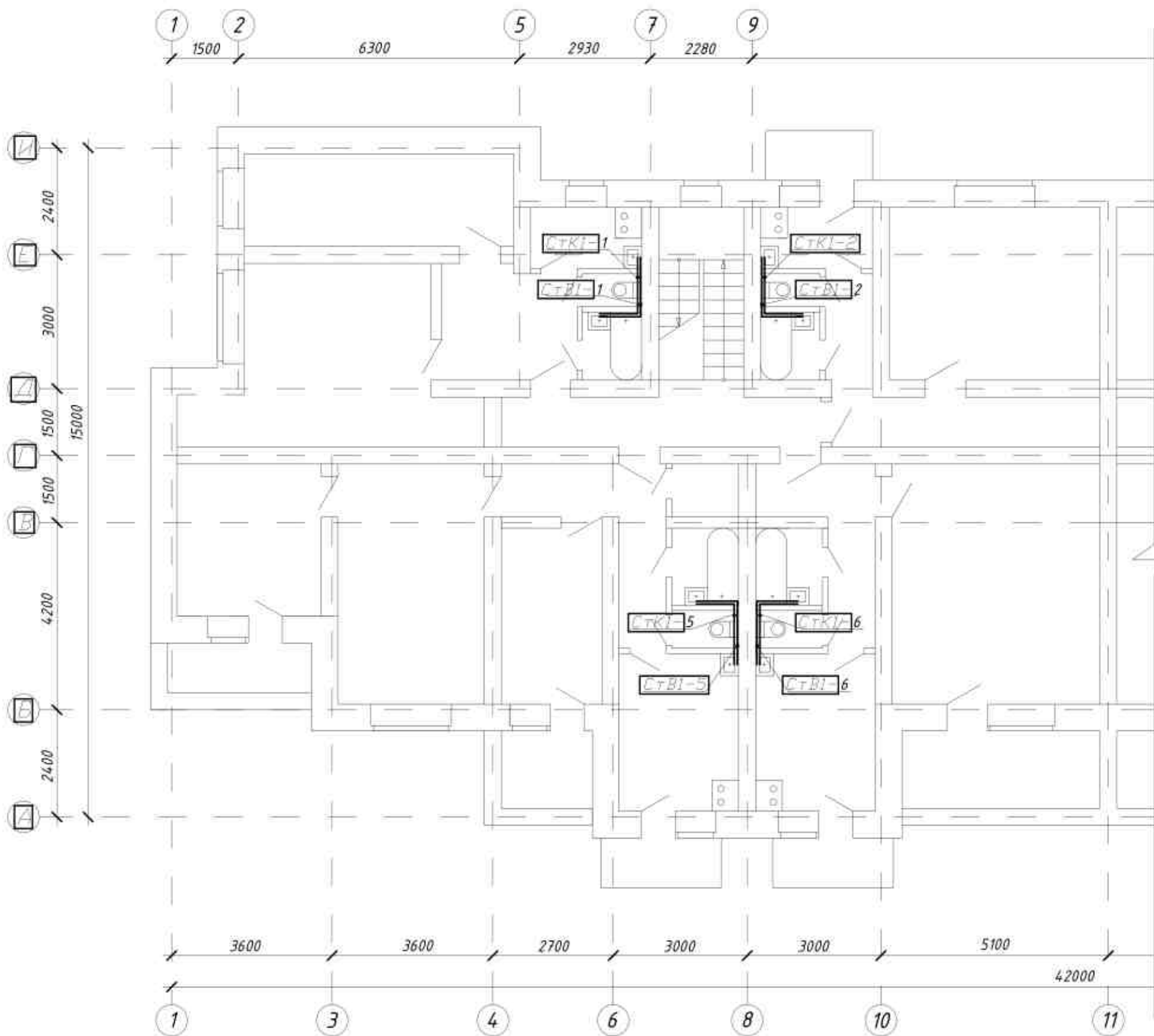
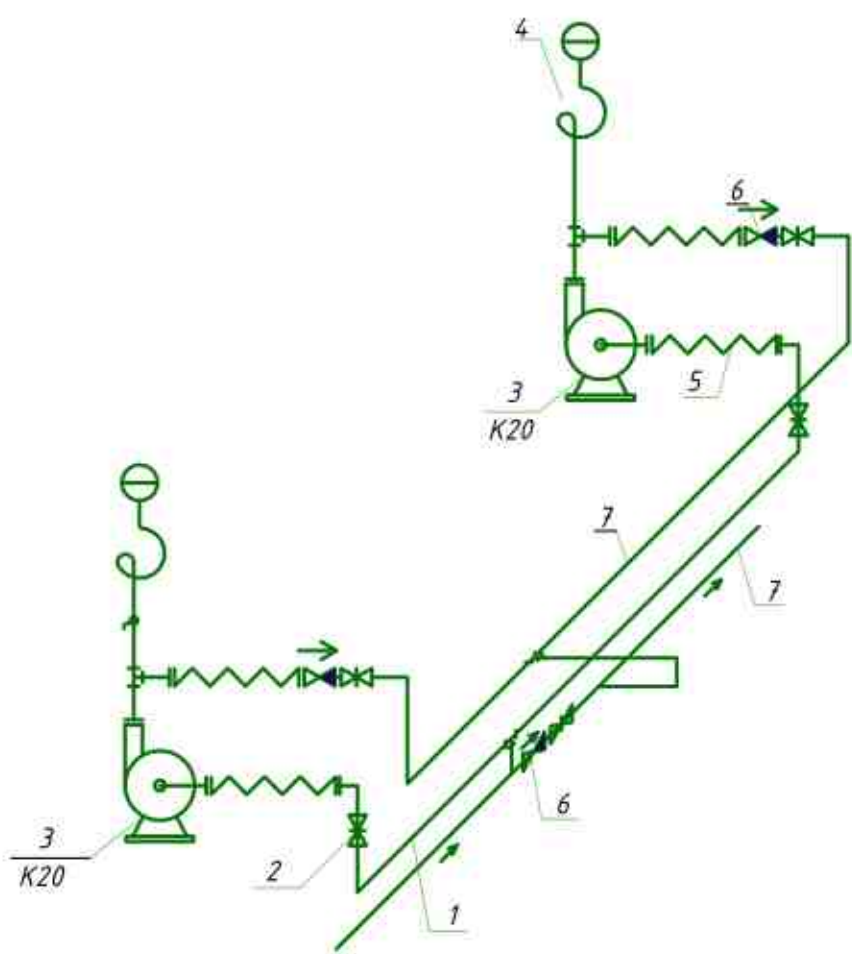
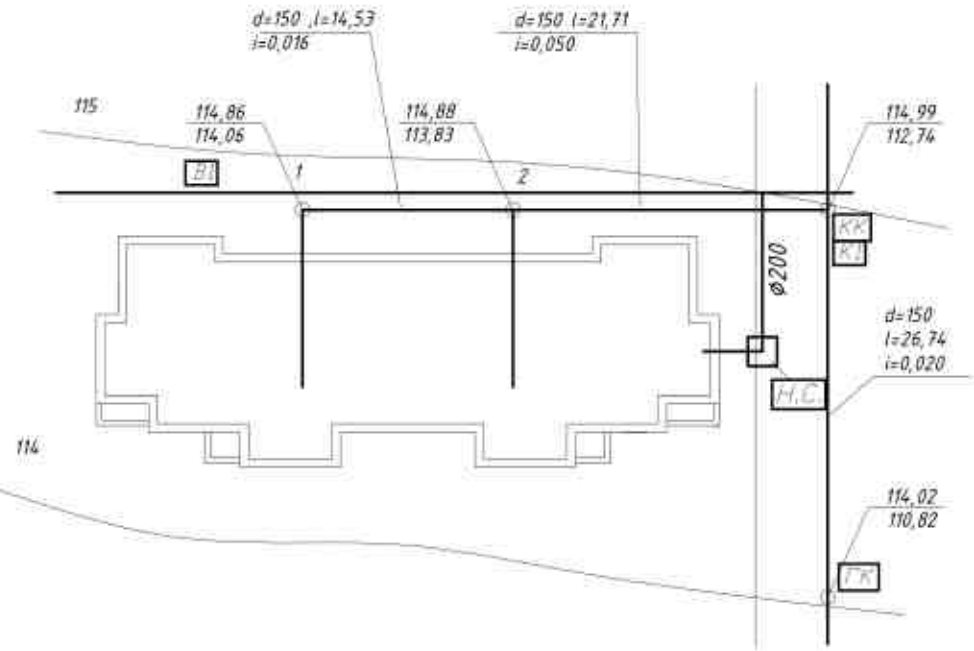


Схема насосной станции

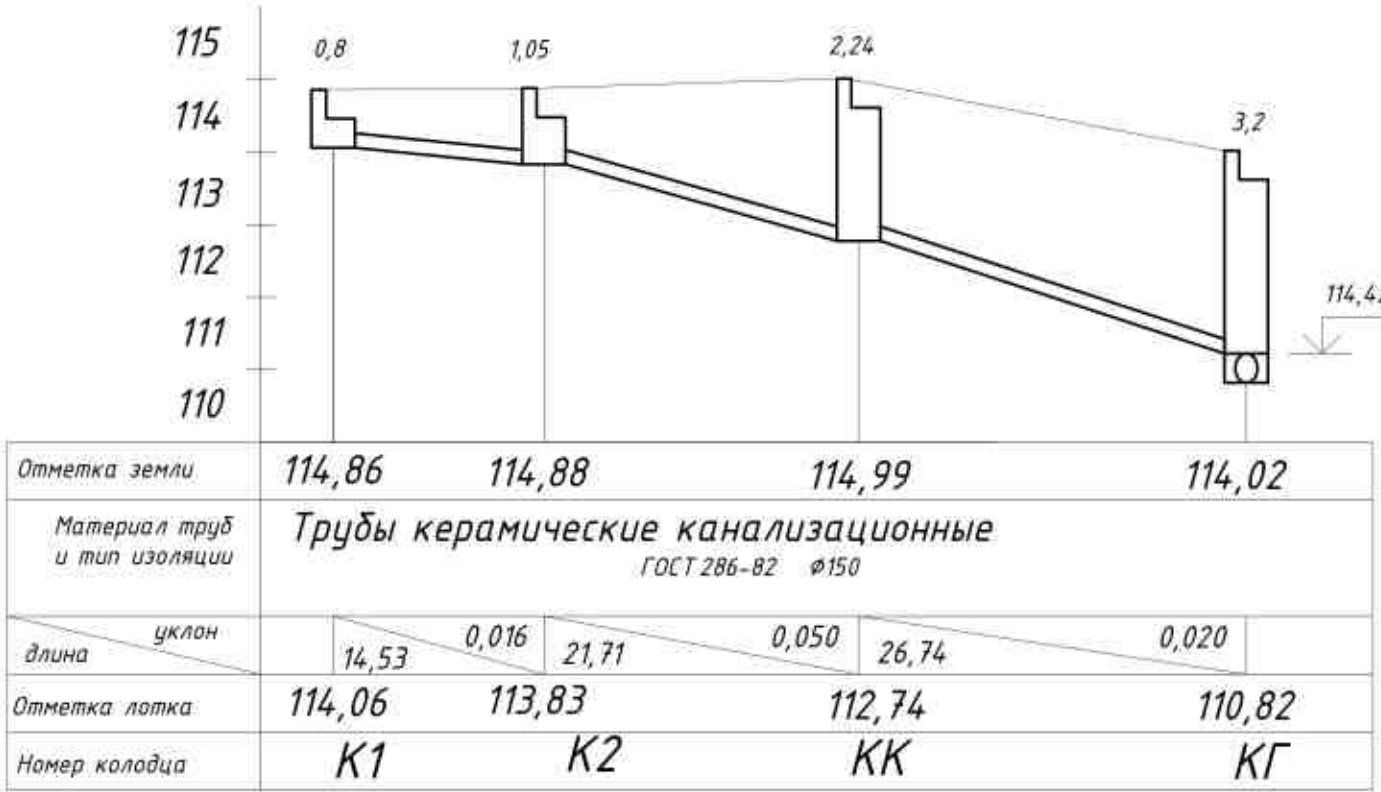


- 1-всасывающий трубопровод
- 2-запорное устройство (вентиль, задвижка)
- 3-насос марки К20
- 4-манометр
- 5-вибровставка
- 6-обратный клапан
- 7-напорный трубопровод

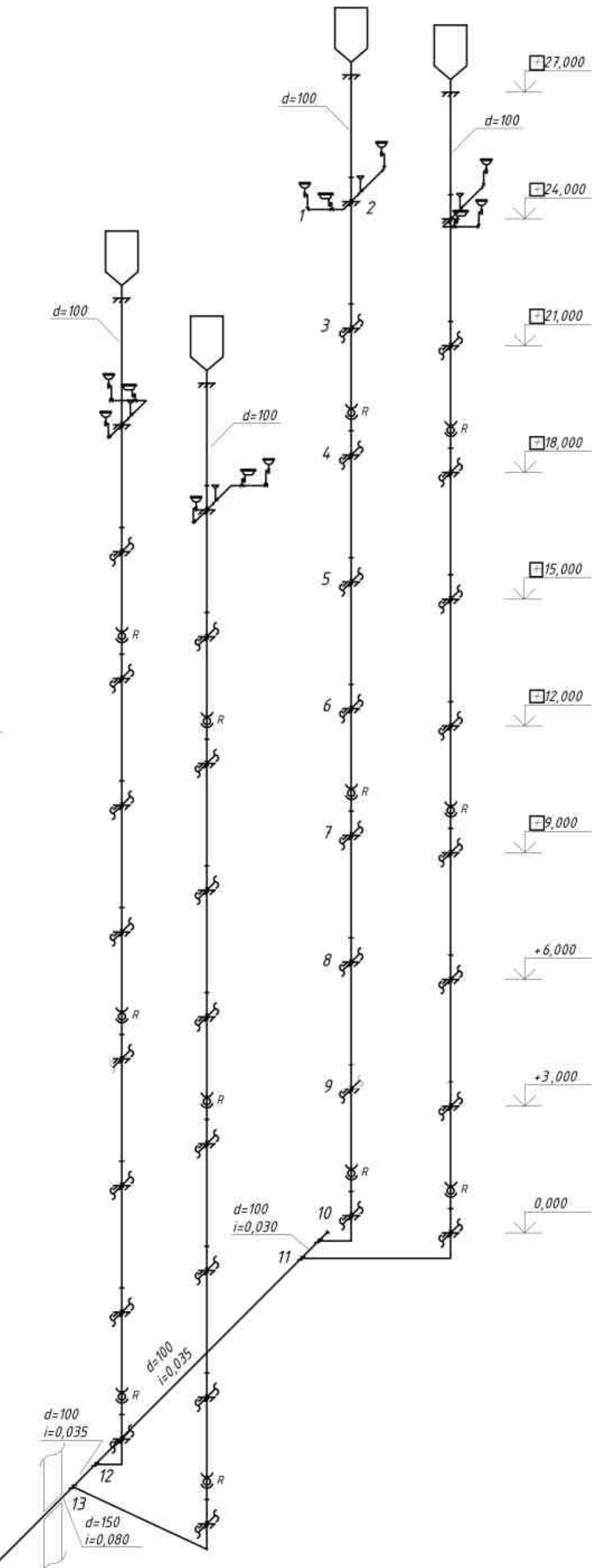
Генеральный план М 1: 500



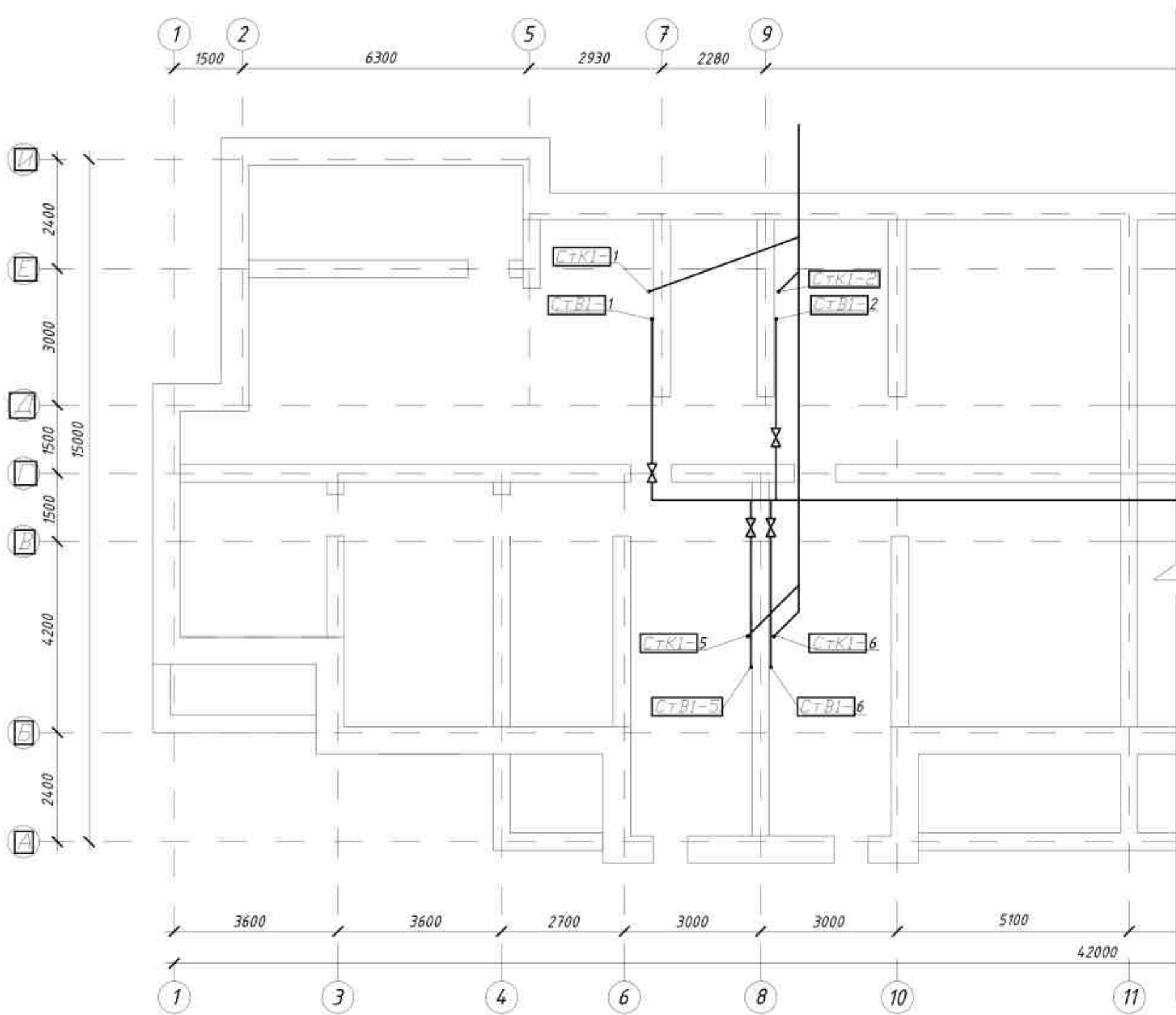
Профиль дворовой канализации масштаб горизонтальный (1:500), вертикальный (1:100)



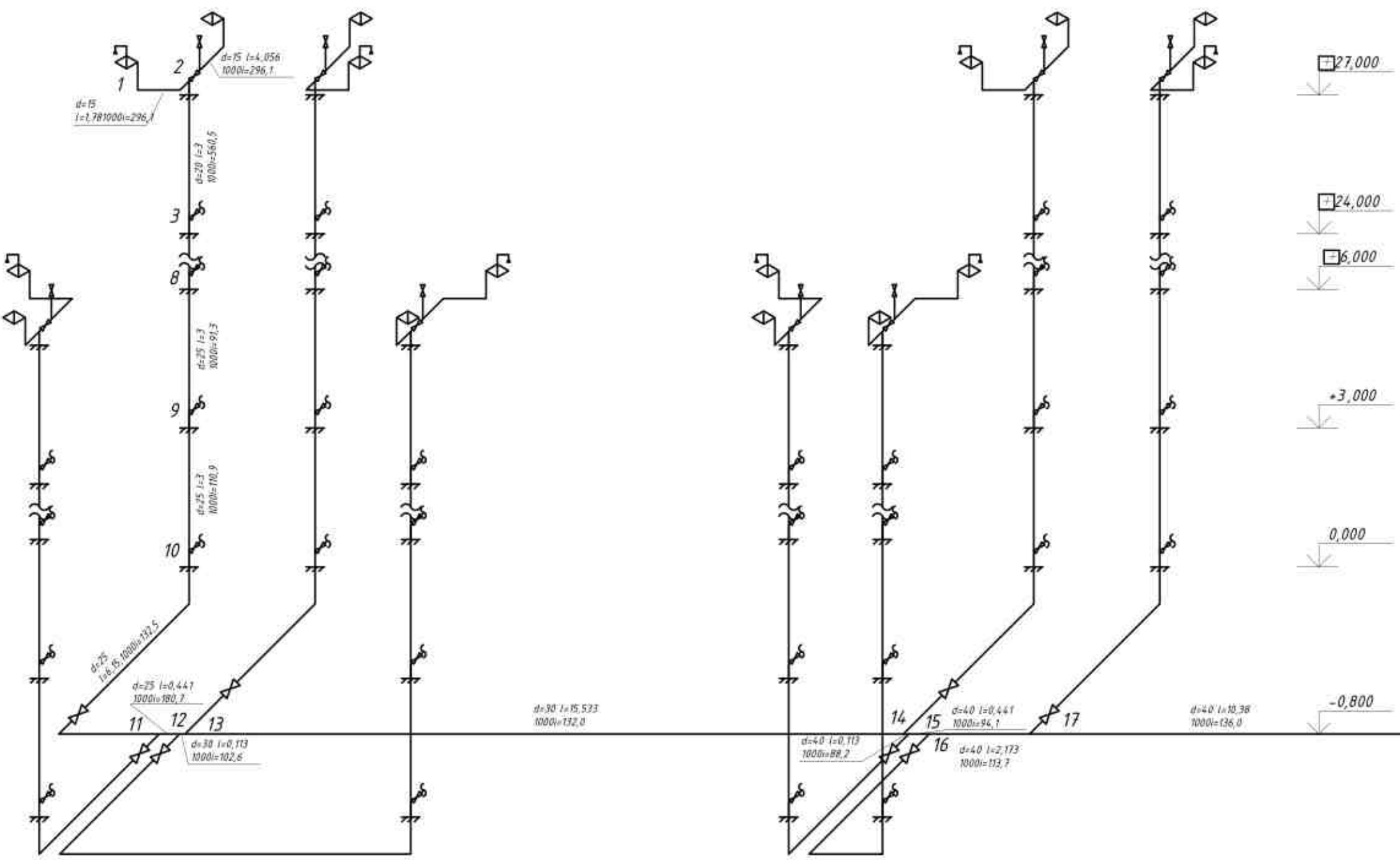
Аксометрическая схема канализации М 1:100



План подвала

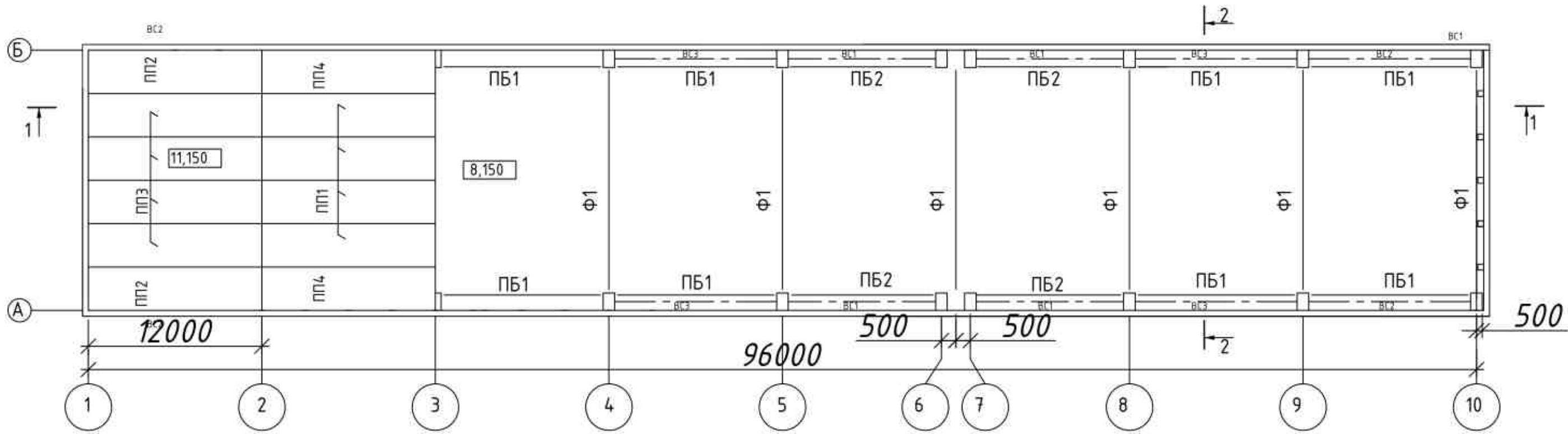


Аксометрическая схема водоснабжения М 1:100

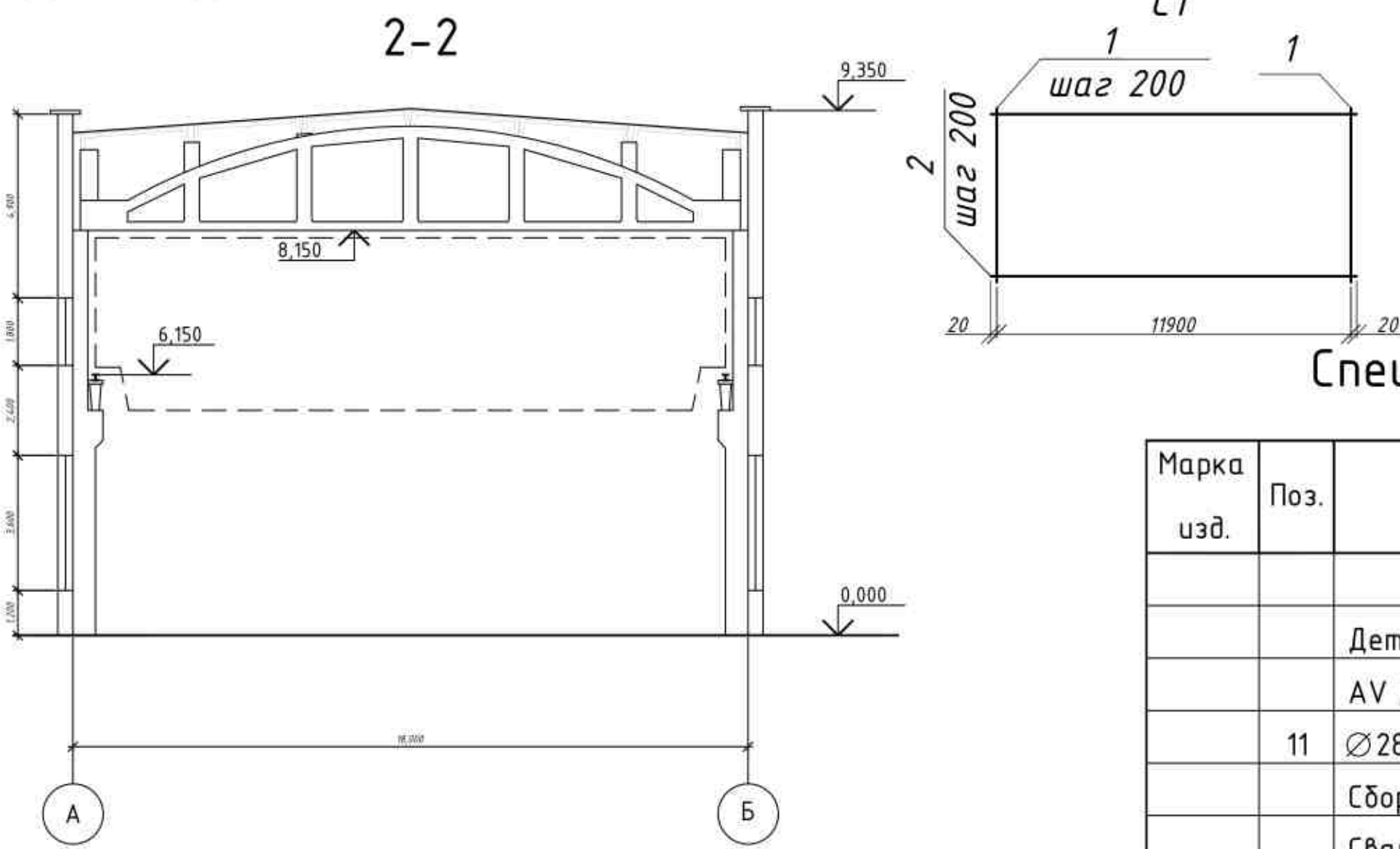


|                                                |         |       |      |                                                   |           |         |        |          |         |
|------------------------------------------------|---------|-------|------|---------------------------------------------------|-----------|---------|--------|----------|---------|
| ГОУ ВПО ВГАСУ 06-11-2899<br>гр.133 (г. Ростов) |         |       |      | Водоснабжение и канализация жилого здания         |           |         | Стдия  | Масса    | Масштаб |
| ИЗМ/Лист                                       | № док   | Подп. | Дата | Защ. Каф.                                         | Консульт. | Бахмеев | У      | 1:1      |         |
| Принят                                         | Бахмеев |       |      | Разработ                                          | Тимоти.Л  |         | Лист 1 | Листов 1 |         |
|                                                |         |       |      | Кафедра гидравлики, водоснабжения и водоотведения |           |         |        |          |         |

Схема расположения элементов



2-2



Спецификация арматуры

| Марка изд. | Поз. | Наименование       | Кол. | Масса 1дет,кг | Масса изд,кг |
|------------|------|--------------------|------|---------------|--------------|
|            |      | Детали             |      |               |              |
|            |      | AV ГОСТ 5781-82*   |      |               |              |
|            | 11   | Ø28 L=11940        | 2    | 7,18          | 14,4         |
|            |      | Сборочные единицы  |      |               |              |
|            |      | Сварные сетки      |      |               |              |
|            |      | C1                 | 1    | 14            | 14           |
|            |      | C2                 | 4    | 0,765         | 3,1          |
|            |      | Детали             |      |               |              |
|            |      | Вр-I ГОСТ 6727-80  |      |               |              |
|            | 1    | Ø4 L=2940          | 31   | 0,153         | 4,7          |
|            | 2    | Ø3 L=11940         | 30   | 0,31          | 9,3          |
|            | 3    | Ø4 L=130           | 6    | 0,012         | 0,072        |
|            | 4    | Ø4 L=230           | 6    | 0,021         | 0,127        |
|            | 5    | Ø4 L=780           | 2    | 0,072         | 0,144        |
|            | 6    | Ø4 L=1530          | 3    | 0,141         | 0,422        |
|            |      | Каркасы сварные    |      |               |              |
|            |      | Кр1                | 2    | 11,4          | 22,8         |
|            |      | Вр-I ГОСТ 6727-80  |      |               |              |
|            | 7    | Ø4 L=260           | 34   | 0,024         | 0,813        |
|            |      | AIII ГОСТ 5781-82* |      |               |              |
|            | 8    | Ø12 L=11940        | 2    | 5,27          | 10,6         |
|            |      | Кр2                | 8    | 5,6           | 44,5         |
|            |      | Вр-I ГОСТ 6727-80  |      |               |              |
|            | 9    | Ø4 L=105           | 36   | 0,01          | 0,36         |
|            |      | AIII ГОСТ 5781-82* |      |               |              |
|            | 10   | Ø12 L=2930         | 2    | 2,6           | 5,2          |

Опалубочный чертеж ПП1

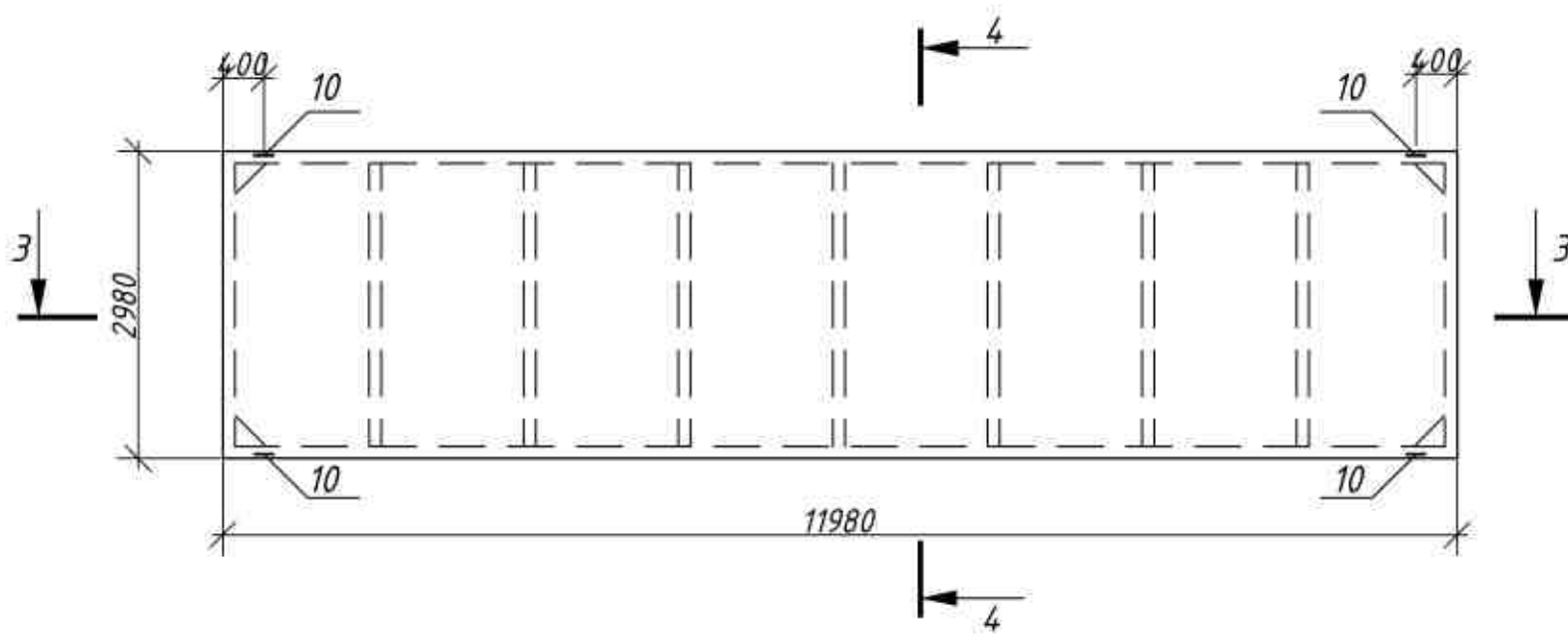
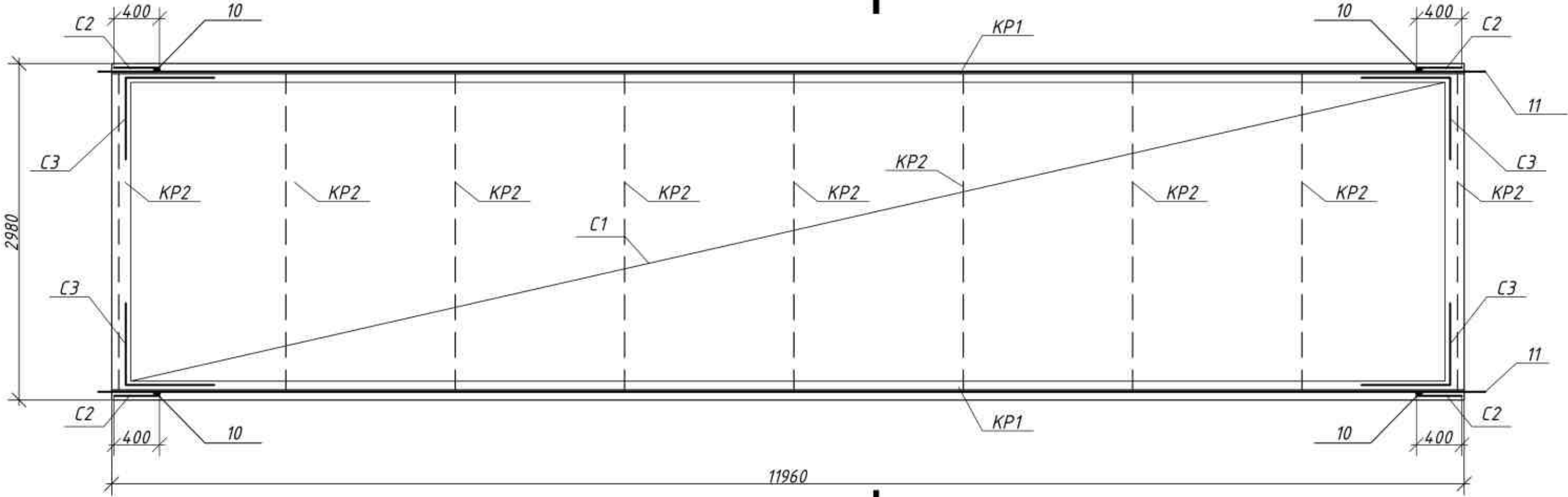
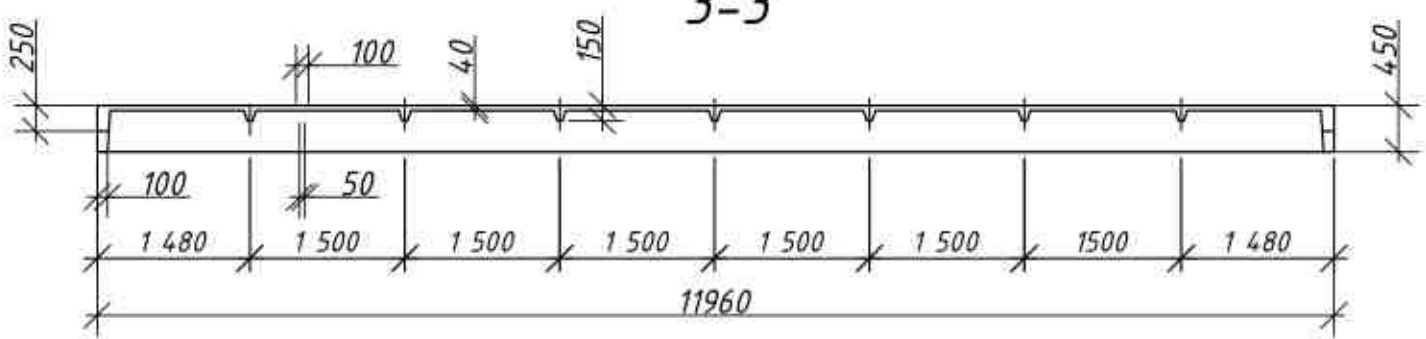


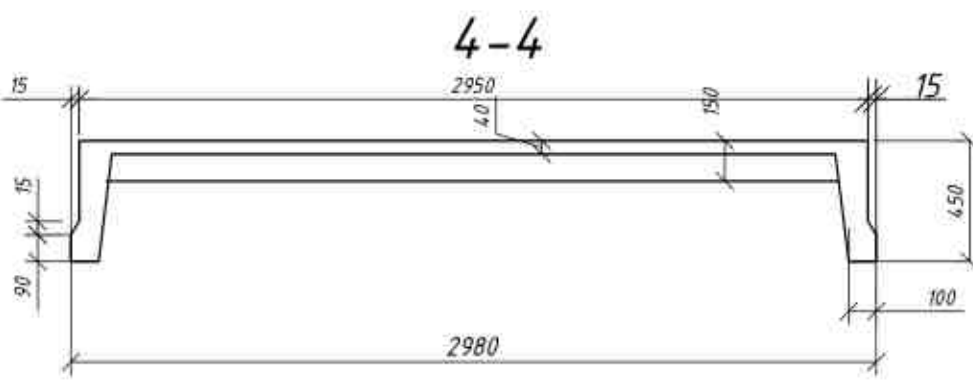
Схема армирования ПП1



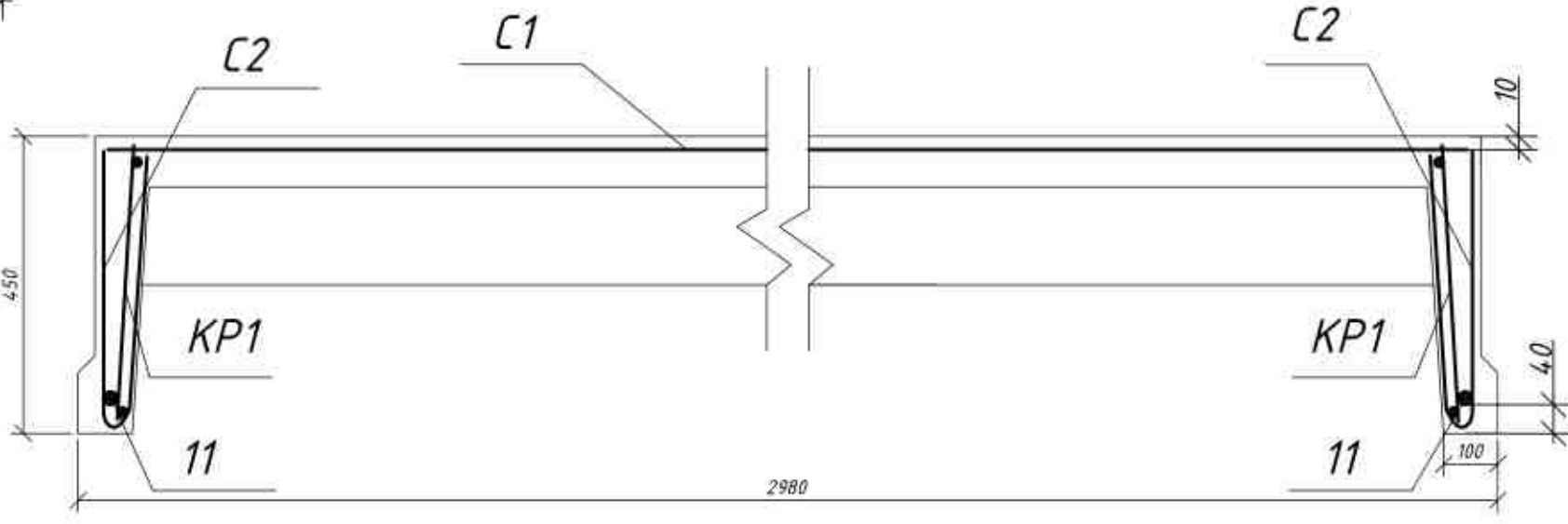
3-3



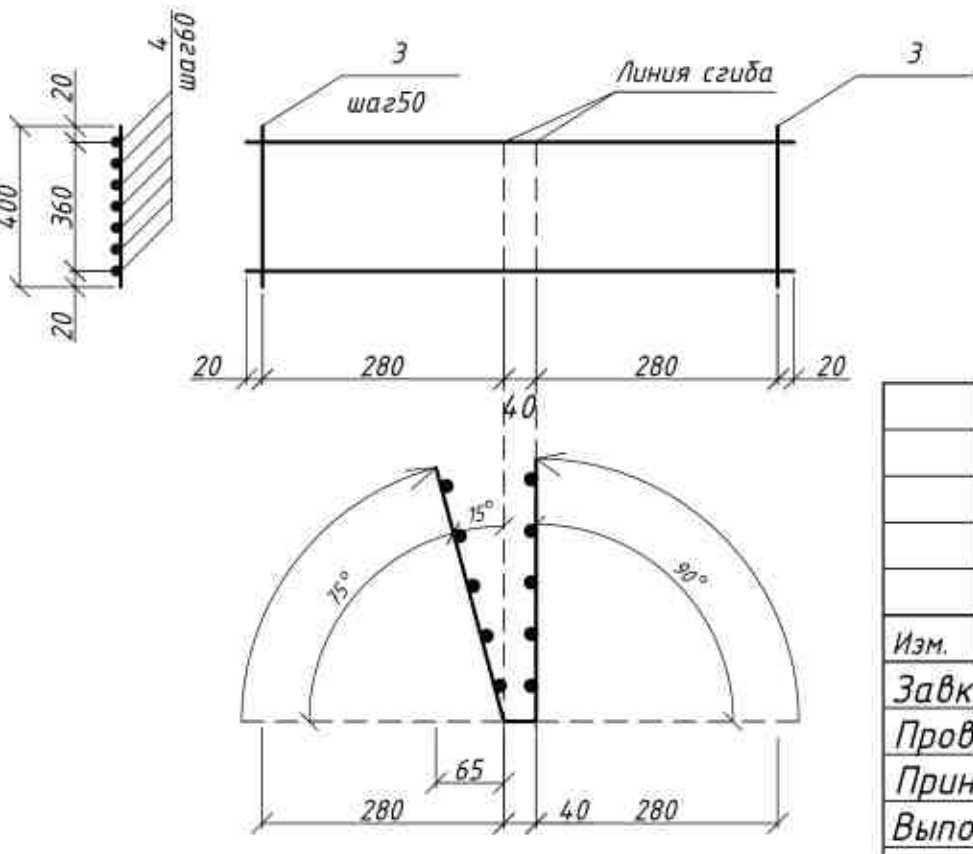
4-4



5-5



C2



Ведомость расхода стали

| Марка<br>элемента | Изделия арматурные |      |               |      | На элемент |
|-------------------|--------------------|------|---------------|------|------------|
|                   | Арматура класса    |      |               |      |            |
|                   | Вр-I               |      | AIII          |      |            |
|                   | ГОСТ 6727-80       |      | ГОСТ 5781-82* |      |            |
|                   | Ø3                 | Ø4   | Ø12           | Ø14  |            |
| ПП1               | 14                 | 1,94 | 15,8          | 14,4 | 46         |

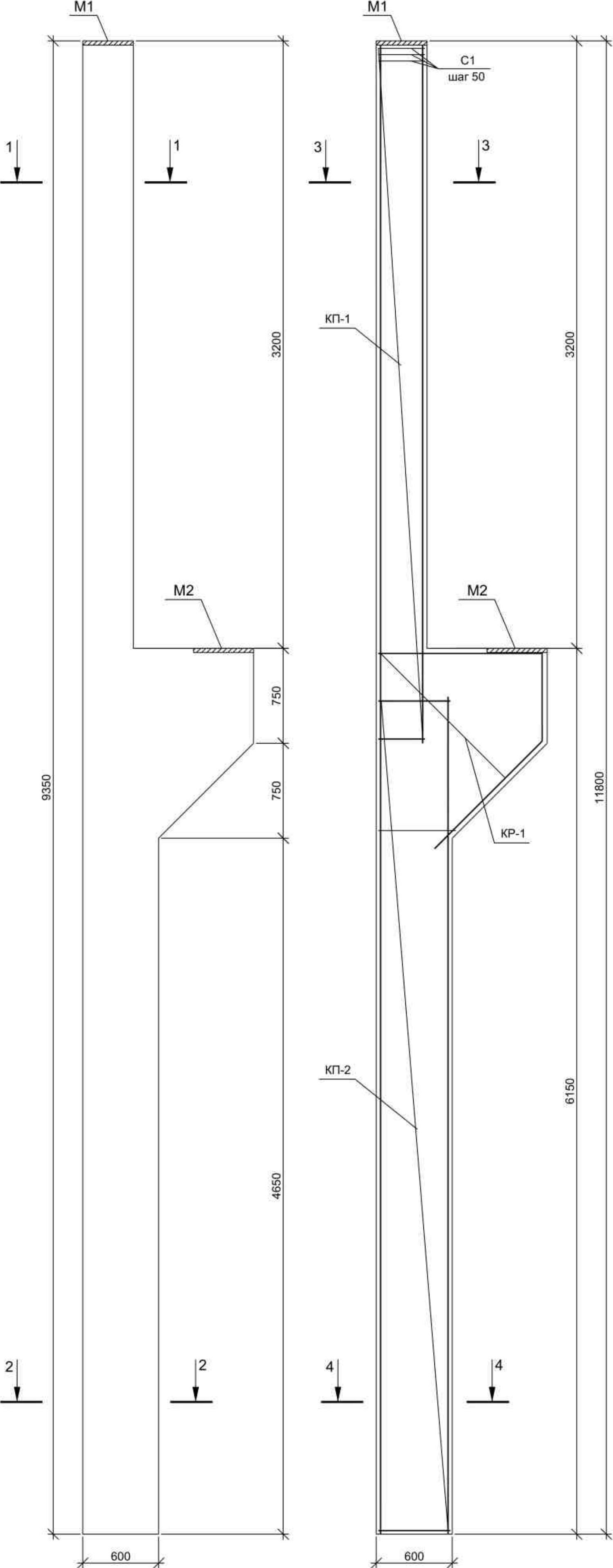
- Проект выполнен согласно СНиП 2.03.01-84.
- Класс бетона по прочности на сжатие для ПП1 В25
- Предварительно напряжённая арматура класса AV устанавливается с натяжением на упоры механическим способом =470МПа

ВГАСУ 06-11-2899 КП 1542р

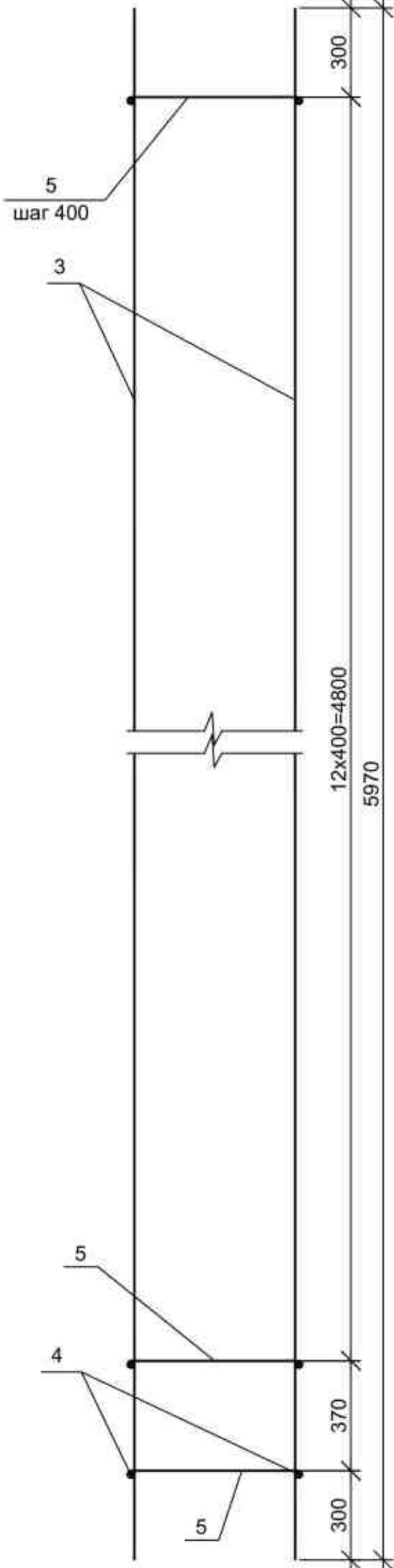
Конструкции ОПЗ с мостовыми кранами

| Изм.     | Кол.уч.  | Лист | № док. | Подпись | Дата | Ребристая плита покрытия | Стадия | Лист | Листов |
|----------|----------|------|--------|---------|------|--------------------------|--------|------|--------|
| Завкаф   | Борисов  |      |        |         |      |                          | У      | 1    | 3      |
| Проверил | Васильев |      |        |         |      |                          |        |      |        |
| Принял   | Васильев |      |        |         |      |                          |        |      |        |
| Выполнил | Тимохи   | Л    |        |         |      |                          |        |      |        |

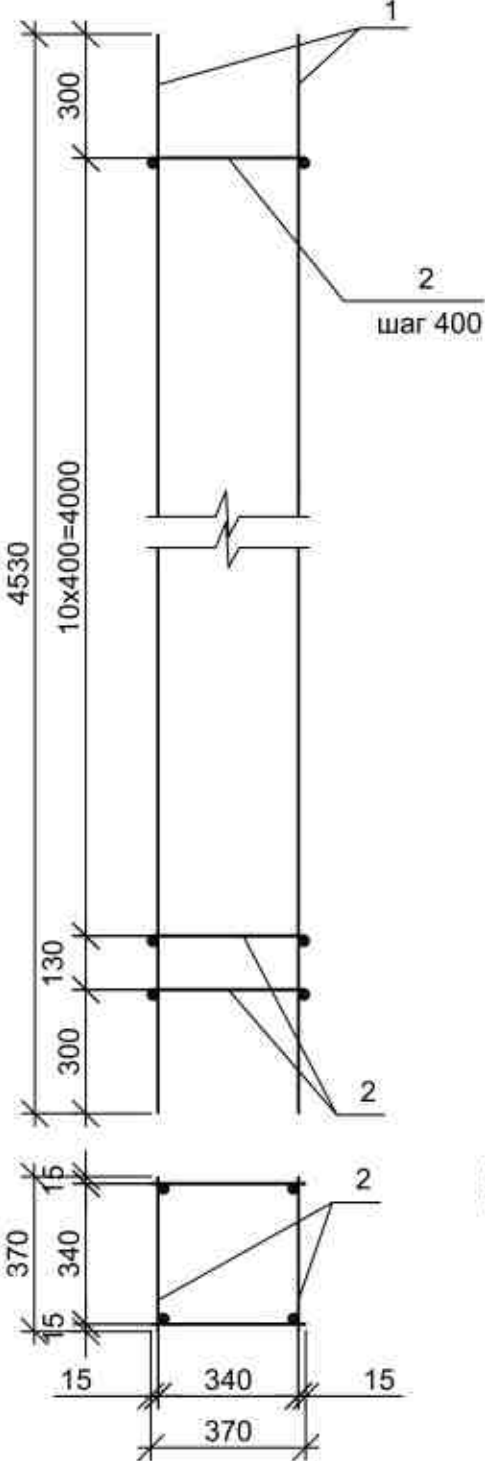
Опалубочный чертёж К1    Схема армирования К1



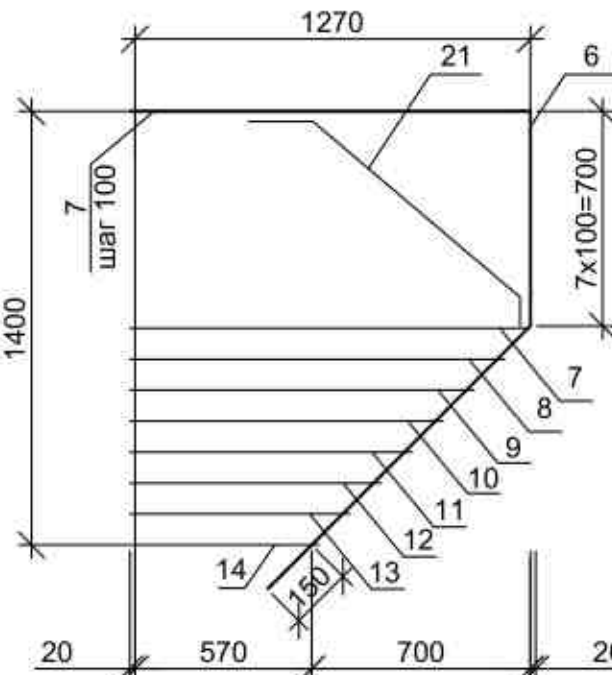
КП-2



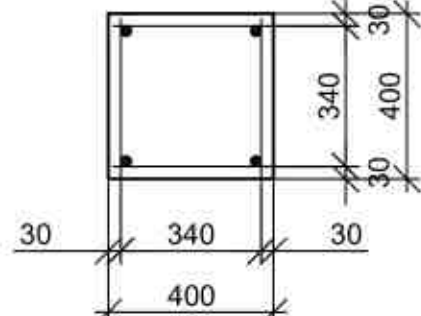
КП-1



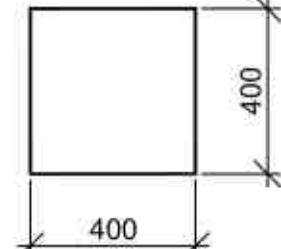
КР-1



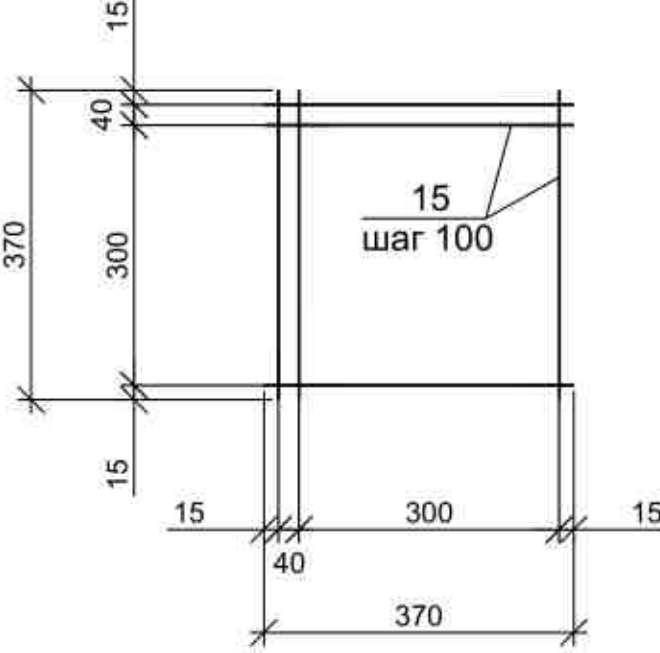
3-3



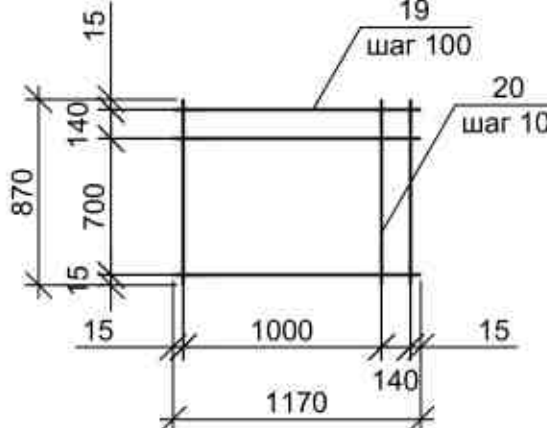
1-1



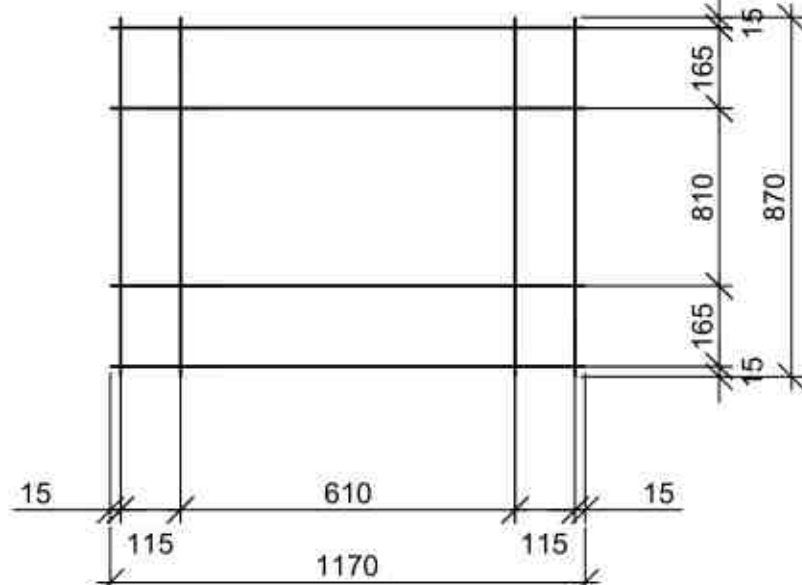
C1



C3



C4



C2

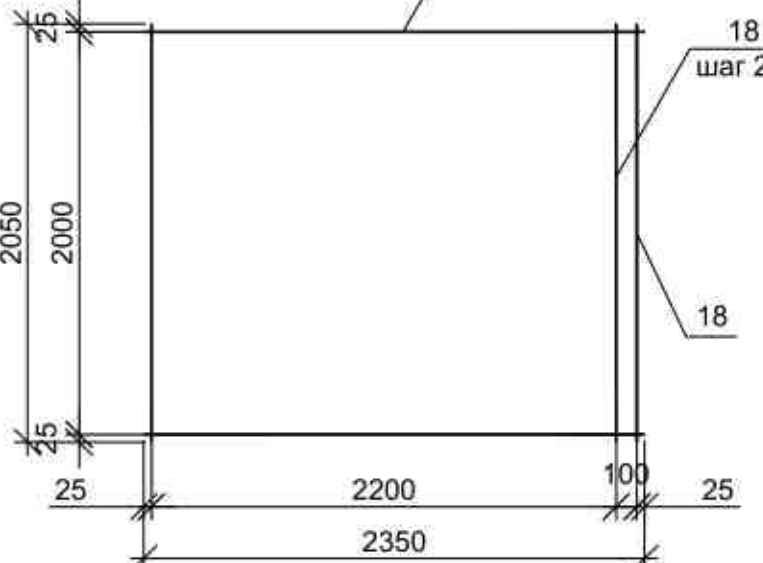
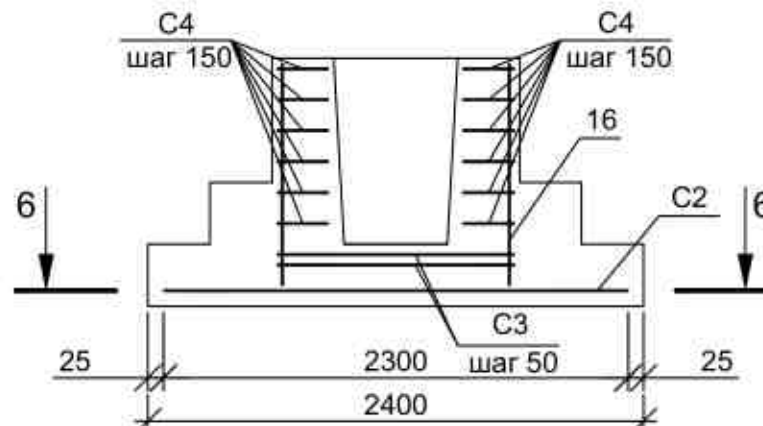
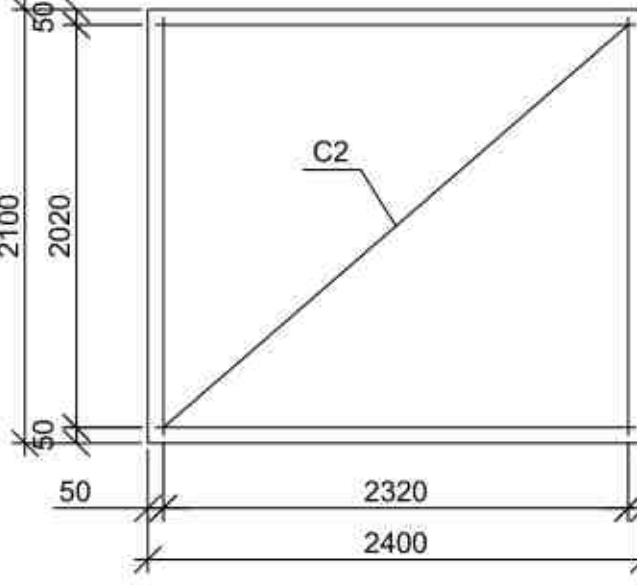


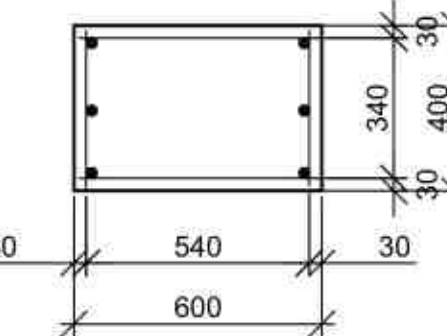
Схема армирования ФФ1



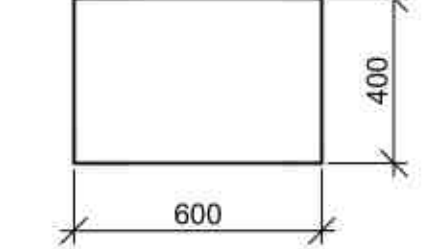
6-6



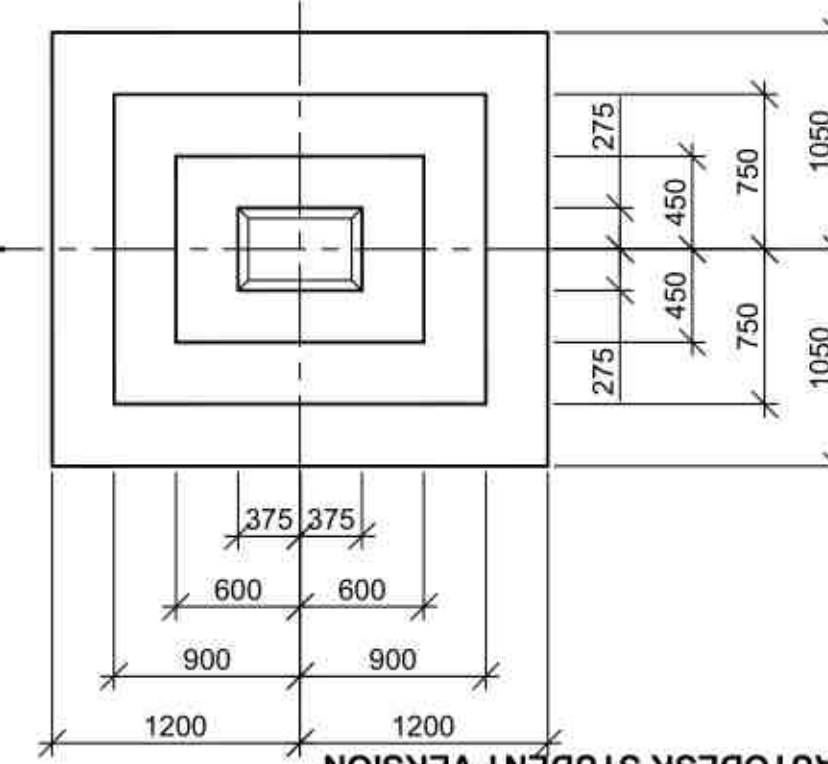
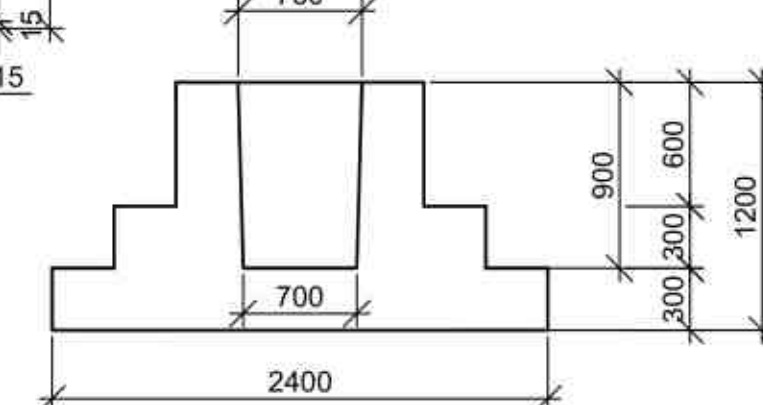
4-4



2-2



5-5



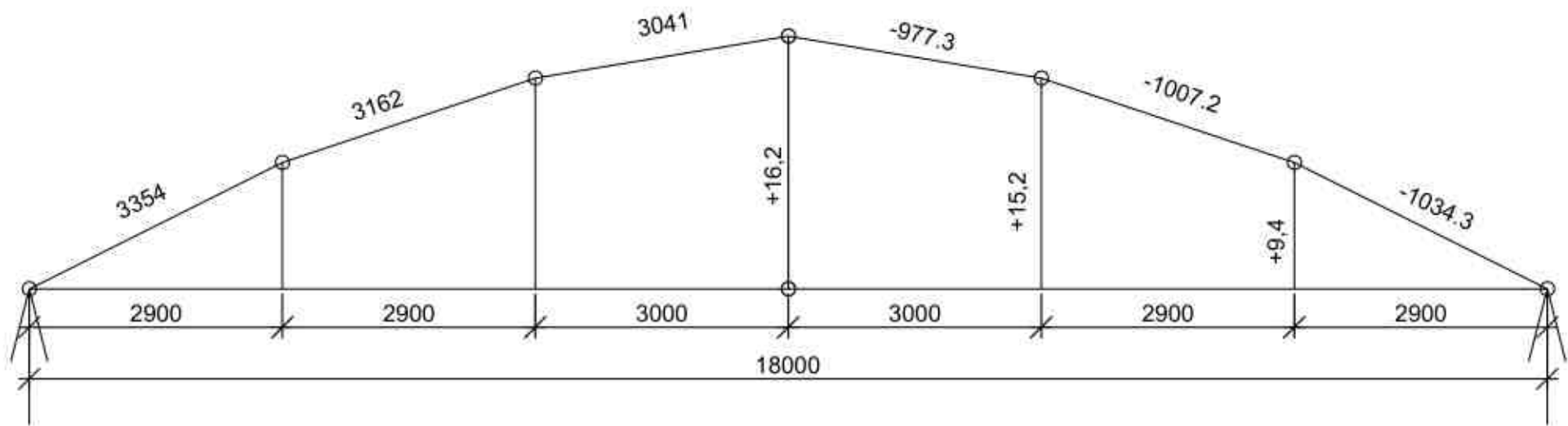
Спецификация арматуры

| Марка изд. | Поз. | Наименование       | Кол. | Масса 1дет,кг | Масса изд,кг |
|------------|------|--------------------|------|---------------|--------------|
|            |      | Колонна К1         |      |               |              |
|            |      | Каркасы сварные    |      |               |              |
|            |      | КП1                | 1    | 68.14         | 68.14        |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 1          |      | Ø22 L=4530         | 4    | 16.5          | 66           |
| 2          |      | Ø6 L=370           | 26   | 0.08          | 2.14         |
|            |      | КП2                | 1    | 131           | 131          |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 3          |      | Ø22 L=5970         | 6    | 20.8          | 124.8        |
| 4          |      | Ø6 L=370           | 30   | 0.08          | 2.4          |
| 5          |      | Ø6 L=570           | 30   | 0.13          | 3.8          |
|            |      | КР1                | 2    | 4.83          | 9.7          |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 6          |      | Ø16 L=730          | 1    | 1.15          | 1.15         |
| 7          |      | Ø6 L=1290          | 8    | 0.29          | 2.3          |
| 8          |      | Ø6 L=1190          | 1    | 0.26          | 0.26         |
| 9          |      | Ø6 L=1090          | 1    | 0.24          | 0.24         |
| 10         |      | Ø6 L=990           | 1    | 0.22          | 0.22         |
| 11         |      | Ø6 L=890           | 1    | 0.20          | 0.20         |
| 12         |      | Ø6 L=790           | 1    | 0.18          | 0.18         |
| 13         |      | Ø6 L=690           | 1    | 0.15          | 0.15         |
| 14         |      | Ø6 L=590           | 1    | 0.13          | 0.13         |
| 21         |      | Ø10 L=1170         | 2    | 0.72          | 1.4          |
|            |      | Сварные сетки      |      |               |              |
|            |      | С1                 | 3    | 1.8           | 5.4          |
|            |      | Детали             |      |               |              |
|            |      | АI ГОСТ 5781-82*   |      |               |              |
| 15         |      | Ø8 L=370           | 12   | 0.15          | 1.8          |
|            |      | Фундамент ФФ1      |      |               |              |
|            |      | Сборочные единицы  |      |               |              |
|            |      | Детали             |      |               |              |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 16         |      | Ø20 L=1030         | 12   | 2.54          | 30.5         |
|            |      | Сварные сетки      |      |               |              |
|            |      | С2                 | 2    | 32.4          | 65           |
|            |      | С3                 | 1    | 12.9          | 13           |
|            |      | Детали             |      |               |              |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 17         |      | Ø10 L=2350         | 11   | 1.45          | 16           |
| 18         |      | Ø10 L=2050         | 13   | 1.26          | 16.4         |
| 19         |      | Ø10 L=1170         | 9    | 0.72          | 6.5          |
| 20         |      | Ø10 L=870          | 12   | 0.54          | 6.4          |

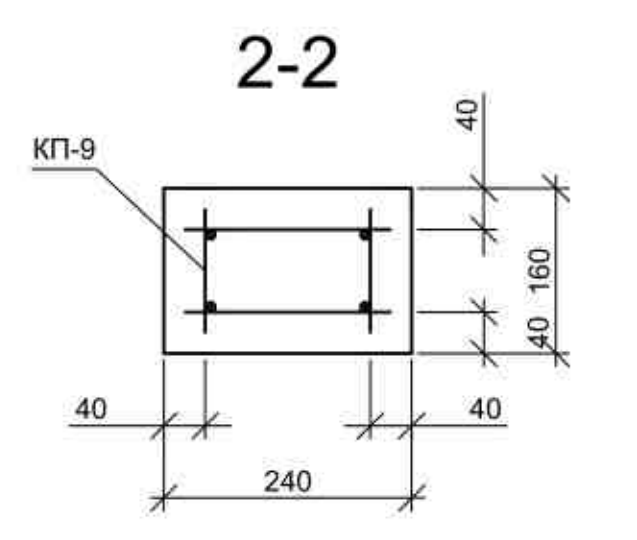
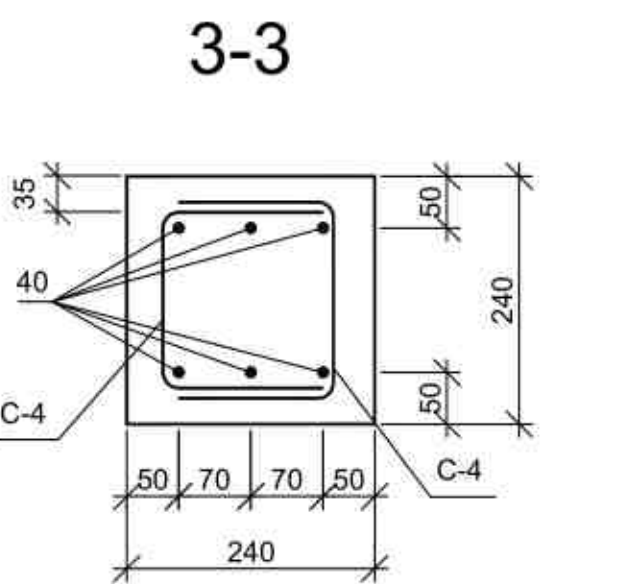
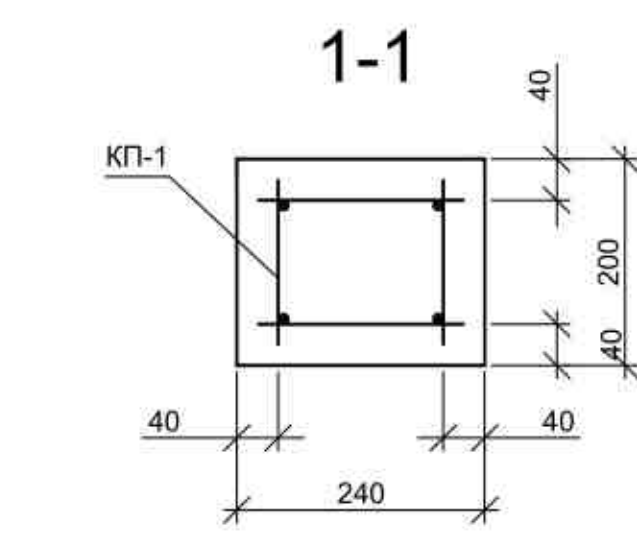
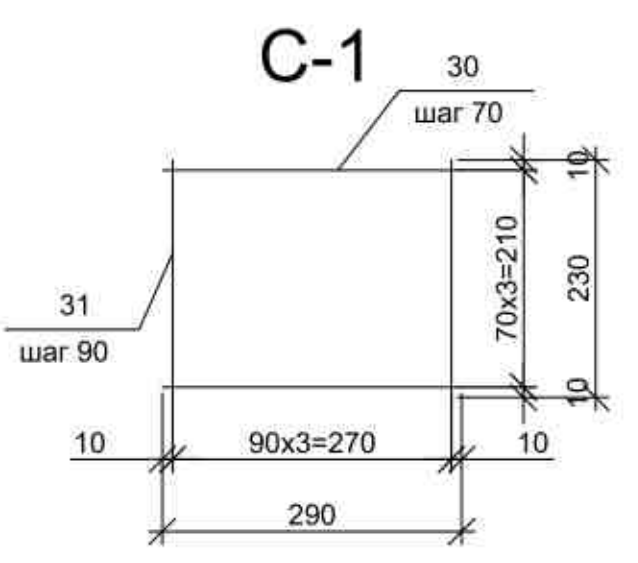
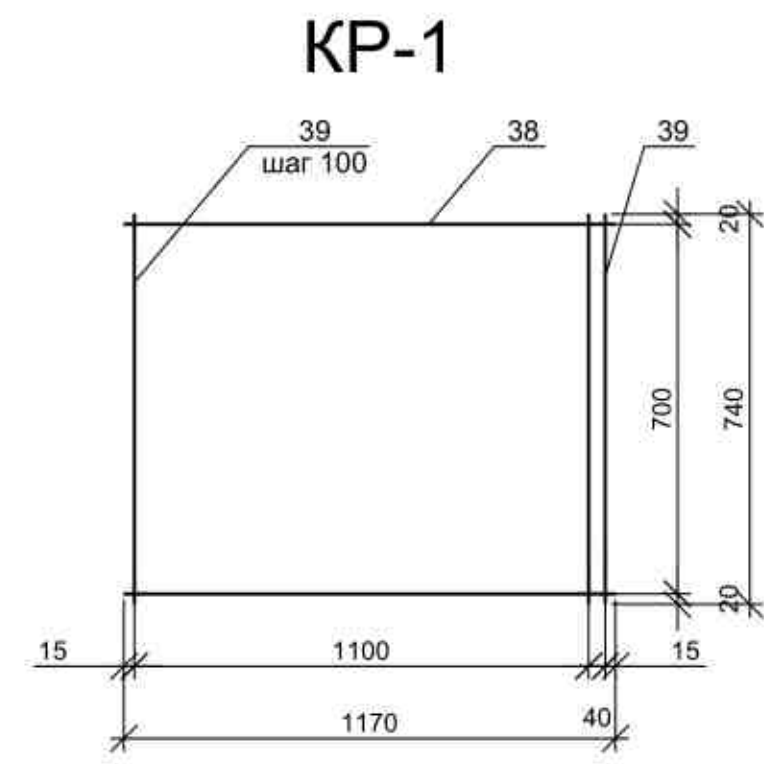
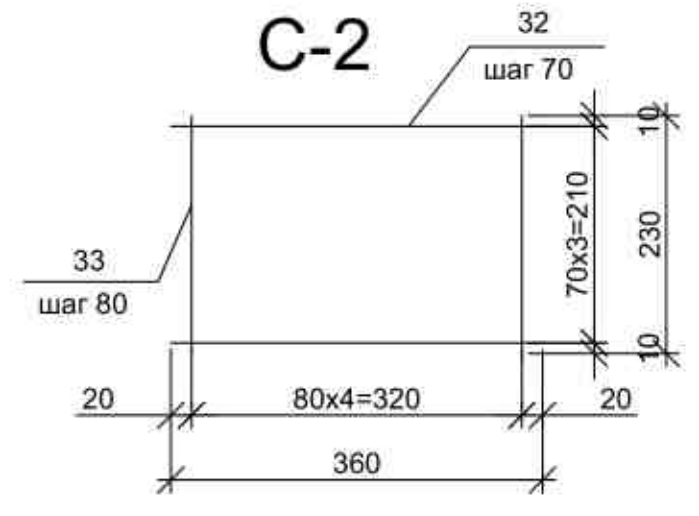
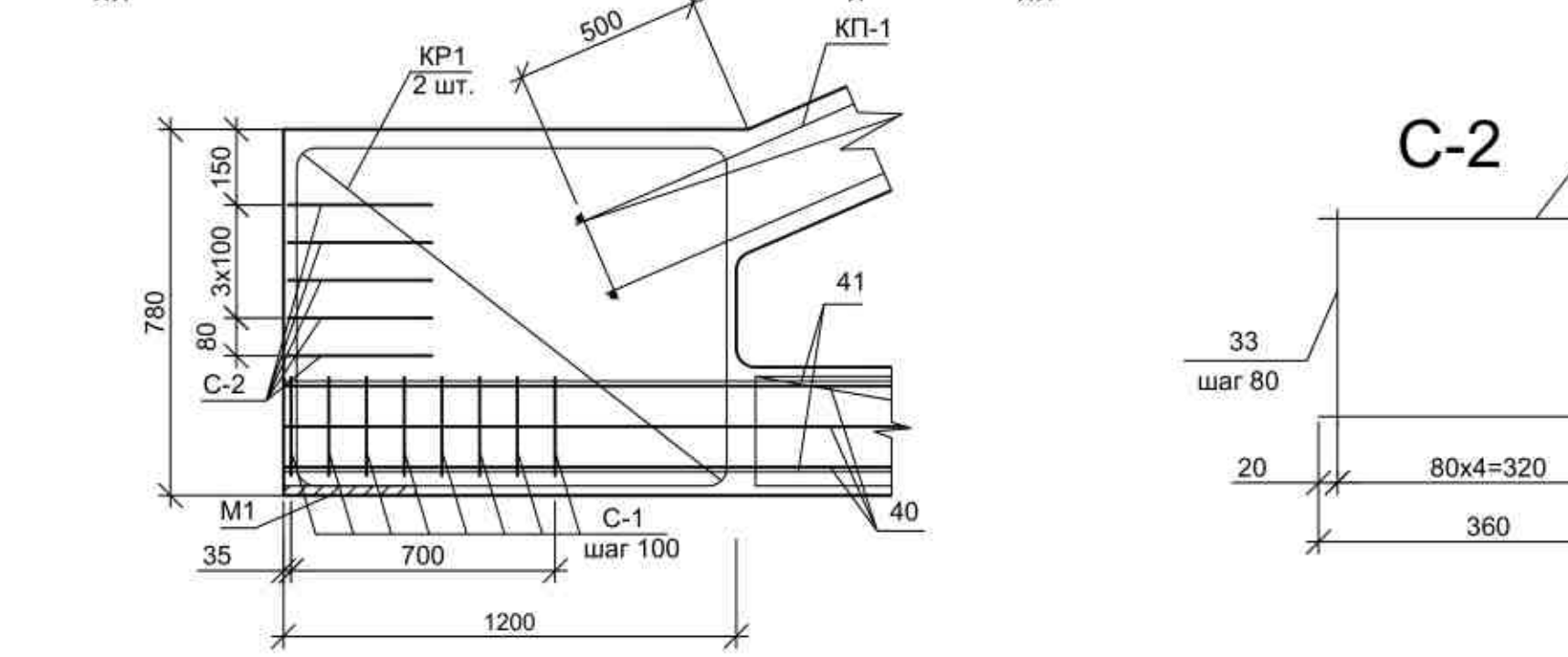
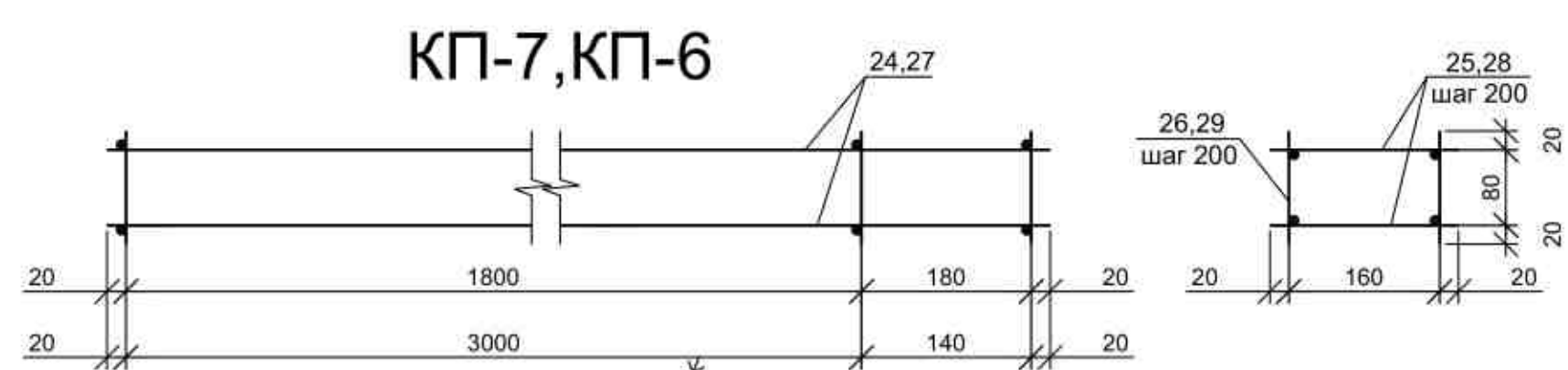
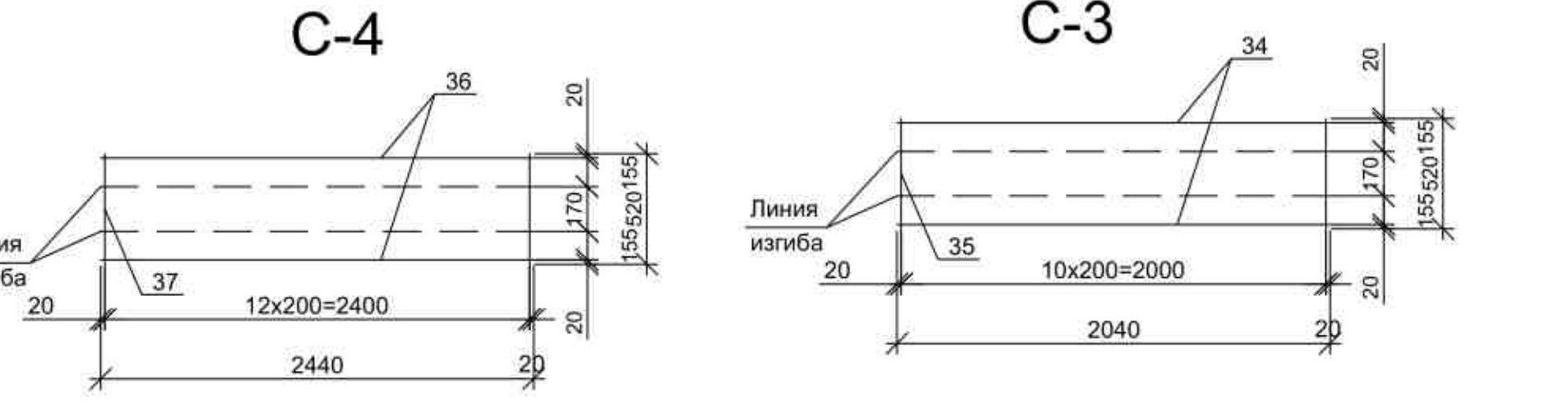
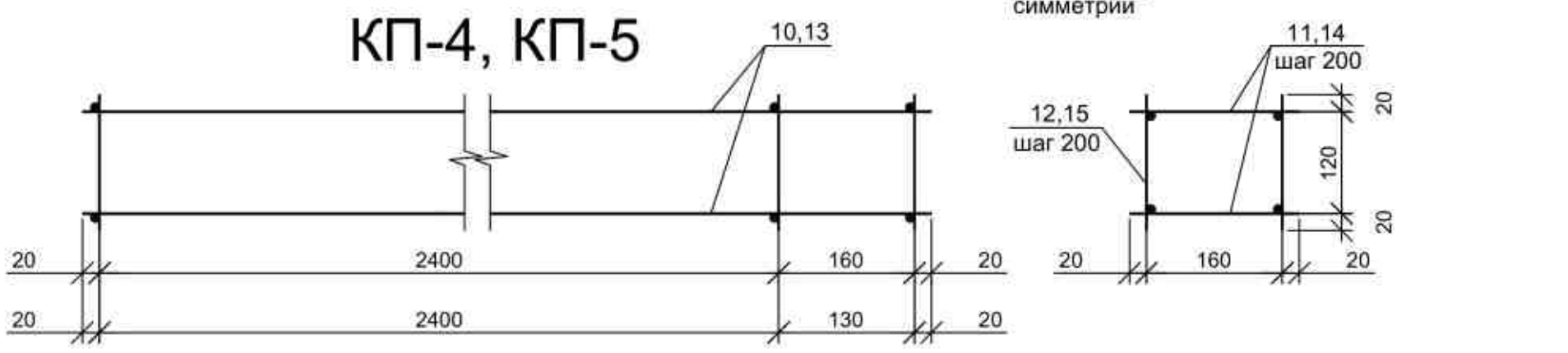
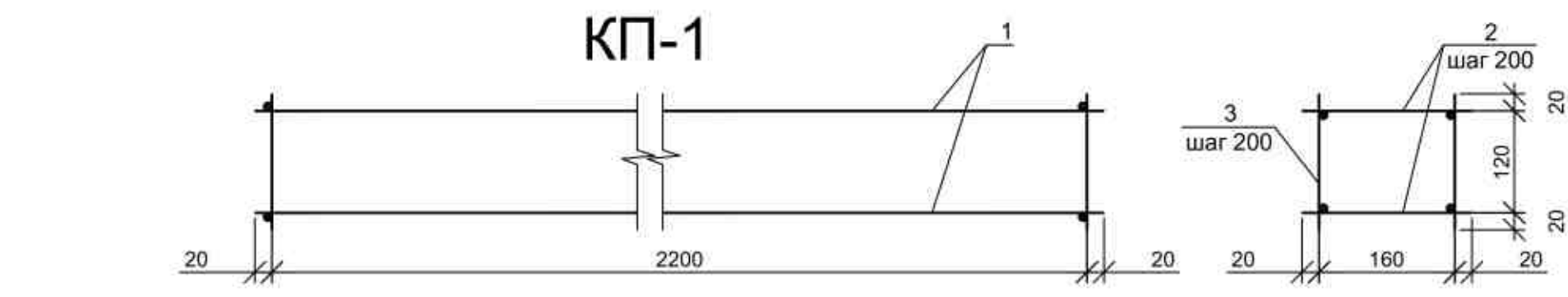
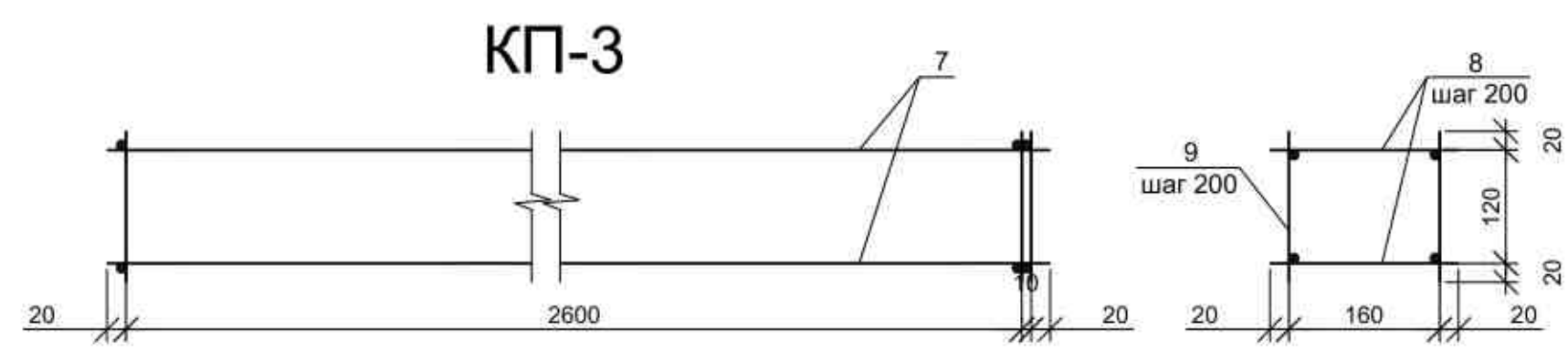
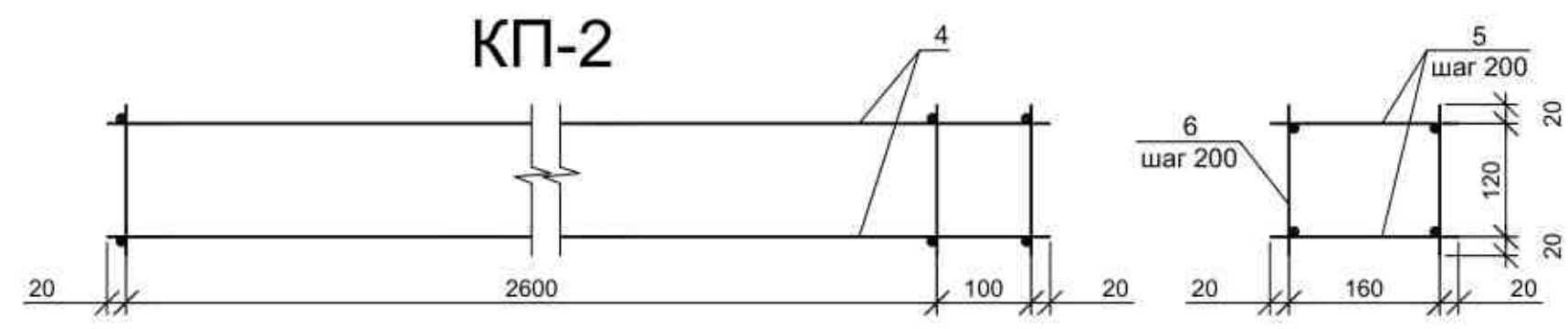
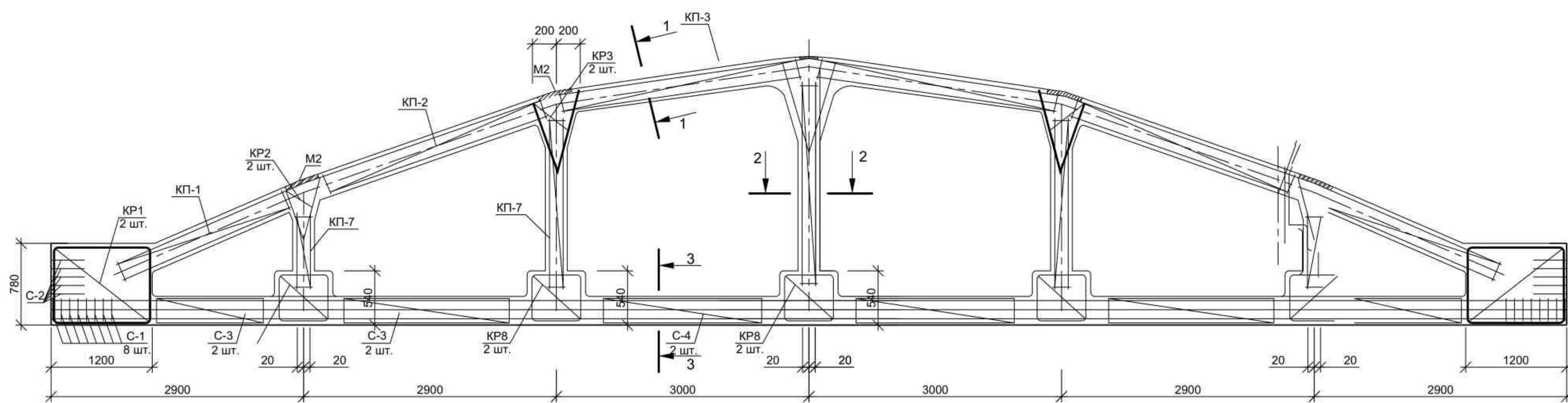
1. Проект выполнен согласно СНиП 2.03.01-84\*  
2.Класс бетона по прочности на сжатие для К2 В15  
3.Класс бетона по прочности на сжатие для ФФ1 В20  
4. Расчётное давление на грунт 0,35МПа

|                                   |              |              |      |
|-----------------------------------|--------------|--------------|------|
| ВГАСУ 06-11-2899 КП . гр 154      |              |              |      |
| Курсовой проект №2                |              |              |      |
| Зав.каф.                          |              | подпись      | дата |
| Принял                            | Васильев А.В |              |      |
| Выполнил                          | Тимофеев Л.  |              |      |
| Несущие конструкции промздания    |              | стадия       | лист |
|                                   |              | У            | 3    |
| Опалубочные чертежи               |              | ВГАСУ        |      |
| Схема армирования К2,ФФ1, разрезы |              | Кафедра ЖБКК |      |

Расчётная схема Ф1



Опалубочный чертёж и схема армирования Ф1



Спецификация арматуры

| Марка изд. | Поз. | Наименование       | Кол. | Масса 1дет,кг | Масса изд,кг |
|------------|------|--------------------|------|---------------|--------------|
|            |      | Ферма Ф1           |      |               |              |
|            |      | Каркасы сварные    |      |               |              |
|            |      | КП-1               | 2    | 8.9           | 18           |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 1          |      | Ø12 L=2240         | 4    | 2             | 8            |
|            |      | AI ГОСТ 5781-82*   |      |               |              |
| 2          |      | Ø6 L=200           | 12   | 0.04          | 0.5          |
| 3          |      | Ø6 L=160           | 12   | 0.035         | 0.4          |
|            |      | КП-2               | 2    | 10.9          | 22           |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 4          |      | Ø12 L=2740         | 4    | 2.4           | 9.7          |
|            |      | AI ГОСТ 5781-82*   |      |               |              |
| 5          |      | Ø6 L=200           | 15   | 0.04          | 0.7          |
| 6          |      | Ø6 L=160           | 15   | 0.035         | 0.5          |
|            |      | КП-3               | 2    | 10.9          | 22           |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 7          |      | Ø12 L=2650         | 4    | 2.4           | 9.7          |
|            |      | AI ГОСТ 5781-82*   |      |               |              |
| 8          |      | Ø6 L=200           | 15   | 0.04          | 0.7          |
| 9          |      | Ø6 L=160           | 15   | 0.035         | 0.5          |
|            |      | КП-4               | 2    | 10.3          | 21           |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 10         |      | Ø12 L=2600         | 4    | 2.3           | 9.2          |
|            |      | AI ГОСТ 5781-82*   |      |               |              |
| 11         |      | Ø6 L=200           | 14   | 0.04          | 0.5          |
| 12         |      | Ø6 L=160           | 14   | 0.035         | 0.6          |
|            |      | КП-5               | 2    | 10.3          | 21           |
|            |      | АIII ГОСТ 5781-82* |      |               |              |
| 13         |      | Ø12 L=2570         | 4    | 2.3           | 9.2          |
|            |      | AI ГОСТ 5781-82*   |      |               |              |
| 14         |      | Ø6 L=200           | 14   | 0.04          | 0.5          |
| 15         |      | Ø6 L=160           | 14   | 0.035         | 0.6          |
|            |      | Детали             | 2    |               |              |
|            |      | К-7 ГОСТ 13840-68  |      |               |              |
| 40         |      | Ø15 L=18000        | 6    | 23.48         | 141          |

1. Проект выполнен согласно СНиП 2.03.01-84  
2.Класс бетона по прочности на сжатие для Ф1 В30  
3. Предварительно напряжённая арматура из канатов К7 устанавливается с натяжением на упоры механическим способом =1200МПа

|                                         |               |                       |      |        |
|-----------------------------------------|---------------|-----------------------|------|--------|
| Курсовой проект №2                      |               |                       |      |        |
| Зав.каф.                                |               | подпись               | дата |        |
| Принял                                  | Васильев. А.В |                       |      |        |
| Выполнил                                | Тимош. Л.     |                       |      |        |
| Одноэтажное промздание                  |               | стадия                | лист | листов |
|                                         |               | У                     | 2    | 3      |
| Расчётная схема Ф1,сечения,узлы каркасы |               | ВГАСУ<br>Кафедра ЖБКК |      |        |