TCU VIA – 26S

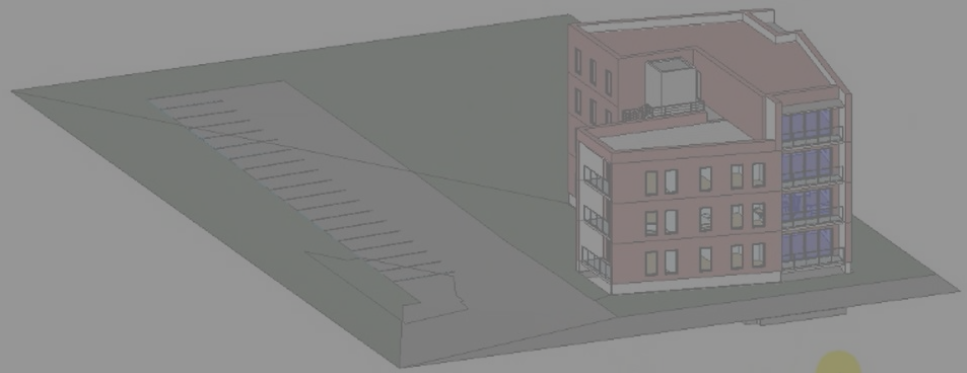
VIA University College

5.01-01 INTRODUCTION

5th Semester

5.01 CIVIL ENGINEERING CONSTRUCTION

- Subjects
- Assignment
- Groupwork
- Hand in
- Presentation
- BIM / Revit model



Welcome to Module 1 - *Civil Engineering Construction*

In this module you will work with and learn something about:

- ***Balconies***
- ***Prefabricated elements***, *light and heavy*
  - ***Timber*** *elements – light constructions*
  - ***Concrete*** *elements – heavy constructions*
- ***Thermal insulation*** *and* ***moisture protection*** *of base-ment exterior walls*
- ***Sustainability***

Assignment 5.01-A01 - *Civil Engineering Construction*

- **Group work**

- The assignment is to be **ready for presentation** on **Thursday 17th of September at 14:00**.

- The assignment must be **uploaded** to the website **Thursday no later** than **12:00**.

- Remember your group no. and file name

Assignment 5.01-A01 - *Civil Engineering Construction*

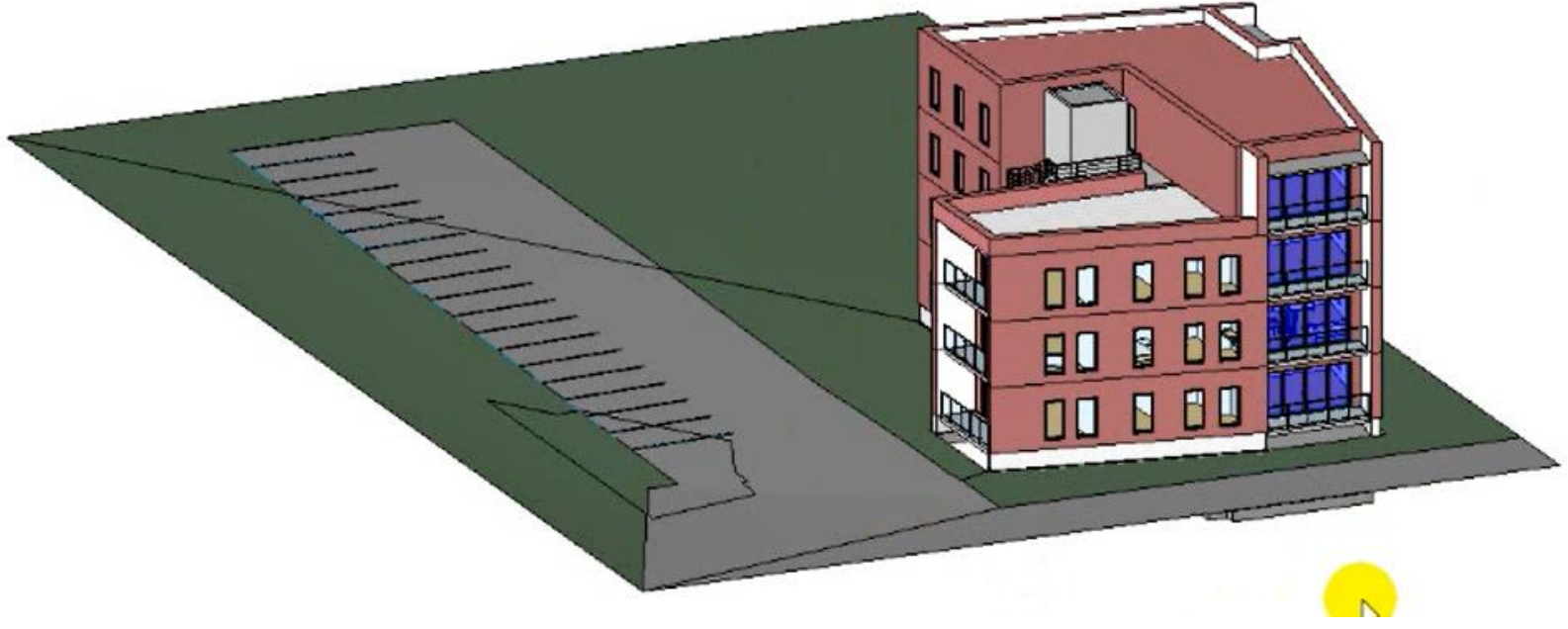
- The assignment must be done as a **PowerPoint** presentation.
- All groups **upload** the powerpoint **with speech**.
- **All students** in the group must **show and tell about at least one slide** and **at least in one minute** - and it must be clearly indicated by name on the PowerPoint who is speaking.

Test 5.01-T01 - *Civil Engineering Construction*

- On **Wednesday 16th of Sep** there will also be a **test**.
- The test is **individual**.
- This means that **each student** in the group will receive a **grade** in module 5.01, which is an **average of the** grade for the **group work and the** grade for the **test**.
- The test is online at the **TCU-VIA Website**.

Assignment 5.01-A01 - *Civil Engineering Construction*

With this assignment, you have been given a **3D Revit model** of a **4-storey apartment building** in red **brickwork**.



Assignment 5.01-A01 - *Civil Engineering Construction*

- The leadership of **TCU** would like to **build this building** on a site on the **TCU Campus**.
  They would like to use it as a **guest housing for lecturers visiting TCU** for longer or shorter periods.

- However, it has been decided that **the building must be modified**.
  Building with **bricks is not allowed** in China and TCU would also like to **give the building a more sustainable look**.

Assignment 5.01-A01 - *Civil Engineering Construction*

- They suggest that the **bottom of the building** will have an **exterior of heavy materials**, while the **top floor** will have **exterior wood cladding**.

- However, the **loadbearing structure** internally can be kept as **concrete elements**, **or** alternatively changed to being wholly **timber elements**.

- They want you to consider **sustainability** in relation to building materials.

Assignment 5.01-A01 - *Civil Engineering Construction*

On the basis of Revit 3D model given to you, the leadership would like **each student-group to do the following**:

1. Come-up with a **solution to the external walls**.

2. **Show which walls are load-bearing** and which are non-load-bearing (based on the slab-span).
   Clue: look at the cross-section though the building for help in making your decision.

Assignment 5.01-A01 - *Civil Engineering Construction*

On the basis of Revit 3D model given to you, the leadership would like **each student-group to do the following**:

3. The existing balconies are recessed balconies. Come-up with a **proposal for the balconies as semi-recessed** – i.e., with part of each balcony being half recessed and half overhanging. Alternatively, **the whole balcony may be overhanging**.
   Suggest what the balconies should be made of and show a typical plan of them – use your imagination!

Assignment 5.01-A01 - *Civil Engineering Construction*

On the basis of Revit 3D model given to you, the leadership would like **each student-group to do the following**:

4. Present a **plan of the top floor** showing where these timber prefabricated elements are.
   Show **vertical details** of how the **wall elements** are combined to the floor elements and their joint to each other, etc.
   Show also the **plans and 3D views** of the **new balcony** design, and suggest what they are made of.

Assignment 5.01-A01 - *Civil Engineering Construction*

On the basis of Revit 3D model given to you, the leadership would like **each student-group to do the following**:

5. **What should the roof be made of?**
   Show a sketch of the roof element, either as a free-hand sketch, an illustration from a supplier / manufacturer or maybe as a 3D drawing from Revit.

Welcome to Module 1 - *Civil Engineering Construction*

- For inspiration, there are **6 videos** on the topics on our website.
- You can also find **Chinese literature** and / or **websites** on the topics.
- Or you can find **Chinese prefabricated building elements**.