Tutorial Name: Revit Structure

1 – Aims

The objectives of this Revit Structure tutorial are as follows:

To learn about Revit's tools to build BIM models of building structures: beams, structural walls, columns, slabs, trusses, bracing systems, beam systems, insulated footings, wall footings, and foundation slabs.

To learn about Revit's tools for entering reinforcement bars into concrete elements of the BIM model.

To learn about Revit's tools for detailing the joints of the steel structure elements.

2 - Learning methodology

We recommend that you perform the Revit tutorial in Block VII before you complete this Revit Structure tutorial.

The teacher will give an explanation about Revit Structures of 10 min duration.

Students will read this tutorial and watch the videos.

Students will perform the following proposed exercises using the corresponding Revit tools whose use is explained in the videos of this tutorial. These exercises are:

- Exercise 1: Creation of e steel frame BIM model, consisting of two structural columns and two beams. The frame dimensions and the rolled steel profiles used will be chosen by the student. This model will include the detail of the beam-column joint.

![BIMVET3]

**Revit Structure
A BIM tutorial**

Co-funded by the
Erasmus+ Programme
of the European Union
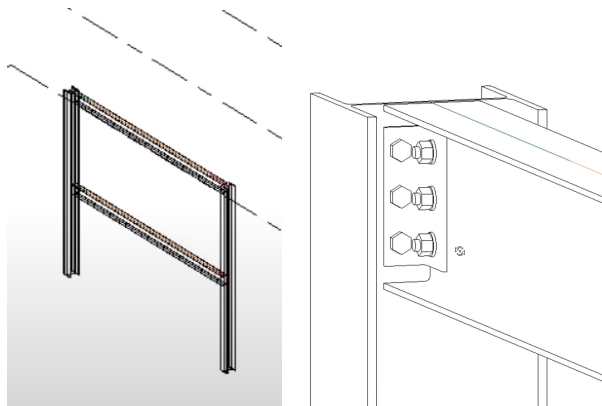
- Exercise 2: Construction of the BIM model of the building basement perimeter wall. This model will include a foundation slab and the reinforcement bars of this slab. The student will choose the dimensions of the wall, of the foundation slab and of its reinforcement bars.
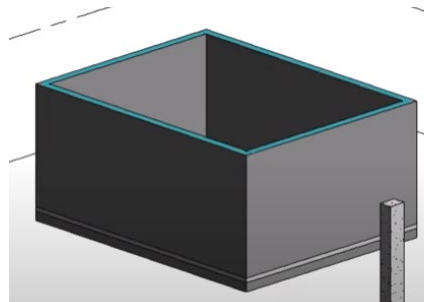
- Exercise 3: Construction of a RC structural column in Revit with its reinforcement bars. The student will choose the dimensions of the column and its reinforcement.
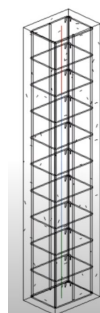
So that the teacher can evaluate the achievement of this practice, each student will write a report of each exercise performed.

3 – Tutorial duration

The practice described in this tutorial will be done in a computer room.

It will last 6 teaching hours.

4 – Necessary teaching resources

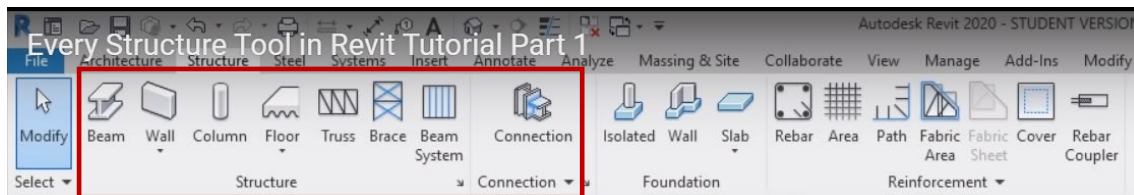Computer room with computers connected to the internet.

Required software: Revit

Hardware required: Pcs

5 – Contents & tutorial

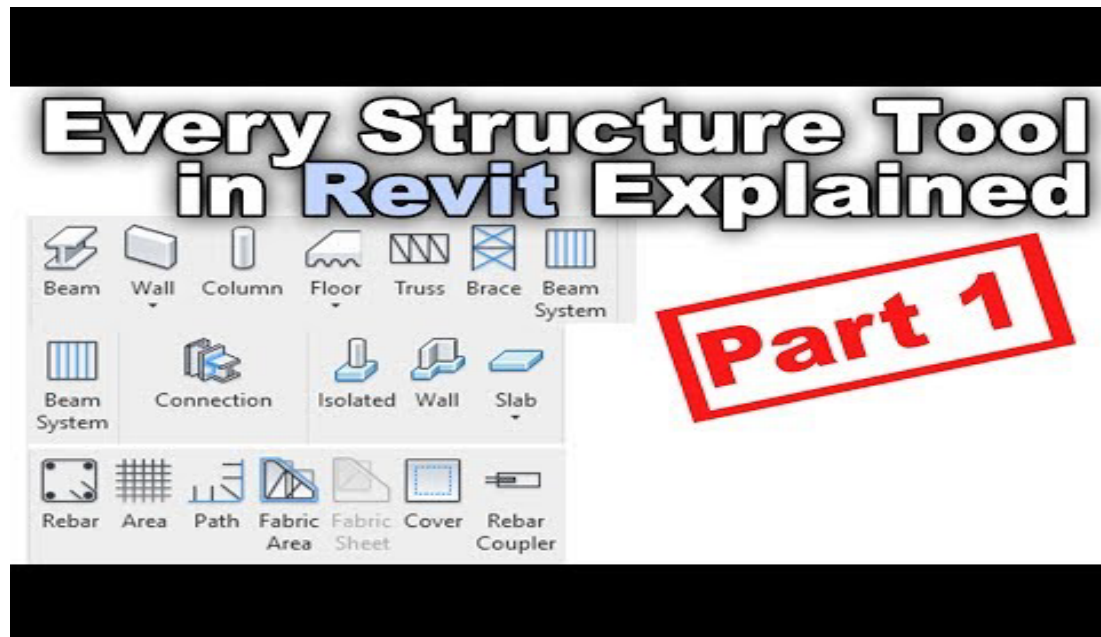### 5.1 – Video 1. Every structure tool in Revit Structure. Part 1.

In this first part of the video tutorial the use of the tools indicated in the following figure will be shown:

These tools allow to enter in a BIM model: beams, structural walls, columns, slabs, trusses, bracing systems, beam systems and joints between steel structural elements.
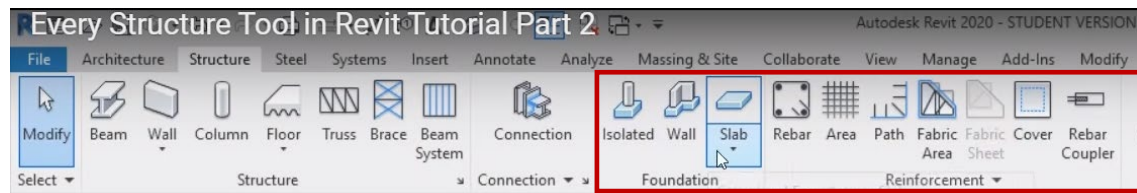
Click with the mouse on the following image to watch the video 1 of Balkan Architect

https://www.youtube.com/watch?v=QdL10Twm-CA&t=131s

**5.2 – Video 2. Every structure tool in Revit Structure. Part 2.**

This second part of the video tutorial will show the use of the tools indicated in the following figure:

These tools allow to enter in a BIM model: Insulated footings, footings for walls, foundation slabs, reinforcement bars for concrete beams and columns, reinforcements bars for concrete slabs, etc.

Click with the mouse on the following image to watch the video 2 of Balkan Architect

https://www.youtube.com/watch?v=DKpo7LSF1v4&t=98s
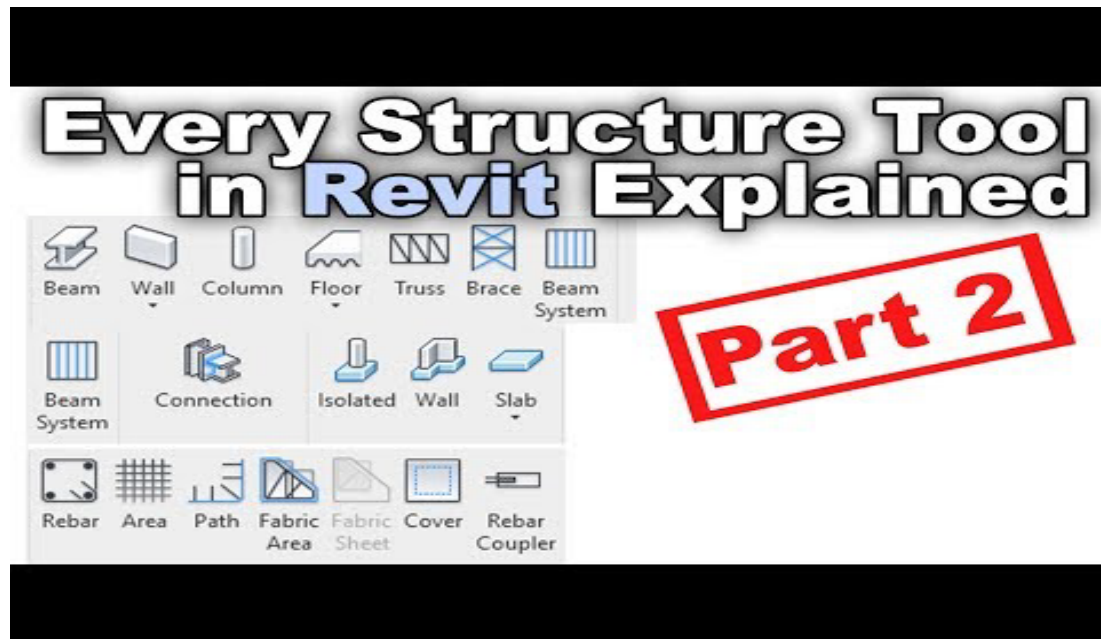
6 - Deliverables

So that the teacher can evaluate the achievement of this practice, the students will write a report for each of the exercises proposed in the learning methodology section.

7- What we have learned

To use Revit tools with which BIM models of structures can be built.