

Autodesk® Revit® Architecture 2011

## Getting Started – Video Tutorials

### Instructor Handout

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September 2010

### **Introduction:**

This tutorial is conceived to allow an easy start with Autodesk Revit Architecture and to get an extensive overview of the BIM based work.

"Getting Started" is the first Tutorial of a series of three Tutorials for Autodesk Revit Architecture 2011. The Tutorials "Advanced Detailing" and „ Professional Mass Modeling “ are based on this first Tutorial and give you a deep insight into Autodesk Revit Architecture.

### **Information:**

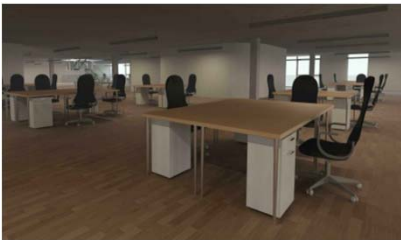
The files were optimized for demonstration purposes, we recommend to use the matching file to every video.

We recommend to use the latest version of Autodesk Revit Architecture for this training.

You can find more learning documents and useful information on the [Autodesk® Education Community](#).

The videos were optimized for Microsoft® Windows Media player. We recommend watching the videos in full screen mode.

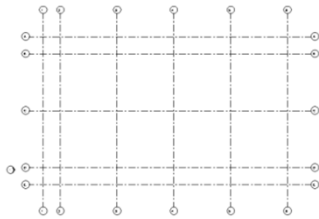
The complete building is available. (RAC\_2011\_ENU\_Tutorial\_1.rvt). To comprehend the steps individually use the Revit Architecture files (step\_xx.rvt) for each video.



## Student Expert

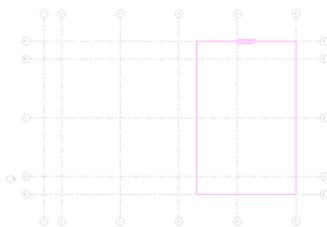
## Step 02

### Grid & levels



#### Grid

- create 5 vertical grid lines  
grid line 1 (3m, distance), grid line 2-5 (10m distance)
- rename grid line
- create 5 horizontal grid lines  
grid A-B & D-E (3m distance) and B-C & C-D (10m distance)
- create 4 additional levels  
offset: 3m
- adjust the grid and the level lines

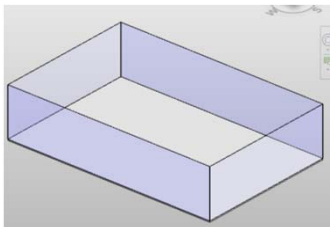


#### Floor

- create floor: generic 300mm  
start > floor > structural floor  
lock the floor boundaries to the grid

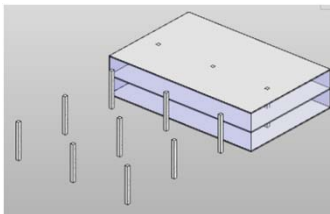
## Step 03

### Walls, columns & floor modifications



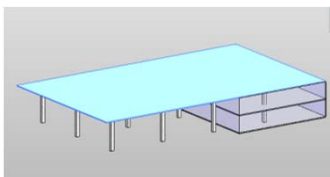
#### Walls

- draw walls  
type: generic 300mm  
base offset : level 1  
top offset: level 3  
lock the walls to the grid lines
- change type  
select the wall chain  
element properties > type: curtain wall: standard
- in the view: east, copy the floor in level 2 and 3



#### Columns

- place columns  
start > column > structural column  
element properties > type: M\_Concrete-Square-Column 500mm x 500mm  
option bar > height: level 3
- place columns on the grid lines intersections  
select grid lines

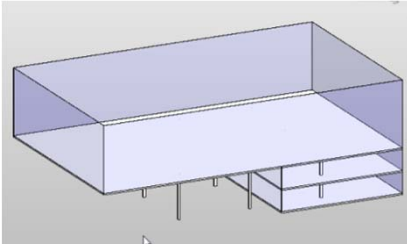


#### Edit floor boundaries

- extend floor  
modify > edit boundary  
move the left boundary to the grid line 1  
lock boundary to the grid line
- join geometry

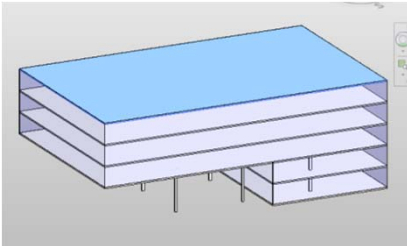
## Step 04

Split element, match properties, attach element to top



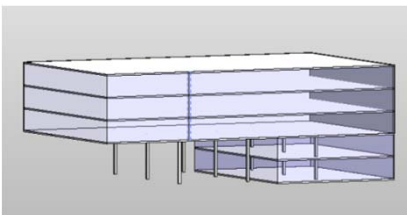
### Walls

- open level 3 view
- draw walls
  - type: Curtain Wall: Standard
  - top constraint: up to level 6
- align walls to the grid lines
- lock constraint



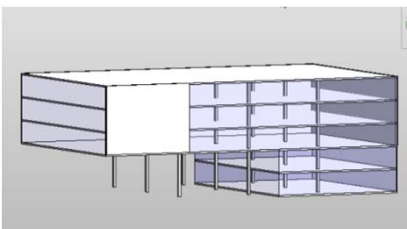
### Paste aligned to selected levels

- copy floor
  - with Ctrl+C copy the floor to the clipboard
- paste floor
  - paste aligned to selected levels
  - select level 3, 4 und 5



### Split element and match type properties

- changing wall type
  - select the walls of the north and west facade
  - change the element properties into type: Exterior Wall – Wood Panels
- split the wall in the east facade
  - select wall
- match type properties
  - first select the wall of the north facade (type: Exterior Wall – Wood Panels)
  - then the splitted wall of the south facade

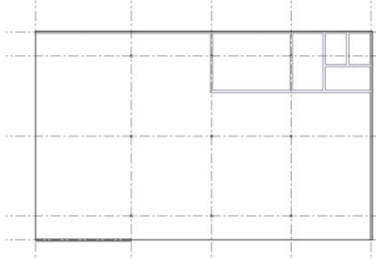


### Attach columns to top

- select all columns
- attach columns to the top floor

## Step 05

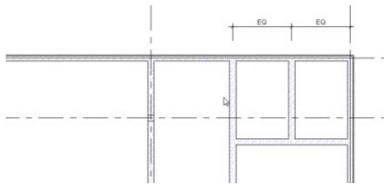
### Interior walls, trim / extend elements & doors



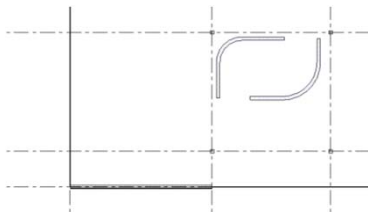
#### Interior walls

- draw walls  
element properties > type: Basic Wand: Generic - 300mm  
base constraint: level 3  
top constraint: level 4

- trim/extend walls  
modify > trim/extend to corner



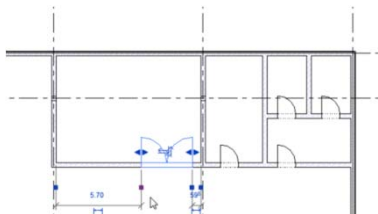
- set the same distance between walls
- dimensions  
set a dimension to the interior walls  
activate the EQ-Symbol



- create the kitchen  
type: Basic Wall Interior – Blockwork 140  
draw a rectangle: 5 x 8.5m  
create fillet arch's

#### Doors

- place door  
type: M\_Single-Flush 0915 x 2134 mm  
Place door  
change the opening direction with the space bar



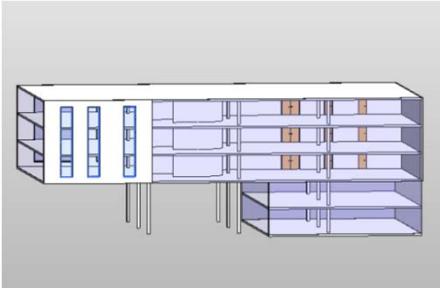
- change doors  
element properties > type: Door Double Flush - Variable

## Step 06

### Windows, stairs & shaft opening

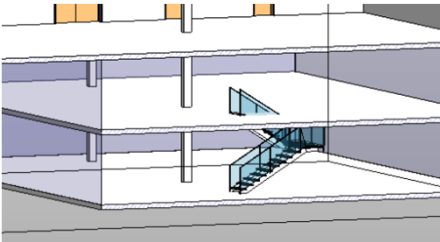
#### Windows

- create windows  
start > window > load family  
additional files  
change the height and width  
copy and mirror the windows



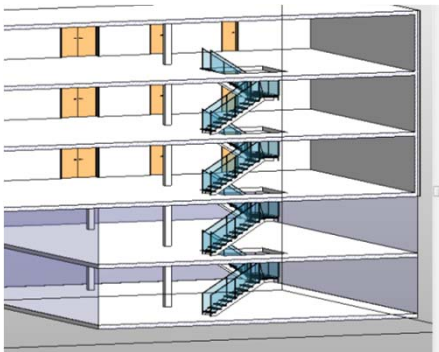
#### Stairs

- draw stairs  
type: Steel Stair - MPK  
element properties > desired number of risers: 17
- railing - type: Glas – MPK  
draw the run and the landing
- multistory stair  
select stair  
element properties > multistory top constraint: Level 5



#### Shaft opening

- create a shaft opening  
draw the shaft boundaries around the stair  
element properties > base constraint: level 1  
element properties > top constraint: Level 4



## Step 07

### railings & modification of curtain walls



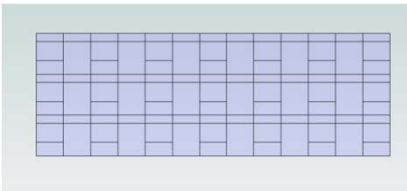
#### Railings

- create railings
- draw a railing in level 2
- element properties > type: Glas - MPK



#### Modification of curtain walls

- create a curtain grid
- draw grid line
- create a curtain grid
- select curtain wall
- vertical grid pattern>
- layout: fixed distance; distance: 2m
- horizontal grid pattern>
- layout: fixed distance; distance: 3m

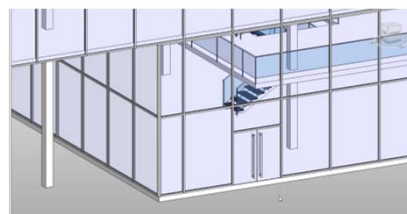


- edit the curtain grid
- create curtain grid: all except picked
- draw, move, copy
- delete grid segment
- curtain mullion
- start > mullions > all grid lines



#### Add a curtain wall element

- add a window element
- select curtain wall element
- change element properties
- type: M\_Curtain Wall Awning

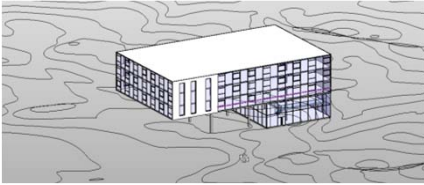


#### Split curtain grid

- split segment
- delete mullion
- select segment > change into a door element

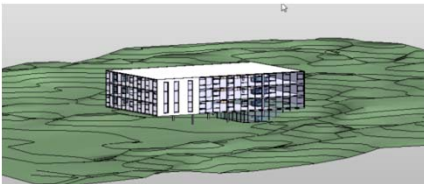
## Step 08

### Import Site, Building Pad & Place Site Components



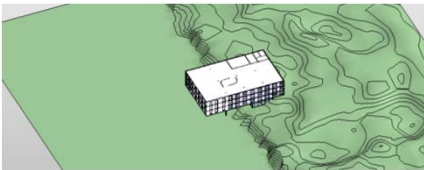
#### Import site

- import DWG-File  
insert > import CAD  
Additional Files/ ISO\_lines.dwg



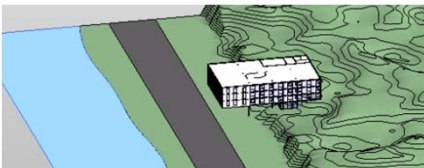
#### Create site

- toposurface > create from import > select import instance  
select ISO-Lines



#### Edit site

- edit surface  
select site  
select points and set the height to 0.00 m



- draw the road  
massing & site> subregion  
sketch the road  
element properties > material: Site – Tarmacadam

- creating the river side  
massing & site > split surface  
draw the river side with spline tool  
element properties > material: site – water  
change the render appearance



#### Building pad

- add a building pad  
massing & site > building pad  
sketch the pad

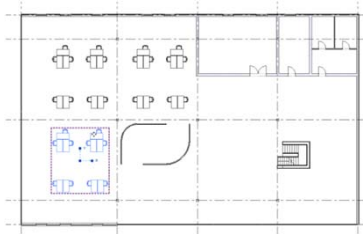


#### Place site component

- add site components  
choose and place trees  
change tree types

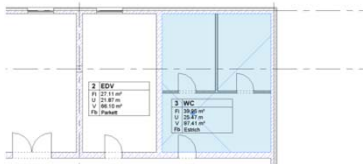
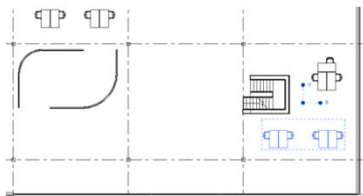
## Step 09

### Groups, rooms & room tags, color scheme



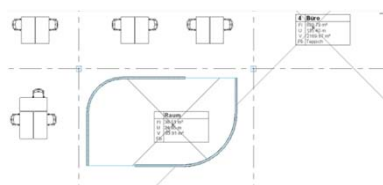
#### Groups

- copy furniture
- create a group
- copy group
- edit group
- select the furniture
- change the furniture type
- duplicate group
- remove elements from the group
- delete elements from the group



#### Rooms

- add room
- start > room
- name the room
- calculate the room volume
- place predefined rooms
- change the walls properties to: non room bounding



#### Room separation lines

- add a separation line
- sketch line
- place room



#### Color scheme

- create a color scheme
- create a color scheme from the names
- add legend

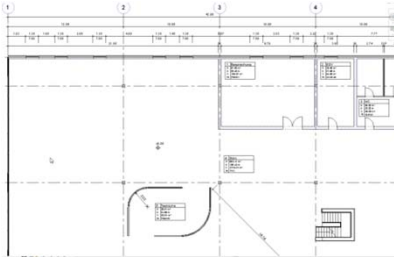
#### Room schedule

- change the floor finish in the room schedule



## Step 10

### Dimensions

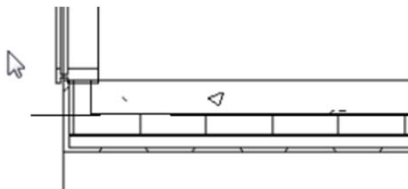


#### Create dimensions

- place a dimension
- set a dimension between individual references
- change references
- diagonal dimension & radial dimension
- measure entire walls
- measure openings, intersecting walls and intersecting grids
- measure between two references.

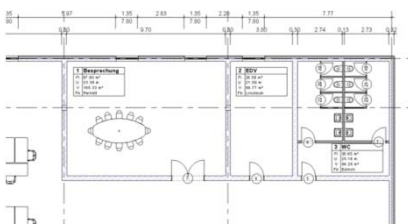
## Step 11

### Wall construction, wall wrapping, schedules, tag elements, section



#### Wall construction & wall joints

- change the wall construction
- select an exterior wall
- insert two layers
- assign material and thickness
- activate wall wrapping at inserts and at the ends

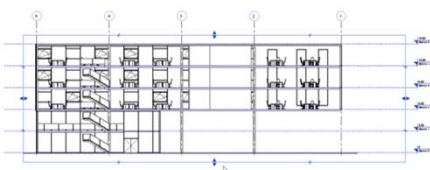


#### Tag elements

- tag doors
- tag by category
- click on a door
- tag all
- door tags – M\_Door Tag

#### Schedules/quantities

- create schedule
- view > schedules > schedule/quantities
- category: doors
- add fields: type, level, mark, height, width
- edit schedule
- schedule properties > sorting/grouping
- sort by: level
- activate header and blank line
- changing the schedules
- change elements through the schedule



#### Section

- create section
- draw section Line
- divide section line
- edit the view range

## Step 12

### View Template, View Properties, Sheets

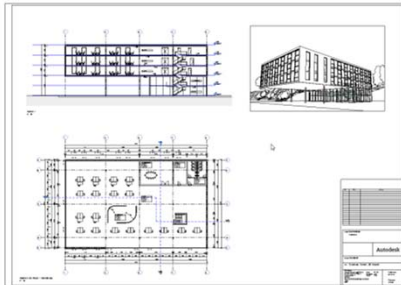
#### View template and view properties

- change view properties
  - change the scale: 1:100
  - change detail level: Fine
- save view properties
  - select level in the project browser
  - create view template from view
  - save view template
- apply the view template to the section
- edit elevation properties
  - modify the crop region
- hide elements/category in view
- create a camera in level 1
  - view > 3D-view > camera
  - place a camera
  - adapt view



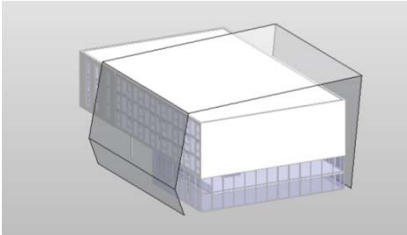
#### Sheets

- add a new sheet
- add views to the sheet
  - with drag and drop add the views to the sheet
- align views to the guide grid
- edit the title of the views
- change the title block



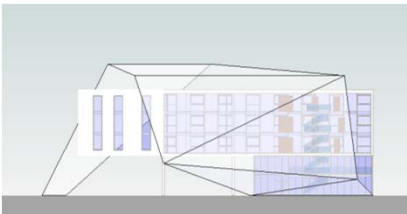
## Step 13

### Freeform



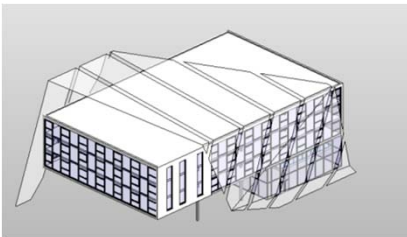
#### Freeform

- creating a mass
- set a work plane  
select the wall on the west side
- sketch a profile with lines
- duplicate profile with „pick lines“  
set work plane: Gridline 3
- create form
- edit form  
move surface/edges/points  
add edge
- create void  
set work plane  
sketch the profile
- create a void  
move surface/edges/points  
copy the void 6 times with a distance of 7m



#### Model by face

- type: curtain wall solar protection
- select surface
- create system

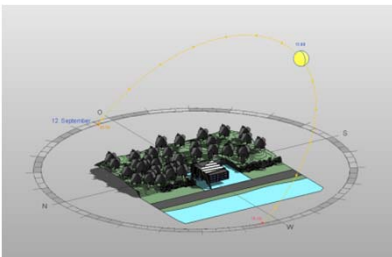


## Step 14

### Sun path, camera & navigation wheel, render properties

#### Sun path

- activate sun path  
view control bar > sun path activate  
edit daylight



#### Create camera & object wheel

- create a 3D-view
- select object wheel  
zoom, orbit, pan...



#### Rendering

- set render properties  
quality: medium  
resolution: Printer 150 DPI  
Lighting: Exterior: Sun only  
Background style: Sky: Few Clouds