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## How to use tracking – simple solution for quick modelling

### Your task:

You will create a simple structure using tracking mode. The building has 2 floors and on the second floor there is one diagonal wall.



#### Definition of settings for tracking:

1) Open a new empty project with material concrete. Tracking is controlled by a button at the bottom right corner of the 3D window. Switch it on.



Settings for tracking are under "Dot grid and tracking settings" under "Dot grid and tracking settings"

 You need to set one angle of rays. Open dialogue "Dot grid and tracking settings" and click button – "Setup for tracking ...". You will use the tracking ray with this angle for inserting the diagonal wall on the second floor.



Define a new angle 30°. Write the value to the row and click button Add. You should also check if the checkbox for "Snap to lines" is active.

#### **Modelling:**

1) You create the first level of the building in the working plane. You define 4 walls, 1 plate and 3

openings. For easy setting of the sizes you can activate snapping to the dotgrid . Now you can snap to the dotgrid and see the distance in a tooltip 5,000 m; 0,00 deg. The definition of the wall is in the next picture.

	Name	S1
	Туре	wall (80) 📃 💌
	Analysis model	Standard 🗾 💌
	Material	C20/25 🛛 🔽
	FEM model	Isotropic 📃 💌
	FEM nonlinear model	none 🗾 💌
	Thickness type	constant 📃 💌
	Thickness [mm]	300
	Member system-plane at	centre 🗾 💌
	Eccentricity z [mm]	0
	LCS Type	Standard 📃 💌
	Swap orientation	🗆 no
	LCS Angle [deg]	0,00
	Layer	Layer1 🛛 🔽
	Geometry	
	Height [m]	3,000
	Insertion point	bottom 💌

2)  $1^{st}$  wall starts in point 0,0,0. The size is 5m. Tracking tooltip shows the distance.



3) You create the 2<sup>nd</sup> wall from the End point of 1<sup>st</sup> wall. the size of the 2<sup>nd</sup> wall is 6m. See the next picture.



1st point of the 2nd wall

4) You will use a new type of Intersection snapping point and Tracking point to create the 3<sup>rd</sup> wall. The size of the 3<sup>rd</sup> wall is 5m.

Procedure to insert the 3<sup>rd</sup> wall:

- Insert 1<sup>st</sup> point of the 3<sup>rd</sup> wall
- Move the cursor over node in 0,0,0 and hold Shift. This node is automatically marked with a blue rectangle.
- This point now works as the Tracking point it means that from this point you can also use rays. Now you have two points with rays.
- The intersection point is in the intersection of two rays. A new intersection point is automatically marked with a little circle.



5) Then you can set the plate on walls. You create 3 openings in the walls. Create them anywhere.



You use the tracking rays for creating openings. The sizes are defined by the dotgrid.

- 6) The second floor is defined by 5 walls and you use the ray under 30 ° angle to create the 3<sup>th</sup> wall as a diagonal wall.
- 7) The  $1^{st}$  wall has the same size as the wall under it.



8) The 2<sup>nd</sup> wall is also of the same size as wall under it. The 3<sup>rd</sup> wall is shorter – the size is only 4m. You use the tracking ray under angle 30° from the end point of the 3<sup>rd</sup> wall and the Tracking point in the start point of the 1<sup>st</sup> wall. The intersections point is created by the ray under 30° and the ray from the new Tracking point in the left corner.



9) Now you can also create some openings to the walls.



10) Now you will define a roof. Use prompt (command line) to define the attic height.

 Select function Plate in the Structure tree menu and define the tracking point in the top node of the wall. Don't insert the 1<sup>st</sup> point! (It will be automatically inserted by Enter in the next step)



12) Move mouse on the ray down to show the direction. Now you write 0.3 (Just write 0.3 on the keyboard) and press Enter.



13) You move along the ray from the last point to the corner of the next wall – see the picture.



14) You define the edge of the wall as a tracking curve. Move over the edge and hold Ctrl. Curve is automatically highlighted by blue colour.



Now you can use the Intersection point of the curve and the ray.

15) Use the same approach to create the whole plate – using tracking line on edges and tracking rays from the last inserted point.

#### 16) Now you can see the result.



The final project with inserted Dimension lines and changed properties is in attached: final\_Dim.esa.