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ADVANTAGES OF ROOF SHAPING WITH SOLID MODELLING TOOLS IN AUTOCAD

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As CAD/CAM/CAE (Computer-Aided Design, Computer-Aided Manufacturing and Computer-Aided Engineering) software assistance in the engineering design and manufacturing process is becoming more broad-based nowadays, the popularisation of modern three-dimensional modelling methods among the civil engineering students becomes the necessity. In this paper the rudiments of shaping the roof geometry by means of solid modelling with AutoCAD tools has been presented. The methods have been illustrated by several examples, involving pitched roofs of fixed and varying slope. The roofs spanned over detached and adjacent buildings have also been discussed. Presented examples show many advantages of shaping the roof geometry with the assistance of solid modelling tools provided by AutoCAD, including the simplicity of determining the area of the roof surfaces and the bevel angles of the hip or valley rafters.
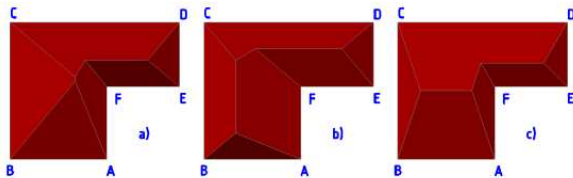

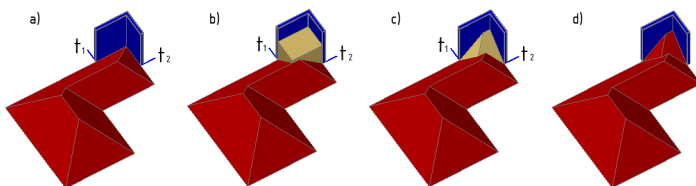Fig. 1 The models of the roof of varying slope spanned over the polygon ABCDEF

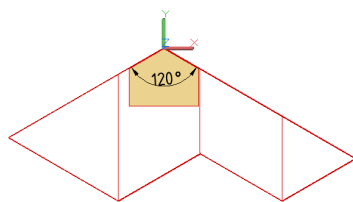Fig. 2 Shaping the model of the roof spanned over the adjacent building

Fig. 3 Determining of the hip rafter bevel angle

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