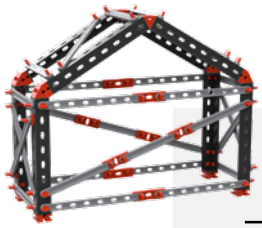


Model 11
Half-timbered house

Date

Name

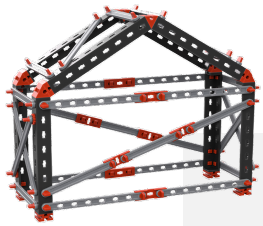
Class

THEMATIC TASK

1. Some of the nodes on the front and back are not designed as joints. Due to the triangles, the flat truss would be statically determined – the "rigid corners" mean that the front and back are statically indeterminate (overdetermined).

2. The same applies to the roof surfaces: if all nodes were designed as joints, it would be statically determined. However, the lower corners are each mounted with three values (clamping) and are therefore statically overdetermined.

3. On the side surfaces, the bracing actually means there is one strut too many – i.e., statically indeterminate.



EXPERIMENTAL TASK

Date

Name

Class

1. The frames yield precisely along the diagonal in which a strut is located.
2. However, the diagonal struts on all surfaces are so slender that in practice they only function as "tension elements" and cannot be subjected to tension and compression in the same way as in an "ideal truss."

When subjected to compressive stress, they buckle and transmit virtually no compressive forces. In practice, you often see cross bracing made of steel cables.

In the real world, pay attention to where you encounter trusses and consider whether they are structurally determined or not.

APPENDICES

Building instructions and templates Models:

Model 11: Building instructions for a truss house.