

**ENGLISH SUMMARY**

**OPTIMUM DESIGN OF DOUBLE-LAYER STEEL SPACE TRUSSES**

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Double-layer steel space trusses are still comparatively new types of structures in Finland. This study (part of the author's diploma work) was aimed to give more information for designers about the basis for selecting an optimal grid geometry for the truss. Five most common grid geometries were chosen according to the literature study. These five types with tubular steel members were analysed in two actual cases,  $36 \times 36 \text{ m}^2$  square and  $36 \times 72 \text{ m}^2$  rectangular both simply supported along all edges, to determine the optimum design. Analysis were carried out by using QSE Space finite element program and all the members were designed according to Eurocode 3. Finally all the results were compared with each other to find the most efficient solution.