

English summary

Falco is a company that makes street furniture, bicycle parking systems, shelters, bicycle marketing products and traffic supplies for public spaces. The modular bicycle shelter model Q has been taken out the range of products due to a consistence of too many parts, difficulties in assembling and a high dependency of suppliers. Falco wants to supply the need for modular sheds.

The goal of the assignment is to design a modular shed in succession to model Q that can be assembled as simple as possible with less parts, assembling steps, minimal bolt connections and can be produced in Falco's own factory with the use of a laser tube.

Competitors of modular sheds have been observed, users were interviewed and requirements of Falco have been determined. Important results are expandability in four directions, no use of middle columns, combining of functions in parts and easier and lighter lifting of the parts.

In addition shed dimensions have been determined, requirements of a connection refined, concepts designed for the connection, the chosen connection further developed and the columns, gutters, trusses, attachments, purlins and walls have been designed. The design result consists of a multifunctional modular shed in which the connection, independent of the amount of directions its expanded, can be attached with two bolts, purlins that can be hung up and attached with self-drilling screws and walls that can be hung up and be attached with self-tapping bolts at the bottom.

In total the shed is using 38 connections instead of 102 connections of model Q and also less parts are used by use of a laser tube. Through use of less connections, parts and use of a hanging system the construction and walls of the shed can be installed in an easy and quick manner.