



CASE STUDY

K.118 – FROM FORMER FACTORY TO BEACON OF SUSTAINABLE BUILDING

Built by baubüro in situ ag, one of the pioneers of sustainable construction, K118 is a factory building which was extended by three additional storeys with studios and workshops instead of opting for a completely new building. This saved around 60 percent of greenhouse gas emissions and 500 tonnes of primary material.

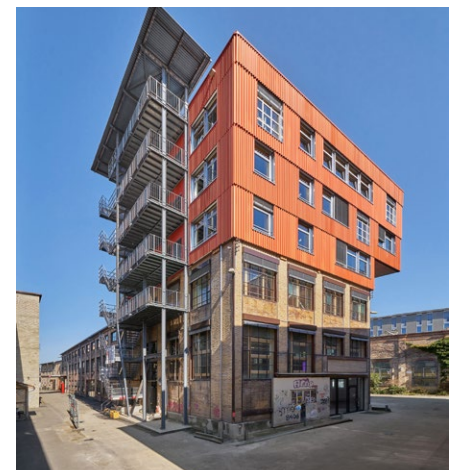
For the architects, circular construction also means thinking in terms of cycles during planning and construction. If existing components are to be reused, the planning process is reversed. It is based on what is available and begins with the search for materials. This is followed by cataloguing. To reuse components, you need information and a precise idea of the requirements and installation options. In this way,

the design is created alongside the usual planning phases in a continuous process of evaluation, testing and decision making.

K118 has a large and varied range of reused components; including windows, natural stone slabs, wooden roof elements, EPS insulation, granite slabs, aluminium profiles and clinker bricks and, of course, steel. Because the reused steel used in this project had been originally hot dip galvanized, it could be reused without any additional repair work. Bolted connections facilitate non-destructive dismantling and reassembly. The hot dip galvanized external staircase on the K118 project is a good illustration of this. The approximately 22 metre-high steel structure, built in 1990, was dismantled

Above and below

The 22-metre-high external staircase from K.118 was previously used in the Orion office building in Zurich



after 28 years of use as an emergency staircase in the Orion office building in Zurich and is now used for access to the K118 building.

The maintenance-free, hot dip galvanized staircase, consisting of support profiles, gratings and railings, required no refurbishment. Only minor modifications were necessary. For example, the banisters were fitted with infill panels to meet today's fall

protection requirements. The seven-storey staircase is also a good example of the inversion of the design process, as its landings determined the floor heights of the building.

By reusing components, the CO₂ emissions of the K118 project were reduced by 59%, or 494 tonnes of CO₂, compared to a new building. The reused steel contributed to a CO₂ reduction of 16% or approximately 80 tonnes of CO₂.

Apart from the environmental strengths of such a project, K118 also contributed to the strengthening of the local economy. The low-cost materials used in the project required a certain amount of craftsmanship and expertise before installation, in turn pumping money which would previously have been used on new material, into the pockets of local workers.



Image credits: Martin Zeller

Learn more about galvanized steel and the circular economy

The galvanizing industry is moving forwards - keeping galvanized steel at the forefront of solutions for tackling climate change and delivering the circular economy.

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