



# CASE STUDY

## The new circular district at the Bayernkaserne, Munich

### KEY FACTS

- The vision: Public construction in Munich will become circular, giving fresh impetus to the entire building sector's green transition.
- The success of the "Bayernkaserne" pilot project provides the basis for this.
- A new, sustainably built urban district will be created on the 50-hectare model area by 2030.
- 1.2 million tonnes of rubble will arise. 50% is due to be recycled on site. This means 90,000 fewer truck journeys – equivalent to 80 trips around the world.

### DO'S

- Secure political backing.
- Set up strong expert groups which represent both the construction industry and decision makers.
- Show results early on, as with the Munich model pavilion.
- Involve all economic sectors at an early stage.

### CONTEXT

The Bavarian capital Munich is one of Germany's and Europe's strongest economic locations. The city has 1.5 million inhabitants and continues to grow at a fast pace, making construction and housing key urban policy areas. At the same time, the city is firmly committed to climate protection. The city government aims to be climate neutral by 2030, the city as a whole by 2035. Munich wants to incorporate circular economy principles in all areas. In terms of public construction, the city wants to establish circular building and the recycling of building materials and introduce binding regulations. Munich's Municipal Services Department is kicking things off with the pilot project to develop the former "Bayernkaserne" barracks and, supported by the Department of Labor and Economic Development, with the EU project URGE.

### PILOT DESCRIPTION

The roughly 50-hectare site of the former military barracks, Bayernkaserne, is located in the north of Munich. By around 2030, some 5,500 new rent-controlled apartments for around 15,000 people are due to be built, along with schools, sports facilities, a park and everything else that makes a modern, densely built urban district an appealing place to live. As part of the plan, the Munich City Council approved an innovative recycling concept in 2019 with a focus on "grey energy". The Municipal Services Department has arranged for rubble arising from the demolition of the old military buildings to be sorted and reprocessed on site, so that a large proportion can be used as recycled concrete in the new buildings. Any soil generated will also be tested and used for horticulture or agriculture. Recycling building materials also helps to prevent high removal costs. The city government can thus show that the circular economy has both ecological and economic benefits.

The URBACT Local Group (ULG), which Munich created with experts and stakeholders as part of the URGE project, combines the perspectives of the city authorities and the construction industry. Munich, the Munich University of Applied Sciences, and partners are currently working on a model pavilion made from 100-percent recycled concrete to illustrate the processes and materials gained. It also provides an environment to investigate pollutants arising from secondary materials.



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## DONT'S

- Don't be afraid of the unknown.
- Don't be afraid of change.
- Don't be put off by bureaucratic hurdles.

## LESSONS LEARNT ON COLLABORATION

- Involve all participants at any early stage in any changes planned → this makes it possible to take various interests into account
- Early planning and careful consideration of all pros and cons is absolutely essential.
- Keep the public informed about plans and progress → win public support
- The younger generation of construction industry workers – for example students – have a strong awareness of and interest in environmental issues like circular building.

## OPPORTUNITIES AND CHALLENGES

### Long-term building project (10 years):

- Important: Develop suitable concept, define milestones, and continuously involve relevant stakeholders in the implementation process.
- The major project has scope for development. Munich can determine the obligatory amount of R-concrete that building contractors must use and increase it over the project term.
- The model pavilion made from R-concrete already illustrates the results of the approach and is a good test object. It has also attracted public interest.
- Ensure lasting political support! The Munich City Council is involved on various levels in the Bayernkaserne pilot project and its impact on construction in Munich.

### Aspects specific to Munich/city government:

- Large city government with many departments → overcome silo mentality! It is beneficial to involve city departments in the ULG.
- There are already diverse Munich strategies and programmes concerning climate neutrality. The ULG is a good forum for comparing and aligning.
- Changing construction tenders takes time and effort – the backing of the entire City Council is key.

### Framework conditions in Germany:

There are stricter regulations for recycled building materials than for primary raw materials, meaning that to date only a small amount of secondary raw materials could be used.

→ A successful pilot project could encourage policy-makers to engage with the topic, adjust old regulations and create new ones as well as binding standards/funding programmes.

### Challenges in the (German) construction industry as a whole:

Little knowledge and awareness of circular building, and to date also little interest; lack of incentives or obligations; lack of technical standards and certification for secondary raw materials.

- The ULG is working on a concept for the general processing site, training, and optimisation strategies for refilling land.
- Munich can show that the circular economy is economically viable!

## WHATS NEXT?

A City Council resolution to embed circular economy principles in the building sector is being prepared. Munich's municipal housing company GWG will start construction at the "Bayernkaserne" in autumn 2021. 1,000 m<sup>2</sup> of R-concrete will be installed.