



### Project Information

#### Builder-Owner

GWG – Städtische Wohnungsges.  
München mbH

#### Location

München

#### Completion

2012

#### Projectfacts

WNF 3.294 m<sup>2</sup>, BGF 4.984m<sup>2</sup>,  
spez. HWB 21,2 kWh/m<sup>2</sup>a

### A new era in modern timber construction used in urban development.

The levels of timber construction in urban development were very low, so it was decided to rectify this and modernise the existing buildings between Fernpaßstraße and Badgasteiner Strasse, using modern timber construction methods. The first phase of this large redevelopment programme is now complete and has seen a new four-storey, dual purpose buildings be realised using modern timber construction methods. The newly renovated buildings are the first of their kind to feature timber ceilings throughout.

»The model renewal of the GWG, currently Munich's largest timber project, achieves the best possible added value and efficiency in construction and operation, doubling the living space and reducing the energy used by a factor of 15.«

Lichtblau Architekten, Munich

The idea was to expand the existing buildings with timber structures, so that contemporary apartment layouts could be achieved, additional apartments could be created, and that the extension building should be completely built using a timber prefabricated system. The reduction of CO<sub>2</sub> emissions contributed to the choice of construction material. Achieving high thermal energy savings in residential buildings requires not only a high level of financial investment, but also a high level of energy use in the manufacture and processing of building materials. Timber offers the best alternative to reduce the environmental impact significantly and permanently. Complex details such as fire protection, moisture protection and sound insulation have to be considered and a solution found. The new building shows that timber, the environmentally friendly building material, can be used convincingly and rationally to create multi-storey buildings.

This project was delivered in cooperation with the Department of Timber Construction at the Technical University of Munich. Students worked on a draft of the modernisation and extension of the neighbourhood, and then these ideas became the basis for processing and structural implementation by the office Hermann Kaufmann and Lichtblau Architekten.

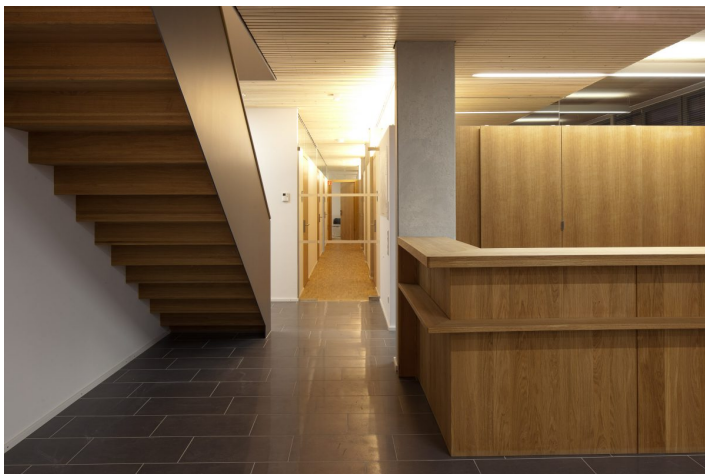
The original development between Fernpaßstraße and Badgasteiner Strasse dates back to the time of rapid housing development in the 1950s. The plot consists of classic solid buildings with three storeys. The heat requirements of these existing buildings is about three times as high as the estimated new building values. The most important construction task of the future is the rebuilding or renovations of the of existing buildings. However, this cannot be financed if existing residential complexes cannot be made more efficient. Renovation of the existing building complexes is also desirable, because it slows down urban sprawl.

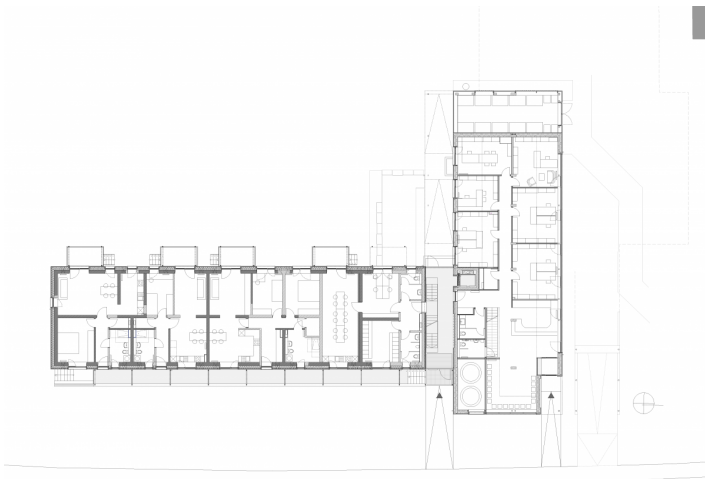
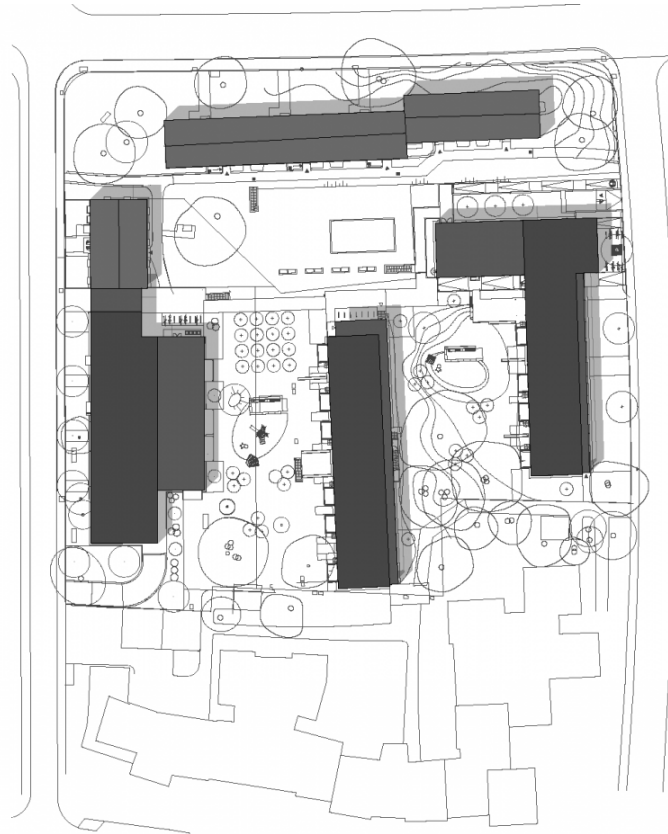
The Fernpaßstraße development has been built according to the latest research findings in modern timber construction, including the load-bearing prefabricated timber frame walls and individual supports store steel girders, on which in turn cross-laminated timber elements were laid. Their underside remains visible and gives the apartments a special character, due to their timber ceilings. The outer shell was prefabricated and its thermal insulation meets the Passive House requirements. The cladding of the facades was done with vertical, spruce boards. This type of exterior cladding has a long shelf life with low maintenance costs. The brightly coloured balconies and pergola parapets, with smooth metal surfaces, stand out in contrast to the simplistic timber facade.



The following goals were set for the renovation project:

- Preservation of existing primary structures (grey energy / waste prevention)
- Increase of rentable living space by 50 percent
- Creation of a market-oriented housing mix
- Reduction of energy used by 50 percent
- Accessibility of all apartments
- Residual energy requirement largely Co<sub>2</sub>-neutral
- Simple, safe technology with high comfort level
- The most comprehensive possible use of renewable raw materials
- Integration of building services and solar components







## Project Stakeholders

### Cooperation

Lichtblau Architekten, München

### Project Leader

Dipl. Arch. (FH) Claudia Greussing

DI Nicole Jendges - Lichtblau

Architekten

### Colleague

Martin Förtsch, Alexander

Reichmann, Judith Vogel

DI (FH) Juliane Wiljotti

Ing. Benjamin Baumgartl

Martin Rümmele

DI (FH) Sandra Endres

BM DI Eugen Keler

### Cost Planning

Arch. DI Roland Wehinger

Bmst. Gerold Hämmerle

Marco Ebner

### Building Site Manager

Christian Sandweger

Project Stakeholders

## Structural Engineering Timber

### Construction

merz kley partner ZT GmbH,

Dornbirn

## Heating Ventilation and

### Sanitary Planning

EST Ingenieurbüro GmbH,

Miesbach

## Electronics Planning

PBM Planungsbüro für

Elektrotechnik, Neubeuern

## Building Physics/Acoustics

Ingenieure Süd GmbH, München

## Fire Protection Planning

Bauart Konstruktions GmbH &

Co KG, Lauterbach

## Green Space Planning

Stadtplaner und

Landschaftsarchitekt bdla,

Stefan Kalckhoff, München

## Awards

Deutscher Bauherrenpreis

Modernisierung

2013 (Besondere

Anerkennung)

Bayerischer Energiepreis

2014 (Preis Gebäude bzw.

Gebäudekonzepte)

Holzbaupreis Vorarlberg

2015 (Auszeichnung Außer

Landes)

## Rights

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Auszug Broschüre Bauen mit

Holz – Eine überzeugende

Ökobilanz, Englisch: Bronwen

Rolls

Foto Stefan Müller-Naumann

