"Pradl Ost" housing complex, Innsbruck

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General information
Südtiroler-Siedlungen (German for “South Tyroleans’ estates”) in Innsbruck
In the summer of 1939, representatives of the national-socialist German Reich and the fascist Italian state agreed on the option of the resettlement of the South Tyrolean population. As a result, some 75,000 people left their home south of the main chain of the Alps in the course of the following four years. Before this resettlement began in earnest, flats all across Austria were planned for the expected “resettlers” (as they were called in the NS jargon) and the largest residential housing project of the war years was started in Tyrol and Vorarlberg. The goal was to erect 10,000 new flats.

Project preparation and contract
To be able to start with the project, the Südtiroler-Siedlungen that had been occupied up to this point, needed to be demolished. Some residents needed to move to existing flats belonging to Neue Heimat Tirol for the time being. After construction was completed, the residents could move back into their flats.

In July 2015, PORR Bau GmbH’s Tyrol branch was commissioned with the extended master builder work for the Pradl housing complex by Neue Heimat Tirol. The job included the construction pit, outside facilities, ETICS work as well as the redesign of the access road.

Project description
The housing complex was built on the site of the Südtiroler-Siedlung in passive house standard.

The building consists of 1 to 2 basement floors and 4 to 5 upper floors. It features two courtyards, whereby courtyard 1 was executed as a high terrace (toddler playground). The large second courtyard does not have a basement underneath.

The three-storey car park (ground floor, basement floors 1 & 2) is located directly underneath courtyard 1 and is accessed via offset mezzanines. The auxiliary and cellar rooms are located in the boundary areas. The majority of the car park is located on the ground floor and is ventilated and lit naturally. The 1st and 2nd basement floors were equipped with a mechanical flue gas and heat extraction system. The buildings forming courtyard 2 in the north, east and south have one basement floor and are exclusively ventilated mechanically and artificially lit.

The underground car park access and exit ramps are located on Gumpfstraße in the southern part of the property. Bicycle parking areas are situated on top and assigned to the individual building segments. Additionally, bicycle and pushchair parking areas and dry rooms are planned to be installed on the first basement floor. The central garbage room is located on the ground floor in the north of the property. The individual building segments are accessed via twelve staircases with integrated barrier-free facilities.

Project data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of construction</td>
<td>July 2015</td>
</tr>
<tr>
<td>Handover</td>
<td>November 2016</td>
</tr>
<tr>
<td>Gross floor space</td>
<td>21,000m²</td>
</tr>
<tr>
<td>Flats</td>
<td>145</td>
</tr>
<tr>
<td>Parking spaces in underground car park</td>
<td>198</td>
</tr>
<tr>
<td>Excavated earth</td>
<td>30,000m³</td>
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<tr>
<td>Shotcrete</td>
<td>1,100m²</td>
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<tr>
<td>Concrete</td>
<td>11,700m³</td>
</tr>
<tr>
<td>Reinforcements</td>
<td>890t</td>
</tr>
<tr>
<td>Facade area</td>
<td>11,800m²</td>
</tr>
</tbody>
</table>
Building process

Overview of building segments
Image: PORR AG

In the area of the two-storey underground car park, the construction pit was secured using shotcrete. This turned out to be more difficult than expected since numerous built-in elements were discovered which had not been documented exactly or not at all. Furthermore, the existing bus stop needed to be preserved and secured. The rest of the building segments could be installed in the open method.

To be able to keep to the schedule, building segments A,B,C,D,L,K with two basement floors were built at the same time as the others with just one basement floor. All building segments were founded on strip foundations. In the area of the staircases, a bottom slab with insulation underneath needed to be installed since this is part of the building’s warm cladding and complies with passive house standards. The other areas were equipped with reinforced paving as a subbase since it only plays a minor role in terms of statics. A floor construction or asphalt was applied to the paving. Formwork was applied to the sloping underground car park ceilings and they were concreted. The structure is a dual-layer bridge insulation system. For the courtyard of the first upper floor, the team chose to implement a white tub.

Carcass work on all twelve building segments was completed in March 2016.

Outdoor facilities
The outside facilities are divided into four sections which were executed as follows:

- **Ground floor courtyard**
  This is where the large playground with green area and playing mound as well as the entrances to the nine buildings and the “artificial tunnel” are located. The latter is a “Kunst am Bau” (German for “Art on the Construction Site”) project. The floor surface was designed using premanufactured concrete parts while the walls were clad with black perforated sheets. The main traffic areas have been built using asphalt. The building entrances have been constructed in “creative concrete” (coloured concrete).

- **First floor courtyard**
  This courtyard serves as an auxiliary entrance hub for the five houses. They are accessed via a prefabricated staircase which originates on the ground floor courtyard. It furthermore houses the toddler playground and various plant beds.

- **Am Roßsprung play street**
  Located to the north of the housing complex is a play street which also serves as a fire department access road for the neighbouring structures and for our own construction scheme. The road is closed to all other traffic to allow for its use as a play street.
**Gumpstraße / Thüringstraße crossing**
In the course of construction, this street has been completely redesigned and the existing infrastructure has been renewed, relocated and extended.

“Am Roßsprung” play street
Image: PORR AG

Exterior view Gumpstraße
Image: PORR AG

**Facade**
The facade consists of a thermal insulation system which complies to the stipulations to achieve passive house standards. The final coating was applied in two layers whereby the team achieved the desired white concrete texture.

First floor courtyard
Image: PORR AG

Only thanks to excellent cooperation between all trades, the team on site was able to stick to the tight schedule and hand the project over to a satisfied client.