

Church space is distinct from other spaces by its spiritual content, its metaphysical expansiveness.

### **Concept of church**

For the church devoted to “St. Josef the Worker” and the “Holy Family” weekday chapel the design approach was to conceive a truly contemporary church. Buildings made with common and durable materials, affordable and available for a long time to lower the upkeep, spaces free of any pollution, with natural lighting and ventilation, the most necessary building technology only, the lowest possible live-cycle energy consumption, easy to maintain, sustainable and resilient - a frugal architecture.

The church buildings had to become exceptional spaces of structural clarity, spaces that postulate openness with a potential to rouse the numinous.

The close silhouette of the Alps inspired to the archetypical yet modern form of cones. Divine light from a large skylight is combined and enhanced with horizontal light from a parabolic arched side window on street level. The space is filled with bright yet diffuse light reaching its highest level at the altar place and creating differing lighting zones at the baptismal font or at the place for the quire and the organ.

It is typical for cones to look modest from the outside and to surprise the entering one by their spaciousness. The idea was to construct the cone with a mesh shell almost like a fish trap as a wide dome for the church and like a tipi for the smaller chapel, the walls being the roof as well.

### **Construction**

In the church the dissolved, exposed wooden shell vaults over the congregation around the altar place. The inclined cone construction of rings and diagonal struts, dynamically spiraling up to the oval skylight was not conceived or built before.

It required a digitalized three dimensional architectural and structural planning as well as such processing methods for the glued laminated timber. Models were built in original size, inclined and curved, to test the right building, detailing and mounting methods. Finally the elemental prefabricated structures of the cones were erected without scaffolding.

### **Foyer and Chapel**

A fully glazed vestibule connects to the adjacent chapel of the “Holy Family” the sacristy and to further parish buildings to be realized in the future. The chapel was desired to serve experimental forms of liturgy. Being a smaller version of the sky lit cone of the church the chapel is different by a much more intimate space feeling. Slender concave acoustical shells refer to the underlying rafter structure.

Here and even more so in the church space the acoustics are of a very fine quality, thus lending rare festive places for concerts. The buildings are very well accepted in the growing town.

## Technology

Both the church and the chapel are naturally ventilated favored by the characteristic updraft in conical volumes. Louvers regulate the air flow. District heating from geothermal sources tempers the floors. Temperature and humidity are electronically controlled to provide comfortable air quality and to protect the organ. A good standard of artificial low energy lighting, acoustic installations and a roll-in screen complete the building technics of the sacred spaces.

## Old and New

The campanile that dominates the parvis terrace originates from the dilapidated old church. Several pieces of handicraft equipment were chosen for recycling to transfer and maintain identity, such as principal parts of the altar, the font, a bronze door now leading to the chapel, wooden saints and the former first cross put symbolically on the outside to set the place for outside worship. Finally the existing organ was modified and got a new case.

## Project Data

2013 competition of the archdiocese of Munich for a new church center - 1st prize  
Program  
church 400 places, chapel 50 places, sacristy+foyer, parish office, parish home, apartments  
2013 - 2015 planning + testing of the new cone structure  
2015 - 2018 construction of 1<sup>st</sup> building phase

### **March 2018 consecration by the Archbishop of Munich and Freising, Reinhard Kardinal Marx**

By then it was the first new church built within the last 10 years in Bavaria.

1<sup>st</sup> build. phase: church, chapel, sacristy, foyer  
plot size 7.000 sqm  
net area 1.331 sqm  
gross area 1.590 sqm  
gross volume 10.761 m<sup>3</sup>  
bulding cost 11,5 Mio Euro

## Building geometry

Church: 1.034 qm, elliptical plan 34,5 x 30 m, height 22 m, 15°inclined skylight 11 x 9 m, slope of cone 51° – 66°  
Chapel: 217 qm, ellptical plan 16,5 x 14,5 m, height 11 m, 15° inclined skylight 4,5 x 3,8 m, slope of cone 51° - 66°  
Sacristy: 212 qm, 8,6 x 24,7 x 3,5 m  
Foyer: 128 qm, 16 x 8 x 3,5 m

## Construction + Materials

### Church

A concrete ring foundation supports the wooden cone structure offering a bench in the round inside. The concrete floor and the wing-smoothened heating screed slopes gently towards the altar-isle.

Horizontal rings and crossing diagonals form the mesh shell structure made of spruce GLT (glued laminated timber) stiffened by steel tie rods in the direction of fall lines. The diagonals under pressure only, permitted to replace the standard steel components at the nodes by special beach LVL (laminated veneered lumber) at more lightly loaded nodes. All the connection fittings were concealed for a R30 rating of the load bearing structure. The prefabricated elements came glazed white to the site.

External wooden board cladding on the lattice shell serves as vapor barrier. On top large prefabricated vaulted elements act as the subconstruction for the larch shingle cladding, which shows two ventilation layers, inside water and wind protecting membrane and insulation to guarantee long durability of the sloped roof. Three layers of shingles act as protecting coat. The skylights are made of slender white steel grillage with painted steel frames. Satined glass in the church and metall louvers in the chapel diffuse the natural light from the top. The triangles of structure are filled in with wooden boards, one third of them microperforated for accoustical reasons.

A bronze portal leads to the church. The new organ case shows the given prospect behind an industrial metal curtain. Curved stalls made of stained multilayer spruce boards on metall supports sit on the concrete floor.

### Chapel

The structure is remarkably different. Beams with a stiff ring at the top, stiffened by two further GLT rings because of the arched window and external wooden board cladding sit on the concrete ring foundations, comparable to an archetypical tent structure. Lathwork and larch shingle cladding on rafters are similar to the church facade.

The heating screed is covered with oak parquet. The bench in the round contains drawers for parish group work. Slender concave plasterboard shells guarantee best accoustics.

### Sacristy + Foyer

The flat green roof of the foyer connects the two cones and extends on the sacristy with the covered alkway outdoors to the north. While the doors and fixed glas panes of the foyer are steel framed the sacristy is a massive cuboid with doors and windows of joinered beach wood. Structurally a plastered perimeter wall of insulating brick is added to slabs and interior walls of concrete. The furniture is made of white laquered three-layer boards sitting on parquet floors, whereas in the foyer dark cast stone flags contrast with white glazed fire resistant oak wood room divider and portal soffits and larch shingle cladding of the cones.

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