

# Ulrich Müther (1934-2007): Cast in concrete

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## Background

For a long time, the work of “formwork virtuoso” Ulrich Müther has received little attention. The main reason for this is the fact that, for most of his life, he practiced as a structural engineer in East Germany – behind ‘the iron curtain’. Despite his isolation, Müther wrote an important chapter in the history of pre-cast concrete construction with his unbelievably light concrete buildings that are of equal importance to the works of Heinz Isler in Switzerland<sup>1</sup> and Felix Candela Outerino in Mexico.<sup>2</sup>

His buildings stood out not only for their construction, but also for their exceptional spatial and architectonic characteristics that were defined by their construction material – concrete.

After constructing his graduation project, a multi-purpose hall in Binz on the island of Rügen, Müther quickly set to work on a succession of so-called “hypar shells”, mainly, but not exclusively, in East Germany. His expressive shell roofs reflected the spirit of the age. Only a few centimetres thick, the concrete shells achieved large, unsupported spans and provided a tangible expression of the frequently invoked technological progress of the 1960s. Primarily designed as part of attention-grabbing, stand-alone public buildings, these expressive shell structures stood out from the uniform greyness of the German Democratic Republic’s prefab buildings. They were “bold solitaires” (*kühne solitäre*) (Dechau 2000) with evocative names such as *Water Lily*, *Teapot* or *Maple Leaf*.

Ulrich Müther referred to himself as a “formwork virtuoso” (*Schalenbaumeister*) in order to underline his broad range of skills as an engineer, architect and entrepreneur. Over a period of 30 years, he produced more than 50 concrete formwork buildings, all of which were designed, engineered and fabricated by his own company “VEB Spezialbetonbau Rügen” – with specialist machinery imported from the “capitalist West”.

Being labour-intensive, yet requiring little by way of resources, Müther’s buildings fitted well into the shortage economy of the East German system and that afforded him a secure niche for his highly specialised company. Although Müther was never a party member, politicians frequently used the shell structures as showcases to promote positive perceptions of socialism.

With the political turnaround of 1989, many of Müther’s shell buildings became vacant. Today, some have been adapted for new purposes, but others were neglected and became derelict or were demolished. In 2000, the proposed demolition of the *Maple Leaf* in Berlin caused great controversy amongst professionals and the public, but campaigns to save the building did not succeed and the building was torn down and replaced with a conventional hotel building.

## Ulrich Müther’s concrete shells – a typology

In the following photographic section, Ulrich Müther’s shell buildings are categorised in accordance with the different design principles used in shell construction. Because the delicacy of the design and the underlying design principles are often more clearly visible when the building is in the early stages of construction, the

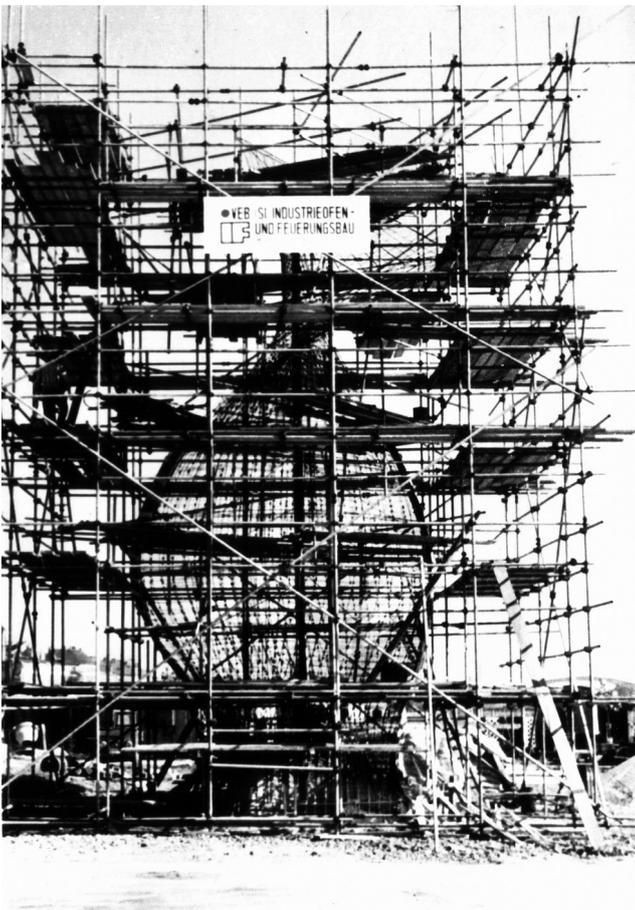
1 See Ramm & Schunk 2002.

2 See Faber 1963.

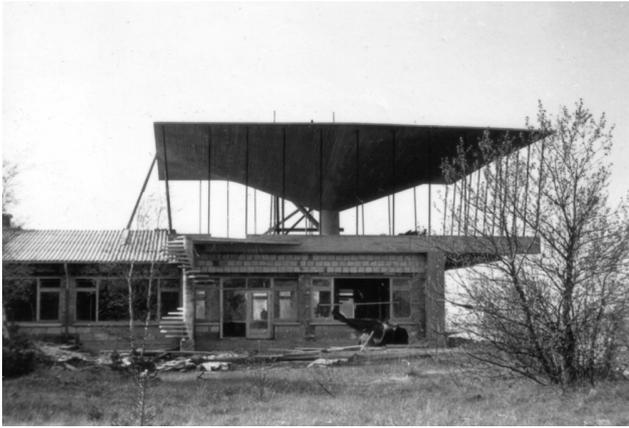
documentation for each project is presented as a set of two images – one picture showing the building in its ‘raw’ state as a concrete shell during construction, and the other showing the completed building. The differences are striking – in their ‘raw’ state, the buildings almost always resemble autonomous sculptures created by an artist rather than precision-engineered designs produced by an architect or engineer. At the same time, the images highlight the sophisticated design principles of the shells, their minimal thickness and material economy, which stood in stark contrast to conventional designs. Some of the shells were only a few centimetres thick whilst spanning a building area of hundreds of square metres. The lightness of the shell was, however, disguised by the bulkier façade elements once the building had been completed. To that effect, the construction photographs of Müther’s ultrathin concrete shells demonstrate the superiority of his methods and his advancement of a new techno-aesthetic paradigm that also marked the work of his colleagues in the West.

### References

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- Faber, C. (1963). *Candela, The shell builder*. New York, NY: Reinhold.
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*Großplastik* (Large Sculpture) in Magdeburg (1972). Free double-curved shells, height 12m



The *Inselparadies* (Island Paradise) restaurant in Baabe (1966). Umbrella shell consisting of four hypar shells, thickness 8cm, 17.6x17.6m



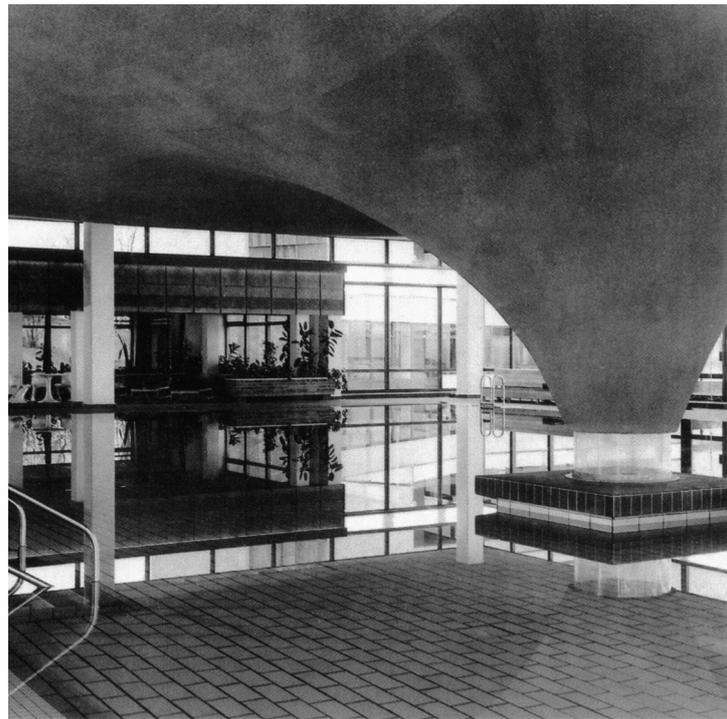
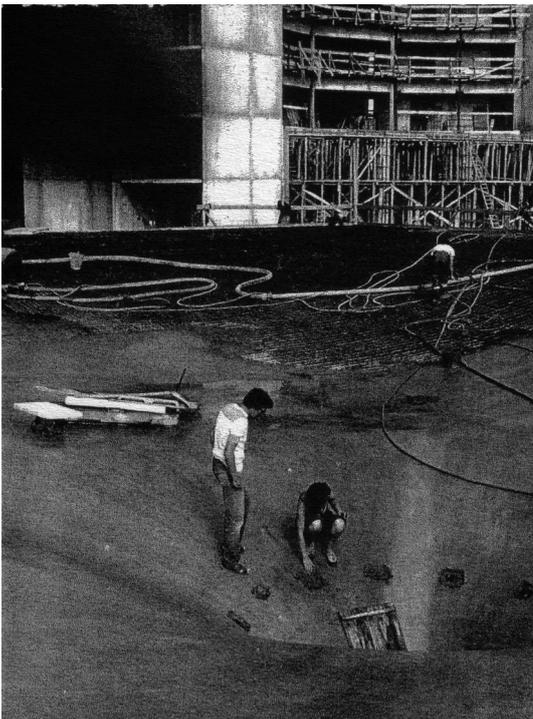
*Messehalle* (Exhibition Hall) Rostock (1966). Two hypar shells offset from each other, thickness 7cm, 2x2x20m



The *Teepot* (Teapot) restaurant in Warnemünde (1968). Shell structure consisting of three hypar shells, thickness 7cm, radius 20m

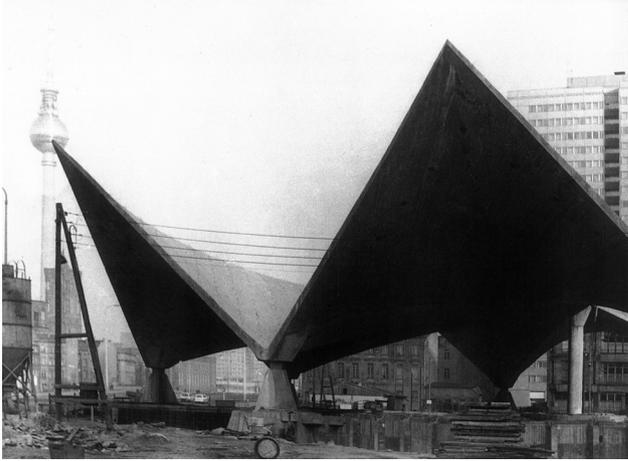


*Strandwache 2* (Lifeguard 2) in Binz (1981). Two double-curved shells assembled to form a box, thickness 3-5cm, 5.5x5.5m



Swimming pool roof for the Central Committee Centre in Sellin (1977).  
Asymmetrical suspended shell without intermediate supports, thickness 9cm, 24.4x33.3m

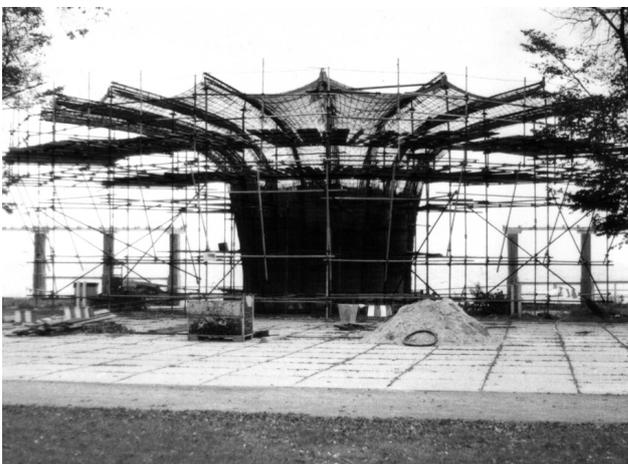
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[www.muether-archiv.org](http://www.muether-archiv.org). Director: Prof. Matthias Ludwig, Cand. PHD Erik Maroko.



The *Ahornblatt* (Maple Leaf) restaurant in Berlin (1973). Five assembled hyperboloid shell segments, thickness 7cm, 5x22x35m



The *Seerose* (Water Lily) waterfront pavilion in Potsdam (1983). Eight-part rosette made from hyperboloid shell segments, thickness 7cm, diameter 23m.



*Kurmuschel* (Seashell) music pavilion in Sassnitz (1987). Seashell-shaped cantilever, thickness 5-15cm, radius 11m