

earliest. The system of testing material and following that the standardisation only came into being in the eighteen-seventies. Even for the construction of the Frankfurt opera house, which took place about 1880, an iron roof frame was rejected as being too expensive. Thus up until the eighteen-seventies, architecture had no other choice than to build in stone and all attempts at using iron construction were, essentially, more or less just tampering".

If one reads this and bears in mind that the majority of cast-iron structures were only constructed long after the Iron House in Graz, that the relevant publications, such as the famous paper by James Bogardus on "Cast Iron Buildings: Their Construction and Advantages" did not appear until the eighteen-fifties, then the magnificent achievement which Johann Benedikt Withalm's Iron House represents becomes clear. On the other hand, however, the building's very slight practical resonance also becomes clear. Even today, our society still tends to treat concepts which do not lead to immediate success by completely rejecting them, instead of learning from the mistakes and carefully continuing with the development of what has been begun.

THE KURHAUS THEATRE FROM 1886 IN AUGSBURG-GÖGGINGEN

Vincent Mayr

The first impression one gains from a modern picture of the Kurhaus Theatre in Göggingen is of little more than a draped building scaffolding, surrounded by trees - probably a building site. However, a building is hidden behind that scaffolding which had already gained mention in Meyers Konversationslexikon four years after its construction. One can read there: "Göggingen, small town in the Bavarian administrative region of Swabia, Augsburg local district, at the point where the Sinkel flows into the Wertach, has a fine theatre building, an orthopaedic centre ..." (1)

The Leipziger Illustrierte paid tribute to the Kurhaus Theatre already in the year of its construction. There we read, among other things: "The auditorium accomodates about 800 people and is at the same time designed as a palm garden. Built completely of stone, glass and iron, the building is 22 m wide, 26 m long and 16 m high. There is a sunken area on the ground floor of the palm garden for the theatre stalls, surrounded on three sides by a flower bed with exotic plants. The stalls boxes, which are also decorated with palms, are on a higher level around this flower bed. The dress circle is reached from the stalls up two staircases. It is divided up into individual boxes by flower stands. The iron pillars passing through the balustrades bear the stone vaulted ceiling which rises in lunettes up towards the cupola crowning the whole. These lunettes or vaulting are closed off by large round-arch windows at the pillars. Going out from the foot of these arched windows are sky lights, which at the same time form the ceiling of the dress circle, with coloured glazing, which together with the outside windows, also glazed with stained glass, give the whole structure a unique appearance". (2)

So much for the contemporary report. It should be added that the technical equipment was the most modern of the day. It included hydraulically driven stage machinery, electric lighting and a central hot-water heating system. Before going into further details, I should like to briefly present the most important details about the original owner and builder and the architect. Friedrich, Ritter von Hessing (1838-1918) had such a great success as a trained cabinet-maker and organ-builder with the construction of orthopaedic apparatus, that he founded an orthopaedic sanatorium which was also supported by the later Imperial Chancellor, Chlodwig, Prince of Hohenlohe-Schillingsfürst, among others.

Apart from in Göggingen, Hessing also built sanatoria in Reichenhall and in Rothenburg ob der Tauber (with the name Wildbad) which all, apart from having carefully conceived functional efficiency and being impeccably constructed, placed the quality of "magnificence" at the service of the matter at issue - cure and recreation in the company of people of like convictions. (3)

Hessing's architect in Göggingen was Jean Keller (1844-1921) who had moved from Darmstadt to Augsburg in 1867 where he was granted the right to open a technical office in 1872. In Augsburg, Jean Keller built, among other things, the main building for the district exhibition in 1886 and, in 1894, the extension to the concert hall; he also drew up projects for a Bismarck Hall. (4)

The Kurhaus Theatre was opened on the 8th May 1887. It was one of the first multipurpose buildings of the day. Theatrical performances, lectures and concerts were given here. At the same time, the building served as a pump room and ballroom for the spa establishment of the time. As the building stands completely on its own, the furnishings

of the palm house and the surrounding park complement one another and at the same time the whole area is visible from within. The surrounding park must be regarded as a continuation of the interior. This can also be taken quite literally: The forecourt is on the same axis as the stage. It was possible to extend the stage area by opening up the rear wall to the park outside - a situation as known from the Baroque theatre.

The question as to why the Kurhaus Theatre remained unknown for so long can be answered by pointing out the fact that its characteristic features had been made unrecognisable. Through later additions and with the bricking up of the window openings (the building was used as a cinema), the transparency, and thus also the impression of space had been lost. It was only after a fire in 1972 that the original skeleton structure appeared again. The City of Augsburg has been in possession of the building since 1973. Up to now, the city authorities have had the most urgent repairs carried out (particularly on the roof).

The interior architecture, with its so light appearance, is in sharp contrast with the exterior. What in the interior appears like a system of openings almost supporting themselves, is on the outside a strictly proportioned ashlar masonry architecture (although, in fact, it is only plastered brickwork with, in part, bricks painted on) with window openings. That was the way in which that claim for representation was fulfilled which was made on the exterior of a theatre at that time. We find the same architectural devices in use as, for example, are to be found on the façade of the Frankfurt Opera House which was built six years earlier than the Göggingen Kurhaus Theatre (opened in 1880, constructed to the designs of Lucae in Berlin who died in 1877). In Göggingen we find, on a reduced scale, the projecting entrance structure with its balcony accessible from within, with the gable rising up behind, the balustrade surrounding the whole structure, following the curves of the passages, the summit in the centre. In order to produce a compact structure of monumental appearance, full use was made of the light and shadow effect of the greatly intersected ashlar masonry architecture. It can be seen from the longitudinal section that with this "ashlar encasement" it was possible to retain the external unity of auditorium and stage. Attention must be drawn here to an area of conflict in the theatre construction of the period. Up until the eighteen-eighties, the functional theatre building was the exception. After some particularly catastrophic theatre fires, new fire safety regulations stipulated that the fire-proof surrounding wall of the stage should be continued up at least 50 cm above the roof of the auditorium. In Göggingen, the pattern of the longitudinal structure, usual up until then, was retained still "such as had resulted from the Baroque theatre, because in the wings and flies stage still in prevalent use, with hanging scenery which is rolled up, the stage does not have to be much higher than the auditorium." (5)

In the auditorium of the Göggingen Theatre, the upper row of windows is recessed and reduces the upper air space to the line of the gallery balustrades. By this means, the impression is given of a central area incorporated into the structure, an impression which is even more accentuated by the glass cupola. In this connection, attention must be drawn to some particularly distressing losses of fittings. The original stained-glass windows have, for the most part, been lost. The plasterwork ceiling with its coloured bordering was removed completely in the course of the first emergency repair works after the fire.

The interior with two dress circles and stalls, had a court box on an axis opposite the stage and especially emphasised by double pillars (the original spiral staircases no longer exist). The two-storey high pillar positions facing the stalls and the balustrades are made of cast iron (judging by an inscription, all came from the Kramer-Klett company). The pairs of pillars are connected by rounded "corbel pieces" in the region of the capitals. Parts of the balustrade railings come out between the bases. These balustrade railings project in cushion-like form towards the stalls, and they are so broken up in their substance that they appear almost like a web. As a result of this system of overlapping, there is then a playful alternating of solid and filigree cast-iron parts at the corners.

It cannot be the object of this paper to analyse the Göggingen Kurhaus Theatre's special hybrid position between theatre and ballroom, between a glass and iron structure and a solid masonry structure, and to allot it its place in the history of the architecture of the nineteenth century. That will be done in a publication due to appear shortly in Munich. There it will be possible to find everything one needs to know. (6)

However, what it is proposed to discuss here is whether the Gögginger Kurhaus Theatre can just be dismissed as a curiosity because the building for social occasions also served simultaneously as a winter garden, "whereby the potted plants, which had been degraded to mere decorative items, only obtained meagre light." (7)

It appears to me that the Kurhaus Theatre's importance lies in the fact that Jean Keller has succeeded in combining in a single structure a series of building tasks which would otherwise be spread over several. At the beginning, we spoke of the quality of "magnificence" in Hessing's buildings. Magnificence comes about, among other things, through the fact that individual elements alone, but combine associations to a great degree in themselves. This can be very clearly recognised by a comparison of the state of the building in 1887 and 1975. The metal frame with its bamboo-like pillars supporting the galleries and ribs, only gained its southern atmosphere by the fact the palms reach up into the second zone, and they do in fact bend, as though they were in a slight southerly wind. In this connection, we could also refer to the "sacral effect" of the ribs bearing the ceiling, or to the highly symbolic floridness of the capitals and corbels. This is surely simply the "style of the nineteenth century", for which a general availability of forms was itself already an artistic expression. However, it appears to me that in Göggingen the synthesis of multipurpose building and style of the day has succeeded remarkably well.

Since the first comprehensive report was prepared by the Bavarian State Office for the Care of Monuments on the 17th May 1973 (i.e. prior to the coming into effect of the Bavarian Law for the Protection of Monuments), there has been an endeavour to research into and preserve the Göggingen Kurhaus Theatre, which strictly speaking, only accounts for a part of the collection of monuments in "Hessing's Institutions". And there is a desperate search going on for a new use for the building. The daily press and specialist periodicals have done a great deal of publicity work, but we are still not informed in all details even today as to the original state. Some remnants of the stained glass windows have, it is true, been found, and a reconstruction may be possible. But we have no information available on the mosaic floors. It is probably still possible to determine the colouring of the plastered walls and the exterior of the building. The first steps have

been undertaken here. The greatest problem is, however, the colouring of the cast-iron elements, namely the pillars, corbels and balustrade railings. Even though we know the links between the corbels and the marblings of the walls, regrettably enough, in the course of the first repair work carried out after the fire, the sand-blasting was carried out so thoroughly, that almost no traces of paint are to be found any more on the cast iron.

At the present state of the investigations, it is possible to presume that an "iron colour" was used, i.e. a dark anthracite grey. However, if the details are consulted with regard to design and art history criteria, it can certainly be assumed that at least the tendrils entwining the pillars were set off in a different colour - perhaps in gold. In historic photographs it is possible to discern differences in brightness between pillars and tendrils - but nothing more.

To return once again to the quality of "magnificence" in Hessing's buildings: One completely indispensable aspect of this quality is noble, shining material - even if it is only imitation. Even the light coming through the windows is so transformed that it contributes to the impression of magnificence. It is thus hardly conceivable that the cast-iron parts in Göggingen were originally in iron colour. In a sketch for a Bismarck Hall by Jean Keller from 1894 (water colour on an inking-pen and pencil preliminary drawing) it can be clearly seen that the pillars accompanying the arcades were to be coloured yellow or gold. (8)

Too little attention has been paid up to now to the problem of the colouring of cast-iron architecture. It is regrettable that it is probably not feasible to make any noteworthy contribution to this with the Göggingen Kurhaus Theatre. However, it does appear as though it is possible to justify claims for certain colouring proposals from the adjoining stucco marbling, which we do know in the meantime. Apart from being a technical problem, the colour treatment of cast-iron architecture is also an artistic problem. As is well known, the material could be obtained in unrestricted quantities from the factory. A restricted availability of forms did often limit the decorative conceptions. The means by which the architect was, however, completely able to realise his artistic concepts was the colouring. We should also not just be satisfied with just examining the original versions. In the more than one hundred years' history of iron architecture, there have been changes in the translation of the optic effect by colour. Just as we know it in the case of the stucco façades of Rococo, iron architecture can be reinterpreted in its horizontality and verticality by different generations. There are certainly still many discoveries still to be made in this field.

Whereas it can be assumed that the original atmosphere of space can be recreated in the Göggingen Kurhaus Theatre, the problem of its future use is much more difficult. Over the course of the years, innumerable proposals have been made. The following possibilities are under discussion: A general assembly hall for social events, for dances with restricted catering, congresses, garden operation, small theatre performances, spoken theatre and concert hall, musical theatre. But quite other uses have also come up for discussion: Exhibition hall, casino, library, swimming pool. (9)

This list betrays uncertainty and discomfort rather than a great breadth of possibilities available. From the point of view of the care of monuments, there are severe restrictions placed on any new use. The new use must be orientated towards the original one and may

not detract from the impression of space and decoration (in so far as it has been preserved or can be reconstructed). Almost insuperable difficulties occur here. One characteristic of this multipurpose building was precisely the hindrance of the visitor. There was no ventilation worth talking of, there were no cloakrooms or toilets, the palms often obstructed the view of the stage. In which rooms should these nowadays indispensable amenities be incorporated? We have heard that the building stands like a solitaire in a park. Every additional structure - and it will hardly be possible to avoid building one - must necessarily lead to a diminution of the overall effect. In Hessing's day, the difficulties mentioned were often compensated by improvisation. Our own day places perfect functioning above everything else. This observation cannot be made without some regret. We have already heard that the Göggingen Kurhaus Theatre was spoilt almost to the extent of disfigurement by the conversion into a cinema. It had already fallen into oblivion. An application for demolition had already been submitted. It was possible to successfully ward that off with arguments of monument preservation. The fire of 1972 made it possible for the importance of this glass-iron architecture to be recognised.

Nowadays we believe that we may include this building among the most important glass and iron multipurpose buildings to have been preserved and that we must do everything possible to restore its original beauty.

The second part of my paper is much shorter than the first, but much more important for all that. The Göggingen Kurhaus Theatre has, namely, by no means, been saved!

The City of Augsburg has, it is true, provided a considerable amount of money over the past few years and, with the assistance of the State of Bavaria (Bavarian State Office for the Care of Monuments), carried out the most urgent repair and conservation measures; however, at the end of 1980, the monument was "moth-balled" because of the lack of any viable concept for future use.

There is a danger that time - that most destructive of elements - will prove to be the most active of partners.

The Bavarian State Office for the Care of Monuments has set itself the task of perhaps still being able to discover the original colouring of the remaining parts of the building and the fittings by intensive investigations. Good use is thus being made of the enforced stoppage. The City of Augsburg, as owner, is, however, not able to make up its mind to carry out a renovation of the structure until the question of its future use has been finally settled. We believe that it should also be possible to start a restoration in special cases as "l'art pour l'art".

Admittedly, the fact that a well-founded initiative from an international congress team, such as has gathered here in Bad Ems, could surely also induce the City of Augsburg and also the State of Bavaria to undertake some new activity is also a reason why I presented the Kurhaus Theatre at Augsburg-Göggingen at this Symposium.

Notes

1. Mayers Konversationslexikon, Leipzig und Munich, 4th Ed. 1890, Vol. 7, page 471.
2. Illustrierte Zeitung of the 30.10.1886, Leipzig. Reproduced in: Monika Steinhauser and Astrid Debold-Kritter, Das Gögginger Kurtheater bei Augsburg - eine Glas-Eisen-Konstruktion. In: Kunstchronik 1973, Vol.26, No.10, page 321.

3. Gerhard Grosch, Friedrich Ritter von Hessing. In: Neue Deutsche Biographie, Berlin 1972, Vol.9, page 25.
4. Exhibition catalogue, Architektur des 19. Jahrhunderts in Augsburg. Augsburg 1979, page 56.
5. Hans-Christoph Hoffmann, Die Theaterbauten von Fellner und Helmer, Munich 1966, page 22.
6. Das Kurhaustheater Augsburg-Göggingen. Arbeitshefte des Bayerischen Landesamtes für Denkmalpflege München, Munich 1981. Contributions by Astrid Debold-Kritter, Dagmar Dietrich, Lothar Schätzl, Ruth-Maria Ullrich.
7. Georg Kohl, Barna von Sartory, Das Glashaus, Munich 1981, page 68.
8. Exhibition catalogue Augsburg 1979, *ibid.* Fig. XI.
9. Kurhaus Göggingen. Studie des Kontaktkreises des Augsburger Architektenverbandes BAB, BAI, BDA, BDB, VFA, Augsburg, no year.

RAILWAY BRIDGES OVER THE MOSELLE AND RHINE (1857-1879). TWENTY YEARS OF BRIDGE CONSTRUCTION HISTORY IN KOBLENZ

Udo Liessem

On account of its topographical situation at the confluence of two important, also strategically significant rivers, Koblenz has been a bridge city from earliest recorded history: Two permanent Roman bridges, one across the Rhine (about 50 A.D.), the other across the Moselle (2nd or 3rd century A.D., with earlier, as yet unproven predecessors) were at the beginning. Whereas the former was abandoned with the fall of the limes (about 260 A.D.) and there was no further permanent Rhine bridge for more than 1500 years, the Roman Moselle bridge had a successor in the Balduin bridge (construction begun about 1332) which was for the most part only destroyed in its historical substance by planning mistakes in the 1960's and '70's.

The following four bridges, which all still exist today, admittedly only with the pillar construction or abutments from the original structures, were built within a little more than two decades (1857-1879). All four are railway bridges, with the Pfaffendorf bridge being used exclusively by road traffic since 1899.

Unfortunately, apart from commemorative publications at the time of the opening and mention in specialist literature, there is no thorough account of the structures and certainly no monograph. Even if the iron constructions have had to make way for modern structures in tune with traffic technical requirements, it is nonetheless incomprehensible why the stone components should also be destroyed and why these remains - imposing enough - still have not been protected as ancient monuments.

It is interesting to observe the very rapid changes in attitude towards the Koblenz bridges. In 1875, the art historian Wilhelm Lübke (1826-1893) listed the "lattice bridges in Dirschau, Marienburg, Cologne and Koblenz" as being equally important and adds that they would rank "on a par with the greatest works of wonder of all times". However, in his "History of German Art" (1890), the same author does not mention a single bridge structure, and F. Haack, who compiled "The Art of the Nineteenth Century" edited by W. Lübke, does not mention the bridges at all (1912/18). On the other hand, the in its time widely used "Illustrated Building Lexicon" by O. Mothes (1874) praises the Pfaffendorf bridge and reproduces two drawings of it. F.M. Feldhaus expresses similar praise in his lexicon "Technology" (1914). In more recent times, G. Drebusch accorded the Pfaffendorf bridge an appropriate place in his work "Industrial Architecture" (1976). If one disregards the brief mention in Lübke's work, the aesthetic-art historical dimension is never brought to the fore, just the technical one. But both should be taken into account if justice is to be done to the bridges.

The Koblenz bridges came into being as a result of the rapid expansion of the Prussian railway network; apart from economic aspects, it was the strategic ones which were decisive. The Moselle bridge was built in the course of the construction of the main north-south trunk route, as part of the section from Rolandseck to Bingerbrück. At the same time, however, a Rhine bridge was planned in order to be able to provide the link to the line running along the right bank of the Rhine. - The two other bridges, the Moselle bridge at Gils and the Rhine bridge at Horchheim, were planned as part of the Berlin-Metz route. In this case it was solely strategic reasons which played a decisive role, something which was also clearly observed in