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Ladies and Gentlemen, dear guests,

on the final day of our Colloquium, I should like to take the liberty of showing a few colour slides as stimulation for our concluding discussion. It is not intended that this should become a paper proper.

Over the past few days we have succeeded in doing reasonable justice to our topic for the second half of the nineteenth century. We concentrated on a few groups of architecture because it would have been impossible to cover the whole of the immense field of iron architecture. Nevertheless, as I mentioned in my welcoming address, it was possible to deal with certain main aspects of the development without getting lost in too much material. I should like to express my appreciation to you for this.
The links between what we call style on the one hand and technology and material on the other hand become apparent. The realities of the technical structures appear to us, so to speak, in a brighter light. Naturally enough, some subjects, which are particularly acute from the point of view of the preservation of monuments, also had to be left untouched.
For instance, I would mention the subject of arcades, about which there is an excellent work by Johann Friedrich Geist, with which you are almost certainly familiar. Admittedly, the subject is not approached from our particular aspect. On the occasion of a Council of Europe Symposion in Bath some years ago, it was covered briefly in passing. In that same city there are some important examples from the beginnings of such architecture. In Brussels we have the Galeries St Hubert from 1846, with the important arcades, the Galerie du Roi and the Galerie de la Reine, still in an excellent state. In Milan this is also the case with the Galleria Vittorio Emanuele II from 1865-67. It is a magnificent specimen which was copied in Naples and Rome. The Milan specimen, in particular, is part of the direction we have been dealing with here of the stone architecture of the second half of the century which only made partial use of iron and used glass for roofing. We could take the ancient Roman shopping streets as a comparison, or Oriental bazaars, with their roofed shopping streets, in order also to observe changes in the method of admitting light. The modern principle of admitting light from above, adopting an early antecedent from the Pantheon, was used for the museum galleries of the nineteenth century, after it had, so to speak, been made presentable by the Salon Carré in the Louvre. It was the iron architecture of the nineteenth century which first created this type of display which has not been improved on for picture galleries right down to the present day. However, we were also able to observe that a typical development in many branches in the second half of the century was that iron, as a factor with aesthetic effect, was pushed into the background in favour of the increasing, very often massive use of stone facing in architecture.

In Italy, with her feeling for specific architecture forms, there has been a desire to pre-establish this term: there was indeed great reservation in the aesthetic application of iron architecture. In Britain, after the first creative impulses, there was a hesitant reticence. In 1956 even, the Deansgate Arcade in Manchester from 1900 was demolished, a late but important arcade structure.

For Britain, and for theatre architecture as a whole, one could refer to the principle of the main hall of the so-called Coal Exchange in London, demolished in 1962, a room which was constructed in 1846-1849. Pentonville Prison in London, erected in 1841-42 by Charles Barry, is part of a related group. The material coped with the most varied purposes and led to solutions, all of a similar kind. And that is to say nothing of the piers in seaside resorts, with their long bridges stretching out to sea with pavilion-like structures at the outer end. This development began in Brighton already in 1860. Miscellaneous examples of these structures have also vanished over the past few decades including, for instance, if I have been correctly informed, those in Bari, Scheveningen and on the Riviera. A whole genre is threatened with extinction.
A broad field of interest is that of American iron architecture. In Charleston, for instance, we find superb precursors of the wrought-iron gate, following the European tradition of the eighteenth and early nineteenth centuries. Now Orleans takes great pride in its iron balconies and arcades, and has made a great attraction out of them. Accordingly, the so-called French Quarter has been the object of lavish care. Royal Street provides an appropriate example of such, in part multi-storeyed, structures. These are attached in front of the houses, in the same way as in the case of the Colonial-style houses, and only have a loose contact with the main stone structure. Three years ago, during our first Colloquium, we saw a precursor of such architecture in Weil near Stuttgart. You vill recall that the iron galleries there were painted in the bright stone colour of the main stone structure and plasterwork. The Colonial-style type of house, initially with wooden balconies, as imported from France from the late eighteenth century onwards, has gained general acceptance here. Empire-style architecture was very fond of using such light structures. In the second half of the nineteenth century, they, too, gave way to more massive stone structures, as the unforgettable Mrs Wagner-Rieger so convincingly presented to us, on the occasion of our first Colloquium, as being a general development, this being a criterion for Austria.

Moorish-Spanish decorative elements soon prevailed in the iron balconies of the southern part of the United States. In Britain, on the other hand, the motif aspect is refined and perfected into purely technical solutions of cool elegance, as the façades demonstrated to us so convincingly. Iron created lattice-work architecture here, earlier than elsewhere, a pioneering feat for the twentieth century. In central and south America, iron was used very reticently for various reasons. In Buenos Aires we could for instance deal with the market hall with its iron architecture behind neo-Romanesque-Classicist stone façades, or in Chile with two iron churches to designs by Eiffel.
At the moment, the Eiffel Tower in Paris is undergoing a thorough renovation. We hope that our French colleagues will here be able to succeed in carrying through their wishes from the preservation of monuments aspect. The additions made in the nineteen-thirties are by no means in keeping with Eiffel's original conception.
Is it possible for iron architecture to be a purely functional structure? Examples taken from mining architecture, especially the apparently purely functional pit-head frames, demonstrated to us, that even their plainness cannot dispense with the aesthetic principles of the material and that iron obeys them.

This state of tension between material and style is, of course, of particular concern for the art historian, the architect and the structural engineer.
On the occasion of our first Colloquium three years ago, I drew your attention briefly to the development in Mainz Cathedral. It is characteristic with regard to Georg Möller's iron eastern tower from 1828. The Gothic tower, which had been shot to pieces during the siege at the beginning of the French Revolutionary Wars, was given an iron cupola with a strangely Oriental appearance by Möller. Shortly after 1871 this cupola disappeared and Petrus Cuypers replaced it with a massive, stone, Romanesque-like tower. Cuypers also designed Amsterdam Central Station, completed in 1885, a characteristic adopting of style with concealed modern elements. In Mainz Cathedral, Cuypers removed the stone reinforcement beneath the eastern tower, which had probably been added in the mid-fifteenth century, with two arches for the tower above. In the period immediately following the re-unification of Germany, what was wanted was an interior completely free of any obstruction to the east. The Gothic addition, on the other hand, was not designed for this sort of feeling for space, adding instead a central support, in front of which was placed an altar. Just as in the case of the Franciscans' church in Salzburg, it was a central pillar which caught the eye.
This was in keeping with the late-Gothic feeling for space, which Möller's iron cupola, for all its modernity still retained, in keeping with the notions of the first decades of the nineteenth century.

Those responsible for the preservation of monuments in the second half of the nineteenth century certainly did not share this enthusiasm for iron, and the same is also true, in general, for the beginning of this present century. In the latter period there was more interest for the need for an authenticity of material, indeed for a "legitimacy of material". When it was proposed, just after the turn of the present century, that the central towers of Worms Cathedral should be secured with concrete reinforced with iron, there was wave of indignant protest - which can still be read - against this so-called "wrong type" of material, which was nevertheless used, albeit concealed. In the course of the proposals for removing the later crossing reinforcements in Speyer Cathedral, the architect in charge of construction just a few years ago rejected the use of concealed iron construction with the very decided comment: "You can't do that sort of thing to natural stone!" Heinrich Hübsch had already avoided any echo of iron architecture during his "reconstruction" of the western front of Speyer in 1854-1858. Nevertheless, he had employed an iron tension rod beneath the shallow surbased barrel vault in his New Pump Room in Baden-Baden, constructed in 1839-1842; Graeco-Roman leaf ornaments fulfil purely decorative purposes on these technical iron rods.

There was once again a revival in the use of iron at the end of the century. Iron architecture now developed in a confident, often gracious, capriciousness. In 1897-1899, Horta in Brussels created the hall of the old Hotel Eltvelde. The gracious iron architecture of the building, which has now been demolished, hearkened back to the idea of the main hall of the Galeries Lafayette. The circular hall of the Hotel Negresco varies this type in a stricter sense: the whole building has now in the meantime been classified as a monument, and a suitable plaque compares the importance of the monument with that of the Palace of Versailles. Early railway stations in Nice reflect other developments.
If we now endeavour, on this final day of our Colloquium, to give an appraisal - even if it is only an inadequate one - then it is Paris

which proves to be, after the various ups and downs of iron architecture, a new and unsurpassed centre for this at the turn of the century. Here, iron architecture attained an often almost odalesque-like burgeoning. Ingenious constructions and variations of the material itself combined to reach heights never attained since. In combination with glass as an ideal partner, iron exploits Art Nouveau to the full. Gas light, then the unbounded possibilities of electric illumination, joined them to form a previously unrealised threesome. Modern steel construction was later again to go other ways.
This was only intended as an attempt to provide some ideas for our further discussion. As host, I should once again like to express my thanks for your intensive, always extremely interesting and fruitful participation.