HORMANN

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INFORMATION FOR ARCHITECTS FROM HÖRMANN



Henning Larsens Tegnestue and Jörg Friedrich Architects

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Martin J. Hörmann, Thomas J. Hörmann and Christoph Hörmann

Ladies and Gentlemen,

The current issue of PORTAL on the topic of "Public Buildings" was accompanied by controversial discussions also on the part of our own editors. What is still "public" these days? In view of the aspirations of the Deutsche Bahn AG to be listed on the stock exchange, does the new Lehrte railway station in Berlin still deserve this title? We believe it does. And likewise the theatre in Erfurt, funded substantially by the state and city, surely also belongs in this category. The third structure presented in this issue is, however, less easy to categorize: the new opera house in Copenhagen was the private affair of its owner and benefactor, until he decided to give it to the Danish people as a gift. Public or not public? Perhaps in future we will have to make a clearer distinction between buildings used by the public and those funded by the public. Public Private Partnerships (PPP) is the concept that is designed to make building possible even when the public purse is empty. In England and the USA the private funding of public buildings in the construction sector has already proven its worth; in this country at present this is still at the trial stage. In this issue of PORTAL, Dieter Jacob, Prof. for Construction Business Management at the Freiberg University of Technology, explains the key PPP models

and their implications for architects and planners. A twofold "Renaissance of railway stations" - one hoped-for and the other having already taken place - is the focal point of the interviews being published in the current issue of PORTAL.

Jürgen Hillmer, one of the partners at gmp - von Gerkan Marg + Partners in Hamburg, attempts to explain and justify to us the chequered constructional history of the new Lehrte railway station. Jürgen Grossmann, an architect from Kehl, explains the opportunities that railway station buildings still offer - even in smaller towns - at least to those who have the courage of their own convictions. And finally, we would like to draw your attention to a new column that will be appearing in future issues of PORTAL. Here we will be presenting artists who tackle architectural subjects in their artform in a specific way. In this current issue we kick off with the Leipzig artist, Ulf Puder. This spring extracts of his work were exhibited at the municipal gallery in Wolfsburg. For the benefit of all those who were unable to attend the exhibition, we are showing the work "Colony" right at the end of this journal.

Moman J. Juima

Thomas J. Hörmann Personally liable shareholder

PUBLIC PRIVATE PARTNERSHIPS IN CONSTRUCTION ENGINEERING: A NEW BUSINESS FIELD FOR ARCHITECTS

Germany is suffering, to put it mildly, as a result of the investment congestion in the public building sector. Public private partnerships, in short: PPPs, are seen as the future remedy. Initial experience has already been gained in school projects. With PPPs, planners face new challenges. Because it is precisely here that the following principle is applicable: the earlier everyone involved can be incorporated into the planning, the more money can be saved.

In some European countries, e.g. Great Britain and France, public private partnerships (PPPs) can already boast a long tradition. Over the past few years an increasing number of European states have taken the PPP concept on board. In German constructional engineering, schools, prisons and administrative buildings in particular were either at the planning or limited implementation stage. The first PPP contracts have already been concluded for school projects (e.g. in Monheim on the Rhine, in the Rhine-Erft district as well as the Offenbach district) and administrative buildings (like the town hall in Gladbeck and the district hall in Unna). The conversion of prisons and court buildings, such as in Chemnitz, is presently at an early stage. In Germany hospital projects are implemented as PPPs somewhat hesitantly, since in this sector there is a greater tendency towards privatization. In Münster, however, they have already started thinking about implementing the masterplan for the University Clinic based on the PPP concept.

The PPP concept and contract models

By PPP we understand long-term contractual agreements between a public agency and a private sector entity, with the objective of delivering a service or facility for the use of the general public. To ensure that the collaboration can produce a growth in efficiency, the optimum risk allocation between the public and the private partner is a key factor. In the process, the basic rule is that the respective risk should be borne by the party that can manage it the best. In terms of the contractual ruling between the public sector and the private consortium, the expert's report "PPs in Public Construction Engineering", commissioned by the "Bundesministerium für Verkehr, Bau- und Wohnungswesen" (Federal Ministry for Transport, Construction and Housing) describes seven PPP models which are briefly outlined in the "following"¹⁾.

The PPP buyer model (contract model I) is designed for turnkey contracts or the restoration and refurbishment of buildings which will afterwards be operated. Throughout the 20 to 30-year term of the contract the contractor is the owner of the object of the agreement. The transfer of title to the public sector takes place as a rule following completion of the operating phase. - In the case of the PPP FM leasing model (contract model II) the buildings are constructed or renovated/refurbished and then leased to the client. A major difference compared with conventional forms of real-estate leasing is that over a 20 to 30year period the contractor provides the services of an operator, i.e. produces results. Such contracts can be drawn up with an option to purchase or an option to extend the lease, so that the title to the property does not pass to the public sector unless at the end of the contract term it takes up the option to purchase. - The PPP renting model (contract model III) is structured in the

same way as the leasing model. Differences occur in particular in calculating the price of the property when applying the purchase option and in calculating the payment/fee.

- The PPP proprietor/owner model (contract model IV) includes the construction or renovation/refurbishment of buildings including maintenance and operation over a period of 15 to 25 years or even longer. Title to the object of the contract is retained by the public sector throughout the term of the contract. The private side renders services in the areas of planning, construction, finance, maintenance and operation and on completion of the building phase receives from the public sector a payment to be paid on a regular basis and which covers all the investment and operating costs. This contract model, also known

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The seven PPP contract models from the expert's report "PPPs in Public Construction Engineering" of the Federal Ministry of Construction $^{1\!\mathrm{)}}$

	Contract model I PPP purchaser model	Contract model II PPP-FM leasing model	Contract model III PPP renting model	Contract model IV PPP owner model	Contract model V PPP contracting model	Contract model VI PPP concession model
Object of contract	New build (if nec. refurbish/ reconstruct) (structural works)	New build if nec. refurbish/ reconstruct (structural works)	New build if nec. refurbish/ reconstruct (structural works)	New build/refurbish/ reconstruct (structural works)	Installation/optimization Plant / plant components	New build/ if nec. refurbish/reconstru (structural works)
Term (years)	20-30	20-30	20-30	15-20 (if nec., longer)	5-15	15-30
Terminability (in due form)	No (possibly partial terminability of individual operator services)	No (possibly partial terminability of individual operator services)	No (possibly partial terminability of individual operator services)	No (possibly partial terminability of individual operator services)	No	No (cf. contract models I-IV)
Design	Yes	Yes	Yes	Yes	Yes	Yes
Build	Yes	Yes	Yes	Yes	Yes	Yes
Finance	Yes	Yes	Yes	Yes	Yes	Yes
Build Finance Title to object of contract during term of contract (Own) Operation/Facility Manacement (Operate)	AN	AN	AN	AG	AG	AN/AG (cf. contract models I-
Operation/Facility Management (Operate)	Yes	Yes	Yes	Yes	Yes	Yes
Use of object of contract here: transfer of title to AG after expiry of contract (Transfer)	Yes	No (yes, when exercising purchase option)	No (yes, when exercising purchase option)	Yes (already through installation or connection with propery of AG)	Yes (already through installation or connection with propery of AG)	Yes/No (cf. contract models I-IV)
Remuneration/fee to cover a) entire investment costs Remuneration/fee to cover b) operator costs,	Yes (repayment)	No (partial amortization)	No (rent)	Yes (reimbursement)	Yes (but due to saved energy costs, poss. addit. reimbursement of AG)	Yes (but due to user paymen possibly knock-on financ / final instalment of AG
o) operator costs, other operating costs, risk premium, profit margin	Yes	Yes	Yes	Yes	Yes (but due to saved energy costs)	Yes (but due to user payme and fees)
Additional payment for acquisition of property	No	Yes (with purchase option purchase price fixed on signing of contract "calculated residual value")	Yes (with purchase option: purchase price established when exercising this option ("market value")	No (as a rule)	No (as a rule)	Yes/No (cf. contract models I-
Property	AN (or AG)	AN (or AG)	AN (or AG)	AG	AG	AN/AG (cf. contract models 1-
Structural works/plant (components) during term of contract	AN (if AG property owner: AN as leaseholder)	AN (if AG property owner: AN as leaseholder or similar)	AN (if AG property owner: AN as leaseholder or similar)	AG	AG	AN/AG (cf. contract models I-
Structural works/plant (components) after expiry of contract	AG	AN (AG when exercising purchase option)	AN (AG when exercising purchase option)	AG	AG	AN/AG (cf. contract models I-

as the operator's model, is the basis of the PPP school project of the town of Monheim on the Rhine, outlined below.

- PPP conracting model (contract model V) does not refer to the entire building but is limited to the plant equipment and component parts thereof. These are installed or optimized for energy efficiency and are then operated for 5 to 15 years. Title to the plant remains in the public sector since this is the property owner.

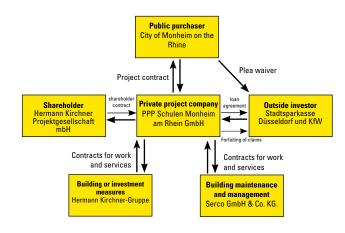
- As contract model VI the PPP concession model enjoys special status. Here the contractor as a rule is not reimbursed by

a remuneration from the client but acquires the right to third party user funding. Accordingly, he generally covers his costs via reimbursements from third parties in payment for use. On principle it is possible to also combine this contract model with models 1 to IV.

- Similar to the PPP concession model, the PPP company model is a model variant. It includes involvement by the public sector as a fellow partner in the contractor's PPP project company. Project categories of PPPs in construction engineering in Europe in 2004. Here throughout Europe Great Britain in particular is regarded as a pioneer.

Project categories of PPPs in construction engineering in Europe in 2004 States schools hospitals prisons Germany \cap 0 0 GR France 0 Netherlands 0 0 0 0 Spain Portugal 0 0 0 0 Italy 0 Ireland 0 Belaium 0 0 0 0 Northern Europe implemented to limited extent implemented Oplanned

Exemplary structure of a PPP project: refurbishment of 13 schools in Monheim on the Rhine (investment sum 24 million euros²)



Cost-effectiveness of PPPs

Before a project is put out for tender as a PPP, its costeffectiveness is examined on the basis of a comparison. In this comparison, we have on the one hand the public sector costs, revenue and assessed risks which would arise over the life-cycle of the project if it were implemented in the conventional way (so called public sector comparator, PSC). On the basis of the PSC or the conventional procurement variant, the costs, revenue and costed assessed risks of the private-enterprise implementation variant are on the other hand forecast by the public sector. For this, the data of the PSC are provided with percentage surcharges and reductions in order to arrive at the estimated PPP bid. Whether the project is put out for tender as a PPP is ultimately decided based on the results and information produced by the comparison. Following receipt of specific bids from the private enterprise sector, proof of economic efficiency must be obtained by comparing the bids with the PSC. During the course of the procurement the PSC must be adapted to arising changes and concretizations of the original tender. Proof of the quantitative economic efficiency of the PPP (illustration on right) is furnished on the basis of the pay-off method. In comparison, frequent qualitative criteria, such as

architecture, aspects relating to the environment and urban-planning or quality of the materials and equipment are incorporated into the evaluation via a supplementary analysis of the use-values.

Cost savings between 9 and 25 per cent

A current analysis of ten municipal PPP school projects⁴⁾ reports cost savings of 9 to 25 per cent for projects implemented applying the PPP procedure compared with public sector funded projects. The potential for PPP projects in the schools and day nursery sectors can be predicted using the data of the German Institute for Town Planning and Urban Development. In the case of schools, the municipal investment needed for new buildings/ extensions and refurbishments over a 10-year period is around 78.1 billion euros, for day nurseries still at least 5.7 billion euros. Implementing public sector projects as PPPs produces new challenges for the planning professions. An important aspect of PPP projects is the life-cycle approach ranging from planning to construction through operation to maintenance and repair as well. Since PPP projects aim at optimizing the life-cycle costs, involvement of the planning professions at an early stage is absolutely essential. The illustration on the bottom right spells

Proof of quantitative economic efficiency of the PPP (top)³) Effect of the preinvestment phase on cost controllability (bottom)

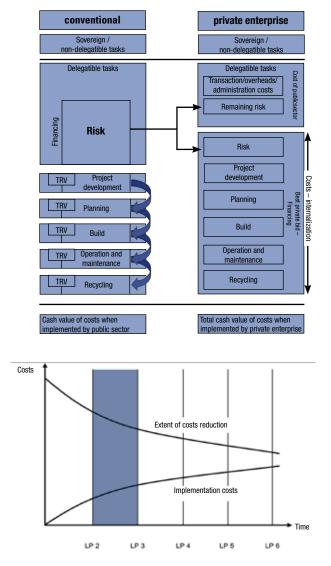
out the connection between the progress of the project and the cost controllability based on the preinvestment phase/preliminary planning.

Early cooperation of the planners is essential

The earlier stipulations are made in the life-cycle of the building, the greater the savings effect. The savings potential decreases as the project advances and the implementation costs increase accordingly. The optimum time for the so called value management in terms of life-cycle cost optimization is regarded as the phase between brainstorming and project planning. This means that already at an early stage in the project planners, building companies and operators should cooperate and coordinate their interests. Since already within five to ten years the costs for operating a facility can have reached the construction costs, a facility management concept developed at an early stage can be crucial in optimizing the life-cycle costs. It would therefore make sense if planners, for example, could participate in the saved costs.

A further aspect is the output orientation of PPP projects. This means that the public sector no longer specifies the services to be rendered as input but describes the service it requires to then be provided by private enterprise. This leads on the one hand to extensive planning services even before a tender is accepted. On the other the output-oriented specification widens the scope for product and process innovations and thus ultimately for an increase in efficiency.

 Valuation Report "PPPs in Public Sector Construction Engineering", commissioned by the BMVBW, volume I: Introduction, 2003, pages 90-97
 Economic Efficiency of Public Private Partnerships based on the example of schools, a survey commissioned by the Baden-Württemberg Department of Trade and Industry, produced by the Chair of "ABWL" (General BA), TU Bergakademie Freiberg, 2005, page 4, can be called up at http://www.wm.bwl.de, heading PPP



3) Jacob/Schweisfurth, PPPs in a Comparison of Economic Efficiency, in: Bundesarchitektenkammer [Federal Architects' Chamber] (publisher), Public Private Partnerships in Practice, publishing house Bundesanzeiger, Cologne 2005, pages 70-89
4) Economic Efficiency of PPPs based on the example of schools, in the place cited, page 28 Further literature on PPPs: http://www.wiwi.tu-Freiberg.de/baubwl/ppp.htm Berlin's Central Railway Station -Lehrte Railway Station

Berlin was once well known for its dense railway network but WW II and the partition of Germany took its toll. Berlin's high volume of traffic demanded a new railway concept. From 2006 Berlin's central railway station - the Lehrte railway station - will link up the North-South line with the metropolitan line running from East to West. Then the largest interchange railway station on the continent will form an interface within a merging Europe.

The new Lehrte railway station is being built on an historical site: For decades, its predecessor, one of six terminal stations in Berlin, was seen as the gateway to Germany's capital. The building, erected in 1871, was blown up in 1959 because as a result of damage sustained during WW II and the partition of Germany it had lost all importance. Today the site, even if once again in the centre of the city, is an industrially marked steppe landscape. However, that is all set to change: the architects gmp from Hamburg, from whom the design originates, see the new Lehrte railway station as an interface within a merging Europe and as a catalyst for the further development of the city.

Shopping mall with railway siding

gmp's design emphasizes the character of the railway station first and foremost as an intersection. A 321 metre long glazed concourse for the metropolitan station running from East to West is cross-linked by a 160 metre long and 40 metre wide lower concourse running from North to South. In addition, it is spanned by two 46-metre high, bow-like office buildings. Five different levels result: the North-South rail link runs under the Spree at a depth of 15 metres. It includes four platforms for long-distance and regional traffic as well as two platforms for the U 55 underground. Located above the tracks for long-distance traffic, at a depth of 7.5 metres, are restaurants, bistros, service facilities and access to a multi-storey car park. The main concourse providing transition to buses, taxi ranks and the tramway is at street level. Above it, an intermediate storey offers space for two shopping galleries (over three levels), restaurants and snackbars.

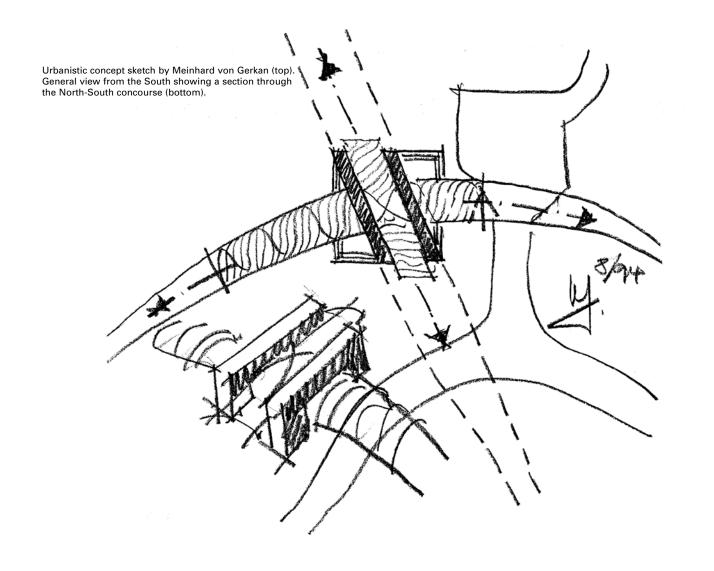
Running through the 27-metre high main concourse from East to West and at a height of some 10 metres are the four city bridges. The new building was started in 1995 with the construction of the zoo tunnel, this being the reason why the bed of the River Spree had to be rerouted for two years from 1996 to 1998. The tunnel is ventilated via a 60-metre high tower that saw completion in 2004. However, the intrusion of water into the tunnel has caused a more than one year's delay in the timetable. Construction of the bridges for the new metropolitan railway line started in 2001, in the year following the glass roof over the main concourse which was already completed a year later. At the present time the "bow structures" started at the end of 2004 are being erected.

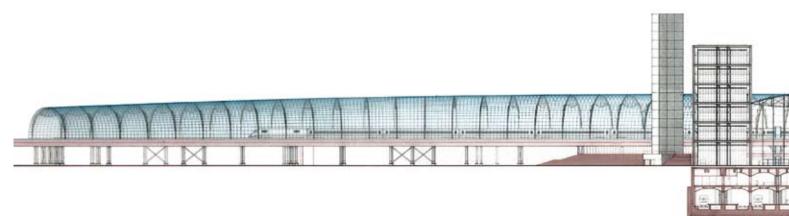
The high quality standard of the structure, already recognizable today in the carefully detailed roofing over the platforms, is continued in the fire doors. On the basis of the required quality and product range Hörmann secured the order for tubular framed elements T30/T90, fixed glazing elements as well as for steel fire doors T30/T90 and sliding fire doors.

Design deviations

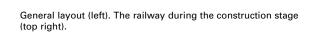
Contrary to the architects' original design, the East-West glazed roof, initially planned 430 metres long, was executed as a structure no more than 321 metres long. The ceiling of the North-South concourse lying some 15 metres under the ground, was not built, as gmp had intended, as a domed construction different in height, but as a flat ceiling using only grey-coloured acoustic tiles. Now, even after the opening, it will no longer be possible to work out whether the missing domes will present a major loss or not.



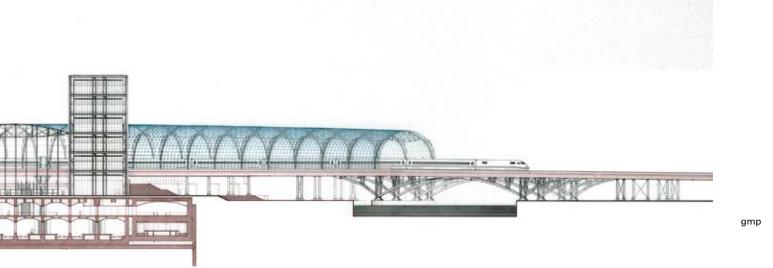






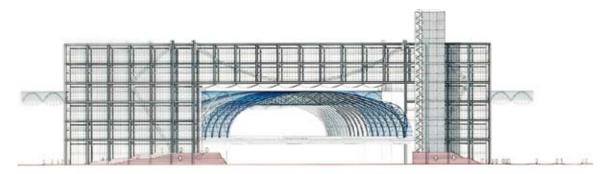






Looking down from the transversal platform into the interior of the building below. Here in the visible stairwell 31 Hörmann F30 steel fixed glazing elements with casing frame (top) were used. Section through the concourse with west view of the bow-like structures (bottom).





CONTRACTOR Deutsche Bahn AG represented by the DB Projekt GmbH - Knoten Berlin

DESIGN gmp – von Gerkan, Marg and Partners

STATICS Schlaich Bergermann and Partners; IVZ/Emsch+Berger

LIGHT PLANNING Peter Andres + Conceptlicht GmbH

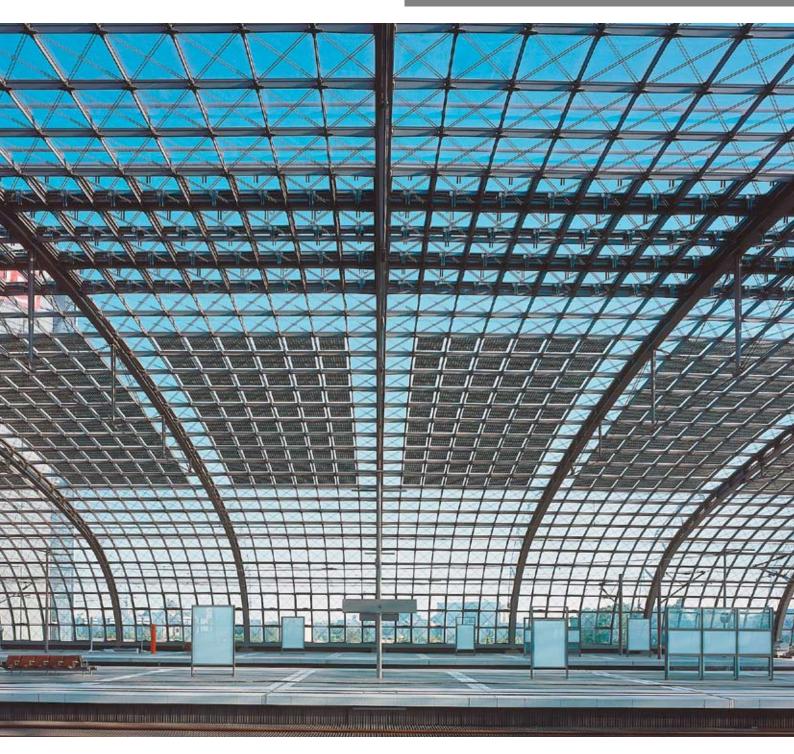
PHOTOS

Jürgen Schmidt (S. 9, 11, 13), Michael Pfisterer (S. 11 general layout), Hörmann KG (p. 12)

HÖRMANN PRODUCTS

Tubular frame elements: single-leaf T30 steel tubular frame doors HE 311, double-leaf T90 steel fire doors HE 920, F90 fixed glazing elements HE 930, steel smoke-tight doors S/RS-100 and S/RS-200, steel smoke-tight glazing S/RS-300; F30 steel fixed glazing elements with casing frame; single and double-leaf steel fire doors T30 H3 und T30 H3-D, single and double-leaf steel fire doors T90 H16, fire shutters T30 H3 and T90 H16, as well as sliding fire doors HG 21

The station concourse is 27 metres high. The Lehrte railway station is Berlin's central interchange station and also the shortest North-South link through the city.



PORTAL TALKS TO JÜRGEN HILLMER

Berlin's new Lehrte railway station scheduled for completion in 2006 is intended to be a traffic hub of European standing. The design of gmp - von Gerkan Marg and Partners envisages the structure as a gigantic traffic intersection and a new "gateway to the city". PORTAL questioned Jürgen Hillmer, a partner and since 1994 Project Manager for the Lehrte railway station at gmp, about the vision of the architects - and additionally, to what extent it will take shape despite the cuts.

PORTAL: 40 years ago Gerkan, Marg and Partners built the Tegel Airport in Berlin, and now with the Lehrte railway station have implemented a traffic-serving facility of similar importance. Which of the two demanded more staying power?

JÜRGEN HILLMER: There was undoubtedly a strong political will behind both projects. 40 years ago it was the Tempelhof Airport that had reached its capacity limits, making a new airport absolutely essential. The basis for the Lehrte railway station was formed back in 1991 with the "German Unification Traffic Projects" investment programme and the Bundestag's Capital City Resolution. The objective was and still is to create a European railway hub right in the heart of Berlin. Looked at in that light, both projects were based on a sound political foundation. But implementing the basic all-embracing concept does demand staying power. With projects of this magnitude it is important not to lose sight of the overall concept and not to allow the desired quality of shape and space to fall prey to shabby compromises. In the case of the Lehrte railway station, this is, even a year before it becomes operative, by far the more difficult task.

PORTAL: Which urban model does Berlin's central railway station follow?

JÜRGEN HILLMER: Today the new Lehrte railway station is the departure and focal point of a district to be revitalized, similar to the historical Lehrte railway station which up until WW II was considered to be the major "overseas railway" in the heart of Berlin. With its high, glazed entrance fronts and the bow-like structures at its flanks the station concourse becomes a major gateway between Moabit in the North and the government quarter in the South. As a result, the architecture emphasizes the character of the railway station as an intersection. In this way it becomes a unique, memorable building and perhaps the most public city landmark of the reunified metropolis. **PORTAL:** What is the present stage of the construction work?

JÜRGEN HILLMER: In the underground part of the railway the interiorwork is in full swing. The tracks are already being laid, while directly adjacent to them the platforms are being covered and the walls and ceiling clad. On the next storey up the first balustrades and glass banisters are fitted so that the interior rooms are slowly taking shape. The same can now also be finally said of the external appearance of the railway station. Some of the reinforcing cores of the bow structures are still being cast in concrete. At the same time work on the outer-lying steel structure has begun. It is scheduled to be completed this August with the swinging down of the bridge elements. PORTAL: When your first design was being drawn up, there was a great demand for office areas ; but not any more. What use can you envisage for the bow-like building structures?

JÜRGEN HILLMER: It would have been extremely short-sighted of those involved in the planning some 10 years ago if they had tied themselves down to using the structures solely as office space. The column grid and the depth of the building have been selected to envisage use as a hotel in addition to its function as office space. To my

JÜRGEN HILLMER

Certified engineer and architect, born in 1959 i Mönchengladbach, Germany

up to 1988	Student of Architecture in Brunswick
1988–1992	Collaboration in the office
1300-1332	of Gerkan, Marg + Partners, Hamburg
1992–1995	Free-lance architect in Haltern,
	Northrhine-Westphalia
1994	Associated partner in the office
	of Gerkan, Marg and Partners
since 1998	Partner at von Gerkan, Marg
	and Partners
since 1994	Managing partner of the Lehrte
	Railway Station Project in Berlin
since 1999	Managing partner of the Hamburg Airport Project (terminal
	buildings 2+3)

knowledge, even specific talks about this have already taken place with a potential client. Today, however, the overall planning is geared towards flexible use as office space. German Rail (DB) is deliberating whether to use one of the bow structures entirely for itself. In the other smaller office units as well as combined or open-plan rooms are conceivable - and thanks to internal stairs also across several storeys.

PORTAL: Compared with your original design, the length of the glazed roof in the East/West direction was shortened by almost one third. What consequences does this have for you?

JÜRGEN HILLMER: The design with its emphasis on the routing of the lines and thus giving prominence to the railway station as a railway intersection has not been destroyed by shortening the roof - but it has definitely been disturbed. The glass roof that with its 430 metre long roof was previously perfectly balanced in relation to the bow-like structures, now looks as if it has been mutilated. But also in terms of the interior space, the effect of the reduction has been fatal. The dynamics and elegance which could previously be sensed, have been significantly weakened. But as far as the passengers are concerned, there is a much more significant disadvantage: in the case of longer ICE-trains passengers needing to get on and off in the front and rear carriages have to stand in the rain along a 100 metre long stretch - and that for a railway station of this magnitude and importance. This is simply absurd when you consider that in Germany railway stations of any size have had additional platform roofs built and continue to do so in order to prevent precisely this problem! PORTAL: Do you anticipate lawsuits from residents on

account of the additional noise pollution? JÜRGEN HILLMER: Shortening the roof increases the

acoustic emissions that the neighbouring properties, presently under development, are exposed to. This will seriously reduce the value of these properties. In 2002 the state of Berlin therefore filed a lawsuit in the Federal Administrative Court against the Federal Office for the Railway and thus the Federal Republic of Germany who had authorized the shortening of the roof. To my knowledge



the lawsuit has failed. But the increased noise pollution remains nevertheless.

PORTAL: After all the problems with the roof in the North-South concourse, can you still identify with the outcome of the construction work?

JÜRGEN HILLMER: The Lehrte Railway Station is, thank goodness, more than simply a glass roof or the suspended ceiling of the underground station concourse. Having said this, however, we feel that precisely by shelving the vault-roof which we had specifically developed over years for the lower storeys of the station, the building in this area has been most horribly disfigured. Now being installed in its place is a cheap flat ceiling which was designed by another architect behind our backs. Already during the construction phase it has become clear to a great number of people, and here I don't just mean the planners but also outside observers who have followed the progress of the building over the past few months, that this is indeed a significant loss. Nevertheless, we do identify with the other parts of our building, where our holistic concept is still very much in evidence. I very much hope that the new Lehrte railway station will be instrumental in improving the image of and thus promoting the "Renaissance of railway stations" as a result.



Intersection architecture: model of the Lehrte railway station in Berlin.

PORTAL TALKS TO JÜRGEN GROSSMANN

While colleages complain about the lack of willingness to invest, the Bühl architect, Jürgen Grossmann, takes things into his own hands: in September 2003 he acquired the railway station of the border town Kehl, refurbished the building and re-opened it to the public some 6 months later. Now the ICE railway station in Offenburg is to follow.

PORTAL: Where did you get the idea from to purchase the railway station in Kehl and to establish yourself there? JÜRGEN GROSSMANN: In 2001 I moved to Kehl-Marlen for personal reasons and in connection with it wanted to also relocate my architect's office and my furniture store to Kehl. In the spring of 2003 the "städtische Wirtschaftsförderung" (body to promote the urban economy) offered me an area in the Kehl railway station. As luck would have it, at the time I had a client for whom I was planning a chain of shops in railway stations and so I got to see the existing reconstruction plans for the railway subway. The railway was still interested in selling the railway station. And also on the part of the town, there was a great deal of interest in finding an investor to allow the building to be renovated. Then, finally in the spring of 2004, the Baden-Württemberg horticultural show in Kehl was fast approaching.

PORTAL: What criteria clinched the matter?

JÜRGEN GROSSMANN: Firstly, the central location. Secondly, the current development of Kehl on the tide of the horticultural show. Above all entrance to the city from the French side needed to be upgraded. Thirdly, the quality of the building itself. And last but not least, the secured use with central tenants.

PORTAL: You purchased the railway station in October 2003 and by April 2004 the opening ceremony was taking place. Did the state's horticultural show and the pressure on the city fathers to get things moving, prove helpful? **JÜRGEN GROSSMANN:** Yes, most definitely! The railway station is located directly next to what was then the entrance to the horticultural show and in its old state would have made an extremely bad impression. I had agreed with the city authorities to have the external facade completed by the start of the horticultural show **PORTAL:** What changes did you make to the floor plans? **JÜRGEN GROSSMANN:** Originally the shops were directed towards the station concourse and the adjoining corridors, in other words were facing inwards. The corridors were removed and the shops were planned to face outwards, i.e. opening onto the station square, the premises being "less public area - more usable space - opening up to the outside".

PORTAL: How is the railway used today?

JÜRGEN GROSSMANN: Besides the more common uses, such as a travel agent, baker and bistro as well as travellers' aid office, there is a hotel, a conference centre, a recruitment agency and a branch of the Kehl savings bank. In addition, we ourselves use large areas for our architect's office and our furniture store "archigramm living culture".

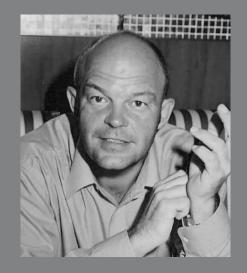
PORTAL: What potential does Kehl have for tradespeople? **JÜRGEN GROSSMANN:** The retail trade in Kehl largely thrives on customers from France. For me Kehl is a district of Strasbourg, in which certain things are better to obtain and in which other qualities are available. compared with the other parts of the city. It's now up to the Kehl business people and the politicians to increasingly develop this further in the years ahead.

PORTAL: In a press report you have already been

JÜRGEN GROSSMANN

Certified engineer and architect, born in 1962 in Baden-Baden

	Trained to become an architectural draughtsman
up to 1990	Student of architecture in
	Karlsruhe and Paris
1990	Architect's office founded
	Jürgen Grossmann Architects
	(JGA) and the furniture store
	Archigramm Living Culture
	(ALC)
1998	Development of a furniture
	system for call centres
1998-2001	Implementation of several
	assignments for the Abu Dhabi
	Royal Family



described as representing a blend of Robin Hood and Warren Buffet. Do you consider this to be appropriate? JÜRGEN GROSSMANN: Not particularly. I regard the description of one of your colleagues, "an architect looking beyond the edge of his nose", to be more accurate. I have now been running my architect's office for more than 15 years, with increasing emphasis on revitalizing ailing properties. At the same time I also manage a furniture store. In brief, it could be said: in my activities as a project developer I unify the experiences gained from different day-to-day operations. Here commercial evaluation, technical know-how and creativity fuse into a single unit. **PORTAL:** What would seem to be impossible for the major railway companies - namely to revitalize smaller railway stations - is obviously something you are good at. Do these projects only function provided you are on site or located nearby?

JÜRGEN GROSSMANN: That is not entirely true. There's no doubt that German Rail could implement similar projects. The crucial question is, however, at what cost and what return can be expected. In these points I have an advantage over big business. Of course, like every business it is an advantage to be close at hand. But it is not the sole deciding factor. **PORTAL:** Is there a minimum size for you, as from when a project like the one in Kehl becomes profitable? **JÜRGEN GROSSMANN:** No. Rather a maximum size whereby this must be individually assessed for each project.

PORTAL: While in other offices more and more work is being outsourced, you have decided to become a generalist. Was that your ideal right from the start? **JÜRGEN GROSSMANN:** As a student of architecture, in the first projects I implemented I also designed the interiors. After completing my studies I continued on this course. Firstly, it leads to an improvement in the project results and secondly it is something that the client appreciates and approves of. Why then separate what obviously belongs together?

PORTAL: For the railway station in Offenburg – after all, an ICE railway station - you are planning a similar revitalization as implemented in Kehl. What does your further time-table there look like?

JÜRGEN GROSSMANN: You will doubtless realize that these are extremely complex projects. It is not simply a matter of renovating a building but generally also entails problems relating to urban planning and traffic engineering. But to be more definite: if everything goes to plan, we hope to have completed the project by the end of 2006.

The railway station in Kehl following its revitalization



Central railway station in Offenburg: visualization of the reconstruction



Opera House in Copenhagen

The genesis of Henning Larsen's new opera house in Copenhagen is a novelty: For the very first time a public building has become a rich man's private affair. The 91 year old shipowner, A.P. Mærsk McKinney Møller, dictated his terms to the state and tax payers and his creative wishes to the architect. The new opera house is after all Møller's gift to Denmark. A " Danaergeschenk" as critics now like to call it.

The then Danish Minister for Culture will doubtless remember the telephone call she received on 4th February 2000 for a very long time. At the other end of the line was Mærsk McKinney Møller, boss of Maersk, the world's largest transport company and Denmark's major tax payer. The year previous he had purchased Dokøen, the old dock island opposite the Amalienborg Royal Palace and partly a wildlife reserve. His intention was to now create a site of cultural interest there for the Danish people. The state and city would be allowed to decide for themselves exactly what this would be. The new building was to be funded by the joint foundation run by Møller and his wife Chastine McKinney. The Danish government decided that a new opera house should be built there and Møller agreed. His mission was not only cultural but also had a city planning aspect to it: the opera house was to represent the glittering "full-stop" at the end of a baroque civic axis, leading from Eigtveld's marble church dating back to 1794 through the octangular royal palace down to the harbour. The view which had lingered here, so to speak, into the wide world beyond, would in future be brought to an end on the other bank of the harbour basin.

With pent roof and radiator grille

The prime order for the new building was awarded to Henning Larsen, accompanied by a tight time-table: Møller demanded that the opera house be completed within four years - in time to mark the Maersk concern's 100 years anniversary. This was achieved - even if the construction costs originally calculated at 200 million euros had by then escalated to 335 million euros.

The opera house covers a total area of 41400 square metres, 12000 of which are on five underground storeys. Its striking distinguishing feature is a 90 x 158 metres large pent roof,

reminiscent of Jean Nouvel's concert house in Lucerne. Up to three metres thick, it overhangs at the front by some 32 metres. Earlier general layouts indicate what Larsen's initial idea had been: a rectangular, glazed foyer which allowed an unobstructed view of the auditorium already from the opposite bank of the harbour. Møller, however, intervened, dictating a horizontally striped construction involving lots of steel and with very little glass which was soon to be given the nickname "radiator grille". But the rounded shape is also problematic in spatial terms: between the stairs leading up to the galleries and the tables of the opera house cafés there is hardly any space left for taking a stroll. Not until the upper floors does the foyer gain in expanse and offer more of a view.

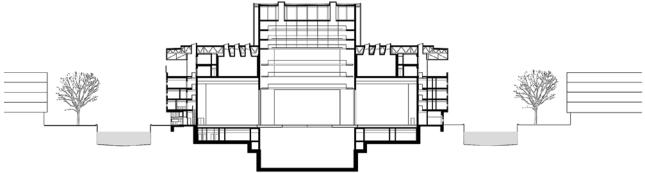
New "outlook" for the old part of the city

Henning Larsen has since distanced himself from his new building, referring to the facade as a "failed compromise". Critics complained from the outset that the view from the Amalienborg Royal Palace would be obstructed and in the end they were right. If the new building is approached from the South or North, it places a welcome accent amid the no-man's land of the docks and warehouses. Head-on from the West, however, it seems to distort the scale of things. It is as if an overseas steamer has moored on the quayside behind the Amalienborg Royal Palace. Yet this "vessel" with its glazed bridge will not be weighing its anchor again so soon. It will remain moored there and certainly also outlive its benefactor. It would seem in the meantime that the people of Copenhagen have actually made friends with their new, obtrusive neighbour. Already by the beginning of March the guided tours through the new building were fully booked up for the rest of the season.

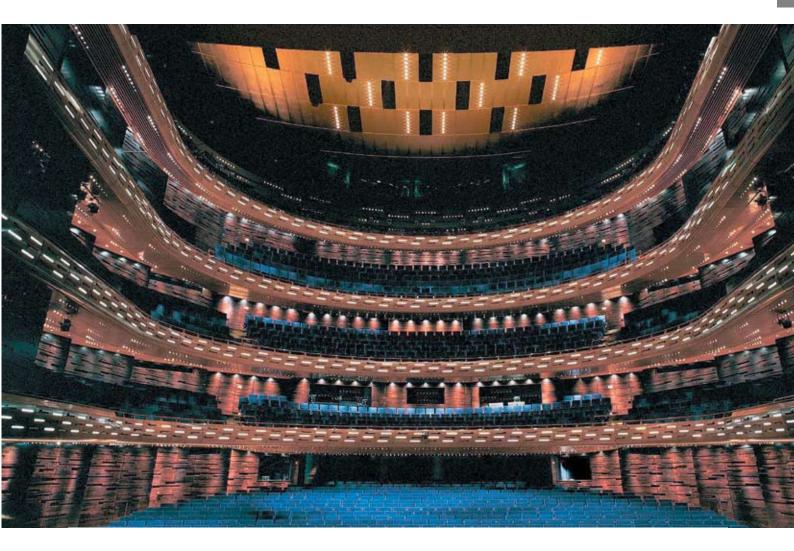


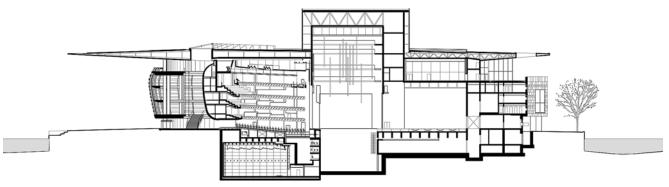
Beneath the striking pent roof the opera house extends over five above-ground and five under-ground storeys. Where grass grows today, apartment blocks will be standing tomorrow.



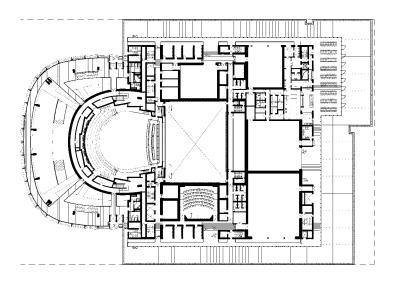


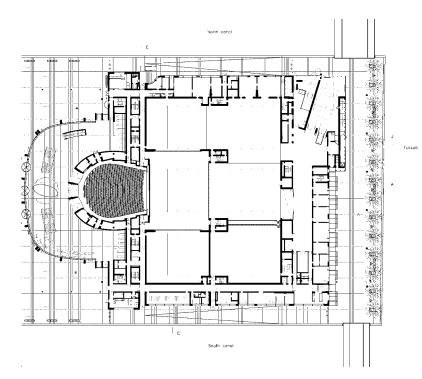
View of the auditorium large enough to accommodate 1500 to 1700 guests. It was given notched, black maple wood clad back panels, oak parquet and - on the request of the owner - a 24 carat leaf gilded ceiling.





Floor plans of the 4th upper floor (top) and ground floor (bottom). View towards the old part of the city: the side and rear facades of the opera house were clad with German jurassic limestone. Beneath the pent roof the observer can take in sumptuous views of Copenhagen (right).







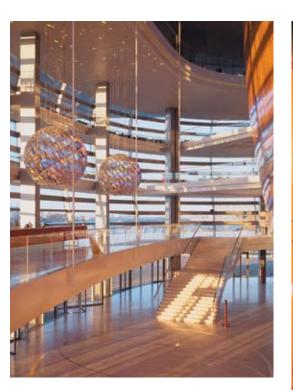


CONTRACTOR A.P. Møller and Chastine Mc-Kinney Møller Foundation , Copenhagen

DESIGN Henning Larsens Tegnestue, Copenhagen

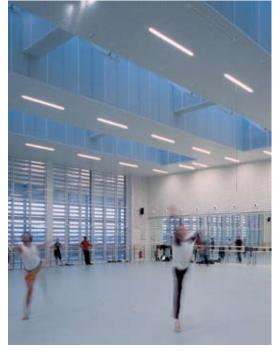
LOCATION Ekvipagemestervej 10, 1438 Copenhagen K / Denmark

PHOTOS A.P. Møller and Chastine Mc-Kinney Møller Foundation (page 21), Lars Schmidt (page 23 right), Adam Mørk (page 19, page 22 bottom right, page 23 left) Jakob Schoof (page 20, page 22 top right)



The heart of the opera house is the auditorium which has been clad with firey red maple wood. Suspended in the foyer, three light sculptures from Olafur Eliasson (top left and right). Most of the rehearsal rooms - here one for ballet - are sited directly beneath the

roof (bottom left).





THEATRE IN ERFURT

With the new theatre designed by the Hamburg architect, Jörg Friedrich, Erfurt hopes to step further out of the shadow of the cultural and classical city of Weimar. The building, located on an industrial wasteland, breaks new ground also in terms of city planning. Within sight of the old part of the city its calm-modern architecture signals renewal and cultural ambitions.

The 12th September 2003 marked a premiere not only for the artistic directors and company of the new Erfurt theatre but also for the entire region: it is the first building of its kind in the new federal states since the new opera house was constructed in Leipzig in 1960 and the Semper opera house reconstructed in 1985. In the old states a theatre of comparable size was last completed in Kaiserslautern in 1995. Politically, the "first German opera house of the 21st century" (Jörg Friedrich) proved to be a difficult birth: a lot of the Erfurt residents pondered as to why the old civic theatre, a building dating back to 1894, could not have been renovated. Repairing it would have proved extremely expensive and space-wise it would still have remained cramped. In the 90s land became available at Brühl, a former factory area on the Western fringe of the old part of the city, opening up opportunities for new growth.

Stage sets in place of office machines

In former East German times office machines of the "Optima" brand were produced here; rising up today on the very same site is the stage tower of the new theatre. On the contrary, "it plunges itself into the cityscape", as the Neue Zürcher Zeitung (New Zurich Times) once wrote: in order to exercise maximum restraint within range of the Mariendom Cathedral and the Church of St. Severi, the new building was set as far as possible into the ground. The stage lies four and a half metres below the outer ground level, yet with rehearsal and engineering rooms still sited beneath it - all uses which, according to Friedrich, if they had taken place above ground would have to have included complicated screening and noise protection technology. Also the section of the new building above ground is essentially housed beneath the twelve metre high flat roof which tops the building. Its position was already predetermined by a special urbanplanning report: a detached solitary building set back from the streets in the South and East. Jörg Friedrich gave the theatre a square floor plan with a side length of 71.5 metres, placing at its side a white rendered studio and workshop building, from which the stage can be directly accessed through a tunnel. The theatre facade comprises a glass frontage as high and as wide as the building itself, framed by black basalt, from which the auditorium and the two white rendered adjoining room appendages step back. In the foyer all the routes converge; from here spiral staircases lead down to the stage level and to the "theatron", a stepped underground courtyard within the interior of the building complex. This open-air stage is a real novelty in the German theatre landscape, otherwise characterized by the strict separation of its houses from the open-air venues. But also throughout the day it provides a good service as a rest and chill-out zone.

A treasure-house for the performing arts

The large auditorium, separated from the roof and the surrounding galleries by bands of light, holds 800 theatre-goers, with a further 199 guests finding seats in the studio stage area in the rear part of the building. Jörg Friedrich compares the auditorium to a treasure-house: the cone-shaped room has been cast in site-prepared concrete and clad with black marble plaster; the interior on the other hand has been kept entirely in crimson red. In order to offer the audience an under-the-skin experience of the performance, the rows of seats are steeply staggered, the last row being a mere 17 metres away from the stage. At the same time the spatial volume is sufficient to create the acoustic perception of a large auditorium.



A cultural city's showcase: the theatre stands as a solitary building on a former industrial site. On a square floor plan it houses a large auditorium, a studio and open-air stage as well as rehearsal and dressing rooms.



CONTRACTOR State capital Erfurt Office for Construction Engineering and Building Management

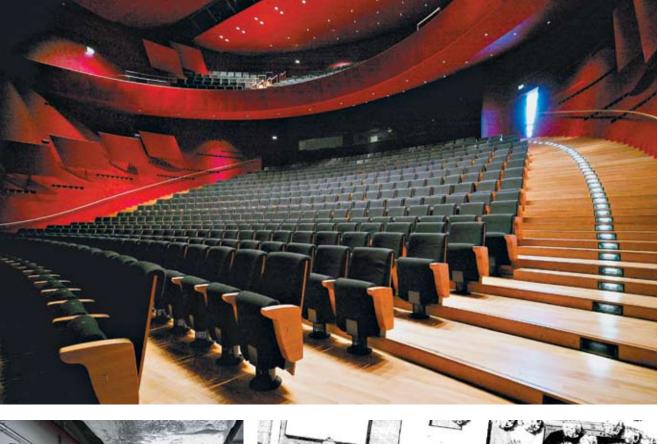
DESIGN Prof. Jörg Friedrich and Partners, Hamburg

LOCATION Theaterplatz 1, Erfurt

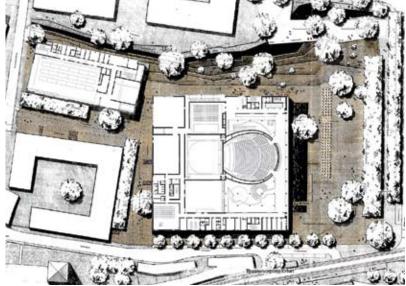
PHOTOS

HÖRMANN PRODUCTS Single and double-leaf steel fire doors T30 H3, single-leaf steel fire doors T90 H16 and double-leaf steel fire doors T90 HG25 as well as double-leaf steel fire doors T90 HG19

The auditorium: a "treasure" in crimson red (top). More than 100 fire doors in the building (bottom) afford the guests and employees protection.







CORPORATE NEWS



2



1. THE HÖRMANN GROUP CONTINUES TO GROW

Over the past two years, and contrary to the overall trend in the construction industry, Hörmann has successfully managed to increase its sales. For the first time the Hörmann Group now employs more than 5000 worldwide. This plus can be attributed above all to its activities in the international markets. In 2004 the group's turnover exceeded € 800 million compared with approx. € 750 million in 2003. In the process, the share of exports rose to over 40 %. Outside Germany, Hörmann has since set up its own sales companies in 25 international markets and cooperates with Hörmann partners in more than 30 further countries. In 2004 a new sales company was opened in Rumania, and in the Czech Republic a new, larger facility was opened near Prague. This autumn a new factory will take up production in Poland. Nevertheless Hörmann also rates the importance of the domestic market as positive and still sees Germany as the impulse generator in the field of research and development and therefore crucial for its role as an international pioneer of innovation and quality.

2. NEW SAFETY STANDARD EN13241-1 FOR GARAGE DOORS AND INDUSTRIAL DOORS

The new European Standard 13241-1 has been in force since 1st May 2005. Within the framework of European harmonization this standard combines all the individual European standards for doors/gates.

The standard describes the safety and performance requirements for all powerdriven and manually operated doors/gates deployed in the industrial and commercial sectors which are intended for use in areas accessed by pedestrians. The fundamental objective of the standard is personal protection. Involved above all here are safety standards, such as finger-trap protection (figure 2.1), anti-fall safeguards (figure 2.2) or reach-in protection (figure 2.3).

The central question in cases of damage, claims or accidents is always: who is responsible for the faultless operation of the door system. Assuming that the owner-operator has carried out proper maintenance, three parties come into question: manufacturer, planner and processor.

The manufacturer meets the required prerequisites

The manufacturer is mainly responsible for implementing the guidelines of the new door standards. The manufacturer must have independent testing institutes verify that the requirements in terms of safety, wind pressure and thermal insulation are met. In the case of a newly installed door system including a door and operator from the same manufacturer, this means, for example that:

- both components are tested together in accordance with the Construction Products Directive, the door has been awarded the CE mark of conformity and the operator comes with an EC declaration of conformity. It confirms that the present combination of door and operator has been tested,

- the door system comes with Installation, Operating, Maintenance and Dismantling Instructions.

Thanks to the documentation supplied, in this case the planner and specialist dealer can be certain that the door meets the requirements of the new standard in every aspect. It goes without saying that the company conducting the work is responsible for the correct installation. The position is similar regarding a garage door that is retrofitted with an operator from the same manufacturer.

Greater expenditure in terms of time and costs for products of different manufacturers

Where a door and operator are of different makes, the work involved and also the liability framework for the installing company increases significantly. The basis for this is the so called "Conformity Assessment" as set out under point 6 of the new European standard. Here we find the following stipulation:

2.2

2.3







"If a door is built on site from products of different manufacturers or suppliers, then according to this European standard the party responsible for the installation is deemed the manufacturer."

The recommendation made here is guite clear: it is best to use a door and operator from the same manufacturer. This applies also to retrofitting an operator to an existing door.

Door planning requires intensive preparation

If the planner wants to be sure that the selected door types and operators are in compliance, he too must be fully aware of the details of the new European standard. In the process, there are a number of performance criteria to be met. Because which door is ultimately used depends above all on the given local conditions and the needs of the user/owner. Therefore, there are some questions that could be relevant for meeting the European standard which planners must clarify in advance, for example:

- do sound insulation measures need to be taken (such as with underground garages sited beneath residential dwellings)? - are the doors exposed to particularly strong winds (e.g. caused by drafts in halls which have access doors on more than one side)?

- do the doors have to be equipped with specific thermal insulation features (relevant, for e.g., for cold stores)? When commercial buildings are renovated and old manually operated doors in halls are retrofitted with new operators, conformity with the new European

standard again becomes an issue. If the combination of door and operator does not comply with the standard, then this can involve a great deal of time and money to put right.

New European standard - this is what Hörmann offers its partners

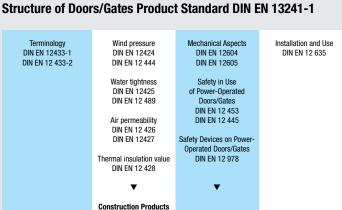
In order to assist its local partners in implementing the new door standard, Hörmann offers the following service package:

- seminars on the topic of EN 13241-1. - comprehensive literature on the new standard.

- all the necessary documentation including declaration of conformity are included with the new doors and operators. Even for retrofitting a Hörmann operator to an already fitted Hörmann door/gate installed prior to 01.05.2004, the

fitting company assumes the minimum responsibility for the correct installation. - At www.hoermann.de Hörmann offers detailed safety checklists for downloading to enable up-and-over garage doors and sectional doors to be checked.

- In addition, Hörmann specialist dealers offer a free-of-charge safety check for any old garage doors.



Directive

Machinery Directive (MRL), EMC Directive

2.1





4.



3. LEADING PHOTOCELL FOR INDUSTRIAL SECTIONAL DOORS

In the hectic world involving the transfer of goods and materials, it can happen that also personnel, forklift trucks or transported goods are located underneath the closing door. In order to largely eliminate potential hazards and damage, Hörmann has developed a leading photocell that detects obstructions before these make contact with the door. Sensors monitor the lower edge of the bottom door profile and in the event of danger immediately cause the door to stop and reverse. A further benefit of the new technology is that it allows Hörmann sectional doors to be operated at even higher speeds with no risk of the permitted closing forces being exceeded. Fast-closing doors reduce heat loss, thereby saving valuable energy. With this system the sensors are no longer located in the bottom door profile but in a leading swivel arm construction. The side crash protection prevents damage to the swivel arm when the door is closed. On the new sectional doors including a wicket door with trip-free threshold, the leading photocell is a standard feature. On all other industrial sectional doors the photocell is available as an optional extra.

4. SECTIONAL DOORS -WICKET DOOR WITH TRIP-FREE THRESHOLD

With its wicket door with trip-free threshold Hörmann offers a true innovation for the industrial and garage door sector. Where lack of space excludes a side door, wicket pass doors prove an extremely practical solution. The wicket pass door provides a simple and convenient access to the garage or to a warehouse without having to open the main door. Up until now, for constructional reasons, a wicket pass door involved a 180 mm or 300 mm high threshold. The new construction, despite comprising an extremely flat stainless steel threshold, no more than 10 mm high in the centre and 5 mm high at the rounded edges, still offers a high degree of door stability. It is no longer necessary to specifically mark the threshold as a potential hazard point.

Under certain circumstances these wicket door garage/sectional doors meet the requirements of an emergency exit door. In the case of power-operated doors with wicket door, a leading photocell with two sensors ensures non-contact reversing should the door encounter an obstruction. The wicket door contact ensures that the main door can only be opened when the wicket door is closed.

5. GLAZINGS FOR SECTIONAL DOORS

6.

With its design-line entrance doors and garage doors as well as matching side doors Hörmann offers architects the possibility of giving the frontage a distinctive look. For 2005 the design spectrum has been extended by adding three coordinated entrance door/sectional door combinations with glazing not only in the entrance and side door but for the first time also in the garage door. The panes are available clear or crystal-structured.

6. SOFTEDGE HIGH-SPEED DOORS WITH ANTI-CRASH

In the light of escalating energy costs and the call to minimize drafts caused by open doors, high-speed doors are proving an increasingly popular option. That's why at this year's BAU Trade Fair Hörmann presented as a world-first high-speed doors with the SoftEdge bottom profile. When compared with the conventional rigid bottom profiles, they offer clear benefits because they are equipped with a rubber closing edge profile which is flexible in the vertical direction yet deflection-resistant when subjected to the action of force in the horizontal direction. In this way serious injuries, as a result of coming into contact with the moving door, are virtually excluded and at the same time







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damage to the door due to collisions with the load or forklift trucks can be prevented.

If the SoftEdge bottom profile collides with goods or a vehicle, it flexes in the direction of the impact and in extreme circumstances - and without sustaining damage - is pressed out of the side guides and the door instantly stops. Following the collision, the curtain can be fed back into the side guides in no time at all and is immediately ready for operation again. The new technology significantly reduces the costs for maintenance and the procurement of spare parts. At the same time safety is increased. Various versions are available and allow use as both internal doors and external doors. As from a certain width and wind pressure high-speed doors for external applications come with welded-in spring steel wind profiles. They can resist high wind speeds, are roller guided at the sides and have a pleasantly quiet action. Models are offered with or without windows and without visible glazing bars. The stainless steel look is available in either a brushed or polished finish. You can choose between single and double-leaf elements, with or without fascia panels and as an option also ceiling-high, roughly 3500 mm high. The acoustic ratings of the doors go as high as 48 dB RwP depending on the version. On request, the new models are available with operator or safety features. It boasts two furnaces which offer optimum conditions for tests on doors and fire shutters.

7. FIRE DOORS IN TIMBER AND STAINLESS STEEL

Schörghuber has developed a new generation of timber fire doors with stainless steel surfaces. Approved as either a T30 or T90 room closure, the doors comprise a basic timber construction which is fully faced with stainless steel - irrespective of the width of the frieze or bottom section and of the size of the door.

8. NEW HÖRMANN DRY CONSTRUCTION FOLDER

As a working basis for planners and the trades, Hörmann has created a folder for "Dry Construction Practice. It contains information about Hörmann's complete programme in terms of fire, smoke protection and steel frames. The folder answers numerous questions as may be asked in daily practice. As an accessory program Hörmann is offering on several dates in 2005 information days for processors in the fire protection centre in Freisen. Besides product information, the event covers presentation of the new Hörmann static programme. In addition, within the course of the tour practical training on fire elements take place. The fire

protection centre in Freisen, Saarland, completed last year, stands on the site of the Hörmann factory there, at which also some of the Hörmann fire elements are manufactured.

9. SPECIFICATIONS PROGRAMME VERSION 2.0

Now that more than 6000 planners have successfully used version 1 of the specifications programme, version 2 will become available as from mid July. The software works with all the common versions of Microsoft Word under the operating systems Windows 98, NT 4, 2000 and XP. The programme directs users quickly and precisely to the Hörmann products searched for and to the corresponding texts. The specifications can be altered or supplemented to meet individual requirements so that a precise as well as comprehensive project-related product description is ensured. Besides the texts, version 2 now also offers drawings in DXF or PDF format.

With immediate effect the specifications programme can be downloaded from the Hörmann architects' forum at www.hoermann.de or alternatively may be ordered on a CD-ROM.

ARCHITECTURE AND ART ULF PUDER: "COLONY"

The house is a retreat that stands for intimacy and introspection. At the same time the space lived in represents a cosmos that can form a projection screen for our emotions, memories and expectations. One's "own four walls" determine a geometrically tangible space around us that protects our ideas, dreams and fantasies. "The house allows us to dream in peace and quiet." In Ulf Puder's pictures we come across various kinds of human habitations which confront the viewer with unspecific and partly weird room situations. In the picture "Colony", for example, the garages do not necessarily house vehicles but can include a world "en miniature". The owner of the first garage, for instance, keeps a small grass hill behind the up-and-over door and as such puts the functional building to somewhat extravagant use. He has created for himself a poetic, artificial inner world which not only takes into account his need for escapism but also his pursuit of individuality. The garage becomes a personal refuge.

Susanne Pfleger

"Colony" Oil on canvas, 90 x 200 cm 2004



ULF PUDER born in 1958 in Leipzig

1976–79 1982	Various apprenticeships Co-founder of the PIG Group of Artists	2005	Exhibitions include: Municipal Gallery Wolfsburg, Praque Biennale,	000
1984–1989	Student of Painting and Graphics at the Academy of Visual Arts, Leipzig		Art Core Gallery Toronto Ulf Puder lives and works in Leipzig and Limehna	
1989–1992	Postgraduate course under Prof. Heisig		Contact: Dogenhaus Galerie	
1990	Fellow of the Gloucestershire College of Art and Technology		Leipzig, phone 0341/9600054, www.dogenhaus.de	
1992	Prize student Numerous international exhibitions			

MILLING



PREVIEW

Topics in the next issue of PORTAL: Industrial construction

Industrial construction - a matter for purpose-minded rationalists and sharpened pencils, accompanied at best by cautious attempts to prettify frontages? Europe since provides sufficient examples to prove that this must not be the case. Industrial buildings can create a sense of identification with the location and the company; when well designed, they play a key role in reinforcing the owner's "corporate identity". The September issue of PORTAL presents you with a number of outstanding examples that successfully accomplish this important task.



View of the new BMW plant in Leipzig by Zaha Hadid

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Cover picture: Lehrte railway station, Berlin Photo: Jürgen Schmidt



All-inclusive from the Loading Technology Specialist.



NEW: Flexible SoftEdge doors with integrated anti-crash Looking for solutions for your ideas? Hörmann has them whether for new properties or renovations: We can supply dock levellers, dock shelters/seals, loading houses and industrial doors from a single

source, all precisely matched and developed based on the know-how and experience of more than 50 years in door manufacture.



