Zeman
Competence in Steel

Sustainability Report of the Zeman Group

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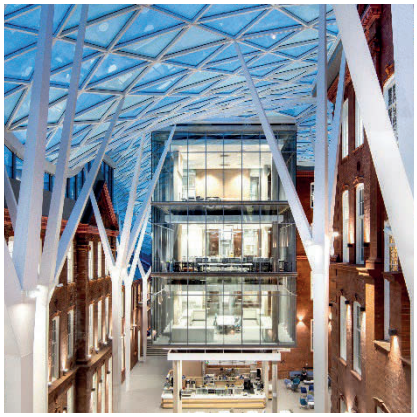
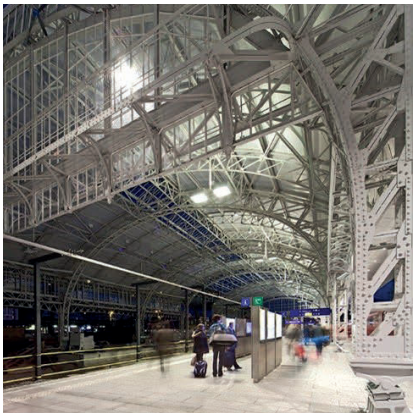
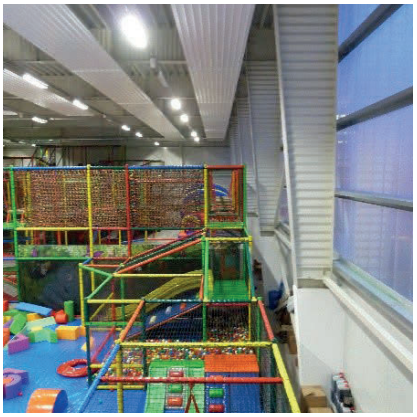
Nachhaltig durch

Innovation & Technik



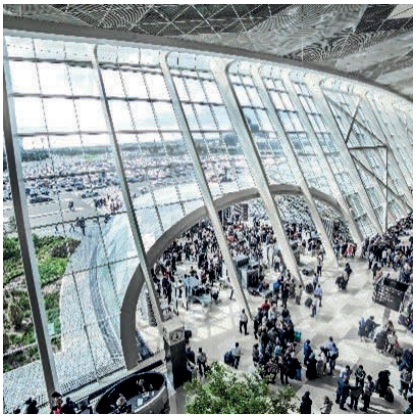
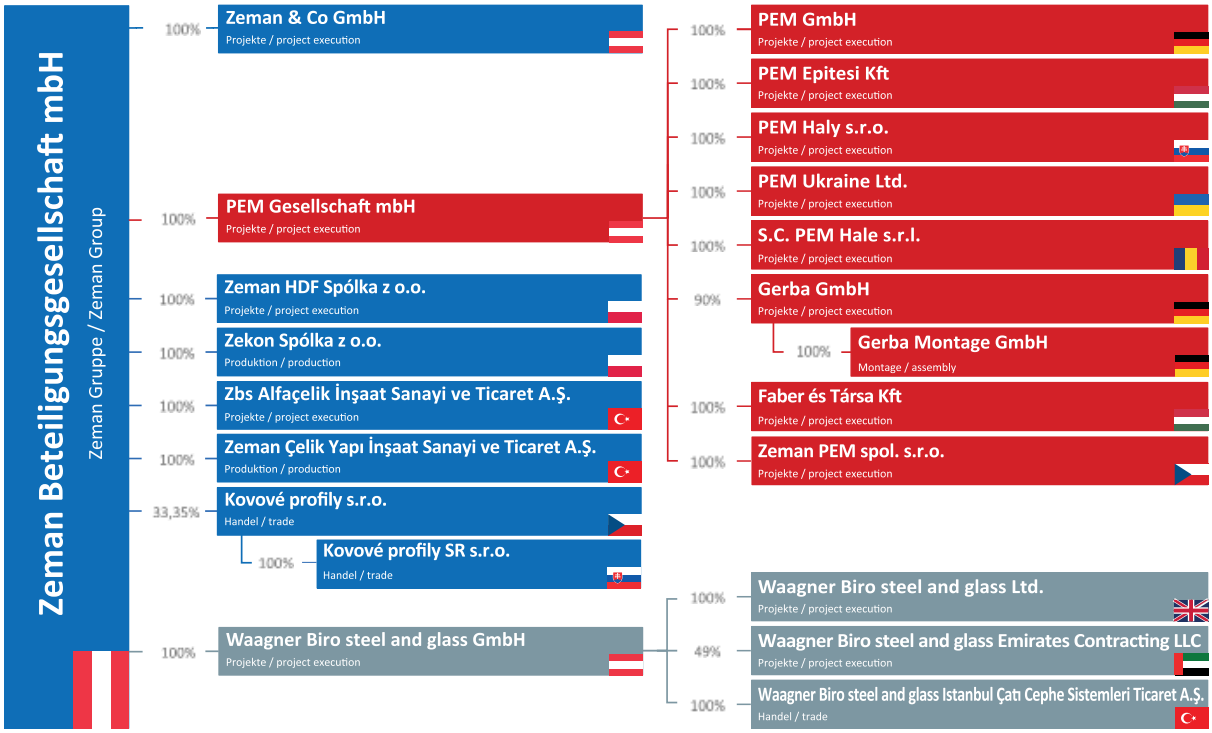



TABLE OF CONTENTS

Company portrait

The Zeman Group was founded in 1965 and brings together companies with decades of experience in the fields of steel construction, glass technology, mechanical engineering and general contractor construction. Innovation, quality and tradition are at the core of our work. A secure basis on which our customers can rely.

Our group has around 650 employees and consists of Zeman Beteiligungsgesellschaft mbH, with 21 subsidiaries in 11 countries. Zeman Beteiligungsgesellschaft mbH and 18 of the 21 subsidiaries are 100% owned by the Zeman family.



Organisation chart of the Zeman Group

In 2021, the Zeman Group generated an operating performance of EUR 141 million with all staff-managed companies of Zeman Beteiligungsgesellschaft mbH.

Why sustainability and social justice are important to us

The Zeman Group is a second-generation family-run business and our values are shaped accordingly. The hierarchies are flat and we constantly exchange values and attitudes. It is important to employees, managers and owners to act in a socially just, environmentally friendly and responsible manner. This is already addressed during recruitment interviews.

We are convinced that this is the right way - also for economic reasons. The promotion of women in technical professions, the integration of employees from a wide range of cultures as well as religions and, last but not least, the responsible use of natural resources and the environment are factors that we in the Zeman Group consider important for the corporate culture and the competitiveness of the individual companies in the group, but also of the steel construction industry as a whole.

We are proud of our achievements and we are known for our handshake quality. We do not tackle the topic of sustainability, social justice more intensively in order to improve our image and increase sales. We promise to communicate authentically, openly and directly, without greenwashing or putting our social commitment in the marketing spotlight.

We want to make our contribution to combating climate change and our contribution to a secure future for all people. We are convinced that despite rationalisation and increased efficiency in recent decades, the steel construction industry still has much further potential to reduce its ecological footprint.

Structures with and made of steel can play out their advantages over other construction methods to the benefit of the environment in many areas. They can achieve a very long service life because, compared to other construction methods, they can be easily extended, adapted to new regulations and for new uses, or even moved to a different location. Therefore, we are convinced that steel construction will occupy an important niche in sustainable building.

Our path towards more sustainability

In this report, we would like to present mainly concrete measures that have already been implemented in the affiliated companies.

There are differences in the design of these measures, which are due to the different locations or company purposes and are therefore unavoidable at present. Furthermore, it has not yet been possible to implement all possible measures equally in all companies. This is being worked on.

In ongoing procedures, successful measures are transferred to other affiliated companies according to the **best practice principle**. Almost all business areas are affected.

It should be noted at this point that building materials of all kinds - whether steel, concrete, glass, glued laminated timber beams, chemical building materials - already release a high proportion of environmentally harmful substances during their production, thus before their further and final processing. The building materials industry is currently making enormous efforts to reduce these negative effects.

Although the manufacturing industry has less influence on enabling environmentally friendly construction, it can still make significant contributions:

- Efficient engineering can reduce the amount of materials used, enable non-destructive dismantling of components or structures, or later adaptations of buildings to new uses. Materials saved in advance and extended useful lives of buildings offer savings opportunities that are hardly inferior to those of the manufacturing industry. Material that is not needed cannot cause any damage.
- Similarly, a tight project organisation and the use of software leads to a reduction in transport and assembly costs. In addition, the number of flights can be reduced.
- Customer consultation also has a great influence on Building with Vision. As professionals, we can provide this advice and do so on an ongoing basis.
- A construction company should not only focus on new projects. Extending the service life of structures makes a significant contribution in terms of reducing the mass of materials used. This is achieved through maintenance, repairs, adaptation to new uses (conversions) or also by upgrading structures.

  The Zeman Group has equipped itself for this and has set up departments in which specialists provide the above-mentioned services. These are not only carried out on request, they are also actively marketed and appropriate expert advice is given in advance. Separate departments and specialists are available for the markets of Central and Eastern Europe, Great Britain and the Arab Emirates.
- So, for the manufacturing industry, sustainability is not just about using deposit bottles or recycled paper in the offices. But such almost symbolic measures are just as important in promoting a corporate culture that strives for sustainability in all aspects.

Measures within the Zeman Group

Climate protection & energy management

Green electricity

At the Zeman Beteiligungsgesellschaft mbH and Zeman & Co GmbH sites, as well as at the Zekon Sp. Z o.o. production site, green electricity from 100% renewable energy sources is used. As soon as this is possible on the part of the local electricity suppliers, the other companies in the group will also switch to green electricity.

Photovoltaics

Zeman Bauelemente GmbH (now sold) and PEM GmbH have invested in photovoltaic systems and successfully put them into operation. It is currently being clarified whether a subsequent installation of a photovoltaic system on the roofs of our production companies Zekon and Zeman Celik is technically possible. The company management would like to see such a system installed.

E-mobility

Electric and hybrid vehicles have been in use in the Group's companies for years. We will continuously increase the share of these vehicle types in new acquisitions. The early retirement of vehicles is not planned due to the additional demand for grey energy as long as we cannot ensure that we can operate them with green electricity from 100% renewable sources. Therefore, we are currently examining and will push for Zeman Group locations to be equipped with photovoltaic systems on the roofs wherever technically possible.

Transport & Logistics

As a processing company with voluminous components and purchased materials, logistics play an important role for Zeman. Transport by ship and rail plays an essential role here.

Transports by ship

The Zeman Group has significantly increased the share of shipments. A significant part of the products from the plant in Hendek could already be transported by sea in recent years.

Currently, it is also being examined how canals can be used as transport routes in order to further increase the share of shipping in intra-European transports.

Rail transport

The Zeman Group has been gaining experience with rail transports for decades. Even though these often prove to be difficult and often entail unnecessarily long transit times, rail transports are requested wherever possible. Unfortunately, many logistics orders fail due to technical feasibility, and sometimes also due to political unwillingness. However, despite all the bad experiences, work is constantly being done to increase the share of rail transport.

Digitisation and paperless office

The accounting systems of Zeman Beteiligungsgesellschaft mbH, Zeman & Co GmbH, PEM GmbH and Waagner Biro steel and glass GmbH have been converted to completely paperless processing, with the exception of some incoming letters. Business partners are able to transmit all data and invoices in electronic form. The internal processing of all transactions between all departments and the accounting department is also purely digital.

Zeman & Co GmbH has a self-created Enterprise Resource Planning (ERP) system that covers the areas of quotations, order overview, cost accounting, standards management, absences and addresses completely and without paper.

In addition, after a successfully completed test phase, another ERP system is currently being introduced for the handling of construction projects. We expect this to result in optimised processing with reduced travel costs. The system also serves to prevent errors and thus also to avoid unnecessary re-production of components that may have been lost due to our own fault or the fault of others.

The companies of the Zeman Group have been located in different countries since the beginning of the 1990s. Countless business trips were therefore unavoidable for a long time. Therefore, the Zeman Group has been using proprietary video conferencing systems since 2005. These have since been replaced by standard software solutions.

Reducing the number of business trips is a long-standing principle in the Zeman Group. In the meantime, there are video conference rooms at all locations, which are used for communication in addition to the workstation computers. Acceptance among employees is very high.
The Covid-19 pandemic has also given an additional impulse to other companies to accept video conferencing and thus further reduce business travel.

In December 2021, we set up another conference room at the headquarters of the Zeman Group and Zeman & Co GmbH, where large video conferences with numerous participants are held on site.

Financing, Legal Compliance and Regulatory Compliance

Investments in accordance with sustainable ESG criteria: All free funds of Zeman Beteiligungsgesellschaft mbH were invested with Raiffeisen Vermögensverwaltung according to the strictest ESG criteria possible there.

No cryptocurrencies: The Zeman Group and its companies have never invested in cryptocurrencies such as Bitcoin. The reasons are, on the one hand, the extremely high energy requirements for mining such "currencies" and, on the other hand, all payment transactions within the group are kept transparent.

Ban on illicit funds: There is a clear ban on accepting illicit funds within the Zeman Group; the companies of the Zeman Group therefore do not have such funds at their disposal and cannot use them.

Ethical principle: We do not accept any unethical or illegal behaviour from or towards our partners, employees, cooperation partners, customers, officials or suppliers.

Awareness raising and environmentally friendly purchasing in the office

The activities described here are mentioned in our sustainability report because they also serve to raise awareness of environmental thinking internally and externally and show that we in the Zeman Group give priority (in that order) to environmental labels, reusable containers and glass containers (in that order) when purchasing office supplies, consumables for daily use and, for example, beverage containers.

First and foremost, this is our own initiative, but it is also useful to show others that environmental awareness and fair trade as well as fair wages in the countries of origin (coffee, cotton bags, etc.) are always a decision factor in our purchasing.

- Few selected give-aways and mainly those with an environmental label or labels based on social criteria (national eco-labels such as the Austrian Eco-label and the Blue Angel as well as international labels such as the EU Ecolabel, but also FSC/PEFC, Fair Trade and organic labels).
- Since 2021, beverages for employees have only been provided in large glass deposit bottles; the mineral water containers also bear the Austrian Eco-label.
- The catering containers for customers and visitors are glass deposit bottles. The mineral water is also certified with the "Austrian Eco-label".
- Fair Trade-certified cloth bags as give-aways.
- Fair Trade-zertifizierte Stofftaschen als Give-away
- Paper products such as writing pads and printer paper carry either the Blue Angel label or equivalent national eco-labels (Austrian Eco-label, Nordic Eco-label, etc.) or the EU Ecolabel.

Active role in national and international associations

In order to promote sustainable development in and outside our company and to better tackle social challenges, we have been working voluntarily for decades in various associations that deal, among other things, with the topics of ecological footprint, circular economy and with the EU's Green Deal.

In particular, these are the **Austrian Steel Construction Association** (ÖSTV), with the development of a CO2 calculator. The **Federation of the Metalworking Industry** (FMTI), which has publicly committed to the EU Green Deal in 2021. The **European Convention for Constructional Steelwork** (ECCS), as the superordinate organisation to the European national steel construction associations, which is actively involved in the reduction of pollutant emissions from the steel construction industry.

In addition, the management of Zeman Beteiligungsgesellschaft is entrusted with **the leadership of the Education Committee of the FMTI**, which deals with educational topics - from primary schools to universities. Essential topics here are the advancement of women, women and technology, and the education of people with a migration background.

Sustainability through Innovation & Technology

Optimised processes through the "everything from a single source" principle

In the Zeman Group, we can carry out almost all the tasks necessary for a construction project ourselves. The **“everything from a single source" principle** allows us to optimise the processes. The services range from initial consultation to structural engineering, planning, production, delivery, assembly, operation and maintenance.

Computer-aided design (CAD) and the digital integration of all project steps, especially in the group's own production and assembly, have been a core topic for decades. Thanks to the **DHS project management software** used in the Zeman Group - a software that is a building block of Building Information Modelling (BIM) for the construction sector - all those involved at project management, planning, production and assembly level have digital access to the latest documents as well as plans and can pass on changes in real time. Everyone knows at all times which parts are currently in which process and whether changes are still possible.

Efficiently integrated processes result in efficient and low-fault production, reduced transport costs, shorter construction times, better construction site management including organised waste avoidance and lower energy costs.

Research & development for resource-optimised products and processes

For decades, the management and engineers of the Zeman Group have been working on the development of steel products that use less material while at the same time offering high performance and load-bearing capacity. In the "SIN smart" concept developed in the Zeman Group, all areas of handling, transport, assembly and also the use of materials are optimised.

SIN-Beam

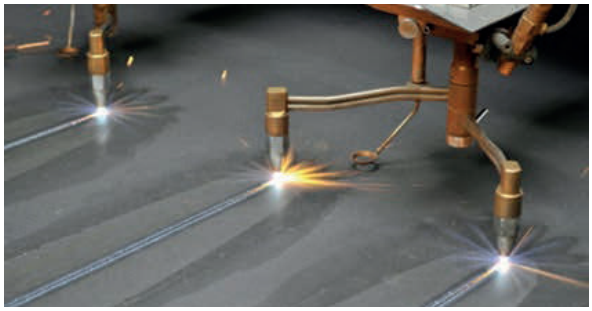
The core product of the "SIN smart" concept is the SIN beam (corrugated web beam), which is produced automatically by means of specially developed robot-assisted machines and systems and reduces the environmental impact by optimising the use of resources.

For example, the energy consumption in the production process could be significantly reduced due to shorter processing times and fewer necessary intermediate transports. Compared to conventional rolled profiles, the material used is more than 40 % less and the welding fumes for employees are minimised.

SIN-Beam (Wellstegträger) wird in allen möglichen Kombinationen und Bauwerken eingesetzt, vor allem aber im Hallenbau

SIN-Line

The SIN production line (SIN-Line) is an in-house development and a worldwide innovation. The unique computer-controlled system minimises all costly and time-consuming pre-assembly and welding processes through automation. With short throughput times and the simultaneous elimination of numerous internal intermediate transports, the production of SIN profiles guarantees a lower error rate and thus an optimised use of resources.



Images: automated robot-assisted production line for SIN corrugated web beams at Zekon's plant.

SIN Smart Hall System

"SIN smart" halls are the quintessence of sustainability from the cradle to the grave. Automation and standardised processes in planning, project management, production, transport and assembly also play to the strengths of the Zeman Group's "everything from a single source" concept.

Last but not least, the environment benefits from the optimised use of resources throughout the entire project. The resulting halls can be adapted very flexibly to needs, new uses and changes, and thus achieve a very long useful life.

See also:
SINsmart: www.sinsmart.eu | SINsmart- Hall planner: https://app.histruct.com/zeman/de/guest

Steel-Beam-Assembler

The **Steel Beam Assembler** (SBA), developed and produced by Zeman, is the innovation in automatic steel beam processing and is used in both plants of the Zeman Group. More than 60 steel fabricators on all continents are successfully using SBA systems. This robot-based system takes over the assembly, welding and a multitude of logistical tasks within a production plant. This significantly reduces the use of energy, eliminates sources of error and considerably reduces the health strain on welders.

The **Scan and Plate Sorting Machine** (SPS) ensures quality through plate digitisation. SPS guarantees that the right parts for the project can be found quickly and made available for processing at the right time.

Circular economy in the Zeman Group

Avoiding the unnecessary use of resources is, of course, the essential criterion for environmentally friendly construction.

In many cases, it is equivalent or even better to use materials that have already been used for a longer period of time, i.e. to extend the useful life of buildings. Here, the areas of maintenance, repair and adaptation to new uses and the upgrading of buildings play the essential roles.

The know-how we have built up over decades is now also being used specifically to extend the useful life of buildings. In recent years, therefore, maintenance departments have been set up in several companies of the Zeman Group that deal exclusively with repairs, (preventive) maintenance and upgrading of buildings in order to maintain the stock and achieve the main goal - an extended useful life.

Extending the useful life of buildings through maintenance, refurbishment, upgrade

The companies of the Zeman Group have project teams with specialised personnel that take on precisely these activities. Starting with the construction of the Palm House at Schönbrunn palace by Waagner Biro, which has already reached a service life of more than 140 years, and the refurbishment of the same, there are a myriad of buildings whose service life has been significantly extended by the services of the engineers of the Zeman Group.

The Zeman companies have specialists who carry out inspections of existing structures, glass facades and roofs, develop renovation plans and implement them. The activities range from cleaning work to glass replacement, leak tests, seal renovations, layer thickness examinations and endoscopic examinations in case of water ingress.

The engineers also write maintenance instructions and offer maintenance contracts that can extend the service life many times over.

Some examples of maintenance and repairs:

- Maintenance of the Louvre Museum Abu Dhabi
- Glass replacement at the Yas Marina Bridge
- Facade cleaning and refurbishment at Sun Tower (Formula 1 Ring Abu Dhabi)
- Palm House Schönbrunn
- Roof renovation St. Stephen's Cathedral
- Complete refurbishment and upgrading of Salzburg Main Station
- Refurbishment of the Museum of the 20th Century (Belvedere 21)
- Extension and adaptation to new uses of the Ronacher establishment
- Refurbishment of the supporting structure of the Viehmarkthalle St. Marx
- Various bridge renovations
- Renewal of crane runway systems at Voestalpine, Böhler and AMAG

Examples of adaptation to extended or new uses are:

- Extension of the Tivoli Stadium in Innsbruck for the European Championship 2008, as well as deconstruction and adaptation of the construction to subsequent needs.
- Hangar elevation at Hanover Airport
- A variety of extension and addition works at the Austria Center Vienna (ACV), such as new entrances, accesses and facades.
- Letztlich kann auch ein Upgrade eines Gebäudes, also die Verbesserung bei Beibehaltung aller bestehenden Bauelemente, eine längere Nutzung ermöglichen. Hierbei ging es bisher hauptsächlich um Verschönerungs-arbeiten. In Zukunft wird der Einbau energiegewinnender Elemente jedoch massiv an Bedeutung gewinnen.

Examples of building upgrades carried out:

- Ruhrpark Bochum
- Queen Elizabeth II Great Court, British Museum
- Weserpark Bremen
- LED Fassadenbeleuchtung Adnec Tower Abu Dhabi
- Reichstagskuppel Berlin

Recycling in the Zeman Group

Steel material is 100% collected in the Zeman Group, both in its own plants and on construction sites, and sent separately for recycling. In any case, the construction sites must be handed over completely cleaned.

Materials recovered from dismantling are reused, if technically possible, or resold.

In individual cases, entire buildings could be dismantled and rebuilt elsewhere, the useful life of buildings could be drastically increased, or buildings could be put to a new use through economical measures. The Zeman Group has gained a lot of experience in this sector.

Detailed presentation of projects in which the useful life through refurbishment and adaptation to a new use is particularly illustrative

General renovation of the Palm House at Schönbrunn palace, Vienna: From 1986 to 1990, the entire steel structure of the Palm House, built in 1882 by Waagner Biro - the predecessor company of Waagner Biro steel and glass - was renovated. The shed-like glazing had to be reconstructed using old riveting techniques and modern technologies in order to meet the criteria of monument protection as well as the requirements of current building standards. The Palm House has now reached a useful life of 140 years.

Images: Palm House at Schönbrunn Palace, Vienna. Picture 1: Austrian Federal Gardens/ Julius Silver, Picture 2: Waagner Biro steel and glass GmbH.

Museum of the 20th Century (Belvedere 21): The Austria Pavilion at the World's Fair in Brussels in 1958 was demolished in 1962 and re-installed in Vienna. The Zeman Group was allowed to help convert and expand the building in 2011, thus adapting it to current requirements. Further use was ensured.

Images: Belvedere 21 Vienna: The key building of post-war modernism has been converted several times, photo 1 Zeman & Co., photo 2 Herbert Ortner_license CC BY 3.0 AT https://creativecommons.org/licenses/by/3.0/at/deed.de

Salzburg Central Station: Further use of a listed historic structure. Opened in 1860, the station was renovated and expanded between 2009 and 2014. The main building was dismantled into all its individual parts, the construction was reinforced according to the current static requirements, the corrosion protection was completely renewed and finally the main building was rebuilt slightly offset.

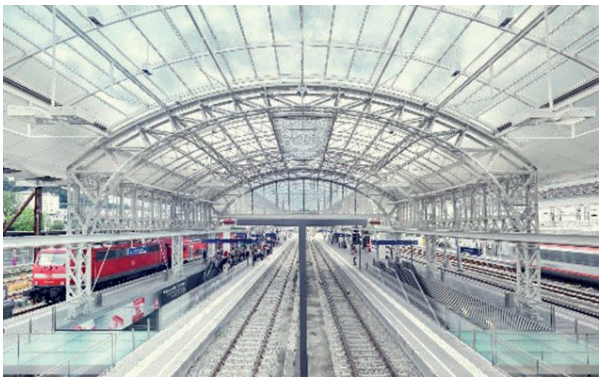


Photo 4: Salzburg main station. The historic ticket hall is integrated into the new platform roofs, Photo1: Zeman & Co., Photo 2: Taufik Kenan

Hanover Airport hangar elevation: Hanover Airport's large aircraft hangar 1 from 1973 would have been demolished and rebuilt without modification. Only through the modification carried out can the hangar continue to be used with a new building height. Scrap and a new building were avoided by this solution, and resources were conserved.

Images: Hangar Hannover Airport: The roof structure was raised by 5 m, photo 1: flash.iFFect/Scheerschmidt, photo 2: Completed hangar

Stadium Tivoli Innsbruck temporary extension: For the temporary extension of the seating capacity from 15,200 to 30,300 seats, the existing roof was dismantled, the stands were extended with SIN profiles, the existing roof was adapted and re-installed. After the 2008 European Championship, the extension was removed and the existing roof was reinstalled. Beams from part of the grandstand construction were reused for halls.

Image: Tivoli Stadium Innsbruck. Temporary extension of the stands, Photo: Thomas Praher

UNIDO Building C09, Vienna. Adaptation enabled continued use: In order to be able to continue using the building, new air conditioning units had to be installed. But the floor heights were not sufficient for this. The existing structure was raised hydraulically so that modern building services could be installed and the building could continue to be used.

Images: UNIDO Building C09 Vienna: The storey height was increased, Photos: Zeman & Co

Social & Health

Donations for social purposes / example Ukraine

As a steel construction group with connections in Ukraine and a hands-on mentality, we established contact with families immediately after the outbreak of war in order to help quickly and unbureaucratically. Since the beginning of the war, PEM Buildings, Zeman HDF, Zekon and Zeman Beteiligungsgesellschaft have so far accommodated 36 refugees from Ukraine in Poland, Germany and Austria and are providing for their livelihoods. All of them are young mothers with small children, some with their grandparents. They had to leave their fathers, husbands, sons and friends behind in Ukraine.

Ethical action

The companies of the Zeman Group are located in 11 different countries, and the employees come from a much larger number of nations and cultural circles of the most diverse ethnicities and religious affiliations. This alone means that racism, chauvinism and discrimination do not correspond to the culture and genetics of our group or employees, and would not be tolerated if they did occur. Already during recruitment interviews, it is made clear that no discriminatory behaviour (including racist and misogynistic behaviour) will be tolerated.

Staff training and development

All the companies in the group operate in very specialised sectors of the construction industry. In these sectors, there is no large offer of training that surpasses the level of know-how available in the companies. Therefore, most of the training is done in-house in small groups or "on the job". If external training courses are available, they are gladly and regularly used. On the other hand, our employees often give lectures to inform and educate interested people in our market.

However, all our employees receive training in technical and safety-relevant areas at least at the prescribed level, depending on the purpose of their work.

COVID-19 pandemic

Employees in the Zeman Group have been able to do work from home for more than 20 years. Almost all office employees have a laptop. The lockdowns during the pandemic were therefore relatively easy to manage, and work continued during these periods without any measurable drop in performance.

In Vienna, employees were provided with parking spaces free of charge in order to avoid journeys by public transport. Similarly, from autumn 2020, daily anti-gene tests were made available at the company's expense. In spring 2021, these were replaced by PCR tests. The measures are continuously adapted to current developments.

In both production plants, fever is measured for all persons before they enter. The number of shifts was increased from three to nine at the Zekon plant in Poland to minimise contacts.

After the first lockdown, a staff survey was carried out to improve the wishes regarding home office or measures regarding further lockdowns.

Imprint

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Gender spelling

In this report, gender-neutral differentiation has been partially dispensed with for reasons of readability. Corresponding terms then apply in principle to all genders.


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