

NEMETSCHKE  
GROUP

NEMETSCHKE SE  
Konrad-Zuse-Platz 1  
81829 Munich  
Tel.: +49 89 540459-0  
Fax: +49 89 540459-414  
investorrelations@nemetschke.com  
www.nemetschke.com

NEMETSCHKE  
GROUP

INNOVATIVE / ETHICAL / TRUSTWORTHY  
AI built by Nemetschek

COMPETENCES &  
REFERENCES

2023



# Contents

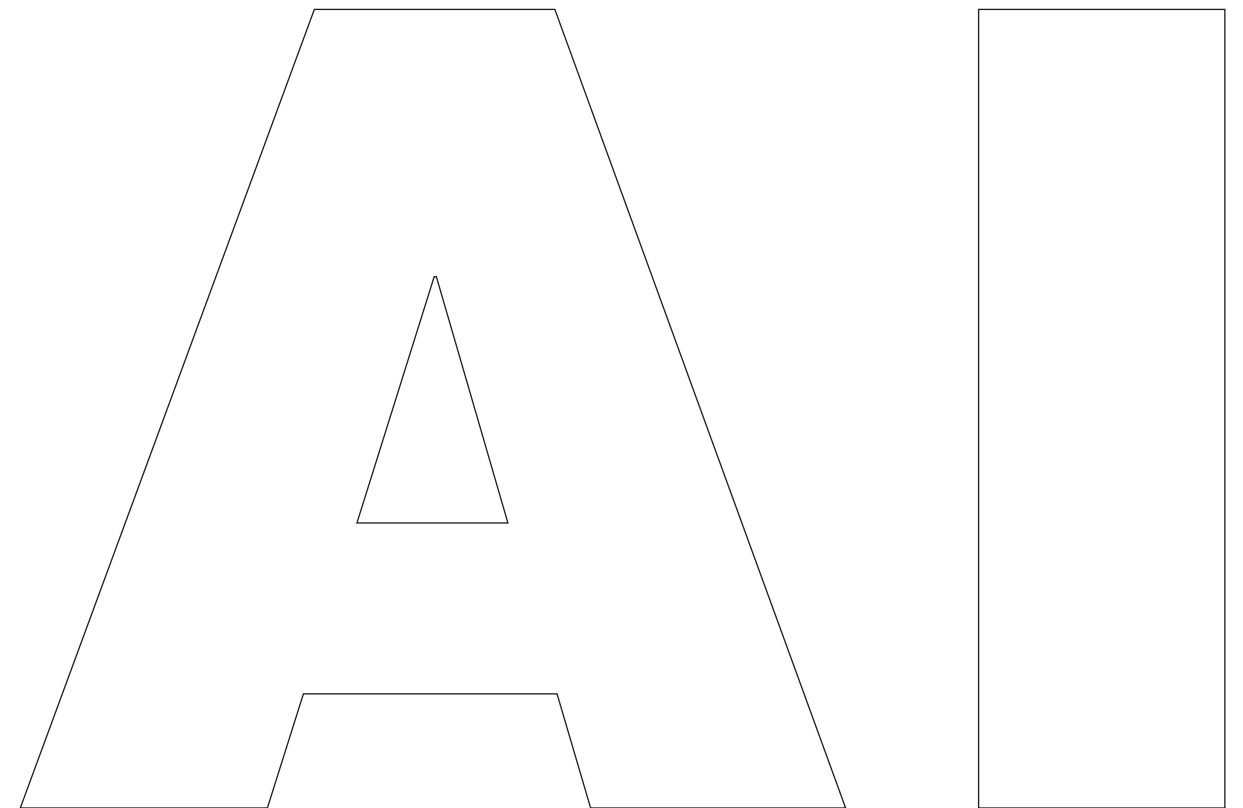
- 03 AI built by Nemetschek
- 14 Our Reference Projects
- 35 Contact



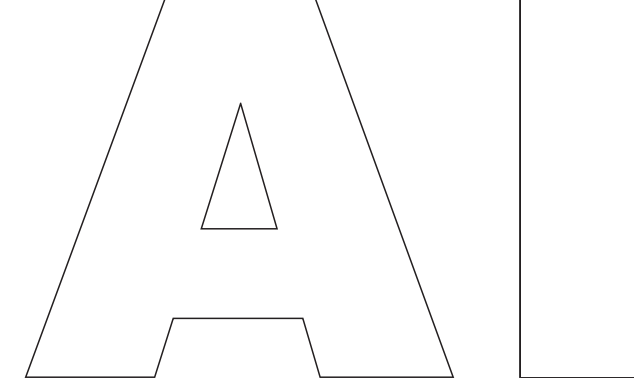
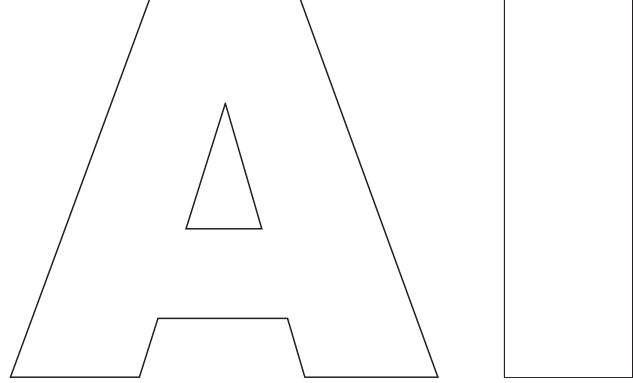
**INNOVATIVE / ETHICAL / TRUSTWORTHY**

# AI built by Nemetschek

Our aim is to adopt and incorporate ethical, trustworthy and sustainable Artificial Intelligence (AI), focusing on our customer needs within the AEC/O and Media & Entertainment industries. We are guiding them towards user value, simplicity and learning. This mindful, responsible and progressive approach is a reflection of our history, principles, and ethics, inherited from our founder, Professor Georg Nemetschek, and pursued since 1963.







**INNOVATIVE / ETHICAL / TRUSTWORTHY**

# Our responsible approach to AI

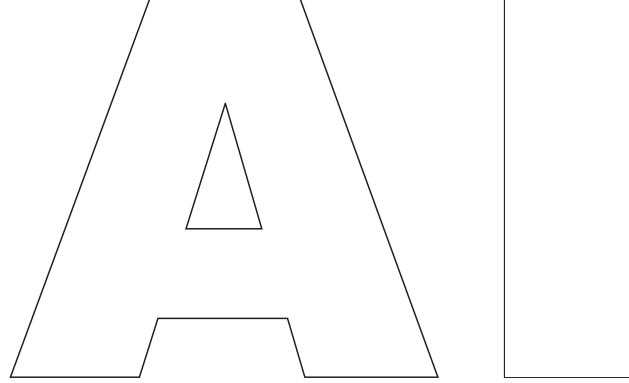
**Giving our customers a competitive advantage**

For more than 60 years, the Nemetschek Group has been a forerunner of digital transformation in the industry and has been successfully driving digitalization in the AEC/O and media industries. With intelligent software solutions, we are leading our customers into the future of digitalization. Now we are taking one step further: leveraging AI as an accelerant to growth with human-centricity, ethics, trust, and sustainability at the core. Since AI became an accessible tool for everyone, issues concerning ethics, regulation, and IP rights have been raised across all industries. And this profoundly resonates for the AEC/O industry, with its legacy of pain points, whether those be the adoption of digital technology itself or financial and cost barriers or resistance to transformation or challenges with interoperability. The AI technology is there at everyone's fingertips – but the AI we are building is a new, ethical, and trustworthy one.



Our customers are facing challenges to deliver on time, on budget, and sustainably across the lifecycle of their projects.

We are bringing our entire set of Group solutions and services to our clients with the augmentative power of AI, thus giving our customers a competitive advantage.

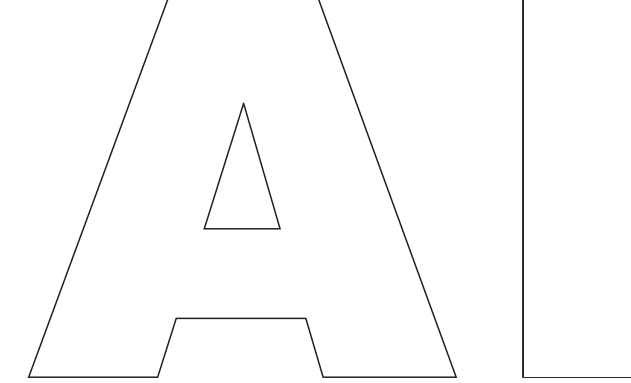


**INNOVATIVE / ETHICAL / TRUSTWORTHY**

# At the forefront of innovation

The Nemetschek Group has created an AI Innovation Hub, which is set to become one of the central drivers of our development activities. We are convinced that the data sets used to train the deep learning algorithms, in particular, are the key to developing new functions. Those functions will offer our customers real added value in the future. Covering the entire life cycle of buildings in the AEC/O industry and the entire content creation process in the media industry, we have a large and broad data set at our disposal. This can be used to expand our own range of solutions with corresponding innovative and disruptive solutions.

We are helping our customers, users and developers to bring new features and products to the market faster. This will in turn help our customers by improving their productivity and efficiency through AI developments, which we have already tried and tested ourselves.



*“My professional life has always been characterized by the ambition to achieve technological progress for the benefit of people through creative and practical research and development in the field of planning, construction, utilization, and management of buildings. The fact that I have succeeded in this endeavor not only as a scientist but also as an entrepreneur has motivated me to establish the Innovation Foundation to ensure the continuation of this important research work.”*

**PROF. GEORG NEMETSCHKEK**  
on the occasion of the establishment of the  
Nemetschek Innovation Foundation, 2020

Climate-neutral travel at hyperspeed: Allplan supports a research group at TU Munich in building a prototype of the Hyperloop. The powerful software is used for formwork and reinforcement design of the vacuum tube.







# AI

INNOVATIVE / ETHICAL / TRUSTWORTHY

## Promoting AI research

To the benefit of society and as a long-term commitment to research, the Nemetschek Innovation Foundation is supporting the TUM Georg Nemetschek Institute Artificial Intelligence for the Built World (TUM GNI). The TUM GNI conducts research on future technological AI areas to facilitate new ways of conceiving, designing, constructing, and preserving the built environment with a strong dedication to ecological viability. In 2023, we substantially increased the number of research projects through the TUM GNI with a double-digit number of interesting, multi-disciplinary AI research projects dedicated to the AEC/O industry.

The AI4Twinning project, for example, aims to create a system of interlinked digital twins at different scales that offers the possibility of seamlessly integrating city, district and building models and keeping them up-to-date and consistent. For this purpose, different approaches (multi-scale, multi-sensor and multi-method approach) are explored and different sensors (visible, thermal, LiDAR, radar) and processing methods are combined and integrated with AI approaches, deriving building information, previous knowledge about the design and construction of buildings and intelligently fusing the resulting information through AI-based methods to close information gaps and increase the completeness, accuracy and reliability of the resulting digital twins. The test and demonstration scenario is the city center of Munich, an area in proximity to the central TUM campus, where large data sets from various sensors are already available.

**Academics –**  
Close relationship  
with research  
institutes.



The Technical University of Munich develops intelligent systems always with a view to its responsibility towards people and society.



Munich University of Applied Sciences is engaged in intensive research in the field of artificial intelligence.

*The New North Zealand Hospital, designed by Herzog & de Meuron, is being built using AI technology. The start-up Imerso, supported by Nemetschek, is automating construction supervision.*





**INNOVATIVE / ETHICAL / TRUSTWORTHY**

# Disrupting the industry

**Ventures** – Investing in disruptive start-ups



Driving AI and Machine Learning adoption also requires disrupting the standard approaches – within Nemetschek but also within the AEC/O and media industries. We have invested in several innovative startups that work with these emerging technologies. They are developing solutions such as the AI-based creation of 3D point cloud models or the identification and mapping of BIM objects. Bringing the startup AI developments and skills together with those of the Nemetschek Group brands sparks inspiration and enrichment. Customers benefit from a continuously expanding product portfolio and accelerated speed in the development of new AI solutions.

Startups such as Reconstruct and Imero are forerunners in the AEC/O markets, as they are already using AI to create 3D point cloud models or to identify and map BIM objects.



A city without cars, roads or emissions: The "The Line" ribbon city in Saudi Arabia is being built with brands from the Nemetschek Group. It sees itself as a pioneer of a technology-supported future.



Over a distance of 170 kilometers, "The Line" connects the Neom development project on the coast of the Red Sea with the city of Tabuk in the northwest of the country.

A digital twin brings together all of a building's data sources in a comprehensive view.



Queen's Wharf in Australia, one of the largest and most complex construction projects in the world, is taking shape with innovative digital solutions.





**INNOVATIVE / ETHICAL / TRUSTWORTHY**

# Intelligent brand strategy

Our mission is to be the preferred and most trusted software provider and partner for the AEC/O and 3D animation industries.

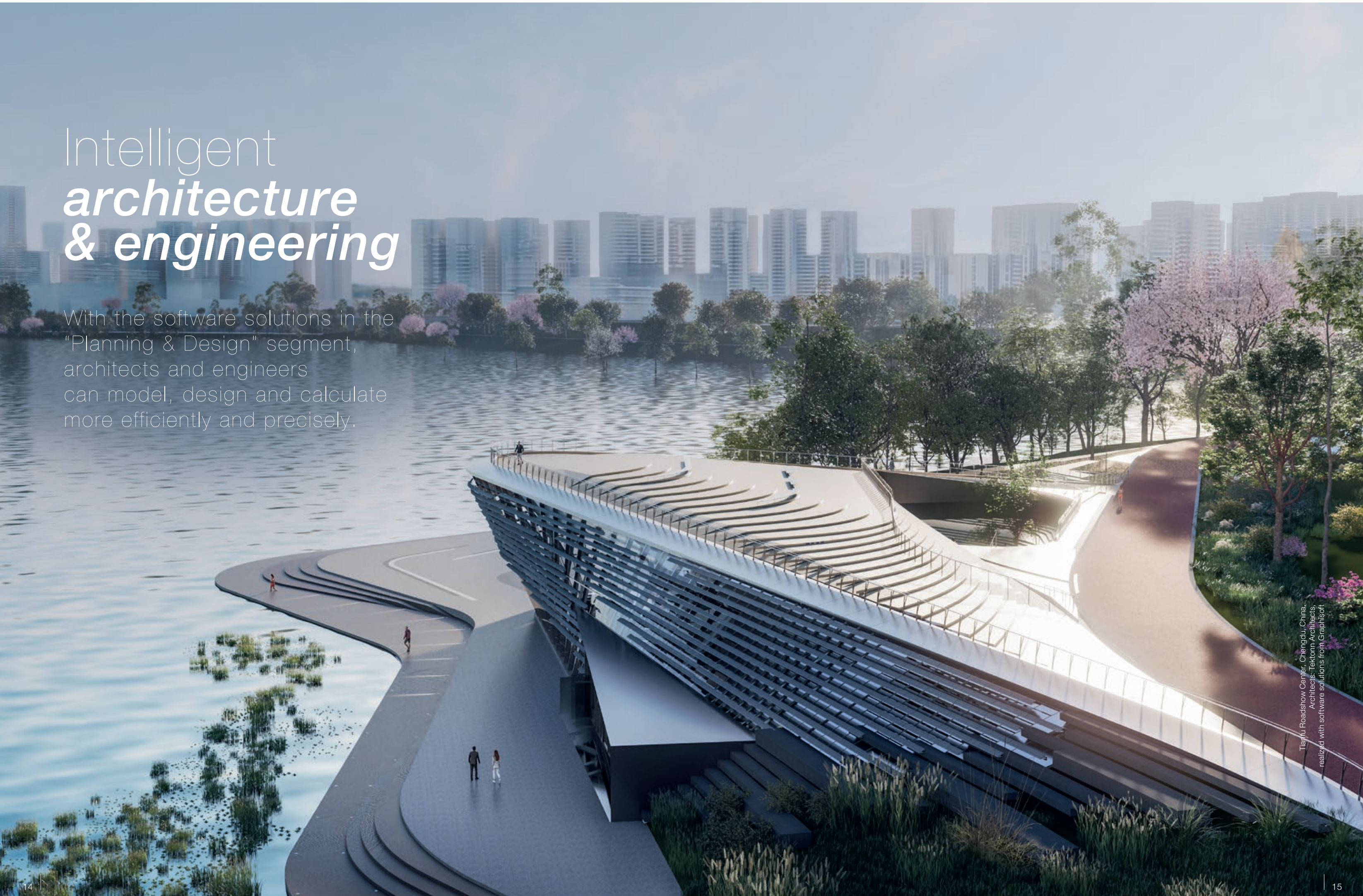
We enable everyone involved in the building process, including architects, designers, engineers, construction managers, project owners, general contractors, and construction companies, as well as building owners, general managers, facility managers, and creatives, to shape the world. Our solutions enable them to make their ideas and visions reality: future-oriented, sustainable and safe cities, with top-quality buildings and infrastructure, like bridges, roads and tunnels, that improve people's quality of life in the long term.





# Intelligent *architecture* & *engineering*

With the software solutions in the “Planning & Design” segment, architects and engineers can model, design and calculate more efficiently and precisely.



Tianju Roadshow Center, Chengdu, China.  
Architects: Tekton Architects,  
realized with software solutions from Graphisoft.





**THE PROJECT**

**A7 Tunnel Altona**

Hamburg, Germany

**Not a bridge,** but a tunnel: HOCHTIEF Engineering innovatively employs the parametric modeling in Allplan Bridge for the design of a tunnel section of the Altona Cover project. This enables the engineers to produce a fast, precise design with all variations and details. Allotments, flowering meadows, and parks will be created on the roof.

**ALLPLAN**

**PRODUCTS:**

Allplan Bridge, Allplan AEC

**WEBSITE:** [www.allplan.com](http://www.allplan.com)

**FRILO** 

**PRODUCTS:**

More than 140 analysis programs (including GEO Building Model)

**WEBSITE:** [www.friilo.eu](http://www.friilo.eu)

**THE PROJECT**

**Casa Legno**

Metzingen, Germany

**Casa Legno**, a sustainable and ecological lighthouse project in residential construction, is one of the first apartment buildings in Germany whose interior was built in solid timber. The successful realization of the construction project mainly relied on the patented technology of holzius GmbH from South Tyrol and the structural engineers from the engineering office IBS Bau-Statik PartG, who were responsible for carrying out the structural analysis and design using FRILLO software.



 **SCIA**

**THE PROJECT**

**Mohammed VI Tower**

Rabat, Morocco

**PRODUCT:**

SCIA Engineer

**WEBSITE:** [www.scia.net](http://www.scia.net)

**55 stories** and 255 meters high, this tower in the Bou-Regreg Valley in Morocco is the tallest building on the African continent. The striking building – visible from 50 kilometers away – has a luxury hotel, business offices, high-quality flats, and a viewing terrace. LEED Gold certified, it meets the highest international environmental standards and can withstand not only seismic events but also flooding from the neighboring river.







**PRODUCT:**  
Vectorworks Architect

**WEBSITE:** [www.vectorworks.net](http://www.vectorworks.net)

**THE PROJECT**  
Oyaki Farm  
Nagano, Japan

**Oyaki** – filled vegetable buns – are baked in a wooden building that blends into the surrounding landscape. Production rooms and a shop with a café were created using cedar and cypress wood along with rammed earth. The design of the building – with its large, curved roof – is based on the idea that it should merge with the surrounding mountains.

## SOLIBRI

**PRODUCTS:**  
Solibri Office, Solibri Site, Solibri Anywhere

**WEBSITE:** [www.solibri.com](http://www.solibri.com)

**THE PROJECT**  
Köhlbrand Brigde  
Hamburg, Germany

**Built in 1974**, the Köhlbrand Bridge is Germany's second-longest road bridge as well as one of its busiest, serving around 36,000 vehicles per day. To facilitate predictive – rather than reactive – maintenance for this critical infrastructure asset, a digital twin has been set up and over 500 IoT sensors have been connected to the bridge model.







**GRAPHISOFT.**

**PRODUCTS:**  
ARCHICAD, BIMx

**WEBSITE:** [www.graphisoft.com](http://www.graphisoft.com)

**THE PROJECT**

Nova Hospital  
Jyväskylä, Finland

**The Nova**, one of the largest hospitals in Finland with 24 surgical rooms and 368 single patient rooms wants to be more than just an ordinary hospital. It also takes the visual needs of patients seriously and offers art inspired by nature in the national parks of Central Finland to heal and comfort. The architecture follows the guiding principle of putting the patient first.

**THE PROJECT**

Empyrean Temple

Black Rock Desert, Nevada, USA



**PRODUCT:**  
RISA-3D

**WEBSITE:** [www.risa.com](http://www.risa.com)

**The wooden Empyrean Temple**, designed by architect Renzo Verbeck, was unveiled at Burning Man 2022. It is borrowed from ancient cosmology, in which the Empyrean symbolizes a fiery celestial realm. The sculpture, which is also architecture, combines geometry with a monumental compass of light and shadow.

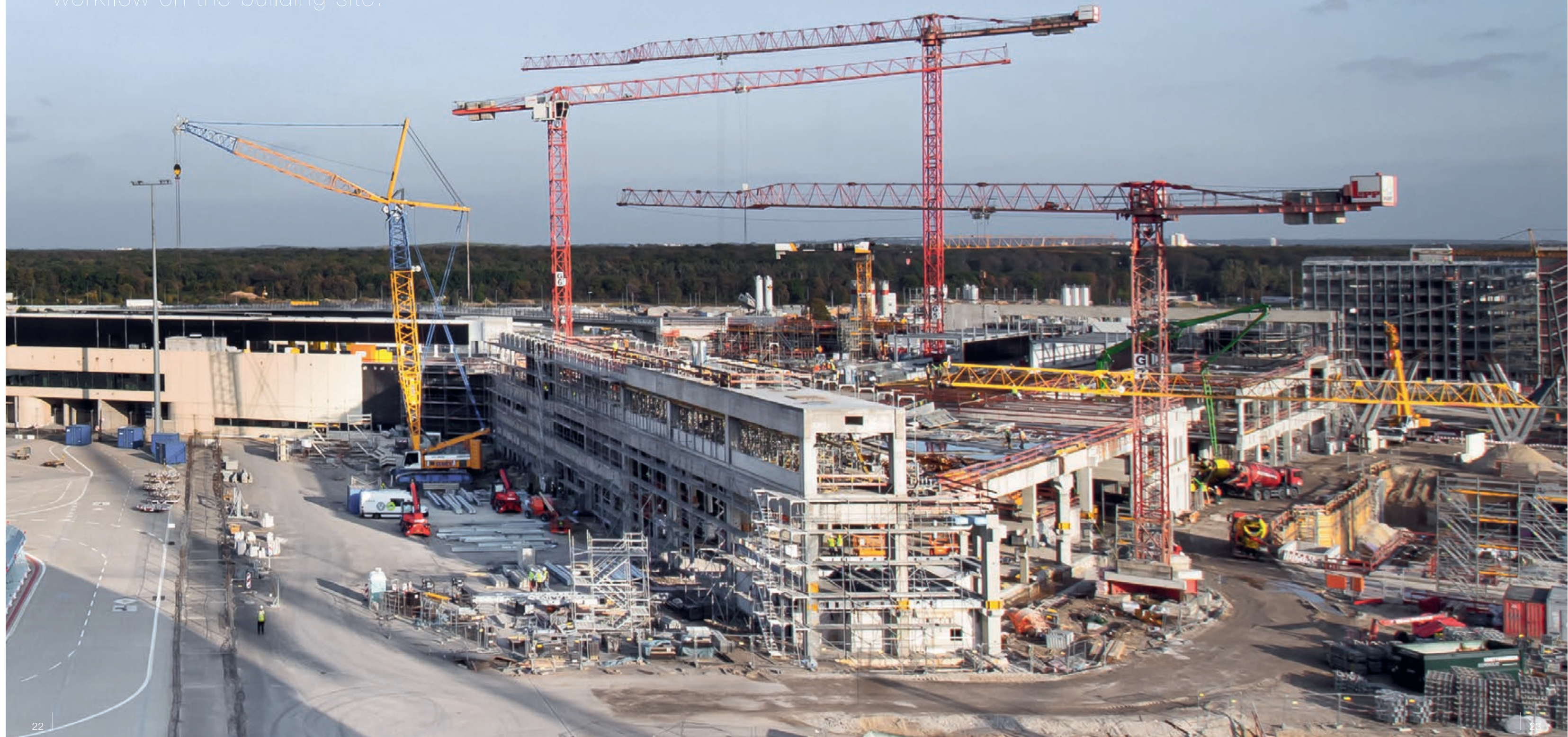




# Intelligent *construction*

The digital solutions from the "Build & Construct" segment ensure a perfectly coordinated workflow on the building site.

Airport Terminal G, Frankfurt am Main, Germany,  
General contractor: Adolf Lupp GmbH + Co KG,  
realized with software solutions from NEVARIS







**THE PROJECT**

Frankfurt School of Finance & Management

Frankfurt am Main, Germany

**A new campus** building has been constructed for the Frankfurt School on Adickesallee with a four-story, glass-roofed, 150 meter-long "Zeil des Wissens". The Frankfurt School's premises are located on the first three floors. Above this, five interconnected, slightly offset towers house the office units.



**PRODUCTS:**

NEVARIS Build, NEVARIS Finance

**WEBSITE:** [www.nevaris.com](http://www.nevaris.com)



**PRODUCT:**

Revu

**WEBSITE:** [www.bluebeam.com](http://www.bluebeam.com)

**THE PROJECT**

Tower C

Shenzhen, China

**A futuristic tower** in the district of the future: the spectacular Tower C building will house company headquarters, a hotel and entertainment facilities, among other things. As so often in China and with Zaha Hadid's projects, the figures are huge: up to 300,000 people are expected to populate the complex on any given day – a mega quarter.





# Intelligent *operation* *of buildings*

Today, buildings are managed efficiently and in a resource-saving way with software solutions from the "Operate & Manage" segment.



LEICA

HERZLICH WILLKOMMEN

LEITZ-PARK III  
Raum für Werte und Visionen

Leica Camera Headquarters, Wetzlar, Germany,  
General contractor: Adolf Lupp GmbH + Co KG,  
realized with software solutions from NEVARIS



**THE PROJECT**

House of Communication

Munich, Germany

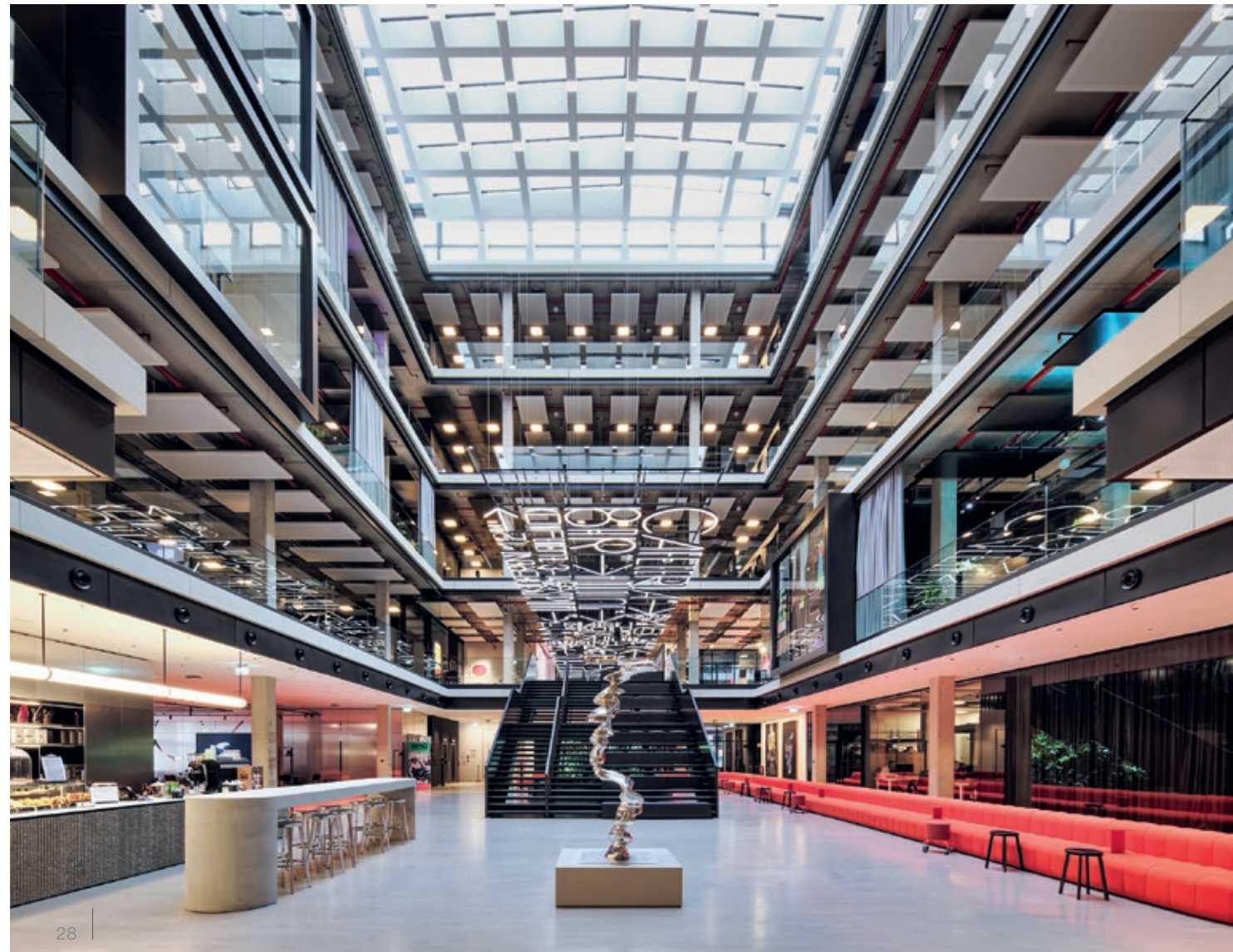
**In the House of Communication** in Munich's Werksviertel, Serviceplan Group has created a 40,000 m<sup>2</sup> workspace for 1,800 talented people. CREM SOLUTIONS provides support here with Workplace, which makes the space flexibly bookable. Hundreds of occupancy and utilization sensors now enable detailed measurements to be made to adapt to employee requirements.

CREMSOLUTIONS

**PRODUCTS:**

Workplace Management, Workplace Experience & Workplace Analytics

**WEBSITE:** [www.crem-solutions.de](http://www.crem-solutions.de)



**THE PROJECT**

CaixaBank

Barcelona, Spain

**CaixaBank is** Spain's leading retail bank. It is currently implementing Spacewell Energy software in around 2,000 of its premises to optimize facilities management, based on IoT and automation. The three main axes of the energy efficiency project are energy saving (consumption monitoring and optimal performance), remote control of the systems, and the comfort of users, whether employees or customers.



SPACEWELL

**PRODUCT:**

ENERGY MANAGEMENT SYSTEM (EMS)

**WEBSITE:** [www.spacewell.com](http://www.spacewell.com)

**dRofus**

**THE PROJECT**

University of Paris-Saclay

Paris, France

**A new** biology, pharmacy, chemistry center of excellence: The complex, totalling approximately 88,000 m<sup>2</sup>, and situated on the Saclay Plateau, one of the most important building sites in France, is a major scientific project for the university.

**PRODUCT:**

dRofus

**WEBSITE:** [www.drofus.com](http://www.drofus.com)





# Intelligent *virtual reality*

Virtual reality is only one of the countless possibilities in which the software from the "Media & Entertainment" segment can be used.







**THE PROJECT**

Soggiorno

Conceptual Project

**A personal,** conceptual project of a living room with particular attention paid to geometric patterns and geometrically shaped furniture. The colors and the light used for the scene invoke an exotic environment. The objects in the room give you the feeling that they are coming from some travel experiences around the world.



**PRODUCT:**

Maxon ONE

**WEBSITE:** [www.maxon.net](http://www.maxon.net)

**PICTURE CREDITS**

*Cover + inside:* Kineum, Gothenburg, Sweden; Architects: Reflex Architects; Image: Markus Esselmark

*Page 5:* Adobe Stock

*Page 7:* Hyperloop, Visualization: TUM Hyperloop

*Pages 8–9:* New North Zealand Hospital, Hillerød, Denmark; Architects: Herzog & de Meuron; Image: Dronepixels.dk

*Page 10:* Adobe Stock

*Page 11:* Shutterstock | The Line, Saudi-Arabia; Project management: Neom/AFP; Image: picture alliance/abaca | Adobe Stock | Queen's Wharf, Brisbane, Australia; Image: Destination Brisbane Consortium

*Page 13:* Shutterstock

*Pages 14–15:* Tianfu Roadshow Center, Chengdu, China; Architects: Tektonn Architects

*Page 16:* A7 Tunnel Altona, Hamburg, Germany; General contractor: ARGE A7 Tunnel Altona

*Page 17:* Casa Legno, Metzingen, Germany; Engineering office: IBS Bau-Statik PartG | Mohammed VI Tower, Rabat, Morocco; Engineering office: Ney + Partner

*Page 18:* Oyaki Farm, Nagano, Japan; Architects: Tono Mirai Architects; Image: Irohado

*Page 19:* Köhlbrand Bridge, Hamburg, Germany; Operator: Hamburg Port Authority

*Page 20:* Nova Hospital, Jyväskylä, Finland; Architects: JKMM Architects; Image: Kuvatoimisto Kuvio

*Page 21:* Empyrean Temple, Black Rock Desert, Nevada, USA; Engineering office: Rbhu

*Pages 22–23:* Airport Terminal G, Frankfurt am Main, Germany; General contractor: Adolf Lupp GmbH + Co KG

*Page 24:* Frankfurt School of Finance & Management, Frankfurt am Main, Germany; General contractor: Adolf Lupp GmbH + Co KG

*Page 25:* Tower C, Shenzhen, China; Architects: Zaha Hadid Architects; Image: Brick Visual

*Pages 26–27:* Leica Camera Headquarters, Wetzlar, Germany; General contractor: Adolf Lupp GmbH + Co KG

*Page 28:* House of Communication, Munich, Germany; Building management: Serviceplan Group

*Page 29:* CaxiaBank, Barcelona, Spain; Building management: CaxiaBank | University Paris-Saclay, Paris, France; Architects: Baumschlager Eberle Architekten; Image: BTuA and Groupe 6

*Pages 30–31:* City in a Can; Visualization: Franck Viennois

*Page 32:* Soggiorno; Visualization: Enzo Pasqua



NEMETSCHEK SE  
Konrad-Zuse-Platz 1  
81829 Munich  
Tel.: +49 89 540459-0  
Fax: +49 89 540459-414  
investorrelations@nemetschek.com  
www.nemetschek.com

---

NOTE: This supplement is an editorial article about the Nemetschek Group,  
published as a non-tested element together with the Annual Report 2023.

---