



ALLPLAN in practice | Architecture

SETTING THE COURSE FOR THE FUTURE: THE FRAUNHOFER ITMP BY WÖRNER TRAXLER RICHTER ARCHITEKTEN

In a rapidly changing construction industry characterized by the challenges of digitalization, price increases, and global challenges, international architectural firms such as wörner traxler richter are holding their own thanks to their clear strategic focus and deep specialist expertise.

With more than 180 employees in Frankfurt, Dresden, Munich, and Basel, the firm is an established presence in the market and has completed numerous buildings over the past decades. One of its most recent success stories is the Fraunhofer Institute for Translational Medicine and Pharmacology (ITMP) in Frankfurt am Main, which is a prime example of the meaningful use of digital planning methods.

wörner traxler richter focuses primarily on research buildings and life sciences—an area that places high demands on precision, flexibility, and the integration of complex technologies. The project for the Fraunhofer Institute for Translational Medicine and Pharmacology (ITMP) in Frankfurt illustrates this well. It not only presented architectural challenges but also became a testing ground for the pragmatic use of digitalization in the planning processes within the firm.



Central link: The ITMP's location in Frankfurt, not far from the Niederrad university campus. This proximity anchors the new institute building as a fundamental component in the existing local research context.



The floors in the building are clearly structured, with laboratories on one side and offices on the other, arranged around a central atrium.

Architectural link in a mature research environment

The ITMP project was funded by the federal government and by the state of Hesse as part of the LOEWE program, which supports outstanding scientific joint projects between universities and research institutions.

The project's location on Sandhöfer Allee in Frankfurt – close to the Niederrad University Hospital campus and the ICE railway line to the east – required bespoke solutions right from the conception and design stage. Sebastian Pfau, partner and co-owner at the Frankfurt office of wörner traxler richter, describes the "genius loci" and the design intention: "We are located opposite the university campus, which is separated from the hospital campus by the central railway line. This is an important factor that we addressed in our conceptual design – the proximity to the university and research. The Fraunhofer Institute also sees itself anchored here as an active building block and in the context of research for people." The new building will thus become the central link between the existing research facilities. And what's more, the ITMP is intended to provide a targeted impetus and trigger the development of a new "mini-campus" in the area.

PROJECT INFORMATION AT A GLANCE

- > **Focus:** Architecture
 - > **Software:** ALLPLAN
 - > **Client:** Fraunhofer-Gesell. z. Förderung d. angewandten Forschung e.V
 - > **Construction costs:** €36.5 million
 - > **Construction time:** 08/2022 – 09/2025
 - > **Project participants:**
 - > FAAG TECHNIK GmbH (tendering / contract award / construction management)
 - > KREBS + KIEFER Ingenieure GmbH (structural engineering / civil engineering)
 - > WUP INGENIEURE | Weber & Partner Ingenieur-gesellschaft für technische Gesamtplanung mbH (technical building equipment)
 - > SHK+ Landschaftsarchitekten PartG mbB (Outdoor facilities / Traffic facilities)
 - > HALFKANN + KIRCHNER PartGmbHB (fire protection)
 - > Wolfgang Sorge Ingenieurbüro für Bauphysik GmbH & Co. KG (Building physics)
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A striking design feature is the combination of public space and contemplative research work.



Working together in bright workplaces and open, flexible room structures.

The focus is on people

The architecture by wörner traxler richter cleverly responds to the functional requirements of "translational medicine," which puts the patient at the center. In addition to highly specialized laboratory areas, modern outpatient areas have also been integrated. The building's shape positions it in terms of location and visibility, but at the same time conveys seclusion and tranquility: the architectural team organized the research laboratories around a central atrium. Despite the nearby ICE railway line, this creates a protected, decelerated, almost contemplative space. The almost square building should not be seen as a "solitary" structure on the railway line, but rather as the center and starting point of a potentially larger whole. After all, much more could be created here in the future.

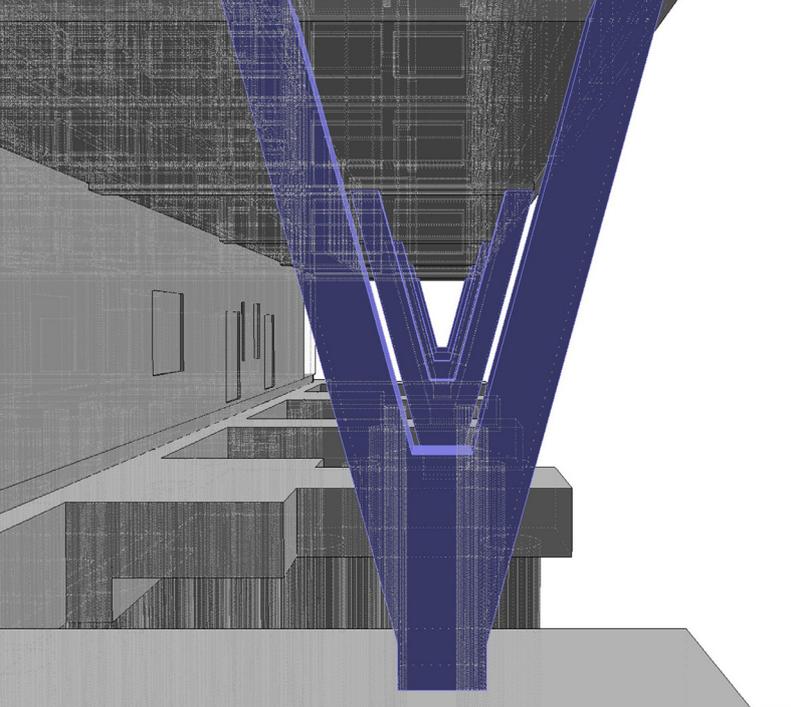
Another striking design feature is the public or semi-public ground floor with a cafeteria, which is closely integrated with the outdoor space and spatially connects the surroundings, patients, researchers, and guests. This, aided by the good transport links to Kennedyallee, is intended to establish the ITMP as a meeting hub for researchers. The individual floors in the building are clearly structured, with laboratories on one side and offices on the other. This takes into account internal organization and flexible usage requirements. The ITMP's structure is flexible and can be adapted quickly to changing research priorities in the future.

Digital planning with vision:

Pragmatic. Solution-oriented. Efficient.

The digitalization of their own processes, especially with regard to this extraordinary research building, was a central issue from the outset – albeit under special circumstances. The wörner traxler richter office sees itself as a pioneer in digital planning and in the use of the BIM planning method in its projects. When planning for the ITMP began in 2019, however, Fraunhofer did not have any explicit BIM requirements. This was not an isolated case at the time. Awareness of the benefits of BIM or a digital twin for building operations among building owners, operators, and users only developed later. However, this situation gave wörner traxler richter an unusually high degree of autonomy and the opportunity to pursue its own BIM path. Sebastian Pfau explains: "We chose a very pragmatic BIM approach. And considered questions like: How does the project benefit from this in particular? How do we automate planning processes while keeping costs within reasonable limits? Things like that were crucial."

In retrospect, the ITMP thus became the initial project with which wörner traxler richter broke new ground in collaboration and the use of digital tools in their existing office structures. ALLPLAN, the central BIM planning tool in the office, proved to be ideal for the associated process adjustments.



The elegant V-shaped columns within the load-bearing structure prove that a central planning model was important in the collaboration with the structural engineers.

Model-based planning, with only the necessary level of detail

The path to the successful implementation of the IMTP in Frankfurt began with a simple 3D model created with ALLPLAN, which was primarily used for communication and to modulate size, function, and spatial relationships. wörner traxler richter continuously refined and qualified this model beyond the conception and design phase so that it could also be used in subsequent planning steps. A central element in the digital workflow was the use of the model as a basis for cost and quantity calculation. For this purpose, wörner traxler richter's own office standard was applied, which specifically achieved only a defined level of detail. The project team thus made a conscious decision not to generate more data than what was absolutely necessary. This made it possible to evaluate which digital work steps were really useful and helpful – both internally and when working with the specialist planners involved.

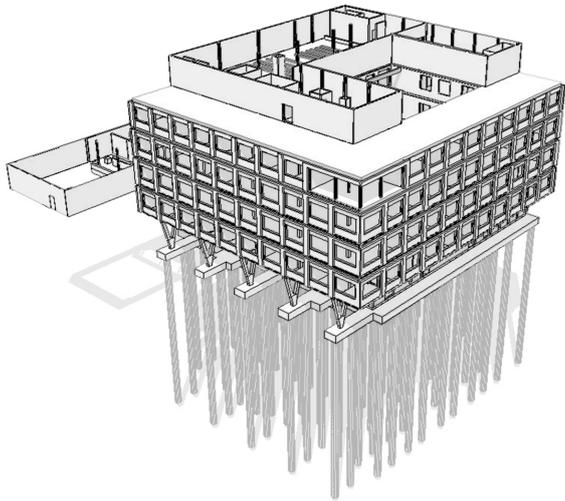
Although the project was implemented in a more conventional manner compared to a consistent "Big BIM" approach – for example, there was no separate CDE (Common Data Environment, i.e., a jointly defined planning environment) or designated data rooms, and much was handled analogously and directly – the further digital processing offered numerous advantages. A concrete example of this was the model exchange in collaboration with the structural engineers. Jens Altmann, project manager and member of the management board

at wörner traxler richter Frankfurt, emphasizes: "The model was great at the interfaces with the structural engineers! Take the development of the complex V-columns within the load-bearing structure: here, model exchange based on our ALLPLAN model took place at an early stage, which subsequently improved the quality of planning and minimized sources of error."

The direct visual and data-based coordination on the virtual model thus greatly facilitated the development of the structural design. But the building services engineers also benefited from the 3D model from ALLPLAN. They used it for the complex technical planning and even used the specialist model on-site. They worked with tablets and used the 3D model live on the construction site to carry out collision checks directly on site, for example.

High process quality thanks to consistent planning

wörner traxler richter combined its own architectural model with the structural engineering and building services models. This was crucial for coordinating the overall planning. Sebastian Pfau explained: "The greatest added value is that collision checks are easy to perform, unlike with a classic 2D plan view." This aspect meant a high degree of planning reliability for consistent coordination with the specialist planners. And it is still considered an essential part of office standards with regard to BIM for all subsequent projects. Nevertheless, architect Sebastian Pfau emphasizes that a completely



When modeling in ALLPLAN, wörner traxler richter pays attention to cost-effectiveness, following the motto: as much as necessary and sensible. BIM was used when weighing up design options and determining quantities and costs.

The research building was opened in fall 2025. The ITMP is a workplace for around 100 employees and provides an important space for exchange and dialogue.

digital process was not always the most practical approach for this specific project: "Our main concern was to weigh up what was appropriate and what was merely 'nice to have'."

Open BIM as an independent planning standard forms the basis for integral collaboration with all project participants in every digital planning process and every project implementation. For wörner traxler richter, one thing is clear: interoperability in the systems used is undoubtedly essential. Especially in projects with planning participants who use different software, which is almost always the case, communication via open standards such as IFC and BCF is crucial. wörner traxler richter also appreciates this flexibility in ALLPLAN, as well as its versatility and opportunities for communication on an equal footing – especially with regard to the necessary compatibility with the tools of other planning participants.

The typology determines the digital precision

According to Sebastian Pfau, the depth of BIM implementation differs primarily in terms of the typology of the project: "As the degree of technological sophistication increases, so does the need for digital precision." Research buildings such as the ITMP, with complex building services and specialized requirements, particularly benefit from digital coordination. Integrated planning, i.e., the concerted interaction of all specialist planning, is therefore a high priority at wörner traxler richter. Projects succeed or fail with qualified coordination and optimal

teamwork. Digital tools play an essential role here, but the central design idea and direct, face-to-face communication remain paramount.

The ITMP: The nucleus for future-oriented planning work

The Fraunhofer ITMP in Frankfurt is an example of how architectural firms are exploring and reconciling the challenges of complex construction tasks with the possibilities of digitalization. wörner traxler richter deliberately relies on a pragmatic planning approach and a BIM approach geared toward effective benefits throughout the course of the project. With the help of their central planning software ALLPLAN, they were able to use digital modeling specifically where it offered the greatest added value: in weighing up design options in the conception and draft stages, in determining quantities and costs in the early planning phases, as a basis for the specialist models of structural engineering and building services, for collision testing, and for subsequent specialist coordination. This approach underscores that digital tools are essential, but they are not the sole foundation for a successful project. Rather, the relationship of trust with the client and project participants, and in the case of ITMP, the people involved, come first. The building is therefore not only a new building block for research on the Frankfurt university campus, but also stands for the practice-oriented integration of digital methods into the planning process at wörner traxler richter.



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Jens Altmann
Project manager and member of the management board, wtr Frankfurt

About the office

wörner traxler richter (wtr) is a German architectural firm with offices in Frankfurt am Main, Dresden, Munich, and Basel. The architectural collective is one of the leading planning offices in the healthcare sector (status in 2025: ranked No. 1 in the Baunetz ranking in the field of health-care buildings) in Germany and neighboring German-speaking countries. The office also plans research and school buildings, residential and hotel projects, as well as museum and cultural buildings.

About ALLPLAN

ALLPLAN is a global provider of AEC software with BIM solutions for architecture, structural engineering, detailing, fabrication and construction. True to our "design to build" claim, we provide tools that enable earlier data-driven design decisions, support digital fabrication and leverage information throughout the entire construction process. Integrated cloud technology further optimizes interdisciplinary collaboration on building and infrastructure projects. Our innovative workflows

empower architects, engineers, and construction professionals to deliver their projects more productively, safely, and eco-consciously.

Around the world, over 700 dedicated employees continue to write the ALLPLAN success story. Headquartered in Munich, Germany, ALLPLAN is part of the Nemetschek Group – a pioneer for digital transformation in the construction sector.

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