MD Prefabrykacja relied on Allplan Precast for the design of the precast elements for "Green Lutynia".

Allplan in Practice

"GREEN LUTYNIA": 8 APARTMENT BUILDINGS DESIGNED IN JUST 4 MONTHS

Enormously reduced lead times thanks to BIM and Allplan Precast

"Green Lutynia" is a landmark project for innovative and modern precast construction. The eight multi-family buildings in Poland offers both a high quality and efficient build, showcasing the huge potential of the precast market.

Located on the outskirts of Wrocław, adjacent to the picturesque Ratyński Forest, this residential complex offers a unique proposition for individuals looking for a balance between city living and proximity to nature. It is the perfect place for those who desire a green environment while also having quick access to urban amenities.

MD Prefabrykacja designed and produced all precast concrete elements for the project in their own precast plant, situated in Miękinia, near Wrocław. An impressive 19,882m^2 of precast walls, 17,500m^2 of precast slabs, 192 precast balconies, and 96 precast stair flights were used for the residential complex. What is interesting about the precast elements is the balanced mix between standard elements, such as balconies or stair flights, and innovative solutions, such as insulated walls. 14,623m^2 of insulated composite walls – also know as thermal walls – were used in the residential complex. As an alternative to monolithic walls,

ALLPLAN
PRECAST

Maximum precision in the design, production, and assembly of the precast elements are crucial for the success of the project.

5,265m² of double walls were assembled in "Green Lutynia". By incorporating these modern design and manufacturing technologies, MD Prefabrykacja was able to ensure process efficiency for the general contractor.

MD Prefabrykacja has been relying on Allplan since the beginning of its precast business, which has been in operation for almost two years now. The individual employees have varying levels of experience of Allplan, ranging from two to ten years.

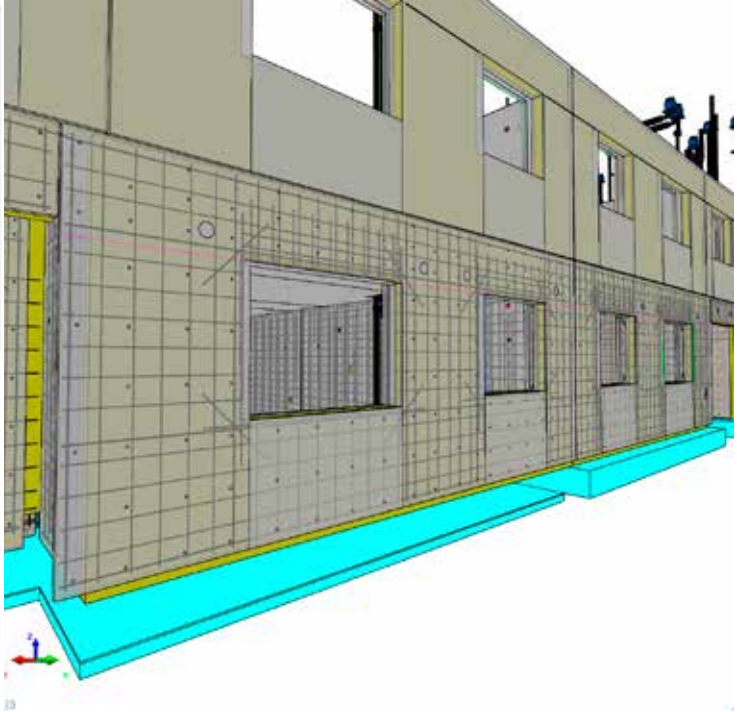
BIM-MODEL AS SINGLE SOURCE OF TRUTH

The integration of BIM technology within the precast element production process at MD Prefabrykacja is key to ensuring excellent data consistency and exceptional precision in execution. The 3D model in Allplan Precast consolidates geometric data, material characteristics, and detailed technical requirements. By using a server license and Workgroup Manager module, each engineer working on the project has access to the most up-to-date versions of the models, ensuring efficient communication within the team and minimizing the risk of potential errors by enabling their early detection. Furthermore, there is no need to have multiple project files for the same project, as the design team can use one file that multiple people can work on simultaneously. Thie means that each engineer can work on the same model, but in different areas of prefabricated elements such as walls, slabs, stairs, etc.

Thanks to precise 3D models in Allplan Precast, connections and interactions between precast walls and other building elements can be planned, creating a comprehensive building structure upon installation. All of this contributes to optimal project realization, minimizing the time and costs associated with on-site work. This is an important factor, as time pressure is one of the main challenges in "fast-track" projects where the delivery schedule is compressed. However, thanks to Allplan and the use of a modern prefabrication facility, MD Prefabrykacja was able to overcome such challenges.

DESIGN TO BUILD AT ITS BEST

Allplan Precast, in synergy with MD Prefabrykacja's ERP system, has contributed to the optimization of the entire process – starting from the initial customer inquiry up to the delivery of finished precast elements to the construction site. This integration has enabled MD Prefabrykacja not only



Allplan Precast was used for the design and detailing of the thermo walls with pins, girders, and various fixtures.

to accurately plan the highly automated production in the precast plant but also to efficiently manage every stage of the process in real-time. As a result, the precast manufacturer has not only achieved higher product quality but also significantly shortened the delivery time to its customers.

The precast design and detailing took approximately three to four months. As "Green Lutynia" was the first implementation of "Mój Dom" (My Home), the next investment of similar size will benefit from even more efficiency. Radoslaw Szynkaruk, Head of Design at MD Prefabrykacja, estimates that in the next project, design time will be reduced by four weeks and assembly time by two or three months.

FAST AND FRUITFUL COLLABORATION

Mr. Szynkaruk is very satisfied with the collaboration with Allplan. "Every time we encounter the need to get in touch with Allplan, we appreciate their problem-solving approach and their ability to guide us on the path to overcoming obstacles."

This is a significant advantage for a software provider, especially in the context of projects where every moment is extremely valuable and holds great significance," he explains.

PROJECT INFORMATION AT A GLANCE

- **Focus:** Precast
- **Software for precast design:** Allplan Precast
- **Precast design and production:** MD Prefabrykacja
- **Number of precast elements:**
  - 19,888m² of precast walls:
    14,623m² thermal walls
    5,265m² double walls
  - 17,500m² precast slabs
  - 192 precast balconies
  - 96 precast stair flights
- **Precast design:** 3 – 4 months
- **Assembly of precast elements:** 7 – 8 months

NEVER STAND STILL

What the Head of Design also appreciates about Allplan is that over the last two years, Allplan has introduced many significant improvements. Moreover, some of these enhancements have originated from his collaboration with BIM platform – the Polish sales partner of Allplan Precast – and the support department of Allplan.

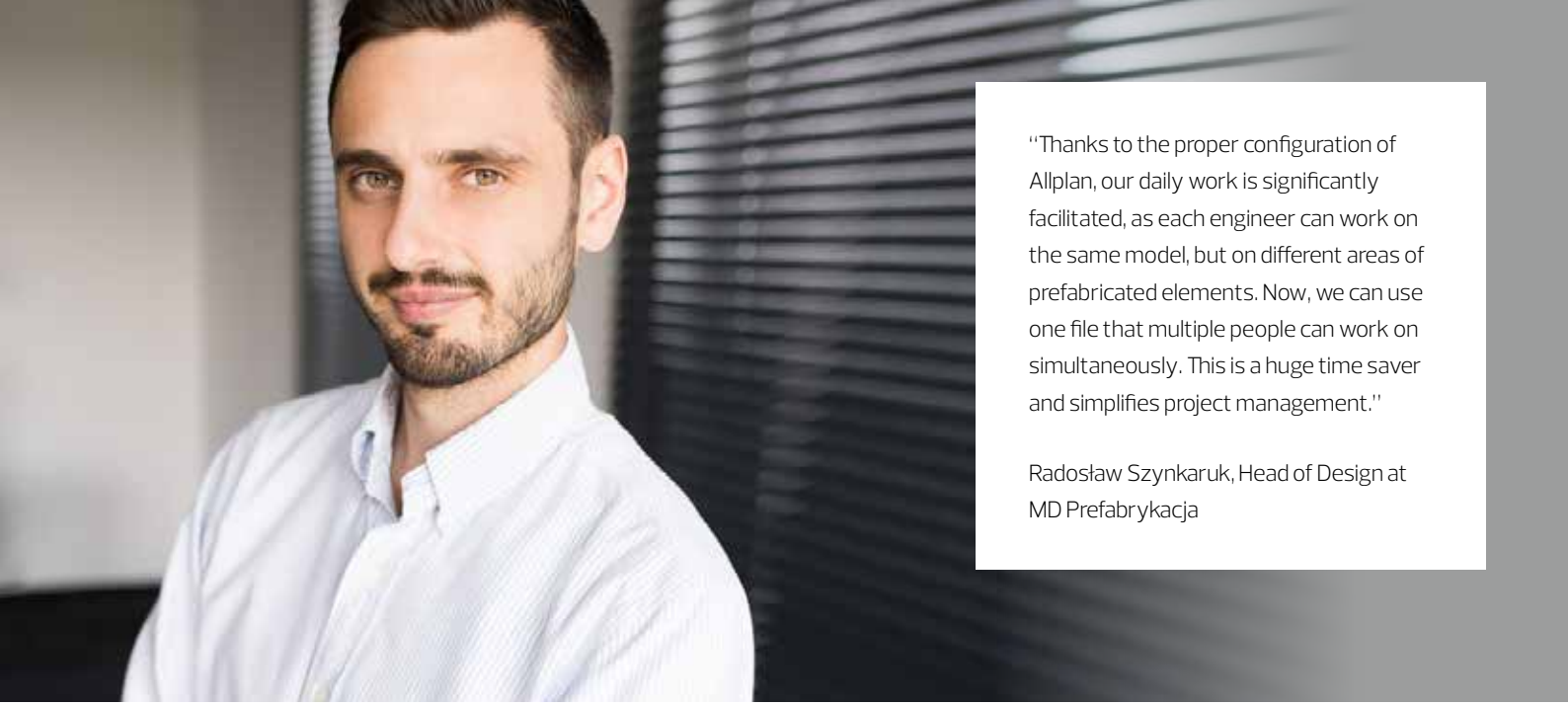
All 192 precast balconies and 96 precast stair flights were designed with Allplan Precast.

Radosław Szynkaruk draws on his experience in strength analyses in the aviation industry, which he often applies in managing the entire MD office. In turn, the MD office has precise ideas for implementing certain solutions in the program, which are discussed with the Allplan team.

COMPLETE AUTOMATION OF PRODUCTION LINE

Allplan Precast software also enabled MD Prefabrykacja to generate accurate PXML machine files. These files constitute a crucial component in operating their welding, cutting, and bending machines, as well as concrete processes. Thanks to this solution, the precast manufacturer has managed to completely automate their production line.

The modern design and production process not only streamlines the work of the general contractor, but also supports the project implementation phase through the optimal planning of activities on the construction site. This approach enables the 'just-in-time' delivery of precast elements, allowing for the optimization of transportation, storage, and on-site assembly. By visualizing the assembly sequence, it becomes possible to precisely schedule activities and eliminate unnecessary tasks, resulting in timely and efficient project completion.



"Thanks to the proper configuration of Allplan, our daily work is significantly facilitated, as each engineer can work on the same model, but on different areas of prefabricated elements. Now, we can use one file that multiple people can work on simultaneously. This is a huge time saver and simplifies project management."

Radosław Szynkaruk, Head of Design at MD Prefabrykacja

THE CLIENT

MD Prefabrykacja designs and manufactures pre-cast concrete elements. The company's portfolio includes both residential units as well as commercial and office premises. MD Prefabrykacja is the largest company specializing in the production of versatile concrete prefabricated elements in Poland and one of the largest in Europe. The company offers walls with insulation as well as without, filigree-type floor slabs, balconies, stairs, stair landings, columns, beams, and other components. Mój Dom S.A. has been operating in the construction industry since 1996. In addition to its core business, the company is a co-owner of two modern silicate block production plants.

ABOUT ALLPLAN

ALLPLAN is a global provider of BIM design software for the AEC industry. True to our "Design to Build" claim, we cover the entire process from the first concept to final detailed design for the construction site and for prefabrication. Allplan users create deliverables of the highest quality and level of detail thanks to lean workflows. ALLPLAN offers powerful integrated cloud technology to support interdisciplinary collaboration on building and civil engineering projects. Around the world over 600 dedicated employees continue to write the ALLPLAN success story. Headquartered in Munich, Germany, ALLPLAN is part of the Nemetschek Group which is a pioneer for digital transformation in the construction sector.

Competence Center Allplan Precast
Tel. +43 6245 210010
info.precast@allplan.com
allplan.com/precast

BIMplatform
Tel. +48 795 943 133
info@bimplatform.pl
bimplatform.pl

ALLPLAN
A NEMETSCHEK COMPANY