



18/11/2019

PRECAST IN OUR SOCIAL LIFE

Habitat & Sport Projects

Zsolt Kovacs

CONSOLIS

ASA

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 - Technical solutions and developments
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 - Example projects
 - Technical solutions and developments
- 5 | Future perspective**

INTRODUCTION OF THE ASA COMPANIES (MEMBERS OF THE CONSOLIS GROUP)

History and international footprint

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Introduction of the ASA Companies (members of the Consolis Group)

Consolis, a European leader bringing construction solutions, notably precast concrete ones

- From design, to manufacturing & assembly on sites
- From building to infrastructures

#1

for **Europe**
of precast
concrete solutions



€1.5 Bn
2018 Sales



over **100** years
of expertise



11.000 + employees
incl. **~500 designers**
& structural engineers



21 countries
around the world
(industrial presence)



80 +
industrial sites

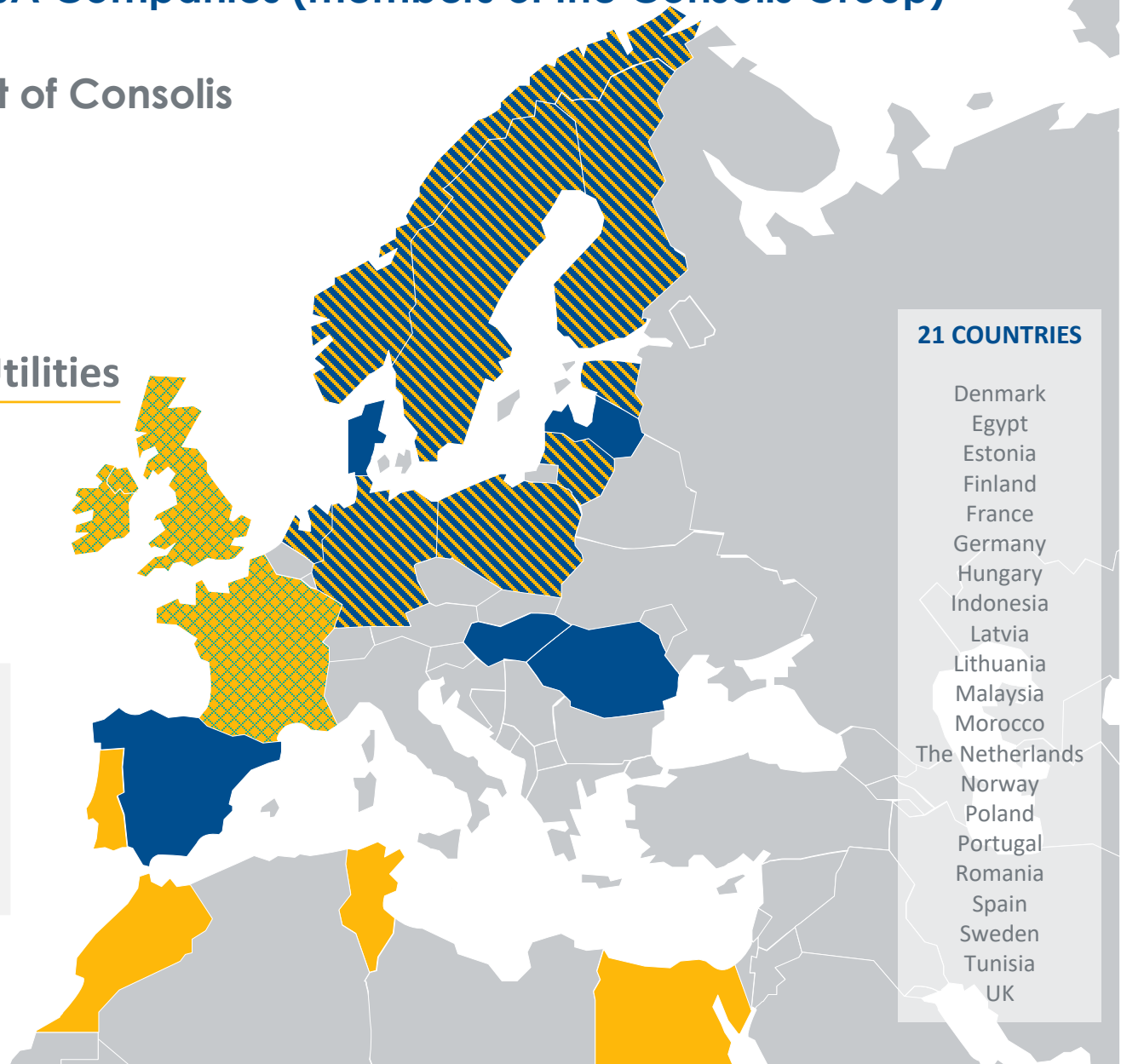
Introduction of the ASA Companies (members of the Consolis Group)

International footprint of Consolis

 **Building**

 **Transportation & Utilities**

 **Drainage**



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Introduction of the ASA Companies (members of the Consolis Group)

International footprint of Consolis

 Building

 Transportati

 Drainage



21 COUNTRIES

Denmark
Egypt
Estonia
Finland
France
Germany
Hungary
Indonesia
Latvia
Lithuania
Malaysia
Morocco
The Netherlands
Norway
Poland
Portugal
Romania
Spain
Sweden
Tunisia
UK

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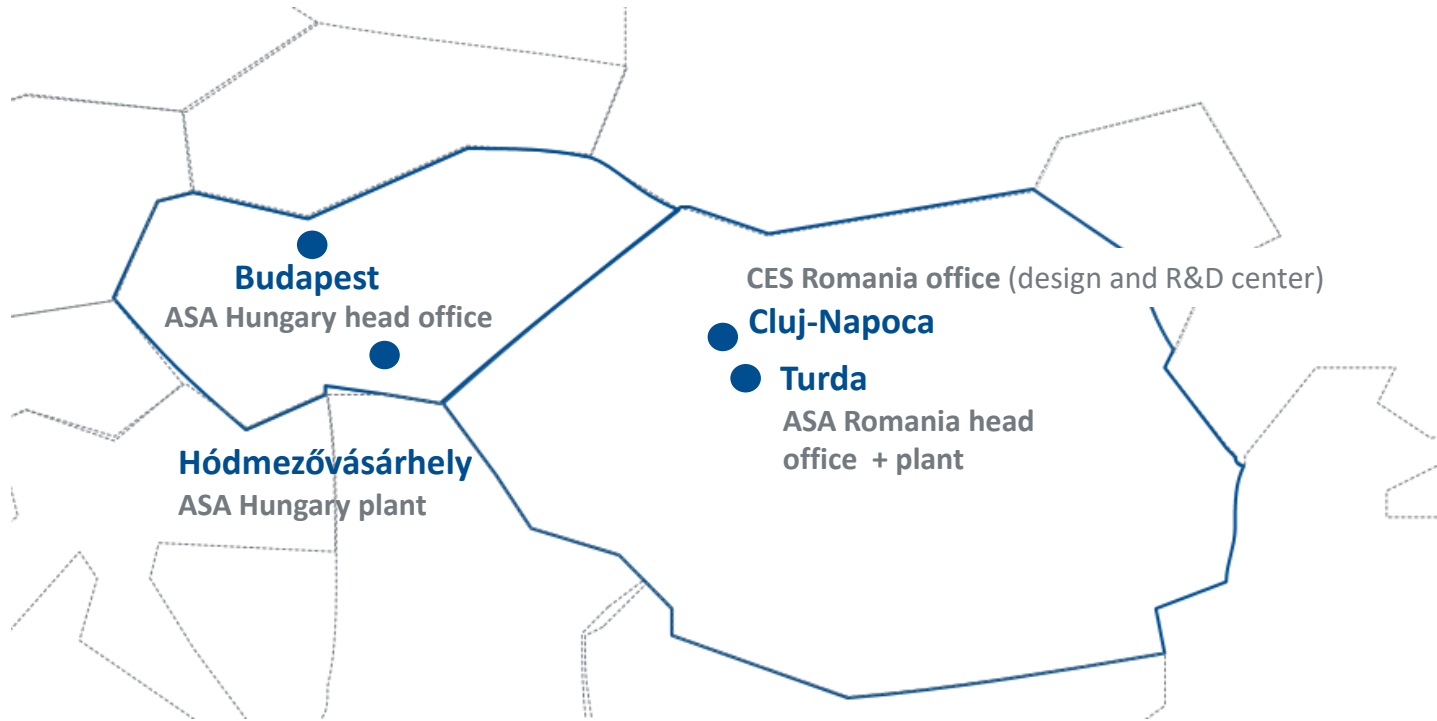
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Introduction of the ASA Companies (members of the Consolis Group)

Consolis ASA Hungary (ASA Építőipari Kft.) was founded in 1990 by the technical staff and on the premises of the former national construction company no. 31. The know-how, the experience, the technical production possibilities were improved and developed considerably during the last decades, yet the same unalterable focus on **innovation and quality** remains the main trademark of ASA Építőipari Kft. **ASA CONS ROMANIA** was established in 1999, as part of the group ASA Építőipari Kft. and from July 2008 both are part of the Consolis Group.



Introduction of the ASA Companies (members of the Consolis Group)



Design & optimization

- Comprehensive solutions
- 3D modelling
- Consolis international design
- **CES** (Consolis Engineering Services)

Prefabrication

- 40 years expertise
- ~40,000 m³ p.a. in Hungary
- ~50,000 m³ p.a. in Romania

Assembly

- 3 in-house teams in Hungary
- 2 in-house teams in Romania
- Safety mindset

Industrial floor

- High-end surface precision
- ~300,000 m² p.a.

General contracting

- Outstanding references
- Strong project management

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EVOLUTION OF THE PRODUCT AND PROJECT PORTFOLIO

Industrial, sport and residential sector

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Evolution of the product and project portfolio

Time:

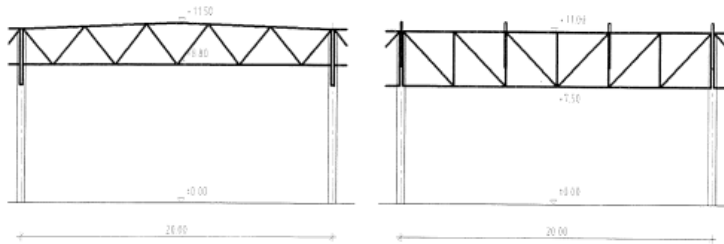
1990



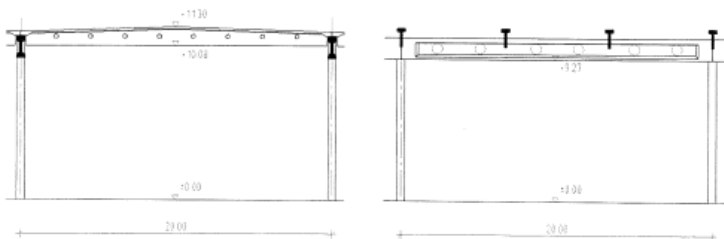
Precast concrete frame structures replacing steel halls

Audi production hall in Győr, Hungary

AUDI GYŐR kiadás 1998 (acél váz)



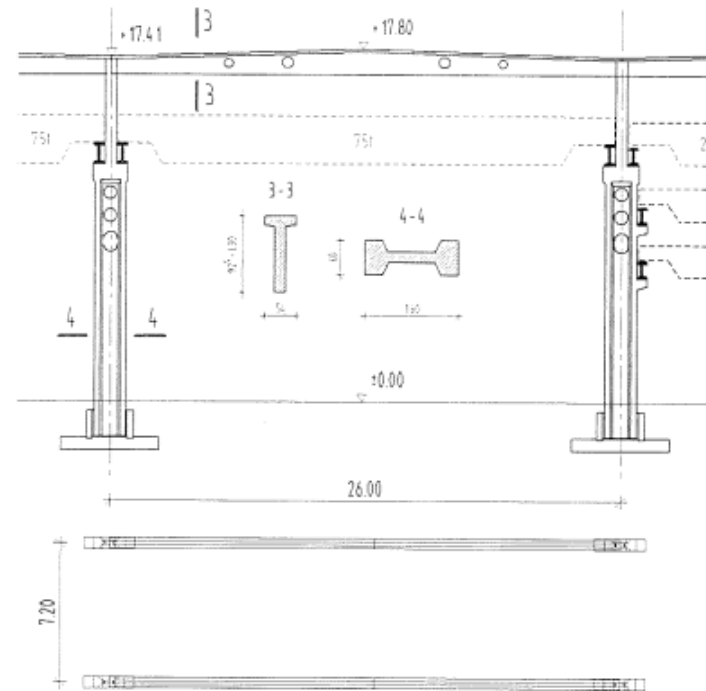
AUDI GYŐR megvalósulás 1999 (bővítés 2000)
előregyártott vb. váz összesen ca.65000 m²



Original drawings

After replanning

GE in Veresegyház



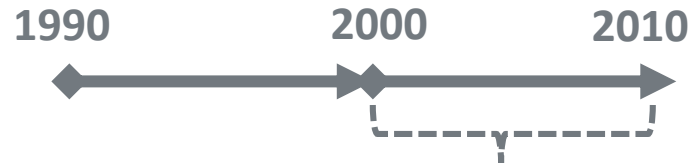
Precast concrete structure after replanning

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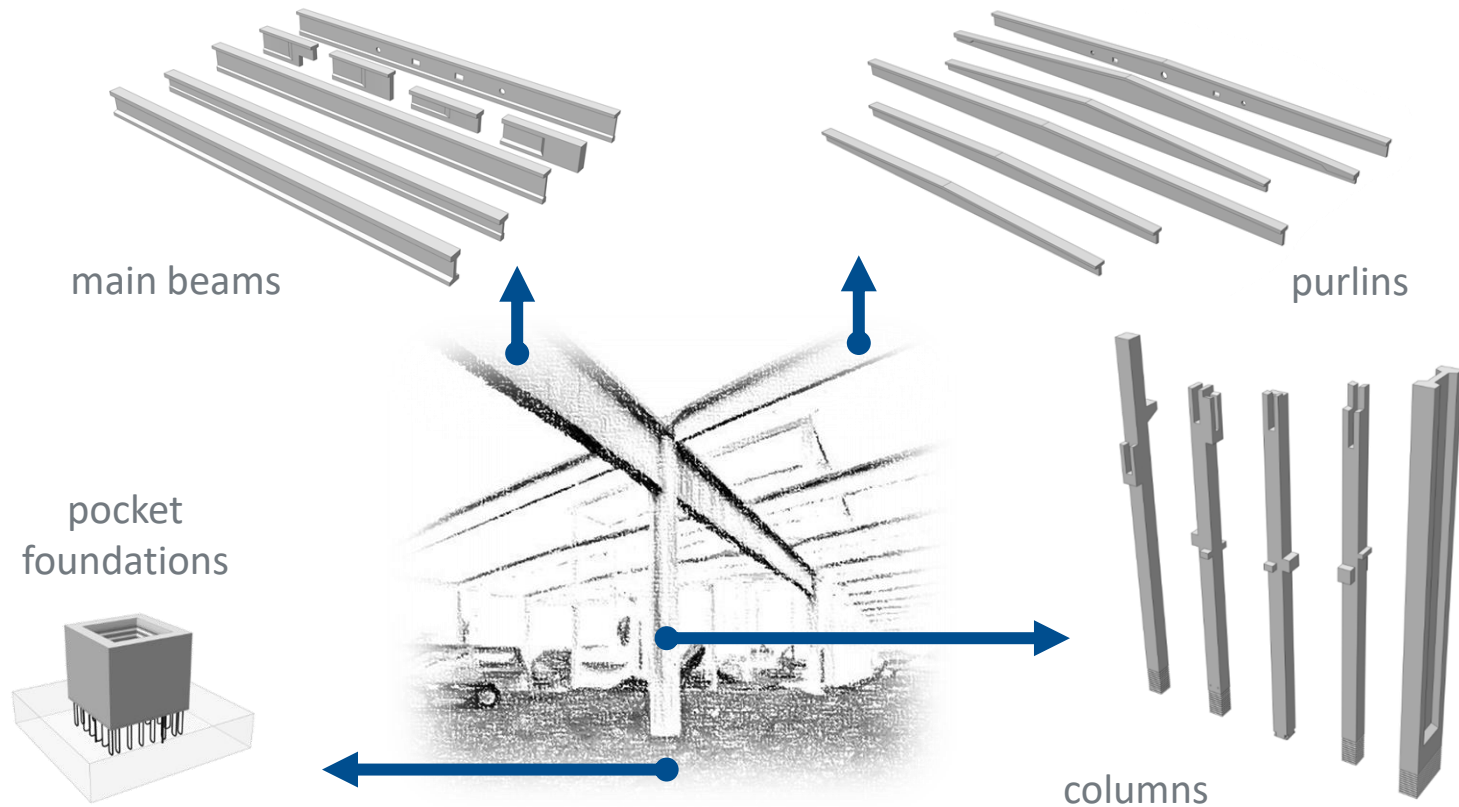
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Evolution of the product and project portfolio

Time:

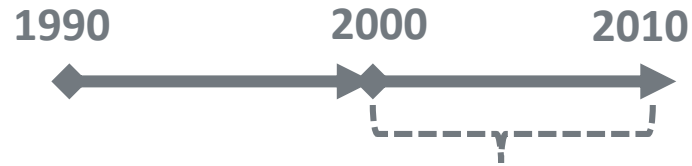


Precast concrete products mainly used for industrial purposes → influences the product portfolio

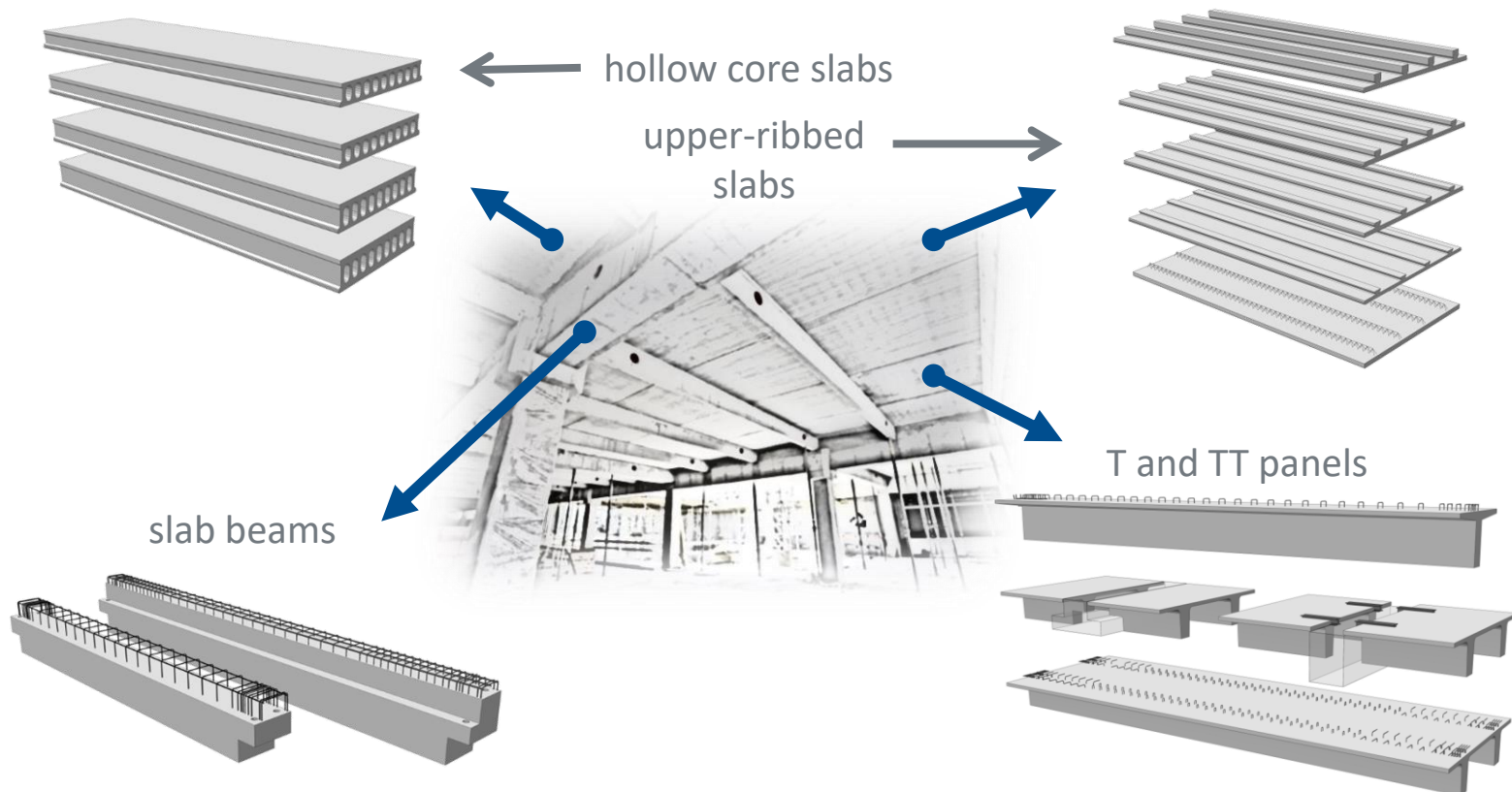


Evolution of the product and project portfolio

Time:



Precast concrete products mainly used for industrial purposes → influences the product portfolio



Evolution of the product and project portfolio

Time:

1990

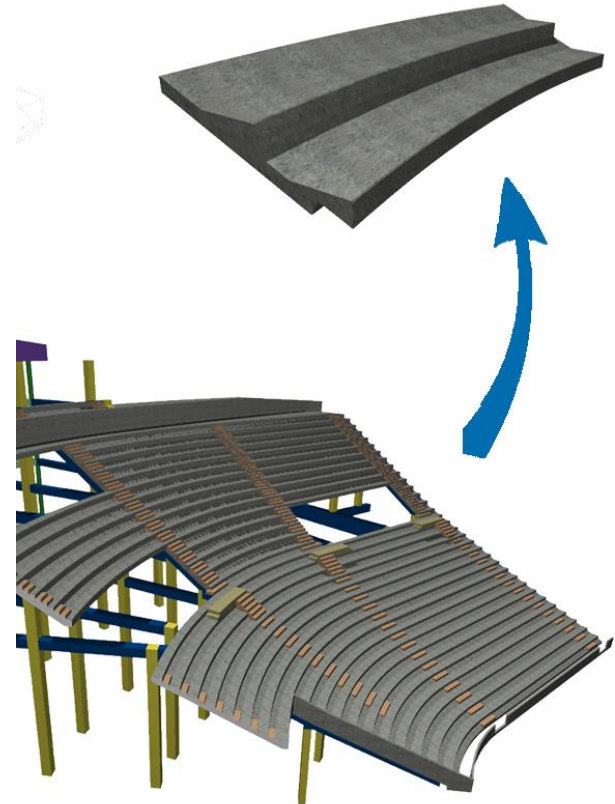
2000

2010

2013

First STADIUM project in Debrecen, Hungary

New product type:
GRANDSTAND ELEMENTS



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Evolution of the product and project portfolio

Time:

1990

2000

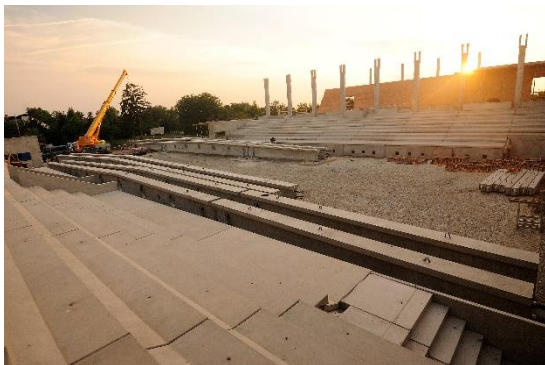
2010

2013 2015

Demand for sport halls with long span roofs

Large span post-tensioned reinforced concrete beams

Sport hall in Siófok, Hungary:



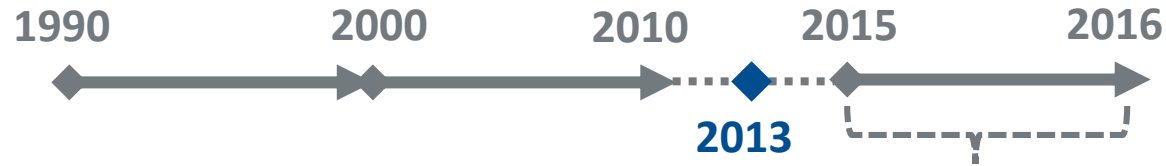
Segmental beams with 40m span from 3 pieces → transportation limits on the roads of Siófok

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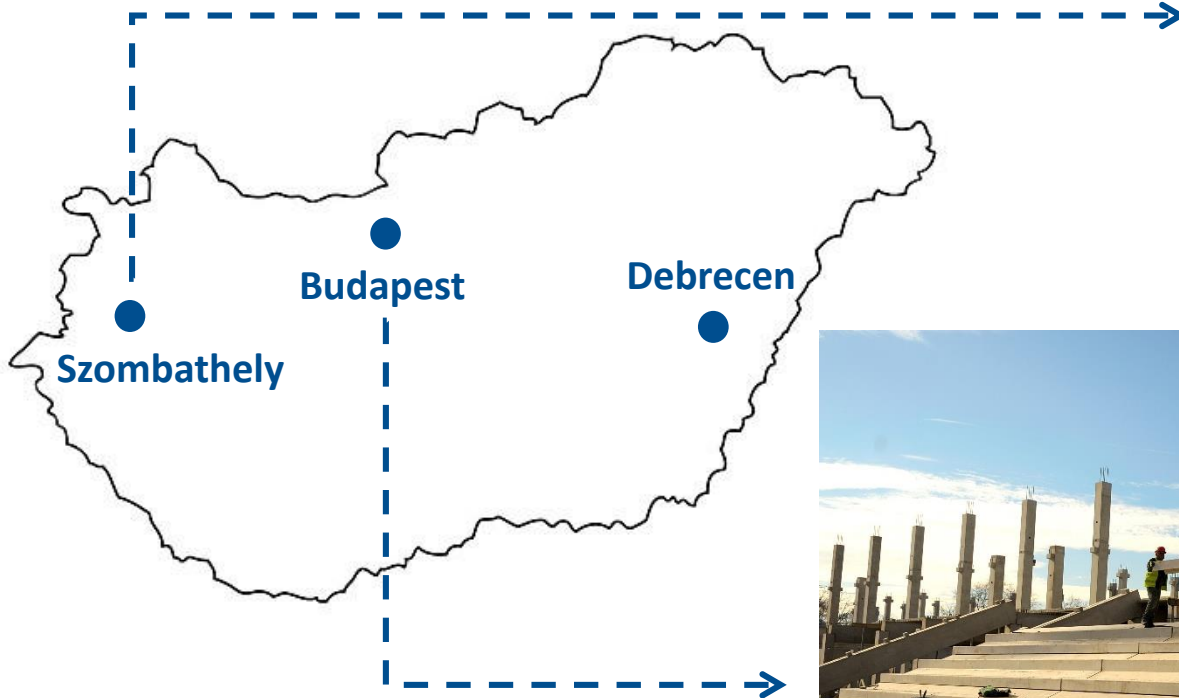
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Evolution of the product and project portfolio

Time:



More stadiums with the usage of the same grandstand type

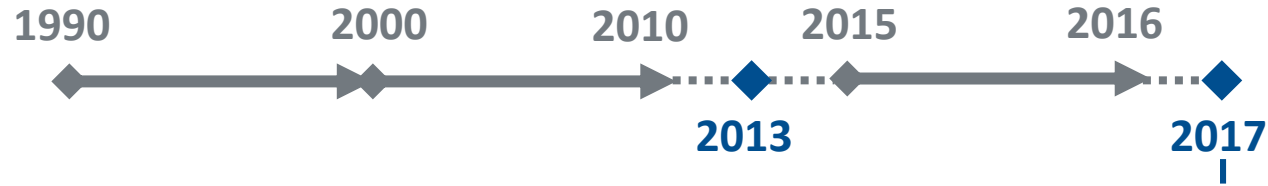


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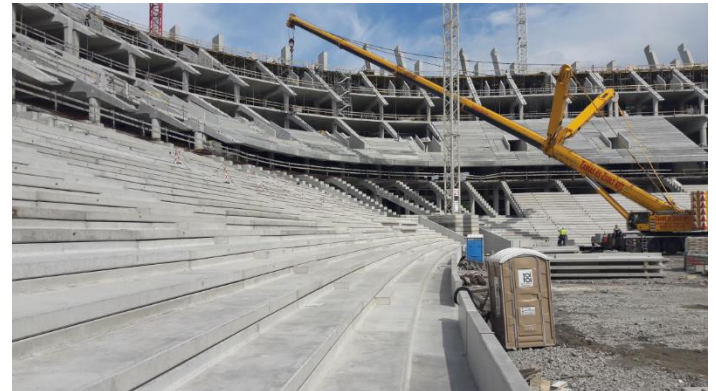
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Evolution of the product and project portfolio

Time:



Puskas Ferenc Stadium with „L” shaped grandstands



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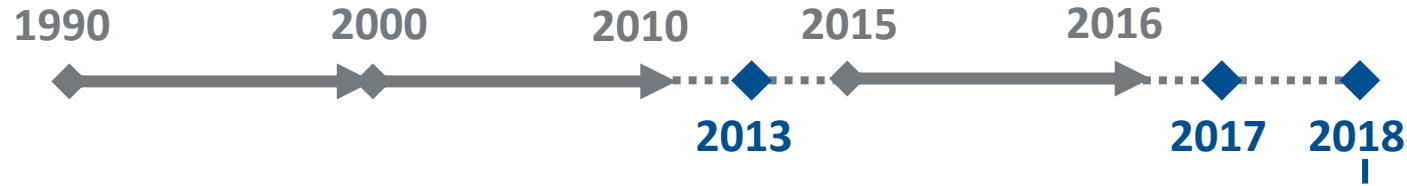
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Evolution of the product and project portfolio

Time:



Besides the stadiums and sport facilities the first residential project started in Szeged, Hungary



Evolution of the product and project portfolio

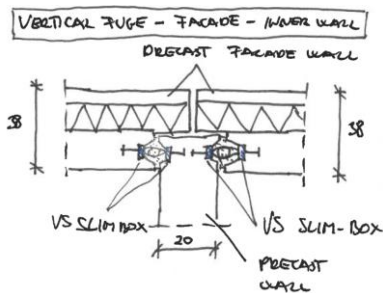
Time:



In 2019 we saw the first signs of the Northern and Western European trends in Hungary, in form of an offer request for a completely precast residential block of flats in Sárvár, Hungary



ASA SÁRVÁR CONCEPT - V2



A concept worked out with the cooperation of the Central European Business Units of Consolis (Consolis Poland + ASA)

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Evolution of the product and project portfolio

Time:



The Northern- and Western European precast concrete housing trends appearing in Central- and Eastern Europe as well?



Precast product mainly used for industrial purposes



First big residential project with precast columns and slabs in 2018



What brings the future?
The Western- and Northern European trends?

STADIUMS AND SPORT FACILITIES

- Example projects
- Technical solutions and developments

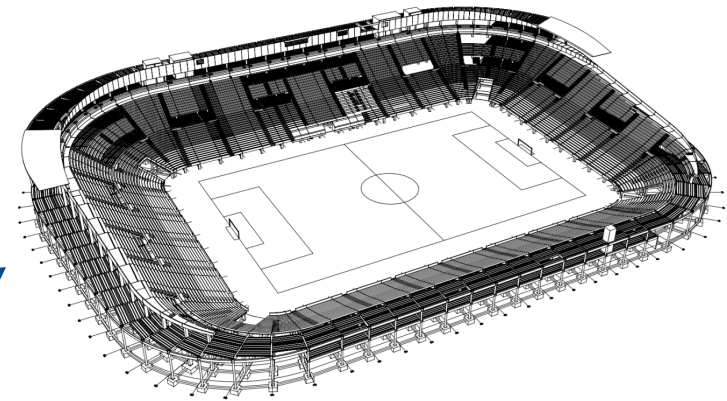
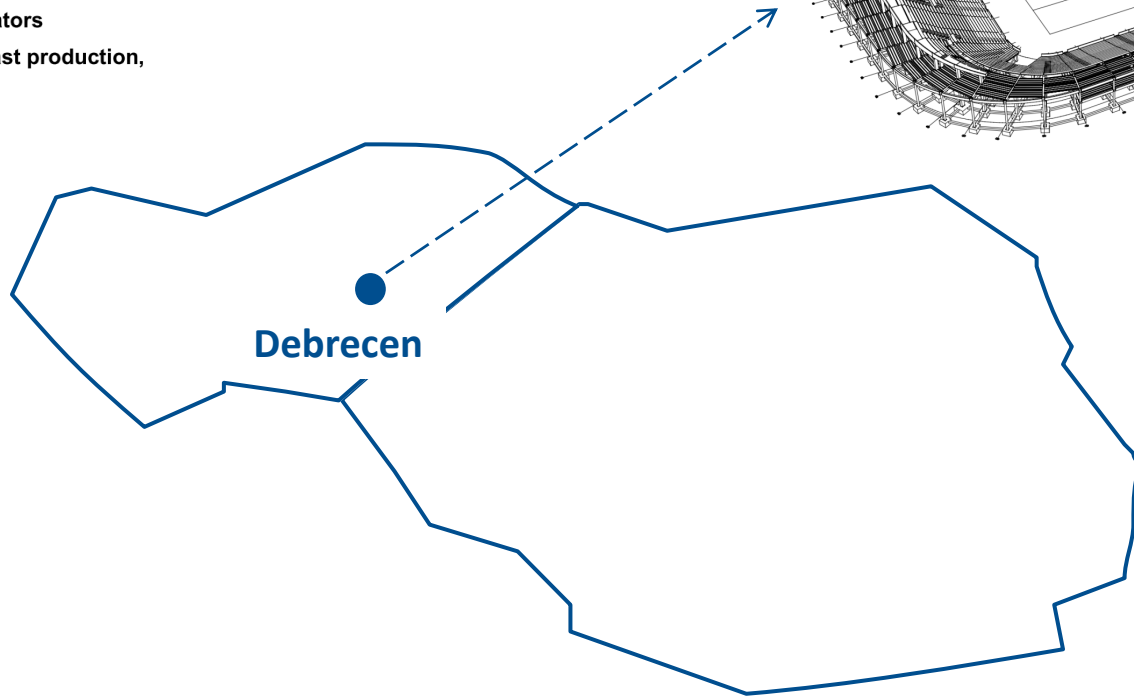
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Stadiums and sport facilities

Nagyerdei Stadium in Debrecen, Hungary (2013)

Place: **Debrecen, Hungary**
Construction year: **2013**
Capacity: **20.020 spectators**
Service made: **design, precast production,
installation**



Stadiums and sport facilities

Nagyerdői Stadium in Debrecen, Hungary (2013)

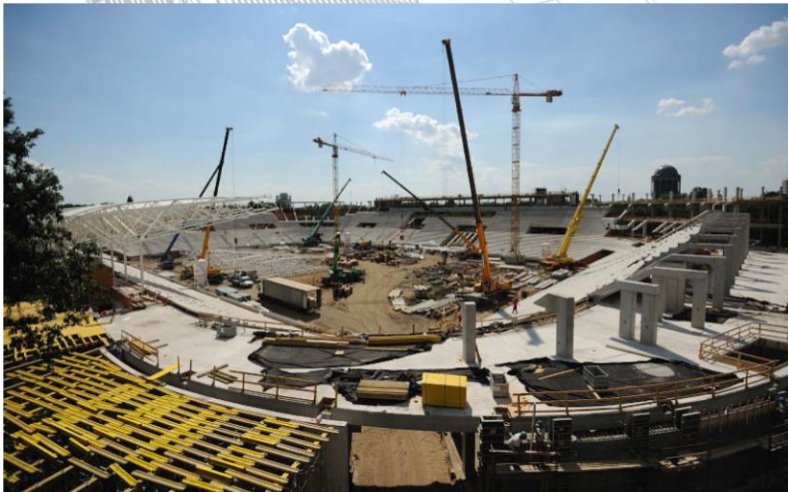
Place: Debrecen, Hungary
Construction year: 2013
Capacity: 20.020 spectators
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installation



Stadiums and sport facilities

Nagyerdői Stadium in Debrecen, Hungary (2013)

Place:
Construct
Capacity
Service



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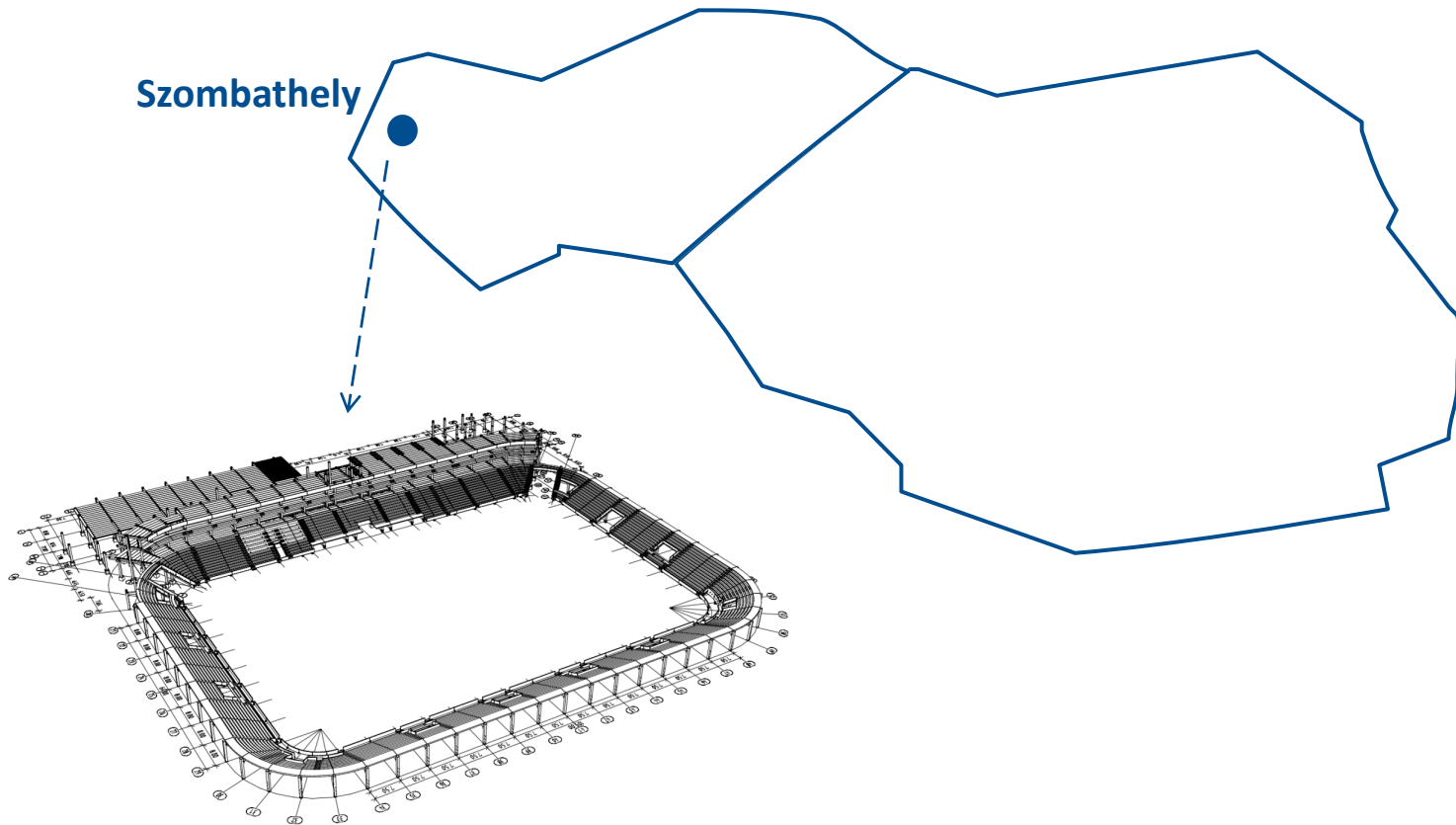
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Stadiums and sport facilities

Haladás Stadium in Szombathely, Hungary (2016)

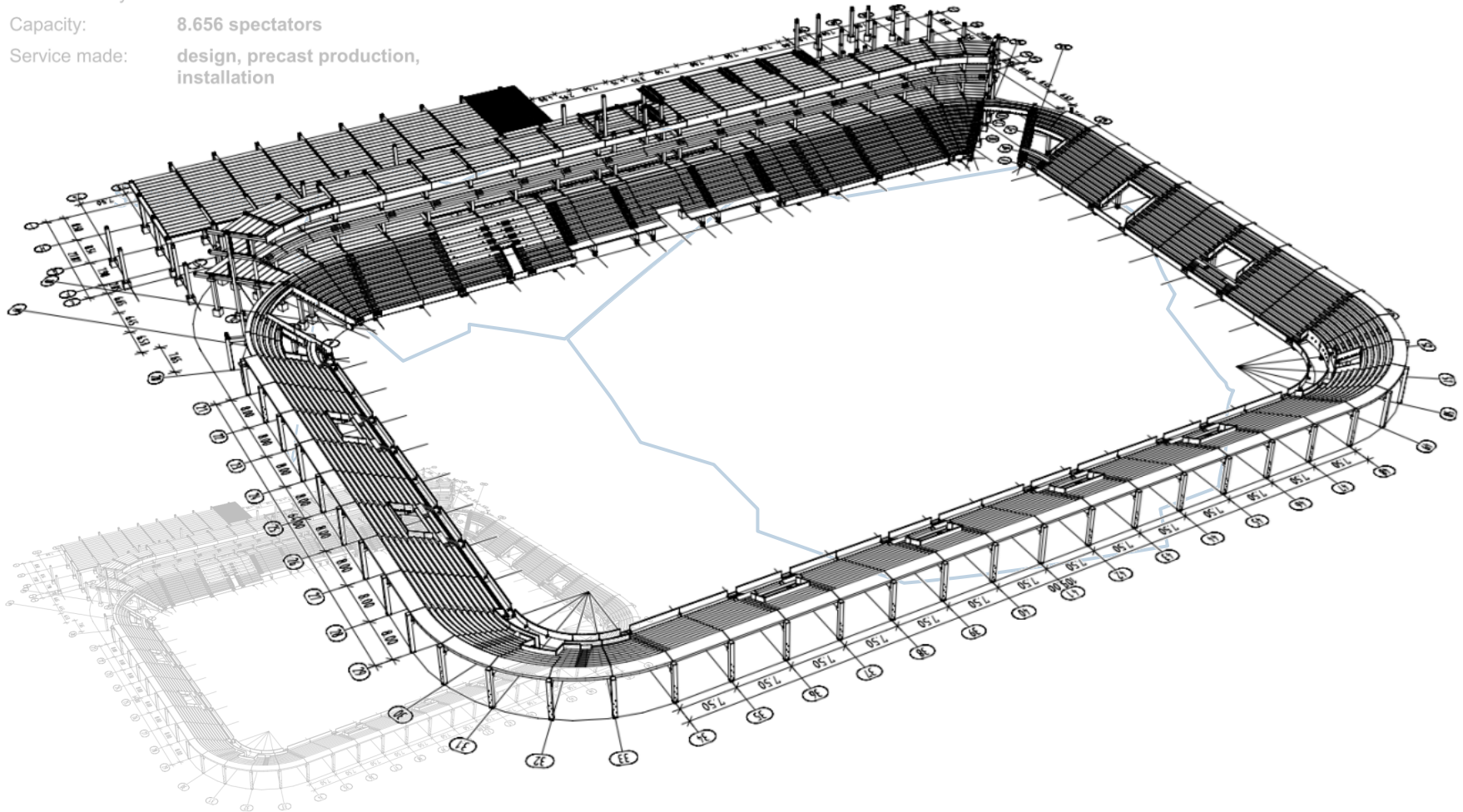
Place: **Szombathely, Hungary**
Construction year: **2016**
Capacity: **8.656 spectators**
Service made: **design, precast production, installation**



Stadiums and sport facilities

Haladás Stadium in Szombathely, Hungary (2016)

Place: Szombathely, Hungary
Construction year: 2016
Capacity: 8.656 spectators
Service made: design, precast production, installation



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Stadiums and sport facilities

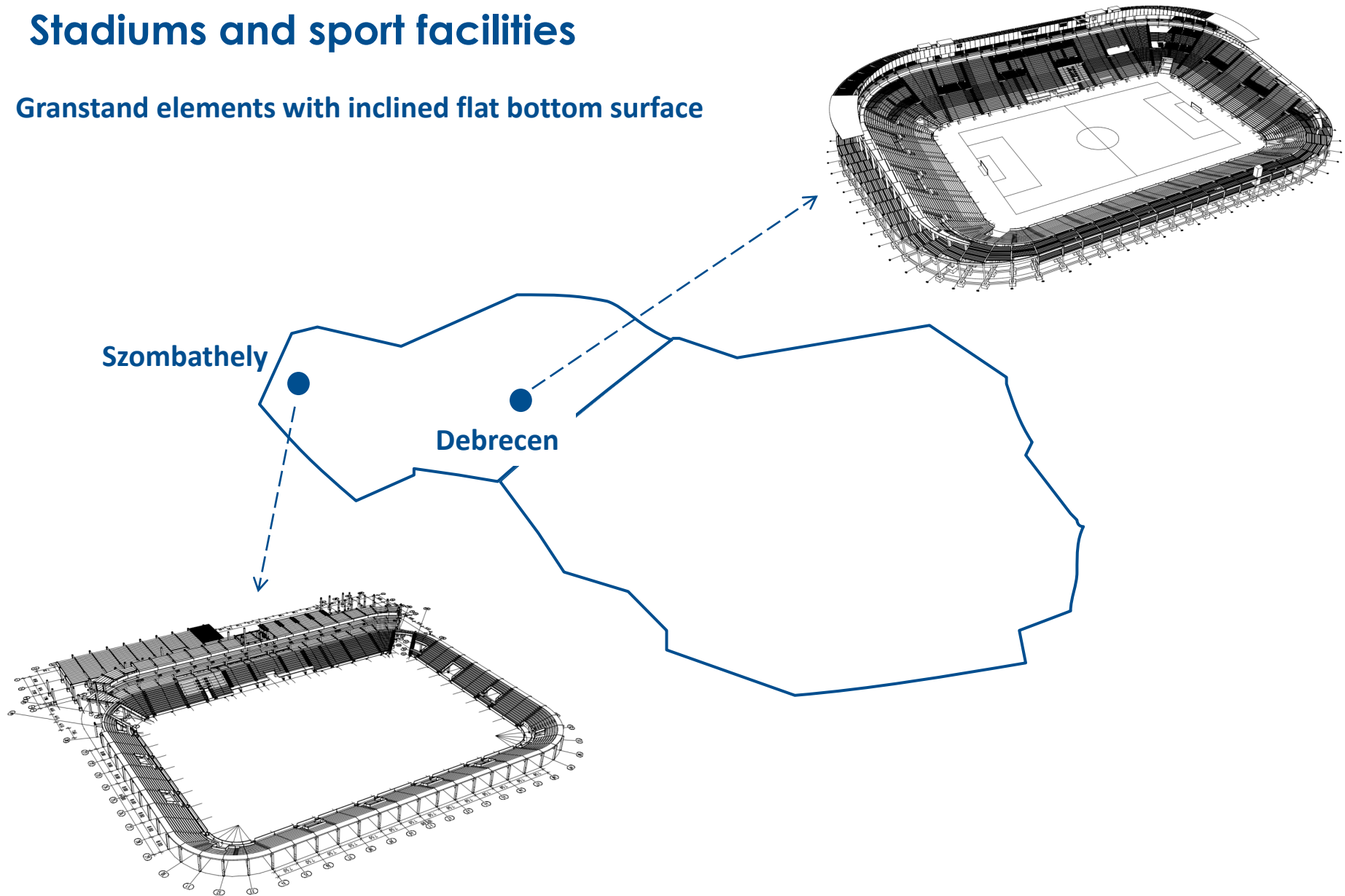
Haladás Stadium in Szombathely, Hungary (2016)

Place:
Const
Capac
Servic



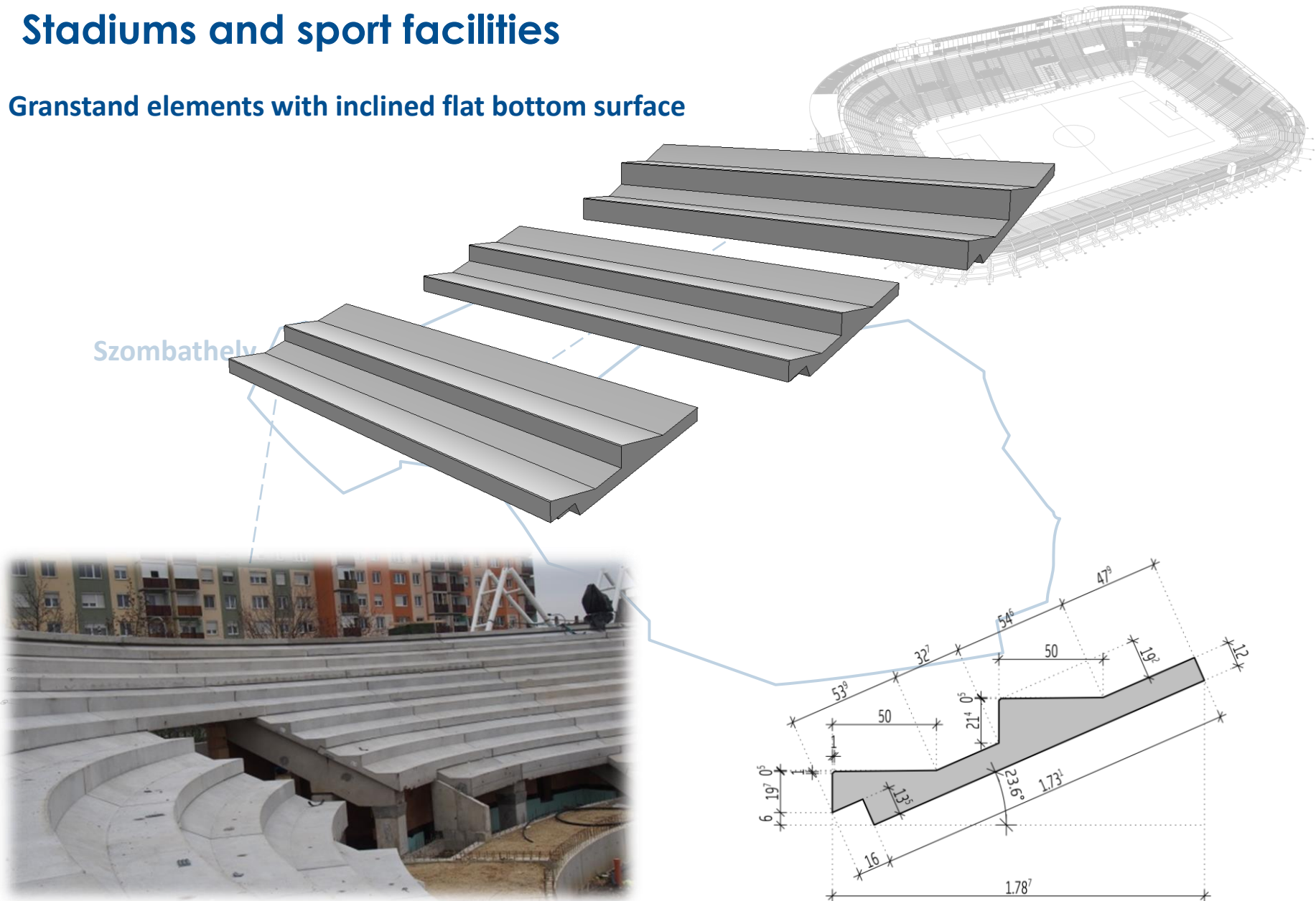
Stadiums and sport facilities

Granstand elements with inclined flat bottom surface



Stadiums and sport facilities

Granstand elements with inclined flat bottom surface

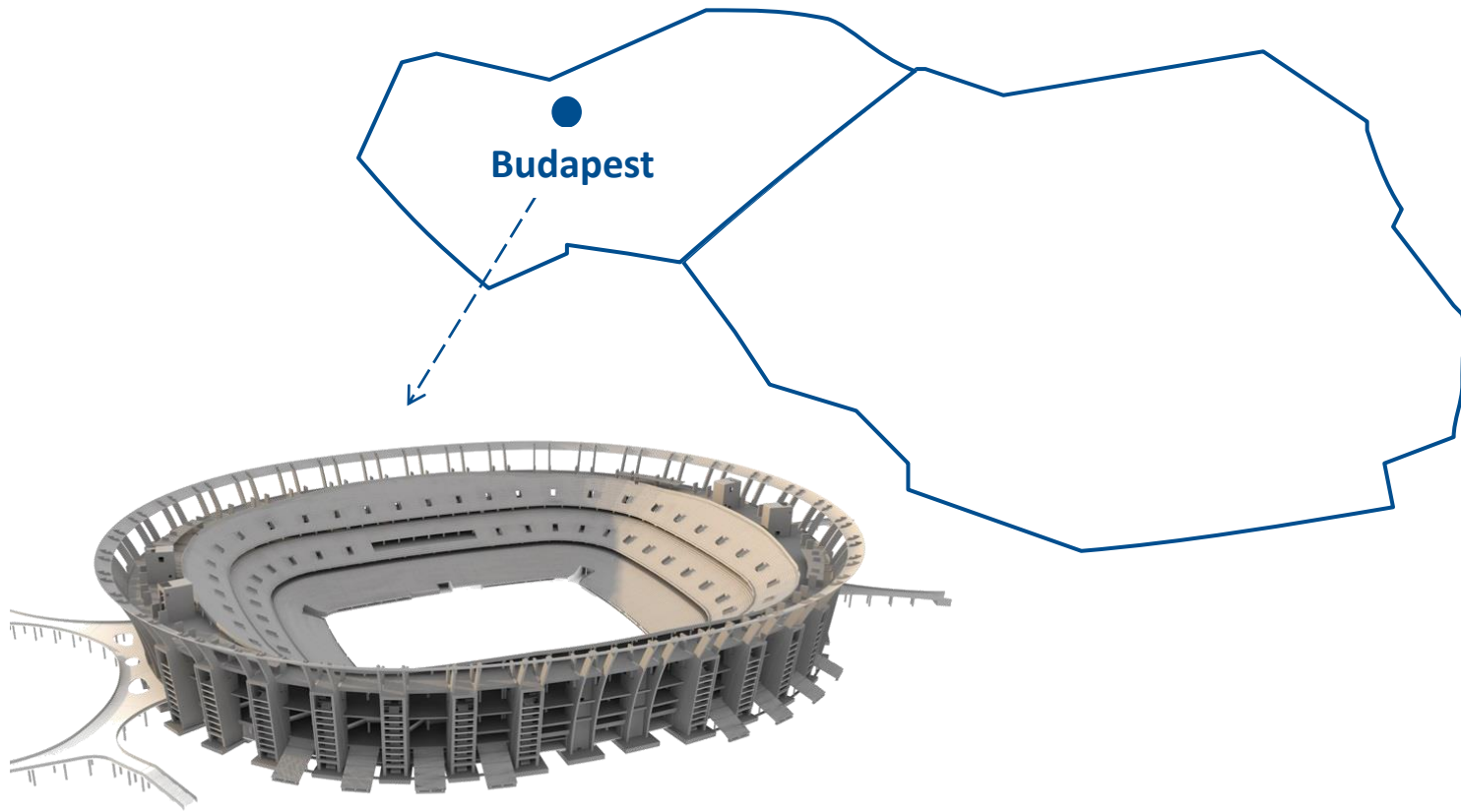


Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

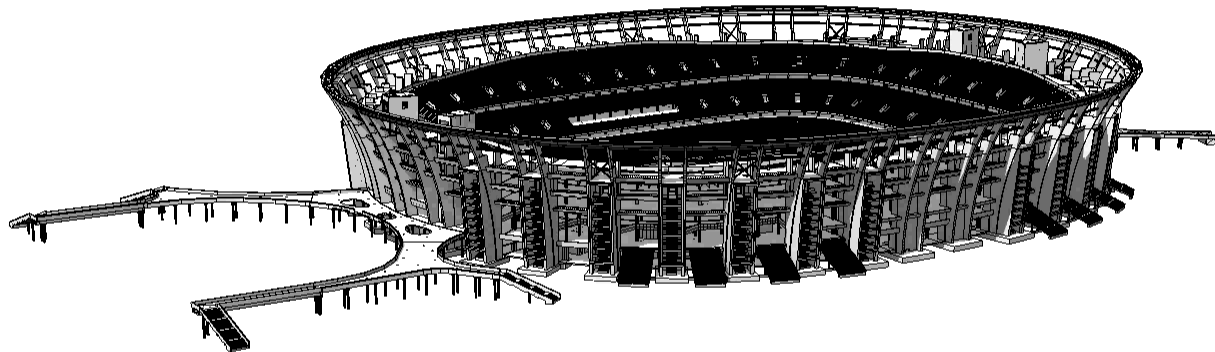
Basic parameters:

- Ground area: **388 062 m²**
- Capacity: **67 155 spectators**



Stadiums and sport facilities

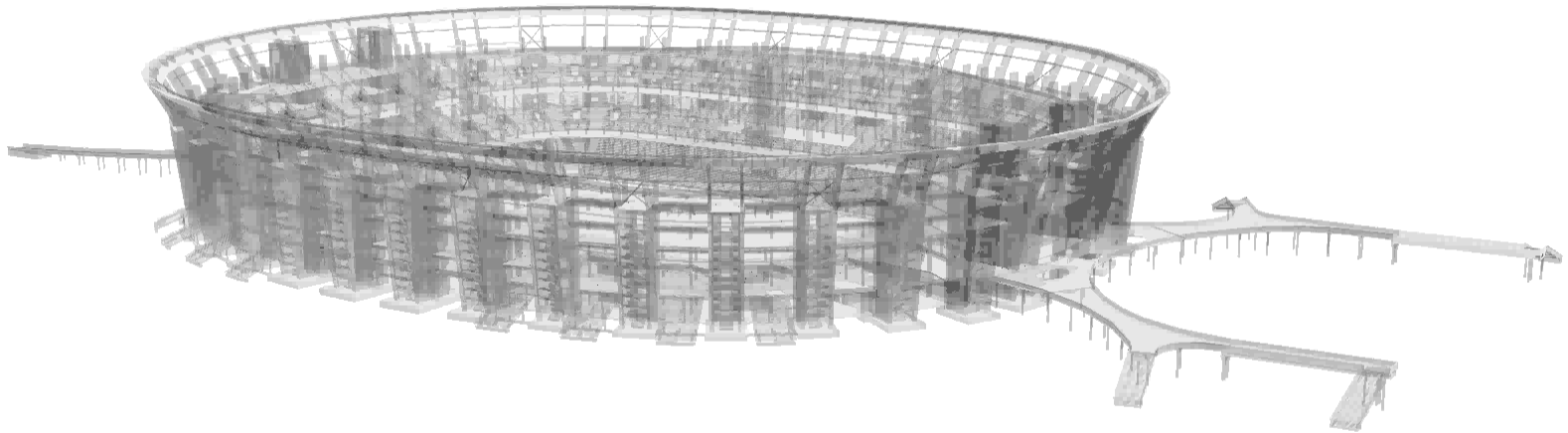
Puskás Ferenc Stadium in Budapest, Hungary (2018)



Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

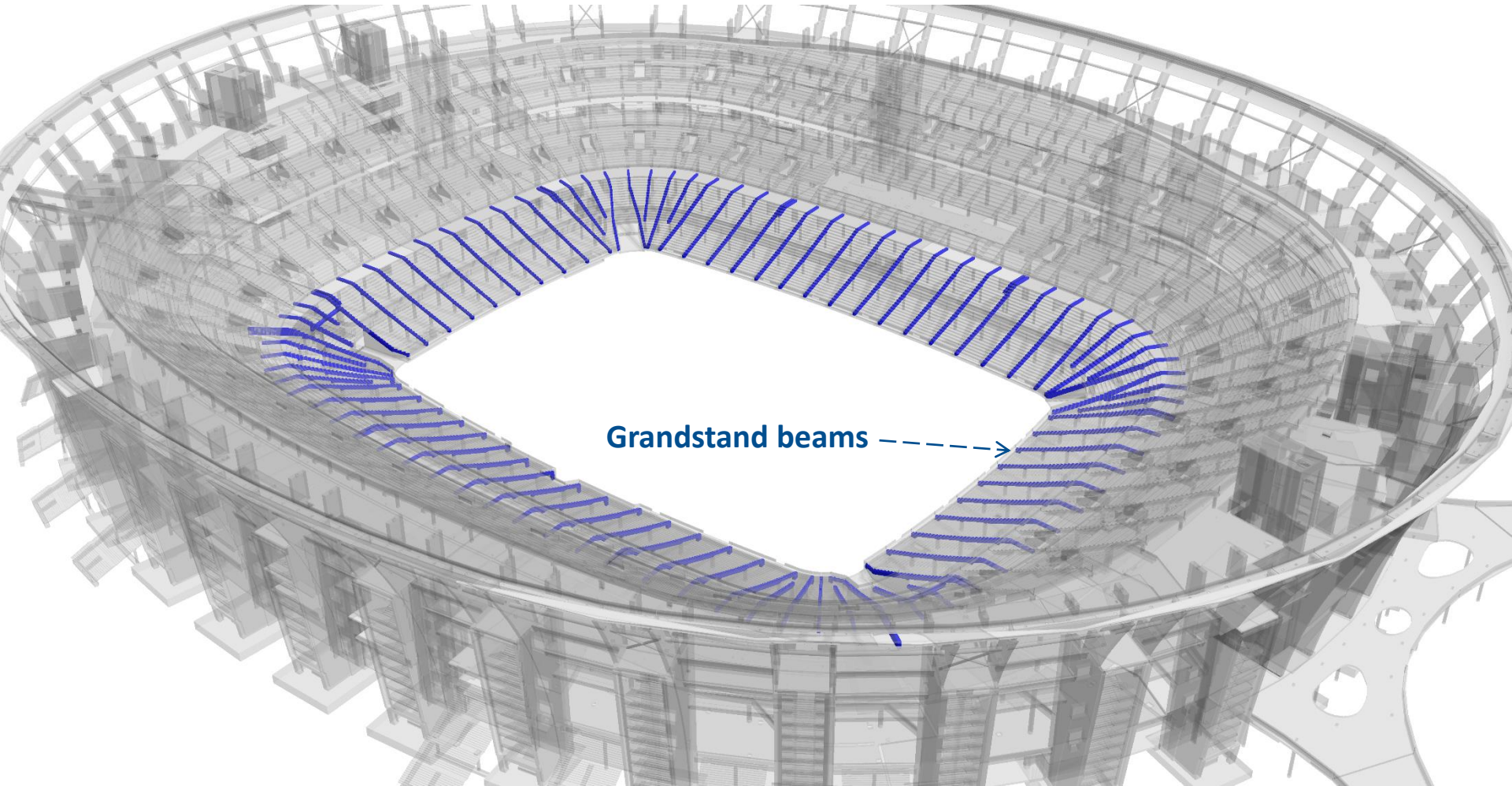
PRECAST ELEMENTS PRODUCED BY ASA



Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



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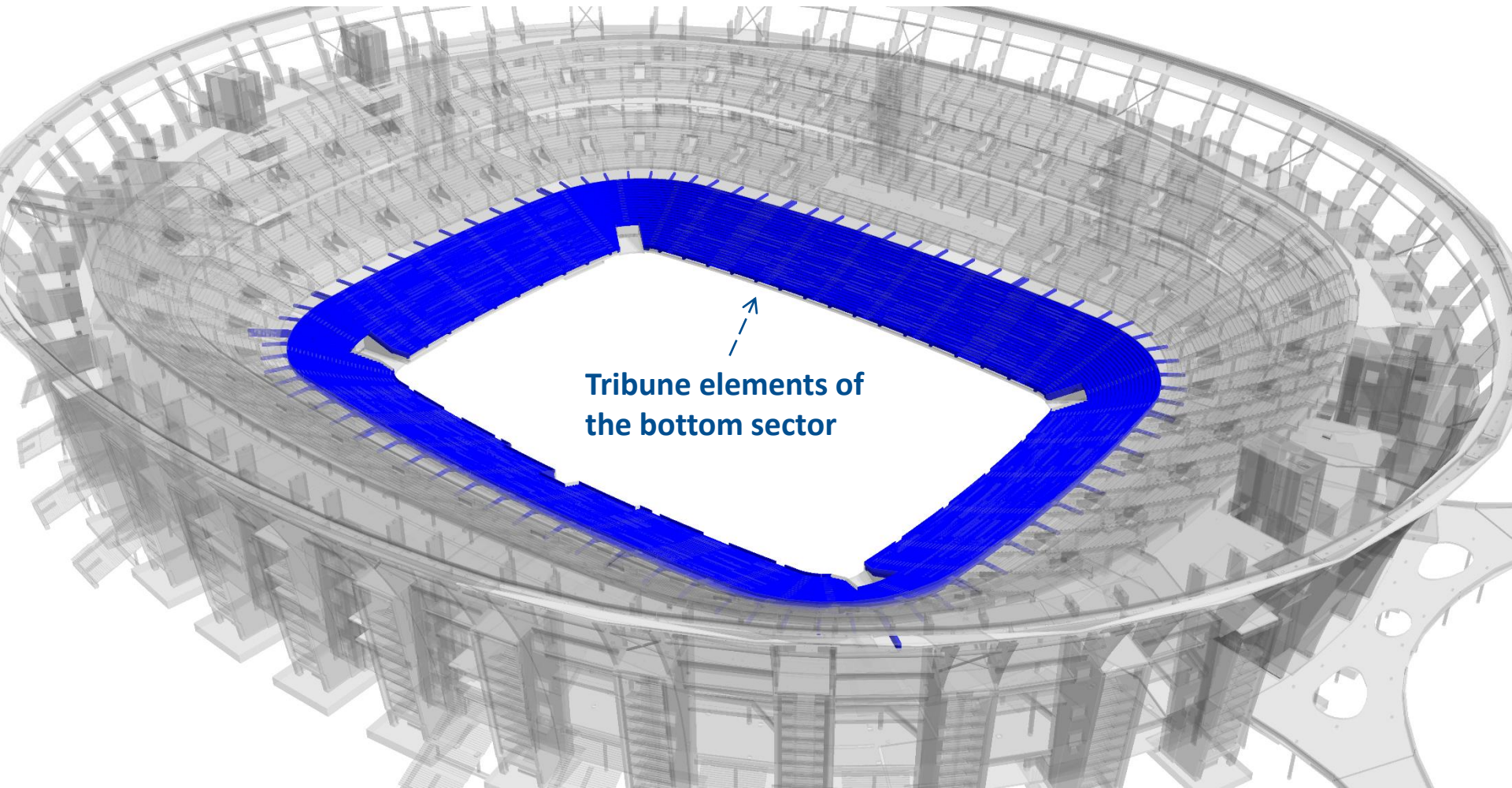
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



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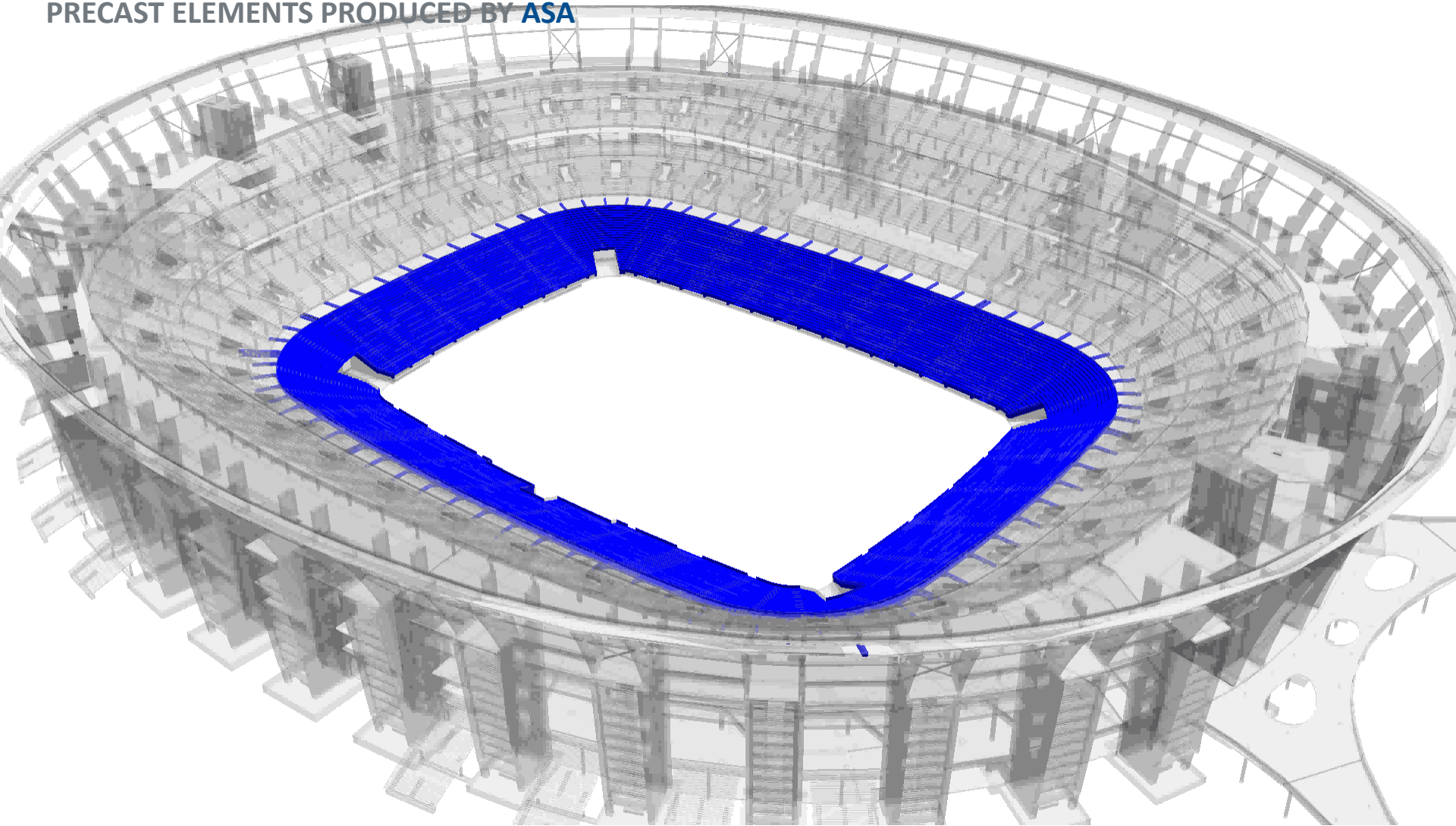
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



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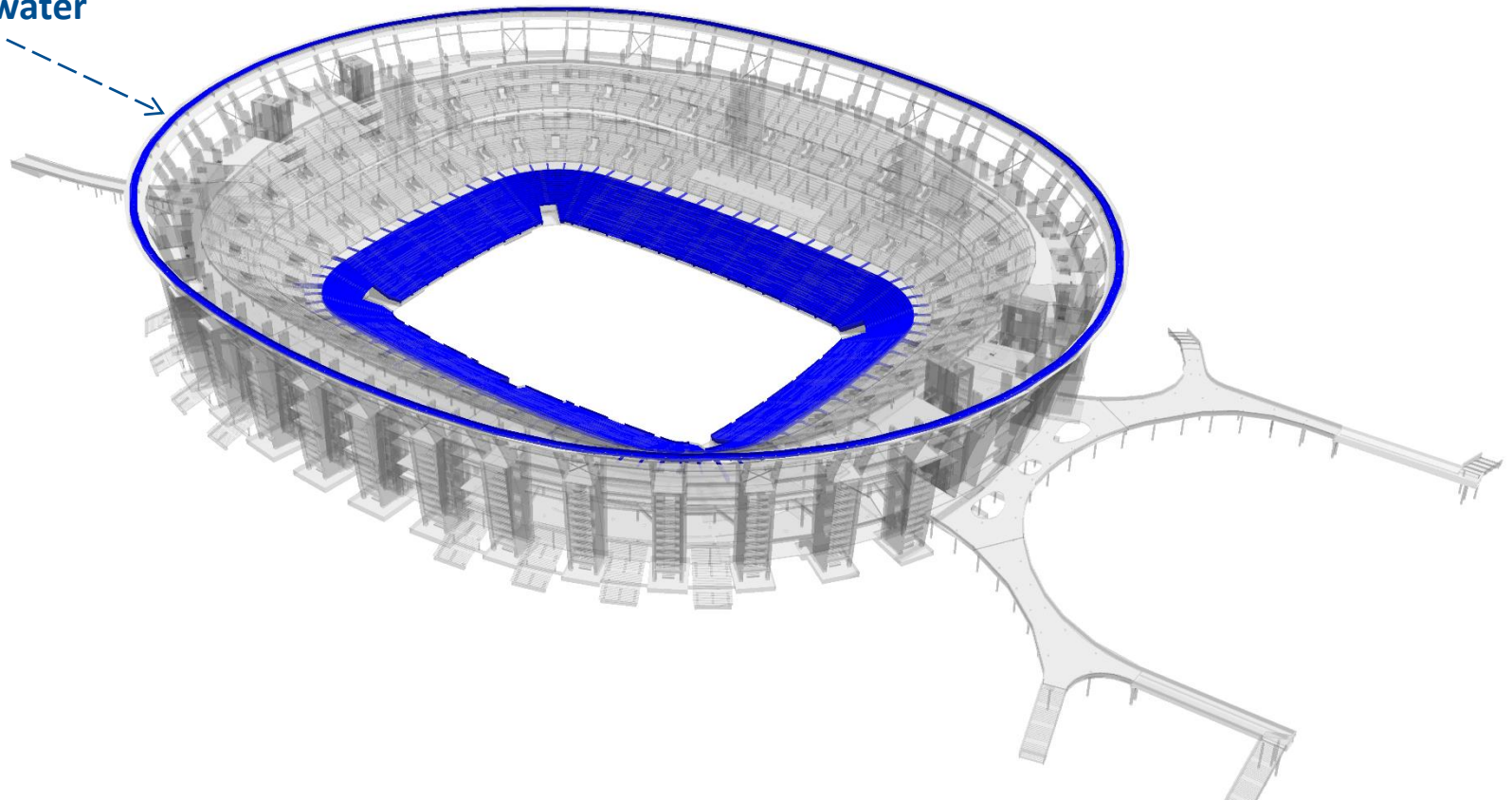
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA

Trough elements for
the roof water



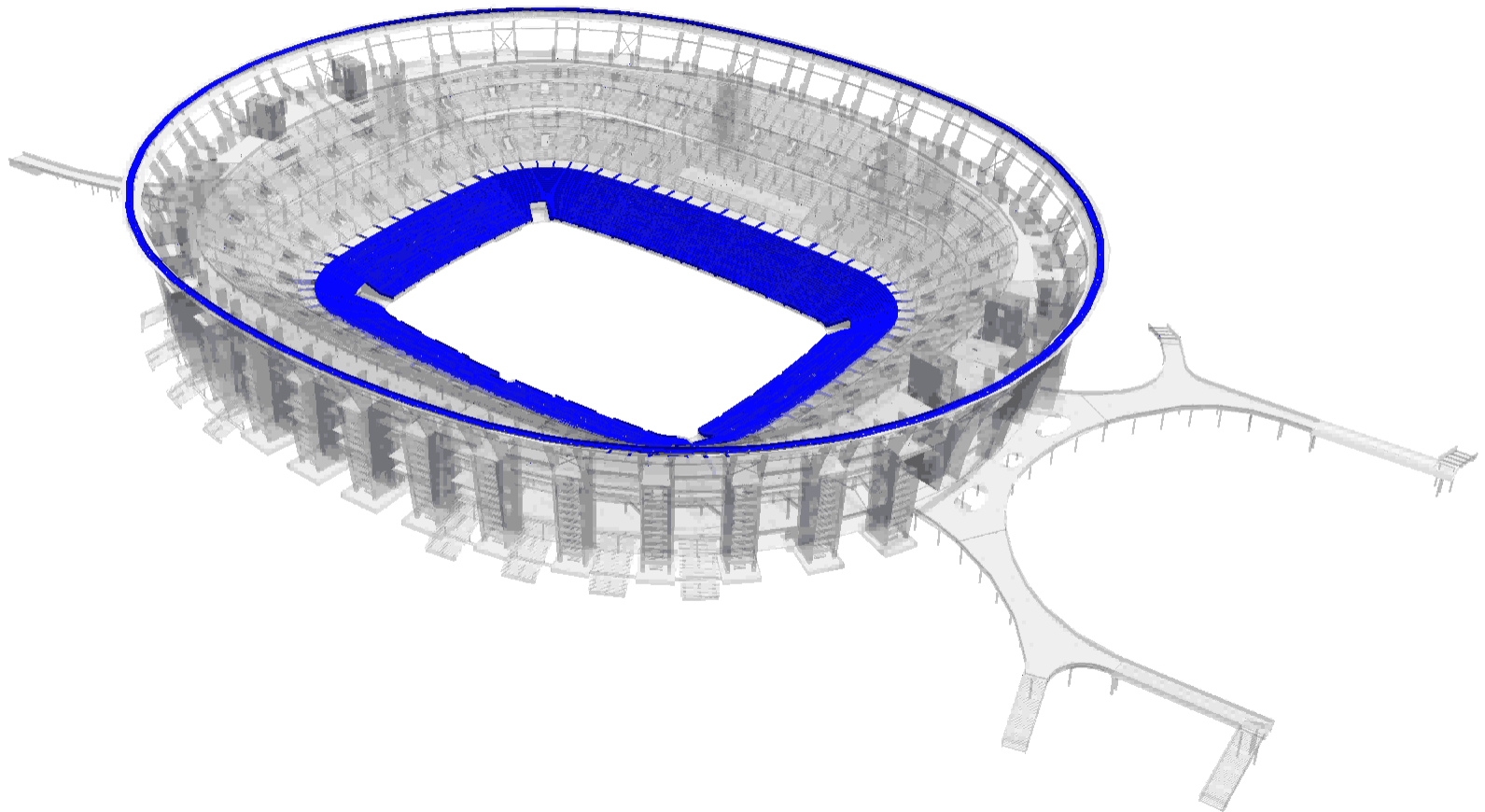
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



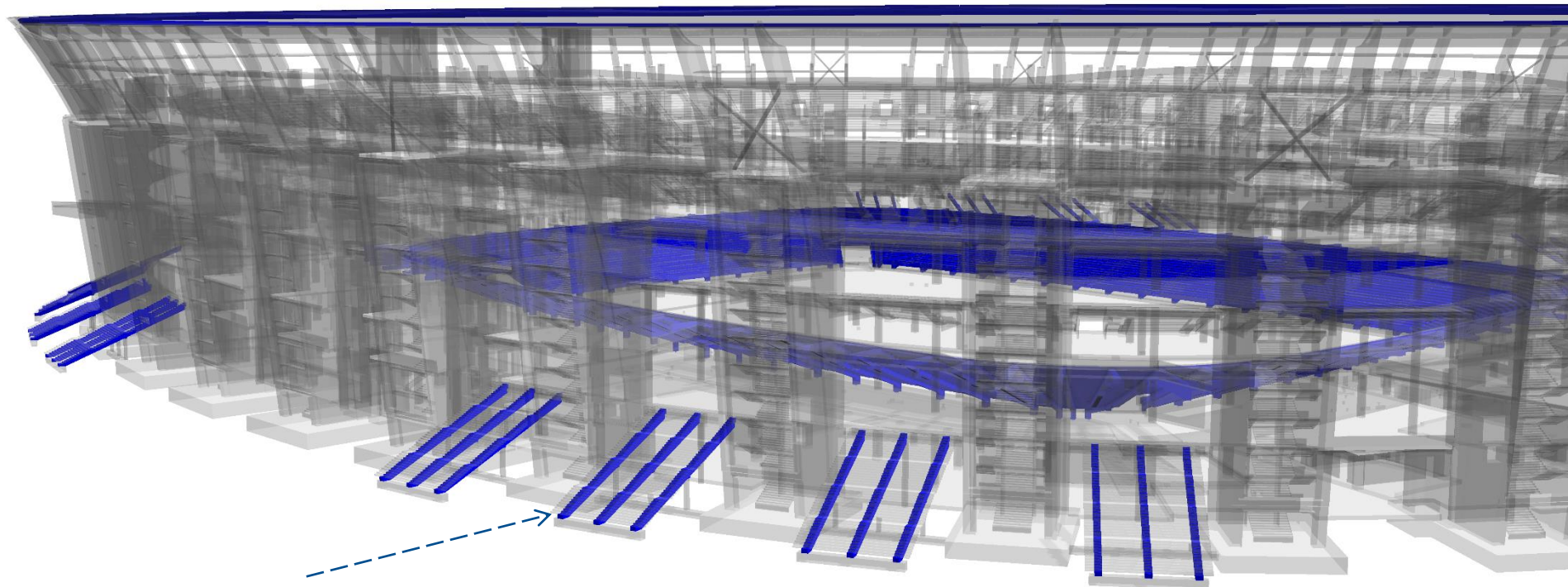
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



Precast beams of
the entrance stairs

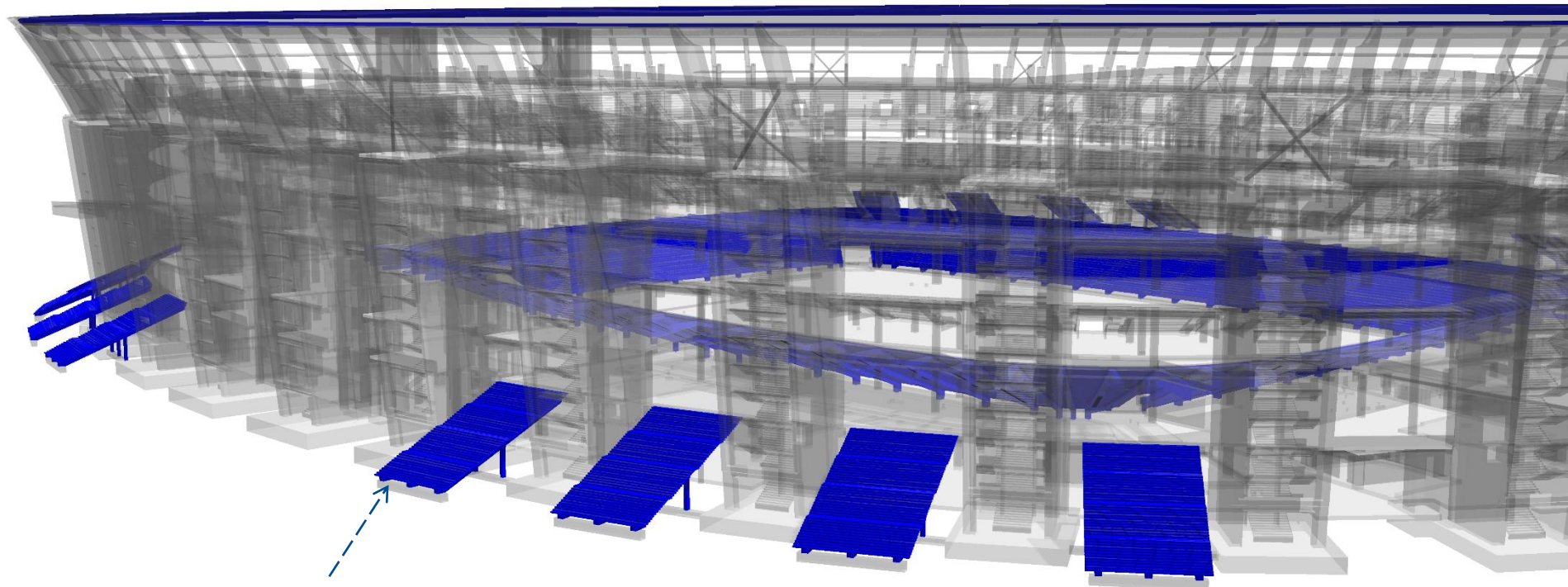
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Puskás Ferenc Stadium in Budapest, Hungary (2018)

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Entrance stair elements

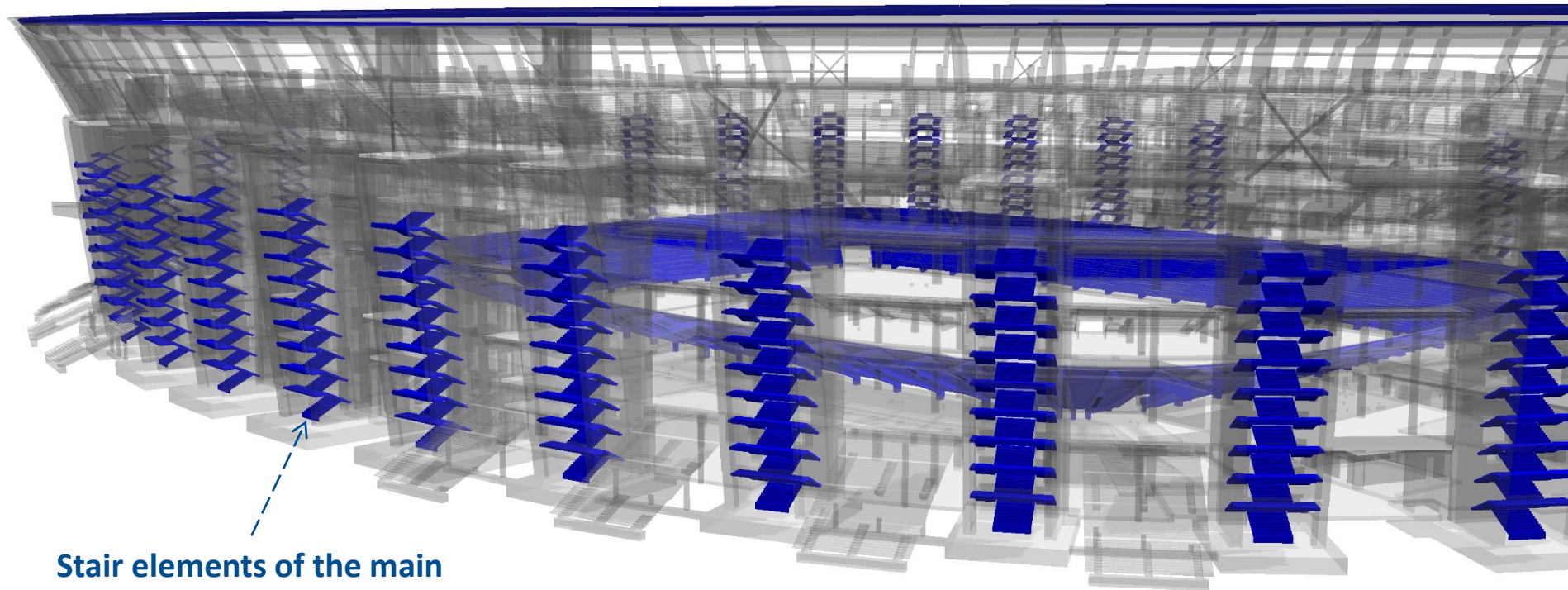
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

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Stair elements of the main staircases in the pilons

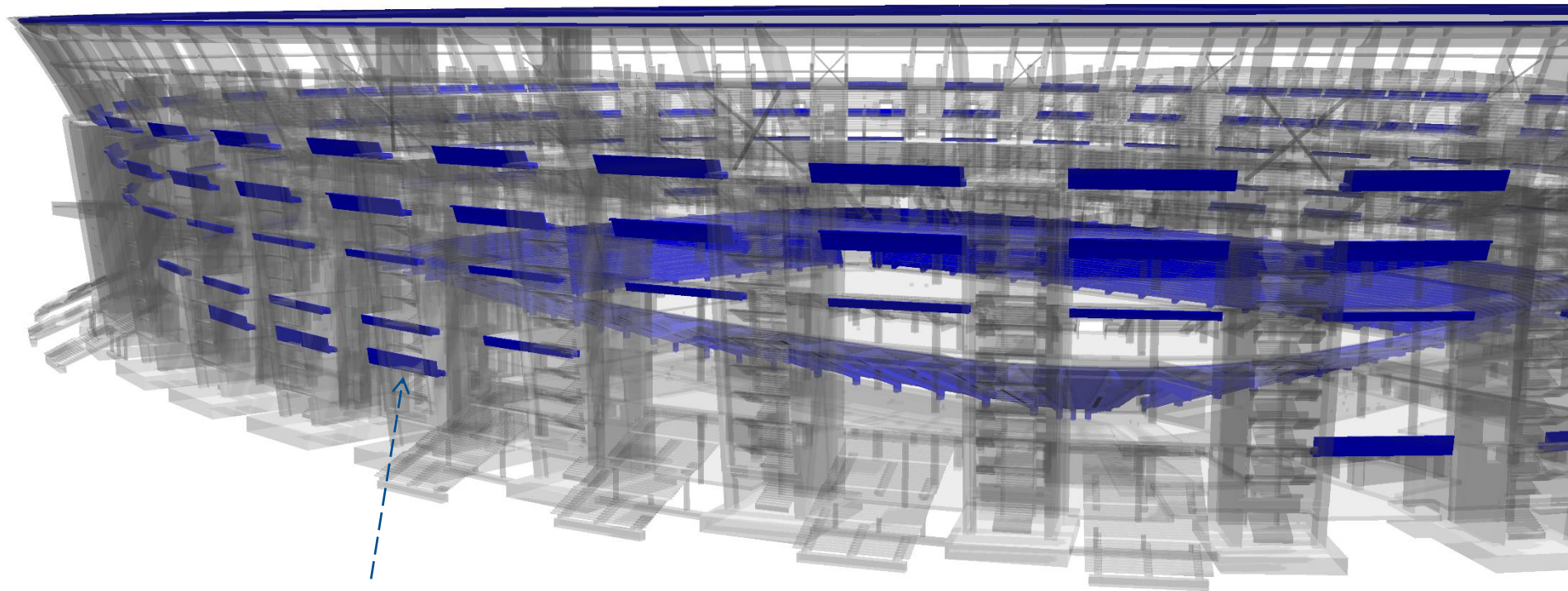
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Puskás Ferenc Stadium in Budapest, Hungary (2018)

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Perimeter beams of the cast-in-situ slabs

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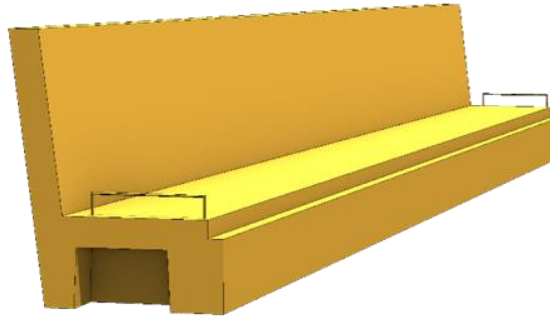
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Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA

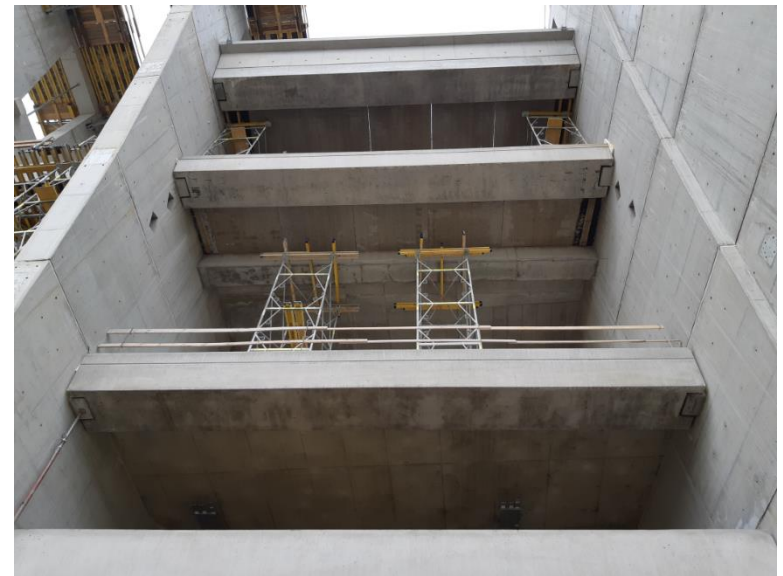
Precast perimeter beams



Lifting of the beams:



Serving as the parapet of the slabs:



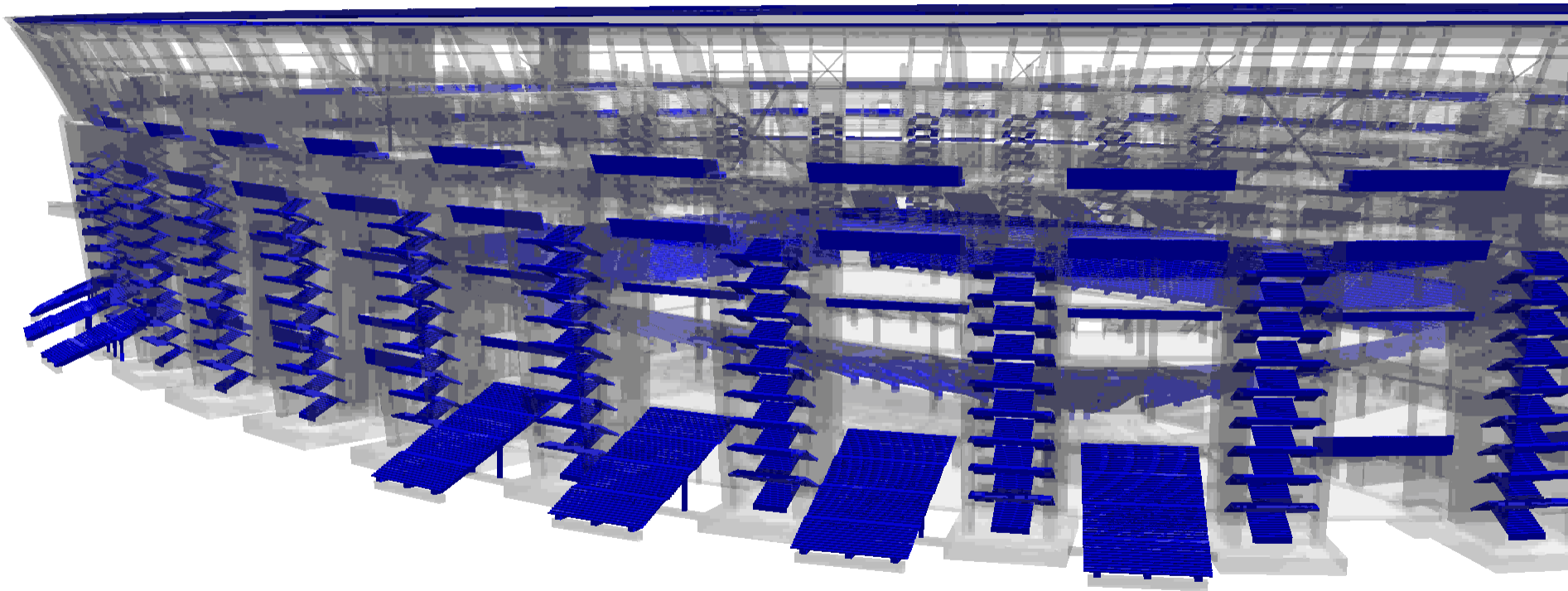
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)

PRECAST ELEMENTS PRODUCED BY ASA



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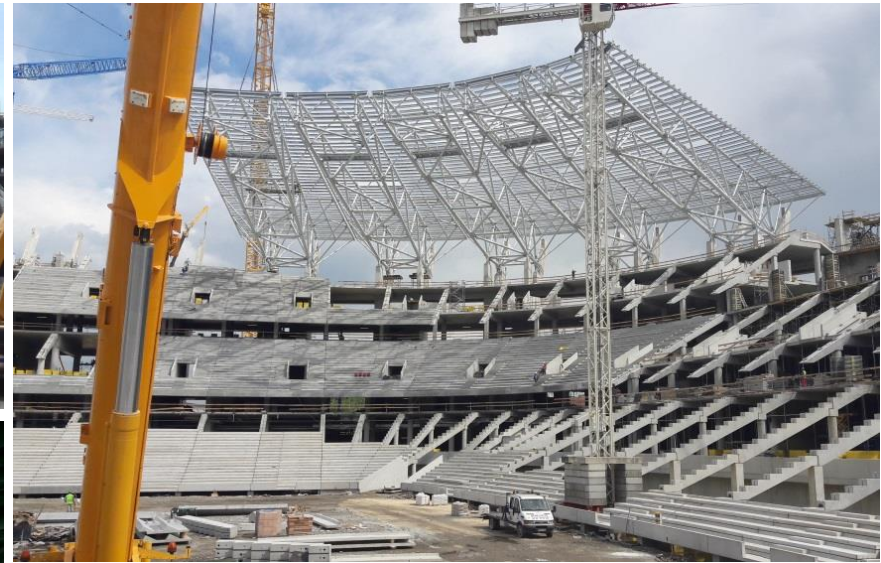
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Stadiums and sport facilities

Puskás Ferenc Stadium in Budapest, Hungary (2018)



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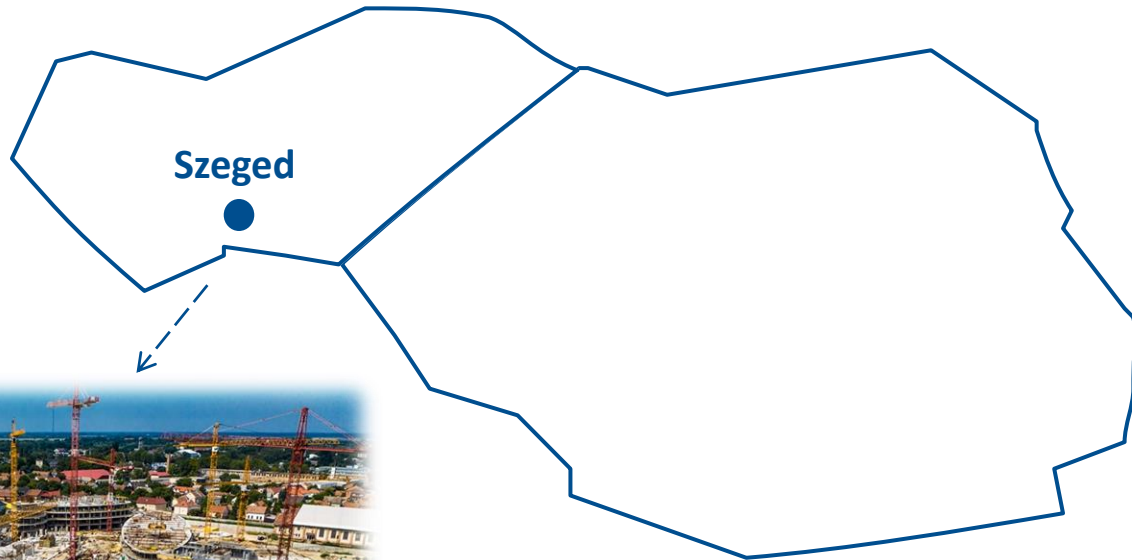
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RESIDENTIAL PROJECTS

- Example projects
- Technical solutions and developments

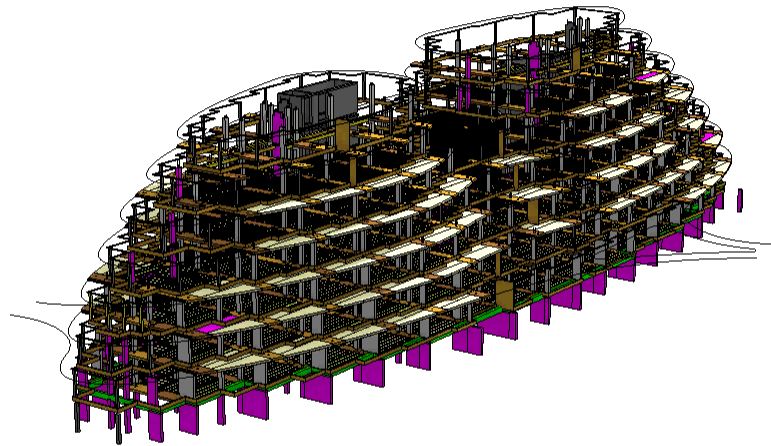
Residential projects

First big residential project with precast slabs in Hungary in 2018



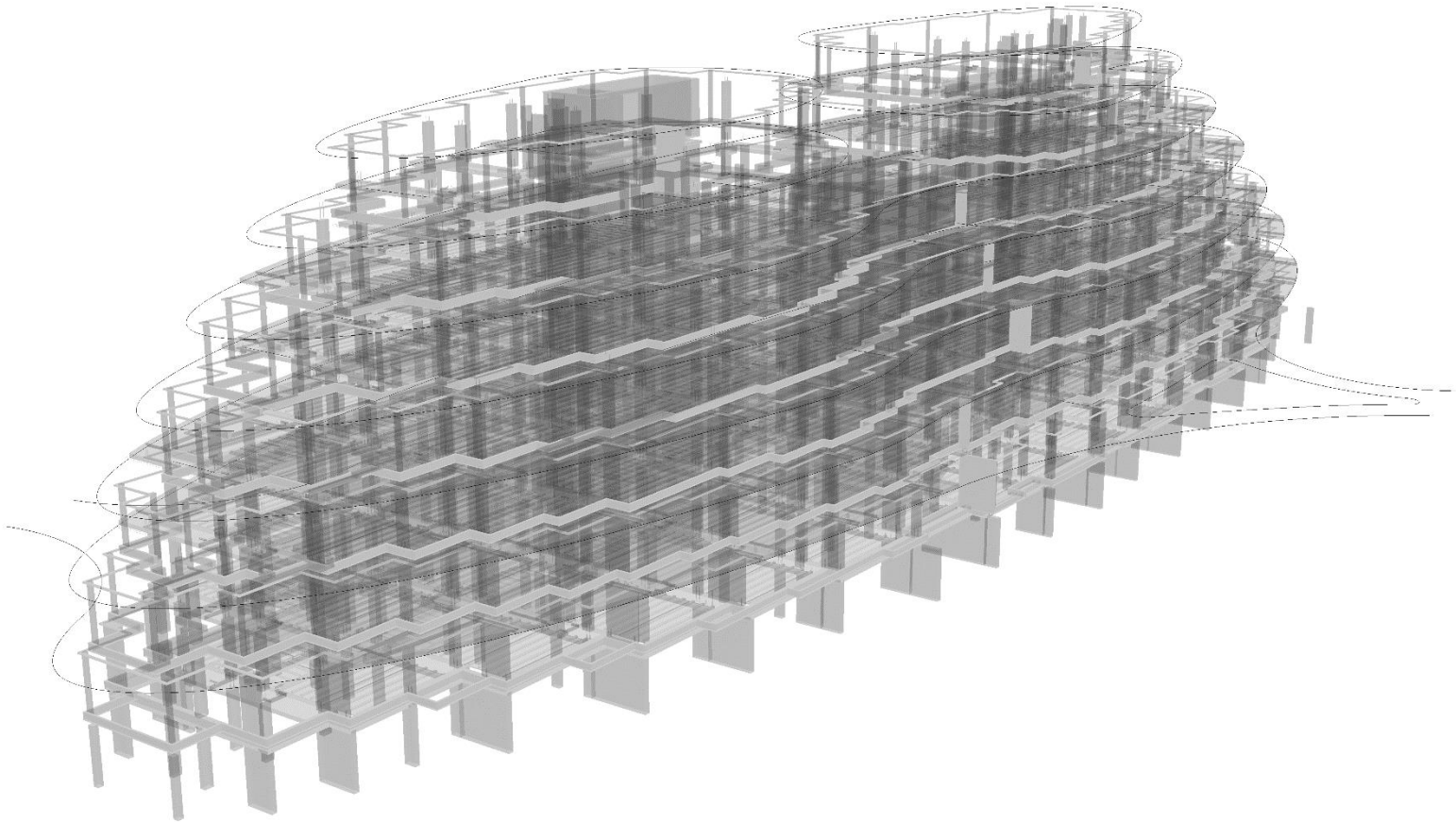
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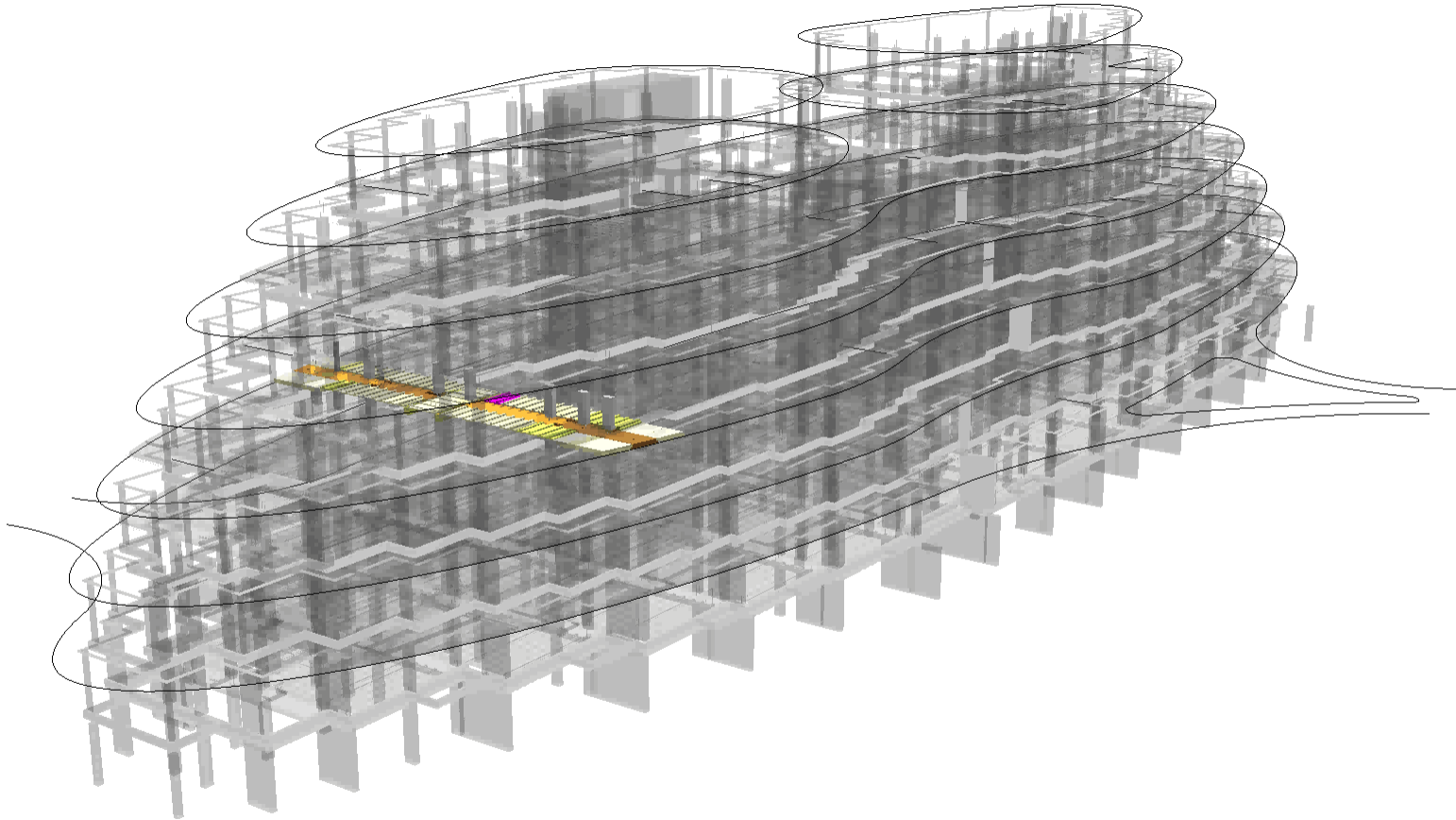
Residential projects

First big residential project with precast slabs in Hungary in 2018



Residential projects

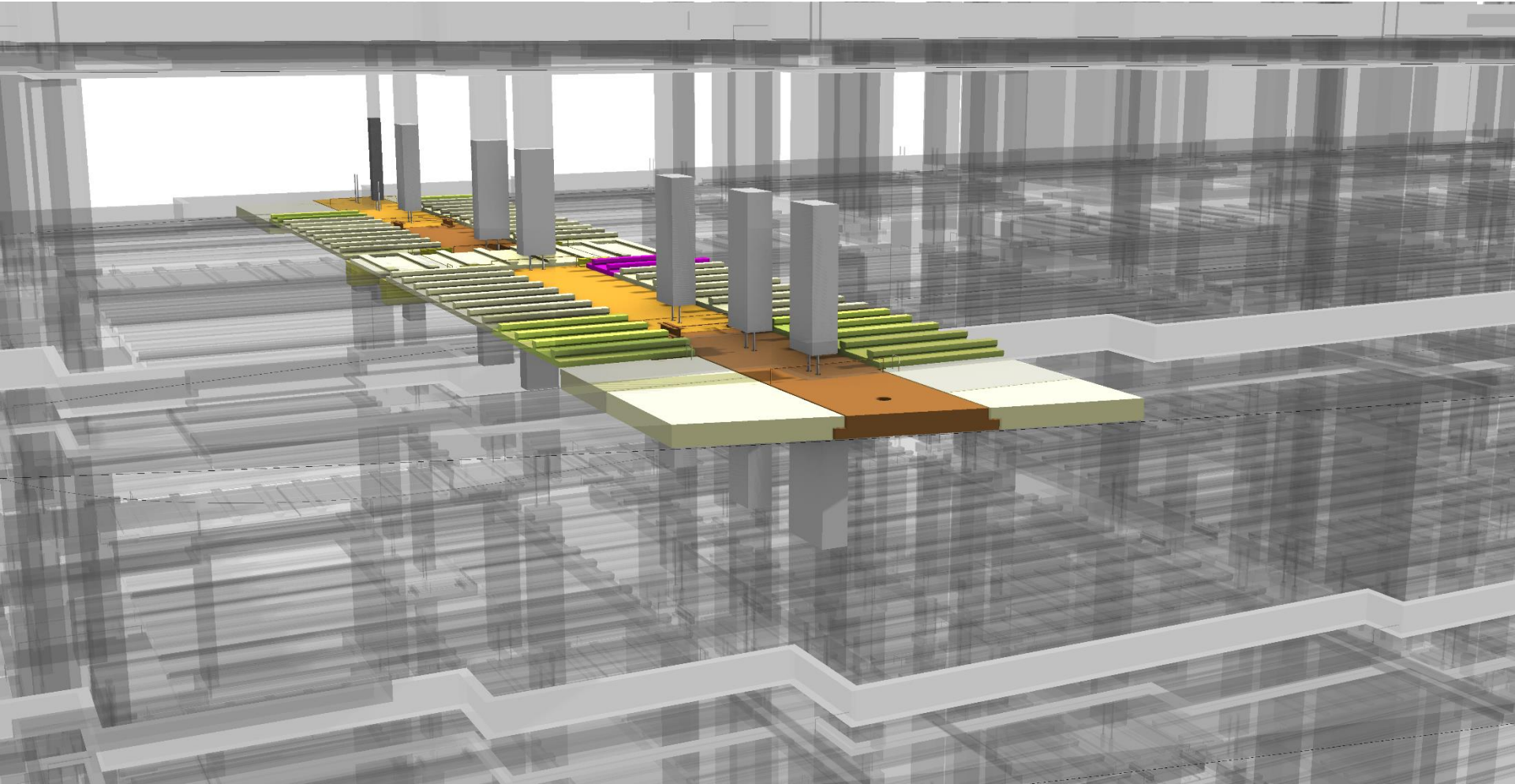
First big residential project with precast slabs in Hungary in 2018



Residential projects

First big residential project with precast slabs in Hungary in 2018

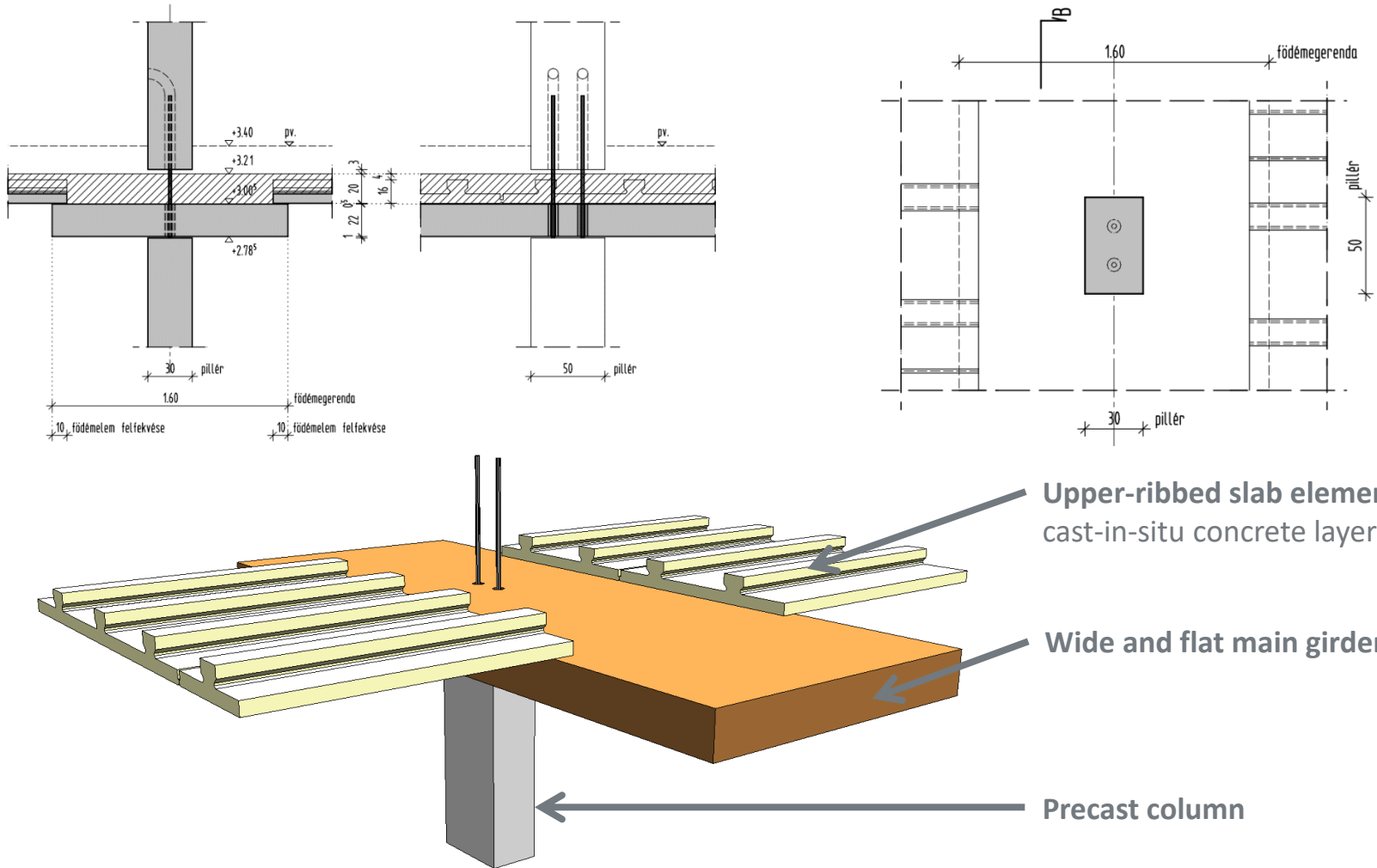
STRUCTURAL BUILD-UP of the precast slab system:



Residential projects

First big residential project with precast slabs in Hungary in 2018

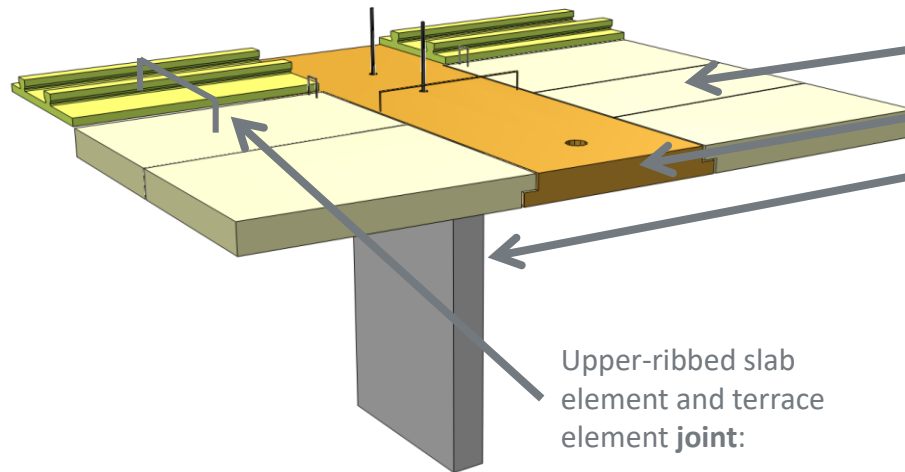
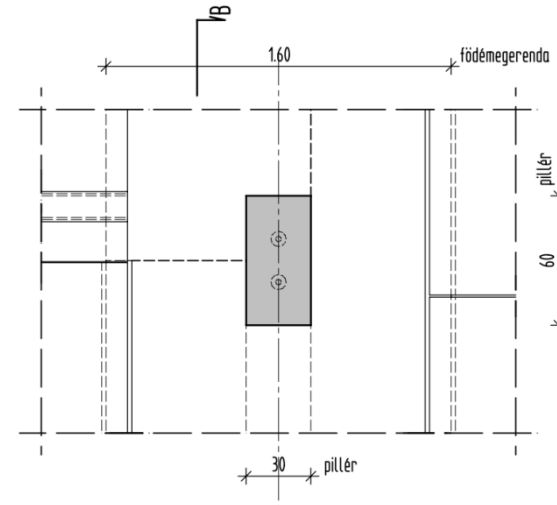
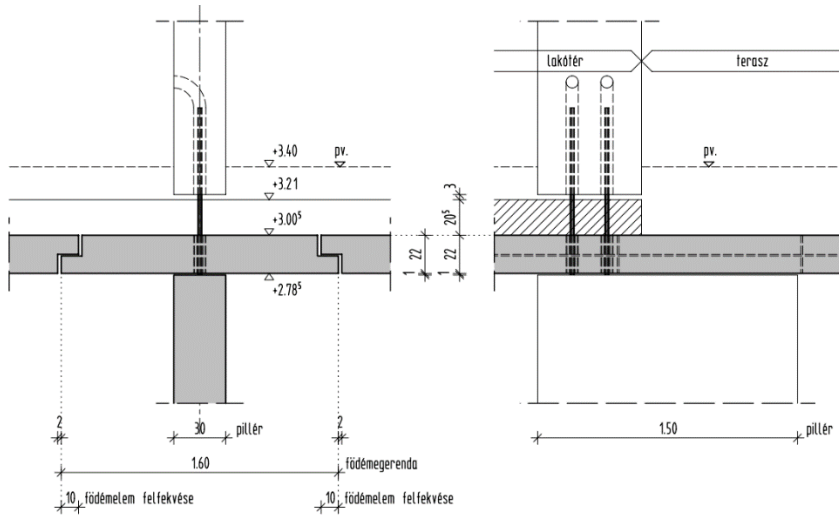
BASIC STRUCTURAL BUILD-UP of the SLABS under the LIVING PLACES



Residential projects

First big residential project with precast slabs in Hungary in 2018

BASIC STRUCTURAL BUILD-UP of the SLABS in the TERRACE AREA

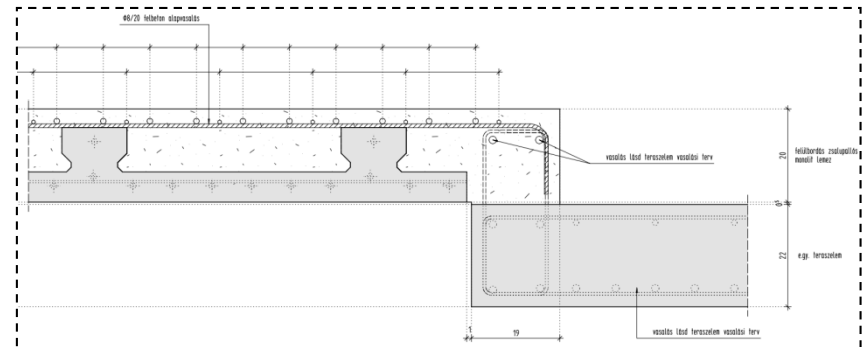


Solid precast slab elements

Wide and flat main girder

Precast column

Upper-ribbed slab element and terrace element joint:



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Residential projects

First big residential project with precast slabs in Hungary in 2018

Construction photos



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Residential projects

First big residential project with precast slabs in Hungary in 2018

Construction photos



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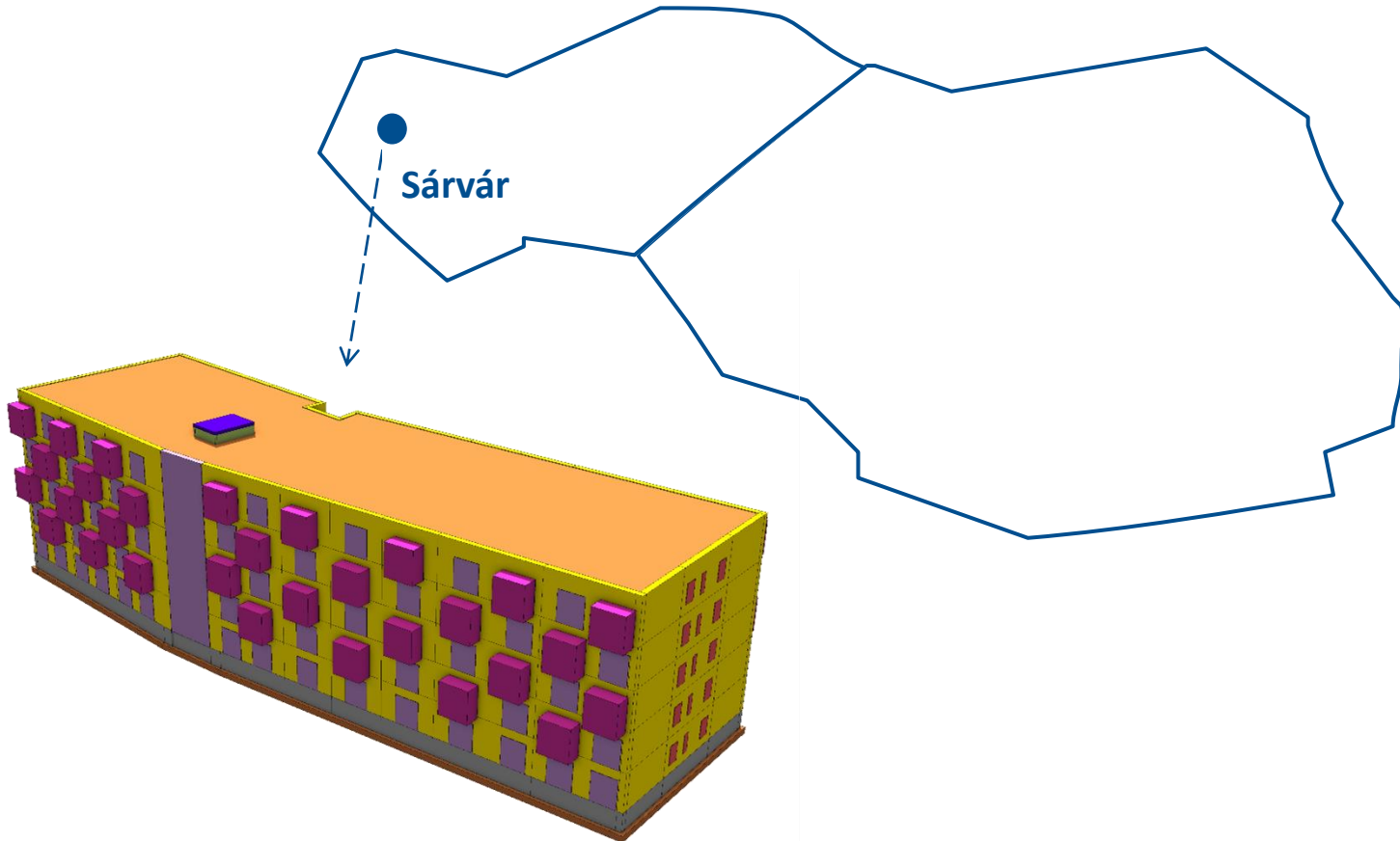
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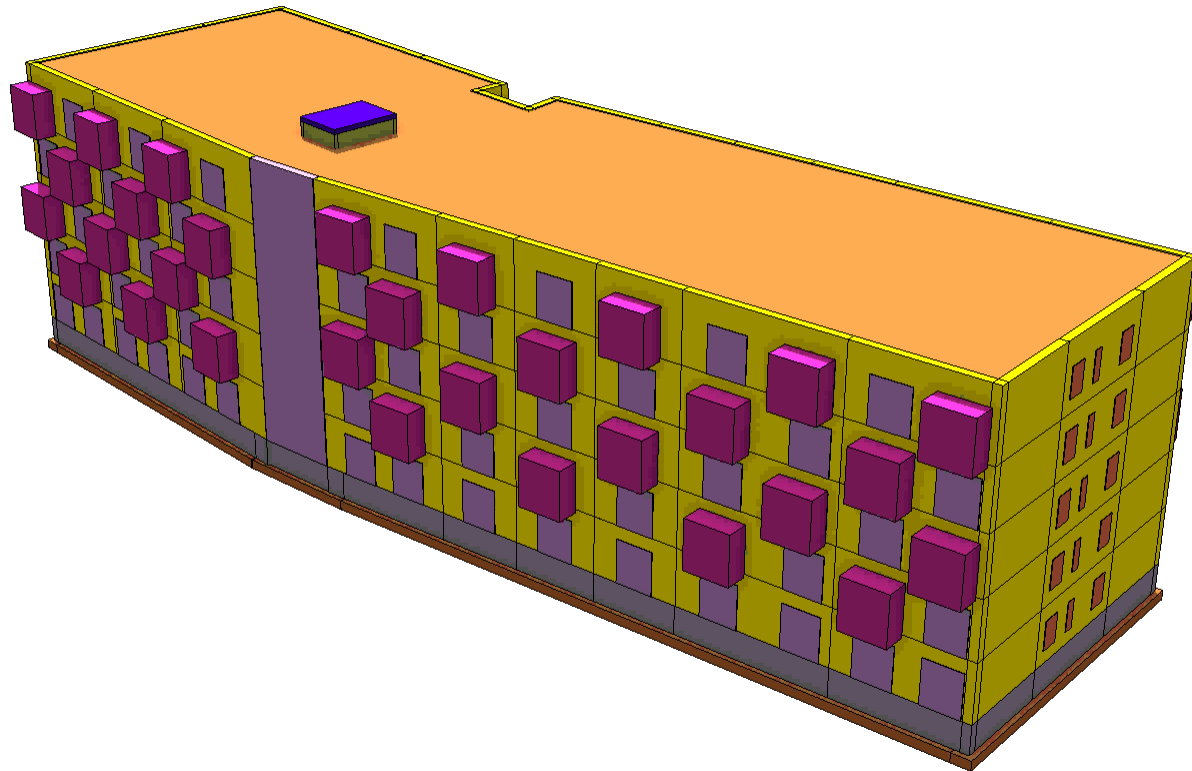
Residential projects

Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)



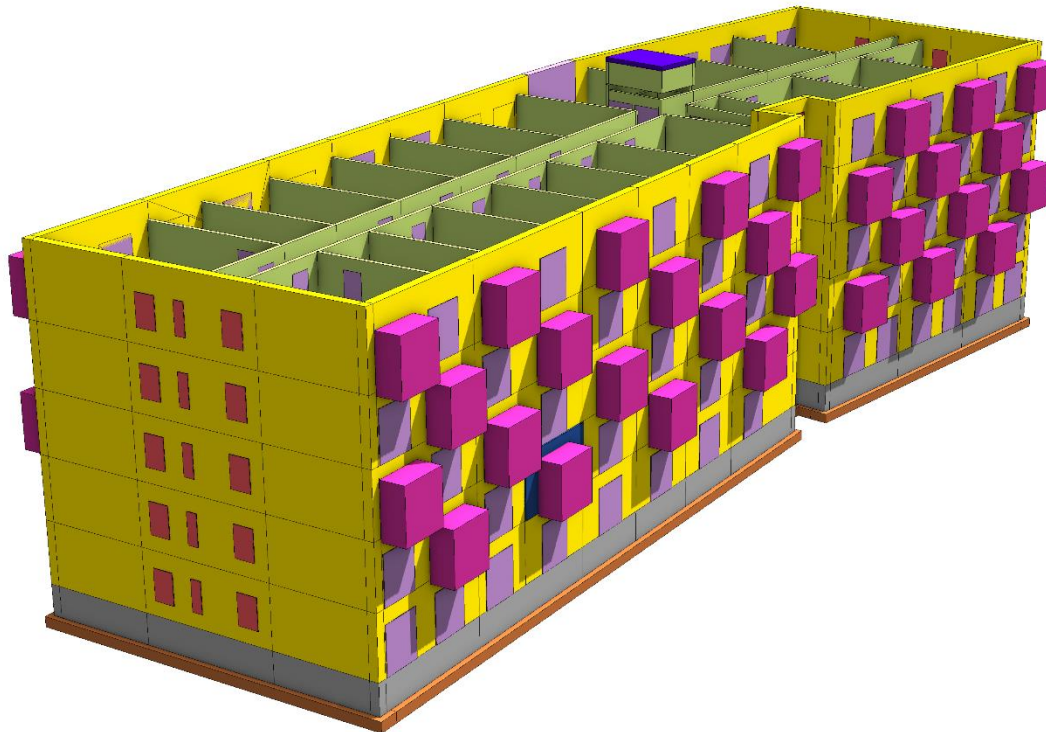
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Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)



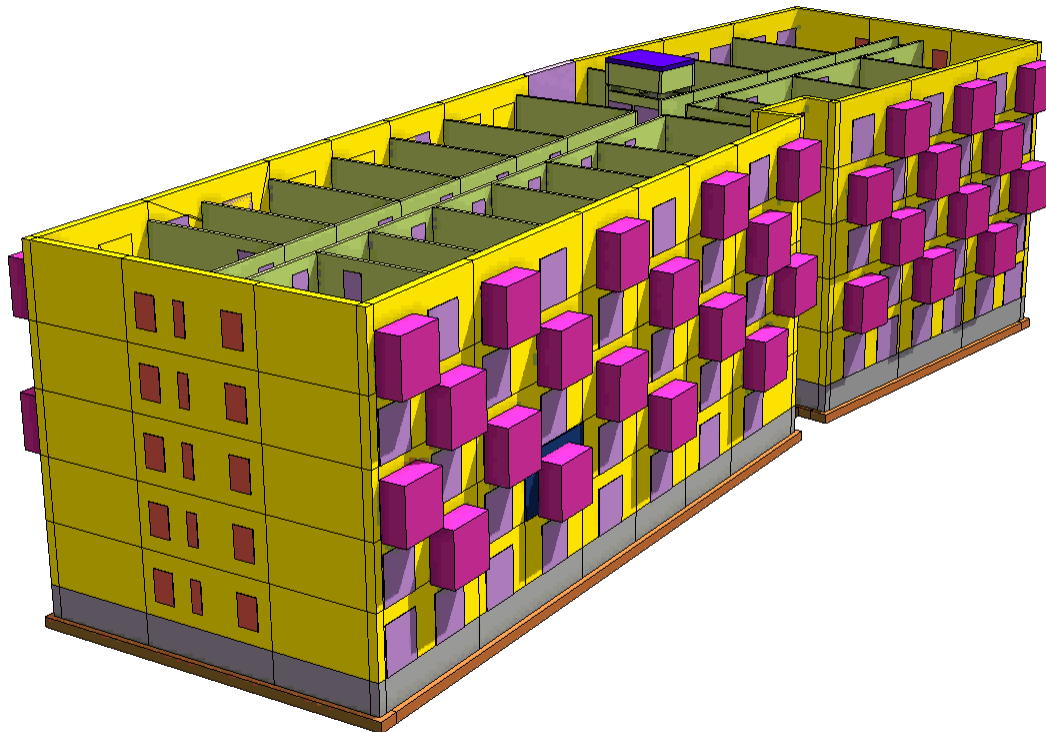
Residential projects

Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)



Residential projects

Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)



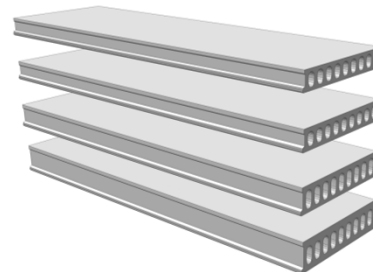
Residential projects

Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)

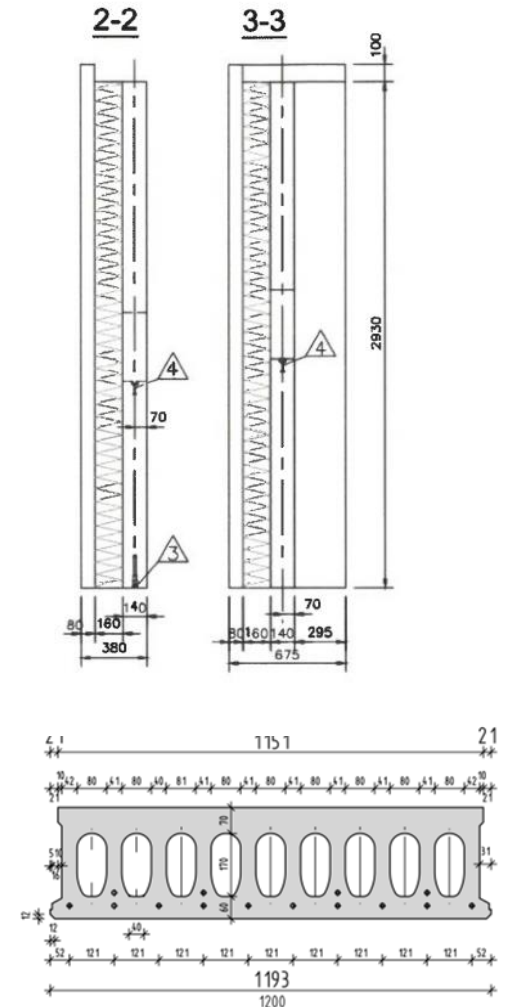
Precast element layout



Hollow-core slab elements:



Selected sandwich wall elements:

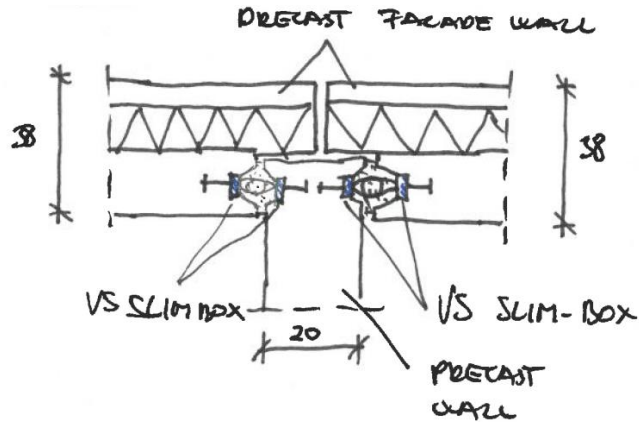


Residential projects

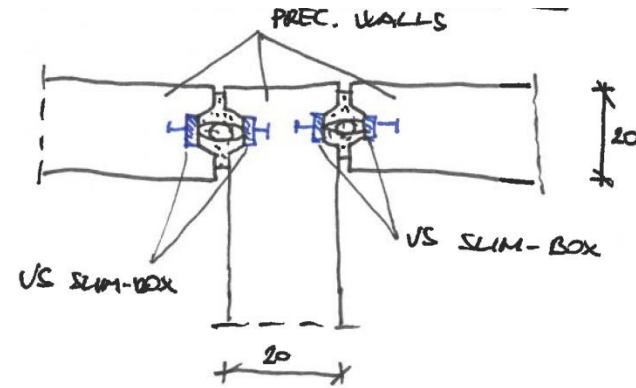
Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)

Connction details

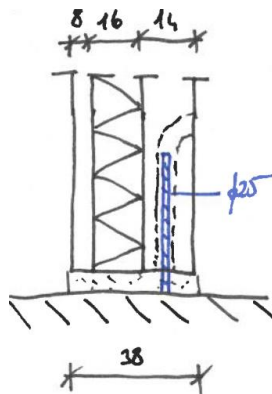
Facade walls (horizontal section)



Inner walls (horizontal section)



Foundation slab connection (vertical section)












- Regular details used by the BUs of the Consolis Group
- Completely precast solutions (only groutings with cast-in-situ concrete)
- Saving of human labour force capacity on site
- Reduction of the construction time
- High quality reinforced concrete elements

Residential projects

Concept for a fully precast residential block of flats in Sárvár, Hungary (2019)

International cooperation within the Consolis Group

Sárvár project	SLAB STRUCTURE	WALL STRUCTURE	BALCONIES
DESIGN			
PRODUCTION			
ASSEMBLY			
COMMENTS	<ul style="list-style-type: none"> • Standard product by ASA • Connection details for wall frame structures (from Consolis Polska) 	<ul style="list-style-type: none"> • Design experience to share • Standard product by Consolis Polska, but mainly in industrial usage • Assembly experience to share 	<ul style="list-style-type: none"> • Moulds of the <i>fira</i> company to use in Poland • Not a standard product by Consolis Polska • Design and assembly experience to gather

FUTURE PERSPECTIVE

Sport facilities and residential sector

CONSOLIS

ASA

Future perspective

SPORT FACILITY SECTOR

INCREASING PROPORTION OF PRECAST CONCRETE COMPARED TO THE TOTAL CONCRETE AMOUNT



Harmonized usage of the precast and cast-in-situ concrete parts

- Taking advantage of their properties and usage fields
- Usage of dry joints (bolts) fastens the assembly speed



Converting the originally cast-in-situ building parts also to precast structures

- For example the slabs in stadiums and sport facilities
- For long span slab the mushroom slabs can provide a suitable solution for sport facilities



RESIDENTIAL SECTOR

INCREASING PROPORTION OF PRECAST CONCRETE COMPARED TO THE TOTAL CONCRETE AMOUNT



Not only column structure but also wall structure buildings to be converted to precast (European trends)

- Usage of sandwich facade wall elements
- Various application of hollow-core and upper-ribbed slab elements



COMPLETE PRECAST RESIDENTIAL BUILDINGS FOLLOWING THE WESTERN- AND NORTHERN EUROPEAN TRENDS

