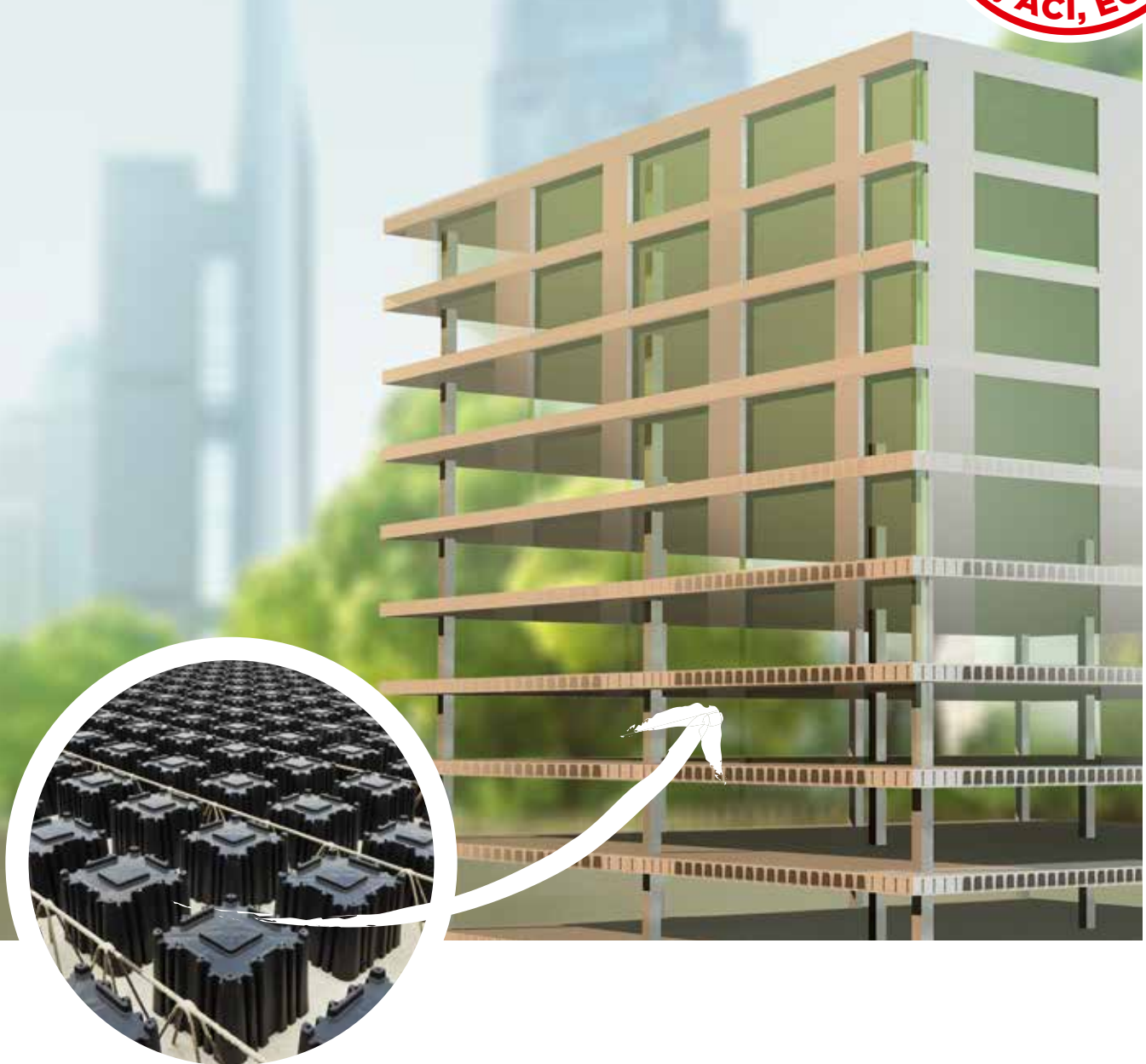
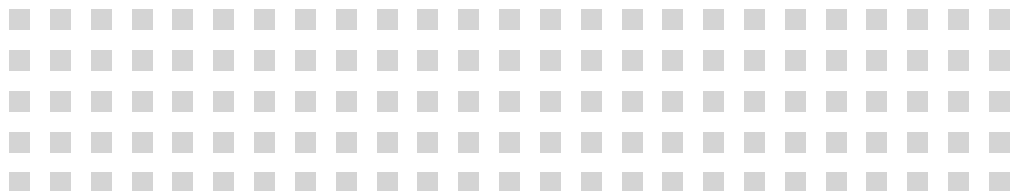


AIRDECK[®] *The right way
to building structures*

**Flexible lightweight
*building structures***



www.airdeck.com



Flexible lightweight building structures

Ideal buildings evolve in time.

New technologies will be available within a few years. They will enable us to work towards a more sustainable society, in which buildings and their flexibility will play a crucial role.

Airdeck produces flexible building structures for tomorrow's sustainable buildings. These are lightweight structures, optimized at all levels, ensuring lasting flexibility in the construction.

Airdeck has a new and revolutionary approach in construction with numerous benefits for all parties involved in the construction process.

Fewer
and leaner
columns

Spans
up to
20 meter

Cantilevers
simply
executable

No
supporting
beams or
walls
required

The Airdeck system consists of lightweight wide slab floors with integrated lattice girders and lower reinforcement.

Airboxes are positioned on the slabs in a fixed pattern of 300 mm, which saves a significant amount of weight.





Building structure up to 50% lighter

Simple vertical and horizontal integration of MEP

Possible to install the exterior walls against the building structure

Less excavations and lighter foundations

References



ZNA Hospital (Antwerp, Belgium)
Design: VK Architects and Engineers



Special Forces Medical City (Jeddah, KSA)
Design: P&T Architects



British School (Leids, the Netherlands)
Design: RAU Architects



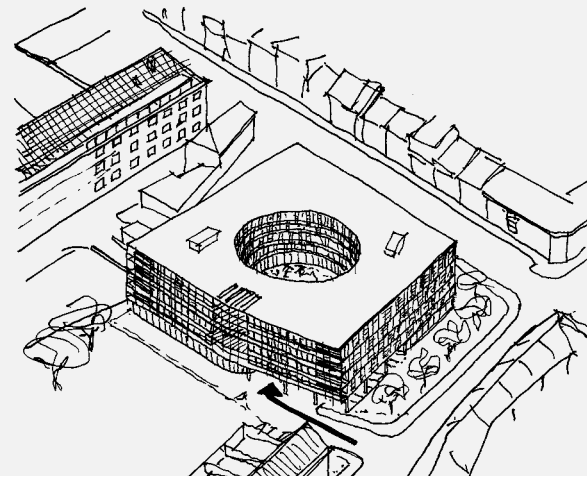
Energihus (Esbjerg, Denmark)
Design: gpp arkitekter

Bridging Architecture

Absolute freedom of design

Airdeck offers more flexibility for you to create a design that meets today's and tomorrow's requirements, considering the lifecycle costs of the building.

Extra benefits: beams and supporting walls can be omitted completely, large spans with flat floors, any building shape is possible, and it is possible to use fewer columns ...



Bridging Structural design

Guaranteed structural design

Airdeck offers the right way and the necessary support to convert a building design into an efficient, feasible building structure.

Extra benefits: plug-ins for structural design software to engineer according to standard codes (e.g. EC2, SBC, ACI, ...), back-up by our internal engineering department for your calculations, training sessions and technology updates ...



Bridging MEP

Easy MEP Integration

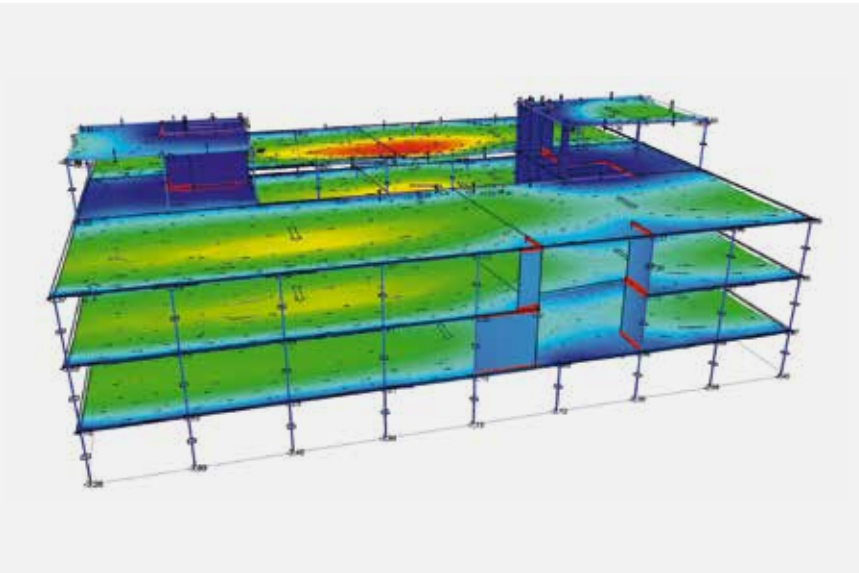
Airdeck offers more options to integrate MEP in a building structure, both vertically and horizontally.

Extra benefits: shafts next to columns, horizontal integration of pipes and conduits in the concrete floors, drilling protocols, project supervision ...





Airdeck allows for absolute freedom of design.



Airdeck provides a guaranteed structural design



Airdeck simplifies the integration of MEP in the building structure.

Reduced **failure costs**

LEAN construction method

Airdeck is a construction method based on the LEAN philosophy. The contractor can reduce failure costs through Airdeck's strong engineering background.

Extra benefits: faster construction time, safe access on the floors, less materials, less construction delays, single phased concrete pouring, faster installation of MEP during the construction phase ...

reduction in
construction
time!

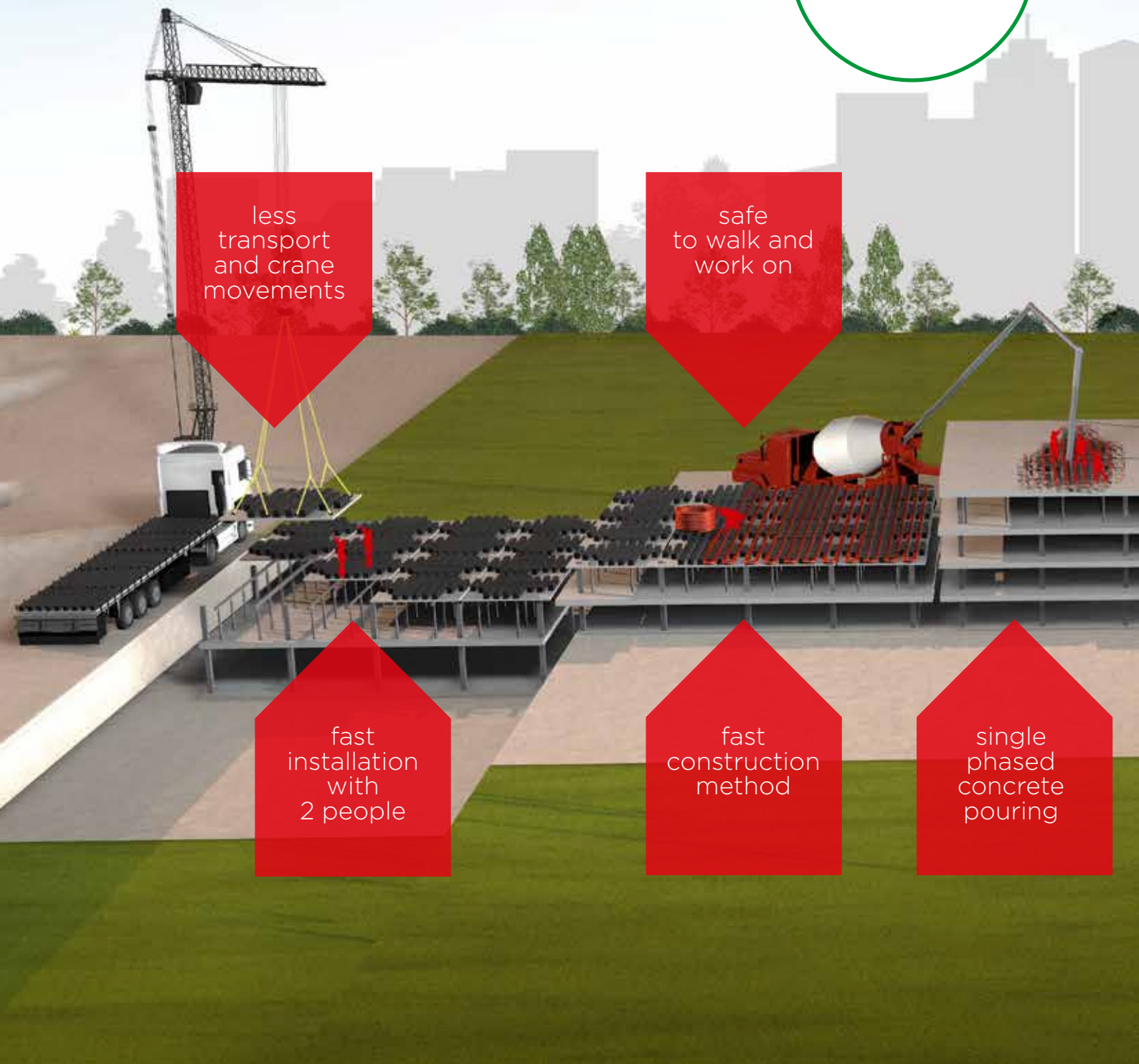
less
transport
and crane
movements

safe
to walk and
work on

fast
installation
with
2 people

fast
construction
method

single
phased
concrete
pouring



Less valuable raw materials



Airdeck works towards dematerialization. We save to the maximum for the development of lightweight building structures:

- Less transport
- Less water consumption
- Less CO₂
- Less steel usage
- Less on-site concrete
- More flexibility!



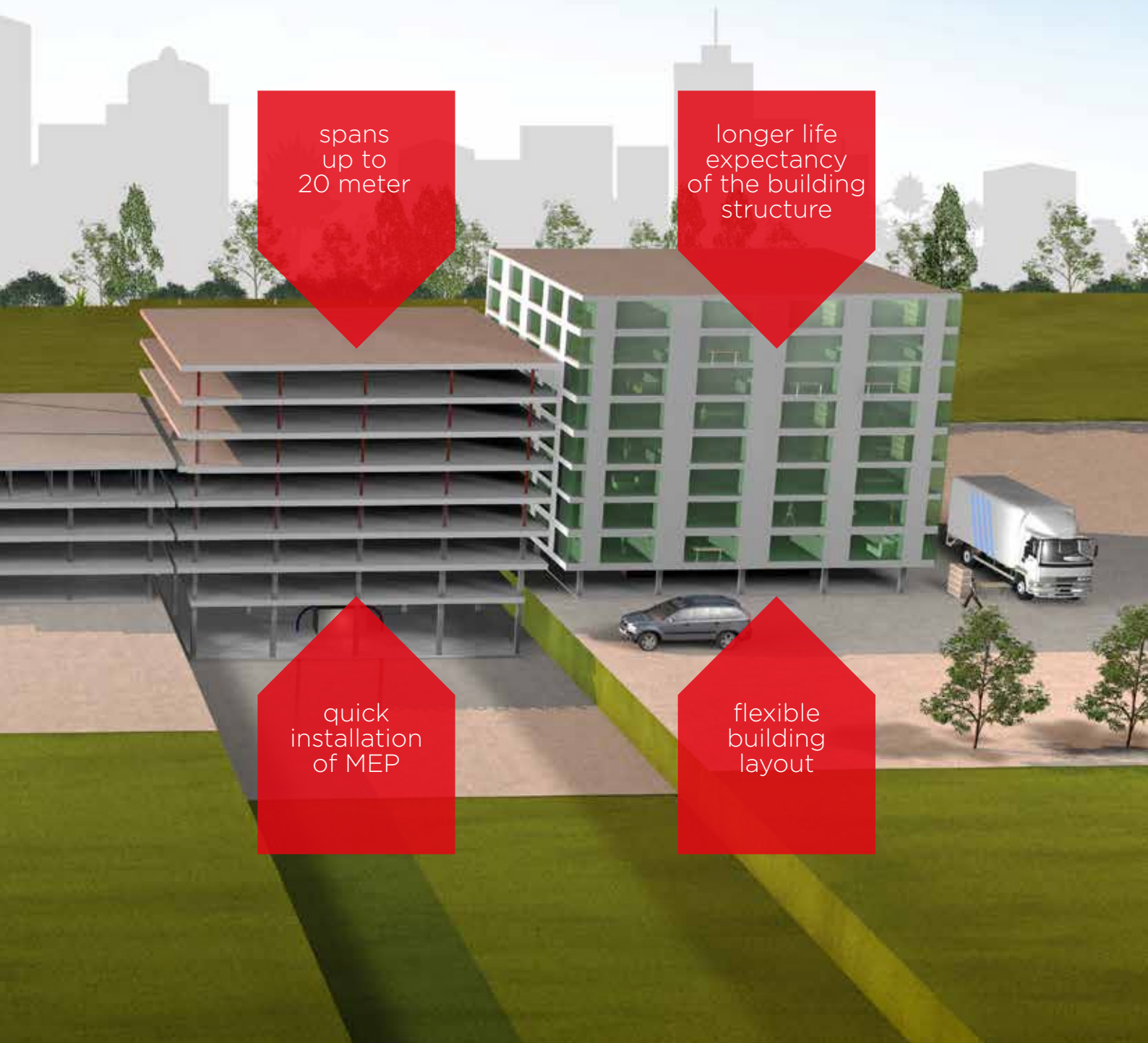
Airdeck is a customized construction method, adapted to the contractor.

spans
up to
20 meter

longer life
expectancy
of the building
structure

quick
installation
of MEP

flexible
building
layout

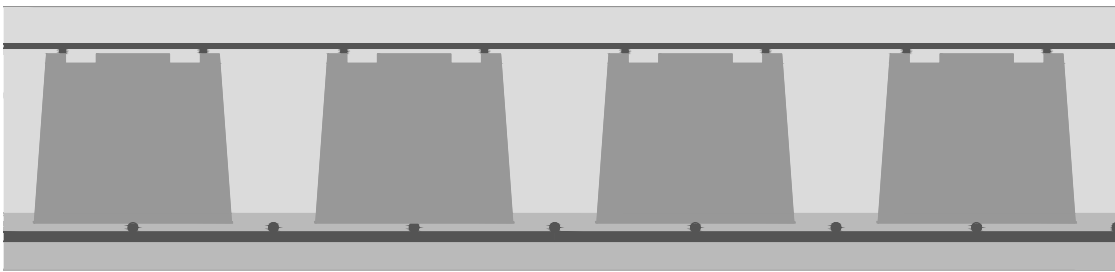


Constructive Floor Solutions

Airdeck is a construction system based on prefabricated wide slab floors with Airboxes (void formers that create the lightweight elements). Every floor is perfectly customized providing all technical openings and slots.

AIRDECK®

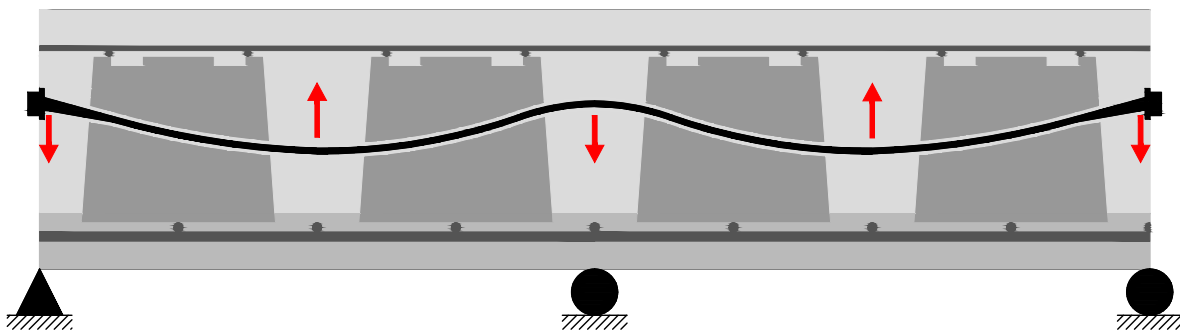
Widespan Floors



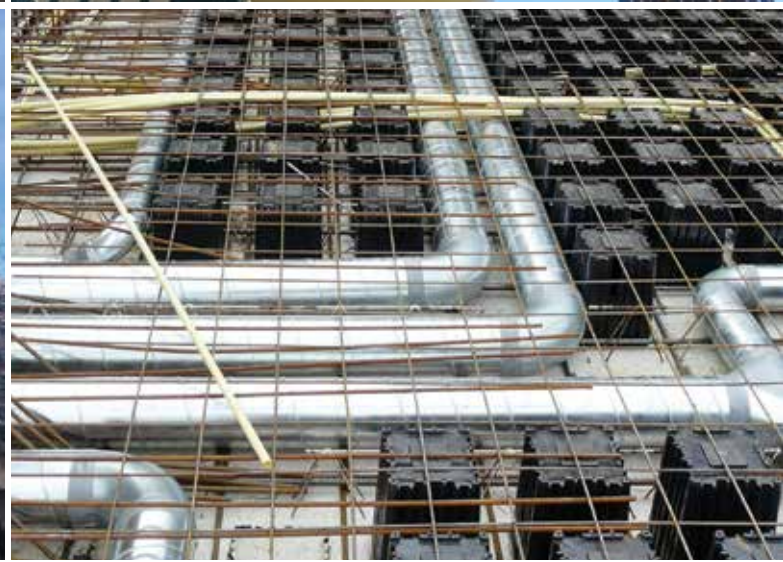
- Spans up to 11.5 meter (single field, supported on 4 columns)
- Spans up to 12 meter (multiple fields)

AIRDECK®

Superspan Floors



- Spans from 12 through 20 meter (with post tensioning)
- Available in floor thickness of 450 mm or more

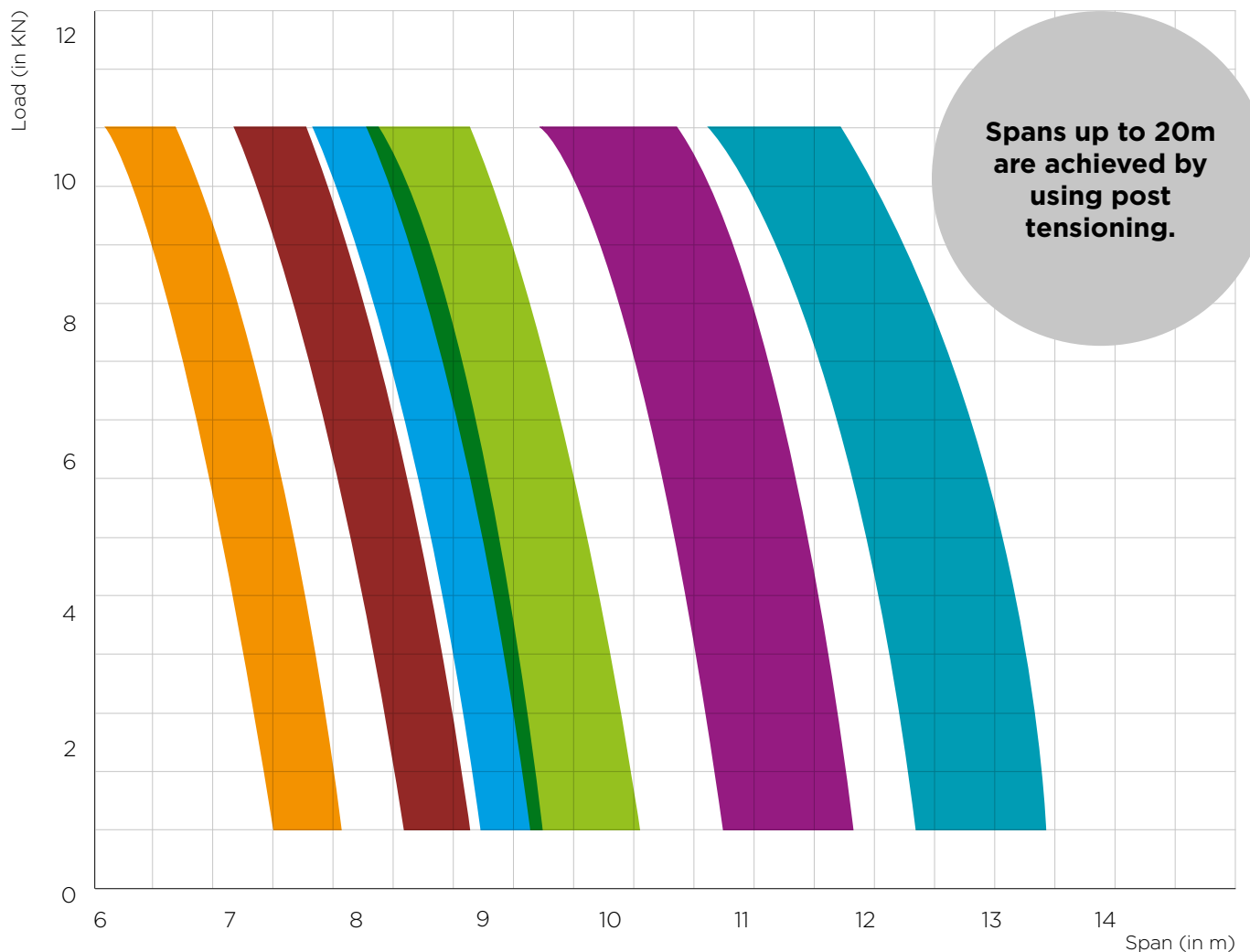










The **Airbox** is the backbone to create lightweight building structures. It was specifically developed to guarantee maximum weight savings. Thanks to these void formers, up to 32% of concrete can be saved. The Airbox can hold a point load of up to 180 kg and is safe to walk on.

The Airbox is available in 6 sizes.
B120, B180, B210, B240, B290 and B350

Airdeck floors are always customised. Depending on the desired spans and the constructive frame building concept, we assist you in achieving a refined building structure.



Do you have a specific question? Contact us to discuss the span options, or a (preliminary) study of your project.

		Floor thickness (mm)	Product name	Box volume (m ³)	Specific gravity (kg/m ³)	Weight Airdeck (kg/m ²)	Weight savings (%)	On-site concrete (m ³ /m ²)	Span single fields (m)	Span multiple fields (m)
B120		220	A220/60/B120	0,0041	1989	437,50	20,45 %	0,115	5,5	7,0
		230	A230/60/B120		2011	462,50	19,57 %	0,125	5,6	7,1
		240	A240/60/B120		2031	487,50	18,75 %	0,135	5,7	7,2
		250	A250/60/B120		2050	512,50	18,00 %	0,145	5,8	7,3
		260	A260/60/B120		2067	537,50	17,31 %	0,155	5,9	7,4
		270	A270/60/B120		2083	562,50	16,67 %	0,165	6,0	7,5
B180		280	A280/60/B180	0,0063	1880	526,33	24,81 %	0,151	6,5	8,0
		290	A290/60/B180		1901	551,33	23,95 %	0,161	6,6	8,1
		300	A300/60/B180		1921	576,33	23,16 %	0,171	6,7	8,2
		310	A310/60/B180		1940	601,33	22,41 %	0,181	6,8	8,3
		320	A320/60/B180		1957	626,33	21,71 %	0,191	6,9	8,4
		330	A330/60/B180		1974	651,33	21,05 %	0,201	7,0	8,5
B210		310	A310/60/B210	0,0074	1835	569	26,6 %	0,158	7,1	8,6
		320	A320/60/B210		1856	594	25,8 %	0,168	7,2	8,7
		330	A330/60/B210		1875	619	25,0 %	0,178	7,3	8,8
		340	A340/60B/210		1894	644	24,3 %	0,188	7,4	8,9
		350	A350/60/B210		1911	669	23,6 %	0,198	7,5	9,0
		360	A360/60/B210		1927	694	22,9 %	0,208	7,6	9,1
B240		340	A340/60/B240	0,0086	1798	611,22	28,09 %	0,184	7,7	9,0
		350	A350/60/B240		1818	636,22	27,29 %	0,194	7,9	9,2
		360	A360/60/B240		1837	661,22	26,53 %	0,204	8,1	9,4
		370	A370/60/B240		1855	686,22	25,81 %	0,214	8,3	9,6
		380	A380/60/B240		1872	711,22	25,13 %	0,224	8,5	9,8
B290		390	A390/60/B290	0,0105	1749	682,01	30,05 %	0,213	9,3	10,5
		400	A400/60/B290		1768	707,01	29,30 %	0,223	9,5	10,7
		410	A410/60/B290		1785	732,01	28,58 %	0,233	9,7	10,9
		420	A420/60/B290		1802	757,01	27,90 %	0,243	9,9	11,1
		430	A430/60/B290		1819	782,01	27,25 %	0,253	10,1	11,3
		440	A440/60/B290		1834	807,01	26,64 %	0,263	10,3	11,5
B350		450	A450/60/B350	0,0129	1704	766,77	31,84 %	0,247	10,8	12,0
		460	A460/60/B350		1721	791,77	31,15 %	0,257	11,0	12,2
		470	A470/60/B350		1738	816,77	30,49 %	0,267	11,2	12,4
		480	A480/60/B350		1754	841,77	29,85 %	0,277	11,4	12,6
		490	A490/60/B350		1769	866,77	29,24 %	0,287	11,6	12,8
		500	A500/60/B350		1784	891,77	28,66 %	0,297	11,8	13,0

For the floor thicknesses **310, 320, 330** two box types are possible, depending on the required span:

B180 and **B210**

For the floor thicknesses **340, 350, 360** two box types are possible, depending on the required span:

B210 and **B240**

Load assumption: 2+3 kN/m².

Assumption concrete weight: 2500 kg/m³.

Figures based on 100% box occupation.

The fire resistance requirements determine the height of the precast floor panel (in this case 60 mm for 90 minutes)

By using post tensioning:
- spans up to 20 meter are achieved
- thinner floors with the same span are realized

Airdeck in your project? How to start?

Choose a **flexible building structure**

Airdeck is a new construction approach of building structures for tomorrow's sustainable buildings. Building structures without beams or supporting walls, completely flexible for all future interventions.

- Absolute architectural freedom
- Optimized building design
- Guaranteed structural design
- Easy integration of MEP
- Reduced failure costs

Airdeck works according to the principle of co-creation where architects, engineers and building companies can work together to develop buildings with a responsible TCI (Total Cost of installation) and TCO (Total Cost of Ownership).

Determine
the objectives
and flexibility
of the building

Construction Company

- Optimized construction process
- Less materials and man hours
- Less influence by the weather
- Less on-site concrete
- Reduced failure costs

Stability Engineer

- Beams and supporting walls can be omitted
- Structural solution for special building shapes
- Guaranteed stability for flexible building layout
- Less resources and materials
- Load-bearing in two directions

Reduce. Re-use. Recycle

Sustainability starts with a holistic approach

Building owner

Sturdy and sustainable building structure
Easy reconfiguration
Manageable construction project
Focused on TCO

Architect

- Flexibility for facade structure
- Open and light architecture
- Free plan layout
- Less disturbing elements
- Absolute design freedom

Engineering MEP

- Easy installation of pipes
- No beams allowing for unrestricted pipe lay-out
- Drilling protocols
- Openings in floors are possible

Airdeck wants to cooperate in dematerialization and permanent flexibility on all levels. Our approach is based on:

Our product characteristics

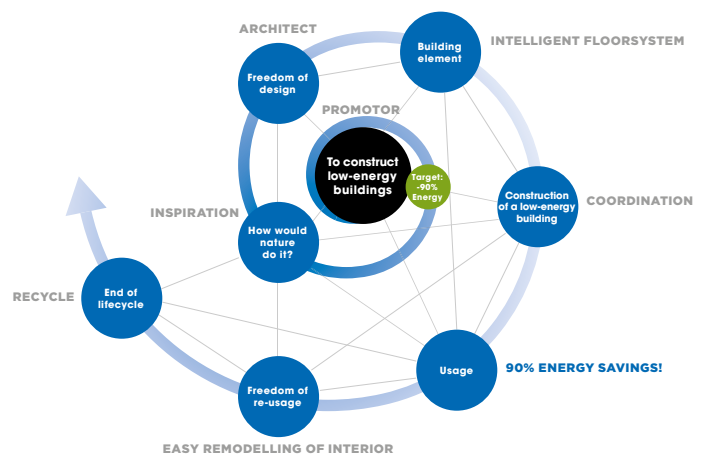
- Less transport
- Less water
- Less CO₂
- Less steel usage
- Less on-site concrete

Our Long-term USPs

- Long-term flexibility
- Simple reconfiguration

Our C2C vision

- Lifecycle directed
- Completely recyclable





Work method and references

Airdeck is a proven construction method with numerous international references.

1. Round building shape with large cantilevers and walls mounted to the building structure
2. Comfortable working areas with floor to ceiling windows
3. Well-planned structural solutions with large spans
4. Airdeck floors can be made in any shape
5. Quick and safe pouring with concrete savings of up to 30%
6. Less weather sensitive construction method based on the LEAN philosophy
7. MEP can easily be integrated vertically
8. Refined architecture without beams
9. Intelligent total integration of MEP to improve construction speed
10. Comfortable working and living areas with maximum daylight
11. Post tensioning can be installed quickly and easily between the boxes
12. Controlled and stable production



AIRDECK® *The right way to building structures*

TOTAL COST OF INSTALLATION (TCI)

- Faster structural assembly
- Optimization of the building height
- Technical shafts possible next to columns
- Special openings and drillings possible
- No column heads or beams
- Supporting walls can be omitted
- Fast installation of MEP
- Steel and concrete saving
- Less crane movements

FOOTPRINT

- Lighter building structure (up to 50% weight saving)
- Less foundations
- Less excavations
- Less concrete elements
- Less steel reinforcement
- Completely recyclable
- Less CO₂ and water consumption during production



TOTAL COST OF OWNERSHIP (TCO)

- Flexibility for reconfiguration or reallocation
- More efficient implementation of the building site
- Reusable building structure during renovation
- Reduced maintenance expenses
- Easy adjustment of integrated MEP or equipment

BUILDING CHARACTERISTICS

- Architectural freedom: any building shape is possible
- Cantilevers can be created easily
- Thinner and flat floors
- Fewer and leaner columns
- Spans up to 20 meter
- Large open spaces for future renovation
- Two way load-bearing building structure
- Facade can be mounted against the building structure

Questions? Don't hesitate to reach out!
We invite you for the co-development of your projects.



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