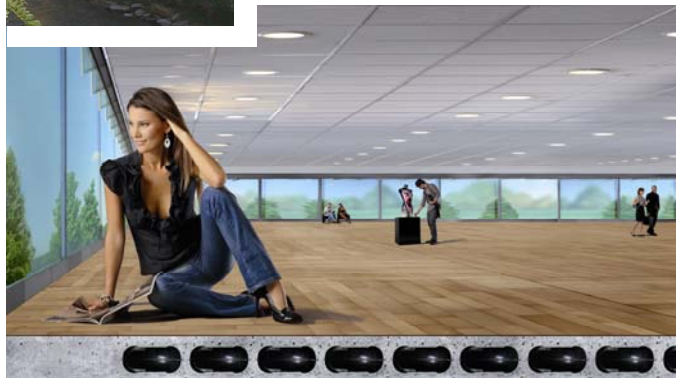




Lightweight solutions in concrete



...for slim slabs & large spans



www.cobiax.com

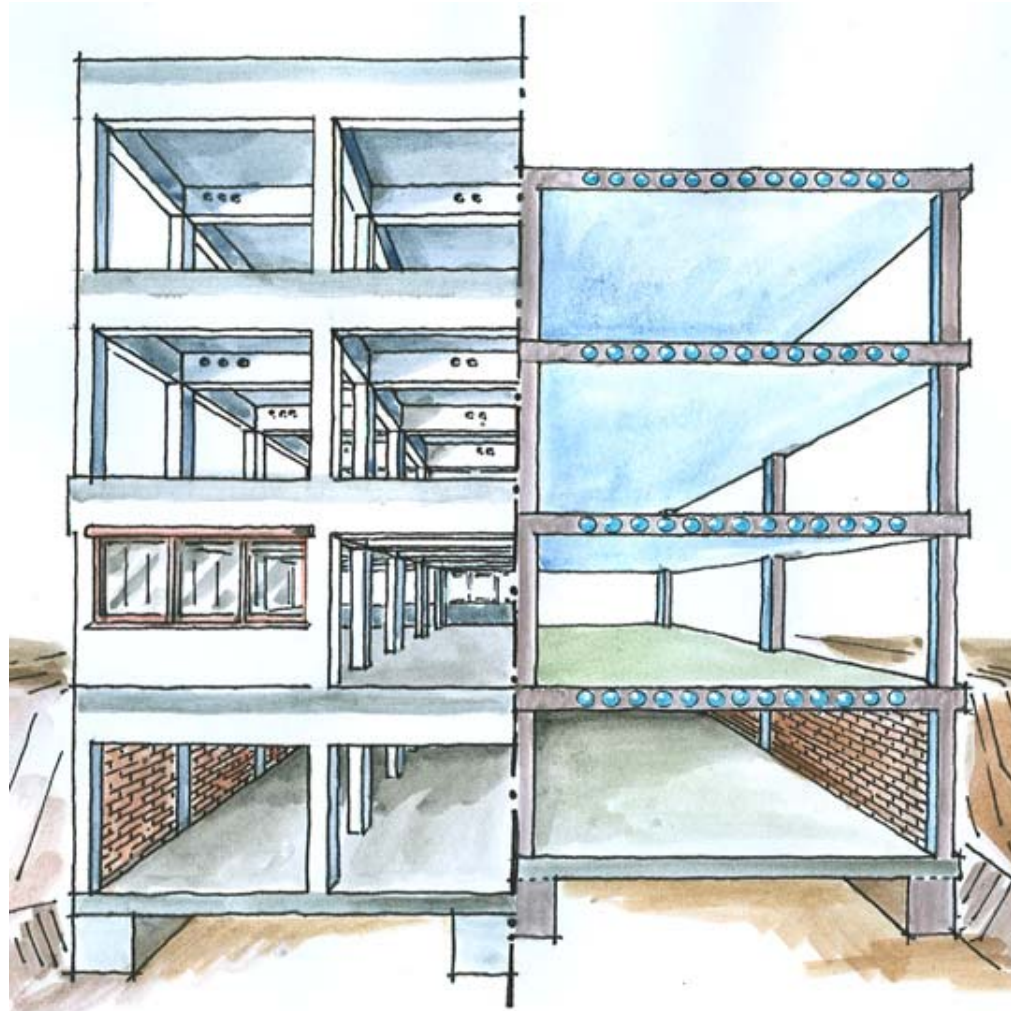
Benefits of the Cobiax flat slab technology

The numerous advantages of the Cobiax technology lead to an increased value for all stakeholders involved in the design and execution process of concrete structures for buildings.

Resource efficiency leads to increased static performance, economic costing and sustainable building structures.

conventional system

optimized with Cobiax



Weight reduction

- Up to 35% lighter than solid flat slabs
- Up to 15% less load acting on foundations
- Increased freedom for structural conception

Large spans

- Up to 20 m spans
- Flat soffits with no obstructing beams
- Up to 40% less columns

Earthquake safety

- Reduction of the accelerated mass
- Eased earthquake design verification
- Reduced damage risks

Cost effectiveness

- Concrete and reinforcement steel savings
- Reduced floor-to-floor height
- Eased retrofitting of building

Sustainability

- Resource efficiency trough building materials savings
- CO₂ emission reductions trough concrete volume optimization
- Use of recycled material for Cobiax products

References

Elbphilharmonie

Opera House, Hamburg, Germany

Architect: Herzog & de Meuron
Engineer: WGG Schnetzer Puskas
2008 - 2010



National Stadium

Soccer Stadium, Warsaw, Poland

Architect: JSK
Engineer: Matejko I Partnerzy
2009 - 2011



UEFA La Clarière

Office Building, Nyon, Switzerland

Architect: Bassi et Carella
Engineer: GTI / Schopfer et Niggli
2009 - 2010



ÖBB Praterstern

Office Building, Vienna, Austria

Architect: S.Tillner & A.Willinger
Engineer: Vasko & Partner ZT
2009 - 2010



Airrail-Center

Office Building, Frankfurt, Germany

Architect: JSK
Engineer: S.A.N.
2008 - 2010



Altra Sede

High Rise Building, Milan, Italy

Architect: Pei Cobb Freed & Partners
Engineer: Prof. Ing. Franco Mola
2008 - 2010



Technology

Principle of the Cobiax flat slab

Leave out as much concrete as possible whilst maintaining the full flexural strength of the slab and allowing a bi-axial load transfer. Maintain concrete in the structurally relevant external zones of the cross-section and create as much internal voided volumes as possible. Void formers – positioned between the bottom and top reinforcement layers – displace concrete.

Expertise

An important amount of tests and theoretical research on the subject of Cobiax slabs has been carried out by various academic institutions.

The Cobiax slab technology holds the «National Technical Approval», number Z-15.1-282, issued by the German Institute of Building Technology (DIBt).

Design

The Cobiax flat slab has the same mechanical load bearing behaviour as a solid flat plate slab. The established codes for the structural dimensioning of traditional concrete flat plate slabs are compatible with the Cobiax flat slabs.

Execution

The Cobiax cage modules are positioned between the bottom and top reinforcement layers in the slab's cross section. The Cobiax slab can be executed in traditional in-situ concrete or in combination with semi-precast elements.



cobiax®

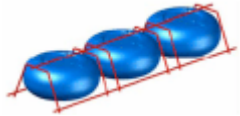
Range of application

- The Cobiax cage modules are available in different sizes and are suitable for slab depths between 20 cm and 60 (+) cm.
- The dead-load reduction created by the void formers is in a range of 1.4 und 4.8 kN/m² depending on their size.

Cage module types

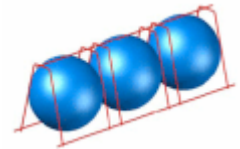
Slim-Line

- Void former height 100 to 180 mm
- Slab depths 20 to 34 cm



Eco-Line

- Void former height 225 to 450 mm
- Slab depths 35 to 60 (+) cm



The Cobiax technology and products are internationally patented

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