

The light span-tastic

Further information
Cobiax Technologies AG
Website: www.cobiax.com

cobiax flat-slab technology makes long concrete spans possible, economical and sustainable.

Large spans for concrete flat slabs used to be the preserve of post-tensioned concrete, but thanks to plastic void formers, made of recycled HDPE and kept in specially designed steel cages, a new dimension of long spanning has been hit.

The resource-effective, patented cobiax technology, removes the non-working dead load of a concrete flat slab substantially, while at the same time maintaining biaxial strength. Thus lightweight and long-spanning concrete flat slabs, for flexible layouts and sustainable CO₂ reduction, are the benefits. For super-long concrete span or super-thin slab design the cobiax void-former technology can alternatively and easily be used in a hybrid combination with post-tensioning methods – the ultimate in green concrete frame economy.

Basel Children's Hospital

When WGG Schnetzter Puskas Ingenieure, on behalf of the Office of Public Buildings of Cantons Basel, wanted to create a 12m grid in a 360mm thick concrete flat slab for the new children's hospital (UKBB) in Basel, Switzerland, they were inspired by the open space architecture from Stump & Schibli Architekten, which creates a positive atmosphere for the young patients and their visitors. A further challenging condition was the necessity for not just high user flexibility in the short term,

but also for possible future re-use, horizontally and vertically.

To cover all medical, technical and social requirements in the frame and floor structure, slab integrated cooling and heating was a further planning condition. The structural engineer WGG Schnetzter Puskas selected the cobiax system for the 12,300m² of concrete flat slab.

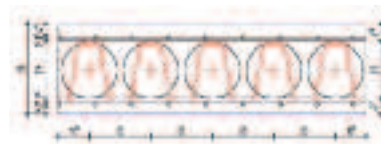
The achieved results, shown in the following key figures, are breaking new ground with:

- a span of 12m
- 360mm concrete flat slab using Cobiax CBCM-E-225 components
- dead-load reduction of 3,400t – approximately 30%
- concrete savings of 1,350m³
- 280t reduction in CO₂ emissions
- substantial improvement of seismic resistance due to load reduction
- cost savings in concrete, reinforcement, vertical elements and foundation.

In this particular project the cobiax components were used in traditional in-situ applications. Due to the modular concept of the cobiax system, it can also be used in combination with precast elements. The contractor appreciated the ease of use of the system, and in particular the fact that the cobiax components replace most of the reinforcement chairs in the field. ●



Project UKBB, University Children's Hospital, Basel, Switzerland.

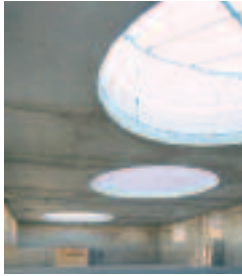


Typical cobiax cross section.



General cobiax project impression of long-spanning open space frame structures.

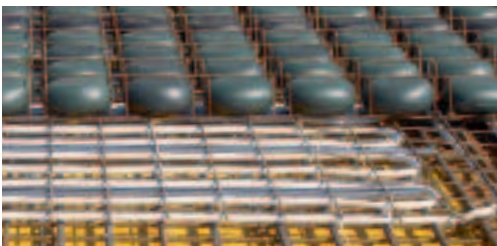
Lightweight Solutions in Concrete



lightweight, biaxial

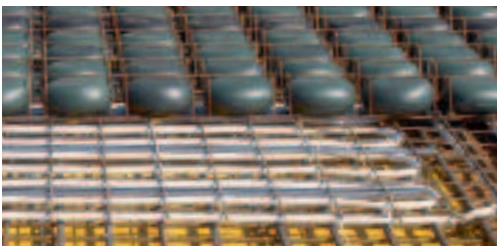


long span



open plan

earthquake resistance



resource effectiveness

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Co₂ savings

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