

SKANSKA

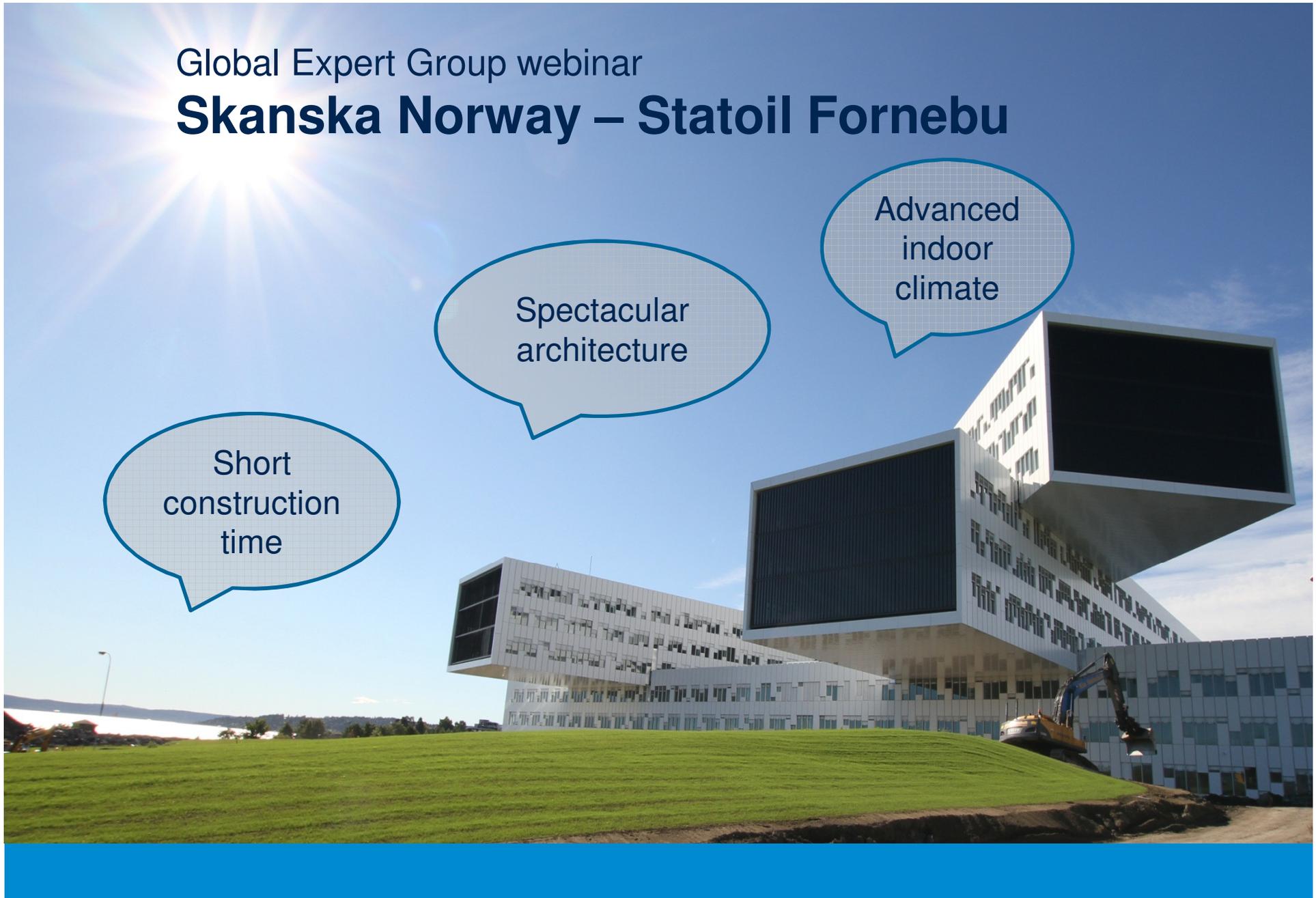
Global Expert Group webinar

Skanska Norway – Statoil Fornebu

Short
construction
time

Spectacular
architecture

Advanced
indoor
climate



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Facts – short construction time

- 67.000m² in 20 months ➡ turnover 8 MEUR p/m.

Challenges – short construction time

- Challenge due to **short** construction time ➡ amount of **advanced technology** ➡ test period should have been **3 months**



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Learning points – short construction time

- Intensive construction time scale requires good **mobilization** → both **quality** and **time**
- Important to **respect testing** phase → building this hi-tech requires **extensive testing**



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Facts – spectacular architecture

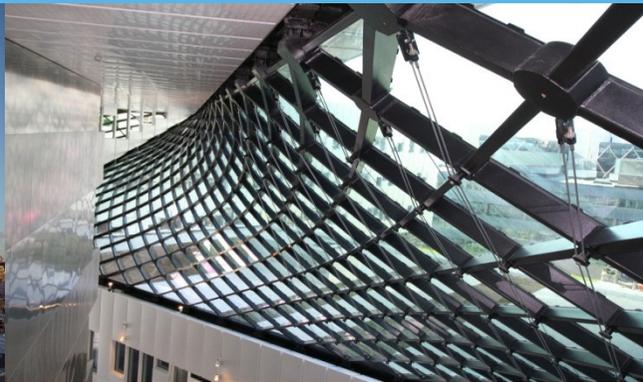
- Large **span** → maximum span for supporting structure is **55 meters** → up to **30 meter cantilever** → High Risk Structure Team involved
- Inspired by **Mikado** → consists of five building shells which are **column-free** and **three floors** high



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Challenges - spectacular architecture

- **Load-bearing** steel beams were prefabricated with a camber of **120mm** ➡ no more than **10mm** camber upon completion. **“Zero” deviation**
- Supported by **16 columns** ➡ **load** on each column varies from **3000** to **5800 tonnes**.
- **Construction** of the **glass roof** ➡ in **conjunction** with **building shells**

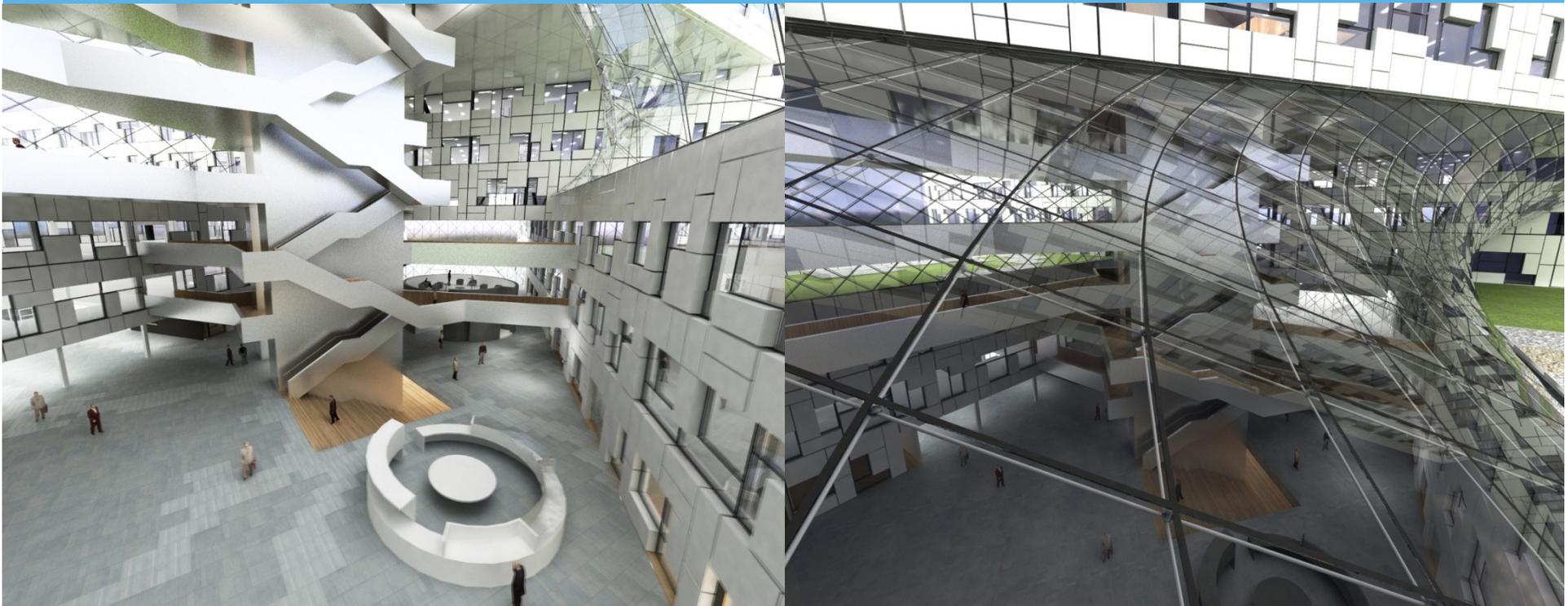


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Learning points - spectacular architecture

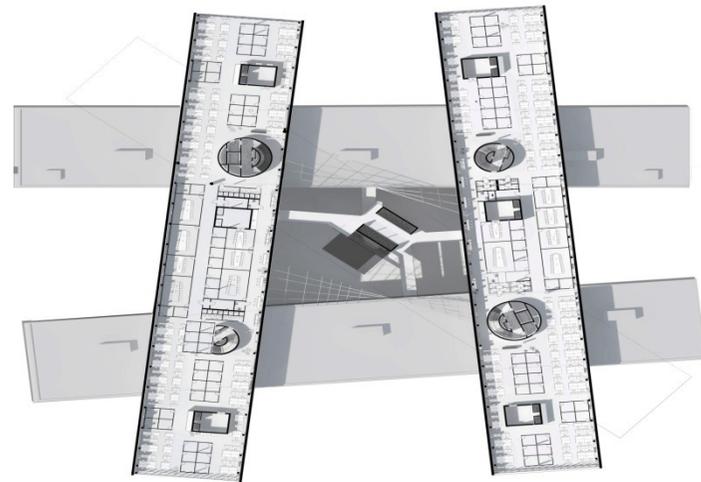
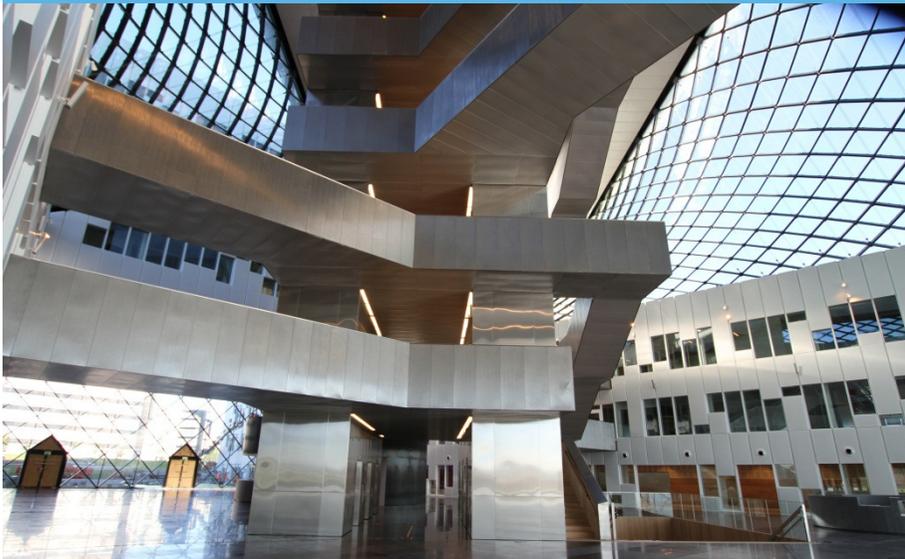
- Through superb cooperation between contractor, architect and consultants we broke **records** → **span + construction time**



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Facts – advanced indoor climate

- Target ➡ world's **best indoor climate**
- Every technical application ➡ managed from **one top system** ➡ which can control **every individual component**



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Challenges – advanced indoor climate

- **Integrated chilled beam** → tested at **factory** and **after completion**. **Entire system** → every **individual** component
- **Communication** between involved parties → **firstly** communication between **people** developing systems → **secondly** between the **systems themselves**
- **Development of the integrated chilled beam** → the **heart/core** of the building's **flexibility** → the combination of all **climatic requirements**



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Learning points – advanced indoor climate

- The **role of the integrator** crucial ➡ need to **understand the complexity**
- **Mock-up room** ➡ level of **detail, size** and **scale**. **Everything** was tested in the mock-up room





**Association of Consulting Architects
in Norway's Developer Award 2012**

Statoil Fornebu

