

Bernard Tschumi Architects
Limoges, France
2006



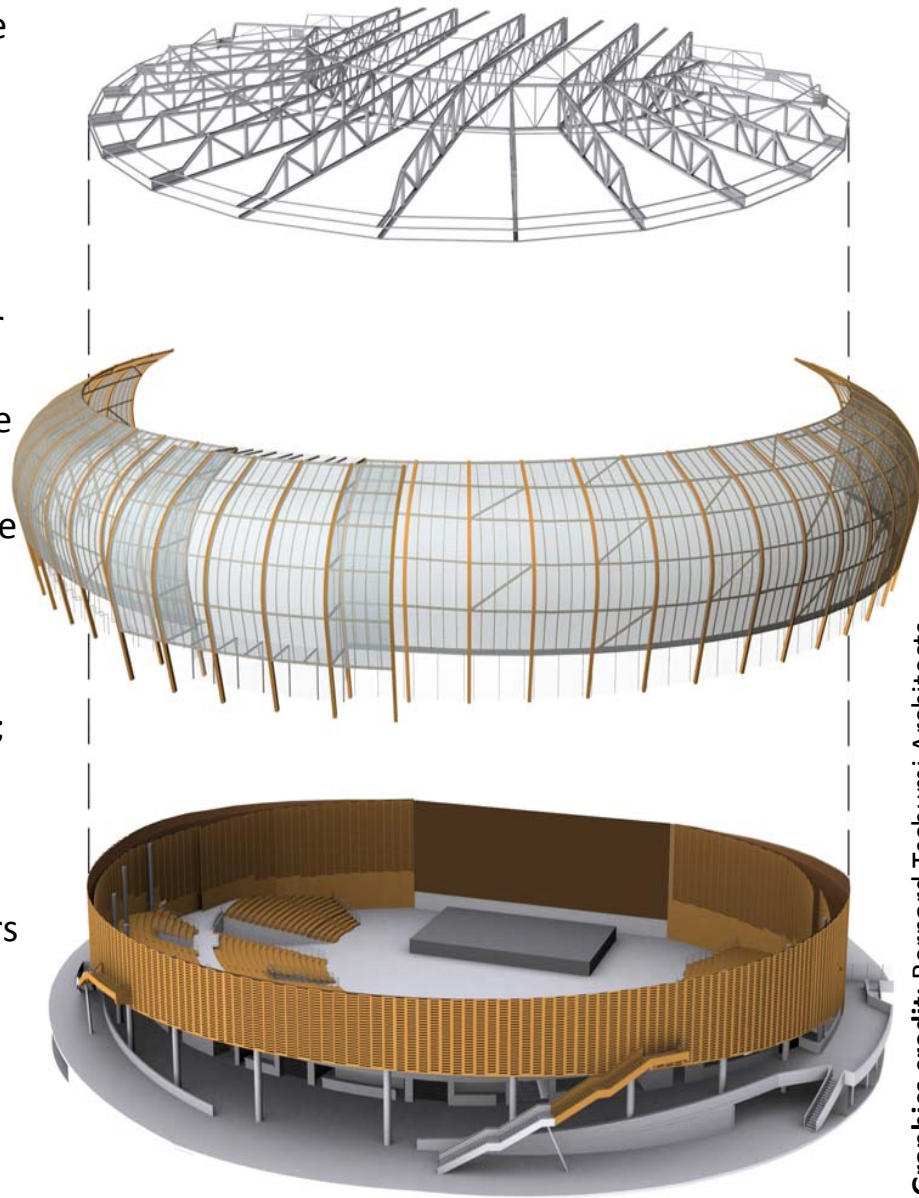
Photo : © Christian Richters

Zénith Concert Hall

With a comprehensive approach to sustainability, Tschumi developed this design with sustainable materials and energy conservation in mind. In that light, the use of locally grown wood was an important choice due to its low carbon footprint, renewability, recyclability and excellent natural sound insulation properties.

- State-sponsored venue for rock concerts, political gatherings, & other cultural events
- Budget: \$36.6 M USD
- Area: 8,500 m² (90 m diameter)
- Height: 22 m
- # of Levels: 3 (backstage area)
- Structure: wood frame, concrete wall, metal
- Translucent envelope: aveolar polycarb
- Inner envelope: acoustic wood trestle
- Meets France's HQE (High Environmental Quality) requirements – US LEED equivalent

- Wooded site at Limoges strongly suggested a building that would complement its environment. Advantage taken of local timber industry for its renewable materials.
- Configuration of double envelope with circulation in between is advantageous scheme, both acoustically and thermally. Outer envelope made of wood arcs and translucent rigid polycarbonate sheets that filter light, provide a high degree of insulation and define circulation spaces; inner acoustical wooden envelope provides intimate setting for concerts and events.
- Natural ventilation is integrated into concept; climate of foyer can be kept at temperate level, with little additional heating required.
- Acoustics play major role in treatment of inner envelope. In auditorium, strong absorption required; in large foyer, absorbent and reflective materials alternated to generate more varied ambiances and acoustic effects.
- Structure designed to accommodate 6,000 spectators comfortably with configurations for as few as 600 or as many as 8,000.
- Stage free of all structural members: performance space approximately 80 m wide by 40 m deep.
- Volcanic stone-paved parking area allows for natural vegetation that captures CO₂ and lets rain water pass through naturally.



Graphics credit: Bernard Tschumi Architects

Structural Composite – Exploded Axonometric

Architects: Bernard Tschumi Architects (*Design/Executive Architects*)
Partners-in-charge: Bernard Tschumi, Véronique Descharrières (BTuA)
Site Architect: ArchitectAtelier4
Engineers: Technip TPS with Jaillet & Rouby and Naterrer Bois Consult
General Contractor: Overseen by Bernard Tschumi Architects – Paris Office
Acoustics: Cial
Landscape architect: Michel Desvigne with Sol Paysage
HQE Engineer: Michel Raoust (sustainability consultants)
Source: Bernard Tschumi Architects



“The (Zénith Concert Hall) shows that sustainability works best when it is a fully integrated design strategy, rather than a veneer achieved through efficient fixtures and a lot of insulation.” – **Bernard Tschumi Architects**