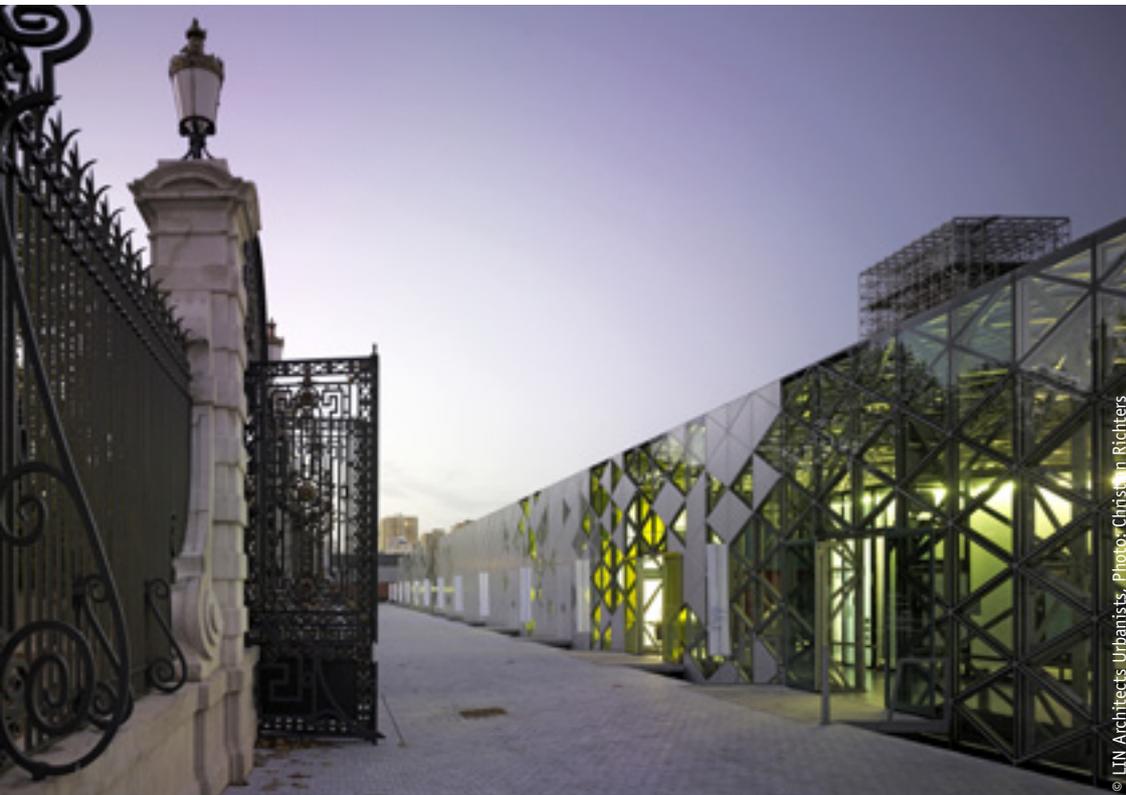


OKASOLAR - REFERENCES

FR | Saint-Étienne | Cité du Design



Project:
Cité du Design
Location:
Saint-Étienne/FR
Product:
OKASOLAR S
OKASOLAR W 50/17
Project volume:
297 m²
82 m²
Client:
Saint-Étienne Métropole/FR
Architect:
LIN Architects Urbanists
Finn Geipel + Giulia Andi, Berlin/DE
Completion:
2008

The “Circuit Board”, the heart of the Cité du Design, is a project with role-model character. Planned and built by the renowned German-French LIN Finn Geipel + Giulia Andi Office, the clarity and straight lines characterizing the circuit board – a flat, elongated component with simple geometry – allow a surprisingly high degree of flexibility and adaptability; largely due to the impressive and innovative façade: a network of uniform glass triangles mounted over OKASOLAR functional glass from OKALUX which covers the exhibition

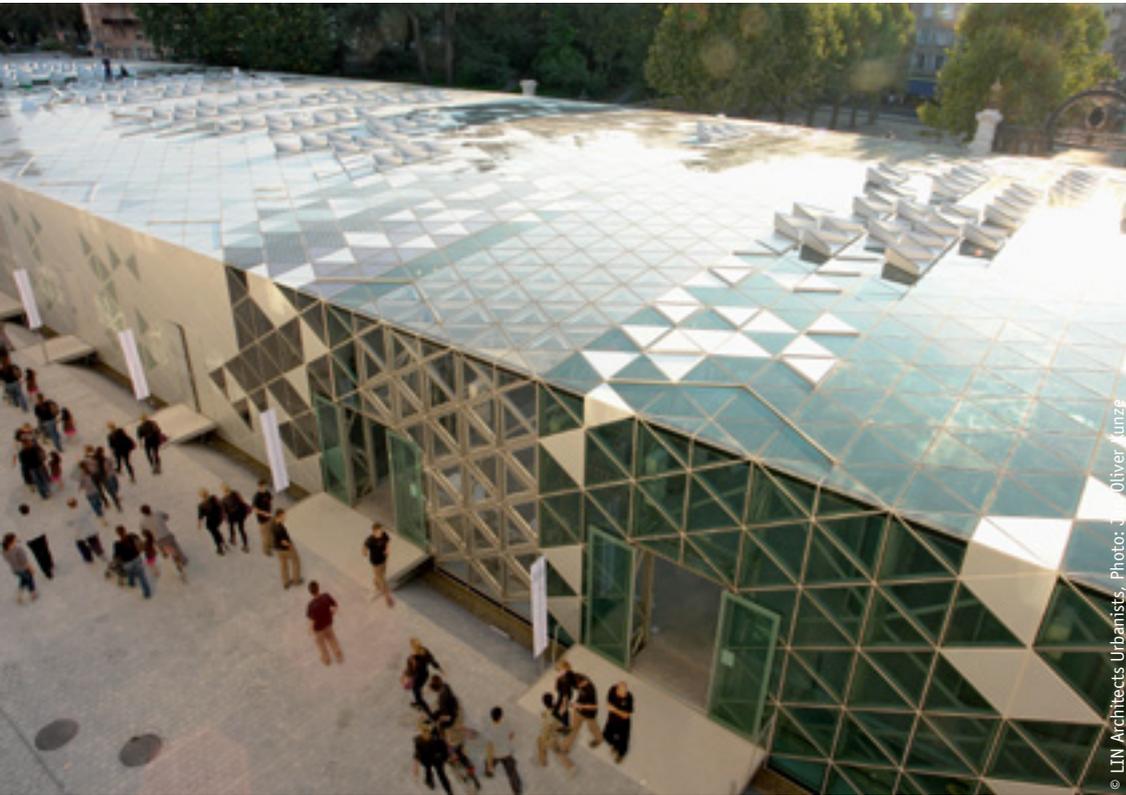
building. Depending on the build-up, the twelve different triangular elements filter the light, absorbing or transforming it into energy thus regulating ventilation and heating as needed. The cultural ensemble of Cité du Design is located on the former premises of the Arms Manufactory in Saint-Étienne, 60 km south of Lyon. Along with the restored factory halls of the Royal Arms Manufactory and the observation tower, the Circuit Board exhibition building constitutes the centre of the Cité. While the simple geometry of the Circuit Board unites

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the various buildings, gardens and squares of the Cité, the interior offers an open structure for many things. The elongated body of the Circuit Board serves as a relay: much as a street it connects the neighboring buildings and houses central functions such as exhibition rooms, the amphitheatre and the library. The various areas of use were placed consecutively in four divisions accordingly – with the interior merging into various zones much as a street. The supporting construction of the Circuit Board, a steel space frame work, allows for a

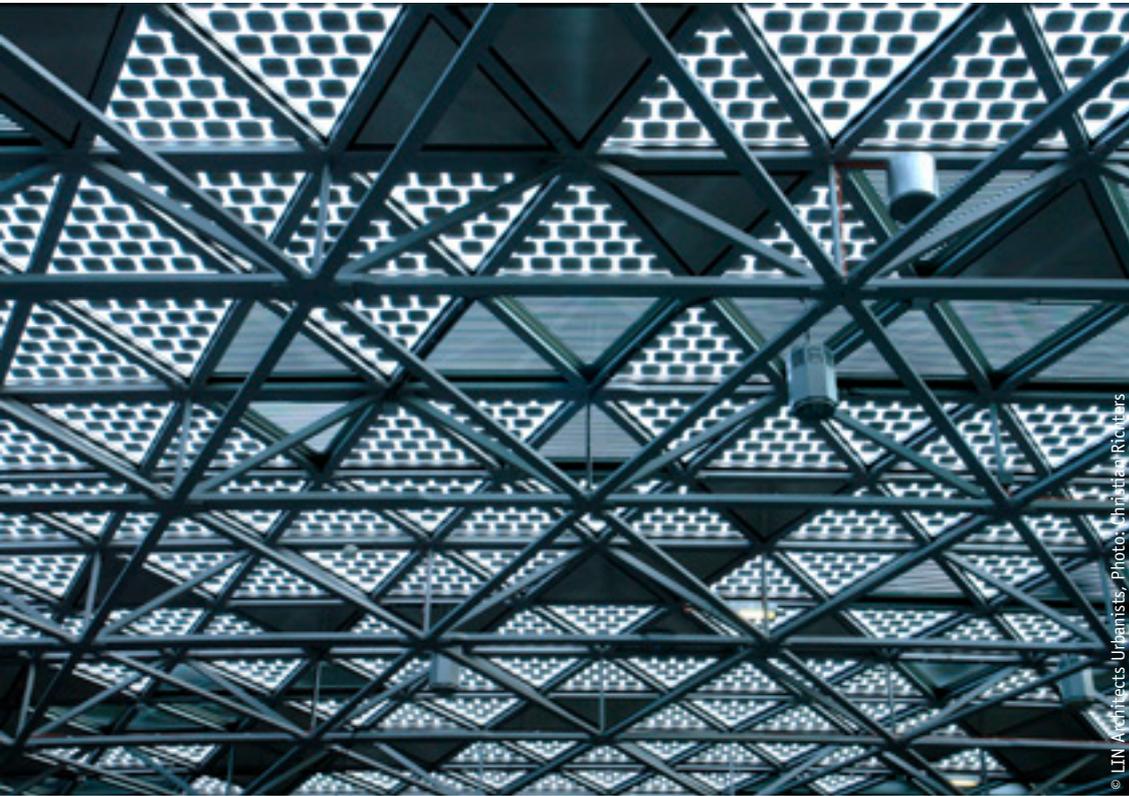
column-free space of about 200 meters length and 30 meters width. With its mobile glass elements, the area can be structured to meet individual requirements. The innovative building shell in particular demonstrates flexibility with its different triangular elements. Façade and roof are surrounded by a network of about 14,000 highly differentiated, interactive and multifunctional, equilateral triangles with a side length of 1.2 meters. Although the seemingly random order of the triangular elements lends the building a playful, artistic



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character, the design of the shell is based on a sophisticated interaction of very different tasks such as lighting, insulation, shading, smoke extraction, ventilation, regulation, the production of electricity or even accentuation through colours. To this purpose, the triangles have been fitted with twelve different elements, a few of which have been developed especially for this building project. In addition to triangles which produce energy using vegetable dyes and photovoltaic panels, there are sandwich elements printed with stripes which can be

easily shifted against each other with the aid of integrated motors thus regulating the incidence of light. Even classical, insulated aluminum sandwich elements with or without argon gas, as well as triangles with sun protective glazing in yellow or green to give colour accents to the interior, are part of the façade. The building shell also contains triangular elements fitted with OKASOLAR functional glass from OKALUX. The OKASOLAR W insulating glass was used in the façade of the Circuit Board, OKASOLAR S was used for the roof. With

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their fixed louvres in the cavities, both types of functional glass keep direct sunlight out and ensure an optimal balance between sun protection and the use of natural light. The specific diameter of the louvres enable the reflection of a large part of the solar gain back to the outside so that the interior does not overheat; simultaneously diffusely guiding a part of the natural light into the interior. In this way, both types of functional glass contribute to the Circuit Board's high degree of visual and

thermal comfort. Organisation, construction and the sophisticated façade concept make the Circuit Board a truly multi-disciplined location which can be adapted as needed. Because of the high flexibility of the façade which, being a three-dimensional shell, can react to any current situation depending on the programming and the season, the Cité du Design has been classified as HQE (Haute qualité environnementale), a high-quality example of architecture with regard to the environment.

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