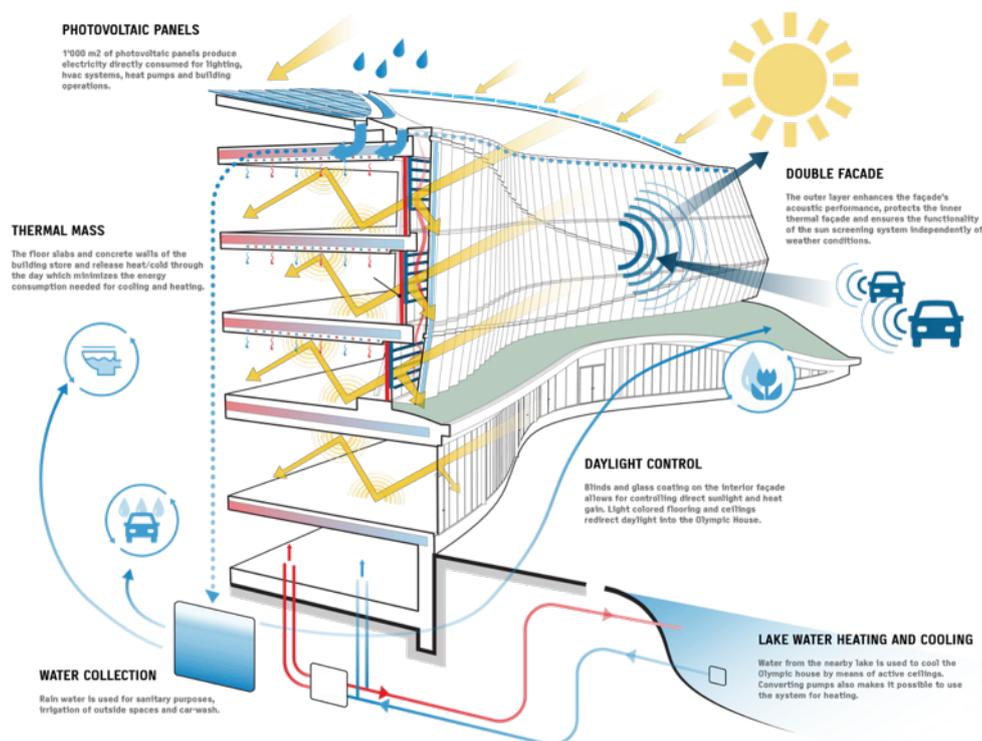


Olympic House- Focus on Sustainability

Olympic House demonstrates the IOC's **commitment to sustainability**, which was one of the five key success factors that the client and architectural team identified at the outset of the project. Olympic House received three of the most rigorous sustainable building certifications, and is therefore one of the most sustainable buildings in the world. With the building of Olympic House, the IOC strives to lead by example; it was awarded **the most demanding sustainability standards** both locally, through the Swiss National Sustainable Construction Standard (SNBS) and Minergie, and internationally through the Leadership in Energy and Environmental Design (LEED). The project contributes to a **circular economy** through efficient **reuse and recycling** processes. More than 95 percent of materials from the former administrative buildings were reused or recycled. Looking beyond construction to the lifecycle of the building, Olympic House has been designed as a **sustainable building** in terms of its operations. Special efforts have been made to maximize energy and water efficiency, waste reduction and landscape integration. The creation of Olympic House has focused on **user wellness** from day one, and has been designed to offer a quality environment for IOC employees and visitors through elements such as access to outdoor views and natural daylight,



air quality and temperature control. In addition, more than 80 percent of the construction costs were spent with **local contractors**.

Deconstruction

Because it was not possible to conserve the existing building, an ambitious approach was developed for its careful deconstruction and selective demolition. As a result of various collaborations and initiatives, more than 95 percent of the materials used in the IOC's former administrative buildings have been recycled, reused or upgraded.

All of the concrete rubble from the demolition of the old building was recycled, including nearly 2338 tons that was used to build the waterproof wall surrounding the Olympic House site, as well as the plinth and peripheral walls in the basement. This process allowed for a reduction in road traffic,

Olympic House- Focus on Sustainability

increased energy and carbon efficiency, as well as providing savings in natural resources and landfill space.

In addition to these existing reuse channels, local architecture students from École polytechnique fédérale de Lausanne were given the opportunity to participate and outline concrete ways of reusing materials for other recycling channels, with a focus primarily on educational and social purposes. The IOC endeavored to bring this social and educational dimension to its deconstruction project in addition to the ecological aspects, ultimately donating several tons of material to local associations. In particular, the circuit-breakers that were given to the Association Cantonale Vaudoise des Installateurs-Électriciens (ACVIE) will allow for its apprentices to be trained on quality equipment at a lower cost to the training centre.

Certifications

- **LEED**, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world. Olympic House has achieved LEED Platinum, the highest certification level of the LEED program. LEED provides a framework to create healthy, highly efficient and cost-saving buildings. LEED certification is a globally recognised symbol of sustainability achievement. According to the U.S. Green Building Council (USGBC), the organisation that developed LEED, Olympic House has received the most points (93) of any LEED v4-certified new construction project to date.
- **The Swiss National Sustainable Construction standard (SNBS)** covers the three dimensions of sustainability: environmental sustainability, social sustainability and economic sustainability. Olympic House is the first international headquarters – and the second building overall – to obtain the highest (Platinum) level of the Swiss Sustainable Construction Standard (SNBS).
- Olympic House has been awarded the Swiss standard for energy-efficient buildings, Minergie P. **The Swiss energy efficiency standard (Minergie P)** guarantees that the building consumes less energy per square metre than average Swiss buildings.

Olympic House is the first building to receive these three certifications, and the first in Switzerland to achieve LEED v4 Platinum.

Olympic House- Focus on Sustainability

Location & Transportation/ Sustainable sites

Mobility

To support the IOC's policy of sustainable mobility, incentives will be put in place to encourage staff and visitors to access the site using active and "green" methods: a shared parking system encouraging car-sharing, 135 bicycle parking spaces, charging stations for electric cars and a future bus line linking the Olympic Museum to the new Olympic House.

Soils

As the site is located on old embankments, several pockets of polluted soil were detected during preliminary drilling. Large volumes of soil were removed for cleaning. In addition, land quality tests were carried out to ensure that the recreated environment would adequately support the development of vegetation.

Vegetation local biodiversity

Over half of the site area is covered by vegetation, and 50 additional trees were planted around the building during the development of the landscape. The design team selected mostly indigenous plant species and created large meadows for pollinating plants that will require less maintenance than lawns. When the project is complete, there will be 2,500 square meters of vegetated roof.

Light pollution

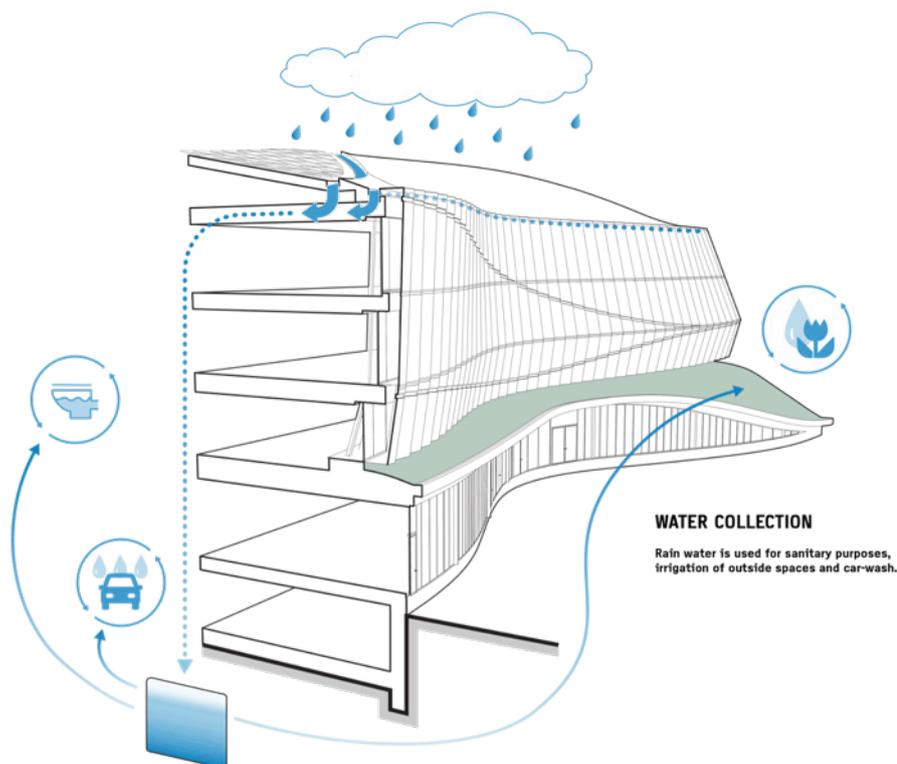
The outdoor lighting systems comply with requirements to minimize light pollution caused by unnecessary night lighting, inadequate light and glare. This approach aims to reduce the impact on the surrounding wildlife as much as possible.

Minimized heat island

The heat island phenomenon has been evaluated and minimized. A roof that is too dark will store heat from the sun and create a microclimate that is disruptive to surrounding ecosystems. All exterior claddings (roof/concrete of terraces/exterior paths, etc.) were analyzed according to their sunlight reflection index. By minimizing the formation of these heat islands, Olympic House works to preserve local ecosystems.

In the development of outdoor space, the IOC prioritized the creation of open and public spaces that will restore the park to the people of Lausanne.

Olympic House- Focus on Sustainability



Water Efficiency

Stormwater management was also a primary concern in the design process. Due to the close proximity of the lake, the land is waterlogged and infiltration is not possible within the project area. Rainwater is diverted to a 300-cubic-meter retention basin, and then used for watering green areas, toilet flushing and car washes. This strategic reuse of rainwater reduces drinking water consumption by about 60% compared to a conventional building.

The overall water-saving scheme involves an optimized watering plan for green spaces, and complies with strict consumption limits for all sanitary appliances by equipping them with pressure reducers. A system for measuring water consumption is integrated directly into the building to ensure the optimization of these strategies.

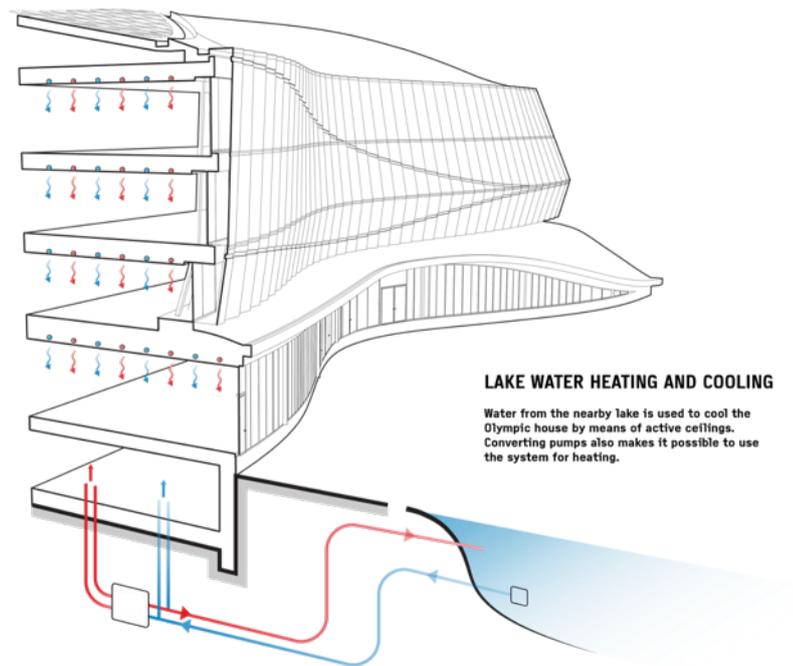
Energy concept

Olympic House will implement energy-saving measures such as enhanced insulation, smart building features and LED lighting, ensuring that it will not use any more energy than the former building, despite the fact that it is three times the size.

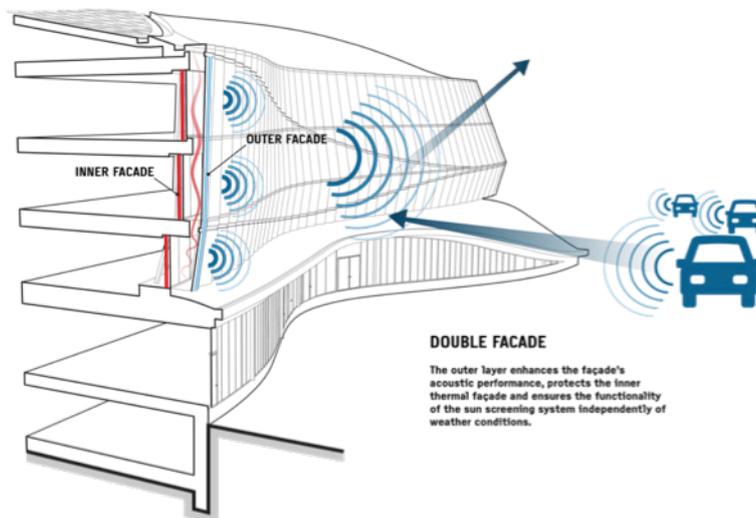
- The heating and cooling of the building is provided by the energy extracted from the lake water. During the winter when the lake is at 4-6°C, heat pumps with a COP of 5 raise the temperature for heating.
- The circulation temperature of the heating system is 35°C.
- The remote heating network of the city of Lausanne provides hot water for domestic use.
- The double skin façade creates an effective thermal and acoustic envelope.
- 1,000 square meters of photovoltaic solar panels on the roof contribute to the electricity that is consumed on site.
- The IOC has chosen to compensate its greenhouse gas emissions related to energy consumption through offset projects.
- An energy monitoring system accurately tracks consumption in order to develop optimization plans.

Olympic House- Focus on Sustainability

Energy models project that Olympic House will use approximately 35 percent less energy than conventional new construction.

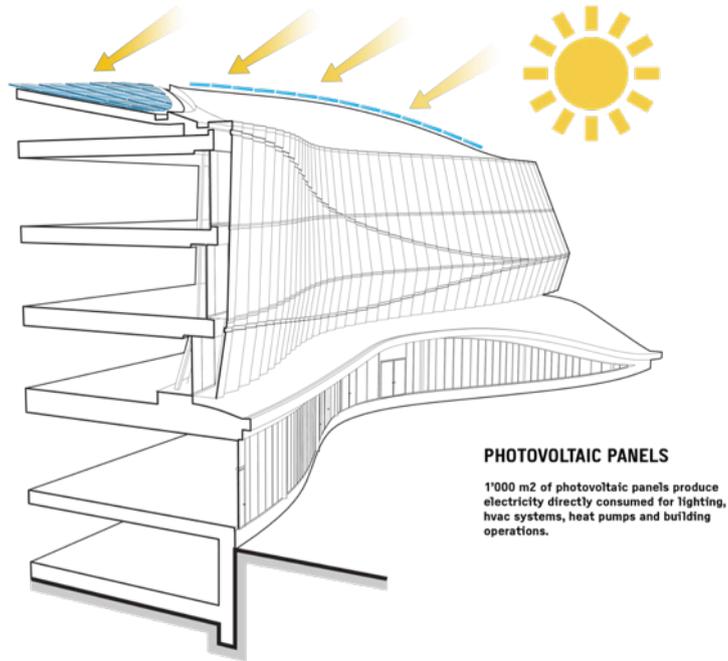


Thermal active slabs

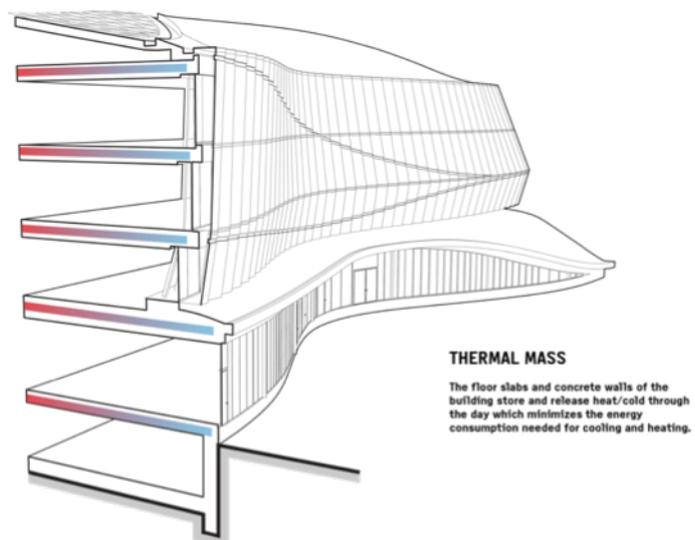


Traffic noise

Olympic House- Focus on Sustainability



Solar panels



Thermal mass

Olympic House- Focus on Sustainability

Plan quality views

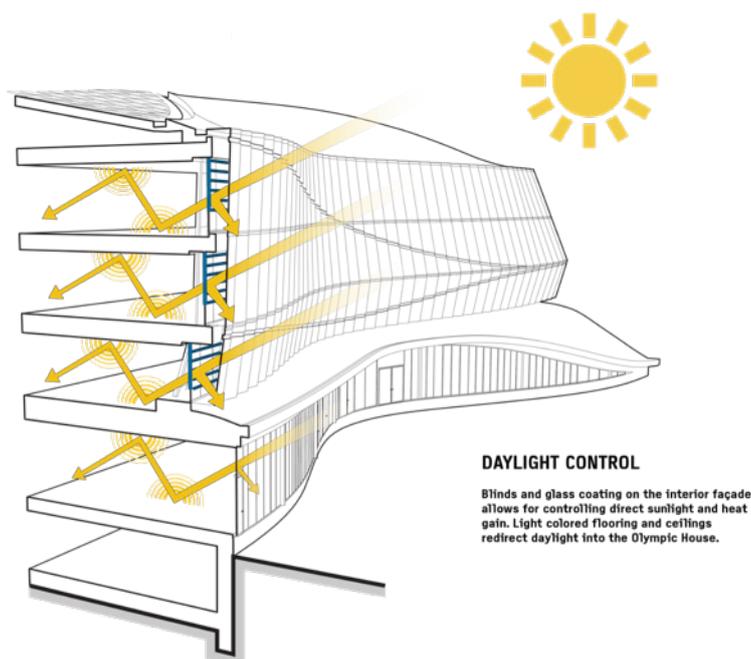
The layout of the workstations ensures that 90% of the spaces regularly occupied (more than one hour per day) offer quality views to the outside. Lighter colors were chosen for interior coverings and furniture to establish a feeling of clarity, transparency and visibility towards the outside and the lake.

Indoor air quality was addressed through the careful selection of materials that emit fewer pollutants after installation. Materials used in the building finishes were tested for their content and emissions of volatile organic compounds and formaldehyde. If a material was found non-compliant with these criteria, the design team worked hand in hand with the manufacturers to understand the technical characteristics of these products and find the best alternatives. During the final stages of construction, a "flush-out" was carried out through the high-flow ventilation system for four weeks in order to ensure a purge of all pollutants that could have stagnated in the building during construction.

The building's large glazed façades, 13-meter central skylight, and central staircase all work to ensure the optimal use of natural light. The interior lighting is modulated for each workstation. The choices of lighting fixtures were carefully monitored to ensure a longevity, optimal color rendering and reduced glare. All materials were analyzed for their reflectance in order to conform to a general visual appeal.

Finally, the development team consulted with an ergonomist to design the optimal workstation.

The IOC encourages active lifestyles by offering its staff the chance to move within the building, through dedicated gym facilities and more generally by promoting the use of staircase.



Olympic House- Focus on Sustainability

Materials

Significant efforts were made to screen construction materials and furniture, ensuring that they complied with strict environmental standards. This approach goes well beyond standard construction practices. The IOC has driven market transformation in its construction material and furniture supply chain, resulting in innovative, long-term changes to suppliers' operations.

Wooden products are certified by the Forest Stewardship Council, which indicates that they have come from responsibly managed forests. This means that the wood is legally harvested, and that the forest is managed to maintain the quality of its ecosystems over time and protect the social and economic well-being of workers and local communities. Most of the wood used in the construction comes from Europe.

The IOC worked transparently with building material manufacturers to determine the composition of their products, and evaluate them in regards to public health.

In a desire to achieve a circular economy, the IOC has sought to maximize the value of materials based on recycled products. An analysis of the building's life cycle was carried out as well.

Economy

Flexibility

The interior design of the building is characterized by flexibility of the space. The absence of pillars in the open floor plan allows for an infinite number of potential layouts. This structure also aims to promote interaction, communication and knowledge sharing among the IOC staff.

The building is designed so that all the surfaces can be transformed into individual offices and conference rooms. A 2.7 meter grid in the facade is repeated in the ceiling and false floor, allowing the size of the offices to be modulated and meet the needs of electrical installations and ventilation in all configurations. This modularity guarantees an evolution of uses throughout the life of the building.

Local economy

A strong emphasis was placed on contracting local companies to build Olympic House. To ensure that the project benefits the local economy, over 80 percent of the construction costs were spent with local contractors based less than 50km from the construction site.

Through this meticulous approach to sustainability, Olympic House hopes to be a source of inspiration for all, and especially for future Olympic cities.