IB+

Sustainable Development

lympic House, Headquarters of the International Olympic Committee IOC, Lausanne
Photo: © Adam Mørk, Copenhagen

IB.
In brief.

An architecture founded on respect, knowledge, and passion
With more than a century of tradition and experience, our architectural and general planning office is a leader in Switzerland. We have always cultivated our independence as the basis of our corporate culture. Humans and their environment are at the heart of our enterprise, whether it is a matter of our architectural projects or our own office. The experience and competencies of our employees and partners are valorized in strong professional teams built to serve the unique requirements of each of our projects.

If we are proud of our past, it is the future that excites us and presents new challenges that motivate us. We develop customized and innovative, forward-looking solutions that we pursue to their realization.

Our success is due to our highly qualified employees, who possess a wide range of expertise and a keen sense of cooperation and teamwork. Testifying to this are the numerous competitions IB has won and the exceptional architectural solutions we have conceived and implemented. Added to this is our awareness of the need to conserve resources and to realize buildings whose life cycle responds to the requirements of both economics and sustainable development.

Sustainability.
Exceptionally good buildings.
The future of architecture is no longer shaped primarily by what we do but rather, by what we do not do. Our environmental resources are limited. Key issues in architecture, such as energy consumption, the science of construction materials and building technology have ceased to be matters of spatial or aesthetic design. In fact, they are now highly complex technical undertakings that have huge implications far beyond the field of architecture.

We do not view sustainability requirements as obstacles that inhibit the architect’s creativity. On the contrary: they present us with a thrilling challenge and spur us on to create innovative projects.

Sustainable Development. A given.

Process
Sustainability in an architectural project constitutes, for us, an integrated, unique, contextualized, and comprehensible approach that is the natural outcome of collaboration among all relevant participants.

Responsibility
We are conscious of the scope of our responsibility with respect to our impact on the built landscape in Switzerland and abroad, and also its wide-ranging ramifications.

- Economic effects, in light of our footprint in the construction market
- Societal effects, in response to the nature of the spaces we create and their importance for future users
- Environmental effects, due to the material and construction decisions we take with our clients

Stimulating challenge
Far from being seen as a constraint that restricts the architect‘s creativity, sustainability is for us a stimulating source of innovation and exciting challenges that foster the emergence of intelligently conceived projects.

Coherence
We seek to develop a coherent approach that generates a sustainable and responsible architecture which meets today‘s needs while also ensuring those of future generations. Beyond this, our reflections develop on two levels: we think of our projects in the global context, calling for the most demanding international sustainability standards, but we also strive to have direct local impact in order to concretely measure the results of our reflections.

IB is proud to be a member of the Sustainable Construction Network Switzerland (NNBS). Our Lausanne and Geneva branches are certified at the level of EcoEnterprise Sustainable Development & Corporate Social Responsibility.

NNBS
Netzwerk Nachhaltiges Bauen Schweiz
Réseau Construction durable Suisse
Network Costruzione Sostenibile Svizzera
Sustainable Construction Network Switzerland
MITGLIED

ECOENTREPRISE CERTIFICATION
DEVELOPPEMENT DURABLE
RESPONSABILITE SOCIETALE

La Cloche d'Or district, Luxembourg

Urbanism.
A vast experience.

Densification
By 2030, nearly 70% of the world‘s population will live in cities, generating 80% of the total global energy demand and 70% of global greenhouse gas emissions. The process of densifying urban spaces is a key opportunity we must seize.

Large scale
We are called upon to design eco-neighborhoods, coherent pieces of a city that are integrated into the urban fabric. Specific challenges are tied to the grand scale of this type of project: mobility and sustainable transport, intergenerational and social diversity, enhanced quality of public spaces, choice of materials, provision of energy on a large scale, and management of water and existing ecosystems.

Participatory process
Participatory urban planning is an approach that holds great potential for citizens to assume a role in transforming the city and its neighborhoods. The people whose daily life unfolds in a neighborhood bring their experience and perspective to the table, thus enriching our analyses as architects and planners.

The master plan conceived by IB provides the guidelines for the urban development of Cloche d‘Or, situated on the southern outskirts of Luxembourg. With this plan, a long-term vision is thus emerging for the future development of the whole city.

Urban climate
Our projects seek to optimize the urban climate. In effect, urban form affects the circulation of wind. Humidity close to the ground and the frequency of fog conditions thus increase urban winds and atmospheric turbulence. Heat Islands are a characteristic phenomenon of the urban climate – essentially a sharp increase in the outdoor temperature of public spaces which renders it difficult, if not impossible, to make use of them. Through the urban forms we propose, we seek to limit this effect by creating public spaces that are vibrant and comfortable to inhabit.

Smart city
«Smart Cities» are conceived to make more intelligent and efficient use of their resources by means of information and communication technologies. A Smart City carefully manages natural resources, blazing the path of a post-fossil fuel society and striving to achieve the long-term objective of climate protection. The inhabitants of Smart Cities benefit in significant ways from better living conditions and quality of life.

New Campus, École Hôtelière de Lausanne (EHL)
Photo: © IB

The project for the new campus of the Hospitality Business Schoole Lausanne (EHL) is based on an innovative energy concept that combines medium depth geothermal energy and heat recovery from waste water. In effect, co-axial geothermal probes will be installed outside the foundation slab to meet the majority of the heating requirements of buildings totaling 65,000 m^2. Photovoltaic solar panels covering 5,000 m^2 of roof complete the system. The campus is expected to be rated Minergie-P.

Energy.
The optimal source.

Efficency
In our projects, rationalism, constructive logic, and the means to address passive solar gains are highlighted to minimize the energy consumption of a building in its operational phase. Devices such as solar thermal and photovoltaic panels make it possible to take advantage of roof and facade surfaces. High-performance building envelopes and integrated systems make it possible to attain the highest energy ratings in the field.

Diversity of supply
In order to minimize the consumption of fossil fuels and green-house gas emissions while buildings are in use, our projects integrate ever more diverse energy supply systems. Deep geothermal energy, heat recovery from wastewater, and heat pumps installed in lake waters are a few strategies we have previously implemented in our projects.

User behavior
Raising the awareness of users with respect to the impact of their energy consumption is a key factor in maintaining a consistent approach. Existing consumption measurement and tracking devices are easily integrated into our projects. This also makes it possible to influence the behavior of users so that they may more comfortably inhabit our buildings while at the same time reducing their impact on the environment.

Tamedia AG (TX Group), Zurich
Photo: © Didier Roy de la Tour, Paris

In the heart of Zurich, the Tamedia Group (now TX Group) building, which bears the signature of the internationally renowned Japanese architect Shigeru Ban, reveals a six-story wooden supporting structure through its glazed facade. In its role as local architect, IB made this bold project a reality, developing plans and construction details with the goal of achieving a building that respects the original concept.

Wood in construction.
A gift of nature.

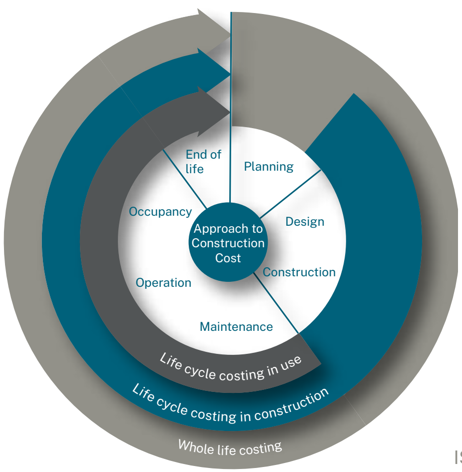
Appeal of wood
From the 1990s, IB cut a pioneering figure in Switzerland when we took the decision to use primarily wood in the construction of the Intercantonal Forestry School at Lyss in the canton of Bern. With the exception of its concrete plinth, this three-story structure is entirely built of wood. It was not only a matter of establishing wood as a contemporary building material, but also establishing a model from an ecological point of view.

Quality and innovation
This approach has been pursued and expanded in our office, where we have been able to build a team of specialists in wood construction. We have tapped into the noble character of this traditional material, while also taking its performance to the extreme.

Sustainable management
In our projects, we pay very particular attention to the use of timber produced according to sustainable logging practices, in order to avoid placing sensitive forests in peril. We work with leading standards for forest management and systems of control, such as the Forest Stewardship Council (FSC), Program for the Endorsement of Forest Certification (PEFC), or the Certificate of Swiss Origin of Wood (COBS). We ensure the integrity of sustainable supply chains through the completion of the building.

Olympic House, Headquarters of the International Olympic Committee IOC, Lausanne
Photo: © Adam Mørk, Copenhagen

Flexibility.
An added value.

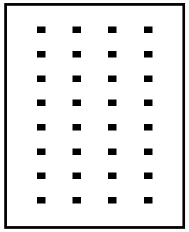


Source:
ISO-Norm 15686-5

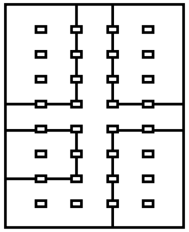
Flexibility of work spaces
In administrative buildings, but also in other types of buildings, such as hospitals for example, the evolution of requirements can occur very rapidly. In order to meet emerging needs with minimum delay, constructive and technical systems must be anticipated and potential installations must be provided for. Bearing in mind that total flexibility is utopian, we design complex systems that allow for well pre-defined flexibility and very rapid adaptation. This requires reflection that goes beyond the scope of the original brief, as well as ongoing dialogue with the client and all other participants.

Separation of systems
Primary system: With a life span of 50 to 100 years, this is the most rigid and difficult to adapt. Typically, the structural system, circulation, and the envelope of the building belong to this category.
Secondary system: This has an average life span of between 15 and 50 years, and is more adaptable. The main secondary elements are interior walls, ceilings and floor coverings, and the installations, fixtures, and fittings of the premises.
Tertiary system: This has the shortest life span, between 5 and 15 years. It must therefore be easily adaptable.

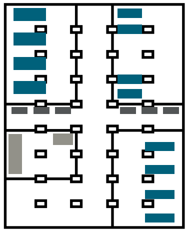
Life-cycle costs
The design of buildings with flexible frames or integrated systems characterized by high constructive flexibility may require in-depth studies and generate higher initial construction costs. However these additional costs are compensated during the life cycle of the building, because the costs of adaptation or replacement of obsolete elements are anticipated and thus can be minimized.



Primary System
50-100 years



Secondary System
15-50 years



Tertiary System
5-15 years

Olympic House, Headquarters of the International Olympic Committee IOC, Lausanne
Photo: © IB

Materials. For the planet and the health of everyone.

As part of the project for Olympic House, Headquarters of the International Olympic Committee IOC, Lausanne, LEED and SNBS certifications required a very precise assessment of building materials, especially in relation to their provenance, emissions, and grey energies.

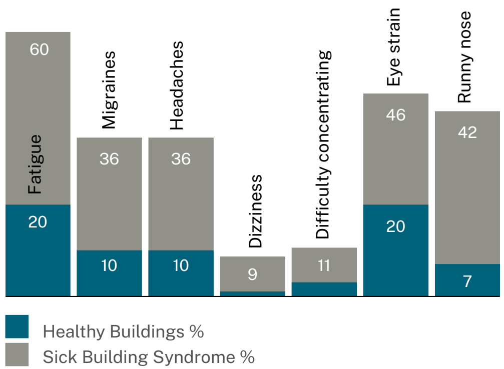
A judicious choice
A judicious choice of materials makes it possible not only to limit the environmental impact of the future building, but also to safeguard the health of its occupants. In the choice of construction materials that we propose, we take into account a range of factors, such as the origin of the product, its life span, the emissions related to its manufacture and use, the impacts associated with its implementation, and its potential for recycling or recovery. The cost of the product‘s life cycle is also assessed.

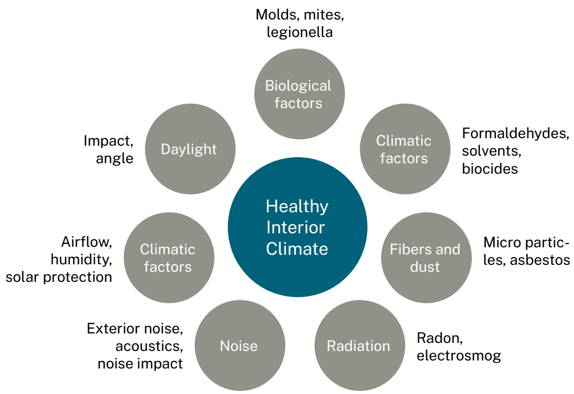
The health of occupants
The problem of asbestos has raised awareness about the impact of building materials on human health. The health of users remains at the heart of our concerns. For projects where it is required, we accurately assess the emission of volatile organic compounds and formaldehydes from the materials we are considering, in order to guarantee future users an exemplary indoor air quality.

Innovating with industry
Within the scope of our projects, we work hand in hand with the manufacturers of building materials. We strive to understand their technical challenges and to explain our increasingly elevated requirements in terms of environmental quality. This allows us to move forward in parallel, with the goal of achieving greater transparency about materials and simultaneously encouraging the industry to evolve.

Eichhof Nursing Home, Lucerne
Photo: © Markus Beyeler, Hinterkappelen

Examples of pathologie





Source:
Gesund und ökologisch bauen mit Minergie-ECO, Gugerli, Lenel, Sintzel, 2015 – Translation IB

Well-being.
The comfort of users above all.

Sick building syndrome
According to the Federal Office of Public Health, we spend 80% of our time in enclosed spaces. The quality of interior spaces is therefore decisive for our well-being. Poorly designed buildings are associated with «Sick Building Syndrome», defined as a combination of unexplained symptoms related to a built place, often new buildings. These symptoms are a source of high absenteeism and lead to a decrease in user comfort and productivity. Well-designed buildings, on the other hand, can significantly reduce these risks and create real added value for all stakeholders. (Source: Hinnen, AEH, Zürich).

Natural light
Daylight stimulates the body. It contributes to the synchronization of the body's internal clock and also to the sense of well-being. In the design of our buildings, we capitalize on the benefits of natural light to the greatest extent possible.

Protection against noise exposure
Noise may affect the development of mental disorders that increase the risk of depression or migraines. It can limit the mental and physical performance of building users. In our projects, special care is taken to reduce noise pollution. In addition, constructive and organizational measures guarantee acoustic quality between individual spaces.

Climate and air quality
The air quality of indoor premises is vital to good health. Frequent and controlled air renewal and the use of non-toxic, low-polluting building materials, once in place, ensure this quality. Comfortable conditions inside a building are also ensured by maintaining temperatures adapted to the nature of activities taking place there as well as controlling the risk of solar overheating and glare.

Protection against exposure to toxic substances
Biocides, wood preservatives, or solvent-based products are avoided in heated spaces. Products emitting formaldehydes and volatile organic compounds in inappropriate proportions would be excluded. Our experience with the specification of healthy building materials allows us to offer high quality environments.

Biophilic design
When vegetation is installed inside a building, it is scientifically proven to have a psychological, chemical, and climatic effect. [1]Indeed, this sensory connection with nature generates a soothing atmosphere, helps to reduce formaldehyde and carbon monoxide, and regulates the humidity in the air and the sensation of heat. It thus contributes to the well-being of users.

1 Roger Ulrich, Xiaobo Quan, Craig Zimring, Anjali Joseph, and Ruchi Choudhary, Report to The Center for Health Design for the Designing the 21st Century Hospital Project, September 2004, a project funded by the Robert Wood Johnson Foundation.

Riva residential complex, Basel
Photo: © IB

Society.
Project as social vector.

Social and functional mix
To the extent possible, we seek to achieve the appropriate social mix in our projects. This involves a socio-professional mix, a cultural mix, and an intergenerational mix. A wide variety of building typologies provides a functional mix and allows for a diversity of lifestyles. The pooling of certain kinds of spaces and amenities creates environments for living and sharing. We are attuned to the
necessity to create conditions for «co-habitation» that are harmonious as well as solidary.

New project leads
Housing cooperatives increasingly become the clients for significant real estate projects. We listen to these stakeholders in order to accompany them in their venture and best meet their needs. New and evolving modes of governance allow the players concerned with the future of a neighborhood to unite around foundational values, and to develop a project consistent with those values. We are committed to supporting participatory approaches at the neighborhood level.

Raising user awareness
We propose to integrate into our projects smart devices that allow users to monitor their energy consumption, water consumption, and waste production. These smart building devices allow users to become more aware of their ecological footprints and to adapt their behavior. These same devices can also function to communicate the activities of the inhabitants and thus increase cohesion within a neighborhood.

Building for everyone
To the greatest extent possible, our projects incorporate measures to reduce architectural barriers and create conditions that accommodate users with reduced mobility.

Polyvalent spaces
We are sensitive to the need for living spaces that are susceptible to appropriation by their inhabitants. The location of common areas, such as laundry rooms, is particularly crucial to facilitating informal exchange among inhabitants in an atmosphere that is luminous and convivial.

Les Minoteries residential complex, Geneva
Photo: © Fernando Guerra

Renovation.
To value existing real estate.

Energy strategy 2050
Energy remediation for apartment buildings is a major feature of the Energy Strategy 2050 established by the Swiss Confederation. The aim is to reduce CO2 emissions in the building sector by 80% by 2050. To achieve this goal, existing buildings that need to be replaced must not generate more than 20kg of CO2 emissions per square meter per year. This translates directly into energy performance improvements that must be architecturally integrated into the building.

A global and interdisciplinary approach
Ad hoc interventions, not considered at the level of constructive detail, risk affecting the architectural and cultural values as well as the urban quality of a real estate development. Therefore it is essential to have an integrated approach for this type of project, which requires a balance of energy efficiency, respect for architectural values, user comfort, the physics of the building, and costs.

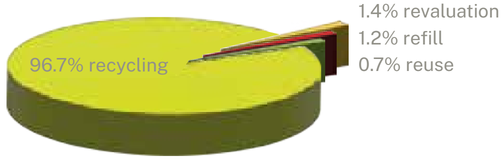
A global concept for large building complexes
Our experience in this domain includes the renovation of existing real estate developments, including for example the 1970s «Les Minoteries» apartment block in Geneva. This building, originally one of the city's largest energy consumers, underwent an exemplary total renovation that reduced energy consumption by 80%, bringing its overall performance close to that of a positive energy building supplied with 100% renewable and emissionfree heating and hot water. This should prevent the emission of more than 1,500 tons of CO2 per year.

The balconies were converted into loggias to reduce the envelope area of the building and eliminate thermal bridges. At the same time, additional living space was created for the tenants that can be used throughout the year. Photo: Didier Jordan

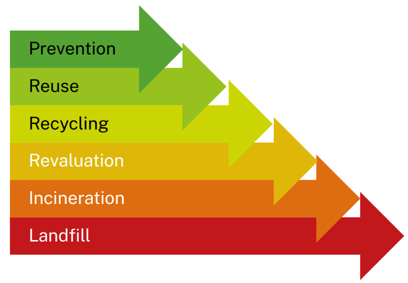
Construction site Olympic House, Headquarters of the International Olympic Committee IOC, Lausanne
Photo: © IB

Re-use.
To offer buildings a second life.

Breakdown of tonnage by type of treatment
Olympic House, Lausanne

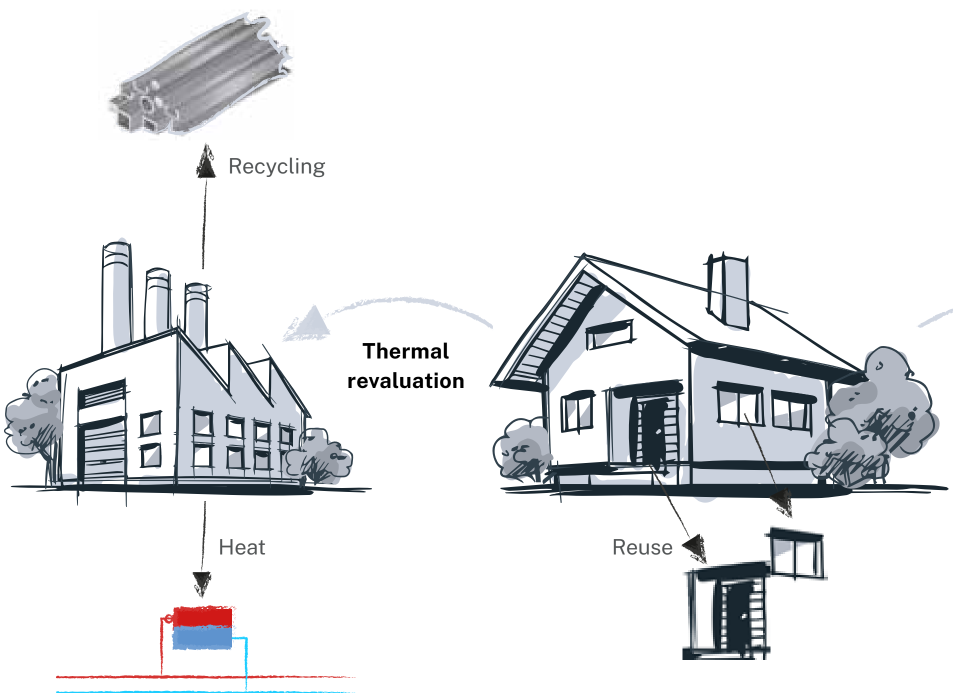


97.4% recycling and reuse



An attentive analysis
When intervening in existing construction, first and foremost we are attentive to the valorization of materials found on site which can be channeled into appropriate reuse. The construction industry must move beyond linear logic in order to embrace a circular approach. We want to be among the actors driving this change.

An exemplary approach
As part of the Olympic House project, we worked with students at the Swiss Federal Institute of Technology in Lausanne (EPFL) to consider innovative ways to deconstruct the existing building on the site. This experience, and the implementation of recommendations resulted in a 97.4% rate of reused or recycled materials from the original building. As a consequence, our teams acquired new knowledge about the management and revaluation of such material flows.



«Waste is material without an identity.»

Thomas Rau, architect

Olympic House, Headquarters of the International Olympic Committee IOC, Lausanne
Photo: © Adam Mørk, Copenhagen

Exemplarity.
A genuine added value for your projects.

A growing interest
The recognition of ecological developments in the real estate sector has gradually increased in recent years. The sustainability factor now represents a significant, even major criterion for any real estate project.

A decisive argument
Obtaining a sustainable construction rating concretely validates efforts to implement sustainable practices during the design and construction of the building. It represents a genuine added value, and makes a decisive argument for investors.

Our expertise
Our experience in the implementation of these requirements is a key added value for the design and realization of our projects.

IB's built projects have qualified for certifications including:
- Minergie
- Minergie-P
- Minergie-P-ECO
- Minergie-A-ECO
- LEED (including a LEED v4 Platinum level project that obtained the greatest number of points in the world for this benchmark)
- BREEAM
- 2000-Watt Site
- SNBS at Platinum level
- DGNB
- WELL

New Headquarters Scott Sports, Givisiez FR
Photo: © Simon Ricklin

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