

Metamorphosis of the Insectarium
Montreal, Canada, 2014–2022

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Scientific report after scientific report confirms that we, humans, now face an inevitable moment to redesign our relationship with this planet and with the non-human species that share it with us. A crucial part of this process of redesign will be the fostering of new understandings and representations of “the natural”. Over hundreds of years, we have built architectures for the preservation, classification, study and display of animals, insects and plants, which have cemented a sense of separation between the human and the natural. In the age of the climate crisis, this separation is collapsing.

The new Montréal Insectarium is an institution which responds to this urgent moment. Through a design by architects Kuehn Malvezzi alongside Pelletier de Fontenay, Jodoin Lamarre Pratte architectes and atelier le balto, the Insectarium aims to transform the public’s relationship with insects.

This is achieved through innovative architectural and museological approaches which draw the bodies of visitors closer to those of insects. Opening at a crucial moment for re-thinking relationships between human and non-human biology, the new Montréal Insectarium represents a critical new approach for museums of natural history.





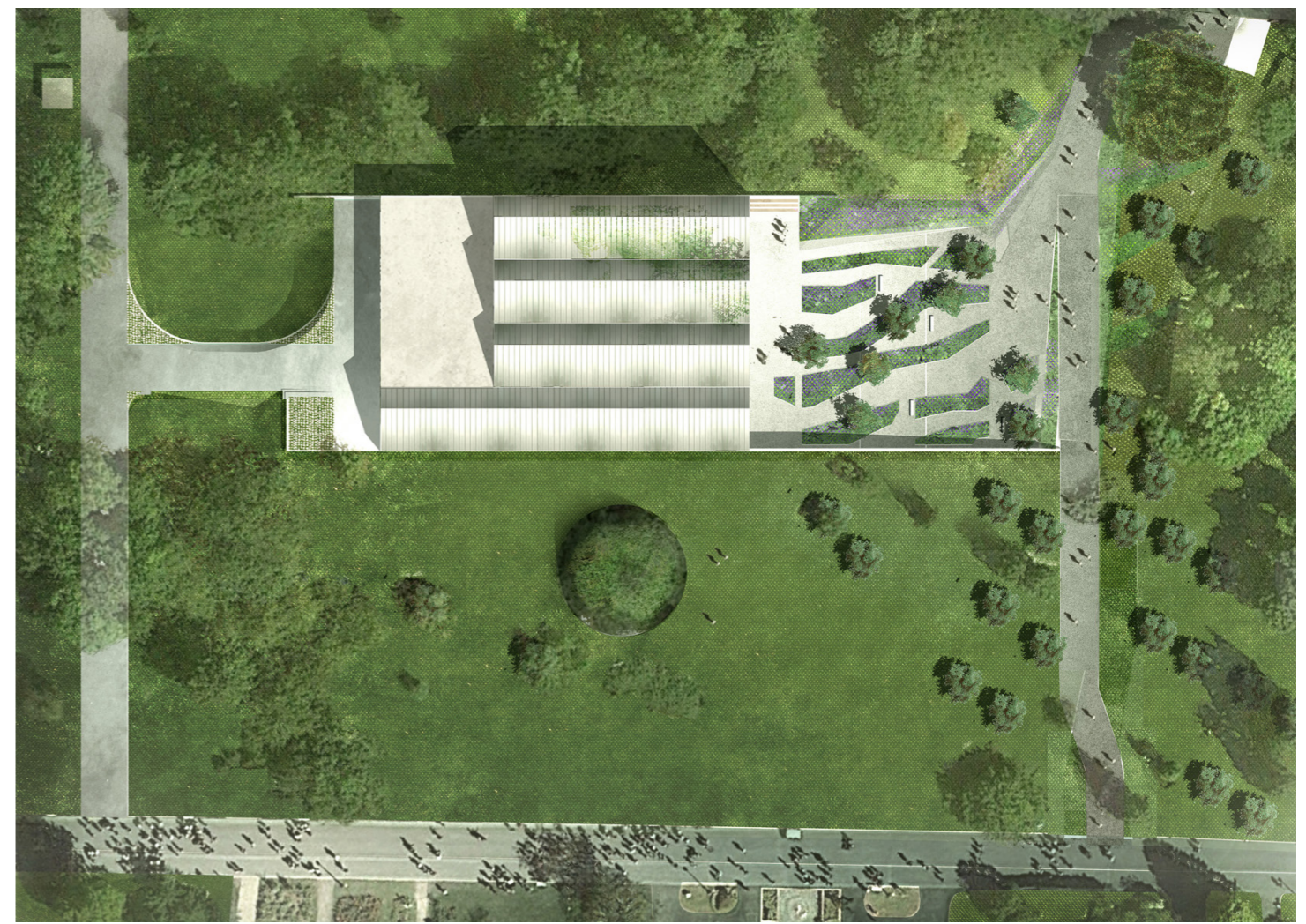
Site Plan – Botanical Garden

Background

The first Montréal Insectarium opened as the largest insect museum in North America in 1990. Amongst its founders was the popular Canadian entomologist Georges Brossard whose personal collection of thousands of species of insects had previously been stored in his basement.

The former Insectarium building was an enclosed structure with an architectural footprint resembling a fly. It featured a permanent exhibition containing over 3,000 preserved specimens and 100 live specimens.

The Insectarium sits within Espace pour la vie, Canada's largest natural science museum complex which also manages other municipal institutions: the Biodôme, the



Site Plan – Insectarium

Biosphère, the Jardin Botanique and the Planétarium.

The design for the new Insectarium was carried out by Berlin-based architects Kuehn Malvezzi with Montréal offices Pelletier de Fontenay and Jodoin Lamarre Pratte architectes as well as landscape architects atelier le balto, Berlin. This partnership won an international competition for the project in 2014 with a concept to fuse architecture and nature.

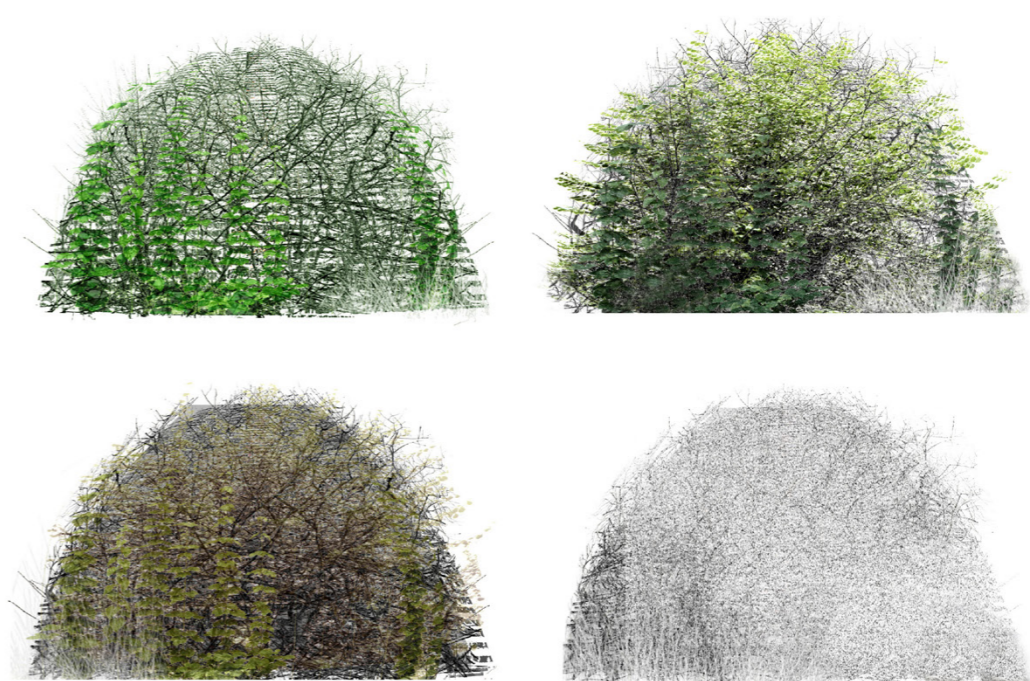
Following a seven-year design and construction period, the new Insectarium opened in April 2022.

Architecture and nature

The design of the new Montréal Insectarium closely integrates the building with the surrounding botanical garden while providing astonishing experiences for visitors, a comfortable workplace for Insectarium staff and, most importantly, safe and sensitive environments for its insect inhabitants.

The architectural and museological philosophy of the project is built upon detailed analysis of 400 years of museums, orangeries, greenhouses and other architectures for the categorization and display of the natural world. From the development of botanical gardens as part of medieval monasteries, through the opening of the Ashmolean Museum in Oxford in 1683, the advancement of greenhouse technologies for the 1851 Great Exhibition in London and on to the large scale experiments of Biosphere 2 in Arizona, there exists a rich history of structures and designs for the control of nature. However, this history cannot be separated from the history of exploitation and transformation of the environment.

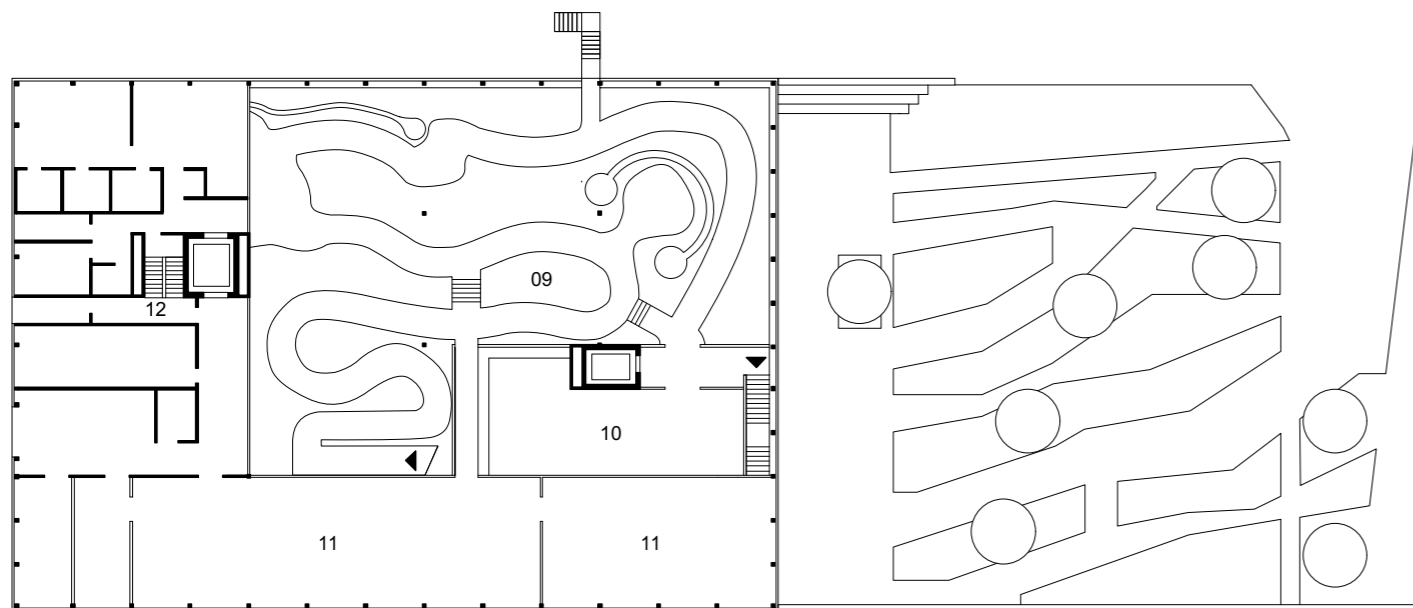
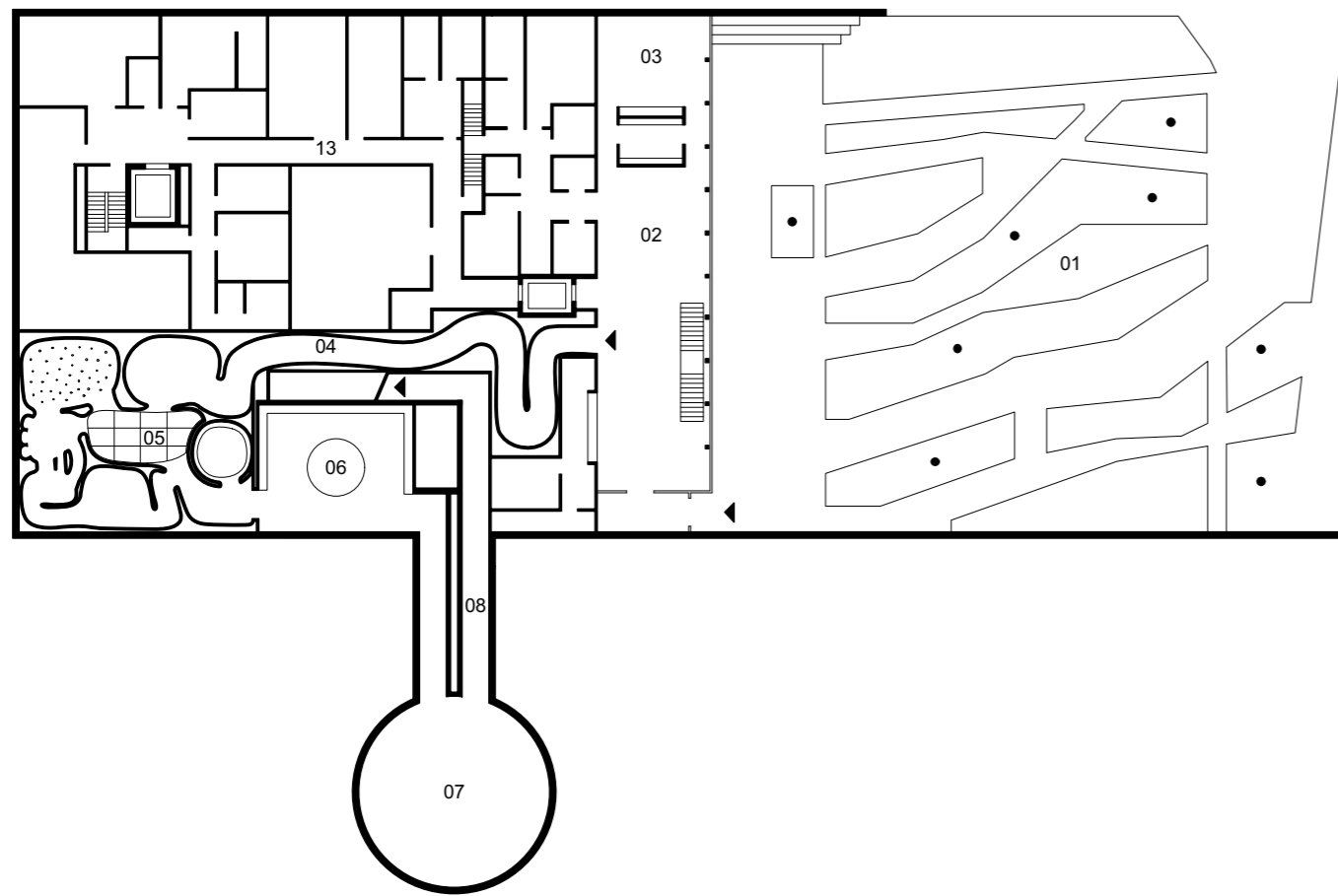
Acknowledging the destructive history of this conceptual separation between humans and other natural life, the project's design subverts museological norms and expectations. Unlike museums designed to contain changing exhibitions and displays, the Insectarium's curatorial concept and its museological expression are held in the very architecture of the building. The precisely choreographed route through the building dissolves the divides between the human and the natural with barrier-free displays and immersive sensory experiences.





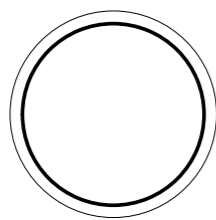
When first approached on foot, the external architecture of the Insectarium is visible through three archetypal structures that communicate a light touch construction process with integration into the pre-existing landscape of the botanical garden. A walled pollinator garden serves as a relaxing space of welcome

The garden slopes down to the base of a greenhouse – a familiar feature of the traditional botanical garden – which contains a central hall and living environments for live insects. Beyond the greenhouse, an enigmatic planted mound erupts from the surface. This cocoon-like dome holds the Insectarium’s collection inside.

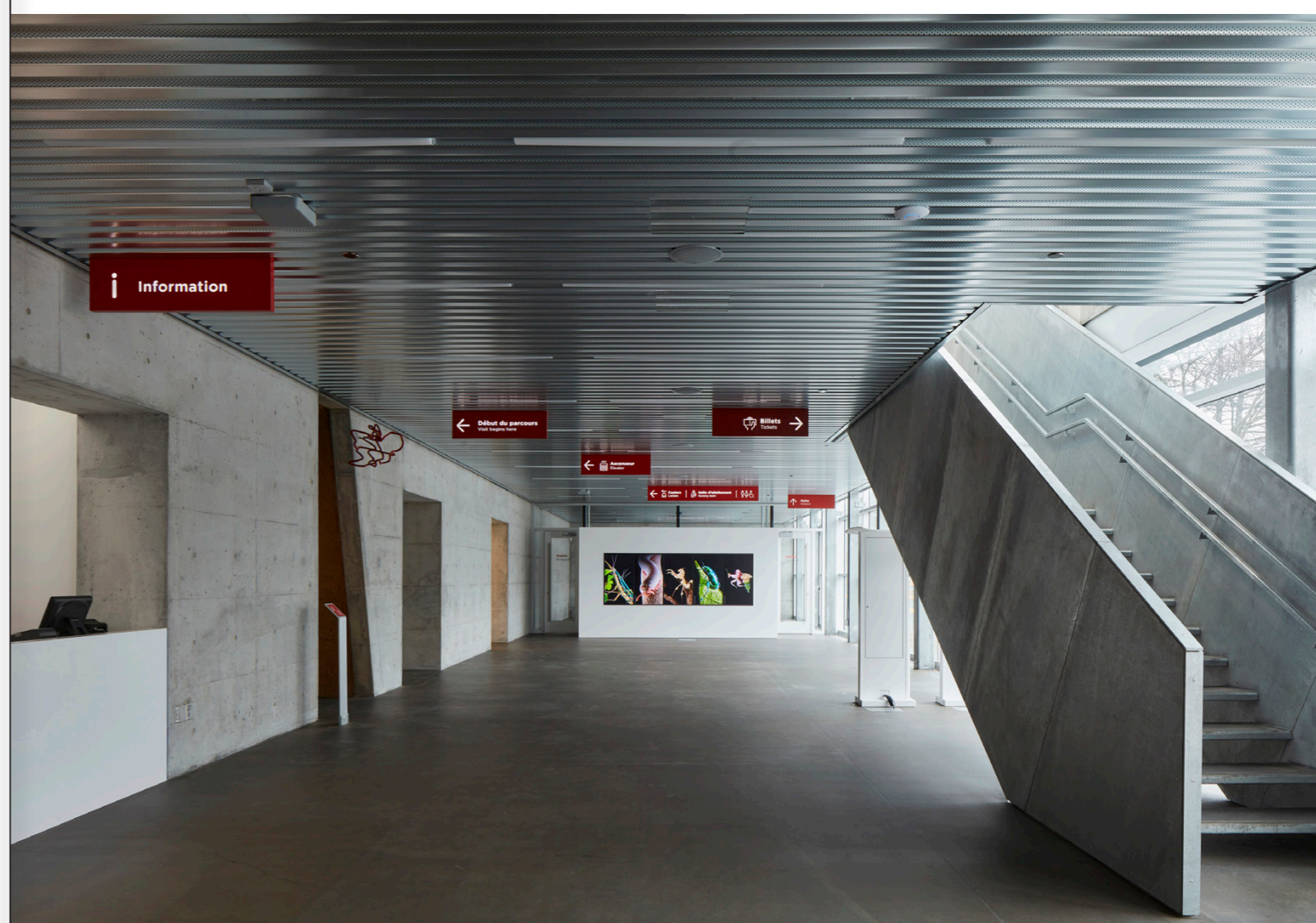


- 01. Pollinator Garden
- 02. Hall
- 03. Lunch area
- 04. Labyrinth
- 05. Alcoves
- 06. Tête-à-Tête Gallery
- 07. Collection Dome
- 08. Ramp
- 09. Grand Vivarium
- 10. Creative Workshop
- 11. Plant production
- 12. Laboratories
- 13. Technical spaces

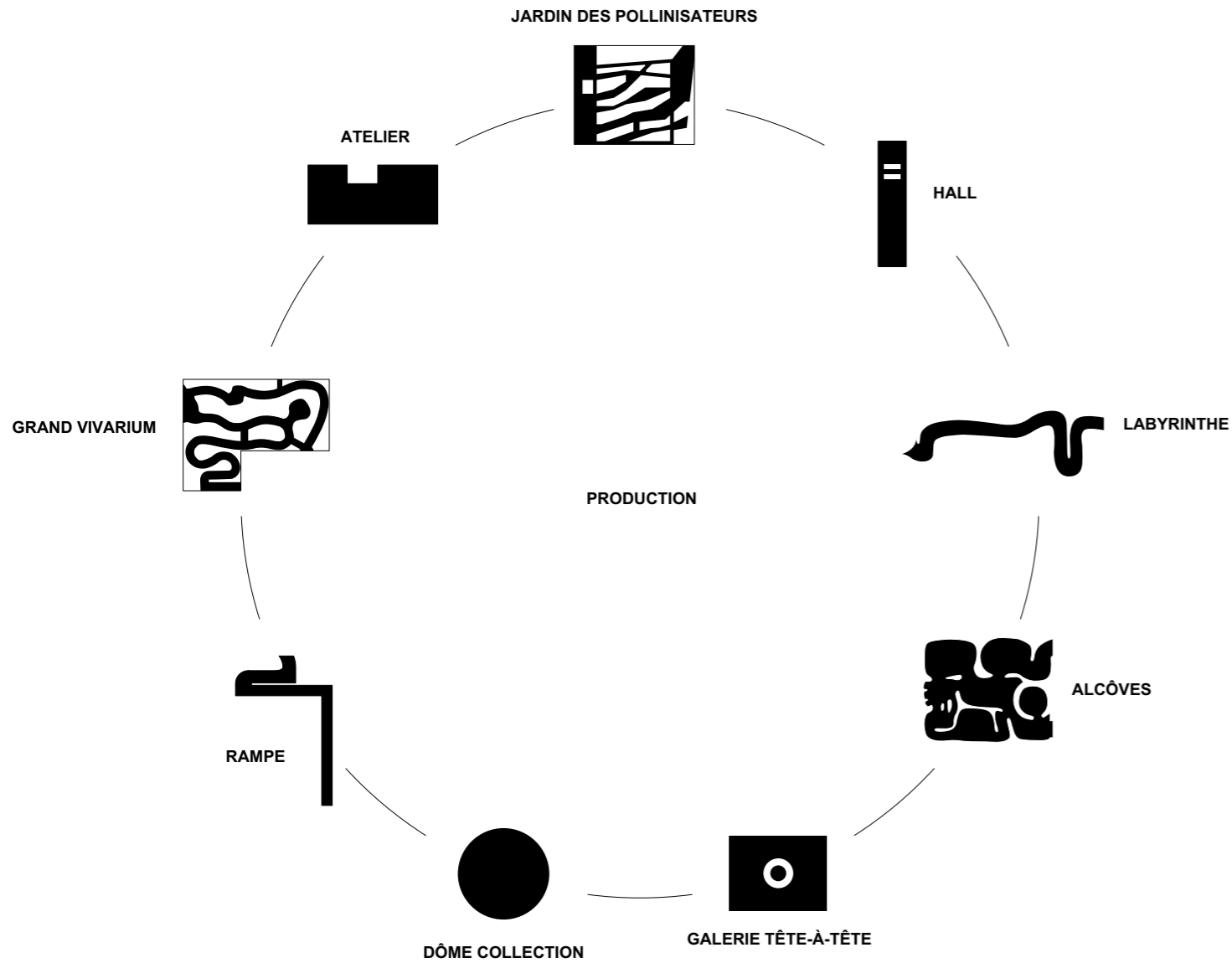
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Entrance Hall



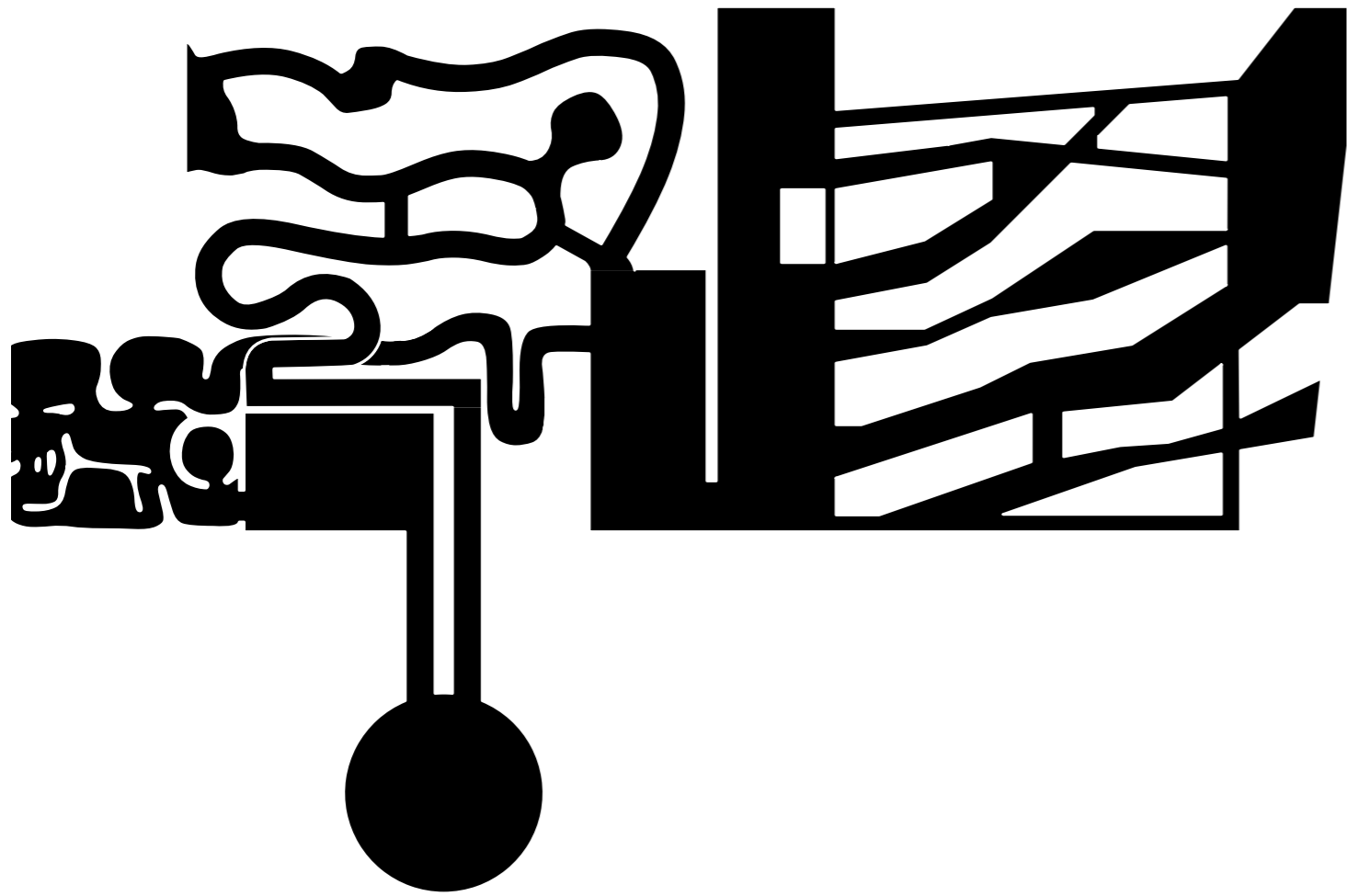
Production Diagram



Immersive experience

The Insectarium visitor's experience begins and ends with a promenade through the Pollinator Garden. The garden gently slopes down towards the Insectarium greenhouse; its sawtooth roof a prominent landmark ahead. This garden blurs the functional divide between the building's interior and exterior. Butterflies welcome visitors and provide them with their first encounters of insect life; encounters that will become transformed during the progression through the museum.





The Labyrinth

Upon passing through the entrance hall, the immersive experience of sensory metamorphosis begins. The Labyrinth takes visitors through a meandering path designed to disorientate; to signal a departure from familiar spatial environments and the entrance to an underground terrain.



The Alcoves

This shadowy and intriguing zone is comprised of six immersive Alcoves, each designed to disorient human senses in different ways and to mimic the sight, sound and movement of insects. *One eye, many facets* simulates the pixelated vision of a fly. The alcove contains a large screen made up of flickering pixels. The pixels reflect the room itself, creating an image that becomes clearer as the visitor approaches the screen, seeing themselves through the eyes of a fly.



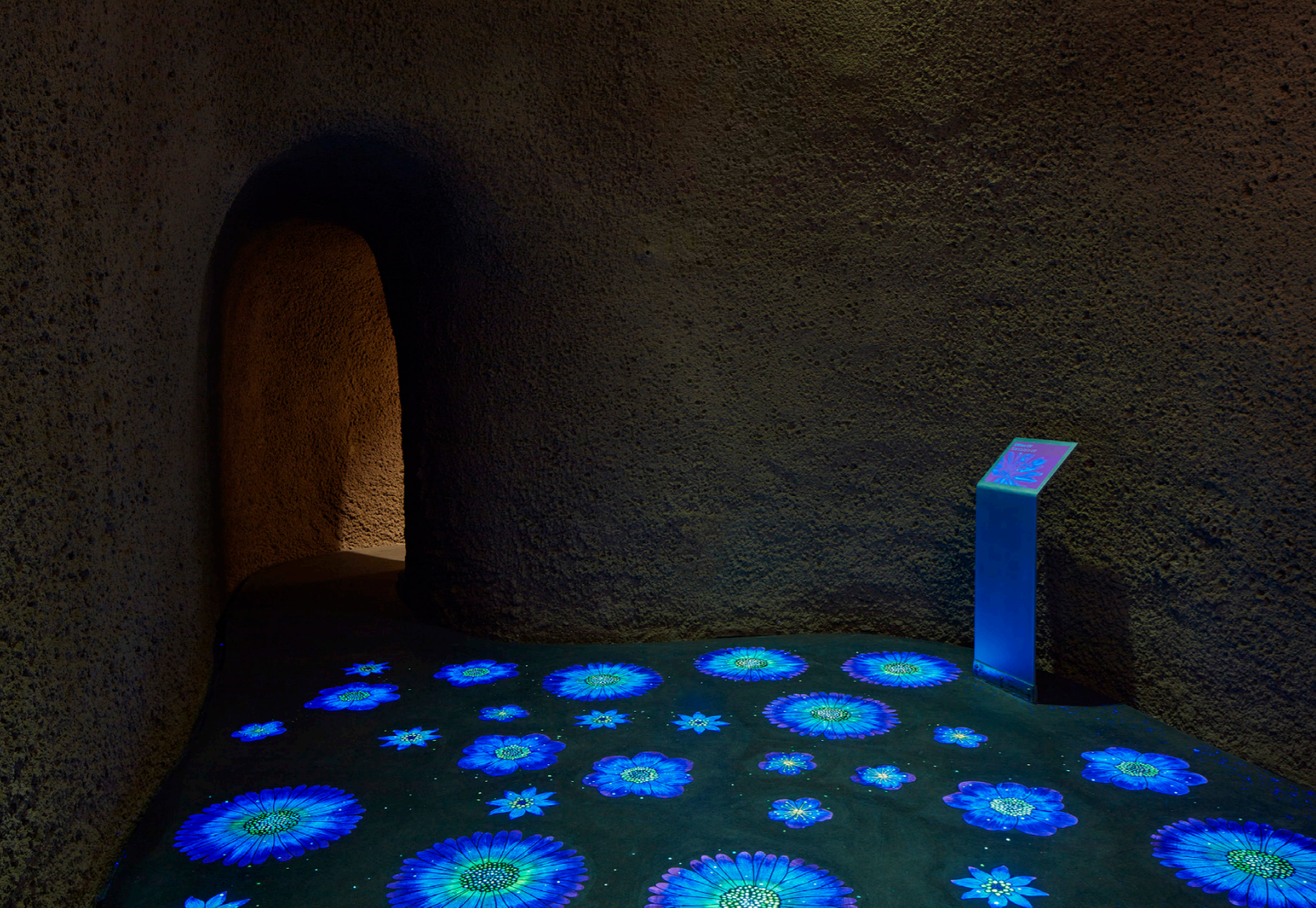
Good vibes amplifies the Alcove's vibrations to reflect the sonics of a grasshopper. Insect noises are turned into vibrations transmitted through a grated floor. Rather than simply hearing, the visitor feels the sonic vibrations in their whole body, just like an insect.



From blade to blade is a route of climbable sticks, requiring the balance of a gnat atop a leaf. Visitors are invited to experience the many strategies insects use to move on different surfaces.



Tight squeeze turns humans into cockroaches who must negotiate a tight squeeze. Inside is a sequence of passages that can be navigated by ducking and crawling, experiencing the ways an insect navigates its burrow and is able to deform its body.



The world in UV replicates the ultraviolet vision of a bee. Blacklight reveals the abstracted forms of floral patterns on the floor, their petals shimmering in ultraviolet.

Ceiling walk turns the world upside down. The entrance to the room seems inverted. In fact, the whole room is upside down, forcing visitors to walk on the ceiling and stare at the floor above their heads.



Having experienced sensory experimentation in the Alcoves, visitors finally meet living insects in the Tête-à-tête Gallery. Here, a bespoke vitrine fans out with six concave viewing boxes, allowing visitors to block out the exterior world and experience a close-up view of flying, buzzing, scuttling insects. The niches facilitate concentrated and immersive contact with the different species of insect; a contact that has been reformulated by the immersive Alcoves.



Chromatic collection

The Insectarium's collection is housed and displayed in a cavernous domed hall that erupts through the earth as a planted mound. On the minimal shotcrete interior, a wall of 72 framed displays shows the museum's extensive and unique collection of preserved insects unfolding across two horizontal bands. The presentation of these bands echoes the spatial and decorative effect of a frieze and, as with the ten-meter-high ceiling, gives the room a sense of ornamentation and grandeur akin to a classical religious space.

The first band is organized chromatically to display the extraordinary biodiversity and beauty of insects. The world of insects is synonymous with a colorful world: different designs, multiple shades and color palettes exist. The colors not only express extraordinary and splendid beauty, but also have an additional importance: by displaying showy colors, some insects attract their sexual partner for mating. In each section, insects of the same color are associated in order to amaze visitors with the diversity and richness of their physical appearances.



Gallery of evolutions

While at the first level of narration the biodiversity of insects is approached through an aesthetic lens, the second level explores the evolutionary success of insects through different themes, such as habitat and gender. Here, visitors learn that insects are specimens not only older than humans but also of greater importance for the planet. Thanks to their extraordinary evolutionary processes, insects now represent 85 percent of animal diversity; in a sense, the world belongs to insects.

The two levels have the combined effects of astonishing and educating the public.



The Grand Vivarium

Interspecies encounters

Re-emerging from the earthen textures of the underground, visitors enter the Grand Vivarium. This spacious, light-filled greenhouse features a gradually undulating route that progresses through a range of microclimates supporting the life of varying plant and insect species.

Many of the insects, such as butterflies and caterpillars, move freely in the space and can be observed without barriers: moving through the space, visitors see hundreds of colored butterflies and coleoptera fill the air and resting to feed on bushes of flowers. One display, the *cage d'urgence* allows visitors to watch butterflies hatching, before flying directly into the vivarium.

Elsewhere, giant beetles and giant centipedes are presented in glass vivaria that are integrated into the botanical landscape of the Grand Vivarium. Alongside the winding path, trees with long and intricate branches are occupied by leafcutter ants which travel back and forth quickly from their nests, carrying immense leaves, blossoms and sources of food.

The experience of strolling up and down the greenhouse touches all the senses. It allows for a full immersion into the different habitats of insects, instilling an awareness of the complexity of their ecosystems and of the importance of preserving them.



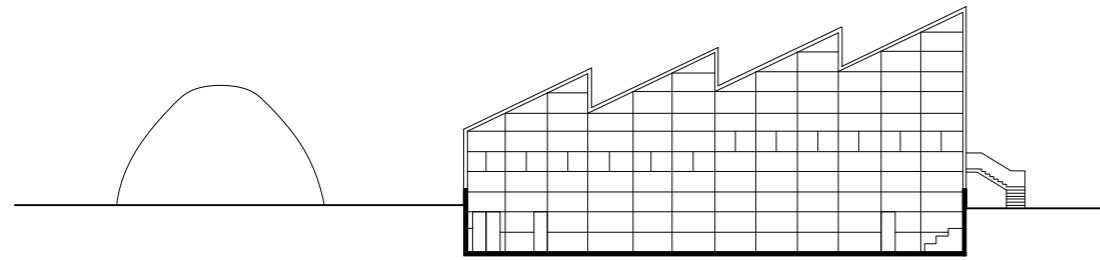


The Creative Workshop

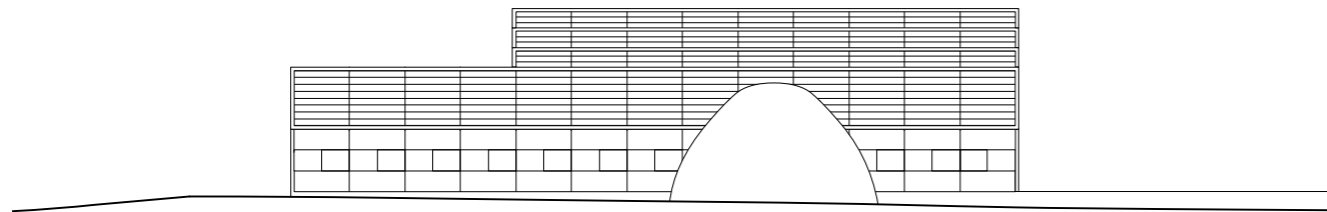


Laboratory

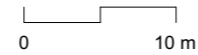
At the center of the greenhouse building is the Creative Workshop, a glass-walled space allows for views into the Grand Vivarium and the production area and beyond the Insectarium towards the botanical garden outside. The layout of this space is deliberately open to a multiplicity of uses: it could host tables and chairs for hands-on scientific experiments; educational workshops; discussions, lectures, film screenings and performances. There is always something going on, giving everyone a chance to participate in their own way, and to engage with the richness of the Insectarium.



Eastern Elevation



Southern Elevation

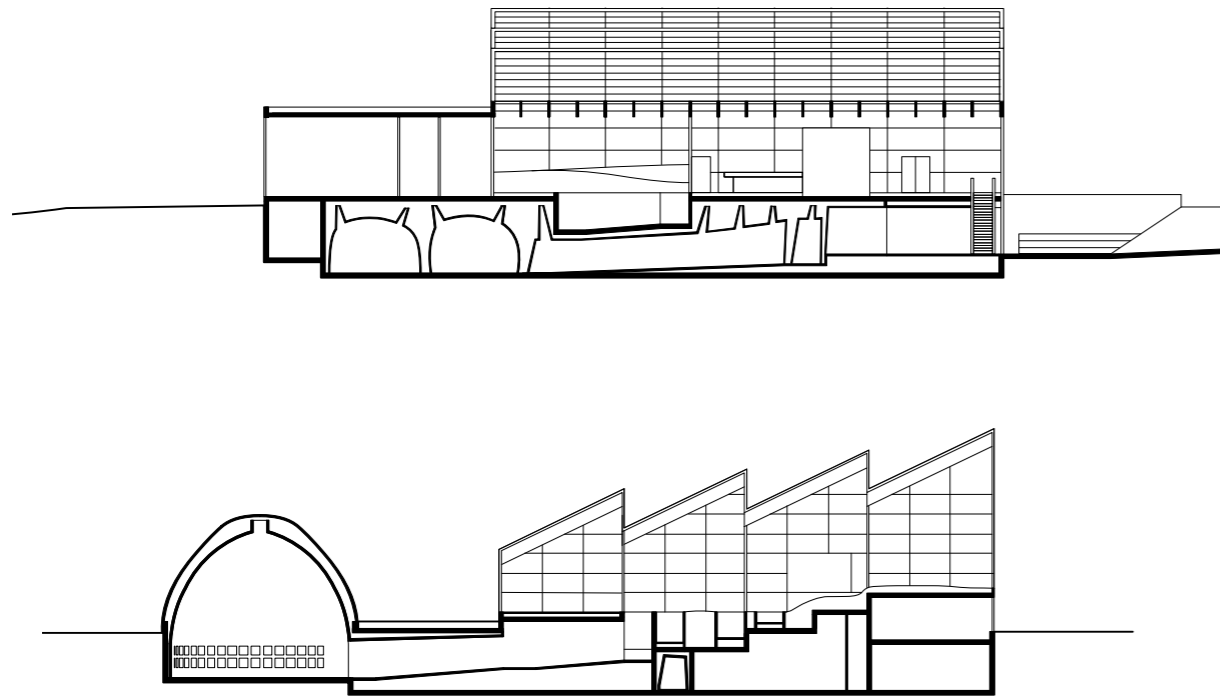


Southern Facade

Bioclimatic Building

In order to make the building symbiotic with its inhabitants and visitors, the Insectarium incorporates several bioclimatic and sustainable development principles.

The stepped shape of the greenhouse volume is naturally oriented towards the south and allows the production greenhouses, the large vivarium and the workshop to benefit from maximum sunshine throughout the year. Dynamic control systems, usually used in commercial production greenhouses, continuously adjust bioclimatic parameters such as solar gains and natural ventilation. Textile shades placed right under the envelope can be deployed mechanically in order to both limit the entry of light during the summer and insulate the greenhouses to limit heat loss at night during cooler months. Motorized louvers strategically placed in the curtain wall allow effective natural cross-ventilation.



Cross Sections

Valorize the resources

In addition to the glazed greenhouses and laboratories above ground, a significant part of the building's functions are placed below ground level. These functions are either exhibition or technical spaces and therefore do not require natural light. By placing them underground, we take advantage of the thermal mass of the earth to stabilize temperature variations and maximize the buildings insulation. Furthermore, advanced mechanical systems allow the recovery and redistribution of a large part of the heat generated in the greenhouses to heat the rest of these building. A range of additional systems such as textile shades, motorized louvers geothermal wells, roof water recuperation and the use of local, sustainable, VOC-free materials support the building's bioclimatic approach and make the Insectarium a truly sustainable building.



Landscape: Wilfried Kuehn (Kuehn Malvezzi) and Marc Pouzol (atelier le balto) in conversation

Wilfried Kuehn

The design of the insectarium began as a competition in February 2014, not with the architecture alone, but simultaneously with the landscape. Initially we met almost daily and developed the idea of a built landscape using room-sized models and plans. From a series of experiences along the visitor's path, the built landscape condensed from a number of small gardens and greenhouses into what is now a built reality: a larger, recessed garden, a single voluminous greenhouse, and a mound on the south side, all situated in the middle of the Botanical Garden. This enigmatic mound is the only element that is at first unusual, whereas the greenhouse is something you expect to see, that belongs to a Botanical Garden. The same is true of the garden, which is rich in plants, although its low position makes it less visible at first glance.

Marc Pouzol

I would say that we did not start with a plan, but with a large rectangle, and we always based the route, the parcours with multiple stations as specified by the client, on this rectangle. At some point we realised that it took up too much space, so we lowered the garden by three metres and made the stations freer, more like a volume. The visitors are led down into the dark and up again to the light-filled space, and benefit from the complexity of the different levels. What we like about this result and what makes it special, is that the garden can be experienced twice. It is not positioned in-between or even in the middle of the route as originally intended, but forms the first and the tenth station, the beginning and the end of the route. For me, this is the most beautiful answer to the question of where plants should be, as food, but also as a habitat for insects, to multiply, live in or to provide a place for metamorphosis. All of this happens in the garden, which is why the plants are selected not for decoration, but primarily for the insects. That was, and still is, an exciting task for us – the test on a 1:1 scale can start in this first season.

Wilfried Kuehn

The garden is not only outside, but also inside. In fact, the whole insectarium is a garden or a sequence of gardens. The lowered garden is the one outside. In the warmer seasons, the monarch butterfly has its home in Montreal and settles here, but leaves Canada in the winter and flies to warm Mexico. In the winter everything takes place in the garden inside, in the bright greenhouse, which like

a large aquarium, emerges from the dark autumn-winter fog. The greenhouse is heated and has an artificial nature. It is supplied by the production facilities situated in the south-facing greenhouses, where the plants grow throughout the year. The large butterfly garden inside, where the butterflies fly freely all year round, is the counterpart to the garden outside. Finally, there is the mound, which is a museum rotunda where the fascinating insect collection is on display. The mound is a distinctive piece of architecture that originates from the classical idea of the cupola. The dome is recessed, and the building is underground with only a section of the dome peeking out – it is not a proud architectural gesture that stands out as a landmark in the landscape. Instead, a mound of earth erupts from the grass like a large tumulus that also becomes part of nature again. It is covered in plants that provide various habitats for insects, but its artificial form is nevertheless a reference to the museum space below.

Marc Pouzol

I think a very strong aspect of our collaboration is that we always question the conventional program that is prescribed, and almost in a systematic way. As a result, we often invent unexpected spaces or landscapes. An example of this was our idea to make the production of the plants visible to the visitors. Initially we wanted it to be accessible to the visitors as well, which was then not possible due to the climate and the insects. However, it did lead us to think of the production hall as an exhibition space, which works very well. For me it is more interesting when vegetable and utility gardens are not a function hidden away, but are present and visible. They are part of this landscape, after all, like the insects and visitors. These gardens are active and generate pleasant spaces that fit in with the whole landscape. They are an important part of our route. The program asked for several stations and we thought of the plant production as one of these stations, thus creating a landscape that contains different moments and actions that do not simply follow each other, but are merged together and become one entity. Our original route, the rectangle, became a long labyrinth of sorts.

Wilfried Kuehn

I recall that in the first stage of the competition, the central production gardens were visible during the parcours. The visitors had continuous contact with the greenhouses and could see where the gardens were being prepared for the insects. There

was always a kind of transparency between the museum perception and the «backstage situation» of production. We had this pronounced path in the middle that was internal and the path of the audience that was O-shaped around it. And in the space in-between, between the strong spine in the middle and the O-shaped path of the audience, were the greenhouses. It quickly becomes apparent that the labyrinth is a dark place that leads underground. In the greenhouses, on the other hand, the plants want to be in the light. This is how our design evolved to its final version, in which the greenhouses, where the production of the plants takes place, are situated above the labyrinth. The visitors follow a path that drives them further away from the outside perception and into an increasingly extraordinary world: a subterranean, artificially lit world that corresponds to the insects' underground existence. This labyrinth is condensed and folded in on itself to become a lengthy, intertwined path in a narrow space, similar to the classical Cretan labyrinth. When one slowly winds out of this inner coil, one ascends to reach the butterfly garden in the large sun-lit greenhouse. Here, the metaphor or perception is also from light to dark and back to light. The visitor goes through a kind of initiation. This oscillation also takes place in the material: below ground, shotcrete prevails, an earthy material that confirms the concave, hollow space that functions like a walk-in sculpture and paves the space for movement. Above ground is a simple greenhouse made of galvanized steel and aluminum, all surfaces raw and unpainted, almost like a readymade. And then there is the architectural level of concrete, which separates the inside from the outside in the foyer, the underground from the aboveground, and which also separates the pollinator garden from the botanical garden by cutting into the earth like a sign in the landscape. In contrast to the raw materials, we find the creative workshop in the very center of the building. After completing the route you enter this workshop space with tables, chairs, a kitchen-like workbench. All of this is lacquered white and has the character of usable equipment that are familiar on a tactile level, and which we also have in the foyer. Here the visitors can be active themselves, this is a moment of activity and events, and there is (as an exception!) an architectural extension level. But here too, the visitors are the focus, and not the architecture.

Marc Pouzol

It is the same in the garden: there are paths that float a little, they flow logically to the entrance of the Insectarium. In between are the plants, and the visitors move along the network of paths. They look at the variety of vegetation, stoop to meet them or take a seat on the large benches. In our gardens – perhaps especially in the gardens or open spaces

that we develop with Kuehn Malvezzi – the visitors are an important element for us, they are nearly part of the composition. Especially in the Insectarium, which will probably attract a lot of visitors, they bring colour and life by interacting with the garden. This is also the case in your indoor garden where visitors must even take care not to step on a butterfly that is flying around freely in the greenhouse. Our garden gives a sense of freedom. Every season it will attract different insects. Like the paths, we wanted the gardens to float and flow a little, and not be too structured.

Wilfried Kuehn

The architecture is also conceived in such a way that it does not start from the object, but from the people moving around. That is, there are stages of perception like in a film that one subjectively edit when moving through it, as a physically experience: in ascending and descending, crawling in and coming out again, in the narrow corridor and the dark corridor, in the bright space and the large space, in the enclosed and the open space. All these are experiences that one makes – the architecture is in fact performative. As an object it recedes and doesn't have such a strong form, even though it has this iconic jagged edge that it presents to the outside. It also has this ascending landscape theme that gives it a certain presence. Yet it is not primarily iconic, or solitary, or sculptural, but is instead in a serving role. And what is at the core of it, and what you can also sense through the facade, through this rise – the cross section is very beautiful, the rising section from the museum below the dome, very low down on the left towards the top on the right so to speak, at the pollinator garden – is actually an inclined landscape like a sloping vineyard that you ascend slowly. That is the visitor's perspective, which in the end makes it possible to experience the museum as space. In this respect, the architectural concept corresponds to the landscape concept and learns from it: movement and time are the decisive criteria for spatial perception, and in the end the whole building can be experienced like a garden.

Marc Pouzol

I find the concept of time very beautiful here. After all, the garden is never finished. The trees, which are still very discrete, will gradually enter into a dialogue with the – I don't say facade, because it is actually much more than a facade, it is almost more of a landscape setting. So 'time', I think, is a very strong factor in all our projects. It will certainly take a few years for the dome to slowly acquire this «couverture vivante», this living envelope. This time factor is essential for both the visitor and for the theme of the insectarium.

Wilfried Kuehn (Kuehn Malvezzi) and Maxim Larrivéé (director, Insectarium Montreal) in conversation:
On museology and a biophilic approach in planning the insectarium.

Wilfried Kuehn

At the insectariums' opening event, you spoke of biophilia, and I know you very much cherish the term. Anne Charpentier, the previous director whom we both worked with when we started the process, also used it. There is a book by Edward O. Wilson with the same title and it was also used extensively in the competition brief. It is a neologism, at least in the architecture world it is something that you hear of very rarely.

Maxim Larrivéé

Biophilia was brought to the project because the intent in the brief was to metamorphosize the relationship of the visitors and their emotional relationship with insects. The premise behind the biophilia hypothesis is as follows: it is any adaptive behavior that was useful for humans' or primates' fitness over the last 10 million years. When this behavior is recreated in an industrialized civilization, it creates a sense of wellbeing. It was a behavior that was useful for our survival prior to industrialization, and it was reinforced over time. In order to change the visitors' relationship to insects and to nature, we wanted to build a museum that would maximize the conditions and the chances of the visitors to be in a biophilic state.

For example, conditions such as going underground would connect people with their more primitive emotions. Through the diversity of shapes, forms, colors, connections, you distance yourself of individuality when connecting with other living organisms. In following the route through the insectarium, there is something that emerges that is related to our primitive instincts – in the Tête-à-Tête Gallery and then progressively in the Dome where we encounter the astonishing diversity of the insects.

This allows you to be in a posture, or frame of mind, to start appreciating and change your relationship to the insects around you, and see them as your kin. Ultimately we are all kin, we all come from Eukaryotes cells and we share the same DNA. This understanding that humans have brothers and sisters that look different, is something that we can push further and it is in part the intention of the museum. From there on we have the resources to nurture this biophilic and entomophilic perception and will extent this to programs and projects that transcend the walls of the museum so that this could manifest in society as well.

Wilfried Kuehn

It is interesting that you use the visitor's parcours to evoke entomophilic perception, in a way suggesting that the spatial experience is already part of this feeling of kinship. However, humans tend to have a hard time thinking of insects as kin, not least because they are of a very different scale and at times appear to be dangerous.

Maxim Larrivéé

Certainly, we fully understand that the majority of the population will not fall in love with insects, but the goal is to foster respect for them, to value the services they render and appreciate their role in our shared ecosystems. People should understand how important they are for our well-being and prioritize them in society as much as anything else. This notion of kinship lies outside the bug that stings you – which is normal to kill – but refers to how we are mutually essential to each other for our shared well-being. However, biophilia maintains an anthropocentric perception of nature.

Wilfried Kuehn

This is true and I wanted to challenge the notion of biophilia in terms of being anthropocentric. The museum, with the insectarium as part of that museum culture, is where humans look at things and no one looks at us. There is no reciprocity, but an asymmetric relation. Wherever we intervene as architects, we are very aware that defining spaces means dealing with power. It is our task to advocate for the ones under-represented or those not in charge. This led us to the question of the insect as part of the spatial experience and to make sure that they have an environment and a habitat also within the insectarium that does not violate them in any possible way and does not treat them as objects.

Maxim Larrivéé

Museums strive to become agents of change in society, more and more, beyond being a space where you learn. In this case, in the hopes of becoming an agent of change in society, we first need to embody what we are proposing. For the insectarium and its metamorphosis, one essential premise was that the space we were going to build would be one where the insects are presented and cared for in the most ideal living conditions possible. We wanted the insects to have the best living conditions, while at the same time reflecting

and maximizing a way of being and environment that we hope society would eventually become. Those elements were essential for the message we want to convey once the museum is open.

Wilfried Kuehn

The museum was planned 7 years ago, with a long period leading up to that where you worked closely with entomologists, the experts in life science, as well as with museologists and educators.

Maxim Larrivéé

This initiative was led by Anne Charpentier and she was the pillar and a visionary in this approach. In order to dream the museum of the future for insects we used a co-design approach, that not only had people from the insectarium and Space for Life involved, but also creators from around the world. We met creators once a month for more than a year. International partners such as Stephen Keller, who was co-editor of the biophilia hypothesis with Edward O. Wilson, contributed to the integration of the biophilia concept into the cultural project that led to the architectural brief. This co-design approach really established what the museum needed to be in order to metamorphosize the relationship of visitors and allowing them to understand the processes that led to the displays and the embodied experience. It was instrumental to build the brief with clarity and coherence, so that it could be taken on by the architects, and eventually we could continue with the co-design for the following 3 years.

Wilfried Kuehn

The competition brief was very complex and unusually long. It included many attachments of workshop results, and an amazing amount of material had been produced prior to the competition in order to inform it. This is not something that you encounter very often, and the competition was not only for the architecture of the museum, but for the architecture and the museology at once. You could choose to team up with a museologist or you could be architect and museologist in one agency like we happen to be. For us it was an incredibly beautiful challenge, because we felt this was a rare chance to really conceive the architecture based on the museology and the museology based on the architecture, and all this together with landscape architects as well.

Inside and outside were coming together through a landscape approach, because it is situated in a botanical garden and we treat nature, and not art, as the core issue. It was an astounding challenge for us, and we loved taking part in the competition. I remember we started it with Marc Pouzol of atelier le balto coming to our office every day for some weeks. We started with a huge model and we were building and cutting and planning together with a landscape

architect from day one, forming the building like a big landscape.

What is interesting to me is that the museum looks quite different today than what we came up with in the competition phases. Due to budget constraints it is much smaller, but it still has the same idea, and that is quite interesting. We developed the concept through this big playground, and it could be shrunk several times and still totally hold the idea of the very first model.

Maxim Larrivéé

Yes, at the core was the experience that we wanted the museum to deliver, through the museology, to the visitor. And those concepts, the progression through the parcours, despite changing lengths, distance and the number of experiences in each section of the museum, could retain its essence despite shrinking. The biggest strength and the unique aspect in the museum is the coherence and how deeply integrated the architecture, the museology and the message in the visitor's experience are.

Wilfried Kuehn

As it takes two to tango, the client and architect need to work together on this, and you cannot really make any decisions if you are not completely together also in the shrinking process. I remember it was also very difficult at times.

Maxim Larrivéé

We had a great working relationship, and as the architects you were always willing to compromise and adapt. I'll always remember one morning where we requested one change and it was you in particular who said 'no, we will not do this, if we do this, we lose the essence of the project and this is not going to happen.' We challenged a little bit, but still you resisted. And then we accepted it, we reached the limit of what we can ask. I also understood it as a stance of respect of each and everyone's expertise. Often it happened from the other end, where we would agree that something works architecturally, but we are not able to present live insects in this context, so you went back and adjusted everything. It was these numerous iterations and reductions that ensured that everything, from the visitors experience to the conditions into which insects were presented, was optimized.

Wilfried Kuehn

Apart from the mutual respect you mentioned, for us it was of particular value that we were not facing a committee that were just doing the exercises in numbers and checklists, but that we were working directly with those who were providing the content. The Insectarium as the user was also taken seriously by the city of Montréal, the client. This also seems an important fact.

Maxim Larrivé

Interestingly enough, because of the co-design approach, the technocrats were involved within the realm of their expertise, and became attached to the project as something that they cared for personally. They wanted it to happen and they wanted it to be the best because of their level of involvement, as project managers or engineers, had a personal touch to it that normally they don't see. We even had people that came and went from the project but always returned to see how it was evolving. I think that is a testament to the co-development, the co-design approach. The strength of the group becomes greater than the sum of the parts, as the classic metaphor goes, but in this case it really made a difference.

Wilfried Kuehn

In line with what you call co-design, I think as designers we must become more curatorial in our approach. We should think of ourselves less as generalists directing an orchestra of specialists and more as being curators who invite in other artists or subjects who then together make the exhibition work. For me an exhibition or design is on the same level, it is a form of decision-making with multiple authorship, or the interface between a subjective process and a public appearance, coming into being. Let us look from here to the future and ask how a place like this can evolve. We talk about evolution, we talk about process, we talk about how to destabilize our human perception. At the same time, the museum has been built and it is here to stay. It is not a temporary building, it is not a pavilion, it has an ecological footprint, that needs not simply some justification or greenwashing, but it needs a perspective of growing, evolving, and adapting. What are your thoughts in this regard?

Maxim Larrivé

The strategic development started a year and a half before the opening, when in alignment with the whole concept we work in co-design to imagine how this museum would evolve and come to life once we would open. Again we worked around the biophilic approach. I realized, through the metamorphosis metaphor of the visitor's relationship visitors to the insects, we were going to focus on the emotions of the visitors and how would we integrate this into our programs, but also to our processes and to our way of working inside of the museum. With this biophilic towards entomophilia approach, the whole co-design method was about what lies underneath entomophilia, how can we foster an entomophilic posture and nurture it so that it transcends the walls of the museum into society, we become an agent of change and build an entomophilic and biophilic society.



PROJECT CREDITS

Client: Space for Life (Espace pour la vie), Montreal

Location: 4581 Rue Sherbrooke Est, Montreal,
Quebec, Canada, H1X 2B2

Surface: 3,600 m²

Construction Costs: CAD 33.26 million (including
museology and taxes)

Competition: 02.2014 – 07.2014

Design: 01.2016 – 09.2018

Construction: 04.2019 – 04.2022

Photo Credits: James Brittain

Key figures

In the Dome: 3,000 preserved insect specimens

In the Grand Vivarium: 175 species of living insects, 3,000
plants of 150 different varieties, up to 80 species of but-
terflies can be seen (160 different species in total during
the year) flying freely all year round, in an environment of
plants designed to encourage activity and longevity.



TEAM OF PROFESSIONALS

Architecture

Kuehn Malvezzi / Pelletier de Fontenay / Jodoin Lamarre
Pratte architectes in consortium

Museology

Kuehn Malvezzi, Berlin

Landscape architects

atelier le balto, Berlin

Electromechanical engineers

Dupras Ledoux, Montreal

Structural Engineers

NCK, Montréal

Civil Engineers

Genie+, Lévis

Sustainable Development Advisor

CIMA+, Montreal (LEED certification)

Indoor and outdoor signage

Kuehn Malvezzi with Double Standards, Berlin

Execution and site supervision for museology

La bande à Paul, Montreal

Scenographic and multimedia coordination

Go multimédia, Montréal

Special consultant for greenhouses

Capital Greenhouse, Thetford-Mines

Tree preservation

Nadeau Urban Forestry, Laval

KUEHN MALVEZZI

Simona Malvezzi, Wilfried Kuehn and Johannes Kuehn founded Kuehn Malvezzi in Berlin in 2001. Public spaces and museums are a main focus of their practice. Kuehn Malvezzi completed the reorganization of numerous art collections such as the Belvedere in Vienna, the extension of the Friedrich Christian Flick Collection at the Hamburger Bahnhof – Museum for Contemporary Art in Berlin, the Modern Gallery at the Saarland Museum and the Julia Stoschek Collection in Düsseldorf. Recently, they won the international competition for the redesign of the Bâtiment d'Art Contemporain in Geneva. Together with architects Pelletier de Fontenay and Jodoin Lamarre Pratte architectes, Kuehn Malvezzi was awarded the first prize in the international competition for the conversion and new construction for PHI Contemporary, a cultural institution in Montreal.

Sustainability and building with an awareness of social contexts and nature is a further focal point in their work. Within in a complex innercity site, the Oberhausen office building with integrated rooftop greenhouse combines the diverse functions of a public administrative building and sustainable food production to form a new urban nucleus. In the 14th district of Paris, Lot Petit - ZAC Saint-Vincent-de-Paul is a public housing ensemble situated in the urban fabric of a former hospital site. The interreligious House of One, to be built on the foundations of Berlin's earliest church, is another current project manifesting a complex intercultural context.

Prizes and awards include the Canadian Architect Award, nominations for the Mies van der Rohe Award and finalists for the DAM Prize for Architecture in Germany. Their work has been shown among others at the Venice Biennial, Manifesta 7, the Chicago Architecture Biennial and the Lisbon Architecture Triennale.

PROJECT REFERENCES

PHI Contemporary, Montreal, CA

Competition 2022, 1st Prize (with Pelletier de Fontenay and Jodoin Lamarre Pratte architectes)

Commission: PHI

Surface: 6 900 m²

Lot Petit – Zac Saint-Vincent-de-Paul, Social housing and commercial spaces
Paris 2019, Competition 1st Prize, Completion 2025

Commission: RIVP – Régie Immobilière de la Ville de Paris

Surface: 13 000 m²

Bâtiment d'art Contemporain (BAC) Geneva, Redesign of cultural center
Competition 2022, 1st Prize, Completion 2025 (with CCHE Genève)

Commission: Ville de Genève

Surface: 10 300 m²

House of One Berlin, Interfaith house of prayer and learning

Competition 2012, 1st Prize, Start of construction 2022

Commission: Stiftung House Of One – Bet- und Lehrhaus Berlin

Surface: 3 540 m²

Oberhausen administrative building with integrated rooftop greenhouse

Competition 2016, 1st Prize, Completion 2019

Commission: OGM Oberhausener Gebäudemanagement

Surface: 10 300 m²

Extension of the Moderne Galerie, Saarlandmuseum Saarbrücken

Competition 2010, 1st Prize, Completed 2017

Commission: Stiftung Saarländischer Kulturbesitz

Surface: 4 600 m²

Julia Stoschek Collection

Dusseldorf 2007

Competition 2005, 1st Prize, Completion 2007

Commission: Julia Stoschek

Surface: 4 350 m²

Friedrich Christian Flick Collection

Extension of the Hamburger Bahnhof – Museum for Contemporary Art, Berlin

Completion 2004

Commission: Stiftung Preussischer Kulturbesitz

Surface: 10 480 m²

PELLETIER DE FONTENAY

Established in 2010 by Hubert Pelletier and Yves de Fontenay, Pelletier de Fontenay is an architectural practice based in Montréal. The office has quickly gained a reputation for excellence in designing contemporary public buildings and is currently working on projects for museums, schools and libraries.

Pelletier de Fontenay has won the international competition for the LOSBATES school near Prague, the Montréal Insectarium, a project in partnership with the Berlin agency Kuehn Malvezzi and Jodoin Lamarre Pratte architectes. Locally, the firm won the Lab-École Shefford competition and the Sanaaq community center in downtown Montréal. Recently, they won the competition for the Montreal art institution PHI Contemporary, also in partnership with Kuehn Malvezzi and Jodoin Lamarre Pratte architectes. The agency's work has also been highlighted by the awarding of major prizes, including the Architectural League prize, one of the most prestigious recognitions for emerging architects in North America.

The studio is particularly interested in the relationship between abstract concepts in architecture and their material embodiments. This approach, born of a double fascination for form and construction, is deepened by an involvement in teaching and research. Parallel to their practice, Pelletier de Fontenay pursues research projects in architecture including the Invariations project, an abstract creative exploration of the fundamental principles of architecture and Architectures de la Nature Captive, a project examining the relationship between the built and the living.

PROJECT REFERENCES

PHI Contemporary, Montreal, CA

Competition 2022, 1st Prize (with Kuehn Malvezzi and Jodoin Lamarre Pratte architectes)

Commission: PHI

Surface: 6 900 m²

Lucy-Faris Library, Gatineau, CA

Competition 2021, finalist

Commission: Ville de Gatineau

Centre Sanaaq, Montreal, CA

Competition 2020, 1st Prize, Start of construction 2022

Commission: Ville de Montréal

Surface: 5 000 m²

Théâtre du Nouveau Monde, Montreal, CA

Competition 2020, Finalist

Commission: Théâtre du Nouveau Monde

Lab-École, Shefford, CA

Competition 2019, 1st Prize, Start of construction 2022

Commission: Commission scolaire du Val-Des-Cerfs

Surface: 4 500 m²

Agora des Arts, Conversion of a church, Rouyn Noranda, CA

Invited competition 2018

Commission: Agora des Arts

Lošbates School Center, Primary and Secondary School, Prague, CZ,

Anonymous International competition 2018, 1st Prize, Start of construction 2022

Commission: Lošbates Union

Surface: 10 800 m²

Place-des-Montréalaises, Montreal, CA

International competition, finalist, 2017-2018 (with Bureau Bas Smets)

Commission: Ville de Montréal

Surface: 100 000 m²

Centre d'Artistes Est-Nord-Est, St-Jean Port-Joli, CA

Invited Competition 2017

Commission: Est-Nord-Est

JODOIN LAMARRE PRATTE ARCHITECTES

Jodoin Lamarre Pratte architectes devotes its practice to the design of architectural projects for the community — mainly in the institutional fields of healthcare, transportation, education, research and culture— as well as the realization of large corporate and governmental projects. The firm works towards the conception of a human, sensitive, intelligent architecture that respects its environment, combining creativity, knowledge and innovation. It values the diversity and complementarity of the skills and expertise of the members of its large team and perpetuates a culture of collaboration, inclusion, integrity and thoroughness.

It is in this spirit that the firm work with their clients and partners to create sustainable buildings. Sustainability manifests itself holistically in all aspects of the building, whether it is flexibility of use, durability of systems, overall energy performance, ecological footprint of materials, quality of living environments, integration of the building with its environment, or resilience to climate change.

Recipient of over 165 awards of excellence and distinctions in architecture, the firm has repeatedly demonstrated its ability to design and build projects of high architectural quality. Founded in 1958 by Bernard Jodoin, Denis Lamarre and Gérard Pratte, Jodoin Lamarre Pratte architectes is now a team of over 130 architects, technologists, technicians, designers and other professionals under the direction of Julie Boucher, Michel Broz, Catherine Demers, Martine Gévry, Sylvain Morrier and Nicolas Ranger.

PROJECT REFERENCES

Centre intégré de cancérologie (CIC), CHU de Québec-Université Laval, Québec City, CA
Completion 2021
Commission: Québec-Université Laval
Surface: 30 200 m²

Final phase of the new CHUM hospital complex in downtown Montreal and Pierre-Péladeau Amphitheatre, CA
Completion 2021 (in consortium)
Surface area: 73 750 m²

REM station at Montreal-Trudeau International Airport, CA
Commission: Aéroport international Montréal-Trudeau, Dorval (Québec)
Under construction

Montreal Museum of Fine Arts' Michal and Renata Hornstein Pavilion for Peace
Concours 2013, 1^{er} Prix, Completion 2016
Commission: Musée des beaux-arts de Montréal
Surface: 4 000 m²

Pôle culturel de Chambly, CA
Competition 2016, Completion 2019 (with Atelier TAG)
Commission: Pôle culturel de Chambly
Surface: 3 250 m²

Theatre Gilles-Vigneault, Saint-Jérôme, CA
Competition 2014, 1st Prize, Completion 2017
Commission: Ville de Saint-Jérôme
Surface: 3 540 m²

Transit Passenger Center at Montreal-Trudeau Airport
Completion 2020
Surface : 5400 m²

Critical Care Pavilion of the Jewish General Hospital, Montreal, CA
Commission: Jewish General Hospital
Surface: 85 000 m²

Collège Saint-Louis, Rehabilitation of a school building, Lachine, CA
Completion 2013 (with Marosi Troy Architectes)
Commission: Collège Saint-Louis
Surface: 13 300 m²

ATELIER LE BALTO

Created in Berlin in 2001, the team of atelier le balto is composed of four landscape architects who also have an education in gardening: Véronique Faucheur, Nil Lachkareff, Marc Pouzol and Marc Vatinel.

Considering the art of gardens in the same way as painting or choreography, they insist on the fact that a garden is not a fixed image. In their works, if the architectural design is particularly present in winter, a certain exuberance expands throughout the summer. The further development of the garden by a professional gardener is then essential. After having created their first garden for the Kunst Werke - Institute for Contemporary Art in Berlin and then for the Palais de Tokyo in Paris, they have worked for many other places dedicated to art and culture. Among them: the Ludwig Forum in Aachen and the Villa Romana in Florence. In Berlin their latest creation is the Jewish Garden in the Gardens of the World. In cooperation with Kuehn Malvezzi, they designed the Vertical Garden of the Job-Center in Oberhausen. Currently under construction is, among others, the urban park Jubileumsparken in Gothenburg, Sweden. Recently, Akademie der Künste awarded atelier le balto the Kunstpreis Berlin 2022 in the 'Baukunst' section.

PROJECT REFERENCES

Jubileum Park, Gothenburg, SE

Design of a large part of the public spaces of a developing district on the site of the former industrial port of Gothenburg

Completed 2021

Commission: Göteborgs stad

Nachbarschaftspark Wuppertal, DE

Realization of a public park for gardening activities on a series of terraces for cultivation

Commission: Stadt Wuppertal

Completed 2021

Project initiated and supported by the Montag Stiftung Bonn

Vertical Garden Oberhausen, DE

Vertical Garden connected to an office building

Completed 2019

Commission: Stadt Oberhausen

Forêt et Cueillettes Paris, FR

Creation of a temporary garden for the Musée de la Chasse et de la Nature, Paris

Completed 2018

Commission: Musée de la Chasse et de la Nature

Le Jardin de l'Ambassade Paris, FR

Installation in the framework of Hors-Pistes, Centre Georges-Pompidou, Paris

Completed 2018

Commission: Centre Georges-Pompidou

Pflückgarten Essen, DE

Creation of a shared garden for a square in the city of Essen

Completed 2017

Commission: Stadt Essen

International Campus of IGA Berlin, DE

Design of a part of the international garden exhibition (Berlin-Marzahn 2017)

Completed 2017

Commission: Grün Berlin

Kunst-Werke Archipelago, Berlin, DE

Creation of a garden in the courtyard of Kunst-Werke, a renowned contemporary art space in Berlin-Mitte

Completed 2017

Commission: Kunst-Werke Berlin – KW Institute for Contemporary Art



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