

PRESS RELEASE

SILOS 13

vib architecture | ballus & vialet

july 2014

PROGRAMME

Construction and design of 2 silos for a cement distribution center,
including a quality control building and space for offices,
in one of Paris's muting urban areas.



THE CONTEXT

The project is located 5 meters away from Paris eastern ring road, at the end of Zac Rive Gauche's large development district. Urban studies conducted by Ateliers LION since 2000, as well as new Urban regulation (PLU) updated in 2010, have made room for a new Bruneseau Nord neighborhood. This project is characterized by high rise buildings and mixed programs where architecture and infrastructure meet. To allow for this new development, the city of Paris has asked CIMENTS CALCIA to give up their existing distribution center located near the Seine, and offered a new site closer to the existing rails out of Austerlitz station. SEMAPA undertook the building of this new project for CIMENTS CALCIA.

Pre-requisites

The project, which transforms an industrial facility into an urban sculpture, is to be considered as the first step of a process to transform the new Bruneseau Nord site.

3 conditions were called for to make this building possible:

- the urban and political vision to extend the city to the East with a pedestrian link from Paris to Ivry. The existing centre was linked to the rail network via a single rail line that cut diagonally through the neighborhood. The new building obviously needed to be moved to allow for this new large development.
- the desire to develop this forgotten industrial area, despite the difficulties linked to the many existing networks and technical issues or urban rules, as well as the decision to maintain this industrial activity within the city's new fabric.
- the presence of a contractor such as Vinci TPI, specialized in civil engineering structures was needed to raise the main silos and gave us a rare chance to design buildings with unusual tools and resources, usually reserved for large infrastructure design.

THE ARCHITECT PROJECT

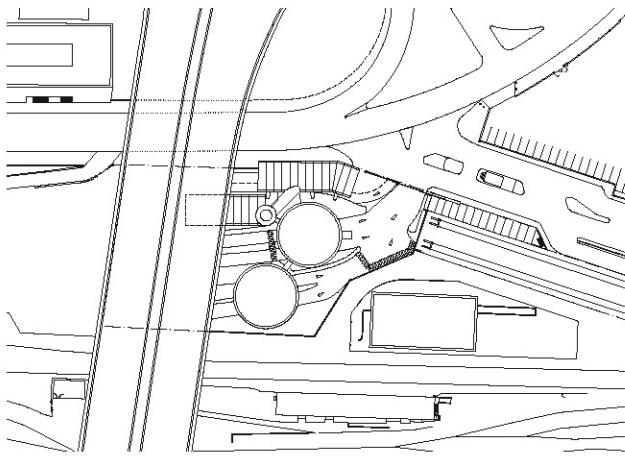
«This project is the first step to develop Paris's new Eastern district. The initial question for us clearly was to insert the project in the coming urban project and bring in «bold design» to the industrial plant. The project was long to design at first, due to high stakes and its noticeable location along Paris' ring road - Europe's busiest freeway with an average 300.000 vehicles a day. The initial 50 meter high silos project was rejected during the building approval phase - despite urban planning and new regulations allowing for high rises, and we were asked to redesign a 37 m high project to fit Paris's usual maximum height. This implied new major constraints. The silos had to be widened to 20m to allow for the same volume of cement, making the site almost too small to hold the program.

At this stage in June 2011, we had one weekend to design a whole new project and be ready for a last chance meeting, attended by every authority involved with the project. These constraints called for a bold and clear project.

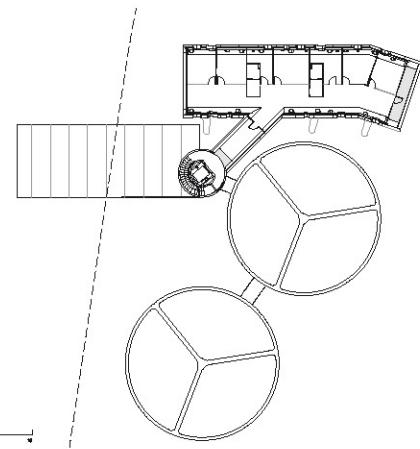
By that time, it was obvious that Calcia - who would be running the center - would prefer materials that promote their people's skills and business of making and selling cement, to erect wonderful buildings around the city.

Our answer was what it is now: first, the main silos had to be inserted in the one and only position that allowed for all existing flux and networks to work. Then the quality control center, because it had to rest on ground, was slided underneath the "peripherique". The office building was set right on the property limit and high on pilars for trucks to come in below. The whole program could then be linked together by a vertical cylinder housing a stair and lift. The project had become quite simple: the whole program, including offices and quality control center, was inserted in 5 different individual silos, all made of concrete, rising from the ground surfaced with concrete too».

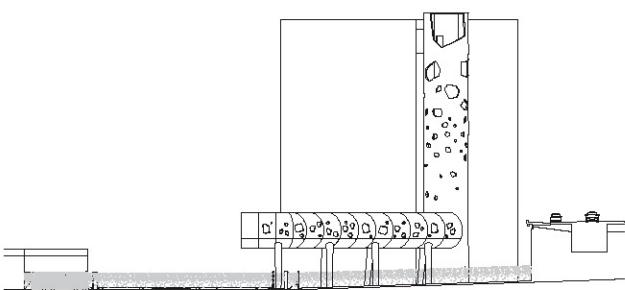




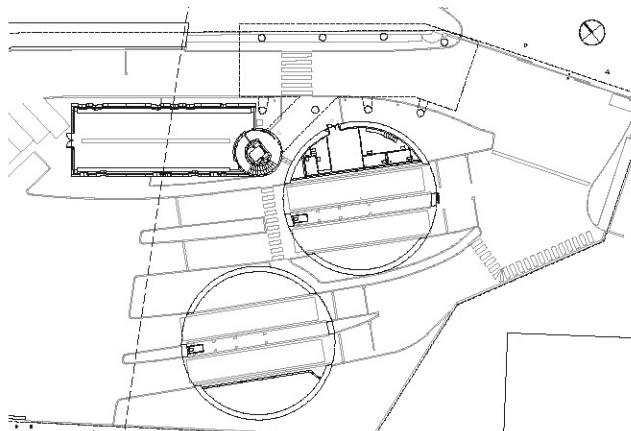
Ground plan



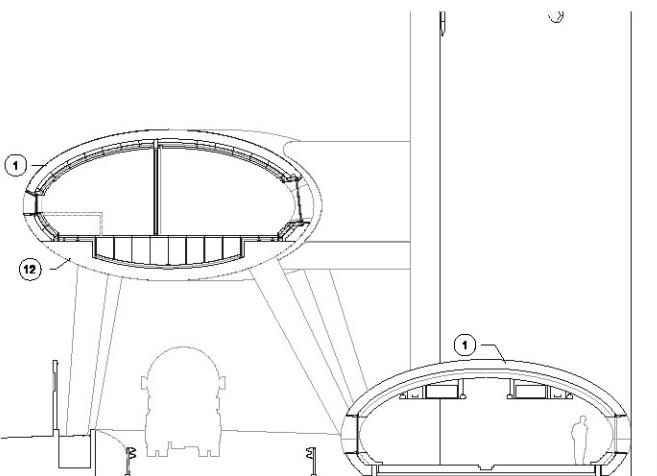
Level 1 plan: offices



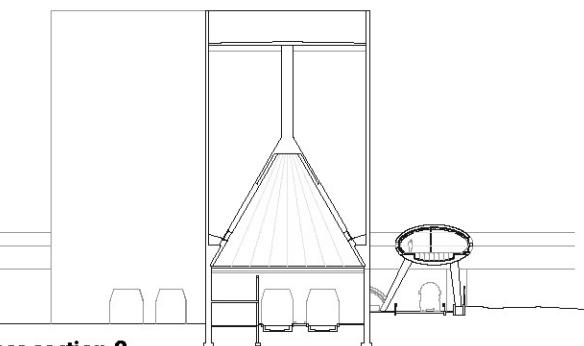
Bruneseau street's facade



Level 0 plan: laboratories



Cross section 1



Cross section 2

The scale of the building

One is now instantaneously overwhelmed by the mass of the project. Although it uses common technical language and fittings, the building has been transformed into a unique work space, dedicated to the material it contains: the silos, the stair tour, the offices, the test center and the ground too, are all made from concrete. The material reveals much of its plastic potential. Not one element that stands out. The project is a whole, it is alive, a sort of abstraction of bodies rising from the ground and attracting each other into one unique place.

Many techniques used for construction

The project relies on many different uses of concrete. The main silos and the vertical tower were cast in slipform, a robust method to

do this. The platform, rose by 2,5 cm per hour which took 3 weeks, day and night, in February, and 2 weeks in June 2013 to get to the top of each of the 37m silos, with an average of 15 workers constantly on deck.

The shells for the horizontal silos were prefabricated, then trucked-in, lifted, rolled and fitted in no more than 24 hours for each entity.

Polygonal windows

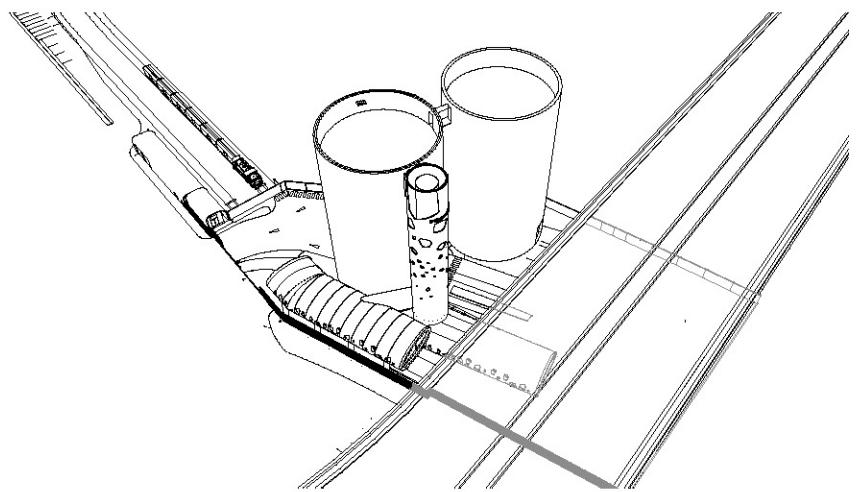
For the office and quality control center, the light at either end of the 'silos' was not enough for all work spaces. The opening on the shells had to be big enough to bring in light but small enough to keep the mass and the surface. The polygonal shape chosen for these openings was imagined as a form of abstraction of two different ideas: the shape of the stones that are used in making the concrete as one, or a mineral fragment or a broken rock as another.



The making of the fixed polygonal aluminum windows was complex. The first issue was the geometry of the polygon meeting with the cylindrical shell - that was sorted with th offices 3D tools. The second, more complex issue, was that to do with current regulations that require really sophisticated design for waterproofing and drainage. We called-in Arcora, our usual facade engineers, to help us design these and make them fit current standards.

The vertical lift/stair tower is the most visible piece of the building, that acts as a signal by rising only 5 meters from the ring road. The design for the openings is similar but they were fitted with a simple inox mesh. We wanted the openings to widen up and lighten up as the tower rises, in contrast to the main silos in the background.

axonometric view



The fence

Special attention was required for the main fence. It was agreed that the center should be perceivable from the street. Our system allows for visual porosity on the industrial activity, without imposing the heavy trucks onto the new quarter. Our proposal allows for the site to be seen, or hidden, depending on the angle from which one looks.

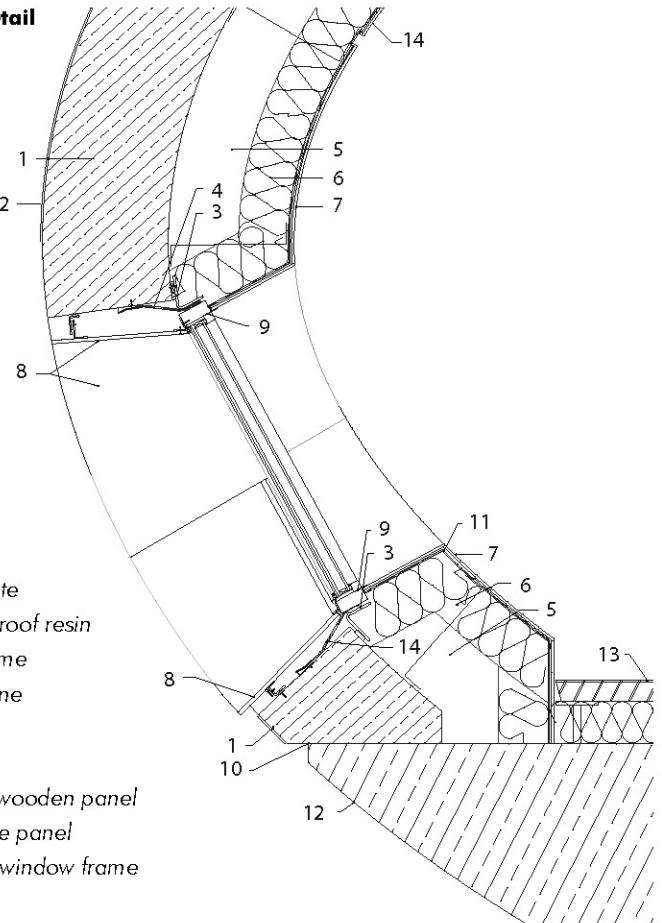
Technical data

Opening hours for the center are from 5am to 6pm. It feeds 80 trucks a day on average and will deal more than 400 000 tons of cement a year. It was designed to allow for 24/7 self-service.

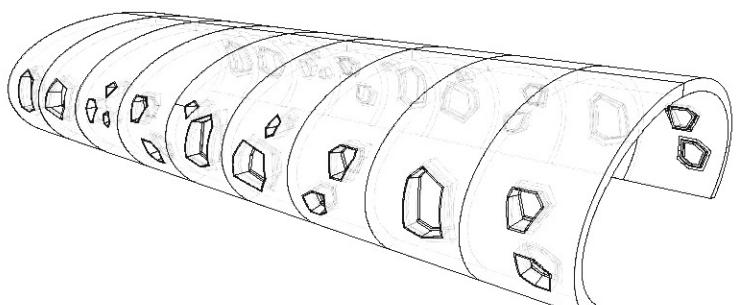
The plant includes:

- Two 37m high silos, holding 11 000m³ of cement in up to 6 different qualities,
- A new rail terminal (outside of our operation), allowing for two trains of about 10 wagons each, filled with cement,
- Compressors and pneumatic transport system needed to rise cement from the trains to the top of the main silos,
- 4 loading stations under the silos fitted with weighbridges,
- a large platform for large truck's specific gyrations,
- a 150m² office building, cantilevering onto the street, raised on large pillars,
- a 180m² quality control and testing center for UNIBETON, tucked in underneath the peripherique,
- 70m² support spaces (mostly on ground aside the main silo), such as workshop, supply or locker room,
- parking spaces for workers.

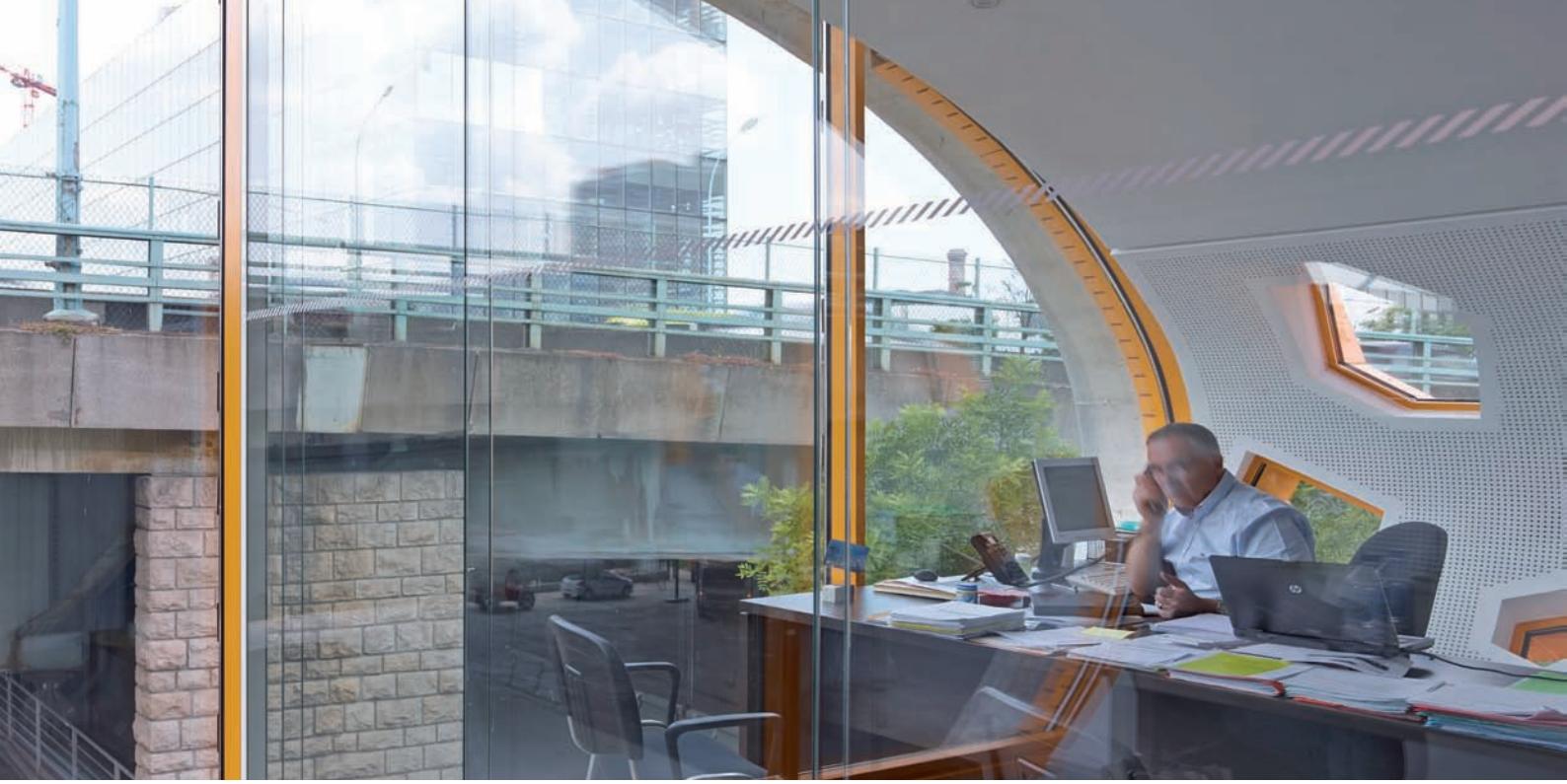
polygonal window detail



prefabricated shells geometry







A SUSTAINABLE PROJECT:

« Considering the new urban project, it was obvious that our existing plant had to be moved if we wanted to keep our activity running in Bruneseau, says Jerome Lestringant, general manager for CIMENTS CALCIA's distribution centers in France. The catchment area of our existing center in Tolbiac was quite concentrated and dense: around 80% of our clients are within 30 km around the site. We obviously wanted to stay near them »

Stay as close as possible to the city

« The key quality for the existing plant in Tolbiac rests in its strategic position at the heart of the city. While 100% of the cement comes upstream by train, the last few kilometers made downstream by truck by our clients, is usually done in the opposite direction from main urban traffic directions. Moving the plant

away from this position would have increased truck movements by 15 000 a year, in the direction identical to the already oversaturated general traffic. »

« Our aim was to create a sustainable project, says M. Lestringant. We wanted to maintain the rail delivery, and to keep the possibility to supply our cement via the nearby Seine. That was another incentive to stay close to our old site. The city of Paris heard our arguments and approved our plans. They rightly considered that our proposal fitted with their vision of preserving mixed uses in the new Bruneseau district. »

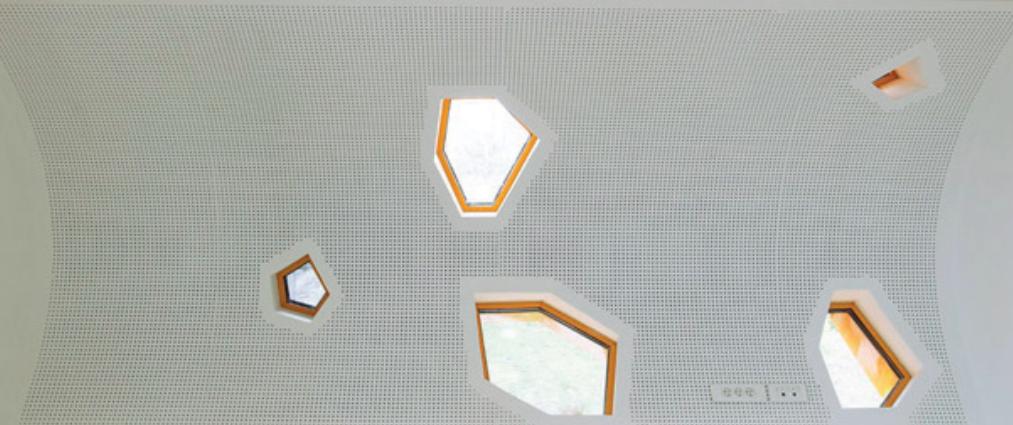
A PIECE OF ART

A work of art, imagined by Laurent Grasso is currently being tested. It will give yet another dimension to this already atypical urban project.





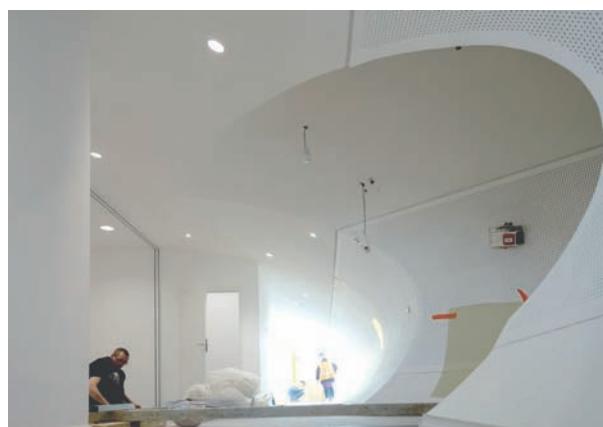
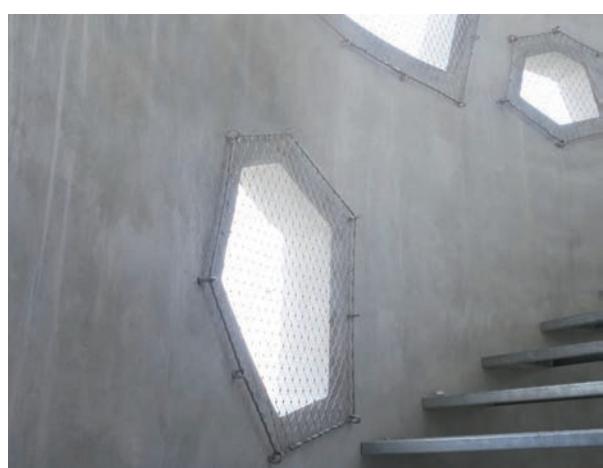
Date of completion: **April 2014**
City: **PARIS (13)**
Site: **Bruneseau Nord**
ZAC Paris Rive Gauche
Client: **SEMAPA**
User: **CIMENTS CALCIA**
Architect: **vib architecture -**
Bettina Ballus + Franck VIALET
Design architects: **Antoine BOURDEAU,**
Marlène BOURQUE, Célia HORN
Construction Architect: **Celia HORN**
Mission: **classic full Loi MOP + method and coordination.**
Construction cost: **18 M€ (excl. tax), for buildings + process.**
Site surface: **4478 m²**
Sustainable certification:
PLAN CLIMAT VILLE DE PARIS
Engineering + construction method and coordination: **JACOBS France**
Acoustics: **PEUTZ & ASS.**
Facade design consultant: **ARCORA**
Contactors: **SOGEA TPI (buildings) - IBAU HAMBURG (process)**
Drawings : ©vib
Construction photos: ©vib
Interior Photos: ©Daniel MOULINET
Exterior Photos: ©Stephane CHALMEAU



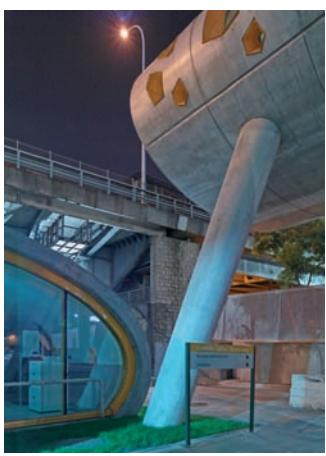
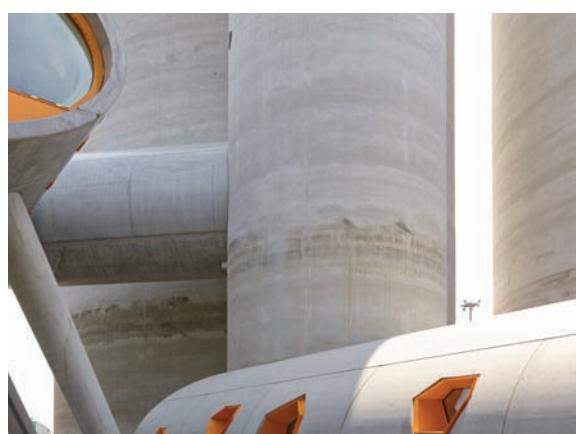




Construction



Photos by ©S. Chalmeau



vib architecture

The Paris based multicultural team comprises around twenty architects. Depending on project programs and complexity, they can expand their design team with specialists and partners with expertise in landscaping, engineering, economy, and acoustic or scenography – that fit their creative and sustainable way of design.

Over the years, vib architecture has acquired serious experience in the design and build of multiple projects, including offices, residential, research centers, educational or cultural facilities throughout France, in places like Paris, Versailles, Toulouse, Caen, Bordeaux or Strasbourg....

The office first appeared on the international radar in 2005 when awarded the "Prix de la 1ere oeuvre" by the Moniteur, for a Brain Imagery research center built in Caen and when they received significant attention from the architectural press.

Press contact

vib architecture

Clara Euler - ceuler@vibarchitecture.com
28, bld Poissonnière, 75009 Paris - FRANCE
T: +33 (0)1 48 00 92 10

www.vibarchitecture.com

Bettina Ballus - architecte associée

Graduated from the Technische Universität Braunschweig in 1999, with a degree in engineering and architecture.

Bettina Ballus was born in Germany and started studying at the Technische Universität Braunschweig in 1991 until 1995 when she spent a year at the la Villette Architecture School in Paris. She graduated back in Germany in 1999 but having lived many years just across the border, decided to make her dream come true and moved to Paris. Her professional experience led her to Jacques Ripault or Jean-Paul Viguier's offices, where she grew a sense for creation and for managing large projects. She worked to design, develop and construct several buildings in France and abroad, in various fields – cultural, academics, medical, commercial, residential, offices, large scale tours.

Bettina has been involved in the office since 2001 and has taken the firm to a new level of professionalization, thanks to her unique sense of design, project management and sustainable engineering.

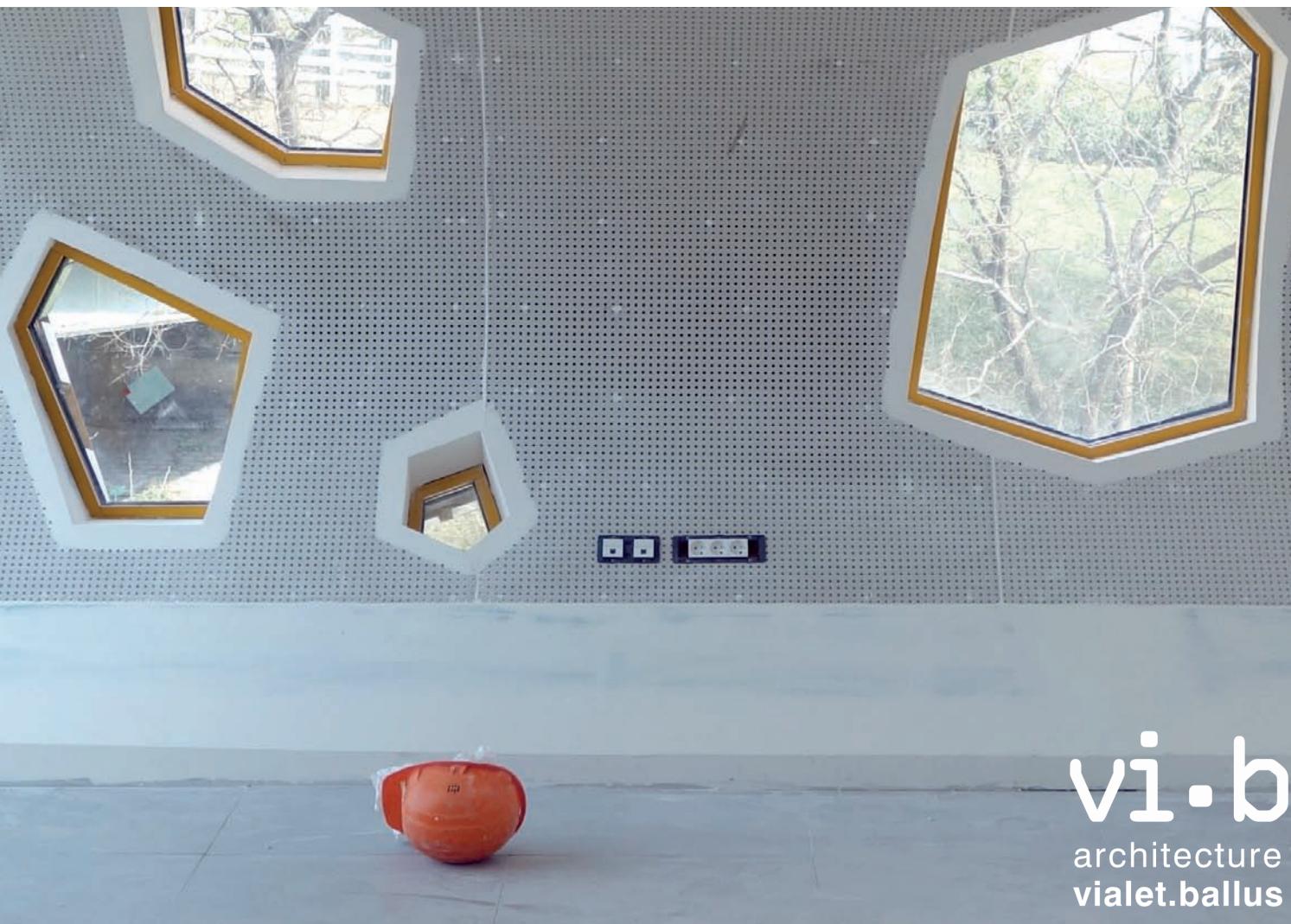
Franck Vialet - architecte associé

Graduated in Architecture from Sydney's University / B.Sc.Arch.(1991) and from the Ecole d'architecture de Versailles in 1998.

Franck took advantage of a long stay in Australia to get his HSC/A levels/Baccalaureate and started studying architecture. He first graduated from Sydney's University in 1991, but promising European perspective decided him to move back to France the same year.

He went on studying with Olivier Girard at the architectural School of Versailles where he completed his degree in 1998. Before the end of his curriculum, he was noticed on the architectural scene by winning a design competition and constructing a Peace Memorial in Val de Rueil, with Dominique Jakob and Brendan MacFarlane.

Over the years, Franck worked with Jean Nouvel and François Seigneur. He teamed up with Bettina Ballus in 2001 and founded Vialet Architecture in 2002.



vi-b
architecture
violet.ballus