



## **PRESS KIT**

# **VINCI, the art of museums**

## Introduction

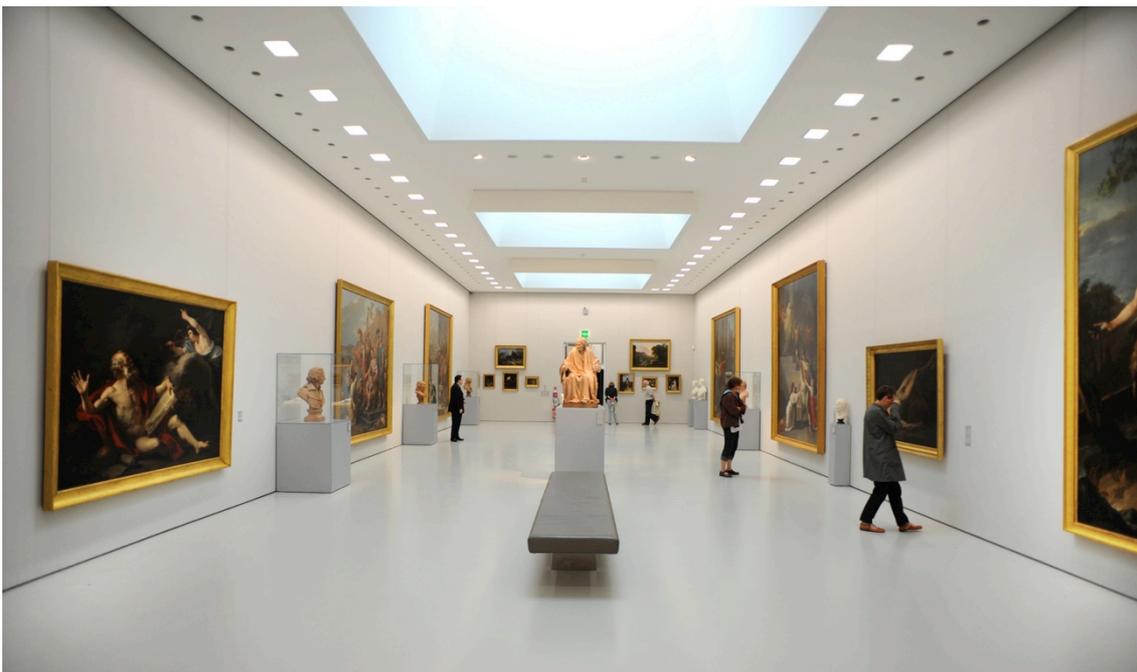
The Museum concept was first introduced in Europe, primarily in France, at the end of the 18<sup>th</sup> century for reasons that originally had nothing to do with economics or urban amenity. Until the 1950s, the purpose of the museum was exclusively conservation, in a continuation of the 19<sup>th</sup> century tradition of private collections.

The real museum revolution originated primarily in the United States, where Peggy Guggenheim laid the foundations for the 20<sup>th</sup> century museum industry, and was also driven by democratisation and the development of cultural industries in Europe.

Today, the number, role and visibility of these institutions have undergone radical change. No longer exclusively focused on conservation, the museum has become a flagship institution that lends resonance to the community. Cultural activities create economic value and give cities momentum. Culture also promotes social inclusion when approached as a way to improve "living together". The museum is now seen as an urban landmark and a driver of urban life.

With its innovative and bold architecture, the museum is often a work of art in its own right. Building or renovating a museum is therefore a high profile but complex operation. The success of such projects requires broad vision, acknowledged capabilities in advanced technology engineering, sophisticated resources, flawless coordination and total commitment to managing people.

On the strength of these qualities, VINCI companies regularly work on exceptional museum projects around the world. Their design, building, network and maintenance expertise makes all the difference in the demanding museum market.



Sogea Sud

© le musée Fabre de Montpellier Agglomération

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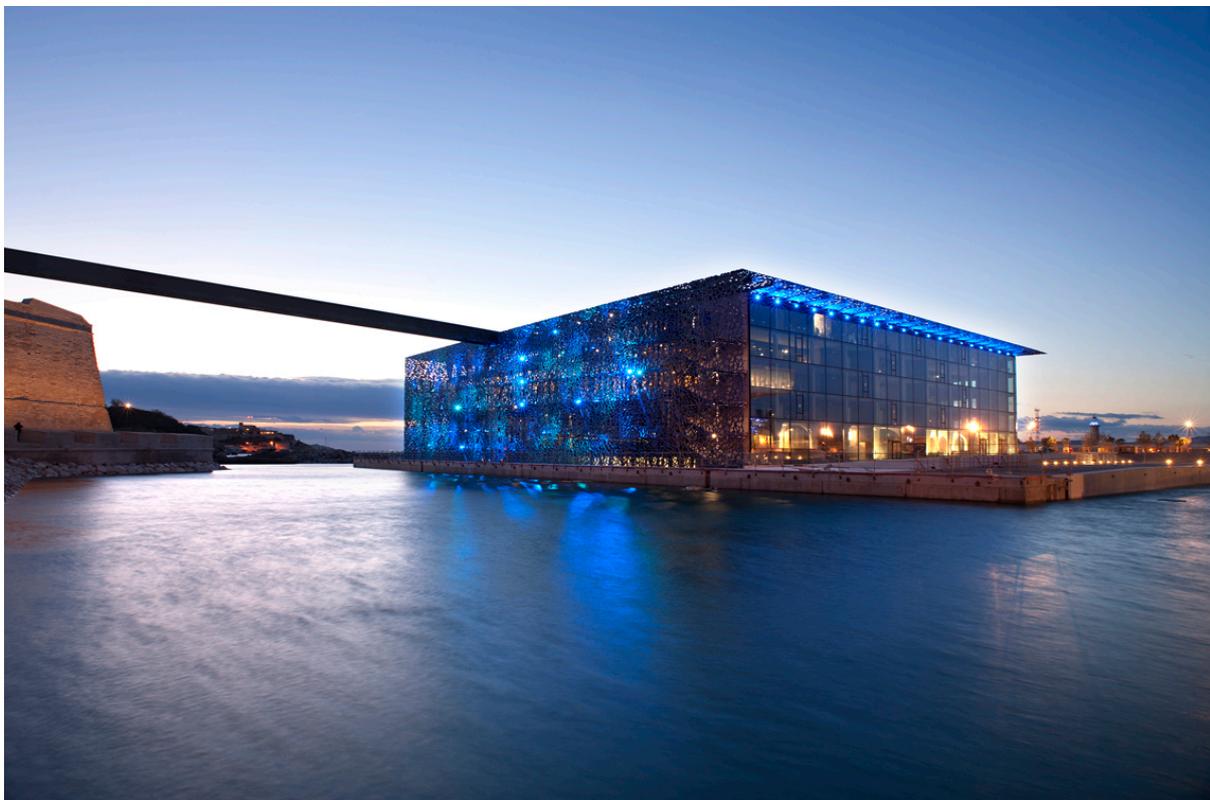
### 3 major projects in the news

#### Marseille. The Museum of European and Mediterranean Civilisation (MuCEM)

Work on the Museum of European and Mediterranean Civilisations began in 2010 in the port of Marseille, the European Capital of Culture in 2013. Designed by architects Rudy Ricciotti and Roland Carta, the structure is one of the Group's flagship museum projects in France.

A consortium made up of VINCI Construction subsidiaries Dumez Méditerranée and Freyssinet carried out the structural work on the technically sophisticated building with a floor area of 12,550 sq. metres.

The building with a simple square shape rises to a height similar to that of the Fort Saint Jean. A central core contains the full range of technical equipment. Around its edge, a forest of posts supports the structure and huge bay windows open up the space to the sea and the city and free the exhibition spaces from technical restrictions. On the southern and western sides of the building, intricate latticework shades the building from the sun and the shimmering sea. A suspended outside ramp takes the visitor gradually up to the roof terrace with a restaurant offering an incomparable view of the port.



Opening on 7 June 2013.

© VINCI Construction France

This building is a technical tour de force that revolutionises concrete construction. Its use of a very strong material, UHPFRC (ultra high performance fibre reinforced concrete) allows for substantial flexibility. The visionary architect designed the building at a time when the material was still in the experimental stage. Rooted in a rocky landscape open to the Mediterranean Sea, the MuCEM uses the material to showcase itself. UHPFRC concrete offers unique possibilities. Initially employed in engineering structures, it is now making inroads into the building industry, where it can be used in both structural works and building envelopes. The material, developed entirely in France, reduces the building's environmental footprint and supports a short production chain. UHPFRC was used in the fine latticework that surrounds the southern and western facades of the MuCEM like a mashrabiya, in an allusion to Mediterranean influence.

Freyssinet also employed UHPFRC to create the structure's 309 prestressed branching posts, the 136 metre long suspended footbridge over the harbour basin to the Fort Saint Jean and the 65 metre footbridge connecting the Fort Saint Jean with the Eglise Saint Laurent church. The Fort Saint Jean, its pure white facade bearing witness to its recent restoration by VINCI Construction France subsidiaries

Dumez Méditerranée and Girard, was until recently used exclusively for military activities but has now been transformed into a major new public space for the city. Some of the beautiful buildings that make up the complex accommodate MuCEM rooms, while the outdoor spaces have become an urban park. Connected by a footbridge to the Panier district, the new landscaped space offers promenades from the ramparts to the top of the fort where the visitor, shaded by Mediterranean trees, enjoys an incomparable view over the city and the sea.

To find out more: watch the film "Inside the MuCEM with Rudy Ricciotti", by the Fabrique de la Cité: <http://vimeo.com/66640835>



### Lyon. The Confluences Museum.

In Lyon, the outsized deconstructivist architecture of the Confluences Museum is gradually taking shape on the tip of the peninsula between the Rhône and Saône Rivers. GTM Bâtiment and Génie Civil Lyon, a VINCI Construction France subsidiary, carried out the structural and shell works. Meanwhile, Menard, a subsidiary of Soletanche Freyssinet, reinforced the ground to prepare for the construction of the museum by installing nearly 5,000 controlled modulus columns with an average depth of 10 metres; and EBM, a subsidiary of VINCI Construction France, developed the area surrounding the project.

This long building with an atypical shape is made up of a steel frame "cloud" and a glass "crystal", currently being assembled, that will float eight metres above a concrete foundation in defiance of the laws of construction. Its architectural constraints are substantial. The entire construction process is geared to rigorously achieving the geometric design by the Austrian Coop Himmelb(l)au architecture firm.

VINCI Construction's major project management expertise is a key factor in the success of this type of museum project, which requires the coordination of some 10 design offices and the combination of state-of-the-art expertise such as VINCI Construction Grands Projets' metal framing capabilities.



Handover in early 2014.

© VINCI Construction France

## Paris. The Louis Vuitton Foundation for Creation

The Louis Vuitton Foundation for Creation is currently under construction in the heart of the Jardin d'Acclimatation in Paris. The chrysalis-shaped building with a 7,500 sq. metre footprint, dedicated to contemporary art and designed by Frank Gehry, is a perfect illustration of the capabilities provided by VINCI companies.

Frank Gehry, winner of the Pritzker Prize in 1989 and the Golden Lion awarded by the Jury of the 11<sup>th</sup> Architecture Biennale in Venice in 2008 for the body of his work, designed the immense glass cloud surrounding what Gehry calls the "Iceberg" for the Louis Vuitton Foundation. The structure is the strongest architectural statement of an atypical career in which he has endeavoured to push back the boundaries of the possible. The building is also a showcase of technological expertise and has earned the Louis Vuitton Foundation the BIM (Building Information Model) excellence award given by the American Institute of Architects.

Carried out on a general contracting basis by VINCI Construction, the work brings together the outstanding expertise of VINCI Construction France subsidiaries Petit and GTM Bâtiment, Dodin Campenon Bernard and the design offices of VINCI Construction Grands Projets and SIDF (Structures Ile de France).



Handover at the end of 2013, opening to the public in the spring of 2014.

©Fondation Vuitton Frank Gehry

In a construction industry first, a single database was set up to bring together the full range of information relating to the project across its entire life cycle in a shared interface: a 3D digital design software package. The innovation enhances reliability at each stage in the project and gains valuable time.

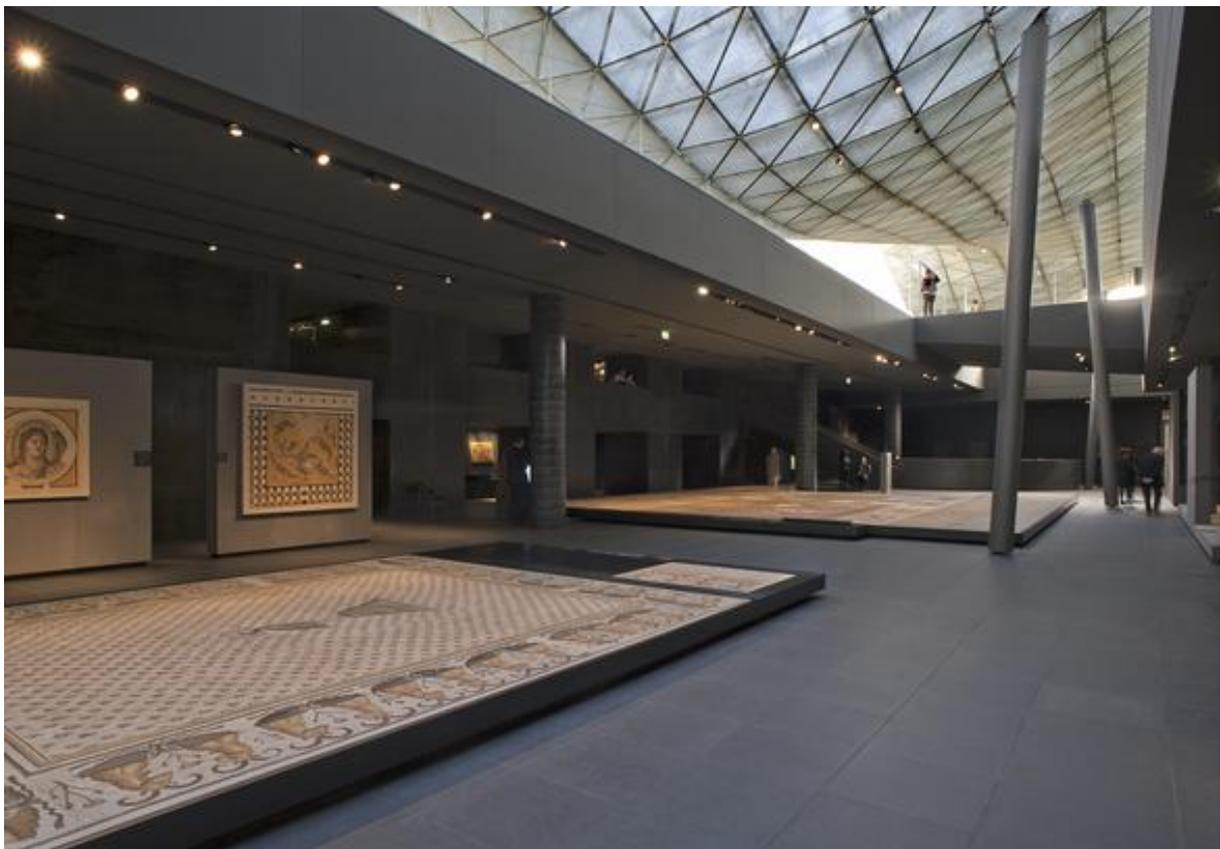
For the Louis Vuitton Foundation, Santerne Ile de France Tertiaire, a subsidiary of VINCI Energies France, is implementing the building's electrical distribution system and integrating the generator set and the low voltage electrical panel as well as all terminal equipment (apparatus and lighting) in the areas open to the public (galleries, auditorium, restaurants).

To find out more: watch the film "The Builders": <http://www.fondationlouisvuitton.fr/batisseurs.html>

## Acknowledged construction expertise

### The Department of Islamic Art at the Louvre

Since the time of Philippe Auguste, under the monarchy, the Revolution and the Empire, the Louvre has been steadily enhanced and enlarged. In the 20<sup>th</sup> century, the work undertaken at the initiative of André Malraux and then François Mitterrand starting in 1986, to which GTM and Dumez made substantial contributions, seemed to have put the finishing touches on one of the world's most prestigious museums. But then between 2010 and 2012, Lainé Delau and Degaine, subsidiaries of VINCI Construction France, and Freyssinet and Soletanche Bachy, subsidiaries of Soletanche Freyssinet, wrote a further chapter in the long saga, chiselling a black diamond in the depths of the Cour Visconti as a new showcase of Islamic Art.



Opened in September 2012.

© Médiathèque Lafarge – Lisa Ricciotti

Following the major works carried out in the 1980s under Chinese-American architect Pei leoh Ming, one courtyard remained available for the creation of new exhibition spaces in the Louvre. Located between the Cour Napoléon (with its famous glass pyramid), the Cour Lefuel, the Cour du Sphinx, and the Seine, the Cour Visconti contained only a few scattered technical facilities and was not open to the public.

Two decades later, the museum decided to use this area to exhibit the collections of its Department of Islamic Art.

Architect Rudy Ricciotti, who also worked with VINCI Construction France on the Jean Cocteau Museum in Menton and the Museum of European and Mediterranean Civilisations (MuCEM) in Marseille, devised a masterpiece of architectural intelligence at the Louvre that is simultaneously fascinating, magnificent and respectful of the place and its history.

The Department of Islamic Art project encompassed redevelopment of the Cour Visconti, reinforcement and enlargement of an older project under the three galleries of antique art and creation of an underground level below the Daru Gallery. The project succeeded in creating 7,000 sq. metres of new space in a 2,000 sq. metre courtyard by excavating two new underground levels and working under historic buildings.

Without very sophisticated technical capabilities the project would not have been feasible. Among other things, it required excavations to a depth of 12 metres next to existing buildings. The operation was a tricky one since these dressed stone buildings are completely rigid and the slightest ground movement would cause cracking.

Partnering with Lainé Delau, Soletanche Bachy carried out jet grouting work (very high pressure injection of a cement slurry) to consolidate the ground under the old buildings and allow vertical excavation without putting them at risk.

In the Cour Visconti, the earthworks were synchronised with the underpinning of the Daru Gallery, which has historic Monument status. On the ground level, stone pillars support the brick and stone arch structure. Metal beams were run through the old foundations of every pillar and underpinned by concrete beams.

Upstream of the project, a large number of utility networks under the courtyard had to be diverted, an operation that took one year of preparatory works since traces of the first Paris rampart - which the 18<sup>th</sup> century palace builders had used to support the structure - unexpectedly proved to extend 70 cm under the Quai du Louvre, where the technical gallery was supposed to be built. The entire area had to be re-designed.

All visible concrete is black, like the inside of a case holding precious objects, creating an intimate, peaceful atmosphere in which to contemplate the works on display. The floors of the courtyard are metal, with long beams that required a feat of logistics (since the loaded crane was not allowed to operate above the museum buildings, all worksite supplies had to be brought in via a portico with a width of only 2.7 metres on the Seine side of the building).

At the heart of the project is a monumental massive staircase in black concrete connecting the courtyard with the first underground level. Cast in place in a single block, with a length of 14 metres and a width of 2.4 metres, its lower surface is reminiscent of the hull of a ship. It took the Delau teams three weeks of intensive work - in addition to six months of preparation - to build the formwork, deliver the metal structure, perform the reinforcing work, install the caisson, pour the concrete and remove the formwork.

VINCI Energies worked with Cegelec Tertiaire Ile de France Grands Projets to implement the heating, ventilation, climate control and smoke venting systems in the new wing. To cope with the technical and architectural constraints, the teams suggested the installation of 210 blowers to prevent condensation on the single pane skylight during the winter. To boost the energy performance of the systems, high-efficiency recovery wheels and fine-tuned free cooling (use of outdoor air for cooling when possible) were implemented.

The new Department of Islamic Art welcomed its first visitors in September 2012, offering the Louvre new space for exhibiting its collections and supporting the universal vocation that makes it the world's most beautiful museum.

### **A large number of project references in France**

In Paris, Lainé-Delau (VINCI Construction France) teams refurbished the Orangerie Museum in the Tuileries gardens in 2006.

In 2012, C3B (VINCI Construction France) built the Muséoparc d'Alésia interpretation centre, where a re-enactment of the battle and siege of Alésia attracts between 100,000 and 150,000 visitors every year.



Muséoparc d'Alésia, opened in 2012.

© Alésia MuséoParc

The 2,000 sq. metre circular building offers a panorama of the battlefield. Its facade is covered with latticework of wood, the material used to build Roman fortifications. Concrete slabs were also used. It was designed by renowned architect Bernard Tschumi, who also designed the Parc de la Villette in Paris and the Acropolis Museum in Athens. The Muséoparc d'Alesia is set to be expanded in 2014 to include an archaeological museum that will exhibit 4,500 items illustrating daily life in Gallo-Roman times.

VINCI Construction France also worked on the renovation of the Regards de Provence Museum in Marseille, a cultural facility dedicated to Provençal painters built by a private foundation, and the Museum of Decorative Arts at the Château Borély. In November 2011, the Group's subsidiary Campenon Bernard Côte d'Azur handed over the Jean Cocteau Museum in Menton, also designed by Rudy Ricciotti. The museum market is particularly buoyant in southern France. These operations follow the construction of the Cité de l'Océan et du Surf Museum and the renovation of the Sea Museum in Biarritz, carried out on a general contracting basis under a PPP (public-private partnership).



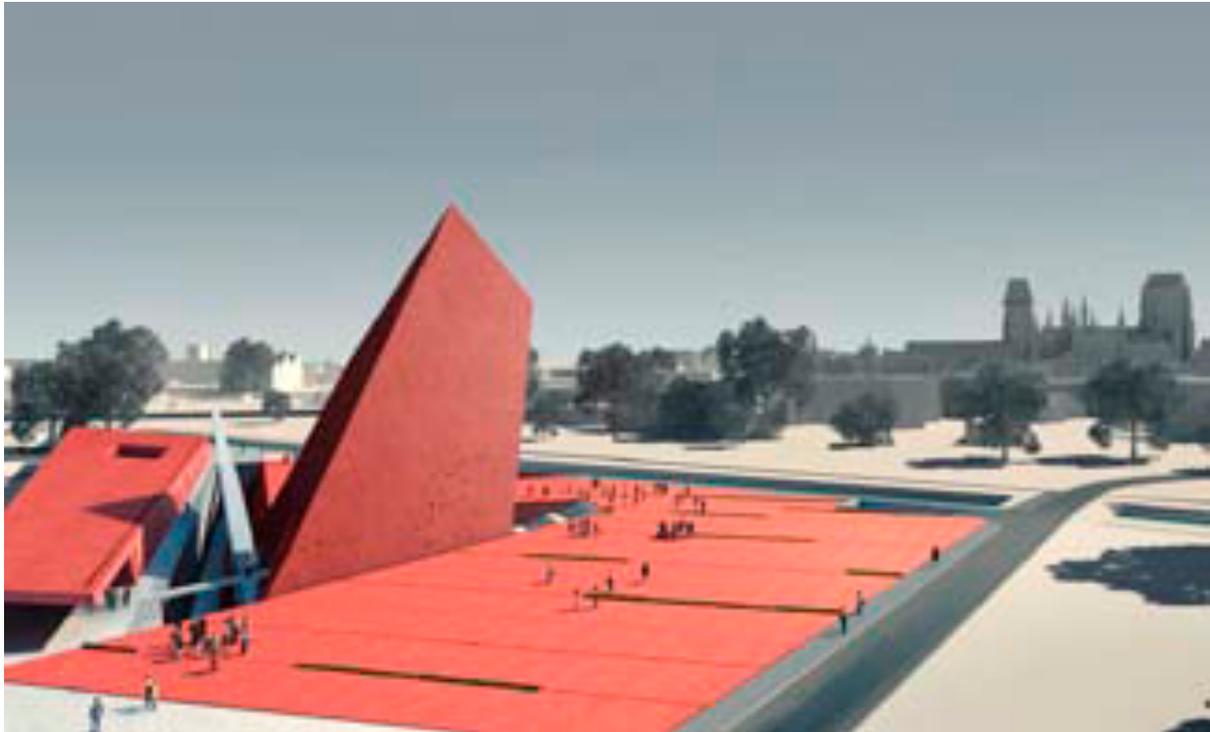
Jean Cocteau Museum, housing the Séverin Wunderman collection

© Lisa Ricciotti

Another emblematic renovation project is the Stella Matutina Museum in Saint Leu on Reunion Island, which is dedicated to the history of the local sugarcane industry and is scheduled for completion at the end of 2013. SBTPC (VINCI Construction Dom-Tom) is carrying out the demolition, structural renovation and extension works over an area of 33,000 sq. metres, as part of a consortium.

## Expertise in the international market

In Poland, following the construction of the Copernicus Science Centre in Warsaw in 2010, Warbud undertook the construction of the Museum of Contemporary Art in Krakow (Mocak), the City of Gdynia Museum and the Art Activity Centre in Lublin. Its projects are currently focused on music, with the enlargement of the Capitol Musical Theatre in Wroclaw, the construction of the new Szczecin Philharmonic Hall and above all the seat of the National Polish Radio Symphony Orchestra in Katowice.



Second World War Museum in Gdansk

©Studio Architektoniczne Kwadrat

Meanwhile, Soletanche Polska (Soletanche Freyssinet) is carrying out the excavation work for the future Second World War Museum at the edge of the old city and the Vistula estuary on the Baltic Sea in Gdansk. The project is complex due to the fact that the bottom of the excavation lies 15 metres below the water table.

In Singapore, Bachy Soletanche (Soletanche Freyssinet) is working on the foundations of the future National Art Gallery, a museum that will combine two historic buildings in the city centre. This work is fairly unprecedented in Singapore: a technically sophisticated diaphragm wall is being built across facades in four places, underneath utility lines. Soletanche Bachy (Soletanche Freyssinet) confirmed its world-class expertise in special works with its high-profile contribution to the extension of the British Museum in London in 2011. During drilling work and the installation of piles for the foundations of the future World Conservation and Exhibitions Centre, the company worked closely with Soldata (Soletanche Freyssinet Group) to reduce noise and vibrations to a minimum.

In Belgium, BPC and CFE Brabant (CFE) have just started renovation and extension work on the House of European History in Brussels. Four years ago, BPC built the Hergé Museum in Louvain la Neuve designed by Christian de Portzamparc. CFE Brabant is currently building the Train World railroad museum in Schaerbeek for the SNCB.

In the United Kingdom, the London Borough of Waltham Forest awarded the contract to renovate and restore the landmark William Morris Museum to VINCI Construction UK in 2012. In addition to the comprehensive restoration of the 18<sup>th</sup> century building, the project includes an extension that will house a visitor centre and exhibition space.

## Equipment and maintenance expertise serving museums

VINCI Energies delivers expertise to museums through two brands: AXIANS, which implements technical equipment in museum exhibition spaces, and VINCI Facilities, which provides multi-technical maintenance (climate control, ventilation, heating, smoke venting, high current and low current electrical systems, computer-assisted maintenance management, building management systems) and safety (fire detection and fire safety) for buildings. In addition to these two brands, VINCI Energies calls on the expertise of local business units such as SDEL Tertiaire, which has been installing high and low current systems in a large number of museums, monuments, cultural and exhibition facilities since 1908, and Cegelec Ile de France Tertiaire, which recently worked on the Quai Branly Museum and the Musée de la Monnaie in Paris.

In 2012, the Louvre awarded to contract to AXIANS to implement the audiovisual and multi-media equipment in the new Department of Islamic Art (projection, touch screen and special devices).

In Marseille, AXIANS Video Solutions carried out the museographic works (multi-media equipment) at the Museum of European and Mediterranean Civilisations, including a 20 sq. metre wall composed of five LED screens, a first for a national museum. AXIANS Video Solutions was also selected to implement the dynamic signs in the MuCEM and the Fort Saint Jean.

VINCI Facilities, meanwhile, is the partner of choice for building services at a large number of museums, especially in France. Its work accommodates operating constraints (sites classified as buildings open to the public, personnel on site at all times including Saturday, special climate control and dimming systems to protect works, sophisticated intrusion detection and access control systems, architecture and decor requiring special attention during technical work and removal and re-hanging of works before and after maintenance operations). Its project references include:

### **Paris - Louvre Museum (since 1992)**

France's most-visited cultural facility is a former royal palace with a built area of over 135,000 sq. metres. It is the largest palace in Europe and the continent's second largest building after Romania's Palace of the Parliament building. The Louvre houses one of the world's richest art collections.



© Musée du Louvre

### **Paris - Orsay Museum (since 1985)**

Inaugurated in 1986, the Orsay Museum was built in the former Orsay railway station. It exhibits Western painting and sculpture from 1848 to 1914, as well as decorative arts, photography and

architecture, and has the world's largest collection of impressionist paintings.



Orsay - Seine facade

© Musée d'Orsay, Sophie Boegly

**Paris - Art Museum of the City of Paris – Petit Palais (since 2009)**

The Petit Palais is one of Paris's most beautiful monuments. Renovated between 2001 and 2005, the magnificent museum is located next to the Champs Elysées and close to the Presidential Palace.



© Petit Palais

**Paris - Cité des Sciences et de l'Industrie science museum - City of Paris (since 1985)**

The museum, which focuses on disseminating scientific and technical culture, was created at the initiative of President Giscard d'Estaing. It is located in the Parc de la Villette, at a site formerly occupied by the La Villette abattoirs.



© Cité des Sciences et de l'Industrie

**Paris - Air and Space Museum at Le Bourget Airport (since 2007)**

The Air and Space Museum is run by the French Ministry of Defence. It is the largest aeronautical museum in France and one of the largest in the world. It occupies part of Le Bourget Airport north of Paris.

**Arles - Musée de l'Arles Antique archaeological museum (since 2012)**

The departmental Musée de l'Arles Antique, called the "blue museum", innovates by offering the "Museum City" concept in an atypical triangular building where the visitor is invited to move around the museum as he or she would move around a city.

**Biarritz -Sea Museum (since 2010)**

The Museum of the Sea is located in Biarritz in southwestern France, opposite the Rocher de la Vierge. It houses a large collection of marine animals and mounted birds. Opened in August 1933, the museum was expanded in 2011 in an operation that doubled its area to 7,000 sq. metres.



© Musée de la Mer

**Marseille - La Vieille Charité Museum (since 2009)**

The Centre de la Vieille Charité houses several cultural institutions: the Mediterranean Archaeology Museum, the Museum of African, Oceanic and Amerindian Art and research institutions. The Vieille Charité, located in Marseille's 2<sup>nd</sup> arrondissement, was built in the 17<sup>th</sup> century from drawings by Pierre Puget to provide shelter for the city's indigent. It was Marseille's contribution to the movement to house the poor that marked the Grand Siècle.

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