

An aerial night photograph of the Liège-Guillemins railway station. The station's roof is a prominent feature, illuminated from within, showing a complex, undulating structure with a metallic, ribbed texture. The station tracks and platforms are visible below the roof, also lit up. In the background, the city of Liège is visible at night, with numerous lights from buildings and streets. A tall, illuminated spire is a notable landmark. The overall scene is a blend of modern architecture and urban landscape.

LIÈGE-GUILLEMIN'S STATION



LIÈGE-GUILLEMINS
STATION

PUBLISHED BY SNCB-HOLDING



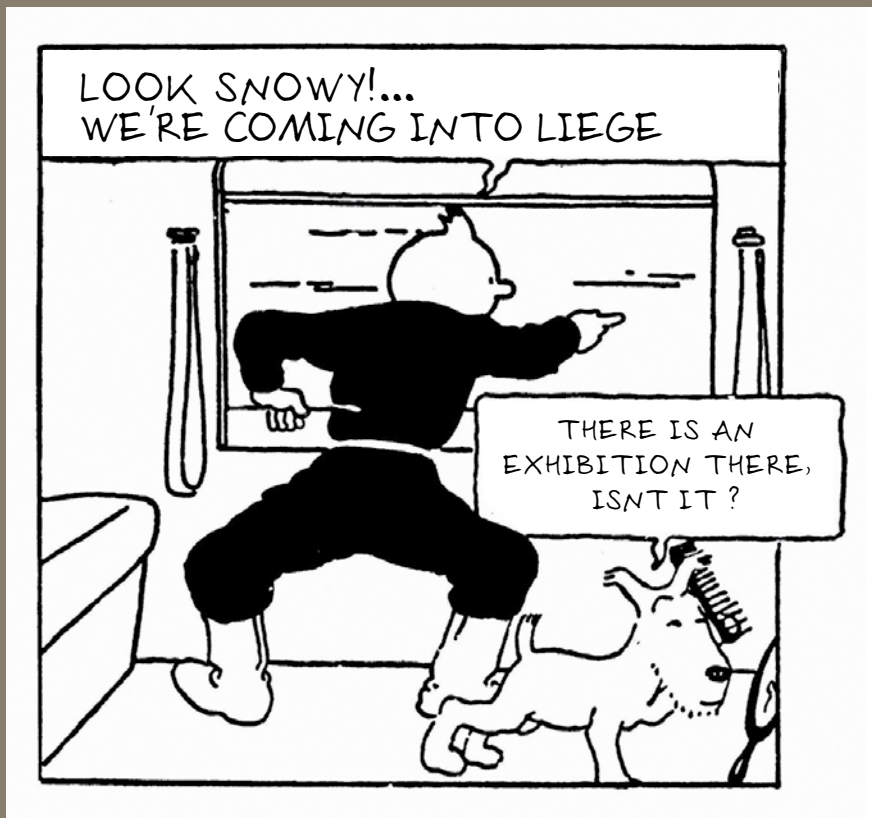
WITH EUROGARE



BY ASBL ART&FACT



LIÈGE, 2010



Tintin in "The Land of the Soviets", p. 68. © Hergé / Moulinsart. 1929/2010

Foreword

ENJOY A VISIT TO LIÈGE STATION

Vincent BOURLARD

Director General "Stations", SNCB-Holding

Managing Director, Eurogare

"Look, Snowy, we're coming into Liège!" Hergé's cartoon shows the inside of a railway carriage. On his return from the "Land of the Soviets", Tintin looks out through the window and tells his faithful friend they're arriving at the Cité Ardente. That was in 1929. Now, eighty years later, Tintin would be coming in from Cologne on the Thalys or the ICE and would have reached Brussels in just 40 minutes, travelling at 300 km/h. But like you, he would have got out to explore Liège's new station.

This station is often known as Calatrava Station or the TGV (high speed train) Station, but both these names are wrong, because they don't tell the whole story - this is Liège station.

Santiago Calatrava is the architect responsible for the design, working his magic to bring to life the specifications of the railway company and Euro-Liège TGV (now Eurogare), who wanted a station that would meet the challenges of modernity better than any other. This is an intermodal hub with facilities for everyone, friendly, intelligent, and symbolic. It is a place full of life and culture. The world's press has called it "a revolution in railway architecture" .

This is not a high speed train station, but a station that receives high speed trains. Belgium has shrewdly enabled its domestic network to take advantage of the investments arising from high speed. This is true not only of the lines themselves, but of the stations as well. The Liège station is part of the rich history of the railways of the world, of Europe, of Belgium...and of Liège.

It links Belgium to the time when it was a country taking the lead in railways - the first country on the continent to have a commercial railway line in 1835, and the first to have completed its high speed network from border to border in 2009. I strongly recommend you visit Liège station with the perspicacity of Tintin. I'm sure you'll find it a worthwhile experience.

Vincent BOURLARD

LIÈGE-GUILLEMINS STATION MAKES HISTORY

In the great battle for mobility, the railways are once more gaining ground, and the prime mover of their success has been the high speed train, thanks to which the railways have become "sexy" again. And it's also thanks to high speed rail travel that Belgium's three major international stations - Brussels-Midi, Antwerp-Central and Liège-Guillemins - have metamorphosed. Today, Brussels-Midi, with its 42 international destinations, sees more international passengers

than Brussels South Charleroi Airport; Antwerp-Central and Liège-Guillemins are classified as two of the world's most beautiful stations. Liège station is certainly a winner not only with users, whether travellers or passers-by, but also with photographers and tourists. And it's also a pleasure for Liège itself, whose station is seen as a benchmark worldwide. Liège-Guillemins station has a 175-year history, and has written a new chapter in the history of rail.



Glass bricks carpet the platforms: the Grande Galerie is lit by natural daylight.



A building in local stone, white concrete, steel, and glass.



FROM MEDIEVAL GUILLEMITES TO 21ST CENTURY GUILLEMINS

The Origins

Today, the name “Guillemins” is associated with a district of Liège and a station. Originally, it was the name of a religious community, the Guillemins, or Guillemites, known in English as Williamites. Founded in the 12th century by William (Guillaume) of Maleval, this order settled in Liège in the 13th century and prospered there until the mid-18th century. After the monastery was closed down in 1770, the buildings became a boarding school, but were then demolished in the Liège Revolution. It was on this ancient site, at the foot of Cointe Hill, that the first Liège station was built in 1842.

The adventure of rail in the Liège region had started a few years earlier in 1838, with the opening of the region's first line, Line 36, linking Mechelen with Liège-Supérieur or Upper Liège. This railway station was not within Liège itself, but at Ans, on the heights of the town. Locomotives could not run on the steep gradient

separating the Hesbaye plateau from the valley of Liège. Stagecoaches had to be used to travel between the new station and the town until the inclined plane was built. The technical side of this work was entrusted to engineer Henri Maus,* and its construction to contractor Henri Borguet. Work on the inclined plane started at the end of April 1838 and it was completed in the spring of 1842, with one line for travelling uphill and another for going downhill.

A system of cables driven by steam engines pulled or braked the trains and enabled them to run on the gradient between the two levels differing in height by 110 m. The machinery was built by the firm Cockerill, from the new Seraing industrial area.

While the inclined plane was being set up, a station was laid out on the site of the old Guillemins monastery. Known as Liège-Inférieur, or Lower Liège, it was designed to be a temporary structure. In fact, from the start of the project, voices were raised to oppose its construction in a place where there

* See Glossary, p. 28

was, as yet, little development, and which was considered to be too far from the town centre. The Liège authorities themselves were not very keen on this site, and wanted a more central station near the Place Saint-Lambert and the old palace of the prince-bishops. However, this project was slow in materializing, and it was not until 1877 that Liège-Palais station was built in the historic heart of the city.

In line with its temporary status, the first Guillemins station was a modest wooden structure built alongside four tracks. Accommodating passengers as well as offices, this long building was flanked by two higher pavilions surmounted by a hipped roof. The complex was surrounded by other utility buildings, as well as several hotels, even though the area still had little urban development. The station quickly became the driving force behind the future Guillemins district, linked to the town by the old "Grand Jonckeu" road, parts of which have now become Rue Dartois, Rue Fabry, and Rue Louvrex.



The first Guillemins station and the inclined plane forming the link between the Hesbaye plateau and the Liège valley.

1. Hôtel de l'Univers at the Guillemins station in Liège, wash drawing, mid 19th century.

© Collections artistiques de l'Université de Liège.

2. RUFF, after DITZLER, Anton, Panoramic view of Liège, detail, aquatint, n.d.

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**FROM MEDIEVAL
GUILLEMITES TO
21ST CENTURY
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A Paris-style station

In 1863, the Liège authorities decided to keep a station in the Guillemins district. A permanent passenger building was designed by the national railways architect, A. Lambeau, on the extension of the Rue des Guillemins, and was spacious, functional, and stone-built. The central bay of the façade was surmounted by a monumental statue, representing industry. Behind the passenger building, a covered area accessible via two underground passages protected the first five tracks. This structure was distinguished by being lightweight - a dome made up of beams, columns, and pillars, with metal ornamentation. This was completed by purely functional structures (sheds, workshops, forges and so on) occupying most of the area between Rue Varin, the Fragnée district, and Rue Mandeville.

Like the eclectic Parisian stations with their fan glasswork lighting the concourse, the Liège building was greatly inspired by the Strasbourg

Station in Paris (renamed as the Gare de l'Est in 1854), first built in 1847 - 1850. The similarities are obvious - a rooftop surmounted by a female statue, and a central body pierced by an enormous glass roof in a full arch in front of which is a clock flanked by two semi-recumbent allegories. While the proportions of the Liège station were more modest, its decorations were more luxuriant, corresponding to changes in taste during the 19th century. Namur and Charleroi-Sud stations, built during the same period by architect Lambeau, also have many similarities to the second Guillemins station.

A major communications hub, Liège station had a number of different layouts. From 1871, the tracks were crossed by a footbridge linking Cointe with the town.

Due to the number of visitors expected at the Liège Universal Exhibition,* it reached its maximum proportions in 1905 - five covered tracks for international and inter-

regional trains, five shunting tracks to the rear, and five tracks for local trains alongside Rue Varin. Urban tramline No. 4, which was built for the occasion, completed a dense rail transport network.

Used by the Germans during the First World War, the station did not suffer any damage during the conflict.

It was refurbished for the 1930 Liège International Exhibition. When the postal, telephone, and telegraph offices (the PTT) moved out into another building, more space became available. At this time, there was still a third class waiting room, as distinct from the first and second class facilities. In spite of these improvements, the idea of demolishing the station was posited, because the building was seen as decrepit and inefficient.

LIÈGE. - La Gare des Guillemins.



The station in 1863.



**FROM MEDIEVAL
GUILLEMITES TO
21ST CENTURY
GUILLEMINS**

The 1958 Modernist Station

During the Second World War, both Allied and enemy bombardments destroyed many stations. After the conflict, they were rebuilt, with the emphasis on efficiency and value for money. In Liège, the station itself had not suffered great damage, unlike the buildings in the Place des Guillemins and many infrastructures. Nevertheless, it was decided to rebuild Liège's main station, due to the project to electrify the rail network. In addition, the fact of the Universal Exhibition* being held in Brussels in 1958 led to compensatory investments in the Liège region (station, Palais des Congrès, and so on).

The first stage in the programme was electrifying the whole of the station's railway grid. The second affected Bressoux Station, where new freight buildings were built. From then on, Guillemins Station was used entirely for passenger traffic.

Improvements had to be made to its immediate surroundings (Place des Guillemins, road centre, parking, etc.), but the main aim was, of course, to rebuild the station, which, inspired by the Stazione Termini in Rome, was designed by the EGAU Group,* which won the public competition held by the SNCB.

The modernist* architects decided on a reinforced concrete framework hinging on a 1.22 metre module, which meant that various prefabricated materials (ceiling parts, glazing) could be used. The mainly glazed façade of the new building, forming a curtain wall, was a faithful reflection of its internal organisation; the offices were on the two upper stories, underlined by metal profiles, while the lower part was reserved for public services. Passengers entered under cover of an imposing white concrete canopy, matching the one to the rear, on the side of the tracks. Inside, 24 booking offices opened onto the vast concourse, opening up the way to the trains.

Above this passage were Belgium's very first automatic timetables. All the areas accessible to passengers communicated with each other visually, so that the general impression was of openness, bathed in light. In addition, special attention was paid to incorporating the visual arts, in particular with a window by Jean Rets,* sculptures by Pol Bury,* and a painting by Georges Collignon.* The same approach can be seen in the neighbouring PTT building, dominated by a great carved stone relief by Noël Randaxhe.* These modern buildings were a great hit with the journalists of the day, who praised the sophisticated elegance of the new station.

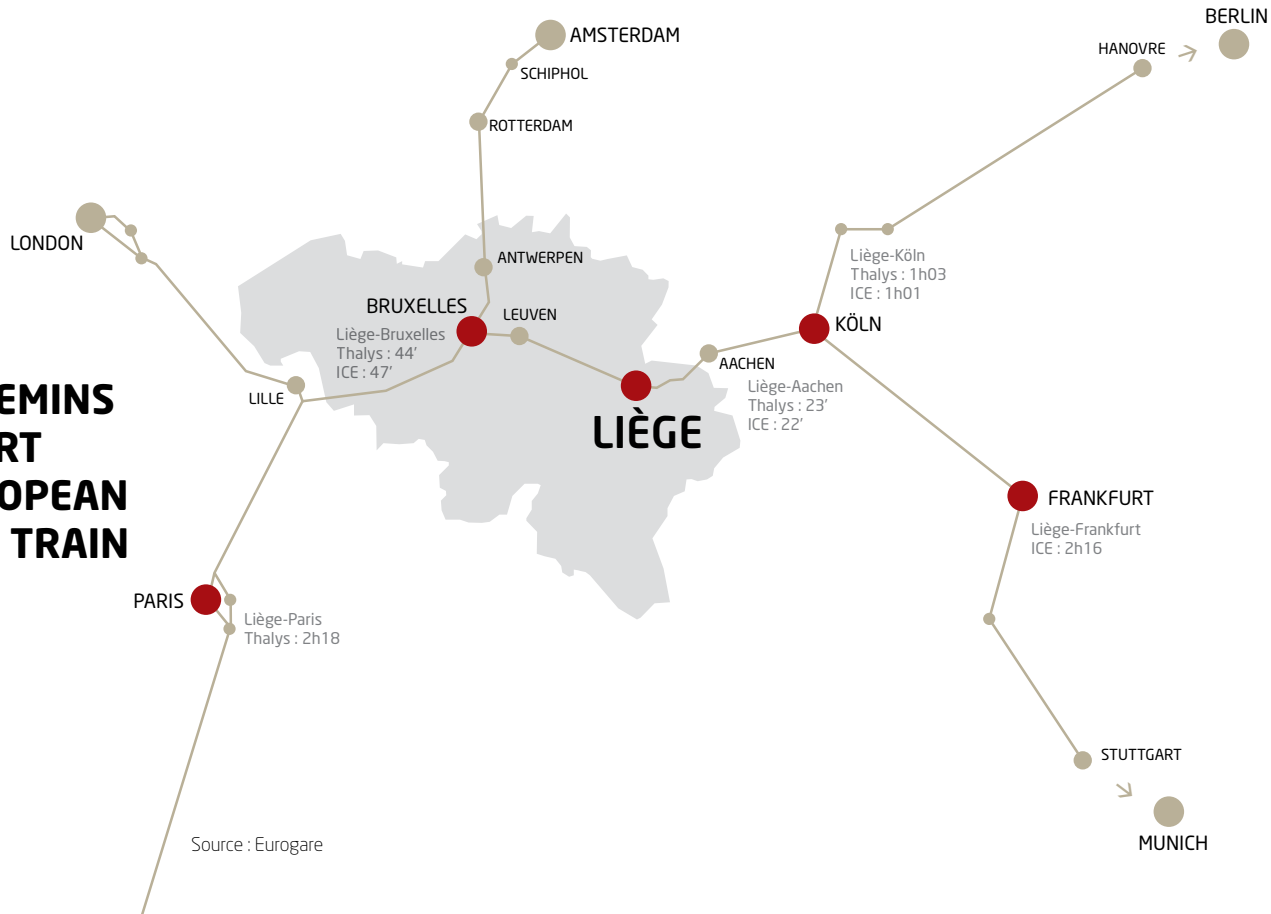
Various changes were made at the end of the 1980s to extend the commercial areas and create a more comfortable travel centre. The materials chosen, glass and aluminium, harmonized with the original style of the building. While the project to build a new station, in particular for high speed trains, did not call a halt to new investments, some facilities, such as the first floor restaurant, were abandoned.



Guillemins Station in 1958.



LIÈGE-GUILLEMINS AT THE HEART OF THE EUROPEAN HIGH SPEED TRAIN NETWORK



Preliminary studies for the building of the new station

The idea of incorporating Liège and Antwerp in the high speed network between Cologne, London, Brussels, Paris, and Amsterdam was first tabled in 1987, and was favourably received, although it ran up against many obstacles.

In Liège, the choice of the station's site gave rise to lively debate. Finally, it was decided to continue to use the Guillemins site, due to its proximity to the town centre and the motorway and in order not to separate the internal traffic from the high speed traffic.

The intention to build a new station on the Guillemins site was based first and foremost on railway considerations, before any architectural dimension was added.

Created in 1993, the Euro Liège TGV* design office, now Euro gare, was put in charge of carrying through the railway site modernisation project.

The feasibility study started in July 1993 was completed two years later. Its conclusions were categorical, and showed that the railway layout had to be modified and a new passenger reception centre built. Due to their layout and their age, the existing infrastructures did not provide the best response to the needs for comfort, safety, intermodality, speed, or multifunctionality. The Ans-Meuse section, 2.5 km long, was an obstacle on the high speed line between Brussels and Germany. There were many reasons for this: the speed on the slope was limited (70 km/h going downhill and 80 km/h uphill) as were the speeds when entering (40 km/h) and leaving (60 km/h) the station, the platforms were curved, narrow, and too short for the TGV trains, the signal box was totally obsolete, and the grid pointlessly complex. To remedy these drawbacks, the feasibility study concluded that it

would be necessary to leave the old site and move 200 metres to the west, alongside the Rue Varin. For the users, innovations were suggested including a motorway link and double access to the tracks (on the "town" side and the "hill" side).

The first changes made were improvements to the railway equipment. Between 1995 and 1998, a new station signal post, with computerised command and control, was set up in a building on the banks of the Meuse. The electronic control screens reproduced the train movements and tracks in great detail. They gave a dynamic image, in real time. As from May 2001, the new box gradually took over management of the railway traffic within its radius of action; it was to control it completely from August 2004. Between 1998 and 2000, the Hemricourt site, upline from the station entrance on the Brussels side, was altered to provide a direct run for trains on lines 36 (the Paris - Brussels - Liège-Guillemins - Cologne line) and 34 (Liège-Palais-Herstal).

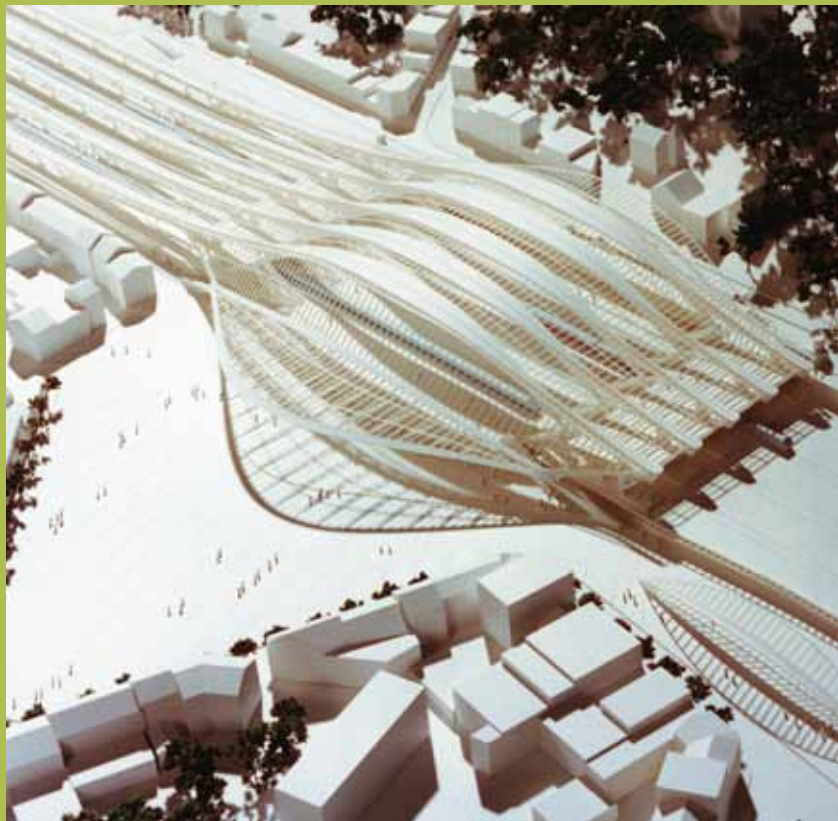


**LIÈGE-GUILLEMINS
AT THE HEART OF
THE EUROPEAN
HIGH SPEED
TRAIN NETWORK**

AN INTERNATIONAL COMPETITION

The Winner: Santiago Calatrava

The volumetry and appearance of the new station were covered by an international tender, notice of which was published in the Official Journal of the European Communities in May 1996. The bidders were selected for their economic and technical capacity. The strict conditions for selection required experience including the building of a station or transport terminal costing one thousand million Belgian francs (around 25 million euros) and integration in an urban environment. In November, Euro Liège TGV* came down in favour of Spanish architect and engineer Santiago Calatrava (1951), who won due to the prestige of his numerous earlier achievements in both railways and structural engineering. As soon as he had seen the site, the architect conceived of an open, transparent station, offering an interesting perspective from above.



Scale model draft, 1997.

Presented in 1997, the first model shows an aerial station whose vault straddles platforms and tracks. Fired with enthusiasm by his approach, the various parties involved decided to work with the architect for the whole perimeter of the station. He was then also commissioned to design the Sofico Bridge* linking the station and its car park to the road network. With its shape recalling the general silhouette of the station, this stayed girder* structure was

characterised by its superstructure,* both curved and sloping. Its outstanding geometry led the engineers to implement the latest calculation techniques in order to guarantee the stability of the metal structure. Control of this geometry, both in the context of fabrication in workshops and erection on site, required very special care.

Although most of the financial and technical resources were used for the

infrastructures, the Calatrava building is still what passengers notice first. It restores the identity of a station which plays the part of urban monument in the same way as a town hall or a cathedral in a different era. Planning permission was given in 2000.

The building work on the station was broken down into specific lots, and then allocated in accordance with European legislation on public tenders.



The stayed girder bridge. Engineer and Architect S. Calatrava / Sofico

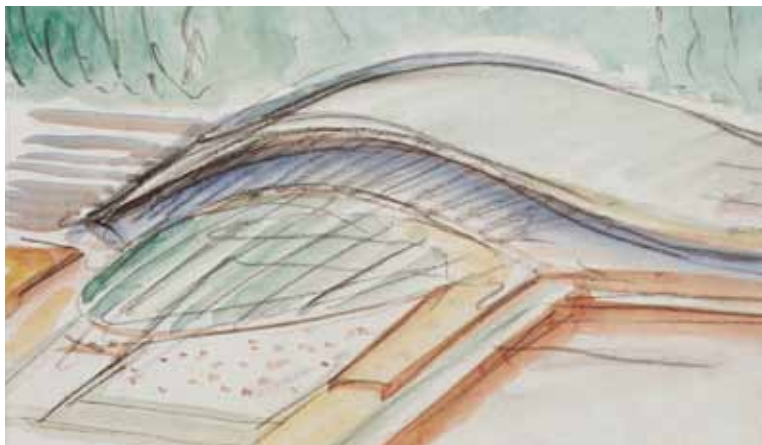


**LIÈGE-GUILLEMINS
AT THE HEART OF
THE EUROPEAN
HIGH SPEED
TRAIN NETWORK**

BETWEEN ARCHITECTURE AND SCULPTURE

A Station with no Façade

Inspired, according to the author of the project, by the figure of a woman lying on her back, the general shape of the station treated as a curve responds to that of Cointe Hill, at the foot of which it lies. The absence of façades highlights the building's function of communication. Receiving trains moving between different places, the station also provides a cross-link between sites separated by the railway line - on one side, the residential district of Cointe, and, on the other, the Fragnée and Les Guillemins residential and commercial districts.



Watercolours by Santiago Calatrava
in "Santiago Calatrava", Ph. Jodidio, Cologne,
Taschen, 2009, p. 84-85.

Surmounted by a monumental vault, the station is laid out on three levels. The town end of the lower level, or "Grande Galerie", in other words the passage under the tracks, houses a shopping gallery, while the "travel centre", faces the station buffet. Then come the platforms, the first of which is easily accessible by the monumental terraces framing the entrance to the "Grande Galerie". Finally, the footbridges at the sides

provide the cross-link, in particular for reaching the various platforms. Passengers make their way round in the station via lifts, escalators, walkways and stairs.

The aerial vault is matched by the intimate atmosphere of the passage under the tracks. Lowered arches of white concrete - whose quality and tone have been scrupulously selected by the architect - create

a luxurious atmosphere reminiscent of the interior of a cave.

However, there is plenty of natural lighting. Light penetrates the glass bricks lining the central part of the platforms and reflects onto the polished bluestone flooring. On either side of this wide corridor giving access to the trains, shops are housed in "bubbles" - oval spaces ringed with large curving windows.



The Galerie des Arcades.



The Grande Galerie.



**LIÈGE-GUILLEMINS
AT THE HEART OF
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TRAIN NETWORK**

A state of the art site

The station is the product of considerable technical research by various design consultants and specialist laboratories. After the first active phase, with the clearing of the site and the demolition of a number of buildings, work was undertaken to stabilise the ground for the construction of the first three platforms. A total of 171 foundation piles were sunk. With a diameter of 90 cm and lengths between 13 and 17m, they were driven into geotechnically complex ground, made up of carboniferous shale, which is difficult to work, and whose response to major loads was unknown. Before the piles were driven, tests were carried out on two piles located in the most fragile part of the subsoil. They were submitted to progressive loads of up to 600 tonnes and behaved in accordance with the working hypotheses.



The construction of the vault, pushed over the tracks.
One technical exploit calling for another: rail traffic was not interrupted on a single day.

As rail traffic could not be interrupted by the building work on the station, technical innovations were employed, in particular for the installation of the vault.

Made up of 39 arches reaching a height of 40 metres at the top and supported on side footbridges and

two canopies, the steel vault rests gently on ten inverted quadripods. Moving it into position, starting in May 2005, was a real technical feat. Assembled on a provisional platform installed on the side facing the town, the arches, grouped in sets of five, were lifted above the tracks, using the thrust of hydraulic jacks.

It took seven successive thrusts to set the structure in place. The arches were moved 9.60 m in each operation. The last thrust, in June 2006, took the 35 arches of the framework to their final position. Two canopies were then added to complete the front and rear structures of the station.



Hydraulic jacks push the arches over the tracks.



General view of the station from Cointe Hill.



**LIÈGE-GUILLEMINS
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The stability of the structure, its wind resistance (with particular reference to the east wind coming off the Meuse) and passenger comfort were measured in a series of tests. These studies were carried out on two scale models of the station placed in a wind tunnel with six fans reproducing strong winds and gusts. The results of these tests were found to be conclusive, and the structure of the station was approved.

At the side by the hill, an 800-space car park was built on three levels, accessed via the stayed-girder bridge* linking it to the motorway network. At the end a quick drop-off car park raised above the tracks completes the station facilities. While vehicle access to the station is on the side

by the hill, passengers travelling by public transport are catered for on the town side. Bus and taxi stops have been provided along the esplanade, with tram stops to follow at a later date. Cycle parking was also located on the town side (under the first platform, in the direction of the Rue du Plan Incliné). The platforms can be accessed from above or below, depending on whether or not one wants to use the underground passage. The many pedestrian facilities (stairs, walkways, escalators, lifts, etc.) provide both disabled access and fluidity of movement.

On Friday, 18 September 2009, the grand opening of the new station took place with the show "Gare à

Vous!", designed by Franco Dragone of La Louvière, and was attended by around 65,000 people.

The formidable enterprise of building this station has been immortalised by the camera of film-maker Thierry Michel who, for nine years, from the first shovelful of earth to the laying of the last slab, filmed the slow gestation of the project. The result is a unique film, "Metamorphosis of a Station", which invites viewers down into the entrails of the site.

Alongside, at the request of Euro Liège TGV,* photographer Alain Janssens criss-crossed the Guillemins site to capture this marvellous technical, architectural, and human adventure!



From the carpark to the platforms via the travel centre and its superb benches of local stone, 135 discrete CCTV cameras provide backup for the "Securail" personnel.

In Figures

29.000 m²
the area covered with Belgian bluestone

32.000 m²
the glazed surface

30.000
the average number of passengers using
Guillemins station every day

10.000 tonnes
the steel for the metal framework

800 spaces
the capacity of the covered car park

200 metres
the length covered by the metal vault

9 years
the time between the work starting
and the official opening of the station

2h18
travel time by Thalys between Liège and Paris

1h03m
travel time by Thalys between Liège and
Cologne

44 minutes
travel time by Thalys between Liège and
Brussels



**LIÈGE-GUILLEMINS
AT THE HEART OF
THE EUROPEAN
HIGH SPEED TRAIN
NETWORK**





Technological innovations: the train timetables can be seen on touch-screens and projected onto the station façade





Left to right, H.R.H. Prince Philip of Belgium, Santiago Calatrava, Architect and Structural Engineer and Vincent Bourlard, Managing Director of Eurogare.

SANTIAGO CALATRAVA: AN INSPIRED ARCHITECT

Born in Valencia in 1951, Santiago Calatrava Valls started drawing and painting at a very young age. After studying architecture in Valencia, he took a postgraduate degree in civil engineering at the Institut Fédéral Suisse in Zurich. In 1981, he submitted a thesis there on the bending of three-dimensional structures. Two years later, he won his first competition - the design of the platform shelters at Zurich Stadelhofen station. This first construction already bore his trademark - a transparent roof in glass broken up by steel arches underpinned by concrete. In 1984, Calatrava produced his first engineering structure - the Bac de Roda bridge, for the Barcelona Olympics. The many bridges he built subsequently established his reputation internationally. In 1989, he won the competition for the design of the Lyon-Satolas airport TGV station, nowadays known as Lyon-Saint-Exupéry. Taking the eye as its inspiration, this building has an aerodynamic form. In the early 1990s, the Spanish architect was in charge of building the Valencia City of Arts

and Sciences. He then opened a third office in his native city, following those in Zurich and Paris. The major contributions made by Calatrava are numerous. He built the Alamillo Bridge in Seville for the 1992 Universal Exposition. For the Lisbon 1998 Exposition, he built the Oriente Station, whose structure, inspired by a forest, is similar to that of the Liège station. In 2004, he produced the Athens Olympic Games sports complex. His team is currently actively at work on the World Trade Center Transportation Hub in New York. This underground station, which was damaged by the attacks of 11 September 2001, is now being rebuilt as part of the Daniel Libeskind* Memory Foundations. In Belgium, Calatrava is in charge of building a new station for the city of Mons.

Combining architecture and sculpture, Calatrava's work, with its instantly recognisable style, is inspired by nature and the human body. Appreciated for his organic architecture,* he is also known as a sculptor, painter, and ceramicist.

Local Stone

What would the new Guillemins Station be without the use of Walloon natural stone? The 27,000 m² of Belgian bluestone give an indisputable added value to this tremendous work of architecture. This material is the bluestone commonly known as "Petit Granit", selected for its outstanding mechanical performance and aesthetic features. Petit Granit can be seen on the platforms, in the Grande Galerie, the travel centre, the esplanade, and the footbridges. Three firms supplied 21,000 m² flags 60 cm long by 30 cm wide and 4 or 5 cm thick with a hammer finish as well as 6,000 m² soft-finish flags for the floors inside the station as well as the steps of massive staircases. The fourteen benches and monoliths in bluestone are also worthy of note. These were made using digitally controlled machines which reproduce the architect's project down to the finest detail. Local sandstone can also be seen on the station approaches.



27,000 m² of local stone - the station is like a giant catalogue for the Belgian quarries!



THE HISTORY OF THE RAILWAYS - A FEW KEY DATES

1804

Commissioning of the first steam engine designed by British engineer Richard Trevithick. This was successfully tested in a factory in Wales. This event marked the beginning of the history of the railways, an essential cog in the wheels of industrialisation.

1825

Commissioning of the first railway in England, near Newcastle, by George Stephenson.* This line was to be used exclusively for transporting coal.

1828

The first French line, linking Saint-Étienne to the port of Andrézieux on the Loire. This was only used for carrying coal.

1830

Installation of the first passenger railway line, running between Liverpool and Manchester.

1832

The first regular passenger transport line in France (Saint-Étienne – Lyon).

1835

The first line in Belgium (Brussels – Mechelen, 20 km long). This link was the starting point for the first steam traction public railway line on mainland Europe.

1835

First line in Germany (Nuremberg – Fürth).

1837

First railway line in Russia (St. Petersburg – Tsarskoye Selo).

1837-1838

Development of the Belgian rail network from Mechelen to Leuven then Tienen and Ans to the east, and Ghent followed by Ostend to the west. In the following years, Ghent, Kortrijk, Landen, Sint-Truiden and Mons were linked to the railway network.

1839

First railway in the Netherlands (Amsterdam – Haarlem) and in Italy (Naples – Portici).

1842

Creation of the inclined plane and inauguration of the first Guillemins station.



2nd half of the 19th century

The Golden Age of the Railways. The length of the railways grew tenfold in Europe and twentyfold in the United States. The development of the railways meant a real revolution in national economies - commercial links were expanded, industrial production soared, and tourism was born!

1912

Manufacture in Germany of the first diesel locomotive.

1924

Construction of an electric diesel locomotive by American Hermann Lemp.

1926

Creation of the Société Nationale des Chemins de Fer Belge (SNCB) (Belgian National Railways).

1930

First diesel locomotive in Belgium.

1931

Inauguration of the rubber-tyred Michelin.*

1935

Inauguration in Belgium of the first electrified railway line, Brussels - Antwerp (top speed: 120 km/h).

1938

Creation of the Société Nationale des Chemins de Fer Français (SNCF) (French National Railways).

Mid-20th Century

Electrification of the Belgian railway network.

1957

Creation of the Trans-Europe-Express (T.E.E.) by the German, Belgian, French, Italian, Luxembourg, Dutch and Swiss railway companies. The aim was to give Europe prestigious passenger express trains.

1964

Commissioning in Japan of the first high speed train. The Shinkansen can travel at up to 210 km/h.

1981

Inauguration of the first French TGV between Paris and Lyon, achieving a speed of 270 km/h.

1983

Belgium joins forces with France and Germany to create a joint high speed network.

1989

The SNCB launches a rejuvenation plan for its network, hand in hand with the TGV project.

1990

Speed record for a TGV train at 515.3 km/h (SNCF).

1993

Opening of the Paris - Brussels-Midi - Antwerp - Amsterdam and Paris - Brussels - Liège - Cologne TGV lines.

1994

Inauguration of the Channel Tunnel. Eurostar lines link London to the continent.

2007

New speed record for the TGV: 574.8 km/h (SNCF).

2009

Inauguration of Guillemins station, built by Spanish architect Santiago Calatrava.



GLOSSARY

* **Modernist Architecture** : a movement that appeared in the first half of the 20th century, characterised by minimal décor, functional, geometric lines, and the use of new industrial techniques involving reinforced concrete, glass, and steel. In the 1920s, key figures such as Mies van der Rohe (1886-1969) and Le Corbusier (1887-1965) dominated the scene. In 1932, New York's Museum of Modern Art (MoMA) held a major exhibition in which this rational architecture, particularly popular in the building of skyscrapers, was described as "international style".

* **Organic Architecture** : an approach developed by American architect Frank Lloyd Wright (1867-1959) in the early 20th century, characterised by the desire to create harmony between human construction and its environment, by interacting with the latter. Giving priority to curves and natural materials, it is designed to appear to be growing naturally from its site, placing it in counterpoint to international style.

* **Bury, Pol (1922-2005)** : trained at the Mons Académie des Beaux-Arts, he was initially influenced by Surrealism, before moving towards

an increasingly strict abstraction. He is mainly known for his mobile sculptures.

* **Collignon Georges (1923-2002)** : a Liège artist trained at the Liège Académie des Beaux-Arts, painted his first abstract in 1946. A fervent supporter of modern art, he worked with the EGAU group several times. A lively pallet and curved rhythms characterised his output even after the return to figurative art in the 1960s.

* **EGAU** : an abbreviation of Études en Groupe d'Architecture et d'Urbanisme, this is the name of a practice consisting of Charles Carlier (1916-1993), Hyacinthe Lhoest (1913-1983), and Jules Mozin (1914-1995). Making its mark on the urban development of the Liège region, EGAU produced several major modernist projects, such as the social housing complex at Droixhe (1951-1979) and Guillemins station (1958).

* **Euro Liège TGV sa** : a design office specialising in technical study, supervision and execution of railway and architectural projects (terminals, signal boxes, logistics centres, workshops, carparks, offices, etc.). In addition to these railway commissions and ensuing work, Euro Liège

TGV is also involved in the property development of the land belonging to the SNCB group near stations - a strategic tool for the upgrading of the neighbouring districts. Euro Liège TGV is a subsidiary of SNCB-Holding. Due to the diversity of its functions, in particular in terms of geography, Euro Liège TGV is now known as Eurogare.

* **Universal Exposition** : an international exhibition bringing together products of all kinds with the twofold aim of comparing national and foreign products and accounting for the technological and artistic progress of the states. Among the best known are the London Exposition, which launched the phenomenon in 1851 with the Crystal Palace, those of Paris in 1889 with the Eiffel Tower and in 1900 with the Petit Palais and Grand Palais, and the one in Brussels in 1958, when the Atomium was built. Liège hosted a single Universal Exposition in 1905, in the present-day Boverie Park and nearby sites.

* **Stayed-girder** : describes a bridge whose superstructure is supported by metal cables fixed to columns.

* **Libeskind, Daniel (1946*)** : an American architect who became known for the building of Berlin's Jewish Museum (1989-1998), whose architecture is rich in symbolism.

* **Maus, Henri (1808-1893)** : a Belgian engineer who produced the inclined plane from Ans to Liège and its operation by cable and fixed machine. He became known in the world of science by defining the tunnelling equipment to be used to drill through Mont-Cenis in the Alps (1854-1870). In 1868, he was appointed as Inspector General of Bridges and Highways.

* **Micheline** : a light railcar whose wheels have special rubber tyres - rail tyres. Patented in 1929, the rail tyre designed by André Michelin can travel on a reduced surface, cross points, and withstand the load of railway vehicles.

* **Stephenson, George (1781-1848)** : a British engineer considered to have invented the steam locomotive. A workman's son - his father was a colliery steam-engine keeper - Stephenson was the first to understand the principle of adhesion between smooth surfaces. In 1814, he submitted his first prototype locomotive,

which he was to improve over the years. His most famous creation was the Rocket, built to link Liverpool and Manchester. With his son Robert, he founded a locomotive works. Stephenson is also known for designing many railway lines.

* **Randaxhe, Noël (1922*)** : a Liège ceramicist and sculptor, mainly known for his monumental compositions. This artist carried out several aesthetic experiments and used various techniques: cast iron sculptures, ceramic geometric bas-reliefs, Petit Granit abstract compositions (including the façade of Guillemins station, designed by the EGAU group).

* **Rets, Jean (1910-1998)** : trained at Liège Académie des Beaux-Arts, he was an important representative of geometric abstraction in Belgium. The space and the relationships of shapes and colours in that space are at the heart of the research of this artist, who was dedicated to painting and architectural integration.

* **Superstructure** : the platform constituting the roadway of a bridge.





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www.calatrava.com

A FILM

"The Metamorphosis of a Station"
by Thierry Michel, 2010.

Founded in 1981, asbl Art&fact is a group of art historians, archaeologists and musicologists from the University of Liège. This non-profit association produces a magazine and scientific publications. It also provides a large number of activities for a wide-ranging public: guided tours, excursions and cultural travel, courses and activities for the young, exhibitions, website creation, teaching packs, books for the layman, etc.

A partnership with SNCB-Holding (teaching pack, guided tours and school events) is designed to raise public awareness of rail transport and its heritage.

Guided tours of the station can be adapted to fit in with specific school syllabi and can be arranged in line with the requirements of the group. Booking at the office of asbl Art&fact.

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"Gare à vous!" Station grand opening show on 18 September 2009. 68,000 people outside the station, 350,000 television viewers. (Photo SNCB-Holding/AT)

