

Reinventing the Railway Station

Michel Maillard

The development of the TGV (French high speed train - *train à grande vitesse*) generated quite a strong positive reaffirmation of the role played by the French railway station. Identity, understandability and functionalism are the three main axes around which the SNCF (Société Nationale des Chemins de fer Français) articulates this global approach, which was first introduced by The Station Design Office (SDO), directed and managed by Jean-Marie Duthilleul, Chief Architect to the SNCF.

Along the mainline system, commuter and local lines, stations are developing into railway transport crossroads, and service and living centres. In the future, their design will fit closely into huge city-planning schemes. The change has taken place through dialogue and consultation between the various parties and partners inside and outside the SNCF.

By reappropriating some of the architectural archetypes of the past, the

modern station is starting over as a symbol of travel and a pleasant place for the customer.

The railway station runs the danger of being a non-spot, a mere transit point. However, in France, the station—new or 150-years old—remains a place that is thoroughly accessible to its users and the areas it serves. As the ‘Gateway to Your Journey,’ the station must be a space where one feels pleased to be; this was the prime target of the successful approach by the SDO, for the last 10 years or so.

The expansion of the TGV system (South-East, Atlantic, North) now serving Europe has generated a network of new stations presenting a powerful image, like older stations did, sharing a common identity. The closed universe of the past has, however, given way to a space of convergence, concentration and interconnection that the station encompasses; it integrates the complex interchanges between today’s different urban, suburban or national transportation modes.

In fact, the old stations, built formerly at the city outskirts functioned very simply on a single level. However, the city has since developed around the station and diversified into underground and overhead transportation systems, etc. One hundred-and-fifty years later, the station is far more elaborate, functioning in three dimensions on several levels. In Lille, for example, the train is connected in a most practical way to all the transportation modes of our modern age. Subway, bus, trams, bypass, taxis and parking spaces are as near as possible to the platforms. This can multiply functional constraints and contradictions, but it is in the resolution of such contradictions within a more compact space, that the heart of any railway station project lays.

First, it is a matter of organization of ‘territory’ whose effectiveness depends on a strong identity. Functional intricacies must be taken into account while properly positioning the principles for identifying the place and the visual relationship to the city landmarks that are the very source of the simplicity of use. It is this kind of balance that creates the modern railway station.

Functional modern stations reviving their heritage

The modern railway station propagates the past and maintains its links with history. It could have been severed from our inherited architectural archetypes. During the boom railway years, the station grew from a ‘gate’ at the city fringe to the status of ‘palace’ in the very heart of the city. Its immutable features being a colossal main hall, subdued light, and stone soaring to the sky to meet the metal framework of the immense ceiling: all characteristic features of a station.

During the 1960s and 1970s, the automobile and plane, more flexible



■ Lille-Europe Station

(SNCF/M. Denancq)

and faster, almost obliterated the enchanting image of transport by rail. The few stations built in that period are bogged down in the surrounding cityscape deprived of the status of noble edifice. The 'palace' turned into a complex territory, planned like a 'factory' with multitudinous 'pipes' connected to carry their respective traffic. City and station were at best simply juxtaposed.

However, in the last 15 years or so, society seems to have re-discovered the railway once again, because it is the fastest and cheapest land transport mode linking the hearts of cities. The new and renovated railway stations propagate the system without breaking the heritage of the past, and also cast the past into the future. For Jean-Marie Duthilleul, the point is to, draw on some of these archetypes to enrich the project, while at the same time outlining the space organizational principles, starting from today's functional restraints."

The Atlantic TGV system made it possible to retrieve the railway station as part of the city, while at the same time serving as city gate and system gate, exchange pole and urban services pole. To marshal this cluster of functions, the SDO had to reinvent some space arrangement and handling principles incorporated in all stages of the project. These principles can be summed up in a single phrase: 'explicitness of the spatial arrangement.' The complexity of a railway station, in its modern sense of intermodal knot, is to be both a system of space sequences, and also of reference points marking out the course. For the user, comfort and fluidity are achieved by easy access and simultaneous perception of the various levels. Montparnasse Station in Paris and Charles de Gaulle Airport in Roissy typify the ideal in this field.

Consistent materials contribute to system identity

The main principles of functionality have been formalized in an architectural charter. Without making any judgment on the shape to be built, the



■ Limoges Station

(SNCF)

charter gives guidance to designers on matters of interior appointments, threshold arrangements, vertical planes and expansive spaces. It stresses the instrumental importance of the linear roofing, horizontal expansion on a huge scale, toward the railway tracks. The way this roofing

shapes the space, curbing and subduing the light is instrumental to the role of creating the architecture of the railway station.

Behind these spatial and sensorial recommendations, it is possible to feel the presence of some of the earlier archetypes, entirely regenerated and adapted to modern requirements.

With regard to the selection and use of materials, the specifications are more precise. Extensive use is made of concrete, metal, wood and glass for their surface appearance and pristine identity. These materials answer the structural quest for image. They all constitute signs marking space, and their consistency effectively contributes identity to the system.

This new paradox gives rise to the notion of consistent railway station projects, all of kindred character as they form the network, and, at the same time all different, heralding the image of the city they serve.

Another factor, light, plays such a dominant role in each project that it becomes a fully specified 'material'. Natural or artificial light allows control of the perception of space and dramatically contributes to passenger comfort. The SDO has also furthered its concern for consistency to the field of design, especially for movables, either technical furniture to be used by railway workers, interfaces used for communicating with SNCF users or

UNE CHARTE D'ARCHITECTURE POUR L'ATLANTIQUE

- 1/ Des gares qui ressemblent à des gares.
- 2/ Des gares dont on lit le fonctionnement par les volumes.
- 3/ Des gares qui s'inscrivent bien dans les villes.
- 4/ Des gares dont l'architecture répond aux caractéristiques techniques du TGVA.
- 5/ Des gares qui fassent rêver à l'Atlantique.

AN ARCHITECTURAL CHARTER FOR THE ATLANTIC

- 1/ Stations which look like stations.
- 2/ Stations where function is perceived through size.
- 3/ Stations which fit in well with cities.
- 4/ Stations where architecture meets the technical characteristics of the TGVA.
- 5/ Stations which make people dream of the Atlantic.

even furniture for their comfort. The design is always used as an image vector, and as a space management tool. Evolutionary analysis led the team to design a kit adaptable to any situation, and consisting of a pole supporting three types of furniture capable of supporting a great variety of elements such as screens, light fittings, column speakers, enclosures, signboards, etc. This furniture kit is positioned with care by associating all the applications (signals, distributors, seats, advertising, telephone, etc.) in order to end up in a near contractual 'Station occupation plan' taking into consideration the consistency and legibility of the whole.

Intermodal railway stations and services centers

The station is a place where crowds meet, and it must, at the same time, foresee and manage a great many individual situations. Each passenger should enjoy the maximum freedom of choice.

The requirements of our time also involve consumption amenities, services for customers as well as reception and inquiry installations. The customer has various observation points in space and on the platforms to watch and should also be able to understand the various services. Rail-

way transport is usually only a link in an entire journey, hence the necessity to plan and organize the prerequisites for intermodality.

Long-distance passengers do not have the same expectations as commuters. The latter, in their daily migrations, become used to ticket vending machines. The long-distance passenger expects more care with regard to reception, inquiries, and sales. Their demand for quality extends to food services, be it fast, or more convivial. Furthermore, many city dwellers frequently visit a railway station without using the services linked directly to a journey; pharmacies and quick services are attracting a new public. Thus, the railway station should be conceived as a centre providing services, as well as a market place, but without turning the station into a bazaar and without hampering the progress of passengers. Finally, in terms of image, the station should impose itself as comfortable and modern.

The architectural and functional concept is to create positions of balance between all these logistics. The station, reaffirmed as city antechamber contributes to the quality of urban life and may become a factor of attraction for the whole city. As gate to the city, the railway station is also the gate to the national or regional system.

New relationships woven between rail and territory

The railway station could be simply left to architects and transportations specialists. However, the treatment of today's railway stations is a planning operation before it becomes a building operation. New design methods have been developed at SNCF to encompass, within a global approach, the architectural project, the programming and legal and financial settings. This non-linear process takes place through permanent ongoing discussion between specialists. It aims to integrate the requirements and wills of the different parties involved (people's representatives, railways and financial authorities) each acting in accordance with their own logic for their management of time and space, or in accordance with the will of the public.

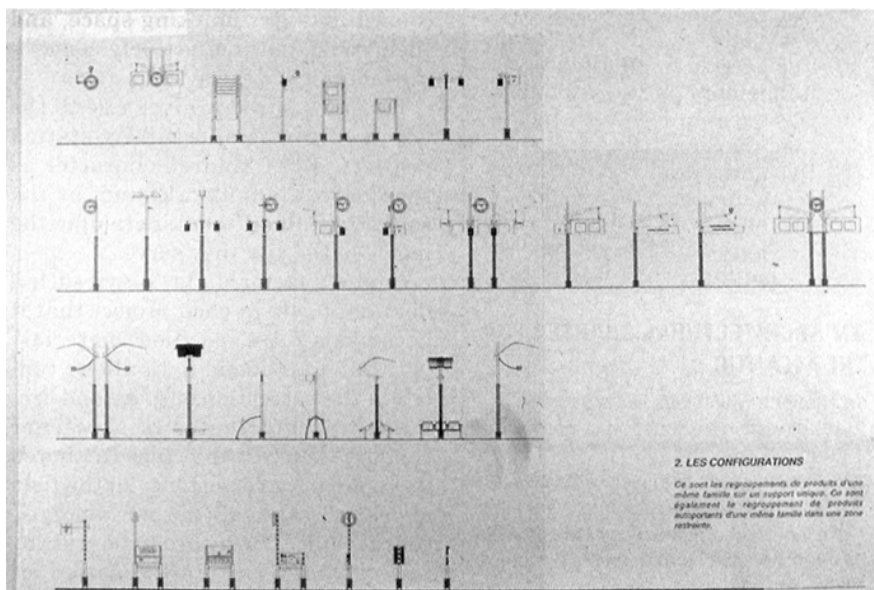
New relationships are woven between the railways and the territory. And, last but not least, the SNCF no longer behaves as a haulier or a landlord, but as a propounding and reactive force in planning matters.

The difficulties in these areas arose from the fact that the analysis factors differ in the course of every design process. So, each new analysis project requires not adaption but redesign of the whole. Discussion helps cross-fertilize ideas, and the points of no return (budgets, deadlines) can be shared by all.

Station Design Office— a place for research and invention

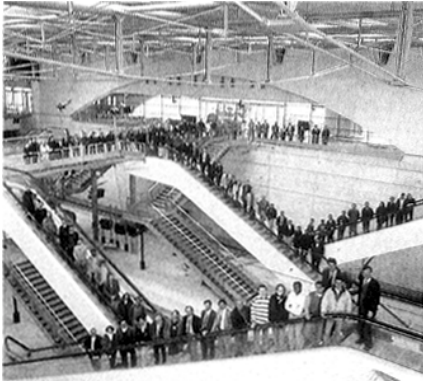
A spirit of openness and debate is found in the Station Design Office (SDO) staffed by some 80 architects, urban planners, engineers, technicians, economists and designers, organized in a linked structure where 'transverse' teams work on each project together with the architect's team in charge of the project and commissioned to implement it at the given site.

The SDO is a laboratory of permanent research thriving on cooperation with external advisers or research departments (civil engineering, struc-



■ Modular Furniture Kit

(SNCF/Andréas. Heym)



■ SDO Staff at Charles de Gaulle (SNCF/J. J. d'Angelo)

tures and fluids, coverings, lighting, acoustics, concrete, etc.).

The charters and rules of the SDO have shown their effectiveness. They are flexible enough to allow diverse solutions and have led to such different achievements as Charles de Gaulle Airport-TGV (collaboration with Paul Andreu, architect to Paris Airports), Lille-Europe (collaboration with Rem Koolhaas, architect-urban planner entrusted with EuraLille area), Chessy-Marne-la-Vallée (at Park gate, integration of Disney charter) and Satolas-TGV (collaboration with Santiago Calatrava resulting from international competition).

The SDO capitalizes on its know-how, acting as an interface between a company dedicated to transport and the heterogeneous factors of the city. It does not negate the contradictions, but stimulates them for the greatest benefit while remaining open in its processes so as to assimilate extremely different situations and produce diversity. In that spirit, it has been developing works abroad in Europe, Asia, and the USA for more than 2 years. This meeting with other cultures on specified subjects is a source



■ SDO Plan for San Francisco Station (SNCF)

of mutual enrichment.

Lille-Europe Box

Lille-Europe, which opened in May 1994, constitutes the station prototype generating and integrating an urban and real-estate development project.

In fact, Lille really wanted the new railway to cross the urban area of Lille and the new TGV station to be established in an empty area just next to Lille-Flanders Station. This choice was based on the local ambition to create a new district called Euralille between both stations to maximize profits from its geographic position in the centre of the London-Paris-Brussels triangle.

After 2 hectic years of talks between the SDO, the local authorities and the team of Rem Koolhaas, the architect commissioned to handle the overall scheme, a substantial programme was finalized. It required shifting the ring road and tramway, extending the subway system and cleaning up a 80-hectare district. Such a program is on a par with a real-estate project developing a shopping mall, hotel, offices, cultural facilities and an urban park.

Originally, the new station had been designed like a 400-m long concrete tube accommodating four tracks

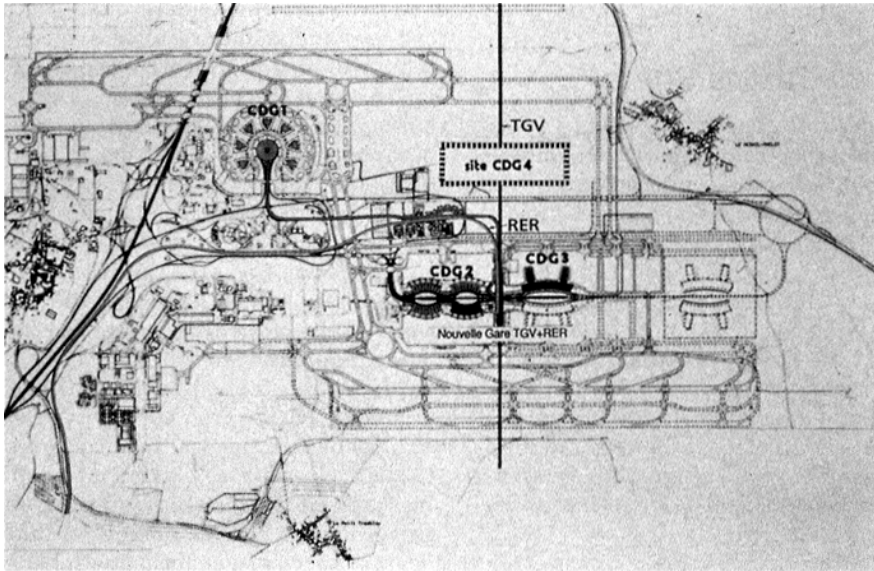
and two platforms underground. Discussions and studies resulted in modifying the initial project so the train appeared on the scene and could take part in the city life. The station thus became a genuine urban space. It is composed of a 400-m pedestrian street, where the passenger can find any transport service he may need: subway, tramway, taxi, car and train. This street also gives access to the entrance halls of the three tower-blocks overhanging the station. Terraced on three storeys, the station hinges around this extensive ambulatory that drains all the transportation modes on the site, gives access to the trains and regroups all the services dealing with travelling, as well as business. This heart of the city is an authentic gallery opening on the city and the trains.

Subdued light, structure repeating to infinity, motion of trains and crowds, Lille-Europe Station is truly within the scope of the eternal station. Its glass roof, shaped into a wave, designed in collaboration with the British engineer, Peter Rice, is suspended by a web of cables from huge metallic arcatures. Thanks to the effects of perforated sheet metal, this glass roof subdues with infinite softness the exquisite light so particular to northern France. By night, indi-



■ Lille-Europe Station under Construction

(SNCF)



■ Plan for Charles de Gaulle TGV Station

(SNCF)



■ TGV Station at Charles de Gaulle Airport

(SNCF/A. Grasser, S. Bataille)

rect illumination seems to make the roof float and creates the illusion of the whole building being suffused with a halo of light.

The circulating vectors of the station play the role of a roofed public passageway between park, shopping mall, tower-blocks, Europe square and urban transport, providing a place for meetings, exchanges and services intermingled with the gossip of the city and the expectations of travel. The spacious arcatures offer the TGV passengers a view of the city. This is how the TGV scene is set.

In this fashion the loop is closed making Lille-Europe Station the archetype of the new relationship between rail and surroundings

Roissy Box

If Lille-Europe Station symbolizes the powerful urban anchor of the modern railway station, Charles de Gaulle Airport TGV stands as the assertion of the multimodal forum, freed from urban constraints. The fruit of exemplary cooperation between two public corporations (Paris Airports and French National Railways), it made Paris the first city in the world to offer passengers such an extensive choice in terms of connection between plane, high-speed train, local express train and highway.

Long discussion led to a complete ref-

ormation of the point-to-point service to the airport. The TGV station, which also serves as a new terminus for the regional express line is between Airport Terminal 2 and future Terminal 3.

This is the point that concentrates all the transportation systems serving the airport. To finalize such a project, whose qualities lie in the deep interdependence of the spaces dedicated to the various modes, a joint team was set up by regrouping the architects of both corporations (Paul Andreu and Jean-Marie Duthilleul of the Station Design Office and Peter Rice of the RFR team).

The first requirement was to build a legible, easy-to-understand pole allowing passengers to keep a permanent whole vision of their itinerary for each available transportation mode. The whole project falls into place on five levels under two immense 200-m long glass roofs rising to the centre of the station topped by a hotel. By bringing out the different structural

levels, the architectural expression has succeeded in turning this *apriori* complex interchange into a very simple space understood by all. Legibility, understandability and functionality are all here; the mineral structure of the trench accommodating the trains, light structures of the stairs and escalators connecting the various levels, and finally, the glass roof topping all the areas offered to the travellers.

The mid-air glass roof (27,000 m²), symbolizing the meeting of the tremendous speeds of the railway and plane, is the key landmark, the element unifying the perception of space. It bestows its identity to this station where travellers to Roissy-Charles de Gaulle can speed directly to principal French cities and other European capitals, while by-passing Paris. ■



Michel Maillard

Following 5 years as an architect in private firms (in France and abroad), 10 years as a town planner in the Paris region and 5 years experience of export with SOFRERAIL, Michel Maillard joined the SNCF (French National Railways) team of architects. He started with the Montparnasse station design project and then became responsible for development studies for the large Paris stations. At present, he works with the SNCF Urban Development Department in charge of station design general studies (in France and abroad), regarding function and their spatial organization.