

The New Station as Interface

An Overview of Image, Function, and Amenity

David B. Stewart

In his *History of Building Types*, the architectural historian Nikolaus Pevsner opens the chapter on 'Railway Stations' with this patent of declaration: "The building of railway stations presupposes the existence of railways". He goes on to describe the first 'real railway' as the 34-mile long Liverpool-Manchester line designed by George Stephenson and opened on 15 September 1830. As is well known, Stephenson's earlier Stockton-Darlington line was mainly limited to the transport of goods. The Liverpool-Manchester demonstration locomotive was the *Rocket*, and in the year following its opening, the line already boasted over 1000 passengers per day. The names of its assorted locomotives, such as *North Star*, *Dart*, *Comet*, *Arrow*, and *Meteor*, are indicative of the impressive speeds, between 15 and 30 mph, attained between the great population centres of Liverpool and Manchester during the early years of operation.

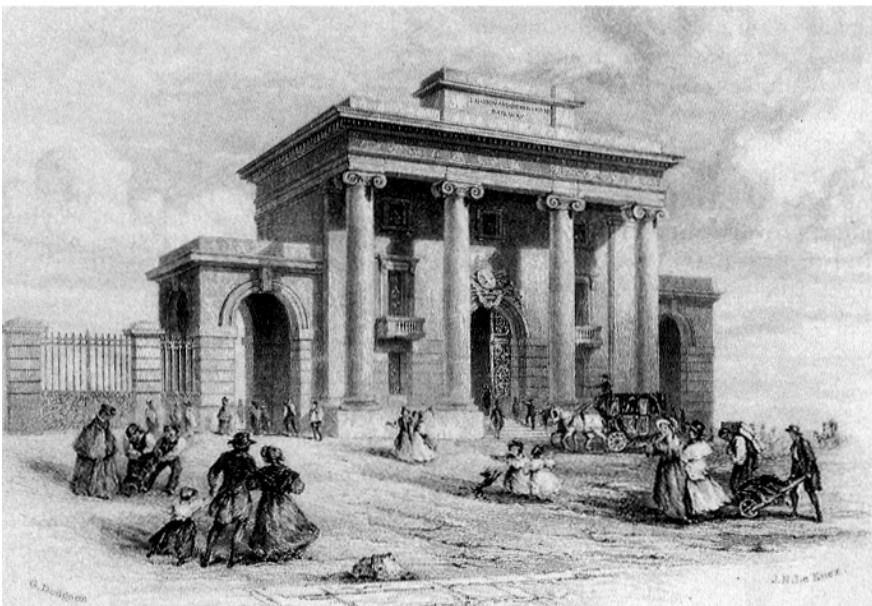
In the USA, the Baltimore and Ohio was incorporated in 1827 while most

of Western Europe, except Spain, had tracks laid by 1839. The first through railroad from the Atlantic coast to the Great Lakes was completed by 1851, by which time Britain had over 6000 miles of rail. The first transcontinental route in America dates from 1869, and by the end of the century the country as a whole boasted some 190,000 miles, or one third of the world's track mileage. In Japan, passenger service was initiated between Tokyo and Yokohama in 1872—with freight service added a year later. The next year, regular service was started between Osaka and Kobe. By 1889, government and private railways together accounted for 1000 miles of track. In 1891, the Russian European system was extended by the construction of the Trans-Siberian Railroad, completed in 1904, during the Russo-Japanese War.

"The earliest of all railway stations," Pevsner writes, "is Liverpool Road at Manchester". This was the Manchester terminal of the Liverpool-Manchester Railway and dates from

1830. Its modest construction is described as "a five-bay house of two storeys with a tripartite entrance and a tripartite window over" – and, of course, a platform (part of which survived into the present century). The Liverpool terminal at Crown Street was another simple, two-storeyed block—with an entrance portico at one end and a covered platform along the line, helping to support a roof of timber across the lines, supported opposite by a blind wall. An optional type set station blocks on either side of the line, an arrangement used from the beginning of the 1840s. From even earlier, a terminal scheme placed the main station building across the lines at their end, with extending wings along either side of the tracks. However, by contrast with the simplicity of the arrangements at both ends of the Liverpool-Manchester Railway, the excavations and tunnels through rock and shale were awe-inspiring. The embankments and bridge at Edgehill, where the locomotives were attached (after the passenger carriages had been allowed to roll by force of gravity through a tunnel from Crown Street) were picturesque and impressive—as was the viaduct over the Sankey Brook and Canal, which attracted favourable attention from the Duke of Wellington at the inauguration of the line. With the addition of Birmingham in 1837, and of London the following year, this line was to become the world's first trunk system.

The London and Birmingham Railway opened in September 1838 and was embellished at both termini by Philip Hardwick, architect to the Duke of Wellington. London Euston (demolished in 1962) was appropriately conceived in the heroic manner as a monument to the Railway Age. Hardwick, himself the son of an architect, had spent some 12 months in Italy in 1818-19 and exhibited views



■ Birmingham Curzon Street Station — The building still stands today, but is not in use.

of the celebrated Doric temples at Paestum, south of Naples, at the Royal Academy in 1820. Primarily a designer of functional and institutional buildings, such as dock-houses, warehouses, and hospitals, Hardwick conceived of the great Propylaeum, or architectural gateway, at Euston as a strictly classical ornament in the Doric mode. Curiously, the railhead and station edifice were still set at right angles to this frontispiece, constructed 1835-39, however the sheer grandeur of the screen was undeniable. It consisted of four cubical lodges with pilasters and bold cornices, flanking two carriage gateways, in the midst of which rose a pedimented gate combining square piers and freestanding columns three storeys in height, not counting the pinnacle of the portico itself, which provided the ceremonial entrance. At the Birmingham end, Hardwick designed Curzon Street Station (1838-42, still standing) as a tall entrance block with four freestanding Ionic columns rising three storeys, with an impressive cornice but no pediment. In 1846-9, Euston Station was enlarged by the architect's son, P.C. Hardwick, who constructed the Great Hall (now demolished) in the Italianate manner. A partial replica of this was co-opted in the Edwardian project for Pittsburgh's P. & L.E. Terminal (1906)—embellished by notions of the Baths of Caracalla—and survives as the Grand Concourse Restaurant of Station Square in Pittsburgh, the most ambitious and successful of all the American rehabilitations of disused stations.

Many European and American stations were designed and executed in variations of Classical and Italianate styles, from late Regency, through Victorian, to the Edwardian period. The grandest and functionally most complex of which were the three great stations—all with vast vaulted concourses—of the Atlantic seaboard built in the first decade of the present century. Of these, Union Station in Washington, D.C., has been recently renovated (while retaining its station function as an Amtrak facility), Grand Central in New York equally retains its role as a station (mostly

commuter) while having become the base of a large Modernist skyscraper, and Pennsylvania Station, also in New York, is no more, a victim, like the Euston arch, of ruthless demolition after WWII. Other stations, almost from the beginning of railway (hence, station) history, were neo-Gothic in motif, or occasionally Egyptian or Moorish. As social institutions, or what Theophile Gautier in the Paris of the last century referred to as “cathedrals of the new humanity”, the railway station—whatever its varied architectural style—provided areas for booking and waiting, eating and meeting facilities, and, especially in the second half of the nineteenth century, sometimes quite regal and elaborate hotel accommodation, both night- and daytime. Following WWI, few Modernist works of distinction were produced—almost none which can compete with the romance and complexity of pre-1914 examples of the age in which the adventure of rail travel was rivalled only by the enchantment of the ocean liner.

Not surprisingly, Pevsner concludes his survey of rail facilities as “building type” with the simple, but brilliant and romantic, facade of Rome's Stazione Termini, which was completed in 1951. The concourse is of glass beneath an undulant concrete roof canopy that is an obvious tour-de-force of engineering, in contrast with an adjacent fragment of Roman wall, which architects were under obliga-

tion to preserve. Sadly, today, the Termini Station is woefully inadequate, not to say vastly overcrowded. However, as an interface with the city (and a dramatic image of arrival-and-departure), the work has lost little or nothing of its excitement dating to the days, in the 1950s, when Rome was a trendsetter of fashion and the art of lifestyle.

Stations have been compared with cathedrals and palaces, or even volcanoes, as centres of bustling activity and perpetual motion. Nevertheless, as a French writer noted as recently as 1978, “The railway station is so ingrained in the very network of our daily routines that one no longer notices it, one no longer sees it”. In the wave of rationalization and station closings that took place during the 1950s and 60s in many countries, notably Britain, this low-key invisibility was precisely the effect sought, partly in the general interest of economy, partly out of sheer negligence, but also in part as a measure of revulsion against a long age during which architecture—including railway infrastructures and their stations—had been all too effective in the promotion of national ideologies and social programmes from which the latter half of the twentieth century now felt itself increasingly distanced. Nevertheless, architects and social theorists alike have frequently remarked that certain monuments are, like rites of passage, a necessary and desirable



■ London Euston Station as it used to be until the 1960s



■ Orsay Station (Paris): Shortly after the opening

(SNCF-CAVI)



■ Orsay Station transformed into a museum

(MAISON DE LA FRANCE)

feature of social existence.

Essentially, it is the railway's role as the most powerful symbol of the Industrial Revolution which renders the station's undeniably emblematic capacity problematic in the present late twentieth century, that is sometimes referred to 'late modernism'—or, even more widely, as 'post-modernism'. The present-day approach is in turn, a rejection of the plain and sober functionalist stations of which Sir Edward Elgar complained as having "...no soul, no romance, no imagination.". On the other hand, today, railway technology and know-how remains simply one mode of advanced technical knowledge among many, even within the field of transport. In fact, airports and service stations present a similar design conundrum of function versus manifest social, or sociological, content. This said, and leaving aside the important preservationist efforts to save or upgrade existing or abandoned stations of the last 150 years, one needs to ask what the future of the railway passenger terminal holds for the next century, predicating an answer on the basis of the notion that railways in some form will continue to exist as one significant means of transport among numerous others.

For economic and demographic reasons, this question is best posed as regards Europe and Japan. In Europe, there has been a more or less constant activity in the renewal and/or replacement of mainline stations and termini in particular. Since WWII, come to mind the competition for Naples (1954), the replacement of Paris-

Montparnasse (throughout the 60s), the projected demolition of Zurich (eventually achieved as a renovation with new subterranean quays, during the later 1970s), the attractive Wilhelmshöhe Station at Kassel (1991), and the bold and, in the event, over-ambitious EuraLille scheme incorporating the Channel-Tunnel link into the European and TGV networks (having become so disappointing in the 1990s), and now the projected 'intermodal' Lisbon-Do Oriente station (with bus, métro, and underground parking facilities) as gateway to the 1998 Universal Exposition.

In Japan, during the 1990s, three major station projects have been under consideration, of which two are presently in construction. At about the same time, JR East and West decided to replace Tokyo Ueno and Kyoto Stations, respectively, while JR Central is supplementing its facility at the mainline station of Nagoya. In fact, Tokyo Station itself has been under a continuous schedule of expansion and renovation, with the decision to preserve the massive red-brick facade of the German Renaissance Revival structure completed in 1914, while at the same time adding new lines, facilities, and services. Meanwhile, the project for the complete replacement of Ueno Station, Tokyo's northernmost terminus, has been placed on indefinite hold.

Still, in all these designs, in Japan as elsewhere, the issue is to predict or prescribe in what ways a contemporary station is expected to serve its public—both functionally and ideologically. In the Age of Steam, the notion

of the station as an 'interface' between journey and destination was clothed in metaphor. Functional provisions were bountiful, especially for First Class passengers, but metaphor showed itself seemingly interchangeable. For example, while the ceiling of the Main Hall at Euston recalled the design of the Basilican church of St. Peter's outside the Walls in Rome, that of its Pittsburgh imitator alluded to a Roman bath hall—a more explicit architectural image of grandeur by the beginning of the twentieth century, an age known for its so-called academic Classicism. Similarly, locomotives, instead of being given names redolent of speed as in the early days of steam, were christened more-or-less randomly with exotic place names or names of persons or places connected with historic events. In fact, stations, or their names, frequently came to be linked with politics, although generally not in the United States of America, where such evocations tended to be restricted to the names of actual locomotives or named expresses.

Perhaps the point here is not so much a changed attitude toward history itself, but rather the fact that rail travel (in spite of its relative decline) continues to be the most public of all forms of transport (including, of course, urban underground railways and all other types of commuter rail services). As transport cannot be virtual—unlike information exchange—it must have a communal dimension that calls for expression. Historically, as well as practically, rail stands for this dimension far more assuredly



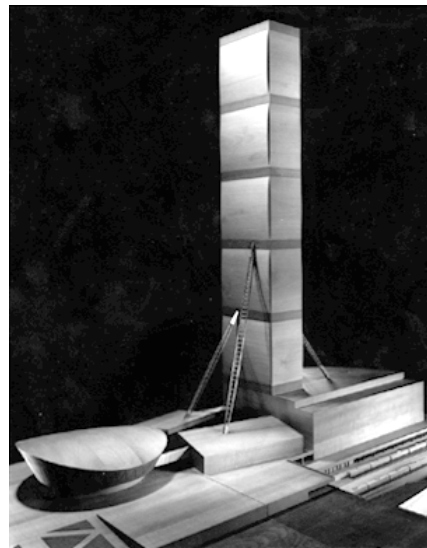
■ Artist's Impression of JR Kyoto Station (in modified construction) (Kyoto Station Building Development Corp.)

than the movement of persons by either road or air.

Of the three large JR station renovations, Nagoya has, hitherto, been largely a one-sided type, Kyoto twin-sided (through with one side dominant), and Ueno a head-type. With most modern stations, the tendency has been to dispense with any type of train shed (the most dramatic feature of any great station, particularly until the demise of steam), placing the trains underground, usually at various levels. This fact alone has deprived arriving and departing passengers of any immediate contact with a great soaring overhead space. Surprisingly, such spaces have instead reappeared in airports—presumably on account of the importance of check-in, which is scarcely a factor in rail travel. The major difference is that however spacious an airport may appear, it is usually a climate-controlled environment, with no further prospect of outside contact, whether in the building itself or, indeed, until the termination of the journey, possibly many hours later. Like those cathedrals which in one way or another they sought to emulate, the great stations of the past were far less hermetically sealed, a factor contributing to their excitement and drama.

In his project for JR Kyoto Station, now under construction, Hiroshi Hara has attempted to recreate the station

as microcosm, or what is today often referred to as a 'second nature'—an artificial, substitute, environment. Nevertheless, it remains the case that even here the existence of the trains themselves is barely taken into account, as the tracks parallel the building, outside it. Moreover, the shinkansen (around whose existence all the great Japanese stations, including the three under discussion, are conceived) provided the first giant step in converting long-distance trains into ultra-high-speed commuter transportation. Thus, except



■ Planned JR Ueno Station (Yasuhiro Ishimoto)

for the notion of increased speed, the concept of the journey is radically de-dramatized; in other words, the thought of passenger convenience overshadows that of real (physical) displacement, so that the journey is made to seem almost virtual. Yet, it was 'virtuality' that highlights all the earliest accounts of rail travel, even on the Liverpool-Manchester line in the 1830s—at a time when the station was emphatically secondary to this sensation of speed, or even to the architecture of the line cuttings as examples of engineering technology.

It is of some interest that the new Kyoto Station will appear as a massive line cutting, or at least a geological, or geographical, 'second nature'. There is, however, a curious precedent for this state of affairs. In Paris, Victor Laloux's Gare d'Orsay of 1900, designed to provide access, real as well as ceremonial, to central Paris on the occasion of the Paris Exposition of that year, utilized electric trains and was approached by two miles of tunnel paralleling the Seine from the Gare d'Austerlitz. Consequently, instead of a separate train-shed, the Gare d'Orsay, which, from its opening, was regarded as a model station, was based on a new open plan that comprised vestibule, waiting spaces, and concourse in one single architectural sweep under a great vault. As Orsay evolved from the status of a



■ Artist's Impression of JR Nagoya Station (in modified construction) (Transportation News)



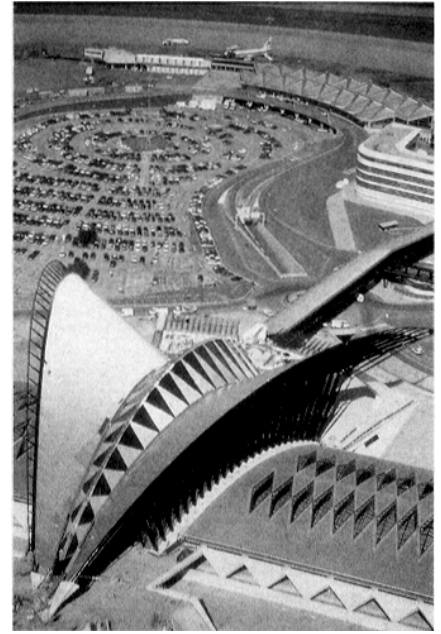
■ Lille-Europe Station (SNCF-CAV/J. J. d'Angelo)

mainline station to a commuter terminal, in 1939, it was seen fit to consign passenger facilities to the existing underground tracks and eventually, years later, closing the luxurious hotel above, just as was to occur soon in numerous American instances, notably after Amtrak. Like in the USA, Orsay gained a reprieve at the eleventh hour, when it was decided, in 1977-78, to convert it into a National Museum of the 19th Century (in celebration of the period 1848-1914). The Milanese designer Gae Aulenti was chosen to renovate the entire structure, which involved replacement of the 988 coffered ceiling panels with gilded rosettes in the Beaux-Arts style and general rehabilitation of the structure, which had become almost a ruin. In particular, Aulenti's contribution was the redesign of the concourse beneath the vault as a vast series of terraces linked by flights of steps, creating a valley-like space for exhibition of works of art, some at very large scale, and expressing an upward movement that opposed, metaphorically, the direction of flow of the Seine.

Consciously, or otherwise, Hara's design for Kyoto provides for the creation of just such a space on the site of the existing—disorganized and piecemeal—station, at present a palimpsest

of lines and functions added over the years, including the fairly recent updating of the original shinkansen platforms and facilities. Hara's architecture has always been predicated on the notion that an individual building, even a very small house, can somehow absorb and filter the chaos of the modern metropolis. Such a building, large or small, offers itself as a matrix or interface between the human perceptual and functional organism, on the one hand, and its wider social context, on the other. The 'geographical concourse' sheltered by a glass canopy is 470-m long and 60-m high, but only 27-m wide. This is more than three times Orsay's 137-m length, and twice Orsay's internal height of 29 meters, but Kyoto's width (27 meters) will be vastly exceeded by Orsay's overall span of 40 meters. In fact, the narrowness of the scheme is explained by the fact that this concourse—comprising station facilities, commercial complex, convention hotel, cultural facilities, and large amounts of parking—is sandwiched between the existing open-air tracks and an only slightly modified vehicular approach zone. By contrast, at Kyoto the principal vertical-glazed facade element, or frontispiece, is virtually continuous with the main horizontal canopy above it, while the immense, skewed cascade stair leading from the 5th to the 11th level will be partially open to the air, thus affording sweeping views of the sky.

By comparison with this new JR Kyoto Station, the JR Central Towers Building, designed by the American architects Kohn, Pedersen, and Fox, and presently under construction, as well, is a somewhat timid and conventional exercise. Although the Japanese can be said to have reinvented the concept of the 'station building' following WWII, thus reviving what had been basically a Victorian concept of traffic infrastructure plus amenity, it seems clear that never again will actual trains and passenger facilities be closely integrated physically. While the new concourse at Nagoya will span the No. 6 subway line, which traverses the mainline tracks below grade, the building itself will be adjacent to the tracks, rising 15 storeys to



■ Lyon-Europe Station (SNCF-CAV/J. J. d'Angelo)

a 'Skystreet'—apparently intended as an analogue of Hara's geographic concourse, but in Nagoya physically separate from the concourse, not to mention the trains. However, it seems possible that these may be visible, in bird's eye fashion, from the Skystreet. Above that level, the structure takes the form of distinct towers: a rounded hotel block of 53 floors and a rectangular office block of 61 floors, with one rounded corner, both facing the city.

A third major Japanese station project of more than usual interest, even though now held in abeyance, is the JR Ueno Station Redevelopment scheme by Arata Isozaki. Ueno is the Tokyo terminus serving the entire north of Japan, served by a pre-war headhouse and sheds, more recently supplemented by underground regional express and new shinkansen lines. Like all mainline Tokyo stations, Ueno Station is an incredible patchwork of human resources, and, more than any other terminal facility, retains the flavour of the vast backcountry area it serves. For increasingly few, it has the bittersweet memory of troop departures for the front. The redevelopment scheme to have been undertaken in 1988, was to have included a hotel, department store, theatre, art gallery, and reorganization of passenger facilities—virtu-



■ N.Y. Grand Central Station

(American Photo Library)

ally the same functions as at Kyoto. The architect's brief called Ueno "a Janus-faced project: one side faces Ueno Park as a cultural amenity; the other overlooks the folksy commercial and residential district." Unlike Kyoto, whose 12 storeys have been the focus of considerable controversy, Ueno was to have been a high-rise scheme, a principle aim of which, nonetheless, was horizontal extension of the Ueno Park 'culture zone' out over the mainline tracks on an artificial platform. The same level would have included a convention-oriented hotel, while commercial and shopping zones would have faced the existing neighbourhood of Asakusa and Okachimachi, a typical hive of shops and entertainment more-or-less in the traditional spirit of Tokyo's downtown. For the skyscraper at the head of Asakusa Avenue, the largest legally-permissible project was contested locally; so the profile of the 300-m high tower was made significantly slimmer, and it would have been supported in a dramatic and visible fashion by huge outside struts-providing a spectacularly sculptural unity for the entire complex. Unfortunately, wind-turbulence studies revealed this buttressing system to be impractical in terms of vibration, while the original articulation of the tower as a stack of discrete 50-meter cubes as a means of fire control also had to be abandoned.

This splendid icon, based nevertheless on various rational and functional premises, at last gave way to a low-rise plan of massed geometries. Such structural considerations apart, the most interesting aspect of the Ueno Station Redevelopment scheme was the notion of extending the park's cultural zone, in conjunction with a renovated commercial interface toward the south and east. The height of the original tower was to have been 69 floors, marginally higher than the American design at Nagoya. The uppermost cube contained a 'Sky Atrium'-seen, in various forms, as an element in common with Kyoto and Nagoya. Finally, the middle three segments of the tower were occupied by hotel rooms. The relationship of tracks to concourse would have been that of the classic across-the-lines terminal, with the interesting exception that one track level would have been at grade, while a second was to have been placed above this, and the public theatre, vast hotel ballroom, and con-

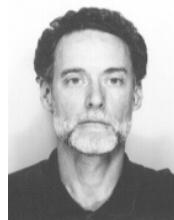
temporary art museum on a raised platform above both, designed to correspond to the level of the park at the top of the slope that backs the station complex.

Today, therefore, the large metropolitan railhead or through station-many of the most spectacular survivals of which are located in Asia, and based on European prototypes-shows that it needs to be the object of the most careful thought in planning renovations or extensions. Metaphor, at least in the older 'applied' understanding of, say, station equals cathedral, is a dead letter. Moreover, a design emblematic of speed of travel becomes less tenable the larger the station, hence the further removal from the actual means of locomotion.

An interesting exception is in France, namely the recently completed Lyon Airport Station designed by the Swiss-trained Spanish structural engineer and architect, Santiago Calatrava. As in the older renovation at Zurich, and the forthcoming new Lisbon East Station, Calatrava plays on the visual coupling between notions of streamlining and the canted vaulting forms of reinforced-concrete technology, which post-date the invention of the butterfly shed and which effectively put paid in the early part of this century to the gigantic train sheds of the past made of cast iron and glass.

Such considerations apart, the new interline, 'intermodal' stations of the present-day represent 'planning for people', with all that the phrase implies, superimposed on a technical base of transport and informational infrastructures. Only in such a way will the dual problems of 'quality of life' be ameliorated and of access and congestion be accommodated and resolved. ■

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David Stewart was born in 1942 in Washington, D.C. Educated at the universities of Pennsylvania and London, he trained as a cultural and architectural historian. Before coming to Japan, he was an architectural journalist for several years in Paris. Since 1975, he has been professor at Tokyo Institute of Technology. He has published *The Making of a Modern Japanese Architecture: 1868 to the Present* (Kodansha International, 1987), and has been a visiting lecturer at Massachusetts Institute of Technology. Earlier this year, he lectured in Seattle and San Francisco on the effects of the Great Hanshin Earthquake last January.