



THE FUTURE OF TRAIN STATIONS

The rail industry continually strives to identify ways to ensure that train users have the best possible experience, and travelling through train stations plays a huge part in this. Although train stations are understandably much quieter at the moment, passengers will eventually return – so, how will train stations adapt and improve what they currently offer in order to accommodate the changing requirements and needs of travellers? This 'roundtable' brings together key industry personnel and those passionate about sharing their opinions on the importance of train stations to the overall rail journey experience, and how these spaces might look in the future when considering the changing demands of tomorrow's passengers.

WITH PARTICIPATION FROM:



Green Furniture Concept



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In what ways do you think that the coronavirus pandemic will shape the way that train stations are used and managed in the future?

RILEY: In the short-term, we expect that, as customers begin to return to rail, they will have a greater focus on cleanliness and social distancing, so we need to have systems in place that will reassure them. The enhanced cleaning regime that we introduced in response to the pandemic will remain in place, and we will also be looking at how we can reduce waiting and congestion within stations. This compliments the steps that we've taken onboard, with reservation-only services ensuring that customers have a socially distanced seat for their entire journey.



A longer-term impact that many have predicted is that we will see a decrease in the number of business travellers. Whether we see this or not, flexibility is bound to increase, alongside the continued use of online meetings. Stations need to play their part in enabling this, providing a brilliant digital experience so that customers can work and join meetings when travelling.



Our customers are diverse and travel for a multitude of different reasons, and we work hard to understand the needs of differing customer demographics. The likely increase in leisure customers will inevitably see more families travelling with us. Customers with small children will have different needs and priorities to that of

a business customer on their daily commute. It's how we understand these differences and model our facilities to ensure that the experience meets the needs of all of our new, and existing, customers that makes all the difference.

Stations have adapted and changed many times over the years, playing a vital part in their local communities and economies, and they will continue to do so long into the future, enabling social mobility and connecting cities and towns across the country.

WALLACE: We'll be missing a trick if an improved station experience is not a positive legacy of the pandemic. We must be responsive to what our passengers want and need, which is a clean, safe and reliable service every day. Stations play a big part in that. We want to reassure and encourage passengers back on to the railway as restrictions are lifted and demonstrate the safety precautions that we have put in place throughout the pandemic. I expect stations in the future to be busier and people to stay for longer, with leisure and business travel likely to recover faster than commuting. This means that people will plan their journeys in advance, including buying tickets, and will be more likely to shop, meet friends and purchase food and

drink before their journeys. Our stations will need to cater for this, as well as the inevitable return of commuters who haven't been working because they can't work from home. I also see railway stations in the future as onward destinations, where passengers on long-distance journeys will hang out longer, like they do in airline travel.

In addition to the precautions and support that we have at stations, our messaging will be just as crucial. We delivered a phenomenal amount of messaging over the past year, and we've asked a lot of our staff who have stepped up and been brilliant for us and our customers. They've really been our shop window for the railway, and I'm proud of the way that we have adapted so quickly. These are the silver linings, because, in facing the challenges of the pandemic, we've learned some important lessons that will really benefit our passengers and customers in the future.

We're also asking a lot from our passengers. We need everyone travelling with us to understand how important it is to follow the guidelines and advice to keep everybody as safe as possible. We're doing everything that we can to keep people safe, but there is also that 'ask' from our passengers to help us and each other.

This is part of our 'welcome back' campaign, which we will focus on as restrictions are eased in the government's phased approach to easing lockdown. It's a crucial moment for us, and we need to be confident in our ability to make people feel safe and confident when they travel on the railway – and that needs to resonate out from us strongly to all of our passengers and station-users.

GRISDALE: In my opinion, there will be three major developments:

Cleanliness and hygiene will become even more important, because they have a major impact on the perception and acceptance of public transport. Corresponding concepts and measures must be visible to the passengers, as this creates trust and confidence.

As it is increasingly uncertain what the 'return to work' volumes are likely to be (estimates vary from a 20 to 40 per cent reduction in passenger numbers after 12 months), advanced ticket sales and 'walk up' sales in station premises will be closely monitored using technology to ensure that facilities, train capacities and timetables are commensurate

with the numbers of travelling passengers.

In addition, the degree of automation at stations will continue to increase, with a further growing importance of smart IT solutions to support the processes. Since, as a consequence of the pandemic and of general cost saving measures, less and less staff are actually on site to directly interact with passengers, it is becoming increasingly important not only to provide contactless self-service offerings, but also to centrally monitor and assess the current situation at a train station and to initiate appropriate measures in case of an incident. This also, and especially, includes new requirements and concepts to guarantee the security and safety of the passengers on site – it's not enough to install another set of surveillance cameras at the station. Intelligent tools are required that can detect and evaluate situations based on sensor information – this is feedback that we receive from our rail customers nearly on a daily basis. In view of the experiences from the pandemic, it is becoming more important, for example, to identify overcrowded train stations promptly and to initiate countermeasures in order to enable distancing rules to be observed.

CASTANIER: It's still too soon to say how many of these new practices will continue once the pandemic is over. But it has definitely made us realise how very vulnerable we are to viruses – and how critical physical interactions can be, particularly in public spaces. COVID-19 has set new rules for living together, and it's very likely that these new standards for cleanliness, hygiene and social distancing will be with us after the pandemic. At SNCF Gares & Connexions, we've raised the bar significantly for protective measures, and have also focused on optimising passenger flows. One tool that we've used is floor markings – white arrows and circles to define the parameters of social distancing. Passengers have told us that they find these markings both practical and attractive. It's more than likely that we will build on these new notions of 'cleanliness' and floor markings to manage passenger flows in the future.

Research undertaken during the pandemic shows that passenger expectations for cleanliness and protective measures remain high and are important factors in encouraging people to prefer travel by rail.

Lastly, we're working hard to make transit through stations as contactless as possible, which often means developing digital technologies »



to accompany travel; in particular, through mobile phones. This includes expanding the use of QR codes, augmented reality and push notifications.



GODDARD: Brightline took off in the United States because we reimagined train travel from a guest experience perspective. Well before COVID-19, we designed a station experience with a cashless, touchless environment that included reserved seating, seat barriers and high-end cleaning. The experience that we designed gave consumers comfort and confidence in normal times and will be the baseline for any train service moving forward. We'll continue to look ahead and will be adding air filtration devices on our trains and stations.



LOHIA: Indian Railway Stations Development Corporation Ltd. (IRSDC) is a Joint venture company of RLDA, RITES and IRCON. IRSDC is at the core of Indian Railways' mission of transforming the country's railway stations into world-class 24/7 hubs and is the Nodal Agency and main Project Development Agency (PDA) for the redevelopment of railway stations.

IRSDC has been entrusted with the mandate to redevelop existing railway stations as per global standards and undertake facility management at railway stations in India to enhance customer experience and make travel a safe and hassle-free experience.

There are, in total, 123 railway stations, 63 by IRSDC and 60 by RLDA, which will be redeveloped in a phased manner. Two stations, Habibganj (Bhopal) and Gandhinagar capital (Gujarat), are in the advanced stages of completion and will be inaugurated by the end of 2021. The Habibganj station will hold the distinction of India's first railway station to be redeveloped under the Public Private Partnership (PPP) model, while Gandhinagar will hold the distinction of being the first station to be redeveloped in EPC mode, with a state government partnership and hotel situated above the live railway tracks.

Other stations to be redeveloped are: Chhatrapati Shivaji Maharaj Terminus (Mumbai); Anand Vihar and Bijwasan (Delhi); Chandigarh, Nagpur (Maharashtra); Gwalior (Madhya Pradesh); Amritsar (Punjab); Sabarmati (Gujarat); Shivaji Nagar (Maharashtra); Surat (Gujarat), Udaipur, Andheri, Bengaluru Cantonment, Hyderabad, Secunderabad, Kanpur central, Prayagraj, Asansol, Kolkata terminus, Jaipur, Gandhinagar (Jaipur); Kota, Dakania Talab (Kota); Ghaziabad etc.

The coronavirus pandemic has further pushed the idea of personalising to the needs of different passengers in a safe environment within the premises of railway stations. At Anand Vihar Station in New Delhi, we came up with the new idea of a 'Digi Locker' at a railway station, wherein a passenger could book a small locker for phone charging services at a nominal price, maintaining a safe distance from other passengers, as well as a digital cloak room. The coronavirus pandemic has paved the way for many passenger-friendly innovations at railway stations.

With the increased use of mobile apps and virtual messaging, what do you think the future of train station ticketing and real-time information facilities will look like?



RILEY: The growth in the use of digital technology whilst on the move presents an opportunity to provide a more personalised experience for our customers. To achieve this, we need to support station teams in understanding individual customer

preferences and needs; enabling them to make the right decisions for each specific customer.

Receiving up-to-date information will remain as crucial as ever to our customers, and we will continue to further enhance our LNER Assistant, which already provides real-time updates via the customer's preferred channel of communication. We also launched our new LNER app in 2020 to provide customers with easy-to-use access to their tickets and live information.

We will build on the increased popularity of contactless technology, empowering our customers to travel door-to-door without the need for a physical ticket. This includes car parking facilities as we begin to rollout ANPR technology across all our managed stations, which will allow customers to pay using contactless payment methods or through the use of an app. However, for those who are less digitally confident, we will continue to provide the more traditional options to cater for our differing audiences.

As an increasing number of customers begin to book their travel online, we are working to make the experience more seamless between the station and customers' online journey. This includes giving

our people the ability to assist customers with queries regarding their online experience.



WALLACE: We'll need to cater for people who want to access information in a variety of ways and



through different service channels. The benefits and ease of mobile apps cannot be understated, but I would temper that with the need for the presence of warm, helpful and knowledgeable station staff – the friendly, human faces who are there on hand to help and support passengers on their journey. It's important that we give passengers accurate and timely information when there are changes that impact their journey, and even more so to tell them about the alternatives, especially if it's to help them to get home or to an important meeting. My hope is that mobile apps and excellent 'on the ground' human customer service can work in tandem to deliver a better experience for our passengers. The importance of blending both the

best of digital technology and human interaction is vital.



GRISDALE: In times of digitalisation, physical tickets, in particular, are a relic from the past. E-commerce is growing steadily, micro payments

for services are on the rise, and the mobile phone as an accepted means of payment is gaining in importance. Even so, paper-based tickets still persist. However, apps offer some significant advantages: they avoid physical contact; they (often) offer guidance through the tariff jungle of the providers; and they can deliver information about delays and deviations in the timetable. However, a major inhibition threshold is currently the fact that, very often, multiple apps are still required to use different providers and modes of transport. There is one app for local public transport, often several for long-distance trains, one for car sharing and one for renting an e-bike. All of these apps need to be installed on the mobile device, and they all work in different ways and support different payment methods. For this reason, physical offerings - such as the paper-based ticket or the information board on the platform - are often viewed as a more convenient and reliable option. As soon as cross-modal apps supporting several types of transport become more prevalent, this will have a drastic impact on ticketing

and information at the train station – everything will go digital.



CASTANIER: It's clear that the increased use of digital technologies has already changed station amenities and will continue

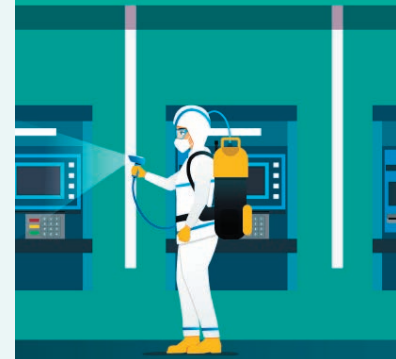
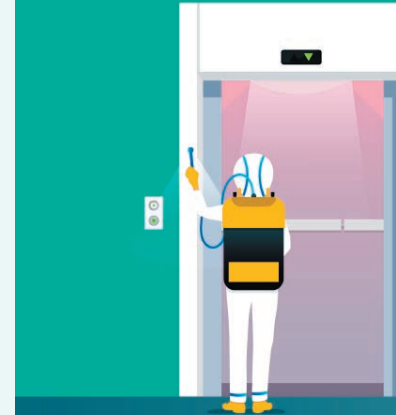
to do so in the future. It has also changed the role played by our staff. But, ultimately, technology is a way to improve customer service. We need to strike the right balance between a reassuring human presence and the convenience that automation can bring – from general information to contextualised, personalised information for individual needs.

We recently teamed up with ENGIE Solutions to launch 'Smart Station', a project designed to monitor 579 stations nationwide and improve the availability of escalators, lifts, boarding gates and other equipment. With the 3D Smart Station app, station operations staff will be able to track and view disruptions, schedule urgent repairs, supervise work remotely and monitor a much larger area more intuitively and efficiently. The system should be up and running by the end of 2021. It will free up staff time for tasks that add value by improving service quality, enhancing the customer experience and boosting customer satisfaction.

GODDARD: As high-speed rail becomes more prevalent in the U.S., first and last mile considerations will be key to offering seamless and convenient access to stations and destinations. The future of our app and service will go beyond our train service. Our app will eventually provide Mobility-as-a-Service (MaaS) and connect our guests to itineraries and destinations at the touch of a button. We envision a digital environment where guests can book, pay for and get ticketed in one place. This one-stop shopping will lead to more convenience being offered, from food and beverage to dry cleaning services. Technology is what will help to enable a true car-free lifestyle.

LOHIA: Indian Railways has already developed both mobile and desktop apps as a part of its digital transformation drive for activities such as ticketing, along with delivery tracking; ticketing confirmation status; real-time train status information; and e-catering apps for food etc. Similar things are also available through a messaging service. These apps are upgraded from time to time, with feedback based on user experience to offer a seamless commuting experience for passengers.

We are in the process of developing self-sustainable railway stations with high standards of safety, comfort, user-friendly passenger amenities, value-added services and efficiency by adopting technology best practices, while focusing on the optimum utilisation of resources. >>



What more can be done to ensure that train stations play a bigger part in boosting passengers' ability to remain digitally connected?

RILEY: A free and high-quality connection is now a standard expectation for most customers, so we need to ensure that that is exactly what we can provide at our stations. The reliability and strength of connection need to match the increased demand for video streaming and online meetings. We've already embarked on a project looking at how to make advances in this area and, as a first step, are working in partnership with mobile phone operator O2 to make 5G available within Newcastle Central Station.

When it comes to connectivity, we need to ensure that the high-quality experience continues when customers leave the station and board their train. This is why our partnership with O2 is also looking to address a key signal blackspot on our route along a 45-mile stretch of the East Coast route between Newcastle and Edinburgh. We are also exploring solutions to address the lack of connectivity within tunnels, a pain point in particular for customers departing or arriving at London King's Cross Station.

Providing a great digital experience isn't just about the speed of connection, so we're investing in our facilities, such as waiting rooms, to ensure that they provide a superior customer experience with the optimum levels of comfort, privacy and ambiance, in addition to good connectivity.

WALLACE: We're continuing the roll out of super-fast Wi-Fi at stations and, in the future, a blend of on-train and station-based Wi-Fi, 4G, 5G and future technology will be crucial to enable this connectivity. In addition, responding to the way in which people change the way they work and meet and the type of facilities that they require access to as a consequence - for example, working space, power and meeting space - is at the forefront of our thoughts.

GRISDALE: First and foremost, an essential point is the improvement of network coverage - for the user, it is becoming less and less important whether it is

cellular technology (4G, 5G) or Wi-Fi. With increasing bandwidth and availability and ever lower usage costs for mobile communications, the use of Wi-Fi actually makes sense where network coverage via mobile networks cannot be guaranteed. However, train stations must not be viewed in isolation, but rather as intermediate stops on a passenger journey. Therefore, it is important to offer a consistent user experience - regardless of whether a passenger is at the station or on the train. This will also improve the acceptance of digital offerings and services that are related to the station, i.e., digital tickets or timetables.

CASTANIER: At SNCF Gares & Connexions, we've launched Digifirst, a programme designed to optimise the delivery of telecommunications and telephony services for the SNCF Group as a whole over the next eight years. We now have 14,000 cameras, 12,000 display boards and announcement systems, 900 Wi-Fi hubs and 380 boarding gates - so our telecoms network has to be homogeneous and robust.

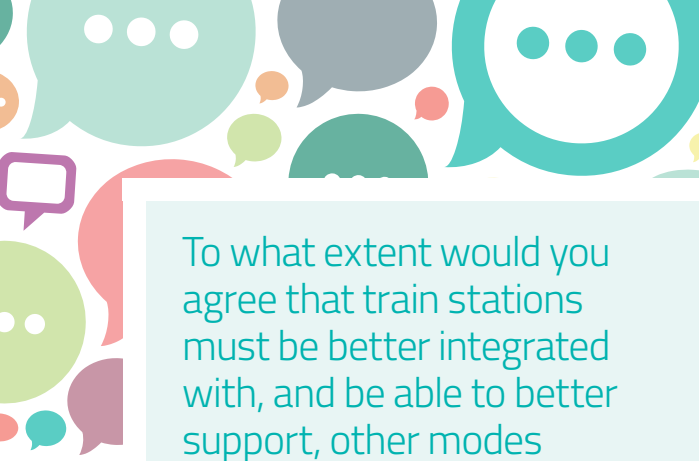
And, as the Internet of Things (IoT) expands within train stations, our connectivity needs will grow.

We're also pioneers in 5G technology. It's already available in our first three Living Lab 5G stations - Nantes, Rennes and Lyon - through three different providers.

LOHIA: Indian Railways is already ensuring that passengers remain digitally connected at train stations by providing free Wi-Fi services at more than 6,000 stations over the last four to five years, as well as Wi-Fi services provided in premium trains.

Indian Railways' social media platforms also allow passengers to log their grievances, appreciation, requests for assistance etc. regarding station standards or train services, which efficiently track, in real-time, passenger experience regarding station standards and aid expeditious solution, thus keeping passengers digitally connected.





To what extent would you agree that train stations must be better integrated with, and be able to better support, other modes of public transport?



RILEY: LNER is committed to becoming the most loved, progressive and responsible way to travel for generations to come, and this includes encouraging as many people as possible to move from long-distance private vehicle journeys or domestic flying to low-carbon rail travel.



To achieve this, enhancing connections between stations and other modes of public transport and active travel is pivotal. The planned improvements for York Station – which will drastically enhance cycling, walking and bus connections – is a good example of how

stations could be better integrated with the local area.

As part of our work to support people in moving towards green travel, we have been increasing the amount of cycle parking spaces that are available at our stations, supporting an increase in the popularity of cycling. We've also been improving car parking at our stations, in order to make it easy for those who are dependent on their car to choose the train for long-distance journeys. As an example, at Durham Station, we have added 50 per cent extra car parking for customers following the completion of a new two-level car park. We will also be installing charging points for electric cars in our car parks, as more people move away from combustion engine cars.

Integration with new and established transport methods is key. With new innovations continuously taking place, it is vital that we provide a variety of options to meet differing customer needs and make it as easy as possible for customers to plan their journey from door-to-door.

WALLACE: I strongly agree. A seamless travel experience between modes is, again, something that our passengers want. Passengers don't necessarily see the divide between, for example, coming into Birmingham New Street Station and then their onward journey by bus to their ultimate destination. There might be different bodies responsible for each leg of their journey, but it's all about getting somewhere on time and with ease, no matter the city or town. Of course, in London, passengers are able to change from rail services to bus, tram and >>



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tube services using a bank card, and this kind of seamless travel is invaluable. The public transport industry as a whole, not just rail, need to realise that and work together to be better integrated.



GRISDALE: From my point of view, this is one of the main challenges that public transport is facing. And this is not just about the physical integration of the various modes of transport – it is, at least, as important to develop comprehensive management and information concepts and roll them out across the board. Today, we are dealing with many more different means of transportation that are available. Whereas, in the past, there was often only the choice between your own car and the local train, there are now a number of mobility providers with a wide range of offerings that can be flexibly combined with one another. Offerings such as trams, car-sharing, e-bikes and e-scooters or carpool apps expand the spectrum – and this often presents station operators with considerable challenges, since a seamless transition between all modes of transport must be possible. This includes maximum connectivity to other means of transport and the ability to change in an easy and convenient way, as well as the availability of booking and ticketing platforms supporting all of these different options. The goal of seamless ‘through ticketing’ must be realised.



CASTANIER: Stations have intermodality in their DNA. They’re multimodal hubs and, as such, superbly placed to develop and accelerate growth in all types of public transport, not least eco-friendly and urban options. One example is EMA (for Espace de Mobilité Augmenté, or Augmented Mobility Space), a concept that we offer to all



regions to develop bike use and facilitate the link between bicycles and stations. EMA features specially designed urban furniture, signage and mobility equipment, including connected options to promote the intermodal use of bikes, scooters and car-sharing.

GODDARD: Greater connectivity is key to building a transportation ecosystem. As a high-speed rail system, we see our responsibility as connecting city pairs that are too short to fly and too far to drive. As we take guests from city to city, other forms of transit must be ready and available for visitors to travel throughout the metro-region. We begin planning for this years in advance and take an ‘all-hands’ approach with local and state governments to ensure broader connectivity.

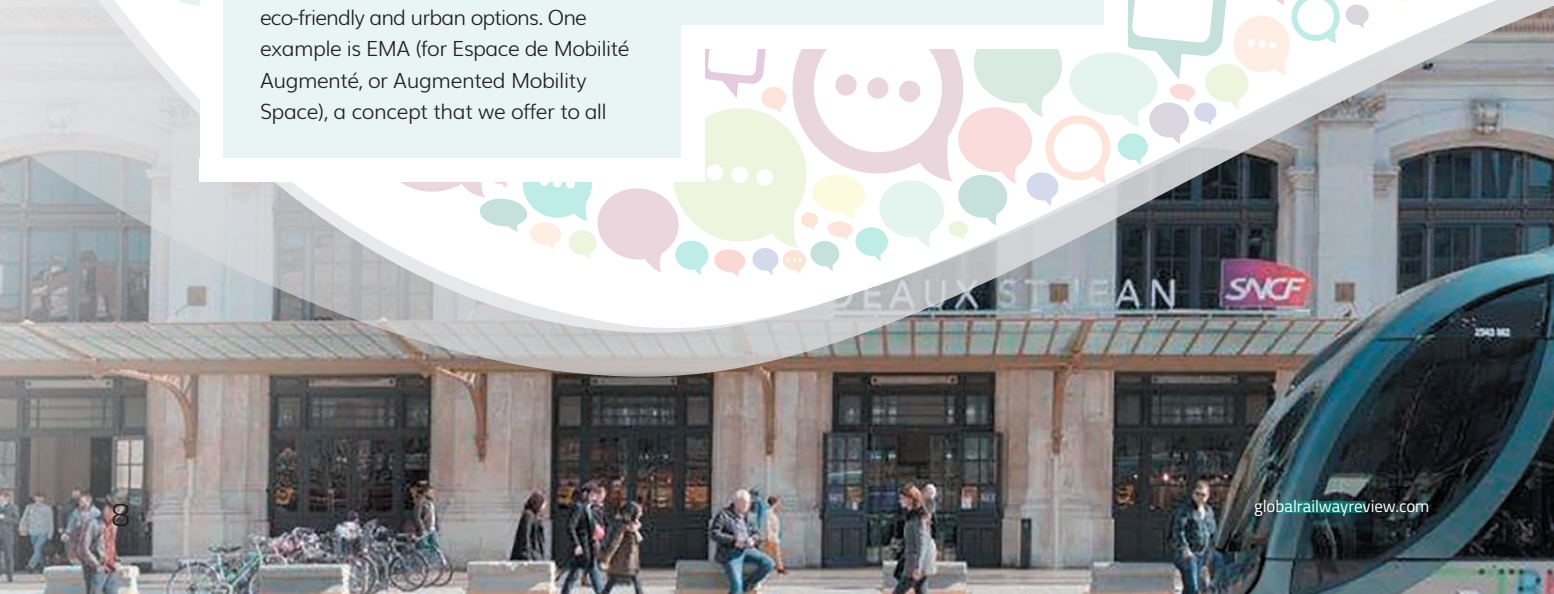
Our flagship station in Miami is a great example of this. We worked with the local government to provide in-station access to the Miami-Dade Metro Rail system, the Tri-Rail (tri-county) and metro mover systems. This connectivity will provide the first and last mile solutions that guests demand. These systems already carry over 40 million passengers annually, giving people access to jobs, entertainment, shopping and residential locations.

LOHIA: As a Nodal Agency and the main PDA for the redevelopment of railway stations, our intent and focus is completely based on ‘multi-modal integration’, which means integration with various other modes of transportation to provide a seamless travel experience for commuters.

Our recently redeveloped Habibganj (Bhopal, Madhya Pradesh) railway

station is the best example of such an integration. The station has been designed as a multi-modal transit hub. It is surrounded by BRTS from both sides. Furthermore, the under-construction Bhopal Metro will have direct connection with the new West Terminal Station Building through a skywalk. To avoid congestion, there is complete segregation between arriving and departing passengers. To decongest the station area, an exit underpass has been constructed for passengers alighting from the trains. The station also has a passenger holding area on the air concourse. The station now has parking provisions for approximately 300 cars, 850 two-wheelers, rickshaws, taxis and buses. To ensure a seamless flow of passengers in all-weather conditions and better passenger movement, two 4m-wide underpasses have been built for arriving passengers, along with the provision for CCTV and PA systems.

Similar facilities will also be provided in other redevelopment projects, such as Surat, where, for the first time in the country, three government agencies have pooled their land and resources (i.e. Municipal Corporation of Surat, Gujarat State Transport Corporation (GSRTC) and Railways) to build a multimodal hub. Likewise, Sabarmati will also be a multi-modal hub with a railway station, high-speed railway terminal, metro terminal and bus terminal integration.



How important do you think it is for train stations to become 'hubs' to cater for leisure, business and housing needs, rather than simply being an entry point to railway networks?



GRISDALE: That certainly depends on the location and size of the station. In large cities, we are already observing a trend that major stations are being transformed into small shopping centres and attract gastronomic offerings. Some of the retail space there is already producing considerable rents today. If it actually happens that stations turn into hubs of various modes of local and long-distance transport (rail, e-mobility, bicycle, etc.), this trend will certainly intensify, as more people will have to change modes of transport or wait for connections. From this perspective, a growing multimodal offering can lead to an increasing attractiveness of the location and, thus, increase the potential for a growing commercial and gastronomic offering – which will have an impact on the future business model of station owners and operators. Even today, some of the larger metropolitan train stations are already managed like a shopping mall.



CASTANIER: It's important for four main reasons. First, the basics: 'hub' stations improve the quality of the user experience. Our surveys show a clear correlation between the presence of retail businesses and travellers' perception of the quality of time spent in our stations.



Secondly, these businesses make a significant contribution to the viability of our stations' business model. In France, we channel 50 per cent of rental income back into the rail system to reduce our station charge for trains, and that translates into lower fares. We invest the remaining 50 per cent into station upgrades. So, all income generated by third-party activities is reinvested in the rail industry.



Thirdly, stations already have the basics to become destinations in their own right. Our own vision calls for making them more multifunctional. For instance, as efficient multi-modal hubs built around rail service and promoting seamless, zero-carbon intermodality; as convenient, lively hubs that are pleasant, warm and community-oriented – where people interact and connect as they go about their daily lives – making stations once again the heart of community life; as logistics hubs – the station's central location, flows and space could offer delivery, forwarding and storage services, at a time when the last-mile delivery equation is more pressing than ever.

Lastly, as an energy hub for trains, for the station itself, for its town and for users. This is a new function that is worth developing.

For decades, stations have played a central role in mobility within our society. Today, they are better equipped than ever to combine past and present to create a balanced, harmonious whole that serves the entire community.

GODDARD: Transit-oriented development offers smart and sustainable development within high-density areas. This is a model that has worked in the United States and elsewhere and has been an area of focus for Brightline. In addition to our own investments alongside our trains, many developers have built additional real-estate for commercial and residential use. Developers see Brightline as a way to lure residents and businesses by providing instant access to a state-wide transportation network. Also, as our cities and neighbourhoods become more walkable and more people go car-free, transportation options become more important. We believe in the 15-minute city and think that, ultimately, these need to be built around multimodal transportation hubs.

Brightline offers a case study in South Florida in how developers looked to redevelop key areas within walking distance of our stations. This creates destinations, connects economic centres and creates liveable hubs that are easy to get around.

LOHIA: It is extremely important, with a next-generation futuristic outlook, to make railway stations hubs for leisure, business and hospitality. We are redeveloping our key set of 63 railway stations on similar lines as we aim to provide best-in-class passenger amenities with state-of-the-art infrastructure facilities.

Our recently redeveloped Habibganj (Bhopal, Madhya Pradesh) railway station is one of the best examples of such hubs. The railway station has been redeveloped along the lines of Germany's Heidelberg railway station.

Habibganj is also a first-of-its kind railway station in India, with all state-of-the-art passenger amenities. A commercial establishment, bus terminal and office lobbies have been built on the western side of the station, while service apartments, hotels, hospitals, spas and a convention centre have been built on the eastern side of the station. The redeveloped station has a dome-like structure at the entrance with sky lights, the first ever air concourse (above the track) – a dedicated concourse area with airport-like retail outlets and cafeterias, a plush waiting lounge for passengers, refurbished and world-class interiors, with gaming and museum zones.

Similarly, Gandhinagar railway station is the first-of-its-kind railway station in the country, where a five-star hotel is being built over the railway tracks. Gandhinagar and Habibganj are the first two stations to have been redeveloped into world-class 'transit hubs', with airport-like facilities and state-of-the-art passenger amenities. >>





How can train stations become more sustainable and play a bigger part in the rail industry's ambition to be a 'greener' mode of transport?

GRISDALE: I think that stations (and the rail industry, in general) needs to be incentivised by time-bound government targets to make improvements in this area, and then using technology to constantly monitor and refine the improvements. For instance:

- Reducing the overall emissions at stations by a percentage x the number of trains using the station
- Mandating a percentage of the overall power usage of each station that is provided from renewable and green sources (solar, ground pump heat generation etc.)
- Ensuring that the stations and train operators that use stations are procuring on a 'sustainability first' principle e.g., purchasing goods, equipment and services that have the lowest environmental footprint and the longest operational lifespan. Also procuring goods that can be serviced, repaired and refurbished in preference to those that are merely replaced.



Many stations (particularly in suburban and rural areas) are custodians of large tracts/corridors of land, most of which cannot be accessed by the public. They should have targets implemented for tree planting and the general planting of a wide diversity of plants to offset carbon emissions. Additionally, there should be targets for protecting and introducing species of fauna that would thrive in these very private corridors of land.

CASTANIER: Stations are particularly well placed to help the rail industry to meet its green goals.

First, they are the access points for trains, which are far and away the most sustainable mobility mode, with CO₂ emissions 50 times lower than individual cars and 80 times lower than planes. As such, they can be a more assertive and credible advocate for the energy transition.

Secondly, because they design, manage and maintain over 10 million square metres of public space, that in turn allows them to support eco-design, energy-efficient systems, waste sorting and recycling. They can even use their space to produce solar energy. Gares & Connexions and our parent company, SNCF Group, are actively engaged in a Green Station programme.

GODDARD: We have a mission at Brightline to become the most environmentally friendly form of transportation in the United States. In order to achieve this, we must look at our broader business practices. We've partnered with Florida Power and Light to place 'solar trees' at our stations and our parking garages to encourage electrical vehicles. As we relaunch after COVID-19, we plan to place renewed emphasis on recycling programmes, waste and water reduction, and partnering with vendors who hold

themselves to high sustainability standards. We are not just offering transportation, we are offering a lifestyle change that starts with getting rid of your car, and our guests should see this throughout our business.

LOHIA: It is extremely important - indeed, a necessity now - for stations to become environmentally friendly 'green buildings', considering the cascading impact of climate change. We are following global standards and requirements of green buildings for all of our upcoming station redevelopment projects.

Those that have been recently redeveloped, like Habibganj (Bhopal, Madhya Pradesh) and Gandhinagar (Gujarat), have all of these facilities in place.

For example, in Habibganj, the extensive re-use of water has been planned, with zero discharge technology being put into place for sewage systems. Approximately 6,778m² has been identified for soft landscaping and 7,300m² for hard landscaping. To ensure cleaner energy from renewable and non-conventional energy, provisions for solar energy generation is also provided at the railway station, along with LED lighting installations. Adequate provision of rainwater harvesting has been made at identified locations.

What do you think are the main priorities to be addressed to ensure that train stations are more accessible for all people in the future?

RILEY: For the rail industry to build back better, we must be ambitious when it comes to creating a truly accessible railway. This starts with getting the basics right, such as ensuring that all stations have level access. As part of this, we are well underway with the construction of a platform lift at Retford, which, once complete, will mean that all station platforms we call at between London and Edinburgh will have modern, level access.

We continue to regularly engage with rail users and disability groups on our route to understand how we can further enhance the experience, especially for those who currently need to book assistance. Increased utilisation of digital technology will play a key part, in addition to simple initiatives that can make a real difference. An example of this is the Sunflower Lanyard initiative, which we introduced to the rail industry in 2019. It is just one way in which we have helped thousands of customers who may



need extra help at our stations or on our trains travel with confidence and enjoy a smoother journey.

WALLACE: Stations must cater for all customers, and our aim is for a truly inclusive railway that is equally accessible to all. To do that, we need to understand what factors are essential to enable customers to be able to travel as independently as possible, through our stations and onto our trains – to be confident that they can complete their journey and be able to rely on us to help and assist when needed.

And we need to ensure that as many of our stations are equipped with what is needed. It's about visible and non-visible conditions, and that requires not just better infrastructure solutions, but better information solutions, and our staff are crucial to this. We have tended to default to being step-free - which is, of course, vital - but these are just the basic foundations from which we need to build a much more inclusive experience.

As a starting point for that, we need better quality data on the effectiveness of what we have in place today to be able to target more effectively where our biggest gaps are. Some of the standards need to be reviewed to make sure that they are as effective as they can be, and we need to work with the industry together to make this better.

GRISDALE: There are many issues here to be considered, which are concerned with minimising any barriers to the rail network via stations. These would include safety and comfort at stations (particularly rural stations) by improving lighting, shelter and the coverage of CCTV at all stations.

Access to local stations is also important, particularly after a pandemic, where the travelling public has opted to start using their cars again as their primary means of commuting and other travel. This will require investment in new stations and walk-up platforms and the re-opening of old stations, so that many of the growing number of suburban new-build conurbations have good access to the rail network.

Also, as discussed earlier, the simplification of ticketing, particularly for multi-mode journey planning.

CASTANIER: To make stations more accessible to travellers with disabilities or reduced mobility, the first priority is to finance necessary changes to infrastructure. That represents a significant investment – and it's often underestimated. At Gares & Connexions, we took over platform management from SNCF Réseau in early 2020 and will require massive investment over the next five years.

But we also have to continue providing high-level assistance through trained staff and tech solutions. This year, for example, we've developed a new digital tool to manage the service as a whole, end-to-end. Now we need to streamline the customer's path through the


station, and that's the goal set out in Article 53 of France's new Mobility Orientation Act (LOM), which calls for a single booking number to handle requests from A to Z. It's a great opportunity to develop direct relationships with passengers that need extra help – a category set to grow as the number of seniors rises.

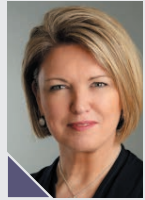
GODDARD: Our situation is a bit different in America than in parts of Asia and Europe. High-speed rail is currently limited to metro areas in the Northeast. But, for high-speed rail and its stations to become more accessible, we need to invest in our nation's infrastructure to offer much greater connectivity. At Brightline, we believe that the private and public sectors both play a role in developing high-speed rail. For America, it's not a matter of 'if', but a matter of 'when', and we believe that this next decade will prove that high-speed rail belongs in America.

We have come a long way in the transportation industry in ensuring that all of our citizens have equal access to travel as they choose, but there is always more work to do. Our trains are the most ADA friendly in the country, with aisles wide enough for wheelchairs to go from one end to another, gap fillers to help people to transition smoothly from train to platform and many other features and amenities to take into consideration those who need special accommodations. The intent is to make all feel welcome and enjoy the experience that we offer.

LOHIA: The priority should always be to provide best-in-class, user friendly amenities, with special emphasis for differently abled people or people with reduced mobility. In fact, all redeveloped stations will cater to the needs of people with reduced mobility and shall follow the guidelines approved by Ministry of Railways.

For all of our ongoing and upcoming station redevelopment projects, we are extremely sensitive about this particular aspect, and developers have been clearly instructed to follow global best practices in this regard.

For example, in Habibganj, the redeveloped station has a central air space concourse that is 84m long and 36m wide, with a connecting bridge 15m wide and 56m long, equipped with amenities for waiting and seating. The station has been redeveloped whilst keeping in mind all best-in-class amenities for differently abled people or people with reduced mobility. International best practices and Indian norms have been taken into consideration to ensure its adherence. User friendly international signage has been installed at the station. It has a well illuminated circulating area with sufficient provision for drop off, pick up and dedicated parking. There is provision for six lifts, 11 escalators and three travelators for easy access to platforms and the concourse. 



SPOTLIGHT

Green Furniture Concept's Founder, *Johan Berhin*, discusses the future of train station furniture and how it can help to shape the passenger experience and prevent the spread of COVID-19.

How must train station furniture evolve to enhance the travel experience of the future?

The world is changing ever faster. The pandemic has pushed this, but the journey of change has still just begun. Stations need to be flexible, furniture needs to be modular and business models need to be circular to be able to shift to the next level when it comes – whether that is Hyperloop docking at the station or self-driving cars.

Passenger satisfaction has already been set as the number one target and performance indicator by Nederlandse Spoorwegen (NS) – the Dutch rail operator. Moreover, it is the key driver for a larger shift to rail, and the key to more business in and around the stations.

The travel experience is not something that can be added on the side anymore, in the style of 'let's choose purple seats'. Railways are in the experience industry now, and wowed passengers are more satisfied, more loyal and more receptive. The furniture companies that can step up to this, in an efficient and ready to roll out way, will be the ones that get the orders from the networks.

What role can train station furniture play in the battle against the spread of COVID-19?

Obviously, furniture needs to be sanitisable, in an efficient way. But not everyone knows that wood is also naturally antiseptic – think of wooden chopping boards. And that this effect can be either closed off, with varnish or paint, or strengthened with wax as a surface treatment.

Having a seamless seating line also answers well to the current need for distancing, where the right distance between travelling entities can be taken while families can sit close together, seamlessly adjusting to regulations and passenger load.

Using natural materials and natural shapes may also be the strongest way of building a nice environment in the stations, and a feeling of safety, for the recovery after the pandemic. Creating a welcoming feeling and giving a place to breathe and to feel that things are OK again.

Can train station furniture contribute to the rail industry's ambition to become more sustainable?

The station is the shop window to the most sustainable means of travel. And station furniture is like

the clothes in that window. So, dress up the station smartly and clearly sustainably, using natural materials and natural shapes. People that actively have chosen the train instead of the car or plane should feel that they are taken seriously in this decision, and that rail is the right choice. 

Johan Berhin

Johan is the Founder of Green Furniture Concept. He is the designer behind the Nova C series that you can find in public places all over the world. He has an engineering and industrial background and got his design education at the TU Delft in Holland, and at Domus Academy in Milano. His industrial experience has given him a good knowledge of manufacturing and has fed a need to make things better – to find ways of manufacturing closer to nature.

Designing future train stations



Green Furniture Concept

A placemaking seating concept of efficiently tailored, modular solutions using Biophilic design to shape passenger experience. Making places that matter.

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