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Vision

Frame is a distinct and elegant footbridge which clearly signals its function and offers a delightful experience to its users. Its timeless design fits cherished heritage settings as well as the newest station environments.

Frame has a strong visual identity, both during the day and after darkness falls. Visually minimised, the simple design is highly identifiable and easily adaptable, technically as well as architecturally. Frame is a flexible system of elements which can be combined to cater to all needs and handle any site-specific complexity. The column-free design allows for more space and better overview on the platform.

At night, the built-in illumination creates perfect visibility conditions, giving a feeling of security by gently supporting encounters between people, while at the same time enhancing the qualities of the bridge itself.

Frame is designed for industrial prefabrication and easy on-site assembly with minimal impact on railway operations.





Identity

Railway buildings and structures have often been at the forefront of technical innovation. This is well illustrated by British cast iron and steel railway structures, as they have historically been highly sophisticated.

The ambition of Frame is to take advantage of today's innovative yet proven steel and glass technologies to create a straightforward and elegant design which nods to the history and heritage of British railway architecture.

Contemporary design can complement an existing historical or heritage context, not by trying to blend in, but rather by enhancing the differences between old and new. Frame represents its own time and age quietly and respectfully. It unfolds a very clear, modular and straightforward design which aims at adapting seamlessly to different settings without losing its distinctness and quality.

Different communities each have their own identities, which a generically designed structure can be challenged to fit into. Frame has a strong identity, yet allows for considerable design flexibility to interact with the surroundings and reflect the specific situation. Frame stands out and signals its use to the outside world. Its experiential features make it an attractive part of the passage over the tracks.



Materials

Like a rough-skinned box with a delicate lining, Frame creates its own welcoming space, with the soffit above and the end walls marking the beginning and the end of the passage.

Frame is an exclusively steel structure, supplemented with glass panes. The small number of materials not only reduces construction time, but is also practical in daily operation and for replacement. The colour scheme with the signature yellow enhances key architectural elements, both exterior and interior. The ceilings of the stairs and bridge as well as end walls, handrails and parapet exteriors are all painted in the yellow Frame colour, which becomes an identifiable signal. The colour code is RAL 1018 Zink Yellow.

For surroundings in which the signature yellow might be less desirable, or where the bridge's expression should be toned down, an alternative green colour is available. This has the colour code RAL 6021 Pale Green.

Bridge deck and steps are finished with a dressed epoxy binder to form a non-slip surface in a warm, neutral colour.

The glass panels are thermally hardened and laminated safety glass. Details on the interior are in stainless steel.





Usability

The Frame design includes a number of small features to improve wayfinding, promote appropriate behaviour and support inconvenienced users.

The signature yellow colour is visible from afar as a key characteristic of the bridge. Yellow is present throughout the journey, on handrails, soffits and the end walls of the bridge deck. Yellow shows the way. Slightly enhanced lighting at the portals marking the entrances to the stairs is not only a helpful signal but also a gentle push, nudging passengers out of this potentially busy spot.

More light at the top of the stairs and in front of the lifts marks key points of the passage and disperses congestion. All users must pass through these particularly well-lit crossings, where CCTV conditions are ideal.

A key feature of Frame is the cantilevered wings of the bridge deck. They stretch the bridge deck visually, and create an extended space from which to look out. An added function of the wings is to provide space for people to wait for the lift without being in the way of those using the stairs. The bridgedesign complies the Design Standards for Accessible Railway Stations.

At platform level, the machine room doubles as a barrier, preventing people from walking into the stringers or the back of the stairs.

The high degree of usability is expressed through straightforward access to lifts, few confusing changes of direction and no differentiation between users. The impression will be of a bridge designed with the users - all users - in mind.

Light

Frame has an illuminated interior space with the strongest light where it is needed - on the deck and stairs - and softer light gently washing the interior and the people inside.

With the light coming from low luminaires, there is no risk of glare. Diffused light from a low height reduces reflections in the glass. Dim reflections help to retain the transparency of the glass at night, ensuring passengers a view of the surroundings, which gives a sense of place and eases wayfinding.

The illumination supports the overall design intentions, and the light fixtures themselves are integrated into the architectural modulation principles to form a part of the bridge fabric.

Seen from the platform, the bridge deck is never in view; from here the soffit of the covered bridge looks the brightest, enhancing the most prominent characteristic of the covered bridge.

On the open bridge, people moving about on the deck will be clearly visible, enhancing the impression of activity at the station. The lighting design ensures a safe, comfortable and positive nighttime experience, also under the bridge.



Facts

Main types:	Open/Covered
Max span:	20 m
Through lifts (area):	1.6 x 1.6 m
Number of treads, landings:	34 treads, 2 landings
Waiting areas:	2
Interior height on covered bridge:	2.4 m
Clear stair width:	1.6 m
Clear bridge width:	2.4 m
Waiting area dimensions:	2.4 x 2.0 m
Clear height over tracks:	5.78 m
Clear height over platform:	4.86 m





Standard bridge with equal platform requirements



Platforms at different levels



Double bridge, shared lifts



Different staircase directions



Different staircase types



Three or more paralle. platforms



External bridge connection



No stairs



Double lifts

Adaptability

Frame is designed for industrial prefabrication and easy on-site assembly, with minimal impact on railway operations.

This is reflected in the modularity of the design, which allows for a high degree of adaptability; the well-defined components can be put together in many different ways to address specific situations. Stairs and bridge decks can be wider, lifts doubled or directions adjusted to fit local conditions and requirements.

While the flexible, modular system caters to all eventualities, the elements that make up Frame - glazed lift shafts, stairs with straight stringers, highly distinct bridges - are so recognisable that any variation of Frame will retain its attractive characteristics and highly identifiable appearance, no matter the situation. The Frame design is not easily compromised.





Step 1



Step 3





Step 4





Step 6

Construction

Frame is designed for straightforward construction, with minimal work to be done on the platforms. Prefabricated elements are joined to form self-stabilising components which are as large as possible, in order to reduce the number of hoists required during assembly - particularly of components which span the tracks. Assembly - Step by step:

Step 1: Foundations and underground services are prepared on the platforms.

Step 2: Lift shafts are erected as on-site construction work or as prefabricated structures transported to site.

Step 3: The cantilevering wings of the main bridge deck are lifted into place, attached to the lift shafts and supported by temporary columns.

Step 4: Fully assembled staircases are hoisted into place and connected to the cantilevering wings. The stair stringers and stair roofs are connected with temporary stiff cross bracing, allowing for glass and cladding to be installed prior to lift.

Step 5: The main bridge deck and roof are lifted into place, resting on the inside stringers and the cantilevering wings. Temporary stiff cross bracing allows for the deck and roof to be transported and hoisted into place as one unit, including glass and cladding. Step 6: Remaining secondary elements and services are installed. on site.

Operation

Standard light fixtures are built into the bridge fabric and drivers are housed behind demountable panels as well as in the lift machine room, which also contains other electrical installations.

The thermally hardened and laminated safety glass panes will stay in place even if broken, continuing to provide weather and safety protection. The panels on the bridge are fixed from the inside and can thus be installed and maintained from the deck, without the use of a lift. The glass panels on the staircase and the lift towers are fixed from the outside.

The glass panels on the bridge are not operable. A "self-cleaning" nano-coating can be selected in order to minimise cleaning requirements. Anti-scratch film protects the glass from vandalism. An open gutter along each side of the bridge deck drains water to similar sloping gutters along the inside of the stair stringers. The water is collected in drains at the foot of the stairs.

The roof over the stairs drains to a gutter integrated in the stair entry portal at the base of the roof. Downpipes are concealed in the entry portal columns.

The central utility channel in the middle of the soffit allows for access from below to drain points for cleaning of the rainwater drains on the bridge roof. Downpipes in the lift shaft are located behind demountable panels, and are accessible from the platform.











