



Permanent Way Institution – London Section

10 April 2024



US railroad station designs -
What do YOU think?

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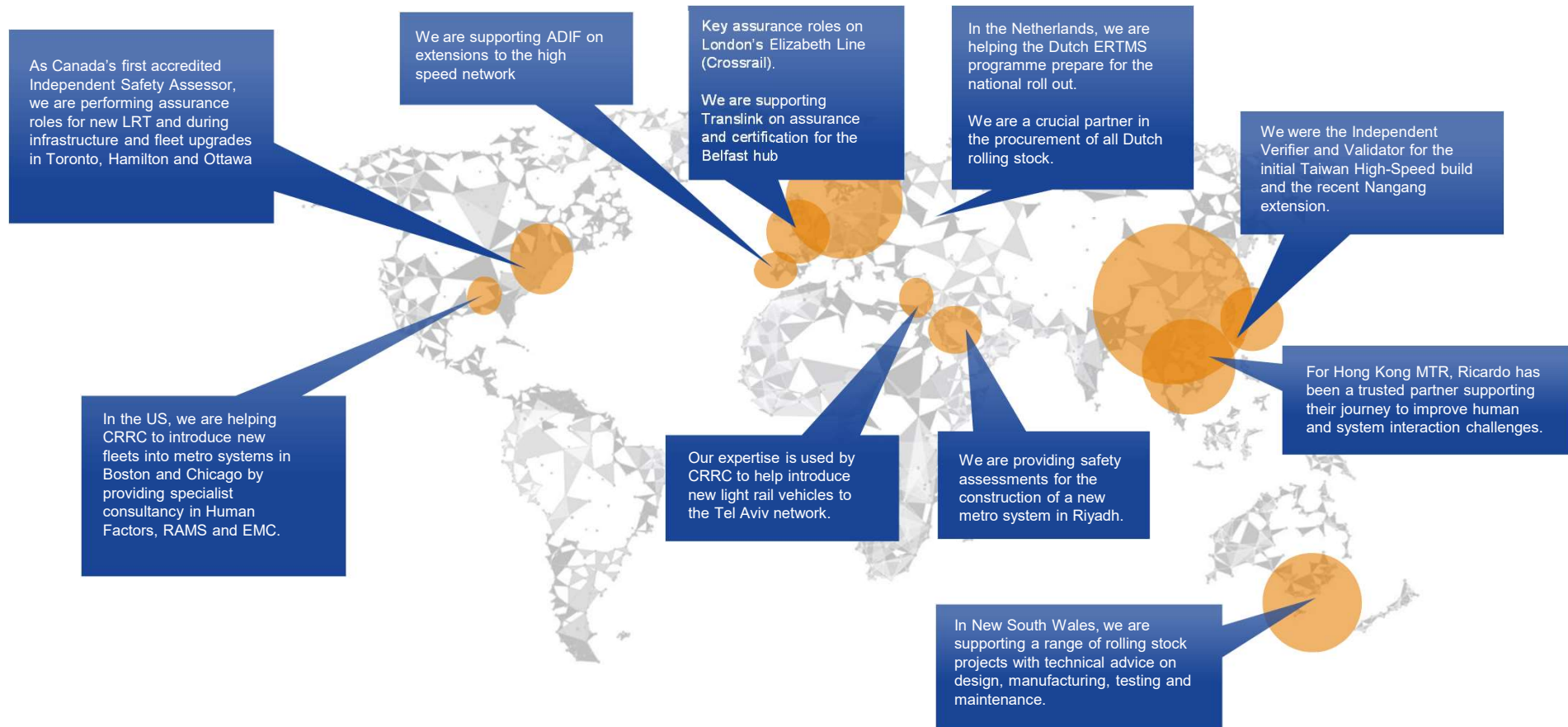
Ricardo in the rail sector

We are rail industry specialists within the Ricardo group working to ensure that communities around the world are served by safe, resilient, high-performance railways.

Our expertise lies in understanding the complex and critical systems that underpin an efficient rail service, providing clients with all the technical skills and insight necessary to navigate the sector's operational, commercial and regulatory demands.



Global rail projects



Two themes

1. *Their world is not our world.* Examples of modern / current US practice, tabled for debate (and comparison) as to whether the approach could work, or even be acceptable, in the UK in respect of operations, accessibility, safety and cost.
2. *Good?* Examples of what I think are good modern developments, put forward for debate. They often include the restoration, at least in part, of original structures.

Most photographs are mine, but I have supplemented them from Google Earth / Streetview and some, e.g., the track layout drawings, are downloaded from the web.

TSI = Technical Specification for Interoperability – Europe (Infrastructure, etc)

NTSN = National Technical Specification Notice – Great Britain (currently mirror TSI)

PRM = One of the Specifications, covers accessibility for persons of reduced mobility

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity and access for persons with disabilities. It is supported by Rules most recently revised in 2011, but currently under review. Review proposals include requiring lifts, ramps, etc., to be train, not platform, based.

When an intercity or commuter railroad constructs or alters a platform, it must ensure the platform is at least 8 inches Above Top of Rail. While a platform 8 inches above Above Top of Rail generally does not provide level boarding, a platform at this height does facilitate boarding by ambulatory passengers, including passengers (e.g., elderly persons) who might have difficulty ascending a vertical distance greater than the normal vertical gap between a platform and the first step of a railroad car.

In addition to this basic accessibility requirement, a railroad that alters a station platform and does not provide level boarding must ensure that passengers with disabilities can board any accessible car of a train available to other passengers at that station, using means including car-borne lifts, station-based lifts, or mini-high platforms.

Lifts must have a minimum design load of 600 pounds and accommodate a wheelchair measuring 30 inches by 48 inches, so, like in the NTSN, there is a defined wheelchair. They are similar, but not identical.

Level entry boarding includes use of a bridge plate between platform or lift and train.

Projects are regularly reported as spending millions to meet the height requirement and permit lift deployment.

Wheelchair lift



US context

Amtrak, the US national passenger railroad, mostly operates using Trackage (= Track access) Rights over freight and commuter owned railroads. It does own track; other operators have equivalent rights over that.

Stations may be owned by Amtrak, commuter railroads, cities, etc



All available station facilities are accessible to passengers using wheelchairs and there are no barriers to access between the station, the train platform and the trains.



There are no barriers to access between the station, the train platform and the trains but some of the facilities within the station are not accessible.

Their world is not our world – or is it?

Operation



Maricopa AZ

- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- No accessible ticket office
- Accessible waiting room
- Accessible parking
- No high platform
- Wheelchair lift available
- Platform 35m long



Taken at the next station (Tucson) after Maricopa

Train

9 coaches, 230m

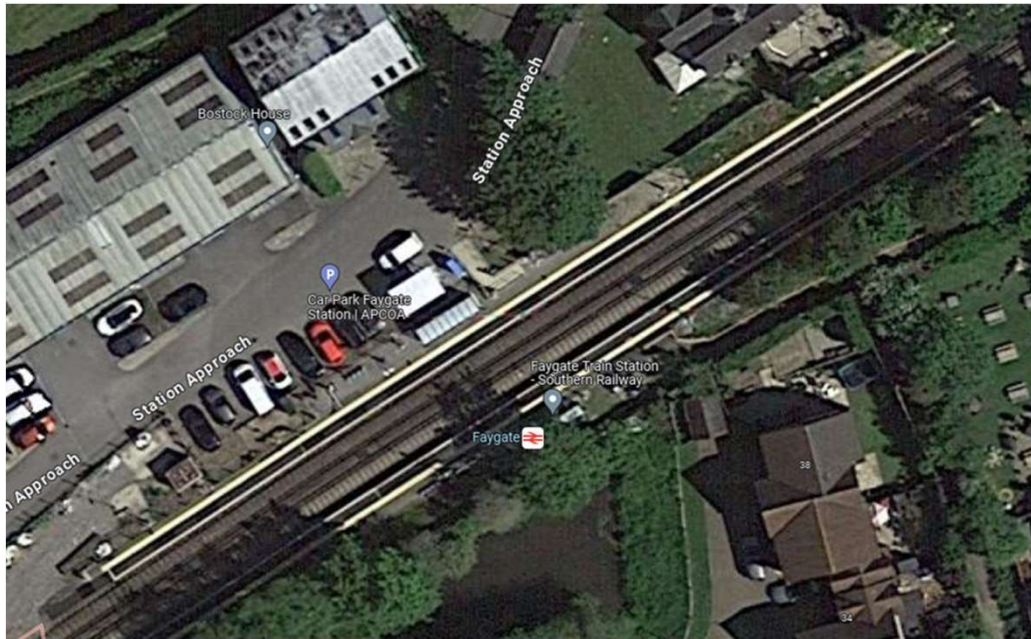
6 distinct areas:-

- Baggage car – Houston, New Orleans
- Sleeper - Houston, New Orleans
- (*Diner & lounge cars– no alighting*)
- Coaches – Houston, New Orleans
- Coach / baggage – Dallas, Chicago
- Sleeper – Dallas, Chicago



Better ... or Worse?

Class 700/1, 242m, Driver Only Operation



Faygate, Sussex
Up Platform 103.6m, Down platform 100.2m



Norwood Junction, 203m DF Platform (above)
Norwood Junction, 184m UF Platform

Some other Sussex Route stations with short platforms

All of these have 240m 12 coach trains scheduled to stop:

- Amberley, nominally 5 coach length, some trains have two portions for different destinations
- Lancing, nominally 5 coach length
- Ifield, nominally 5 coach length, used by 12 coach Driver Only Operation trains
- Goring-by-Sea, nominally 6 coach length
- Durrington-on-Sea, nominally 6 coach length
- Cooksbridge, nominally 6 coach length
- Angmering, nominally 6 / 7 coach length
- Christs Hospital, nominally 7 coach length, some trains have two portions for different destinations
- Billingshurst, nominally 7 coach length, some trains have two portions for different destinations

12 coach trains are scheduled stop at more than a dozen other stations with short platforms

Source: Network Rail Sectional Appendix

Their world is not our world – or is it?

Accessibility



- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- No accessible ticket office
- Accessible waiting room
- Accessible parking is available
- No high platform
- Wheelchair
- Wheelchair lift available

Does not yet meet 8 inch height
above rail requirement

Minot ND





- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- Accessible waiting room
- Accessible parking is available
- High platform at the level of the vestibule of the train
- Boarding plate visible against building

Rutland VT



Better ... or Worse?

From National Rail website



The PRM NTSN, in Point 4.2.1.14 (2), allows the use of platform lifts
Platform lift requirements are given in Point 5.3.1.3

Their world is not our world

West Glacier MT

West Glacier MT

- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- Accessible waiting room
- No high platform
- No wheelchair
- No wheelchair lift



Their world is not our world

Syracuse NY



- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- Accessible ticket office
- Accessible waiting room
- Accessible parking is available
- High platform, a platform at the level of the vestibule of the train
- Wheelchair available for passengers who cannot walk far or at all

Syracuse NY



Level boarding

Note that the Elizabeth Line requires use of ramps at all stations between Acton Main Line and Reading.

Note also the broad yellow tactile strip at the platform edge, a standard feature of modernised stations. Maricopa and Rutland have them, but Tucson, Minot and West Glacier do not.



Their world is not our world – obstacle-free?

Elko NV



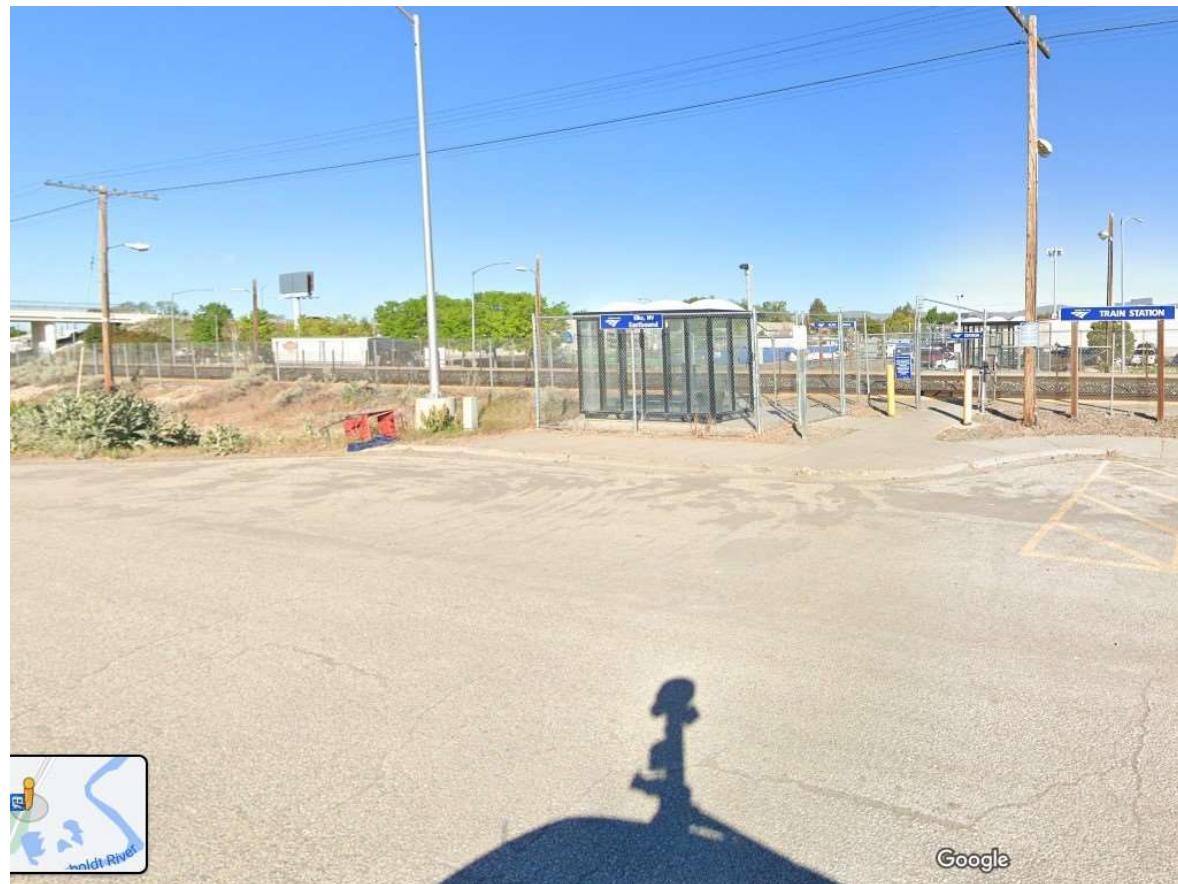
- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible parking is available for free.
- Wheelchair lift available

Elko NV - Westbound





Elko NV - Eastbound





Elko NV – Obstacle-free route, shortest practical distance ... for everyone

AMTRAK®

Elko Station Opposite Boarding Platforms Only Accessible by Shuttle

Effective Immediately
Please be advised the eastbound and westbound platforms at the Elko station are only connected by an accessible shuttle until further notice.

All passengers can only traverse between the platforms at the station by an accessible shuttle, which may require additional travel time.

Allow Extra Time – Don't Miss Your Train
Customers may need to allow extra time to get to the boarding platforms during this time.



Their world is not our world – obstacle-free

Santa Barbara CA



Santa Barbara CA – Main entrance

- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- Accessible ticket office
- Accessible waiting room
- Accessible parking
- No high platform
- Wheelchair available for passengers who cannot walk far or at all
- Wheelchair lift available



Santa Barbara CA Platforms

Shows 8 inch platforms, relative height as against train door and crossing access to outer platform.

INF TSI (but not NTSN) permits platform heights of 200mm (Slovakia, Point 7.7.17.9) and 220mm (Poland, Point 7.7.12.10)

PRM TSI Point 4.2.1.15 permits the use of level track crossings in stations





Santa Barbara CA - Alternative Exit



Haddiscoe (*Greater Anglia slide*)



PRM NTSN Point 4.2.1.15 permits the use of level track crossings in stations

Their world is not our world

Albuquerque NM



Albuquerque NM – Overhead view

Amtrak facilities

- Accessible platform and a barrier-free path from the drop-off area outside the station to the train platform.
- Accessible restrooms
- Accessible ticket office
- Accessible waiting room
- No accessible station parking
- No high platform
- Wheelchair available for passengers who cannot walk far or at all
- Wheelchair lift available





Albuquerque NM – Amtrak end



Albuquerque NM – Rail Runner end (I)



Albuquerque NM – Rail Runner end (II)

All New Mexico Rail Runner Express stations are accessible by ramp or mini high-level platform.

All train cars are equipped with four priority seating locations for individuals with disabilities.



Their world is not our world – commuter rail

Santa Fe NM (Rail Runner)

Santa Fe NM - Depot



Santa Fe NM - Platform

All New Mexico Rail Runner Express stations are accessible by ramp or mini high-level platform.

All train cars are equipped with four priority seating locations for individuals with disabilities.



Santa Fe NM - Alternative Exit



Their world is not our world – scenic cruise train

Moab UT

Moab UT Rocky Mountaineer

Whilst the Rocky Mountaineer does deploy lifts, it may require wheelchair users to transfer on-board or before boarding to a train wheelchair (15 inches wide).

Arrangements can be made for those who cannot transfer, but the limit is 23 inches, not the 30 inches of the ADA.

TSI and NTSN apply to vehicles used on system, ADA applies to intercity or commuter railroads.

Effect of this on a scenic cruise train?



Their world is not our world - heritage

Silverton CO Durango & Silverton

Silverton CO (I)



Silverton CO (II)

There is an accessible coach fitted with a wheelchair lift.

There are accessible toilets on the train and at the main stations.



Their world is not our world – tram stops

Seattle WA

Seattle WA

