





Supporting the £547-million rebirth of King's Cross Station, a fleet of 24 Stannah lifts is powering the movement of millions of people and goods throughout this Grade I listed rail hub designed in 1852 by the civil engineer, Lewis Cubitt.

Over 160 years, this Victorian rail blazer has graciously acceded to the demands of modern rail travel to become a world-class hybrid of history, space, light and efficiency – with the Stannah lifts embodying Network Rail's policy of total station access.

Managed by the Stannah Major Projects team, the installations were on time, on budget and running to schedule – just like the trains (not one cancellation to service) – despite a logistically fraught project.

Scope of work

Stannah won the contract for the 24 new and refurbished lifts ranged throughout the four key areas of King's Cross: the train shed, the service tunnels, the Western Range and the Western Concourse.

The lifts were designed and installed by Stannah's Major Projects team reporting to main contractors, Vinci and Network Rail.

Following eighteen months of challenging work, the lifts are improving accessibility for everyone in this world-class rail station, with the final phase of refurbishment to the station itself and to King's Cross Square scheduled for completion in 2013.









In the train shed

The refurbished train shed has three layers. The train platforms at ground level, a spectacular new bridge above the platforms for additional access and the essential service tunnels below ground level where on-board services (OBS) and refuse collections are constantly on the move:

- 5x scenic, 2-stop, 8-person mobility impaired persons lifts the first noticeable passenger lifts providing easy travel from the bridge to each of the platforms below. The one-way downward travel of these lifts is part of the overall design of people-flow around the station which aims to keep an open, relaxed feel to a very busy environment. There are escalators down to each platform, too.
- 4x OBS 24-person goods/passenger lifts sited at platform level, these
 provide direct access to and from service tunnels to individual trains.
 These lifts enable the quick, efficient delivery of OBS directly to individual
 trains and the clearing of refuse from trains at the end of their journey.
 The lifts are finished to Network Rail specification, with 'bumpers' low on
 solid walls to add additional protection in a busy, demanding
 environment.

The installation of this number of OBS lifts has cut changeover times and reduced 'people and goods' traffic across the whole station, where previously goods were taken across the platforms from only two points in the train shed.

Machine rooms are housed in pits beneath the platforms, 1400mm deep, covered by a pair of heavy steel shutters set into the platform walkways.

All work to install the lifts in the train shed had to be completed during service blockades as these platforms were operational throughout most of the working period.

547

£million regeneration of a major London railway terminus

50

million passengers per year (and increasing)

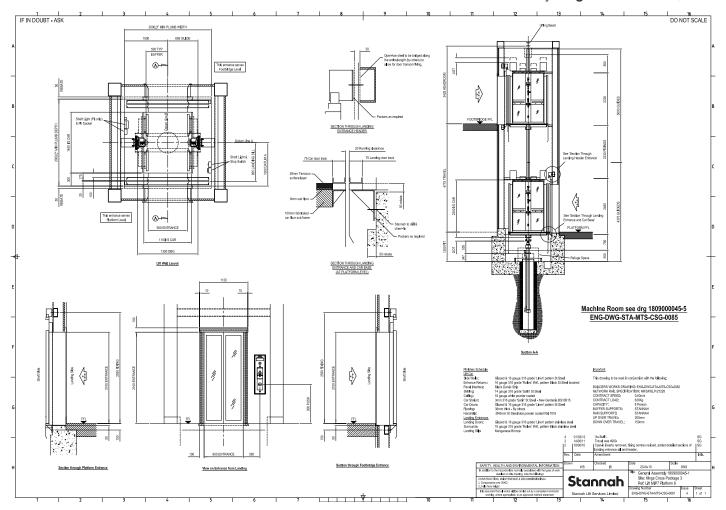
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movement of people and goods

24

Stannah lifts

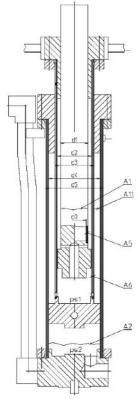


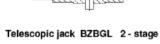


Scenic lifts installation

The installation of the four 2-stop hydraulic scenic lifts in the train shed all feature a telescopic cylinder ram located within a bore hole through the platform. With the busy station fully functional throughout the project the bore holes presented a challenge - and there was the small problem of all the services below the train shed.

The 2-stage cylinder has a closed length of just over 3 metres, extending to 5130mm and weighing in at 246.6kg. The result of this engineering? The smoothest of descents whilst enjoying the view.







In the service tunnels

As part of the refurbishment, over 300m of service tunnels now lie beneath the train shed and listed Great Northern Hotel. These are home to many additional lifts, the workhorses that assist in the movement of goods to and from all areas of the station, 24 hours a day.

In addition to the on-board services supplies, being prepared for every journey from every platform, there is the continual movement of goods to the on-station pub and the new mezzanine food court level, not to mention the essential movement of waste for recycling. Then there are all the essential services that run through the tunnels and their programme of maintenance.

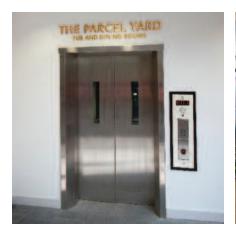
For staff use only, these include:

- 2x 2500kg, 33-person 2-stop goods/passenger service lifts from delivery area to service corridor.
- 2x 2000kg, 26-person 4-stop goods/passenger service lifts –
 from level -2, main delivery area to -1, service tunnel, ground floor –
 main concourse and level 1, the retail mezzanine.

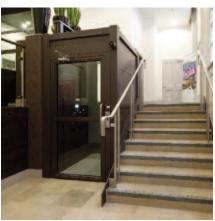


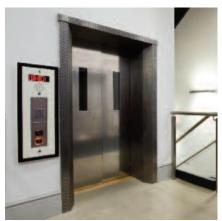














In the Western Range

The Western Range is a complex series of buildings through which millions of passengers pass. In its new guise it is a vital transition space that links the restored 1852 station to the new Western Concourse. Also a Grade I Listed building, it has been sensitively but not slavishly restored, with the original atrium space that housed the parcels office flourishing as a split-level pub and restaurant.

It is also home to seven further passenger lifts:

- 1 x 630kg, 8-person lift played a big part in moving contractors during all the building work and now with a final lift interior for public use.
- 4 x 1200kg, 16-person goods/passenger lifts one of which was
 particularly challenging to install tight to a low-pitched roof at the top of
 the shaft.
- 1 x 2000kg, 26-person goods/passenger lift travelling 7 stops from the basement to the rooftop and featuring a very wide lift car for the easy movement of goods.
- 1 x Midilift SL platform lift within the First Class Lounge approach on
 the first floor. This lift helps people with restricted mobility and wheelchair
 users avoid a flight of steps that leads on to the bridge area in the train
 shed where further passenger lifts provide access to the platforms below.
 (Separate case study available.)



In the Western Concourse

Europe's largest single span station structure and the heart of the development, this semi-circular vaulted lattice dome by main architect, John McAslan + Partners, and engineers, Arup, is three times the size of the original. Grafted on to the façade of the original building but completely self-supporting, the exterior may remind science fiction fans of a just-landed discoid spaceship. However, the contents are distinctly earthly and pander to every travelling comfort – new shops and restaurants, improved access to services on the Underground, the new Thameslink station and domestic and international services at the adjoining St Pancras International Station. The lighting is better, the destination boards are bigger and... the station announcements are clearer!

And four more Stannah lifts have helped to complete the project:

- 2 x 1200kg, 16-person lifts finished in brushed stainless steel with York stone floor and special lighting. Both lifts are for public access to and from the mezzanine food court, one travelling 3 stops to London Underground. These public use passenger lifts were specified by Arup.
- 2 x 3100kg, 40-person goods/passenger lifts for service personnel only and providing robust movement of goods over 4 floors. These lifts were installed in existing shafts that were extended to travel further. Both lifts provide back-up for OBS and one provides access directly into the Fullers Pub on the Western Concourse.







Maintenance

All the lifts will be maintained by the London and South East branches of Stannah Lift Services, part of a nationwide network of lift support that maintains more than 83,000 lift products nationwide (more than 800 units on the rail network), all types of lifts from all manufacturers. Within this number are several hundred lifts on Network Rail stations right across the UK.

In addition to maintenance, Stannah also carries out lift refurbishments, installs new bespoke lifts, escalators and moving walkways, sometimes in the most challenging environments.

The Stannah promise

Stannah is committed to delivering:
The best quality products
Superior service
Good value for money
And, last but not least, complete reliability

All backed by a 150-year lift manufacturing pedigree.



All Stannah lift products meet required standards, including: The Equality Act 2010, EN81-70, EN81-3, BSEN115, Health & Safety at Work Act, CE Mark and Certificate of Conformity. "Being part of the huge team of contractors working flat-out to complete this project was challenging, but the results speak for themselves. **Problems were** solved, deadlines were met and not a single train was cancelled throughout the whole process. We are proud to have made a major contribution to this magnificent refurbishment of one of London's most famous stations."

Ian Smith Operations Manager, Stannah Major Projects Department

For more information about Stannah Lift Services call the Major Projects team on 01264 364311 or go to **www.stannahlifts.co.uk**



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