



Restricted Access - Rail

Main Contractor

BUCKINGHAM
Group Contracting

Client

NetworkRail

Location

**Bromsgrove,
Worcestershire**

Project Brief

In the last decade the number of passengers using Bromsgrove station has increased by 400%, this is the fastest growth rate of any station in Worcestershire.

The current station facilities were limited to:

- Two number short platforms with one passenger shelter on each platform.
- Inadequate car parking spaces.
- Cycle parking that consisted of bike bins and covered Sheffield cycle stands.

Key issues/requirements

To create a new station approximately 250m south of the existing Bromsgrove station with additional capacity to accommodate six car trains and provision for nine car trains.

To achieve this goal the construction of the following was proposed:

- A new modern station building with a ticket desk, toilets and a retail outlet.
- Four platforms constructed on two new island platforms connected to the station by a covered footbridge and lifts designed to be fully accessible for all.
- Improved secure car parking with approximately 350 car parking spaces.
- Secure covered cycle storage, motor cycle parking and electric car parking with charging points.



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Solution

- To enable construction of the above, Roger Bullivant Limited (RB) constructed 286no sectional flight auger (SFA) piles.
- The piles were designed by RB and in total seven different project specific solutions were devised. These varied from a 300mm diameter pile at 6.7m deep complete with cage reinforcement, 3.0m in depth to 450mm diameter pile, 9.7m in depth and reinforced with a 244mm diameter x 13mm wall thickness steel tube.

Challenges

- The RB team faced a number of challenges. The tube reinforcement had to be detailed so it could be installed in two metre sections with screwed/threaded connections. The short lengths were specifically designed to overcome the restricted height issues associated with working in close proximity to the open rail lines. Also, the material deliveries were all synchronised in pre-arranged night time possessions to overcome the limited storage in this restricted work area and yet meet production demands.
- Two rigs working simultaneously were required to facilitate the program restraints. Both rigs were required to be transferred over the tracks during night time possessions along with several carefully planned material deliveries to the isolated work fronts.
- All piles were grouted with the grout being site batched, again to overcome the isolated locations which prohibited the use of ready mixed concrete deliveries.
- Due to the close proximity of these piles to the open rail lines some night time possession working was required to safely construct certain piles and the work was completed with no disruption to rail services.

