

Honda Car Assembly Plant, Swindon - New Press Pit, Recycling Tunnel and Extension to Assembly Plant Buildings

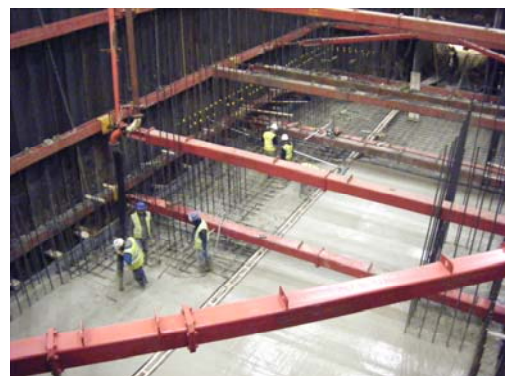
Client: Honda of the UK Manufacturing Ltd
Date: 2008/9
Project Managers: Honda Facilities Team.
Designer: SSOE (U.S.A)

The contract was undertaken to allow a 200 tonne body panel press to be installed in the car assembly plant to provide additional press capacity.

The new Press Pit was constructed inside the operational car plant only 12m from the existing operational press. This meant working space was inevitably at a premium and methods of work were dictated by the restricted working space and extensive operational and environmental control measures that were specified by Honda. The working area was sheeted off from the rest of the works and all diesel powered plant required exhaust filtration units to be fitted.

During the tender period we reviewed various excavation support and recycling tunnel construction solutions to identify the most cost effective and least disruptive techniques.

- Saw cut and break out 1500m² of the existing 250mm thick reinforced concrete floor slab using electric floor saws
- Excavation of the 25 x 12.6 x 8m deep press pit and 10 x 6 x 7m deep scrap tunnel, much of which was through previous foundations, backfill and gabion structures
- Install proprietary ground support system from specialist supplier MGF for both the press pit and the recycling tunnel excavations which included the use of sheet piling installed using the overhead gantry crane with ICE vibratory piling equipment and removed using side grip piling equipment
- Form a 3.5m x 2.5m opening through 1m thick existing concrete press wall using a combination of diamond wire cutting and a high frequency robotic breaker.
- Install 8nr 2.5 x 3.5m precast concrete culvert sections, 13tonne each to form the recycling conveyor tunnel
- Complete excavation and support to the main pit excavation and construct 1.2m thick reinforced concrete base slab, 305m³ concrete in one pumped pour
- A Bentonite water proof matting 'Voltex' was placed over protection boarding as 'tanking' to the outside of the pit walls, underside of base and to culverts
- Construct 7m high x 900mm thick reinforced concrete walls complete with steel angle iron protection to exposed edges requiring 1500m³ of pumped concrete
- 4nr reinforced concrete piers 4.5m high x 1.5m wide x 4.8m long were constructed on which the press would sit. The pillars incorporated 130mm diameter anchor box sleeves to a tolerance of +/- 2mm in the diagonal (measured over 11m) and a height tolerance of +/- 1mm
- Construct stacker pit, ATC rails, shuttle feeder rails and bolster rails



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- The new floor slab construction incorporated significant built-in structural steel members (beams, plates and angles) to facilitate the Press installation by Honda. These built in structural steel beams were installed to very fine tolerances of +/- 2mm line and level
- Despite encountering substantial old foundations and gabion structures together with some additional work the contract was completed 2 weeks ahead of programme



Extension to Existing Press Warehouse including Mezzanine Foundations

- Plane off existing service yard, street light relocation and removal of existing gabion retaining wall
- 82m of 2m high gabion basket retaining wall & 76m of reinforced concrete retaining wall followed by placement of structural fill to provide construction platform for warehouse extension
- 7m wide tarmac road around perimeter of new building including kerbing & drainage including 675mm diameter storm water sewer diversion
- Installation of 181nr permanently steel cased ODEX concrete piles 273mm diameter to a depth of 7m.
- Construct reinforced concrete perimeter column foundations and grade walls including 28nr pile caps & 4nr pad foundations

