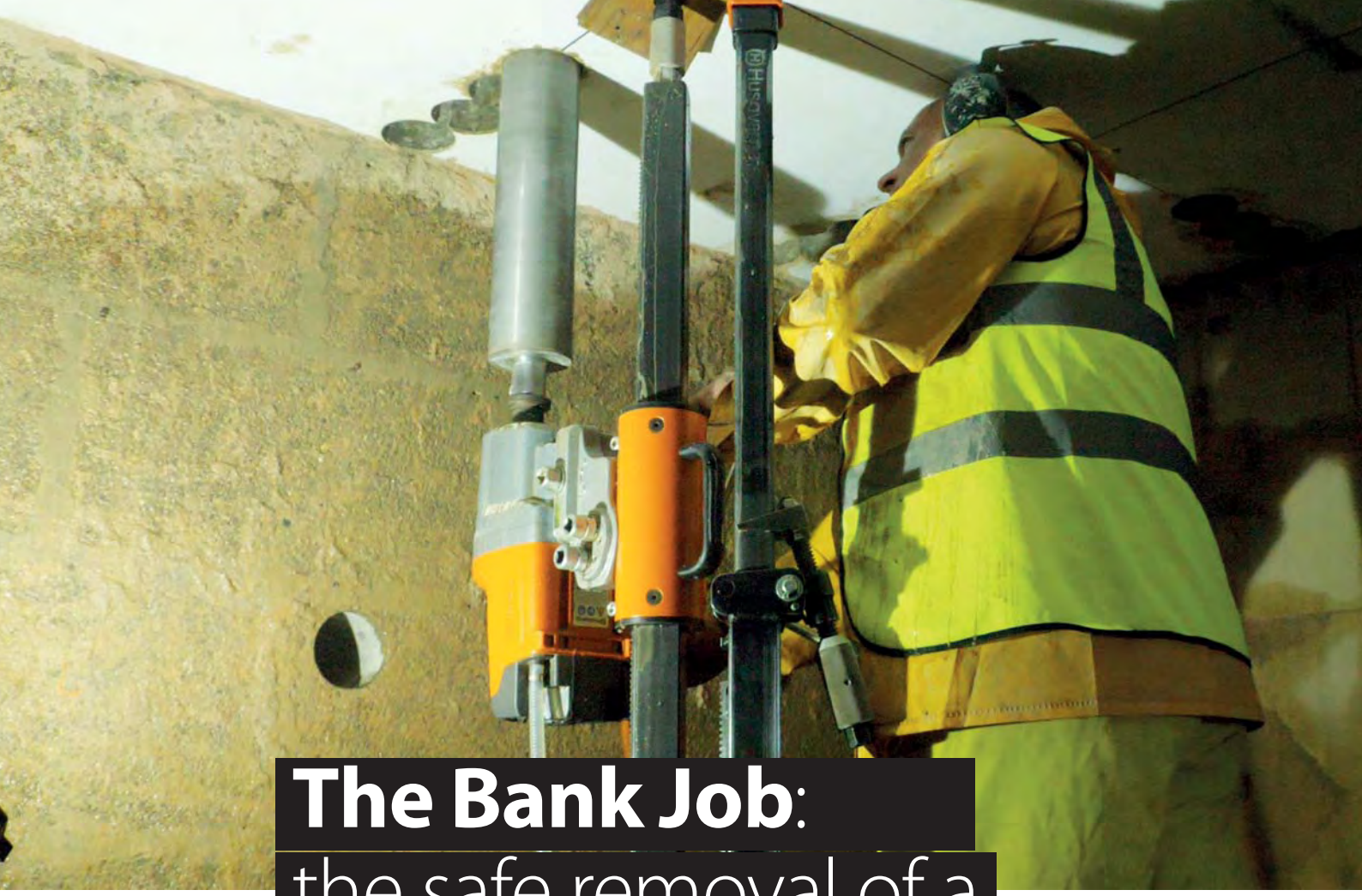

The Bank Job: the safe removal of a concrete bank safe

Approached by a potential client to quote for the removal of a walk-in concrete safe in a recently vacated branch of HSBC Bank in Worthing, Hawes Diamond Drilling was challenged with the task of returning the site to its original footprint, prior to the bank's use. ***Bruce*** *and* ***Sarra Hawes*** *of* ***Hawes Diamond Drilling*** *report.*

The safe consisted of 300mm-thick heavily reinforced concrete walls and roof slab. It measured 340cm wide × 3000m deep × 270cm high. The reinforcement ran vertically and then had spiral/helical bars wrapped around each vertical bar.

The team faced the complication of having no access to the top of the roof slab, as the gap to the floor above was only 150mm. This meant all drilling and cutting had to be undertaken from below, with associated risks to those operating the equipment. Also there are residential properties in the same building directly above the bank, therefore any noise had to be kept to a minimum level. The residents, who were not amenable to the works, were regularly informed of progress.

After the removal of the heavy safe door, work commenced utilising a Husqvarna DM650 drill motor fitted to a DS50 gyro rig. This enabled the team to carry out the required inverted drilling to the roof slab. Holes were drilled into the corners of the slab and the intersections with walls in the locations where it was intended to track saw the slab into sections. During this operation it was discovered that the safe was formed of precast planks/beams, which had been installed over three twisted 16mm rebars at close centres and subsequently grouted in. This made removal of the top slab even more difficult, in terms of support requirements, to guarantee that only the designated section was removed at a time to ensure there was no danger of an uncontrolled collapse.

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Drilling works

Once the drilling works were complete a Husqvarna WS220 track saw was used to cut the concrete into sections. This saw, although slightly underpowered for the concrete being cut, was chosen for its size and weight, and because it required only a 16A three-phase power supply.

As there was no mains three-phase power supply available and nowhere to stand a large generator, a small Atlas Copco portable three-phase generator was used to power the saw. The front wall of the safe structure was then removed, to give better access and enable support of the individual top slab sections. Once again, all sawing works to the top slab were carried out upside down (inverted). This proved awkward with the amount of propping required and was very slow due to the level of reinforcement and the intricacy of fitting in between the props. However, the site team persevered and eventually the top slab was removed in sections measuring approximately 600 × 600mm.

The side and rear walls then followed, until eventually just a small section was left at the base with rebar sticking out of the floor slab. The remaining concrete sections were slotted using a Diaquip QHS-400 110V hand-held saw and then broken out with a hand-held breaker. The remaining rebar was cut off using an angle grinder and the works were complete, save for removing the numerous concrete blocks, which weighed approximately 35 tonnes.

Although the job took longer to complete than was initially anticipated, all those involved with the project were pleased with the end result – and useful experience was gained for future projects. ■