



# Foundations

## Pre-cast piles and beams

Work type

**Academy Primary School**

Customer

**Seddon**

Client

**Staffordshire  
County Council**

Design Engineer

**entrust**

Tenant/End-user

**REACH2  
ACADEMY TRUST**  
Raising Educational Achievement for children

Location

**Burton on Trent  
Staffordshire**

### Project Brief

The contract was for the design, delivery and installation of a pre-cast pile and ground beam foundation for a £6m large new academy primary school in Burton on Trent. The Scientia Academy is a state-of-the-art two storey modern design incorporating 15 classrooms, nursery provision and ancillary spaces for 420 pupils.



### Key issues/ requirements

- Staffordshire County Council approved plans for the new academy on the site of the former Belvedere Sports and Social Club off Mona Road in Burton on Trent and appointed design engineers Entrust to deliver the project design. Entrust consulted foundations specialist Roger Bullivant Limited (RBL) at this early stage.
- Following the appointment of main contractor Seddon Construction Limited, RBL developed the foundation solution for the new Academy in record time due to early consultation with the design team.
- Before any piling works commenced, RBL designed and installed a safe working platform and piling mat across the 2,000 sq meter site.



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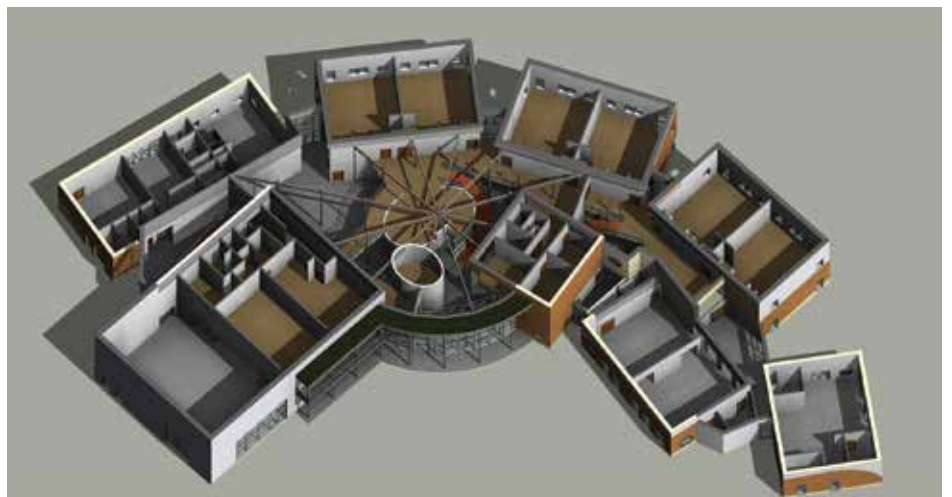
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## Solution

RBL adopted the use of the RB Quiet Hammer piling rig which is especially designed to deaden the noise and vibration associated with piling due to the site's close proximity to nearby homes.

- 339 no. pre-cast segmental piles were installed in 3 or 4 meter sections to eliminate waste. The 250mm and 350mm piles were delivered to an average depth of 10 meters to carry safe working loads(SWL) up to 750 kN.
- Dynamic pile testing was carried out on 3% of the piles to confirm the design, size and bearing capacity.
- 950 linier meters of pre-cast beam was installed combined with insitu duct and column bases to accommodate services and the new building structure consisting of both steel and timber frames.
- All the pre-cast elements for the foundation were designed and produced locally at the company's Drakelow headquarters near Burton on Trent. Beams are produced to schedule for just-in-time delivery to avoid stock piling on site.

Work was completed on-time and to schedule to allow follow-on trades to continue the build.



The Scientia Academy is the latest development by the REAch2 academy trust, which will run the new school.

REAch2(Raising Educational Achievement for Children) is seeking to work with small clusters of schools in different geographical areas

around the country. The aim is to work with like minded schools that share a passion and drive for securing the best possible outcomes for primary aged children.

The new academy is part of Staffordshire County Council's bid to cope with rapidly rising birth rates in the town.

