



# HOUSING



**VAN ELLE**  
TOTAL FOUNDATION SOLUTIONS

# Dedicated to delivering innovative foundation solutions to residential developers across the whole of the UK.

Van Elle has been providing first-class ground engineering services since 1984 and is now the UK's largest contractor. Our services cover every aspect of ground engineering, taking our clients from initial site investigation work, design and engineering through to completion.

Van Elle has a complete offer for the housebuilder whatever the scale of the development. We have built an unrivalled reputation for delivering fast, value-engineered and proven foundation solutions for housing developments across the UK.

**We understand the commercial drivers of maximising land use, minimising construction costs and delivering homes quickly and efficiently.**

With pioneering innovation, we developed the Smartfoot® precast modular foundation system.

Compared to traditional trench filled foundations and other precast systems, Smartfoot® is now the preferred system for many of the UK's largest and specialist house builders due to the economic and time saving features of the system.

True to a culture of continued investment in research and development, led by our innovative engineering teams, we have developed the Vemech piling rig specifically for residential projects with significantly reduced working platform requirements.

## Van Elle Housebuilder Life Cycle



**1 SITE INVESTIGATION (SI)**  
Understand soil profile, ecology and conservation



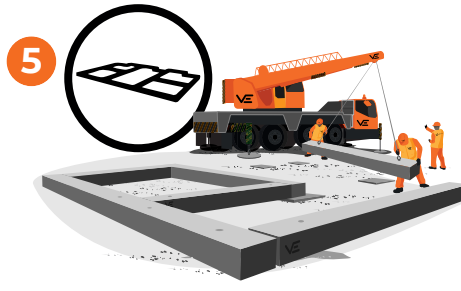
**2 DESIGN AND VALUE ENGINEERING**  
we work with the client to provide the best design for their method of construction



**3 GEOTECHNICAL ENGINEERING**  
our capabilities enable us to provide ground improvement through drilling and grouting in addition to vibro stone columns and rigid inclusions



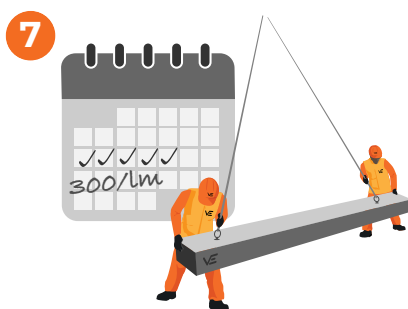
**4 PILING**  
as part of our package we can offer a range of piling techniques including continuous flight auger (CFA), pre-cast driven and tubular steel driven; constructing in-situ pile caps to bespoke designs



**5 BESPOKE GROUND-BEAMS**  
our pre-cast factory manufacture on a plot by plot specification to support just-in-time delivery



**6 DEDICATED LOGISTICS**  
our in-house transport division ensure smooth delivery of ground beams on a per plot schedule



**7 GROUND-BEAMS (SMARTFOOT) LIFTING**  
with offsite production and 5-7 days enabling works, 300lm per week can be installed per gang



**8 POST-TENSIONING**  
we use a cable and hydraulics system with bitumen membranes to lock together the foundations creating an extremely sturdy single foundation unit



**9 TESTING & HANDOVER**  
we then provide the client the security of a regulated product that carries all the necessary accreditations



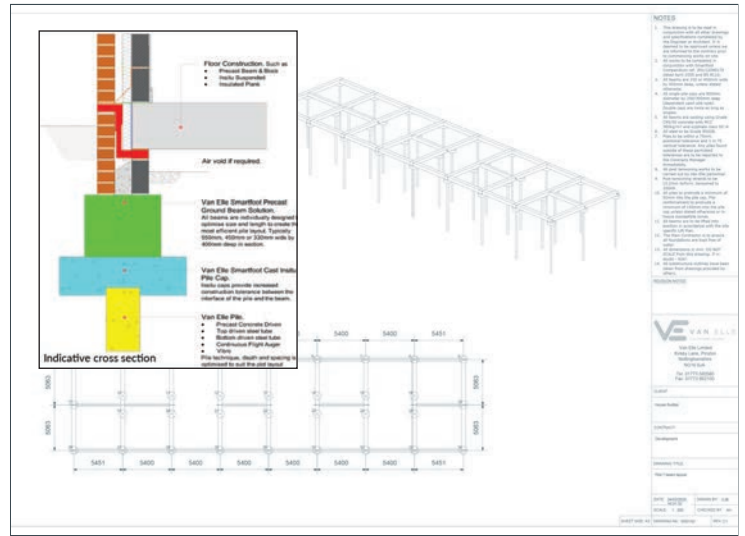
# OUR SERVICES AND CAPABILITIES

## Design & Technical Services

Our dedicated team in house carry out bespoke designs for SMARTFOOT® Ground Beams, Vibro Stone Columns, rigid inclusions and piling, giving clients a single point of contact to oversee the project.

Designers are involved early to give a full life appreciation of developments and understanding of key drivers.

Early involvement can give an opportunity for value engineered schemes making for more thorough cost effective results.



## Smartfoot® Ground Beams

Smartfoot® precast modular ground beams uses post-tensioning technology for a robust foundation. Simple and quick to install, Smartfoot® reduces excavation, minimises waste and provides a cost-effective solution compared to both traditional in situ foundation solutions and alternative modular methods.



### FAST

Over 300Lm per week can be installed per gang. Post-tensioning and just in time delivery allow for savings



### FLEXIBLE

Bespoke design & angle blocks mean that any beam configuration can be accommodated



### COST ASSURED

In situ pile caps accommodate piling tolerances meaning less variations



### ISO & NHBC APPROVED

System type approval from the NHBC as well as an ISO accredited factory ensure quality is always delivered.



### SAFE

Industry leading Health & Safety performance. Site Supervisor's Safety Training Scheme (SSSTS) trained site operatives



### INNOVATION

Seven strand Dyform steel cable allows for enhanced moment capacity via post-tensioning

## Capabilities and services:

### PRECAST CONCRETE & STEEL TUBULAR DRIVEN PILING



#### JUNTTAN PM16

Weight	37 tonnes
Length	7.5m
Width	4.0m
Mast Height	20.4m
Bearing Pressure	192kPa (BRE Load Case 2)
Benefits	Cost effective and minimum spoil

A compact top driven piling rig designed specially for the housing market. Capable of precast concrete and steel tubular piles of lengths up to 14m in a single section. Hammer weights up to four tonnes ensure sufficient penetration through most ground types including bedrock.

### CONTINUOUS FLIGHT AUGER (CFA)



#### SOILMEC SR-30

Weight	40 tonnes
Length	7.3m
Width	3.7m
Mast Height	26.5m
Bearing Pressure	215kPa (BRE Load Case 2)
Benefits	CFA – low noise, low vibration

Low noise and low vibration rigs capable of CFA 300-900mm diameter. Self-mounting, easily transportable and designed to give the best drilling solution. Relative high torque enables the SR-30 to penetrate further into rock and avoid obstructions where others may struggle.

### VIBRO STONE COLUMN



#### VIBRO BESPOKE ENGINEERED RIGS

Weight	24 tonnes
Length	8.4m
Width	3m
Mast Height	10.2m
Bearing Pressure	175kPa (BRE Load Case 2)
Benefits	lightweight, no spoil, cost effective

A bespoke purpose built vibro rig, with a JCB tracked base machine and Tier four final engine. This is a powerful yet lightweight rig with six tonne pull down and 320mm diameter vibroflot producing 100kW power. Treatment depths up to 8m can be achieved with this machine. The vibroflot is hydraulically operated with vibrations right down to the tip to enhance ground compaction. The rigs are delivered to site on a semi low-loader and can access small sites with ease.

### SECTIONAL DRIVEN PILING



#### VE-MECH BESPOKE RIG

Weight	26 tonnes
Length	6.5m
Width	3.0m
Mast Height	6.6m minimum, 8.1m maximum
Bearing Pressure	114kPa (BRE Load Case 2)
Benefits	lightweight rig

A unique small section precast piling solution installed using bespoke specialist lightweight rigs reducing the requirement for a large and expensive piling mat. Pile units are manufactured in 2.5m and 4.0m lengths to keep operating height to a minimum. These short pile units allow increased flexibility to deal with varying pile depths and significantly reduce overall wastage on materials.

# Recent Case Studies

## Challenging ground conditions

- Dunston Road, Chesterfield**  
**Client:** Strata Homes  
 Hybrid steel tubular piling/pad foundations & Smartfoot® along highwalls  
**Rigs:** Juntann PM16
- Hampton Waters, Peterborough**  
**Client:** Bovis Homes  
 90 plot project on a deep fill brickwork quarry incorporating driven piling and Smartfoot®  
**Rigs:** Juntann PM16 & PMX22

## Speedy programme schedules

- Newbury Racecourse, Newbury**  
**Client:** Barratt, David Wilson Homes  
 New homes next to the racecourse completed with augered piling & Smartfoot®  
**Rigs:** Solimec SR30
- Dewside, King's Lynn**  
**Client:** Lovell Partnerships  
 Due to the poor working platform the lighter VeMech sectional precast concrete piles were utilised with Smartfoot®  
**Rigs:** VeMech (restricted access driven)

## Developer cost reduction schemes

- 120-Bed Care home, Eastbourne**  
**Client:** McGoff Construction  
 200/250mm square precast concrete driven piles and Smartfoot®  
**Rigs:** Juntann PM16
- Augusta Park, Dinnington**  
**Client:** Persimmon Homes  
 Steel tubular driven piling & Smartfoot® to backfilled quarry with highwall  
**Rigs:** Klem 709

## Ground improvement schemes

- Jordanhill, Glasgow Ground improvement**  
**Client:** Cala Homes  
 Vibro Stone Columns in preparation for multi-plot development on the old Strathclyde University campus.  
**Rigs:** VB1 – S45 Conversion
- Sunnyside Farm**  
**Client:** Owl Homes  
 Housing development in Walsall, where we installed top-feed vibro stone columns to improve the ground ready for construction to start.  
**Rigs:** VB3 – JCB1 Self Build

## Large development schemes

- Residential Care Home in Bingley**  
**Client:** McCarthy & Stone  
 One of our largest and complex integrated piling and Smartfoot precast ground beam projects.  
**Rigs:** Juntann PM16

## Innovative solutions

- Bespoke modular home foundations**  
**Client:** Engie & Ilke Homes  
 Driven precast piles and Smartfoot for 22 new modular-built homes that are manufactured in sections in a factory and installed insitu.  
**Rigs:** Juntann PM16



Smartfoot ground-beam system being installed by crane at Love Street, Scotland



Vibro stone column installations for Cala Homes in Erskine, Scotland



Van Elle's largest Smartfoot installation working at a rate of 200 linear meters per day



Smartfoot precast modular ground beam system to be installed on driven piles for modular home developer Ilke Homes.

96,105

linear meters of Smartfoot per annum

1601

number of plots per year (based on 60 linear meter AVE per plot)

470

housing developments completed last year

1170

residential projects in the last five years

## Ground investigation

STRATA Geotechnics, a subsidiary of the Van Elle group, has the expertise and specialist equipment to perform housing related ground investigation (GI) whether it be at feasibility stage or ready for construction.

The STRATA team have all the relevant qualifications and training needed to work in challenging environments, whilst sites are regularly audited by members of our management, safety and quality teams to ensure the highest standards throughout.



## Dedicated FORS accredited transport fleet

Rigs are delivered and collected via our dedicated plant and logistic fleet based at our main facility in Kirkby in Ashfield. Specially designed beavertail rigid wagons mean we can access the most restricted piling areas.



**The health, safety and wellbeing of staff, project stakeholders, and the communities in which Van Elle works, is paramount.**

Every precaution is taken to protect our workforce and other people they encounter, wherever they are working: on site, in the offices or in the yard, by continually improving and enforcing safe working practices, processes and environments. Van Elle's Safety team carries out regular site audits to highlight areas for improvement and all staff are empowered to raise any matter of concern.

The company's Think Safe Act Safe behavioural programme has been established over 10 years and has improved awareness and prevented accidents. The Van Elle mobile app enables prompt and centralised recording and reporting of hazards and near misses, equipment inspections, toolbox talks, site audits and other safety matters.

## Contact Us

Please contact one of our specialist housing team

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