



# PINNACLE

CONSULTING ENGINEERS

Civil & Structural Services

Introduction

Expertise

Services

Sectors & Experience

Offices

## Our Vision

Deliver world-class engineering solutions while upholding the highest ethical values and safety standards underpinning progressive growth.

## Our Mission Statement

*Delivering Solutions* - Provide thoughtful, cost effective and innovative design solutions from project inception to completion.

*Quality Assured* - Regular design reviews reinforcing quality, trust and confidence.

*Invest in our People* - Empower our team in an environment and structure that promotes forward thinking, innovation and creativity.

*Promote Safety* - Committed to the health & safety of all stakeholders, underpinned by continuous monitoring and process improvement.

*Environmental Responsibility* - Sustainable solutions minimising our environmental footprint.

*Embracing Technology* - Maintain our position at the forefront of innovation.

*Pinnacle provides an environment that promotes forward thinking and encourages innovation.*

*Embracing technology and pioneering new techniques coupled with our team's knowledge and engineering expertise equals a winning combination!*

*We support, encourage and develop our people to become the best that they can be.*

# Introduction

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Pinnacle has been providing trusted engineering services for over 20 years.

Coverage from teams in Dublin, London, Norwich, Welwyn Garden City, Frankfurt & The Hague.

Proven delivery of service to many of the top national house builders, retail developers and public authorities.

Highly skilled teams tailor client specific solutions, using cutting edge technology and innovative solutions which lead to cost and programme savings and delighted clients.

A complete 'one stop shop' from land purchase to construction.





- Structural Engineering
- Design and innovation
  - Reinforced concrete
  - Load bearing masonry
  - Steel frame structures
  - Structural surveys
  - Structural timber
  - Building Information Modelling

- Civil Engineering
- Engineering masterplanning
  - Infrastructure design
  - Pre-development engineering
  - Sustainable drainage solutions
  - Flood Risk Assessments
  - Hydraulic modelling
  - Soil stabilisation
  - 3D Terrain and drainage modelling

- Feasibility Studies
- Pre-purchase due diligence
  - Site development/property appraisals

Transportation Planning

Highways Design



Clients



Pinnacle work across various sectors with numerous multinational companies - we gain repeat business and referrals from satisfied, long standing clients.



Clients



# Accreditations & Affiliations



Our work ethic is underpinned by our commitment to maintain our accreditations.

Pinnacle are affiliated with carefully chosen partners to reflect the sectors we work in and the high standard of work we produce.

- SMAS Worksafe Contractor
- NHBC
- Safecontractor
- Constructionline
- CSCS
- QMS ISO 9001
- QMS ISO 14001
- FPAL
- Investors In People Bronze Award
- Insights
- British Safety Council
- Institute of Civil Engineers





# Awards

Innovative BIM technology on Tesco Sheringham store wins international engineering award

Pinnacle won "Best Engineering Project" in the 2013 Tekla Global BIM Awards. Competing with projects in Finland, Morocco and Saudi Arabia Pinnacle were recognised for their innovative use of Building Information Modelling (BIM) technology on a bespoke supermarket design, featuring a timber roof structure.



This project also placed Pinnacle in the final for the Construction News Award in 2014 and was the winner of the East of England Constructing Excellence Award in 2014.

2014 - IStructE - PINNACLE L13-FD-1 to Kraken

Tekla Trimble UK Awards 2017 Small Projects Category Winner for Boat Landings for AME - 2 and AWG - 1

## Builder & Engineer Awards 2011



Pinnacle were shortlisted for the Builder & Engineer Award for their work on a mixed use construction scheme in Orpington.

## Regularly Ranked NCE 100 Company







Future Constructor and Architect Journal

Feature article by Pinnacle highlighting the risks of pluvial and fluvial flooding and the increased threat of global warming

Airport control tower design - Mixed use development on constrained sites - Design methods for glass structures

**TheStructuralEngineer**



Orpington  
Europe's Largest Cobiax Slab Development

FOUNDATIONS: SEATON TESCO STORE

**FLOORED GENIUS**

With over 245,000m<sup>2</sup> of fill needed to redevelop a site in the coastal Devon town of Seaton, an innovative approach was needed to avoid clogging up the narrow rural roads. Claire Symes visited the site to find out more



Some people view redeveloping a site as a challenge. Pinnacle undertakes a feasibility study of the site for Seaton in Devon to see if it is suitable for an average-sized supermarket and what the potential development costs. Progress halted until and when the client wanted to include a pipeline to the local community to ground filling. The client wanted a pipeline to the local community to ground filling. The client wanted a pipeline to the local community to ground filling.



Seaton  
xxxxxxxxxxxxxxxxxxxx

# Working in the Community

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## Inspiring Young Engineers for the Future

Pinnacle are committed to the growth and development of it's industry by raising the profile of Civil and Structural Engineering in Schools and Colleges.

## Big Bang Fair Eastern - STEM

Pinnacle recently spent a day at the Big Bang Fair Eastern, University of Hertfordshire - a journey of discovery into Science, Technology, Engineering and Maths for school children aged 11-18. Attendees received an insight into Civil and Structural Engineering through building small structures with a variety of materials - a great learning opportunity and 'hands on fun'.

## The Pinnacle Student Challenge Award

Our involvement with University Technical College Norfolk continues through engagement and participation with the college's Industry Liaison Group.

Over the last few years, we have set year 12 students a challenge based on real-life engineering projects that we been appointed on. Students responded well to these challenges and following a judging session led by our engineers, a winning team was chosen for each project and rewarded with a prize.



## Work Experience

We regularly provide a weeks work experience for local school and college students to visit our offices and spend time with our Engineers and Technicians to gain an understanding of what we do on a day to day basis.

## Undergraduate Student Placements

We provide Students currently studying for a degree in Civil and Structural Engineering, the opportunity of a one year Placement to help them enhance their knowledge and understanding through practical experience.

## Apprenticeship Programme

Working closely with our local Colleges we run a three year Apprenticeship Programme for Civil and Structural Technicians. Now in our fifth year our apprentices have gone on to study HNC and Degree level.

# Services

## Development Infrastructure Drainage Design

During periodic flooding events, the public and politician's awareness is heightened to the consequences of flooding to homes, businesses and essential infrastructure. With the implementation of the Flood and Water Management Act 2010, the issue of compliance with good Sustainable Drainage Systems (SuDS) will come to the forefront of Clients and planning Authorities through the LLFA's (Local Lead Flood Authorities).

As a result, the implementation of appropriate drainage systems will become even more of a key aspect of development.

Pinnacle has a group of specialist Engineers with considerable experience in the design of efficient fully compliant SuDS schemes. Past projects have ranged from large scale commercial and residential schemes to advice for individual home owners.



Our service offer covers the whole life of a project, from concept through to detailed design for construction:

- Scheme concept and master planning advice, including advice on the incorporation of (SuDS) into developments
- Securing agreements with local authorities and statutory bodies
- Support for Planning Applications, including FRA's
- Assessments and drainage strategy reports
- Detailed design to Building Regulations Part H, Sewers for Adoption and CIRIA guidance

Designs to achieve relevant elements of BREEAM and Building regulations.

Provision of fully BIM compliant drainage models, where appropriate.

Our Engineers organise and advise on drainage surveys and alterations to existing drainage and sewer networks. Pinnacle has also worked extensively with water authorities throughout the country to secure cost-effective diversions or build over agreements of existing sewer systems to open up development potential.

## SuDS

SuDS are at the forefront of drainage design, whether for a Greenfield development or redevelopment of an existing site. The implementation of the Flood and Water Management Act 2010 - (Schedule 3 FWMA) reinforces the important role SuDS has for the continuing growth of an urban environment. It is therefore key that SuDS form part of any future development proposals.

SuDS features can take many forms, including: Ponds; swales; porous car park / surfacing; green roofs; filter strips; rain water harvesting; channels and rills; filter trenches; infiltration basins; infiltration trenches; detention basins; retention ponds; wetlands and underground storage tanks.

Our Engineers are experienced in the design and subsequent adoption of SuDS systems. We have the specialist knowledge to provide advice and assistance from inception, throughout the planning process onto detailed design securing adoption and providing support during construction.



The use of SuDS has extensive benefits including: reducing flood risk, improving water quality, enhancing amenity and biodiversity, improving water resource efficiency and providing community and recreational enhancements. The aim of SuDS is to mimic the natural drainage process.

Early involvement in the design process is key to ensuring that the SuDS ethos is fully integrated within project proposals, ensuring a smooth planning and adoption process. It is our experience that SuDS often influence an entire scheme and is more difficult to implement at a later stage. Pinnacle's early involvement helps deliver a successful planning application providing a design that is fully compliant with current legislation.

## Important Legislation

Schedule 3 of the FWMA specifically addresses SuDS. Whilst the Act called for the establishment of a SuDS Approving Body (SAB) to be set up; this has subsequently been "watered down".

Instead, in Early 2015 Lead Local Flood Authorities (LLFA's) were stabilised, under the direction of the Planning authority. The LLFA is now responsible approval of all new drainage systems for new and redeveloped sites to be obtained before construction commences. Their requirements will "trump" those of the water board, in terms of allowable discharge from sites.



# Zero To Landfill

## Help Protect the Environment and Save Our Clients Money

We pride ourselves on being environmentally conscious, taking every possible opportunity to incorporate and promote sustainable practices as we strive to achieve our "Zero to Landfill" policy using all design and treatment techniques available. A few examples of how we achieve this are:

### 3D Terrain Modelling

Pinnacle Engineers use the latest 3D terrain modelling software on projects to manipulate finished levels in order to minimise import or export from site and create a balanced cut and fill solution. Combined with the environmental mapping of the sub soils, this allows the most efficient defined earthwork packages to ensure clarity in tendering and deliver cost certainty and significant savings to the overall build costs and programme for our Clients.



### Soil Stabilisation

Soil stabilisation utilises soil mixing techniques to recycle and strengthen poor quality and contaminated soils and reduce the need for removal to landfill. This value engineering solution not only provides a suitable, solid platform on which to found the building slabs and hardstanding, but also provides significant cost savings on a project by minimising expensive importation of granular materials quarried from natural sources.

### Retaining Materials

Many elements of existing buildings on brownfield developments can be retained on site, sorted and reused in their current state following demolition, e.g. manhole covers and gully gratings. Materials can also be modified for an alternative use, e.g. concrete and masonry being crushed and graded, then reused for engineering fill material. Consideration throughout the design stage is also given to the reuse of the existing drainage, in particular the outfalls from the development. Existing hard standings are considered during the level strategy design stage and can be left in situ to form a foundation for new surfacing.

Pinnacle is fully focused on sustainability and continues to obtain recommendations for new business based on our ability to put sustainability at the heart of our design.

# Flood Management

## Flood Risk Assessments and Hydrology

In order to comply with good practice and design standards; all designs must cater for Climate change which will involve increased rainfall intensity, stronger winds and rising sea levels.

This often results in an increased requirement for attenuation in order to mimic nature in terms of discharge from a site.

Pinnacle believe that flood risk issues need careful consideration at the outset of any project. We enter into sensitive but effective negotiation with relevant authorities to ensure that development is both appropriate and cost effective.

## Capability

Pinnacle has extensive experience of flood risk management and working with developers, planning consultants, local authorities and statutory bodies to provide expert help on:

- Site specific FRA's
- Hydrological assessment of rivers, the sea, breach analysis and potential overtopping of flood defences
- Flood compensation assessments and designs for development in floodplains with flood resilience advice
- Surface Water Management Plans
- Flood Evacuation Plans
- Drainage Impact Assessments
- Negotiation with Local Authorities and Statutory Bodies



## The Legislation

Planning legislation is in place throughout the United Kingdom and the Republic of Ireland for the assessment of flood risk in developments:

- National Planning Policy Framework
- TAN 15 - Technical Advice Note 15: Development and Flood Risk (Wales)
- PPS 15 - Planning Policy Statement 15: [c1] Planning & Flood Risk (Ireland)
- The Scottish Planning Policy – Feb 2010
- The Planning System and Flood Risk Management 2009 (ROI)

## Sustainability

In tandem with determining the effect of a project on a floodplain and any compensation works required, the development also requires the production of sustainable surface water management plans, drainage impact assessments and flood evacuation plans.



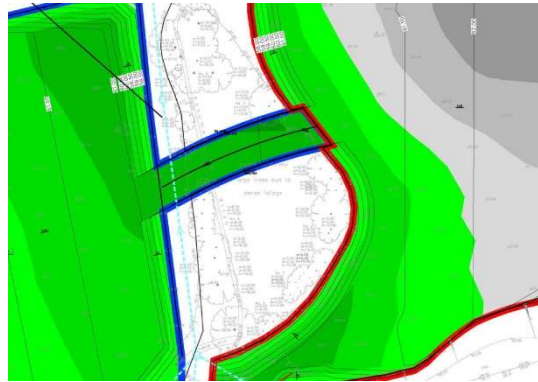
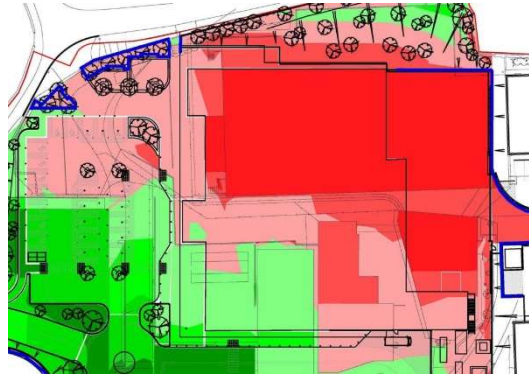
# 3D Terrain Modelling

## Knowing Your Volumes Saves You Money!

### Our Capability

Careful consideration of proposed site layouts and associated levels regimes, construction make ups and minimising material volumes is a key value driver. Our use of 3D terrain modelling software to manipulate finished levels minimises imported fill and export of unsuitable material from site, targeting a balanced cut and fill model with zero to waste.

Innovative road pavement construction and slab design suit a variety of site conditions. Existing soils determine the best value solutions and, frequently, soil stabilisation techniques provide significant cost and environmental benefit maximising the reuse of site won soils. The resulting earthworks package ensures clarity at tender stage to deliver cost and programme certainty during construction.



## Soil Stabilisation

Soil suitability testing to confirm the use of lime/cement stabilisation allows development of the most economic levels regime for the site in collaboration with the project team. Our drawings and volume schedules result in a robust groundworks cost plan.

Planners may seek to influence a site levels strategy, prompting a move away from a neutral cut and fill balance. However, we are experienced in negotiating the environmental benefits of minimising soil movement from site and the associated environmental consequences in order to seek a relaxation on possible restrictions with often favourable results.

Our key driver is to minimise the volume of imported and exported material, maximising the reuse of materials on site.

# Structural Engineering

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## Delivering Thoughtful, Well-engineered and Cost Effective Solutions

Pinnacle offer a broad range of structural engineering design services delivering thoughtful, well-engineered and cost-effective solutions to meet the expectations of our clients.

Our skilled and experienced design engineers utilise state of the art 3D modelling software for design analysis to test structural solutions in a virtual world and push the boundaries of efficiency. The structural models also help our engineers to see how complex geometry and components of a design work together.

All appropriate building materials are considered through the early stages of a design and take on board the aesthetic, sustainable and economic performance requirements of the project.



Pinnacle have worked successfully with repeat clients over many years as a result of our continued commitment to developing better solutions and pride ourselves on delivery of production information to agreed programmes. Our record of challenging structural solutions in the commercial and retail sector secures Pinnacle a place on the Centre of Excellence panel of a multinational client driving design standards throughout their property portfolio.

Our engineers work within creative teams reporting to our technical directors to ensure our designs satisfy all the standards and relevant codes of practice. The engineering process is subjected to a series of rigorous internal audits to ensure the final design meets all expectations of the clients brief and is a safe and buildable structure.

Pinnacle has a passion for engineering and provide building structures and the associated infrastructure of the highest quality. We welcome the opportunity of working with new clients to share the benefit of our knowledge and the opportunities current technologies offer.

[www.pinnacleconsultingengineers.com](http://www.pinnacleconsultingengineers.com)

## Why Commission Our Services?

The repurposing of existing buildings either in part or in whole is becoming ever more popular. It is important to understand an existing buildings' condition and suitability prior to any acquisition or for a better understanding of maintenance needs if within an existing property portfolio.

## The Existing Structure

The ability of an existing structure to carry new loading is key to determining the viability of refurbishment and re-use. Building issues range from low risk, almost cosmetic in nature, to the more severe and costly problems associated with structural defects.

## Our Expertise

Pinnacle has a group of chartered structural engineers with significant experience in surveying existing buildings ranging from detailed checking of large commercial multi-storey frames to smaller residential properties for the home owner.



## Our Service

Our reports are presented to meet each client's key requirements typically covering the following:

- A detailed description of the building construction
- Recording and describing building structural defects
- Determining the cause of the defects
- Highlighting issues that may influence property acquisition with suggested remedial works
- Recommending further investigations if required and identifying future risks and liabilities
- We are familiar with surveying buildings of special architectural and/or historic interest, providing advice and recommendations for sympathetic restoration and repair works. We regularly work with specialist external third parties and heritage consultants

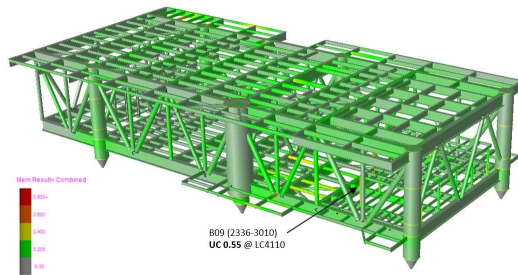
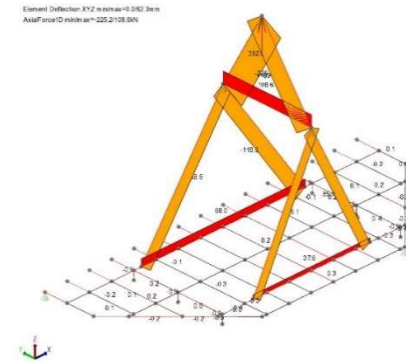


Figure 5.2 - 3D Model (Combined UC) - Platform NE View

- Chartered Engineers overseeing all key projects
- Support worldwide standards
- Invested significantly in 3D analysis and design
- Tekla Structural Designer, STAAD Pro, TEDDS, Sacs



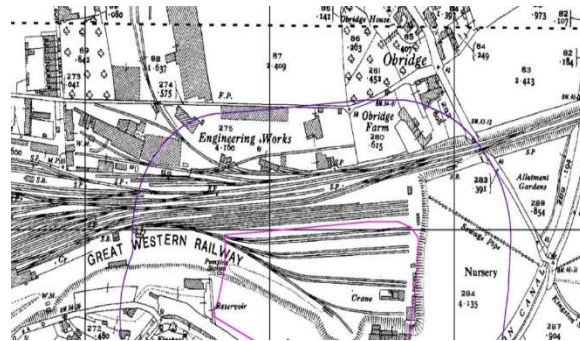
# Due Diligence

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We provide a responsive and comprehensive due diligence assessment of the risks associated with and the liabilities assumed from the acquisition of land and buildings tailored to suit your specific needs.

With over 20 years' experience we can advise on:

- The benefits of due diligence
- Land and buildings purchase considerations and risks
- Liabilities assumed on ownership
- Key site constraints and negotiation opportunities
- Programme and budget implications
- Recommended next steps in the acquisition process



Our reports assess available data, proposing value engineering opportunities to be explored, subsequent development of cost models and site constraints to be 'risked out' where possible to the benefit of negotiations on land/building acquisition, retention or disposal.

Pinnacle are one of the largest consultants operating in the due diligence arena throughout the UK. Our service offer is typically separated into two areas, one for clients interested in site development and one for clients wishing to either lease, refurbish or let existing buildings or property.



# Energy - Structural Surveys

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## Full Support, Advice and Knowledge

Our offshore structural condition surveys, in which we visit installations by either marine or helicopter, are carried out by qualified structural engineers and are undertaken to enable accurate and informative condition reporting of existing assets to be determined, using risk based assessments.



## Reports

Our reports can then be used to instigate any necessary remedial actions in a timely manner, so as to prevent unscheduled production shutdowns and thereby minimise cost of operation. Regular inspections also form a vital tool in managing safety and ensuring the continued safe access across the platform. Corrosion and coating breakdown, damage or deterioration of gratings, stairs and handrails, as well as any deformation, damage or deterioration of structural elements are all routinely reported upon.

## Surveys & Inspections

In addition to our structural design service, we regularly attend offshore manned nodal and normally unmanned installations (NUIs) in order to carry out localised and specific structural dimensional surveys and inspections. This provides clarification of structural detail, dimensional checks and confirms the condition of existing areas or structures.

These enable design assumptions to be confirmed, on station, prior to fabrication or construction works, thus ensuring an efficient installation or construction process on site.

## Certification

BOSIET / MIST / S-Cape / CSCS

We have engineers with BST GWO Work at Height/ Renewable UK Work at Height and Rescue (WAHR) and Working at Heights qualifications. Every offshore survey is backed up with a clear, concise, accurate and informative written report with appropriate photographs and location plans. Where appropriate; recommended remedial actions, along with suggested timescales, are included within our written reports in order to better inform the reader of the severity of any issues raised.

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# Energy - Interfacing

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## Bridging The Gap - Linking Fixed Platforms with Jack-Up Barges

Working with Operators, ISC's and Rig Owners, Pinnacle have been structurally designing interfaces for jack-up barge campaigns since November 2011, working within the Southern North Sea, UK and NL waters and the Irish Sea.

### Our Work

As well as the structural assessment of the interfaces and associated checks on the existing platform structure, we also carry out all of the initial layout checks and coordination giving input from rig position planning through to construction.

Where required, Pinnacle has carried out pre-interface structural inspections of platforms in order to confirm 'as built' data against the condition, dimensions and arrangement on station.

Our output typically includes:

- Full annotated construction drawings for every project showing bridge and grillage landing positions
- Tie down details and any pre-works required in order to minimise the time scale for the installation of the bridges
- Temporary linking of the fixed installations with the jack-up barges.



## Reports

We always prepare a full structural engineering calculation report to UK, European or International Standards as well as fully detailed method statements for construction and deconstruction of the interface.

Our engineering team provides:

- Highly qualified and experienced structural engineers
- Feasibility studies and initial rig positioning input
- Method Statements
- Assistance with the production of Lifting Plans
- CAD detailing

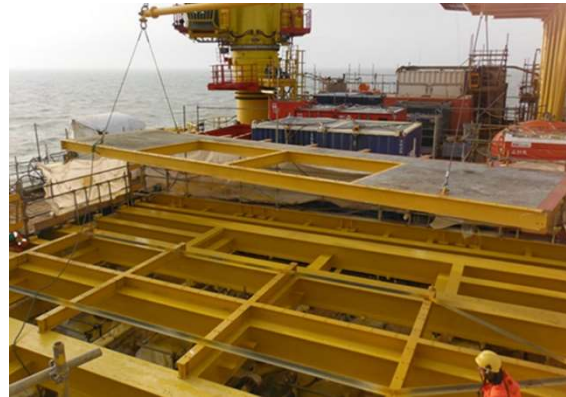
We continually strive to maintain our blend of total professionalism and ultimate flexibility to accommodate the inevitable changes of a realistic and volatile vessel sequence plan. Understanding the requirements of stakeholders throughout the design process Pinnacle ensure that the proposed interface solution is tabled early in the programme and that any project specific requirements are included within the finalised design solution.

Our Engineering team have extensive interface experience particularly within the Southern North Sea sector working with key operators such as Shell and NAM. We have qualified structural engineers experienced and appropriately certified for offshore working so we can respond quickly where needed to inspect, survey or attend sites and work areas.



## Repairs, Maintenance and Inspections

Owners and operators of offshore installations invest significant time and resource in order to safeguard the continued operation and production of existing assets. Pinnacle's energy team have built a sound base of expertise and experience in dealing with the challenges of brownfield projects, in particular, the ageing assets within the Southern North Sea - many of which date back to the 1960's and 70's.



## Safety and Environment

Safety of personnel and the environment are and will remain the over-riding highest priority. An integral part of achieving this is to maintain safe access across all offshore installations. Combined with regular structural engineering reports Pinnacle provides an integral tool in enabling appropriate repairs and modifications to be undertaken in a planned process, thereby avoiding unplanned production holds and shut downs. Regular structural inspections also form a vital tool in managing safety of personnel, assets and the environment.

## Engineering Design Work

At Pinnacle, we regularly carry out structural engineering design work such as:

- New staircases
- Deck replacement
- Hand-railing
- Walkways
- Pipe line supports
- Strengthening and replacement of structural members and;
- Complete platform fabric maintenance campaigns

Along with structural engineering design, Pinnacle produce detailed general arrangements, as well as detailed fabrication drawings, specification and onshore and offshore inspection of structural strengthening, alteration and repair works.

# Energy - Well Rejuvenation

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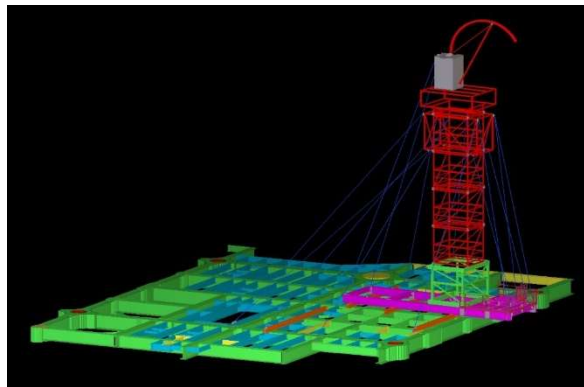
## Brownfield Rejuvenation, SNS - Velocity String, Coil Tubing & Fracking

Pinnacle have provided innovative structural engineering solutions to AJS, Shell and NAM since 2011, in order to support the installation, erection and operation of coil tubing and velocity string towers on existing gas platforms, within the UK and NL waters of the Southern North Sea.

### Design Solutions

Pinnacle's design solutions typically begin with the structural assessment and analysis of the existing platform's primary and secondary structure, local to the project affected areas.

Using this analysis data Pinnacle can then design and fully detail appropriate steel spreader frames, transfer grillages and tie down points to distribute the operational, environmental and accidental loadings from the well intervention tower into the jacket structure, without causing detriment to the serviceability of the existing construction.



### Fully Co-ordinated

Throughout this process Pinnacle fully coordinate the design to ensure that there are no clashes with interface landing positions, project deck requirements, guy wires or platform equipment.

The design solutions developed by Pinnacle's engineering team prioritise intelligent solutions to enable simplicity and optimum speed of the offshore installation, in order to minimise client costs and time. In order to maximise efficiency and minimise waste, Pinnacle have, wherever possible, designed solutions that allow for the re-utilisation of support spreader frames and pad-eyes on subsequent platforms and projects.

As with all of Pinnacle's design solutions; the provision of a safe and functional working environment is the highest priority.

Throughout the process of planning and design through to construction and de-construction Pinnacle support the client's team with a fully integrated structural engineering service.

Pinnacle are flexible, adaptable and proactive and above all totally reliable.

# Energy - Civil Engineering

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## Pinnacle Have Built Up a Bank of Civil Engineering Experience & Expertise

Offering bespoke, client focussed solutions Pinnacle have built up a bank of civil engineering experience and expertise within the petrochemical and major gas terminal environments.

### Development Infrastructure

Pinnacle have extensive experience designing and detailing site infrastructure works comprising levels and drainage, retaining walls and pavement designs. Our skilled and highly competent team of engineers and detailers prepare reinforced concrete drawings and details together with bar bending schedules.

Utilising both 2 dimensional CAD and 3 dimensional modelling software, Pinnacle can provide a greater understanding of the parametric relationships between disciplines, preventing co-ordination issues during the construction phase.

Our philosophy on all sites is to achieve 'Zero to Landfill'. Therefore, careful consideration of site levels, construction make ups and quantifying the volumes of materials being moved on site is the key driver to delivering a cost effective groundworks package.

We have the skills and expertise to model sites utilising Autodesk 3D Civils software, enabling road pavement and slab designs to be tailored, using alternative methods of construction, to suit each particular site condition.



## Drainage Systems

Pinnacle have the expertise to develop and design a variety of drainage systems to meet current best practice and legislative requirements covering:

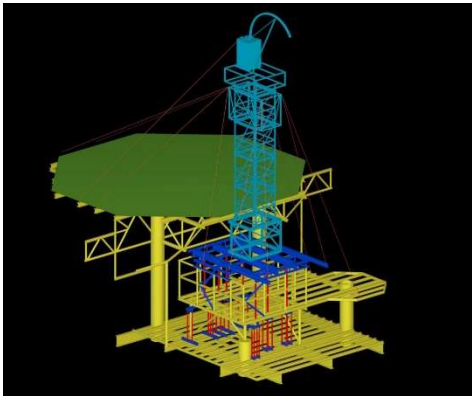
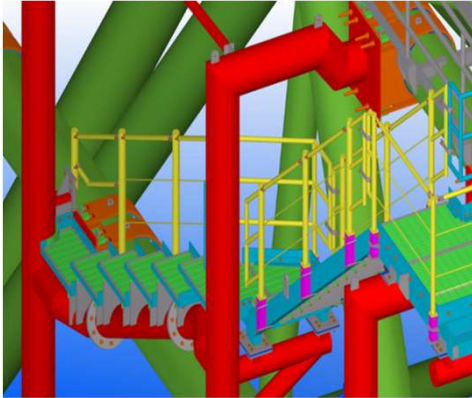
- Scheme concept and master planning advice, including the incorporation of Sustainable Urban Drainage Systems (SuDS) into developments
- Securing agreements with local authorities and statutory bodies
- Support for Planning Applications, including Flood Risk Assessments and drainage strategy reports
- Detailed design to Building Regulations Part H, Sewers for Adoption and CIRIA guidance
- Designs to achieve relevant elements of ECOHomes and BREEAM assessments

Our team can also advise on alterations to existing drainage and sewer systems, including arranging surveys of existing pipework to confirm current regimes, highlighting any possible site constraints.

Pinnacle have worked extensively with water authorities throughout the country to secure cost-effective diversions of existing sewer systems opening up developments that would otherwise be heavily constrained by no-build zones from existing sewer easements.

## Energy - CAD Design & Modelling

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Pinnacle Have An Experienced Team of Structural Designers and CAD Technicians

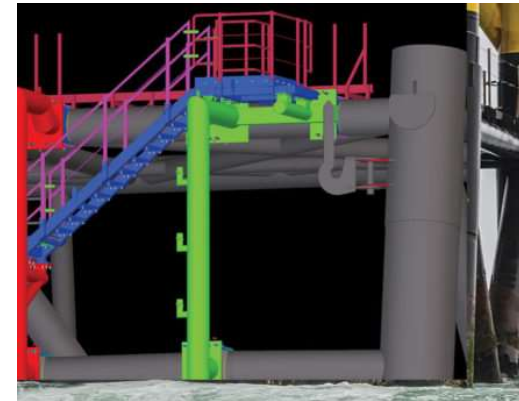
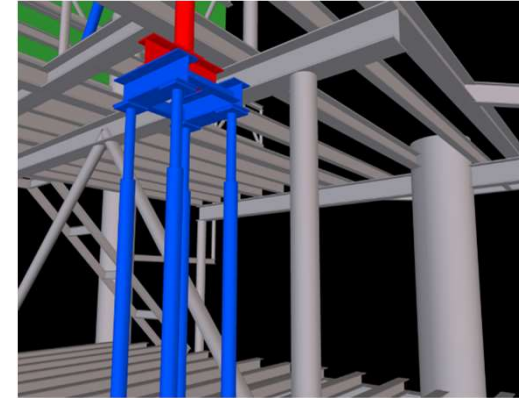
### CAD Design & Modelling

Pinnacle has an experienced team of Structural Designers and CAD Technicians dedicated to offshore structural detailing with considerable expertise in the production of information ranging from conceptual design to detailed fabrication works.

We have appropriately trained and experienced personnel with knowledge and experience of undertaking offshore surveys, which is especially useful for checking existing asset data and co-ordination purposes.

Working with a 'right first time' philosophy helps to ensure all aspects of schemes are thoroughly reviewed and considered throughout the design phase to ensure the information that we produce fulfils all of its obligations to the stakeholders who work from our output. This contributes to reducing supply chain and fabrication queries, and along with our passion for safety, is key to the successful delivery of a project.

Pinnacle has invested significantly in 3D modelling and has utilised it successfully on a wide range of initiatives from brown field modifications, fabric maintenance, well rejuvenation and new build projects. Pinnacle regularly incorporate point cloud data into our design models to develop a better understanding of where key issues lie and enhance team understanding, we have well developed protocols for reviews and for checking output.





## Energy - Decommissioning

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### Cost Effective, Innovative and intelligent structural Engineering Solutions

Having successfully completed structural engineering analysis, design, coordination and CAD detailing for decommissioning, de-complexing and simplification projects on a variety of ageing offshore gas platforms within the Southern North Sea, Pinnacle have built significant knowledge and expertise in providing cost effective, innovative and intelligent structural engineering solutions whilst maintaining the highest standards of safety.

### Safe Solutions

Working closely with clients Pinnacle align themselves with the owner/operator's desired objectives and drivers in order to ensure the most appropriate and safe structural removal methods (piece small, modular, single lift) as well as the longevity and life span of the retained structures, where appropriate.

Benefiting from experience in the brown field arena Pinnacle use continuous learning to find the best solutions, with minimal waste (time and material). In addition to detailed engineering Pinnacle also provide project front end concept design studies offering different alternatives, along with recommendations, for the structural works. This can be invaluable in building a robust plan.



### Specialised Knowledge

Pinnacle has valuable and specialised knowledge and is ahead of the market in working within ageing assets on de-complexing and simplification projects as well as the structural engineering preparation for total decommissioning.

### Experience

Completed projects have included the removal of major structural items from ageing platforms ranging from and including total and part deck removals, helidecks, plant, equipment, flowlines, vessels, cranes, vent masts and accommodation modules. Where platforms were to be maintained, following a radical simplification approach, Pinnacle have designed and fully detailed extensive refurbishment, replacement and repairs to the retained platform topside structures including walkways, gratings, stairs, handrails, deck support steels, pipe supports, boat landings, blast walls and the support and installation methodology for hybrid power systems.

As well as cutting edge design solutions, Pinnacle's significant experience and expertise helps to ensure that your project will be fully coordinated and planned for smooth delivery of the structural engineering thereby saving programme time and money.

## A Successful Approach to Starting on Site

Make use of the available programme time to fully understand, challenge and value manage often significant construction programme and cost risk to the successful delivery of your project. Understandably there is often Client reluctance to commit financially to a project until the comfort of an implementable planning permission is gained. However, for relatively little cost, the time can be well spent understanding key constraints, exploring value alternatives and challenging regulatory authorities' often intransigent lack of imagination in delivering value. The increasing development of urban brownfield sites are seldom without their technical and regulatory challenges if best value is to be achieved.

Building on our Tier 3 Due Diligence report, and its associated site database, we will be aware of many of the high cost risk budget items that would benefit from challenge. Use the opportunity to instruct those outstanding surveys and reports to allow later detailed design, typically including:

- Phase II Geo/Environmental SI's
- Soakage testing
- 3D readable topographical surveys
- Completion of CCTV drainage surveys and the development of a strategic drainage strategy incorporate/challenge the need for SUDs/ soakage, current regulatory framework
- Services asset location and GPR
- Bat/reptile surveys
- Written schemes of Archaeological investigation



*"The message is one of commitment to the early understanding of at and below ground site risks to deliver programme and value engineered cost certainty"*



## Targeting Zero Waste to Landfill

3D terrain modelling will develop absolute risk free site levels, considering soil stabilisation and re-use of crushed demolition arisings at a significant saving over 'normal' dig, dump and import of granular sub-base. The model includes attenuation volumes and foundation and service trench arisings, with the flexibility to manage volumes as they are better known during work on site.

### Soil stabilisation

The supplier market needs time and test results to understand the soil chemistry and their availability of resources to suit an emerging programme if best value is to be delivered. We will frequently develop a groundworks solution in conjunction with suitably qualified suppliers.

### Reptiles/Bats

Relocate reptiles/bats in the season preceding a start on site.

### Party Walls

Completion of Party Wall Surveys and satisfying any boundary issues obligating use of the Party Wall Act 1996.

### Rail Negotiations

Network Rail and Transport for London negotiations when working in proximity to a live railway and infrastructure.

### Services

Challenge the need for diversion/reinforcement. Obtain, challenge and negotiate supply / connection / disconnection / diversion costs. Plot services routes and trial pit depths to prove the opportunity for building over.

### Sewers

Trial pit existing infrastructure to confirm alignment and depth. Challenge wayleave obligations at pinch points. Promote alternative diversion routes, and/or construction technologies to minimise programme and wayleave hungry solutions.

### Sustainability

### Surface Water Runoff

# Building Information Modelling

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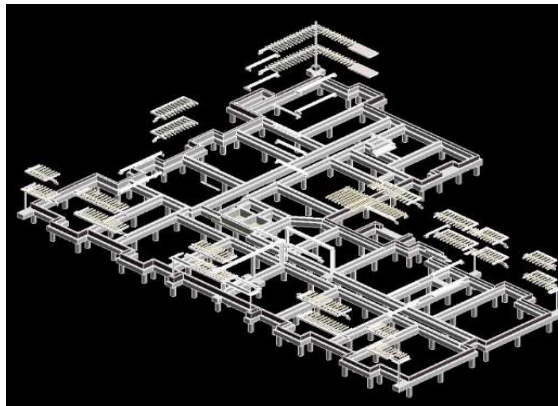
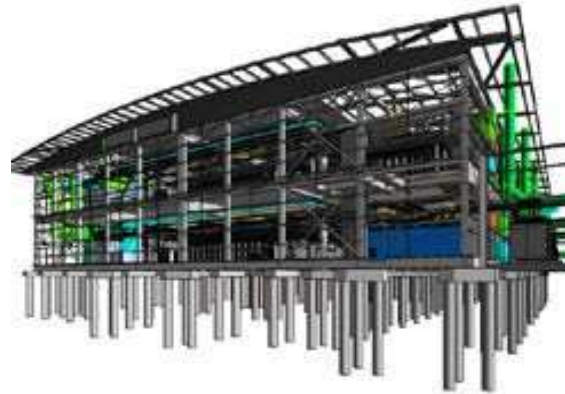
BIM is becoming popular amongst our clients as it continues to demonstrate significant improvement in cost control and the delivery of well-coordinated and thought through building projects.

Pinnacle's expertise in BIM allows you to be at the forefront of this technology.

Our design teams are proficient and skilled in delivering 3D models contributing to an overall project delivery plan.

Pinnacle understand the many benefits derived from developing the project utilising a 3D model including simulations, managing key design constraints and design team coordination. The model can be interrogated at key project stages to gain an accurate understanding of material volumes and impact of scheme changes.

Our software capability includes Autodesk Revit, Tekla Structures and 3D Civils.



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Our software capability includes Autodesk Revit, Tekla Structures and 3D Civils.

Benefits include:

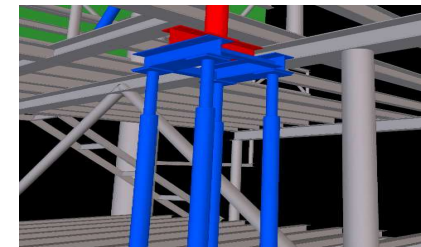
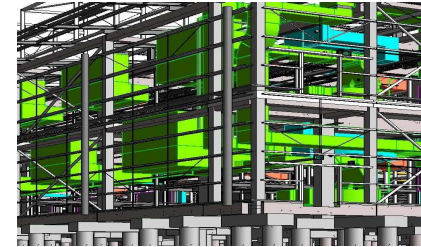
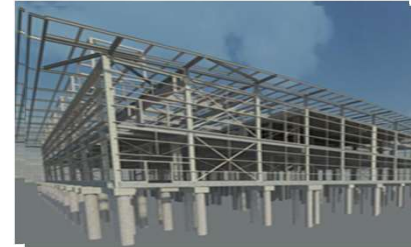
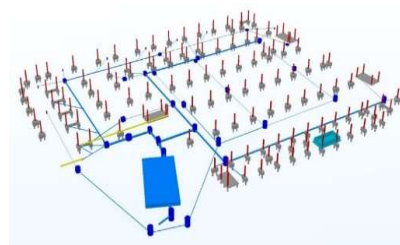
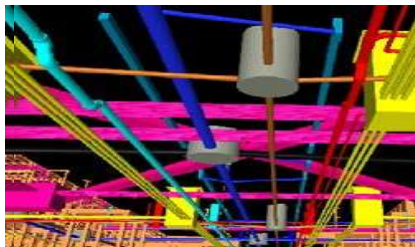
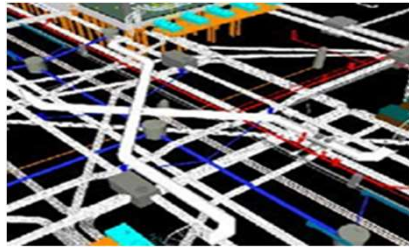
- Cost savings as a result of tender confidence
- Identifying clashes assisting the design process
- Improved use of internal space due to better visualisation
- Detailed reporting for input to budget planning
- 'What if' analysis - a platform to consider alternative construction techniques
- Clarity of construction sequencing
- An accurate building record for operation and maintenance throughout its lifecycle

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# Building Information Modelling

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# Transportation & Highways

**PINNACLE**  
CONSULTING ENGINEERS

## A Reputation for Applying Innovative Thinking to Develop Practical, Deliverable and Sustainable Answers to Transport Issues

Transportation affects our daily lives. It is key to a well functioning society and vibrant economy. How we develop transportation infrastructure will shape our future. It is vital we get it right.

Pinnacle has developed a reputation for applying innovative thinking to develop practical, deliverable and sustainable answers to transport issues. Our experienced engineers help Clients to overcome their challenges by working in close partnership with the design team to deliver real outcomes and long term benefits.

We acknowledge the increasing challenge of providing access to new developments for both developers and road authorities. Traffic congestion, poor accessibility to public transport and other sustainable forms of travel are often barriers to development. We take a collaborative approach to solving transport issues, seeking solutions that are cost effective and sustainable, while providing the best option for our Client and the receiving Community.



### Our Expertise

Our highly experienced transportation team complements Pinnacle's long established civil and structural capabilities, resulting in fully integrated design solutions.

We offer a full range of Transportation Planning services across all sectors, from site feasibility through to construction, including;

- Traffic Assessments
- Highway Engineering
- Junction Analysis & Design
- Transport Modelling
- Transport Masterplanning
- Mobility Management Plans
- Traffic Management Plans
- Cycle Planning, Design & Auditing
- Section 278 Agreements
- Road Safety Audits
- Expert Witness Advice

We have worked extensively with leading developers and their design teams across numerous sectors, providing expert technical advice that secures implementable planning permissions.

### Our Capability

Pinnacle provides the right design solutions, from simple priority junctions through to complex traffic networks. Our proposals take into consideration key constraints such as developmental impact, economic feasibility, environmental sustainability and road safety implications.

We use the latest industry standard design software to develop and assess options for highway design and transportation planning issues. Our team is fully trained and experienced in the use of: ARCADY; PICADY; OSCADY; LINSIG; TRANSYT; TRICS and AUTOTRACK.

We deliver best practise designs that are implemented to the relevant local, national and international standards.

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## Basement Development

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Pinnacle have designed various underground car parks on mixed-use schemes including 2 levels of underground car parking and a single level of roof top parking with a 70,000sq<sup>2</sup> retail store and three levels of residential apartments built between. This project involved building intricate ramps that would take vehicles from ground level to the desired parking areas (images 1 & 2).



Great Russell Street, London  
Conversion of lower basement car parking into new 'windowless' hotel concept utilising BIM to model existing structures and limited headroom for new bed layouts and complex servicing requirements. New vertical circulation cores formed through the 5 floors and additional plant areas created.



Pinnacle is conversant in interfacing with collaborative document management systems as the primary means of distributing project information.

Current live systems being utilised successfully include:

- BIM 360 GLUE
- FTP Client Sites
- Autodesk Buzzsaw
- 4 Projects
- Centrix
- Cadweb
- Dropbox
- Submittal Exchange

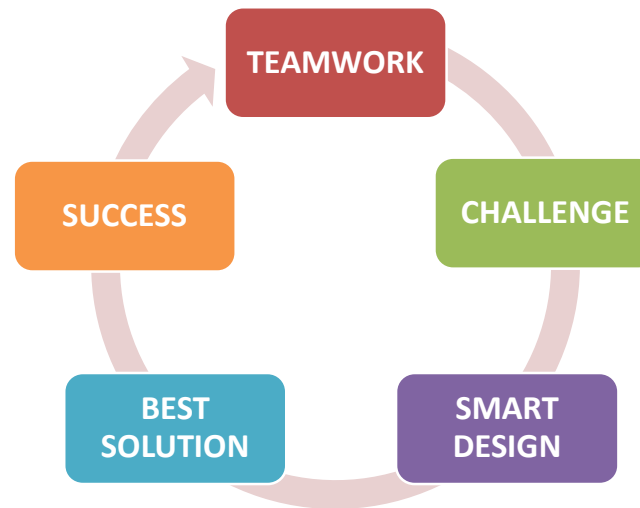


**AUTODESK**  
**BIM 360 GLUE**



**BUZZSAW**

Our drive to provide the most efficient solutions to deliver value and quality of building is at the core of everything we do.



## Buildings

- Drive commonality through the building model
- Work with third party suppliers to deliver efficient, least cost, sustainable and smart designs
- Look for common themes and drill down for best solution
- Continuously improve our clients' Concept Designs; we have been the Panel Designer on numerous global companies design models for the past 20 years
- Challenge material choice pre-planning to minimise cost
- Maximise pre-formed/flat pack build/modular opportunities

## Earthworks, SuDS and Drainage

- Consider site constraints - levels, connections, wayleaves
- Utilise 3D Terrain Modelling to maximise reuse of site materials and 3D drainage modelling to deliver parametric quantities and minimise unknowns
- Ability to achieve neutral cut and fill balance
- Infiltration testing to understand what's possible
- Cost effective drainage solutions
- 'Proof' surveys such as CCTV drainage and hard/soft surveys to maximise existing discharge volumes and minimise attenuation
- Package up earthworks and drainage solutions to achieve best value in the market place and suit programme phasing
- Early surveys and SI deliver value and narrow cost and programme risk bandwidth
- Provide programme improvements

## Identify the big ticket items

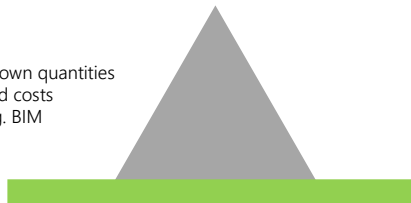
- Most engineering issues and risks are in the ground
- Our philosophy - the more early data, the more efficient solutions can be explored
- Identify long lead-ins or site enabling works
- Method of construction - civils & buildings

*"Keen to be part of the team and identify opportunities and easy wins"*

## What Developers Want

Budget expectation on the building and fit-out to maximise bottom line

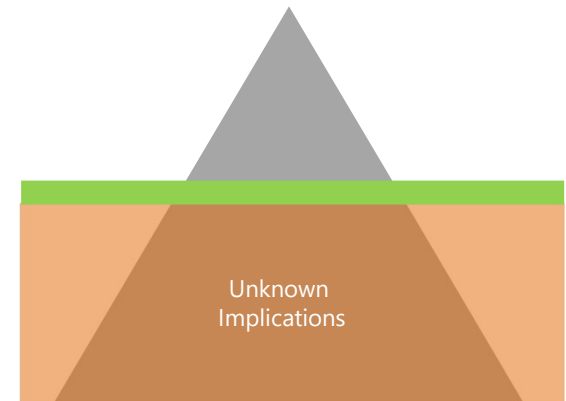
Known quantities and costs  
e.g. BIM



## What Developers don't want

Unexpected below ground or abnormal site costs

Unknown Implications





## Zero To Landfill

Help protect the environment and save our clients money. We pride ourselves on being environmentally conscious, taking every possible opportunity to incorporate and promote sustainable practices as we strive to achieve our "Zero to Landfill" policy using all design and treatment techniques available. A few examples of how we achieve this are:

### 3D Terrain Modelling

Pinnacle Engineers use the latest 3D terrain modelling software on projects to manipulate finished levels in order to minimise import or export from site and create a balanced cut and fill solution. Combined with the environmental mapping of the sub soils, this allows the most efficient defined earthwork packages to ensure clarity in tendering and deliver cost certainty and significant savings to the overall build costs and programme for our Clients.



## Soil Stabilisation

Soil stabilisation utilises soil mixing techniques to recycle and strengthen poor quality and contaminated soils and reduce the need for removal to landfill. This value engineering solution not only provides a suitable, solid platform on which to found the building slabs and hardstanding, but also provides significant cost savings on a project by minimising expensive importation of granular materials quarried from natural sources.

## Retaining Materials

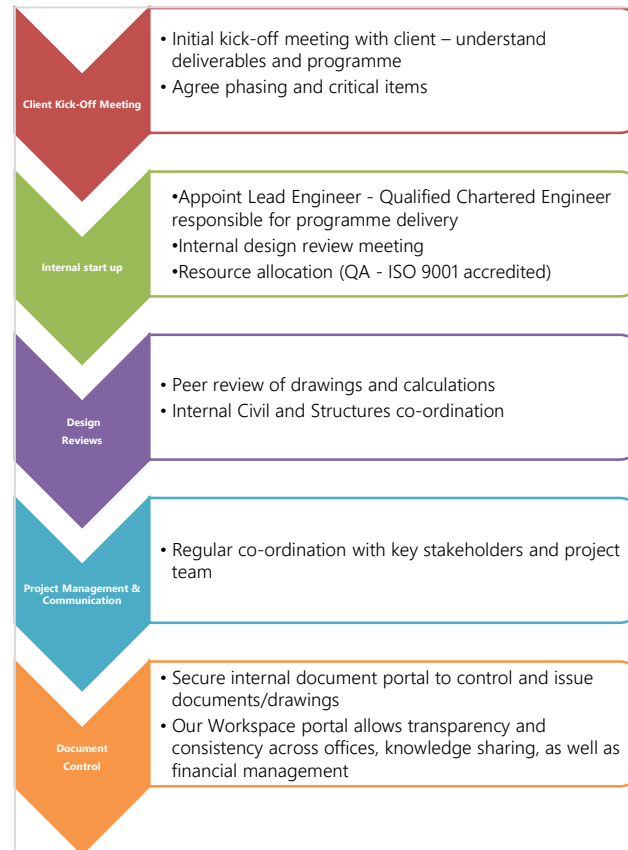
Many elements of existing buildings on brownfield developments can be retained on site, sorted and reused in their current state following demolition, e.g. manhole covers and gully gratings. Materials can also be modified for an alternative use, e.g. concrete and masonry being crushed and graded, then reused for engineering fill material. Consideration throughout the design stage is also given to the reuse of the existing drainage, in particular the outfalls from the development. Existing hard standings are considered during the level strategy design stage and can be left in situ to form a foundation for new surfacing.

Pinnacle is fully focused on sustainability and continues to obtain recommendations for new business based on our ability to put sustainability at the heart of our design.



# Delivery Of Projects

Success Through Planning and Coordination



Sectors / Capability / Experience

# Commercial - Recent Projects



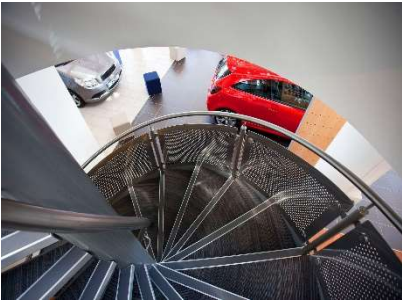
Riverbank House, London  
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NEXEN Headquarters, London  
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AXA Headquarters, Ipswich  
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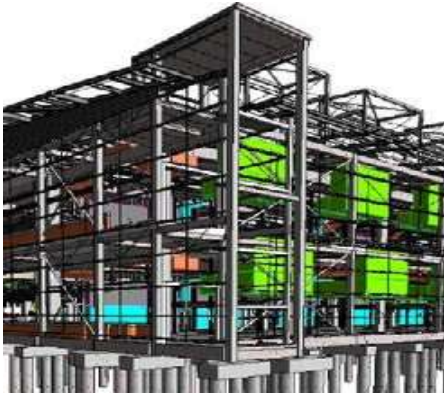


Motor Village, Toomey  
A brand new state-of-the-art motor village in Rochford, Essex designed to accommodate 6 new car franchises, a valet centre and a petrol station. Pinnacle headed up the entire project providing civil and structural engineering expertise from pre- development through to completion.



Studio 4, Welwyn Garden City  
Pinnacle provided engineering services for the feasibility study, acquisition and conversion/extension of disused commercial premises in Welwyn Garden City into a contemporary office building with finishes and services appropriate for its future use.

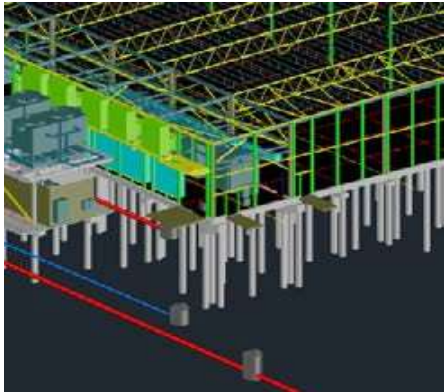
# Data Centre / Mission Critical Experience



Pinnacle has worked with international clients providing the civil and structural design for data centre facilities over the past twenty years. We are experienced in both new build and multi-phase campus sites, and also in the conversion of existing properties such as warehousing and office buildings to provide new DC space to institutional standards.



We are market leaders in delivering fully federated 3D BIM models a prerequisite on all highly functional building facilities such as DC's. This technology plays a key role in the concept and spatial planning of new space, and to enable the structural detailing to go hand in hand with the complex nature of the services infrastructure routes and plantroom configurations. The modelling allows regular reviews of the shell for clash detection with the design team, and minimises issues later with the delivery of the subcontractor packages to site.



We maintain a long standing and very successful relationship with repeat clients and specialist MEP consultants. The scale of projects can typically range over 100MW on new campus sites, to smaller but often equally complex fit out projects in smaller facilities.

Our clients include a number of high profile global end users, co-location clients, operators of wholesale data centres, and also been commissioned directly to main contractors as part of a D&B contract.

## Data Centres / Mission Critical - Recent Projects

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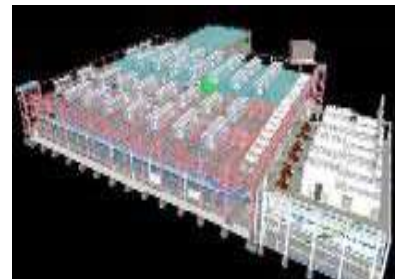
**SatGate, Lithuania**  
Full structural design for a new greenfield, two storey DC, including a hybrid precast concrete shell and steel frame together in a barrel vaulted roof.



**US / EMEA Concept Design**  
Developing EMEA concept design model for large US client rollout. Scheme design has been in Level 2 BIM with full coordination with the MEP and Architectural teams.



**Africa DC Concept Design**  
Structural concept and detail design for standardised DC shell role out for a high profile multinational client developing sites across EMEA.



**DUB Dublin (Phase 1, 2 & 3)**  
Structural, civil and infrastructure designer for a new three phase (15 + 15 + 10 MW) facility on a greenfield site. Extensive earthworks and drainage strategies included for planning and environmental sign off.



**AMS, Phases 1-4 Amsterdam**  
Four separate building projects over 3 year period, 10-15MW whitespace each, providing detailed structural and civil packages for conversion of existing warehousing into new colocation space including new mezzanine levels.



**IRM Slough London**  
Structural and civil engineers for a US client entering the UK market and supporting them on their first acquisition. Scheme involves the fit out of 3 new halls, plant support gantries over existing roofs, and new office block extension.

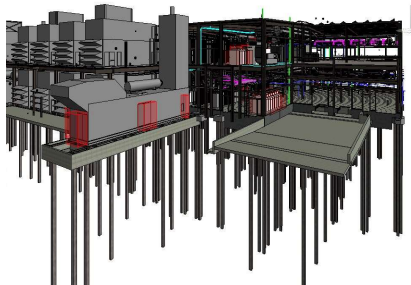


## Data Centres / Mission Critical - Recent Projects

**PINNACLE**  
CONSULTING ENGINEERS



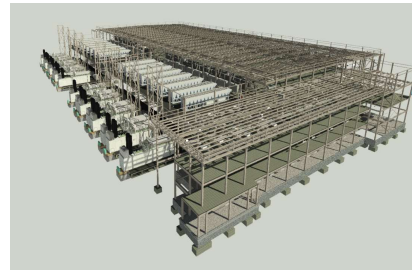
**Equinix Group, London**  
Structural modifications and fit out works over 3 phases. Complex steelwork support design for critical services utilising BIM and cloud point surveys.



**AMS – New Campus Buildings 64MW**  
Detailed structural and civil design for two 32MW double storey data centres on an existing green field campus site. All buildings, external works and services in single coordinated 3d BIM to Level 2. Extensive substructures designs due to very poor subsoils



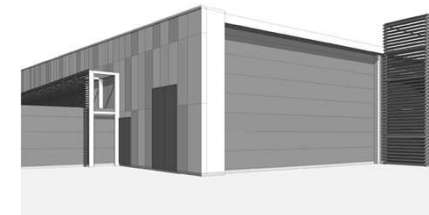
**Infinity, Slough & London 2**  
Full structural and civil design of data space delivered across 3 phases with Uptime Institute Tier 4 certified design. Scheme involved new mezzanine floors built on screw pile technology within an existing live facility



**AMS & DUB For large US Colo Client**  
Full structural and civil design coordinated to BIM Level 2 for two and three storey DCs on a large green field site. Site design include pre loading and consolidation to limit future ground settlements due to bulk filling up to development levels.



**AMS Netherlands**  
Full structural and civil design for large 96MW multiphase data center on a large green field site. All buildings, external works and services in single coordinated BIM Level 2 model allowed full IFC contract documents to be delivered and built.



**KAEC & DUB Schemes for Colo Client**  
Working on three schemes with a new client looking to roll out data centres in various countries in EMEA and far east. Designs currently up to detailed design to hand over to local D&B contractors whilst retaining the Clients representative role

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## Education Experience

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Pinnacle's experience includes feasibility studies, and the detailed design and construction of new builds, and extensions for primary and secondary schools, adopting various methods of construction and material use. We have also recently been involved in the assessment of the change of use of space within the iconic Senate House UOL.



Our design engineers are skilled and proficient in medium and high rise design from flat slab and post tensioned solutions to deep basement and substructure design. We use the latest structural 3D design software to model the frame in concrete or steel and present various options at concept stage for consideration by the design team, ensuring the best solution is agreed before proceeding to the detailed stage.



Developers need for build cost certainty in their business model and our focus on drilling down on the big ticket design issues and site abnormal risks allow our clients to be aware of the key cost items.

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## Education - Recent Projects

**PINNACLE**  
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Riverbank House, London  
xxxxxx



xxxxxxxxxxx  
xxxxxx



St Andrews School, Hove  
Structural and Civil design for a new build primary school. project consisted of a loadbearing masonry structure over 2 storeys.



Eaton Valley Primary School, West Bromwich  
Structural and Civil design for a new Primary School. General ground improvement techniques were utilised for the foundations with a number of environmental initiatives.

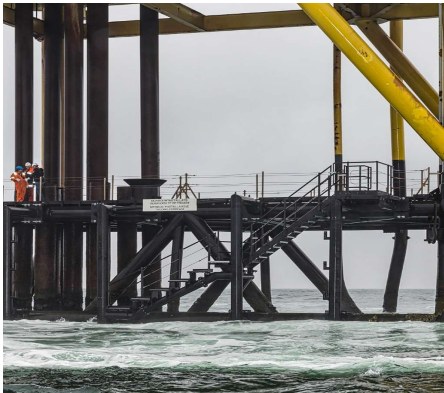


High School, Suffolk  
Structural and Civil services to undertake detailed design within a Grade 1 listed building. Consideration to the phasing of works has been given to minimise disruption and maintain services throughout the academic year.



University of London, Senate House  
Engineering assessments to determine and clarify impact on the structure for change of use.

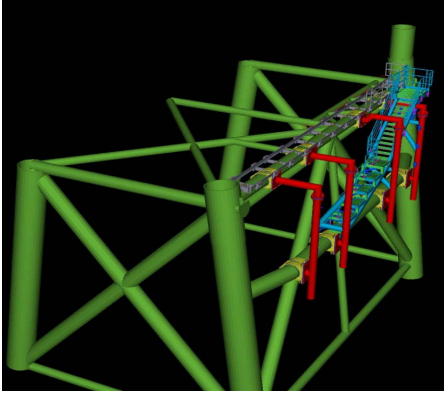
# Energy Experience



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## Energy - Recent Projects

**PINNACLE**  
CONSULTING ENGINEERS



Structural Visual Inspections



Interfacing



New Boat Landings

How can shuttling costs be reduced for two aging gas platforms in the Southern North Sea?  
That was the question posed by our client.  
The answer: *substitute helicopters for boat transfers*



Well Intervention Structural Engineering

In July 2014, Shell/NAM commenced a well clean out and fracking project on the L02-FA-1 gas platform, located within the Dutch sector of the Southern North Sea (SNS). The plan was to carry out a process of Coiled Tubing (CT) clean out followed by a Perforating Run and then Fracking.



Decomplexing and Simplification



Brownfield Modifications

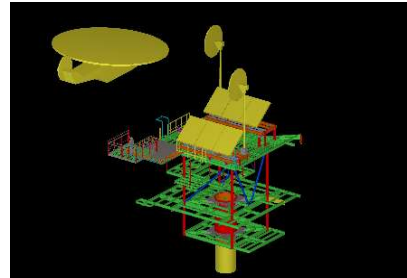


## Energy - Recent Projects

**PINNACLE**  
CONSULTING ENGINEERS



Gas Terminal Inspections



Feasibility Studies



**Structural Modifications to High Pressure Vent**  
As part of the interfacing of drilling rig (EnSCO 122) with nodal gas platform (K14-FA-1) in the Dutch sector of the Southern North Sea, Pinnacle designed an interface for a 27m personnel gangway between the drilling rig and the production platform along with significant works to re-route the main platform high pressure gas vent.



**Velocity String and Coil Tubing Structural Engineering**

In 2011, Pinnacle worked with Shell / NAM when they commenced a campaign of well rejuvenation to gas wells within the Southern North Sea, which had become closed-in and no longer productive.

## Hotels / Leisure Experience

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Pinnacle has been involved with several projects in the leisure and hotel sector, many situated in and around the London area and typically asked to provide structural advice and detailing for fit-out and refurbishment projects. These works often include adaptation of the main building shell to allow for new layouts of the front or back of house areas, and to reflect the expectations of the interior designer.



Our structural engineers have extensive knowledge and experience of working in old and complex buildings. Often, due to the age of the building, there are little or no original records available and our engineers are experienced in seeking out historical information available from third parties or the local authorities, and if necessary manage intrusive opening up works to establish the key structural elements. This enables a representation of the existing building form to allow structural modifications to be clearly defined.



Some projects include independent one-off boutique hotel brands, and this has required very careful detailing of the structural solutions to reflect the aesthetic nature of the interior designers brief. We have also been involved with international hoteliers such as Hilton, Ibis and Morgan Hotel Group, where we are part of the local design team working with these clients on refurbishment works in the Greater London areas mainly.

Hotels & Leisure - Recent Projects



**Sanderson, London**  
Completed in 1958, the landmark 150 key, luxury hotel building was Grade II listed by the government's English Heritage Commission. The modification of the building was subject to numerous consultations with the local Authorities to ensure the heritage value was not affected both internally and externally. Pinnacle were involved in the structural works front of house primarily and in the feasibility assessment in consideration of covering the central open air dining area.



**Great Russell Street, London**  
Conversion of lower basement car parking into new 'windowless' hotel concept utilising BIM to model existing structures and limited headroom for new bed layouts and complex servicing requirements. New vertical circulation cores formed through the 5 floors and additional plant areas created



**St. Martins Lane, London**  
Boutique hotel conversion. Built in the 1960's, the original office building was the headquarters of a major advertising agency until the early 1990's before being acquired by Morgans Hotel Group in 1996. The 7 storey, 204 key luxury hotel is formed of an insitu concrete framed building and a precast concrete façade. Pinnacle's role has been to detail various structural cut and carve works to be carried out both front and back of house.



**55 Newman Street, London**  
Pinnacle carried out an extensive feasibility assessment of the current 6 storey office building to convert to a new boutique hotel for an overseas client. This included major structural works such as retention of the facades to allow the internal frame to be demolished, a new double basement dig and a new structural frame installed, including adding two additional storeys to the building.



**Hilton, Docklands**  
The hotel is formed of 1800's Wharf buildings as well as contemporary accommodation blocks. Pinnacle's role was initially a due diligence appointment for the acquisition of the hotel in 2013/14 including all assets such as the dry docks, river walls and landing jetty for the river taxi. This reporting then led on to carrying out the detailed design works for the refurbishment of the hotel and a leisure building being converted into private residential use.



**IBIS Wembley, Refurbishment**  
Pinnacle instructed to carry out the detailed design of new front of house modifications to the multi storey building. Majority of the works involved new customer vertical circulation routes around the reception area and to the breakfast rooms on the first floor.

## Logistics Experience

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CONSULTING ENGINEERS



Pinnacle works with international clients providing the civil and structural design packages for large sites with complex logistic and data centre facilities.



Sites typically vary from 20 to 250 acres and our scope includes civils infrastructure, cut and fill modelling, SUDS drainage strategies and structure.



Unit sizes typically vary from 50,000 to 750,000ft<sup>2</sup>.



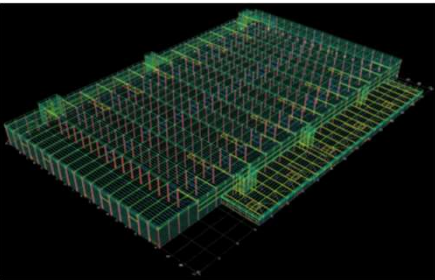
## Logistics - Recent Projects

**PINNACLE**  
CONSULTING ENGINEERS



### Corby St James

Heavily contaminated site: the redevelopment had to accommodate the possible future movement of the lens of slag underlying much the development and design solutions for foundations/slabs and external hardcover accordingly.



### East Midlands Gateway/ARS2

44 acre site providing a sortation centre on 3 levels for a total floor area of 1,200,00ft<sup>2</sup> for client Amazon.



### Peterborough Distribution Centre

350,000ft<sup>2</sup> distribution warehouse with 80,000ft<sup>2</sup> RSU for client Tesco Stores with associated ancillary buildings on a 54 acre site. Structural and civil design for the 120m x 286m main shed some 13.5m in height to eaves. Vehicle maintenance unit RSU building (110 x 90m x 17.25m height). Technical block and gatehouse



### Immingham UK Kia Distribution Centre

85 acres of car storage for the importation of up to 105,000 Kia cars annually with associated PDI/Workshops/Bodyshop and marshalling for transporters.



### MAN2 Warrington

Retro-fit of a new base build shed (350,000ft<sup>2</sup>) to incorporate 2 x 300,000ft<sup>2</sup> mezzanines and a new 2 storey office building on a 42 acre site for client Amazon Fast-track construction programme 24hr working.



### Stanion Park, Corby

2,500,000 ft<sup>2</sup> of warehousing or production areas with associated HGV trailer spaces and staff parking all on a 250 acre site.



# Residential Experience



XXXXXXXXXXXXXXXX  
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Residential - Recent Projects



Lewisham, London  
High density development featuring a 35 storey tower on a constrained site with challenges that include easement corridors for Thames Water, DLR, Network Rail and the enhancement and naturalisation of the Ravensbourne River flowing through the site.



Park Prewett, Basingstoke  
xxxxxxxxxx



Beckenham, London  
16 unit development of this 4-5 storey Ortus Range by McCarthy & Stone.



Xxxxxxx  
xxxxxxx



Soham, Cambridgeshire  
96 plot residential development, statutory approvals and Anglian Water SuDS adoption.



Nailsea, Somerset (ALSO UNDER RETIREMENT)  
Structural engineering services for a 40 unit development.

Residential - Recent Projects



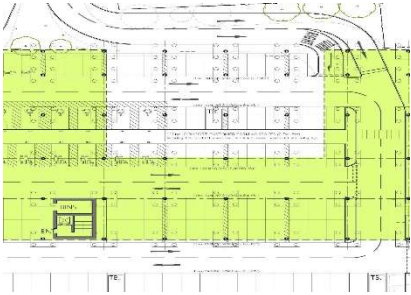
Blackrock, Dublin  
xxxxxx



Calne, Wiltshire  
xxxxxxx



Dun Laoghaire, Ireland  
xxxxxxx



Kennington Lane, London  
Air rights apartment block development of 7 & 8 storeys over the existing food retail store and car park adjacent the Oval cricket ground.



Worcester Park, Surrey  
xxxxxx



Reading **(ALSO UNDER MIXED AND RETAIL)**  
A brand new, 65,000ft<sup>2</sup> retail store with residential housing above, together with adjacent retail and office units. This was art of the major redevelopment of the former brownfield Battle Hospital site in the centre of Reading.

# Retirement Living - Recent Projects



Canterbury, Kent  
Development of 60 Ortus flats with improvements to the cricket ground including landscaping, re-organisation of the supermarket and formation of a new vehicular access.



Nailsea, Somerset (ALSO UNDER RES)  
Structural engineering services for a 40 unit development.



Beckenham, London  
16 unit development of this 4-5 storey Ortus Range by McCarthy & Stone.



Sidcup, London  
Care Village. Structural engineering for the sub and super-structure designs, incorporating a complex roof structure of this 50 unit scheme.



South Molton, Devon  
34 units of self-contained apartments with associated communal space and car parking.



Xxxxxxxxxx  
39 units over 2 and 3 storeys with associated communal areas. Areas of stone façade to reflect local surroundings.



## Retail - Recent Projects

**PINNACLE**  
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### Coventry Arena

Development of a former gasworks site where Pinnacle's remediation and value engineering solutions saved the Client millions of pounds. The leisure/retail park included a 140,000ft<sup>2</sup> flagship store, retail kiosks and a fast food restaurant.



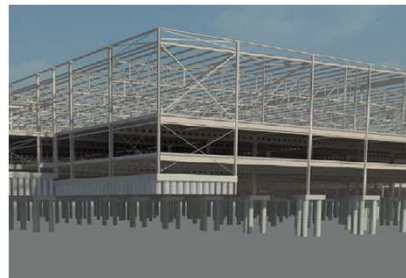
### Reading (ALSO UNDER MIXED AND RES)

65,000ft<sup>2</sup> retail store with residential housing above, together with adjacent retail and office units, all as part of the major redevelopment of the former brownfield Battle Hospital.

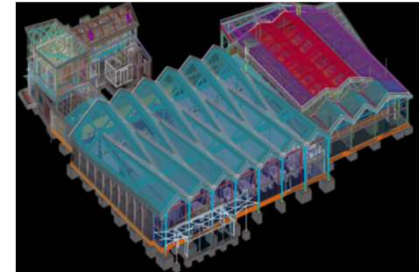


### Dublin

An iconic Tesco Extra led shopping centre at Clarehall. The 65,000 square foot multi-use facility includes a Tesco Extra Store built upon stilts to house customer parking underneath, together with 28 retail units, a food court, a petrol filling station and 18,000ft<sup>2</sup> of office space.

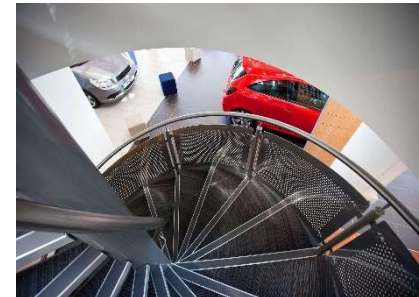


### Bexleyheath, London



### Sheringham

This store, with its geometrically unique structure and complex roof design, has won numerous Awards including "Best Engineering Project" in the TEKLA Global BIM Awards for the technical capabilities demonstrated by the use of BIM technology.



### Motor Village, Toomey

A brand new state-of-the-art motor village in Rochford, Essex designed to accommodate 6 new car franchises, a valet centre and a petrol station. Pinnacle headed up the entire project providing civil and structural engineering expertise from pre-development through to completion.

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## Retail - Recent Projects

**PINNACLE**  
CONSULTING ENGINEERS



### West Bromwich

The 475,000ft<sup>2</sup> retail and leisure regeneration development included a 139,000ft<sup>2</sup> supermarket; 50,000ft<sup>2</sup> two-storey anchor store; 5-screen cinema and 40,000ft<sup>2</sup> of restaurants.



### Martlesham



### Bicester

Pinnacle was the structural and civil engineer for this 90,000ft<sup>2</sup> Extra store. The project was a relocation and enlargement of the legacy store within the Bicester Village site opposite incorporating a restaurant, petrol filling station, 600 car park spaces and fast food unit.



### Seaton

East Devon District Council and Seaton Town Council designated the 120,000 square metre, former seaside chalet park as a regeneration area. However, as the site, and much of the town was situated in a floodplain, the development of this site as a catalyst for improvements to Seaton, was difficult to achieve.



### Ramsey

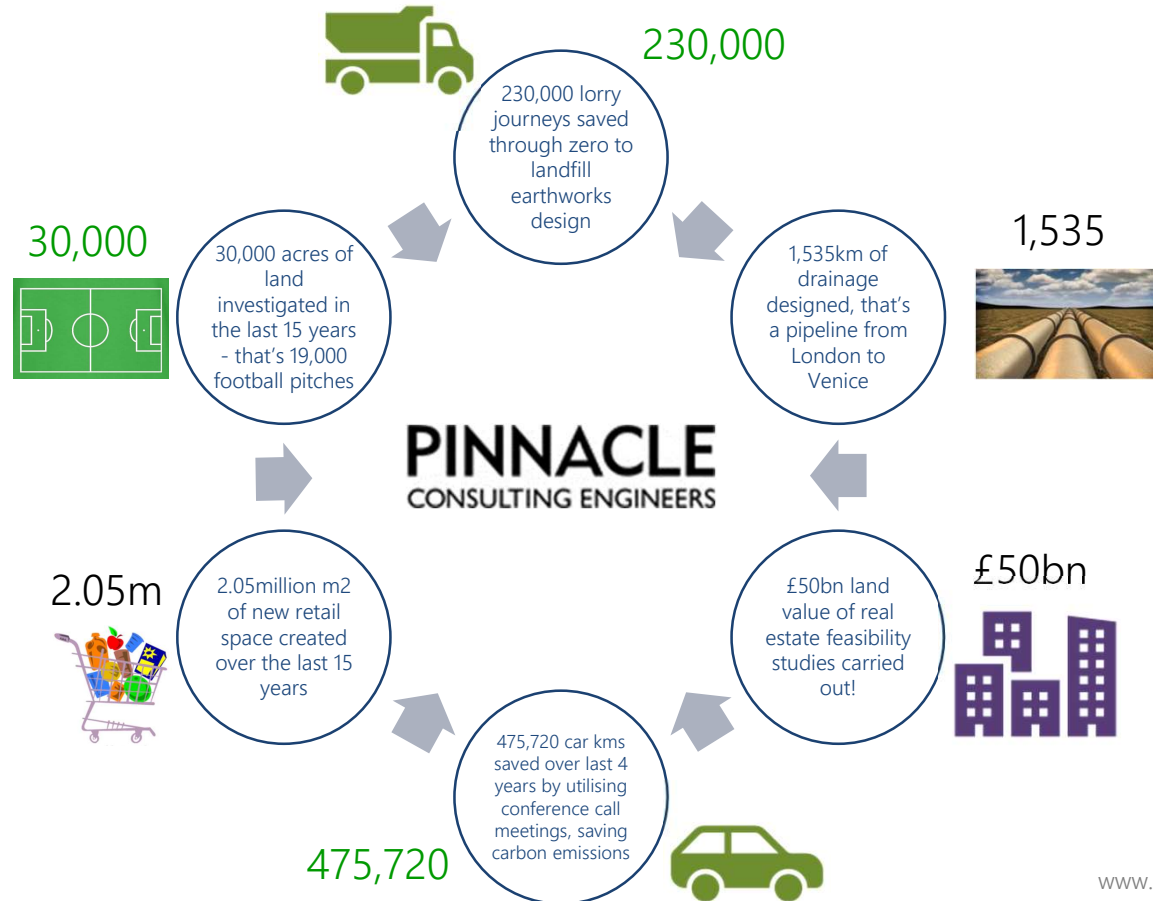
A revolutionary, ultra-green supermarket incorporating a series of low carbon initiatives and renewable technologies expected to cancel out energy consumption and negate the carbon footprint attributed from construction.



### Ystradgynlais

Delivery of a new, state of the art environmentally friendly store for our retail client, and a first of its kind in Wales. The scheme re-used an existing vacant heavily industrialised site and delivered a new development that regenerated the area and served the local community.

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