Heritage & Bridges.

ECSL

www.engineeringcsl.com

Conservation Engineers

Who we are

ECSL was established in October 2019 with a vision to harness the vast innovation and expertise of the UK rail industry and apply it to infrastructure projects around the world.

Since its inception, the ECSL Group has steadily grown, delivering a wide range of railway schemes across the UK, and nearly five years later, the ECSL team has grown to become one of the few consultancies that can combine accredited heritage engineering knowledge with modern transport and infrastructure delivery expertise.

Over this period, we have successfully delivered more than 500 projects, driven by our core values of **Innovation**, **Sustainability**, and **Social Responsibility**. These principles underpin our commitment to delivering smarter, faster, and more cost-efficient solutions that challenge conventional approaches in the UK construction industry.

A key objective for ECSL from the beginning has been to build self-sufficiency in project delivery. This goal was realised in 2023 with the launch of IES our dedicated arm for site investigation, topographical surveys, and structural examinations. Gaining full control over these critical inputs has enhanced our quality assurance and strengthened our turnkey service capabilities.

"At ECSL our vision is to champion social responsibility by empowering the next generation of civil engineers.

We intend to lead the civil engineering industry through the development of innovative and sustainable solutions.

We look for clients and partners who share the vision to build resilient infrastructure that serves society with integrity.

Within our business we aim to foster a culture of collaboration, learning, inclusion, and long-term, forward-thinking design"

Dr Dave Gent – Founder and CEO

Safeguarding Heritage Structures for future generations

Historic bridges and structures demand more than inspection alone—they require informed judgement, technical assurance, and sensitive engineering. ECSL brings these together through a single, integrated approach to heritage asset management.

Through IES, the inspection arm of ECSL, we deliver STE4 inspections using proportionate, low-impact access methods including rope access and UAVs. This enables thorough assessment of complex and sensitive structures while minimising disruption and intervention.

Inspection outputs are assured in-house by ECSL structural engineers, providing STE2 certification and clear technical accountability. Where defects are identified, findings flow seamlessly into the design of appropriate remediation and repair works—fully aligned with heritage, safety, and compliance requirements.

Whether delivered as a standalone service or a complete end-to-end solution, our approach ensures historic structures are understood, protected, and engineered for the future.

Heritage & Bridge Engineering Services

- Heritage Bridge Inspection, Assessment and Design
- Structural Condition & Principal Inspections
- Heritage Asset Management & Lifecycle Planning
- Heritage Railway & Associated Infrastructure
- Conservation Advice & Accreditation (CARE)

Inspection Delivery, Survey & Engineering Support

- Specialist Access Inspections
- UAV (Drone) Inspections & Surveys
- 3D Reality Capture & Measured Surveys
- Temporary Works & Access Design
- Digital Engineering (BIM & Asset Data Models)
- Project Management & Technical Advisory
- Flood Risk Assessments

Conservation Accreditation Register for Engineers

HERITAGE RAILWAY ASSOCIATION

NHIG National Heritage Ironwork Group

Bennerley Viaduct, Derbyshire

Case Studies.

Penydarren Tramroad Bridge

Location: Merthyr Tydfil, Wales
Client: Rhondda Cynon Taf County Borough Council
Year: 2021-2023

Services:
3D scanning
Structural assessment
Bridge design
Conservation / Heritage Consultancy

ECSL were engaged to provide all the design services required to reconstruct the Grade II listed, cast-iron former tramway bridge after a critical failure following a storm event. The bridge is the oldest railway bridge in the world, and of significant heritage importance.


Penydarren Tramroad Bridge
Credit: RTC Council

Grosvenor Bridge

Location: Chester, England
Client: Chester West & Chester Council
Year: 2022

Services:
Structural assessment
Repair options
Conservation / Heritage Consultancy

ECSL supported the repair and future-proofing of Chester's Grade I listed Grosvenor Bridge—built in 1833 and still home to the UK's longest masonry arch span.
In response to repeated vehicle impacts, ECSL developed sensitive repair options, including hidden reinforcement and debris protection. Led by a CARE-accredited engineer, the work balanced safety, durability, and heritage conservation.


Grosvenor Bridge

ECSL

Greater Anglia Principal Inspections

Location: Greater Anglia Area
Client: Greater Anglia Trains
Year: January 2024

Services:
3D scanning
Principal Inspections
Bridge design
Conservation / Heritage Consultancy

ECSL inspected and assessed heritage bridges at listed stations within Greater Anglia's live railway network. Using non-intrusive inspection techniques, assessments were completed safely without possessions or closures. Conservation Accredited engineers delivered inspection and repair recommendations through a single, integrated commission, reducing risk and providing best value.

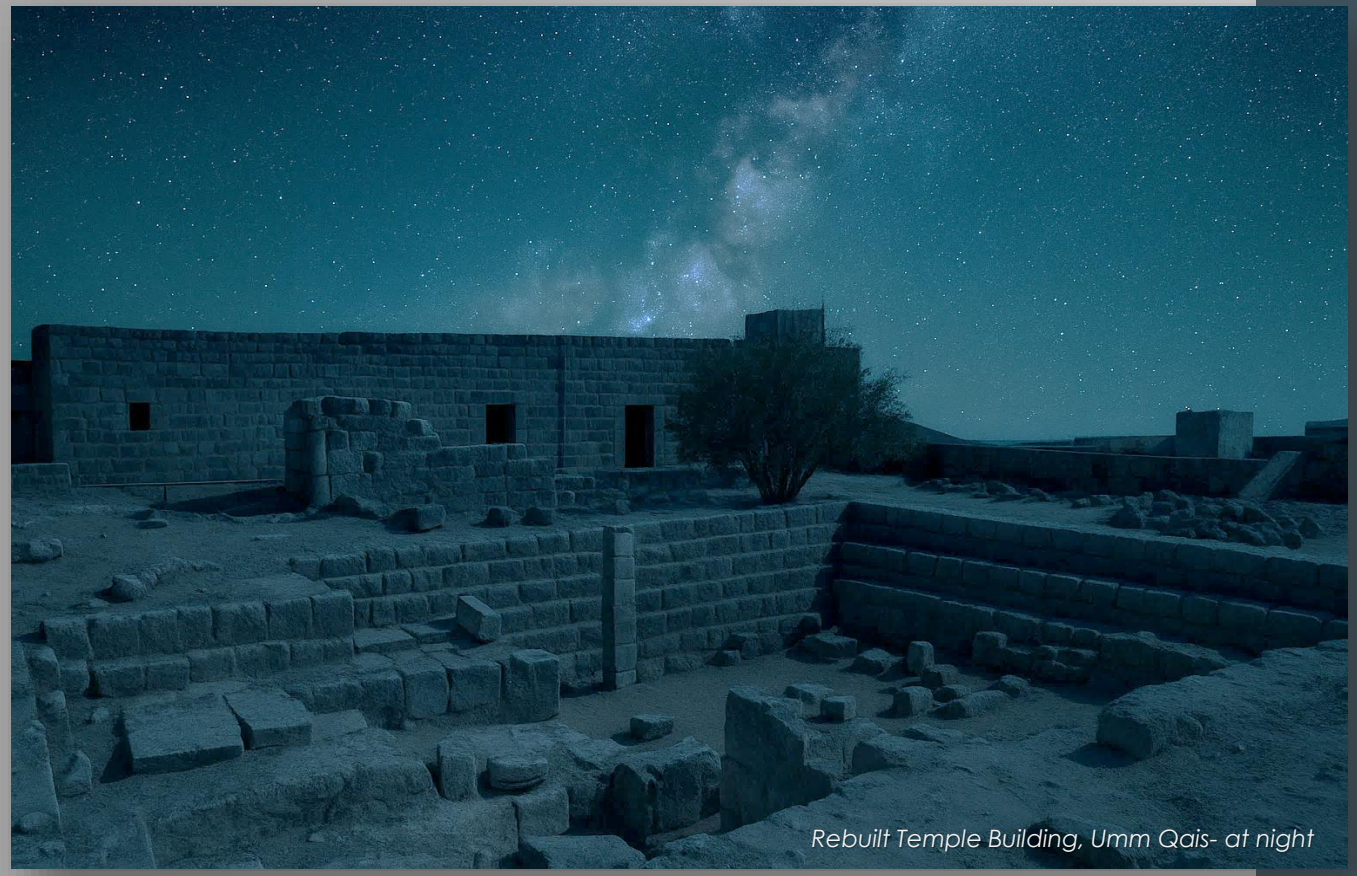
Nene Valley Railway

Location: Peterborough, England
Client: Nene Valley Railway
Year: 2024

Services:
Structural assessment
Repair options
Conservation / Heritage Consultancy

ECSL worked with Network Rail Eastern Region to develop an STE examination training scheme aligned with NR/L2/CIV/1000. Network Rail approved ECSL to train and manage its own examiners, enabling full control of internal and supply-chain competence, improving quality assurance and providing a significant competitive advantage.

Visitor's Attraction, Umm Qais, Jordan



Rebuilt Temple Building, Umm Qais- at night

ECSL acted as conservation lead for the heritage-sensitive reconstruction of a Roman temple at Umm Qais, a prominent archaeological site overlooking the Sea of Galilee and the Golan Heights. Once part of the ancient Decapolis city of Gadara, Umm Qais is renowned for its basalt architecture, Roman theatres, and colonnaded streets.

ECSL provided expert guidance on material selection, reconstruction techniques, and architectural authenticity, ensuring compliance with international conservation standards. The project balanced structural integrity with historical accuracy, enhancing both the visual impact and cultural interpretation of the site for visitors and heritage stakeholders alike.

Location	Umm Qais, Jordan
Client	Turquoise Mountain
Year	2021
Services	3D scanning Structural assessment Structural engineering Asset management

The Old Vicarage

Location Tugby, UK
Client Private Client
Year 2025

Services CARE Structural Inspection and Assessment

ECSL assessed The Old Vicarage, a severely deteriorated building in Tugby's conservation area. Structural failures included rotten timbers, collapsing floors, and displaced masonry, making the building unsafe.
ECSL recommended full demolition and rebuild in a style sympathetic to the local character, with reuse of salvageable materials - balancing safety, heritage, and sustainability.


Old Vicarage, Tugby

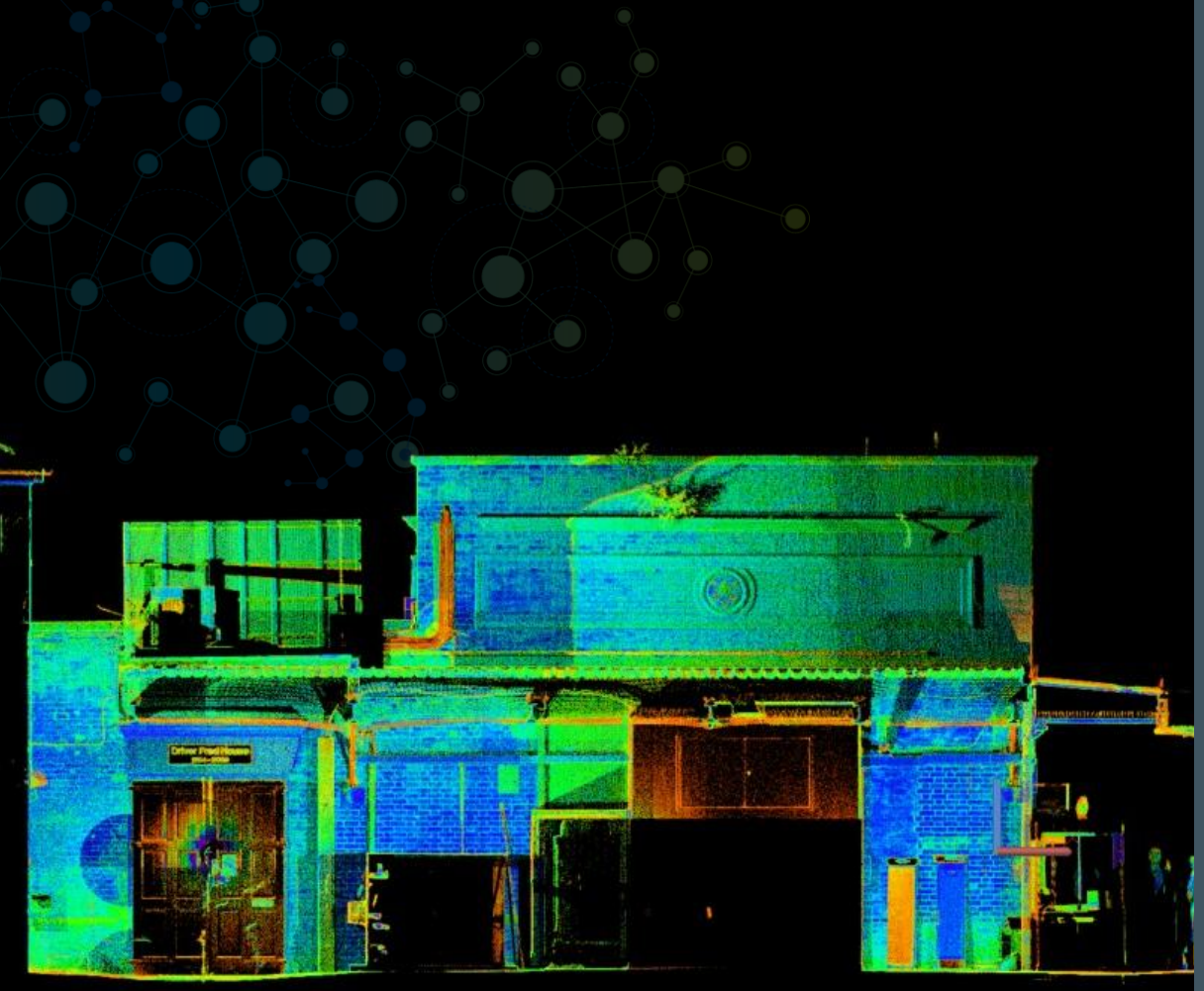
Osmaston Villas

Location Derby, UK
Client Knight Property Development
Year 2022-2024

Services Structural Inspection
Tree surveys
UAV roof surveys
Conservation / Heritage Consultancy

ECSL were engaged to undertake the inspection and assessment required to transform the Grade II listed Osmaston Villas and Wilderslowe House into sustainable residential properties.
ECSL provided the Heritage Impact Assessment and conservation consultancy required to implement the scheme.

Osmaston Villas, Derby



Surveying and Data Collection.

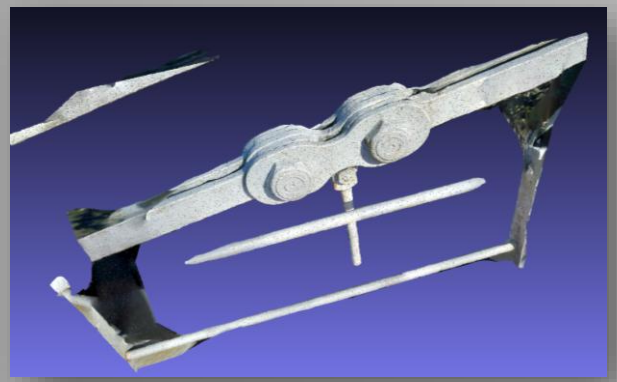
Carmyle Viaduct, Glasgow

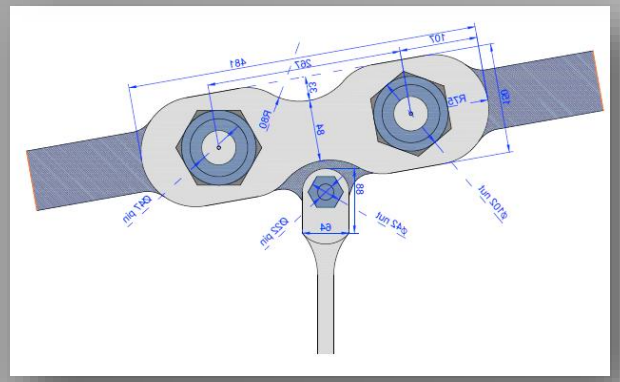
Point cloud of Carmyle Viaduct

ECSL acted as the Technical Specialist leading the inspection, assessment, condition appraisal and optioneering for remediating a historic former railway bridge in accordance with conservation principals, leading the design of the proposed cycle path on behalf of Sustrans. The structure is a 130m long 5-span early steel truss formerly carrying the Carmyle to Kirkhill line over the River Clyde.

Location	Carmyle, Glasgow
Client	Sustrans
Year	2019
Services	Structural Inspection Structural Assessment Point Cloud Survey

Whorlton Suspension Bridge

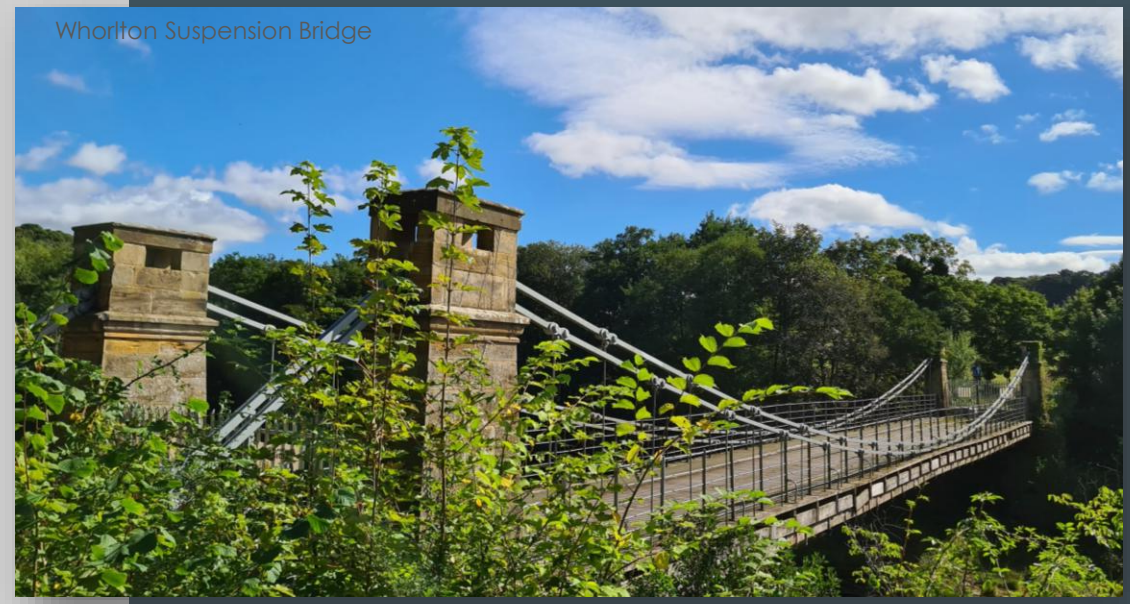




Constructed in 1831, Whorlton Bridge is one of the earliest surviving suspension bridges in the UK, rich in engineering heritage. Its age and historic value demanded a careful and informed approach to any repair proposals - particularly to the critical chain links that support the structure.

ECSL was engaged to investigate the feasibility of repairing the chain links, recognising that changes and degradation over nearly two centuries could significantly impact the approach. A key focus was obtaining accurate dimensional data and understanding likely construction constraints before any fabrication work began.

To achieve this, ECSL carried out a detailed survey using high-resolution photography and 3D scanning techniques. These data sets were used to develop precise models and fabrication drawings. To further test and visualise the proposed solution, we produced 3D-printed prototypes of both the chain links and the intended repair configuration—allowing stakeholders to assess the proposal prior to implementation.



Fabrication detail

Location	Whorlton, Barnard Castle
Client	Taziker
Year	2021
Services	3D Scanning 3D Modelling Fabrication Details

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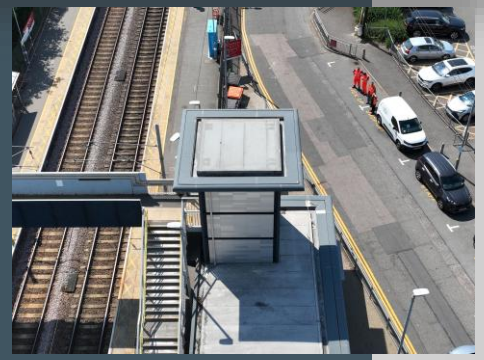
UAV and Drone Surveys

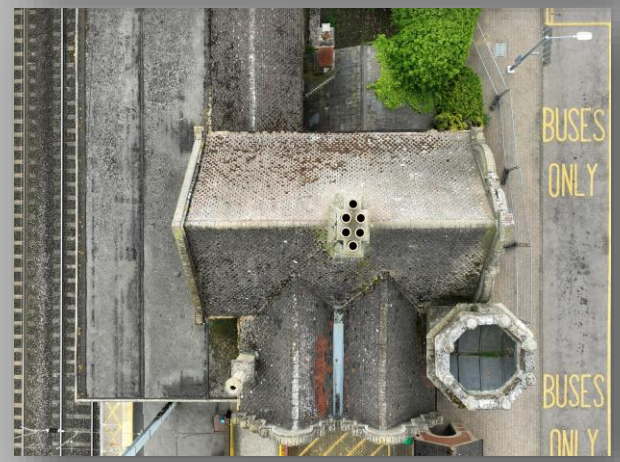

Poplar Farm Estate


Waltham Cross station
footbridge lift shaft survey

Drones have become an indispensable part of modern surveying, transforming how we capture aerial imagery and assess sites with speed, accuracy, and safety. Their ability to access hard-to-reach areas makes them ideal for tasks such as roof surveys, significantly reducing the need for personnel to be exposed to working at height risks. Beyond safety, drones provide high-resolution data that supports detailed analysis and informed decision-making, particularly valuable in planning and development contexts.

At ECSL, our survey team is fully trained and proficient in drone operations, integrating this technology seamlessly into our site investigation services. Whether supporting the master planning of conservation areas or conducting detailed land assessments, our use of drones ensures efficient data collection while maintaining environmental sensitivity.

By combining traditional expertise with cutting-edge tools, ECSL delivers precise, comprehensive survey solutions tailored to the unique needs of every project.



Stow Market roof survey and
Point Cloud data capture

ECSL

Our Conservation Clients.

Let's Work Together

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Witton Park Viaduct