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Survey Liaison Group response to MHCLG Call for Evidence: Strategy for the built environment professions, trades and occupations

Executive summary

The Survey Liaison Group welcomes the opportunity to respond to this Call for Evidence. The Survey Liaison Group, or SLG, is the collaborative body bringing together the Chartered Institution of Civil Engineering Surveyors, the Royal Institution of Chartered Surveyors and The Survey Association. It was established to find consensus on common industry issues, reduce duplication between the three bodies and work together on matters such as skills, standards, education, professional guidance and sector events. SLG bodies operate across geospatial, mapping, land management, civil engineering surveying, commercial management, hydrographic surveying and related areas of practice.

This response focuses on the role of geospatial surveying, and particularly engineering geospatial surveying, as an essential but often under-recognised function within the built environment. Geospatial surveyors provide the measurement, positioning, spatial data, monitoring and verification evidence on which design, construction, compliance, asset management and safety decisions depend. If the built environment is increasingly being designed, delivered, regulated and operated through digital information, that information must start from trusted, accurate and professionally assured spatial data.

Engineering geospatial surveying is a particularly important specialism because its outputs are frequently relied upon for construction positioning, verification and safety-critical decisions. Engineering geospatial surveyors establish control networks, set out works, monitor movement and deformation, verify as-built conditions, support digital construction workflows and provide the spatial assurance needed for project decisions. Poor or insufficient geospatial competence can result in design misalignment, construction error, rework, disputes, programme delay, safety risk and loss of confidence in the information used across the building lifecycle.

The geospatial sector already has a substantial portfolio of best-practice standards, guidance and client-facing guides produced or endorsed across the three SLG bodies. RICS provides three major sector regulated best practice standards, all of which appear on the UK Geospatial Data Standards Register - GOV.UK The geospatial portfolio also includes guidance on commissioning surveys, survey control, topographical surveys, measured building surveys, utility surveys, monitoring, photogrammetry, LiDAR, laser scanning, PAS 128, hydrographic surveys, setting out, aerial and satellite survey methods and other specialist areas. TSA

maintains a substantial suite of client guides, guidance notes and briefing notes across these areas, while CICES has recently published a *Survey Control Reports* guidance note.

The SLG's joint 2025 client guide, *Do You Need a Survey?*, produced by CICES, RICS and TSA together, is a practical example of how the sector is already collaborating to improve client competence and reduce project risk. It was designed to help built environment clients make informed decisions when procuring geospatial surveys, including by understanding qualifications, insurance, experience, survey control, health and safety and project-specific accuracy.

The central issue we wish to highlight is that this capability is at risk. An in-depth geospatial academic report arising from the UK Geospatial Skills discussion held on 5 November 2025, chaired by Professor Jon Mills of Newcastle University, stated that there is a particularly acute crisis in the geospatial surveying sector. It recorded that Level 3 and Level 6 apprenticeships were being proposed to help plug the gap, but also that higher education pathways are needed alongside apprenticeships and promotional activity. The same report noted that Newcastle University had lost one third of its geospatial academics during 2025, reducing from 12 to eight.

SLG therefore urges MHCLG to recognise geospatial surveying as a priority enabling profession within the built environment strategy. The sector does not need government to create standards from first principles. It needs government to recognise, align, and support the existing professional infrastructure, address the education and training pipeline, support apprenticeships at Levels 3 and 6, help sustain specialist university provision and ensure that geospatial surveying is properly understood by clients, procurers, educators and policymakers.

Section 5a: Pre-design

Question 1: What types of skills, knowledge and experience are needed to carry out pre-design work?

At pre-design stage, geospatial surveyors provide the spatial evidence base that allows clients, designers, engineers and contractors to make informed decisions. This includes an understanding of site constraints, existing assets, boundaries, levels, utilities, underground infrastructure, topography, adjacent structures, access, monitoring requirements and the spatial context for future digital design, and the intended uses, reliance and longevity of the resulting information

For more complex or consequential projects, particularly infrastructure, tall buildings, high-density urban development and sites with ground movement or adjacent-party risks, an appropriately competent geospatial lead should advise on control, coordinate reference systems, accuracy and uncertainty, setting-out strategy, monitoring regimes and data deliverables. Engineering geospatial surveyors are especially important where these judgements influence design tolerances, construction sequencing, safety, cost or risk allocation. These are not administrative or commodity functions; they are technical professional judgements. The wider geospatial sector portfolio of standards, guidance and client guides gives clients and project teams a strong foundation on which to commission and specify this work properly. That portfolio is already substantial across the SLG bodies and should be better recognised and used across public and private sector procurement.

Question 2: Where are the most material gaps in skills, knowledge and experience in the pre-design phase?

The most material gap is that geospatial surveying is too often brought in too late, procured primarily on price, or treated as a technical commodity rather than as a professional advisory function. This can result in poor briefs, inappropriate accuracy specifications, weak control, unclear data ownership, inadequate utility information, no clearly accountable technical lead, and spatial data that is not fit for downstream design, construction or asset management.

There is also a wider skills pipeline issue. The UK Geospatial Skills academic discussion held on 5 November 2025 recorded a particular crisis in geospatial surveying, noting that Level 3 and Level 6 apprenticeships were being proposed to help address the gap, but also that alternative UK higher education pathways are needed alongside apprenticeships and promotional activity. The same report highlights weak student awareness of geospatial careers, difficulty recruiting home students to specialist programmes and a recognition problem around the term "geospatial".

SLG strongly supports the development of clearer geospatial surveying pathways, including the CCES initiative, Level 3 technician routes and Level 6 degree apprenticeship routes. However, these routes must be supported by a viable national education and training infrastructure. Without that, the sector risks creating demand for apprenticeships that cannot be met by provider capacity, academic expertise or employer support.

Section 5b: Design and specification

Question 18: What types of skills, knowledge and experience are needed to carry out design and specification work?

Design and specification increasingly rely on digital data, BIM, common data environments and digital twins. Those systems are only as reliable as the survey control, spatial data, metadata, provenance, accuracy or uncertainty statements and limitations that underpin them.

Geospatial surveyors support design and specification by ensuring that design teams understand the reliability, intended use, and limitations of spatial data. This includes the accuracy of topographic, measured building, utility and laser scan surveys; the relationship between local and national coordinate systems; datum and level information; monitoring requirements; provenance and revision status; and whether survey deliverables are appropriate for design intent.

Engineering geospatial surveyors are especially important where design requires tight tolerances, movement monitoring, integration with existing structures, façade retention, structural interventions, basement construction, rail interfaces, highways, utilities, cranes, temporary works or automated machine control.

Question 19: Where are the most material gaps in skills, knowledge and experience in the design and specification phase?

The key gap is client and design-team understanding of what good geospatial specification and assurance looks like. Poor survey specifications can create risk throughout the lifecycle.

Common issues include unclear intended use and accuracy requirements, unsuitable survey grids, poor metadata and provenance, lack of clarity on tolerances and uncertainty, inadequate consideration of utilities, and insufficient provision for monitoring, and no defined process for validation and technical approval.

There is also a gap in the wider understanding of geospatial surveying as a profession, and of engineering geospatial surveying as one of its higher-consequence specialisms.. Many stakeholders recognise architects, engineers, project managers and quantity surveyors, but do not always recognise the role of surveyors who establish and maintain the spatial framework for the project. This can lead to underinvestment in the very data on which later design and construction decisions are based.

The geospatial sector is not short of best practice material. The issue is visibility, consistent adoption and client understanding. Government can help by recognising the existing guidance portfolio across the SLG bodies and encouraging public sector clients, contracting authorities and regulated actors to require risk-proportionate evidence of competent leadership, organisational capability and project-specific assurance, or demonstrably equivalent arrangements, when commissioning survey work.

Section 5c: Construction

Question 35: What types of skills, knowledge and experience are needed to carry out construction work?

During construction, engineering geospatial surveyors provide the spatial control and verification that allow design to be translated correctly into physical works. This includes setting out, deformation monitoring, checking tolerances, scanning as-built works, machine control, quality assurance, progress measurement and the creation of reliable records for handover and occupation.

For complex projects, construction teams need access to surveyors who understand engineering tolerances, coordinate systems, survey control, instrument calibration, uncertainty, quality assurance and the consequences of error. This is particularly important where tolerances are tight or where incorrect positioning could have safety, structural, operational or financial consequences.

Question 36: Where are the most material gaps in skills, knowledge and experience in the construction phase?

The most material construction-phase gap is the shortage of competent engineering geospatial surveyors. This is now affecting the ability of employers to recruit and retain staff with the necessary technical capability. The UK Geospatial Skills academic discussion recorded industry concern that the sector is “desperate” for Level 6 apprenticeship provision, while also noting that one university example involved only 40 apprentices spread over six years of intake.

The report also noted that staffing levels may be an issue for providers, and that geospatial expertise may need to be pooled nationally if provision is to be sustainable. This is an important point. The skills issue is not simply a lack of promotion to young people, though promotion is needed. It is also a structural issue in the education system, where the number of specialist

providers and academics has reduced to a level that may not be resilient enough to meet built environment demand.

SLG therefore supports the following connected measures:

- the CCES initiative as a practical industry-led response to professional recognition and market visibility
- Level 3 apprenticeship pathways for technicians and survey operatives
- Level 6 degree apprenticeship pathways for professional engineering geospatial surveyors
- urgent work with universities and employers to maintain specialist provision
- national coordination of specialist teaching where individual institutions cannot carry the full burden alone

CCES and the wider professional skills pathway

A particularly important current initiative is the Chartered Civil Engineering Surveyor, or CCES, designation. CCES has been developed through collaboration between RICS and CICES and is highly relevant to the issues raised in this Call for Evidence. It creates a clearer professional identity for civil engineering surveyors and formally recognises the expertise of professionals operating across geospatial engineering, engineering surveying and commercial management.

This matters because one of the persistent barriers in the geospatial and engineering surveying workforce is visibility. The profession is fundamental to infrastructure and building delivery, but it is not always well understood by clients, schools, colleges, universities or early-career entrants. CCES helps address that by giving civil engineering surveyors a recognised professional designation that reflects the reality of modern practice and the multidisciplinary nature of delivery across geospatial engineering, commercial management and digital construction.

The CCES initiative is not a substitute for apprenticeships or higher education provision. Rather, it should be seen as part of a coherent pathway. Level 3 apprenticeships can provide an entry route for geospatial survey technicians. Level 6 degree apprenticeships can support the development of professional geospatial and engineering surveyors. CCES can then provide a recognised professional destination for those progressing through the sector, helping employers, clients and individuals understand what competent professional practice looks like.

From January 2026, eligible UK-based dual members of RICS and CICES can use the CCES designation where they meet the stated professional criteria. The RICS route requires MRICS or FRICS via the Geospatial pathway, including Engineering surveying competency at Level 3, while the CICES route includes relevant geospatial engineering and commercial management pathways.

This is a good example of practical sector leadership. It creates alignment between professional bodies, supports recognition of professional competence, reduces duplication for dual

members and creates a clearer professional signal to the market. It should be recognised by government as part of a broader workforce and assurance strategy for geospatial surveying.

SLG also notes that CCES sits alongside wider sector activity on apprenticeships and training. CICES apprenticeship information identifies Level 3 Geospatial Survey Technician provision across several regions, and recent sector reporting has highlighted new regional provision intended to build geospatial capability, including the embedding of the TQUK Level 3 Diploma in Geospatial Surveying within the apprenticeship standard.

The challenge is scale and resilience. The UK Geospatial Skills academic report records strong employer interest in Level 6 apprenticeships, but also identifies constraints around university capacity, staffing levels, travel distances for apprentices, viability of cohorts and whether employers are properly supporting apprentices in practice.

SLG therefore recommends that MHCLG, Skills England and the Department for Education work with CICES, RICS, TSA, employers and universities to create a more coordinated national pathway for geospatial surveying. That pathway should include Level 3 technician apprenticeships, Level 6 degree apprenticeships, professional recognition through routes such as CCES where applicable, other relevant RICS and CICES routes and demonstrably equivalent independently assessed competence; technical, associate, vocational and robust experienced-practitioner routes; specialist CPD and modular learning, stronger promotion of geospatial careers in schools and colleges, support for specialist academic capacity, and better national coordination where individual universities cannot sustain full provision alone.

Section 5d: Occupation and maintenance

Question 53: What types of skills, knowledge and experience are needed to carry out occupation and maintenance work?

During occupation and maintenance, geospatial surveying supports facilities management, asset management, lifecycle planning, retrofit, refurbishment, monitoring, change detection and the safe preparation of later works. It is also fundamental to maintaining reliable BIM, digital twin and asset information models over the operational life of a building or infrastructure asset.

Required competence includes the ability to understand existing survey records, models and spatial datasets, including their coordinate systems, provenance, accuracy, uncertainty, limitations and intended use. Owners, occupiers and asset managers need to know when information remains fit for purpose and when proportionate supplementary survey is required.

This has direct CAPEX and OPEX implications. Poor or obsolete geospatial information can lead to repeat surveys, inefficient maintenance, abortive design, unforeseen site constraints, retrofit risk and increased operational cost. Good geospatial data, properly governed, supports better capital planning, maintenance prioritisation, compliance, safety assurance and long-term asset value.

Organisations therefore need clear arrangements for ownership and stewardship of geospatial information, BIM models and associated asset data. This should include version control, metadata, secure accessibility, model updates, integration with asset information systems and procedures for incorporating verified change. On more complex or higher-consequence assets, an accountable geospatial lead should ensure that new data is tied to an appropriate spatial framework and that handover and operational information is technically reviewed and approved.

Question 54: In your experience, where are the most material gaps in skills, knowledge and experience in the occupation and maintenance phase?

The most material gap is the assumption that information produced at construction handover will remain understandable, current and reliable throughout occupation. In practice, models, point clouds, drawings and asset datasets can become detached from their original control, accuracy, purpose, limitations and revision history as buildings are altered and responsibilities pass between owners, occupiers, consultants, contractors and facilities teams.

Ownership is often unclear. The party that paid for the BIM model or geospatial dataset may not fully understand what rights, obligations or limitations attach to it, while later users may assume it is suitable for purposes for which it was never specified. This creates risk across both CAPEX and OPEX decisions, particularly where data is reused for maintenance, compliance, retrofit, refurbishment or future construction.

Facilities and maintenance teams may also lack the geospatial competence to judge whether inherited information is fit for use. Small works, surveys and retrofit projects can then create further uncoordinated datasets, weakening monitoring, change detection, safety planning and future design.

Better handover and information-management requirements should preserve a durable geospatial record, define ownership and stewardship of models and data, and set out how later changes are validated and incorporated. This requires coordination between geospatial surveyors, designers, contractors, BIM and information managers, asset managers and owners, supported by proportionate organisational and project assurance.

Section 5e: Cross-cutting issues, themes and challenges

Question 72: Across the building lifecycle, where are skills, knowledge, experience, behaviours and accountability enhanced or constrained by cross-cutting functions?

Geospatial surveying is a cross-cutting function. It supports pre-design, design, construction, handover, occupation, maintenance, refurbishment and asset management. It is therefore an important test case for whether the built environment strategy properly recognises enabling professions as well as more visible professions and trades.

Skills and accountability are enhanced where geospatial surveyors are engaged early, given clear briefs, asked to advise on accuracy and risk, and integrated into the project information management process. They are constrained where survey is procured late, reduced to lowest-

cost data capture, or disconnected from design, construction and asset management decisions.

The built environment is moving towards digital workflows, but digital confidence will be undermined if the underlying spatial information is not accurate, traceable and professionally assured. The existing geospatial guidance portfolio across SLG bodies provides a strong foundation for improving this, but clients and procurers need to understand and use it.

Question 73: What roles do existing sector bodies and regulators play?

Professional bodies and sector groups have an important role in setting standards, convening employers and educators, supporting apprenticeships, and helping government understand where technical skills shortages create delivery risk.

SLG is already fulfilling this role through collaboration between CICES, RICS and TSA. The group has a clear purpose to reduce duplication, endorse relevant documents, work together on events and collaborate on skills, standards and education.

The SLG's recent work includes the *Do You Need a Survey?* guide, developed to improve client understanding of geospatial survey procurement. This is an example of practical, collaborative sector leadership that government should recognise and use.

However, standards and pathways are only effective if there is a viable talent pipeline. The UK Geospatial Skills academic report suggests that UK higher education provision is fragile, that student recognition of geospatial careers is weak, and that collaboration between professional bodies, universities and industry is needed.

SLG would welcome government recognition of geospatial surveying as a sovereign priority enabling profession within the built environment strategy.

Question 75: How are emerging technologies or changing practices shaping work across the building lifecycle?

Geospatial surveying is central to many of the technologies now shaping the built environment: BIM, digital twins, laser scanning, GNSS, GIS, remote sensing, drone survey, mobile mapping, machine control, digital monitoring, asset information management and AI-enabled spatial analysis.

These technologies create major opportunities for productivity, quality assurance and risk reduction. They also increase the need for professional competence. Technology does not remove the need to understand accuracy, uncertainty, control, datum, calibration, metadata, limitations and professional judgement. The risk is that easy-to-use technology can create false confidence if operated or interpreted without proper geospatial competence. The UK Geospatial Skills academic report noted that geospatial is affected by rapid technological change and that there may be demand for a national or virtual approach to geospatial training, including flexible modules and CPD that could build towards qualifications. SLG supports this direction, provided it complements, rather than replaces, robust Level 3, Level 6 and professional qualification routes.

Question 76: To what extent are individuals and organisations able to access effective education, training and development?

Access is currently inconsistent and fragile. Apprenticeships are a vital part of the solution, particularly Level 3 and Level 6 routes, but they will not succeed without sufficient providers, academic staff, employer engagement and viable national coverage.

The UK Geospatial Skills academic report recorded that Nottingham Trent University was considering a Level 6 Degree Apprenticeship in Geospatial, that Coventry reported strong interest in Level 6 apprenticeships, and that industry was asking for courses to start quickly because the skill is needed. It also recorded concerns about the viability of provision, travel distances for apprentices, accommodation costs and whether employers are fully supporting apprentices in practice.

This points to a need for government, Skills England, employers, professional bodies and universities to work together on a more coordinated national model.

Question 78: What are the three most important insights for a new strategy?

First, geospatial surveying should be recognised as a sovereign enabling profession and as essential infrastructure for the built environment. Accurate spatial data underpins safe design, construction, compliance, maintenance and asset management. Engineering geospatial surveying should be explicitly recognised as one of the profession's particularly consequential specialisms, not assumed to sit somewhere behind other professions.

Second, the geospatial skills shortage should be treated as a delivery risk. The issue is not simply lack of awareness. It includes lack of university provision, shortage of academic staff, limited national provider capacity, weak visibility in schools, and competition from better-known STEM and technology careers. The UK Geospatial Skills academic report records both an acute sector crisis and a reduction in specialist academic capacity.

Third, government should support a joined-up pathway from Level 3 to Level 6 and professional qualification. Level 3 apprenticeships, Level 6 degree apprenticeships, the CCES initiative, professional body pathways, and the wider standards and guidance portfolio of the SLG bodies should be aligned into a coherent national talent pipeline. This should include technician, professional and specialist routes, with flexible CPD and modular learning where appropriate.

Question 79: Final points

SLG's final point is that the built environment strategy should avoid focusing only on the most visible duty-holder roles. The safety, quality and productivity of the built environment also depend on enabling professions whose work determines whether decisions are made on reliable evidence.

Engineering geospatial surveyors are a clear example. They support the spatial integrity of projects from the earliest site investigation through to construction verification, monitoring and as-built records. If this capability is weakened, the impact will be felt across design quality, construction accuracy, programme certainty, safety assurance, digital delivery and asset management.

The sector has already done much of the hard work in building standards, guidance and professional consensus. The geospatial sector portfolio of guidance and guides across CICES, RICS and TSA is formidable. Government should not duplicate it. It should help make it visible, support its adoption and ensure that public sector clients and procurement teams understand the value of professionally recognised geospatial survey provision.

SLG recommends that MHCLG:

- explicitly recognises geospatial surveying, and engineering geospatial surveying in particular, as an enabling profession within the built environment strategy
- recognises SLG as a collaborative voice for the UK survey profession, bringing together CICES, RICS and TSA
- supports the CCES initiative as a practical example of professional body collaboration and professional recognition
- supports Level 3 and Level 6 apprenticeship pathways for geospatial surveying
- works with Skills England, universities and the SLG bodies to stabilise and grow national training capacity
- addresses the decline in specialist university provision and academic staffing
- promotes geospatial careers earlier in schools and colleges
- encourages public sector clients and procurers to use the existing geospatial sector portfolio of standards, guidance and client guides
- treats high-quality spatial data as a foundation of safe, digital and accountable built environment delivery

Geospatial surveying is not a niche technical service. It is one of the foundations on which safe, productive, secure, high-performing and digitally enabled built environment delivery depends.

On behalf of SLG, please direct all communications connected to this response to:

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