



Pathway guide

Environmental Surveying

August 2018



Pathway guide

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Environmental Surveying

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Introduction

This guide supports the Environmental Surveying pathway. It is designed to help you understand more about qualifying in this area.

You must use this guide in conjunction with the core assessment documentation which is available on the RICS website and comprises of:

- Requirements and competencies guide
- Candidate guide for your RICS assessment e.g. APC, Academic, Senior Professional, Specialist
- Counsellor guide.

You can download all the supporting guidance from [rics.org/apcguides](https://www.rics.org/apcguides)

All RICS pathways are global, though it is appreciated that markets may vary from country to country. If you have any queries please contact your local office.

About the competencies

The RICS competency framework ensures those applying for the RICS qualification are competent to practise and meet the highest standards of professionalism required by RICS. There is a wide range of pathways available to qualify as an RICS professional covering many different areas of practice.

The RICS assessment aims to assess that you are competent to carry out the work of a qualified chartered surveyor. To be competent is to have the skill or ability to perform a task or function. The RICS competencies are also based upon attitudes and behaviours. The competencies are presented in a generic way so they can be applied to different areas of practice and geographical locations. It is important that you interpret them within the context of your own area of practice or specialism and location.

Each competency is defined at three levels of attainment. You must reach the required level in a logical progression and in successive stages.

Level 1 – knowledge and understanding

Level 2 – application of knowledge

Level 3 – reasoned advice, depth and synthesis of technical knowledge and its implementation.

The competencies are in three distinct categories:

Mandatory – the personal, interpersonal, professional practice and business skills common to all pathways and mandatory for all candidates.

Technical core – the primary skills of your chosen pathway.

Technical optional – Selected as additional skill requirements for your pathway from a list of competencies relevant to the area of practice.

The mandatory competency requirements are set out in detail in the Requirements and competencies guide.

Choosing your competencies

It is important that you give careful thought to your choice and combination of competencies. Your choice will inevitably reflect the work you do in your day-to-day environment (driven by the needs of your clients/employer). Your choice and combination of competencies will be a reflection of your judgement.

At the final assessment interview, the assessors will take these choices into account. They will expect you to present a sensible and realistic choice that reflects the skills needed to fulfil the role of a surveyor in your field of practice.

This guide should help candidates and employers with a degree of assistance in choosing the competencies that are most appropriate to their area of practice.

Where to find help

RICS has fully trained teams across the globe who will be able to help you with any queries. For details of your local office – [rics.org/contactus](https://www.rics.org/contactus)

About the pathway

Every chartered surveyor must consider the environmental factors within the parameters of their profession. Environmental surveyors are specialists in all aspects of the management, monitoring and assessment of the environment in the context of real estate, land and construction. As experts, they are likely to be working in many areas, including environmental management, land use and contaminated land, environmental auditing and assessment.

Environmental surveyors are also involved in planning processes. Many planning/building permit applications require some form of environmental input either related to Environmental Impact Assessment (EIA) or similar due diligence work.

Many other types of market exist in the day to day management of land and property. Environmental surveyors also need an in-depth knowledge of legislation, professional due diligence, insurance, investment and all sectors of risk management from groundwater pollution risk to pollution control within the air that we breathe.

There is huge demand and major opportunities for qualified environmental professionals due to a high media profile, coupled with demands on natural resources worldwide.

RICS qualification

The Environmental Surveying pathway is ideal for anyone pursuing a career in property who has a particular interest in specialising in environmental management, land use and contaminated land, environment auditing and assessment.

Although environmental management is a skill applied by chartered surveyors across a wide variety of assets, this pathway is aimed at individuals who work in development, regeneration, town planning and, residential and/or commercial work. Other areas, such as machinery and business assets, arts and antiques or minerals have their own dedicated RICS pathway.

The Environmental Surveying pathway places emphasis on competency in environmental practice. However, as with the other property pathways, a broad base of experience in general property practice is also required. Candidates undertaking the pathway may gain their experience in either a residential commercial or rural property context – or a mixture of these.

Chartered alternative designations

All candidates qualifying through this pathway will be entitled to use the designation 'Chartered Environmental Surveyor'.

Pathway requirements

Mandatory	Core	Optional
<p>Level 3</p> <ul style="list-style-type: none"> Ethics, Rules of Conduct and professionalism <p>Level 2</p> <ul style="list-style-type: none"> Client care Communication and negotiation Health and safety <p>Level 1</p> <ul style="list-style-type: none"> Accounting principles and procedures Business planning Conflict avoidance, management and dispute resolution procedures Data management Diversity, inclusion and teamworking Inclusive environments Sustainability 	<p>Level 3</p> <ul style="list-style-type: none"> Environmental management <p>Level 2</p> <ul style="list-style-type: none"> Legal/regulatory compliance <p>Plus, three to Level 3</p> <ul style="list-style-type: none"> Consultancy services Contaminated land Environmental assessments Environmental audit (and monitoring) Environmental science and processes Inspection Management of the natural environment and landscape Planning and development management 	<p>Two to Level 2, including any not already chosen from the core list</p> <ul style="list-style-type: none"> Development appraisals Development/project briefs Energy and renewable resources Environmental analysis Forestry and woodland management GIS Ground engineering and subsidence Land use and diversification Management and regeneration of the built environment Measurement Surveying and mapping Sustainability Waste management <p>Plus, one to Level 2 from the full list of technical competencies, including any not already chosen from the core and optional lists.</p>

Technical competencies guidance

Consultancy services

This competency is about the provision of environment consultancy services to a range of different clients from inception to completion.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the procurement and execution of advisory and strategic consultancy in the context of environmental consultancy services.

Examples of knowledge comprised within this level are:

- Different forms of procurement for consultancy services
- The range of different consultancy interventions and approaches
- The consultancy cycle
- The types of problems, risks and issues that may arise during each phase of the consultancy cycle
- The importance of agreeing a clear contract with clients
- The need for the planning, timing and managing of consultancy interventions
- Managing the use of resources
- Managing client expectations
- Forms of reporting
- How to manage ethical dilemmas
- The principal tools and techniques relevant to consultancy services
- Importance of confidentiality when dealing with sensitive information.

Level 2

Apply your knowledge of the provision of consultancy in the context of environmental consultancy services

Examples of activities and knowledge comprised within this level are:

- Preparing consultancy service plans
- Preparing client briefs
- Updating reports to clients
- Negotiating client contracts
- Dealing with ethical dilemmas
- Selecting appropriate tools and techniques for a given consultancy service
- Using selected tools and techniques to achieve agreed outcomes
- Keeping appropriate records.

Level 3

Give reasoned advice, prepare and present consultancy reports, together with relevant analysis to clients, in the context of environmental consultancy services.

Examples of activities and knowledge comprised within this level are:

- Providing reports containing strategic advice and recommendations to a range of clients
- Presenting to clients
- Implementing consultancy intervention.

Contaminated land

This competency is about an understanding of contaminated land in the context of urban and rural land and property asset management, transaction and development, law and planning.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of how land becomes contaminated through human activities and natural occurrences. Clearly illustrate the implications of contamination for real estate valuation, development and management.

Examples of knowledge comprised within this level are:

- The definition of contaminated land under the Contaminated Land Regulations 2000, and associated legislation
- Areas of professional practice where contaminated land is relevant, e.g. valuations, development, asset management, transactions, environmental assessment
- The relevance under Part 11A of the Environmental Protection Act, planning policy guidance and RICS published guidance and practice notes
- Demonstrate an understanding of the limitations upon Chartered Surveyors in this area, e.g. Professional Indemnity Insurance, Public Liability Insurance.

Level 2

Prepare a brief and/or specification for the appointment of a specialist(s) to undertake a site investigation.

Examples of activities and knowledge comprised within this level are:

- Assembling specialist team members to advise on contaminated land assessment and remediation
- Undertaking Review Stage 1 and desktop environmental reports and advise clients accordingly
- Assisting in project management of and undertaking phased contaminated land assessments and remediation options appraisals
- Negotiating and liaising with clients and regulators on contaminated land issues
- Working with specialist project teams dealing with contaminated land and assessment and remediation.

Level 3

Supervise a site investigation, interpret the results of laboratory analyses and make recommendations as to remedial treatments.

Examples of activities and knowledge comprised within this level are:

- Advising clients on the application of contaminated land to their asset management, planning and development projects
- Advising clients on the law and regulation and procedures and RICS guidance and practice appertaining to contaminated land.

Development appraisals

This competency is about the role of development appraisals in residential and commercial development. Development appraisals also have a role in residual valuations of development sites but it should be remembered that the two are different activities.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the principles and practices underlying a valid development appraisal.

Examples of knowledge comprised within this level are:

- The role of development appraisals in the marketplace and the situations where their use is appropriate
- The content of appraisals and how different issues such as planning requirements can be reflected
- The sensitivities of appraisals, what factors affect the appraisal
- The external factors which have an influence upon the appraisal process.

Level 2

Identify, select, assemble and analyse data relevant to carrying out development appraisals. Undertake appraisals using relevant techniques and methodology and identify possible sources of development funding.

Examples of activities and knowledge comprised within this level are:

- Analysing appropriate sources of information and data
- Preparing appraisals for possible acquisition, disposal or valuation of development sites including residential, commercial and/or mixed use
- Using different techniques and software available for appraisals [whilst having an understanding of the basic principles of development appraisal]
- Undertaking a sensitivity analysis
- Assisting in the selection of appropriate sources of development finance.

Level 3

Interpret and provide evidence of reasoned advice on development appraisals and further opportunities.

Examples of activities and knowledge comprised within this level are:

- Using development appraisals to advise on the acquisition, disposal or valuation of development sites
- Producing reasoned analysis of risk using appropriate sensitivity analysis
- Advising on the appropriate sources of development finance.

Development/project briefs

The purpose of development briefs is to stimulate interest in development sites whilst project briefs influence the form that a desired development will take. Both provide a framework for developers in the conception of major types of development schemes.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the information required to prepare a development brief or project brief.

Examples of knowledge comprised within this level are:

- The objectives of development/project briefs
- Essential site details including history, location, accessibility, services and utilities
- Environmental features and issues
- The consultation process
- The planning policy background
- Market conditions
- Relevant RICS guidance
- Review land ownership documentation and boundary definition
- Assess spatial data capture and output needs
- Assess data needs [i.e. aerial survey, national mapping, planning portal, historical mapping etc.].

Level 2

Apply your knowledge to identify, select, assemble and analyse information relevant to the preparation of development briefs or outline project briefs.

Examples of activities and knowledge comprised within this level are:

- Producing a development/project brief understanding geospatial elements
- Analysing gathered information and data for a development/project brief
- Produce agreed specification and decide on survey needs
- Review and highlight any legal constraints [i.e. easements, neighbour issues]
- Advise on boundary issues including determined boundaries and as built surveys.

Level 3

Apply information in the preparation and presentation of development briefs or detailed design briefs, or parts thereof.

Examples of activities and knowledge comprised within this level are:

- Using a development/project brief to design a development scheme
- Negotiating agreements with stakeholder interests
- Planning the implementation of a development scheme
- Formulating financial arrangements for a development scheme.

Energy and renewable resources

This competency deals with the understanding and application of the energy and renewable resources sector including regulatory framework, technologies, relationship with property, an appreciation of economic viability and cash flows, together with estates and project management.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate a broad appreciation of energy and renewable resources of energy. Undertake inspections of energy and renewable energy facilities.</p>	<p>Demonstrate experience of the economic and technical viability and monitoring of energy and renewable energy facilities.</p>	<p>Demonstrate practical competence in providing reasoned advice to clients in a wide range of services relating to the energy and renewable resources sector. Be responsible for the preparation of formal reports and advice under proper supervision. Demonstrate a thorough knowledge of the sector.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> The various energy and renewable energy technologies including but not limited to solar, wind, hydro, biomass, anaerobic digestion, landfill gas to energy, incineration and waste to energy. Current and emerging legislation including the Energy Act together with national targets for renewable energy generation Estates and planning management functions Inspection of facilities to assess property issues including ownership boundaries, rights of way, easements, discharge consents, regulatory compliance Industry trends. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> Advising on legal agreements, royalties, rents, and rating and compliance issues Understanding the practical application of Government subsidies to energy projects and the impacts on their cash flows Researching and collating data from energy and renewable energy schemes for analysis Interpret evidence and cash flow analysis to prepare advice to clients in respect of valuations, Landlord and Tenant issues, legal agreements, local taxation or any other consultancy service required. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> Carrying out detailed valuations/financial appraisals and preparing reports to clients Development of a discounted cash flow to reflect all incomes and outgoings through an energy related assets including all subsidies and royalty arrangements Managing property interests including purchase and sale of energy and renewable energy facilities Identifying and evaluating related business opportunities including new technologies Negotiating and reviewing rents, royalty agreements, and wayleaves.

Environmental analysis

Knowledge and understanding of appropriate laboratory procedures, analytical suites, relevant assessment criteria and guidance, and interpretation of laboratory results are essential in the completion of suitable site investigations and the evaluation of land or property in relation to environmental risk and sustainability, in all types of land uses and development.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of best practice in environmental laboratories, including accreditation requirements and criteria.

Examples of knowledge comprised within this level are:

- Being able to select an appropriate laboratory to undertake the analysis and understand why laboratories should be accredited and to what standards
- The analytical techniques and relationships to the volume and quality of samples required to complete the testing
- Being able to choose the correct containers for sample collection, ensuring appropriate labelling and laboratory scheduling
- How to prepare samples for submission to the laboratory and the effects of transit time, temperature and storage, prior to analysis.

Level 2

Determine an appropriate analytical scope, taking account of present and historic site activities, environmental setting and proposed uses.

Examples of activities and knowledge comprised within this level are:

- Understanding how previous and current site uses should influence laboratory scheduling
- Developing a suitable suite of analysis to evaluate potential contaminants using relevant guidance and accreditations
- Understanding the effect of suitable laboratory analysis and detection limits in relation to site sensitivity, proposed end uses and regulatory requirements
- Identification of organisms to appropriate taxonomic levels.

Level 3

Interpret laboratory results and make recommendations as to further analytical requirements and/or other actions that may be needed.

Examples of activities and knowledge comprised within this level are:

- Selecting appropriate assessment criteria relevant to the determinants and site end use
- Identifying any contaminants of concern and establish pollutant linkages
- Determining the requirement and advise on the necessity, specification and potential benefits for further analysis and assessment
- Advising on possible methods to mitigate the contaminants of concern, encompassing laboratory analysis and other methods
- Analysis of data and preparation and interpretation of reports.

Environmental assessments

This competency is about an understanding and application of the principles of environmental assessment, such as an Environmental Impact Assessment, within the planning and regulatory framework.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of appropriate environmental assessment concepts, processes and systems. This should include responsibilities imposed by law, codes of practice and other regulations relating to environmental assessment.

Examples of knowledge comprised within this level are:

- The aims, objectives and principles of an Environmental Impact Assessment (EIA) (or equivalent)
- The data gathering processes for environmental assessment such as BREEAM, EIA or similar
- The types of development which may require an environmental assessment.

Level 2

Apply in practice your understanding of environmental assessment and the requirements for compliance, including undertaking an environmental assessment.

Examples of activities and knowledge comprised within this level are:

- Managing the preparation of an environmental assessment
- Conducting an environmental assessment, including EIA, BREEAM or similar for development and/or infrastructure projects
- Experience of when a formal or informal environmental assessment is applicable
- The processes, procedures and requirements of a formal EIA and Social Impact Assessment (SIA), including screening and scoping.

Level 3

Provide evidence of reasoned advice including the preparation and production of reports based on appropriate environmental assessments.

Examples of activities and knowledge comprised within this level are:

- Advising on the need and application of an environmental assessment
- Providing specialist advice on environmental assessments, including negotiations with clients and regulators
- Advising on requirements and scope of an environmental assessment and the regulators' roles
- Preparing and compiling environmental statements and non-technical summaries for submission to clients, regulators, and other stakeholders.

Environmental audit (and monitoring)

This competency is about knowledge and understanding of the processes and standards used in environmental audit, in the context of land and property, and the application of these principles in practice.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of appropriate environmental auditing concepts, processes, systems and the role of the environmental audit in environmental monitoring.</p>	<p>Apply in practice your understanding of environmental auditing and monitoring, as appropriate.</p>	<p>Provide evidence of reasoned advice including the preparation and production of reports of appropriate environmental audits</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • What an environmental audit is • Where environmental audit applies in chartered surveyor practice • The standards used in environmental audit including ISO 14001, ISO 50001 Eco-Management and Audit Scheme (EMAS) or National equivalent • Auditing regulatory and operational compliance e.g. with planning conditions and legislation/regulation. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Carrying out environmental audit and reporting to set requirements • The scope and methods to be used for environmental audit • The specialisms and specialists required to conduct environmental audit. • Reporting nonconformities. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Presenting and proposing actions following the findings of environmental audit • Advising clients on the needs of environmental audit • Negotiating and liaising with clients and regulators on the findings and actions arising from environmental audit • Managing nonconformities from either raising and subsequent closure as an auditor or identifying as an auditee corrective and preventative action to avoid recurrence of nonconformities.

Environmental management

This competency deals with both the broad knowledge and application of environmental management practice, as well as the more specific knowledge and application of formal environmental management standards for land, property and the natural environment.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of appropriate environmental management concepts, processes and systems.</p>	<p>Apply your understanding of appropriate environmental management and environmental land management concepts, processes and systems.</p>	<p>Give reasoned advice on appropriate environmental management and environmental land management concepts, processes and systems.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Where environmental management applies in chartered surveyor practice • The standards used in environmental management including ISO 14001, ISO 15001 and EMS or National equivalent • Identifying and understanding environmental compliance obligations to your area of practice • Application of sustainability principles in environmental management • The regulatory and practical aspects of the restoration, remediation and reinstatement of land. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Carrying out environmental management and reporting, including data management systems • The scope and methods to be used for environmental management • The specialisms and specialists required to conduct environmental management. • Carrying out monitoring and compliance with planning, legal or environment control of an environmental site • Interpreting legislation and regulations to achieve compliance • Ecosystem and carbon balance evaluation and biodiversity off setting and mitigation • Application of renewable and energy recovery to environmental management. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Advising clients on the needs of environmental Management • Presenting and proposing actions following the findings of environmental management • Negotiating and liaising with clients and regulators on the findings and actions arising from environmental management. • How environmental projects comply with principles of sustainability • Authoring reports on habitat management schemes • Integrating land management plans or National Equivalent • Developing monitoring systems.

Environmental science and processes

This competency deals with the knowledge and application of environmental science principles and standards, in the context of the management of land and property for asset management, development and transactions.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the environmental sciences, with particular references to the impact of human activities on the natural & built environment and human health, including ecology soil, water and air.

Examples of knowledge comprised within this level are:

- The relevant Codes of Practice, guidance and EU legislation or National equivalent on ecology, soil, water and air
- The application and relevance of these in environmental sciences and processes as part of environmental management.

Level 2

Interpret specialist reports and/or specifications in order to advise on possible present and future environmental implications.

Examples of activities and knowledge comprised within this level are:

- The scope and methods to be used for environmental management
- The specialisms and specialists required to conduct environmental sciences and processes within projects.

Level 3

Where appropriate, apply your own understanding of environmental science and processes, or specify works and materials, including design detailing, to ensure achievement of environmental objectives.

Examples of activities and knowledge comprised within this level are:

- Advising clients on the need, scope and methods of environmental sciences and processes on project work
- Reviewing and interpreting specialist reports and specifications for scope, adequacy and relevance
- Advising on the implications of this for future actions
- Specifying requirements for materials, ecological, soil, water and air assessments by specialists and specialist laboratories
- Specifying works and materials in environmental science assessments
- Undertaking specialist assessments and interpreting and modelling on environmental science aspects
- Liaising and negotiating with clients, regulators and third parties on these aspects
- Advising on strategy for dealing with environmental science aspects of chartered surveying practice.

Forestry and woodland management

This competency covers silvicultural and environmental management of woodland. It includes the management of plantations from planting to felling, with all associated relevant operations for effective maintenance.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate the ability to describe the silvicultural requirements, and the tree identification and silvicultural characteristics, of the main commercial and amenity species. Demonstrate knowledge and understanding of current grant regimes.

Examples of knowledge comprised within this level are:

- The main commercial and amenity tree species
- The silvicultural requirements of those species
- Current legislation and grant regimes.

Level 2

Demonstrate the ability to apply your understanding of silviculture to the establishment and management of different forest and woodland systems. Demonstrate an understanding of the practice of silviculture from seed through establishment of crops, through to thinning and harvesting. Demonstrate an understanding of current forestry policy and its impact on grant regimes.

Examples of activities and knowledge comprised within this level are:

- Providing advice on a range of woodland management issues
- The planting and establishment of trees and grant applications
- Silvicultural practice including harvesting and marketing.

Level 3

Demonstrate experience of the economics and financial implications of various types of forest and woodland systems; preparation and submission of forest and woodland grant scheme applications; calculation of timber yields, forecasting, and use of plans and recording systems; carrying out valuation of trees and stands of timber; and drawing up of thinning and harvest programmes.

Examples of activities and knowledge comprised within this level are:

- Preparing woodland management plans
- Providing strategic advice to clients to support decision-making by estate managers.

GIS [Geographical Information Systems]

A GIS uses computer technology to integrate, manipulate and display a wide range of information to create a picture of an area's geography, environment and socio-economic characteristics. Beginning with a computerised topographic map as its base, a GIS overlays and integrates graphic and textual information from separate databases. The end result is a tool that can support decision-making and problem solving and provide almost instantaneous answers to complex questions.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the principles of geographic information science and systems. Be aware of industry standard GIS, data structures, types and their applications, and of appropriate capture and output systems.

Examples of knowledge comprised within this level are:

- The generic concepts in GIS appropriate to different audiences
- Compare and contrast different commercial GIS software packages and explain their relative merits
- Proficiently operate at least one commercially available off-the-shelf GIS software package e.g. create, store, access, view, analyse and plot spatial data
- The data types and data structures used for spatial data and explain their relative merits
- The different open source and proprietary data formats and explain their relative merits
- The different methods of primary, and especially secondary, data capture and their underpinning technologies
- The different output options and their underpinning technologies.

Level 2

Apply your knowledge and assess data quality; define and use appropriate input and data transfer methods; analyse data and prepare databases; identify digital data sources and assess 'fitness for use'. Understand and be aware of national and international data standards.

Examples of activities and knowledge comprised within this level are:

- Specifying capture methods appropriate to the data source and the application, explaining and justifying the rationale used
- Managing data capture projects and providing quality control over the acquisition of spatial data for use in GIS
- Understanding the principles underlying the analysis of spatial data and implement these with typical GIS algorithms using standard functionality and/or a high-level programming language
- Applying query languages in relation to database management systems e.g. data modelling, data loading, data maintenance, query, translate data formats, data export
- Identifying, assessing and sourcing datasets appropriate to user requirements and assessing their quality and fitness for purpose in the context of quantitative and qualitative measures such as: spatial resolution, accuracy/precision, temporal resolution, purpose of original capture etc.

Level 3

Assess clients' needs and advise them accordingly. Define specifications including data and process modelling, customise systems, carry out advanced spatial analyses, and manage data and observe data standards.

Examples of activities and knowledge comprised within this level are:

- Designing and conducting user requirements analysis at consultancy level
- Analysing and synthesising user requirements into a coherent and convincing strategy
- Presenting, explaining and justifying findings and advice in a language appropriate to the customer
- Defining data standards to meet specific user requirements
- Analysing customer processes and presenting options to model these as appropriate with respect to availability of resources, criticality and customer expectations
- Customising GIS software using a high-level programming language in order to implement data specifications, data models, process models etc.
- Analysing, defining and implementing appropriate analytical methods

continued on next page

GIS [Geographical Information Systems] [continued]

Level 1



Level 2

- Understanding international industry standards and how these apply in local jurisdictions and to local customs and practices
- Understanding metadata for third-party datasets and be able to prepare, create and maintain appropriate metadata for new datasets.

Level 3

- Defining appropriate data management standards with respect to: currency requirements, conflict resolution, archiving, availability, backup and recovery, system resilience etc.
- Explaining all of the above in the context of the customer's wider information systems
- Identifying and explaining the implications and limitations of advice with respect to any of the above
- Preparing project proposals and draft tender documentation for system procurement, conducting benchmark tests, and overseeing implementation programmes.

Ground engineering and subsidence

Detailed understanding of rock and soil mechanics and how these are applied to ground and slope stability problems. Detailed understanding of natural and mining induced subsidence in terms of causation, effect, mitigation and remedies.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Undertake appropriate investigations including site inspection to research site history and geology.</p>	<p>Collate, analyse and interpret information gathered after initial research.</p>	<p>Provide evidence of reasoned advice, prepare and present reports.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Soil and rock properties as required under Eurocode 7, Part 2 or National equivalent • Causation of natural and mining induced subsidence • Monitoring ground movement in a subsidence area • Monitoring the effect of ground movement on a building/structure • The various categories of land slip and their causation • The principles of slope design and failure. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Investigating geological and mining records to produce a report on causation of ground movement • Examining the options for minimising the risk of ground movement • Examining the amount of ground movement expected and the strains induced • Considering the options for the treatment of subterranean voids and mine outlets • Identifying sites suitable for opencast/landfill having regard to ground stability • Considering the options for a mine/site layout having regard to likely ground movement. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Calculating slope stability and point of failure • Calculating a mining subsidence profile including strains • Calculating crown hole collapse associated with natural and mining sources • Producing reports with recommendations for the minimisation, mitigation and remedy of subsidence damage • Producing a report on slope instability recommending means of minimising risk • Analysing the results of rock and soil tests and considering the effect on slope behaviour • Assisting with the preparation of an expert witness report on ground engineering/subsidence • Analysing the results of ground movement monitoring and producing a report with conclusions • Evaluating the options for treating subterranean voids and mine outlets and recommending a course of action.

Inspection

Inspection is fundamental to providing accurate land and property advice. It is important that candidates are able to demonstrate knowledge and understanding of the core requirements of land and property inspection, including site surveys, specialist studies.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the different requirements for inspection, together with the required information and factors affecting the approach to an inspection.

Examples of knowledge comprised within this level are:

- The requirements and reasons for a land and property inspection
- Safety issues when undertaking an inspection
- Implications of location and situation
- Identify access arrangements
- Building construction and specification
- The legal requirements that impact upon the occupation/ownership of land and buildings.

Level 2

Undertake inspections and apply the information gained to prepare reports, schedules and/or registers of equipment, presenting appropriate information gained from the inspection.

Examples of activities and knowledge comprised within this level are:

- Accurate recording of building and site characteristics
- Preparing or assisting in the preparation of reports for clients
- Understanding potential defects of buildings and implications
- Assessing quality of location, design and specification
- Understanding risks involved and methods of health and safety risk assessment including health and safety compliance
- Data recording including photographic record, condition studies, surveys and river habitat surveys
- Monitoring change over time, review of historic plans, etc.
- Understanding and applying evaluation systems.

Level 3

Provide evidence of reasoned advice and recommendations arising from inspections

Examples of activities and knowledge comprised within this level are:

- Preparing reports for clients containing detailed information and evaluation
- Providing detailed reasoned advice to clients
- Making clients aware (where appropriate) of their statutory responsibilities
- Reporting on risks and health and safety implications.

Land use and diversification

This competency is about understanding land use and the diversification options available to Rural property.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of how a variety of land uses, policies and options for diversification have an impact on real estate and business.

Examples of knowledge comprised within this level are:

- The principles and rationale for diversification projects
- Relevant planning issues
- Agencies likely to be involved when diversifying into new enterprises
- Basic taxation issues.

Level 2

Apply your knowledge to recognise and evaluate the economic, social and environmental needs of different land uses and options for diversification in relation to location and markets.

Examples of activities and knowledge comprised within this level are:

- Preparing and analysing a full feasibility study and financial appraisal
- Preparing a planning appraisal for a potential scheme
- Preparing and analysing both development and management options
- Interpreting findings.

Level 3

Provide evidence of reasoned advice, write reports and undertake the management of land use and, where appropriate, diversification and related projects.

Examples of activities and knowledge comprised within this level are:

- Providing advice on the more complex aspects of diversification
- Providing advice on the valuation, progress and management of a diversification project.

Legal/regulatory compliance

This competency requires knowledge and application of environment and waste law and terminology used in formulating arrangements relating to the buying and selling of land and/or property. It also relates to the obligations of owners and users of land/property in terms of their own occupancy or that of others under their control.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of any legal/regulatory compliance requirements in relation to your area of practice.

Examples of knowledge comprised within this level are:

- The framework of environmental law – guidance principles
- The contaminated land regime set out in part IIA of the Environmental Protection Act 1990 or National equivalent
- Interaction of planning and environment law, including case law
- The waste management obligations to owners and occupiers
- Environmental Permitting Regime.

Level 2

Apply your knowledge to comply with legal/regulatory requirements in specific situations within your area of practice.

Examples of activities and knowledge comprised within this level are:

- Understanding the roles and obligations of vendor and purchaser in terms of environment law
- Preparing reports for sale and/or purchase
- Developing a brief or providing advice for the redevelopment of Brownfield land
- Undertaking risk assessment
- Advising on the obligations of EIA
- Advising clients on the roles of the relevant sector stakeholders in terms of buying, selling or developing land.
- Compliance with planning and regulatory obligations
- Environmental Permit applications.

Level 3

Provide evidence of reasoned advice, prepare and present reports on legal/regulatory compliance requirements in relation to your area of practice.

Examples of activities and knowledge comprised within this level are:

- Negotiating with relevant authorities for the redevelopment of Brownfield land
- Negotiating appropriate agreements for the sale and transfer of the land which may or may not be contaminated
- Providing evidence in support of an expert witness report
- Negotiating of agreements regarding the management of waste streams either from the redevelopment of Brownfield land or from the premises of owners and occupiers
- Assistive compliance with the requirements of statutory bodies in terms of environmental performance required by any legal agreement
- Audit and reporting compliance.

Management and regeneration of the built environment

Environmental surveyors must ensure that sustainability of the built environment is integrated into every aspect of a development proposal for them to receive planning consent.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of the importance of sustainable management of the built environment as part of the urban and land planning and regeneration process.</p>	<p>Apply your knowledge of sustainable management of the built environment as part of the urban and land planning and regeneration process. Demonstrate an understanding of the roles played by public, private and not-for-profit sectors.</p>	<p>Provide evidence of reasoned advice, write reports and negotiate on all matters relating to sustainable management of the built environment as part of the urban and land planning and regeneration process. This should include the roles played by public, private and not-for-profit sectors.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> Recognising the key factors and principles for the sustainable management of the built environment Identifying planning policies and guidance notes applicable to the sustainable management of the built environment for an urban regeneration project Understanding of National planning and regeneration policies. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> Providing examples of regeneration developments where sustainable management of the built environment has been achieved successfully Demonstrating, with reference to a regeneration development, the practical application of the key factors and principles of the sustainable management of the built environment Explaining, with reference to a regeneration development, the roles played by different types of organisations in the sustainable management of the built environment Application of knowledge of national planning and regeneration policies Analysis of options for re-use/recycling of built environment. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> Preparing detailed reports to clients on matters of sustainable management of the built environment for planning policy consultation and representation, and planning applications Giving written advice on the commercial viability of the sustainable management of the built environment in urban regeneration development projects.

Management of the natural environment and landscape

This competency is about the management of landscape, natural resources and habitat in the context of property management and development.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of the importance and role of nature conservation and the landscape in real estate, business management and development.</p>	<p>Apply your knowledge of nature conservation and landscape in the management of real estate and development.</p>	<p>Provide evidence of reasoned advice, write reports and negotiate on all matters relating to nature conservation and landscape.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Landscape, designations and agri-environmental schemes • Relevant legislation governing designation schemes • Bodies charged with bringing in and delivering such legislation. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Advising on planning relating to the natural environment • Advising on grants available for protection of landscape, natural habitat and natural resources. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Providing strategic advice on land use, management practice, and management of specific habitats and species • Interpreting and filtering advice • Providing balanced report writing to provide an over-arching view of management of a landscape. Demonstrating the application of additional methods beyond standard/routine identification processes to include the context of historical and provenance issues, in line with client requirements.

Measurement

This competency is relevant to all data capture and measurement of land or property.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate knowledge and understanding of the principles and limitations of measurement relevant to your area of practice.

Examples of knowledge comprised within this level are:

- Relevant data capture techniques including the use of lasers and tapes
- The limitations of different methods of measurement
- Checking procedures for the instruments used and the calculations undertaken
- Potential sources of error from use of the instruments
- The basis on which measurements should be undertaken i.e. the core definitions of measurement and their application
- The appropriate standards and guidance relating to measurement with particular reference to the RICS Property measurement
- The degree of accuracy that is required for different types of property and the use to which the measurements will be put
- The use and limitations of plans and drawings.

Level 2

Apply your knowledge to undertake measurement. Use basic and/or advanced instrumentation to collect data. Present appropriate information gained from measurement.

Examples of activities and knowledge comprised within this level are:

- Using the appropriate instrumentation (including lasers and tapes) to capture sufficiently accurate data, based on an understanding of limitations of different instruments
- Dealing with and advising on sources of error from use of instruments
- Applying the appropriate guidance correctly in practice to undertake measurement of a variety of properties, understanding the basis on which measurements should be undertaken
- Undertaking necessary calculations
- Preparing and presenting measurements in a manner appropriate for the purpose they are to be used, understanding the level of accuracy that is required for different types of property.

Level 3

Evaluate, present, manage, analyse data and/or apply spatial data and information. Show an advanced understanding of accuracy, precision and error sources.

Examples of activities and knowledge comprised within this level are:

- Please note, level 3 is only recommended for candidates with specialist knowledge and experience of sophisticated measurement and data capture practice. Most property candidates will only attain level 2. For guidance on level 3 please refer to the RICS Geomatics pathway guide.

Planning and development management

The planning system plays a vital role in the opportunities available for any potential development scheme. This means it is important for developers to have good working knowledge and experience of the processes involved in environmental planning to ensure successful development outcomes.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of the principles of planning.</p>	<p>Apply your knowledge to matters relevant to the planning process</p>	<p>Give reasoned advice, including the preparation and presentation of reports on planning matters, brief other professional consultants and understand the application of specialist knowledge to the resolution of planning problems.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • The purpose and structure of the planning system as utilised by National Governments • The decision-making process on planning applications and permitting • The special planning powers for National and International designated areas and features • The requirements for community involvement in the planning system • Environmental Assessment and Strategic Environmental Assessment and the planning system • Environmental permitting regimes and other environmental legislation • Knowledge of the infrastructure systems. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Completing the submission of planning and permitting applications • Applying pre-consultation and negotiation processes to the planning application process • Participating in the formulation of planning strategies, development plans and programmes • Interpreting strategic planning policies. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Producing viability/feasibility reports • Providing reasoned client advice on planning applications including advice on appeals • Advising clients on reasonableness of planning conditions and involvement in related negotiations • Justifying environmental and other impact assessments • Overseeing the work of external consultants.

Surveying and mapping

Mapping, in this context, is an exceptionally broad potential area of practice. Encompassing everything from LIDAR, IFSAR, aerial photography and other primary data capture techniques to ground control using GPS and/or traditional techniques and the production of digital elevation models, DTMs or any form of geographical output including GIS data capture and output.

Examples of likely knowledge, skills and experience at each level

<p>Demonstrate knowledge and understanding of the principles of mapping and geographic information systems appropriate to your area of practice. Be aware of accuracy, scale, currency and fitness for purpose of hardcopy and/or digital maps, drawings, imagery and plans.</p>	<p>Apply your knowledge of mapping and geographical sciences in relation to your area of practice</p>	<p>Provide evidence of reasoned advice on the design and specification of mapping and/or geo-information projects in a national and/or international context.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Data capture techniques and the knock-on effects regarding accuracy and precision • Instrument checking techniques • The basic principles of geodesy and its application to mapping according to your area of practice • Basic survey software. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Using post processing survey/mapping software competently • Using digital terrain modelling/digital elevation models • Understanding the principles of data integration and compatibility, integrating different data sets to achieve client needs • Understanding scalability in the context of both mapping and user requirements • Using imagery software and GIS data capture tools • Using modern survey instrumentation and understanding checking/calibration techniques. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Using all forms of survey/mapping/imagery contracts competently and describing the nuances of each [i.e. accuracy/fitness for purpose issues] • Being fully conversant with all RICS Geomatics specifications and guidance in relation to mapping • Explaining complex mapping issues to clients and discerning their 'actual' needs.

Sustainability

Achievement of this competency demonstrates a broad-based understanding of the theory of sustainability as set in its political and legal framework, together with an appreciation of its economic, social and environmental context and the tools and techniques used to measure cost and return, and evaluate options for action.

Examples of likely knowledge, skills and experience at each level

Level 1	Level 2	Level 3
<p>Demonstrate knowledge and understanding of why and how sustainability seeks to balance economic, environmental and social objectives at global, national and local levels in the context of land, property and the built environment.</p>	<p>Provide evidence of the practical application of sustainability appropriate to your area of practice, and of awareness of the circumstances in which specialist advice is necessary.</p>	<p>Provide evidence of reasoned advice given to clients and others on the policy, law and best practice of sustainability, in your area of practice.</p>
<p>Examples of knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • The aims, objectives and principles of BREEAM or similar assessments • Historical background – e.g. Brundtland, Green Party, climate change • Legal and policy background • Design considerations – site, location, building form, materials, lighting, ventilation, heating, water and drainage • Sources of renewable energy and energy recovery • National Design and Evaluation Codes. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Planning guidance, sustainability checklists • Focus on energy – EU Directive on Energy Performance of Buildings or National equivalent • Renewable energy options – photovoltaics, wind turbines, biomass, central heating and power (CHP), ground source heating, thermal mass • Post-occupancy evaluation, life-cycle costing • National Infrastructure projects and energy conservation. 	<p>Examples of activities and knowledge comprised within this level are:</p> <ul style="list-style-type: none"> • Sustainable valuation, triple bottom line, economic, social and environmental considerations, short- medium- long term impacts • Hard and soft valuation issues, health, well-being and Productivity • Examples and case studies of advice given and impact made upon client practice • Transfer of knowledge and practice • Sustainability assessments • Corporate sustainability advice.

Waste management

This competency deals with the practical aspects of waste management including the regulatory framework, compliance issues, and an appreciation of economic viability, technical design, planning and Pollution Prevention & Control (PPC) permitting, estates and project management.

Examples of likely knowledge, skills and experience at each level

Level 1

Demonstrate a broad appreciation of practical aspects of waste management and regulatory regime. Undertake inspections of waste management facilities.

Examples of knowledge comprised within this level are:

- Current and emerging legislation including Landfill Directive, Waste Strategy, Mines Waste Directive, Groundwater Protection Act, Landfill Tax and similar National legislation
- The various waste management technologies dealing with collection, recycling, treatment and disposal together with trends in the industry
- Estates and planning management functions
- Inspection of facilities to assess property issues including ownership boundaries, rights of way, easements, discharge consents, regulatory compliance.

Level 2

Demonstrate an appreciation of the economic and technical viability and/or management application of the practical requirements and monitoring of waste facilities.

Examples of activities and knowledge comprised within this level are:

- Advising on legal agreements, royalties, rents, rating and compliance issues
- Carrying out evaluation of facilities to assess economic and technical viability
- Knowledge of landfill engineering and design, gas utilisation, environmental control systems and aftercare measures or similar aspects relating to another waste treatment technology
- Carrying out environmental monitoring of a waste management facility.

Level 3

Design, advise on, and/or manage waste management schemes, their implementation and/or property interests therein.

Examples of activities and knowledge comprised within this level are:

- Carrying out detailed valuations/financial appraisals and preparing reports to clients in support of development opportunities
- Designing and/or project managing planning and/or permit application or waste treatment/disposal tenders
- Managing property interests including purchase and sale of waste assets
- Identifying and evaluating related business opportunities including new technologies.



Confidence through professional standards

RICS promotes and enforces the highest professional qualifications and standards in the valuation, development and management of land, real estate, construction and infrastructure. Our name promises the consistent delivery of standards – bringing confidence to markets and effecting positive change in the built and natural environments.

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