



Urban Drainage Group

Competency Framework Support Document

Version 03

Competency Framework Support Document 2023.

www.ciwem.org/groups/udg

Technical enquiries

All technical enquiries and suggestions relating to this publication should be addressed to the Urban Drainage Group mailbox: UDG@CIWEM.org.

The Competency Framework Support Document has been written to be used in conjunction with the UDG Competency Framework to provide a linkage between this document and the CIWEM Mandatory competencies which need to be demonstrated to achieve professional membership (C.WEM) of the Institution.

The Competency Framework and this Support Document are issued for guidance in good faith following industry consultation. CIWEM cannot accept responsibility for consequences arising from its application. It is intended that the Competency Framework Support Document will undergo periodic review to reflect good practice and new technologies as they mature.

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CIWEM is the leading independent Chartered professional body for water and environmental professionals, promoting excellence within the sector.

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1 Introduction

Supporting the professional development of members of the urban drainage community is a key aspect of the CIWEM Urban Drainage Group's (UDG) strategy.

To provide an indication of the broad range of skills that were emerging within the group, the UDG Competency Framework was developed in 2015. This outlined a series of broad knowledge and skills detailing individual competencies which might be expected of people working within the industry. Over the years this has been broadly adopted into training programmes, role requirements and job descriptions.

The aim of this document is to describe the competencies and demonstrate how someone working within the urban drainage sector can use the UDG Competency Framework to support their professional development.

1.1 Competency framework development

The first draft of the Wastewater Planners User Group (WaPUG) Competency Framework was released in September 2006. The vision for this initial iteration of the framework was to "provide guidance for an accredited programme of assessment, education and training".

Since 2006 there has been significant development in the approaches and environment that we as urban drainage professionals are operating in. This has been influenced by technological advances and the significant impact of periods of extreme weather in the late 2000's. These developments have strongly influenced the Flood and Water Management Act (FWMA 2010) and when balanced with customer expectations have included further amendments from the new Environment Act 2021. This has brought about new stretching challenges, including developing statutory Drainage and Wastewater Plans (DWMPs) and the new Storm Overflow Discharge Reduction Plan (SODRP).

In 2010 the Wastewater Planners User Group (WaPUG) became a CIWEM Special Interest Group. The UDG now has the additional role of supporting urban drainage professionals in understanding the requirements of CIWEM Membership and the requirements of becoming a Chartered Water and Environment Manager (C.WEM), whilst continuing to promote best practice and innovation within the Urban Drainage sector.

The UDG Competency Framework was re-written in 2015 to expand on the original document scope. The aim of this was to provide understanding to members of the community on how the skills they have developed demonstrate the mandatory competencies required to achieve CIWEM Membership and C.WEM status.

This update in 2023 is to refresh the competency framework. This brings in the wider industry changes and the now broader competencies, along with more bespoke roles that exist within the urban drainage industry. Therefore this update now means the competencies are not focusing on specific elements for sewer modelling, but now looking in the round for urban catchment planning.

1.2 Benefits of Membership and Chartered Status

Becoming a CIWEM member and C.WEM gives you a globally-recognised demonstration of your professionalism and technical abilities. At CIWEM and within the UDG we champion highly qualified water and environmental managers, engineers and scientists who are recognised throughout the world for their professional expertise and conduct.

The UDG has a global reach and we recognise that supporting the development of competency has a benefit not just to individuals, but for the companies involved within the sector and the industry as a whole. How all these benefits marry together is illustrated within Figure 1-1.

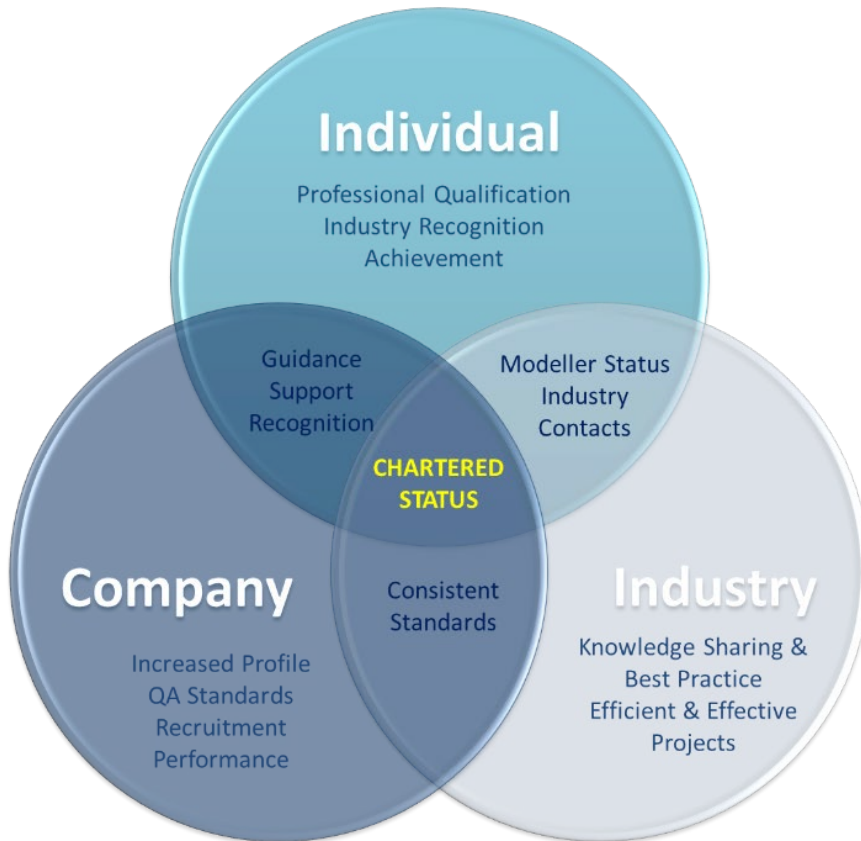


Figure 1-1 Benefits of Chartered Status Venn Diagram

1.3 Terminology and language

The Competency Framework uses language and terms predominantly related to the United Kingdom and Ireland, although the skills and sectors outlined will be relevant for use internationally.

1.4 Target audience

The target audience is urban drainage practitioners who are actively involved in aspects of the urban drainage cycle and are looking to support their professional development and achieve chartered or fellowship status with CIWEM.

2 CIWEM mandatory competencies

The CIWEM Mandatory competencies that are used to assess the suitability of individual candidates for the various levels of membership are shown in Table 2-1. The competencies have been refined over time to enable candidates to better target their personal development.

The competencies are split into five grouped areas:

- **A Competencies** – Existing and emerging factors influencing environmental and water issues
- **B Competencies** – Planning, implementation and evaluation of work
- **C Competencies** – Safe and effective working practices
- **D Competencies** – Communication and professional ethics
- **E Competencies** – Professional development

This breakdown will enable individual candidates to demonstrate an understanding of the industry they are working in, show through examples of how they have undertaken work within the sector, ensure that environmental sustainability, health and safety and quality are at the heart of their working practices and demonstrate a commitment to professional standards and the development of themselves and others.

Each of these five groups contain specific competencies which draw on different aspects of the group, enabling each candidate to give a full representation of their capabilities. More detailed descriptions of the competencies is shown in Section 3.1 below.

Table 2-1 CIWEM Mandatory Competencies.

A	Existing and emerging factors influencing environmental and water issues
A1	Knowledge of wider environmental issues and trends (you should demonstrate your knowledge of wider environmental and wider issues beyond your area of expertise)
A2	Ability to develop strategies or plans to address changes in your sector
B	Planning, implementation and evaluation of work
B1	Ability to analyse and evaluate environmental and/or water problems
B2	Ability to solve problems by identifying, developing and evaluating options
B3	Ability to initiate, implement and manage change
B4	Ability to plan and implement solutions and monitor their continuing performance
C	Safe and effective working practices
C1	Ability to manage resources effectively and efficiently
C2	Understanding, promotion and application of Health, Safety and Wellbeing (HS&W)
C3	Your contribution to sustainability
C4	Understanding, promotion and application of quality enhancement and Quality Assurance (QA)
D	Communication and professional ethics
D1	Ability to communicate effectively in English

D2	Work professionally, ethically and comply with relevant codes of conduct
E	Professional development
E1	Demonstrate continuing professional development
E2	Discuss your commitment to CIWEM

2.1 UDG Competency Framework

The original WaPUG Competency Framework was designed to enable individuals to assess their level of knowledge and skill against a series of competencies. Some guidance was supplied to support the individual to assess their individual level and some 'typical' score distributions for types of role within the sector.

The revision of the framework in 2015 was designed to expand the original competencies to reflect the progression within the sector and to align the UDG competencies more closely to the CIWEM Mandatory Competencies. This provided a UDG focussed support document for individuals moving towards a full level of CIWEM Membership and C.WEM status.

The 2023 update has now aligned fully with the main CIWEM mandatory competencies. There will be no specific subset of competencies that 'must' be met to be defined as a UDG member. This move has been initiated due to the ever expanding scope of our membership. For instance it is unrealistic for a catchment planner to be able to be an expert in flow monitor accuracy analysis nor is it expected that a sewer modeller will be an expert in outlining a flood risk for a watercourse regulator (i.e. Environment Agency in England) funding business case.

Instead of creating an ever expanding list of specific subset competencies, we have outlined different examples of what would be expected. These examples are detailed under each of the CIWEM mandatory competencies, and aim to provide an understanding of the minimum level of attainment required to reach this competency for a variety of key career paths within the urban drainage sector. In some cases these minimum expectations are the same for all career paths and are the areas that bring us together as one group. In others they are different and help show the breadth of expertise that we as a group have.

3 Competence Alignment and Examples

3.1 A1 Knowledge of wider environmental issues and trends (you should demonstrate your knowledge of wider environmental and water issues beyond your area of expertise)

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>The list of bullet points below outlines areas of potential internal UDG expertise expected at Chartered CWEM level. It should be noted that applicants must ensure their responses are not constrained to only UDG expertise.</p> <ul style="list-style-type: none"> • Understand the historical development of the regulatory structure that applies to the UK water sector in particular the roles and duties of the regulators (e.g. Ofwat, Environment Agency, SEPA, NRW) • Understand the planning processes and funding mechanisms applied to UK Water Companies – e.g. role of regulators, the Price Review process, Business Planning, Consumer Council for Water, different sources of investment (i.e. Scottish Water vs Welsh Water vs Severn Trent vs Thames Water), the financial implications of regulatory compliance and performance commitments. • Understand the current and emerging legislative framework surrounding Urban Drainage Planning, e.g. UWWTD, EU Bathing Waters, Water Framework Directives, the Water Act, Floods and Water Management Act and Environment Act • Appreciate the Floods and Water Management Act implications for stakeholders since the Pitt Review, What is statutory within this act for all the different stakeholders and how are they all working together. Show knowledge of collaborative working such as the creation of the annual Section 18 report and the incident driven Section 19 reports. • Understand the legislative and regulatory development process, including the role of government (i.e. Defra), regulators (i.e. EA), water industry groups (i.e. Water UK), and public interest groups. • Understand the role of the generation of new knowledge in the development and support of new legislation and regulation (e.g. the role of UKWIR, industry task and finish groups and other knowledge generators) • Demonstrate knowledge of how external high level drivers, and trends e.g. climate change, carbon emissions, nature based solutions, demographic change and land use planning, can impact on the delivery of current and future urban drainage services. • Demonstrate knowledge of wider environmental issues outside of the urban drainage industry. Be this on the wider energy, carbon, water resources or ecology impacts that encompass other important elements. Be that at an international level or at a UK or specific continent level. • Demonstrate engagement with a wide range of knowledge sources, e.g. on-going research projects and organisations, Water UK, CIWEM and ICE publications, journal and trade publications and government evidence reports.

	<ul style="list-style-type: none"> • Demonstrate an ability to assess the main potential impacts of emerging technologies and organisational changes affecting environmental and water affairs in the next five years and identify opportunities to apply this knowledge to existing products and processes.
<p>UDG expectations – Fellow C.WEM potential elements</p>	<ul style="list-style-type: none"> • Experience of presentations at Industry Events, CIWEM, UDG, PIG, ICE etc • Experience of contributing to industry thought pieces in publications like the CIWEM monthly magazine or in peer-reviewed technical research publications • Experience of lecturing at Universities or organising STEM outreach programmes, or delivering training within your own organisation. • Experience of outlying company or industry policy, guidance and specifications that covers topics like modelling specifications, strategic environmental investment plans or tactical environmental improvement requirements. • Experience of contributing to the development of your company strategy that encompasses a variety of government legislations, policies, guidance notes that cover a variety of drivers (i.e. flooding, pollution, storm overflows, ecology, growth etc)
<p>Additional guidance</p>	<p>Describe how you obtained your personal knowledge of environmental or water issues. For those with water related experience – it is important to refer to the linking of water quality, air quality and land use with public health aspects.</p> <p>Investigate the historical development of the environmental sector</p> <p>Refer to knowledge of the “environment” gained from publications (magazines, periodicals and technical papers).</p> <p>Investigate and assess regulatory factors, including legal and financial which govern the environmental sector.</p> <p>Select a topic to research and look at it from the public’s perspective and maybe that of a private organisation or pressure group within the environmental sector.</p>

3.2 A2 Ability to develop strategies or plans to address changes in your sector

Knowledge group	Competencies comments
<p>UDG expectations – Chartered C.WEM expected elements</p>	<ul style="list-style-type: none"> • Understand current and changing legislation requirements and the need to balance different elements like flooding vs storm overflow improvements or short term budget focus vs long term ambitions. • Appreciate the different risk based catchment plans and understand the differences between Drainage and Wastewater Management Plans (DWMPs), Surface Water Management Plans (SWMPs), River basin management plans and Flood Risk Management Plans. Specifically which parts are statutory and what are stakeholder led on each plan development. • Lead and carry out stakeholder engagement – Understanding the different drivers to focus on, how these may overlap, how each stakeholder may have

	<p>different priorities within each driver and each stakeholder may have different programme and resource expectations</p> <ul style="list-style-type: none"> ● Be able to identify the best approach for your need - appreciating the type and level of analysis including modelling (hydraulic - 1D / 2D, water quality, risk modelling - likelihood and consequence, financial - best value vs least cost) ● Outline Specification Development for internal or external purposes ● Undertake Tool Development – e.g. Flood Risk, Blockage Hot Spot, Corporate Decision Support Tools, Asset Condition Modelling, Develop bespoke computational or analysis tools for company use, e.g. sediment transport and deposition impact modelling ● Contribute to internal Training Programme Support and Development ● Contribute to software developments, for example in-house visualisation tools ● Contribute to Asset Management initiatives – Asset health, Performance measures, Asset resilience, Asset condition assessment ● Assess the main potential impact of emerging technologies and organisational changes and managerial issues affecting environmental and water affairs in the next five years and identify opportunities to apply this knowledge to existing products and processes.
<p>UDG expectations – Fellow C.WEM potential elements</p>	<ul style="list-style-type: none"> ● Experience of presentations at Industry Events, CIWEM, UDG, PIG, ICE etc ● Experience of writing or contributing to industry thought pieces in publications like the CIWEM monthly magazine or in peer-reviewed technical research publications ● Experience of contributing to industry policy, guidance and specifications that covers topics like modelling specifications, strategic environmental investment plans or tactical environmental improvement requirements. ● Experience of leading on the development of your company strategy that encompasses a variety of government legislations, policies, guidance notes that cover a variety of drivers (i.e. flooding, pollution, storm overflows, ecology, growth etc) ● Experience of identifying and implementing opportunities to apply innovative practice in your workplace.
<p>Additional guidance</p>	<p>Identify changes or development in the sector in which you work, or related sectors, and evaluate your findings Select items that would have the greatest effect on your business in terms of workload or revenue From these items develop possible ways of dealing with these changes and how they could be adopted in your organisation Identify any gaps in your proposal above and show where you feel additional investigation needs to be carried out</p> <p>Outline the progress you have made to ensure that environmental issues and sustainability issues are included in your personal development plan in your workplace, highlighting how cultural changes in your organisation may have</p>

	<p>impacted on such aspects. those changes and developments requiring formal and detailed review. Select items that would have the greatest effect on your business in terms of workload or revenue. Appraise and agree alternative strategies and options. Prepare and agree a planning framework for dealing with changes or developments. Identify any gaps in your existing relevant information and implement appropriate programmes of research to satisfy them.</p>
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3.3 B1 Ability to analyse and evaluate environmental and/or water problems

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<ul style="list-style-type: none"> ● Be able to utilise the appropriate modelling tools and techniques to understand the underlying cause of the investigation problem at hand. ● Understand when it is appropriate to undertake a more complicated modelling approach (i.e. 2D modelling) and when it's right to keep things simple (i.e. rational method) ● Be able to plan and manage the appropriate level of data collection to support the investigations. ● Be able to outline the wider issues / drivers may also be of interest or impact the problem at hand. ● Understand what element of the driver targets at defined by your company, the drainage owner company, by country guidance or by country legislation ● Understand where modelling / assessment techniques differ from your company, the drainage owner company, by country guidance or by country legislation ● Understand the drainage owners level of service measures (standard operating levels) and how exceedance impact on customers ● Understand how the drainage owner outlines their affordability / cost benefit approach including TOTEX approach, customer willingness to pay and quantifying wider benefits (environmental, carbon, energy etc). ● Appreciate how sustainable solutions v more grey approaches in regards to design approach, construction period, stakeholder management, operational management and final ownership agreements. ● Appreciate and engage on the collation of evidence to support need identification and subsequent business case for investment
UDG expectations – Fellow C.WEM potential elements	<ul style="list-style-type: none"> ● Experience of contributing to industry policy, guidance and specifications that covers topics like modelling specifications, strategic environmental investment plans or tactical environmental improvement requirements. ● Experience in creating company investigation guidance and specifications ● Lead in the development in company willingness to pay or benefit quantification approaches

	<ul style="list-style-type: none"> Engage in strategic agreements between companies on collective approaches to investigating problems and outlying drivers / risks.
<p>Additional guidance</p>	<ul style="list-style-type: none"> Understand the legislative and regulatory constraints that have led to the need being identified (e.g.s, a flood report entered into the database, change to legislation in response to the Environment Act) (this could link back to A1 and A2 competencies) Explore other factors, such as historical, social and ecological context Has the property flooded before? Do water quality samples or pollution reports suggest there is a repeat or severe impact of a problem? Confirm what information you need to know to and think about how you will obtain it: <ul style="list-style-type: none"> Do you need to consult with other teams? Do you need to outsource data gathering (customer interviews, surveys etc.) Agree scope and fee required to gather information <ul style="list-style-type: none"> Planning a survey scope is a really good example here: <ul style="list-style-type: none"> What types of survey are required? <ul style="list-style-type: none"> MH Ancillaries Watercourse Flow/depth monitors Water quality monitors Topographical <ul style="list-style-type: none"> Can you get other information to fill any gaps? Telemetry Radar rainfall Lidar Survey returns <ul style="list-style-type: none"> Did you get the information you needed? <ul style="list-style-type: none"> If not, why not? What is the risk of it not being available? (link to B3 competency) Did you get additional benefits from engaging with stakeholders: <ul style="list-style-type: none"> Additional funding Additional scope identified Additional justification for the need (e.g. more properties coming forward for flooding scheme so that cost-benefit ratio is likely to improve) Is legislation likely to change in the future, is the problem likely to get worse in the future (climate change etc.). If so what steps will you take to ensure that it provides the necessary standard of protection.

- Do you have to write it up/present it to others to convince them and the business for future investment?

3.4 B2 Ability to solve problems by identifying, developing and evaluating options

Knowledge group	Competencies comments
<p>UDG expectations – Chartered C.WEM expected elements</p>	<ul style="list-style-type: none"> • Understand the drainage owners level of service measures (standard operating levels) and how exceedance impact on customers • Apply and understand how the drainage owner outlines their affordability / cost benefit approach including TOTEX approach, customer willingness to pay and quantifying wider benefits (environmental, carbon, energy etc). • Undertake the collation of evidence to support need identification and subsequent business case for investment • Understand how the funding cycles for water companies, councils and environmental regulators outline targets in regards to finances and improvement conditions. • Understand how sustainable solutions v more grey approaches differ in regards to design approach, construction period, stakeholder management, operational management and final ownership agreements. • Undertake option development for a variety of problems (flooding, quality, serviceability etc) either in a variety of projects or for a complex project. • Understand how options develop over the project life cycle from notional scheme through to detailed design. • Apply a variety of options within your projects including grey infrastructure, nature based solutions and general surface water management • Apply and understand how real time control management within existing systems or within a new option development can improve the level of service from the drainage assets. • Understand how operational management (proactive or reactive) can work alongside (or instead) of any new infrastructure builds. • Appreciate the whole life cost and maintenance approach for the options developed. • Understand how the residual risks from the proposed options can be mitigated through operational management (monitors or site visits) • Understand the impact on the proposed solutions on the local community and other drainage owners within the nearby area.
<p>UDG expectations – Fellow C.WEM potential elements</p>	<ul style="list-style-type: none"> • Lead in the incorporation of new options within the drainage owners standard 'tool box'

	<ul style="list-style-type: none"> • Lead on the further development of evaluating options to increase the understanding behind the quantification of benefits • Lead on engagement between different drainage owners on complex joint drivers / solutions • Lead on the development of national guidance for option development and benefit assessments
<p>Additional guidance</p>	<ul style="list-style-type: none"> • Using creative and original thought where appropriate, plan the solution process to meet customer needs. • Develop and test alternative project solutions to meet: <ul style="list-style-type: none"> • Specifications; Performance requirements; reliability; environmental maintainability; production; construction, installation and commissioning requirements; training needs; • Present and agree recommendations and solutions, factoring in risks and opportunities. • Prepare detailed solutions and comply with statutory controls. • Check your solution has met the regulatory and legislative requirements and customer expectations • Feasibility Reports • Cost Benefit Analysis • Did you formulate novel approaches – How and why were these needed? Were new management, engineering, scientific principles involved? How did you assess the validity of these approaches and methods of working? • Look at a plan and highlight your personal contributions where problems or gaps have been identified. • Consider whether your various suggestions delivered a „best fit“ outcome. • Check your solution <p>Try to think of interesting examples where something different happened. Were there new technologies and/or methods being used? If so, what did you have to find out in order to implement them, and how did you do this?</p> <p>Do you have examples where things did not go to plan – did a particular solution not work, or need to be adapted in order to meet the criteria of the project? Did you consider or suggest changing the criteria of the project (e.g. a hybrid blue-green solution for a lower standard of protection to reduce costs etc.)</p>

3.5 B3 Ability to initiate, implement and manage change

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>The core element of this objective is to outline how you have managed an unexpected change within your workstream. This could include project / resource management, policy changes occurring at critical points in a project, stakeholder / customer changes in level of engagement or new data coming to light that critically changes the fundamental understanding of the problem or solution.</p> <ul style="list-style-type: none"> ● Apply good resource management between either your team and / or sub-contractors, be able to undertake clear coordination for the production of outputs. ● Understand contract management and the role in the procurement and management of data collection. ● Apply appropriate project change controls (i.e. NEC options A-F, early warnings, compensation events (NEC = New Engineering Contract) as required. ● Respond proactively to changes in team (i.e. Team Structure or Delivery Structure) ● Respond proactively to changes in project requirements i.e. change in scope from client or new data coming to light ● Proactively review current processes and procedures. Initiate changes to these in a communicative approach engaging others within department and wider to ensure any new approach is embedded for further use. ● Proactively review stakeholder engagement plans to ensure all stakeholders (internally and externally) are incorporated within the wider communication approach and feel engaged in the delivery of the project. ● Proactively review current company and country relevant policies and guidance during the project lifecycle to ensure any new elements are appropriately incorporated within the project at hand.
UDG expectations – Fellow C.WEM potential elements	<ul style="list-style-type: none"> ● Lead on the development and creation of new follow guidance from the creation of new country legislation or policy creation ● Engaged and support in the creation of new country legislation or policy creation ● Lead on the financial, resource or technical policy creation within your company
Additional guidance	<ul style="list-style-type: none"> ● How have you developed a plan for a task, monitored its development, and made any necessary revisions during its implementation? ● Ensuring minimum disruption whilst implementing a new system; ● Develop plan in close liaison with the client;

	<ul style="list-style-type: none"> ● Demonstrate the ability to deal with the unexpected. ● Co-ordinate the production of documents, systems and services ● Prepare procurement, contract and production documents to plan and control development. ● Describe precisely how you were able to manage change – was this new in your organisation or was it down to external and not necessarily stakeholder influences. Give details and the framework that underpins the management direction. ● Understand and abide by the legal liabilities and risks in contractual relationships with clients on behalf of your employer.
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3.6 B4 Ability to plan and implement solutions and monitor their continuing performance

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>The core element of this objective is to show how you have continued to review and improve on the specific problem at hand. This could include implementing a new process and reviewing it's implementation across a full team / company or reviewing how a built solution has worked as designed by implementing actual data monitors and assessing the monitor data.</p> <p>Be able to review a current process approach and be able to outline a new approach, engage with relevant teams to ensure buy-in to new approach, test the new approach from concept, trial on one project through to roll out to wider team use.</p> <p>Be able to review a newly built solution including utilising monitor data, customer surveys, operational team information to understand how the built solution has worked during standard operational periods and more extreme operational periods (for instance extreme weather event)</p>
UDG expectations – Fellow C.WEM potential elements	<p>Outline wide strategic initiatives within the company and wider industry that will impact a large proportion of the individuals, embed monitoring approaches within this strategy that ensure constant proactive improvements are encouraged by the team in question.</p>
Additional guidance	<ul style="list-style-type: none"> ● Plan the operation of systems and services to meet performance objectives. ● Control systems and services to meet given requirements. ● Develop maintenance plans to meet required outputs and take necessary action to achieve performance. ● Monitor and evaluate the performance of systems and services against predetermined standards. ● Identify and diagnose the causes of unacceptable variations in performance. ● What strategy have you developed to ensure a task will be achieved and comply with all the appropriate standards QA, H&S or environmental regulations

	<ul style="list-style-type: none"> ● Look at how you drew up a plan for monitoring and maintaining a system or service. Examine the results including cost, resource management etc. ● Look at the outputs from the task and any analysis you may have done giving recommendations to avoid the repeat of any that were unacceptable ● Setting up a new team ● Client Feedback Forms ● The extent to which you have the executive power to plan, implement and control the active management of the planning and implementation phases of projects. NOTE: These projects do not have to be major developments or research items with significant, (up to six figures) capital expenditure horizons. ● What strategy have you developed to ensure a task will be achieved and comply with all the appropriate standards QA, H&S or environmental regulations? ● Look at how you drew up a plan for monitoring and maintaining a system or services against predetermined standards. Examine results including costs, resources management etc. ● Look at the outputs from the task and any analysis you may have done giving recommendations to avoid the repeat of any that were unacceptable. ● Identify any risks which may compromise the outcome.
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3.7 C1 Ability to manage resources effectively and efficiently

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>Demonstrate track record in supporting the delivery of urban drainage projects to time, budget and financial targets using and developing technical skills and resources where required within team members to meet the objectives of the project.</p> <ul style="list-style-type: none"> ● Project management activities related to urban drainage projects ● Framework management of projects delivered for a specific client ● Line / Team management activities to support team development ● Managing performance of contractors on site to achieve data collection outcomes. ● Technical development of members of your team. ● Management of a wider supply chain to deliver a project.
UDG expectations – Fellow C.WEM potential elements	<ul style="list-style-type: none"> ● Lead on the resource management for your company (regionally or nationally) for a significant team size ● Lead on the programme management and or development of a multimillion pound (English) improvement project.

	<ul style="list-style-type: none"> • Support in the industry future guidance / policy documents that outline the future programmes of work.
<p>Additional guidance</p>	<p>General experience could be supported by additional qualifications in project delivery/project management from a recognised source, however this is not critical.</p> <ul style="list-style-type: none"> • Potential to support the growth and expansion of delivery teams through recruitment and team development activities. • Managing the 'remote team' within the current blend of office/WFH/Offshoring that is current practice across the industry. • Developing process efficiency tools to support project delivery within a technical context. • Training preparation and delivery to support technical growth of the team. • An understanding of the Contracts that are in place and projects are delivered under. • Report on the performance of project aspects to which you are contributing. Look at how you can help your company to deploy, monitor, control and organise people and resources to achieve a planned outcome • Corrective actions to remediate challenges to programme/budget. • Understanding scope change and managing this through compensation events or similar. • Workload planning and staff allocation ahead of time; • How you contribute to improving and /or maintaining the reputation and effectiveness of your employer or specific department within your employer's organisation, in the widest possible manner. This must include professional, technical and financial parameters of control. • Report on the performance of project aspects to which you are contributing both internally and to clients. • Secure effective resource allocation for activities and projects. • Recognise, interpret and apply appropriate employment regulations; • Undertake appropriate negotiation, conflict resolution and counselling where necessary; • Identify and review for effectiveness both work-place and off-site training needs and provision for skills extension; • Enhance performance and further staff abilities to adapt to new technology and changing requirements • Develop, implement, maintain and enhance effective team working relationships; giving clear and accurate instructions; identifying collective goals and responsibilities; promoting and typifying appropriate professional convictions

	<p>and attitudes; promoting the exchange of ideas; recognising the competence of others:</p> <ul style="list-style-type: none"> ● Be aware of and contribute, where possible, to corporate marketing strategies and the competitiveness/effectiveness of your organisation.
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3.8 C2 Understanding, promotion and application of Health, Safety and Wellbeing (HS&W)

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>Demonstrate an understanding of H&S legislation, corporate strategy and implications on all activities within urban drainage projects, from working within an office to construction on site.</p> <ul style="list-style-type: none"> ● This should cover all stages of a project from start-up to commissioning and completion. ● This also includes the work undertaken by contractors undertaking data collection on your behalf. ● The need for risk assessment, method statements and permits to work for site related activity and understand the need to have health and safety in mind when planning site activities and how they have been utilised on the projects you work on. ● How do you deal with H&S incidents within your workplace?
UDG expectations – Fellow C.WEM potential elements	<p>Experience in overseeing the Health, Safety and Wellbeing for a significant team size or for a large programme of investment improvements.</p> <p>Support in company reporting and investigating of safety incidents. Ensuring improvements from near miss elements etc are taken forward and embedded into the relevant workstream.</p>
Additional guidance	<p>General experience could be supported by additional qualifications in Health and Safety from a recognised source. This would be over and above standard induction type activities. An example may be IOSH Managing Safely.</p> <ul style="list-style-type: none"> ● How does the legislative framework influence practices in the working environment (policies, standards and systems). How does this then influence activities on projects? ● Demonstrate awareness of employers Health & Safety policy and procedures, or Health and Safety practices appropriate to all sectors of professional activity. ● How does CDM impact your specific projects? What is your understanding of CDM?

	<ul style="list-style-type: none"> ● Contribute to the development of safety guidelines, considering risk assessment, safe systems of work, control procedures and recovery methods. ● Assess and create safe systems and conditions, putting community safety at the forefront of consideration. ● Promote adherence to safety requirements. Investigate accidents and unsafe behaviour of individuals and the environment in which they work. ● Show awareness of your employer’s H&S policy and procedures, or the practices appropriate to aspects of your professional activity. ● Look at how you personally can adhere to safety requirements ● Contribute to/ prepare a H&S Plan; ● Create a site H&S plan; ● Carry out site inductions; <p>Your knowledge of personal health & safety requirements must be clearly defined, together with how this knowledge is incorporated, or has been developed from legislative, regulatory, codes of practice and the normal parameters that broadly equate to custom and practice. It is important to realise that health & safety covers all activities, even outside the working environment and in personal time. This is intended to prevent such activities having a detrimental impact upon subsequent or impending activities in the workplace. This general philosophy must be rolled out to all personnel under both your direct and indirect control. Safe working practices must be sacrosanct.</p> <p>Promote adherence to safety requirements. Investigate accidents and unsafe behaviour of individuals and the environment in which they work.</p> <p>Show your awareness of your employer’s health & safety policy and procedures, or the practices appropriate to aspects of your professional activity. Look at how you personally can promote adherence to safety requirements.</p> <p>Co-ordinate and control environmental safety and impact e.g. in respect of pollution control, biodiversity protection etc...</p>
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3.9 C3 Your contribution to sustainability

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	Understand the sustainability targets of your company, your clients and your sector. How does the work you are doing support those objectives?

	<ul style="list-style-type: none"> • Development of sustainable options (at various stages of confidence) as part of the catchment strategy to manage flooding, pollution and capacity. • Where possible, consider and design measures that are low in carbon and deliver other environmental and societal benefits. • Embed sustainable practice in your own personal life and ‘walk the walk’ wherever possible
<p>UDG expectations – Fellow C.WEM potential elements</p>	<p>Lead or significantly support on the enhancement or development of new sustainable improvement programmes within the industry. This can include wider guidance and policy improvements for a country or company or implementation of improvements covering wider regions of area.</p>
<p>Additional guidance</p>	<ul style="list-style-type: none"> • Co-ordinate and control environmental safety and impact e.g. in respect of pollution control, biodiversity protection etc. • Promote the wise use of non-renewable resources through waste minimisation, recycling and the development of alternatives whenever possible. • Strive to achieve the beneficial objectives of your work with the lowest possible consumption of raw materials, carbon and energy, and by adopting sustainable management practices. • Manage environmental performance through audit, reporting, evaluation, planning and monitoring. • Organising education/awareness raising activities e.g. road shows sharing good practice. • Look at how you have promoted the wise use of non-renewable resources through possible waste minimisation and recycling. Also, the benefits you may have observed through the lowest consumption of raw materials and energy and by the adoption of sustainable development practices • Assess contractors work against an EMP; • The sustainability of all activities (audit, reporting, evaluation, planning and monitoring) must be emphasised, especially those that impinge on environmental aspects. The widest possible linkages with the need to protect and enhance the environment must be considered and mentors must relate to this as a requirement not as a helpful adjunct to their role. • Identifying activities where a large amount of waste was being generated or environmental harm was being caused • Supporting changes in behaviour that result in X reduction of waste, and X reduction in consumption of resources. • Look at how you have promoted the wise use of non-renewable resources through possible waste minimisation and recycling also the benefits you may have observed by the lowest consumption of raw materials and energy and by the adoption of sustainable management practices.

3.10 C4 Understanding, promotion and application of quality enhancement and Quality assurance (QA)

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<p>Quality management is fundamental to any project within the urban drainage sector. It should be fundamental to all aspects of any type of data/model/intervention and the stages of their development.</p> <p>Demonstrate an understanding of quality management system (QMS) that your company has in place and how you follow its requirements as part of your project work, with suitable examples.</p> <ul style="list-style-type: none"> ● Adhere to the QMS with regards to technical processes. ● Undertake appropriate review and approval of technical procedures/calculations relating to projects you are completing. <p>ISO Standards at a national level, implemented within company systems delivered on your specific project.</p> <ul style="list-style-type: none"> ● Show awareness of any quality procedures your company may have in place, understand how they are applicable to all aspects of work undertaken and how you have implemented them within your own project work. ● Definitive references must be made to the need to understand why data collection is being planned, or where data is being collected, the importance of assessing the reliance and hence the quality of such data for use in specific circumstances. Not all data is suitable for such usage. This applies to direct use by oneself or by subordinates and colleagues for whom you are responsible. ● Contribute to the continuous improvement of quality management systems. ● Apply the appropriate quality procedures and assurance techniques. ● Foster the acceptance of quality management principles in colleagues to ensure that work is performed to the established standards. ● Undertake internal audits of activities against the requirements of the corporate quality management system.
UDG expectations – Fellow C.WEM potential elements	<ul style="list-style-type: none"> ● Lead on the enhancement or development of new audit processes for your company or client that impact multiple departments. ● Be responsible for processes going through strategic internal audits and external audits.

3.11 D1 Ability to communicate in English

Knowledge group	Competencies comments
UDG expectations – Chartered C.WEM expected elements	<ul style="list-style-type: none"> ● Active presentation of urban drainage projects to clients, stakeholders, colleagues and the public. This could incorporate technical and non-technical aspects of projects undertaken. ● Presentations at UDG events and the development of associated papers. ● Participation in workshops and knowledge sharing groups. ● Contributing content to UDG and CIWEM outputs, e.g. blogs, consultation responses, articles for The Environment.
UDG expectations – Fellow C.WEM potential elements	Further examples in communication including managing complex engagement between conflicting view points and demonstratable engagement in cross industry forums.
Additional guidance	<ul style="list-style-type: none"> ● Communicate with others, at all levels, both in your discipline and in other sectors. Share experiences, ideas and plans via presentation and discussion to achieve and implement a solution to a technical challenge. ● Set out problems factually, providing objective evidence, opinion and statement, so that they may be solved. ● Develop independence and integrity as the mainstay of your own personal conduct and judgement. ● Representing your company; Allowing others to benefit from your work; contribute to industry committees, panels. Work in compliance with company policies and standards; Communications (or even leading) a large project team, perhaps inter-disciplinary and including external members. Working on sensitive projects e.g. of high public concern/ media coverage; Understanding a client's needs/viewpoint (feedback forms); Understanding specific audience requirements and levels of understanding. ● Voluntary training, attend courses;

3.12 D2 Work professionally, ethically and comply with relevant codes of conduct

Knowledge group	Competencies comments
UDG expectations – Chartered & Fellow C.WEM expected elements	<ul style="list-style-type: none"> ● Working on Integrated Catchment Studies, Integrated Urban Drainage Studies which involve interaction with members of the public and/or stakeholders. ● Have attended and/or presented at public meetings to discuss project proposals or outcomes. ● Working with customers on any urban drainage initiatives.
Additional guidance	<ul style="list-style-type: none"> ● Familiarise and ensure compliance with CIWEM's Code of Conduct (and any other additional registration's Code (e.g. CEng) Demonstrate application of, promote and comply with professional ethics and codes of conduct in your work.

	<ul style="list-style-type: none"> • Ensure that those for whom you have responsibility comply with the required standards. • Abide by the legal liabilities and risks in contractual arrangements. • Try to give examples of situations where relevant codes and individual actions by stakeholders have fallen short of requisite standards of work and behaviour patterns and how these have been rectified, and/or mitigated. • Demonstrate application of, promote and comply with professional ethics and codes of conduct in your work and ensure that those for whom you have responsibility comply with the required standards
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3.13 E1 Demonstrate continuing professional development

Knowledge group	Competencies comments
UDG expectations – Chartered and Fellow C.WEM expected elements	<ul style="list-style-type: none"> • Maintenance of CPD record within personal Development Plan. Within the CPD record applicants should identify what they have learned and how they plan to apply any learning outcomes in their role. • Development of technical skills within Urban Drainage field and within wider team management, project management and behavioural skills areas. • Demonstrate achievement of UDG competencies and future development targets. • Be able to demonstrate you have a career plan moving forward as part of your professional review and development process.
Additional guidance	<p>Your understanding and willingness to foster and involve yourself in continuing professional development programmes by reading, mentoring, meetings and application of lessons learned is essential and must be displayed.</p> <p>Demonstrate a commitment to continued maintenance and improvement of knowledge, experience and skills via a personally developed CPD programme;</p> <ul style="list-style-type: none"> • Investigate needs and exploit opportunities for the transfer of technology within a particular industry or area of expertise, taking appropriate actions to secure the value of intellectual property; • Continually optimise and enhance existing technology, services, products, current practices and processes ensuring continuing fitness for use; • Apply and exploit the potential opportunities of emerging technology, products and processes and other relevant developments; • Assess, review and identify the potential impacts of these changes ensuring sound environmental use and continued quality.

3.14 E2 Discuss your commitment to CIWEM

Knowledge group	Competencies comments
UDG expectations – Chartered & Fellow C.WEM expected elements	<p>You will need to demonstrate a commitment to the Urban Drainage Group by supporting activities during your career. This could include</p> <ul style="list-style-type: none"> ● Attendance at UDG conferences and training days ● Present Papers at UDG events ● Actively contribute to UDG Workshops and training days ● Actively contribute to UDG research initiatives ● Promote the activities of the UDG within your organisation / Local Branch.
Additional guidance	<p>Continuing support of CIWEM activities is essential and evidence supplied of your intent to enhance this pathway into the future will be of benefit.</p> <p>Where possible demonstrate a commitment to the development of CIWEM by contributing to and presenting at local Branch meetings, presenting papers for publication in the Journal or contribution to the management of CIWEM by volunteering for involvement in the relevant technical panels or standing committees.</p> <ul style="list-style-type: none"> ● Actively contribute content ideas and content - e.g. blogs, articles. ● Actively participate in providing consultation responses and provide suggestions for thought leadership ● Support CIWEM Professional Development activities within the group and within local branches, enabling community members to achieve chartership. ● Support/Participate in your Companies Structured Training Programme ● Local Branch - Participate on a Branch Committee, New Members Group ● Organisation – Participate in Structured Training, Discussion Groups, Knowledge Sharing and assist colleagues with CIWEM applications. ● Provide evidence where possible of attendance at CIWEM events over your training period where there has been an urban drainage ● Serve on the UDG Committee or on the New Members Sub Group.

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