MODULE SHEET A

PH1: Drainage Systems (above ground)

OBJECTIVE:

Demonstrate the ability to apply above ground drainage guidance to provide designs for above ground foul and rainwater drainage systems, including:

i. The specification and production of designs from concept through to construction
ii. Provide advice regarding engineering options and associated requirements
iii. Understanding of the particular scope of works and interfaces with other designers

Demonstrate the ability to integrate above ground drainage designs into architectural designs.

Acquire a working knowledge of other disciplines to aid coordination between above ground foul and rainwater drainage and other disciplines during the design and construction process.

Develop problem-solving skills, including conducting appropriate research and the selection and development of appropriate design solutions.

TYPICAL ACTIVITES:

- Attendance at the CIBSE mid-career college 'Sanitary and Rainwater design using BS EN12056: 2000' course
- Self-study of relevant standards and guidance documents (but not limited to) Approved Document H - Drainage and Waste Disposal, BS EN 12056: 2000 – Code of practice for Gravity drainage systems inside buildings, BS 8490:2007 - Code of practice for Siphonic Rainwater systems, and CIBSE Guide G, Chartered Institute of Plumbing & Heating Engineers "Plumbing Design Guide" (Chapter 6 – Sanitary Plumbing & Drainage)
- Attendance at manufacturers' CPDs and familiarisation with associated products
- Completion of projects to demonstrate the use and understanding of the skills outlined above. This can be a single project or a combination of multiple projects
- Understanding and researching the differences between each type of above ground foul drainage system, i.e. primary ventilated, secondary ventilated systems, unventilated and ventilated branch discharge pipework configurations
- Understanding and researching the differences between each type of above ground rainwater disposal system, i.e. gravity system, syphonic system, and category of risk selection
- Completion of design calculations, schematics and system design

TYPICAL EVIDENCE RECORD:

None specific, refer to the competence module sheet.

TYPICAL COMPETENCE ASSESSMENT:

None specific, refer to the competence module sheet.

MODULE SHEET A

PH2: Drainage Systems (below ground)

OBJECTIVE:

Demonstrate the ability to apply below ground drainage guidance to provide designs for curtilage/ sub-structure drainage systems (as applicable to the project), including: -

i. The specification and production of designs from concept through to construction.
ii. Provide advice regarding engineering options and associated requirements.
iii. Understanding of own scope and interfaces with others.

Demonstrate the ability to introduce sustainable solutions to below ground drainage designs.

Develop problem solving skills, including conducting appropriate research and the selection and development of appropriate design solutions.

TYPICAL ACTIVITES:

- Attendance at the CIBSE mid-career college 'Building Drainage Explained' course.
- Self-study of relevant standards and guidance documents including Approved Document H Drainage and Waste Disposal, BS EN 752:2008 Code of practice for Drain & Sewer Systems Outside Buildings, Pollution Prevention Guides, CIRA SuDS Manual (C753) and CIBSE Guide G, Chartered Institute of Plumbing & Heating Engineers "Plumbing Design Guide" (Chapter 6 – Sanitary Plumbing & Drainage).
- Attendance at manufacturers' CPDs and familiarisation with associated products.

TYPICAL EVIDENCE RECORD:

None specific, refer to the competence module sheet.

TYPICAL COMPETENCE ASSESSMENT:

None specific, refer to the competence module sheet.

MODULE SHEET A

PH3: Hot and Cold Water Services

OBJECTIVE:

Demonstrate the ability to design hot and cold water service systems to achieve statutory compliance and water efficiency, including:

i. Understanding incoming water requirements and backflow/fluid categories
ii. Cold and hot water storage
iii. Water treatment and Legionella control
iv. Water demand, pipework design, sizing, flow and control of pressures
v. Types of hot water generators and safe water temperatures
vi. Solar hot water systems (Note: Not compulsory – only if suitable opportunities arise)

TYPICAL ACTIVITES:

- Attendance at CIBSE mid-career college 'Designing Water Efficient Hot & Cold Supplies'
- Self-study of relevant documents including (but not limited to) B5 8558, BS EN 806, The Institute of Plumbing 'Plumbing Design Guide' (Chapter 1 – Hot and cold water supplies), CIBSE Guide G 'Public Health and Plumbing Engineering' (Chapter 2 – Water services and utilities)
- Attendance at manufacturers' CPD events
- Attend technical review of projects/critiques with experienced engineers to understand common errors, mistakes and pitfalls.
- Technical evenings through SoPHE

TYPICAL EVIDENCE RECORD:

None specific, refer to the competence module sheet.

TYPICAL COMPETENCE ASSESSMENT:

None specific, refer to the competence module sheet.

MODULE SHEET A

PH4: Conservation and Sustainability

OBJECTIVE:

Demonstrate the ability to provide guidance on reclaimed water systems, including:

i. An understanding of the various types of reclaimed water systems and their appropriate application.
ii. Specific usages and benefits to a project
iii. Design constraint issues
iv. Methods of calculation for supply and demand
v. Basic understanding of BREEAM
vi. Sustainable Drainage Systems (SUDs) – A basic understanding of certain SUDs elements, which are located within a project's site boundary. This includes attenuation, flow control, rainwater harvesting and 'blue', 'green' and 'brown' roofs. This will not include large SUDs elements which will form part of the civils package (eg. swales, retention/detention ponds, etc.).

Demonstrate the ability to advise members of the team on reclaimed water systems and their positive and negative aspects specific to the project.

Acquire a working knowledge of the project and the scope of works when relating to systems that could be installed above or below ground.

TYPICAL ACTIVITES:

- Attend any reclaimed water system CIBSE seminars or CPD events
- Self-study the applicable codes of practices including (but not limited to) BS 8515: 2009 Rainwater Harvesting & BS 8525: 2010 – Greywater Harvesting
- Understanding and researching the differences between each type of reclaimed water system, ie rainwater, greywater, black water and borehole systems
- Understanding specific parts of BREEAM to provide advice on potential credits that can be awarded to any project when installing reclaimed water systems
- Completion of feasibility studies to confirm if reclaimed water systems are applicable to a project
- Completion of design calculations, schematics and system design

TYPICAL EVIDENCE RECORD:

None specific, refer to the competence module sheet.

TYPICAL COMPETENCE ASSESSMENT:

None specific, refer to the competence module sheet.