SUMPM10
Manage work activities and resources to meet building services engineering project requirements

Overview

This standard is for people who manage work activities and resources to meet building services engineering project requirements

The person carrying out this work must be able to assess project data, calculate resource requirements, and optimise use of resources. They will be able to select work methods, plan activities and communicate with relevant persons to minimise potential problems. They must also identify personnel required to complete the project, negotiate contracts as appropriate and brief members of the project workforce. They will be able to monitor the work of the project workforce and provide feedback to them on their performance.

Performance criteria

Plan work activities and resources

You must be able to:

P1 identify **project requirements**, including any use of **environmental technologies**, record them and advise **relevant person(s)**

P2 identify and/or obtain and assess available data and summarise it to enable decisions on **work activities** to be made

P3 identify and evaluate work methods that meet the **project** brief, approved **procedures**, **legal and regulatory requirements** and relevant **codes of practice**

P4 select and recommend to decision makers work methods which best meet the **project** brief

P5 prepare a method statement that is acceptable to all **relevant person(s)**

P6 prepare a risk assessment that is acceptable to all **relevant person(s)**

P7 determine the **resources** needed using **information** available, and obtain clarification and advice if the **resources** needed are not available

P8 determine how long each work activity will take, identify **work activities** which influence each other and sequence them to make best use of available **resources**

P9 plan and obtain **resources** which will meet the **project requirements** and schedule

P10 produce detailed plans for **work activities** which are consistent with approved **procedures** and the **project** brief

P11 identify **factors** which might compromise the proposed works, describe and summarise them, and advise **relevant person(s)**

P12 give accurate details about the proposed works to the utility companies and emergency services

P13 identify access points for the site which are the most convenient for works traffic and minimise disruption

P14 plan the site layout for operational purposes and pass on **information** about the plans to **operatives** and other **relevant persons**

P15 plan the storage and use of **equipment**, materials and **components** so that materials handling and movement is efficient and wastage is limited

P16 notify **relevant persons** about timing of work in line with contractual, **legal and**

regulatory requirements

P17 identify **relevant persons** who will be at the work location and plan the coordination of the **project**'s **requirements** with theirs

Select, form and brief a project team

You must be able to:

P18 identify the **operatives** and any **consultants** that are needed and where they can be obtained

P19 select **operatives** and if needed **consultants** who are available within agreed timescales and budget limits

P20 evaluate the quality and potential reliability of available **operatives** and any **consultants** and communicate the results to **relevant persons**

P21 follow approved **procedures** and **legal and regulatory requirements** to appoint **operatives** and any **consultants**

P22 negotiate contracts for **operatives** and/or **consultants** and confirm these in writing

P23 confirm and agree with the **relevant person(s)**

- P23.1 the scope of your **responsibilities** and to whom you should report
- P23.2 the deadlines and standards expected to be reached
- P23.3 the persons for whom you are responsible
- P23.4 which **operatives** are competent to operate plant and **equipment**

P24 inform those who report to you about their job **responsibilities** and limitations in a way which promotes good working relationships

P25 confirm that those who report to you understand the method statement(s) and risk assessment relevant to the **project** brief

P26 explain **project** activities and associated **information** in a manner that is understood by all members of the **project workforce**

P27 inform people who report to you that you will be monitoring their performance at work

P28 explain to the **project workforce** how they should address potential problems during the **project**

During a project

You must be able to:

P29 monitor the work of individuals within the **project workforce** in accordance with **procedures** and in a way which will:

- P29.1 obtain sufficient and reliable **information**
- P29.2 take account of operational constraints
- P29.3 provide opportunities to receive feedback

P30 identify workable solutions for any conflicts which impact upon productivity

P31 provide feedback to **relevant person(s)** on the overall **project** and its progress

P32 consult the **project workforce** for constructive suggestions to improve future performance

P33 identify opportunities to improve productivity and **information** flow

Knowledge and understanding

You need to know and understand:

K1 **project requirements** and sources of **information** about **project requirements**, including where appropriate **environmental technologies**

K2 methods to record and advise **relevant person(s)** about **project requirements**

K3 data that can be used to inform decisions on **work activities** and sources of such data

K4 work methods that make the best use of **resources** and which meet the **project** brief, approved **procedures**, **legal and regulatory requirements**, and relevant **codes of practice**

K5 **hazards**, **risks** and how to prepare a method statement to help minimise them

K6 the purpose and importance of risk assessments that are in accordance with the **project** brief and approved **procedures**

K7 **resources** and time needed to complete **work activities**

K8 sources of clarification and advice if **resources** needed are not available

K9 activities that influence each other and how they should be sequenced

K10 how to prepare plans for **work activities**

K11 **factors** that can compromise works

K12 **requirements** to pass **information** to appropriate authorities, including utility companies and emergency services, about the proposed works

K13 site access and layout **requirements** and how to minimise disruption

K14 **information relevant persons** need about site layout plans

K15 methods for safe storage and use of **equipment**, materials and **components**

K16 contractual, **legal and regulatory requirements** to notify **relevant persons** about timing of work

K17 how to coordinate **work activities**, to meet the **requirements** of the **project** and other individuals and organisations who will be at the work location

K18 **requirements** for **operatives** and any **consultants** to complete work activities

K19 how to evaluate the quality and potential reliability of **operatives** and **consultants**

K20 proposals for team membership which are likely to produce effective working relationships

K21 **procedures** for appointing **operatives** and **consultants**

K22 techniques for negotiating contracts

K23 the scope of your **responsibilities**, including to whom you should report and for whom you are responsible

K24 the deadlines and standards that you are expected to meet

K25 **responsibilities** and competences of any person(s) who report to you

K26 how to communicate **project** activities and **information** to all members of the **project workforce**

K27 **procedures** to address any problems arising during the **project**

K28 **procedures** in relation to discipline, basic industrial relations, and contractual agreements

K29 how to inform people reporting to you that their work performance will be monitored objectively in accordance with organisational **procedures**

K30 **procedures** to monitor the work of individuals, including to ensure compliance with **legal and regulatory** requirements, **industry standards** and **codes of practice**

K31 **information** needed when monitoring work, taking account of relevant constraints and **factors**, and providing opportunities for feedback

K32 workable solutions for any conflicts which impact upon productivity

K33 how and why to provide feedback to those who report to you on **project** progress

K34 how and why to consult the **project workforce** for constructive suggestions to improve future performance

K35 opportunities to improve productivity and **information** flow

Additional information

Scope related to performance criteria

1 **Requirements**

1.1 project (e.g. contractual, specification, brief, cost, purpose, location, schedule)

1.2 site (e.g. access, site conditions, occupancy)

1.2 social (e.g. user, client, near neighbours)

1.4 legal and good practice (e.g. environmental, health and safety, management of hazards and risks, codes of practice, legal and regulatory constraints, protection of property, consents for listed buildings and conservation areas, specified technical performance standards)

1.5 business

1.6 whole life (hand-over, durability, fault testing, maintenance replacement)

2 **Environmental technologies**

2.1 solar photo voltaic

2.2 solar thermal

2.3 heat pumps (air and ground source)

2.4 combined heat and power installations (CHP)

2.5 grey water recycling

2.6 rainwater harvesting

2.7 biomass

2.8 micro-wind turbine

2.9 micro hydro

3 **Relevant person(s)**

3.1 supervisor(s)/site manager(s)/contract manager(s)

3.2 other contractors/trades/consultants

3.3 health and safety officers/managers

4 **Procedures** which can apply within an organisation or on site

4.1 information management

4.2 project management

4.3 risk assessment and management

4.4 implementing and monitoring health & safety requirements
4.5 implementing and monitoring environmental requirements

5 **Legal and regulatory**

5.1 building regulations
5.2 health and safety regulations (including where appropriate specialist regulations related to gas, electricity, hazardous substances, lifting, manual handling, design, noise, provision and use of work equipment regulations, display screen at work regulations)
5.3 control of waste
5.4 data protection
5.5 customer/consumer rights
5.6 employment law (including equality)
5.7 listed buildings
5.8 conservation areas

6 **Information**

6.1 technical (design documentation, plans, installation specifications, equipment specifications, manufacturers' data, manufacturers' instructions, tender documents, surveys, BIM data, physical models)
6.2 client information (provided by the client including the invitation to tender, any drawings and specifications)
6.3 contractual
6.4 statutory consents
6.5 quotations
6.6 health and safety
6.7 planning and pre-planning
6.8 instructions (verbal, written)

7 **Resources**

7.1 labour
7.2 plant and equipment
7.3 finance
7.4 IT

7.5 materials and other consumables

8 **Factors**

8.1 physical (e.g. hydrology, geology, soil type, exposure, solar gain, light levels, temperature range, wind speed)

8.2 technical (e.g. resource availability, material and equipment performance, structural forms, component life, heating and cooling, health and safety, fire protection, access, transportation, traffic generation)

8.3 environmental (e.g. sustainability, energy use, local ecology, emissions, pollution risk)

8.4 requirements (e.g. client and user needs, regulatory, legal, timescales, BIM protocols, contractual, cost, management of hazards and risks)

9 **Operatives**

9.1 building services engineering operatives (plumbers, electricians, heating and ventilation engineers, refrigeration and air conditioning engineers)

9.2 other built environment operatives

10 **Consultants**

10.1 building services engineering consultants (e.g. design engineers, estimators)

10.2 other built environment consultants (e.g. architects, surveyors, planners)

10.3 none built environment consultants (e.g. accountants, lawyers, IT consultants, HR consultants)

11 **Equipment**

11.1 electrical

11.2 mechanical

11.3 software

11.4 hardware

12 **Components**

12.1 hot and cold water components (e.g. storage vessels, water heaters, valves, taps, pumps)

12.2 space heating components (e.g. boilers, calorifiers, heat emitters, heat exchanges, thermostats)

12.3 ventilation components (e.g. filters, fan, grilles, dampers, heat exchangers)

12.4 air conditioning components (e.g. air handling units, cooling towers, refrigeration units

12.5 fuel components (for gas, oil and/or solid fuel)

12.6 fire protection components (e.g. fire detection systems, sprinkler heads, drain taps)

12.7 steam components (e.g. steam traps, boiler feed pumps, condensate receivers and controls)

12.8 electrical (e.g. wiring/cables/conductors and enclosures, distribution boards and/or panels, control panels)

Range related to performance criteria

1 **Codes of practice** for

1.1 quality management

1.2 technical procedures

1.3 risk assessments

1.4 safety

1.5 environmental performance

2 **Responsibilities**

2.1 contractual

2.2 legal

2.3 social

2.4 environmental

Scope related to knowledge and understanding

1 **Requirements**

1.1 project (e.g. contractual, specification, brief, cost, purpose, location, schedule)

1.2 site (e.g. access, site conditions, occupancy)

1.2 social (e.g. user, client, near neighbours)

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4.2 plant and equipment

4.3 finance

4.4 IT

4.5 materials and other consumables

5 **Hazards**

5.1 site hazards (e.g. slip and trip hazards, extreme temperature, working at height, working in confined spaces, electricity, fire, flooding, erosion, corrosion)

5.2 equipment hazards (e.g. unguarded machines, poorly maintained machinery or equipment, improper use and storage of tools and equipment,

5.3 human hazards (e.g. human error, visitors)

5.4 hazardous substances (e.g. chemicals and other substances hazardous to health and/or the environment, gas, asbestos, dust, fumes)

5.5 vehicles

5.6 lifting

6 **Risks**

6.1 technical

6.2 financial

6.3 scheduling

6.4 environmental

6.5 social

6.6 legal

6.7 contractual

6.8 health and safety

7 **Factors**

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7.2 technical (e.g. health and safety, fire protection, access, equipment performance, transportation, traffic generation)

7.3 environmental (sustainability, energy use, local ecology, emissions, pollution risk)

7.4 requirements (client and user needs, regulatory, legal, timescales, BIM protocols, contractual, cost, management of hazards and risks)

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2.3 risk assessment

2.4 risk management

2.5 implementing and monitoring health & safety requirements

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3.3 control of waste

3.4 data protection

3.5 customer/consumer rights

3.6 planning

3.7 recycling

3.8 employment law (including equality)

3.9 listed buildings

3.10 conservation areas

4 **Industry standards**

4.1 building regulations

4.2 British Standards

4.3 EU standards

4.4 manufacturers' instructions

4.5 BIM protocols (where appropriate)

4.6 competence/skills card schemes

5 **Codes of practice** for

5.1 quality management

5.2 technical procedures

5.3 risk assessments

5.4 safety

5.5 environmental performance

6 **Responsibilities**

6.1 contractual

6.2 legal

6.3 social

6.4 environmental

Glossary

Work activities

Work in progress, response to changed circumstances, work that affects others.

Project

This relates to a plan of work activities and responsibilities that the project workforce must achieve in order to meet the demands required of them for the undertaking as a whole. It is likely that the same project may involve operatives from a number of different trades who will interact or impact on the work of the building services engineering workforce.

Workforce

The persons who are undertaking activities within the project and work under your direction and authority.

External Links

Links correct at time of NOS approval:

- Health & Safety Executive Documents http://www.hse.gov.uk/pubns
- The quality of buildings and building work in England https://www.gov.uk/government/policies/providing-effective-building-regulations-so-that-new-and-altered-buildings-are-safe-accessible-and-efficient
- The quality of buildings and building work in Wales http://wales.gov.uk/topics/planning/buildingregs/?lang=en
- The quality of buildings and building work in Northern Ireland www.buildingcontrol-ni.com/
- The quality of buildings and building work in Scotland http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards
- British Standard 7671: – Requirements for Electrical Installations http://www.theiet.org/resources/wiring-regulations/
- Carriage of dangerous goods authorisations https://www.gov.uk/government/publications/carriage-of-dangerous-goods-authorisations
- The requirements and information on microgeneration https://www.gov.uk/government/publications/microgeneration-strategy
- Refrigeration and Air Conditioning Standards http://www.iso.org/iso/home/store/catalogue_tc/catalogue_tc_browse.htm?commid=

50356

- F-Gas guidance - https://www.gov.uk/managing-fluorinated-gases-and-ozone-depleting-substances
- BRA Jointing of Copper Pipework Guide http://www.feta.co.uk/associations/bra/downloads
- Waste Electrical and Electronic Equipment recycling (WEEE): www.hse.gov.uk/waste/waste-electrical.htm
- Control of Substances Hazardous to Health (COSHH): www.hse.gov.uk/coshh
- Construction (Design and Management) Regulations: http://www.hse.gov.uk/construction/cdm.htm

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Validity	Current
Status	Original
Originating organisation	SummitSkills
Original URN	STE9/10 and EVTS13/14/16
Relevant occupations	Building Services Engineering Technician; Supervisor; Team Leader; Project Manager; Managers; Owner/Manager; Contract Manager; Air conditioning and Refrigeration Engineers; Electricians; Heating and Ventilation Engineers; Plumbers; Plumbing
Suite	Building Services Engineering Technology & Project Management
Key words	health and safety; building services engineering; project management; supervision