

Overview

This unit is about preparing method statements, programmes and schedules and calculating resource requirements and monitoring progress and dealing with deviations from plans.

You will need to assess data, obtaining more if necessary and analyse and assess work methods and produce a method statement. You will need to identify activities, calculate the resources and time requirements, analyse the activities and produce activity programmes and schedules.

You will need to implement monitoring systems, identify deviations from plans and, following investigation, implement appropriate corrective action. You will need to regularly inform decision makers regarding progress and identify, and recommend possible improvements.

Performance criteria

You must be able to:

Assess and identify work methods

- P1 assess the available **project data** accurately and summarise it to enable decisions on **construction, installation and work methods** to be made
- P2 obtain more information from **alternative sources** in cases where the available **project data** is insufficient
- P3 identify with site personnel any **special considerations**, record them and pass them onto people who may be affected
- P4 assess the selected **work methods** against relevant **technical** and **project criteria** and identify the one which best meets the **criteria**
- P5 **analyse** the **method** which has been selected for its activity content and quantify it accurately
- P6 prepare a **method statement** which is accurate, clear, concise and acceptable to all the people involved

Develop project programming and resourcing

You must be able to:

- P7 identify major activities, calculating the **resources** needed from the information available and prepare a draft work **programme**
- P8 develop schedules to procure **resources**
- P9 obtain **clarification and advice** where the resources needed are not available
- P10 calculate how long each activity will take, identify activities which influence each other and sequence them logically and realistically so that they make the best use of the **resources** available
- P11 **analyse** the sequential programming of activities against **technical and project requirements** and the necessary **resources**
- P12 **produce** detailed **programmes and schedules** of planned activities which are consistent with the complexity of the project
- P13 identify alterations to the works **programme** which will meet changed circumstances or offer cost and time benefits, calculate the savings accurately and justify them to decision makers
- P14 implement a system for monitoring the works **programme** and use the results to improve future production and planning

Monitor project progress against agreed programmes

You must be able to:

- P15 implement **systems to monitor and record** the progress of the contract against the agreed **programmes**, and collect information regularly and summarise it accurately
- P16 identify and **quantify** any variations and deviations from planned progress which have occurred, or which may occur, and which could disrupt the **programme**

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Assess, plan and monitor project methods and progress in construction



Performance criteria

- P17 investigate the **circumstances** of any variations thoroughly and report to line manager
- P18 suggest options which are most likely to minimise increases in cost and time and help the contract progress, and pass these on to line manager
- P19 **revise** programme to accommodate new **circumstances**

Knowledge and understanding

You need to know and understand:

Assess and identify work methods

- K1 how to summarise **project data** (application)
- K2 how and why to assess the available **project data** (analysis)
- K3 how and why to recommend the selected **work methods** (synthesis)
- K4 how and why to prepare a method statement (synthesis)
- K5 how to obtain more information from **alternative sources** in cases where the available **project data** is insufficient (application)
- K6 how and why to assess the selected **methods** against relevant **technical** and **project criteria** and identify the method which best meets the **criteria** (evaluation)
- K7 how and why to **analyse** and quantify the **method** which has been selected for its activity content (analysis)

Develop project programming and resourcing

You need to know and understand:

- K8 what to identify as major activities (understanding)
- K9 how to calculate the **resources** needed from the information available (application)
- K10 how to prepare a draft work **programme** (application)
- K11 how to obtain **clarification and advice** where the **resources** needed are not available (application)
- K12 how to calculate how long each activity will take and sequence activities (application)
- K13 which activities to you identify as influencing each other (understanding)
- K14 how and why to **analyse** the sequential programming of activities against **technical and project requirements** (analysis)
- K15 how to **produce** detailed **programmes and schedules** of planned activities (application)
- K16 what alterations to the work **programme** do you identify which will meet changed circumstances or offer cost and time benefits (understanding)
- K17 how to calculate the savings resulting from alterations to the work **programme** (application)
- K18 how and why to justify to decision makers the savings resulting from alterations to the work **programme** (evaluation)
- K19 how to implement a system for monitoring the works **programme** (application)
- K20 how to use the results of monitoring to improve future production and planning (application)

Knowledge and understanding

You need to know and understand:

Monitor project progress against agreed programmes

- K21 how to implement **systems to monitor and record** the progress of the contract against the agreed **programmes**, and collect and summarise information (application)
- K22 what to identify as any variations and deviations from planned progress which have occurred, or which may occur, and which could disrupt the **programme** (understanding)
- K23 how and why to **quantify** any variations and deviations from planned progress which could disrupt the **programme** (analysis)
- K24 how and why to investigate the **circumstances** of any variations (analysis)
- K25 how to report variations and **circumstances** to line manager (application)
- K26 how to suggest options which are most likely to minimise increases in cost and time and help the contract progress and pass them to line manager (application)
- K27 how to **revise** programme to accommodate new **circumstances** (application)

Scope/range

Assess and identify work methods

- 1 Project data:
 - 1.1 conditions of contract
 - 1.2 bills of quantities
 - 1.3 specifications
 - 1.4 detailed drawings
 - 1.5 health and safety plans
 - 1.6 time-scales
 - 1.7 contractual risks, obligations and scope of works
- 2 Construction, installation and work methods:
 - 2.1 sequencing of work and integration of work operations
 - 2.2 organisation of resources (people, plant, materials, finance)
 - 2.3 construction and installation techniques
 - 2.4 temporary works
 - 2.5 prefabrication and standardisation (volumetric pods, panelised hybrid)
 - 2.6 health, safety and welfare
 - 2.7 new materials and technologies
- 3 Alternative sources:
 - 3.1 the client
 - 3.2 consultants
 - 3.3 contractors
 - 3.4 sub-contractors
 - 3.5 suppliers
 - 3.6 regulatory authorities
 - 3.7 technical literature
 - 3.8 trade literature
 - 3.9 organisational expertise
- 4 Identify work methods:
 - 4.1 standard lists and procedures
 - 4.2 investigative research
- 5 Technical and project criteria:
 - 5.1 materials & component performance and availability
 - 5.2 structural forms

Scope/range

- 5.3 phased occupancy
- 5.4 fire protection
- 5.5 access
- 5.6 plant, equipment & people capability
- 5.7 traffic generation and management
- 5.8 environmental factors
- 5.9 transportation
- 5.10 waste and sustainability
- 5.11 seasonal weather conditions
- 5.12 buildability
- 5.13 value engineering
- 5.14 protection of archaeological and historically valuable resources
- 5.15 third party obligations
- 5.16 other related programmes
- 5.17 community benefits, including skills and training
- 6 Analyse:
 - 6.1 method study
 - 6.2 work study
 - 6.3 production analysis
 - 6.4 benchmarking

Develop project programming and resourcing

- 7 Resources:
 - 7.1 people
 - 7.2 plant and equipment
 - 7.3 materials and components
 - 7.4 sub-contractors
 - 7.5 information
- 8 Programmes and schedules:
 - 8.1 bar charts
 - 8.2 network analysis
 - 8.3 critical path
 - 8.4 time change

Scope/range

- 8.5 action lists
- 8.6 method statements
- 9 Clarification and advice - from:
 - 9.1 the client/client's representative
 - 9.2 consultants
 - 9.3 project team partners
 - 9.4 practice research
 - 9.5 technical publications
 - 9.6 trade literature
 - 9.7 management
- 10 Analyse - using:
 - 10.1 method study
 - 10.2 work study
 - 10.3 production analysis
- 11 Technical and project requirements:
 - 11.1 materials & component performance and availability
 - 11.2 structural forms
 - 11.3 phased occupancy
 - 11.4 fire protection
 - 11.5 access
 - 11.6 plant, equipment & people capability
 - 11.7 traffic generation and management
 - 11.8 environmental factors
 - 11.9 transportation
 - 11.10 waste and sustainability
 - 11.11 seasonal weather conditions
 - 11.12 buildability
 - 11.13 value engineering
 - 11.14 protection of archaeological and historically valuable resources
 - 11.15 third party obligations
 - 11.16 other related programmes
 - 11.17 community benefits, including skills and training
- 12 Produce:

Scope/range

- 12.1 manually
- 12.2 electronically

Monitor project progress against agreed programmes

- 13 Systems to monitor and record:
 - 13.1 visual inspection
 - 13.2 resource records
 - 13.3 site inspection reports
 - 13.4 contractors' reports
 - 13.5 certified payments
 - 13.6 written and graphical records of actual work against programmed work
 - 13.7 site meetings
 - 13.8 key performance indicators
 - 13.9 organisational procedures
 - 13.10 management reports
 - 13.11 benchmarks
- 14 Programmes:
 - 14.1 bar charts
 - 14.2 network analysis
 - 14.3 critical path
 - 14.4 time change
 - 14.5 action lists
 - 14.6 method statements
 - 14.7 project expenditure forecasts
- 15 Resources:
 - 15.1 people
 - 15.2 plant and equipment
 - 15.3 materials and components
 - 15.4 finance
 - 15.5 time
 - 15.6 specialist services
 - 15.7 public utility services
 - 15.8 information

Scope/range

- 16 Quantify:
 - 16.1 method study
 - 16.2 work study
 - 16.3 production analysis
 - 16.4 cost implication
- 17 Circumstances:
 - 17.1 resource shortages
 - 17.2 design problems and constraints
 - 17.3 industrial disputes
 - 17.4 lack of essential construction information
 - 17.5 construction errors
 - 17.6 inclement weather
 - 17.7 physical constraints
 - 17.8 legal
 - 17.9 environmental
 - 17.10 contract variations
 - 17.11 force majeure
- 18 Revise:
 - 18.1 revise programme
 - 18.2 agree new completion dates
 - 18.3 initiate contract claim

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