

Direct the control of project delivery against design

Overview

This unit applies to senior designers who go onto site. You will need to ensure that quality management systems are established and implemented for project work. You must be able to show how these systems work, and how they benefit design projects when used. It is about working to programmes. You must have knowledge of planning and programming theory, and be able to show how your programming systems have led to successful delivery of the design project.

It is about monitoring design project costs. You must know about cost control systems and procedures, and show how the application of such systems has successfully controlled expenditure. This process will include exploring opportunities for cost savings.

Performance criteria

You must be able to:

Monitor design projects against quality standards

- 1 ensure that quality standards and guidance are identified and interpreted from available information and passed to people responsible for their implementation, before they start work
- 2 specify, clearly and unambiguously, the responsibilities which individuals have for maintaining quality standards and guidance
- 3 ensure the establishment and implementation of quality management systems for project work
- 4 inform decision makers regularly about significant variations in quality standards and guidance, programme and safety implications, and suggest the decisions which they need to make and actions they need to take
- 5 identify specifications which conflict with legal requirements and refer them to decision makers for modification
- 6 identify improvements from feedback received and recommend them to decision makers
- 7 agree amendments to the contract quality requirements and specifications and record them accurately

Monitor design project progress against programmes

- 8 develop and implement systems to monitor and record the progress of the project against the programmes
- 9 ensure that information is collected regularly and summarised
- 10 identify inadequately and inappropriately specified resources and specify and obtain alternative resources
- 11 identify and quantify any deviations from planned progress which have occurred, or which may occur, and which could disrupt the programme
- 12 investigate the circumstances of any deviations thoroughly and agree and implement appropriate corrective action
- 13 select options which are most likely to minimise increases in cost and time and help the contract progress whilst maintaining quality
- 14 regularly inform relevant people about progress, changes to the operational programme, resource needs, and agree the decisions and actions that need to be taken
- 15 review feedback received and make decisions on improvements

Monitor design project costs

- 16 develop and implement appropriate project cost control systems which are

able to provide early warning of problems

17 ensure that quantities and cost data are collected regularly

18 ensure that correct work values and quantities and cost data are calculated from estimates of work quantity and payment rates

19 identify variations and trends in quantities and cost data

20 investigate any variations thoroughly and agree and implement appropriate corrective action which will restore costs and expenditure to budget

21 develop and implement systems and processes for identifying opportunities for cost savings

22 identify realistic opportunities for cost savings and agree them with other parties to the project

Knowledge and understanding

You need to know and understand:

Monitor design projects against quality standards

- 1 how to ensure that quality standards and guidance are identified and interpreted from available information and passed to people responsible for their implementation, before they start work (application)
- 2 how and why to specify, clearly and unambiguously, the responsibilities which individuals have for maintaining quality standards and guidance (evaluation)
- 3 how to ensure the establishment and implementation of quality management systems for project work (application)
- 4 how to inform decision makers regularly about significant variations in quality standards and guidance, programme and safety implications (application)
- 5 how and why to suggest the decisions and actions that need to be taken by decision makers (synthesis)
- 6 what to identify as specifications which conflict with legal requirements and refer them to decision makers for modification (understanding)
- 7 how and why to refer specifications which conflict with legal requirements to decision makers for modification (application)
- 8 what to identify as improvements from feedback received (understanding)
- 9 how and why to recommend improvements them to decision makers (synthesis)
- 10 how and why to agree amendments to the contract quality requirements and specifications (evaluation)
- 11 how to record amendments to the contract quality requirements and specifications (application)

Monitor design project progress against programmes

- 12 how to implement systems to monitor and record the progress of the project against the programmes, and collect and summarise information (application)
- 13 how and why to develop systems to monitor and record the progress of the project against the programmes (synthesis)
- 14 what to identify as inadequately and inappropriately specified resources (understanding)
- 15 how to obtain alternative resources (application)
- 16 how and why to specify alternative resources (evaluation)
- 17 what to identify as any deviations from planned progress which have occurred, or which may occur, and which could disrupt the programme

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(understanding)

18 how and why to quantify any deviations from planned progress (analysis)

19 how and why to investigate the circumstances of any deviations (analysis)

20 how and why to agree appropriate corrective action (evaluation)

21 how to implement corrective action (application)

22 how and why to select options which are most likely to minimise increases in cost and time and help the contract progress whilst maintaining quality

(synthesis)

23 how and why to agree corrective action in circumstances of any deviations (evaluation)

24 how to regularly inform relevant people about progress, changes to the operational programme, and resource needs (application)

25 how and why to agree the decisions and actions that need to be taken (evaluation)

26 how and why to review feedback received (synthesis)

27 how and why to make decisions on improvements (evaluation)

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28 how and why to develop appropriate project cost control systems which are able to provide early warning of problem (synthesis)

29 how to implement appropriate project cost control systems which are able to provide early warning of problems (application)

30 how to ensure that quantities and cost data are collected regularly (application)

31 how to ensure that correct work values and quantities and cost data are calculated from estimates of work quantity and payment rates (application)

32 what to identify as variations and trends in quantities and cost data (understanding)

33 how and why to investigate any variations (analysis)

34 how and why to agree appropriate corrective action which will restore costs and expenditure to budget (evaluation)

35 how to implement appropriate corrective action which will restore costs and expenditure to budget (application)

36 how and why to develop systems and processes for identifying opportunities for cost savings (application)

37 how to implement systems and processes for identifying opportunities for cost savings (application)

38 what to identify as realistic opportunities for cost saving (understanding)

39 how and why to agree realistic opportunities for cost savings with other

parties (evaluation)

Scope/range

Monitor design projects against quality standards

1 Quality standards and guidance:

- 1.1 statutory requirements
- 1.2 project specifications
- 1.3 British Standards
- 1.4 International Standards
- 1.5 Codes of Practice
- 1.6 certification and accreditation of products, systems & personnel
- 1.7 organisation standards
- 1.8 trade advisory guidance and best practice
- 1.9 benchmarks
- 1.10 setting out information
- 1.11 dimensional control criteria
- 1.12 cultural significance
- 1.13 structural integrity

2 People responsible:

- 2.1 the client
- 2.2 contractors
- 2.3 consultants
- 2.4 sub-contractors
- 2.5 suppliers
- 2.6 workforce
- 2.7 internal management

3 Work:

- 3.1 materials and components and their use
- 3.2 methods of construction
- 3.3 methods of alteration, adaptation and refurbishment
- 3.4 methods of maintenance, repair and preservation

4 Quality management systems:

- 4.1 selection
- 4.2 establishment
- 4.3 monitoring
- 4.4 improvement

Monitor design project progress against programmes

5 Systems to monitor and record:

- 5.1 inspection and testing
- 5.2 resource records
- 5.3 site inspection reports
- 5.4 contractors' reports
- 5.5 certified payments
- 5.6 written, graphical and electronic records of actual work against programmed work
- 5.7 meetings
- 5.8 organisational procedures
- 5.9 management reports
- 5.10 benchmarks
- 5.11 comparison with project requirements
- 5.12 supply chain management

6 Programmes:

- 6.1 digital timeline model
- 6.2 bar chart
- 6.3 network analysis
- 6.4 critical path
- 6.5 line of balance
- 6.6 time chainage
- 6.7 action lists
- 6.8 method statements
- 6.9 check costs
- 6.10 control systems
- 6.11 as built programme
- 6.12 project expenditure forecasts

7 Resources:

- 7.1 people
- 7.2 plant and equipment
- 7.3 materials and components
- 7.4 finance
- 7.5 time
- 7.6 specialist services
- 7.7 utility services
- 7.8 information

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8 Quantify:

- 8.1 method study
- 8.2 work study
- 8.3 production analysis
- 8.4 cost implication

9 Deviations:

- 9.1 resource shortages
- 9.2 design problems and constraints
- 9.3 industrial disputes
- 9.4 lack of essential construction information
- 9.5 errors
- 9.6 weather conditions
- 9.7 physical constraints
- 9.8 legal
- 9.9 environmental
- 9.10 contract variations
- 9.11 force majeure

10 Corrective action:

- 10.1 restore progress in accordance with agreed programme
- 10.2 agree new completion dates
- 10.3 initiate contract claim
- 10.4 securing additional resources
- 10.5 alter planned work
- 10.6 incentive schemes
- 10.7 agreeing additional costs
- 10.8 changing suppliers
- 10.9 carrying out a value engineering exercise
- 10.10 regulating expenditure to conform with budgets
- 10.11 making a contract claim

11 Relevant people:

- 11.1 the client
- 11.2 contractors
- 11.3 sub-contractors
- 11.4 consultants
- 11.5 suppliers
- 11.6 workforce
- 11.7 internal management

Monitor design project costs

12 Project cost control systems:

- 12.1 contractual procedures and meetings
- 12.2 operational procedures and meetings
- 12.3 open book accounting
- 12.4 electronic recording

13 Quantities and cost data:

- 13.1 materials and quantities
- 13.2 plant & equipment
- 13.3 people
- 13.4 sub-contractors
- 13.5 dayworks
- 13.6 variations
- 13.7 indirect costs
- 13.8 final accounts
- 13.9 periodic valuations
- 13.10 retention sums
- 13.11 forecasts of expenditure
- 13.12 performance information
- 13.13 contract programme and progress

14 Corrective action:

- 14.1 regulating expenditure to conform with budgets
- 14.2 agreeing additional costs
- 14.3 making a contract claim

15 Opportunities for cost saving:

- 15.1 increase productivity
- 15.2 waste reduction and management
- 15.3 modify project management systems
- 15.4 resource management and logistics
- 15.5 application of new technologies and materials
- 15.6 energy management
- 15.7 water management
- 15.8 recycling/reusing materials and resources
- 15.9 alternative sources and types of materials
- 15.10 reduce plant and labour resource
- 15.11 variations in quality
- 15.12 standardisation
- 15.13 value engineering

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15.14 apply lean construction principles

15.15 design out waste

15.16 lean manufacturing principles

15.17 offsite construction

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Developed by Construction Skills

Version Number 2

Date Approved December 2014

Indicative Review Date November 2019

Validity Current

Status Original

Originating Organisation Construction Skills

Original URN COSBEDPO07

Relevant Occupations Architects; Architectural Technologists; Architecture; Civil engineers; Construction Project Manager and Related Professions; Production Managers and Directors in Construction; Managers in construction; Associate Professionals and Technical Occupations

Suite Built Environment Design and Consultancy Practice

Keywords Contract; progress; costs; quality; programmes; schedules; projects
