EUSUND3

Evaluate designs for utility networks

Overview

This standard is about evaluating designs for utility networks. As part of the design process, this may well be carried out by the designer who is producing design options before finalising designs.

It requires developing evaluation criteria, using them to measure the designs' effectiveness against the design brief, identifying viable changes and presenting results.

This standard is for utility network designers.

Performance criteria

You must be able to:

1. obtain accurate information about designs from the design brief, and other technical, specialist, and supplier sources in line with organisational procedures
2. verify that designs meet the design brief before commencing evaluation
3. establish evaluation criteria which enable clear evaluation of chosen technology, functionality, performance, practicality, lifespan and future network requirements, together with quality and cost
4. establish evaluation criteria which enable clear evaluation of implementation timescales, the ease of implementation, and the ease and cost of maintenance
5. establish evaluation criteria which enable clear evaluation of conformity with health and safety, environmental, organisational, and industry standards
6. assess designs against evaluation criteria using methods that are robust and can be justified, identifying clear information about the strengths and weaknesses of each
7. identify viable options for changes and improvements to designs while still meeting the design brief
8. present the results of evaluations and its outcomes to the people involved in a manner and format suitable to the design project and in line with organisational procedures
9. support design options with a risk register when required

Knowledge and understanding

You need to know and understand:

1. utility network engineering principles and processes that apply to the network being designed
2. engineering design principles and processes, including design data from the latest versions of standards
3. different evaluation methods and when to use each method
4. legislative requirements for health and safety, the environment and the network being designed
5. standards, directives, industry guidelines, organisational procedures, systems and manuals, operating parameters and working practices appropriate to the network being designed
6. the effects that emerging technology and environmental considerations have on network design and how to keep abreast of those changes
7. presentation methods and when to use each method
8. the methods that could be used for obtaining information on a design
9. how and when to use simulation, digital modelling, pilot trial, and prototype assessment for evaluating a design against technical and environmental, financial, and organisational criteria
10. how to use the information from relevant sources including, but not restricted to, feasibility studies, population density, environmental surveys and examinations of mining, archaeology, sites of special scientific interest, ancient monuments, and areas of outstanding natural beauty
11. evaluation techniques and how to identify and establish evaluation criteria for technical and environmental considerations including the technology, functionality, performance, practicality, lifespan and upgradability, together with quality and cost
12. evaluation techniques and how to identify and establish evaluation criteria for implementation timescales, the ease of implementation, and the ease and cost of maintenance
13. evaluation techniques and how to identify and establish evaluation criteria for conformity with health and safety, environmental and organisation and industry standards
14. sources of information for a design and how and where to find them
15. how to determine who should be involved in the evaluation process
16. the methods that could be used for verifying different types of result

17. the type of impact the evaluation could have on the organisation
18. how to determine who requires information on evaluations, and the procedures for informing them
19. types of recommendation that could emerge from evaluations
20. how to identify options for adaptions to designs to better meet stakeholder parameters or the design brief
21. a range of techniques for presenting recommendations

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