

# **Temporary works training course**

## **Workbook**

**Study notes for temporary works training course trainees**



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### **Study notes for temporary works training course trainees**

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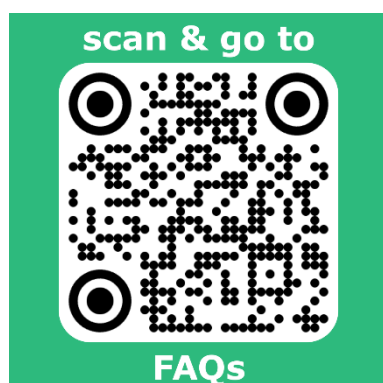
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|                                   |    |
|-----------------------------------|----|
| Your details                      | 5  |
| About this workbook               | 7  |
| Keynote guide                     | 9  |
| Keynotes                          | 11 |
| Exercise 1 - Case study 1         | 27 |
| Exercise 2 - Hazards and controls | 29 |
| Exercise 3 - Case study 2         | 31 |
| Exercise 4 - The design brief     | 33 |
| Exercise 5 - Table 1 and 2        | 39 |
| Exercise 6 - Who is responsible   | 41 |
| Annex A - Loddon Bridge           | 43 |
| Annex B - DI duties               | 47 |
| Annex C - PC TWC duties           | 49 |
| Annex D - TWC duties              | 51 |
| Annex E - TWS duties              | 53 |

[Frequently asked questions](#)

[Terms and definitions](#)

[Further reading](#)





Please complete your details below. This can be used for future reference if you need to contact your training provider, or the awarding organisation, in the future.

In addition, please let your training provider and tutor know if you have any learning needs, or difficulty, such as dyslexia, dyspraxia, dyscalculia, and ADHD, or any other requirements during your training course.

|                                                                                                                                                                                                                                       |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| What is your company name?                                                                                                                                                                                                            |             |
| What is your job role?                                                                                                                                                                                                                |             |
| What course are you attending?                                                                                                                                                                                                        |             |
| What is the course start date?                                                                                                                                                                                                        |             |
| What is the course number?                                                                                                                                                                                                            |             |
| Where is the training location?                                                                                                                                                                                                       |             |
| Who booked the course for you?                                                                                                                                                                                                        |             |
| What are your bookers contact details?                                                                                                                                                                                                | Email: Tel: |
| Who is the training provider?                                                                                                                                                                                                         |             |
| What are the training providers contact details?                                                                                                                                                                                      | Email: Tel: |
| What is the tutor's name?                                                                                                                                                                                                             |             |
| What are the tutor contact details?                                                                                                                                                                                                   | Email: Tel: |
| <p>What are <b>your objectives</b> for attending this training course?</p> <p>At the end of the course, you will be asked whether your objectives were met. If not, you can leave feedback with your training provider and tutor.</p> |             |



This workbook provides study material for those attending temporary works training courses either in-house or CITB accredited. It includes a range of tutor-guided questions, exercises and case studies to assist in your learning.

It follows CITB's scheme of works, and the training course syllabus covering all learning outcomes for temporary works coordinator training course (TWCTC) and refresher (TWCTCR) and temporary works supervisor training course (TWSTC). It covers all CITB's mandatory and optional exercises for all temporary works training courses. To be eligible for the final exam you must complete all mandatory exercises and complete all questions.

Your tutor will present questions to you during your course. You may complete these questions during your course, at the end of each module, or as instructed by your tutor. You may also use this guide completing all questions to assist with pre-course, or exam, preparation.



You should complete the questions listed in the table below related to the temporary works training course you are attending by answering the questions marked as 'Yes'. The questions are keynotes to achieve learning outcomes for your course. Click [here](#) to check your answers.

| Question | TWCTC | TWCTCR | TWSTC | Topic                       |
|----------|-------|--------|-------|-----------------------------|
| 1        |       |        | Yes   | Introducing temporary works |
| 2        |       |        | Yes   |                             |
| 3        | Yes   |        | Yes   |                             |
| 4        |       |        | Yes   |                             |
| 5        | Yes   | Yes    | Yes   |                             |
| 6        |       |        | Yes   |                             |
| 7        | Yes   | Yes    |       |                             |
| 8        | Yes   | Yes    | Yes   |                             |
| 9        |       |        | Yes   | Law and guidance            |
| 10       |       |        | Yes   |                             |
| 11       | Yes   | Yes    | Yes   |                             |
| 12       |       |        |       |                             |
| 13       | Yes   | Yes    |       |                             |
| 14       | Yes   |        | Yes   |                             |
| 15       | Yes   | Yes    | Yes   |                             |
| 16       | Yes   |        |       | Organising temporary works  |
| 17       | Yes   | Yes    | Yes   |                             |
| 18       | Yes   | Yes    |       |                             |
| 19       | Yes   | Yes    |       |                             |
| 20       |       |        | Yes   |                             |
| 21       | Yes   | Yes    | Yes   |                             |
| 22       | Yes   | Yes    |       |                             |
| 23       |       |        | Yes   |                             |
| 24       | Yes   | Yes    |       | Planning temporary works    |
| 25       | Yes   | Yes    | Yes   |                             |
| 26       |       |        |       |                             |
| 27       | Yes   |        |       |                             |
| 28       |       |        | Yes   |                             |

## Keynote Guide

| Question | TWCTC | TWCTCR | TWSTC | Topic                        |
|----------|-------|--------|-------|------------------------------|
| 29       | Yes   | Yes    |       | Designing temporary works    |
| 30       | Yes   | Yes    |       |                              |
| 31       |       |        | Yes   |                              |
| 32       | Yes   | Yes    |       |                              |
| 33       | Yes   | Yes    | Yes   |                              |
| 34       | Yes   | Yes    | Yes   |                              |
| 35       |       | Yes    |       |                              |
| 36       | Yes   |        |       |                              |
| 37       | Yes   | Yes    |       | Implementing temporary works |
| 38       |       |        |       |                              |
| 39       |       |        | Yes   |                              |
| 40       | Yes   | Yes    |       |                              |
| 41       |       |        | Yes   |                              |
| 42       | Yes   | Yes    |       |                              |
| 43       | Yes   | Yes    | Yes   |                              |
| 44       |       |        | Yes   |                              |
| 45       | Yes   | Yes    | Yes   |                              |

## Introducing temporary works

1. How can temporary works be **described**? [S\*]

2. How can permanent works be **described**? [S\*]

3. **Identify** three (3) different types of temporary works and **outline** their purpose. [CS\*]

| Type, i.e., examples that you use | Purpose, i.e., what does it enable or provide? | Does it rely on permanent works for stability? |
|-----------------------------------|------------------------------------------------|------------------------------------------------|
| 1.                                |                                                | If 'Yes', how?                                 |
| 2.                                |                                                | If 'Yes', how?                                 |
| 3.                                |                                                | If 'Yes', how?                                 |

4. How can standard solutions be **described**? [S\*]

5. **Identify** the **3 P's** and provide three (3) examples for each. [CS\*]

| P_____ | P_____ | P_____ |
|--------|--------|--------|
| 1.     | 1.     | 1.     |
| 2.     | 2.     | 2.     |
| 3.     | 3.     | 3.     |

6. **Explain** the importance of communication by **listing** three (3) examples of poor communication and how it can be controlled. [S\*]

| What is an example of poor communication? | How can this be controlled? |
|-------------------------------------------|-----------------------------|
| 1.                                        |                             |
| 2.                                        |                             |
| 3.                                        |                             |

7. **Identify** what the Bragg Report determined were the two (2) overall causes of historical falsework failures. [C\*]

|  |
|--|
|  |
|--|

8. The Bragg Report made 27 principal recommendations. **Outline** one (1) **technical recommendation** and one (1) **procedural recommendation**. [CS\*]

| Recommendation Number | What was the recommendation? |
|-----------------------|------------------------------|
|                       |                              |
|                       |                              |

## Law and guidance

9. **Describe** the purpose of BS 5975-1 by filling in the missing words and **identify** who has duties. [S\*]

a. Clause 1...gives recommendations...for procedures to ensure that temporary works are conceived, designed, specified, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ in a safe and controlled manner.

b. **Identify** who has specific duties in BS 5975-1.

- |           |           |
|-----------|-----------|
| (1) _____ | (4) _____ |
| (2) _____ | (5) _____ |
| (3) _____ | (6) _____ |

10. **Outline** the key requirements of the following regulations. Fill in the missing words. [S\*]

| Regulation                                              | Key requirements                                                                                                                   |                                           |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Construction (Design and Management) Regulations (CDM)  | Require all <u>construction work</u> to be suitably _____, _____ and _____, i.e., _____, to secure construction health and safety. |                                           |
| Provision and Use of Work Equipment Regulations (PUWER) | Regulation 4 _____<br>Regulation 5 _____                                                                                           | Regulation 6 _____<br>Regulation 20 _____ |

11. **Explain** the purpose of the following HSE publications. [CS\*]

| Document type                    | What is the purpose of these documents? |
|----------------------------------|-----------------------------------------|
| Approved Code of Practice (ACoP) |                                         |
| Health and Safety Guidance (HSG) |                                         |

12. With reference to L153 Managing health and safety in construction page 7, **describe** the key elements of Construction (Design and Management) Regulations 2015.

- managing the \_\_\_\_\_ by applying the \_\_\_\_\_;
- appointing the right \_\_\_\_\_ and \_\_\_\_\_ at the right time
- making sure everyone has the \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ they need;

13. **Outline** the requirements of regulation 8(4) from the Construction (Design and Management) Regulations 2015 by filling in the missing words below. [C\*]

Regulation 8(4) requires that, a person with a duty or function under these regulations must \_\_\_\_\_ with \_\_\_\_\_ working on in in relation to a project.

14. **Identify** the three (3) main duty holders' responsibilities as defined by the Construction (Design and Management) Regulations 2015. Tick (✓) all those that apply. [CS\*]

| Who is responsible?                                                            | Client | Principal Designer (PD) | Principal Contractor or (PC) | All duty holders |
|--------------------------------------------------------------------------------|--------|-------------------------|------------------------------|------------------|
| a. Who is responsible for cooperating with other duty holders? [C*]            |        |                         |                              |                  |
| b. Who is responsible for following the general principles of prevention? [C*] |        |                         |                              |                  |

| Who is responsible?                                                                       | Client | Principal Designer (PD) | Principal Contractor or (PC) | All duty holders |
|-------------------------------------------------------------------------------------------|--------|-------------------------|------------------------------|------------------|
| c. Who is responsible for providing pre-construction information?                         |        |                         |                              |                  |
| d. Who is responsible for producing the construction phase plan?                          |        |                         |                              |                  |
| e. Who is responsible for the health and safety file? [C*]                                |        |                         |                              |                  |
| f. When there is more than one contractor, who is responsible for appointing the PC? [S*] |        |                         |                              |                  |
| g. Who is responsible for the pre-construction phase? [S*]                                |        |                         |                              |                  |
| h. Who is responsible for the construction phase?                                         |        |                         |                              |                  |
| i. Who is responsible for all construction work?                                          |        |                         |                              |                  |
| j. Who is responsible for leading and setting standards for construction site works? [C*] |        |                         |                              |                  |

15. By applying the general principles of prevention, from the list below, **outline** how risk can be controlled. [CS\*]

a. What is the best way to control collapse or failure? Give an example.

b. If risk cannot be eliminated what action should be taken? How can this be achieved?

c. What should be prioritised over personal protective equipment? Give an example.

## Organising temporary works

16. **Identify** the three (3) main duty holders as defined by the Construction (Design and Management) Regulations 2015 and **outline** their general responsibilities as defined by BS 5975-1. [C\*]

| Who is responsible?                                                                                                          | Client | Principal Designer (PD) | Principal Contractor or (PC) | All duty holders |
|------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------|------------------------------|------------------|
| a. Who is responsible for assisting the PC in controlling temporary works?                                                   |        |                         |                              |                  |
| b. Who is responsible for ensuring temporary works do not affect permanent works?                                            |        |                         |                              |                  |
| c. Who is responsible for ensuring that temporary works that remain in-situ have been identified the health and safety file? |        |                         |                              |                  |
| d. Who has ultimate responsibility in the safe execution of all temporary works on site?                                     |        |                         |                              |                  |
| e. Who is responsible for ensuring temporary works have been identified in the construction phase plan?                      |        |                         |                              |                  |

17. **Identify** the role and responsibilities of the designated individual (DI). [CS\*]

| Responsibilities                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>a. Clause 8.2.1 The DI should establish and maintain a procedure and, in addition, verify:</p> <ul style="list-style-type: none"> <li>i. the _____ of individuals to be appointed as TWC, TWS, etc</li> <li>ii. the TWC, TWS, etc, understands _____ and their _____.</li> </ul> |
| <p>b. Clause 8.2.3 The DI should verify that there is a _____ for the _____ of temporary works. [C*]</p>                                                                                                                                                                            |
| <p>c. Clause 8.2.6 The _____ should confirm subcontractors' temporary works procedures. [S*]</p>                                                                                                                                                                                    |

18. **Identify** the role and responsibilities of the PC's TWC. [C\*]

## Responsibilities

- a. Clause 10.2.2.1 The PC's TWC should have \_\_\_\_\_ for the coordination of \_\_\_\_\_ across the site.
- b. Clause 10.2.2.5 Responsible to the \_\_\_\_\_ for verifying the temporary works design is \_\_\_\_\_ in accordance with the relevant \_\_\_\_\_ drawings and the specification.

19. **Identify** the role and responsibilities of the subcontractors TWC. [C\*]

## Responsibilities

- a. Clause 10.3.1.1 The subcontractors TWC should be appointed to assist the \_\_\_\_\_.
- b. Clause 10.3.2.2 The TWC should be responsible for implementing on site the \_\_\_\_\_.

20. **Identify** the role and responsibilities of the TWS. [S\*]

## Responsibilities

Clause 11.2.1 The TWS should assist the \_\_\_\_\_ or \_\_\_\_\_ as appropriate in the \_\_\_\_\_ and \_\_\_\_\_ of temporary works, i.e., \_\_\_\_\_.

21. **Outline** what the requirements of regulation 8(1) from the Construction (Design and Management) Regulations 2015 state about those responsible for appointing others. [CS\*]

Regulation 8(1) requires that, a \_\_\_\_\_ or \_\_\_\_\_ appointed to work on a project must have the \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ and, if they are an organisation, the \_\_\_\_\_.

22. **Outline** three (3) requirements, as stated in BS 5975-1 clause 4.2.1, about all those managing temporary works. [C\*]

| Clause 4.2.1 | Requirement | How can this be achieved? |
|--------------|-------------|---------------------------|
| a.           |             |                           |
| b.           |             |                           |
| c.           |             |                           |

23. **Identify** duties for each of those listed below as defined by BS 5975-1. Tick (✓) all those that apply. [S\*]

| Who is responsible?                                                                                                          | PC TWC<br>Clause 10.2 | TWC<br>Clause 10.3 | TWS<br>Clause 11.3 |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------|--------------------|
| a. <u>Confirm</u> that a Temporary Works Register is established and maintained                                              |                       |                    |                    |
| b. <u>Confirm</u> that a Design Brief is prepared                                                                            |                       |                    |                    |
| c. <u>Verify</u> the PC's DI has given their approval                                                                        |                       |                    |                    |
| d. <u>Verify</u> that those responsible for on-site supervision receive all the details of the design and any residual risks |                       |                    |                    |
| e. <u>Supervise</u> the erection, use and dismantling of temporary works                                                     |                       |                    |                    |
| f. Draw to attention to the TWC for any changes or modifications to the temporary works scheme [S*]                          |                       |                    |                    |
| g. Carry out, or <u>supervise</u> , the final check prior to use of the temporary works                                      |                       |                    |                    |

## Planning temporary works

24. In reference to BS 5975-1 clause 4.1, **outline** the main aim of organisations having a temporary works procedure. [C\*]

a. Clause 4.1.1.5 ...to \_\_\_\_\_ the chance of \_\_\_\_\_ being made, and to \_\_\_\_\_ the chance of \_\_\_\_\_ being discovered...an effective system of \_\_\_\_\_, both for the \_\_\_\_\_ and its \_\_\_\_\_, should also be implemented.

b. Clause 5.1.1.11 To understand, \_\_\_\_\_ or mitigate the \_\_\_\_\_, organisations involved in temporary works should prepare and record \_\_\_\_\_.

25. In reference to BS 5975-1, **identify** principal contractors and contractors' responsibilities. [CS\*]

a. Clause 8.5.1.4 At the start of the project, a \_\_\_\_\_ should be established to define the appropriate degree of \_\_\_\_\_, by each party, to demonstrate \_\_\_\_\_ of the temporary works. [C\*]

b. Clause 13.1.2 The \_\_\_\_\_ or \_\_\_\_\_ should verify that a temporary works implementation plan is in place. [S\*]

c. Clause 8.1.2 The \_\_\_\_\_ should manage the interfaces.

d. Clause 8.1.3 Details of the interfaces should be included in the \_\_\_\_\_. [C\*]

26. In reference to BS 5975-1 clause 13.1, **identify** two (2) key documents that form part of the temporary works implementation plan.

| Document Name | What stage is it drafted and/or completed? |
|---------------|--------------------------------------------|
| a.            |                                            |
| b.            |                                            |

## Keynotes

27. In reference to BS 5975-1 clause 5.2, **explain** the purpose of the temporary works register (TWR) and **list** two (2) items that should be included. [C\*]

Purpose:

a.

b.

28. **Identify** who is responsible for the temporary works register TWR. [S\*]

a. Clause 5.2.1 The \_\_\_\_\_ should arrange for a temporary works register to be prepared and maintained throughout the project.

b. Clause 5.2.2 Where a contractor has been appointed to manage their own temporary works, the \_\_\_\_\_ should prepare and maintain a \_\_\_\_\_ temporary works register.

## Designing temporary works

29. **Explain** the purpose of the design brief and **list** two (2) design considerations that should be included. [C\*]

Clause 12.2.1 A design brief should be prepared to serve as the basis for subsequent decisions, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

a.

b.

30. **Identify** who is responsible for verifying the design brief is prepared. [C\*]

Clause 12.2.3 The \_\_\_\_\_ should verify that \_\_\_\_\_ and \_\_\_\_\_ information is collated before \_\_\_\_\_ can commence or a \_\_\_\_\_ for the construction of the temporary works can be drawn up.

31. **Outline** what should be included in design outputs. [S\*]

- a. Clause 12.6.1 Sufficient and comprehensive information should be provided by the \_\_\_\_\_ to allow the temporary works to be \_\_\_\_\_ and \_\_\_\_\_ correctly.
- b. Clause 13.1.5 ... \_\_\_\_\_ should be addressed in [contractors' task-specific risk assessment and] \_\_\_\_\_.

32. **Outline** suppliers' responsibilities. [C\*]

Clause 9.5.3 The supplier should provide the following and specify any specific \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_ regimes:

- a. Detailed \_\_\_\_\_ in an appropriate format, explaining how items are to \_\_\_\_\_;
- b. Information on \_\_\_\_\_ and \_\_\_\_\_ of temporary works equipment on site;
- c. Identification of \_\_\_\_\_ requiring inspection, such as items prone to \_\_\_\_\_ over a period of time.

33. **Define** the purpose of the Inspection and Test Plan (ITP) and **identify** who is responsible. [CS\*]

- a. Clause 3.1.20 A document that \_\_\_\_\_ to be used to produce an item of work. [C\*]
- b. Clause 10.2.3 (n) The \_\_\_\_\_ is responsible for confirming that an ITP is prepared ... to verify that the \_\_\_\_\_ have been \_\_\_\_\_ in accordance with the \_\_\_\_\_. [S\*]

34. **Explain** the purpose of the design checking process and what should be provided to the TWD. [CS\*]

Clause 12.7.1 ...the proposed temporary works design should be checked for \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ to the requirements of the \_\_\_\_\_.

35. Go to BS 5975-1 clause 5.1.3 and **identify** who is responsible for confirming the design check category. [R]

- a. Clause 5.1.3.3 The \_\_\_\_\_ should confirm the...design check category...where there is an \_\_\_\_\_. Where there is \_\_\_\_\_ the \_\_\_\_\_ of the \_\_\_\_\_ carrying out the \_\_\_\_\_ should be responsible for this.
- b. Clause 5.1.3.4 The... design check category should be determined in consultation with the \_\_\_\_\_ team.

36. By referring to BS 5975-1 table 2, **identify** who should carry out design checking? [C\*]

| Category | Description   | Who can carry put the check? |
|----------|---------------|------------------------------|
| 0        | S_____        |                              |
| 1        | S_____        |                              |
| 2        | M_____ C_____ |                              |
| 3        | C_____        |                              |

## Implementing temporary works

37. **Identify** 'Execution Risks' for the **construction, use** and **removal** of temporary works, and **outline** two (2) controls for each. [C\*]

| Execution Risk | What is the hazard?                                                                           | How can this be controlled? |
|----------------|-----------------------------------------------------------------------------------------------|-----------------------------|
| W_____         | Poor workmanship by operatives                                                                |                             |
| M_____         | Poor quality materials, or unserviceable equipment, or components incorporated into the build |                             |

37. **Identify** 'Execution Risks' for the **construction, use** and **removal** of temporary works, and **outline** two (2) controls for each. [C\*]

| Execution Risk      | What is the hazard?                                                    | How can this be controlled? |
|---------------------|------------------------------------------------------------------------|-----------------------------|
| E_____              | Inexperienced workforce,<br>unfamiliar with equipment,<br>or processes |                             |
| M_____<br>of U_____ | Equipment overloaded, or<br>misused during use                         |                             |

38. Go to BS 5975-1 clause 5.1.3 and **identify** who is responsible for confirming the implementation risk classification. [R]

- a. Clause 5.1.3.3 The \_\_\_\_\_ should confirm the...implementation risk class...where there is an \_\_\_\_\_. Where there is \_\_\_\_\_ the \_\_\_\_\_ of the \_\_\_\_\_ carrying out the \_\_\_\_\_ should be responsible for this.
- b. Clause 5.1.3.4 The...implementation risk class should be determined in consultation with the \_\_\_\_\_ team.

39. Go to BS 5975-1 table 1 and in the table below **identify** the requirements of the 'Implementation Risk Classification' levels. [R, S\*]

| Implementation Risk Class | Who can issue the permit? |
|---------------------------|---------------------------|
| Very Low                  |                           |
| L_____                    |                           |
| M_____                    |                           |
| H_____                    |                           |

## Keynotes

40. Go to BS 5975-1 clause 5.1.3.2 and table 1 and **identify** what influences the 'Implementation Risk Classification' levels. [C\*]

Clause 5.1.3.2 Each organization should determine the level of control for each risk class of temporary works, depending on their \_\_\_\_\_ and \_\_\_\_\_, and the \_\_\_\_\_ of the particular temporary works and the \_\_\_\_\_ of its failure.

41. Go to BS 5975-1 clause 11.2 and **explain** what criteria the DI or the PC's TWC should confirm before authorising a TWS to issue a permit. [S\*]

- a. an individual TWS is \_\_\_\_\_ and has been given the appropriate \_\_\_\_\_ AND
- b. the risk classification identified is \_\_\_\_\_ or \_\_\_\_\_.

42. **Define** the term 'hold point' and **give** an example. [C\*]

43. Go to BS 5975-1 clause 13.2 and **explain** what should be confirmed, and **identify** who should verify, if issuing a permit to release a hold point, load or bring in to use. [CS\*]

- a. Clause 13.2.1.2 The \_\_\_\_\_, an \_\_\_\_\_ or an \_\_\_\_\_ should verify that a permit to load is issued to the site team prior to bringing the TW into use.
- b. Clause 13.2.1.3 The permit to load (or proceed), issued prior to release of the hold point, should confirm that:
  - (i) The temporary works have been \_\_\_\_\_ in accordance with a \_\_\_\_\_ design.
  - (ii) Any modifications to the temporary works have been approved by the \_\_\_\_\_.
  - (iii) The \_\_\_\_\_, \_\_\_\_\_ and environmental conditions are envisaged by the \_\_\_\_\_.

44. Go to BS 5975-1 clause 12.9 and **explain** the procedure if changes in temporary works design are required. [S\*]

- a. Clause 12.9.2 Any alterations...proposed by the \_\_\_\_\_ should be referred to the \_\_\_\_\_ or \_\_\_\_\_, who should contact the TWD to change the design.
- b. Clause 12.9.1 If there is no significant change to the design, \_\_\_\_\_ should confirm the acceptability of the proposals to the appropriate \_\_\_\_\_.
- c. Clause 12.9.3 Where the designer considers that the alteration is \_\_\_\_\_, the alteration should be referred to the \_\_\_\_\_.

45. Go to BS 5975-1 clause 13.3 and **explain** the procedure for dismantling temporary works. [CS\*]

Clause 13.3 ...the temporary works should be dismantled in accordance with any restrictions imposed by the \_\_\_\_\_ as set out in the \_\_\_\_\_.



Case Study Name:

**Outline** the causes, and **identify** the related product, process and people failures, from the article provided by your tutor.

| Cause | Which of the 3 P's does this relate to? |
|-------|-----------------------------------------|
| 1.    |                                         |
| 2.    |                                         |
| 3.    |                                         |
| 4.    |                                         |
| 5.    |                                         |
| 6.    |                                         |
| 7.    |                                         |
| 8.    |                                         |
| 9.    |                                         |
| 10.   |                                         |



## Identify hazards and controls

**1** **Identify** up to 5 (five) hazards and who could be harmed.

| Hazard | Who could be harmed? |
|--------|----------------------|
| 1.     |                      |
| 2.     |                      |
| 3.     |                      |
| 4.     |                      |
| 5.     |                      |

**2** Consider one (1) of the hazards listed above, and **identify** how likely is it that an injury could occur.

| Select your answer ▼                                 | Your answer |
|------------------------------------------------------|-------------|
| 5 - Certain to happen                                |             |
| 4 - Very likely, i.e., it wouldn't be at all unusual |             |
| 3 - Likely, i.e., it wouldn't be totally unexpected  |             |
| 2 - Unlikely, i.e., but not impossible               |             |
| 1 - Very unlikely to happen                          |             |

**3** From the one (1) hazard you have considered in question 2, **identify** how severe the injury could be.

| Select your answer ▼                                                          | Your answer |
|-------------------------------------------------------------------------------|-------------|
| 5 - Fatal, catastrophic event possibly involving the public                   |             |
| 4 - Non-fatal specified injury, i.e., broken bones                            |             |
| 3 - Lost time injury, i.e., including over 7-day injury reportable to the HSE |             |
| 2 - Minor injury, no lost time, minor damage                                  |             |
| 1 - No injury or damage, but it could be a near miss                          |             |

## Exercise 2

### Identify hazards and controls

**4** **Identify** the legislation that applies. (You can select more than one choice)

| Select your answer ▼                                                             | Your answer |
|----------------------------------------------------------------------------------|-------------|
| Health and Safety at Works Act 1974 (HASAWA)                                     |             |
| The Construction (Design and Management) Regulations (CDM)                       |             |
| The Works at Height Regulations (WAH)                                            |             |
| The Provision and Use of Work Equipment Regulations (PUWER)                      |             |
| The Manual Handling Regulations                                                  |             |
| The Confined Spaces Regulations                                                  |             |
| The Control of Substances Hazardous to Health (COSHH)                            |             |
| The Lifting Operations and Lifting Equipment Regulations (LOLER)                 |             |
| Personal Protective Equipment at Work Regulations (PPER) 1992 as amended in 2022 |             |
| The Management of Health and Safety at Work Regulations (MHSWR)                  |             |

**5** **Outline** the work equipment or engineering controls that could be used to reduce risk.

Case Study Name:

**Outline** the causes, and **identify** the related product, process and people failures, from the article provided by your tutor.

| Cause | Which of the 3 P's does this relate to? |
|-------|-----------------------------------------|
| 1.    |                                         |
| 2.    |                                         |
| 3.    |                                         |
| 4.    |                                         |
| 5.    |                                         |
| 6.    |                                         |
| 7.    |                                         |
| 8.    |                                         |
| 9.    |                                         |
| 10.   |                                         |



## The design brief

### Scenario 1

You are a member of the site team working for a civil engineering contractor and you have been tasked with installing drainage for a new 4-storey office block.

Your task, using the site plan, is to contribute to the design brief by identifying site-specific considerations that can influence the design and build of a **trench lining system** to support the vertical sides of the excavation to enable you to install the drainage.

The redundant factory has been demolished, and the ground contamination and the Japanese knotweed have been removed. The foundation for the new 4-storey office block has been recently completed.

**1**

**Outline** the information the temporary works coordinator (TWC) should ensure is sent to the temporary works designer (TWD) so they can provide a suitable solution. These are **design inputs**.

Note: the TWD could be a supplier - consider this in your response.

## Exercise 4

### The design brief

2

Outline the information the temporary works designer (TWD) should ensure is sent to the temporary works coordinator (TWC) so that the designed solution provided can be reviewed. These are **design outputs**.

3

**Outline** the information that should be included in the design brief, and provided to the TWD, so that the **trench lining system** provided can be **built**, in a safe and controlled manner.

Note: the TWD could be a supplier - consider this in your response.

## The design brief

### Scenario 2

You are a member of the principal contractors' project team and have been appointed with specific temporary works duties acting as the temporary works coordinator or temporary works supervisor.

Your task, using the site plan, is to contribute to the design brief by identifying site-specific considerations that can influence the design and build of a **general-purpose access scaffolding** to assist building a new 4-storey office block.

The redundant factory has been demolished, and the ground contamination and the Japanese knotweed have been removed. Drainage works around the boundary of the new 4-storey office block have recently been completed.

4

**Outline** the information the temporary works coordinator (TWC) should ensure is sent to the temporary works designer (TWD) so they can provide a suitable solution. These are **design inputs**.

Note: the TWD could be the scaffolding contractor - consider this in your response.

## Exercise 4

### The design brief

5

Outline the information the temporary works designer (TWD) should ensure is sent to the temporary works coordinator (TWC) so that the designed solution provided can be reviewed. These are **design outputs**.

6

**Outline** the information that should be included in the design brief, and provided to the TWD, so that the **scaffolding** provided can be **built**, in a safe and controlled manner.

Note: the TWD could be the scaffolding contractor - consider this in your response.





Table 1 &amp; Table 2

|                                                                                                                              |                                                                                                                                                                                  |                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|                                              |                                                                                                 |                                                |
| 1                                                                                                                            | 2                                                                                                                                                                                | 3                                                                                                                                 |
| Trench lining system in excavation up to 1.2 metres, good ground, no additional imposed loads, experienced installation team | Top retained falsework over 3 metres high, no unusual or imposed load, the product is new to the installation team and installed over a weekend for concrete pour Monday morning | Flying shores supported mid-way, fixed to capping beam, loads from adjacent structures and highway, experienced installation team |
| 1. Referring to table 2, what is the design check category?                                                                  | 4. Referring to table 2, what is the design check category?                                                                                                                      | 7. Referring to table 2, what is the design check category?                                                                       |
| A. Category 0<br>B. Category 1<br>C. Category 2<br>D. Category 3                                                             | A. Category 0<br>B. Category 1<br>C. Category 2<br>D. Category 3                                                                                                                 | A. Category 0<br>B. Category 1<br>C. Category 2<br>D. Category 3                                                                  |
| 2. Referring to table 1, what is the implementation risk classification?                                                     | 5. Referring to table 1, what is the implementation risk classification?                                                                                                         | 8. Referring to table 1, what is the implementation risk classification?                                                          |
| A. Very Low<br>B. Low<br>C. Medium<br>D. High                                                                                | A. Very Low<br>B. Low<br>C. Medium<br>D. High                                                                                                                                    | A. Very Low<br>B. Low<br>C. Medium<br>D. High                                                                                     |
| 3. Referring to table 1, who can issue the permit to bring into use?                                                         | 6. Referring to table 1, who can issue the permit to bring into use?                                                                                                             | 9. Referring to table 1, who can issue the permit to bring into use?                                                              |
| A. TWS<br>B. SC TWC<br>C. PC TWC<br>D. All the above                                                                         | A. TWS<br>B. SC TWC<br>C. PC TWC<br>D. All the above                                                                                                                             | A. TWS<br>B. SC TWC<br>C. PC TWC<br>D. All the above                                                                              |

## Exercise 5

**Table 1 & Table 2**

|                                                                                            |                                                                                                           |                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4                                                                                                                                                                           | 5                                                                                                                                                                                          | 6                                                                                                                                                                           |
| <p>Open steel-mesh fencing, temporary measure until timber hoarding design has been approved, installed on a Monday morning by inexperienced site labourers new to site</p> | <p>Temporary stairway and landing edge protection handrail, fixed using conventional methods, installed by senior operatives from contractor responsible for installing precast stairs</p> | <p>Access trackway used to protect the temporary road surface and provide traction for construction plant, installed by a well-established civil engineering contractor</p> |
| <p>10. Referring to table 2, what is the design check category?</p>                                                                                                         | <p>13. Referring to table 2, what is the design check category?</p>                                                                                                                        | <p>16. Referring to table 2, what is the design check category?</p>                                                                                                         |
| <p>A. Category 0<br/>B. Category 1<br/>C. Category 2<br/>D. Category 3</p>                                                                                                  | <p>A. Category 0<br/>B. Category 1<br/>C. Category 2<br/>D. Category 3</p>                                                                                                                 | <p>A. Category 0<br/>B. Category 1<br/>C. Category 2<br/>D. Category 3</p>                                                                                                  |
| <p>11. Referring to table 1, what is the implementation risk classification?</p>                                                                                            | <p>14. Referring to table 1, what is the implementation risk classification?</p>                                                                                                           | <p>17. Referring to table 1, what is the implementation risk classification?</p>                                                                                            |
| <p>A. Very Low<br/>B. Low<br/>C. Medium<br/>D. High</p>                                                                                                                     | <p>A. Very Low<br/>B. Low<br/>C. Medium<br/>D. High</p>                                                                                                                                    | <p>A. Very Low<br/>B. Low<br/>C. Medium<br/>D. High</p>                                                                                                                     |
| <p>12. Referring to table 1, who can issue the permit to bring into use?</p>                                                                                                | <p>15. Referring to table 1, who can issue the permit to bring into use?</p>                                                                                                               | <p>18. Referring to table 1, who can issue the permit to bring into use?</p>                                                                                                |
| <p>A. TWS<br/>B. SC TWC<br/>C. PC TWC<br/>D. All the above</p>                                                                                                              | <p>A. TWS<br/>B. SC TWC<br/>C. PC TWC<br/>D. All the above</p>                                                                                                                             | <p>A. TWS<br/>B. SC TWC<br/>C. PC TWC<br/>D. All the above</p>                                                                                                              |

## Who is responsible?

In accordance with BS 5975-1, **identify** who is primarily responsible for carrying out specific actions relating to the safe execution of temporary works. Select one (1) for each question.

| Responsibility                                                                                                                  | DI  | TWC | TWS | PD  | PWD | TWD | TWDC |
|---------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|
| Clause →                                                                                                                        | 8.2 | 10  | 11  | 7.5 | 7.3 | 7.4 | 12.7 |
| 1. Who verifies a design brief is prepared and issued to the TWD?                                                               |     |     |     |     |     |     |      |
| 2. Who verifies that an ITP has been prepared?                                                                                  |     |     |     |     |     |     |      |
| 3. Who maintains the temporary works register?                                                                                  |     |     |     |     |     |     |      |
| 4. Who approves subcontractors' temporary works procedures?                                                                     |     |     |     |     |     |     |      |
| 5. Who appoints the TWC?                                                                                                        |     |     |     |     |     |     |      |
| 6. Who appoints the TWS?                                                                                                        |     |     |     |     |     |     |      |
| 7. Who ensures the temporary works procedure is developed and maintained?                                                       |     |     |     |     |     |     |      |
| 8. Who ensures the temporary works procedure is implemented?                                                                    |     |     |     |     |     |     |      |
| 9. Who can the TWC authorise to complete the final sign-off for a structure assessed as low implementation risk classification? |     |     |     |     |     |     |      |
| 10. Who assists the TWC in carrying out or supervising regular checks during all stages of the construction process?            |     |     |     |     |     |     |      |

## Exercise 6

In accordance with BS 5975-1, **identify** who is primarily responsible for carrying out specific actions relating to the safe execution of temporary works. Select one (1) for each question.

| <b>Responsibility</b>                                                                                                         | <b>DI</b> | <b>TWC</b> | <b>TWS</b> | <b>PD</b> | <b>PWD</b> | <b>TWD</b> | <b>TWDC</b> |
|-------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------------|-----------|------------|------------|-------------|
| Clause →                                                                                                                      | 8.2       | 10         | 11         | 7.5       | 7.3        | 7.4        | 12.7        |
| 11. Who verifies that the PC's TWC or TWC has issued a permit to the site team?                                               |           |            |            |           |            |            |             |
| 12. Who issues the design check certificate?                                                                                  |           |            |            |           |            |            |             |
| 13. In the design phase, who should address buildability and make provision for temporary works?                              |           |            |            |           |            |            |             |
| 14. In the pre-construction phase, who ensures that the proposed construction method identifies all key temporary conditions? |           |            |            |           |            |            |             |
| 15. Who is responsible for liaising with the TWD to ensure alterations are managed appropriately?                             |           |            |            |           |            |            |             |

The following provides narrative about the **Loddon Bridge Disaster, Berkshire, October 1972**. For additional information go to [the Bragg Report pages 111-117](#).

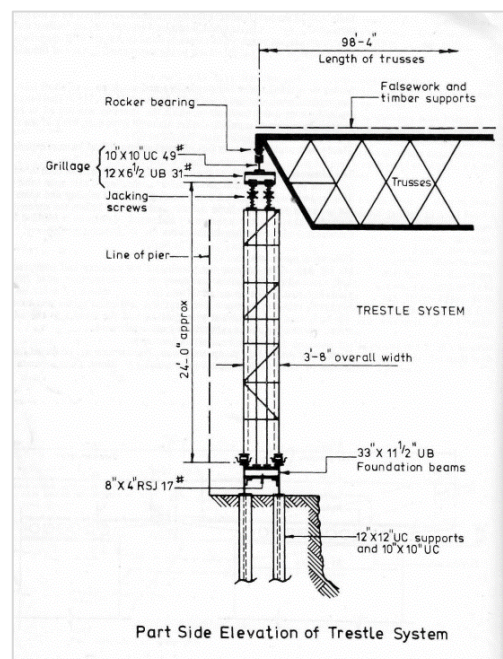
### About

1. The **Loddon Bridge disaster** was a collapse of falsework during construction of a reinforced concrete deck on the Loddon Bridge of the A329(M) in Berkshire, England, on 24 October 1972. It killed three people and injured ten others. It is thought that a design error led part of the falsework, transitioning between the deck and the supporting towers, to be understrength and it failed by buckling or twisting. The part-poured deck fell into the river below. The collapse was investigated by Her Majesty's Factory Inspectorate and the contractor, Marples Ridgway pleaded guilty to a breach of the construction regulations at a trial in Bracknell, being fined £150 (equivalent to £2,291 in 2023).
2. The collapse led to the **Advisory Committee on Falsework**, chaired by Brunel University vice-chancellor Stephen Bragg and consequently known as the **Bragg Report**. The committee, whose final report was published in 1975, made 27 recommendations for changes in how falsework was designed, constructed, and dismantled. These formed the basis of British Standard 5975 The Code of Practice for Falsework, published in 1982. The Bragg Report had a wider impact on how temporary works were managed in the UK including establishing procedures and the position of temporary works coordinator.



### The background

3. The bridge was part of a viaduct built by contractor Marples Ridgway in Reading, Berkshire, as part of the A329(M) motorway, a link road to the M4 motorway to the east. The eastbound and westbound carriageways and a separate on slip to the westbound carriageway were all constructed on separate post-tensioned reinforced concrete viaduct structures. The westbound viaduct had been completed early in 1972.
4. The eastbound viaduct consisted of thirteen spans between reinforced concrete piers. The span over the River Loddon, which was the one that collapsed, measured 93 feet (28 m) between piers 35 feet 6 inches (10.82 m) wide. The deck was 4 feet (1.2 m) thick in the centre, tapering at the outer



edges, with an average depth of 1 foot (0.30 m). It was skew in plan, by around 37 degrees from the angle of the pier and had a 1:29.25 crossfall built in.

5. The deck was formed from in-situ concrete laid onto timber plank formwork which was supported by a system of falsework. This consisted of a series of 26 lattice trusses beneath the deck. These measured 98 feet 4 inches (29.97 m) in length (extending into an adjacent span) and were made of four lattice sections connected by scaffolding. The trusses were of a German system built under licence by Rapid Metal Developments.
6. The trusses were supported by 24-foot (7.3 m) high trestle towers adjacent to each pier. The trusses were connected to the towers by rocker bearings. These were supported by a two-layer grillage of I-beams. The upper layer was formed of 10-by-10-inch (250 mm × 250 mm) universal column sections running perpendicular to the carriageway. These were supported by the lower layer, formed of 12-by-6.5-inch (300 mm × 170 mm) universal beam sections running parallel to the carriageway. The lower layer of the grillage was supported by the 16 pairs of fork heads at the tops of the towers. French company Indumat manufactured the towers.

### The collapse

7. In August 1972, the falsework that had supported the westbound carriageway deck pour was moved over to the eastbound carriageway. The two structures were separated by a gap of just 2 feet 10 inches (0.86 m). The falsework was dragged across on a temporary track. It was inspected and some defects were rectified before it was put into use. Some questions were raised as to whether the falsework was truly plumb but works proceeded.



8. The concrete to the eastbound carriageway deck was poured on 24 October 1972. It was estimated that around 750 cubic yards (570 m<sup>3</sup>) of concrete would be required, of which 500 cubic yards (380 m<sup>3</sup>) was on top of the River Loddon falsework system and the remainder over adjacent spans. Four concrete pumps were provided and four gangs of workers, 30 men in total, with 14 vibrating pokers were in use. Placement of concrete began at 8:30 am at a rate of around 84 cubic yards (64 m<sup>3</sup>) per hour, dropping to 50 cubic yards (38 m<sup>3</sup>) per hour later that morning before rising again to 88 cubic yards (67 m<sup>3</sup>) per hour.
9. At 1:35 pm the east end of the formwork fell around 6 inches (150 mm). Seconds later the entire deck plunged into the river below. The trestle towers at the east end of the span overturned and

fell onto the deck, though those at the west end remained standing. Three workers were killed and 10 injured, 7 of them seriously.

### **The investigation**

10. The collapse was investigated by Her Majesty's Factory Inspectorate. The investigation was difficult as the falsework had collapsed into the riverbed and been covered by the concrete which had set on top of it. Inspectors found that the steel beam support grillages at the eastern end were badly twisted and buckled. It was considered that the horizontal force imposed on them had caused deformation which had led to a progressive collapse. Tests determined that the grillage arrangement had a factor of safety of just 1.3 when ideal conditions and vertical loads only were considered. They thought that larger beams should have been used, or stiffeners welded to the beams (they noted that where a stiffener had been welded to a beam due to damage before the pour it had resisted deformation). The beam size was found to be a mistake in the design calculations; beams 50 per cent larger should have been specified. This was not picked up by a design check.
11. The inspectors found that the foundations for the falsework were satisfactory. They thought that the towers, which were freestanding, ought to have been braced against the adjacent piers but did not think this was a direct cause of the collapse. The inspectors noted that the same falsework arrangement had sufficed for the westbound deck pour, which was under a heavier load. They considered that the falsework may have been damaged when moved, noting that some trestle legs had been repaired afterwards.
12. As secondary matters they found that some bolts used in assembling the falsework were missing or too short to accept a full nut. They also found that the ends of some of the grillage I-beams had been tapered by flame cutting, reducing their effective web area by around 30 per cent. The inspectors considered that although some bracing was provided between the support trusses this was insufficient when the horizontal and dynamic forces were considered. The bearing arrangement below the trusses was also considered sub-standard. The bearings were rough and unlubricated, providing resistance to rotation which was not considered in the temporary works design (which considered the bearing as an ideal pin joint). The pads below the bearings were only lightly attached to the universal columns in the grillage, not ideal when horizontal loading was expected.
13. Marples Ridgway were prosecuted under the construction regulations of the Factory Acts at Bracknell magistrate's court. A consultant giving evidence stated that the loading imposed on the grillage was particularly difficult to assess and the designers should have recognised this and strengthened the beams, for example with stiffener plates welded to the web. The court found that the failure to check the design had led to the collapse through buckling of the beams. Marples Ridgway were fined £150 and ordered to pay £150 costs after pleading guilty.



## Duties of the DI

| Your duty                                                                                                                                                                                                                                                              | Stage |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Clause 8.2.1 The DI should:</b>                                                                                                                                                                                                                                     |       |
| 1. establish and maintain a procedure, suitable to their organization, to control those aspects of temporary works (and associated risks) for which the contractors are responsible.                                                                                   | -     |
| 2. verify the competence of the individuals to be appointed as TWC;                                                                                                                                                                                                    | Plan  |
| 3. verify that the proposed TWC has a full understanding of the procedure and their specific responsibilities                                                                                                                                                          | Plan  |
| <b>Clause 8.2.2 The PC's DI should:</b>                                                                                                                                                                                                                                |       |
| 4. verify that contractors' temporary works procedures are satisfactory (see clause 8.2.6)                                                                                                                                                                             | Plan  |
| <b>Clause 8.2.3 The DI should verify that:</b>                                                                                                                                                                                                                         |       |
| 5. for the type, scale and complexity of work/projects undertaken, the risks associated with the temporary works can be identified, classified and effectively managed                                                                                                 | Plan  |
| 6. there is a clear process for on-site management of the design, design checking, erection, use, maintenance, monitoring and dismantling of temporary works                                                                                                           | Plan  |
| 7. the risks, roles and responsibilities associated with the subcontracting of any elements of temporary works are addressed                                                                                                                                           | Plan  |
| 8. a TWC is appointed for each project who is competent, given clear recorded authority, technically responsible to the DI, responsible for the implementation of the organization's procedure and the final authority on site for the safe use of any temporary works | Plan  |
| 9. provision is made for the appointment of one or more TWS's, where required                                                                                                                                                                                          | Plan  |
| 10. the TWC is given sufficient time and resources to fulfil the role                                                                                                                                                                                                  | Plan  |
| <b>Clause 5.1.3.4 Table 1 For high-risk schemes, the PC's DI should:</b>                                                                                                                                                                                               |       |
| 11. verify that the scheme is reviewed, e.g. hazard and operability study (HAZOP) or peer review.                                                                                                                                                                      | Build |



## Duties of the PC's TWC

| Your duty                                                                                                                                                                                                                                                                                                                                 | Stage            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Clause 10.2.3 The PC's TWC should:</b>                                                                                                                                                                                                                                                                                                 |                  |
| 1. coordinate all temporary works activities;                                                                                                                                                                                                                                                                                             | All              |
| 2. confirm that a temporary works register is established and maintained (see clause 5.2);                                                                                                                                                                                                                                                | Plan             |
| 3. confirm that information relevant to the temporary works has been received from the client, principal designer and permanent works designer, as appropriate;                                                                                                                                                                           | Plan             |
| 4. confirm that a design brief is prepared (see clause 12.2) with consultation within the project team and that it is both adequate and in accordance with the actual situation on site;                                                                                                                                                  | Design           |
| 5. confirm that any other temporary works in the vicinity are referenced in the design brief;                                                                                                                                                                                                                                             | Design           |
| 6. confirm that any residual risks identified at the design stage, assumed methods of construction or loading constraints identified by the PWD are included in the design brief;                                                                                                                                                         | Design           |
| 7. confirm that all temporary works designers and design checkers have been assessed as competent to carry out designs and design checks;                                                                                                                                                                                                 | Design           |
| 8. confirm that the design brief is issued to the TWD and that a satisfactory design is carried out;                                                                                                                                                                                                                                      | Design           |
| 9. confirm that a design check is carried out by someone who was not involved in the original design (see clause 12.7);                                                                                                                                                                                                                   | Design           |
| 10. where appropriate, confirm that information on the certified temporary works design is made available to other interested parties, e.g. the principal designer and/or the designer of the permanent works, and, where required, to the client;                                                                                        | Design           |
| 11. register or record the drawings, calculations and other relevant documents relating to the final design;                                                                                                                                                                                                                              | Design           |
| 12. confirm that the relevant client and/or third-party approvals required by the contract have been received;                                                                                                                                                                                                                            | Plan             |
| 13. confirm that those responsible for on-site supervision receive all the details of the design, any residual risks, including any limitations and guidance notes associated with the temporary works, and that a specific method statement, which details a safe system of work, is prepared for the temporary work's erection and use; | Build            |
| 14. confirm that an inspection and test plan is prepared, along with an appropriate checklist(s), based on the temporary works design output, and is used to verify that the temporary works have been constructed in accordance with the certified design;                                                                               | Design           |
| 15. confirm that any proposed changes in materials or construction are checked against the original design and appropriate action taken;                                                                                                                                                                                                  | Design/<br>Build |

## Duties of the PC's TWC

| Your duty                                                                                                                                                                                                                                                       | Stage      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Clause 10.2.3 The PC's TWC should:</b>                                                                                                                                                                                                                       |            |
| 16. confirm that checks, inspections and tests are made at appropriate stages;                                                                                                                                                                                  | Build/ use |
| 17. advise the designer of any changes or modifications to the scheme or differences from the envisaged conditions (use or environmental);                                                                                                                      | Build      |
| 18. in the event that any inspections reveal discrepancies between the certified and as-constructed temporary works, prevent loading (or unloading) until the discrepancies have been rectified to their satisfaction;                                          | Build      |
| 19. confirm that a permit to load or proceed (bring into use) is issued after a satisfactory final check by either the PC's TWC, TWC or TWS (see clause 13.2.1);                                                                                                | Build      |
| 20. verify that during use of the temporary works all appropriate monitoring and maintenance is carried out;                                                                                                                                                    | Use        |
| 21. verify that a permit to unload or proceed (take out of use) the temporary works is issued, when it has been confirmed that the permanent structure has attained adequate strength and/or stability, by either the PC's TWC, TWC or TWS (see clause 13.2.2); | Dismantle  |
| 22. verify that a documented safe system of work is in place for the dismantling of any temporary works; and                                                                                                                                                    | Dismantle  |
| 23. verify that any relevant information for the health and safety file is transmitted to the principal designer.                                                                                                                                               | Dismantle  |
| 24. receive the contractor's DI's assessment of the capability of the TWS (and TWC where appointed), including the individual's acceptance of the role;                                                                                                         | Plan       |
| 25. verify that the TWCs and TWSs are operating in accordance with the approved procedures;                                                                                                                                                                     | Build/ Use |
| 26. provide copies of all information relevant to the contractor's temporary works design to the contractor's TWC;                                                                                                                                              | Design     |
| 27. define the interfaces between the contractor's works and those of the PC or other contractors to establish which design briefs are to be provided to the PC's TWC for approval before issue to the relevant TWD;                                            | Plan       |
| 28. receive copies of the relevant design briefs produced by the contractor's TWC and confirm there are no adverse effects on any other works (including temporary works) which might be planned;                                                               | Design     |
| 29. for relevant designs, receive copies of the design output, design and design check certificates prior to implementation of the contractor's temporary works; and                                                                                            | Design     |
| 30. inspect the contractor's temporary works, where necessary.                                                                                                                                                                                                  | Use        |

## Duties of the Contractor's TWC

| Your duty                                                                                                                                                                                                                                  | Stage  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>Clause 10.3.3 The duties of the [Contractor's] TWC should include the following:</b>                                                                                                                                                    |        |
| 1. coordinating the temporary works activities of their organization;                                                                                                                                                                      | All    |
| 2. verifying that the PC's DI has given approval to the contractor to manage and design the temporary works, and confirming that the organization has accepted their appointment;                                                          | Plan   |
| 3. confirming that the PC's DI has either given approval to the contractor to use their own temporary works procedure, or that the PC's procedure is to be used;                                                                           | Plan   |
| 4. being aware of any limitations on use of the temporary works for which their organization is responsible;                                                                                                                               | Plan   |
| 5. liaising with the PC's TWC to confirm that those involved understand the types and limits of permits and when they have the authority to proceed by releasing the hold points;                                                          | Plan   |
| 6. providing information to and receiving information from the PC's TWC to manage the temporary works schemes for which they are responsible;                                                                                              | Plan   |
| 7. establishing and maintaining a temporary works register (see clause 5.2);                                                                                                                                                               | Plan   |
| 8. making available or communicating their works register to the PC's TWC at agreed intervals;                                                                                                                                             | Plan   |
| 9. verifying that a design brief (see clause 12.2) is prepared with consultation within the project team, and that it is both adequate and in accordance with the actual situation on site;                                                | Design |
| 10. where required, providing copies of design briefs to the PC's TWC and receiving confirmation there are no adverse effects on, or caused by, the temporary works;                                                                       | Design |
| 11. confirming that all temporary works designers and design checkers have been assessed as competent to carry out designs and design checks;                                                                                              | Design |
| 12. verifying that any residual risks, identified at the design stage, assumed methods of construction or loading constraints identified by the designer of the permanent works are included in the design brief;                          | Design |
| 13. verifying that the design brief is issued to the relevant TWD;                                                                                                                                                                         | Design |
| 14. receiving copies of the design output, design and design check certificates prior to implementation of the temporary works and, where required, providing evidence to the PC's TWC that the design and checking have been carried out; | Design |
| 15. verifying that the relevant client and/or third-party approvals, required by the contract, have been received from the PC's TWC;                                                                                                       | Plan   |
| 16. verifying that a documented safe system of work is in place for the erection and dismantling of any temporary works;                                                                                                                   | Build  |

## Duties of the Contractor's TWC

| Your duty                                                                                                                                                                                                                                                                          | Stage            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Clause 10.3.3 The duties of the [Contractor's] TWC should include the following:</b>                                                                                                                                                                                            |                  |
| 17. verifying that an inspection and test plan is prepared, along with an appropriate checklist(s), based on the temporary works design output, and is used to verify that the temporary works have been constructed in accordance with the certified design;                      | Design/<br>Build |
| 18. verifying that checks, inspections and tests are made at appropriate stages and that the inspection and test plan (at relevant stages) and checklist(s) are signed by the TWC or TWS as appropriate (see clause 13.1.4) and, where required, the PC's TWC;                     | Build            |
| 19. verifying that any changes or modifications to the scheme or differences from the envisaged conditions (use or environmental) are drawn to the attention of the designer;                                                                                                      | Build            |
| 20. issuing a notice to prevent loading (or unloading) in the event that any inspections reveal discrepancies between the certified and as-constructed temporary works, until the discrepancies have been rectified to the satisfaction of the PC's TWC and/or TWC;                | Build            |
| 21. verifying that any instructions from the PC's TWC in connection with any identified discrepancies in the temporary works have been rectified to the satisfaction of the PC's TWC;                                                                                              | Build            |
| 22. verifying that any agreed changes, or corrections of faults, are correctly carried out on site;                                                                                                                                                                                | Build            |
| 23. verifying that during use of the temporary works all appropriate monitoring and maintenance is carried out;                                                                                                                                                                    | Use              |
| 24. verifying that a permit to load or proceed (bring into use) after a satisfactory final check is issued by either the PC's TWC, TWC or TWS (see clause 13.2.1);                                                                                                                 | Build            |
| 25. verifying that a permit to unload or proceed (take out of use) the temporary works is issued, when it has been confirmed that the permanent structure has attained adequate strength and/or stability, by either the PC's TWC, TWC or TWS (see clause 13.2.2);                 | Dismantle        |
| 26. registering or recording the drawings, calculations and other relevant documents relating to the final design of their temporary works and, where required, submitting these to the PC's TWC;                                                                                  | Design           |
| 27. verifying that a documented safe system of work is in place for the dismantling of any temporary works;                                                                                                                                                                        | Dismantle        |
| 28. verifying that any relevant information for the health and safety file is transmitted to the PC's TWC;                                                                                                                                                                         | Dismantle        |
| 29. verifying that any appointed TWS is operating in accordance with the correct approved procedure; and                                                                                                                                                                           | Use              |
| 30. verifying that those responsible for on-site supervision receive relevant details of any design, any residual risks, including limitations and guidance notes associated with the temporary works, and verifying that a documented safe system of work is prepared and issued. | Build            |

## Duties of the TWS

| Your duty                                                                                                                                                                                                                                                                                  | Stage               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Clause 11.3 Where appointed, the main activities of the TWS should be to:</b>                                                                                                                                                                                                           |                     |
| 1. liaise and cooperate with the PC's TWC or TWC where appropriate;                                                                                                                                                                                                                        | Build               |
| 2. assist the appropriate TWC in confirming that the site is operating in accordance with the approved procedures;                                                                                                                                                                         | Build               |
| 3. check that information relevant to the temporary works has been received prior to commencement of work on site, including any residual risk information from the TWD;                                                                                                                   | Build               |
| 4. supervise the erection, use, maintenance and dismantling of the temporary works as applicable;                                                                                                                                                                                          | Build               |
| 5. carry out or supervise the required checks at appropriate stages during the construction erection or installation of the temporary works;                                                                                                                                               | Build               |
| 6. carry out or supervise any planned maintenance of the temporary works;                                                                                                                                                                                                                  | Build               |
| 7. draw to the attention of the PC's TWC and/or TWC and/or the designer (as appropriate) any changes or modifications to the scheme, differences of environment or changes in use;                                                                                                         | Build               |
| 8. carry out the final check prior to use of the temporary works;                                                                                                                                                                                                                          | Build               |
| 9. in the event that any inspections reveal discrepancies between the certified and as-constructed temporary works, issue a notice to prevent loading (or unloading) until the discrepancies have been rectified to the satisfaction of the PC's TWC and/or TWC;                           | Build/<br>Dismantle |
| 10. after a satisfactory final check, and when authorized to do so, issue a permit to load or proceed (bring into use) and copy that permit to the PC's TWC and/or TWC (see clause 13.2.1); and                                                                                            | Build/<br>Dismantle |
| 11. when it has been confirmed that the permanent structure has attained adequate strength and/or stability, and when authorized to do so, issue a permit to unload (take out of use) the temporary works and provide a copy of the permit to the PC's TWC and/or TWC (see clause 13.2.2). | Dismantle           |





