

6 November 2019

BS5975:2019

Code of practice for temporary works procedures

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Temporary Works Manager



What's changed in the industry?

- CDM Regulations in 2015
 - Introduced Principal Designers (PD)
- Specialist temporary works contractors taking on managing temporary works and subsequent reduction in contractor's experience
- Introduction of certified courses for TWC & TWS
- Awareness many organisations do not appreciate their involvement in the temporary works process
 - Client, principal designer, permanent works design etc

What's changed in the code of practice?

BS 5975:2019 revises Section 1 and 2 of the 2011 version. The principal changes are:

- Details of the procedures which clients, permanent works designers and temporary works designers should adopt
- The standard has been updated to take account of the Construction (Design and Management) Regulations 2015, particularly in respect of the interface between the design of permanent works and the design of temporary works
- Terms and definitions have been updated
- The principal contractor's temporary works coordinator (PC TWC) retains overall responsibility for the temporary works on site, but where another contractor manages their own temporary works within that site, they have their own procedures and appoint their own TWC

Overview of temporary works procedures and training

BS 5975:2019 Clause 5

Temporary works is not defined

§ 5.1.1.1 Temporary works can be **described** as providing an “engineered solution” that is used to support or protect either existing structure or the permanent works during construction, or to support an item of plant or equipment, or the vertical sides or side-slopes of an excavation during construction operations on site or to provide access. **It is used to control stability, strength, deflection, fatigue, geotechnical effects and hydraulic effects within defined limits.**

§ 5.1.1.1 continued

This description of temporary works includes, but is not limited to:

- a) supporting or protecting either an existing structure or the permanent works during construction, modification or demolition;
- b) provision of stability to the permanent structure during construction, pre-weakening or demolition (e.g. propping, shoring, façade retention etc.);
- c) securing a site, or providing access to a site or workplace on site or segregation of pedestrians and vehicles (e.g. hoarding, haul roads, fencing, stairs);

§ 5.1.1.1 continued

- d) Supporting or restraining plant, materials or equipment, including stability of water-borne craft;
- e) provision of earthworks or slopes to an excavation or supports to the side or roof of an excavation or supports or diversions to watercourse during construction operations;
- f) providing a safe platform for work activity on land or water (e.g. jetty, scaffold, edge protection or towers);

§ 5.1.1.1 continued

- g) providing measures to control noise, dust, debris, fume, air quality, groundwater or any site discharges during construction or demolition (e.g. screens, bunds, de-watering, demolition debris);
- h) providing protection or support to services; and
- i) facilitating testing (e.g. pressure testing pipes, pile testing, pre-demolition floor load capacity testing).

§ 5.1.1.10 Fundamental principles

1. All organisations have a duty to manage and control their work
2. The contractor is responsible for building the permanent works, and that includes any associated temporary works in order to construct the project.
3. One person should take overall responsibility for managing the temporary works.
 1. For very large or technically complex sites, this should be managed in accordance with § 5.1.4.6

Principal Roles

Designated Individual (DI)

The senior person in the organisation responsible for establishing and maintaining the TW procedure, and appointing TWC's and TWS's if required.

The Principal Contractor's Temporary Works Coordinator (PC TWC)

The competent person appointed by the PC to manage and control all the TW on a site/project

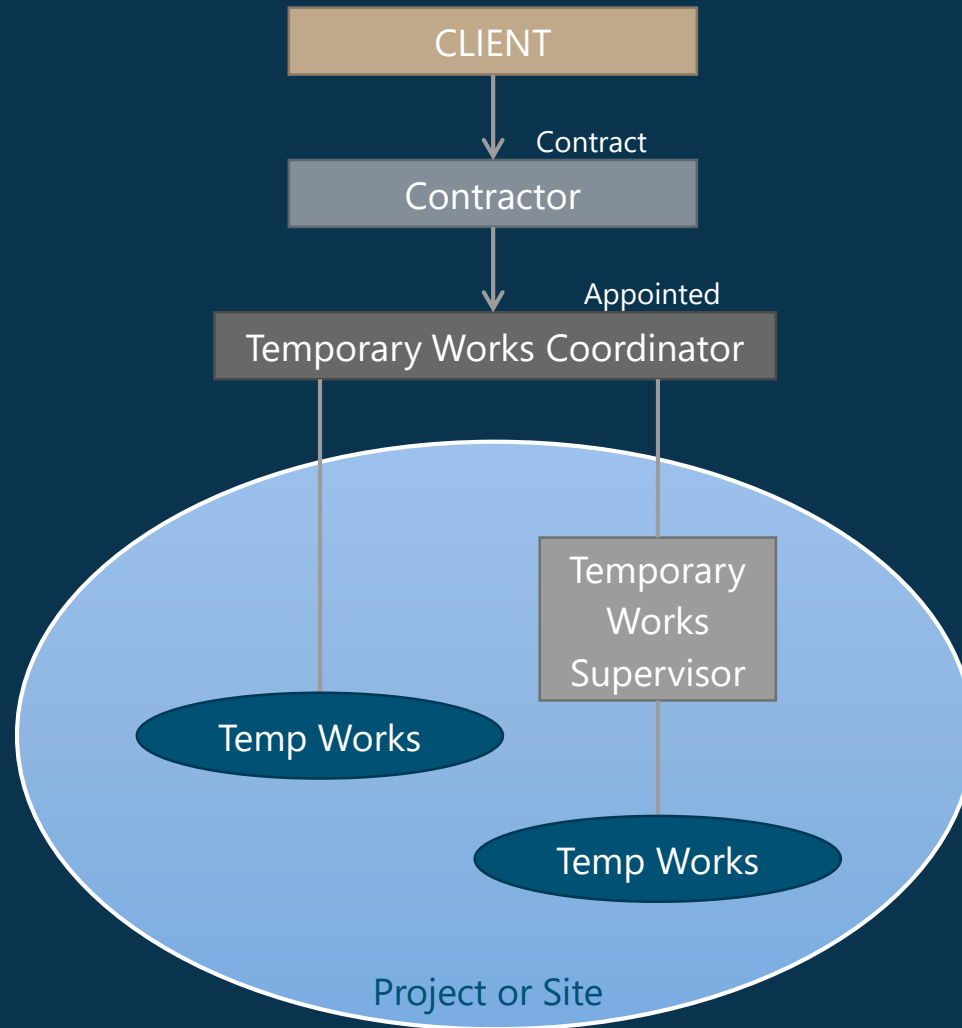
The Temporary Works Coordinator (TWC)

The competent person appointed by the organisation contracted to manage their own organisation's TW. The person will be responsible to their DI and PC TWC

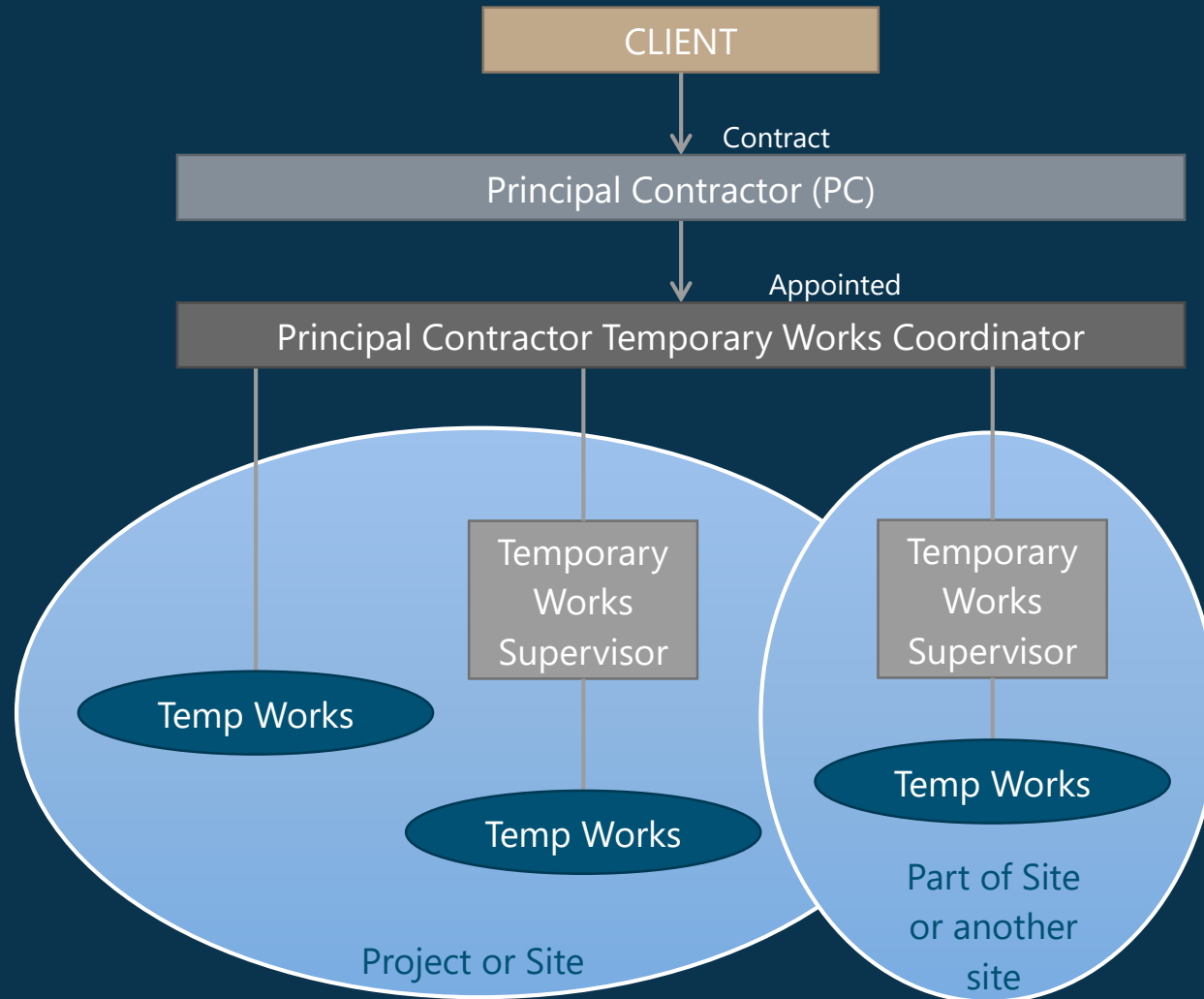
The Temporary Works Supervisor (TWS)

The competent person appointed by the organisation responsible to and assisting the TWC.

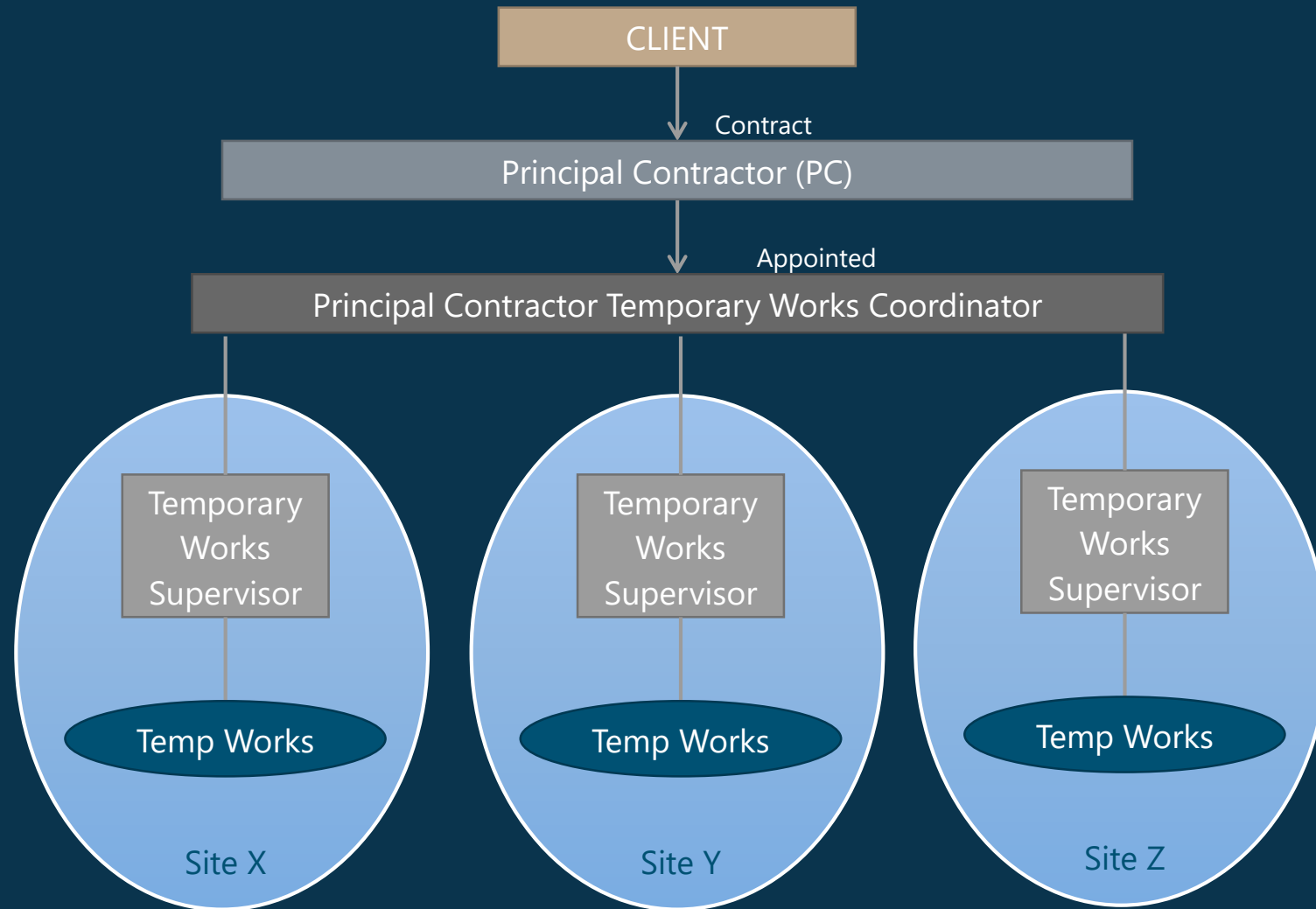
Single contractor on small project



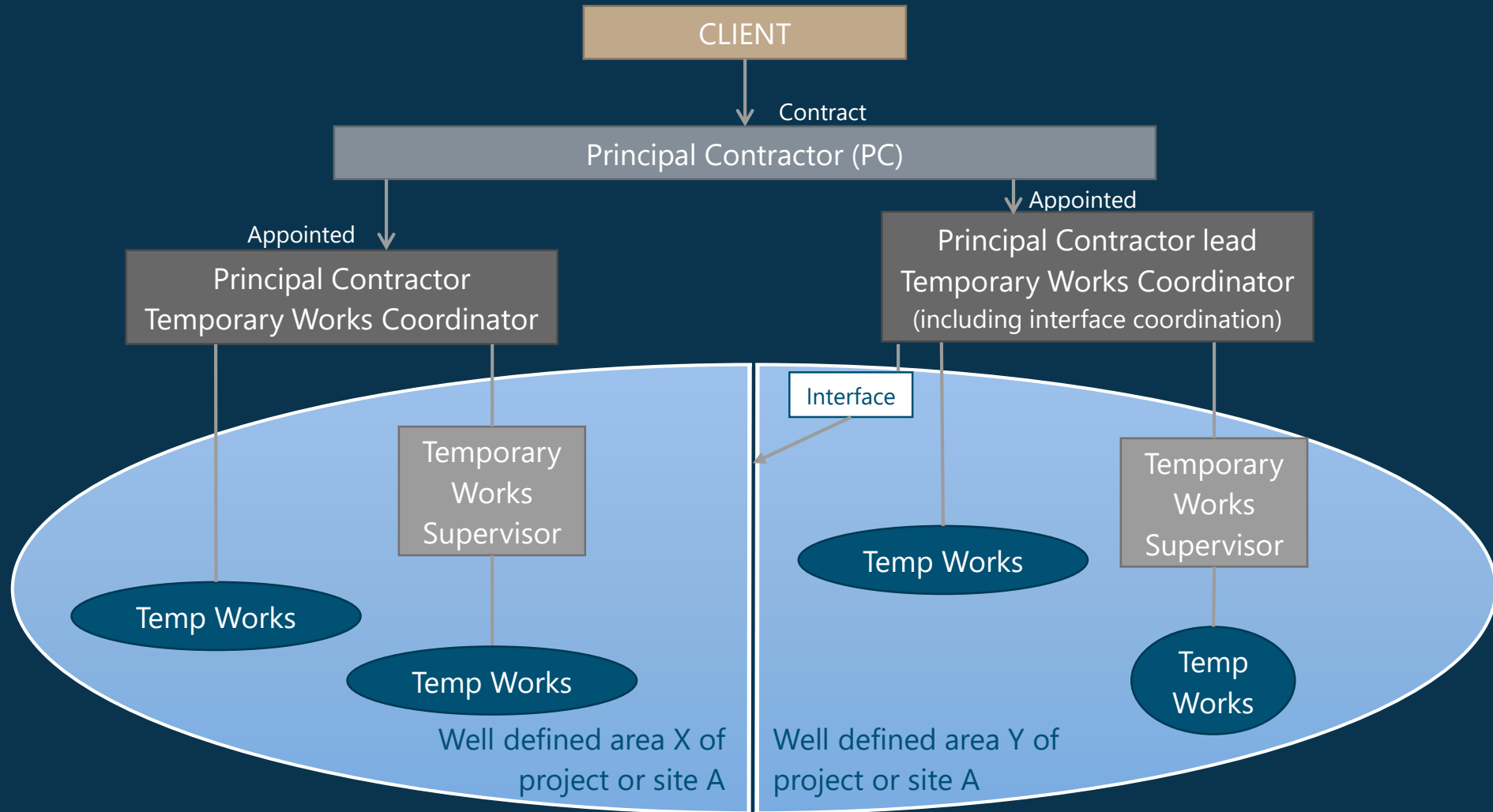
Client appoints principal contractor



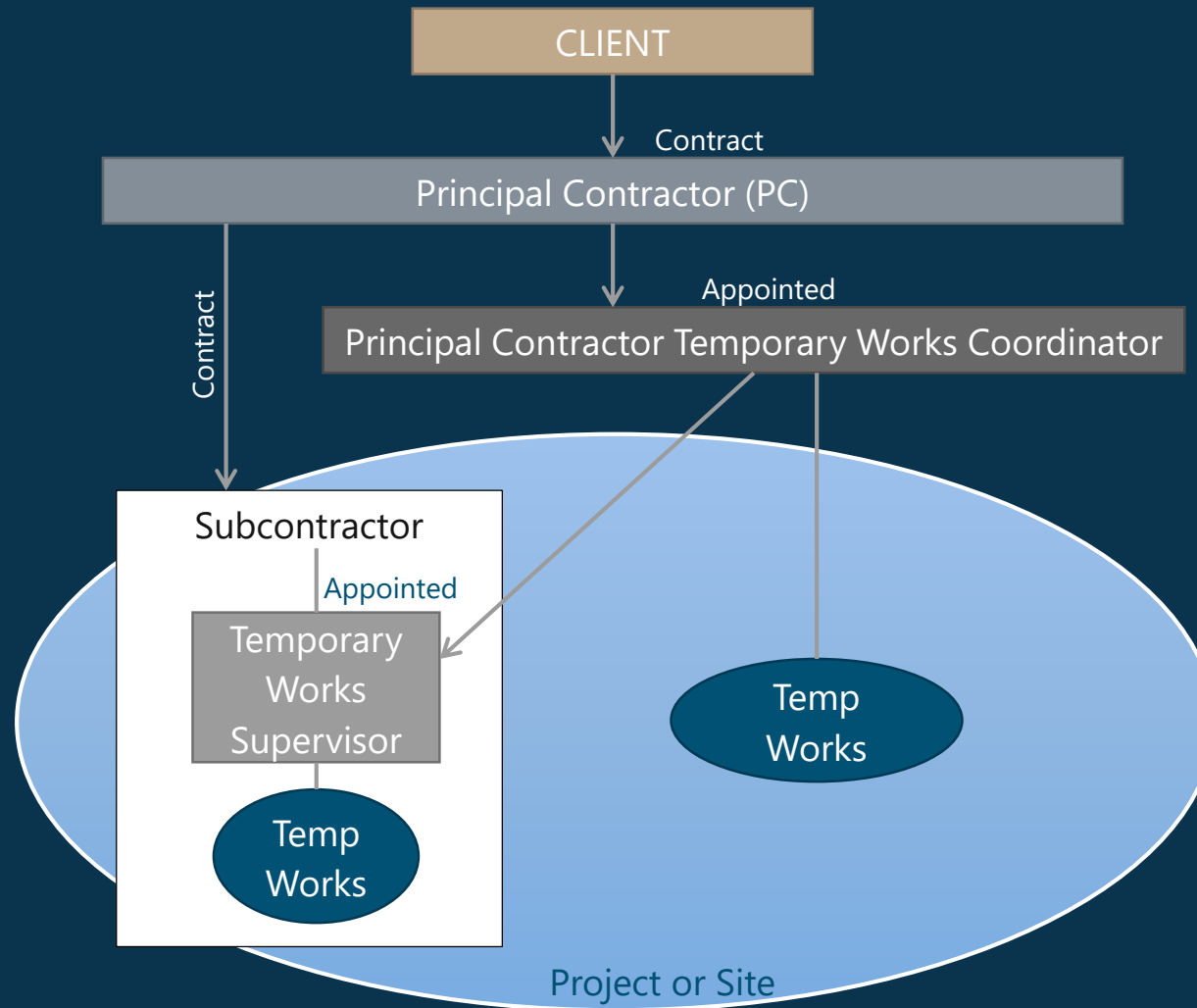
PC with several small sites (e.g. housebuilder)



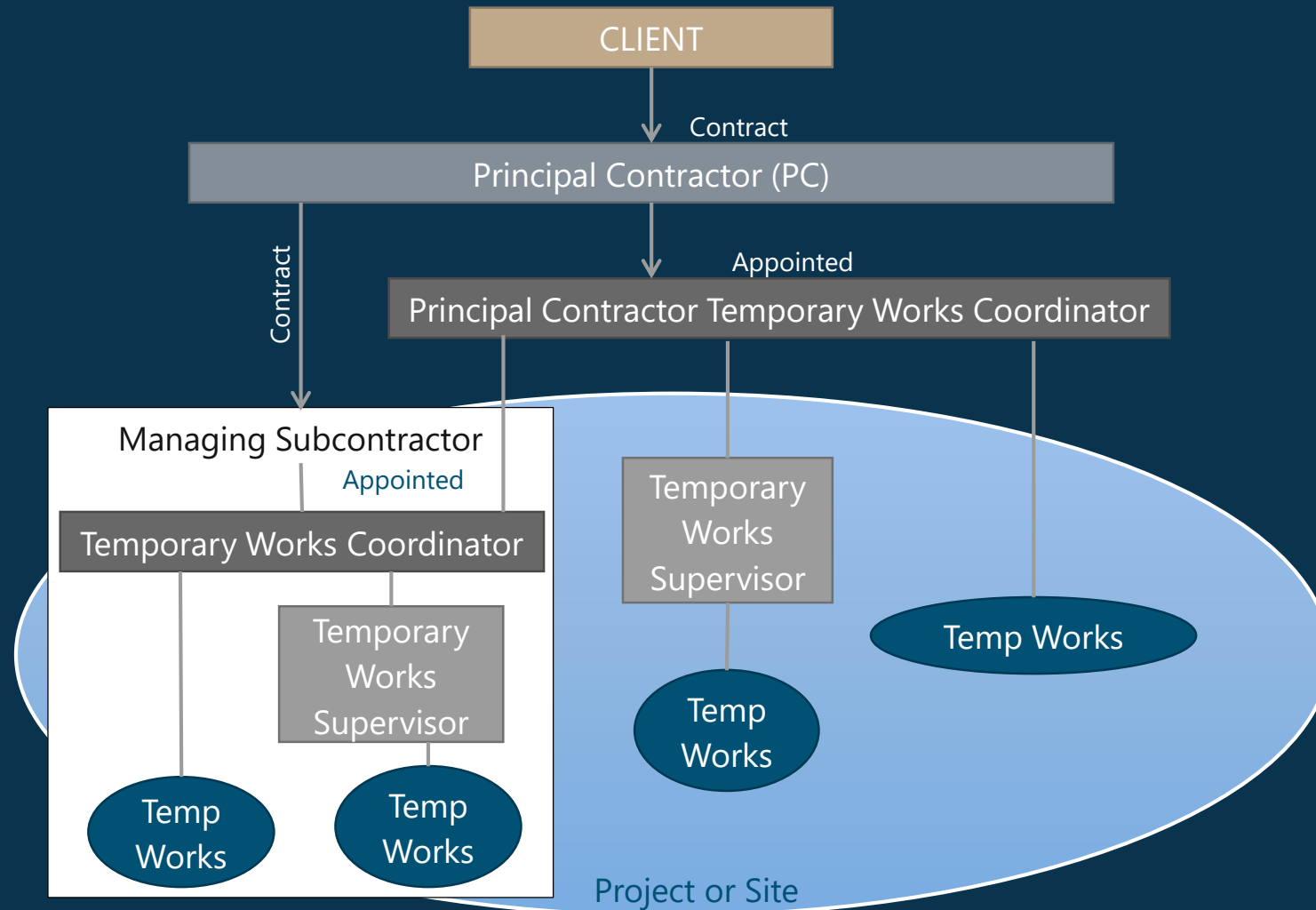
Complex project



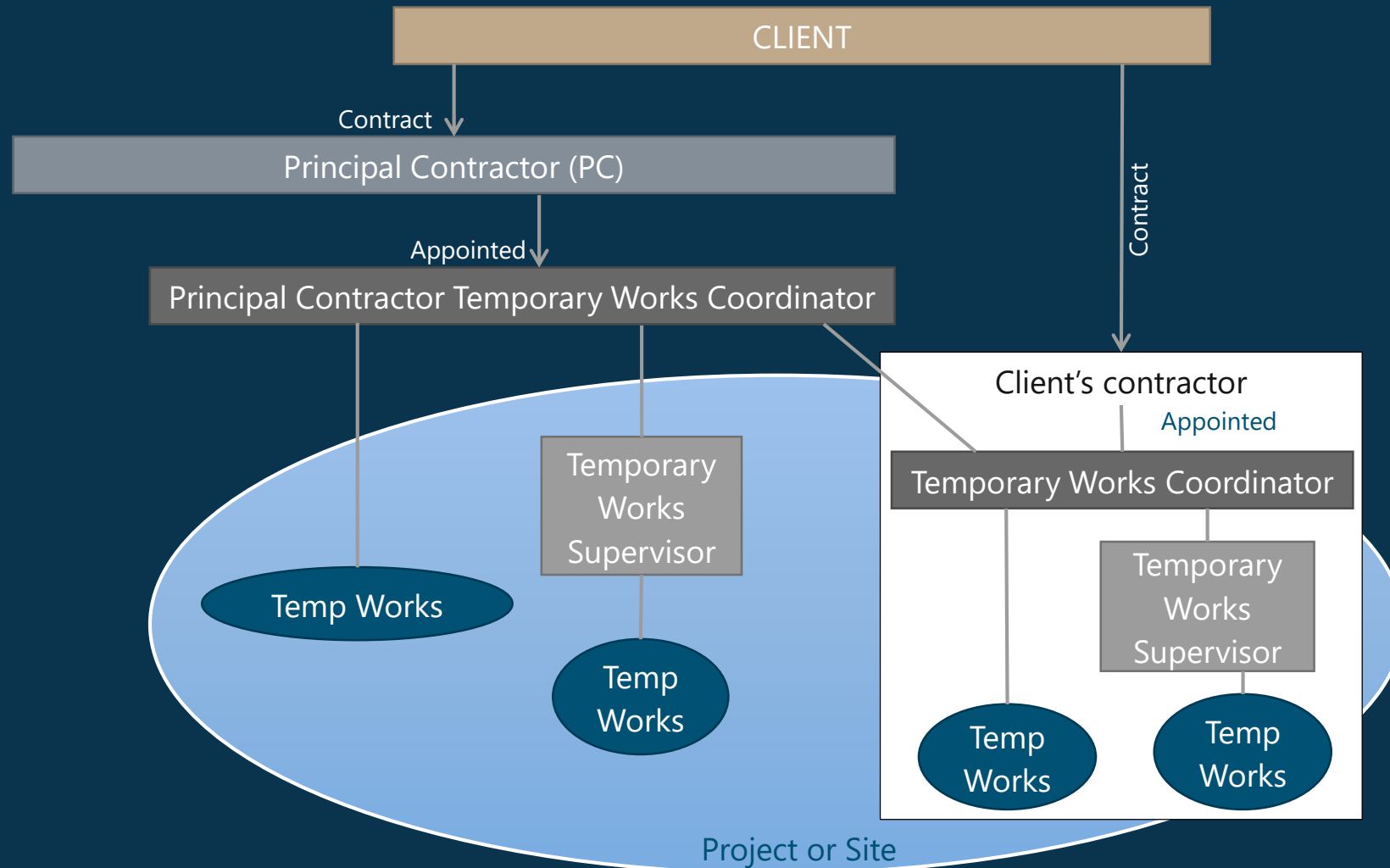
Subcontractor implementing TW



Subcontractor managing their own TW



Client contractor managing their own TW



§ 5.2 Training

All those managing temporary works should have, as a minimum, an understanding of:

- a) the procedures outlined in Section 2 of the British Standard;
- b) the specific procedures for the organisation for whom the person works;
- c) the risk management aspect associated with the management of temporary works;
- d) technical knowledge relevant to both the role and the complexity of the work; and
- e) Practical knowledge relevant to the complexity of the work.

Procedural control of temporary works

BS 5975:2019 Clause 6

Implementation risk classes

Implementation risk class	Risk	Permits required	Other control measures
Very low	<ul style="list-style-type: none">No identified practical mode of failure.No impact if failure occurs.	N/A	Control via RAMS. Inspection by site team, not necessarily recorded on the temporary works register and might not require a design brief.
Low	<ul style="list-style-type: none">Minor structures with high levels of robustness.Very experienced workforce.Failure is entirely within the site, of low impact. Inconvenient, but personal injury unlikely.	Permits can be signed by a TWC or an authorised TWS.	Control via RAMS Follow company risk assessment processes Inspection and test plan.

Implementation risk classes

Implementation risk class	Risk	Permits required	Other control measures
Medium	<ul style="list-style-type: none">• Conventional structures. Conventional construction methods.• Relatively experienced workforce.• Failure would be major, potentially involving injury, fatality or significant economic loss. Would not initiate secondary events.	Permits can be signed by the PC's TWC or an authorised TWC.	Control via RAMS. Follow company risk assessment processes. Close supervision. Inspection and test plan.

Implementation risk classes

Implementation risk class	Risk	Permits required	Other control measures
High	<ul style="list-style-type: none">• Schemes with dependency on critical structural details, with little or no redundancy, or with stability reliant on critical elements.• Schemes with complex interfaces where various items of temporary works impact on one another.• Inexperienced workforce.• Unfamiliar processes or equipment.• Failure would be catastrophic in its own right, or if minor might initiate a secondary or chain reaction of major or catastrophic events.	Permits signed by PC's TWC.	Control via RAMS. Follow company risk assessment processes. Close supervision and management. Involve regional SHE manager in the development of the RAMS. DI to review TW scheme. Inspection and test plan.

Organisation

- Clients
- Management / cost of work
- Contractors / subcontractors
- Temporary works designers
- Manufacturers / suppliers
- Some organisations have management contracts

6.2.3 With respect to the provision of temporary works the CDM Regulations [8], the HSE Approved Code of Practice (ACoP), *Managing Health and Safety in Construction* [3] (see 5.8) and the Management of Health and Safety at Work Regulations [6], [7] (see 5.3) effectively require:

- a) clients to provide pre-construction information;
- b) principal contractors to prepare a construction phase plan (which should include appropriate rules and reference to relevant risk assessments and any method statements);
- c) designers to provide adequate information about any significant risks associated with the permanent works, e.g. drawings, specifications and site investigations used in the design of the permanent works, data sheets, suggested construction sequences and other information showing particular constraints to the construction process;
- d) CDM co-ordinators to take reasonable steps to ensure co-operation between permanent works and temporary works designers;
- e) the co-ordination of design work, e.g. design reviews;
- f) appointment of a competent adequately resourced principal contractor;
- g) appointment of competent and adequately resourced contractors;
- h) the production of job-specific risk assessments, as required, for specific structures;
- i) the erection, use, maintenance and dismantling of the temporary works in a co-ordinated sequence and controlled manner.

6.2.4 One of the main aims in any method of work should be to minimize the chance of errors being made and to maximize the chance of errors being discovered if they are made. To this end there needs to be effective communication of information and requirements between all levels of the construction organizations involved in the scheme, whether they are concerned primarily with the permanent works or the temporary works. An effective system of checking, both design and implementation is also needed.

6.3 Roles and responsibilities of organizations

6.3.1 Organizational aspects

6.3.1.1 Every organization involved in temporary works should have a designated individual responsible for:

- a) establishing, implementing and maintaining a procedure for the control of temporary works for that organization; and
- b) ensuring that any sub-contractors have adequate temporary works procedures if they are carrying out and managing temporary works.

The procedure should cover the management of the design process, and include measures for ensuring that the design function and the roles of the temporary works co-ordinator and temporary works supervisor are carried out by competent individuals.

NOTE 1 Organizations which typically could have an involvement in temporary works include: clients, management contractors, contractors, sub-contractors, suppliers, and consultants.

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(acting for a client)

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Client's procedures

BS 5975:2019 Clause 7

Client's duties

- Appoint a Designated Individual
- Identify assets which may be affected by temporary works.
- Identify scheme which require formal approval.
- Identify hold points.
- Provide information to allow the principal designer or principal contractor to design, construct and remove temporary works.
- Ensure the principal contractor is coordinating all temporary works on the project and working in accordance with its procedure.

Client's duties

- If the client is principal designer and / or principal contractor then the client must have procedures outlined for principal designer and procedures outlined for principal contractor too.
- The client must inform their directly appointed contractors that they should provide their procedure to the PC's DI for approval before undertaking the management of their own temporary works procedures (and should work to the PC's procedure in the event that approval is not given).

Designer's procedures

BS 5975:2019 Clause 8

Designer's duties

- Appoint a Designated Individual
- The procedure is based on the CDM Regulations, expanded to require that the designers (including the principal designer) liaise with the temporary works coordinator.
- Should respond promptly to queries from the temporary works coordinator.
- Clearly communicate the design.
- Ensure any excluded areas of TW design are clearly highlighted.

Contractor's procedures

BS 5975:2019 Clause 9

Contractor's duties

- Appoint a Designated Individual
- The duties on the principal contractor have remained the same in relation to its own works **but additional duties** have been added in relation to the work of other contractors.
 - The PC's DI should check that contractors appointed by either the PC, the client, or any other third party have a satisfactory procedure.
 - The PC TWC must ensure the contractor's TWC is working in a well-defined area and doing as the contractor's procedure requires.

Temporary Works Coordinator

BS 5975:2019 Clause 11

Duties of the temporary works coordinator

- 1975 First recommendation for constructor to appoint a properly qualified TWC.
- 1982 BS5975 recommends the construction organisation involved appoints a 'Falsework Coordinator'.
- 2008 BS5975 renames to TWC and lists the principle activities of the TWC.
 - BS5975:2011 gave 19 activities / duties
 - BS5975:2019 has 23 duties for PC TWC + 6 duties when other contractors are on site
 - TWC has 26 duties

Existing TWC duties

Activity	PC TWC	TWC
a) Coordinate all temporary works;	✓	✓
b) Ensure a temporary works register is established and maintained; and ensure liaised with PC's register	✓	✓
c) Ensure responsibilities allocated and accepted This is the role of the DI, not the TWC	x	x
d) Ensure a design brief is prepared, is adequate, and accords with site;	✓	✓
e) Ensure that residual risk identified by the PWD are included;	✓	✓
f) Ensure a TW design is carried out;	✓	✓
g) Ensure design check carried out by someone not involved in original design Where required confirm to PC TWC	✓	✓
h) Where appropriate, ensure design is made available to interested parties;	✓	x

Existing TWC duties

Activity	PC TWC	TWC
i) Register or record relevant documents	✓	✓
j) Ensure on-site receive relevant details, any limitations, notes, method statements	✓	✓
k) Ensure that appropriate checks are made;	✓	✓
l) Ensure proposed changes are checked against design and action taken;	✓	✓
m) Ensure agreed changes, corrections are correctly carried out; And advise designer of changes / modifications	✓ ✓	✓ ✓
o) Ensure permit to load issued after check;	✓	✓
p) When confirmed structure has strength and / or stability, ensure permit to unload is issued;	✓	✓
q) Ensure safe system of work in place for the dismantling of temporary works; And for erection of TW	✓ ✓	✓ ✓

Existing TWC duties

Activity	PC TWC	TWC
r) Ensure relevant information for health & safety file transmitted to PD	✓	
	Or PC TWC	✓
s) Ensure TWS operate approved procedure	✓	✓

New TWC duties

Activity	PC TWC	TWC
1) Ensure relevant TW information received from client, PD, and/or PWD	✓	✓
2) Ensure other TW in vicinity referenced in design brief	✓	
3) Copy brief to PC TWC and confirm no adverse effects on any vicinity TW		✓
4) Ensure design brief issued to TWD	✓	
5) Ensure client / 3 rd party approvals received	✓	✓
6) If discrepancies found in check prevent load / unload until rectified	✓	✓
7) Ensure PC's DI has approved the Subcontractor to manage their own TW		✓
8) Ensure which procedure the PC's DI has agreed (either PC or subcontractor)		✓
9) Awareness of any limitations in use		✓
10) Liaise PC TWC on understanding of types & limits on use permits/hold points		✓

New TWC duties

Activity	PC TWC	TWC
11) Ensure TWDs and checkers competent and verified by organisation's DI		✓
12) Ensure PC TWC rectification instructions carried out and to PC TWC satisfaction		✓
13) Receive contractor's DI's assessment of capability of TWC and TWS	✓	
14) Provide relevant TW information	✓	
15) Define interfaces between PC & others	✓	
16) Receive briefs; confirm no adverse effect	✓	
17) Receive relevant TW info, designs, certs etc	✓	
18) Inspect contractor's TW as necessary	✓	

Design of temporary works

BS 5975:2019 Clause 13

Design check categories

Category	Scope	Independence
0	Restricted to standard solutions	Site issue – by other member of the site or design team
1	Simple design	By another member of the design team
2	More complex or involved designs	An individual not involved in design and not consulted by the TW designer
3	Complex or innovative design	By another organisation

- These categories are unchanged

Temporary Works forum

- www.twforum.org.uk
- Industry wide body promoting best practice
- Guidance notes
- Discussion forum
- Quarterly open meetings

