

SGG11 - GUIDANCE ON TEMPORARY WORKS

INTRODUCTION

Temporary works are an important element of most construction projects, and are used to facilitate the construction of the permanent works design. Temporary works do not generally form part of the permanent works, although they may be sacrificial and remain in place following completion of construction.

British Standard 5975 describes temporary works as, “an engineered solution that is used to support or protect either an 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.”

In complex developments, temporary works can form a significant part of the project, are often safety critical, and have important characteristics that do not apply to permanent works.

LEGISLATION

Temporary works do not have their own set of regulations, however, they are governed by legal duties contained in the Construction (Design and Management) Regulations. In brief, the design of temporary works are subject to the same legal requirements under CDM as the design of permanent works. The relevant duties under CDM are detailed below:

1. Regulation 4 – requires the client to provide information to designers and contractors;
2. Regulation 9 – requires designers to eliminate hazards and reduce risks in design;
3. Regulation 11 – requires the Principal Designer to plan, manage and monitor the design phase, and also liaise with the Principal Contractor and share information;
4. Regulation 13 – requires the Principal Contractor to plan, manage and monitor the construction phase and also liaise with the Principal Designer and share information;
5. Regulation 19 – requires the prevention of new or existing structures collapsing or becoming dangerous; and
6. Regulation 22 – requires the prevention of an excavation collapsing or items falling into the excavation.

HAZARDS AND CONSEQUENCES

Hazards

There are many potential hazards associated with temporary works, as a result of the complex process that requires them to be managed, designed, supplied, installed, brought into use, inspected and maintained. The hazards and interface between each stage of the temporary works process must be well managed or the risks may not be adequately controlled. Some of the hazards involved with temporary works are detailed below:

1. Failure to adequately define roles and responsibilities;
2. Inadequate design information provided for installation;
3. Incorrect materials provided for installation;
4. Work at height, falling objects, incorrect installation, surcharging etc.;
5. Inadequate inspection of installation prior to loading;
6. Inadequate inspection regime; and
7. Inadequate maintenance.

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Consequences

There are many potential consequences associated with temporary works, as a result of the variety, scale and complexity of the items that can be used. The consequences involved with temporary works can range from minor to catastrophic, as detailed below:

1. Collapse or failure of the temporary works;
2. Structural failures and collapse of the permanent works;
3. Uncontrolled ingress or egress of materials, spoil and water;
4. Collapse of adjacent structures (buildings, transport systems, infrastructure); and
5. Risk of single / multiple fatalities and serious injuries to workers and members of the public.

EXAMPLES OF TEMPORARY WORKS

The list below identifies examples of temporary works:

1. Temporary roads, bridges and access;
2. Access staircases and platforms;
3. Foundation designs for temporary buildings ;
4. Pre-fabricated reinforcement cages;
5. Tube and fitting scaffold (covered by TG20:13 and bespoke design);
6. System scaffold (covered by TG20:13 and bespoke design);
7. Falsework and formwork;
8. Propping schemes;
9. Excavations, sheet piling and trench boxes;
10. Proprietary edge protection and catchment nets;
11. Needling of structures;
12. Hoarding, temporary partitions and signage;
13. Working platforms for tracked plant;
14. Concrete slab support for mobile plant and equipment;
15. Tower crane, hoist and mast climber bases and ties;
16. Silo bases;
17. Flying and raking shores;
18. Temporary platforms over holes and voids;
19. Structural steelwork erection that requires temporary support; and
20. Precast concrete and stone erection that requires temporary support.

MANAGEMENT OF TEMPORARY WORKS

BS5975 has introduced the ability for the Principal Contractor (PC) to delegate temporary works to specialist contractors, such as RC frame, groundwork and demolition contractors. To manage this successfully, it is essential that contractors have the competence and resources to organise and implement their temporary works procedures.

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Where any appointments are made by an organisation, it is essential that adequate due diligence is carried out to ensure that contractors' temporary works procedures are satisfactory and individuals involved are competent. Evidence should be acquired detailing how temporary works have been implemented on previous contracts and the type of temporary works the contractor has been responsible for.

If the organisation's DI deems the contractor's procedures not acceptable, then improvement is required prior to any appointment being made.

APPOINTMENTS AND RESPONSIBILITIES

Designated Individual

All parties involved in temporary works, including clients, designers, Principal Designers (PD), PC's and contractors should appoint a Designated Individual (DI).

The DI is the person within an organisation who has ultimate responsibility for the management of temporary works. The DI is responsible for establishing, maintaining and implementing procedural controls in order to manage temporary works relevant to the organisation.

Therefore, the DI for a client will be interested in assessing the organisational and individual competence of any appointments, defining measures to manage and monitor appointments, and provide relevant information to all other parties.

The DI for a design organisation will focus on the competence of sub-consultants, the assessment of risks during the design process, and the provision of information to and co-ordination with other parties.

The DI for a PC will focus on the competence of organisational and individual appointments, the management of the design process and outputs from the parties involved, and the controls necessary for ensuring the certified design is correctly installed, inspected, maintained and dismantled.

Generally, the DI has a strategic role and is not involved in the day-to-day management of temporary works. Within St George, the Director Responsible for Health & Safety fulfils the role of DI.

Principal Contractors Temporary Works Co-ordinator (PC-TWC)

The Principal Contractor's Temporary Works Co-ordinator (PC-TWC) is appointed for each project by the DI, with the PC-TWC signing to accept their duties in writing. It is recommended that the PC-TWC appointment is accompanied by the individual's certificate of temporary works training, and a short CV demonstrating their temporary works experience. It is also recommended that a deputy PC-TWC is identified and appointed, in the event of any absence or leave.

The PC-TWC is responsible for ensuring that all aspects of the temporary works procedures are implemented at project level. The management and co-ordination of temporary works can be a daily requirement on large projects that have a multitude of temporary works items, therefore, it is preferable that the PC-TWC is resident on site.

The principal activities of a PC-TWC are to:

1. Co-ordinate all temporary works activities, including those delegated to another contractor;

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2. Ensure that a temporary works register is established and maintained;
3. Ensure that the various temporary works responsibilities have been allocated and are accepted in writing;
4. Ensure that a design brief is prepared and accurately reflects the site conditions;
5. Ensure that any residual risks, assumed methods of construction or loading constraints identified by the permanent works designer are included in the design brief;
6. Identify a suitable design category check for each item of temporary works, and include this in the design brief;
7. Receive copies of the relevant design briefs produced by the contractors TWC;
8. Ensure that a satisfactory temporary works design is carried out;
9. Ensure that a design check is carried out by someone with a level of independence commensurate with the design category check allocated to the temporary works;
10. Ensure that designs are made available to other interested parties, e.g. the Principal Designer or permanent works designers;
11. Provide copies of all information relevant to the contractor's temporary works design to the contractors TWC;
12. Register or record the drawings, calculations and other relevant documents relating to the final design;
13. Ensure that contractor TWCs and TWSs receive full details of the design, including any limitations and guidance notes associated with it, and prepare a specific safe system of work;
14. Ensure that a documented safe system of work is in place and implemented for the installation, use, alteration and dismantling of temporary works;
15. Ensure that checks are made at appropriate stages;
16. Ensure that any proposed changes in materials or construction are checked against the original design and appropriate action taken;
17. Ensure that any agreed changes, or corrections of faults, are correctly carried out on site;
18. Ensure that during use of the temporary works all appropriate maintenance is carried out;
19. After a final check, ensure a Permit to Load is issued by an authorised person;
20. When it has been confirmed that the permanent structure has attained adequate strength and / or stability, ensure a Permit to Dismantle is issued by an authorised person;
21. Ensure that any relevant information for the health and safety file is transmitted to the Principal Designer;
22. In all cases, ensure that TWCs and TWSs are operating in accordance with the approved procedures; and
23. Remain ultimately responsible for the temporary works on the project.

Where St George are the Principal Contractor, the person fulfilling the role of PC-TWC must be a permanent employee, not an Agency member of staff or consultant.

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Temporary Works Co-ordinator

If a PC decides to delegate responsibility for a package of temporary works to another contractor, a Temporary Works Co-ordinator (TWC) may be appointed to manage those temporary works.

The contractor's TWC should be appointed by the DI of the organisation for whose work package the TWC is responsible. The TWC should be an employee of the organisation contracted to provide the services. It is also recommended that a deputy TWC is appointed, in the event of absence or leave.

The principal activities of a TWC are to:

1. Co-ordinate all temporary works activities of their organization;
2. Ensure that the PC's DI has given approval to the contractor to manage and design the temporary works, and confirm that the organization has accepted their appointment;
3. Liaise with the PC-TWC to ensure that those involved understand the types and limits of permits and when they have the authority to proceed by releasing the hold points;
4. Be responsible for providing information to and receiving information from the PC-TWC, to manage the temporary works schemes for which they are responsible;
5. Ensure relevant information is provided for the site wide temporary works register and is maintained for the temporary works involved;
6. Ensure that a design brief is prepared and accurately reflects the site conditions;
7. Ensure that any residual risks, assumed methods of construction or loading constraints identified by the permanent works designer are included in the design brief;
8. Where required, provide copies of any design briefs prepared and submit to the PC-TWC and receive confirmation there are no adverse effects on the temporary works which might be planned;
9. Ensure that all temporary works designers and design checkers are competent and have been verified by the organisation's DI for carrying out designs;
10. Ensure that any residual risks, identified at design stage, assumed methods of construction or loading constraints identified by the designer of the permanent works are included in the design brief;
11. Receive copies of the design output, design and design check certificates prior to implementation of the temporary works and, where required, provide evidence to the PC-TWC that the design and checking has been carried out;
12. Ensure that a documented safe system of work is in place and implemented for the erection of any temporary works;
13. Ensure that an inspection and test plan is prepared, along with an appropriate quality control check list, 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;
14. Ensure that checks, inspections and tests are made at appropriate stages and that the inspection and test plan and check list are signed by an authorised person;
15. Ensure that any changes or modifications to the scheme or differences from the envisaged conditions are drawn to the attention of the designer;
16. Ensure that during the use of temporary works all appropriate monitoring and maintenance is carried out;

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17. After a final check, ensure a Permit to Load is issued by an authorised person.
18. When it has been confirmed that the permanent structure has attained adequate strength and / or stability, ensure a Permit to Dismantle is issued by an authorised person;
19. Ensure that any relevant information for the health and safety file is transmitted to the PC-TWC.
20. Ensure that any appointed TWS is operating in accordance with the correct approved procedure.

Temporary Works Supervisors

Temporary Works Supervisors (TWS) are responsible for managing the day-to-day issues with items of temporary works specific to certain work packages. They are appointed by the DI of the relevant contractor, with the TWS signing to accept their duties in writing. It is recommended that the TWS appointment is accompanied by the individual's certificate of temporary works training, and a short CV demonstrating their temporary works experience.

All TWSs are issued an authorisation letter by the PC-TWC, or contractor's TWC, which details their responsibility to issue Permits to Load or Dismantle for the project.

The principal activities of a TWS are to:

1. Assist the PC-TWC and TWC in the supervision and checking of temporary works;
2. Brief the operatives on the safe system of work for the installation, use, alteration and / or dismantling of the temporary works;
3. Check and inspect components are fit for use;
4. Supervise the installation, use, alteration and dismantling of temporary works;
5. Liaise with the PC-TWC or TWC to ensure any modifications or differences from the envisaged conditions are drawn to the attention of the PC-TWC or TWC and designers;
6. Carry out checks of temporary works prior to and during the installation and retain documented records of these checks;
7. Carry out periodic inspections of temporary works and retain documented records of these inspections; and
8. Carry out periodic maintenance of temporary works and retain documented records of these maintenance activities.

Temporary Works Designers

Temporary Works Designers (TWD) are appointed as required for each item of temporary works and can be appointed directly by the PC-TWC, or alternatively, by the contractor with responsibility for the item of temporary works. TWDs can be from a variety of organisations, dependent on the item of temporary works being designed.

A TWD may be:

1. A site based engineer with the relevant training and experience;
2. A specialist supplier, i.e. proprietary falsework and formwork systems suppliers; or
3. An external temporary works or consulting engineer.

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The TWD must demonstrate competence relevant to the complexity of the item of temporary works requiring design. It is recommended that the employing organisation carry out an assessment to verify the designer’s competence, addressing their training, knowledge and experience.

The principal activities of a TWD are to:

1. Carry out the design works in accordance with the Design Brief and provide adequate information to enable the temporary works to be erected safely;
2. Provide information or an outline method statement for all aspects of the temporary works design that affect the construction method and / or sequence;
3. Liaise with the permanent works designer to ensure that the temporary works do not overload the permanent works, and that the permanent works can provide sufficient support for the temporary works;
4. Advise the permanent works designer of any temporary conditions or loads that should be considered in the permanent works design;
5. Where the category of design check is not specified by the principle contractors procedures or the clients, the TWD, in consultation with the PC-TWC, should advise the minimum category of design check;
6. Carry out their design work in accordance with the “Designers Duties” as set out in the Construction (Design and Management) Regulations;
7. Ensure an assessment of health and safety risks in design has been carried out and the information relating to significant risks is communicated through the relevant documents; and
8. Where appropriate, ensure that the design is made available to other interested parties, e.g. the Principal Designer, structural designer, architect and the Client.

Temporary Works Design Checkers

Temporary Works Design Checkers (TWDC) are appointed as required for each item of temporary works and can be appointed directly by the PC-TWC, or alternatively, by the contractor with responsibility for the item of temporary works.

The TWDC must demonstrate competence relevant to the complexity of the item of temporary works being checked. It is recommended that the employing organisation carry out an assessment to verify the designer’s competence, addressing their training, knowledge and experience.

The principal activities of a TWDC are to:

1. Carry out a design check in accordance with the design brief, design statement, drawings, specification and associated information;
2. Check the design against the relevant standards, codes of practice and confirm the structural adequacy of the design;
3. For Category 2 and 3 checks, carry out the check without reference to the designer’s calculations; and
4. Issue a design check certificate that clearly details the standards that the design was verified against.

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Principal Designers

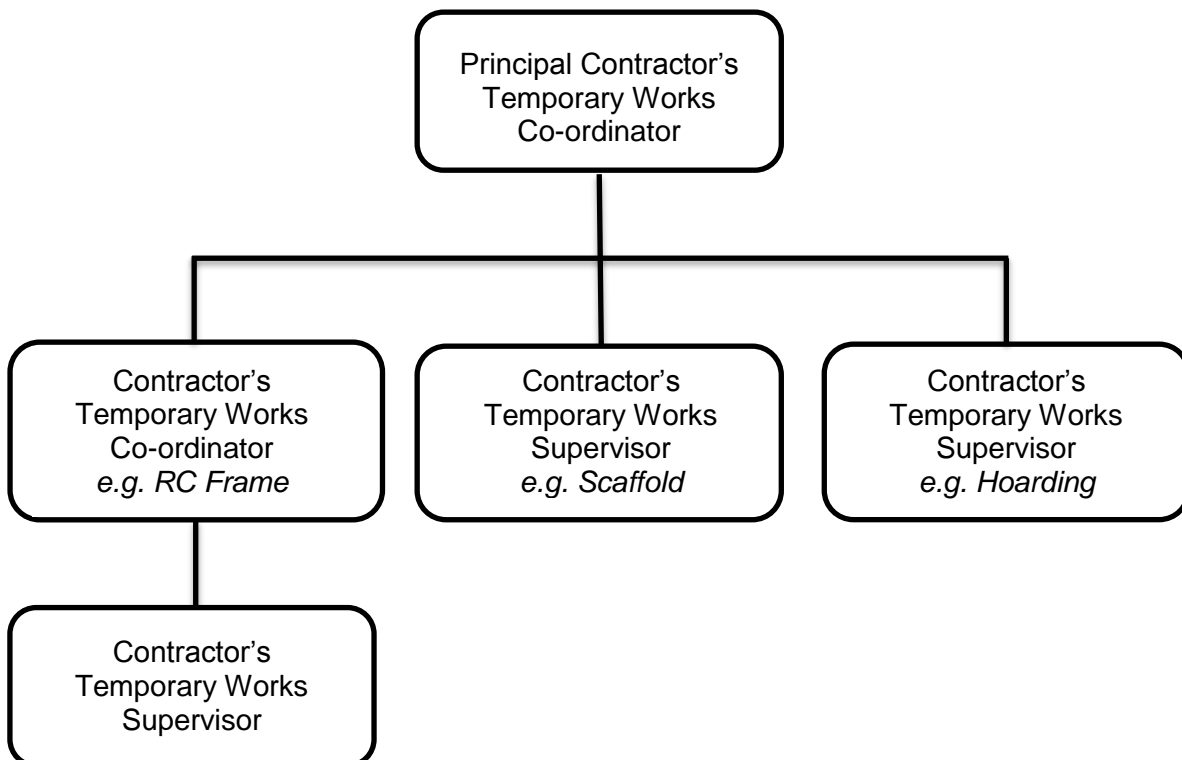
In relation to temporary works, the Principal Designer should ensure that:

1. There is a coherent construction method which identifies all key temporary conditions and temporary works;
2. The finally agreed construction method, sequence and temporary works are not deleterious to the permanent works design;
3. Designers follow the recommendations of the relevant clauses with the British Standards;
4. They share information with designers, the PC-TWC and TWC, which might influence the design of temporary works or the selection of construction methods;
5. Designers take account of the Construction Phase Plan;
6. They retain appropriate information relating to temporary works that would be required for the health and safety file.

Temporary Works Team Structures

To ensure that the PC-TWC is aware of and understands the interface between all items of temporary works, it is recommended that a structure chart, similar to the one below, is adopted.

Below is an example structure chart, where a Principal Contractor has delegated a package of temporary works to a contractor. The contractor has appointed their own Temporary Works Co-ordinator who will manage the temporary works for this package of work. The remaining temporary works are still directly under the control of the PC-TWC, with Temporary Works Supervisors appointed for each contractor.



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COMPETENCE

Temporary Works Co-ordinator

Anyone appointed to act as a PC-TWC or TWC should demonstrate their competence by possessing up-to-date training, experience and qualifications relevant to the complexity of the temporary works.

Ideally a PC-TWC or TWC should:

1. Have experience of the proposed items of temporary works, including type, size, complexity and working environment for the project;
2. Have successfully attended a valid formal training course, preferably the CITB Temporary Works Co-ordinator Training Course, carried out within the last five years;
3. Possess engineering knowledge and understanding, particularly the ability to read, understand and implement the requirements of drawings and specifications;
4. Be able to plan and manage both people and resources;
5. Preferably hold a Degree / HND in Civil / Structural engineering; and
6. Preferably be a Chartered Civil / Structural Engineer.

Temporary Works Supervisor

Anyone appointed to act as a TWS should demonstrate their competence by possessing up-to-date training, experience and qualifications relevant to the complexity of the temporary works.

Ideally a TWS should:

1. Have experience of the proposed items of temporary works, including type, size, complexity and the working environment for the project;
2. Have successfully attended a valid formal training course, preferably the CITB Temporary Works Supervisor Training Course, carried out within the last five years; and
3. Be able to manage the works and supervise workers.

Temporary Works Designer

Anyone appointed to act as a TWD should demonstrate their competence by possessing up-to-date training, experience and qualifications relevant to the complexity of the temporary works.

Ideally a TWD should:

1. Have experience of the proposed items of temporary works, including type, size, complexity and working environment for the project;
2. Hold a Degree / HND in Civil / Structural engineering;
3. Be a Chartered Civil / Structural Engineer; and
4. Possess engineering knowledge and understanding, particularly the ability to read, understand and implement the requirements of drawings and specifications.

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Temporary Works Design Checker

Anyone appointed to act as a TWDC should demonstrate their competence by possessing up-to-date training, experience and qualifications relevant to the complexity of the temporary works.

Ideally a TWDC should:

1. Have experience of the proposed items of temporary works, including type, size, complexity and working environment for the project;
2. Have an appropriate level of independence from the temporary works designer;
3. Hold a Degree / HND in Civil / Structural engineering;
4. Be a Chartered Civil / Structural Engineer; and
5. Possess engineering knowledge and understanding, particularly the ability to read, understand and implement the requirements of drawings and specifications.

TECHNICAL

Design Check Categories

As part of the design process all items of temporary works should be allocated a design check category, to ensure that they receive a review from a design checker with a suitable level of independence from the original designer.

The table below identifies the allocation of design check categories based on the complexity of the item of temporary works, as per British Standard 5975.

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Category	Scope	Comment	Independence of Checker
0	Restricted to standard solutions only, to ensure the site conditions do not conflict with the scope or limitations of the chosen standard solution. These may include standard trench boxes.	This applies to the use of standard solutions and not the original design that will require both structural calculation and checking to Category 1, 2 or 3 as appropriate.	Because this is a site issue, the check may be carried out by another member of site or design team.
1	For simple designs. These may include formwork, falsework, needling and propping to brickwork openings in single storey construction.	Such designs would be undertaken using simple methods of analysis and be in accordance with the relevant standards, supplier's technical literature or other reference publications.	The check may be carried out by another member of the design team.
2	On more complex or involved designs, including excavations, foundations, structural steelwork connections, and reinforced concrete. Designs where stability is obtained by restraint at the top of the temporary works (e.g. top restrained falsework).	Category 2 checks would include designs where a considerable degree of interpretation of loading or soils' information is required before the design of the foundations or excavation support or slope is carried out.	The check should be carried out by an individual not involved in the design and not consulted by the designer.
3	For complex or innovative designs, which result in complex sequences of moving and/or construction of either the temporary works or permanent works. It also includes basement excavations and tunnels.	These designs include unusual designs or where significant departures from standards, novel methods of analysis or considerable exercise of engineering judgement are involved.	The check should be carried out by another organization and should include an overall check to assure co-ordination of the whole design.

Changes to Temporary Works

Where changes are required to temporary works, either at the design or installation stage, these must follow a strict change control process. The PC-TWC must ensure that the changes have gone through a verification process to ensure that the change is acceptable and meets the design brief.

Changes made during the design process must be clearly identified through drawing revisions and updates to information, with the PC-TWC or TWC managing the flow of information prior to the acceptance of the "For Construction" issue drawings.

When changes are made during the installation process, or if the installation has not been erected in accordance with the design, these issues must be referred back for approval to the PC-TWC or TWC by the TWS. The PC-TWC or TWC should liaise with the TWD to ensure that the changes are reviewed and a revised set of temporary works design information produced.

In both circumstances, the PC-TWC or TWC should consider whether the modifications to the temporary works are significant enough to warrant a further design check, and obtain an updated certificate if so.

Co-ordination of Permanent and Temporary Works Designs

As temporary works designs are subject to the same legal duties under CDM as permanent works designs, it is important that Principal Designers are involved in the co-ordination of temporary works designs.

The PC-TWC should include the Principal Designer in all correspondence involving the design of temporary works, so that the Principal Designer can facilitate co-ordination between the permanent and temporary works designers. The co-ordination of temporary and permanent works designers should ensure that the two designs are compatible and that the permanent works can support any loadings from the temporary works.

DESIGN INFORMATION

Adoption of Existing Designs

Where temporary works have been designed and installed by others prior to St George becoming Client and/or Principal Contractor, it is important that the PC-TWC takes reasonable steps to obtain accurate information.

The following information should be acquired:

1. Temporary Works Register;
2. Design Briefs;
3. Construction issue drawings;
4. Design calculations;
5. Design check certificates; and
6. Inspection and maintenance records.

If any items of temporary works do not have adequate design information, then design information should be retrospectively obtained to ensure that the item of temporary works is fit for purpose.

Design Brief

A design brief is produced to inform the designer what items of temporary works are required, and to establish clearly the conditions and parameters in which the temporary works will exist. The design brief will act as the focus for the designer to make decisions and develop calculations, therefore, it is important that accurate and detailed information relevant to the temporary works is provided.

Supporting information should be made available to the designer, such as permanent works drawings, specifications, residual health and safety risks and the construction programme.

Where a contractor is responsible for developing the design brief through their TWS, it is recommended that the PC-TWC or TWC review all design briefs prior to them being issued to the designer, to ensure that they do not conflict with other items of temporary works. It is important that the information provided to the designer is adequate and accurately details the site conditions.

When St George are the Principal Contractor, it is recommended that the design brief issued by all contractors conforms to the items detailed in BS 5975. This will provide reassurance that adequate details have been provided and the relevant permanent works design information identified.

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Design Drawings and Specification

Depending on the item of temporary works required, there will be varying amounts of design work carried out. Proprietary products such as Heras fencing have a standard design and configuration, which means little or no design work is required to ensure that it is installed properly. In contrast, where a bespoke item of temporary works is required, such as a tower crane base, significant design work will be required to ensure that the item is installed properly and fit for purpose.

The designer should generate a design in accordance with the temporary works design brief, taking into account relevant legislation, standards, codes of practice and manufacturer's data that is applicable to the item of temporary works.

The designer should produce sufficient information for the item of temporary works to be checked and verified as fit for purpose, and also for the installation to be carried out safely. It is recommended that the following items are obtained from the TWD as part of the package of design information:

1. Design drawings;
2. Design calculations;
3. Details relating to restrictions or limitations affecting temporary works, such as lateral stability assumptions and assumed pour rates;
4. Details relating to any loadings applied to the permanent works;
5. Identification of critical components and any specific details governing their use;
6. Details of any specific methods or sequences for the temporary works;
7. Inspection checklists for installation and loading; and
8. Details of health and safety design risk information, particularly significant residual risks.

Where proprietary products are used as items of temporary works, it is important that a design for the whole item is available prior to installation commencing. If additional components are required to form the item of temporary works, and these are not designed and supplied by the proprietary product supplier, then they will not have been incorporated into the scope of design.

If this situation occurs, then it is the responsibility of the PC-TWC to ensure that all components that form part of the temporary works have been designed, and to instruct the supplier or another designer to incorporate the additional components into the design. No item of temporary works should ever be taken into use without all components having been clearly identified in the design drawings and/or specification.

Finally, it is important that all drawings that are provided for the installation of temporary works are identified clearly as "For Construction". Where old revisions of drawings are retained for record purposes, these must be marked to identify clearly them as superseded.

Design Check

A design check is carried out by a competent independent designer (TWDC) to verify that the original design achieves the necessary requirements, based on the following parameters:

1. Design concept;
2. Strength and structural adequacy; and
3. Conformance with the design brief.

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It is essential that a design check certificate is obtained from the TWDC for each item of temporary works. The certificate must clearly identify the item of temporary works and the relevant documents, standards and codes that the design has been checked against.

Temporary Works Register

Only one master Temporary Works Register should exist for a construction project, with information provided by the relevant contractors to ensure that the PC-TWC can co-ordinate all items of temporary works properly. The register should be kept up to date on a regular basis, as the document is an essential tool for managing and monitoring the process of each item of temporary works.

Where responsibility for a package of temporary works has been delegated to a contractor, the PC-TWC must retain control of the Temporary Works Register and ensure that information is provided by each TWC and/or TWS on a regular basis.

The requirement for one register per project is essential, as this document provides the details of those individuals responsible for the ongoing inspection and maintenance of temporary works items.

SAFE SYSTEMS OF WORK

Risk Assessment

A risk assessment must be produced for the installation, alteration, and use and dismantling of all items of temporary works, which addresses the prevalent risks and clearly identifies the control measures for the works to be carried out safely.

Method Statement

A method statement for the installation, alteration, use and dismantling of temporary works must be developed from the risk assessment, which clearly identifies how the activity is to be carried out safely.

The method statement should be based on the risk assessment findings and include:

1. Method of installation, alteration, use or dismantling;
2. Details of plant and equipment to be used;
3. Details relating to the means of access to and egress from the item of temporary works;
4. Sequence of activities, particularly where the designer has provided information relating to restrictions or limitations; and
5. Details of the Construction Issue drawings to be used during the activity.

It is recommended that method statements have specified hold points introduced in the sequence of activities, where safety critical tasks are to be completed. The hold point should ensure that work activities cannot proceed past a certain stage without authorisation from a designated individual, normally the PC-TWC, TWC or TWS. Hold points are initiated at critical points during installation, specifically prior to loading, bringing into use and prior to the dismantling of the item of temporary works.

The method statement should include details of the design parameters with any restrictions clearly identified. Temporary works are designed for certain operating conditions, and it is important that the workers using the items of temporary works understand these conditions and adhere to them. It should be made clear to all workers that the use of temporary works outside of their working parameters, through the additional loading of plant for example, may result in the collapse of the structure.

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Any method statement that is developed for the dismantling of temporary works must clearly identify the conditions that must be achieved by the permanent works prior to the dismantling of the temporary works. Confirmation that these conditions have been met should be provided through the completion and formal authorization of a Permit to Dismantle.

The PC-TWC should ensure that safe systems of work are produced for all temporary works activities, with the risk assessment and method statement reviewed and accepted by the manager with responsibility for that package of work.

Permit to Load or Dismantle

A Permit to Load or Dismantle may be issued by the PC-TWC, TWC or the TWS where authorised to do so. It is important that only those individuals formally authorised to issue Permits to Load or Dismantle do so.

A Permit to Load should be issued once an installation has been completed, and once the PC-TWC, TWC or TWS has confirmed that the temporary works has been installed in accordance with the design, which is confirmed by a final check.

It is important that the permit details any restrictions or requirements relating to the use or loading of the temporary works, and is signed by the authorised person.

Examples of when a Permit to Load may be used:

1. Completion of working platform ready for piling rig;
2. Completion of falsework and formwork installation ready for steel reinforcement and concrete; and
3. Completion of a tower crane base installation.

A Permit to Dismantle should only be issued once evidence has been obtained that the permanent works have reached a sufficient strength to support their own weight and that the temporary works are no longer required.

Examples of when a Permit to Dismantle may be used:

1. Removal of falsework and formwork once concrete has reached adequate strength;
2. Removal of backpropping; and
3. Removal of sheet piles forming an excavation.

Equipment and Material Checks

All equipment and materials that form temporary works should be checked before use on every occasion. Checks should only be undertaken by a competent person ideally the TWS, and involve a visual inspection to ensure that all components are fit for purpose.

Checks should also ensure that the correct items of temporary works components are available for the installation, with the make, model, size, number and condition verified in accordance with the “For Construction” design information.

Damaged or defective equipment should be removed from service, and only equivalent components used in their place. At no point should improvised components ever be used that are not specified by the temporary works design.

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INSPECTION AND MAINTENANCE

Inspection

All items of temporary works must be subject to a regime of inspection once they have been brought into use. The PC-TWC is responsible for identifying the competent person responsible for carrying out the inspection, and the frequency of inspection should be agreed between the PC-TWC, TWC and TWD based on the design information.

Where proprietary products are used, the frequency is usually detailed within the manufacturer's information, and this regime must be adhered to.

Some items of temporary works are subject to statutory inspection regimes, such as scaffolding and excavations, and as such, these frequencies must be adhered to.

The details of all inspections should be recorded, so that a schedule is produced that can verify that the structural integrity of the item of temporary works has been maintained.

Maintenance

All items of temporary works must be subject to maintenance, which is generally based on the outcomes of each inspection. Manufacturer's information for proprietary equipment may require periodic maintenance and these guidelines must be adhered to.

Maintenance work should only be carried out by a competent individual, with records made of the maintenance activities carried out.

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