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| **Temporary Works** |
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| **Procedure** |
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# PURPOSE

1. The purpose of this procedure is to outline the methodology surrounding the implementation of temporary works, when it is required.

# GENERAL STANDARDS

1. Temporary Works are “engineered solutions” used to support or protect 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, or to provide access. The construction of most types of permanent works will require the use of some form of temporary works.
2. Failure to adequately design, construct and maintain Temporary Works can lead to unsafe situations e.g. as a result of collapse or failure of the Temporary Works, structural failures and collapse of the permanent works, uncontrolled ingress or egress of materials, spoil and water, collapse of adjacent structures etc.
3. Temporary Works failures can cause fatalities or serious injuries to workers and members of the public, significant delay and increased costs to construction projects and significant financial and commercial risks to contractors, sub- contractors, designers, suppliers, and clients.
4. This Temporary Works procedures identifies how temporary works will be managed on all projects carried out and is appropriate for the types of Temporary Works those projects require.
5. The procedure describes the allocation of the role of Designated Individual and the formal process for appointing a competent Temporary Works Coordinator (TWC) and, where necessary, one or more competent Temporary Works Supervisors (TWS) to support the TWC when required.

# APPOINTMENTS

1. Before the appointment of a TWC (Temporary Works Co-ordinator) the Designated Individual must ensure the proposed appointee(s) has an appropriate level of competence relative to the complexity and risks associated with the Temporary Works required for the range of projects the company undertakes.
2. Competence requirements must be defined in the Temporary Works procedures and describe requirements for relevant experience, qualifications and training.
3. Appointments must give adequate time and authority to fulfil the role of the TWC and TWS (Temporary Works Supervisor) so they can carry out their responsibilities including stopping the work if it is not carried out satisfactory in line with any design etc.

# PLANNING DESIGN AND TENDER – CONSTRUCTION PROJECTS

1. The TWC will obtain information on tender stage assumptions and decisions about TW from the tender/ job file.
2. The TWC will participate in a Technical Review to consider the mitigation of technical risks on the project, including temporary works.
3. On projects where there are a significant number of elements of TW, or where the TW may be complex or high risk, or where the TW are distributed among a number of subcontractors, the TWC should consult and work with the Technical Director/ Manager.
4. The TWC will, in conjunction with the site, technical, safety & environmental personnel, review the project, and identify TW requirements and record all of them in the TW Register. This must be regardless of whether they are procured directly or indirectly e.g. through a subcontract package.
5. The TWC must maintain a register recording all Temporary Works required for each project.
6. Competent designers and design checkers must be selected and appointed to prepare Temporary Works designs. This is normally done by the client or other 3rd party.
7. The TWC must ensure that adequate design briefs are prepared for each Temporary Works design to serve as the focus for subsequent decisions, design work calculations and drawings. They should include all data relevant to the design of the Temporary Works and should be prepared in good time to allow for all subsequent activities. A design brief may be relatively simple for the smaller schemes, but for major work, more information will need to be collected and collated before design work can commence.
8. Before work starts on site, all Temporary Works designs must be checked for design concept, strength and structural adequacy (including foundations and lateral stability) and compliance with the design brief.

# PLANNING OF WORKPLACE ACTIVITIES

1. The significant health, safety and environmental risks of temporary works should be identified. Where significant risks are identified they should be included in the relevant risk assessment / method statements (RAMS) for the type of works to be carried out.
2. For any activity involving Temporary Works the RAMS should be reviewed and approved by the TWC/ HSEQ Advisor/ M2 Safety Consultants Limited.
3. Environmental considerations should also be planned into the activity.
4. Specific risk assessments relating to the proposed work can and should be completed if necessary.

# CONTRACTORS AND SUPPLIERS

1. All subcontractors and suppliers designing or implementing Temporary Works must comply with this Temporary Works procedure and cooperate with the appointed TWC for that project.

# WORK PRACTICES

1. All work on site must be carried out in accordance with Temporary Works designs and approved RAMS which have been checked and issued for construction.
2. Any changes to Temporary Works must be referred to the designer for acceptance before being implemented on site. Where a change is accepted, the Temporary Works design must be updated to reflect that change including a check on the revised design where necessary.
3. Before being brought into use, Temporary Works must be inspected thoroughly to ensure that it has been constructed in accordance with the design. Where necessary the TWC or TWS will issue a permit to confirm the following:

* Load or Construct
* Alter
* Unload or Remove (Dismantle)

1. Whilst in use Temporary Works must be inspected at regular intervals to ensure that they remain in accordance with the design with corrective action being taken, where necessary, to address deterioration. Legal requirements for inspection of Temporary Works must be complied with e.g. excavation daily checks.
2. Before being dismantled the TWC or TWS will check and confirm that the Temporary Works are no longer required and where necessary will complete a permit to confirm that the Temporary Works may be dismantled (de-loading).

# DEVELOPING THE TW REGISTER

1. The TW Register will be a live document that is kept up to date throughout the duration of a project to reflect progress of the work, changes in site conditions and changes in construction methodology.
2. Different elements of any TW installation will be identified separately in the TW Register. For example, if the superstructure and abutments of a temporary bridge are designed by different subcontract packages or likely to be designed by different designers, they should be recorded as different items in the TW Register. The same principle will apply if the falsework, lateral stability, foundations/back propping and striking time elements of the TW design for constructing a suspended RC slab are designed by different TWDs.
3. The TWC will assess the risk associated with each item of TW and classify them as high, medium or low risk with reference to guidance note on Temporary Works Management Classes to define requirements.
4. Higher risk items will require more resource, more time and more planning than low risk items. They will also require more attention to the selection and approval of the TWD, enhanced requirements for design briefs and greater attention to inspections prior to issue of permits to load/use and unload/dismantle.
5. The TWC will assign a Design Check Category to each TW item on the register to define the level of independence between the TWD & TWC. Design check categories will be as defined in the guidance note.
6. The Design Check Category will be determined by the complexity of the TW design, or the level of innovation included, or third party requirements. The 3rd party requirements may come from the client.
7. In some situations, it will be appropriate to select different design check categories for different sections of a TW design. For example, the check on a falsework design might be Category 2 but the check to confirm that the columns and walls can resist the horizontal forces necessary to ensure horizontal stability of the falsework might be Category 3.

# MANAGEMENT OF CHANGE

1. If TW proposals change, either as a result of a change in the project programme or a change in the proposed supply chain, or a change in the environmental conditions, or a change in the methodology for installation or use of the TW, then the TWC must review and revise the Risk Class and the design check category if necessary.

# SELECTING DESIGNERS & CHECKERS

1. The TWC will ensure that a competent TWD & TWDC is selected and appointed for each TW design.
2. For High and Medium risk class TW the TWD & TWDC not be the same person and if possible, be independent from WM Donald. The independence between the selected TWD & TWDC will reflect the assigned design check category.
3. The TWC should work with the Commercial Manager or QS to ensure that all subcontract packages that include responsibility for temporary works design are placed on a subcontract-order-with-design basis. Proof of checks and competency of the TWD/ TWDC are to be provided on every occasion.
4. Where the appointment of the TWD and/or TWDC is in connection with a supplier or plant hire order, the appointment will be in accordance with the appropriate procurement procedures and will state clearly the design responsibility of the supplier of the temporary works and also their responsibility to indemnify the company for any errors or omissions in their designs and design checks.
5. Where the TWD and/or TWDC are directly appointed consulting engineers, the appointment will be in accordance with the appropriate design management procedures and will state clearly the design responsibility of the consulting engineer and also their responsibility to indemnify the company for any errors or omissions in their designs and design checks.
6. Where different elements of a TW design are designed by different TWDs it would be desirable to appoint a single TWDC for all elements of the design as a way of ensuring that the organisational interfaces have been properly managed during the design process and that the designs for all elements of the TW design are mutually compatible.

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