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Project Construction Temporary Works Procedure



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Project Construction Temporary Works Procedure

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1.0 PURPOSE

The purpose of this procedure is to define the basic requirements for the planning and control of Temporary Works. It is aimed at ensuring that all Temporary Works have a consistent approach to their design, procurement, erection, maintenance and removal.

Temporary Works are defined as the parts of the works that allow for the construction of the permanent elements of the work, in a safe manner, which may or may not be described or stipulated within the Works Information. Temporary Works are used to provide (non-exhaustive list):

- Access site roads, bridges, paths, scaffolding etc. including safety measures.
- Facilities for site set-up, site offices, satellite cabins, stores and warehouses, toilets, canteens etc.
- Site or work area boundaries including protection of public - hoarding, barriers, traffic management, debris netting etc.
- Structural support and ground support - formwork, falsework, special lifting gear, trench support, propping, underpinning etc.
- Utilities and plant, forced air, rescue equipment, temporary utilities, construction plant, site drainage etc.
- Material and equipment pads during the construction stage, piling mats, tower crane pads and rails, laydown areas etc.
- Safe work environment, dewatering, temporary roofs, instrumentation and monitoring etc.

Temporary Works may or may not remain in place upon the completion of the works. Interaction of Temporary Works with permanent works is critical and may require a detailed Engineering review.

This procedure applies to works performed under all Government construction projects executed throughout the Kingdom of Saudi Arabia.

For the purposes of the Construction Management Procedures the Project Management Company is the Entity Project Management Organization (EPMO) appointed by the Entity and references prefixed with "Site", such as Site Construction Department, Site Engineering Department, represent the Project Management Company at Project level, on construction sites.

2.0 SCOPE

This procedure applies to the management, design and approval of all temporary works that should be provided for all construction related projects.

Many of the responsibilities, deliverables and effort related to this procedure are associated with and are prepared by the Construction Contractor. However, these are covered here to identify methodologies that all projects should observe, and to be able to effectively audit Construction Contractors' activities and identify poor performance so that mitigation measures can be put in place to ensure the successful delivery of the project.

3.0 DEFINITIONS

Definitions	Description
Design Check Certificate	The certificate confirming that the design complies with the requirements of the design brief, the standards/technical literature used and the constraints or loading conditions imposed. There are 4 categories of Design Check Certificate (0, 1, 2 & 3) which correlate to the appropriate level of risk and complexity (Cat. 3 being the highest).
Temporary Works	Temporary Works are defined as the parts of the works that allow for the construction of the permanent elements of the work, in a safe manner, which the contract requirements may not stipulate. Temporary Works provide support and access



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Definitions	Description
	during the construction stage and may or may not remain in place upon the completion of the works.
Temporary Works Coordinator (TWC)	The competent person appointed by the Construction Contractor to coordinate all activities related to Temporary Works on the project. Coordination includes planning where and when Temporary Works will be needed and ensuring that they are correctly installed, used, checked and maintained.
Entity Project Management Organization (EPMO)	An Entity Project Management Organization, this is an integrated team that comprises the Entity and its PMC responsible for managing all the Entity's projects.
Construction Contractor	The Main or Principal Contractor responsible for undertaking the Construction Works on the Project
Architect/Engineer Consultant (A/E)	Design consultant undertaking part or the whole of the design for a project.
Enterprise Content Management System (ECMS)	An information management and collaboration platform for managing and controlling Project documents and Entity records
Site Contracts Department	Department within the Project Management Company that is responsible for administering Contracts.
Site Construction Department	Department within the Project Management Company that is responsible for Construction activities/operations.
Site Engineering Department	Department within the Project Management Company that is responsible for Engineering or design activities/operations.

4.0 REFERENCES

None

5.0 RESPONSIBILITIES

5.1 Construction Contractor

The Construction Contractor shall be responsible for managing all Temporary Works aspects for the scope of works. The Construction Contractor is responsible for appointing a Temporary Works Coordinator who is competent and experienced with the design and implementation of Temporary Works Schemes.

5.2 Site Construction Department

The Site Construction Department is responsible for ensuring that Temporary Works are properly implemented and that there are competent resources available to ensure that the design, design checking, construction, inspections and use of Temporary Works are complete and are acceptable.

The Site Construction Department is responsible for undertaking periodic audits of the Construction Contractor's activities and ensuring best practice guidelines are implemented at all times.

6.0 PROCESS/INSTRUCTIONS

6.1 General Considerations

The following basic principles shall apply to all Temporary Works:

- All Temporary Works shall be conducted in line with the requirements of the relevant applicable standards. This includes the design, provision, use, maintenance and removal of all Temporary Works.



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- Where the works may affect Third Parties, the Temporary Works shall also be designed and implemented in accordance with the appropriate Third Party standards. This is particularly relevant to works which are within or could affect assets or operations of Third Parties.
- Where the Works Information specifies performance requirements for the Temporary Works, the Temporary Works design and implementation shall ensure that those requirements are met. A compliance statement against the Works Information design requirements shall be provided within the Temporary Works design submissions.

Temporary Works shall not apply loads to the works in excess of those permitted in the Works Information. Where the Temporary Works could impose loads, cause deformations or induce other effects on the works which are not expressly allowed for in the Works Information, the Construction Contractor shall submit details to the Site Construction Department for acceptance. The Site Construction Department shall confirm suitability of the design with the Site Engineering Department and the Architect / Engineering Consultant (A/E) if required.

To design the Temporary Works, the Construction Contractor shall appoint competent and qualified engineers with sufficient experience who shall certify the designs. Any Consultant subcontractors employed as the Contractors Temporary Works Designer shall also be vetted to confirm the requisite competencies are established within the organization and that an accredited Quality Management System is in operation.

Temporary Works shall only be erected or brought into use once the method statement, drawings and calculations have been accepted by the Construction Contractor's Temporary Works Team, and the Site Construction Department/Engineering Department, as required.

Method Statements for Temporary Works shall include methods for both the installation and the removal of the Temporary Works and the criteria which will be used to determine when the Temporary Works may be loaded, unloaded and removed.

All Temporary Works shall be constructed, fabricated and erected to the materials and workmanship to the same specification and drawings as the Permanent Works (where applicable) unless otherwise accepted by the Site Construction Department and Site Engineering Department.

All Plant, Equipment and Materials, used as load carrying components shall conform to the relevant Standards. Where applicable the re-use of construction materials shall be considered and used in the Temporary Works.

Where Plant, Equipment and Materials are reused in the Permanent works, the quality of the Plant, Materials and Equipment shall match the standard required by the Contract Specification.

Health and Safety issues relating to Temporary Works shall be taken into account early in the design stage.

The adequacy of any temporary support shall consider loading on the permanent structure

Appropriate drawings, calculations, specifications and any contributions to the Construction Plan shall be prepared and followed.

Once checked, changes shall only be made after direct consultation with the Contractor's Temporary Works designer.

All persons with responsibilities regarding Temporary Works shall be competent to undertake those duties, and shall provide evidence to demonstrate that competence to the Construction Department. The Construction Contractors Temporary Works Coordinator shall maintain a record of the responsible persons and shall ensure that the authorities for each person are clearly defined and communicated.

The Construction Contractor's Temporary Works Designer shall make all reasonable endeavors to reduce the impact of Temporary Works on any other elements or parts of the construction site.



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6.2 Design Brief

For all Temporary Works, a design brief shall be prepared by the Construction Contractor's Temporary Works Coordinator (TWC) as the basis for subsequent decisions, design work, calculations and drawings with all parties concerned contributing to the preparation of the brief.

The design brief shall be issued to the Contractor's Temporary Works Designer and shall, as a minimum, include the following:

- Design criteria, design constraints and design requirements
- Appropriate drawings of the permanent works
- Appropriate clauses from the specification for the permanent works
- The timing for the removal in relation to the ability of the permanent works to be self-supporting
- Any requirements for access onto, under or around permanent works
- Any relevant environmental information such as location and topography of the site, rainfall and groundwater levels
- Site investigation data and reports relating to the areas under and adjacent to the Temporary Works
- Any constraints or criteria related to the staged construction of the Temporary Works

The Site Construction Department may request that the Construction Contractor's Design Brief shall be reviewed prior to design being undertaken. This review would generally only be undertaken for Temporary Works schemes that the Site Construction Department deems are complex and or/ high-risk. This criterion should be identified at the Project Kick-off Meeting.

6.3 Temporary Work Design and Checks

Temporary Works Designers have the same designer duties as permanent works designers and must be sufficiently competent in their specific field of temporary works design.

The responsible Construction Contractor's Temporary Works Designer shall base their design on the requirements of the respective Design Brief and shall deliver the specified design per the directed program. The design drawings and calculations for the proposed Temporary Works shall be submitted to the TWC accompanied with the design check approval certificates.

The design check and approval shall be carried out by separate competent persons from those responsible for the design (third party check). Checking and approval shall consider the design concept, adequacy, correctness and compliance with the requirements of the design brief. The level of design check undertaken shall be as appropriate to the level of risk and complexity of the Temporary Works and will be stated in the Design Brief. These can vary from:

- Category 0 – designer inspection – simple temporary works schemes; to
- Category 3 – fully independent calculation – complex or innovative temporary works designs

In all cases the final approval of the Temporary Works design shall be (via the Site Engineering Department) by the Engineering Department / A/E Consultant / Design Firm, in consultation with any relevant responsible Authority that may have an interest in the Project Works.

6.4 Temporary Works Implementation

The Construction Contractor must have a Design Check Certificate for the Temporary Works Design in place prior to starting any Temporary Works.

6.4.1 Coordination and Supervision of Work on Site

Work shall be constructed safely in accordance with the design and specified materials and that only when all checks have proved satisfactory are the Temporary Works loaded, used, maintained and then dismantled in accordance with the design documentation and formal method statement.



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The design documentation and method statement shall be followed, but those responsible for work on site need to compare conditions experienced on site during construction with those assumed in the proposed Temporary Works design in order that appropriate action can be taken to modify the design if it becomes necessary.

Inspections of the Temporary Works shall be carried out during construction in accordance with the relevant standards and regulations as a minimum. This is carried out by the TWC or other qualified person(s) appointed by the TWC.

6.4.2 Checking on Site

From the information supplied by the Contractor's Temporary Works Designer, it is required that the Construction Contractor establishes an Inspection and Test Plan (ITP) to carry out checks on the Temporary Works as the structure is under construction. The Construction Contractor's TWC should define points at which the structure shall be checked for compliance, and by which party.

The results of these inspections shall be recorded and any variations from the design will be rectified or the designer informed in order that one can review and accept the changes or advise on further remedial works

6.4.3 Alterations

Changes in the requirements of the Temporary Works Design shall be recorded in writing, with reference to the original design brief and confirmed to the Temporary Works Designer, who shall check the proposals against the original design and incorporate the requirement for these alterations into the design and drawings. If there is no significant change to the design, the Temporary Works Designer shall confirm the acceptability of the alterations in writing.

6.4.4 Loading and Unloading / Permit to Use

The Construction Contractors' TWC shall issue a "Permit to Load" certificate to the site team prior to putting into use.

In simple cases, a single "permit to load" can be issued when the Temporary Works have been checked, but in more complex, or larger cases, a number of permits shall be required at different stages, for either loading, for different areas or for individual excavations. Subsequent planned modifications that need to take place and the area over which the loading extends shall also be set down in the permit as required.

Where the Temporary Works are used to provide support to the permanent works until it is self-supporting, the TWC shall determine that the permanent works is capable of being self-supporting prior to issuing a "Permit to Strike" (unload).

When proprietary Equipment shall be used strictly in accordance with the manufacturer's recommendations.

6.4.5 Dismantling

When the structure being supported by the Temporary Works has become self-supporting, or the excavation has been backfilled or other condition on which the design is based is met, the Temporary Works may be dismantled (removed) subject to a previously agreed procedure and/or restrictions imposed by the relevant part of the works.

7.0 ATTACHMENTS

None.