

## TEMPORARY WORKS SPECIFICATION

**SITE: 85 CAMDEN MEWS, NW1 9BU LONDON**

**PERMANENT WORKS ENGINEER = AXIOM STRUCTURES**

**TEMPORARY WORKS ENGINEERS = AXIOM STRUCTURES**

**TEMPORARY WORKS CO-ORDINATOR = TBC**

Prepared by

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### C30 SHORING / FAÇADE RETENTION / TEMPORARY WORKS

To be read with all Permanent Works Architects and Structural Engineers drawings and specification and Axiom Structures drawings and specifications. Preliminaries / General conditions and Structural Design Statements by the design team.

#### 110 TERMS USED IN FAÇADE RETENTION

- Definitions: As CIRIA Report, C579, 'Retention of masonry façades - best practice guide',

Glossary and as follows:

- Façade: The masonry front façade is to be retained and laterally restrained by steel shoring structure.
- Basement Excavation: basement is to be excavated to create additional below ground level at the above site

#### 120 RETENTION STRUCTURE GENERALLY

- 121 Extent of façade: See Architects and Engineers GA's and Structural Design Statement. Nature of existing structure: masonry walls of conventional solid walls likely 225mm thick. Generally superstructure masonry walls are to be retained and restrained by existing or new permanent or temporary structures installed early in the programme.

Temporary works system: As detailed on Axiom Structures drawings – Mild Steel / RMD / timber / scaffold tubing or steel lateral restraint frames tied to the existing structure until main frame is in place. Any new permanent frames or beams are to be fully braced and tied to the existing structure as per permanent works drawings.

Conventional needles and props on temporary pads or strip footings to support existing structure and enable installation of transfer steelwork

Façade retention, basement shores and timbering as noted in **TW- series drawings**; formwork and concreting design to be considered by others.

#### 130 RAKING SHORES

- refer to drawings (where required), TWC to confirm if necessary

#### 140 FLYING SHORES (to be established by others)

- unlikely to be required, TWC to confirm if necessary

#### 160 STRUCTURAL STEEL SPECIFICATION STANDARD

- Standard: Comply with latest edition of National Structural Steelwork Specification (NSSS).

Document availability: Make available during the course of the Works at fabrication shop and on site. See Specification Section G10 from Permanent works engineer

- 170 CONCRETE
- RC25 for all temporary works padstones and foundation bases. Refer to permanent works drawings and specification for specification of permanent RC structures.
- 180 TEMPORARY WORKS CO-ORDINATOR
- Appoint: Suitably qualified and experienced person to co-ordinate the temporary works.
  - Responsibilities:
    - To meet= BS5975:2008 Code of practice for temporary works procedures and the permissible stress design of falsework.
  - To ensure that:
    - Relevant features of the façade, whether known at the outset or discovered in the course of the work, are fully considered in design and construction of retention structure.
    - Components of the design and detailing fit each other and the façade.
    - Required actions are only undertaken when it is safe to do so, and are carried out under supervision in accordance with design and relevant standards.
  - Period of appointment: From commencement of Contract until removal of temporary works.
- 260 ACCESS TO FAÇADE
- Standard: To BS EN 12810-1 and 2 and as required to undertake the works.
- 345 WIND LOADS
- Standard: To BS 6399-2, using factors and coefficients appropriate to location, exposure, altitude, shape and size of adjacent and/ or attached buildings.

## **PRODUCTS**

- 410 STRUCTURAL STEEL
- Steel grades: Submit proposals. Minimum S355
  - Protective coating: Protect steelwork and prevent rust staining of façade and other permanent or retained works.
- 420 STRUCTURAL TIMBER
- Standard: To BS 5268-2. Minimum C16
  - Grading: To BS 4978, BS EN 519, BS EN 14081-1 or other national equivalent and so marked.
- 430 SCAFFOLDING AND ACCESSORIES
- Standard: To BS EN 12811-1 and -2.
  - Protective coating for carbon steel tubes and fittings: Protect steelwork and prevent rust staining of façade and other permanent or retained works.
- 435 TIMBER SCAFFOLD BOARDS
- Standard: To BS 2482.
- 460 BONDED ANCHORS
- Additional protection, anchors to be placed on internal elevation if necessary to avoid damage to façade.
- 470 RAPID TIE BARS AND WALER PLATES
- with minimum tension capacity of SWL =50kN

480 ACROW PROPS

- capacities as per A-Plant/ Lead Acrow tables and relevant details
- installed strictly in accordance with manufacturers guidance. Tie top and bottom with scaffold tubing
- alternative supplier to contractors proposal to be send to temporary works engineer for approval.

490 SUPER / ALSHOR / PERI MULTI PROPS

- capacities as per RMD Alshor type graphs and tables or Peri Multi-prop information, refer to drawings and calculation report.
- installed strictly in accordance with manufacturers guidance. Tie top and bottom with scaffold tubing
- alternative supplier to contractors proposal to be send to temporary works engineer for approval.

491 SUPER SLIM SOLDIER PROPS

- capacities as per RMD graphs and tables, refer to drawings and calculation report. We allowed for SWL=100kN for 5m long props
- installed strictly in accordance with manufacturers guidance. Tie top and bottom with scaffold tubing.
- alternative supplier to contractors proposal to be send to temporary works engineer for approval.

**EXECUTION**

600 WORKMANSHIP

- Operatives skill and experience: Appropriate for the type of work.  
Evidence: Submit prior to commencement.

601 GENERAL EXECUTION

The contractor should follow procedure and good practice of execution of temporary works in accordance with current British Standards and industry guides. As follows but not limited to:

**Temporary Works procedures during construction works are to be in accordance with BS5975:2008 Code of practice for temporary works procedures and the permissible stress design of falsework.**

Formwork – A Guide to Good Practice, 2<sup>nd</sup> Edition, 1995. Concrete Society.

Design and Construction of Sheet Pile Cofferdams. CIRIA Report No .95

Trenching Practice CIRIA Report No.97

Concrete Pressure on Formwork. CIRIA Report No. 108

Control of Ground Water for Temporary Works. CIRIA Report No. 113

Concreting of Deep Lifts Large Volume Pours CIRIA Report No. 135

Formwork Striking Times CIRIA Report No.136

BSC Piling Handbook (Edition, Date)

Code of Practice for the Safe Use of Lifting Equipment. Lifting Equipment Engineers Association.

Traffic Management Act 2004

Construction (Design and Management) Regulations 2015

602 REMOVAL OF TEMPORARY WORKS

- Temporary works coordinator to inspect and sign off as built works before temporary works are removed. Consult temporary works engineer, if any doubt. **Give at least 48h notice for temporary works designer to enable inspection of works as required or when permit to load/unload is required from the designer.**
- 610 DESK STUDY/ SURVEY
- Before starting work: Examine available information. Carry out a survey of the structure, site and surrounding area.
  - Report and method statements: Submit, describing relevant matters raised in specification.
  - Statutory notices and licences: Ensure issue and obtainment.
- 620 COMMENCEMENT CONDITION SURVEY
- Before starting work: Survey façade and existing structure, and take photographs of damaged or defective areas.
  - Items to be recorded: Location, extent and magnitude of cracks, spalling, movement, previous repairs, modifications and other irregularities of the fabric and presence of hazardous materials.
  - Information supplied: Give notice of areas of variance.
  - Report: Submit for comment. Include recommendations for:
    - Repair or monitoring of defects that could adversely affect structural adequacy of façade or retained structures while temporally supported.
- 630 MONITORING SURVEY POINTS – *Refer to permanent works engineers drawings as required*
- Façade survey points: Establish an agreed number and location of survey points and record initial positions to enable monitoring of:
    - Movements; Verticality / tilt, lateral displacement and level.
    - Crack widths
  - Retention structure survey points: Before loading, establish and record initial positions to enable monitoring of movement.
- 640 ENABLING WORK
- Scope:
    - Before erection of retention structure:
      - Remove hazardous materials, as section C20.
      - Repair façade as agreed, to facilitate connection to retention structure.
- 650 FOUNDATIONS
- Services: Sleeve through or temporarily divert around foundations.
  - Immature concrete: Protect from loading, drying and frosting until concrete is cured.
- 655 RETAINING WALLS
- Surcharge loadings: Provide barriers, etc. to enforce restriction of load behind retaining wall as specification/ calculations.
- 660 ERECTING RETENTION STRUCTURE AND TEMPORARY WORKS – *Refer to Axiom Structures Drawings*
- Existing and new services which may be affected by retention structure: Locate and mark positions. Provide temporary diversions, as necessary.
  - Existing foundations: Prevent excessive load being imposed onto foundations of façade and other structures retained in permanent works.
  - Retention structure and temporary works: Erect and connect to façade retained

structure, taking precautions to prevent damage. Allow for movement of structure which may occur before, during and after demolition.

- Connections: Tighten/ wedge to prevent slip under load.
- Vulnerable areas of façade: Protect jambs of openings and other surfaces that could be knocked or rubbed.
- Damage to adjoining property or façade: Give notice of damage arising from the execution of the works. Agree methods of repair.
- Compliance check: Check retention structure and temporary works for compliance with design at agreed stages during erection.
- Commissioning: When retention structure / temporary works and connections to façade are complete, obtain permission to load systems and give notice before commencing demolition.

#### 670 UNFORESEEN HAZARDS

- General: Give notice if unrecorded voids, flues, bonding timbers, services, etc. are discovered during erection of support systems.
- Action: Submit proposals for methods for infill, making good, relocation of connections, etc. as required.

#### 680 BONDED ANCHORS

- Holes: Drilled to manufacturer's recommended diameter and depth. Clean and free from dust at time of installing anchor.
- Permeable sleeves: Use in conditions where otherwise the loss of bonding agent would be unacceptably high.
- Installation/ tightening: To manufacturer's instructions.
- Testing: - Standard: To BS 5080-1 and 2.

#### 710 RETENTION STRUCTURE AND TEMPORARY WORKS MAINTENANCE

- Visual inspection: Carry out daily. Look for evidence of movement, distress or vandalism.
- Detailed inspection and maintenance: Carry out at same intervals as monitoring, making good to ties, wedges, connections, weatherproofing, corrosion protection, etc. as necessary.
- Accidental loading: Protect structure from impact damage by vehicles, plant and site operations that system has not been designed to withstand.
- General: Prevent access onto retention structure by unauthorised persons. Leave structure safe outside working hours.

#### 720 FAÇADE MAINTENANCE

- Stability: Inspect at same intervals as monitoring. Report significant movement or deterioration of façade.
- Remedial work: Submit proposals.
- General protection: Protect façade from damage by site operations and from staining due to corrosion of support systems.
- Weather protection: to Architects details.

#### 730 MOVEMENT MONITORING

- Method: target points and frequent readings as per **permanent works engineers specification**
- consult temporary works engineer immediately if any movement in doubt is happening.

#### 740 CRACK MONITORING

- Method: Contractors choice **unless noted otherwise in permanent works engineers specification.**
- New or extending cracks: Mark extent and record date. Report and make proposals for

additional monitoring points.

Period of monitoring: Until cracks are made good.

## COMPLETION

### 910 DISMANTLING RETENTION STRUCTURE AND TEMPORARY WORKS

- Permanent connections: When complete between façade, existing structure and new construction, give notice.
- Disconnection and dismantling: Obtain permission before proceeding.

### 920 REMOVAL OF TEMPORARY FOUNDATIONS

- Break out : All temporary concrete works are to be left unless clash with permanent works proposals, then foundations are. to be broken down and RC permanent structure made good as required.
- Backfilling: Allow for lean mix concrete or well compacted granulated hardcore / material, unless agreed otherwise.

### 930 COMPLETION CONDITION SURVEY

- Timing: After disconnection of support systems, survey and record the state of façade.
- Defects: Ensure that defects caused by or due to retention structure have been remedied.
- Record: Submit for agreement.