

## **Standard Specification Clause for O&M Manuals**

### **OPERATIONS AND MAINTENANCE MANUALS**

The Contractor is to provide completed Operation and Maintenance Manuals to the Principals Authorised Person prior to Completion or the date nominated in the approved Commissioning and Handover Plan

This is a condition precedent to payment for any Completion Amounts due under the Contract.

### **USE OF WEBFM PROPRIETRY SYSTEM**

The Contractor at its cost is to use the WebFM OMTrak System for the purpose of producing Electronic O&M Manuals.

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The Contractor is to procure the WebFM O&M system within 30 days of commencement of the Contract or at a time approved by the Principal.

### **OBJECTIVES**

The objectives of the Operations and Maintenance Manuals are:

- (a) to be of sufficient detail to enable the Principal to take over any maintenance, operation or use of the works and to do so in a safe, effective and efficient manner
- (b) to enable progressive and timely development and checking of the Manuals in advance of any completion milestones
- (c) to be fully completed and finalised prior to the Principals occupation, use or acceptance of the works
- (d) to be developed in standardised and fully electronic data format suitable for upload to the Principals Asset and Data Management Systems
- (e) to enable complete financial reconciliation of the assets and works showing element and asset costs, life expectancy costs and the like

### **CAPTURE OF ASSET, MAINTENANCE AND OPERATIONS DATA**

Contractors must progressively capture and input all relevant data into the WebFM O&M system in a timely manner during the contract term and prior to any handover of the works. Contractors are required to check and correct the data progressively.

## STAGED COMPLETIONS

Where the works are to be completed and handed over to the Principal in stages or separable portions the O&M Manual are to be completed to sufficient detail and content to enable the Principal to assume its responsibilities for the ongoing operation and maintenance of the completed works.

## ACCESS BY THE PRINCIPAL

The Contractor will make available the O&M Manuals in electronic format via WebFM internet access for review by the Principal and or the Authorised Person at the Contractors cost.

## ACCESS BY OTHERS

The contractor will provide access to the on-line WebFM O&M System for other relevant parties including but not limited to:

- Sub-contractors
- Design Consultants
- Independent Certifiers
- Other Parties with responsibilities in regard to development, checking and finalizing O&M Manuals

## QUALITY ASSURANCE PROCESS

The Contractor is to utilize the QA system provided as part of the WebFM O&M System. All parties with access to the system are to record any errors or omissions and to update the status on any actions taken.

## WEBFM SETUP

The Contractor is to provide a suitable venue and to co-ordinate attendance of relevant participants to the initial Set-up workshop conducted by WebFM. The Set-up session is to

- ensure the correct base facility and or asset data is used in the system,
- to establish the number of manuals and there scope relative to the completed works
- to agree the respective roles and responsibilities of the parties in development of O&M Manuals
- to advise the various parties using the system of any special requirements to be addressed in the O&M Manuals

The Set-Up workshop is to be conducted early in the project term to allow all Parties sufficient time to enable progressive data input prior to completion of any stage or separable portion of the works.

## TRAINING

The Contractor is to ensure all relevant staff, consultants and sub-contractors are suitably trained in the proper operation of the WebFM system.

The Contractor is also to provide at its cost training of nominated Principals representatives or agents in operation of the WebFM System. The number of trainees nominated will be a reasonable number in consideration of the size and complexity of the works.

## STANDARD O&M HEADINGS

O&M Manuals are to follow the standard headings shown below to ensure consistency for all elements of the works:

- **Introduction & Scope** – overview and description of the systems, the approach taken and other relevant information to ensure the client has an understanding of the equipment and its intended purpose
- **Assets** - detailed schedule of all financial assets data, maintainable assets data, items and locations all reconciled to the total projects value
- **Maintenance** - detailed instructions and frequency to ensure proper function of the assets
- **Operations Data** - detailed instructions for safe and efficient operation of the assets, including general cleaning, proper use and function of the assets/systems and relevant suppliers documentation
- **Spare Parts** - listed items or components required to complete maintenance or operation tasks or for replacements
- **Warranty and Certificates** - descriptions of all warranties and (both contracted and procured through suppliers) for the assets and descriptions of any certificates issued as part of the works including uploaded copies of all relevant documents
- **Help and Contact** - Details of any relevant contractors, suppliers and the like who may be used by the owner to support the operation and maintenance of the assets
- **Drawings and Reference** - lists of all final as built drawings, specifications and other relevant documents forming the final contract scope and other relevant attachments - like product manuals, specifications and the like relevant to the proper operation and maintenance of the works.

Where a particular section is not relevant it may be left blank

## HANDOVER OF ASSET, MAINTENANCE AND OPERATIONS DATA

The Contractor is to advise the Principal and or the Authorised Person when the Operations and Maintenance data is complete and accurately reflects the works.

The Contractor is to complete the draft O&M Manuals 28 days in advance of Handover of the Works or parts thereof or in accord with the approved Commissioning and Handover Plan whichever is the earlier date.

Should the Principal and or the Authorised Person identify any errors or omissions in the submitted data then within the time period stated in the approved Commissioning and Handover Plan or the issued Defect Notice the Contractor is required to rectify any items and to pay all such costs that may be incurred to update the final data.

## DOCUMENT COMPLETION

The Contractor must integrate the collection of asset data documents, and their subsequent production and submission in accord with the timing set out in the approved Commissioning and Handover Plan (including Inspection and Test Plans and Staged works handover), with progressive development of documents in electronic form.

The number of electronic copies of O&M Manuals shall be as stated in the approved Commissioning and Handover Plan or in the absence of a stated number 1 copy for each defined recipient in the

approved Commissioning and Handover Plan. In the absence of any defined recipients a minimum of 2 CD Copies are to be supplied.

Contractors are to advise the Principal or where responsibility for verification of O&M Manuals is vested with the Contractor or another Party when Manuals are at draft stage and ready for review.

Nominated personnel from the Principal, and or Responsible Party in accord with the approved Commissioning and Handover Plan shall access the on-line O&M Manuals and provide comments or directions for any corrections as needed.

The Contractor will update the O&M Manual data in accord with the directions issued and the stated timetable and notify the Principal or Responsible Party of satisfactory completion.

When notified by the Principal or Responsible Party of completion of all O&M Manuals the Contractor is to direct WebFM to close on-line access (to prevent further alteration to the approved data) and transfer all O&M Data to CD versions for Handover.

## COMPLIANCE WITH LAWS, STANDARDS AND SPECIFICATIONS

The Contractor shall check and verify that all data and attached files and documents that form the completed O&M Manuals comply with the relevant Laws, Standards, Codes and Specifications applicable to the works to enable the proper operation and maintenance by the Principal and or its appointed agents of the completed works.

## WORK-AS-EXECUTED DRAWINGS

The Contractor is to provide to the Principal work-as-executed drawings in electronic formats for Subcontract and Supplier packages showing the completed works as constructed for that stage or portion of the works. Formats are to be PDF and CAD or other format as approved by the Principal.

Ensure the content, accuracy and level of detail of work-as-executed drawings are equivalent to those in the detail design drawings used for construction and are sufficient to describe and to ensure the efficient operation of the assets created under the Contract. Where required to describe the Works, include digital photographs of specific aspects of the Works in work-as-executed drawings or operations and maintenance manuals.

Include in work-as-executed drawings a survey drawing indicating the position of the Works relative to a primary survey grid. Certify survey drawings using a Registered Surveyor where required by the Principal.

All work as executed and as-built documentation must be in accord with the Specification. Verify each drawing certifying accuracy, completeness, correctness and compliance with CAD conventions.

All work as executed and as-built documentation must be uploaded into the WebFM system. All Attached files to be adequately described in WebFM Heading and Description boxes per Contract Specification including Drawing title, number, short description of the works, location ie Building No etc (similar to drawing register). Where a Zip file is used all contained files and their titles are to be shown in the Description box with sufficient detail to allow easy assessment of each files contents.

## HARD COPY FORMAT

The Contractor is to provide Hard Copy versions of O&M Manuals only if specified in the approved Commissioning and Handover Plan or other contract document.

Where any conflict occurs with any other part of the contract and or specifications in reference to provision of Hard Copy O&M Manuals the Principal in the interests of compliance with Green Building Policy will accept the same number of electronic copies of O&M Manuals in lieu of the number of Hard Copy Manuals nominated.

#### ELECTRONIC COPY FORMAT

The Contractor is to provide to the Principal the specified number of copies of the WebFM electronic O&M Manuals in CD or DVD disks containing all O&M Manual data, attached files and documents transferred from the on-line web site. Disk Media are to be packaged in a suitably bound Disk Case. Disks and Case are to be fully labeled with the following:

- Project Name (Front Case cover and Spine, All Disk Media)
- Contractor Name and contact details (logo may be inserted)
- Compiled date (date when O&M Manuals data transferred to Disk Media)
- Contents List (include list of all trade manuals in order)
- Installation instructions (inside front Case Cover)

All O&M Manuals are to be supplied in stand alone MS Access database and PDF formats as single electronic systems with suitable hyperlinks to all associated files and documents for easy retrieval and use by the Principal.

The number of electronic copies of WebFM O&M Manuals shall be as stated in the approved Commissioning and Handover Plan or in the absence of a stated number 1 copy for each defined recipient in the approved Commissioning and Handover Plan. A minimum of 2 CD Copies are to be supplied.