OBJECTIVE

To define the procedure for proper management and production of drawings in the Company.

RESPONSIBILITIES

CAD Manager	-	To assist Project Manager to ensure that drawings produced are in accordance with the Client's/Authorities' requirement.
	-	Drafting manpower scheduling.
Project Manager	-	To ensure drawings are produced in accordance to the Client's/ Authorities' requirement and intents of the drawing are appropriate.

PROCEDURES

1. Incoming Drawings

1.1 Registration

(a) Hardcopy

Drawing transmittal covering all incoming drawings shall be stamped on the reverse side of ***drawing transmittal*** with the 'DATE RECEIVED' stamp by the Administrative Assistant and shall be circulated to the Project Manager within the day of receipt ***via email.***

The Administrative Assistant shall maintain the 'Incoming Drawing Record' form for all hard copy drawings received for each project.

(b) Softcopy – via storage media

A copy of the covering letter***/drawing transmittal*** shall be given to the CAD Manager. The CAD Manager shall verify the contents of the diskettes. Any discrepancies and problem with the content of the diskette shall be reported to the Project Manager. If none, the CAD files will then be saved in the drawing server.

(c) Softcopy – via emails

The Project Manager must state the Project ref. numbers in the email containing the CAD file attachments before forwarding it to CADMAIL or the CAD Manager. The CAD Manager shall verify the contents of the attachments in the email. Any discrepancies and problem with the content of the attachments in the email shall be reported to the Project Manager. If none,

the CAD files will then be saved in the drawing server.

Hardcopies will not be printed unless instructed by the Project Manager. Hardcopies printed will be stamped with the 'DRAWING RECEIVED VIA EMAIL' stamp.

The CAD Manager shall maintain the CAD files and update the necessary files in the drawing server. The respective drafting personnel shall be informed of the updates.

1.2 Other Consultants' Drawings

(a) The Project Manager of each project and the CAD Manager shall take charge of managing the hardcopy and softcopy incoming drawings respectively.

(b) The Project Manager may assign other team members specific task in respect of the filing of drawings.

(c) For each project, the latest set of architectural, structural and other consultants' drawings shall be maintained and filed as follows:

(i) Hardcopies – may be filed in box files for easy reference
(ii) Softcopies – saved in the drawing server

(d) Hardcopies of superseded drawings shall be immediately removed and disposed as the Project Manager deems fit.

(e) Upon receipt of the drawings, the Project Manager shall at his/her discretion either:

(i) Direct the team member to file up the drawings into the respective drawing holder and supersede the relevant existing drawings. The original transmittal or covering letter shall then be circulated to other team members without the drawings; or

(ii) Gather the relevant team members for a briefing concerning the contents of the drawing and courses of action. Thereafter, follow the procedures in (i) above.

(f) Every team member who borrows the drawing for reference is to ensure that no drawings are detached from the set. All references are to be made with all drawings intact as a complete set and thereafter to immediately return it to its proper place when he/she no longer needs the drawings.

1.3 Contractors' Shop Drawing

Upon receipt of the drawings, the Project Manager shall circulate the drawings with the transmittal directly to the team member who is taking action on the drawing.

The review and approval of the drawings shall be in accordance to Section M7: Construction Process Control.

2. Outgoing Drawings

All drawing and sketches issued shall be properly annotated and dated for easy identification and must be accompanied by a cover letter or drawing transmittal ***or email***.

For drawings issued under Architect's Instructions, these drawings shall be cross-referenced to the Architect Instruction Nos. issued.

All drawings issued shall be identified with the proper stamp for the purpose of its issuance.

3. Request for Production of Drawings

All requests for production of drawings shall be done via the Manpower Allocation Request Form (Form S8.D) to the CAD Manager. At the time of request, all necessary design information or sketches shall be given to the CAD Manager. The CAD Manager shall take charge of managing all the information given and arranging of manpower.

Generally, the date to complete the production of drawings based on the given information shall be agreed between the CAD Manager and the respective Project Manager/Assistant Project Manager. At the same time, the CAD Manager and the Project Manager shall work together to agree on the presentation of the drawings, including format and standard of drawing, number of drawings and the title or description to be used. The agreed number and description of the drawings to be produced shall be recorded in the Progress of Drawing Production form which will be used eventually to track and record the progress of works.

All progress of drawing production shall be recorded in the Progress of Drawing Production Form (Form S8.A).

4. Format and Standard of Drawings

The format and standard of drawings produced shall be in accordance with the guidelines stated in Alpha Consulting Engineers Pte Ltd's CAD and BIM Manual. For projects where the Client has specific requirement on the format and standard of drawings to be produced, these shall be recorded in the Project Quality Plan.

Preparation of drawings shall also be made with reference to the Standard Drawing Checklists which can be found in the office's intranet.

5. Drawings Filing/Record

The following procedures for filing/keeping of drawings shall be adopted:

(i) All drawings in hardcopy prints shall be scanned to image files and cut to DVD (2 copies). For record purposes, the respective team member concerned will only keep the latest revision/issue of each hardcopy prints. Hence, superseded hardcopy prints may be destroyed/disposed indefinitely.

In general, the latest hardcopy prints will be kept for three months after the TOP or Practical Completion of the project or whichever is later. Thereafter, the hardcopy prints of the project concerned will be dealt with in accordance to Section S6: Archive Control.

(ii) Softcopy drawings shall be saved in the drawing server. Thereafter, they will be dealt with in accordance to Section S6: Archive Control.

6. Drawing/Design Check

All design drawings shall be subjected to 'Design Check' prior to issuance. The checker shall be the Project Manager or in his/her absence, the Project Director or any other person appointed by the Project Director.

All checker's comment shall be recorded or annotated in ink on the 'Check Print'. The 'Check Print' shall indicate the name of the checker ***and approver,*** date it was checked ***and initial by checker and approver*** and kept by the project team member for record purposes.

The project team members shall ensure that all comments in the 'Check Print' are incorporated into the final design drawing by initialising at the appropriate 'Drawn', 'Checked' and 'Approved' boxes on the drawing title block.

In the event of urgent issuance of design drawing, the 'Design Check' may be done after issuance of the drawings. However, all comments arising from the 'Design Check' shall be consolidated and reissued to the necessary parties.

For design drawings to be issued after tender award, 'Check Print' will not be required unless there are overall/major changes in the design concept.

7. Authority Approved Drawing

(i) All authority-approved hardcopy drawings shall be scanned and cut to DVD (2 copies). The scanned copies shall be saved in the drawing server under the Electronic Submission folder. Thereafter, the hardcopy drawings will be dealt with in accordance to Section S6: Archive Control.

(ii) All authority-approved softcopy drawings shall be saved in the drawing server under the Electronic Submission folder.

8. Request for Deviation from Standard Notes & Details

All drawings prepared shall be incorporated with the standard notes & details taken from the CAD Library server. If in such case where the standard notes or details have to be amended to suit a particular project, prior approval from the Project Director shall be obtained. The Project Manager shall use the Request for Deviation of Standard Notes/Standard Details on Drawings form (Form S8.C) for all requisition and submit it to the Project Director.

The CAD Manager shall record all requisition forms in the Register of Request for Deviation of Standard Notes/Standard Details on Drawings form (Form S8.C)

REFERENCE

Form S8.A - Progress of Drawing Production

Form S8.B - Register of Request for Deviation from Standard Notes/Standard Details on Drawings

Form S8.C - Request for Deviation from Standard Notes/Standard Details on Drawings

Form S8.D - Request for Allocation of Drafting Staff

Alpha Consulting Engineers Pte Ltd CAD Manual

Alpha Consulting Engineers Pte Ltd BIM Manual