

Section 4: Documenting Data from CAD Projects#

4.4 Documenting Field Data Capture#

Those involved in the survey will generally begin recording information about data as soon as they begin to create or use it. **Log books** are often used to record information as the project proceeds. It is normal to record details of the equipment and software used, any problems that were encountered or modifications that were made to standard procedures or naming conventions.

Some information about each on-site survey technique used is required. This helps to assess the suitability of the archived results for later use in a CAD model. Such information would enable the precision and accuracy of the data to be assessed to determine, for example, if it was suitable for use in producing a three-dimensional model.

The following is a general list of the forms of documentation that might be useful to record for each survey technique. For [Laser Scan](#) and [Photogrammetric](#) surveys, please see the relevant guides for more specific metadata requirements.

Element	Description
Project Name	Include the project name or title with the documentation to cross-refer to the project level documentation.
Reference Number	Include the project reference number (if any) with the documentation to cross-refer to the project level documentation.
Survey Type	The type of survey technique should be recorded, e.g. total station survey, GPS survey, direct object scanning, hand measurement survey etc.
Survey Purpose	Provide a brief summary (200-300 words) describing the survey, the techniques used, including training procedures, and equipment checks as appropriate.
Duration	The dates when the survey took place, i.e. the dates of the first and last day of the survey. If separate pieces of fieldwork took place they should be listed separately.
Surveyor	The name and address of the organisation or individual(s) who carried out the survey.
Survey Keywords	Keywords indexing the type of survey technique.
Instrumentation	Specific information about the make and model of the instruments used and their test and repair records as appropriate.
Coverage	Describe the area covered and the methods used (e.g. fixed grid) for each technique.
Precision and Accuracy	This should provide a commentary on the accuracy and precision of the data captured by a particular technique. This might include: The estimated error of survey base station coordinates Data precision

	Data accuracy Data density The estimated error terms for the coordinate pairs and (if appropriate) the z-coordinate Georeferencing information.
Data Transfer Files	The data transfer files (if any) used to move survey data from a total station to a computer and any intermediate files used in that process. Record the following information: File name Date A summary of the work done Data points + numbers, etc.

4.4.1 Additional Information for GPS Data

In addition, the following information is recommended for data captured using GPS equipment:

Element	Description
Location Method	Record the method that was used to locate stations, C/A or P code pseudorange measurements, carrier phase measurements and whether a single measurement or averaging (include the time period) was used.
Coordinate Transformation	Record the software used for any coordinate transformation and give the associated error estimates.
Satellite	The satellites used in obtaining fix and observed GDOP (Geometric Dilution of Precision, a measure of the quality of the fix indicating the suitability of satellite positions for triangulation).
Differential Correction	The nature of any differential correction undertaken together with error estimates
Broadcast	The broadcast differential: name of the service provider and the name and location of base station
Base Station	The local base station: instrument details, location (including error estimate) of base station
Post-processing	Post-processing software used and the source of correction data.

4.4.2 Notes and Hand Measurements

Most forms of survey involve taking notes and making annotated drawings as part of the process. Much survey work also involves some hand measurements with tapes and line levels, even if the major part of the work is done using electronic equipment. For example, hand measurements may be used in inaccessible areas while fixed points are surveyed with electronic equipment to specify the relationships between the different areas of the site.

Notes and drawings form part of the project archive, although not part of the digital archive unless they are retrospectively digitised. They include:

- Drawings of the survey subject with markers showing the data points
- Specifying data points with three coordinates for three-dimensional models

- Date produced
 - Name of the originator.
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