

DIGITAL ARCHIVING: INTRODUCTION

INTRODUCTION

Archival records are administrative or project records which are no longer in current use but are retained to satisfy legal requirements, for promotional or reuse value, or for their potential historical significance. This TECHnote addresses requirements for successful long-term storage of, and access to, digital archival records.

LONG-TERM DIGITAL STORAGE

Digital records require ongoing maintenance to survive in long-term storage. Digital physical carrying media may fail suddenly or incrementally, and digital information loss may not be noticed before it is too late.

Digital file corruption is inevitable. However, duplicating archived digital files, validating the integrity of files on a regular basis and replacing corrupted files with uncorrupted copies will help to ensure that file corruption is discovered and corrected.

File location and duplication

Digital archival records should be centralised in one repository, and at least two copies of the repository maintained in separate physical locations.

However, maintaining more than two copies of the archive will reduce the risk of data loss. This may mean, for example, for a small firm:

- Two external drives, with one maintained offsite, or
- Cloud storage with an external drive backup.

A larger firm may use:

- A networked server with tape drive backup, or
- A networked server with backup by an external storage provider.

File validation

Digital files must be checked regularly for corruption. Corrupted files must be replaced with uncorrupted copies. Generating checksums for files, and regularly validating files against checksums, is an efficient and reliable way of monitoring the health of digital files. NATSPEC provides a training module on checksum generation and file validation.

External digital storage providers may validate files and replace corrupted files as a part of their terms of service. Whether this is the case must be determined with external providers.

DIGITAL ARCHIVE MANAGEMENT

At least one, but preferably two individuals within a practice should have a basic understanding of digital preservation principles. NATSPEC provides a series of training modules on these principles. One of these individuals should be made responsible for managing the digital archival repository.

Individuals with limited IT experience should not be responsible for the maintenance of the repository.

Digital archival files should be write-protected to prevent accidental alteration or deletion. When re-using files from the archive, create and work on copies, never on archival files themselves.

POLICY AND PROCESS DOCUMENTATION

Unspoken codes and conventions in common knowledge, or codes and symbols which seem to have obvious meanings, may be forgotten by the time project files are accessed from the digital archive.

Therefore, file management policies, drawing and modelling conventions, and retention and disposal schedules must be archived alongside every project at the end of every project.

In this way, each project folder becomes a self-contained package that contains all of the information needed to interpret its contents.

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Digital archiving

Digital archiving is the process of collecting records in a digital environment. Records may include drawing documentation, specifications, reports, email correspondence and photographs, and may be stored in a range of file types.

Training and professional development

NATSPEC provides a training module on archiving digital architectural records. Resources and further reading are available in the *Archiving digital architectural records: towards a national framework project* report, hosted on the NATSPEC website.

Relevant websites

Architecture Museum,
University of South Australia
www.unisa.edu.au

National BIM Guide,
NATSPEC
bim.natspec.org

Archiving, Acumen Practice
Notes
acumen.architecture.com.au

NATSPEC TECHnotes

GEN 031 Digital archiving:

Glossary

GEN 032 Digital archiving:

File naming and project folder structure

DIGITAL ARCHIVING

LEGACY DIGITAL RECORDS

Legacy digital records are groups of archival records created in the past, organised using file and folder naming conventions which are not compliant with current conventions. These records may be stored on legacy carrying media, such as floppy disks or magnetic tape.

Where possible, legacy digital records should be ingested into the central archival repository using a file-copying utility that validates files after copying and does not alter file metadata. Legacy digital records stored on floppy disk, CD or DVD disks, flash, or other external media should be ingested into the repository as a matter of urgency.

Folder structures containing CAD or BIM files are almost certain to contain hidden links which may be broken if files are rearranged. Avoid sorting, rearranging or renaming folders belonging to legacy records beyond the top-level project folder.

If legacy files and folders must be heavily reorganised, retain an unaltered copy of the original file and folder structure for future reference.

Legacy Software

Software is the key to accessing the contents of native 2D and 3D CAD and BIM files. Legacy software is software which is no longer used in practice or no longer supported by software vendors.

Increasingly, software not compatible with current operating systems may be accessed through emulation, so legacy software should always be retained.

Software may include installation files, such as those on CD-ROM, manuals, documentation, licence keys and hardware locks.

RETENTION AND DISPOSAL

If intentions surrounding the retention and disposal of records are not codified in transparent protocols, a danger exists that important records may be destroyed or deleted. Such decisions are often regretted later.

Develop a policy for documenting which types of records will be archived at the end of a project and how long those records will be retained. Review this policy on a periodic basis, at minimum every five years.

Retain a list of records which have been destroyed or deleted, including the destruction or deletion date.

RECORDS TO KEEP

At minimum, the following records should be retained:

- Client briefs.
- Milestone project deliverables, including design intent, construction coordination and as-built documentation.
- Specifications.
- A selection of design development records (key sketches and studies).
- Photographs, especially construction progress photographs.
- Presentations.
- Records of unbuilt projects (e.g. competition entries).

Native format CAD and BIM drawings and models should be retained as well as open format derivatives (e.g. PDF and IFC). Further information on file formats may be found in the NATSPEC National BIM Guide.

DONATING RECORDS

When developing retention and disposal schedules, address the possibility of donating records to collecting institutions (libraries, archives, and museums).

If donation is a desired outcome, this intention should be documented, including which records will be donated and to where, when they will be donated and any conditions of use that will be placed on donated records.

Digital archives

The records of the process of designing a building cover a broad spectrum. Digital archives may include any number of file types, including but not limited to:

- 2D documents, including proprietary word processing, spreadsheet, desktop publishing and presentation files.
- 2D images, including proprietary format raster and vector image editing files, and open format images.
- Proprietary native format 2D and 3D CAD and BIM models and open format CAD and BIM models, including PDF drawings.
- Email archives.
- Video files.
- Audio files.
- Other proprietary software files.

Digital archives will also likely contain proprietary and open source software.