

ENHANCED BUILDING OPERATIONS PROGRAM

Systems manual introduction

This systems manual template is intended as a starting point to build a systems manual for a specific building.

It includes a recommended file organization structure and a collection of sample documents and guidelines. You'll find a format for information related to building systems, assemblies, day-to-day building operational activities, commissioning processes, and ongoing building energy efficiency tracking.

The template documents are based upon ASHRAE Guideline 1.4, Preparing Facility Systems Manuals. They should be added to, edited and deleted where appropriate to accurately reflect the systems and processes of the specific building.

When the systems manual is complete, it will act as an important resource for the building owner and operators to understand, operate, and maintain the building's systems, as well as gather background on the building design and construction process. It will also provide important baseline information for future building upgrades, retrofits, and performance maintenance such as re-commissioning projects. The systems manual may be one of the most important documents created, as it ensures the building and its systems will be operated and optimized as intended. This manual is not to be confused with the operations and maintenance manual.

Over time, the systems manual will prove to be an ideal tool for documenting both physical and operational changes to the building, making it a comprehensive reference resource for the building owner and operators.

When this resource is applied to the:

- I) **Manitoba Hydro New Buildings Program**, it's recommended to include all available information from the documents generated in the construction of the new building. This information, presented in the format indicated below, is the **minimum** content requirement for compliance with this program; or
- II) **Manitoba Hydro Enhanced Building Operations Program (EBOP)**, it's recommended to include all available information from the archives for the building. Information gathered, used and developed for the EBOP project, presented in the format indicated below, is the **minimum** content requirement for compliance with this program.

Systems manual format

I. Executive summary

II. Original facility design and construction

1. Owner's project requirements
2. Basis of design
3. As-built or record drawings (construction/ project record documentation)

III. Original facility, systems and assemblies information

1. Building design and equipment specifications
2. Approved submittals including sequences of operations for equipment and systems
3. Manufacturer's operations and maintenance manuals
4. Equipment warranty documentation (optional)
5. Contractor and supplier contact information (optional)

IV. Facility operations

1. Operating plan
2. Facility and equipment operating schedules
3. Set points, ranges and limitations
4. Operational control sequences
5. Emergency procedures
6. Maintenance procedures (optional)

V. Original commissioning process

1. Final commissioning report
2. Testing and start-up reports
3. Baseline data

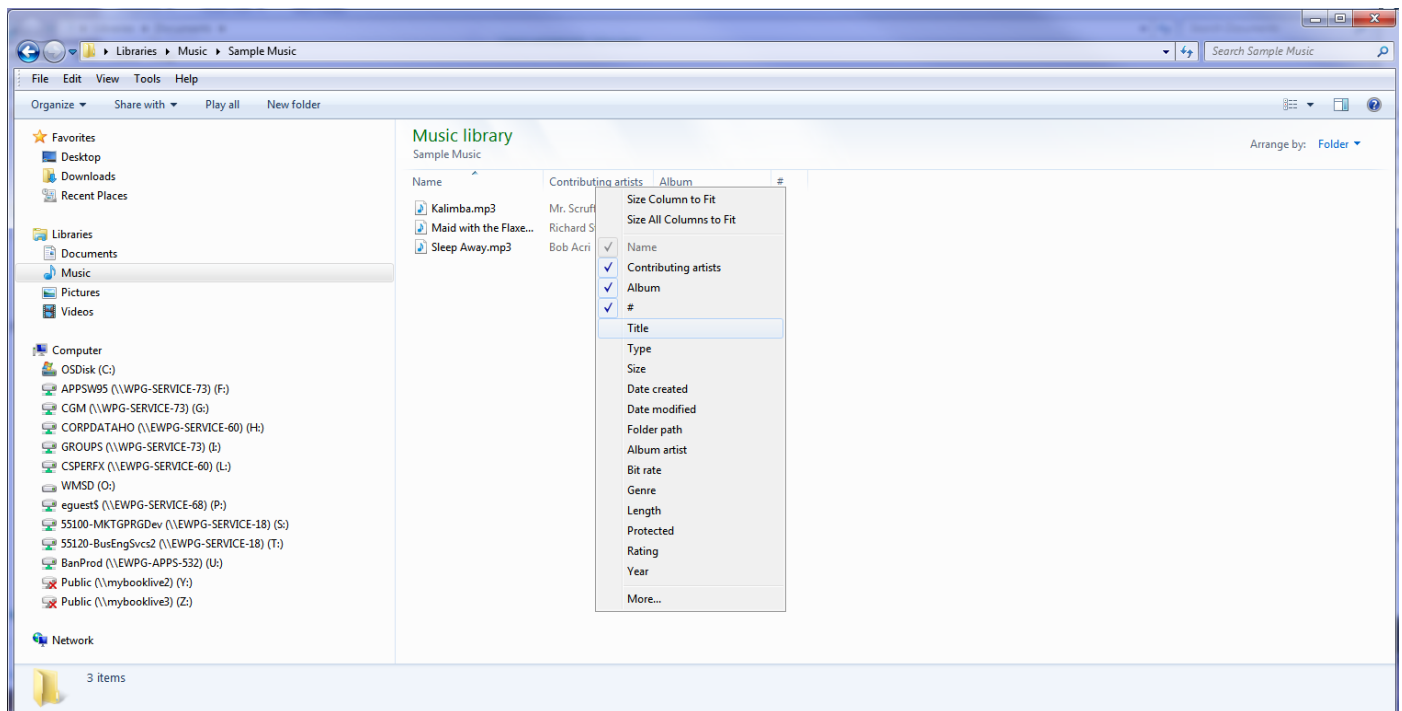
VI. Building efficiency

1. EBOP project
 - a. (yyyy/mm/dd)
 1. EBOP opportunities report
 2. EBOP measures report
 3. EBOP implementation and validation report
 4. Ongoing efficiency reports
 5. Updated current facility requirements
 6. Updated issues log
2. EBOP
 - a. (yyyy/mm/dd)
 1. ...

¹APEGM Authentication of Hardcopy and Electronic Professional Documents – May 12, 2011, section 1.2.3 (pg. 11) defines, in Manitoba:

- i) As-built drawings to not include professional engineer seals, having non-verified actual conditions content; and,
- ii) Record drawings to include signed professional engineer seals, having verified actual conditions content.

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Another approach to enable the Title in the view bar is described at the following web link: <https://support.microsoft.com/en-ca/kb/310297>

For more information about this and other Power Smart for Business Programs, contact:

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