

ASHRAE Guideline 4-2008
(Supersedes ASHRAE Guideline 4-1993)



ASHRAE GUIDELINE

Preparation of Operating and Maintenance Documentation for Building Systems

Approved by the ASHRAE Standards Committee on June 21, 2008, and by the ASHRAE Board of Directors on June 25, 2008.

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ISSN 1049-894X

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and Air-Conditioning Engineers, Inc.**
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NOTE

When interpretations or errata to this guideline have been approved, they can be downloaded free of charge from the ASHRAE Web site at <http://www.ashrae.org>.

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(This foreword is not part of this guideline. It is merely informative and does not contain requirements necessary for conformance to the guideline.)

FOREWORD

Originally published in 1993, Guideline 4 has been updated in this edition to reflect the changing technology of building systems and the increased use of computer programs since 1993. It provides a greater focus not only on the content of the operating and maintenance (O&M) documents but also on how to prepare and update the documents utilizing electronic storage and presentation tools.

As new and renovated buildings have become progressively more technologically complex, documentation needs have grown. Many of these buildings contain sophisticated systems to control indoor environments in an energy-efficient manner. To sustain the required level of performance of HVAC&R systems throughout the service life of these buildings, it is essential that these systems be documented appropriately.

Accurate and relevant O&M documentation is also essential for the safe, reliable and efficient operation of systems. Timely delivery of O&M documentation is important. It should be used for commissioning and training of building management, operating, and maintenance personnel before the building is taken over by the owner.

This guideline is directly applicable to HVAC&R systems but can also be used for other building systems. It complements ASHRAE Guideline 1.1, HVAC&R Technical Requirements for The Commissioning Process.

1. PURPOSE

To guide those responsible for the design, construction, and commissioning of building HVAC&R systems in the preparation and delivery of operating and maintenance (O&M) documentation that

- a. is simple to prepare and update,
- b. is delivered on time,
- c. is easy to use, and
- d. provides accurate and relevant information.

2. SCOPE

This guideline covers the format, content, delivery, and updating of building HVAC&R systems O&M documentation that is normally provided by the design and construction team members.

3. DEFINITIONS

Many of the terms used in this guideline and recommended for use in the O&M documents are defined in *ASHRAE Terminology of Heating, Ventilating, Air-Conditioning & Refrigeration*.¹ Others are defined in *ASHRAE Guideline 0, The Commissioning Process*,² and *ASHRAE Guideline 1.1, HVAC&R Technical Requirements for The Commissioning Process*.³ Additional terms are defined below:

Basis of Design: a document that records the concepts, calculations, decisions, and product selections used to meet the Owners Project Requirements and to satisfy the applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

building project: a task with the objective of delivering a base building or a building shell that must be fitted-out before it is suitable for occupancy.

commissioning authority: an entity identified by the owner who leads, plans, schedules, and coordinates the commissioning team to implement the commissioning process.

design authority: a prime consultant, usually an architect, responsible for the quality of the design that is proposed to meet the owner's requirements.

design intent: see *Basis of Design*. Both terms are commonly used.

designer: a member of the project team involved in providing design solutions to meet the owner's requirements and in preparing construction and O&M documents during the conceptual design, the completion of construction documents (the design), the construction, and the operational stages of the project delivery.

electronic documentation: as used in this guideline, a compilation of electronic files relevant to all components and systems of a project. The documentation adheres to the content requirements described by this guideline and has an overall structure and search capabilities that allow navigation, access, and search of all files contained through networked, stand-alone, and/or portable devices.

fit-out project: a project through which furnishings, including partitions, furniture, and tenant equipment (e.g., copy machines, fax machines, personal computers) are delivered.

O&M designer: a designer specializing in the O&M aspects of a project.

O&M documentation: a comprehensive set of documents providing information pertaining to a specific facility, including information regarding the design, operation, and maintenance of the facility.

owner: the person or legal entity that will own the delivered facility or an agent representing the owner. The owner defines the project requirements.

Owner's Project Requirements: a written document that details the functional requirements of a project and the expectations of how it will be used and operated. This includes project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information. The term *Project Intent* is used by some owners for their commissioning process instead of Owner's Project Requirements.

Preliminary Operating Manual: an elaboration of the design intent that includes operating information developed during the construction documents (design) stage.