



# Take the HVAC CHALLENGE™

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## New Building Commissioning



### ACROSS

2. This organization publishes Guideline 4 – “Preparation of Operating and Maintenance Documentation for Building Systems.”
7. This is also referred to as the “design intent” and is a documentation of a project’s functional requirements and expectations of how it will be used and operated.
8. This is the documented primary decision-making process and assumptions behind design decisions made to meet the owner’s project requirements.
11. This testing is conducted to verify proper operation during, at minimum, both winter and summer conditions where sufficient variations in seasonal conditions exist.
14. This person is the owner’s advocate who leads and manages the commissioning process for the owner.
15. This manual is an archive of documentation that provides information needed to understand, operate, and maintain systems and assemblies
16. This comprises the reasoning and underlying set of assumptions for design calculations, decisions, schemes, systems, and

assemblies selected to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines.

17. This organization publishes MasterFormat.
19. This type of testing uses the BAS or data-loggers to record system parameters over time and then analyzes the data days or weeks later.
21. When present, this is the backbone for conducting much of the testing for commissioning.
22. Most of this should occur during construction before substantial completion; however, for complex systems, this may require multiple sessions over time.

### DOWN

1. This is a quality assurance process for buildings from pre-design through design, construction, and operation.
3. This type of testing gathers or analyzes system performance data completely electronically or with significant help from electronic tools.
4. This type of commissioning is called “ongoing” or “recommissioning” and involves ongoing monitoring and periodic retesting and calibration of selected systems and assemblies.
5. This involves systematically investigating, analyzing, and optimizing performance of existing equipment, systems, and assemblies that have not been recently commissioned.
6. This commissioning phase is done during construction.
9. These checklists verify that the specified equipment has been provided, is properly installed and initially started, and checks out adequately in preparation for full operation and testing.
10. This should include definitions, a list of equipment and systems to be commissioned, submittal, construction checklist, testing and documentation requirements, and sample checklists and test forms.
12. These requirements are described in the specifications and describe what modes and features are to be tested and verified and under what conditions.
13. This narrative is the written description and discussion of the concepts and features the designer intends to incorporate into the design or what they have incorporated to meet the project requirements and associated performance criteria.
18. This type of test is done to evaluate systems to obtain immediate results.
20. These procedures are written repeatable procedures, prepared specifically for each project and are designed and provided for each component, system, and assembly.

To brush up on the facts behind this month’s clues, refer to Chapter 42 (“New Building Commissioning”) in the *2003 ASHRAE Handbook — Applications*.

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## Solution to December’s HVAC Challenge™

