SUMMARY OF: COMMISSIONING AND FINAL INSPECTION REQUIREMENTS
2012-IgCC

Commissioning IgCC - Where application is made for construction as described in this section, the registered design professional in responsible charge or approved agency shall perform commissioning during construction and after occupancy as required by Table 903.1.

Where Table 903.1 specifies that commissioning is to be done on a periodic basis, the registered design professional in responsible charge shall provide a schedule of periodic commissioning with the submittal documents that shall be reviewed and approved by DPS.

The approved agency shall be qualified and shall demonstrate Competence for the commissioning of the particular type of construction or operation. The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the approved agency provided those personnel meet the qualification requirements of this section to the satisfaction of DPS.

The approved agency shall provide written documentation to DPS demonstrating competence and relevant experience or training. Experience or training shall be considered relevant where the documented experience or training is related in complexity to the same type of commissioning activities for projects of similar complexity and material qualities.

An approved Commissioning Agency shall: Be objective, competent, and independent from the contractor responsible for the work being inspected. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed.

An approved agency shall have adequate equipment to perform the required commissioning. The equipment shall be periodically calibrated.

An approved agency shall employ experienced personnel educated in conducting, supervising and evaluating tests and commissioning.

1. Must be independent of the work of design and construction of this project (though may be an employee of the project design firm).
2. Must not be an employee of, or contracted through, a contractor or construction manager holding construction contracts of this project.
3. Must have prior experience commissioning a minimum of two (2) projects of similar scope.
4. May be an employee or consultant of the owner of this project meeting the above requirements.

AND

POSSESS AT LEAST ONE OF THE FOLLOWING CREDENTIALS: Must be a Certified Commissioning Professional certified by at least one of the following commissioning provider certification agencies:

- Building Commissioning Association (BCA), Certified Commissioning Professional (CCP)
- Building Commissioning Certification Board (BCCB), Certified Commissioning Professional - CCP
- ASHRAE, Commissioning Process Management Professional (CPMP)
- ASHRAE, Building Commissioning Professional Certification (BCxP)
- AABC Commissioning Group, ACG, Commissioning Authority (CxA)
- National Environmental Balancing Bureau (NEBB), Building Systems Commissioning (BSC)
- Association of Energy Engineers (AEE), Certified Building Commissioning Professional (CBCP)
- University of Wisconsin - Accredited Commissioning Process Manager (CxM)
- University of Wisconsin - Accredited Commissioning Process Authority Professional (CxAP or CAP)
- University of Wisconsin - Accredited Green Commissioning Process Provider (GCxP or GCP)
550/081 – Final Inspection - Preoccupancy report requirement. The approved commissioning agency shall keep records of the commissioning required by the IgGC. The approved agency shall furnish commissioning reports to the owner and the registered design professional in responsible charge and, upon request, to DPS. Reports shall indicate that work was or was not completed in conformance with approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. Where discrepancies are not corrected, they shall be brought to the attention of the owner, DPS and the registered design professional in responsible charge prior to the completion of that phase of the work. Prior to the issuance of a Certificate of Occupancy, a final commissioning report shall be submitted to and approved by DPS.

Post-occupancy report requirement. Post-occupancy commissioning shall occur as specified in the applicable sections of this code. A post-occupancy commissioning report shall be provided to the owner within 30 months after the Certificate of Occupancy is issued for the project and shall be made available to DPS upon request.

BUILDING OPERATIONS AND MAINTENANCE: Building operations and maintenance documents in accordance with Section 904.3 shall be submitted to the owner prior to the issuance of the Certificate of Occupancy. Record documents shall be in accordance with Section 904.2.

The building owner shall file a letter with DPS certifying the receipt of record documents and building operations and maintenance documents.

At least one copy of these materials shall be in the possession of the owner and at least one additional copy shall remain with the building throughout the life of the structure.

Record documents. The cover sheet of the record documents for the project shall clearly indicate that at least one copy of the materials shall be in the possession of the owner. Record documents shall include all of the following:

1. Copies of the approved construction documents, including plans and specifications.
2. As-built plans and specifications indicating the actual locations of piping, ductwork, valves, controls, equipment, access panels, lighting and other similar components where they are concealed or are installed in locations other than those indicated on the approved construction documents.
3. For sites that have previously been a brownfield, or required environmental corrective action, remediation or restoration at the federal, state or local level, copies of engineering and institutional control information shall be provided.

Building operations and maintenance documents. The building operations and maintenance documents shall consist of manufacturer’s specifications and recommendations, programming procedures and data points, narratives, and other means of illustrating to the owner how the building, site and systems are intended to be maintained and operated.

The following information shall be included in the materials, as applicable to the specific project:

1. Directions to the owner or occupant on the manual cover sheet indicating that at least one copy of the materials shall be in the possession of the owner or occupant.
2. Operations and maintenance manuals for equipment, products and systems installed under or related to the provisions of Chapter 4 including, but not limited to, the following, as applicable:
   2.1. Vegetative shading, vegetative roofs and natural resource protections and setbacks.
   2.2. Water-conserving landscape and irrigation systems.
   2.3. Stormwater management systems.
   2.4. Permanent erosion control measures.
   2.5. Landscape or tree management plans.
3. Operations and maintenance documents for materials, products, assemblies and systems installed under or related to the provisions of this code for material resource conservation in accordance with Chapter 5 including, but not limited to, the following, as applicable:
   3.1. Care and maintenance instructions and recommended replacement schedule for flooring, including, but not limited to, carpeting, walk-off mats and tile.
   3.2. Care and maintenance instructions for natural materials including, but not limited to, wood, bio-based materials and stone.
   3.3. Available manufacturer’s instructions on maintenance for:
3.3.1. Exterior wall finishes.
3.3.2. Roof coverings.
3.3.3. Exterior doors, windows and skylights.
3.4. Information and recommended schedule for required routine maintenance measures, including, but not limited to, painting and refinishing.

4. Operations and maintenance documents for equipment, products and systems installed under or related to the provisions of this code for energy conservation in accordance with Chapter 6 including, but not limited to, the following:
   4.1. Heating, ventilating and air-conditioning systems including:
       4.1.1. Recommended equipment maintenance schedule.
       4.1.2. Air filters and fluid filters, including recommended replacement schedule and materials.
       4.1.3. Time clocks, including settings determined during commissioning.
       4.1.4. Programmable controls and thermostats, including settings determined during commissioning.
   4.2. Domestic hot water systems including performance criteria and controls.
   4.3. Building thermal envelope systems including:
       4.3.1. Glazing systems inspection schedule.
       4.3.2. Performance criteria for replacements and repairs.
       4.3.3. Information and recommended schedule on required routine maintenance measures, including but not limited to, sealants, mortar joints and screens.
   4.4. Electrical and lighting systems including:
       4.4.1. Technical specifications and operating instructions for installed lighting equipment.
       4.4.2. Luminaire maintenance and cleaning plan.
       4.4.3. Lamp schedule, recommended relamping plan, and lamp disposal information.
       4.4.4. Programmable and automatic controls documentation, including settings determined during commissioning.
       4.4.5. Occupant sensor and daylight sensors documentation, including settings determined during commissioning.
   4.5. Automatic demand reduction systems.

5. Operations and maintenance documents for equipment, products and systems installed under or related to the provisions of this code for water conservation in accordance with Chapter 7, including, but not limited to the following:
   5.1. Domestic fixtures.
   5.2. Water-regulating devices including faucets and valves.
   5.3. Irrigation and rainwater and gray water catchment.

6. Operations and maintenance documents for equipment products and systems under or related to the provisions of this code for indoor environmental quality in accordance with Chapter 8, including, but not limited to, the following:
   6.2. Green cleaning products, procedures and techniques.
   6.3. Recommended window cleaning schedule.
   6.4. Ventilation controls.
   6.5. Floor finishes.
   6.6. Fireplaces and combustion appliances.

*The following IgCC Commissioning Checklist shall accompany all IgCC plan submittals, complete as applicable.*
# 903.1
## COMMISSIONING PLAN

<table>
<thead>
<tr>
<th>Applies</th>
<th>CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION</th>
<th>PREOCCUPANCY</th>
<th>POST-OCCUPANCY</th>
<th>METHOD</th>
<th>OCCURRENCE</th>
<th>SECTION/REFERENCED STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural resources and base line conditions of building site</td>
<td>X</td>
<td>None</td>
<td>Report</td>
<td>With permit submittal</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Landscape irrigation systems</td>
<td>X</td>
<td>None</td>
<td>Field inspection</td>
<td>Installation</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Topsoil and vegetation protection measures; setbacks from protected areas</td>
<td>X</td>
<td>None</td>
<td>Field inspection and report</td>
<td>Installation of measures, prior to other site disturbance</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Imported soils</td>
<td>X</td>
<td>None</td>
<td>Field inspection and report</td>
<td>With permit submittal; after all-fill operations complete</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Soil restoration and reuse</td>
<td>X</td>
<td>None</td>
<td>Field inspection and report</td>
<td>Preparation and replacement of soils</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Stormwater management system operation</td>
<td>None</td>
<td>X</td>
<td>Field inspection</td>
<td>—</td>
<td>24 months</td>
</tr>
<tr>
<td></td>
<td>Erosion and sediment control</td>
<td>X</td>
<td>X</td>
<td>Field inspection</td>
<td>During construction activities</td>
<td>Periodic for 24 months</td>
</tr>
<tr>
<td></td>
<td>Hardscape and shading provided by structures and vegetation</td>
<td>X</td>
<td>X</td>
<td>Field inspection and report</td>
<td>During construction and installation</td>
<td>24 months</td>
</tr>
<tr>
<td></td>
<td>Vegetative roofs</td>
<td>X</td>
<td>X</td>
<td>Field inspection and report</td>
<td>Installation of protective membranes, base materials, soils and vegetation</td>
<td>24 months</td>
</tr>
<tr>
<td></td>
<td>Site lighting</td>
<td>X</td>
<td>None</td>
<td>Testing and report</td>
<td>Installation</td>
<td>None</td>
</tr>
</tbody>
</table>

### Chapter 4: Site Development and Land Use

#### Natural resources and base line conditions of building site
- **X** indicates the system requiring commissioning.
- **None** indicates no commissioning is required.
- **Report** indicates commissioning is required but not specified in the table.
- **Field inspection** indicates commissioning is required through field inspection.
- **Installation** indicates commissioning is required through installation.
- **Verification** indicates commissioning is required through verification.
- **Preparation and replacement of soils** indicates commissioning is required through preparation and replacement of soils.

### Chapter 5: Material Resource Conservation and Efficiency

#### Moisture control (Section 507.1)
- **X** indicates the system requiring commissioning.
- **None** indicates no commissioning is required.
- **Field inspection and verification** indicates commissioning is required through field inspection and verification.
- **Periodic inspection for entire sub-soil drainage system** indicates commissioning is required through periodic inspection for entire sub-soil drainage system.
- **Periodic inspection for the entire foundation** indicates commissioning is required through periodic inspection for the entire foundation.
- **Periodic inspection for entire slab footprint** indicates commissioning is required through periodic inspection for entire slab footprint.

1. **Foundation sub-soil drainage system.**
   - **X**
   - **None**
   - **Field inspection and verification**
   - **Periodic inspection for entire sub-soil drainage system**
   - **None**
   - **507.1 and IBC Ch 18**
2. **Foundation waterproofing**
   - **X**
   - **None**
   - **Field inspection and verification**
   - **Periodic inspection for the entire foundation**
   - **None**
   - **507.1 and IBC Ch 18**
3. **Foundation dampproofing**
   - **X**
   - **None**
   - **Field inspection and verification**
   - **Periodic inspection for the entire foundation**
   - **None**
   - **507.1 and IBC Ch 18**
4. **Under slab water vapor protection**
   - **X**
   - **None**
   - **Field inspection and verification**
   - **Periodic inspection for entire slab footprint**
   - **None**
   - **507.1, IBC Ch 19 and ASTM E 1643**
### Chapter 6: Energy

#### Energy consumption, monitoring, targeting and reporting

<table>
<thead>
<tr>
<th>CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION</th>
<th>PREOCCUPANCY</th>
<th>POST-OCCUPANCY</th>
<th>METHOD</th>
<th>OCCURRENCE</th>
<th>SECTION/REFERENCED STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Monitoring system</td>
<td>X</td>
<td>None</td>
<td>Inspection and verification</td>
<td>During construction and prior to occupancy</td>
<td>None</td>
</tr>
<tr>
<td>b. Calibration</td>
<td>X</td>
<td>X</td>
<td>Testing and review and evaluation or test reports</td>
<td>During commissioning</td>
<td>Annually</td>
</tr>
</tbody>
</table>

**Mechanical systems completion – all buildings**

| a. Air system balancing – provide the means for system balancing | X            | None           | Inspection and verification | During construction and prior to occupancy | None | 611.1.2.1 and through reference to IECC |
| b. Hydronic system balancing – provide means for system balancing | X            | None           | Inspection and verification | During construction and prior to occupancy | None | 611.1.2.2 and through reference to IECC |
| c. Mechanical system manuals – construction documents to require O&M manual | X            | None           | Verification of construction documents | Plan review | None | 611.1.5.2 |

**Mechanical systems – buildings over 5,000 square feet total building floor area**

a. Commissioning required and noted in plans and specifications

<p>| a. Commissioning required and noted in plans and specifications | X            | None           | Verification of construction documents | Plan review | None | 611.1 |
| b. Documentation of required commissioning outcomes | X            | None           | Verification with the building owner | Subsequent to completion of all commissioning activities | None | 611.1 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Preparation and availability of a commissioning plan</th>
<th>X</th>
<th>None</th>
<th>Verification with the RDP or commissioning agent</th>
<th>Between plan review and commissioning initiation</th>
<th>None</th>
<th>611.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>d. Balance HVAC systems (both air and hydronic)</td>
<td>X</td>
<td>X</td>
<td>HVAC system installer/contractor or commissioning agent</td>
<td>After installation HVAC systems prior to occupancy</td>
<td>of and</td>
<td>TBD</td>
</tr>
<tr>
<td></td>
<td>e. Functional performance testing of HVAC equipment</td>
<td>X</td>
<td>X</td>
<td>HVAC system installer/contractor or commissioning agent</td>
<td>After installation HVAC systems prior to occupancy</td>
<td>of and</td>
<td>TBD</td>
</tr>
<tr>
<td></td>
<td>f. Functional performance testing of HVAC controls and control systems</td>
<td>X</td>
<td>X</td>
<td>HVAC system installer/contractor or commissioning agent</td>
<td>After installation HVAC systems prior to occupancy</td>
<td>of and</td>
<td>TBD</td>
</tr>
<tr>
<td></td>
<td>g. Preparation of preliminary commissioning report</td>
<td>None</td>
<td>X</td>
<td>HVAC system installer/contractor or commissioning agent</td>
<td>None</td>
<td>Subsequent to commissioning</td>
<td>611.1.4</td>
</tr>
<tr>
<td></td>
<td>h. Acceptance of HVAC systems and equipment/system verification report</td>
<td>None</td>
<td>X</td>
<td>Building owner</td>
<td>None</td>
<td>Letter verifying receipt of the commissioning report</td>
<td>611.1.4.1</td>
</tr>
<tr>
<td></td>
<td>i. Preparation and distribution of final HVAC system completion—Documentation that construction documents require drawings, manuals, balancing reports and commissioning report be provided to the owner and that they have been pro-vided</td>
<td>None</td>
<td>X</td>
<td>RDP, contractor or commissioning authority</td>
<td>None</td>
<td>90 days after final certificate of occupancy</td>
<td>611.1.5</td>
</tr>
</tbody>
</table>

**Chapter 6: Lighting**

<table>
<thead>
<tr>
<th></th>
<th>Auto demand reduction control system functionality</th>
<th>X</th>
<th>X</th>
<th>Functional testing</th>
<th>Final inspection</th>
<th>18-24 months</th>
<th>604.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plug load controls</td>
<td>X</td>
<td>None</td>
<td>Functional testing</td>
<td>Final inspection</td>
<td>None</td>
<td>608.6</td>
</tr>
<tr>
<td>Connection of appliances to switched receptacles</td>
<td>—</td>
<td>X</td>
<td>Field inspection</td>
<td>None</td>
<td>18-24 months</td>
<td>608.6</td>
<td></td>
</tr>
<tr>
<td>Specified transformer nameplate efficiency rating</td>
<td>X</td>
<td>None</td>
<td>Field inspection</td>
<td>Final inspection</td>
<td>None</td>
<td>608.8.1.1</td>
<td></td>
</tr>
<tr>
<td>Verification of lamp</td>
<td>X</td>
<td>X</td>
<td>Field inspection</td>
<td>Final inspection</td>
<td>18-24 months</td>
<td>608.10</td>
<td></td>
</tr>
<tr>
<td>Verification of ballast</td>
<td>X</td>
<td>None</td>
<td>Field inspection</td>
<td>Final inspection</td>
<td>None</td>
<td>608.10</td>
<td></td>
</tr>
</tbody>
</table>

**Lighting controls**

| a. Installation | X | None | Field inspection | Post-installation | None | 608.11 |
| b. Calibration | X | X | System installer, contractor or commissioning agent | Post-installation | 18-24 months | 611.3.3 |

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**Chapter 7: Water Resource Conservation, Quality and Efficiency**

| Appliances | X | None | — | — | — | 702.6 |
| Hot water distribution | X | None | — | — | — | 702.8 |
| Cooling tower performance | — | X | — | — | — | 703.7.7 |
| Metering | X | None | — | — | — | 705.1.1 |
| Rainwater system water quality | None | X | Field testing and verification | None | 707.15.1 | 707.15.1 |
| Gray water system water quality | None | X | Field testing and verification | None | 708.13.8 | 708.13.8 |
| Soil percolation test | X | None | Field inspection and report | Prior to installation of gray water irrigation system | None | 708.14.2 |

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**Chapter 8: Indoor Environmental Quality and Comfort**

Building construction, features, operations and maintenance facilitation

| Air-handling system access | X | X | Field inspection and verification | During construction and prior to occupancy | 18 - 24 months | 802.2 |
| Air-handling system filters | X | X | Field inspection and verification | During construction and prior to occupancy | 18 - 24 months | 802.3 |
| HVAC systems | — | X | Field inspection and verification | — | 18 - 24 months | 803.2 |

Specific indoor air quality & pollutant control measures
<table>
<thead>
<tr>
<th>Listing, installation and venting of fireplaces and combustion appliances</th>
<th>X</th>
<th>—</th>
<th>Field inspection and verification</th>
<th>During construction and prior to occupancy</th>
<th>—</th>
<th>804.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound transmission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical and emergency generator equipment located outside buildings or located where exposed to exterior environment.</td>
<td>X</td>
<td>None</td>
<td>Field testing and verification</td>
<td>See Section 807.5.1</td>
<td>None</td>
<td>807.5.1</td>
</tr>
<tr>
<td>HVAC background sound</td>
<td>X</td>
<td>None</td>
<td>Field testing and verification</td>
<td>See Section 807.5.2</td>
<td>None</td>
<td>807.5.2</td>
</tr>
</tbody>
</table>