



## **GBI COMMISSIONING SPECIALIST (CxS) REGISTRATION & PREREQUISITES**

### **INTRODUCTION**

The GBI rating system recognizes the need to address typical shortfalls of the building industry where it relates to the need for proper design and commissioning of a building's energy related system. Whilst the GBI (v1.0) does not mandate the appointment of a CxS, owners are urged to consider such an appointment to enhance the performance of their buildings in the long run.

The commissioning process begins early in the Design phase of a building project and continues through Construction and warranty period. GBI encourages commissioning of both dynamic and static elements that impact energy & water efficiency and elements that impact IEQ. Commissioning should be performed on features and systems, including all HVAC systems and their controls, ductwork, pipework, renewable and alternative energy technologies, lighting controls and daylighting systems, waste heat recovery, and advanced technologies; such as UFAD, chilled slab cooling, chilled beams, thermal storage, heat recovery system, and so forth.

Water commissioning includes irrigation systems, plumbing fixtures, and plumbing infrastructure. Energy commissioning covers HVAC system, lighting, and energy-generation equipment. Commissioning activities that affect Indoor Environmental Quality (IEQ) include acoustics, temperature and humidity controls, ventilation systems, monitoring equipment, occupant controls, and daylighting systems. It is important that the scope of commissioning incorporates both dynamic and static elements in the design, and not merely the mechanical and electrical systems. Commissioning plumbing fixtures involves just the fixtures that are used to reduce water use, while the plumbing-infrastructure requirement applies to such things as rain-water or gray-water recovery systems. Innovative waste-water technologies should also be commissioned.

The CxS is expected to be well-qualified for the managerial and technical aspects of the project and exhibit experience in construction management, design, engineering, hands-on field experience with equipment and troubleshooting, energy efficiency, and operations & maintenance.

In a nutshell, the CxS must ensure that the building's energy related systems are designed and installed to achieve proper commissioning so as to realise their full potential and intent.

### **ROLE OF THE CxS**

GBI requires the CxS to be an independent, third-party expert who serves as an objective advocate of the owner, directs the commissioning process, and presents final recommendations to the owner regarding the performance of commissioned building systems.

The design reviews and submittal reviews must be performed by a firm other than the design firm. It is the function of the CxS to introduce standards and strategies early in the design process and ensure implementation of selected design measures by seeing that clearly stated target requirements are included in the construction documents. A knowledgeable CxS on a team can greatly facilitate the design process through collaborative design reviews. These reviews can help minimise costs and maximise GBI rating by ensuring that the requirements can be met.



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### SPECIFIC TASKS OF THE CxS

GBI Assessment Criterion requires the appointment of an independent GBI recognised CxS at the onset of the design process to verify that comprehensive pre-commissioning and commissioning is performed for all the building's energy related systems in accordance with ASHRAE Commissioning Guideline or other GBI approved equivalent standards by:

1. Conducting at least one commissioning design review during the detail design stage and back-check the review comments during the tender documentation stage.
2. Developing and incorporating commissioning requirements into the tender documents.
3. Developing and implementing a commissioning plan.
4. Verifying the installation and performance of the systems to be commissioned.
5. Reviewing contractor submittals applicable to systems being commissioned for compliance.
6. Developing a systems manual that provides future operating staff the information needed to understand and optimally operate the commissioned systems.
7. Verifying that the requirements for training operating personnel and building occupants are completed.

### GBI Commissioning includes the following examples:

- GBI NRNC EE6: Enhanced Commissioning of Building Energy Systems (3 points)
- GBI NRNC EE7 (Part 2): Post Occupancy Commissioning (1 point)

Related credits are EE8: Verification (2 points); EE9: Sustainable Maintenance (3 points); EQ14: IAQ Before & During Occupancy (2 points); EQ15: Post Occupancy Comfort Survey (2 points); and WE5: Metering & Leak Detection System (2 points).

To fulfill these criteria, the independently appointed GBI recognised CxS is required to be engaged at the onset of the design to be able to conduct the requisite design review so as to enable systems and components to be commissionable later.

### GBI APPROVAL OF THE CxS

GBI will assess and approve individual CxS (upon request on a case by case basis), engaged for each GBI registered project for the period ending 20th May 2010 based on the prerequisites of such CxS as appended in the subsequent section. Meanwhile, a list of CxS recognized by GBI will be progressively posted on the GBI website.



## GBI COMMISSIONING SPECIALIST (CxS) REGISTRATION & PREREQUISITES

### PREREQUISITES OF THE COMMISSIONING SPECIALIST (CxS)

#### THE INDIVIDUAL CxS:

1. Must be affiliated to a Commissioning Company,
2. Is a current TABB (The Testing, Adjusting and Balancing Bureau) Certified Supervisor who has certified at least 5 (five) buildings/industrial plants on M&E Systems (Note that TABB only certifies a contractor or a supervisor or a technician, and there is no TABB certified engineer);  
**OR**  
Is a Professional Engineer registered with the Board of Engineers, Malaysia and has more than 5 years of testing & commissioning experience in Building Services;  
**OR**  
Is a Competent Electrical or Supervising Engineer registered with Suruhanjaya Tenaga;

#### THE AFFILIATED COMMISSIONING COMPANY:

1. Must be registered with Suruhanjaya Syarikat-Syarikat Malaysia.
2. Is currently registered as a NEBB (The National Environmental Balancing Bureau) Building Systems Commissioning Certified Firm or TABB (The Testing, Adjusting and Balancing Bureau) Commissioning Contractor who has certified at least 5 (five) buildings/industrial plants on M&E systems;  
**OR**  
Have at least in their full-time employment, one professional Mechanical engineer and one professional Electrical/Electronic engineer registered with the BEM, each with at least 5 years testing & commissioning experience in Building Services. In lieu of the professional Electrical/Electronic engineer, to have a Competent Supervising Engineer or Competent Electrical Engineer registered with Suruhanjaya Tenaga, or at least two High Tension Chargemen registered with Suruhanjaya Tenaga.