



The Knowledge Leader for Project Success

Owners • Contractors • Academics

## 10-10 Program – Programming Questionnaire

### Building Projects

#### Instructions

This questionnaire is for the Programming phase. The starting point of the Programming phase is the **single project concept adopted** and the establishment of a formal project team. Programming concludes at **project authorization** for the design and construction of the project.

Each questionnaire includes three sections. The first section focuses on general project information such as project location, nature, and selected delivery method. The second section addresses input measures by asking various types of questions such as those requiring yes/no and sliding-scale (Likert-scale) responses (i.e., from ‘strongly agree’ to ‘strongly disagree’). The final (third) section asks project outputs such as cost, schedule, and capacity. In the questionnaire, for the terms marked with an *asterisk* (\*), additional description is available in the Appendix.

The questionnaire is designed to be **completed by members of the project’s management team**. If you are a member of this team, please answer the following questions to the best of your ability. If you are unable to answer a particular question, leave it blank and move to the next question. Remember, some of these questions are intentionally subjective by design.

All data provided for the survey by participating individuals and organizations are considered confidential. These data will not be viewed by any party other than CII staff members.

You can review the CII Benchmarking Code of Conduct at the following site: <https://www.construction-institute.org/scriptcontent/bmm-code.cfm?section=bmm>

Should you have any questions about the 10-10 Performance Assessment Campaign, please contact Dr. Daniel Oliveira via e-mail ([Daniel.Oliveira@cii.utexas.edu](mailto:Daniel.Oliveira@cii.utexas.edu)) or by phone at (512) 232-3050.

The Performance Assessment Committee thanks you for your participation in this very important industry initiative!

CII Performance Assessment Committee

# I. General Information

Your Company Name:

Your Name:

Project Name:

Owner Company Name:

Project Construction Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Construction Contractor:

Lead Design Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Architect of Record:

Currency:

Unit System: ( ) Imperial ( ) Metric

Exchange Rate: 1 USD =

Midpoint of Actual Phase (Programming) (mm/dd/yyyy)

Closest Cost Index Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

## Project Type

- |  |  |
|--|--|
| <input type="checkbox"/> Communication Center                | <input type="checkbox"/> Movie Theatre           |
| <input type="checkbox"/> Courthouse                          | <input type="checkbox"/> Parking Garage          |
| <input type="checkbox"/> Dormitory/Hotel/Housing/Residential | <input type="checkbox"/> Physical Fitness Center |
| <input type="checkbox"/> Embassy                             | <input type="checkbox"/> Prison                  |
| <input type="checkbox"/> Low-rise Office (<=3 floors)        | <input type="checkbox"/> Restaurant/Night club   |
| <input type="checkbox"/> High-rise Office (>3 floors)        | <input type="checkbox"/> Retail Building         |
| <input type="checkbox"/> Hospital                            | <input type="checkbox"/> School                  |
| <input type="checkbox"/> Laboratory                          | <input type="checkbox"/> Warehouse               |
| <input type="checkbox"/> Maintenance Facilities              | <input type="checkbox"/> Other Buildings         |

## Project Nature

|  |                            |                         |
|--|----------------------------|-------------------------|
| Grass Roots, Greenfield ( )            | Brownfield (co-locate) ( ) | Addition, Expansion ( ) |
| Modernization, Renovation, Upgrade ( ) |                            |                         |

### Project Delivery Method

|  |   |
|--|---|
| <input type="checkbox"/> Design-Bid-Build            | Serial sequence of design and construction phases: owner contracts separately with designer and constructor.  |
| <input type="checkbox"/> Design-Build (EPC)          | Owner contracts with Design-Build (EPC) contractor.   |
| <input type="checkbox"/> CM at Risk                  | Owner contracts with designers and construction manager (CM). CM holds the contracts.   |
| <input type="checkbox"/> Parallel Primes             | Owner contracts separately with designer and multiple prime constructors.   |
| <input type="checkbox"/> Integrated Project Delivery | A project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses that talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. (AIA definition) |

**[Contractor Only]** Which phase(s) did your company participate in on this project? (check all that apply)

Programming     Design     Procurement     Construction     Commissioning

### Project Team Members

Please mark the project management team participants in this phase (check all that apply)

|   |  |
|---|--|
| <input type="checkbox"/> Project Manager      | <input type="checkbox"/> QA/QC                   |
| <input type="checkbox"/> Architect            | <input type="checkbox"/> HSE                     |
| <input type="checkbox"/> Construction Manager | <input type="checkbox"/> Maintenance             |
| <input type="checkbox"/> Operation Manager    | <input type="checkbox"/> Consultants             |
| <input type="checkbox"/> Consulting Engineers | <input type="checkbox"/> Business Unit Personnel |
| <input type="checkbox"/> Procurement          | <input type="checkbox"/> Project Sponsor         |
| <input type="checkbox"/> Contracting          | <input type="checkbox"/> Finance Manager         |
| <input type="checkbox"/> Project Controls     | <input type="checkbox"/> Commissioning Agent     |

### Project Description

Please briefly describe this project (i.e., what is the purpose of the building (?), what is its scope (?))

Did this project use PDRI?

YES

NO

If yes, was the PDRI externally facilitated?

YES

NO

If yes, what was the total PDRI score at Full Funding Authorization?

What was the average project management team\* size (in FTE)? What was the maximum project management team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

## II. Input Measures

1. Your Cumulative Years of Experience in Capital Projects: \_\_\_\_\_

2. Are you the Project Manager?

YES

NO

3. The complexity of this project was very high based on its (check all that apply):

|   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Size             | <input type="checkbox"/> Schedule      | <input type="checkbox"/> Contract strategy         | <input type="checkbox"/> Location                 |
| <input type="checkbox"/> Technology risks | <input type="checkbox"/> Process scope | <input type="checkbox"/> Diversity of project team | <input type="checkbox"/> Supply chain reliability |
| Other (specify): _____                    |  |  |   |

4. **Please choose a rating below that best describes the level of difficulty for this project, compared to other building projects.** Difficulty factors describe the conditions under which construction will be performed such as restricted access or limited working hours. Use the definitions below as general guidelines.

Difficulty factor 1: All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints.

Difficulty factor 2: have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new buildings on a tight urban site or existing campus with constricted working conditions.

Difficulty factor 3: have restricted access, as listed above as well as limited working hours that require overtime and/or shift labor that will affect the costs.

Difficulty factor 4: have restricted access and limited working hours as listed above, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities.

Difficulty Factor 1     Difficulty Factor 2     Difficulty Factor 3     Difficulty Factor 4

5. A robust, formal stage-gate process was rigorously followed for this project.

|   |   |  |
|---|---|--|
| <input type="checkbox"/> Robust Process, No Rigor | <input type="checkbox"/> No Process, No Rigor | <input type="checkbox"/> Robust Process, Rigor |
| <input type="checkbox"/>                          | <input type="checkbox"/>                      | <input type="checkbox"/>                       |

6. What percentage of design/engineering was completed prior to full funding authorization?

%

7. Were pre-construction services used and was a constructability plan developed?

- Pre-construction services were used, a constructability plan was developed.
- Pre-construction services were used, no constructability plan was developed.
- Pre-construction services were not used.

8. Please characterize how project meetings were conducted (check all that apply).

- Including appropriate representation of stakeholders, i.e., the 'right' people are present  
Effective mechanisms for resolving project related issues (as measured by pre-planning, time, content, documentation, follow-up, etc.)
- Occurring with a frequency that meets the project's needs
- Having meaningful output that justifies my time investment.

9. Which of the following statements characterized the decisions made by the manager(s) of this project? (check all that apply).

- Considered final and not revisited
- Collaborative and inclusive
- Made at the lowest appropriate level in the organization
- Communicated promptly to the team
- Made in a timely and effective manner
- Consistent with the delegation of authority

10. Was there a formal (documented in writing) change management process for this project?

- Yes, a formal, documented change management process existed
- Yes, there was a process, but it was not formal nor documented
- No change management process existed

11. Was a life cycle cost analysis completed for this project?  YES  NO

If yes, which of the following were considered? (please check all that apply)

- Carbon Footprint Measurement
- Energy Optimization
- Waste Minimization
- Sustainability Certification

12. Is this project intended to be LEED certified or equivalent (certifiable)?  YES  NO

If yes, what level of LEED certification or equivalent is planned?

- Certified
- Silver
- Gold
- Platinum

|   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 13. Were bridging documents* produced during Programming?                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Did Programming incorporate community relations issues?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Was the owner's project manager assigned at the beginning of Programming? | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Was the construction manager assigned during Programming?                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Was an architect involved in Programming?                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Was the lead scheduler assigned during Programming?                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Was a cost engineer assigned during Programming?                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. The project had integrated peer reviews during Programming.               | <input type="checkbox"/> | <input type="checkbox"/> |

|  | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 21. The Programming process included sufficient resources necessary to adequately define the scope.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. The owner level of involvement was appropriate.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. The project team members were familiar with the project execution plan (PEP) and they used it to manage their work.    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. The procurement strategy and plan were developed and communicated to the project team during Programming.              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. The project team was well aligned in terms of the owner's objectives, needs and expectations.                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. The project execution plan supported the objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. The Programming process adapted to changes in project objectives or market conditions.                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. The procurement and vendor schedules were not a significant challenge during Programming on this project.              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. The project had an effective risk identification and management process.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Preassembly*, prefabrication*, modularization*, and offsite fabrication* were thoroughly evaluated during Programming. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. A formal plan for commissioning was developed which incorporated operations and maintenance philosophy.                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Project management team* members were clear about their roles and how to work with others on the project.              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. The project team including project manager(s) had skills and experiences with similar projects / processes.            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 34. The project management team* was adequately staffed.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. People on this project worked effectively as a team.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. The project experienced a minimum number of project management team* personnel changes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. The interfaces between project stakeholders were well managed.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Key project team members understood the owner's goals and objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. All of the necessary, relevant project team members were involved in the risk assessment process.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Project leaders recognized and rewarded outstanding personnel and results.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Leadership effectively communicated business objectives, priorities, and project goals.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Project leaders were open to hearing "bad news", and they wanted input from project team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. The project management team* maintained open and effective communication.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Project team members had the information they needed to do their jobs effectively.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Plan and progress including changes were communicated clearly and frequently amongst project stakeholders.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. A high degree of trust, respect and transparency existed amongst companies working on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. The project's commissioning objectives were appropriately communicated to the relevant project team members.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. The project's work processes and systems (e.g., document management, project controls, business and financial systems) supported project success. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. When issues arose, there were effective mechanisms to ensure they were resolved.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Regulatory requirements (e.g., permitting and environmental issues) were properly managed and Programming is in compliance.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. The project team members attended sufficient professional training directly related to their Programming work.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### III. Output Measures

1. Please provide the estimated and actual phase (Programming) cost.

| Estimated Cost (\$) | Actual Cost (\$) |
|---------------------|------------------|
|                     |                  |

2. Please provide the *forecasted* total project cost and duration.

|          |                 |
|----------|-----------------|
| Cost: \$ | Duration: weeks |
|----------|-----------------|

3. Please provide the estimated and actual phase (Programming) start and end dates

| Estimated Schedule (mm/dd/yyyy) |      | Actual Schedule (mm/dd/yyyy) |      |
|---------------------------------|------|------------------------------|------|
| Start                           | Stop | Start                        | Stop |
|                                 |      |                              |      |

4. What is the *forecasted* size of the facility?

|   |  |
|---|--|
| Total Building Gross Square Footage* (BGSF) |  |
|---|--|





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## 10-10 Program – Design Questionnaire

### Building Projects

#### Instructions

This questionnaire is for the Design phase. The phase covers both schematic and detail designs. The starting point of the Design phase is the **basis of design (BOD) and contract award to A/E firm(s)**. Design phase concludes with the **release of all approved drawings and specifications for construction** for the project

Each questionnaire includes three sections. The first section focuses on general project information such as project location, nature, and selected delivery method. The second section addresses input measures by asking various types of questions such as those requiring yes/no and sliding-scale (Likert-scale) responses (i.e., from 'strongly agree' to 'strongly disagree'). The final (third) section asks project outputs such as cost, schedule, and capacity. In the questionnaire, for the terms marked with an *asterisk* (\*), additional description is available in the Appendix.

The questionnaire is designed to be **completed by members of the project's management team**. If you are a member of this team, please answer the following questions to the best of your ability. If you are unable to answer a particular question, leave it blank and move to the next question. Remember, some of these questions are intentionally subjective by design.

All data provided for the survey by participating individuals and organizations are considered confidential. These data will not be viewed by any party other than CII staff members.

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The Performance Assessment Committee thanks you for your participation in this very important industry initiative!

CII Performance Assessment Committee

# I. General Information

Your Company Name:

Your Name:

Project Name:

Owner Company Name:

Project Construction Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Construction Contractor:

Lead Design Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Architect of Record:

Currency:

Unit System: ( ) Imperial ( ) Metric

Exchange Rate: 1 USD =

Midpoint of Actual Phase (Design) (mm/dd/yyyy)

Closest Cost Index Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

## Project Type

- |  |  |
|--|--|
| <input type="checkbox"/> Communication Center                | <input type="checkbox"/> Movie Theatre           |
| <input type="checkbox"/> Courthouse                          | <input type="checkbox"/> Parking Garage          |
| <input type="checkbox"/> Dormitory/Hotel/Housing/Residential | <input type="checkbox"/> Physical Fitness Center |
| <input type="checkbox"/> Embassy                             | <input type="checkbox"/> Prison                  |
| <input type="checkbox"/> Low-rise Office (<=3 floors)        | <input type="checkbox"/> Restaurant/Night club   |
| <input type="checkbox"/> High-rise Office (>3 floors)        | <input type="checkbox"/> Retail Building         |
| <input type="checkbox"/> Hospital                            | <input type="checkbox"/> School                  |
| <input type="checkbox"/> Laboratory                          | <input type="checkbox"/> Warehouse               |
| <input type="checkbox"/> Maintenance Facilities              | <input type="checkbox"/> Other Buildings         |

## Project Nature

|  |                            |                         |
|--|----------------------------|-------------------------|
| Grass Roots, Greenfield ( )            | Brownfield (co-locate) ( ) | Addition, Expansion ( ) |
| Modernization, Renovation, Upgrade ( ) |                            |                         |

### Project Delivery Method

|  |   |
|--|---|
| <input type="checkbox"/> Design-Bid-Build            | Serial sequence of design and construction phases: owner contracts separately with designer and constructor.  |
| <input type="checkbox"/> Design-Build (EPC)          | Owner contracts with Design-Build (EPC) contractor.   |
| <input type="checkbox"/> CM at Risk                  | Owner contracts with designers and construction manager (CM). CM holds the contracts.   |
| <input type="checkbox"/> Parallel Primes             | Owner contracts separately with designer and multiple prime constructors.   |
| <input type="checkbox"/> Integrated Project Delivery | A project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses that talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. (AIA definition) |

### Primary Contract Type for Design

|  |   |
|--|---|
| <input type="checkbox"/> Lump Sum          | <input type="checkbox"/> Unit Price                     |
| <input type="checkbox"/> Cost Reimbursable | <input type="checkbox"/> Guaranteed Maximum Price (GMP) |

**[Contractor Only]** Which phase(s) did your company participate in on this project? (check all that apply)

Programming     Design     Procurement     Construction     Commissioning

### Project Team Members

Please mark the project management team participants in this phase (check all that apply)

|   |  |
|---|--|
| <input type="checkbox"/> Project Manager      | <input type="checkbox"/> QA/QC                   |
| <input type="checkbox"/> Architect            | <input type="checkbox"/> HSE                     |
| <input type="checkbox"/> Construction Manager | <input type="checkbox"/> Maintenance             |
| <input type="checkbox"/> Operation Manager    | <input type="checkbox"/> Consultants             |
| <input type="checkbox"/> Consulting Engineers | <input type="checkbox"/> Business Unit Personnel |
| <input type="checkbox"/> Procurement          | <input type="checkbox"/> Project Sponsor         |
| <input type="checkbox"/> Contracting          | <input type="checkbox"/> Finance Manager         |
| <input type="checkbox"/> Project Controls     | <input type="checkbox"/> Commissioning Agent     |

### Project Description

Please briefly describe this project (i.e., what is the purpose of the building (?), what is its scope (?))

What was the average Design team size (in FTE) and the maximum Design team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

What was the average project management team\* size (in FTE)? What was the maximum project management team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

## II. Input Measures

1. Your Cumulative Years of Experience in Capital Projects: \_\_\_\_\_

2. Are you the Project Manager?     YES                       NO

3. The complexity of this project was very high based on its (check all that apply):

|   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Size             | <input type="checkbox"/> Schedule      | <input type="checkbox"/> Contract strategy         | <input type="checkbox"/> Location                 |
| <input type="checkbox"/> Technology risks | <input type="checkbox"/> Process scope | <input type="checkbox"/> Diversity of project team | <input type="checkbox"/> Supply chain reliability |
| Other (specify): _____                    |  |  |   |

4. **Please choose a rating below that best describes the level of difficulty for this project, compared to other building projects.** Difficulty factors describe the conditions under which construction will be performed such as restricted access or limited working hours. Use the definitions below as general guidelines.

|  |
|--|
| <p>Difficulty factor 1: All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints.</p> <p>Difficulty factor 2: have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new buildings on a tight urban site or existing campus with constricted working conditions.</p> <p>Difficulty factor 3: have restricted access, as listed above as well as limited working hours that require overtime and/or shift labor that will affect the costs.</p> <p>Difficulty factor 4: have restricted access and limited working hours as listed above, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities.</p> <p><input type="checkbox"/> Difficulty Factor 1    <input type="checkbox"/> Difficulty Factor 2    <input type="checkbox"/> Difficulty Factor 3    <input type="checkbox"/> Difficulty Factor 4</p> |
|--|

5. Did the major project objectives change during Design?

| Yes ( <u>Major</u> Change) | Yes ( <u>Minor</u> Change) | No                       |
|----------------------------|----------------------------|--------------------------|
| <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/> |

6. This project used the following design, standards and specifications. (Please check all that apply)

- Existing owner standards
- Published industry standard
- Local building codes and regulations

7. This project experienced a high number of (please check all that apply):

- Scope change / creep
- Deviation notices
- Major equipment\* list changes
- Project development changes
- Non-conformance reports
- Program changes

8. Please characterize how project meetings were conducted (check all that apply).

- Including appropriate representation of stakeholders, i.e., the 'right' people are present
- Effective mechanisms for resolving project related issues (as measured by pre-planning, time, content, documentation, follow-up, etc.)
- Occurring with a frequency that meets the project's needs
- Having meaningful output that justifies my time investment.

9. Which of the following statements characterized the decisions made by the manager(s) of this project? (check all that apply).

- Considered final and not revisited
- Collaborative and inclusive
- Made at the lowest appropriate level in the organization
- Communicated promptly to the team
- Made in a timely and effective manner
- Consistent with the delegation of authority

10. Was a life cycle cost analysis completed for this project?  YES  NO

If yes, which of the following were considered? (please check all that apply)

- Carbon Footprint Measurement
- Waste Minimization
- Energy Optimization
- Sustainability Certification

11. Is this project intended to be LEED certified or equivalent (certifiable)?  YES  NO

If yes, what level of LEED certification or equivalent is planned?

- Certified
- Gold
- Silver
- Platinum

12. Did this project use a Building Information Model?  YES  NO

If yes, who used BIM? (check all that apply)

- Architect  Mechanical Consultant
- Electrical Consultant  Contractor
- Other, please specify: \_\_\_\_\_

Please identify the purpose for which BIM was used on the project? (Please check all that apply)

- Space Validation  Architecture – Spatial and Material Design Models
- Energy Analysis  Clash Detection/Coordination
- Design Visualization for Communication, Functional Analysis, and Constructability
- Building System Models – Structural, MEP, Fire Protection, and Interiors
- Masterplan Space Scheduling and Sequencing – 4D
- Communication of Construction Scheduling and Sequencing – 4D
- COBIE/Commissioning
- Facility Management

13. What percentage of Design was complete prior to the start of construction?

 %

14. Was the construction manager involved during Design?  YES  NO

If yes, in which aspects of Design was the construction manager involved?

- Schematic Design (SD)
- Design Development (DD)
- Contract Documents (C/D)

|  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 15. Were multiple design offices used on this project? | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        | Neutral                  | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|
| 16. The owner level of involvement was appropriate.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. The project team members were familiar with the project execution plan (PEP) and they used it to manage their work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. The procurement strategy and plan were communicated to the project team during Design.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. The project objective and priorities were clearly defined.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 20. The equipment procurement and vendor schedules were not a significant challenge for this project during Design.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Comprehensive constructability suggestions (e.g., preassembly*, prefabrication*, modularization*, and offsite fabrication*) were evaluated and incorporated into the Design of the project. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. A formal plan for commissioning including operations and maintenance philosophy was incorporated in Design.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. This project incorporated community relations issues in Design.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Project management team* members were clear about their roles and how to work with others on the project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Project team members had the authority necessary to do their jobs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. The project team including project manager(s) had skills and experiences with similar projects / processes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. People on this project worked effectively as a team.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. The project experienced a minimum number of project management team* personnel changes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. The key stakeholders (owner, architect, consulting engineers, etc.) were fully aligned during Design.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. The interfaces between project stakeholders were well managed.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Key project team members understood the owner's goals and objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. All of the necessary, relevant project team members were involved in an effective risk identification and management process for Design.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Project leaders recognized and rewarded outstanding personnel and results.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Leadership effectively communicated business objectives, priorities, and project goals.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Resources were allocated according to project priorities.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Project leaders were open to hearing "bad news", and they wanted input from project team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Project team members had the information they needed to do their jobs effectively.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Plan and progress including changes were communicated clearly and frequently amongst project stakeholders.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. A high degree of trust, respect and transparency existed amongst companies working on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  | Strongly Disagree        | Neutral                  |                          |                          | Strongly Agree           |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 40. The project's commissioning objectives were appropriately communicated to the relevant project team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. The project's work processes and systems (e.g., document management, project controls, business and financial systems) supported project success.                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. The number and quality of Design / consulting engineering personnel was sufficient.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. When issues arose, there were effective mechanisms to ensure they were resolved.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Regulatory requirements (e.g., permitting and environmental issues) were properly managed and Design is in compliance.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Design deliverables were released in a timely manner as a result of a good Design work sequence on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. The Design deliverables received from consulting engineers or other architects were complete and accurate (possessing a minimal amount of errors and omissions). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. The project control system was effective in monitoring project progress in terms of cost, schedule, and scope.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. A dedicated process was used to proactively manage change on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. A formal project Quality Management System was used for the Design of this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. An interim product database and/or standardized designs were used extensively in the Design of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. The project team members attended sufficient professional training directly related to their Design work.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. The customer was satisfied with the Design phase deliverables.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. The cost of quality* was determined during the Design phase of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



### III. Output Measures

1. Please provide the estimated and actual phase (Design) cost.

| Estimated Cost (\$) | Actual Cost (\$) |
|---------------------|------------------|
|                     |                  |

2. Please provide the forecasted total project cost and duration.

|          |                 |
|----------|-----------------|
| Cost: \$ | Duration: weeks |
|----------|-----------------|

3. Please provide the total number of major equipment\*.

|             |
|-------------|
| piece count |
|-------------|

4. Please provide the estimated and actual phase (Design) start and end dates

| Estimated Schedule (mm/dd/yyyy) |      | Actual Schedule (mm/dd/yyyy) |      |
|---------------------------------|------|------------------------------|------|
| Start                           | Stop | Start                        | Stop |
|                                 |      |                              |      |

5. What is the forecasted size of the facility?

|   |  |
|---|--|
| Total Building Gross Square Footage* (BGSF) |  |
|---|--|

6. What was the total number of Design work hours?

|  |       |
|--|-------|
|  | hours |
|--|-------|

7. Please provide the IFC (Issued For Construction) quantities.

|   |                        |     |
|---|------------------------|-----|
| Total Concrete                                  | (                    ) | CY  |
| Total Structural Steel                          | (                    ) | ton |
| Total Masonry                                   | (                    ) | SF  |
| Total Glazing                                   | (                    ) | SF  |
| Total Piping<br>(not including fire protection) | (                    ) | LF  |
| Total HVAC ductwork                             | (                    ) | LF  |



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## 10-10 Program – Procurement Questionnaire

### Building Projects

#### Instructions

This questionnaire is for the Procurement phase. The Procurement phase begins with the **development of a Procurement plan** for the major equipment and a major equipment list. It concludes when **all materials and equipment have been delivered to the site**.

Each questionnaire includes three sections. The first section focuses on general project information such as project location, nature, and selected delivery method. The second section addresses input measures by asking various types of questions such as those requiring yes/no and sliding-scale (Likert-scale) responses (i.e., from 'strongly agree' to 'strongly disagree'). The final (third) section asks project outputs such as cost, schedule, and capacity. In the questionnaire, for the terms marked with an *asterisk* (\*), additional description is available in the Appendix.

The questionnaire is designed to be **completed by members of the project's management team**. If you are a member of this team, please answer the following questions to the best of your ability. If you are unable to answer a particular question, leave it blank and move to the next question. Remember, some of these questions are intentionally subjective by design.

All data provided for the survey by participating individuals and organizations are considered confidential. These data will not be viewed by any party other than CII staff members.

You can review the CII Benchmarking Code of Conduct at the following site: <https://www.construction-institute.org/scriptcontent/bmm-code.cfm?section=bmm>

Should you have any questions about the 10-10 Performance Assessment Campaign, please contact Dr. Daniel Oliveira via e-mail ([Daniel.Oliveira@cii.utexas.edu](mailto:Daniel.Oliveira@cii.utexas.edu)) or by phone at (512) 232-3050.

The Performance Assessment Committee thanks you for your participation in this very important industry initiative!

CII Performance Assessment Committee

# I. General Information

Your Company Name:

Your Name:

Project Name:

Owner Company Name:

Project Construction Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Construction Contractor:

Lead Design Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Architect of Record:

Currency:

Unit System: ( ) Imperial ( ) Metric

Exchange Rate: 1 USD =

Midpoint of Actual Phase (Procurement) (mm/dd/yyyy)

Closest Cost Index Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

## Project Type

- |  |  |
|--|--|
| <input type="checkbox"/> Communication Center                | <input type="checkbox"/> Movie Theatre           |
| <input type="checkbox"/> Courthouse                          | <input type="checkbox"/> Parking Garage          |
| <input type="checkbox"/> Dormitory/Hotel/Housing/Residential | <input type="checkbox"/> Physical Fitness Center |
| <input type="checkbox"/> Embassy                             | <input type="checkbox"/> Prison                  |
| <input type="checkbox"/> Low-rise Office (<=3 floors)        | <input type="checkbox"/> Restaurant/Night club   |
| <input type="checkbox"/> High-rise Office (>3 floors)        | <input type="checkbox"/> Retail Building         |
| <input type="checkbox"/> Hospital                            | <input type="checkbox"/> School                  |
| <input type="checkbox"/> Laboratory                          | <input type="checkbox"/> Warehouse               |
| <input type="checkbox"/> Maintenance Facilities              | <input type="checkbox"/> Other Buildings         |

## Project Nature

|  |                            |                         |
|--|----------------------------|-------------------------|
| Grass Roots, Greenfield ( )            | Brownfield (co-locate) ( ) | Addition, Expansion ( ) |
| Modernization, Renovation, Upgrade ( ) |                            |                         |

---

**Project Delivery Method**

|                          |                             |   |
|--------------------------|-----------------------------|---|
| <input type="checkbox"/> | Design-Bid-Build            | Serial sequence of design and construction phases: owner contracts separately with designer and constructor.  |
| <input type="checkbox"/> | Design-Build (EPC)          | Owner contracts with Design-Build (EPC) contractor.   |
| <input type="checkbox"/> | CM at Risk                  | Owner contracts with designers and construction manager (CM). CM holds the contracts.   |
| <input type="checkbox"/> | Parallel Primes             | Owner contracts separately with designer and multiple prime constructors.   |
| <input type="checkbox"/> | Integrated Project Delivery | A project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses that talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. (AIA definition) |

**[Contractor Only]** Which phase(s) did your company participate in on this project? (check all that apply)

Programming     Design     Procurement     Construction     Commissioning

**Project Team Members**

Please mark the project management team participants in this phase (check all that apply)

|   |  |
|---|--|
| <input type="checkbox"/> Project Manager      | <input type="checkbox"/> QA/QC                   |
| <input type="checkbox"/> Architect            | <input type="checkbox"/> HSE                     |
| <input type="checkbox"/> Construction Manager | <input type="checkbox"/> Maintenance             |
| <input type="checkbox"/> Operation Manager    | <input type="checkbox"/> Consultants             |
| <input type="checkbox"/> Consulting Engineers | <input type="checkbox"/> Business Unit Personnel |
| <input type="checkbox"/> Procurement          | <input type="checkbox"/> Project Sponsor         |
| <input type="checkbox"/> Contracting          | <input type="checkbox"/> Finance Manager         |
| <input type="checkbox"/> Project Controls     | <input type="checkbox"/> Commissioning Agent     |

**Project Description**

Please briefly describe this project (i.e., what is the purpose of the building (?), what is its scope (?))

What was the average project management team\* size (in FTE)? What was the maximum project management team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

What was the average Procurement team size (in FTE) and the maximum Procurement team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

## II. Input Measures

1. Your Cumulative Years of Experience in Capital Projects: \_\_\_\_\_

2. Are you the Project Manager?      YES                       NO

3. The complexity of this project was very high based on its (check all that apply):

|   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Size             | <input type="checkbox"/> Schedule      | <input type="checkbox"/> Contract strategy         | <input type="checkbox"/> Location                 |
| <input type="checkbox"/> Technology risks | <input type="checkbox"/> Process scope | <input type="checkbox"/> Diversity of project team | <input type="checkbox"/> Supply chain reliability |
| Other (specify): _____                    |  |  |   |

4. **Please choose a rating below that best describes the level of difficulty for this project, compared to other building projects.** Difficulty factors describe the conditions under which construction will be performed such as restricted access or limited working hours. Use the definitions below as general guidelines.

|  |
|--|
| <p>Difficulty factor 1: All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints.</p> <p>Difficulty factor 2: have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new buildings on a tight urban site or existing campus with constricted working conditions.</p> <p>Difficulty factor 3: have restricted access, as listed above as well as limited working hours that require overtime and/or shift labor that will affect the costs.</p> <p>Difficulty factor 4: have restricted access and limited working hours as listed above, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities.</p> |
| <p><input type="checkbox"/> Difficulty Factor 1     <input type="checkbox"/> Difficulty Factor 2     <input type="checkbox"/> Difficulty Factor 3     <input type="checkbox"/> Difficulty Factor 4</p>   |

5. Did the project objectives change during Procurement?

|                            |                            |                          |
|----------------------------|----------------------------|--------------------------|
| Yes ( <u>Major</u> Change) | Yes ( <u>Minor</u> Change) | No                       |
| <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/> |

6. This project experienced a high number of (please check all that apply):

- Scope change / creep
- Deviation notices
- Major equipment\* list changes
- Project development changes
- Non-conformance reports
- Program changes

7. Please characterize how project meetings were conducted (check all that apply).

- Including appropriate representation of stakeholders, i.e., the 'right' people are present
- Effective mechanisms for resolving project related issues (as measured by pre-planning, time, content, documentation, follow-up, etc.)
- Occurring with a frequency that meets the project's needs
- Having meaningful output that justifies my time investment.

8. Which of the following statements characterized the decisions made by the manager(s) of this project? (check all that apply).

- Considered final and not revisited
- Collaborative and inclusive
- Made at the lowest appropriate level in the organization
- Communicated promptly to the team
- Made in a timely and effective manner
- Consistent with the delegation of authority

9. Was a life cycle cost analysis completed for this project?  YES  NO

If yes, which of the following were considered? (please check all that apply)

- Carbon Footprint Measurement
- Waste Minimization
- Energy Optimization
- Sustainability Certification

10. Is this project intended to be LEED certified or equivalent (certifiable)?  YES  NO

If yes, what level of LEED certification or equivalent is planned?

- Certified
- Gold
- Silver
- Platinum

|   | Strongly Disagree        | Neutral                  | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|
| 11. The owner level of involvement was appropriate.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Preferred suppliers were used effectively to streamline the Procurement process.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. The project team members were familiar with the project execution plan (PEP) and they used it to manage their work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 14. The project objective and priorities were clearly defined.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. The Procurement plan adapted to changing market conditions.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. The materials management plan for this project appropriately addressed elements such as project goals, responsibility, cost & schedule, and transportation & logistics. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. The equipment procurement and vendor schedules were not a significant challenge for this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. A formal Commissioning execution plan including operations and maintenance philosophy was incorporated in the Procurement.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Sustainability was an important consideration for the Procurement phase of this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. The Procurement plan addressed local content requirements.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Appropriate contingencies were established to address materials and labor cost escalation.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Project management team* members were clear about their roles and how to work with others on the project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Project team members had the authority necessary to do their jobs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. The project team including project manager(s) had skills and experiences with similar projects / processes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. People on this project worked effectively as a team.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. The project experienced a minimum number of project management team* personnel changes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. The interfaces between project stakeholders were well managed.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Key project team members understood the owner's goals and objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. All of the necessary, relevant project team members were involved in an effective risk identification and management process for Procurement.                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Project leaders recognized and rewarded outstanding personnel and results.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Leadership effectively communicates business objectives, priorities, and project goals.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Resources were allocated according to project priorities.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Project leaders were open to hearing "bad news", and they wanted input from project team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. The key stakeholders (owner, architect, vendors and suppliers, etc.) were fully aligned during Procurement.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 35. Project team members had the information they needed to do their jobs effectively.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Plan and progress including changes were communicated clearly and frequently amongst project stakeholders.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. A high degree of trust, respect and transparency existed amongst companies working on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. The project's commissioning objectives were appropriately communicated to the relevant project team members.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. The project's work processes and systems (e.g., document management, project controls, business and financial systems) supported project success. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. When issues arose, there were effective mechanisms to ensure they were resolved.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Regulatory requirements (e.g., permitting and environmental issues) were properly managed and Procurement is in compliance.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. The project encountered few problems associated with the late delivery of equipment and bulk materials.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Site materials management was effective.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Major equipment* was delivered complete and on time.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Risks were appropriately allocated through effective purchasing agreements.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. This project implemented a supplier quality surveillance program.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. The project control system was effective in monitoring project progress in terms of cost, schedule, and scope.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. A dedicated process was used to proactively manage change on this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. A formal project Quality Management System was used for the Procurement of this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. The project team members attended sufficient professional training directly related to their work in Procurement.                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. The customer was satisfied with the Procurement phase deliverables.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. The cost of quality* was determined during the Procurement phase of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



### III. Output Measures

1. How many vendors and suppliers were awarded purchase orders?

2. What was the total number of purchase orders awarded?

3. Please provide the total number of major equipment\*.

4. Please provide the total cost of major equipment\*.

5. Please provide the estimated and actual phase (Procurement) start and end dates

| Estimated Schedule (mm/dd/yyyy) |      | Actual Schedule (mm/dd/yyyy) |      |
|---------------------------------|------|------------------------------|------|
| Start                           | Stop | Start                        | Stop |
|                                 |      |                              |      |

6. Please provide the forecasted total project cost and duration.



7. What is the forecasted size of the facility?

|   |  |
|---|--|
| Total Building Gross Square Footage* (BGSF) |  |
|---|--|



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## 10-10 Program – Construction Questionnaire

### Building Projects

#### Instructions

This questionnaire is for the Construction phase. The Construction phase begins with the **notice to proceed (mobilization/commencement of foundations or driving piles)**. It concludes at **beneficial occupancy date (BOD)**.

Each questionnaire includes three sections. The first section focuses on general project information such as project location, nature, and selected delivery method. The second section addresses input measures by asking various types of questions such as those requiring yes/no and sliding-scale (Likert-scale) responses (i.e., from 'strongly agree' to 'strongly disagree'). The final (third) section asks project outputs such as cost, schedule, and capacity. In the questionnaire, for the terms marked with an *asterisk (\*)*, additional description is available in the Appendix.

The questionnaire is designed to be **completed by members of the project's management team**. If you are a member of this team, please answer the following questions to the best of your ability. If you are unable to answer a particular question, leave it blank and move to the next question. Remember, some of these questions are intentionally subjective by design.

All data provided for the survey by participating individuals and organizations are considered confidential. These data will not be viewed by any party other than CII staff members.

You can review the CII Benchmarking Code of Conduct at the following site: <https://www.construction-institute.org/scriptcontent/bmm-code.cfm?section=bmm>

Should you have any questions about the 10-10 Performance Assessment Campaign, please contact Dr. Daniel Oliveira via e-mail ([Daniel.Oliveira@cii.utexas.edu](mailto:Daniel.Oliveira@cii.utexas.edu)) or by phone at (512) 232-3050.

The Performance Assessment Committee thanks you for your participation in this very important industry initiative!

CII Performance Assessment Committee

# I. General Information

Your Company Name:

Your Name:

Project Name:

Owner Company Name:

Project Construction Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Construction Contractor:

Lead Design Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Architect of Record:

Currency:

Unit System: ( ) Imperial ( ) Metric

Exchange Rate: 1 USD =

Midpoint of Actual Phase (Construction) (mm/dd/yyyy)

Closest Cost Index Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

## Project Type

- |  |  |
|--|--|
| <input type="checkbox"/> Communication Center                | <input type="checkbox"/> Movie Theatre           |
| <input type="checkbox"/> Courthouse                          | <input type="checkbox"/> Parking Garage          |
| <input type="checkbox"/> Dormitory/Hotel/Housing/Residential | <input type="checkbox"/> Physical Fitness Center |
| <input type="checkbox"/> Embassy                             | <input type="checkbox"/> Prison                  |
| <input type="checkbox"/> Low-rise Office (<=3 floors)        | <input type="checkbox"/> Restaurant/Night club   |
| <input type="checkbox"/> High-rise Office (>3 floors)        | <input type="checkbox"/> Retail Building         |
| <input type="checkbox"/> Hospital                            | <input type="checkbox"/> School                  |
| <input type="checkbox"/> Laboratory                          | <input type="checkbox"/> Warehouse               |
| <input type="checkbox"/> Maintenance Facilities              | <input type="checkbox"/> Other Buildings         |

## Project Nature

|  |                            |                         |
|--|----------------------------|-------------------------|
| Grass Roots, Greenfield ( )            | Brownfield (co-locate) ( ) | Addition, Expansion ( ) |
| Modernization, Renovation, Upgrade ( ) |                            |                         |

### Project Delivery Method

|  |   |
|--|---|
| <input type="checkbox"/> Design-Bid-Build            | Serial sequence of design and construction phases: owner contracts separately with designer and constructor.  |
| <input type="checkbox"/> Design-Build (EPC)          | Owner contracts with Design-Build (EPC) contractor.   |
| <input type="checkbox"/> CM at Risk                  | Owner contracts with designers and construction manager (CM). CM holds the contracts.   |
| <input type="checkbox"/> Parallel Primes             | Owner contracts separately with designer and multiple prime constructors.   |
| <input type="checkbox"/> Integrated Project Delivery | A project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses that talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. (AIA definition) |

### Primary Contract Type for Detail Design

|  |   |
|--|---|
| <input type="checkbox"/> Lump Sum          | <input type="checkbox"/> Unit Price                     |
| <input type="checkbox"/> Cost Reimbursable | <input type="checkbox"/> Guaranteed Maximum Price (GMP) |

**[Contractor Only]** Which phase(s) did your company participate in on this project? (check all that apply)

Programming     Design     Procurement     Construction     Commissioning

### Project Team Members

Please mark the project management team participants in this phase (check all that apply)

|   |  |
|---|--|
| <input type="checkbox"/> Project Manager      | <input type="checkbox"/> QA/QC                   |
| <input type="checkbox"/> Architect            | <input type="checkbox"/> HSE                     |
| <input type="checkbox"/> Construction Manager | <input type="checkbox"/> Maintenance             |
| <input type="checkbox"/> Operation Manager    | <input type="checkbox"/> Consultants             |
| <input type="checkbox"/> Consulting Engineers | <input type="checkbox"/> Business Unit Personnel |
| <input type="checkbox"/> Procurement          | <input type="checkbox"/> Project Sponsor         |
| <input type="checkbox"/> Contracting          | <input type="checkbox"/> Finance Manager         |
| <input type="checkbox"/> Project Controls     | <input type="checkbox"/> Commissioning Agent     |

### Project Description

Please briefly describe this project (i.e., what is the purpose of the building (?), what is its scope (?))

What was the average project management team\* size (in FTE)? What was the maximum project management team size (in FTE)?

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| Ave. Team Size (in FTE) |  | Max. Team Size (in FTE) |  |
|-------------------------|--|-------------------------|--|

What was the typical foreman to craft ratio?

|                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|
| ≤ 5:1                    | 6:1 ~ 8:1                | 9:1 ~ 12:1               | ≥13:1                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Overall how many workers per safety professional were typically (i.e., in terms of the average workforce) on site?

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 : 20                   | 1 : 21-40                | 1 : 41-60                | 1 : 61-100               | 1: over 101              |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## II. Input Measures

1. Your Cumulative Years of Experience in Capital Projects: \_\_\_\_\_

2. Are you the Project Manager?      YES                       NO

3. The complexity of this project was very high based on its (check all that apply):

|   |  |  |   |
|---|--|--|---|
| <input type="checkbox"/> Size             | <input type="checkbox"/> Schedule      | <input type="checkbox"/> Contract strategy         | <input type="checkbox"/> Location                 |
| <input type="checkbox"/> Technology risks | <input type="checkbox"/> Process scope | <input type="checkbox"/> Diversity of project team | <input type="checkbox"/> Supply chain reliability |
| Other (specify): _____                    |  |  |   |

4. **Please choose a rating below that best describes the level of difficulty for this project, compared to other building projects.** Difficulty factors describe the conditions under which construction will be performed such as restricted access or limited working hours. Use the definitions below as general guidelines.

|   |
|---|
| <p>Difficulty factor 1: All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints.</p> <p>Difficulty factor 2: have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new buildings on a tight urban site or existing campus with constricted working conditions.</p> <p>Difficulty factor 3: have restricted access, as listed above as well as limited working hours that require overtime and/or shift labor that will affect the costs.</p> <p>Difficulty factor 4: have restricted access and limited working hours as listed above, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities.</p> <p><input type="checkbox"/> Difficulty Factor 1     <input type="checkbox"/> Difficulty Factor 2     <input type="checkbox"/> Difficulty Factor 3     <input type="checkbox"/> Difficulty Factor 4</p> |
|---|

5. Did the project objectives change during Construction?

|                            |                            |                          |
|----------------------------|----------------------------|--------------------------|
| Yes ( <u>Major</u> Change) | Yes ( <u>Minor</u> Change) | No                       |
| <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/> |

6. This project experienced a high number of (please check all that apply):

- Scope change / creep
- Deviation notices
- Major equipment\* list changes
- Project development changes
- Non-conformance reports
- Program changes

7. Was a renovation to an operating facility included in the scope of this project?  YES  NO

(If yes) Construction was well integrated with the operation of the existing facility.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Strongly Agree           | Agree                    | Neutral                  | Disagree                 | Strongly Disagree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. Please characterize how project meetings were conducted (check all that apply).

- Including appropriate representation of stakeholders, i.e., the 'right' people are present
- Effective mechanisms for resolving project related issues (as measured by pre-planning, time, content, documentation, follow-up, etc.)
- Occurring with a frequency that meets the project's needs
- Having meaningful output that justifies my time investment.

9. Which of the following statements characterized the decisions made by the manager(s) of this project? (check all that apply).

- Considered final and not revisited
- Collaborative and inclusive
- Made at the lowest appropriate level in the organization
- Communicated promptly to the team
- Made in a timely and effective manner
- Consistent with the delegation of authority

10. This project used the following methods (please check all that apply):

- Plan Percent Complete
- Work Packaging
- Ongoing Craft Training Programs
- Preassembly\*
- Modularization\*
- Workface Planning/Last Planner
- Subcontractor Prequalification
- Substance Abuse Testing
- Prefabrication\*
- Offsite Fabrication\*

11. Formal (classroom) safety training was attended:

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Monthly                  | Quarterly                | Annually                 | Initial/once             | Never                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Was there a formal new hire safety orientation process?  YES  NO

Did an owner representative participate in the orientation?  YES  NO

|  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 12. Did the original primary contractor(s) complete the project?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Was safety performance a criterion for contractor and subcontractor selection? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Were safety toolbox meetings held daily?                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Were accidents including near misses formally investigated?                    | <input type="checkbox"/> | <input type="checkbox"/> |

|  | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 16. The availability and competency of craft labor was adequate.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. The owner level of involvement was appropriate.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. The owner and primary contractor(s) maintain a long-standing partnering arrangement.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. The project team members were familiar with the project execution plan (PEP) and they used it to manage their work.                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. A formal plan for Commissioning including operations and maintenance philosophy was incorporated in Construction.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. The work planning and scheduling processes were effective.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Project cash flow was managed well during Construction.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. The Construction execution plan addressed community relations issues.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. The project team including project manager(s) had skills and experiences with similar projects / processes.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. The project experienced a minimum number of project management team* personnel changes.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. All of the necessary, relevant project team members were involved in an effective risk identification and management process for Construction. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Project safety procedures were well defined and strictly followed.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Project management team* members were clear about their roles and how to work with others on the project.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|   |                          |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 29. Subcontractors provided the majority of the Construction craft workers.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. People on this project worked effectively as a team.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Key project team members understood the owner's goals and objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. The interfaces between project stakeholders were well managed.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Design deliverables were released in a timely manner and in a proper sequence.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Project team members had the authority necessary to do their jobs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. This project experienced a minimum amount of labor disruption.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. The owner and primary contractor(s) maintained positive working relationships.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Leadership effectively communicated business objectives, priorities, and project goals.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. The key stakeholders (owner, architect, vendors and suppliers, etc.) were fully aligned during Construction.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Project leaders were open to hearing "bad news", and they wanted input from project team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Plan and progress including changes were communicated clearly and frequently amongst project stakeholders.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. The project's Commissioning objectives were appropriately communicated to the relevant project team members.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Resources were allocated according to project priorities.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. A high degree of trust, respect and transparency existed amongst companies working on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. The project's work processes and systems (e.g., document management, project controls, business and financial systems) supported project success. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Project team members had the information they needed to do their jobs effectively.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. Project leaders recognized and rewarded outstanding personnel and results.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. The Design deliverables were complete and accurate (possessing a minimal amount of errors and omissions).   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. When issues arose, there were effective mechanisms to ensure they were resolved.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. The project encountered few problems associated with the late delivery of equipment and bulk materials.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. A dedicated process was used to proactively manage change on this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



|  |                          |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 51. A formal project Quality Management System was used on this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. Regulatory requirements (e.g., permitting and environmental issues) were properly managed and Construction is in compliance. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. Site materials management was effective.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 54. The project employed regular safety audits or observations.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 55. Materials and equipment were typically received on time, without damage, and per design specification.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 56. The project team members attended sufficient professional training directly related to their work in Construction.           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 57. The customer was satisfied with the Construction phase deliverables.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. The cost of quality* was determined during the Construction phase of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 59. Sustainability was an important consideration for the Construction phase of this project.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### III. Output Measures

1. Please provide the forecasted total project cost and duration.

Cost: \$

Duration:  weeks

2. Please provide the estimated and actual phase (Construction) start and end dates

| Estimated Schedule (mm/dd/yyyy) |                      | Actual Schedule (mm/dd/yyyy) |                      |
|---------------------------------|----------------------|------------------------------|----------------------|
| Start                           | Stop                 | Start                        | Stop                 |
| <input type="text"/>            | <input type="text"/> | <input type="text"/>         | <input type="text"/> |

3. Please provide the total number of major equipment\*.

piece count

4. Please provide the number of cases.

Medical Treatment (  )  
 Days Away (  )  
 Job Restriction or Transfer (  )

5. What was the average and peak Construction craft workforce?

|                      |                      |                           |                      |
|----------------------|----------------------|---------------------------|----------------------|
| Ave. Craft Workforce | <input type="text"/> | Max./Peak Craft Workforce | <input type="text"/> |
|----------------------|----------------------|---------------------------|----------------------|

6. Excluding the major equipment\* cost, please provide the estimated and actual phase (Construction) cost.

| Estimated Cost (\$) | Actual Cost (\$) |
|---------------------|------------------|
|                     |                  |

7. What is the *forecasted* size of the facility?

|   |  |
|---|--|
| Total Building Gross Square Footage* (BGSF) |  |
|---|--|

8. What was the total number of Construction work hours?

|  |       |
|--|-------|
|  | hours |
|--|-------|

9. Please provide the IFC (Issued For Construction) quantities.

|   |     |     |
|---|-----|-----|
| Total Concrete                                  | ( ) | CY  |
| Total Structural Steel                          | ( ) | ton |
| Total Masonry                                   | ( ) | SF  |
| Total Glazing                                   | ( ) | SF  |
| Total Piping<br>(not including fire protection) | ( ) | LF  |
| Total HVAC ductwork                             | ( ) | LF  |



The Knowledge Leader for Project Success

Owners • Contractors • Academics

## 10-10 Program – Commissioning Questionnaire

### Building Projects

#### Instructions

This questionnaire is for the Commissioning phase. This phase begins at **beneficial occupancy date (BOD)** and concludes with **custody transfer to user/operator** for steady state operation.

Each questionnaire includes three sections. The first section focuses on general project information such as project location, nature, and selected delivery method. The second section addresses input measures by asking various types of questions such as those requiring yes/no and sliding-scale (Likert-scale) responses (i.e., from 'strongly agree' to 'strongly disagree'). The final (third) section asks project outputs such as cost, schedule, and capacity. In the questionnaire, for the terms marked with an *asterisk* (\*), additional description is available in the Appendix.

The questionnaire is designed to be **completed by members of the project's management team or commissioning team**. If you are a member of one of these teams, please answer the following questions to the best of your ability. If you are unable to answer a particular question, leave it blank and move to the next question. Remember, some of these questions are intentionally subjective by design.

All data provided for the survey by participating individuals and organizations are considered confidential. These data will not be viewed by any party other than CII staff members.

You can review the CII Benchmarking Code of Conduct at the following site: <https://www.construction-institute.org/scriptcontent/bmm-code.cfm?section=bmm>

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The Performance Assessment Committee thanks you for your participation in this very important industry initiative!

CII Performance Assessment Committee

# I. General Information

Your Company Name:

Your Name:

Project Name:

Owner Company Name:

Project Construction Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Construction Contractor:

Lead Design Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Architect of Record:

Lead Commissioning Agent

Office Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

Lead Commissioning Agent:

Currency:

Unit System: ( ) Imperial ( ) Metric

Exchange Rate: 1 USD =

Midpoint of Actual Phase (Commissioning) (mm/dd/yyyy)

Closest Cost Index Location: City: \_\_\_\_\_, (State or Province): \_\_\_\_\_, Country: \_\_\_\_\_

## Project Type

- |  |  |
|--|--|
| <input type="checkbox"/> Communication Center                | <input type="checkbox"/> Movie Theatre           |
| <input type="checkbox"/> Courthouse                          | <input type="checkbox"/> Parking Garage          |
| <input type="checkbox"/> Dormitory/Hotel/Housing/Residential | <input type="checkbox"/> Physical Fitness Center |
| <input type="checkbox"/> Embassy                             | <input type="checkbox"/> Prison                  |
| <input type="checkbox"/> Low-rise Office (<=3 floors)        | <input type="checkbox"/> Restaurant/Night club   |
| <input type="checkbox"/> High-rise Office (>3 floors)        | <input type="checkbox"/> Retail Building         |
| <input type="checkbox"/> Hospital                            | <input type="checkbox"/> School                  |
| <input type="checkbox"/> Laboratory                          | <input type="checkbox"/> Warehouse               |
| <input type="checkbox"/> Maintenance Facilities              | <input type="checkbox"/> Other Buildings         |

## Project Nature

|  |                            |                         |
|--|----------------------------|-------------------------|
| Grass Roots, Greenfield ( )            | Brownfield (co-locate) ( ) | Addition, Expansion ( ) |
| Modernization, Renovation, Upgrade ( ) |                            |                         |

**Project Delivery Method**

|                          |                             |   |
|--------------------------|-----------------------------|---|
| <input type="checkbox"/> | Design-Bid-Build            | Serial sequence of design and construction phases: owner contracts separately with designer and constructor.  |
| <input type="checkbox"/> | Design-Build (EPC)          | Owner contracts with Design-Build (EPC) contractor.   |
| <input type="checkbox"/> | CM at Risk                  | Owner contracts with designers and construction manager (CM). CM holds the contracts.   |
| <input type="checkbox"/> | Parallel Primes             | Owner contracts separately with designer and multiple prime constructors.   |
| <input type="checkbox"/> | Integrated Project Delivery | A project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses that talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. (AIA definition) |

**[Contractor Only]** Which phase(s) did your company participate in on this project? (check all that apply)

Programming     Design     Procurement     Construction     Commissioning

**Project Team Members**

Please mark the project management team participants in this phase (check all that apply)

|   |  |
|---|--|
| <input type="checkbox"/> Project Manager      | <input type="checkbox"/> QA/QC                   |
| <input type="checkbox"/> Architect            | <input type="checkbox"/> HSE                     |
| <input type="checkbox"/> Construction Manager | <input type="checkbox"/> Maintenance             |
| <input type="checkbox"/> Operation Manager    | <input type="checkbox"/> Consultants             |
| <input type="checkbox"/> Consulting Engineers | <input type="checkbox"/> Business Unit Personnel |
| <input type="checkbox"/> Procurement          | <input type="checkbox"/> Project Sponsor         |
| <input type="checkbox"/> Contracting          | <input type="checkbox"/> Finance Manager         |
| <input type="checkbox"/> Project Controls     | <input type="checkbox"/> Commissioning Agent     |

**Project Description**

Please briefly describe this project (i.e., what is the purpose of the building (?), what is its scope (?))

What was the average Commissioning management team\* size (in FTE)?

|                         |  |
|-------------------------|--|
| Ave. Team Size (in FTE) |  |
|-------------------------|--|

## II. Input Measures

1. Your Cumulative Years of Experience in Capital Projects: \_\_\_\_\_

2. Are you the Project Manager?      YES                       NO

3. The complexity of this project was very high based on its (check all that apply):

(   ) Size                      (   ) Schedule                      (   ) Contract strategy                      (   ) Location  
 (   ) Technology risks     (   ) Process scope     (   ) Diversity of project team     (   ) Supply chain reliability  
 Other (specify): \_\_\_\_\_

4. **Please choose a rating below that best describes the level of difficulty for this project, compared to other building projects.** Difficulty factors describe the conditions under which construction will be performed such as restricted access or limited working hours. Use the definitions below as general guidelines.

Difficulty factor 1: All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints.

Difficulty factor 2: have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new buildings on a tight urban site or existing campus with constricted working conditions.

Difficulty factor 3: have restricted access, as listed above as well as limited working hours that require overtime and/or shift labor that will affect the costs.

Difficulty factor 4: have restricted access and limited working hours as listed above, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities.

(   ) Difficulty Factor 1     (   ) Difficulty Factor 2     (   ) Difficulty Factor 3     (   ) Difficulty Factor 4

5. Was a renovation to an operating facility included in the scope of this project?      YES                       NO  
 (If yes) Commissioning was well integrated with the operation of the existing facility.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Strongly Agree           | Agree                    | Neutral                  | Disagree                 | Strongly Disagree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. Please characterize how project meetings were conducted (check all that apply).

- Including appropriate representation of stakeholders, i.e., the ‘right’ people are present
- Effective mechanisms for resolving project related issues (as measured by pre-planning, time, content, documentation, follow-up, etc.)
- Occurring with a frequency that meets the project’s needs
- Having meaningful output that justifies my time investment.

7. Which of the following statements characterized the decisions made by the manager(s) of this project? (check all that apply).

- Considered final and not revisited
- Collaborative and inclusive
- Made at the lowest appropriate level in the organization
- Communicated promptly to the team
- Made in a timely and effective manner
- Consistent with the delegation of authority

|   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 8. Was there a written, Commissioning -specific safety plan for this project? | <input type="checkbox"/> | <input type="checkbox"/> |

|   | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 9. The owner level of involvement was appropriate.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. A formal plan for Commissioning including the impact to operations and maintenance was implemented.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. The Commissioning planning and scheduling processes were effective.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. The Commissioning plan addressed community relations issues.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. The Commissioning team had skills and experiences with similar projects / processes.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. The project experienced a minimum number of Commissioning team personnel changes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. All of the necessary, relevant Commissioning team members were involved in an effective risk identification and management process for Commissioning. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Commissioning management team* members were clear about their roles and how to work with others during Commissioning.                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. People on this project worked effectively as a team.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Key Commissioning management team* members understood the owner's goals and objectives of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Commissioning management team* members had the authority necessary to do their jobs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Leadership effectively communicated Commissioning goals and priorities.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. The key stakeholders were fully aligned before and during Commissioning.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Commissioning leaders were open to hearing "bad news", and they wanted input from Commissioning team members.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  | Strongly Disagree        |                          | Neutral                  |                          | Strongly Agree           |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 23. Plan and progress including changes were communicated clearly and frequently amongst project stakeholders.                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. The project team members were familiar with the Commissioning plan and they used it to manage their work.                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Resources were allocated according to Commissioning priorities.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. A high degree of trust, respect and transparency existed amongst companies working on this project during Commissioning.             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. The Commissioning processes and systems supported project success.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Commissioning management team* members had the information they needed to do their jobs effectively.                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Project leaders recognized and rewarded outstanding personnel and results during Commissioning.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. The Commissioning process achieved the operability and product quality objectives.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. When issues arose, there were effective mechanisms to ensure they were resolved.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. A dedicated process was used to proactively manage change during Commissioning.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Regulatory requirements (e.g., permitting and environmental issues) were properly managed and Commissioning is in compliance.        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. The project's Commissioning processes were explicitly defined, managed, measured, and controlled.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. The Commissioning management team* members attended sufficient professional training directly related to their work.                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. The customer was satisfied with the Commissioning phase deliverables.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. The cost of quality was monitored during the Commissioning of this project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Sustainability was an important consideration for the Commissioning phase of this project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. The project's process safety objectives were appropriately communicated amongst the relevant Commissioning management team* members. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Commissioning safety procedures were well defined and strictly followed.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Pre-task planning (including safety) was regularly conducted by foremen and/or other Commissioning management team* members.         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Virtually all of punch list items were not very difficult to address in terms of time and cost.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



### III. Output Measures

1. Please provide the actual total project cost and duration.

|          |
|----------|
| Cost: \$ |
|----------|

|           |       |
|-----------|-------|
| Duration: | weeks |
|-----------|-------|

2. Please provide the total number of major equipment\*.

|             |
|-------------|
| piece count |
|-------------|

3. Please provide the estimated and actual phase (Commissioning) start and end dates

| Estimated Schedule (mm/dd/yyyy) |      | Actual Schedule (mm/dd/yyyy) |      |
|---------------------------------|------|------------------------------|------|
| Start                           | Stop | Start                        | Stop |
|                                 |      |                              |      |

4. Please provide the estimated and actual phase (Commissioning) cost.

| Estimated Cost (\$) | Actual Cost (\$) |
|---------------------|------------------|
|                     |                  |

5. What is the actual size of the facility?

|   |  |
|---|--|
| Total building gross square footage* (BGSF) |  |
|---|--|

When Commissioning was complete, what percentage of the facility was placed in service?

|  |   |
|--|---|
|  | % |
|--|---|

6. What was the total number of Commissioning work hours?

|  |       |
|--|-------|
|  | hours |
|--|-------|