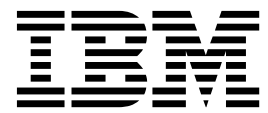


IBM TRIRIGA  
Version 10 Release 5

*Facility Assessment  
User Guide*



**Note**

Before using this information and the product it supports, read the information in "Notices" on page 19.

This edition applies to version 10, release 5, modification 0 of IBM TRIRIGA and to all subsequent releases and modifications until otherwise indicated in new editions.

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## **Chapter 1. Assessing and improving the physical condition of facilities**

You use the IBM® TRIRIGA® Facility Assessment application to assess the physical condition of facilities, analyze opportunities for improvement, and start processes to improve the condition.



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## Chapter 2. Overview of Facility Assessment

IBM TRIRIGA Facility Assessment is a process that is used to analyze the existing and projected future condition of facilities, and the building systems and assets within those facilities.

The process is made up of four main steps. First, you plan and set up the assessment details, then you conduct the assessment. After the assessment, you analyze the findings, and then begin addressing the opportunities for improvement. The assessment process enables organizations to address the operational requirements along with required funding requirements.

- **Planning and setup:** Before you begin assessing the condition of facilities by using the IBM TRIRIGA Facility Assessment application, you define your assessment and analysis program goals and criteria. Then, you develop the standards, templates, procedures, and setup data that is required to support those goals.
- **Assessing:** You can perform facility and system inspections to identify the physical and functional condition of the facility and its component systems. You can identify opportunities for improvement and estimate costs that are associated with addressing the opportunities.
- **Analyzing:** You can maintain real-time and historical Facility Condition Index (FCI) and System Condition Index (CI) ratings. By facility analyzing, you can determine funding alternatives and priorities and review against targets and goals that are established during planning phase.
- **Addressing opportunities:** You can develop short and long-term facilities plans and plan and launch facilities and capital projects to improve the condition of facilities. You integrate opportunity remediation with ongoing corrective and preventive maintenance programs. The facility and system condition, opportunity status, and overall FCI/CI are updated as projects and tasks are completed.

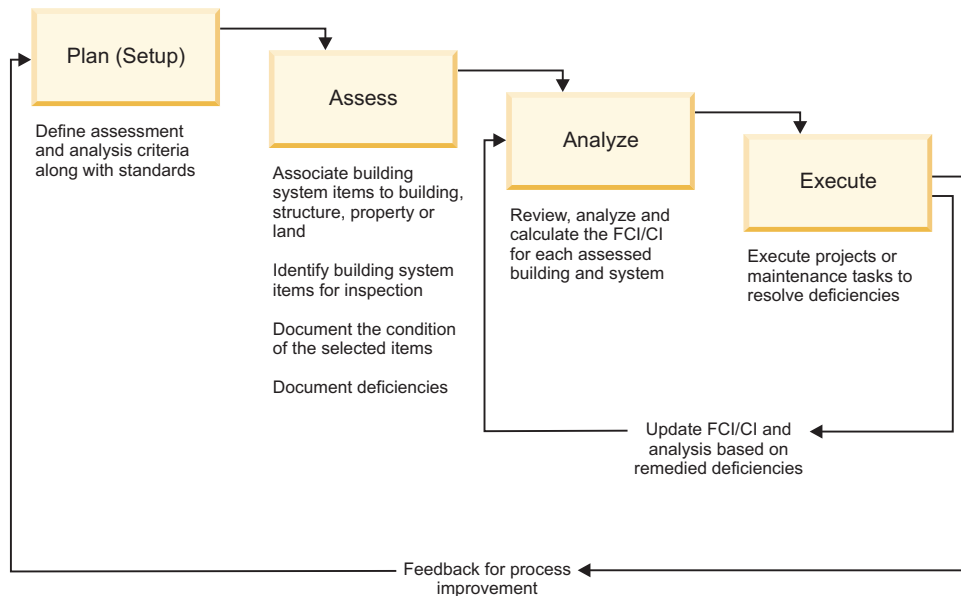


Figure 1. Overview of facility assessment process

## Facility Condition Index and System Condition Index

IBM TRIRIGA Facility Assessment uses the industry standard Facility Condition Index (FCI) or the Condition Index (CI) calculations to help you to determine the condition of facilities so that you can plan repairs and enhancements.

The CI is an industry standard calculation for measuring the condition of a facility, group of facilities, or systems within a facility. The FCI is an implementation of the CI when it is applied to a facility, usually at the building or structure level.

The FCI or CI is calculated by using the following formula:

FCI or CI = Total Cost of Opportunities/Current Replacement Value

Cost estimates for opportunities are provided in the Opportunity record. The Current<sup>®</sup> Replacement Value is calculated by using the following formula:

The Facility = Total Gross Area \* Replacement Cost per UOMSystem =  
Replacement Cost of Facility \* System % of Facility Cost

Two levels of FCI and CI calculations that are based on the priority of the opportunities are available. You can capture and log all opportunities, but include only the opportunities that you want in your FCI or CI calculations.

The following default priority values are provided, but you can modify these values to meet your specific business needs:

- 1 - Critical failure is imminent and code violations
- 2 - Will become critical in 1 – 2 years
- 3 - Will become critical in 3 – 4 years
- 4 - Wish List (nice to have)
- 5 - Grandfather code issues and ADA
- 6 - New Construction



---

## Chapter 3. Prerequisite setup and planning

Before you begin assessing the condition of facilities by using the IBM TRIRIGA Facility Assessment application, you define your assessment and analysis program goals and criteria. Then, you develop the standards, templates, procedures, and setup data that is required to support those goals.

---

### Building system classification and related classifications

The building system is the key classification for the IBM TRIRIGA Facility Assessment application.

The building system classification provides a way to centrally report across buildings and structures, or across the entire portfolio for building system items, costs, and opportunities that are related to a specific building system classification.

*Table 1. Building system classification relationships*

Classification	Description
Building system classification	<p>The building system classification is a classification that is intended to hold standard building system designations to ensure consistency throughout the portfolio. Usually, the classification is based on the UNIFORMAT II standard. You can decide which level or levels are appropriate for your installation. A modified version of the UNIFORMAT II standard, or another industry standard, can be used to include building systems that are not covered by the current standard. The IBM TRIRIGA system is designed so that you can use any building system standard or a user-defined standard.</p> <p>The TRIRIGA system includes the UNIFORMAT II standard by default. You can change it to suit your business requirements.</p>
Priority	<p>All opportunity records in the system must have a priority. The priority can be used for reporting. The setting on the priority record also defines whether the opportunity is included in the FCI or CI calculations (Level 1, Level 2, or both Level 2).</p>
Opportunity classification	<p>The opportunity classification contains a master list of types of opportunities (deficiencies). On each building system classification record, you can define which opportunities from the overall list apply to that building system. When you create a new opportunity, you use this list to classify the opportunity.</p>

*Table 1. Building system classification relationships (continued)*

Classification	Description
Repair classification	The repair classification contains a master list of types of repairs. Each opportunity classification can have a defined set of repair classification records.
Severity classification	<p>The severity classification contains a master list of types of severity. Each deficiency classification can have a defined set of severity classification records.</p> <p>After you select the opportunity classification for a newly created opportunity record, you can select a Severity classification from a list. The severity classification records are filtered so that only the records that are related to the deficiency classification are displayed.</p>
Category classification	The category classification provides a way to group building systems for reporting purposes. Building Envelop and Architectural Features are examples of categories.
Serviceability classification	The serviceability classification provides an extension to the building system classification for use with the American Society for Testing and Materials (ASTM) Standards on Whole Building Functionality and Serviceability.
Service assignment classification	With the service assignment class, you can link a building system classification to the discipline or trade that normally services that system. Facilities, Plumbing, Electrical, Mechanical, Interiors, and Security are examples of service assignments.

The following diagram shows the relationships between the various classifications.

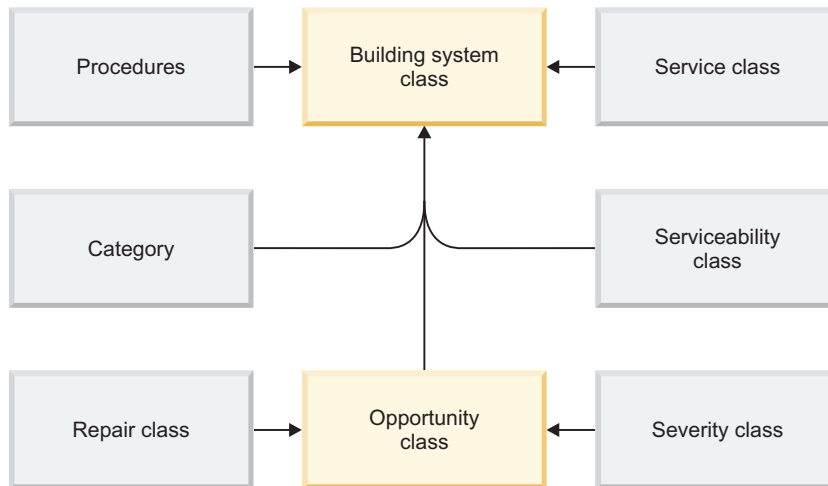


Figure 2. Classification relationships

## Condition-related classifications

The IBM TRIRIGA Facility Assessment application uses several classifications to indicate the condition and risk impact for the various building system items. These condition-related classifications each have a name and a numerical rating.

The ratings are used to provide a weighted score for each classification and a total for each category (Total Condition Rating and Total Risk Impact). The ratings for each classification provide a means for comparative reporting and analysis both within a single building or structure and across the entire portfolio.

The following diagram shows the relationships between the Classifications.

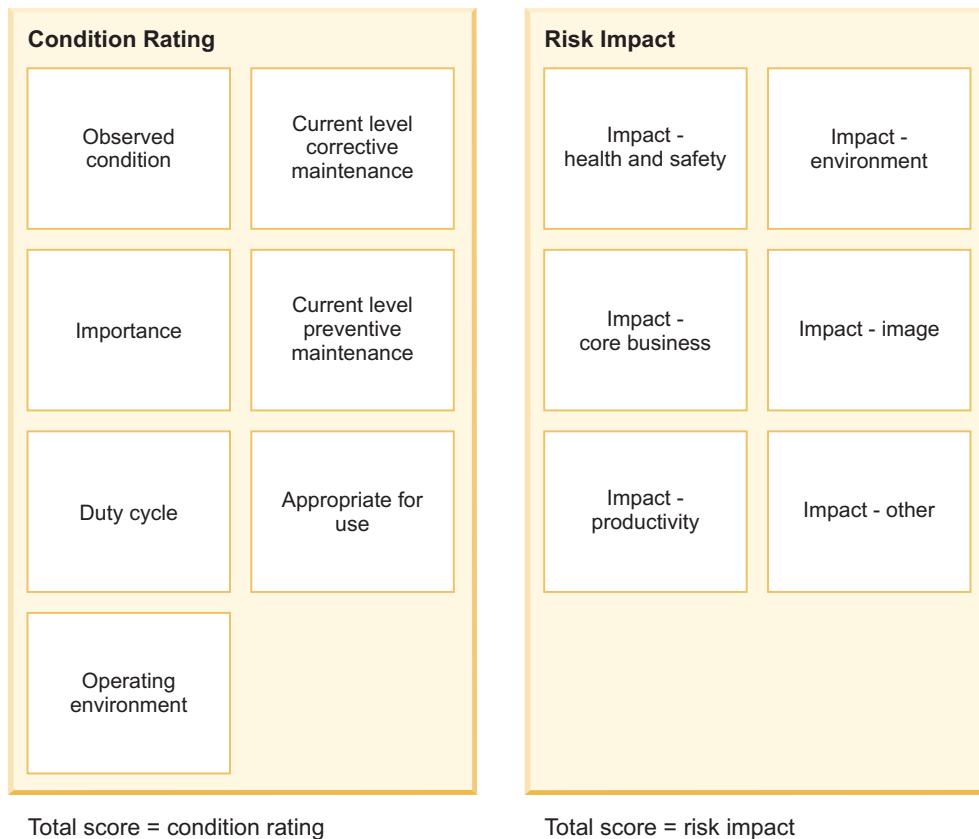


Figure 3. Relationship between the classifications

The TRIRIGA application includes default records for all classifications, as shown in the following table. During the planning and setup phase of implementation, you can evaluate and modify these values as needed to best suit your business needs.

Table 2. Condition-related classification relationships

Classifications	Description
Observed Condition	The Observed Condition classification is used to rate the condition of the building system, as based on the general observation of the inspector.
Importance	The Importance classification is used to rate the overall importance of the building system for the function it is supporting.
Duty Cycle	The Duty Cycle classification is used to rate the amount of usage that the building system is subjected to.
Operating Environment	The Operation Environment classification is used to rate the type of environment that the building system operates within.
Current Corrective Maintenance Level	The Current Corrective Maintenance Level classification is used to rate the level of the current Corrective Maintenance program.

Table 2. Condition-related classification relationships (continued)

Classifications	Description
Current Preventive Maintenance Level	The Current Preventive Maintenance Level classification is used to rate the level of the current Preventive Maintenance program.
Appropriate for Use	The Appropriate for Use classification is used to rate if the building system is appropriate for how it is being used.
Impact – Health and Safety (Failure Impact A)	The Impact – Health and Safety classification is used to rate the impact that failure of the building system has on the health and safety of the occupants.
Impact – Core Business (Failure Impact B)	The Impact – Core Business classification is used to rate the impact that failure of the building system has on the Core Business operations.
Impact – Productivity (Failure Impact C)	The Impact – Productivity classification is used to rate the impact that failure of the building system has on the Productivity of the occupants.
Impact – Environment (Failure Impact D)	The Impact – Environment classification is used to rate the impact that failure of the building system has on the Environment.
Impact – Image (Failure Impact E)	The Impact – Image classification is used to rate the impact that failure of the building system has on the corporate Image.

## Building system items

The **Building System Item** record contains the information and processes for a single building system in a single location (for example, the Roofing System in Las Vegas Building Two).

A location typically has several building system items, one for each building system.

The Building System Items section of the Assessment tab for a location (building, property, structure, or land), contains a record for each building system that is associated with the location. You can create building system items from a template, which populates the record with values from the template. You can also add a building system item from the building system classification.

---

## Building system templates

You can create building system templates for the various building or structure types in your portfolio.

You can use the templates to populate the buildings or structures with a standard list of building systems, which includes default values for the following items:

- Building class
- Life expectancy
- Default replacement cost per unit of measurement



---

## Chapter 4. Assessing the current condition of facilities

You can inspect facilities and systems to identify the physical and functional condition of the facility and its component systems. You can identify opportunities for improvement and estimate costs that are associated with addressing the opportunities.

---

### Managing facility data

Property, land, building, and structure records in the IBM TRIRIGA system hold the main Facility Assessment data. With these records, you can identify and manage building system items, opportunities, regulatory and valuation information. You can then initiate inspection requests and funding requests, and manage FCI history records.

### Inspection requests

The inspection request process begins with an inspection request and ends with the completion of one or more Facility Assessment work tasks. The Facility Assessment work tasks capture updated condition information about one or more building system items and record any new deficiencies that are identified during the assessment inspection.

The following image shows the inspection request process.

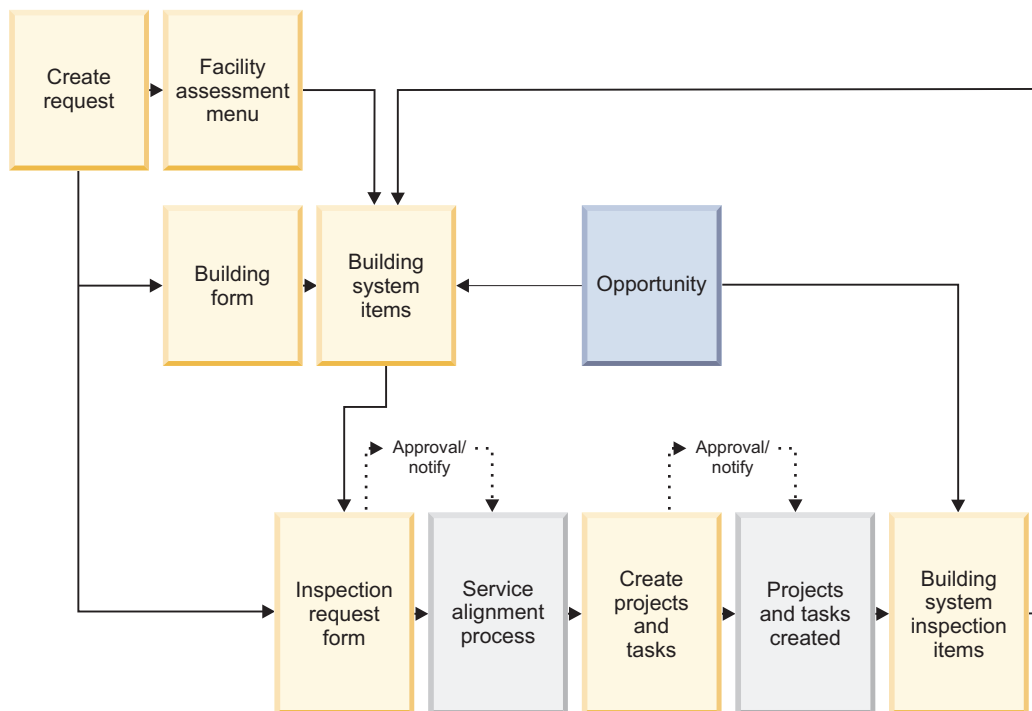


Figure 4. Inspection request process

## Inspection request process components

### Create request from

You can create an inspection request directly from a building or structure by selecting the building system items that need to be inspected. Use this option when you want the inspection request to include building system items specific to a single building or structure. You can also create an inspection request from the **Manage Requests** form, or from the **Facility Assessment** window.

### Building system items

The building system items are used to create the inspection items on the task.

### Inspection request

The inspection request is a request object in the system that is used specifically for initiating a request for the inspection of the selected building system items.

### Service assignment process

The service assignment process is used throughout the IBM TRIRIGA system for determining whether to create and how to assign projects or tasks, or both.

### Project or task

Projects or tasks are created to satisfy the inspection request. They are created and assigned based on the business rules that are established in the service assignment process, or service plan.

### Building system inspection items

A building system inspection item is created for each building system item that is listed on the inspection request and is appended to the task. When the task is completed, the data in the building system inspection item is updated to the corresponding building system items.

### Opportunities

Opportunities can be identified from the tasks and are automatically associated back to the building or structure, building system item, assets, and locations that they reference.

## Opportunities

Opportunities show areas where the condition a location or building system might be improved. For example, if a roof has cracks around the vents, you can indicate that there is an opportunity to improve the condition of the roof.

Opportunities can describe changes that are needed due to deficiencies, such as deteriorating materials, and changes that are needed to support environmental enhancements. Each opportunity has its own lifecycle process in which it is advanced through to the appropriate people to review and approve or defer it. An opportunity also has a priority value that is used to determine how it is accounted for in the Facility Condition Index (FCI) or Condition Index (CI) calculations. You can also provide cost estimates for opportunities to help with the decision making about which ones are addressed.

You can defer active opportunities to a future date. When you defer an opportunity, you stamp the record with a future date when you plan to address the opportunity. Deferred opportunities are included in the Total Cost of Opportunities Levels 1 and 2 and Green Condition Index Level 1.



---

## Chapter 5. Opportunity analysis

You can maintain real-time and historical Facility Condition Index (FCI) and System Condition Index (CI) ratings. By performing facility analysis, you can determine funding alternatives and priorities and review against targets and goals that are established during planning phase.

### Funding analysis for opportunities

A funding analysis provides information for comparing opportunities and funding requests.

### Facility assessment analysis process

A facility assessment analysis provides information for comparing environmental or facility assessment data across multiple buildings, structures, and retail locations.

### Cost estimates

The **Cost Estimate** form contains the objects, forms, and processes for creating unit price data and creating cost estimate line items. The **Cost Estimate** form is on the **Application Setup** menu bar under the **Tools** menu bar.



---

## Chapter 6. Selecting opportunities and requesting funding

You can develop short- and long-term facilities plans, plan and launch facilities and capital projects, integrate opportunity remediation with ongoing maintenance programs.

---

### Funding requests

You can submit funding requests for programs, capital project, and facilities projects.

The following diagram shows the funding request process.

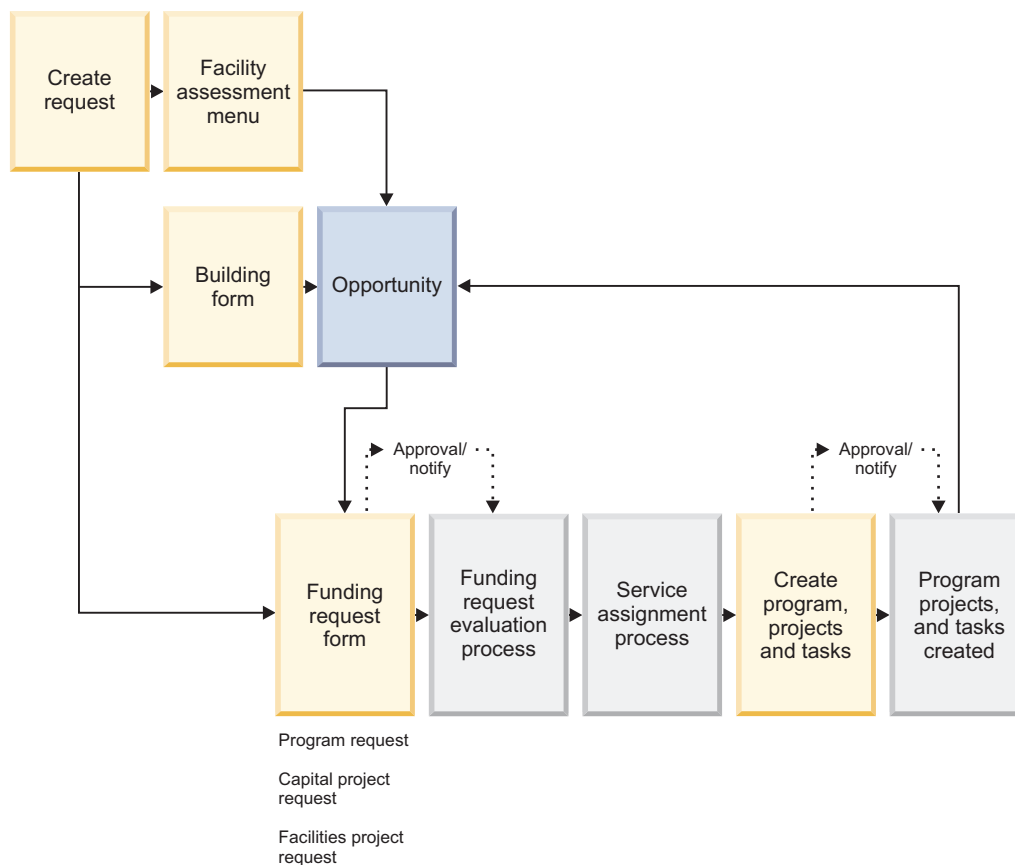


Figure 5. Funding request process

### Funding request process components

#### Opportunities

The opportunities that you want to address and are requesting funding for.

#### Funding request

The funding request is a request object that is used for initiating a request for funds to create one or more program, capital project, or facilities project.

**Service assignment process**

The service assignment process is used throughout the IBM TRIRIGA system for determining whether to create and how to assign projects or tasks, or both.

**Program, project, or task**

A program, project, or task is created to satisfy the funding request. These objects are created and assigned based on the business rules that are set up in the service assignment process, or service plan.

---

## Chapter 7. Addressing opportunities

You can develop short and long-term facilities plans and plan and launch facilities and capital projects to improve the condition of facilities. You integrate opportunity remediation with ongoing corrective and preventive maintenance programs. The facility and system condition, opportunity status, and overall FCI/CI are updated as projects and tasks are completed.

Based on the size and financial nature of the work to be completed as part of a funding request, you can specify the following actions:

- Create a Program – With a funding request only. If a Program Requested For value is specified in the request, then a subprogram is created.
- Create a Capital Project - Seeded with data and tasks from a capital project template. If a **Program Requested For** value is specified in the request, then a child capital project is created.
- Create a Facilities Project - Seeded with data and tasks from a facilities project template. If a Program Requested For value is specified in the request, then a child facilities project is created.
- Create Work Tasks - Directly without a project.
- Integrate Opportunities - With ongoing corrective and preventive maintenance tasks.



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