

FACILITY CONDITION INDEX

Facility Condition Index (FCI) is an industry standard asset management tool which measures the “constructed asset’s condition at a specific point in time” (US Federal Real Property Council, 2008). It is a functional indicator resulting from an analysis of different but related operational indicators (such as building repair needs) to obtain an overview of a building’s condition as a numerical value.

It was developed by the US Navy to assess conditions of vessels and strategically prioritize renewal spending. FCI was first utilized as an index for determining building condition in the early 1990s by US National Association of College and Universities and quickly became the standard for post secondary institutions across North America. Recently condition index measures have been adopted by the US Federal Real Property Council, American Public Works Association, Council of Ontario Universities, Federation of Canadian Municipalities (through their Infraguide publications), Health Authorities, Education Ministries and Social Housing Authorities throughout North America.

FCI is obtained by aggregating the total cost of any needed or outstanding repairs, renewal or upgrade requirements at a building compared to the current replacement value of the building components. It is the ratio of the “repair needs” to replacement value” expressed in percentage terms. Land value is not considered when evaluating FCI.

$$\text{FCI} = \frac{\text{Total of Building Repair/Upgrade/Renewal Needs (\$)}}{\text{Current Replacement Value of Building Components (\$)}}$$

The lower the value of FCI, the better condition that a building is in. Current industry benchmarks for social housing indicate the following subjective condition ratings for facilities with various ranges of FCI:

0- 10% FCI	<i>Asset is in <u>good</u> condition</i>
10-25% FCI	Asset is in <i><u>fair to good</u></i> condition
25-60% FCI	Asset is in <i><u>poor to fair</u></i> condition
60% + FCI	Asset is in <i><u>critical</u></i> condition

For example, a building with a replacement value of \$1,000,000 with outstanding renewal needs of \$90,000 would have an FCI of 9%, indicating the building is in good condition. FCI can be reported at all levels in the asset hierarchy; it can be used to express component condition

(example: elevators), building condition, development condition and portfolio condition, with each higher level being the aggregate of those beneath it in the hierarchy.

While originally developed by the US Navy, FCI was quickly adopted by universities and other public institutions to monitor building condition and employed as a strategic decision-making investment tool. Other organizations in Canada are adopting this tool and are at various stages of implementation. This indicator is analogous to the condition index employed for many years by the Ministry of Transportation to monitor condition of bridges in the province, used to identify and prioritize repairs. BC Housing is currently using FCI to assist with investment decisions and strategic directions.

FCI IMPACTS, RISKS & RESIDENT MORALE

Utilizing FCI provides a professional method of measurement to determine the relative condition index of a single building, group of buildings, or if desired, a total portfolio. As FCI increases, the assets will experience:

- Increased risk of component failure
- Increased facility maintenance and operating costs
- Greater negative impacts to staff and residents.

Table 1 on the following page illustrates the types of risks and tradeoffs that can be expected when buildings are maintained at different FCI levels.

Table 1: Facility Condition Index Levels and Impact to Component Failure Risk, Residents and Staff

Common Implications of FCI to Housing Portfolios				
FCI Levels	Impact to Buildings and Components	Examples of Component Issues	Resident Complaints and Morale	Maintenance Staff Impact
Critical (Over 60%)	<ul style="list-style-type: none"> - Facilities will look worn with obvious deterioration. - Equipment failure occurring frequently. Occasional building shut down will likely occur. Management risk is high. - Health and safety issues figure prominently 	<ul style="list-style-type: none"> - Replacement of multiple systems required (i.e. Mechanical, Electrical, Architectural and Structural - Building heating system failure. - Evacuation of upper floor due to unaddressed roof leakage. - Structural issues including envelope replacement. 	<ul style="list-style-type: none"> - Resident complaints will be very high with an unmanageable level of frequency. - Lack of maintenance will affect resident attitudes and morale. 	<ul style="list-style-type: none"> - Staff will not be able to provide regular scheduled maintenance due to high level of “reactive” calls
Poor (25% to 60%)	<ul style="list-style-type: none"> - Facilities will look worn with apparent and increasing deterioration - Frequent component and equipment failure may occur. Occasional building shut down could occur 	<ul style="list-style-type: none"> - Replacement of specific major systems required, such as heating and plumbing systems, complete interior renovations, building envelope restoration. - Shut down may affect some units (i.e. roof or pipe leakage) 	<ul style="list-style-type: none"> - Resident complaints will be high with increased level of frequency. - Concern about negative resident morale will be raised and become evident. 	<ul style="list-style-type: none"> - Facilities staff time will likely be diverted from regular scheduled maintenance and forced to “reactive” mode
Fair (10% to 25%)	<ul style="list-style-type: none"> - Facilities are beginning to show signs of wear - More frequent component and equipment failure will occur 	<ul style="list-style-type: none"> - Repairs and replacement of specific systems, i.e. boiler, window replacements, interior renovations. 	<ul style="list-style-type: none"> - Resident complaints will occur with higher level of frequency - Resident morale may be affected 	<ul style="list-style-type: none"> - Facilities staff time may at times be diverted from regular scheduled maintenance
Good (0% to 10%)	<ul style="list-style-type: none"> - Facilities will look clean and functional - Limited and manageable component and equipment failure may occur 	<ul style="list-style-type: none"> - Repairs and replacement of more of an aesthetic or general nature, such as wall painting, carpet replacement, roof repair, window caulking. 	<ul style="list-style-type: none"> - Resident complaints will be low and manageable - Resident morale will be positive and evident 	<ul style="list-style-type: none"> - Facilities staff time will be devoted to regular scheduled maintenance