BUILDING CONDITION ASSESSMENT

A Comprehensive Approach in Energy and Facility Management
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Nadine International – Company Profile

• Multi-Discipline Consulting Engineering Firm
• ISO 9001 Certified
• A “One Stop Shop” for Engineering Services
• Registrations:
  - Association of Professional Engineers of Ontario
  - Consulting Engineers of Ontario
  - Consulting Engineers of Canada
  - Ministry of Municipal Affairs and Housing
  - Winner of 2008 Consulting Engineers of Ontario Award
FACILITY CONDITION INDEX (FCI)
Industry Preferred Formula

\[ FCI = \frac{\text{total cost of existing repairs or deferred maintenance (DM)}}{\text{current replacement value (CRV)}} \times 100 \]

- **Good**
- **Fair**
- **Poor...**

5% 10% Greater than 10%
FACILITY CONDITION INDEX (FCI)
Other Formula for the FCI Calculation

\[ \text{FCI} = (1 - \frac{\text{Total Deficiencies}}{\text{Replacement Costs}}) \times 100 \]
Deferred Maintenance Deficiencies Defined

The total dollar amount of existing major maintenance repairs and replacement, identified by a comprehensive Building Condition Assessment of building, grounds, fixed equipment, and infrastructure needs.

It does not include projected maintenance and replacements, or other types of work, such as program improvements or new construction; these items are viewed, as separate capital needs.
Current Replacement Value Defined

- Current Replacement Value (CRV) is defined as the total amount of expenditure in current dollars required to replace the asset.

- Meet the current acceptable standards of construction, and comply with regulatory requirements.

- CRV is not the Insurance Replacement Value, Book Value, or the Market Value.
Why FCI?

- Strategic Asset Management Tool
- Building / Facility Performance Indicator
- Useful tool for setting renewal priorities
- Useful tool for the allocation of funding and resources
- Benchmark to compare conditions of a group of facilities, or portfolio
Strategic Asset Management & Capital Renewal Plan

- FCI
- BCA
- Analysis
- Strategy
- Operations
Strategic Asset Management & Capital Renewal Plan

FACILITY CONDITION INDEX (FCI)

ANALYSIS

BUILDING CONDITION ASSESSMENT

Strategy

Reserve Fund Planning
Risk Management
Capital Renewal Needs
Planned PM
Validation & Summary

Operations

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

Budgets & Funding
Job Costing & Project Tracking
Work Orders
BCA is a comprehensive condition inspections, generally performed every three (3) years, and used to assess the performance of a system, subsystem or component.

In addition to providing a detailed inventory, short/long term replacement strategies, and life cycle costs, Building Condition Assessment (BCA) provides a key data for Accurate Facility Condition Index (FCI) calculations, and energy savings.

**Why BCA?**

*What do you own?*

*What is it worth?*

*What is its condition?*

*What is the remaining service life?*

*What are the project priorities?*

*What is the deferred maintenance, repairs, replacements, and upgrades required?*

*Is the asset energy efficient?*
Building Condition Assessment (BCA)

- BCA provides an accurate data for FCI Calculations
- Establishes the baseline conditions for the building and its systems
- Identifies, classifies and prioritizes building deficiencies
- Recommends corrective action for each deficiency
- Estimates cost for proposed corrective actions
- Maintains building condition and cost data current
- Identify and prioritize the necessary short and long term maintenance and repair requirements
- Better allocation of the funding
- Identifies areas of energy saving
- Assessment performed by professional architects and engineers (with/or without RFID)
BCA Approach, Detailed and Intrusive Audit

Preliminary Site Audit:

- Review drawings and Annual Inspection Reports
- Review existing documentation (Studies, Reports, etc.)
- Interview Building Management Staff
  a) Interview Checklist  b) Equipment History
  c) Performance        d) Future Planning
- Digital pictures
- Install Radio Frequency Identification (RFID) tags (recommended)
RFID tagging will help reduce the FCI in the following ways:
- Reduce the cost of future BCA
- Improve Asset Management
- Reduce operating/maintenance expenditures
- Improve tracking of assets, asset condition, repairs and upgrades
- Integration with Computerized Maintenance Managements Systems (CMMS) will provide better control over FCI across the portfolio
- Improve the quality of the strategic decision making, due to the accurate and current data
BCA Approach, Detailed and Intrusive Audit

- **Detailed Audit:**
  - Visual Inspection of the entire building

- **Intrusive Assessment:**
  a) Review existing documentation
  b) Conduct Inspection as per Checklists
  c) Open the equipment panels
  d) Conduct performance tests
  e) Record actual condition of the equipment
  f) Take digital picture of the deficiencies
  g) Identify opportunities for improvements (Energy Efficiency, accessibility, Codes, etc.)
BCA Approach, Detailed and Intrusive Audit

- Intrusive Audit:
  - Conduct Inspections as per Checklists
  - Infrared Scanning of the Electrical Panels:
    a) Radiometer
    b) Graphic profile of the terminal
    c) Determine trouble spots
  - Generator Test:
    a) Generator run test
  - Chain Drag Test:
    a) Underground parking garage floor slab
    b) Damaged areas are identified and quantified
BCA Reports

- Projected annual/overall sustainment costs based on the condition of the facility
- Condition analysis spreadsheets
- Capital Planning Analysis spreadsheet
- Deferred Maintenance data
- Cash flow analysis
- Reserve fund analysis
- Individual Uniformat II component, and total portfolio reporting for user-defined periods
- Capability to relate actual work performed to projected budgets for each Uniformat II component, or by portfolio.
Basic BCA Reports
Part I – Life Cycle Cost Chart

• Uniformat Code
• Component Name
• Description
• Observations
• Recommendations
• Uniformat Categories
• Cost Allowance
• Service/Actual and Remaining Life
• Scope of Work
• Quantities/Units
• Rates
• Photos/Attachments
• Percentage of quantity scheduled
• Estimated future cost

LIFE CYCLE COST TABLE

The information is assumed to be accurate and correct. The mechanical checklists, electrical checklists, and the Elevator Report provide the information collected during the Site Inspection, and provided by the Building Management Staff, equipment condition, and the age of the building. The Equipment Replacement Costs is estimated in today’s Canadian Dollars. The actual condition of the piping, connections to the Fire Alarm System, etc. have been included in the Equipment Replacement Costs. The Mechanical and Fire Safety Inspection was conducted for 10% or less of the building.
Basic BCA Reports
Part II– Annual Expenditures Chart

- Uniformat Code
- Budget Cycles
- Annual Projections
Basic BCA Reports
Part III – Equipment Database

- Equipment Naming Convention
- Equipment Name
- Manufacturer’s Name
- Service Life
- Equipment Location
- Installation Date
- Model/Serial #
- Capacity
- Power Supply
BCA

How BCA Provides Quality and Accuracy

• Use comprehensive Checklists to ensure a thorough Assessment

• Interview appropriate Property Management Staff to gather information on:
  - Equipment History
  - Performance
  - Future Planning

• Conduct detailed intrusive Assessments by specialized professionals to obtain:
  - Accurate information for developing Scope of Work, and reliable business case

• Identify deficiencies with respect to applicable Codes, Standards, and Manufacturer’s recommendations
BCA
How BCA Provides Quality and Accuracy

- Analyze deficiencies and make sound Engineering recommendations
- Apply Good Engineering Practice
- Ensure proposed upgrades are in line with Client’s Corporate Objectives
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

FACILITY CONDITION INDEX (FCI)

ANALYSIS

BUILDING CONDITION ASSESSMENT

Strategy
- Reserve Fund Planning
- Risk Management
- Capital Renewal Needs
- Planned PM
- Validation & Summary

Operations
- Budgets & Funding
- Job Costing & Project Tracking
- Work Orders
OPERATIONS – Budgets and Funding

- Multiyear Capital Plan
- Based on BCA or SWOT (Strength, Weakness, Opportunities and Threats) Analysis
- Gap Analysis (Funding/Needs)
- Long Term Service and Replacement Issues
- Setting priorities from funding
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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OPERATIONS – Job Costing and Project Tracking

- Based on accurate information from BCA
- Class “D” Estimate
- Includes Contingencies
- Life Cycle Costs
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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Nadine International Inc.
STRATEGY – Reserve Fund Planning

- Have the management policies shortened the life of the building?
- Have the unfunded liability been identified?
- Are any parts of the building reaching, or have reached functional obsolescence?
- Have the depreciated value of physical deterioration, and obsolescence been identified?
- Has the quality of the original construction been assessed against life cycle and the gap identified?
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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Nadine International Inc.
STRATEGY – Risk Management

- Is the present condition of the assets?
  a) Acceptable
  b) Below Standard
  c) Well below Standard
  d) Will likely fail imminently
  e) Has failed

- What will happen if this asset Fails?
  a) No Risk
  b) Local Inconvenience
  c) Significant Inconvenience
  d) Critical or Life Safety

- What would happen if the Repair is delayed?
  a) No Significance
  b) Reduction in efficiency
  c) Deterioration of the Asset
  d) Major deterioration of the Asset
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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STRATEGY – Planned Preventive Maintenance

• Establish a reasonable set of Planned Preventive Maintenance procedures to keep the asset base to an acceptable level

• Develop an internal and external process to perform these tasks

• Evaluate the effects of the Preventive Maintenance Program
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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STRATEGY – Validation & Summary

- Are the Capital Projects, Planned Maintenance and Emergency Repairs keeping the Assets at the acceptable level?

- Is there a process to validate the BCA information, and the ongoing maintenance projects for the assets?
Strategic Asset Management & Capital Renewal Plan

ASSET MANAGEMENT & CAPITAL RENEWAL PLAN

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Nadine International Inc.
ANALYSIS
Prioritizing Repairs/Replacement/Upgrades

- **Priority 1**: Immediate/Critical: Immediate Safety, Building Code, Accreditation

- **Priority 2**: Potentially Critical: Short term deficiencies, correct within 1 to 2 years

- **Priority 3**: Necessary / May become critical: Long term deficiencies correct within 3 to 5 years

- **Priority 4**: Potentially Critical: Improvements required to improve the performance of the building and its systems

- **Priority 5**: Current Code Compliance: New code requirements, to be addressed in any major renovation
Strategic Asset Management & Capital Renewal Plan

- ASSET MANAGEMENT & CAPITAL RENEWAL PLAN
  - FACILITY CONDITION INDEX (FCI)
    - ANALYSIS
      - BUILDING CONDITION ASSESSMENT

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  - Work Orders
FACILITY CONDITION INDEX (FCI)
Case Study – ABC LTC
# Building Condition Assessment

## FCI - Case Study – ABC LTC

Current Replacement Value (CRV)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Substructure</td>
<td>$126.03</td>
<td>$1,430,650.00</td>
</tr>
<tr>
<td>B Shell</td>
<td>$694.38</td>
<td>$7,882,700.00</td>
</tr>
<tr>
<td>C Interiors</td>
<td>$610.24</td>
<td>$6,927,500.00</td>
</tr>
<tr>
<td>D Services</td>
<td>$1,108.66</td>
<td>$12,562,963.33</td>
</tr>
<tr>
<td>E Equipment &amp; Furnishings</td>
<td>$79.28</td>
<td>$900,000.00</td>
</tr>
<tr>
<td>Sub-Total</td>
<td>$2,616.59</td>
<td>$29,703,813.33</td>
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<tr>
<td>Contractor Fees (General Conditions, Overhead, Profit) - 18%</td>
<td>$470.99</td>
<td>$5,346,686.40</td>
</tr>
<tr>
<td>Architectural, Engineering, Project Management, and Building Permit Fees - 15%</td>
<td>$392.49</td>
<td>$4,455,572.00</td>
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<tr>
<td>User Fees - 3%</td>
<td>$78.50</td>
<td>$891,114.40</td>
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<tr>
<td>Contingency - 8%</td>
<td>$209.33</td>
<td>$2,376,305.07</td>
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<tr>
<td><strong>CURRENT REPLACEMENT VALUE (CRV):</strong></td>
<td><strong>$3,767.90</strong></td>
<td><strong>$42,773,491.20</strong></td>
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</tbody>
</table>
## FCI - Case Study – ABC LTC
### Current Replacement Value (CRV)
#### “A” - Substructure

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>A1010000 Wall Foundations - General</td>
<td>$25.77</td>
<td>$292,500.00</td>
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<tr>
<td>A1013000 Perimeter Drainage</td>
<td>$6.30</td>
<td>$71,500.00</td>
</tr>
<tr>
<td>A1030000 Slab on Grade</td>
<td>$53.48</td>
<td>$607,100.00</td>
</tr>
<tr>
<td>A2010000 Basement Excavation</td>
<td>$10.71</td>
<td>$121,550.00</td>
</tr>
<tr>
<td>A2020000 Basement Walls</td>
<td>$29.77</td>
<td>$338,000.00</td>
</tr>
<tr>
<td><strong>A Substructure</strong></td>
<td><strong>$126.03</strong></td>
<td><strong>$1,430,650.00</strong></td>
</tr>
</tbody>
</table>

2 North Pole Avenue, Canada

Building Type: Long Term Care Centre with Face Brick & Concrete Block Back-up / Bearing Walls

Floor Area (SM): 13,481

Gross Floor Area (SM): 11,352

Cost Per Square Meter: $3,767.90  
Cost Per Square Foot: $350.05  

Building Cost: $42,773,491.20
FCI - Case Study – ABC LTC
Current Replacement Value (CRV)
“B” - Shell

<table>
<thead>
<tr>
<th>Building Type:</th>
<th>Long Term Care Centre with Face Brick &amp; Concrete Block Back-up / Bearing Walls</th>
</tr>
</thead>
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<tr>
<td>Floor Area (SM):</td>
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<tr>
<td>Gross Floor Area (SM):</td>
<td>11,352</td>
</tr>
<tr>
<td>Cost Per Square Meter:</td>
<td>$3,767.90</td>
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<tr>
<td>Building Cost:</td>
<td>$42,773,491.20</td>
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<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1010000 Floor Construction</td>
<td>$145.78</td>
<td>$1,654,900.00</td>
</tr>
<tr>
<td>B1020000 Roof Construction</td>
<td>$168.23</td>
<td>$1,909,700.00</td>
</tr>
<tr>
<td>B2010000 Exterior Walls</td>
<td>$242.83</td>
<td>$2,756,650.00</td>
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<tr>
<td>B2020000 Exterior Windows</td>
<td>$59.66</td>
<td>$677,300.00</td>
</tr>
<tr>
<td>B2030000 Exterior Doors</td>
<td>$10.36</td>
<td>$117,650.00</td>
</tr>
<tr>
<td>B3010000 Roof Coverings</td>
<td>$66.42</td>
<td>$754,000.00</td>
</tr>
<tr>
<td>B3020000 Roof Openings</td>
<td>$1.10</td>
<td>$12,500.00</td>
</tr>
<tr>
<td>B Shell</td>
<td>$694.38</td>
<td>$7,882,700.00</td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
Current Replacement Value (CRV)
“C” - Interiors

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1010000 Partitions</td>
<td>$149.90</td>
<td>$1,701,700.00</td>
</tr>
<tr>
<td>C1020000 Interior Doors</td>
<td>$165.33</td>
<td>$1,876,800.00</td>
</tr>
<tr>
<td>C1030000 Fittings</td>
<td>$13.48</td>
<td>$153,000.00</td>
</tr>
<tr>
<td>C2010000 Stair Construction</td>
<td>$33.69</td>
<td>$382,500.00</td>
</tr>
<tr>
<td>C3010000 Wall Finishes</td>
<td>$77.42</td>
<td>$878,900.00</td>
</tr>
<tr>
<td>C3020000 Floor Finishes</td>
<td>$87.76</td>
<td>$996,200.00</td>
</tr>
<tr>
<td>C3030000 Ceiling Finishes</td>
<td>$82.66</td>
<td>$938,400.00</td>
</tr>
<tr>
<td><strong>C Interiors</strong></td>
<td><strong>$610.24</strong></td>
<td><strong>$6,927,500.00</strong></td>
</tr>
</tbody>
</table>
**FCI - Case Study – ABC LTC**

**Current Replacement Value (CRV)**

“D” - Services

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1010000 Elevators and Lifts</td>
<td>$43.00</td>
<td>$488,150.00</td>
</tr>
<tr>
<td>D2010000 Plumbing Fixtures</td>
<td>$261.24</td>
<td>$2,965,650.00</td>
</tr>
<tr>
<td>D2020000 Domestic Water Distribution</td>
<td>$11.31</td>
<td>$128,350.00</td>
</tr>
<tr>
<td>D2030000 Sanitary Waste</td>
<td>$6.17</td>
<td>$70,000.00</td>
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<tr>
<td>D2040000 Rain Water Drainage</td>
<td>$6.17</td>
<td>$70,000.00</td>
</tr>
<tr>
<td>D3010000 Energy Supply</td>
<td>$38.71</td>
<td>$439,450.00</td>
</tr>
<tr>
<td>D3020000 Heat Generating Systems</td>
<td>$85.16</td>
<td>$966,790.00</td>
</tr>
<tr>
<td>D3030000 Cooling Generating Systems</td>
<td>$193.56</td>
<td>$2,197,250.00</td>
</tr>
<tr>
<td>D3040000 Distribution Systems</td>
<td>$23.19</td>
<td>$263,270.00</td>
</tr>
<tr>
<td>D3050000 Terminal &amp; Package Units</td>
<td>$38.71</td>
<td>$439,450.00</td>
</tr>
<tr>
<td>D3060000 Controls &amp; Instrumentation</td>
<td>$7.74</td>
<td>$87,890.00</td>
</tr>
<tr>
<td>D4010000 Sprinklers</td>
<td>$54.00</td>
<td>$613,008.00</td>
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<tr>
<td>D4020000 Standpipes</td>
<td>$11.00</td>
<td>$124,872.00</td>
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<tr>
<td>D5010000 Electrical Service/Distribution</td>
<td>$38.52</td>
<td>$437,325.00</td>
</tr>
<tr>
<td>D5020000 Lighting and Branch Wiring</td>
<td>$173.40</td>
<td>$1,968,458.33</td>
</tr>
<tr>
<td>D5030000 Communications and Security</td>
<td>$100.93</td>
<td>$1,145,800.00</td>
</tr>
<tr>
<td>D5090000 Other Electrical Systems</td>
<td>$13.85</td>
<td>$157,250.00</td>
</tr>
<tr>
<td><strong>D Services</strong></td>
<td>$1,106.66</td>
<td>$87,346,982.40</td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
Current Replacement Value (CRV)  
“E” – Equipment & Furnishings

<table>
<thead>
<tr>
<th>Building Current Replacement Value (CRV)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimate Name:</strong></td>
</tr>
<tr>
<td>2 North Pole Avenue, Canada</td>
</tr>
<tr>
<td><strong>Building Type:</strong></td>
</tr>
<tr>
<td><strong>Floor Area (SM):</strong></td>
</tr>
<tr>
<td><strong>Gross Floor Area (SM):</strong></td>
</tr>
<tr>
<td><strong>Cost Per Square Meter:</strong></td>
</tr>
<tr>
<td><strong>Cost Per Square Foot:</strong></td>
</tr>
<tr>
<td><strong>Building Cost:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Per S.M.</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1090000 Other Equipment</td>
<td>$79.28</td>
<td>$900,000.00</td>
</tr>
<tr>
<td>E Equipment &amp; Furnishings</td>
<td>$79.28</td>
<td>$900,000.00</td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
Annual Estimated Expenditures/Total Cost of Existing Repairs

<table>
<thead>
<tr>
<th>UNIFORMAT CODE</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Substructure</td>
<td>$ 117,400.00</td>
</tr>
<tr>
<td>B - Shell</td>
<td>$ 340,520.00</td>
</tr>
<tr>
<td>C - Interiors</td>
<td>$ 445,366.00</td>
</tr>
<tr>
<td>D - Services</td>
<td>$ 522,000.00</td>
</tr>
<tr>
<td>E - Equipment &amp; Furnishings</td>
<td>$ 205,000.00</td>
</tr>
<tr>
<td>G - Site Work</td>
<td>$ 573,200.00</td>
</tr>
<tr>
<td>H - General Requirements</td>
<td>$ 160,000.00</td>
</tr>
<tr>
<td><strong>Annual Estimated Expenditures / Total Cost of Existing Repairs</strong></td>
<td><strong>$ 2,363,486.00</strong></td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
FCI Calculations

$$\text{FCI} = \frac{\text{total cost of existing repairs}}{\text{current replacement value}} \times 100$$

ABC LTC
$$\text{FCI} = \frac{$2,363,486.00}{$42,773,491.20} \times 100 = 5.53\%$$

As per standard industry norms,
the 5.53% is classified as a “FAIR” Facility Condition Index.
FCI - Case Study – ABC LTC
Graphical Presentation

FCI

poor

fair

good

ABC LTC

FCI = 5.53%

YEAR

2011 2012 2013
# BUILDING CONDITION ASSESSMENT

## FCI - Case Study – ABC LTC


<table>
<thead>
<tr>
<th>UNIFORMAT CODE</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>A -Substructure</td>
<td>$ 117,400.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>B - Shell</td>
<td>$ 340,520.00</td>
<td>$ -</td>
<td>$ 340,160.00</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>C -Interiors</td>
<td>$ 445,366.00</td>
<td>$ 59,992.00</td>
<td>$ 59,992.00</td>
<td>$ 161,281.00</td>
<td>$ 59,992.00</td>
</tr>
<tr>
<td>D - Services</td>
<td>$ 522,000.00</td>
<td>$ 180,000.00</td>
<td>$ 205,000.00</td>
<td>$ 110,000.00</td>
<td>$ 487,000.00</td>
</tr>
<tr>
<td>E - Equipment &amp; Furnishings</td>
<td>$ 205,000.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 7,000.00</td>
<td>$ -</td>
</tr>
<tr>
<td>G - Site Work</td>
<td>$ 573,200.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>H - General Requirements</td>
<td>$ 160,000.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ 60,000.00</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Annual Estimated Expenditures</strong></td>
<td><strong>$ 2,363,486.00</strong></td>
<td><strong>$ 239,992.00</strong></td>
<td><strong>$ 605,152.00</strong></td>
<td><strong>$ 338,281.00</strong></td>
<td><strong>$ 546,992.00</strong></td>
</tr>
</tbody>
</table>
## FCI - Case Study – ABC LTC
Annual Estimated Expenditures from 2010 BCA (2016-2020)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Substructure</td>
<td>$ - $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>B - Shell</td>
<td>$ - $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>C - Interiors</td>
<td>$ 59,992.00</td>
<td>$ 155,692.00</td>
<td>$ 59,992.00</td>
<td>$ 59,992.00</td>
<td>$ 155,692.00</td>
</tr>
<tr>
<td>D - Services</td>
<td>$ 1,491,000.00</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>E - Equipment &amp; Furnishings</td>
<td>$ 29,000.00</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>G - Site Work</td>
<td>$ 189,390.00</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>H - General Requirements</td>
<td>$ - $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
<td>- $ $</td>
</tr>
<tr>
<td>Annual Estimated Expenditures</td>
<td>$ 1,769,382.00</td>
<td>$ 155,692.00</td>
<td>$ 119,992.00</td>
<td>$ 489,992.00</td>
<td>$ 215,692.00</td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
Annual Estimated Expenditures from 2010 BCA
Ten (10) Years Graphical Presentation

![Graph showing annual estimated expenditures from 2010 BCA for ABC LTC over ten years. The graph includes two series, Series 1 and Series 2, with data points for each year from 2011 to 2020. The expenditures range from $0 to $2,500,000, with peaks in 2011 and 2012 for Series 1, and in 2016 for Series 2. The graph highlights the significant expenditures incurred over the ten-year period.](image)
- Keep current FCI stable at 5.53%
- The red line in the following chart assumes that there will be no spending in 2011

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ESTIMATED EXPENDITURE</th>
<th>FUNDING</th>
<th>FCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$2,363,486.00</td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>$239,992.00</td>
<td>$239,992.00</td>
<td>5.53%</td>
</tr>
<tr>
<td>2013</td>
<td>$605,152.00</td>
<td>$605,152.00</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>$338,281.00</td>
<td>$338,281.00</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>$546,992.00</td>
<td>$546,992.00</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$1,769,382.00</td>
<td>$1,769,382.00</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$155,692.00</td>
<td>$155,692.00</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$119,992.00</td>
<td>$119,992.00</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>$489,992.00</td>
<td>$489,992.00</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>$215,692.00</td>
<td>$215,692.00</td>
<td></td>
</tr>
</tbody>
</table>
FCI - Case Study – ABC LTC
Funding Option I – Graphical Presentation

Current FCI 5.53%
FCI - Case Study – ABC LTC
Funding Option II

- The FCI increases to 14.07% in 2017
- A funding of $6,018,977.00 in 2017, and $119,992.00 in 2018 will be required to reduce the FCI to 0.28% in 2018

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Estimated Expenditure</th>
<th>Funding</th>
<th>FCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$2,363,486.00</td>
<td>$-</td>
<td>5.53 %  Fair</td>
</tr>
<tr>
<td>2012</td>
<td>$239,992.00</td>
<td>$-</td>
<td>6.09 %  Fair</td>
</tr>
<tr>
<td>2013</td>
<td>$605,152.00</td>
<td>$-</td>
<td>7.50 %  Fair</td>
</tr>
<tr>
<td>2014</td>
<td>$338,281.00</td>
<td>$-</td>
<td>8.29 %  Fair</td>
</tr>
<tr>
<td>2015</td>
<td>$546,992.00</td>
<td>$-</td>
<td>9.57 %  Fair</td>
</tr>
<tr>
<td>2016</td>
<td>$1,769,382.00</td>
<td>$-</td>
<td>13.71 % Poor</td>
</tr>
<tr>
<td>2017</td>
<td>$155,692.00</td>
<td>$6,018,977.00</td>
<td>14.07 % Poor</td>
</tr>
<tr>
<td>2018</td>
<td>$119,992.00</td>
<td>$119,992.00</td>
<td>0.28 %  Good</td>
</tr>
<tr>
<td>2019</td>
<td>$489,992.00</td>
<td>$-</td>
<td>1.15 %  Good</td>
</tr>
<tr>
<td>2020</td>
<td>$215,692.00</td>
<td>$-</td>
<td>1.65 %  Good</td>
</tr>
</tbody>
</table>
Thank you.