



# FACILITY CONDITION ASSESSMENT

Fab Lab | November 2020





## Executive Summary

Fab Lab, located at 12004 Hwy 57 in Vanclave, Mississippi, oldest building is 3 years old (at time of 2020 assessment). It comprises 3,200 gross square feet.

The findings contained within this report are the result of an assessment of building systems performed by building professionals experienced in disciplines including architecture, mechanical, plumbing and electrical. The total current deficiencies for this site, in 2020 construction cost dollars, are estimated at \$15,647. A ten-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Fab Lab the ten-year need is \$180,462.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined to calculate a Facility Condition Index (FCI). A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation. The Fab Lab facility has a 5-year FCI of 4.46%.

## Summary of Findings

The table below summarizes the condition findings at Fab Lab

Table 1: Facility Condition by Building

Number	Building Name	Current Deficiencies	5-Year Life Cycle Cost	Yrs 6-10 Life Cycle Cost	Total 5 Yr Need (Yr 1-5 + Current Defs)	Total 10 Yr Need (Yr 1-10 + Current Defs)	Replacement Cost	5-Year FCI
<b>Exterior Site</b>								
	Exterior Site	\$1,513	\$0	\$49,193	\$1,513	\$50,706	\$0	
<b>Permanent Building(s)</b>								
01	Fab Lab	\$14,134	\$12,795	\$102,827	\$26,929	\$129,756	\$637,760	4.22%
<b>Sub Total for Permanent Building(s):</b>		<b>\$14,134</b>	<b>\$12,795</b>	<b>\$102,827</b>	<b>\$26,929</b>	<b>\$129,756</b>	<b>\$637,760</b>	
<b>Total for Site:</b>		<b>\$15,647</b>	<b>\$12,795</b>	<b>\$152,020</b>	<b>\$28,442</b>	<b>\$180,462</b>	<b>\$637,760</b>	<b>4.46%</b>



## Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

**Current Deficiencies:** Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

**Life Cycle Forecast:** Life cycle analysis evaluates the ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

All members of the survey team recorded existing conditions, identified problems and deficiencies, and documented corrective action and quantities. The team took digital photos at each site to better identify significant deficiencies.

## Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

**Priority 1 – Mission Critical Concerns:** Deficiencies or conditions that may directly affect the site's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

**Priority 2 - Indirect Impact to Educational Mission:** Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

**Priority 3 - Short-Term Conditions:** Deficiencies that are necessary to the site's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

**Priority 4 - Long-Term Requirements:** Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

**Priority 5 - Enhancements:** Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.



The following table summarizes this site's current deficiencies by building system and priority.

Table 2: System by Priority (Site & Permanent Buildings)

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	\$0	\$0	\$1,513	\$0	\$0	\$1,513	9.67 %
Roofing	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Structural	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Exterior	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Interior	\$0	\$0	\$14,134	\$0	\$0	\$14,134	90.33 %
Mechanical	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Electrical	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Plumbing	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Fire and Life Safety	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
Specialties	\$0	\$0	\$0	\$0	\$0	\$0	0.00 %
<b>Total:</b>	\$0	\$0	\$15,647	\$0	\$0	\$15,647	

The building systems at the site with the most need include:

Interior	-	\$14,134
Site	-	\$1,513
Fire and Life Safety	-	\$0



The chart below represents the building systems and associated deficiency costs.

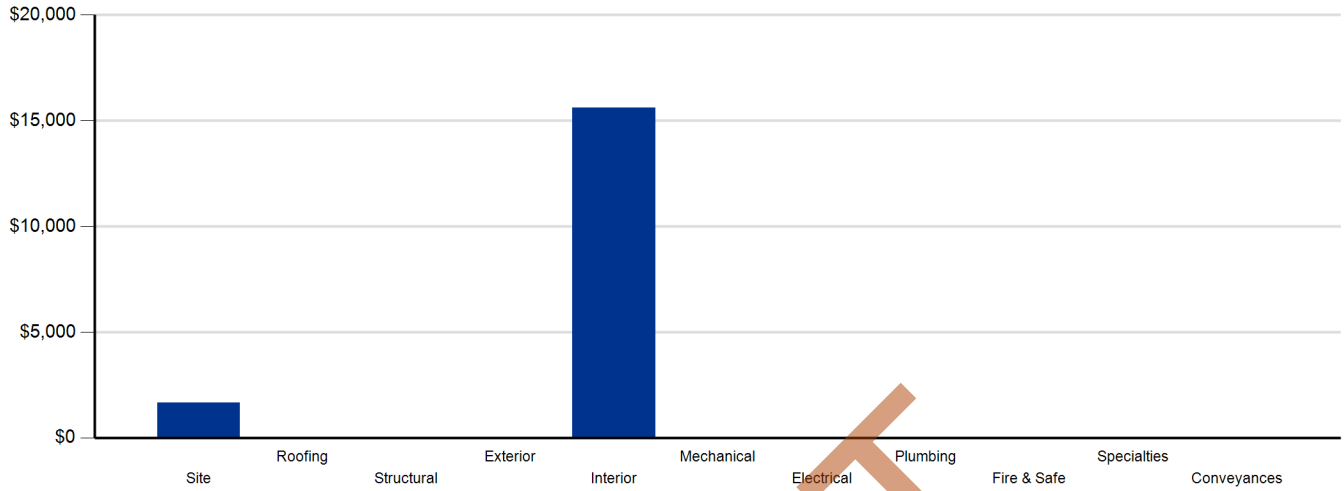


Figure 1: System Deficiencies

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### Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If an assessor identified a need for immediate replacement, a deficiency was created with the item's repair costs. The identified deficiency contributes to the facility's total current repair costs.

However, capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a ten-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following tables show current deficiencies and the subsequent ten-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3a: Capital Renewal Forecast (Yrs 1-5)

System	Life Cycle Capital Renewal Projections					Total 1-5
	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	
Site	\$0	\$0	\$0	\$0	\$0	\$0
Roofing	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$0	\$0	\$0	\$0	\$0	\$0
Interior	\$0	\$0	\$0	\$0	\$12,795	\$12,795
Mechanical	\$0	\$0	\$0	\$0	\$0	\$0
Electrical	\$0	\$0	\$0	\$0	\$0	\$0
Plumbing	\$0	\$0	\$0	\$0	\$0	\$0
Fire and Life Safety	\$0	\$0	\$0	\$0	\$0	\$0
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$12,795</b>	<b>\$12,795</b>





Table 3b: Capital Renewal Forecast (Yrs 6-10)

System	Life Cycle Capital Renewal Projections						Total 6-10	Total 1-10
	Total 1-5	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030		
Site	\$0	\$0	\$0	\$0	\$0	\$49,193	\$49,193	\$49,193
Roofing	\$0	\$0	\$0	\$96,014	\$0	\$0	\$96,014	\$96,014
Exterior	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interior	\$12,795	\$0	\$0	\$0	\$0	\$0	\$0	\$12,795
Mechanical	\$0	\$0	\$0	\$4,418	\$0	\$0	\$4,418	\$4,418
Electrical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Plumbing	\$0	\$0	\$0	\$2,395	\$0	\$0	\$2,395	\$2,395
Fire and Life Safety	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$12,795</b>	<b>\$0</b>	<b>\$0</b>	<b>\$102,827</b>	<b>\$0</b>	<b>\$49,193</b>	<b>\$152,020</b>	<b>\$164,815</b>

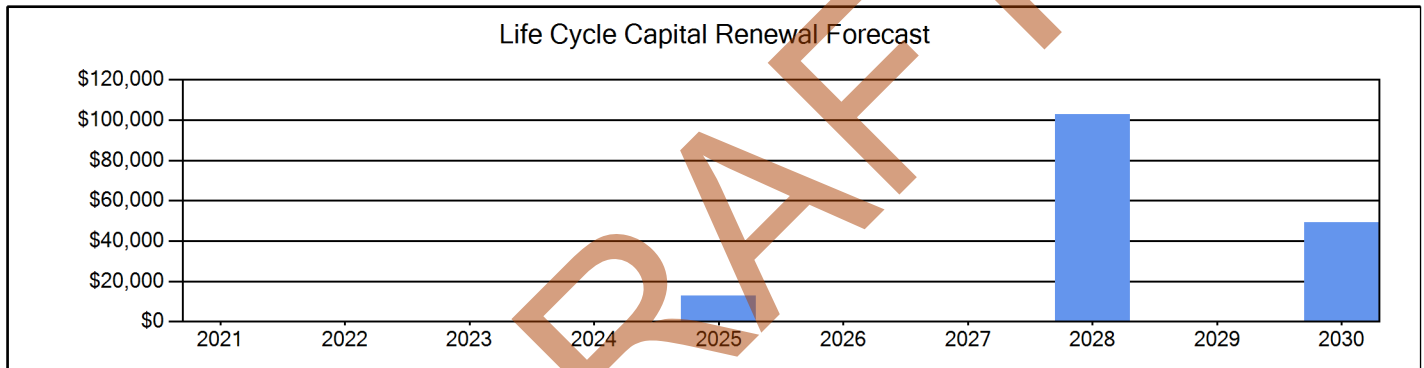
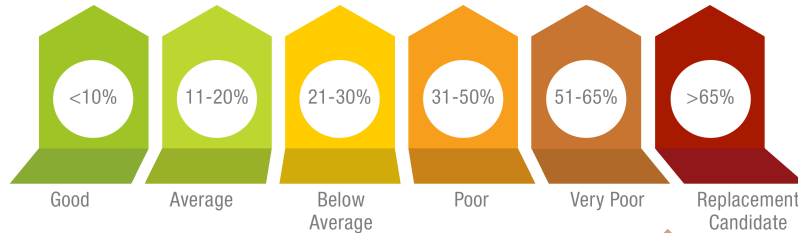


Figure 2: Ten Year Capital Renewal Forecast



### Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building’s health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of sites. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair sites with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making campus facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today’s estimated cost of construction in the Jackson, MS area. The estimated replacement cost for this facility is \$637,760. For planning purposes, the total 5-year need at the Fab Lab is \$28,442 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Fab Lab facility has a 5-year FCI of 4.46%.

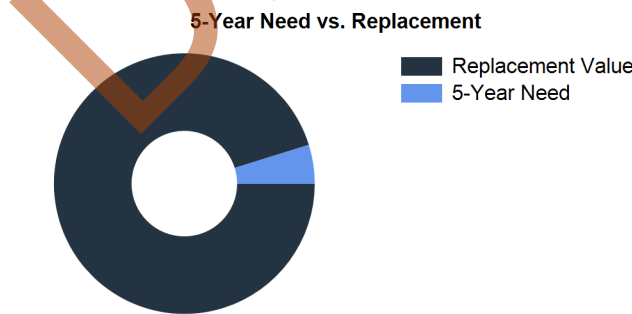


Figure 3: 5-Year FCI





## Fab Lab - Deficiency Summary

### Site Level Deficiencies

#### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Exterior Entry Signage At The Building Entry Does Not Meet ADA Requirements <b>Location:</b> Main entry	ADA Compliance	1	Ea.	3	\$120	757
The Van Accessible Parking Spaces Do Not Meet ADA Requirements <b>Note:</b> Install van accessible parking signage and spaces	ADA Compliance	2	Ea.	3	\$1,393	756
<b>Sub Total for System</b>		<b>2 items</b>			<b>\$1,513</b>	
<b>Sub Total for School and Site Level</b>		<b>2 items</b>			<b>\$1,513</b>	

### Building: 01 - Fab Lab

#### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Entry Door Does Not Have Power Assist Device <b>Location:</b> Main Entry	ADA Compliance	1	Ea.	3	\$14,134	758
<b>Sub Total for System</b>		<b>1 items</b>			<b>\$14,134</b>	
<b>Sub Total for Building 01 - Fab Lab</b>		<b>1 items</b>			<b>\$14,134</b>	
<b>Total for Campus</b>		<b>3 items</b>			<b>\$15,647</b>	

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## Supporting Photos



Fab Lab utility closet with water heater



Fab Lab restroom fixtures and finishes



Fab Lab interior



Fab Lab exterior