

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

Executive Summary

Facility Condition Assessments
May 2016



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OVERVIEW

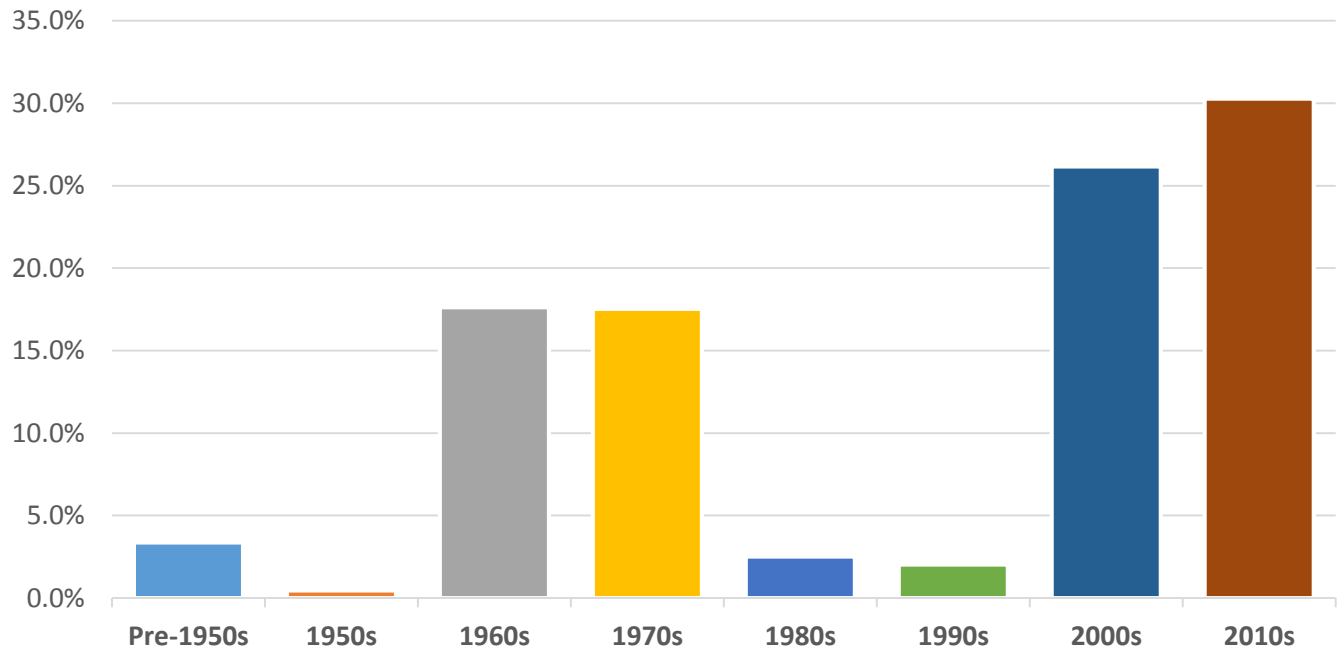
Project Summary

In December 2015, the San Bernardino Community College District (SBCCD) contracted with ISES Corporation to perform comprehensive Facility Condition Assessment (FCA) services for three buildings for the District, 32 buildings at San Bernardino Valley College (SBVC), and 19 buildings at Crafton Hills College (CHC). The overall FCA effort included 54 buildings encompassing 1,031,471 square feet of classroom, lab, office, library, and general support space. The SBCCD, formed in 1926, is one of 72 community college districts within the California Community College system. SBVC is the original and largest of the two colleges in the SBCCD. It was established in 1926 and serves 12,000 students each semester. CHC in Yucaipa was opened in 1971 and currently serves approximately 4,500 students. Both have gone through expansions and have new facilities that have come online or are in progress.

Construction Dates

The average year built for the inspected buildings is 1991, with an average age of 25 years old at the time of inspection.

Construction Date Ranges



Percentages based on square footage

Facility Usage Types

The following table shows the predominant facility usage types.

USAGE TYPE	BUILDING COUNT	SQUARE FOOTAGE	PERCENT OF TOTAL
Classroom/Academic	19	353,458	34.3
Laboratory	6	151,457	14.7
Gymnasium/Athletics	4	113,901	11.0
Office/Administrative	8	111,476	10.8
Library	2	98,979	9.6
Student Union	3	89,803	8.7
Theater/Auditorium	2	56,029	5.4
Shops/Trade	4	23,528	2.3
Warehouse/Storage/Utility	2	10,095	1.0
Child Care	1	9,010	0.9
Medical/Clinic	2	7,975	0.8
Retail	1	5,760	0.6
TOTAL	54	1,031,471	

FCA Inspections

Extensive experience with asset surveys has led ISES to develop a standardized system of data collection that efficiently and effectively utilizes the time spent in each building. Each asset was inspected by a two-person team, which consists of experienced architectural and engineering inspectors. They inspected the various components in each building and determine what repairs or modifications may be necessary to restore the systems and buildings to an acceptable condition, or to a level defined by the College. The team typically starts on the roof, or the highest accessible level, and proceeds to the lowest level, inspecting each of the discrete building categories as the building is walked.

The assessment is an evaluation of the mechanical, electrical and plumbing systems, structural architectural components, vertical transportation systems, and utilities as they relate to each asset in the study. Exterior equipment considered a part of the building, such as a pad-mounted chiller or transformer or parking specifically designated for the building, is included in the survey. An ISES FCA complies fully with ASTM E2018-15. It includes an evaluation of resource conservation opportunities and addresses compliance with the ADA Accessibility

Guidelines. All accessible equipment and building components receive a thorough visual inspection. The inspection team lifts ceiling tiles in suspended ceilings and opens access doors to reveal hidden equipment and building components that are integral to the survey.

The visual nature of this inspection process requires close interaction with your operations and maintenance personnel. Many of the problems inherent in building systems are not visually apparent. ISES field assessors conducted staff interviews to ensure that all known system problems are cataloged and identified. Working as a team with your personnel improves the accuracy of the database and provides the most useful data.

Contacts

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Definitions

Facility Renewal Needs

Facility renewal needs are recommendations intended to bring facilities up to like-new standards and condition. These efforts enhance user safety and mitigate College liability. Renewal needs replenish the lifecycle of existing assets and maximize the lifecycle of newly installed assets. They do not include cosmetic renovations or replacements of systems as a reaction to failure. Cosmetic and reactive maintenance activities do not necessarily renew the life of a facility because the replacement components do not always realize their economic lifecycle. In other words, the replacement component can be renewed again shortly thereafter due to more comprehensive renovation work. Facilities maintenance and repair activities are also not considered to be facilities renewal efforts.

Recurring vs. Nonrecurring

Facility renewal needs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and are associated with replacement (or renewal) of building components and systems. Examples include roofs, chillers, windows, finishes and air handling units. The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory. Each component has an associated renewal cost, installation date and life expectancy. From this data, a detailed projection of recurring renewal needs is developed for each building. These needs are categorized by UNIFORMAT II classification codes (down to Level 4). The result is a detailed year-by-year projection of recurring renewal needs for a given asset.

Nonrecurring costs pertain to facility repairs and improvements that are one-time propositions and are not recurring. They typically consist of facility improvements to accommodate accessibility, address fire life/safety deficiencies, or alter a building for a new use. They also include nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, recommendations are developed with estimated costs to rectify said deficiency. They each have a unique identifier and are categorized by system type, priority and classification. The costs are indexed to local conditions and markups applied as the situation dictates. Examples of such repair work are correction of building façade damage caused by a storm or seismic event or repairs to a roof section. Similarly, once a building has been rendered compliant with ADA, this cost does not recur. These needs are a significant component of overall need, but they are not recurring needs.

Recurring Renewal Need Classifications *(generated by the Lifecycle Component Inventory)*

- *Deferred Renewal*

Recurring repairs that are past due for completion but have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral of such renewal could impair the proper functioning of the facility. Costs estimated for Deferred Renewal needs should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

(These do not pertain to components found in what is considered to be program-use space within a building.)

- *Projected Renewal*

Projected Renewal needs that will be due within the scope of the assessment. These represent regular or normal facility maintenance, repair or renovation that should be planned in the near future. (These efforts do not pertain to components found in what is considered to be program-use space within a building.)

Nonrecurring Renewal Need Classifications *(stored in the Projects module)*

- *Plant/Program Adaption*

Nonrecurring expenditures required to adapt the physical plant to the evolving needs of the organization and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changed teaching or research methods and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- *Corrective Action*

Nonrecurring expenditures for repairs needed to correct random and unpredictable deficiencies. Such recommendations are not related to aligning a building with codes or standards. Deficiencies classified as “Corrective Action” could have an effect on building aesthetics, safety or usability.

Nonrecurring Renewal Need Categorization

Renewal needs are divided into appropriate categories, as well as multiple systems, components and elements within each category. Categories in this study include:

- Immediate Building Site
- Exterior Structure and Roof Systems
- Interior Structure, including Architectural Finishes
- ADA Accessibility
- Energy/Water Conservation
- Health Hazards
- Fire/Life Safety
- Heating, Ventilation, and Air Conditioning Systems
- Plumbing System
- Electrical System
- Vertical Transportation

Prioritization of Nonrecurring Renewal Needs

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal need, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- *Priority 1 – Immediate*

Items in this category require immediate action to:

- a. correct a cited safety hazard
- b. stop accelerated deterioration
- c. and/or return a facility to normal operation

- *Priority 2 – Critical*

Items in this category include actions that must be addressed in the short-term:

- a. repairs to prevent further deterioration
- b. improvements to facilities associated with critical accessibility needs
- c. potential safety hazards

- *Priority 3 – Noncritical*

Items in this category include:

- a. improvements to facilities associated with noncritical accessibility needs
- b. actions to bring a facility into compliance with current building codes as grandfather clauses expire
- c. actions to improve the usability of a facility following an occupancy or use change

Calculations

Current Replacement Value

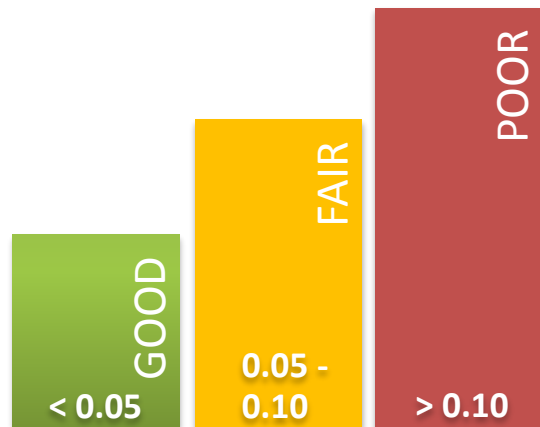
ISES traditionally calculates Current Replacement Value (CRV) using a cost per gross square foot based on building size and use (e.g. theater, research lab, classroom building, etc.). We utilize R.S. Means Section Square Foot costs as the starting point. This base number is adjusted for the size of the facility and modified with city cost indices to the local area, with appropriate modifiers for professional fees and demolition of existing structure added. Our standard methodology will prorate the base cost per GSF based on different use types in a building.

Traditional methods of calculating CRV do not take into account the historic significance of a structure. Replacement of a historic structure would only occur in the event of a catastrophic loss of said building. In such occurrences, the normal practice ISES observes is to construct modern facilities that meet the site/campus architectural standards rather than attempt to mimic the historical construction style that has been lost. Calculated CRVs are updated automatically in the AMS software when the annual inflation factor is added to the database.

Facility Condition Index (FCI)

Similar to the FCNI, the FCI provides another relative measure for an objective comparison of building condition. This is a simple calculation derived by dividing the Deferred Renewal Needs by the CRV. This number is also an index, with the same cautions as with the FCNI, but restricted only to the Deferred Renewal/Corrective Action needs. This scale does not apply to multiple facilities.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$



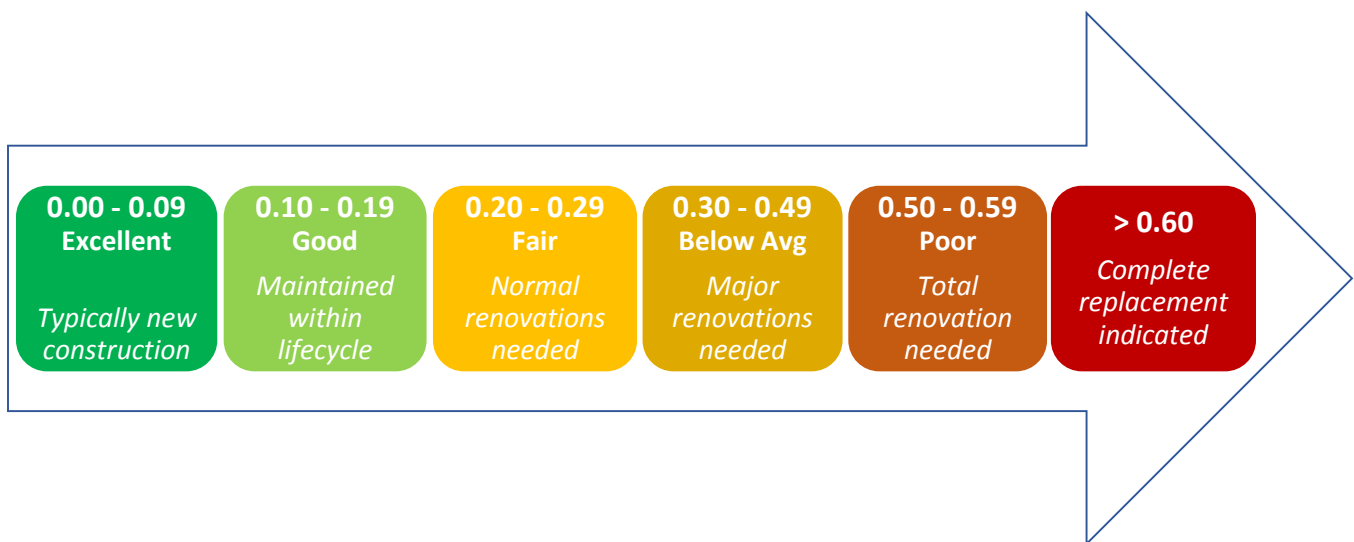
Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of 10-year renewal needs (including deferred renewal) to the current replacement value of the asset.

$$FCNI = \frac{\text{10-Year Renewal Needs}}{\text{Current Replacement Value}}$$

The FCNI can be employed at multiple levels for analysis. It is most commonly used to compare buildings to other buildings. The index can be used as an evaluation tool when applying it to a single facility. The lower the FCNI, the better the facility condition. It should also be noted that this is an index, not a percentage. It can, especially in the case of historic facilities, exceed 1.00.

In terms of assessing where a facility falls within a range of conditions, the following standards can be applied.



The above ranges represent averages based upon our extensive FCA experience. The reader is cautioned, however, to examine each facility independently for mitigating factors (i.e., historic structures, temporary structures, facilities with abnormally low replacement costs, such as warehouses, etc.).

The FCNI can also be used for comparing groups of facilities to other groupings, including entire campuses. Comparisons in this vein form the basis of analysis for comparing the overall state of facilities to another comparable grouping. Note that the above ranges *do not* apply to multiple facilities. Variability among groups of buildings is reduced further as sample sets get larger. You can see how your institution ranks among other institutions in Appendix C.

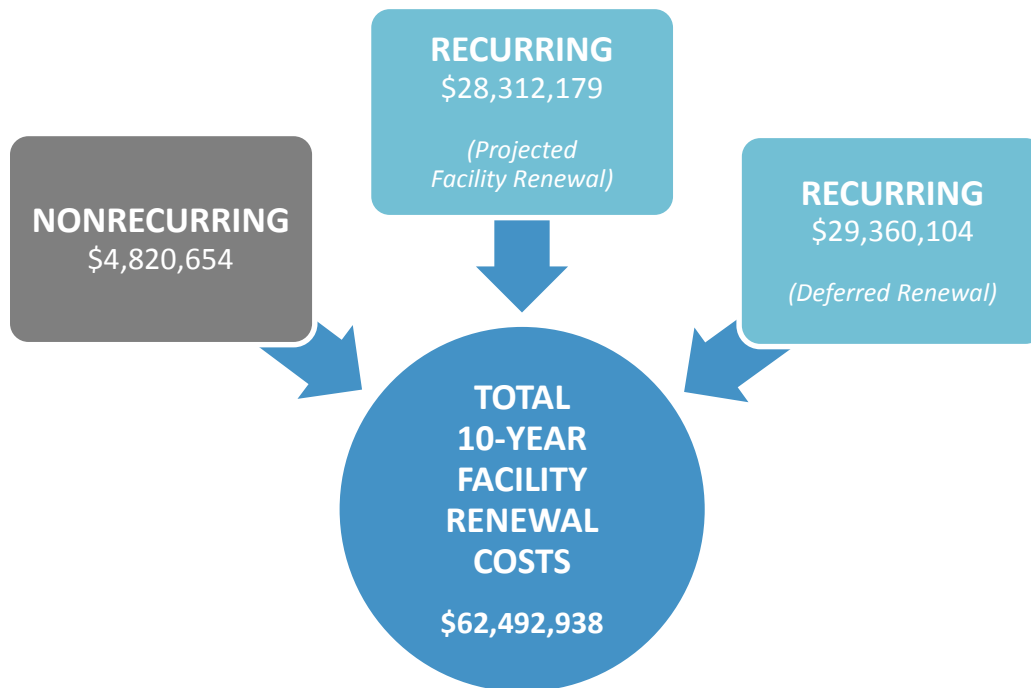
SUMMARY OF FINDINGS

All data related to the FCAs was developed in, and is contained within, the ISES AMS (Asset Management System) database. ISES hosts this database system on our servers, and college personnel have access to the system via the Internet. The database is available for ongoing use by the SBCCD, SBVC, and CHC facilities teams.

Total Ten-Year Facility Renewal Costs

Overall, the FCA effort identified nonrecurring projects and recurring renewal needs totaling over \$62 million. These needs should be addressed over the next ten years.

As illustrated below, ISES identified more than \$4.8 million in nonrecurring renewal needs and almost \$58 million in recurring renewal needs. Of the recurring costs, Deferred Renewal needs total \$29 million, which is 47 percent of the total 10-year renewal costs.



FCNI Calculations

District-wide

$$\frac{\text{10-Year Renewal Needs}}{\text{Current Replacement Value}} = \frac{\$62,492,938}{\$391,986,000} = \mathbf{0.16}$$

Crafton Hills

$$\frac{\$22,825,534}{\$144,524,000} = \mathbf{0.16}$$

District Offices

$$\frac{\$3,315,373}{\$16,606,000} = \mathbf{0.20}$$

San Bernardino Valley

$$\frac{\$36,352,030}{\$230,856,000} = \mathbf{0.16}$$

The total CRV for the 54 buildings is almost \$392 million. This results in a district FCNI of 0.16 and suggests the facilities are in overall good condition. It is our assessment that the establishment of consistent preventive maintenance programs and a system-directed capital renewal plan has allowed the total asset catalog to remain in a stable reinvestment state. Several factors have a significant impact on the overall and individual campus condition indices and general conditions. The overall average age of the SBCCD assets is 25 years old, which is certainly a factor. There is \$1 million of critical nonrecurring needs which should be reviewed. The majority of these are in accessibility and fire/life safety categories split evenly between SBVC and CHC.

The table on the following page provides a detailed breakdown of all renewal costs, listed by system, priority class (nonrecurring), and year (recurring), with totals for each category.

FACILITIES RENEWAL PLAN

All dollars shown as Present Value

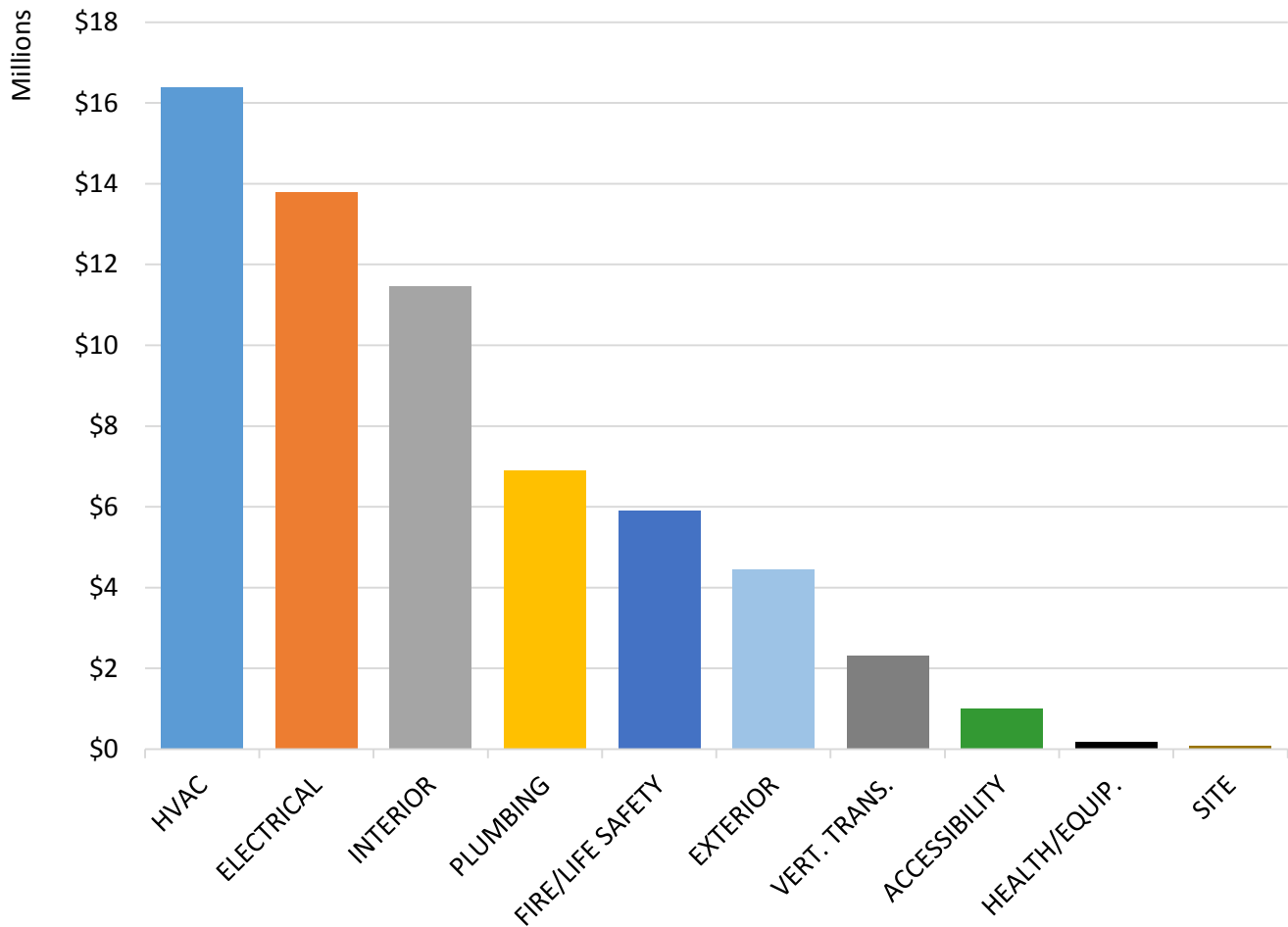
CATEGORY	NON-RECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Non-Critical	Deferred Renewal	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	TOTAL
ACCESSIBILITY	5,581	453,412	545,723	0	0	0	0	0	0	0	0	0	0	0	\$1,004,716
EXTERIOR	0	14,307	65,118	2,868,787	43,334	89,130	151,572	0	790,033	20,340	0	0	79,087	321,954	\$4,443,661
INTERIOR	0	0	0	3,050,314	684,114	1,416,819	751,539	200,927	1,581,220	352,056	1,079,936	691,506	127,937	1,541,750	\$11,478,118
PLUMBING	0	910	52,421	5,367,949	548,259	36,919	5,723	51,569	611,958	10,896	13,841	29,808	19,247	143,149	\$6,892,648
HVAC	0	0	0	8,065,789	35,840	182,771	1,894,284	220,528	765,683	288,729	1,145,839	1,596,251	719,704	1,476,150	\$16,391,567
FIRE/LIFE SAFETY	11,869	394,438	2,452,412	1,024,588	43,125	0	552,900	121,257	109,186	332,881	38,802	222,481	442,774	161,199	\$5,907,912
ELECTRICAL	0	0	646,402	7,756,602	157,529	138,508	966,280	434,215	955,140	112,307	14,990	562,111	819,165	1,223,177	\$13,786,427
SITE	0	0	43,848	0	0	0	0	38,095	12,286	0	0	0	0	0	\$94,228
VERT. TRANS.	0	0	0	1,226,075	60,773	60,773	0	0	480,399	60,773	303,865	121,546	0	0	\$2,314,203
HEALTH/EQUIP.	0	126,539	7,676	0	9,048	36,193	0	0	0	0	0	0	0	0	\$179,455
SUBTOTAL	\$17,450	\$989,605	\$3,813,599	\$29,360,104	\$1,582,022	\$1,961,111	\$4,322,299	\$1,066,591	\$5,305,905	\$1,177,981	\$2,597,272	\$3,223,704	\$2,207,915	\$4,867,380	\$62,492,938
TOTAL NON-RECURRING PROJECT NEEDS			\$4,820,654	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										\$57,672,283	

CURRENT REPLACEMENT VALUE	\$391,986,000
FACILITY CONDITION NEEDS INDEX	0.16
FACILITY CONDITION INDEX	0.07

GSF	TOTAL 10-YEAR FACILITY NEEDS	10-YEAR NEEDS/SF
1,031,471	\$62,492,938	60.59

Total Facility Renewal Costs by System Code

A viable approach to capital planning is to analyze common building systems for needs. The following chart illustrates system project backlog by weight of total backlog.



1. HVAC – \$16,391,567

The heating, ventilation, and air conditioning (HVAC) category is focused on comfort climate control as well as providing fresh air to the interior spaces. The HVAC needs for the district represent 26.2 percent of the overall facilities renewal recommendations. Recurring HVAC distribution network renewals are the highest proportion of these needs. This includes ductwork, HVAC piping, air distribution specialties, etc. Recurring HVAC controls upgrades and recurring air handling unit replacements are also recommended. This category is 27 percent of the Deferred Renewal needs.

2. ELECTRICAL – \$13,786,427

The electrical system analysis focuses on normal and emergency power systems within the facilities. The incoming service transformer for a building is the starting point of the assessment. Electrical needs make up 22.1 percent of the facilities renewal recommendations. Upgrading the electrical distribution networks is the highest proportion of the electrical needs, along with interior lighting upgrades. Electrical system needs are the second highest dollar value for identified current Deferred Renewal needs.

3. INTERIOR FINISHES – \$11,478,118

Interior finish needs include refinishing work that would be part of a renovation effort, as opposed to routine or customer build-out refinish work. These account for 18.4 percent of the district and facilities renewal backlog and are the fourth highest total of identified Deferred Renewal needs. Recurring finishes renewal and interior door and hardware replacements represent the highest proportion of these needs.

4. PLUMBING – \$6,892,648

The plumbing systems category is for non-HVAC piping networks throughout the building. Plumbing system renewals are 11 percent of the identified facilities renewal needs. These recommendations are for major renovation activities, such as drain and supply piping replacements and plumbing fixture upgrades.

5. FIRE/LIFE SAFETY – \$5,907,912

The fire and life safety needs pertain mainly to fire alarm and fire suppression systems, but also include architectural facets, such fire ratings, egress paths, stair safety and other user safety concerns. Fire and life safety needs are 9.5 percent of the overall recommendations. The highest proportion of these recommendations is associated with nonrecurring fire sprinkler system installations and extensions.

6. EXTERIOR STRUCTURE – \$4,443,661

Exterior structure needs are concerned with exterior envelope systems – primarily roofs, exterior walls and finishes, and fenestrations. These needs account for 7.1 percent of the total facilities renewal backlog. Glazing replacements are the highest proportion of these needs, followed by roof and door replacements.

7. VERTICAL TRANSPORTATION – \$2,314,203

Vertical transportation system recommendations generally pertain to elevators, escalators, and dumbwaiters. These represent 3.7 percent of the system facilities renewal backlog.

8. ACCESSIBILITY – \$1,004,716

Accessibility assessment pertains to ADA type issues and is 1.6 percent of total needs. However, there are over \$450,000 of critical needs indicated district-wide which will require review.

9. HEALTH – \$179,455

The health assessment pertains to hazardous materials management as well as culinary, lab, or other applicable institutional equipment within the project scope. Health projects represent 0.3 percent of the facilities renewal recommendations. The most prevalent health need is the abatement of asbestos-containing materials (ACM) in the mechanical systems and interior finishes of older facilities.

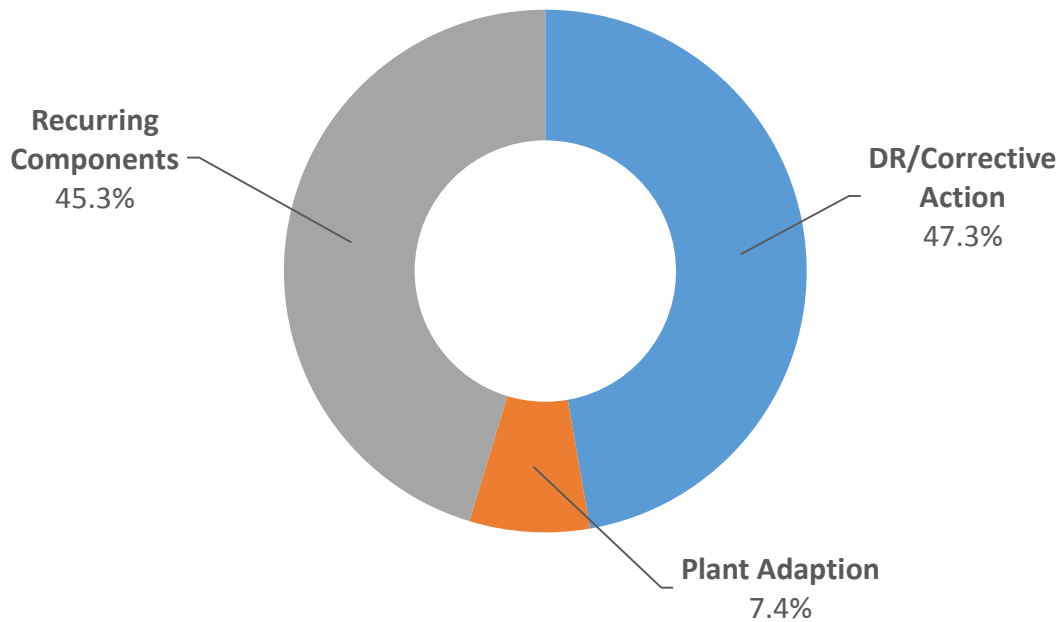
10. SITE – \$94,228

The site analysis was limited to landscape and hardscape immediately surrounding or dedicated to the individual buildings. Site needs represent 0.2 percent of the facilities renewal recommendations.

Total Facility Renewal Costs by Classification

District-wide

- Nonrecurring Plant Adaption needs make up 7.4 percent of the total cost (\$4,644,961).
- The recurring components projected to emerge over the next ten years represent 45.3 percent (\$28,312,179) of the facilities renewal recommendations.
- Recurring Deferred Renewal and nonrecurring Corrective Action needs are 47.3 percent of the recommendations (\$29,535,798).



CLASSIFICATION	PERCENTAGE	COST (\$)
Recurring Components	45.3%	28,312,179
DR/Corrective Action	47.3%	29,535,798
Plant Adaption	7.4%	4,644,961
TOTAL		\$62,492,938

Crafton Hills

CLASSIFICATION	PERCENTAGE	COST (\$)
Recurring Components	43.4%	9,915,440
DR/Corrective Action	47.5%	10,843,096
Plant Adaption	9.1%	2,066,997
TOTAL		\$22,825,534

District Offices

CLASSIFICATION	PERCENTAGE	COST (\$)
Recurring Components	54.2%	1,796,975
DR/Corrective Action	17.1%	566,381
Plant Adaption	28.7%	952,017
TOTAL		\$3,315,373

San Bernardino Valley

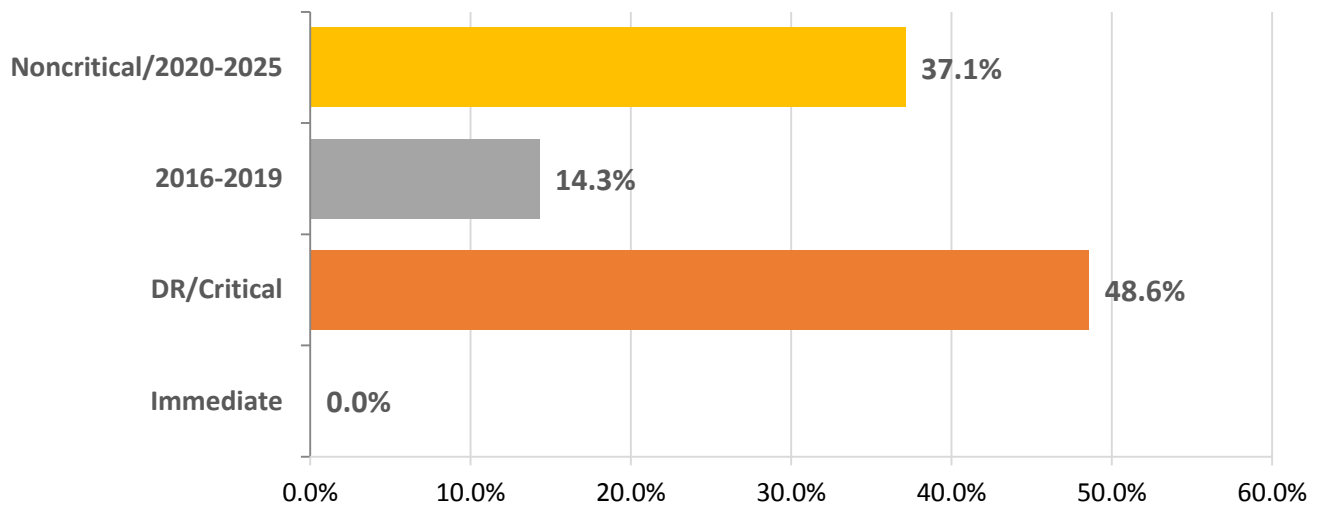
CLASSIFICATION	PERCENTAGE	COST (\$)
Recurring Components	45.7%	16,599,765
DR/Corrective Action	49.9%	18,126,319
Plant Adaption	4.3%	1,625,946
TOTAL		\$36,352,030

Total Facility Renewal Costs by Priority

District-wide

The Facilities Renewal Needs have been prioritized to indicate the urgency of the recommendations. Like the previous chart, this also summarizes both the recurring and nonrecurring recommendations.

- Immediate nonrecurring needs are minimal and total only \$17,450.
- Recurring Deferred Renewal and nonrecurring Critical needs combined represent 48.6 percent of the recommendations (\$30,349,709).
- The first four years (2016-2019) of recurring component replacement needs equal \$8,932,023 (14.3 percent).
- The next six years (2020-2025) of recurring component replacement needs combined with the nonrecurring Noncritical needs equal \$23,193,756 or 37.1 percent.



PRIORITY	PERCENTAGE	COST (\$)
Immediate	0.0%	17,450
DR/Critical	48.6%	30,349,709
2016-2019	14.3%	8,932,023
Noncritical/2020-2025	37.1%	23,193,756
TOTAL		\$62,492,938

Crafton Hills

PRIORITY	PERCENTAGE	COST (\$)
Immediate	0.1%	15,963
DR/Critical	49.2%	11,236,363
2016-2019	16.5%	3,763,538
Noncritical/2020-2025	34.2%	7,809,671
TOTAL		\$22,825,534

District Offices

PRIORITY	PERCENTAGE	COST (\$)
Immediate	0.0%	0
DR/Critical	18.5%	614,329
2016-2019	12.9%	428,056
Noncritical/2020-2025	68.6%	2,272,988
TOTAL		\$3,315,373

San Bernardino Valley

PRIORITY	PERCENTAGE	COST (\$)
Immediate	0.0%	1,487
DR/Critical	50.9%	18,499,017
2016-2019	13.0%	4,740,429
Noncritical/2020-2025	36.1%	13,111,097
TOTAL		\$36,352,030

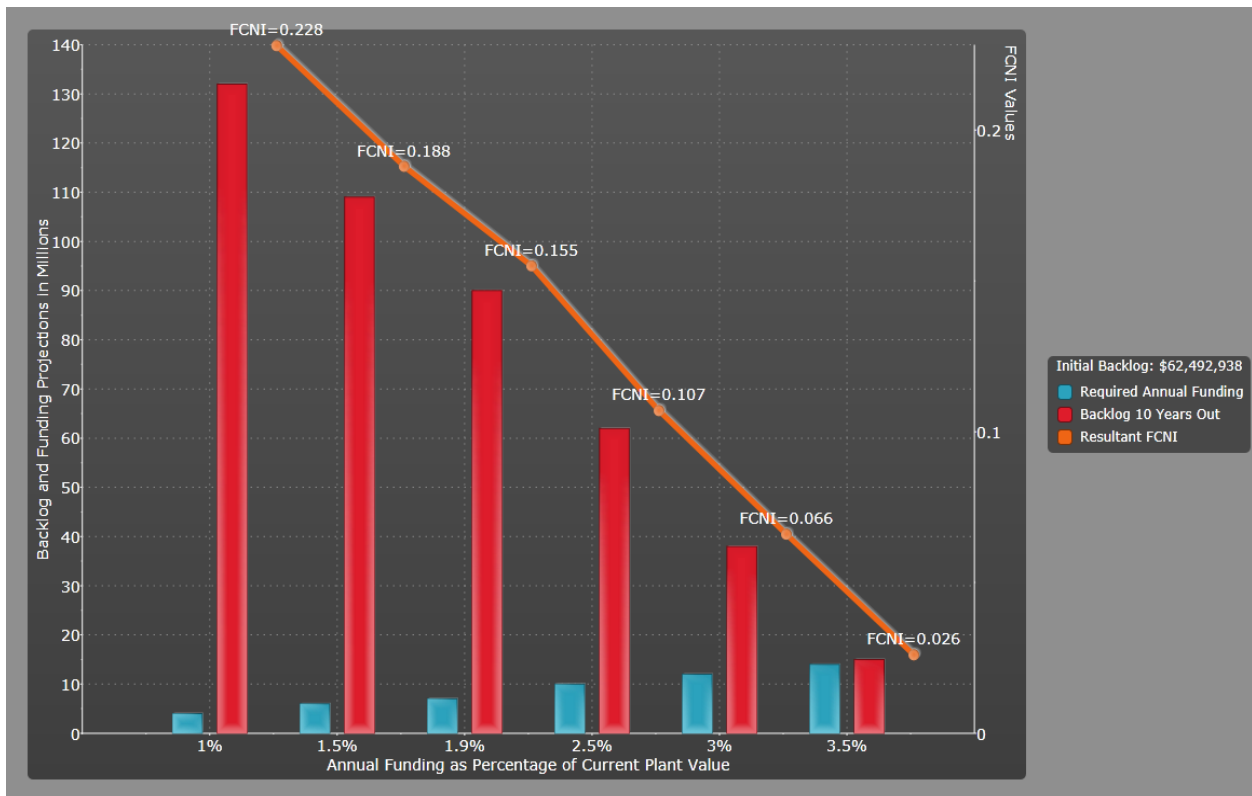
AMS FINANCIAL MODELING

FCNI Projections

The ISES AMS software and database application features a funding modeling tool which can estimate the effects of funding levels on the FCNI. By using this tool, we calculated that \$7.4 million will need to be reinvested annually to maintain the current FCNI of 0.16. This is equal to 1.9 percent of plant value on an annual basis (this figure accounts for 3 percent inflation). The model also incorporates a 1 percent portfolio growth rate (rate at which square footage is added) and a 1.5 percent plant deterioration rate (the rate at which new capital project needs arise).

Reinvestment Rates

If the reinvestment rate is lower than 1.9 percent of plant value, then the FCNI at the end of the tenth year will be higher than it was in the first year. For instance, if 1 percent of plant value (\$3.9 million) is reinvested annually, the resultant FCNI after ten years is estimated to be 0.23. Conversely, if 3.0 percent of plant value (\$11.7 million) is reinvested annually, the resultant FCNI is estimated to be 0.07 after ten years. The following chart shows sample funding scenarios.



The calculations in the model above take into account all money that goes towards renewing the facilities and their supporting components. In most cases, not all of the needs are funded by the Facilities Management organization's budget. Programs, donors, schools, and other stakeholders can pay for projects. It is common for projects that are part of major renovation efforts to be funded predominately by other sources besides the Facilities department.

The funding level presented in this section is a steady and annualized rate. It is important to understand that, in most cases, the fulfillment of these needs is ad hoc and the amount reinvested can vary widely from year to year. Not all projects are performed on a piecemeal basis. Projects can include limited renovation projects, gut renovation activities, or full raze and replace measures. These large-scale efforts can eliminate a significant proportion of needs in a relatively short period of time.

CONCLUSIONS

The preceding sections of this report illustrate that the SBCCD facilities are overall in overall good condition when compared to the condition of similar use institutional buildings for which data is available. The FCNI of the district, which is a measure of anticipated needs for a ten-year period, is 0.16. FCNIs between 0.10 and 0.20 are defined as being in the “good” category.

The FCI is a measure of critical and past due current needs. The FCI is 0.08, which falls into the “Fair” category. These measures are influenced by the fact that just under 50 percent of the identified needs are designated as Deferred Renewal. This occurs when building assets are being used long after their expected useful lives have expired. In general, building support equipment is being well maintained and is in working order. However, the costs of maintenance and field modifications required (due to the lack of repair parts) can cause the cost of continuing to operate aged equipment to exceed the cost to replace in the long term. Capital replacement of these assets in a timely manner can prevent “over maintenance” and reduce the percentage of Deferred Renewal needs.

With regard to FCNI, the most effective method of shrinking the index is to holistically reinvest in existing facilities. This means either razing and rebuilding or gut-renovating aging assets. This type of project work has collateral benefits, such as making maintenance organizations more effective. New construction will have a positive effect on the FCNI only if existing buildings are replaced. If new structures are built but the older facilities kept in service, any existing FCNI problems will be exacerbated. Furthermore, if the maintenance staff is not expanded in the event of adding incremental square footage to the portfolio, the FCNI issues will become more difficult to manage.

From a building systems perspective, portfolio-wide HVAC and electrical distribution upgrades and replacements are warranted. These primary building systems are critical to the day-to-day operation of a facility. Many are aged and, though functional, require routine and repetitive maintenance. The failure of either system could result in the ineffective use of, or the inability to use, the facility as a whole. Also, plumbing upgrades to aging assets should be planned with renovations to ensure that these systems are periodically renewed.

From a liability perspective, the accessibility and fire/life safety projects should be considered for execution regardless of the proportion of needs they represent. Accessibility projects constitute almost half of the critical nonrecurring needs. As mentioned earlier, the district may want to analyze these to reduce this need.

The Administrative Annex at 8th Street has structural roof repairs that need to be addressed. A complete gut and remodel is recommended if the district is going to keep this building. Both SBVC and Crafton have a small number of facilities which are recommended for renovation.

As plans are developed to address identified needs, the scope of these repairs should be carefully considered to maximize the financial impact of capital reinvestment. For aging facilities, periodic complete renovations and upgrades are necessary to replace critical building systems and to not only prolong life but “reset” the anticipated usable life of these assets.

If it is impossible to fully gut-renovate or raze and replace a facility, consider bundling ISES recommendations to achieve economy-of-scale and minimize campus impact. For example, if an expensive HVAC system renewal project is justified and funded, consider undertaking any exterior envelope projects in concert with it. Replacing roofs, windows, and exterior doors will produce maximum energy savings, which will allow for as short a payback period as possible. In this case, electrical and plumbing projects could also be combined. Lastly, when common efforts are needed in buildings that are close to each other, consider executing projects over multiple buildings.

The primary goal of reinvesting in or renewing facilities is to mitigate customer or program downtime, which, of course, results in happier customers. There are many other benefits as well. SBCCD will provide more suitable and modern space for schools and programs, and the facilities will be more attractive to prospective students and programs. When effectively executed, facilities renewal efforts will reduce purchased energy consumption and make the existing maintenance organization more efficient.

APPENDIX A

Building List by Building Number

Appendix A is a general building inventory sorted by building number. The table includes typical stats such as primary use, year built, and size and also provides valuable information like CRV, total renewal costs, FCNI, and FCI.

BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	RENEWAL COSTS (\$)	FCNI	FCI
CH0001	Maintenance and Operations	ST	1974	11,304	3,829,000	638,623	0.17	0.13
CH0003	Crafton Hall	SU	1972	8,560	3,705,000	1,716,535	0.46	0.41
CH0004	Clock Tower Building	OF	1972	9,970	3,811,000	7,604	0.00	0.00
CH0005	West Complex	CL	1972	6,800	2,769,000	924,022	0.33	0.28
CH0006	Crafton Center	SU	2015	46,542	17,313,000	30,553	0.00	0.00
CH0007	Student Support Building	MC	1999	5,575	2,131,000	624,896	0.29	0.06
CH0008	Child Development Center	CC	1996	9,010	2,984,000	756,670	0.25	0.02
CH0009	Gymnasium	GM	1975	27,250	8,587,000	5,243,500	0.61	0.39
CH0010	Central Complex	CL	1969	30,621	10,997,000	68,945	0.01	0.00
CH0011	Central Complex 2	CL	1980	17,238	6,712,000	3,108,786	0.46	0.09
CH0012	Canyon Hall	LB	2015	36,060	19,266,000	83,455	0.00	0.00
CH0013	Visual Arts	CL	1975	9,842	3,682,000	1,589,716	0.43	0.36
CH0014	East Complex	RT	2003	5,760	1,306,000	304,191	0.23	0.00
CH0015	East Complex 2	CL	2003	4,320	1,759,000	391,948	0.22	0.00
CH0016	Public Safety and Allied Health	CL	2015	35,023	12,529,000	54,883	0.00	0.00
CH0018	North Complex	LB	2011	10,334	5,597,000	152,655	0.03	0.00

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BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	RENEWAL COSTS (\$)	FCNI	FCI
CH0019	Kinesiology, Health Ed, Aquatics Complex	GM	2009	17,924	6,229,000	143,880	0.02	0.00
CH0020	Learning Resource Center	LY	2010	59,100	19,962,000	854,727	0.04	0.00
CH0021	Performing Arts RTS (16)	TH	1978	29,851	11,356,000	6,129,945	0.54	0.22
DO0002	District Office	OF	2001	26,800	9,290,000	1,311,235	0.14	0.02
DO0036	Administrative Annex - 8th Street	OF	1988	8,771	3,353,000	1,539,632	0.46	0.10
DO0056	Applied Technology Training Center	OF	2007	9,731	3,963,000	464,507	0.12	0.00
SV0004	Auditorium	TH	1935	26,178	9,959,000	1,321,124	0.13	0.09
SV0009	Shipping/Receiving Office	ST	1935	6,000	2,032,000	568,402	0.28	0.17
SV0010	Child Development 1	OF	1956	2,356	959,000	582,154	0.61	0.40
SV0011	Child Development 2	CL	1956	2,437	992,000	663,887	0.67	0.41
SV0012	Child Development 3	CL	1935	1,757	715,000	340,513	0.48	0.26
SV0013	Child Development 4	OF	1998	2,158	825,000	175,398	0.21	0.05
SV0018	Observatory	LB	1931	828	280,000	53,483	0.19	0.08
SV0022	Technical	CL	1964	63,923	22,020,000	6,000,585	0.27	0.20
SV0023	Women's Gym	GM	1965	37,691	11,507,000	4,311,872	0.37	0.22
SV0025	Joseph W. Snyder Gym	GM	1975	31,036	9,780,000	3,344,684	0.34	0.26
SV0027	Liberal Arts	CL	1970	39,359	14,080,000	7,066,494	0.50	0.41
SV0029	Warehouse	WH	1960	5,935	1,084,000	187,566	0.17	0.11
SV0032	Planetarium	LB	1977	6,875	2,329,000	1,086,570	0.47	0.17
SV0033	Library	LY	2003	39,879	13,989,000	2,307,960	0.16	0.00
SV0034	Telecom Building	ST	2004	624	639,000	130,280	0.20	0.00
SV0037	Health and Life Sciences	LB	2004	40,200	21,478,000	2,055,413	0.10	0.00

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BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	RENEWAL COSTS (\$)	FCNI	FCI
SV0038	Butler Building/Athletics	WH	1994	4,160	760,000	97,417	0.13	0.04
SV0039	Administration/Student Services	OF	2005	33,305	12,298,000	1,554,982	0.13	0.00
SV0040	Child Development 6 (Building A)	CL	2006	7,812	3,181,000	236,289	0.07	0.00
SV0041	Child Development 7 (Building B)	CL	2006	4,776	1,945,000	118,440	0.06	0.00
SV0042	Child Development 8 Modular	CL	2006	1,920	782,000	43,190	0.06	0.00
SV0043	Child Development 9 Modular	CL	2006	1,920	782,000	43,190	0.06	0.00
SV0044	Art Center and Gallery	CL	2006	22,488	8,757,000	545,951	0.06	0.00
SV0045	Campus Center	SU	2006	34,701	13,619,000	770,097	0.06	0.00
SV0046	Student Health Services	MC	2008	2,400	1,011,000	83,192	0.08	0.00
SV0047	Maintenance and Operation	ST	2009	5,600	1,897,000	56,005	0.03	0.00
SV0048	Transportation	CL	2009	7,895	3,215,000	180,434	0.06	0.00
SV0049	Media and Communications	OF	2010	18,385	6,721,000	556,825	0.08	0.00
SV0050	North Hall	CL	2010	49,756	17,415,000	592,330	0.03	0.00
SV0051	Physical Sciences	LB	2011	57,160	29,407,000	836,286	0.03	0.00
SV0052	Business Education	CL	1961	43,651	15,616,000	397,831	0.03	0.00
SV0056	Child Development 10 Modular	CL	2006	1,920	782,000	43,190	0.06	0.00
GRAND TOTAL		54	1991	1,031,471	\$391,986,000	\$62,492,938	0.16	0.07

APPENDIX B

Building List by FCNI

Appendix B provides a building list sorted by FCNI in descending order. This report is useful for directing funding for building renovations. If a building is high on the list and projected to be a relevant part of the college mission for years to come, it is recommended that the building be sustained to a minimal degree until a major renovation or facility replacement can be funded.

BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	TOTAL 10 YR NEEDS (\$)	FCNI
> 0.60							
SV0011	Child Development 2	CL	1956	2,437	992,000	663,887	0.67
CH0009	Gymnasium	GM	1975	27,250	8,587,000	5,243,500	0.61
SV0010	Child Development 1	OF	1956	2,356	959,000	582,154	0.61
0.59 – 0.50							
CH0021	Performing Arts RTS (16)	TH	1978	29,851	11,356,000	6,129,945	0.54
SV0027	Liberal Arts	CL	1970	39,359	14,080,000	7,066,494	0.50
0.49 – 0.30							
SV0012	Child Development 3	CL	1935	1,757	715,000	340,513	0.48
SV0032	Planetarium	LB	1977	6,875	2,329,000	1,086,570	0.47
CH0003	Crafton Hall	SU	1972	8,560	3,705,000	1,716,535	0.46
CH0011	Central Complex 2	CL	1980	17,238	6,712,000	3,108,786	0.46
DO0036	Administrative Annex - 8th Street	OF	1988	8,771	3,353,000	1,539,632	0.46
CH0013	Visual Arts	CL	1975	9,842	3,682,000	1,589,716	0.43
SV0023	Women's Gym	GM	1965	37,691	11,507,000	4,311,872	0.37

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BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	TOTAL 10 YR NEEDS (\$)	FCNI
SV0025	Joseph W. Snyder Gym	GM	1975	31,036	9,780,000	3,344,684	0.34
CH0005	West Complex	CL	1972	6,800	2,769,000	924,022	0.33
0.29 – 0.20							
CH0007	Student Support Building	MC	1999	5,575	2,131,000	624,896	0.29
SV0009	Shipping/Receiving Office	ST	1935	6,000	2,032,000	568,402	0.28
SV0022	Technical	CL	1964	63,923	22,020,000	6,000,585	0.27
CH0008	Child Development Center	CC	1996	9,010	2,984,000	756,670	0.25
CH0014	East Complex	RT	2003	5,760	1,306,000	304,191	0.23
CH0015	East Complex 2	CL	2003	4,320	1,759,000	391,948	0.22
SV0013	Child Development 4	OF	1998	2,158	825,000	175,398	0.21
SV0034	Telecom Building	ST	2004	624	639,000	130,280	0.20
0.19 – 0.10							
SV0018	Observatory	LB	1931	828	280,000	53,483	0.19
SV0029	Warehouse	WH	1960	5,935	1,084,000	187,566	0.17
CH0001	Maintenance and Operations	ST	1974	11,304	3,829,000	638,623	0.17
SV0033	Library	LY	2003	39,879	13,989,000	2,307,960	0.16
DO0002	District Office	OF	2001	26,800	9,290,000	1,311,235	0.14
SV0004	Auditorium	TH	1935	26,178	9,959,000	1,321,124	0.13
SV0038	Butler Building/Athletics	WH	1994	4,160	760,000	97,417	0.13
SV0039	Administration/Student Services	OF	2005	33,305	12,298,000	1,554,982	0.13
DO0056	Applied Technology Training Center	OF	2007	9,731	3,963,000	464,507	0.12

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BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	TOTAL 10 YR NEEDS (\$)	FCNI
SV0037	Health and Life Sciences	LB	2004	40,200	21,478,000	2,055,413	0.10
0.09 – 0.00							
SV0049	Media and Communications	OF	2010	18,385	6,721,000	556,825	0.08
SV0046	Student Health Services	MC	2008	2,400	1,011,000	83,192	0.08
SV0040	Child Development 6 (Building A)	CL	2006	7,812	3,181,000	236,289	0.07
SV0044	Art Center and Gallery	CL	2006	22,488	8,757,000	545,951	0.06
SV0041	Child Development 7 (Building B)	CL	2006	4,776	1,945,000	118,440	0.06
SV0045	Campus Center	SU	2006	34,701	13,619,000	770,097	0.06
SV0048	Transportation	CL	2009	7,895	3,215,000	180,434	0.06
SV0042	Child Development 8 Modular	CL	2006	1,920	782,000	43,190	0.06
SV0043	Child Development 9 Modular	CL	2006	1,920	782,000	43,190	0.06
SV0056	Child Development 10 Modular	CL	2006	1,920	782,000	43,190	0.06
CH0020	Learning Resource Center	LY	2010	59,100	19,962,000	854,727	0.04
SV0050	North Hall	CL	2010	49,756	17,415,000	592,330	0.03
SV0047	Maintenance and Operation	ST	2009	5,600	1,897,000	56,005	0.03
SV0051	Physical Sciences	LB	2011	57,160	29,407,000	836,286	0.03
CH0018	North Complex	LB	2011	10,334	5,597,000	152,655	0.03
SV0052	Business Education	CL	1961	43,651	15,616,000	397,831	0.03
CH0019	Kinesiology, Health Ed, Aquatics Complex	GM	2009	17,924	6,229,000	143,880	0.02
CH0010	Central Complex	CL	1969	30,621	10,997,000	68,945	0.01
CH0016	Public Safety and Allied Health	CL	2015	35,023	12,529,000	54,883	0.00

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BLDG #	BUILDING NAME	BLDG TYPE	YEAR BUILT	SQUARE FEET	CRV (\$)	TOTAL 10 YR NEEDS (\$)	FCNI
CH0012	Canyon Hall	LB	2015	36,060	19,266,000	83,455	0.00
CH0004	Clock Tower Building	OF	1972	9,970	3,811,000	7,604	0.00
CH0006	Crafton Center	SU	2015	46,542	17,313,000	30,553	0.00

APPENDIX C

FCNI Comparison

Appendix C is a comparison table listing a sampling of results from similar FCA efforts to benchmark against the SBCCD results. The average FCNI for the complete dataset is 0.24. This indicates that the SBCCD buildings are in above average condition compared to those clients.

CLIENT	YEAR OF INSP	FCNI	GSF	ASSET COUNT	AVG YEAR BUILT	AVG AGE AT INSP	PROJECT BACKLOG/SF (\$)	TOTAL BACKLOG (\$)	FCNI PERCENT RANK	AVG AGE PERCENT RANK
CSU Channel Islands	2015	0.11	1,092,906	38	1976	39	45.25	49,453,663	100%	28%
CSU San Bernardino	2005	0.11	1,508,323	21	1988	17	31.27	47,171,329	100%	100%
San Bernardino Comm. College Dist.	2016	0.16	1,031,471	54	1991	25	60.59	62,492,938	82%	91%
University of Puget Sound	2012	0.17	1,213,642	41	1965	47	66.08	80,194,365	73%	10%
Oakland Community College	2012	0.24	2,241,895	78	1980	32	67.47	151,259,842	64%	64%
University of San Diego	2013	0.24	3,222,911	86	1986	27	68.18	219,724,286	64%	82%
San Diego State University	2012	0.25	3,200,642	41	1975	37	102.21	327,138,710	46%	46%
CSU Northridge	2015	0.30	3,192,038	48	1982	33	105.95	338,210,994	37%	55%
CSU Los Angeles	2005	0.33	1,908,641	20	1966	39	99.30	189,533,235	28%	28%
Cal Poly SLO	2006	0.36	859,028	36	1968	38	77.06	66,198,105	19%	37%
CSU Dominguez Hills	2015	0.37	1,182,151	32	1985	30	120.74	142,733,288	10%	73%
CSU Chico	2015	0.44	530,029	7	1950	65	143.85	76,245,895	0%	0%
AVERAGES	2012	0.24	1,765,306	42	1976	36	\$82.63	\$145,863,054		

The average year built per square foot of the SBCCD facilities is 1991. This is an average age of 25 years old for this group of buildings. The average year built of the sample set is 1976, with an average age of 36 years old at the time of inspection.

APPENDIX D

AMS Database Functionality

The ISES AMS database is the industry standard for maintaining and managing capital and deferred renewal needs. It was designed inhouse exclusively for the purpose of managing FCA data and is the tool used daily by ISES personnel for data development and report generation. The system accommodates ongoing management and use of FCA information in an efficient manner, allowing facilities professionals to manage their portfolios – instead of being managed by deteriorating facilities conditions.

AMS is cloud-based and user-friendly. It has a menu-driven system for the efficient management and organization of FCA information. It uses a relational database, eliminating the storage of redundant data. From ease of use for data entry to providing reports and graphics utilized to quantify and qualify capital improvement plans, AMS is a powerful and invaluable tool.

All assessment data is stored in AMS. The database is hosted under an ASP model. There are no minimal hardware specifications, and it is accessible via the Internet to anyone designated by the Client as an authorized user. Users can be created with different levels of view and edit capabilities based upon your needs. ISES will provide access via our own web servers and ensure that the system remains available and current. The only requirements for your authorized users are Internet access and web browser software. It is compatible with Windows Internet Explorer 7.0 or higher, as well as comparable browser systems, such as Firefox.

Benefits

The power of AMS lies in its ability to sort data in numerous ways and generate customized reports to meet your needs. AMS allows you to easily track, sort and prioritize facility conditions by building, defined group, site/campus or for all of the buildings in the database. Users will be able to identify needs across multiple assets through utilization of user-defined queries. Results can be exported for integration into presentations, analytical studies, reports, CMMS databases and more.

AMS Access

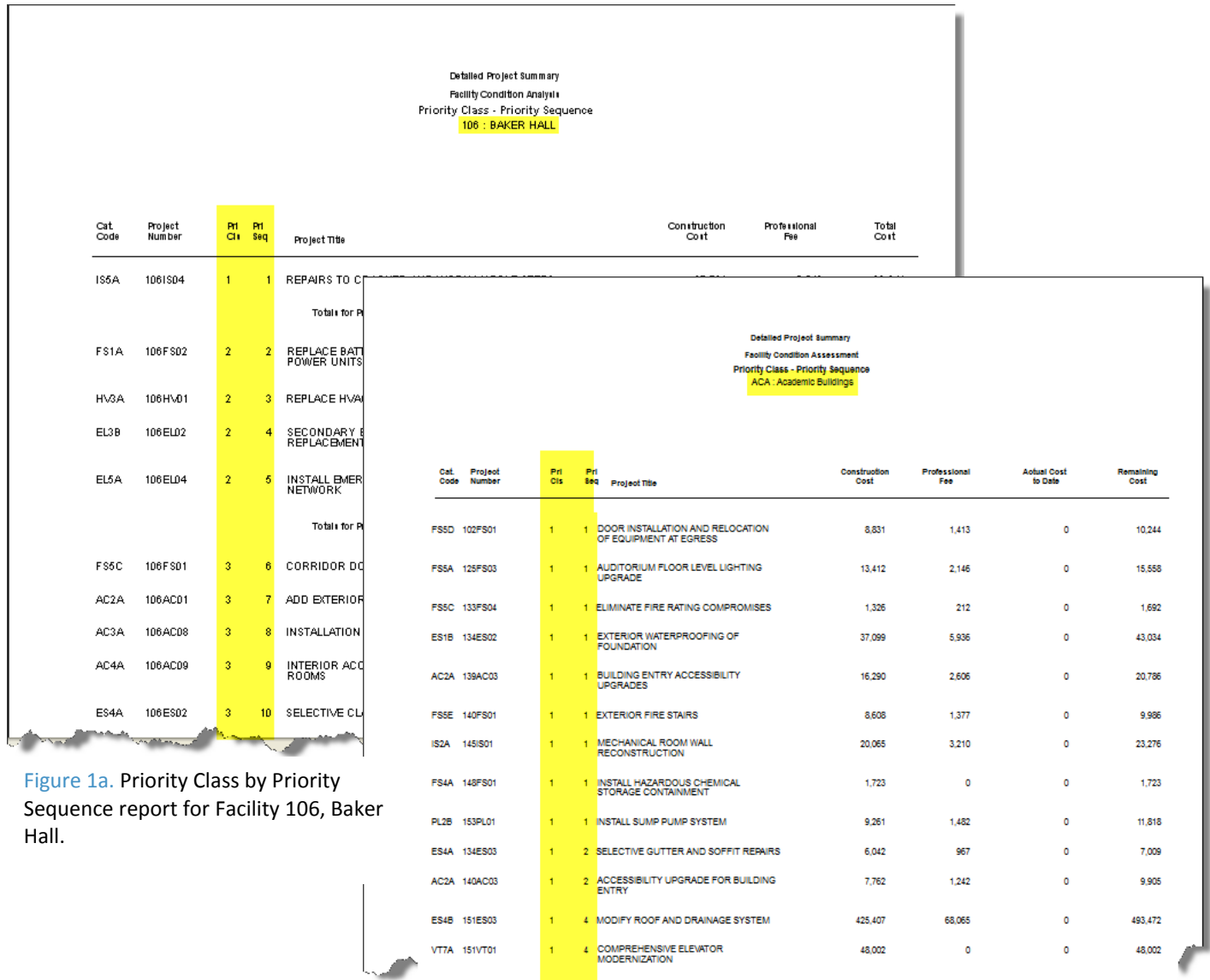
Your customized AMS database can be accessed by visiting the ISES homepage (<http://www.isescorp.com>). Click on **My AMS** in the upper right-hand corner to enter your login information.

Data Sorting and Customized Reporting

The data housed in AMS can be sorted in numerous ways. Project data fields and characteristics enable you to sort and filter electronic data more effectively. Typical sortable fields include, but are not limited to:

- Deficiency Priority
- Facility Type
- Correction Type
- Item/Component Types
- Deficiency Category
- Facility Location
- Repair Cost

AMS generates a report listing all of the renewal needs by building, group, or all buildings. Figures 1a and 1b show renewal needs sorted by priority class and priority sequence.



Lifecycle Component Inventory (Recurring Renewal Needs)

The ISES FCA includes development of a full lifecycle component inventory of each facility. The inventory is based on industry standard life expectancies applied to an inventory of building systems and major components within a facility. This inventory covers the *entire* lifespan of the facility.

Figure 2a displays a typical lifecycle inventory list. Figure 2b shows the detail associated with individual line items in the inventory.

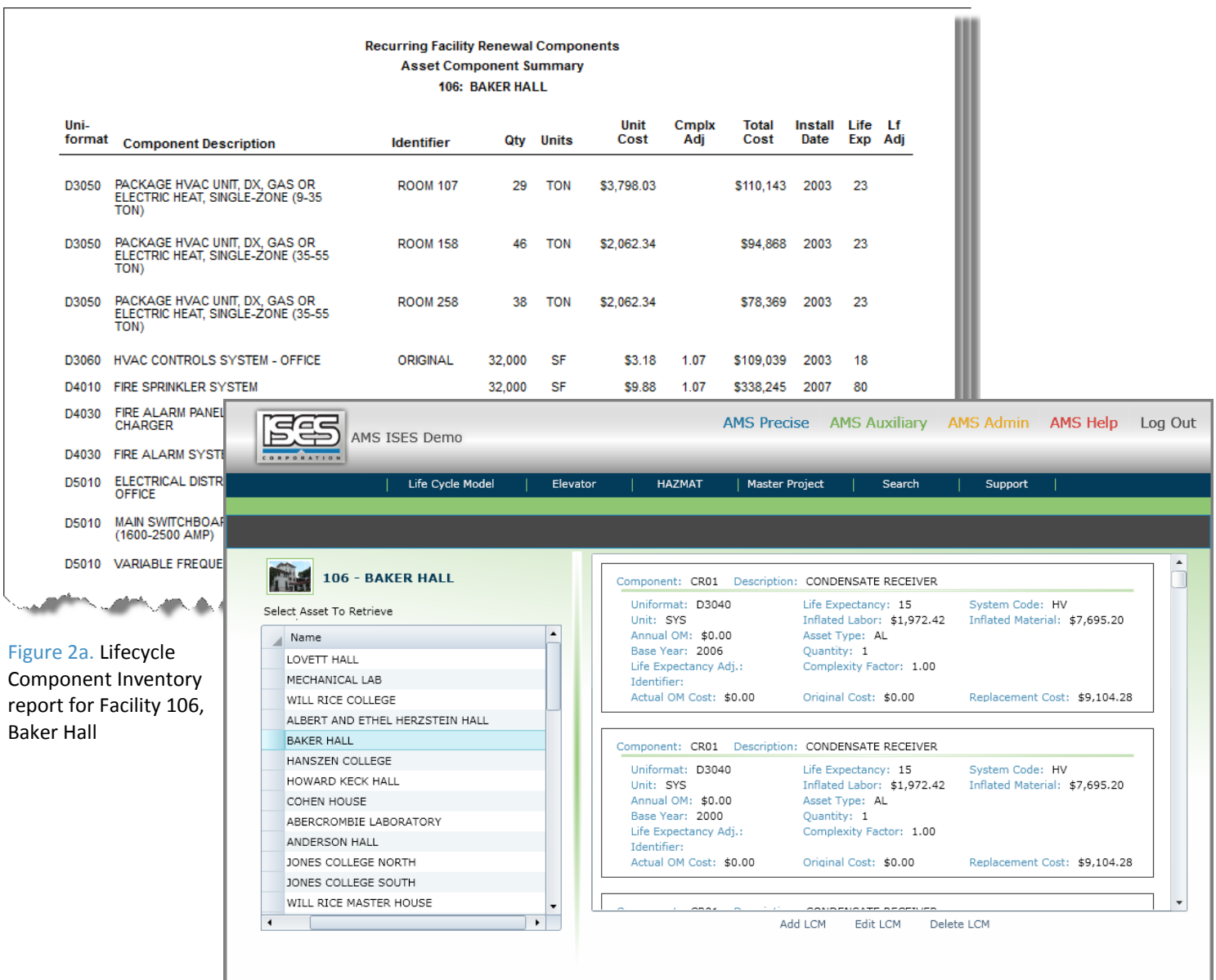


Figure 2a. Lifecycle Component Inventory report for Facility 106, Baker Hall

Figure 2b. AMS screenshot of Lifecycle Component Inventory detail.

Nonrecurring Renewal Needs

A. Management of Recommended Projects

The user can select an asset for specific data entry; enter, edit, or view various system data and settings, including photographs and CAD; print or view a wide array of reports produced by SAP Crystal Reports; generate on-the-fly search lists; and construct forecasting models of system financial data. Each deficiency is classified by the major property components identified for survey in the field. The user has the ability to edit fields and support tables to allow for owner-specified classifications to be added to the above lists.

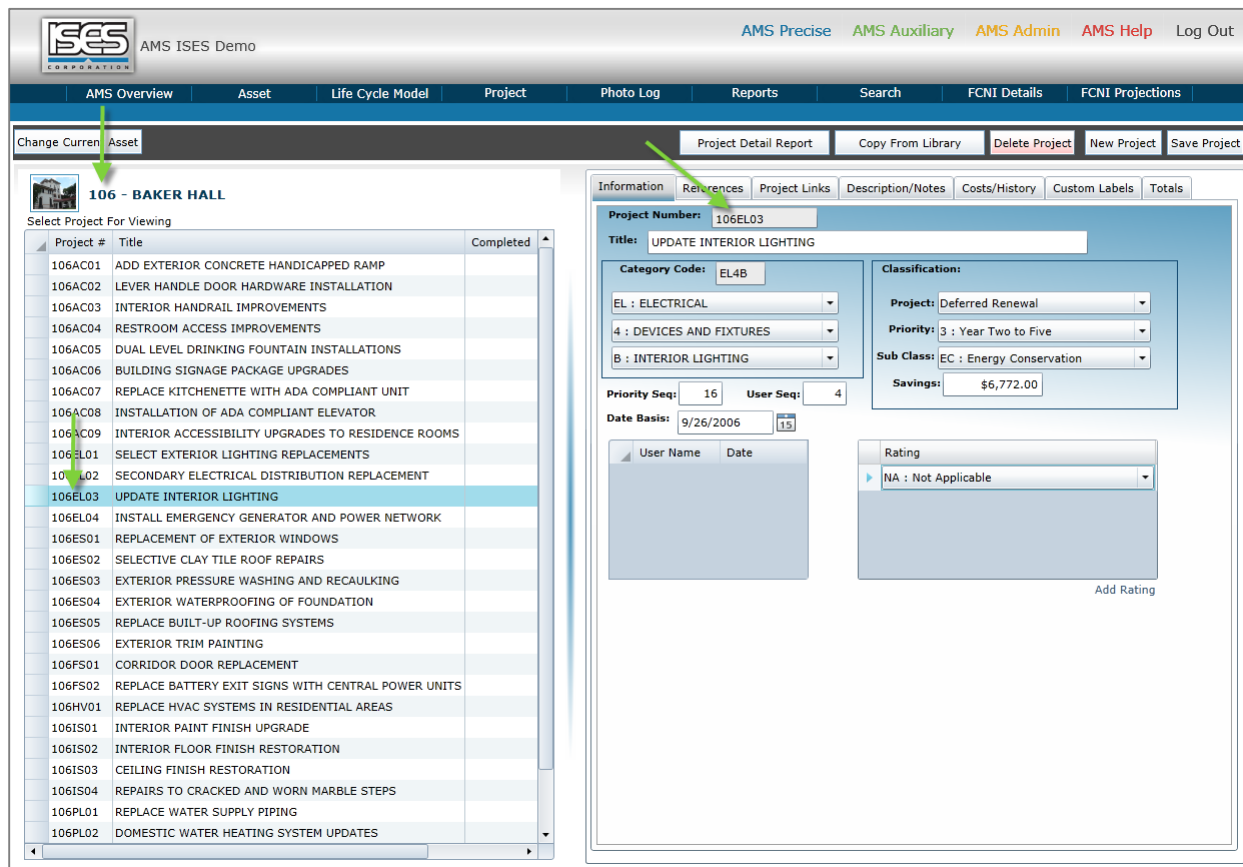


Figure 3. AMS screenshot of Project EL03 showing the Information tab of the Project Menu.

B. Cost Estimates

Costs for nonrecurring renewal needs include multiple tasks, as dictated by circumstances. All costs are estimated and then indexed to local conditions. Markups are applied as the situation dictates.

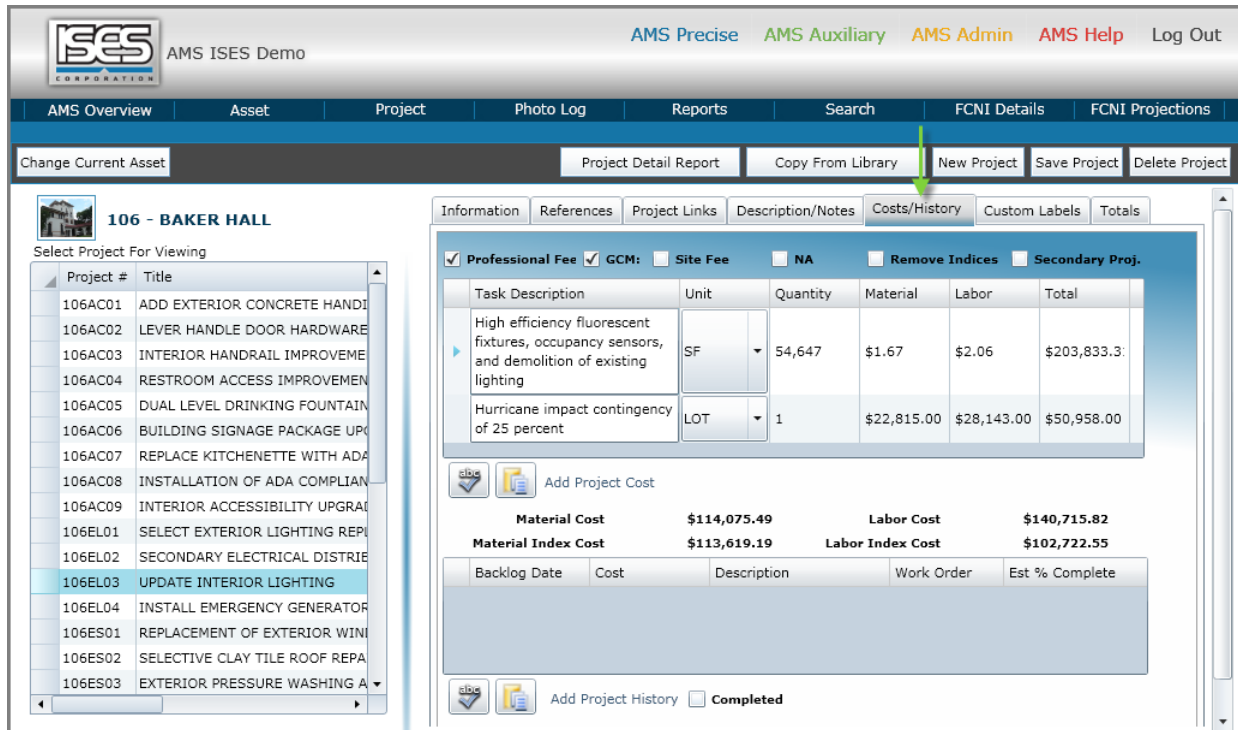


Figure 4. AMS screenshot of Project EL03’s Costs/History tab.

The database also contains a History section that allows you to record any work that is performed on a project. This feature records the date, actual cost, description of work performed, work order number (if applicable) and estimated percentage of completion. If the work is 100% complete, it will remain in the database but is removed from the reporting of outstanding projects.

C. Project Totals

This summary shows original costs, inflation (as dictated by the base year of the estimate), total markups and work completed to date.

The screenshot displays the 'AMS ISES Demo' application. The top navigation bar includes 'AMS Overview', 'Asset', 'Project', 'Photo Log', 'Reports', 'Search', 'FCNI Details', and 'FCNI Projections'. Below this is a secondary menu with 'Change Current Asset', 'Project Detail Report', 'Copy From Library', 'New Project', 'Save Project', and 'Delete Project'. The main content area is titled '106 - BAKER HALL' and features a 'Select Project For Viewing' list on the left. The 'Totals' tab is active, showing the following cost breakdown:

Material/Labor Index Cost:	\$216,341.74		
GCM:	\$43,268.35	GCM:	20%
Inflation:	\$0.00	Base Year:	2006
Construction Cost:	\$259,610.08		
Construction Cost:	\$259,610.08		
Professional Fee:	\$51,922.02	Professional Fee:	20%
Site Fee	\$0.00	Site Fee	0%
NA	\$0.00	NA	0%
Project Total:	\$311,532.10		
Project Total:	\$311,532.10		
Cost To Date:	\$0.00	Est. % Complete	0%
Project Total:	\$311,532.10		

Figure 5. AMS screenshot of Project EL03's Totals tab.

Photolog

In addition to detailed renewal information, ISES creates a full photographic record of the physical inspection of the building, which is accessible via the database. This provides visual identification of the facility, as well as documentation of renewal needs.

Figure 6a depicts thumbnails of the photographs taken by the field inspectors, together with their description and location. Clicking on the photo will generate a larger popup of the image. The photos in 6b are linked to project EL03 (Upgrade Interior Lighting), showing affected areas in the building.



Figure 6a. AMS screenshot of building Photolog.

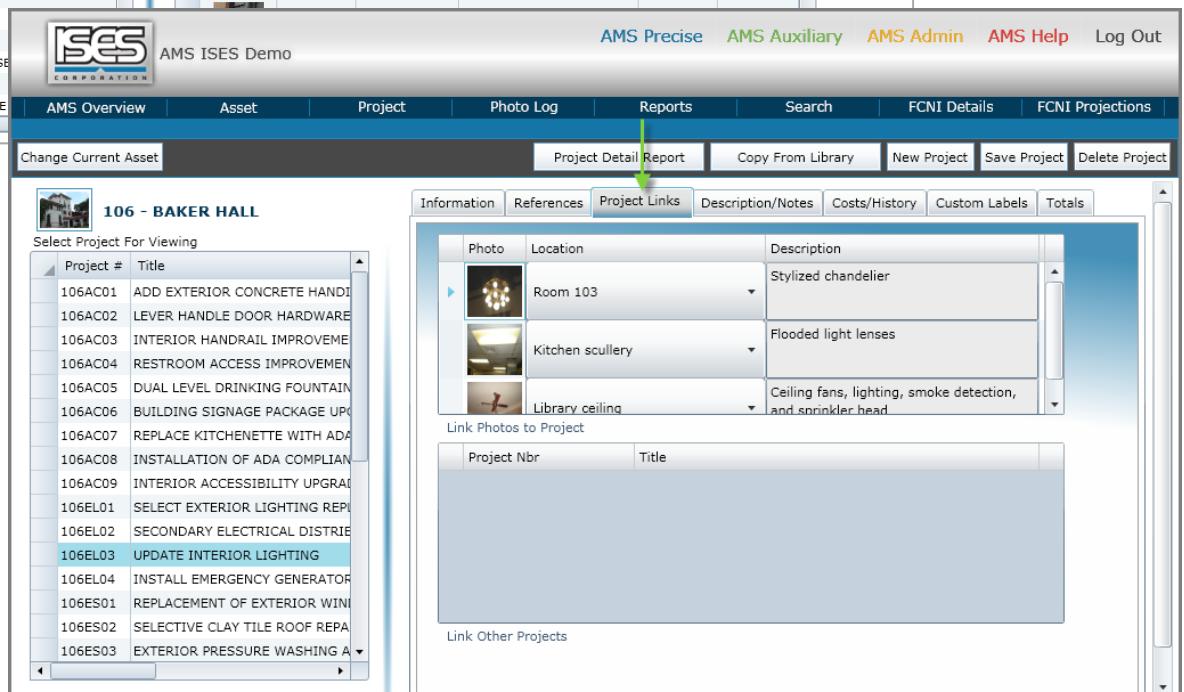


Figure 6b. AMS screenshot of project EL03's Project Links Tab.

CAD Drawings

If drawings are provided by the Client, ISES identifies the location of nonrecurring renewal recommendations on the floor plans. These drawings are integrated with the database and included in published facility reports.

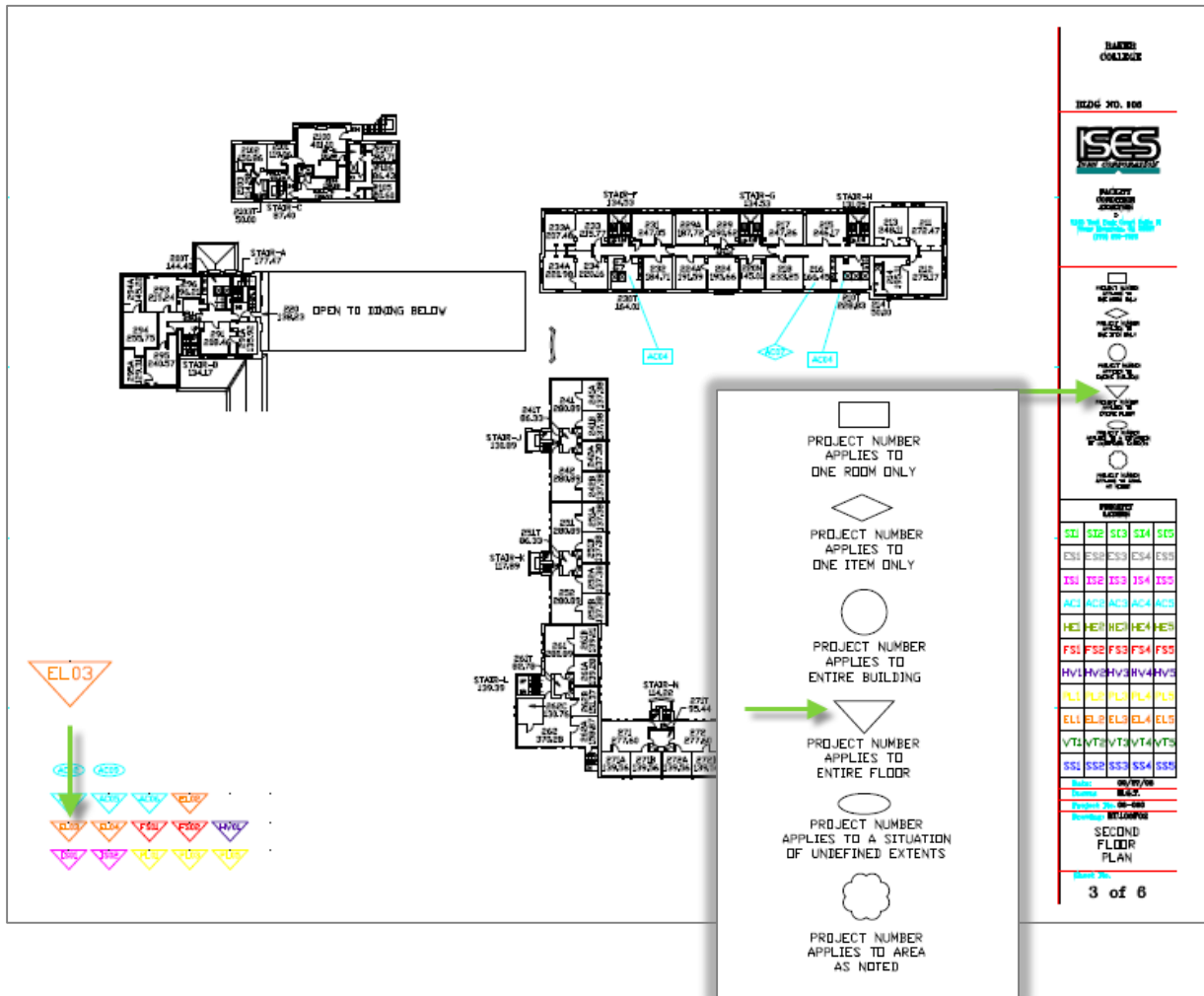


Figure 7. CAD for the second floor of the facility. The triangular icon for EL03 indicates that the renewal recommendation pertains to the entire floor.

Facility Reinvestment Modeling

Once the baseline condition of each facility has been established through the FCA process, the built-in modeling capability of AMS allows you to forecast funding requirements to meet target goals of condition. Multi-level financial modeling can be generated by deferred renewal backlog, capital renewal and selected timeframe. The information can be presented both graphically and textually and exported in standardized Microsoft Office formats. ISES will work with you to develop funding scenarios based on differing targets.

Projections can be based on renewal needs for a single building or across the entire facilities portfolio. AMS also calculates various metrics of your asset portfolio and measures the overall Facility Condition Needs Index (FCNI) against a national standard.

Figure 8 depicts economic parameters for setting up the models. It shows the various parameters that are input into the model once the existing condition has been established.

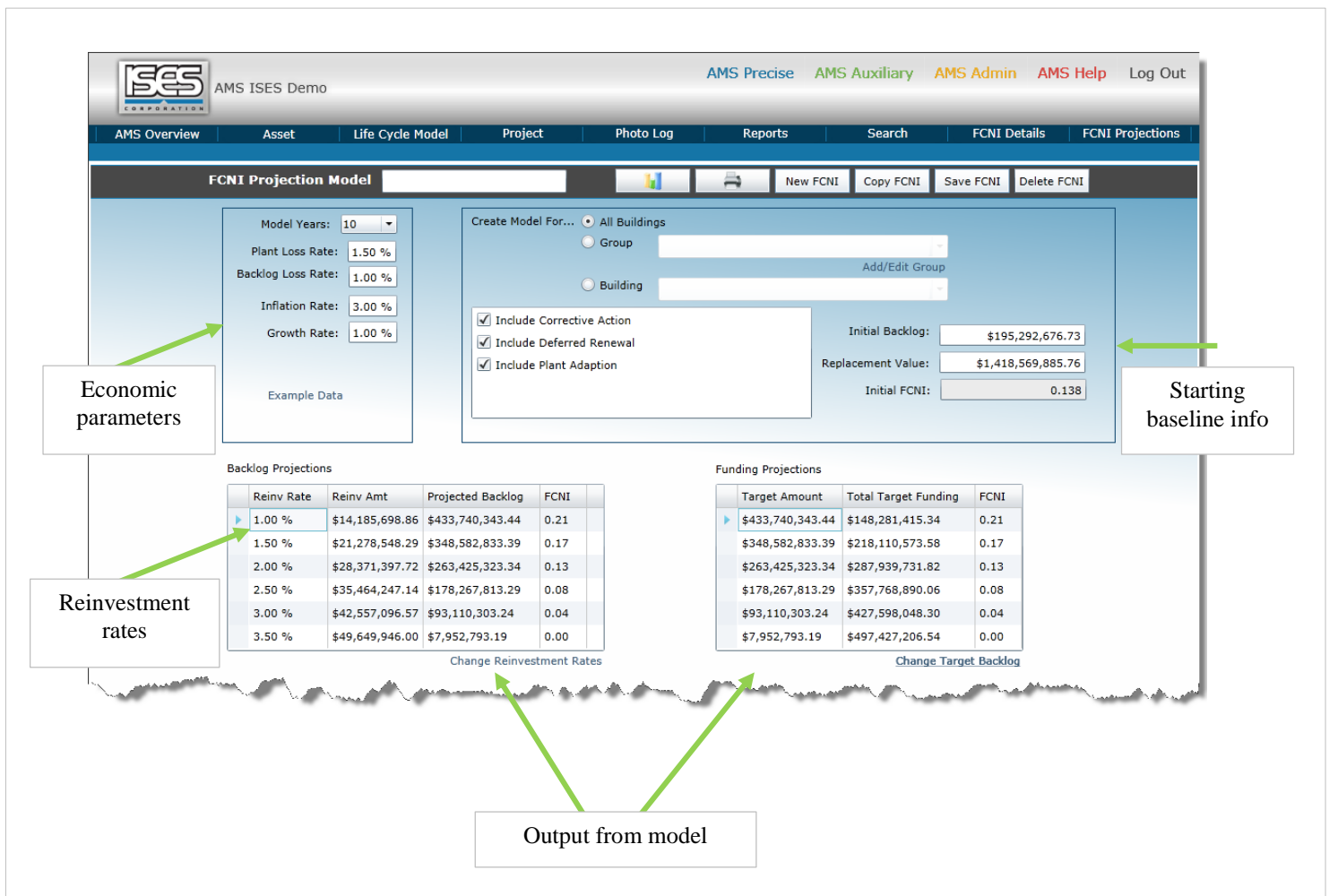


Figure 8. AMS screenshot of the Projection Model feature for the entire campus.

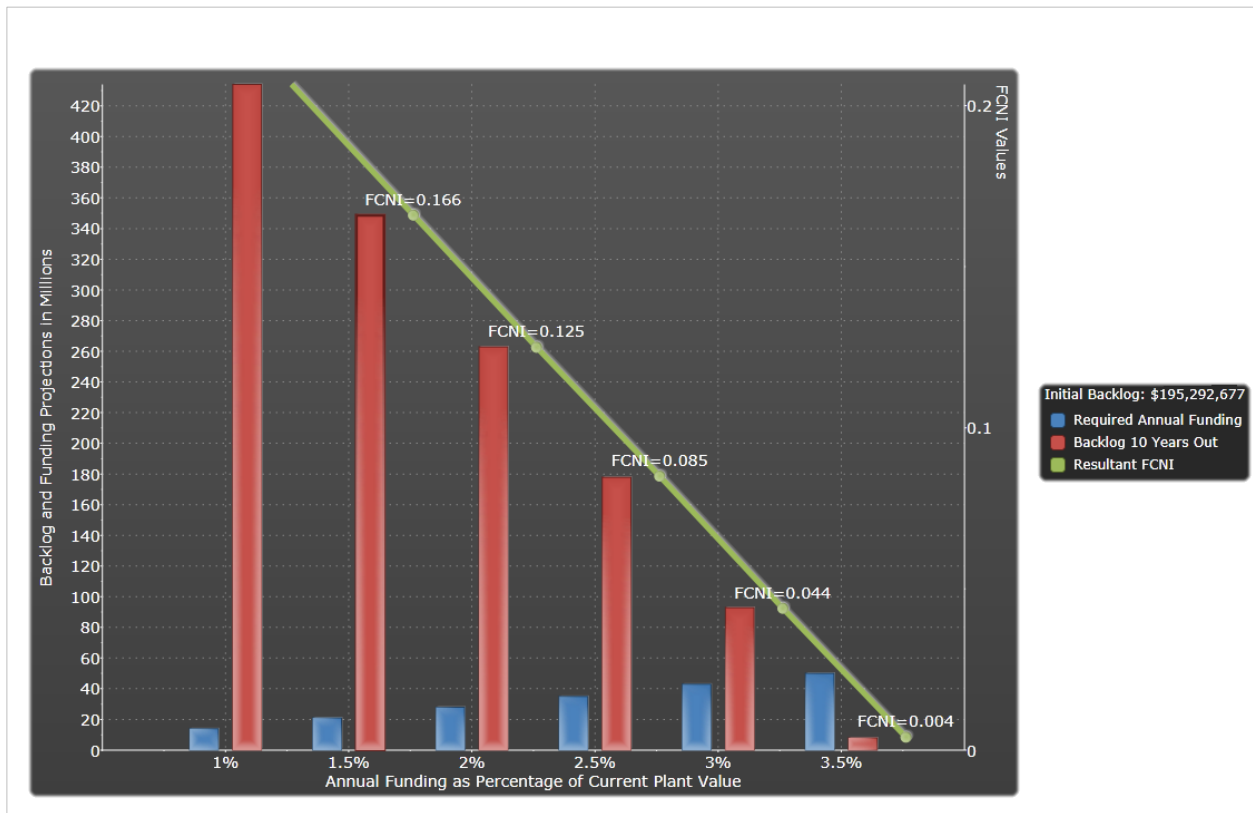


Figure 9. AMS screenshot of the Projection Model's Graphic Report.

ISES will work with you to develop several funding scenarios based on differing targets. Using the modeling function, the required levels of funding to achieve target conditions can be established.

The projections in Figure 8 are based on the facilities renewal need across the entire facilities portfolio. They are displayed graphically in Figure 9.