

EXECUTIVE SUMMARY
EAST CAROLINA UNIVERSITY
FACILITY CONDITION ANALYSIS
MARCH 2010



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SECTION ONE: EXECUTIVE SUMMARY AND CONCLUSIONS

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1.1 History

East Carolina University was founded in 1907 to alleviate a shortage of teachers in the eastern part of North Carolina. The main campus occupies approximately 530 acres in a residential area of Greenville and has grown over its hundred year history to include 4.6 million square feet of academic, research, and residential space in 158 buildings. The Health Sciences Campus includes 1.3 million square feet of academic and research space in 62 buildings on 206 acres. The Department of Biology occupies 33,000 square feet in seven buildings on the 650 acre West Research Campus. As part of a strategic planning directive, the University contracted Smith Group's Raleigh-Durham office to provide a comprehensive strategic master plan. ISES Corporation was chosen to provide Facility Condition Analysis (FCA) services in support of the overall master plan. The FCA project included the inspection of 67 buildings, totaling nearly 4 million square feet, including various higher education use types.

The following observations and conclusions are based on a thorough Facility Condition Analysis of the 67 facilities by ISES Corporation. The FCA process was supervised by Ricky Hill, Interim Executive Director / Facilities Services, and Bill Bagnell, Associate Vice Chancellor for Campus Operations. The Analysis was directed by Kyle Thompson, Director of Operations at ISES Corporation. Survey teams members, consisting of architectural and engineering inspectors, collected, evaluated, and compiled the data for the study.

1.2 Summary of Findings

A. FCNI Definition and Utilization

The FCNI referred to above is the Facility Condition Needs Index. This index provides a relative measure for comparing one building (or group of buildings) to another. The index is a simple calculation, derived by dividing total project costs by the total facility replacement cost (FRC). When applying the index as an evaluation tool, the lower the number, the better the facility condition. It should also be noted that this is an index, not a percentage. It can (and often does in the case of historic facilities) exceed 1.00.

The FRC represents the cost to replace an existing building with one of similar use type and size on the same site. This includes demolition, site preparation, professional fees, and construction costs. ISES gives

the client the option to develop their own FRCs or have ISES develop those costs for them. For this FCA effort, East Carolina University (ECU) opted to have ISES develop the FRCs based on 2009 R.S. Means construction cost data.

There are two main methods of applying the FCNI in analyzing the data derived from an FCA. The first method involves looking at individual facilities. When applying it to a single facility, the lower the FCNI, the better. In terms of assessing where a facility falls within a range of conditions, the following standards can be applied.

TABLE 1

Individual Building FCNI Range	Condition Description
0.01 - 0.05	Excellent condition, typically new construction
0.06 - 0.15	Good condition, renovations occur on schedule
0.16 - 0.30	Fair condition, in need of normal renovation
0.31 - 0.40	Below average condition, major renovation required
0.41 - 0.59	Poor condition, total renovation indicated
0.60 and above	Complete facility replacement indicated

The above ranges represent averages based upon ISES Corporation experience extending over 8,500 facilities with more than one billion gross square feet, and associated infrastructure evaluations. 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 second method of utilizing the FCNI is for comparing groups of facilities to other groupings. Comparisons in this vein do not yield hard data, but rather form the basis of analysis for comparing the overall state of facilities to another comparable grouping. Figure 3 in Section 2 of this document provides a listing of relevant ISES Corporation historical data for other institutions for which we have provided FCA services.

B. Analysis of Overall Conditions

The FCA process for ECU culminated in a database of deficiencies that need to be addressed over the next ten years. For the 67 buildings in the study evaluated for this Executive Summary, ISES identified \$347

million in project recommendations over the next ten years. When compared to the \$1.259 billion replacement value for the facilities in the study, the subsequent FCNI equals 0.28. This FCNI figure is only slightly higher than the 0.26 median FCNI typically experienced by ISES Corporation, indicating that these buildings are in just slightly worse than average condition. However, considering the weighted average age of 40 years for the portfolio analyzed, the FCNI is to be expected. For a complete analysis, it is necessary to look at individual components and classifications and then compare them to the norm.

The first area for standard analysis is reviewing the project backlog distribution across the various building systems. The table below summarizes this information and was derived from a review of the data in Figures 2 and 4 in Section 2. Data representing ISES client history statistics has been included for comparative purposes.

	AC	EL	ES	FS	HE	HV	IS	PL	SI	VT
East Carolina University	4.0%	13.3%	11.0%	8.1%	0.6%	34.8%	18.6%	8.4%	0.6%	0.6%
ISES Historical Average	5.9%	14.8%	11.8%	8.1%	1.3%	29.5%	18.2%	7.4%	2.1%	0.9%

(AC-Handicapped Accessibility, EL-Electrical, ES-Exterior Structure, FS-Fire / Life Safety, HE-Health, HV-HVAC, IS-Interior Finishes / Systems, PL-Plumbing, SI-Site, VT-Vertical Transportation)

The median for MEP systems is about 52 percent of total backlog. MEP systems account for 56.5 percent of total deficiencies in the East Carolina University database. This deviation from the norm is partly attributable to the fact that the portfolio of facilities inspected was slightly older than the norm. It was observed that, although competently maintained, the HVAC systems are generally aged and neglected with regards to capital investment. Exterior envelope and Interior Finish categories for ECU are equal to the norm at 30 percent of the total backlog.

Next, we need to examine the distribution of project costs across the three project classifications. The three classifications utilized in categorizing the data are:

- A. Plant / Program Adaption: Expenditures required to adapt the physical plant to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g. accessibility).
- B. Deferred Maintenance: Refers to expenditures for repairs which were not accomplished as a part of normal maintenance or capital repair which have accumulated to the point that facility deterioration is evident and could impair the proper functioning of the facility. Costs estimated for

deferred maintenance projects should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to affect the needed repairs. Deferred maintenance projects represent catch up expenses.

- C. Capital Renewal: A subset of regular or normal facility maintenance which refers to major repairs or the replacement / rebuilding of major facility components (e.g., roof replacement at the end of its normal useful life is capital repair; roof replacement several years after its normal useful life is deferred maintenance).

	Plant / Program Adaption	Deferred Maintenance	Capital Renewal
East Carolina University	12.4%	54.0%	33.6%
ISES Historical Average	20.3%	28.4%	51.3%

In the chart above, we can see that 12.4 percent of the project backlog falls within the Plant Adaption Projects classification. Consisting mostly of fire / life safety and accessibility upgrades, East Carolina University ranks better than the historical average in this project classification. The proportion of Capital Renewal projects to Deferred Maintenance projects at East Carolina is essentially the reverse of past ISES clientele. Many ISES clients have been witnessing this shift from Capital Renewal to Deferred Maintenance over the past five to ten years. A higher education construction boom in the late 1960s and early 1970s contributes to an average 38 year facility age for ISES' client history. As costly systems with 30 to 50 year life cycles started to fail in recent years, deficiencies that were considered Capital Renewal five to ten years ago are now considered Deferred Maintenance.

Finally, we will compare how the backlog falls within the four priority classes, as shown in the chart below:

	Priority 1 and 2 (Year 1)	Priority 3 (Years 2-5)	Priority 4 (Years 6-10)
East Carolina University	9%	73%	18%
ISES Historical Average	22%	57%	19%

For the ECU campus, Priorities 1 and 2 account for only 9 percent of the total backlog compared to the 22 percent ISES Historical Average. This shift can be attributed to renovation efforts in over 10 percent of the facilities portfolio in the late 1990s and early 2000s. Priorities 3 and 4 account for 91 percent of total backlog, with 73 percent of that amount being due in years two through five. The high percentage of deficiencies in priority class three indicates that facilities conditions can rapidly deteriorate if adequate funding for systems renewal is not secured.

1.3 Conclusions and Recommendations for Facility Improvement

The preceding sections of this report, supported by the graphs and charts contained in Section 2, illustrate that the overall conditions for East Carolina's occupied facilities are only 8 percent worse than the norm found from past ISES FCA clients. East Carolina's FCNI currently lies at the 58nd percentile of ISES' historical client data. While the ECU campus was found to be average, the 40 year age of the University's facilities portfolio is such that overall conditions are set to deteriorate rapidly as major building systems exceed their useful service lives.

Applying the FCNI projection capabilities of the database to the backlog, the model predicts that the status quo FCNI of 0.28 can be maintained by reinvesting at the rate of 1.84 percent of current plant value (\$23.2 million annually). If the future reinvestment rate is lower than 1.84 percent of plant value, the FCNI will gradually increase over the next ten years. For example, a 1 percent reinvestment rate (\$12.6 million annually) will cause the FCNI to increase or worsen to 0.344 at the end of ten years. Reinvestment at the rate of 2 percent of plant value (\$25.2 million annually) will cause the FCNI to decrease or improve to 0.263 at the end of ten years. Many different scenarios can be played out in the financial model feature of the database software.

The Life Cycle Model projection (Figure 9) shows an average annual cost per square foot for these East Carolina facilities in the amount of \$5.04. This figure is derived by estimating the cost to replace all major systems / components of the buildings as they reach the end of their estimated lifespans over a fifty-year period. When the annual average of \$5.04 per gross square foot is applied to the entire group of facilities inspected, it results in an annual Capital Renewal funding requirement of \$19.9 million. This figure is less than the aforementioned "status quo" annual reinvestment rate because the LCM does not take plant adaption into account. Still, the number is on par with the annual reinvestment rate required to keep the overall condition of facilities from deteriorating.

When attempting to plan for the annual investment required to meet the desired goal, keep in mind that the annual investments discussed above represent funding from all sources (annual Deferred Maintenance and Capital Renewal funding, major renovation funding, program-related grant funding, which provides for space renewal, etc.). This figure also would include any funding for new construction provided that the new construction is utilized to replace existing deteriorated structures. If new structures are built but the older facilities are kept in service, the problem will be exacerbated.

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2.1 Figure 1 - Detailed Facility Inventory

BLDG CODE	NAME	BLDG USE	YEAR BUILT	GSF	FRC	TOTAL PROJECT COSTS	FCNI
AUST	AUSTIN BUILDING	CL	1964	63,866	\$18,222,000	\$7,831,620	0.43
AYCO	AYCOCK RESIDENCE HALL	DM	1960	89,516	\$27,805,000	\$7,323,321	0.26
B043	MAIL SERVICES / WAREHOUSE / TECH LAB A	WH	1951	24,932	\$3,206,000	\$1,510,962	0.47
B098	HARDY BUILDING	MC	1967	4,220	\$1,109,000	\$398,058	0.36
BATE	HAROLD H. BATE BUILDING	CL	1988	165,000	\$47,077,000	\$11,257,429	0.24
BELK	BELK RESIDENCE HALL	DM	1966	80,950	\$25,144,000	\$8,918,788	0.35
BIOT	BIOTECHNOLOGY BUILDING	LB	1991	28,152	\$11,514,000	\$3,849,285	0.33
BREW	BREWSTER BUILDING	CL	1970	118,456	\$33,797,000	\$14,946,185	0.44
BROD	BRODY MEDICAL SCIENCES BUILDING	LB	1982	480,279	\$196,432,000	\$69,020,811	0.35
CHAN	CHANCELLORS RESIDENCE	RS	1948	7,016	\$1,540,000	\$120,776	0.08
CLEM	CLEMENT RESIDENCE HALL	DM	1969	86,044	\$26,726,000	\$4,446,018	0.17
COTA	COTANCHE BUILDING	OF	1955	29,137	\$7,740,000	\$1,658,337	0.21
COTT	COTTEN RESIDENCE HALL	DM	1925	47,088	\$14,626,000	\$1,407,707	0.10
ERWI	ERWIN HALL	OF	1952	14,652	\$3,892,000	\$1,991,252	0.51
FICK	DOWDY-FICKLEN STADIUM	SU	1963	58,819	\$18,104,000	\$4,394,430	0.24
FLEM	FLEMING RESIDENCE HALL	DM	1923	32,428	\$10,072,000	\$2,021,757	0.20
FLET	FLETCHER RESIDENCE HALL	DM	1964	80,649	\$25,050,000	\$5,352,478	0.21
FMUS	FLETCHER MUSIC CENTER	CL	1966	58,950	\$16,819,000	\$5,689,398	0.34
FSSP	STEAM PLANT 14TH STREET	PP	1968	16,914	\$3,927,000	\$988,162	0.25
GARR	GARRETT RESIDENCE HALL	DM	1956	53,344	\$16,569,000	\$4,070,777	0.25
GCTR	GREENVILLE CENTRE	OF	1991	35,289	\$9,374,000	\$1,095,720	0.12
GRAH	GRAHAM BUILDING	CL	1929	16,080	\$4,588,000	\$1,841,082	0.40
GREE	GREENE RESIDENCE HALL	DM	1966	82,731	\$25,697,000	\$4,342,395	0.17
HARS	HARRIS BUILDING	ST	1997	19,325	\$5,133,000	\$584,141	0.11
HOWE	HOWELL SCIENCE	LB	1969	107,569	\$43,995,000	\$20,328,579	0.46
HUMA	HUMAN RESOURCES	OF	1973	12,250	\$3,254,000	\$935,671	0.29
JARV	JARVIS RESIDENCE HALL	DM	1909	34,467	\$10,706,000	\$1,110,652	0.10
JENK	JENKINS FINE ARTS CENTER	CL	1977	109,994	\$31,383,000	\$12,057,922	0.38
JONE	JONES RESIDENCE HALL	DM	1958	103,520	\$32,154,000	\$5,939,065	0.18
JOYE	JOYNER EAST	CL	1975	30,118	\$8,593,000	\$2,284,812	0.27
JOYN	JOYNER LIBRARY	LY	1956	280,575	\$114,754,000	\$22,026,240	0.19
LIFE	LIFE SCIENCES BUILDING	LB	1980	75,482	\$30,872,000	\$5,053,471	0.16
LJCC	LEO JENKINS CANCER CENTER	MC	1984	39,155	\$16,014,000	\$4,814,966	0.30
MCGI	MCGINNIS THEATRE	TH	1951	26,692	\$7,691,000	\$3,223,026	0.42
MCSS	MCGINNIS SCENE SHOP	WH	1982	9,600	\$1,235,000	\$413,011	0.33
MEDP	MEDICAL PAVILIONS 1-10	MC	1966	15,574	\$4,093,000	\$1,773,176	0.43

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BLDG CODE	NAME	BLDG USE	YEAR BUILT	GSF	FRC	TOTAL PROJECT COSTS	FCNI
MESS	MESSICK THEATRE ARTS COMPLEX	CL	1927	35,038	\$9,997,000	\$3,989,785	0.40
MING	MINGES COLISEUM	GM	1967	155,598	\$38,489,000	\$5,337,648	0.14
MSCB	MENDENHALL STUDENT CENTER	SU	1974	116,900	\$35,982,000	\$13,060,311	0.36
MURP	MURPHY STRENGTH CENTER	GM	2001	52,475	\$12,980,000	\$493,864	0.04
PHQC	PHYSICIANS QUAD C	MC	1966	2,484	\$653,000	\$288,136	0.44
PHQM	PHYSICIANS QUAD M	MC	1978	3,472	\$913,000	\$350,737	0.38
PHQN	PHYSICIANS QUAD N	MC	1974	3,636	\$956,000	\$432,534	0.45
RAGS	RAGSDALE HALL	OF	1923	41,144	\$10,929,000	\$5,068,727	0.46
RAWL	RAWL BUILDING	CL	1959	73,524	\$20,977,000	\$9,010,552	0.43
RIVE	RIVERS BUILDING	CL	1968	73,997	\$21,112,000	\$8,844,923	0.42
RIVE2	RIVERS ADDITION	OF	2004	38,249	\$10,160,000	\$1,091,496	0.11
SCAL	SCALES FIELD HOUSE	GM	1966	14,349	\$3,812,000	\$1,244,468	0.33
SLAY	SLAY HALL	OF	1949	34,269	\$9,103,000	\$1,595,848	0.18
SPEI	SPEIGHT BUILDING	OF	1965	50,562	\$13,431,000	\$5,226,030	0.39
SPIL	SPILMAN BUILDING	OF	1930	16,720	\$4,441,000	\$1,199,863	0.27
SRCB	STUDENT RECREATION CENTER	GM	1996	150,227	\$37,161,000	\$6,175,905	0.17
STHC	STUDENT HEALTH SERVICES ADDITION	MC	2002	16,508	\$4,339,000	\$389,477	0.09
STUH	STUDENT HEALTH SERVICES	MC	1930	11,744	\$3,087,000	\$336,838	0.11
TODD	TODD DINING HALL	FS	1994	35,000	\$10,773,000	\$1,406,360	0.13
TYLE	TYLER RESIDENCE HALL	DM	1969	96,105	\$29,851,000	\$8,751,577	0.29
UMST	UMSTEAD RESIDENCE HALL	DM	1955	48,512	\$15,068,000	\$1,602,797	0.11
UTIL	MEDICAL HEATING FACILITY	PP	1980	11,863	\$14,828,750	\$2,548,647	0.17
UTIN	INCINERATOR PLANT AND UTILITY	PP	1999	16,672	\$4,489,542	\$271,730	0.06
WARD	WARD SPORTS MEDICINE	GM	1989	76,695	\$18,972,000	\$4,460,619	0.24
WHIC	WHICHARD BUILDING	OF	1923	23,470	\$6,234,000	\$2,265,985	0.36
WHIT	WHITE RESIDENCE HALL	DM	1968	82,731	\$25,697,000	\$4,487,758	0.17
WILS	WILLIS BUILDING	OF	1974	15,366	\$4,082,000	\$1,583,636	0.39
WRAB	WEST ACADEMIC BUILDING	OF	1960	24,047	\$6,388,000	\$2,639,513	0.41
WRIA	WRIGHT ANNEX	SU	1968	39,279	\$12,090,000	\$4,150,672	0.34
WRIG	WRIGHT AUDITORIUM	TH	1925	33,986	\$10,461,000	\$3,182,901	0.30
WRIP	WRIGHT PLACE	FS	1968	10,000	\$3,078,000	\$495,064	0.16

GRAND TOTALS				3,943,455	\$1,259,441,292	\$347,005,881	0.28
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2.2 Figure 2 - Detailed Project Totals Matrix

SYSTEM DESCRIPTION	PRIORITIES				TOTALS
	1	2	3	4	
ACCESSIBILITY	13,831	366,786	828,168	12,662,369	\$13,871,154
ELECTRICAL	0	913,148	35,271,270	10,123,223	\$46,307,640
EXTERIOR	0	4,852,480	23,272,006	9,900,001	\$38,024,488
FIRE/LIFE SAFETY	1,219,857	20,958,875	4,498,429	1,379,535	\$28,056,697
HEALTH	0	56,717	1,798,310	247,864	\$2,102,891
HVAC	0	0	112,974,398	7,923,105	\$120,897,503
INTERIOR FINISHES/SYS.	0	0	57,408,451	7,155,916	\$64,564,367
PLUMBING	0	811,871	15,081,172	13,227,756	\$29,120,799
SITE	0	22,729	1,445,663	499,318	\$1,967,710
VERT. TRANSPORTATION	100,000	180,560	1,812,070	0	\$2,092,630
TOTALS	\$1,333,688	\$28,163,166	\$254,389,938	\$63,119,087	\$347,005,881

CAPITAL RENEWAL	\$116,722,106
DEFERRED MAINTENANCE	\$187,267,535
PLANT/PROGRAM ADAPTION	\$43,016,238
FACILITY REPLACEMENT COST	\$1,259,441,292
FACILITY CONDITION NEEDS INDEX (FCNI)	0.28

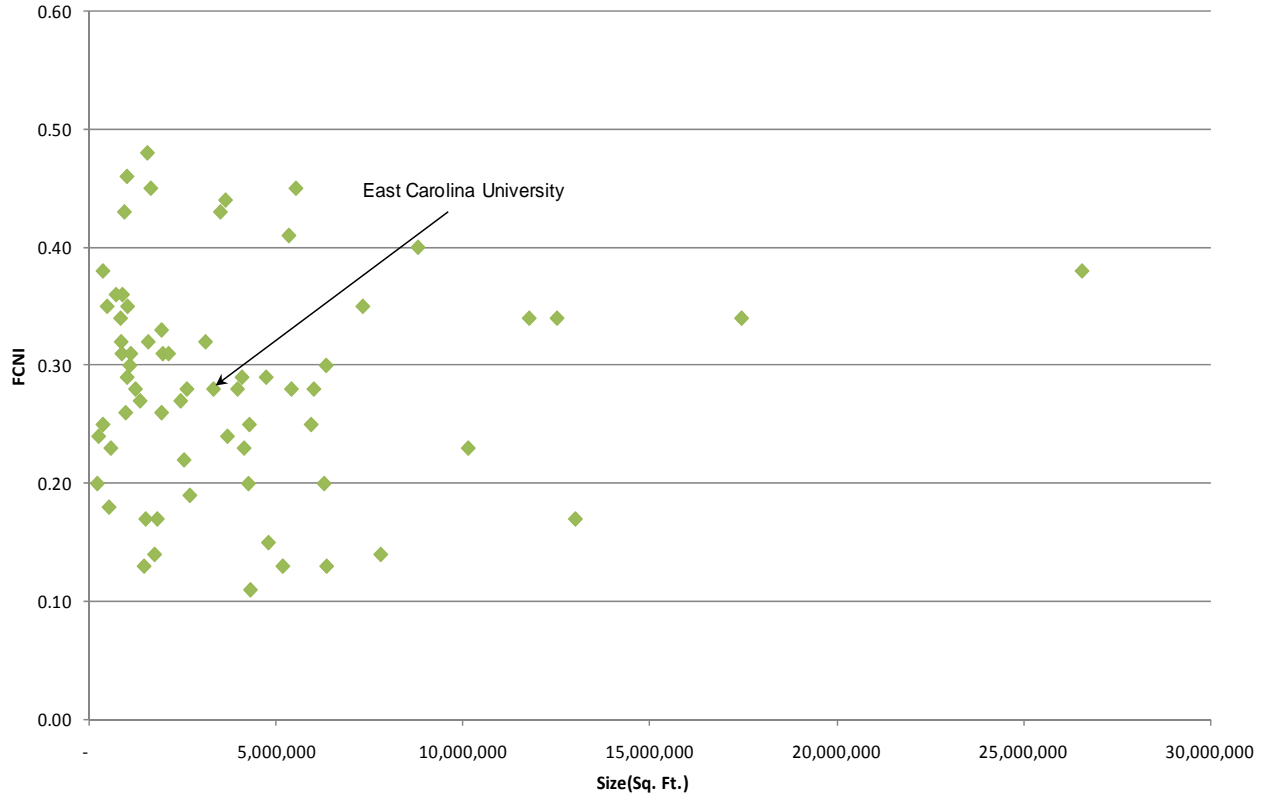
GROSS SQUARE FEET	3,943,455
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TOTAL PROJECT COST PER SQUARE FOOT	\$88.00
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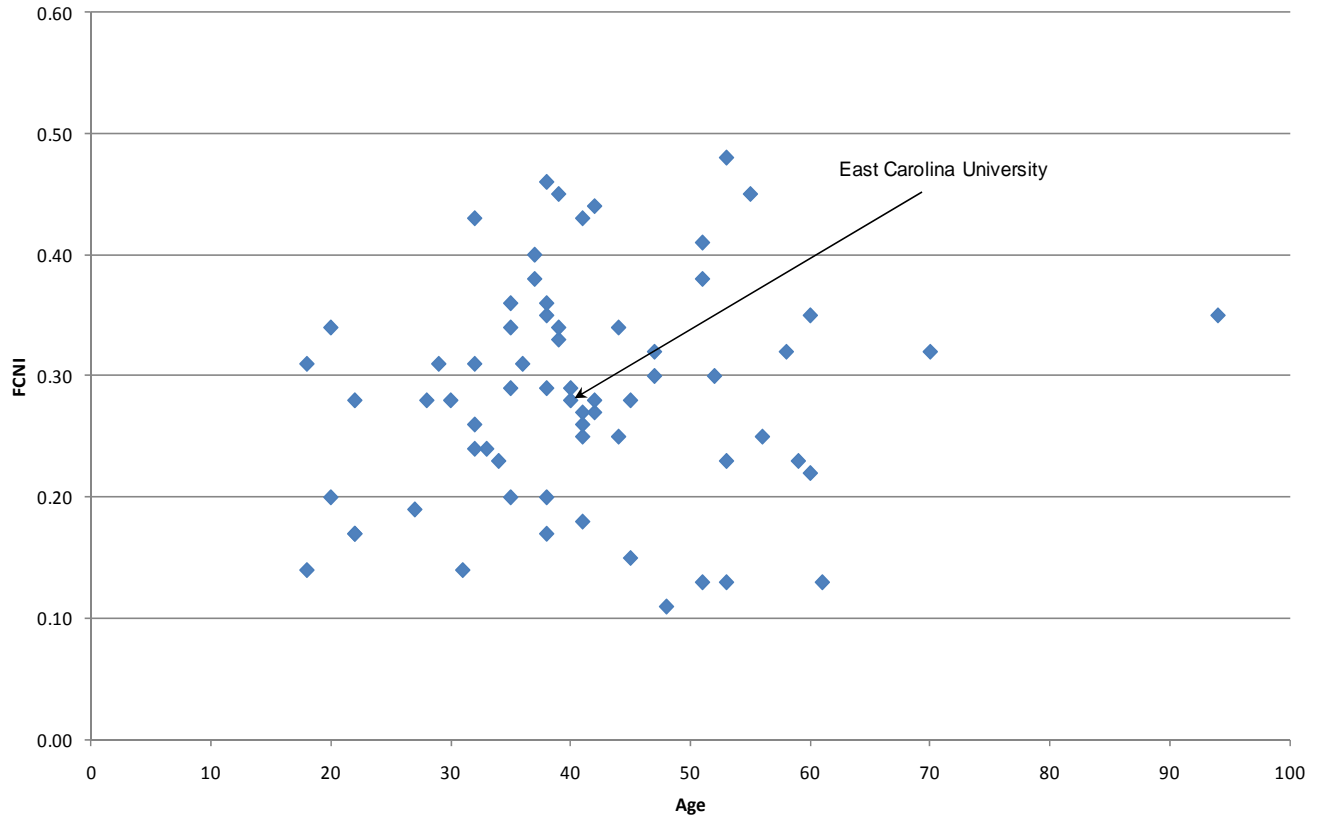
2.3 Figure 3 – ISES Client History Sampling and FCNI Comparison Table and Graphs

Sampling of ISES Client History List									
Client Name	Year of Inspection	Facility Condition Needs Index	Gross Square Feet	Asset Count	Average Year Built	Avg. Age at Time of Inspection	Project Backlog per Square Foot	FCNI Percent Rank	Total Backlog
University of Notre Dame	2009	0.11	4,289,141	44	1961	48	\$39.46	100%	\$169,249,450
Middlebury College	2000	0.13	1,440,035	76	1939	61	\$26.60	99%	\$38,310,987
North Carolina State University	2002	0.13	6,332,806	13	1949	53	\$30.24	99%	\$191,477,735
Vanderbilt University	2003	0.13	5,155,207	87	1952	51	\$25.48	99%	\$131,352,530
Georgia Institute of Technology	2005	0.14	7,780,731	113	1974	31	\$23.93	94%	\$186,205,554
University of North Florida	2008	0.14	1,720,437	28	1990	18	\$40.40	94%	\$69,498,230
Washington University School of Medicine	2006	0.15	4,772,585	40	1961	45	\$55.88	91%	\$66,669,760
University of Southern California	2005	0.17	12,996,710	229	1967	38	\$66.25	90%	\$861,089,718
Vanderbilt University Real Estate	2005	0.17	1,793,906	26	1983	22	\$16.42	90%	\$29,458,946
Pepperdine University	2008	0.17	1,483,295	54	1986	22	\$61.59	90%	\$91,362,453
Western Michigan University	2001	0.18	500,367	5	1960	41	\$46.17	85%	\$23,102,103
University of Texas Health Science Campus Houston	2001	0.19	2,665,879	11	1974	27	\$33.62	84%	\$89,618,600
Washington University Main Campus	2002	0.20	4,236,605	84	1964	38	\$22.03	82%	\$93,313,060
Florida State University	2008	0.20	6,264,871	97	1973	35	\$59.00	82%	\$369,649,466
Scotland Memorial Hospital	2002	0.20	185,705	2	1982	20	\$43.94	82%	\$8,159,439
Stanford University II	2007	0.22	2,512,843	47	1947	60	\$80.58	78%	\$202,481,536
University of Iowa	2008	0.23	10,124,253	99	1949	59	\$87.24	76%	\$883,266,611
California Institute of Technology	2007	0.23	4,120,495	146	1954	53	\$69.66	76%	\$287,049,757
Michigan State University	2003	0.23	549,627	5	1969	34	\$34.74	76%	\$19,094,755
Marist School	2005	0.24	222,074	7	1982	33	\$42.15	72%	\$9,361,057
California State University Long Beach	2005	0.24	3,673,351	98	1973	32	\$56.34	72%	\$206,952,566
Nevada System of Higher Education	2007	0.25	5,914,522	121	1951	56	\$111.50	69%	\$659,446,351
Friendship Public Charter School	2003	0.25	336,066	4	1959	44	\$34.13	69%	\$11,468,395
University of Nebraska	2001	0.25	4,261,626	69	1960	41	\$10.34	69%	\$44,052,261
San Francisco State University	2003	0.26	1,908,545	21	1962	41	\$70.16	64%	\$133,898,966
Tarleton State University	2003	0.26	946,406	40	1971	32	\$36.37	64%	\$34,420,450
University of Missouri Kansas City	2008	0.27	2,419,857	38	1966	42	\$79.96	61%	\$193,486,256
University of West Georgia	2004	0.27	1,334,306	36	1963	41	\$45.01	61%	\$60,061,598
East Carolina University	2009	0.28	3,943,455	67	1969	40	\$88.00	58%	\$347,005,879
Stanford University I	2002	0.28	2,586,556	50	1957	45	\$63.31	58%	\$163,753,297
University of Rochester	2007	0.28	5,387,635	23	1965	42	\$91.78	58%	\$494,470,898
University of Houston	2001	0.28	5,988,420	82	1971	30	\$42.74	58%	\$255,952,690
Northern Michigan University	2000	0.28	3,298,899	48	1972	28	\$50.77	58%	\$167,481,965
Chapman University	2002	0.28	1,209,650	31	1980	22	\$48.30	58%	\$58,426,248
Portland State University	2008	0.29	4,062,486	37	1968	40	\$70.03	49%	\$284,495,209
Valdosta State University	2004	0.29	985,822	19	1966	38	\$46.06	49%	\$45,409,388
Pennsylvania State University, Regional Campuses	2005	0.29	4,710,283	231	1970	35	\$58.14	49%	\$273,305,298
Rice University	2006	0.30	1,058,521	20	1954	52	\$81.27	44%	\$86,029,289
University of Missouri Columbia	2004	0.30	6,320,149	108	1957	47	\$89.38	44%	\$564,906,658
Morehouse College	2007	0.31	844,948	24	1971	36	\$66.97	41%	\$56,583,054
Rowan University	2005	0.31	1,940,879	44	1962	32	\$74.51	41%	\$144,619,873
University of Texas Health Science Center	2005	0.31	2,094,892	5	1976	29	\$88.96	41%	\$186,371,579
California State University San Bernadino	2000	0.31	1,082,701	18	1982	18	\$62.03	41%	\$67,162,351
Phillips Exeter Academy	2007	0.32	1,551,807	132	1937	70	\$82.55	35%	\$128,102,742
Kenyon College	2007	0.32	825,023	52	1949	58	\$84.38	35%	\$69,612,041
Oklahoma State University	2009	0.32	3,086,167	40	1962	47	\$111.29	35%	\$343,450,807
California State University Los Angeles	2005	0.33	1,908,641	20	1966	39	\$99.30	31%	\$189,533,235
Pennsylvania State University, University Park Campus	2005	0.34	12,505,007	219	1961	44	\$60.69	29%	\$758,951,647
University of Connecticut	2006	0.34	11,758,814	311	1967	39	\$85.11	29%	\$1,000,773,188
Texas A&M University	2008	0.34	17,451,046	297	1973	35	\$89.87	29%	\$1,568,245,670
Georgia State University Foundation	2003	0.34	810,212	5	1983	20	\$48.73	29%	\$39,480,904
University of the Arts	2008	0.35	996,503	15	1914	94	\$125.05	23%	\$124,617,342
University of Chicago	2008	0.35	7,299,755	123	1948	60	\$119.47	23%	\$872,115,627
Oakland University	2004	0.35	449,117	6	1966	38	\$69.71	23%	\$31,310,078
California Polytechnic State University San Luis Obispo	2006	0.36	859,028	36	1968	38	\$77.06	19%	\$66,198,105
University of Nebraska - Omaha	2006	0.36	690,190	6	1971	35	\$76.81	19%	\$53,013,995
University of Minnesota	2007	0.38	26,573,070	318	1956	51	\$99.41	16%	\$2,641,730,320
University of California Irvine	2007	0.38	336,208	26	1970	37	\$89.47	16%	\$30,082,075
University of South Carolina	2004	0.40	8,780,323	100	1967	37	\$57.51	13%	\$504,990,688
Oregon State University	2000	0.41	5,318,016	94	1949	51	\$55.24	11%	\$293,752,489
University of Miami - Coral Gables	2006	0.43	3,485,330	88	1965	41	\$89.45	10%	\$311,769,384
Western Carolina University Dept. of Residential Lvg.	2004	0.43	911,938	14	1972	32	\$73.41	10%	\$66,947,791
George Washington University, The	2002	0.44	3,623,150	84	1960	42	\$82.16	7%	\$297,694,823
University of Alabama	2005	0.45	5,509,132	134	1950	55	\$51.75	5%	\$285,113,705
San Diego State University	2006	0.45	1,619,605	21	1967	39	\$105.04	5%	\$170,118,528
University of Wyoming	2001	0.46	980,767	11	1963	38	\$77.84	2%	\$76,342,523
Miami of Ohio University	2007	0.48	1,527,840	30	1954	53	\$94.23	0%	\$143,963,945
Averages	2005	0.29	3,944,989	69	1964	41	\$65.33		\$278,021,551

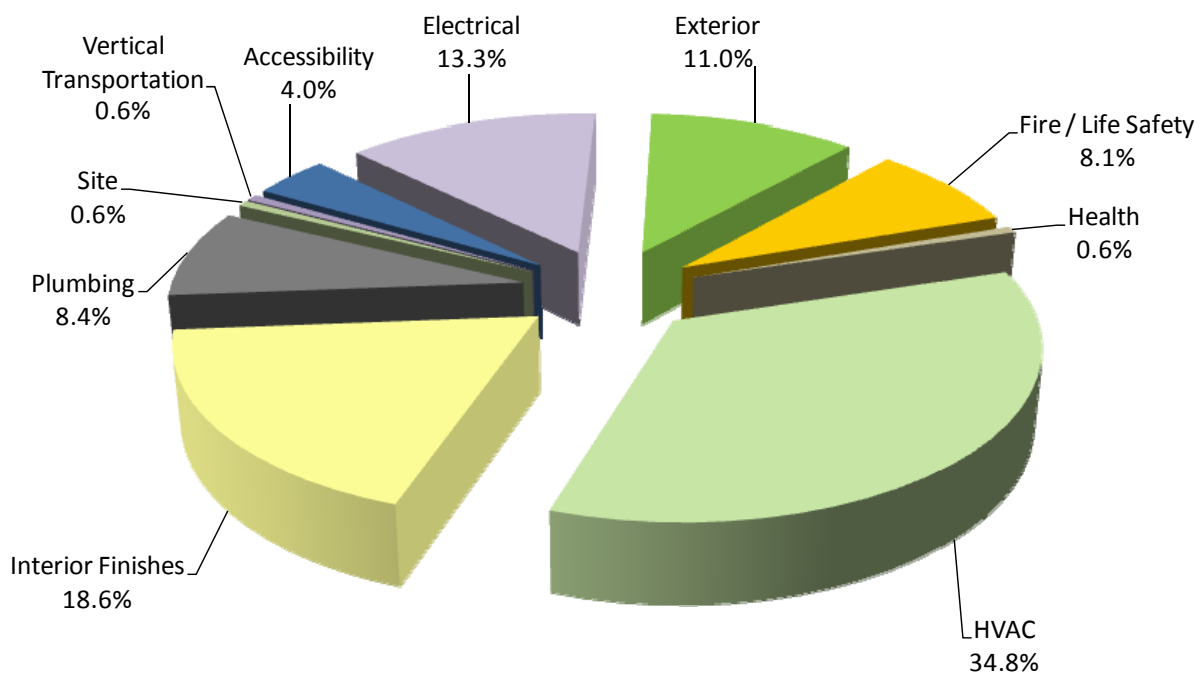
Sampling of ISES Client History – FCNI vs. Size



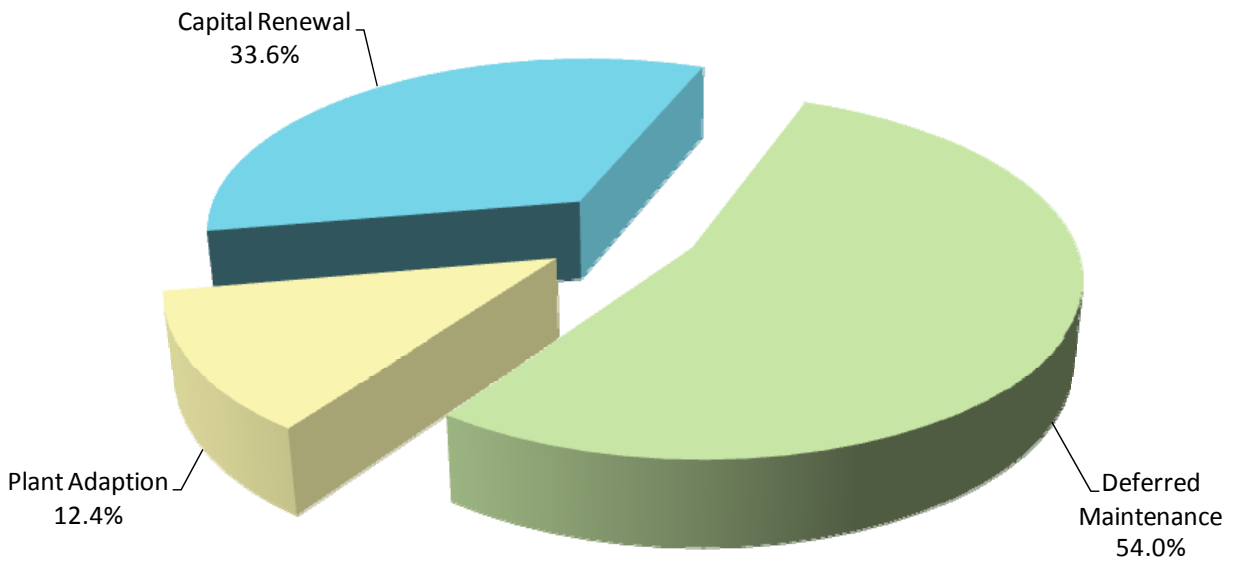
Sampling of ISES Client History - FCNI vs. Age



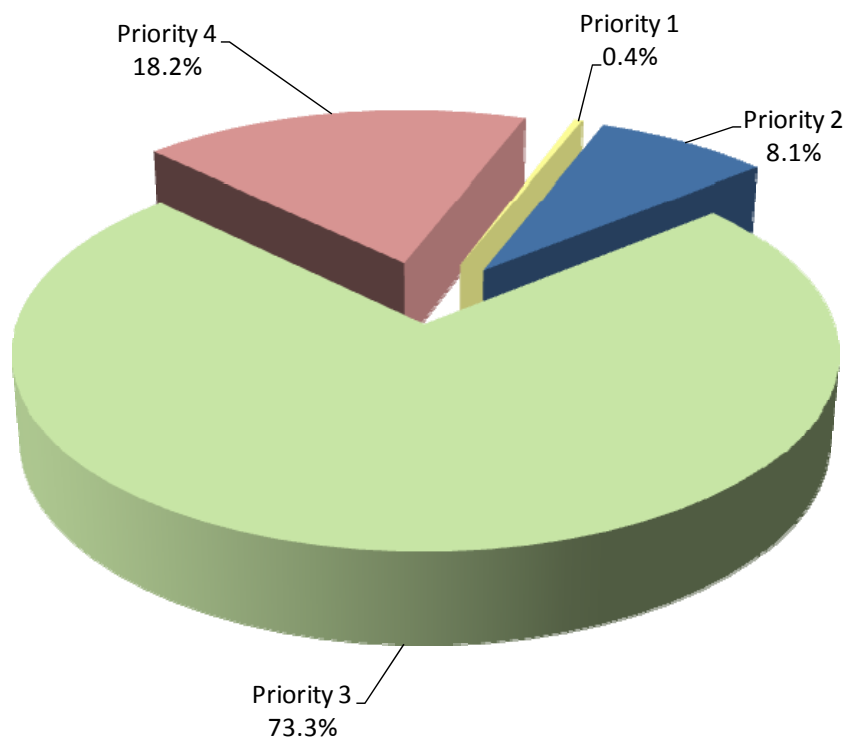
2.4 Figure 4 – System Code Project Cost Distribution Chart



2.5 Figure 5 – Project Classification Project Cost Distribution Chart



2.6 Figure 6 – Priority Class Project Cost Distribution Chart



2.7 Figure 7 – Summary of FCNI and Project Cost by Facility

BLDG CODE	NAME	BLDG USE	YEAR BUILT	GSF	FRC	TOTAL PROJECT COSTS	FCNI
FCNI 0.00 to 0.09							
MURP	MURPHY STRENGTH CENTER	GM	2001	52,475	\$12,980,000	\$493,864	0.04
UTIN	INCINERATOR PLANT AND UTILITY	PP	1999	16,672	\$4,489,542	\$271,730	0.06
CHAN	CHANCELLORS RESIDENCE	RS	1948	7,016	\$1,540,000	\$120,776	0.08
STHC	STUDENT HEALTH SERVICES ADDITION	MC	2002	16,508	\$4,339,000	\$389,477	0.09

FCNI 0.10 to 0.19							
COTT	COTTEN RESIDENCE HALL	DM	1925	47,088	\$14,626,000	\$1,407,707	0.10
JARV	JARVIS RESIDENCE HALL	DM	1909	34,467	\$10,706,000	\$1,110,652	0.10
HARS	HARRIS BUILDING	ST	1997	19,325	\$5,133,000	\$584,141	0.11
RIVE2	RIVERS ADDITION	OF	2004	38,249	\$10,160,000	\$1,091,496	0.11
STUH	STUDENT HEALTH SERVICES	MC	1930	11,744	\$3,087,000	\$336,838	0.11
UMST	UMSTEAD RESIDENCE HALL	DM	1955	48,512	\$15,068,000	\$1,602,797	0.11
GCTR	GREENVILLE CENTRE	OF	1991	35,289	\$9,374,000	\$1,095,720	0.12
TODD	TODD DINING HALL	FS	1994	35,000	\$10,773,000	\$1,406,360	0.13
MING	MINGES COLISEUM	GM	1967	155,598	\$38,489,000	\$5,337,648	0.14
LIFE	LIFE SCIENCES BUILDING	LB	1980	75,482	\$30,872,000	\$5,053,471	0.16
WRIP	WRIGHT PLACE	FS	1968	10,000	\$3,078,000	\$495,064	0.16
CLEM	CLEMENT RESIDENCE HALL	DM	1969	86,044	\$26,726,000	\$4,446,018	0.17
GREE	GREENE RESIDENCE HALL	DM	1966	82,731	\$25,697,000	\$4,342,395	0.17
SRCB	STUDENT RECREATION CENTER	GM	1996	150,227	\$37,161,000	\$6,175,905	0.17
UTIL	MEDICAL HEATING FACILITY	PP	1980	11,863	\$14,828,750	\$2,548,647	0.17
WHIT	WHITE RESIDENCE HALL	DM	1968	82,731	\$25,697,000	\$4,487,758	0.17
JONE	JONES RESIDENCE HALL	DM	1958	103,520	\$32,154,000	\$5,939,065	0.18
SLAY	SLAY HALL	OF	1949	34,269	\$9,103,000	\$1,595,848	0.18
JOYN	JOYNER LIBRARY	LY	1956	280,575	\$114,754,000	\$22,026,240	0.19

FCNI 0.20 to 0.29							
FLEM	FLEMING RESIDENCE HALL	DM	1923	32,428	\$10,072,000	\$2,021,757	0.20
COTA	COTANCHE BUILDING	OF	1955	29,137	\$7,740,000	\$1,658,337	0.21
FLET	FLETCHER RESIDENCE HALL	DM	1964	80,649	\$25,050,000	\$5,352,478	0.21
BATE	HAROLD H. BATE BUILDING	CL	1988	165,000	\$47,077,000	\$11,257,429	0.24
FICK	DOWDY-FICKLEN STADIUM	SU	1963	58,819	\$18,104,000	\$4,394,430	0.24
WARD	WARD SPORTS MEDICINE	GM	1989	76,695	\$18,972,000	\$4,460,619	0.24
FSSP	STEAM PLANT 14TH STREET	PP	1968	16,914	\$3,927,000	\$988,162	0.25
GARR	GARRETT RESIDENCE HALL	DM	1956	53,344	\$16,569,000	\$4,070,777	0.25

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BLDG CODE	NAME	BLDG USE	YEAR BUILT	GSF	FRC	TOTAL PROJECT COSTS	FCNI
AYCO	AYCOCK RESIDENCE HALL	DM	1960	89,516	\$27,805,000	\$7,323,321	0.26
JOYE	JOYNER EAST	CL	1975	30,118	\$8,593,000	\$2,284,812	0.27
SPIL	SPILMAN BUILDING	OF	1930	16,720	\$4,441,000	\$1,199,863	0.27
HUMA	HUMAN RESOURCES	OF	1973	12,250	\$3,254,000	\$935,671	0.29
TYLE	TYLER RESIDENCE HALL	DM	1969	96,105	\$29,851,000	\$8,751,577	0.29

FCNI 0.30 to 0.39

LJCC	LEO JENKINS CANCER CENTER	MC	1984	39,155	\$16,014,000	\$4,814,966	0.30
WRIG	WRIGHT AUDITORIUM	TH	1925	33,986	\$10,461,000	\$3,182,901	0.30
BIOT	BIOTECHNOLOGY BUILDING	LB	1991	28,152	\$11,514,000	\$3,849,285	0.33
MCSS	MCGINNIS SCENE SHOP	WH	1982	9,600	\$1,235,000	\$413,011	0.33
SCAL	SCALES FIELD HOUSE	GM	1966	14,349	\$3,812,000	\$1,244,468	0.33
FMUS	FLETCHER MUSIC CENTER	CL	1966	58,950	\$16,819,000	\$5,689,398	0.34
WRIA	WRIGHT ANNEX	SU	1968	39,279	\$12,090,000	\$4,150,672	0.34
BELK	BELK RESIDENCE HALL	DM	1966	80,950	\$25,144,000	\$8,918,788	0.35
BROD	BRODY MEDICAL SCIENCES BLDG	LB	1982	480,279	\$196,432,000	\$69,020,811	0.35
B098	HARDY BUILDING	MC	1967	4,220	\$1,109,000	\$398,058	0.36
MSCB	MENDENHALL STUDENT CENTER	SU	1974	116,900	\$35,982,000	\$13,060,311	0.36
WHIC	WHICHARD BUILDING	OF	1923	23,470	\$6,234,000	\$2,265,985	0.36
JENK	JENKINS FINE ARTS CENTER	CL	1977	109,994	\$31,383,000	\$12,057,922	0.38
PHQM	PHYSICIANS QUAD M	MC	1978	3,472	\$913,000	\$350,737	0.38
SPEI	SPEIGHT BUILDING	OF	1965	50,562	\$13,431,000	\$5,226,030	0.39
WILS	WILLIS BUILDING	OF	1974	15,366	\$4,082,000	\$1,583,636	0.39

FCNI 0.40 to 0.49

GRAH	GRAHAM BUILDING	CL	1929	16,080	\$4,588,000	\$1,841,082	0.40
MESS	MESSICK THEATRE ARTS COMPLEX	CL	1927	35,038	\$9,997,000	\$3,989,785	0.40
WRAB	WEST ACADEMIC BUILDING	OF	1960	24,047	\$6,388,000	\$2,639,513	0.41
MCGI	MCGINNIS THEATRE	TH	1951	26,692	\$7,691,000	\$3,223,026	0.42
RIVE	RIVERS BUILDING	CL	1968	73,997	\$21,112,000	\$8,844,923	0.42
AUST	AUSTIN BUILDING	CL	1964	63,866	\$18,222,000	\$7,831,620	0.43
MEDP	MEDICAL PAVILIONS 1-10	MC	1966	15,574	\$4,093,000	\$1,773,176	0.43
RAWL	RAWL BUILDING	CL	1959	73,524	\$20,977,000	\$9,010,552	0.43
BREW	BREWSTER BUILDING	CL	1970	118,456	\$33,797,000	\$14,946,185	0.44
PHQC	PHYSICIANS QUAD C	MC	1966	2,484	\$653,000	\$288,136	0.44
PHQN	PHYSICIANS QUAD N	MC	1974	3,636	\$956,000	\$432,534	0.45
HOWE	HOWELL SCIENCE	LB	1969	107,569	\$43,995,000	\$20,328,579	0.46
RAGS	RAGSDALE HALL	OF	1923	41,144	\$10,929,000	\$5,068,727	0.46
B043	MAIL SERVICES / WAREHOUSE / TECH LAB A	WH	1951	24,932	\$3,206,000	\$1,510,962	0.47



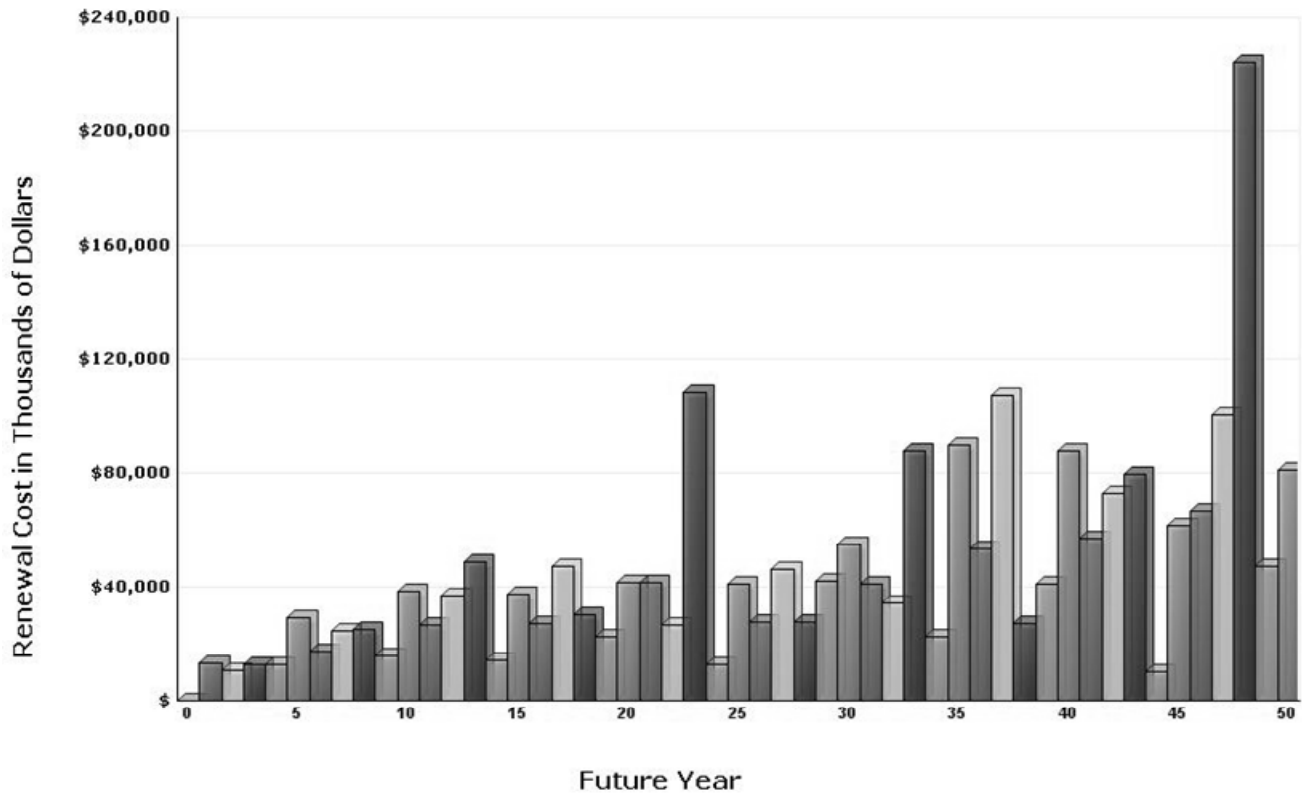
BLDG CODE	NAME	BLDG USE	YEAR BUILT	GSF	FRC	TOTAL PROJECT COSTS	FCNI
FCNI > 0.50							
ERWI	ERWIN HALL	OF	1952	14,652	\$3,892,000	\$1,991,252	0.51

2.8 Figure 8 – Summary of Average Age and Facility Use Types

Year	# of Facilities	% of GSF	GSF	Avg. Age
Pre 1920	1	0.9	34,467	100
1920 – 1929	7	5.8	229,234	84
1930 – 1939	2	0.7	28,464	79
1940 – 1949	2	1.0	41,285	60
1950 – 1959	9	16.6	654,888	53
1960 – 1969	22	32.8	1,294,954	43
1970 – 1979	8	10.4	410,192	35
1980 – 1989	7	21.8	858,074	25
1990 – 1999	6	7.2	284,665	14
2000 – Present	3	2.7	107,232	7
Totals:	67	100.0	3,943,455	40

Facility Type Code	Description	# of Facilities	% of GSF	GSF
CL	Classroom / Academic	10	18.9	745,023
DM	Dormitory / Apartments	13	23.3	918,085
FS	Food Service / Dining	2	1.1	45,000
GM	Gymnasium / Athletics	5	11.4	449,344
LB	Laboratory	4	17.5	691,482
LY	Library	1	7.1	280,575
MC	Medical / Clinic	8	2.5	69,793
OF	Office / Administrative	12	8.5	335,155
PP	Physical Plant / Utility	3	1.2	45,449
RS	Residential / Single Family	1	0.2	7,016
ST	Shops / Trades	1	0.5	19,325
SU	Student Union	3	5.5	214,998
TH	Theater / Auditorium	2	1.5	60,678
WH	Warehouse / Storage / Utility	2	0.9	34,532
	Totals:	67	100.0	3,943,455

2.9 Figure 9 – Life Cycle Model Expenditure Projections



Average Annual Renewal Cost Per Square Foot: \$5.04