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ABSTRACT

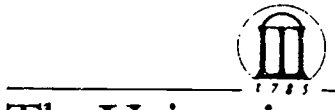
The University of Georgia (UG) conducted a complete campus building condition evaluation survey in 1989 that identified the nature and magnitude of the capital renewal/deferred maintenance requirements for each campus building. The survey design was based on a model developed by Harlan Bareither at the University of Illinois. Data were collected at weekly meetings held for 3 hours each over several months. The dollar value of all necessary capital renewal and deferred maintenance work was estimated on a building by building basis. The total analysis covered 1,118 buildings comprising over 11 million square feet. The estimate for each building was compared to the total replacement value of the building and the resultant percentage deficiency was recorded. Results found that: (1) roof and window replacements totaled almost $19 million; (2) new fixed equipment and elevators totaled over $36 million; (3) plumbing and fire protection waste piping and sprinkler systems totaled over $22 million; (4) replacement of heating, ventilating and air conditioning systems equipment and controls accounted for almost $79 million; and (5) new distribution wiring and fire alarms were estimated at $22 million. The analysis also noted that under a formula funding system like the one UG uses, the total deficiency of almost 30 percent cannot be corrected with the planned yearly funding level of .75 percent of total replacement cost. (Contains 43 references.) (JB)

Evaluating Deficiencies in Campus Facilities: The Institutional Research/Physical Plant Nexus

Prepared for the 1990 SAIR/SCUP Conference
Southern Association for Institutional Research
Society for College and University Planning

Fort Lauderdale, Florida

October 11, 1990



The University of Georgia

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Introduction

Higher education institutions require buildings of all types to support teaching, research and public service activities. These facilities must first be built, and then maintained, to remain useful for their intended purposes. Some maintenance expenses, including funds for functional improvements to spaces and systems, can be deferred for long periods of time. During the 1960s and 70s, many institutions diverted maintenance funds to other "higher priority" projects, including recruiting the world-class researcher and paying for the increased fuel and energy costs resulting from the Arab oil embargo. Since most buildings on a typical university campus were built between 1950 and 1975, deferring this maintenance was rationalized quite easily, since these buildings were "new" and major maintenance projects could be put off until "later". By the late 1970s, higher education administrators, usually the physical plant or business office directors, began calling attention to this deferred maintenance problem, and asked for assistance before conditions escalated from outrageously expensive to prohibitively expensive. Unfortunately, the recession and stock market loss experienced in the 1980s, the reduction in funding for higher education programs by the Federal Government, and the implementation of new regulations involving asbestos abatement

and access for the handicapped, exacerbated this deferred maintenance dilemma. Older institutions also were faced with additional costs due to historic preservation requirements, which impose significantly higher repair and renovation expenditures on an institution's shrinking budget. Operating under retrenchment management principles, college and university administrators once again opted to defer maintenance and functional improvement programs until "later".

During the last few years, the higher education literature has discussed this problem, and concluded that extreme funding difficulties exist for capital renewal and deferred maintenance projects in the academy. All authors agree that each institution should first conduct an audit of its facilities, in order to establish the extent of the problem on each campus. This paper presents the results of a complete campus building condition evaluation survey conducted at the University of Georgia in 1989. This program identified the nature and magnitude of the capital renewal/deferred maintenance requirements for each campus building. The Departments of Institutional Research and Physical Plant combined efforts to implement this evaluation, utilizing a deficiency model that expresses needs as percentages of building replacement costs. The resultant data is important for planning and budgeting purposes, since specific facility problems can be identified and prioritized.

Definitions

Preventive Maintenance - Preventive or normal maintenance is a systematic day-to-day process funded by the annual operating budget to control deterioration of the plant facilities: e.g. structures, systems, equipment, pavement and grounds. Planned maintenance includes scheduled repetitive work to provide adjustments and make minor repairs, and call-in requests for service.(1)

Deferred Maintenance - Deferred maintenance projects include those from prior years and the current year that were not included in the maintenance process because of perceived lower priority status than those projects implemented within available funding. Deferred maintenance includes postponed renewal and replacement maintenance, and unperformed and unscheduled major maintenance.(2)

Renewal and Replacement Maintenance - This refers to a systematic management process to plan and budget for known future cyclic repair and replacement requirements which extend the life and retain usable condition of campus facilities and systems, and which are not normally contained in the annual operating budget. This category includes major activities that have a maintenance cycle in excess of one year: e.g. replace roofs, paint buildings, resurface roads, replace equipment (boilers, chillers, transformers), etc.(3)

Facilities Renewal Program - A facilities renewal program integrates a regular maintenance program funded by current operating funds with deferred maintenance, facilities remodeling and renovations, retrofit for energy conservation, elimination of health and life safety problems, and provisions for access for the handicapped.(4) Note that, as a practical matter, this definition by Dr. Kaiser includes preventive maintenance because it is almost impossible to separate "that which is maintenance only" from remodeling, renovation and retrofit projects.

Capital Renewal/Deferred Maintenance - The term now generally used in the academy describes the functional improvements and deferred maintenance requirements of a facility; it is essentially the Kaiser "Facilities Renewal" definition without the preventive or normal maintenance components.

National Survey

A 1989 survey(5) by the National Association of College and University Business Officers (NACUBO) and the Association of Physical Plant Administrators (APPA) indicated that higher education buildings nationwide face a 60 to 70 billion dollar backlog of maintenance and repairs. This total was increased in May of 1990 to a value of 80 to 90 billion, when follow-up analyses identified additional requirements.(6) This amount represents an average deficiency of over 25% when expressed as a

percentage of the total replacement costs, estimated at over 300 billion dollars, of all campus buildings nationwide.

The University of Georgia Survey

As a Research (Carnegie category) Institution with more than 80% of its buildings older than 20 years, the University of Georgia would be expected to experience a deficiency higher than 25%, caused not only by building age, but also by the increased level of sophistication of research building systems and by expanded usage of these facilities due to increased enrollments. The recent survey conducted by the University confirms this condition, indicating a gross deficiency of over 29% of replacement costs for all 1,118 buildings carried on the University space inventory. Note that Housing Buildings have a gross deficiency higher than the average of all buildings, while Resident Instruction Buildings have a deficiency percentage slightly lower than average.

Survey Instrument

The building condition survey is based on Dr. Harlan Bareither's deficiency model developed at the University of Illinois; this method separates building deficiencies into seven general headings. Dr. Bareither pioneered research in facility space planning in the late 1960s, and published the seminal work in this area.(7) He suggested that the University of Georgia

employ a building evaluation model which stressed deficiencies, represented as a percentage of building replacement costs; this procedure utilized a two page survey instrument (see Appendix I). Replacement costs for each building were estimated, using square foot costs from recently constructed buildings, national estimating data, and costs generated by the NACUBO/APPA National Survey. Each week appropriate personnel were given a list of buildings to review and estimate deficiencies for each category. Costs were transferred to deficiency percentages: e.g., for a building with a replacement value of $100,000, each percentage replacement is worth $1,000; if the air conditioning system had a deficiency which would cost $5,100 to correct, it was given a deficiency rating of 5.1 for that category.

Weekly meetings, lasting about 3 hours each, were held over several months to collect data. Representatives of Physical Plant, Institutional Research and Planning, and the Departments occupying each building met and estimated, on a building by building basis, the dollar value of all necessary capital renewal and deferred maintenance work. This amount was compared to the total replacement value of the building, and the resultant percentage deficiency was recorded. Since many institutions are funded on a formula basis using a similar percentage (i.e. with capital renewal/deferred maintenance funded on a line item as a percentage of replacement cost), a direct comparison between actual funding percentage and deficiency percentage can be made.

For example, the University System of Georgia Resident Instruction funding formula returns to the University of Georgia 3/4 of one percent of total building replacement cost. It takes no effort to see that a present deficiency of almost 30% is not going to be corrected by a yearly funding level of 0.75%.

Survey Results

The University of Georgia has 1,118 buildings, with a total area of over eleven million square feet. A review of the summary sheet (Appendix II-A) for all Buildings indicates several areas of significant deficiencies:

A. In category 30 - Exterior: roof and window replacements total over 19 million dollars.

B. In category 40 - General: New fixed equipment and elevators total over 36 million dollars, and new interior wall realignment costs exceed 23 million dollars.

C. In category 50 - Plumbing/Fire Protection: waste piping and sprinkler systems total over 22 million dollars.

D. In category 60 - Heating, Ventilating and Air Conditioning: replacement of systems, equipment and controls account for almost 79 million dollars.

E. In category 70 - Electrical: new distribution (wiring) and fire alarms total almost 22 million dollars.

Data covering the evaluation of Main Campus Resident Instruction Buildings (Appendix II-B) and Main Campus Housing

Buildings (Appendix II-C) indicates interesting similarities and differences in the various categories. Appendix III summarizes the data for all Buildings, Resident Instruction Buildings and Housing Buildings. In addition, individual summary sheets are included in Appendix IV, covering a "benign" older building (LeConte Hall [1938] - History Department - Appendix IV-A), a typical dormitory (Boggs Hall [1961] - Appendix IV-B), and a large Research Building (Boyd Graduate Studies Building [1968] - Appendix IV-C).

Implications for Colleges and Universities

A majority of college and university buildings nationwide would be expected to evidence high deficiency percentages similar to those revealed by the University of Georgia survey. Housing buildings are particularly affected by this capital renewal/ deferred maintenance problem, since the appearance and condition of these structures is important for recruitment and retention of students. Many housing facilities at the University of Georgia were built without air conditioning in the 1950s and 60s; correcting oversights like these accounts for a high percentage of the total deficiency in housing buildings. In addition, experts suggest that Housing buildings should be renewed on a ten-year cycle, which further exacerbates the problem.(8)

All institutions should consider performing a building evaluation survey to identify their exact deficiency needs, and

then follow the guidelines proposed in the current literature. In late 1989, NACUBO, APPA and the Society for College and University Planning (SCUP) joined forces to recommend the following solution to the dilemma, based on financial equilibrium planning concepts:(9)

> - Sufficient "plant renewal" funds on an ongoing basis to keep the plant in good condition for its present use, based on facility subsystem life cycles. (1.5 to 2.5 percent of plant replacement costs for most institutions).
> - And sufficient "plant adaptation" funds on an ongoing basis to alter the physical plant for changes in use and changes in codes and standards, based on recent experience and judgment (0.5 to 1.5 percent of plant replacement costs at most institutions).
> - And sufficient "catch-up maintenance" funds over a short term period to bring the plant into reliable operating condition, based on a facilities audit".

Regardless of funding level, projects should be prioritized and scheduled over several fiscal years to achieve maximum efficiency and effectiveness. Predictive models, such as Cushing Phillip's formula approach(10), should be employed for this purpose.

Conclusion

The building condition evaluation survey described in this paper was based on the Bareither deficiency model. This assessment method is very thorough and is highly recommended for use by other institutions. However, this is not the only model available; others may be more appropriate for other institutions.

Regardless of the model used, all members of the academy should consider implementing an audit as soon as possible. In addition, a joint venture involving Instructional Research and Physical Plant personnel should also be considered to perform this evaluation.

Finally, all institutions of higher education must be sensitive to these building issues, mundane as they may be, because we have failed in the stewardship of these facilities.(11) The President of the Carnegie Foundation reminded us recently why we must do better:

> The buildings we erect today also reflect our priorities as people. And as we invest in education - as we build our cathedrals of learning - we are, in fact, affirming the university as a place where civilization will be preserved, where learning will be highly prized, and where the potentialities of every student will be served.(12)

Footnotes

(1) Rush, Sean C. and Johnson, Sandra L. The Decaying American Campus-A Ticking Time Bomb. Alexandria, VA:APPA, 1989, p. 135.

(2) ibid., p. 134

(3) ibid., p. 135

(4) Kaiser, Harvey H. Facilities Audit Workbook. Washington, D.C.:APPA, 1987, p. 10.

(6) Rush, loc. sit., p. 12.

(6) Schaw, Walter A. "APPA Fact File - Current Status of 'The Decaying American Campus'". Alexandria, VA:APPA, 1990.

(7) Bareither, Harlan D. and Schillinger, Jerry L. University Space Planning. Urbana, IL.:University of Illinois Press, 1968.

(8) Reed, William S. "Private Institution Approaches". In Meyerson, Jowel W. and Peter M. Mitchell. Financing Capital Maintenance. Washington, D.C.:NACUBO, 1990.

(9) Dunn, John A. "Financial Planning Guidelines". In "Capital Renewal and Deferred Maintenance", Critical Issues in Facilities Management Series (No. 4). Alexandria, Va.: APPA, 1989. Dunn presented this summary information from the recently published NACUBO/APPA/SCUP Financial Planning Guidelines for Facility Renewal and Adaption. Ann Arbor:SCUP, 1989. For a good overall view of the problems faced by the academy see Harvey H. Kaiser, editor. "Planning and Managing Higher Educational Facilities", New Directions for Institutional Research. San Francisco: Jossey-Bass, 1989.

(10) The Phillips model is described in Kaiser, Harvey H. "Major Maintenance and Capital Renewal/Replacement Programs", in Dillow, Rex O. (ed) Facilities Management - A Manual for Plant Administration (2nd ed.). Alexandria, Va.: APPA, 1989.

(11) In the Executive Summary of Financial Planning Guidelines for Facility Renewal and Adaption, the only italicized sentence is "It has become clear that American higher education has failed in the stewardship of its facilities assets."

(12) Boyer, Ernest L. "Buildings Reflect Our Priorities". Educational Record, Winter 1989 (Special Reprint by A.C.E.), p. 27.

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UNIVERSITY OF GEORGIA
BUILDING CONDITION EVALUATION

BUILDING _____ NO. _____ CAMPUS _____ DATE CONSTR. _____

GROSS AREA _____ EST. REPLACEMENT COST _____

EACH DEDUCT POINT EQUALS APPROXIMATELY _____

EVALUATION FACTORS AND CONDITIONS	NOTES	COMMENTS	DEDUCT POINTS
1.0 FOUNDATION	**MAXIMUM 8 POINTS**		
1.1 Cracked Foundation	Deduct up to 3 pts		
1.2 Apparent Settlement	Deduct up to 5 pts		
1.3 Other Problems			
Note: If major settlement is apparent, indicate if opinion of Structural Engineer is required			
2.0 SUPERSTRUCTURE	**MAXIMUM 13 POINTS**		
2.1 Broken or Cracked Walls	Deduct up to 5 pts		
2.2 Roof Sagging	Deduct up to 3 pts		
2.3 Floor Movement Excessive	Deduct up to 4 pts		
2.4 Roof Ponds	Deduct up to 1 pt		
2.5 Other Problems			
3.0 EXTERIOR SKIN	**MAXIMUM 11 POINTS**		
3.1 Needs New Roof	Deduct up to 3 pts		
3.2 Windows in Poor Condition	Deduct up to 4 pts		
3.3 Tuckpointing Required	Deduct up to 4 pts		
3.4 Other Problems			
4.0 GENERAL	**MAXIMUM 29 POINTS**		
4.1 Interior Needs Painting	Deduct up to 2 pts		
4.2 Needs New Flooring	Deduct up to 2 pts		
4.3 Needs New Ceiling	Deduct up to 1 pt		
4.4 Inter. Walls Need Realign.	Deduct up to 16 pts		
4.5 Needs New Fixed Equipment	Deduct up to 8 pts		
4.6 Exits & Stairways			
4.7 Entry Ramp			
4.8 Elevator			
4.9 Other Problems			
4.9A Asbestos			

BUILDING _____ NO. _____

5.0 PLUMBING AND FIRE PROTECTION SYSTEMS	MAXIMUM 6 POINTS	
5.1 Fixture Replacement	Deduct up to 1 pt	
5.2 Needs New Waste & Vent	Deduct up to 2 pts	
5.3 Water Line Capacity Inadeq.	Deduct up to 1 pt	
5.4 Sprinkler System	Deduct up to 2 pts	
5.5 Handicap Access. Toilets		
5.6 Other Problems		

6.0 HEATING, VENTILATION, AND AIR-CONDITIONING SYSTEMS	MAXIMUM 20 POINTS	
6.1 Heating	Deduct up to 5 pts	
6.2 Ventilation	Deduct up to 6 pts	
6.3 Air Conditioning	Deduct up to 7 pts	
6.4 Temperature Control	Deduct up to 2 pts	
6.5 Other Problems		

7.0 ELECTRICAL, FIRE ALARM, AND LIGHTING SYSTEMS	MAXIMUM 13 POINTS	
7.1 Capacity	Deduct up to 1 pt	
7.2 Distribution	Deduct up to 10 pts	
7.3 Fixtures	Deduct up to 1 pt	
7.4 Fire Alarm System	Deduct up to 1 pt	
7.5 Other Problems		

8.0 TOTAL BUILDING DEFICIENCY	

9.0 COMMENTS:

EVALUATORS: _____ _____ _____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____ _____ _____

DATE _____

BUILDING NAME	TOTAL
LOCATION	ALL
CONSTRUCTION DATE	ALL
EVALUATION DATE	ALL

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION	7,196,423	.66
11	CRACKED FOUNDATION	2,139,442	.20
12	APPARENT SETTLEMENT	3,075,787	.28
13	OTHER PROBLEMS	1,981,194	.18
20	SUPERSTRUCTURE	16,511,627	1.52
21	BROKEN OR CRACKED WALLS	6,926,898	.64
22	ROOF SAGGING	1,394,789	.13
23	FLOOR MOVEMENT EXCESSIVE	3,141,864	.29
24	ROOF PONDS	891,127	.08
25	OTHER PROBLEMS	4,156,949	.38
30	EXTERIOR SKIN	26,879,684	2.47
31	NEEDS NEW ROOF	8,774,930	.81
32	WINDOWS IN POOR CONDITION	10,400,606	.95
33	TUCKPOINTING REQUIRED	2,782,768	.26
34	OTHER PROBLEMS	4,921,380	.45
40	GENERAL	112,089,036	10.29
41	INTERIOR NEEDS PAINTING	7,898,487	.73
42	NEEDS NEW FLOORING	8,893,331	.82
43	NEEDS NEW CEILING	6,540,424	.60
44	INTERIOR WALLS NEED REALIGN	23,090,080	2.12
45	NEEDS NEW FIXED EQUIPMENT	26,603,761	2.44
46	EXITS AND STAIRWAYS	5,729,605	.53
47	ENTRY RAMP	1,350,699	.12
48	ELEVATOR	9,490,952	.87
49	OTHER PROBLEMS	8,207,660	.75
49A	ASBESTOS	14,284,037	1.31
50	PLUMBING & FIRE PROTECTION SYS	42,087,007	3.86
51	FIXTURE REPLACEMENT	6,598,017	.61
52	NEEDS NEW WASTE AND VENT	9,129,597	.84
53	WATER LINE CAPACITY INADEQUATE	6,965,641	.64
54	SPRINKLER SYSTEM	13,090,824	1.20
55	HANDICAP ACCESS - TOILETS	4,075,464	.37
56	OTHER PROBLEMS	2,227,464	.20
60	HEATING, VENTILATION & AC SYS	83,740,551	7.69
61	HEATING	17,677,135	1.62
62	VENTILATION	24,344,200	2.23
63	AIR CONDITIONING	28,372,638	2.60
64	TEMPERATURE CONTROL	8,497,505	.78
65	OTHER PROBLEMS	4,849,073	.45
70	ELECT, FIRE ALARM & LIGHT SYS	33,410,988	3.07
71	CAPACITY	4,906,500	.45
72	DISTRIBUTION	17,414,850	1.60
73	FIXTURES	4,673,540	.43
74	FIRE ALARM SYSTEM	4,499,773	.41
75	OTHER PROBLEMS	1,916,325	.18
80	TOTAL BUILDING DEFICIENCY	321,915,159	29.55

NUMBER OF BUILDINGS	1,118
GROSS AREA	11,063,376
EST. REPLACEMENT COST	1,089,299,869

RESIDENT INSTRUCTION

BUILDING NAME TOTAL
LOCATION 816 UGA MAIN CAMPUS
CONSTRUCTION DATE ALL
EVALUATION DATE ALL

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION	4,240,190	.62
11	CRACKED FOUNDATION	1,158,987	.17
12	APPARENT SETTLEMENT	1,593,290	.23
13	OTHER PROBLEMS	1,487,913	.22
20	SUPERSTRUCTURE	9,830,857	1.44
21	BROKEN OR CRACKED WALLS	3,906,215	.57
22	ROOF SAGGING	553,479	.08
23	FLOOR MOVEMENT EXCESSIVE	2,280,225	.34
24	ROOF PONDS	566,145	.08
25	OTHER PROBLEMS	2,524,794	.37
30	EXTERIOR SKIN	13,311,346	1.96
31	NEEDS NEW ROOF	4,975,843	.73
32	WINDOWS IN POOR CONDITION	5,294,953	.78
33	TUCKPOINTING REQUIRED	1,802,918	.26
34	OTHER PROBLEMS	1,237,640	.18
40	GENERAL	75,677,588	11.12
41	INTERIOR NEEDS PAINTING	3,988,249	.59
42	NEEDS NEW FLOORING	5,608,731	.82
43	NEEDS NEW CEILING	4,264,962	.63
44	INTERIOR WALLS NEED REALIGN	17,096,621	2.51
45	NEEDS NEW FIXED EQUIPMENT	19,215,609	2.82
46	EXITS AND STAIRWAYS	3,634,041	.53
47	ENTRY RAMP	969,003	.14
48	ELEVATOR	6,444,385	.95
49	OTHER PROBLEMS	3,363,411	.49
49A	ASBESTOS	11,092,579	1.63
50	PLUMBING & FIRE PROTECTION SYS	25,826,940	3.79
51	FIXTURE REPLACEMENT	3,925,659	.58
52	NEEDS NEW WASTE AND VENT	5,348,556	.79
53	WATER LINE CAPACITY INADEQUATE	3,905,309	.57
54	SPRINKLER SYSTEM	8,722,555	1.28
55	HANDICAP ACCESS - TOILETS	2,945,908	.43
56	OTHER PROBLEMS	978,955	.14
60	HEATING, VENTILATION & AC SYS	49,528,622	7.28
61	HEATING	9,750,983	1.43
62	VENTILATION	14,853,415	2.18
63	AIR CONDITIONING	16,741,187	2.46
64	TEMPERATURE CONTROL	5,315,909	.78
65	OTHER PROBLEMS	2,867,129	.42
70	ELECT, FIRE ALARM & LIGHT SYS	20,894,190	3.07
71	CAPACITY	3,293,644	.48
72	DISTRIBUTION	10,756,536	1.58
73	FIXTURES	3,294,894	.48
74	FIRE ALARM SYSTEM	2,475,331	.36
75	OTHER PROBLEMS	1,073,787	.16
80	TOTAL BUILDING DEFICIENCY	199,309,736	29.29

NUMBER OF BUILDINGS 184
GROSS AREA 5,744,888
EST. REPLACEMENT COST 680,553,462

BUILDING NAME TOTAL
LOCATION 816B RESIDENTIAL UGA MAIN CAMPUS
CONSTRUCTION DATE ALL
EVALUATION DATE ALL

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION	559,389	.31
11	CRACKED FOUNDATION	101,090	.06
12	APPARENT SETTLEMENT	322,722	.18
13	OTHER PROBLEMS	135,497	.08
20	SUPERSTRUCTURE	1,772,124	.99
21	BROKEN OR CRACKED WALLS	1,218,305	.68
22	ROOF SAGGING	72,420	.04
23	FLOOR MOVEMENT EXCESSIVE	148,016	.08
24	ROOF PONDS	50,021	.03
25	OTHER PROBLEMS	291,362	.16
30	EXTERIOR SKIN	5,626,682	3.15
31	NEEDS NEW ROOF	946,144	.53
32	WINDOWS IN POOR CONDITION	3,026,030	1.70
33	TUCKPOINTING REQUIRED	308,067	.17
34	OTHER PROBLEMS	1,346,441	.75
40	GENERAL	14,703,627	8.24
41	INTERIOR NEEDS PAINTING	1,543,781	.87
42	NEEDS NEW FLOORING	1,729,722	.97
43	NEEDS NEW CEILING	1,277,747	.72
44	INTERIOR WALLS NEED REALIGN	1,265,303	.71
45	NEEDS NEW FIXED EQUIPMENT	2,517,203	1.41
46	EXITS AND STAIRWAYS	1,140,347	.64
47	ENTRY RAMP	188,271	.11
48	ELEVATOR	2,413,911	1.35
49	OTHER PROBLEMS	1,260,708	.71
49A	ASBESTOS	1,366,634	.77
50	PLUMBING & FIRE PROTECTION SYS	8,384,611	4.70
51	FIXTURE REPLACEMENT	1,490,277	.84
52	NEEDS NEW WASTE AND VENT	2,081,799	1.17
53	WATER LINE CAPACITY INADEQUATE	1,433,674	.80
54	SPRINKLER SYSTEM	2,418,458	1.36
55	HANDICAP ACCESS - TOILETS	309,432	.17
56	OTHER PROBLEMS	650,961	.36
60	HEATING, VENTILATION & AC SYS	19,895,813	11.15
61	HEATING	4,535,988	2.54
62	VENTILATION	5,715,123	3.20
63	AIR CONDITIONING	6,635,410	3.72
64	TEMPERATURE CONTROL	1,764,664	.99
65	OTHER PROBLEMS	1,244,628	.70
70	ELECT, FIRE ALARM & LIGHT SYS	4,517,387	2.53
71	CAPACITY	775,672	.43
72	DISTRIBUTION	2,235,359	1.25
73	FIXTURES	480,426	.27
74	FIRE ALARM SYSTEM	907,904	.51
75	OTHER PROBLEMS	118,026	.07
80	TOTAL BUILDING DEFICIENCY	55,459,539	31.09

NUMBER OF BUILDINGS 48
GROSS AREA 2,043,141
EST. REPLACEMENT COST 178,402,005

APPENDIX III - SUMMARY

BUILDING CONDITION EVALUATION - UNIVERSITY OF GEORGIA

1. General	All Buildings	Housing Main Campus	Resident Instruction Main Campus
Buildings	1,118	48	184
Gross Area (Sq. Ft.)	11,063,376	2,043,141	5,744,888
Replacement Cost	$1,089,299,869	$178,402,005	$680,553,462

2. SURVEY RESULTS
(Bareither Deficiency Model)

Category	All Buildings Deficiency %	Housing Main Campus	Resident Instruction Main Campus
10 - Foundations	.66	.31	.62
20 - Superstructure	1.52	.99	1.44
30 - Exterior	2.47	3.15	1.96
40 - General	10.29	8.24	11.12
50 - Plumbing/Fire	3.86	4.70	3.79
60 - HVAC	7.69	11.15	7.28
70 - Electrical	3.07	2.53	3.07
80 - Total (Gross)	29.55%	31.09%	29.29%

3. Gross Deficiencies ($): (Replacement Cost x Gross Deficiency %)

a) All Buildings: $1,089,299,869 x 29.55% = $321,915,159

b) Main Campus Housing Buildings: $178,402,005 x 31.09% = $55,459,539

c) Main Campus Resident Instruction Buildings: $680,553,462 x 29.29% = $199,309,736

BUILDING NAME	LECONTE HALL
BUILDING NUMBER	0053
LOCATION	816A UGA MAIN CAMPUS
DATE CONSTRUCTED	1938
GROSS AREA	28,330
EST. REPLACEMENT COST	3,314,610
EVALUATION DATE	1989 02 21

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION		.0
11	CRACKED FOUNDATION		.0
12	APPARENT SETTLEMENT		.0
13	OTHER PROBLEMS		.0
20	SUPERSTRUCTURE	49,719	1.5
21	BROKEN OR CRACKED WALLS	33,146	1.0
22	ROOF SAGGING		.0
23	FLOOR MOVEMENT EXCESSIVE		.0
24	ROOF PONDS	16,573	.5
25	OTHER PROBLEMS		.0
30	EXTERIOR SKIN	165,730	5.0
31	NEEDS NEW ROOF	33,146	1.0
32	WINDOWS IN POOR CONDITION	132,584	4.0
33	TUCKPOINTING REQUIRED		.0
34	OTHER PROBLEMS		.0
40	GENERAL	430,899	13.0
41	INTERIOR NEEDS PAINTING	16,573	.5
42	NEEDS NEW FLOORING	66,292	2.0
43	NEEDS NEW CEILING	33,146	1.0
44	INTERIOR WALLS NEED REALIGN	33,146	1.0
45	NEEDS NEW FIXED EQUIPMENT	16,573	.5
46	EXITS AND STAIRWAYS	33,146	1.0
47	ENTRY RAMP		.0
48	ELEVATOR	198,877	6.0
49	OTHER PROBLEMS		.0
49A	ASBESTOS	33,146	1.0
50	PLUMBING & FIRE PROTECTION SYS	92,809	2.8
51	FIXTURE REPLACEMENT	9,944	.3
52	NEEDS NEW WASTE AND VENT	9,944	.3
53	WATER LINE CAPACITY INADEQUATE	13,258	.4
54	SPRINKLER SYSTEM	49,719	1.5
55	HANDICAP ACCESS - TOILETS	9,944	.3
56	OTHER PROBLEMS		.0
60	HEATING, VENTILATION & AC SYS	397,753	12.0
61	HEATING	66,292	2.0
62	VENTILATION	99,438	3.0
63	AIR CONDITIONING	198,877	6.0
64	TEMPERATURE CONTROL	33,146	1.0
65	OTHER PROBLEMS		.0
70	ELECT, FIRE ALARM & LIGHT SYS	43,090	1.3
71	CAPACITY	9,944	.3
72	DISTRIBUTION	9,944	.3
73	FIXTURES	16,573	.5
74	FIRE ALARM SYSTEM	6,629	.2
75	OTHER PROBLEMS		.0
80	TOTAL BUILDING DEFICIENCY	1,180,001	35.6

BUILDING NAME	BOGGS HALL
BUILDING NUMBER	2216
LOCATION	816B RESIDENTIAL UGA MAIN CAMPUS
DATE CONSTRUCTED	1961
GROSS AREA	32,638
EST. REPLACEMENT COST	2,611,040
EVALUATION DATE	1989 05 02

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION		.0
11	CRACKED FOUNDATION		.0
12	APPARENT SETTLEMENT		.0
13	OTHER PROBLEMS		.0
20	SUPERSTRUCTURE	26,110	1.0
21	BROKEN OR CRACKED WALLS	26,110	1.0
22	ROOF SAGGING		.0
23	FLOOR MOVEMENT EXCESSIVE		.0
24	ROOF PONDS		.0
25	OTHER PROBLEMS		.0
30	EXTERIOR SKIN	78,331	3.0
31	NEEDS NEW ROOF		.0
32	WINDOWS IN POOR CONDITION	26,110	1.0
33	TUCKPOINTING REQUIRED	13,055	.5
34	OTHER PROBLEMS	39,166	1.5
40	GENERAL	193,216	7.4
41	INTERIOR NEEDS PAINTING	26,110	1.0
42	NEEDS NEW FLOORING	52,221	2.0
43	NEEDS NEW CEILING	26,110	1.0
44	INTERIOR WALLS NEED REALIGN	26,110	1.0
45	NEEDS NEW FIXED EQUIPMENT		.0
46	EXITS AND STAIRWAYS	13,055	.5
47	ENTRY RAMP	13,055	.5
48	ELEVATOR		.0
49	OTHER PROBLEMS		.0
49A	ASBESTOS	36,555	1.4
50	PLUMBING & FIRE PROTECTION SYS	130,550	5.0
51	FIXTURE REPLACEMENT	26,110	1.0
52	NEEDS NEW WASTE AND VENT	26,110	1.0
53	WATER LINE CAPACITY INADEQUATE	26,110	1.0
54	SPRINKLER SYSTEM		.0
55	HANDICAP ACCESS - TOILETS	26,110	1.0
56	OTHER PROBLEMS	26,110	1.0
60	HEATING, VENTILATION & AC SYS	522,208	20.0
61	HEATING	130,552	5.0
62	VENTILATION	156,662	6.0
63	AIR CONDITIONING	182,773	7.0
64	TEMPERATURE CONTROL	52,221	2.0
65	OTHER PROBLEMS		.0
70	ELECT, FIRE ALARM & LIGHT SYS	26,110	1.0
71	CAPACITY	5,222	.2
72	DISTRIBUTION	7,833	.3
73	FIXTURES	5,222	.2
74	FIRE ALARM SYSTEM	7,833	.3
75	OTHER PROBLEMS		.0
80	TOTAL BUILDING DEFICIENCY	976,529	37.4

BUILDING NAME	BOYD GRAD RSCH CTR
BUILDING NUMBER	1023
LOCATION	816A UGA MAIN CAMPUS
DATE CONSTRUCTED	1968
GROSS AREA	159,517
EST. REPLACEMENT COST	21,375,278
EVALUATION DATE	1989 03 21

		EST CORRECTION COST	% OF EST REP COST
10	FOUNDATION		.0
11	CRACKED FOUNDATION		.0
12	APPARENT SETTLEMENT		.0
13	OTHER PROBLEMS		.0
20	SUPERSTRUCTURE	897,762	4.2
21	BROKEN OR CRACKED WALLS	427,506	2.0
22	ROOF SAGGING		.0
23	FLOOR MOVEMENT EXCESSIVE		.0
24	ROOF PONDS		.0
25	OTHER PROBLEMS	470,256	2.2
30	EXTERIOR SKIN	106,876	.5
31	NEEDS NEW ROOF	106,876	.5
32	WINDOWS IN POOR CONDITION		.0
33	TUCKPOINTING REQUIRED		.0
34	OTHER PROBLEMS		.0
40	GENERAL	1,474,895	6.9
41	INTERIOR NEEDS PAINTING	128,252	.6
42	NEEDS NEW FLOORING	106,876	.5
43	NEEDS NEW CEILING	106,876	.5
44	INTERIOR WALLS NEED REALIGN	427,506	2.0
45	NEEDS NEW FIXED EQUIPMENT	213,753	1.0
46	EXITS AND STAIRWAYS	64,126	.3
47	ENTRY RAMP		.0
48	ELEVATOR	213,753	1.0
49	OTHER PROBLEMS		.0
49A	ASBESTOS	213,753	1.0
50	PLUMBING & FIRE PROTECTION SYS	1,282,518	6.0
51	FIXTURE REPLACEMENT	213,753	1.0
52	NEEDS NEW WASTE AND VENT	213,753	1.0
53	WATER LINE CAPACITY INADEQUATE	213,753	1.0
54	SPRINKLER SYSTEM	427,506	2.0
55	HANDICAP ACCESS - TOILETS	213,753	1.0
56	OTHER PROBLEMS		.0
60	HEATING, VENTILATION & AC SYS	897,763	4.2
61	HEATING	213,753	1.0
62	VENTILATION	213,753	1.0
63	AIR CONDITIONING	213,753	.0
64	TEMPERATURE CONTROL	42,751	.2
65	OTHER PROBLEMS	213,753	.0
70	ELECT, FIRE ALARM & LIGHT SYS	1,432,144	6.7
71	CAPACITY	106,876	.5
72	DISTRIBUTION	427,506	2.0
73	FIXTURES	42,751	.2
74	FIRE ALARM SYSTEM	106,876	.5
75	OTHER PROBLEMS	748,135	3.5
80	TOTAL BUILDING DEFICIENCY	6,091,954	28.5