



AUDITOR GENERAL

William O. Monroe, CPA



OPERATIONAL AUDIT OF CAPITAL CONSTRUCTION ACTIVITIES FOR MIAMI-DADE COUNTY DISTRICT SCHOOL BOARD JULY 1, 2000, THROUGH APRIL 30, 2002

SUMMARY

This audit report is the fourth in a series of reports issued on audits conducted pursuant to Chapter 2001-253, Laws of Florida, Specific Appropriation 118, and Section 11.45, Florida Statutes. Additional reports will be issued as audit fieldwork is completed in areas selected by the Auditor General for audit.

This operational audit focused on the Miami-Dade County District School Board's administration of the capital construction program and a review of employee job qualifications for the Department of Facilities Planning and Construction and selected employees in the Department of Maintenance Operations. The District's Department of Facilities Planning and Construction is charged with overseeing and managing the District's capital construction program. During the period of July 1, 2000, through April 30, 2002, the District awarded 325 new construction, renovation, and remodeling projects valued at \$227,343,961. Our audit disclosed the following:

Finding No. 1: Review of Qualifications of Personnel Engaged in Capital Construction and Maintenance Activities

We noted five instances in which employees did not meet the minimum qualification requirements for their respective positions in the Departments of Facilities Planning and Construction and Maintenance Operations. In another instance, after being promoted to the position, an employee failed to maintain the required certifications that were part of the minimum requirements for the position.

Finding No. 2: Verification of Work Experience

We noted five instances in which the District did not document its verification of work experience, although it was the determining factor that qualified the employees

for positions at the Departments of Facilities Planning and Construction and Maintenance Operations.

Finding No. 3: Review of Licensure and Continuing Training for Construction and Maintenance Staff

The District did not require active architecture or engineer licensure or other specified continuing training for particular positions of responsibility in the facility construction and maintenance areas. Requiring that employees having architecture or engineering degrees hold active licenses, or that employees in particular positions of responsibility receive specified continuing training, would provide additional assurance that these employees remain current with technical and professional standards.

Finding No. 4: Review of Employee Job Duties

Improvements could be made in maintaining job descriptions that correspond to tasks and duties assigned. We noted that 29 of the 34 employees included in our audit tests in the Departments of Facilities Planning and Construction and Maintenance Operations were performing tasks that were not consistent with the job descriptions for their positions.

Finding No. 5: Direct Purchases of Construction Materials

We noted that the District's procedures did not provide for the direct purchase of construction materials on major construction projects. Our review of several major construction projects disclosed that the District could have realized significant sales tax savings had the District directly purchased construction materials.

Finding No. 6: Architect Errors and Omissions

The District's architect/engineer (A/E) contracts contained a provision that the District would not claim or recover additional construction costs or damages for architectural or engineering errors and omissions, when the costs of such errors and omissions totaled less than a

specified allowance (1 or 1.5 percent of total project construction costs). The Board should consider revising future A/E contracts to eliminate allowances for errors and omissions.

Finding No. 7: Project Closeout

The District incurred significant costs to closeout construction projects after contractors and architects/engineers had, in some instances, been paid in full for work not completed.

Finding No. 8: Warranty Process

Improvements were needed in warranty administration procedures to ensure that all construction and renovation project malfunctions and deficiencies identified within warranty periods are corrected at no cost to the District. We noted two addition and renovation projects where the District was not tracking the warranties of the completed projects.

Finding No. 9: Contractor Prequalifications

Procedures should be improved to ensure that only properly qualified building contractors are prequalified to bid for the District's new construction contracts. Our audit tests disclosed that contractors who failed to finish previous projects were currently approved as prequalified bidders for new construction contracts.

INTRODUCTION

The Miami-Dade County District School Board's Department of Facilities Planning and Construction is charged with overseeing and managing the District's capital construction program. The Department's responsibilities include site acquisition, planning, design, new construction and major building improvements. The Department is staffed with approximately 265 employees who manage the capital budget and oversee capital projects.

The District's capital construction program utilizes various construction delivery methods to build, renovate, and remodel schools and other facilities including conventional bid, design-build, construction manager, and job order contracts. As shown in the following tabulation, during the period of July 1, 2000, through April 30, 2002, the District awarded 325 new construction, renovation, and remodeling projects valued at \$227,343,961:

CONSTRUCTION CONTRACTS AWARDED BY CONTRACT TYPE				
Contract Type	No. of	Amount	No. of	Amount
	Contracts	7/1/00-6/30/01	Contracts	7/1/01-4/30/02
Conventional Bid	37	\$ 28,034,999	21	\$ 35,012,767
Design - Build	9	47,323,007	2	20,388,500
CM @ Risk GMP	7	6,687,212	9	62,524,593
CM @ Risk Misc	92	18,983,956	52	5,351,769
JOC	61	1,894,011	35	1,143,147
TOTAL	206	\$ 102,923,185	119	\$ 124,420,776

CM = Construction Manager
 GMP = Guaranteed Maximum Price
 JOC = Job Order Contracts

AUDIT SCOPE, OBJECTIVES, AND METHODOLOGY

The scope of this audit included a review of the Miami-Dade County District School Board's administration of the capital construction program and a review of employee job qualifications for the Department of Facilities Planning and Construction and selected employees in the Department of Maintenance Operations. Our review did not include an assessment of the reasonableness of the number of employees in these departments. This assessment was performed in connection with the Best Financial Management Practices Review (Report No. 02-25A) conducted by the Legislative Office of Program Policy Analysis and Government Accountability (OPPAGA). Our objectives were as follows:

- To determine that personnel in the District's Departments of Facilities Planning and Construction and Maintenance Operations met the minimum job qualifications. Also, to determine if the job duties performed by Department of Facilities Planning and Construction personnel generally agreed with duties noted in the employees' job description.
- To determine whether the District utilized cost efficient methods for purchasing construction materials for major construction projects.
- To determine whether the District's professional service agreements for architectural and engineering

services were written to provide the maximum benefit to the District.

- To determine the effectiveness of the District's procedures for closeout of construction projects.
- To determine the effectiveness of the District's procedures for monitoring warranties on new construction projects.
- To determine the effectiveness of the District's prequalification procedures for contractors.

FINDINGS AND RECOMMENDATIONS

Finding No. 1 - Review of Qualifications of Personnel Engaged in Capital Construction and Maintenance Activities

We reviewed the job descriptions and related minimum qualification requirements for 267 professional and technical staff of the Departments of Facilities Planning and Construction and Maintenance Operations. Our review included all professional and technical staff of these departments, except for those working in the Office of Governmental Affairs and Land Use Policy and Acquisitions whose qualifications had been previously reviewed and were the subject of our audit report No. 02-124. We reviewed the qualifications of 148 employees from the Department of Facilities Planning and Construction and 119 employees from the Department of Maintenance Operations. A summary of the positions reviewed and actual salary ranges for the fiscal year ended June 30, 2001, is shown below:

Position Description (1)	No. of Positions (2)	Actual Salary Range
Assistant Chief and Chief Facility Officers	3	\$120,411 - \$143,019
Administrative and Executive Directors	13	\$65,972 - \$113,563
Directors	20	\$61,352 - \$104,691
Project Manager and Managers	18	\$42,838 - \$85,890
Supervisors	21	\$54,872 - \$86,653
Architects	3	\$52,722 - \$62,706
Engineers	6	\$52,336 - \$64,826
Coordinators	123	\$40,472 - \$82,447
Trades Masters	8	\$56,637 - \$65,559
Project Inspectors	18	\$46,724 - \$76,673
Safety Inspectors	7	\$40,009 - \$51,364
Program Inspectors	5	\$31,926 - \$55,872
Other	8	\$39,174 - \$62,205
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Notes: (1) As a result of reorganization and restructuring of offices within the school district, several employees are currently in other positions.
 (2) Does not include 14 positions in which the employees did not work the complete fiscal year.

Audit tests disclosed that employees generally met the written qualifications for their respective positions. However, we noted five instances in which employees did not meet the minimum qualification requirements for their respective positions at the time of appointment. These employees were appointed to the positions by the Board upon the recommendation of the Superintendent (direct appointments). In another instance, an employee failed to maintain the minimum requirements for the position after being promoted to the position. The specific instances are described below:

- An employee was directly appointed effective July 1996 to an executive director position in the Department of Maintenance Operations. The minimum requirements for the position included 15 years of architectural, engineering or construction management experience. Personnel records disclosed that the employee was approximately ten years short of the required experience at the time of appointment. We were informed by District management that the employee was awarded the position at a time when the department needed restructuring. District management stated that the employee, "...was in the right place at the right time, and his knowledge of the roofing department made him the best candidate to take over the position." The experience requirements were waived due to the employee's experience and workload production in other construction-related positions at the District.

- An employee was directly appointed effective August 1998 to a supervisor II position in the Department of Facilities Planning and Construction. The minimum requirements for the position included a bachelor's degree in school administration, business management, construction management, or public administration, or a minimum of ten years administrative experience in plan reviews, facilities planning, business management, and/or contract administration. Personnel records disclosed that the employee holds a degree in secondary education. Based on District records, the employee did not have the required experience in the areas of plan reviews, facilities planning, or business management. According to District management, after the employee was appointed to the position in August 1998, the employee gained applicable work experience through on-the-job training.
- An employee was directly appointed effective April 1998 to a supervisor II position in the Department of Facilities Planning and Construction. The minimum requirements for the position included a bachelor's degree in construction management or related field and at least five years experience in planning, design, or construction management or ten years professional experience, including five years of managerial experience in construction management of commercial/institutional buildings. Personnel records indicated that the employee holds a bachelor of science degree in architecture. Although requested, a copy of the degree was not provided for audit. Our review disclosed that most of the work experience (eight years) cited by the employee was obtained while working as a consultant for a company for which the employee was the president, i.e., self-employed. We recognize that the employee could have qualified for the position based on this experience. However, given the District's failure to document the verification of work experience, as discussed in Finding No. 2, and the inability of the employee to provide us with evidence of the required degree, District records did not evidence the employee's qualification for the position at the time of appointment.
- An employee was directly appointed effective July 1999 to a coordinator I position in the Department of

Facilities Planning and Construction. The minimum requirements for the position included a bachelor's degree in business administration, computer science, or engineering; a minimum of two years supervisory experience in document preparation and data gathering; and documented completion of college level training in at least two programming languages including "C", COBOL, basic or equivalent. Personnel records disclosed that the employee did not hold the required bachelor's degree. Also, District records did not evidence that the employee had completed the required college level programming training.

- An employee was directly appointed effective January 1996 to a coordinator III position in the Department of Maintenance Operations. The minimum requirements for the position included a bachelor's degree in business management, business administration or related field. Personnel records disclosed that the employee did not hold the required bachelor's degree. District management indicated that the employee qualified for the position based on experience. However, the qualification requirements for the position did not provide for work experience as an alternative to the education requirement.
- An employee was promoted effective July 1990 to a safety manager III position in the Department of Maintenance Operations. The position required the employee to be certified as an asbestos inspector. Also, the employee was required to be an asbestos abatement instructor within six months from appointment. Although the employee held the required certifications at the time of promotion, upon audit inquiry, the employee indicated that the required asbestos inspector and instructor certifications had expired on June 2001 and December 1995, respectively.

In response to a similar finding in our audit report No. 02-124, concerning direct appointments, District procedures were revised to require that individuals recommended for direct appointments provide the appropriate documentation to demonstrate that they meet the specific qualifications and background applicable to the position as indicated on the job description. We recommend that Personnel Management and Services staff review the personnel records of the

above employees and obtain documentation necessary to ensure that the employees are qualified for their current positions including any required certifications. Furthermore, the District should continue its efforts to ensure that the revised procedures for direct appointments are properly implemented.

District Response

Personnel Management and Services staff is reviewing job qualifications applicable to various positions and the personal qualifications of the incumbents in conjunction with construction administration. Where a discrepancy is identified, action will be taken to resolve the disparity through employee and/or job description adjustment. The District will be reorganizing the construction function, and this issue will be addressed fully prior to December 2002.

Finding No. 2 - Verification of Work Experience

Improvements were needed in procedures for documenting the verification of work experience of employees hired, promoted, or directly appointed to positions at the Departments of Facilities Planning and Construction and Maintenance Operations. We noted five instances in which the District did not document the verification of work experience, although it was the determining factor that qualified the employees for the positions. These five instances included a project associate, a project specialist, and a construction coordinator in the Department of Facilities Planning and Construction, and two construction coordinators in the Department of Maintenance Operations.

In one instance, the work experience cited by the employee to qualify for the position of project associate was obtained while working for a family-owned company for which the employee was a director. In another instance, personnel records disclosed that from 1990 through 1999, prior to the current position of construction coordinator, the employee worked for the Miami-Dade Community College in the area of student services (i.e., non-construction). The experience cited by the employee to qualify for the position at the District was obtained from 1980 through 1990 while working for a family-owned company. The employee reported experience working as a project coordinator for the family-owned company with responsibilities such as managing all contracts with sub-contractors, approving

plans for new construction, and planning and scheduling of a multi-trade workforce. However, the employment application completed by the employee for the position at the College disclosed a different account of the employee's experience obtained from 1980 through 1990. On that application, the employee indicated that the position held at the company and responsibilities were those of an accounts payable clerk.

We recommend that the District enhance its hiring procedures to adequately document the verification of the work experience reported by job applicants. The District should take additional steps to verify the appropriateness of an applicant's qualifications if the work experience reported by job applicants was obtained through self-employment or by working for a company that is otherwise related to the applicant.

District Response

Staff from the Office of Administrative & Professional and Technical Staffing will pursue an aggressive course of the verification procedure through the collection of appropriate documentation and work experience credentials. In terms of self-employed applicants, affidavits from the applicant's business contacts will be required to verify experience and time frame.

Finding No. 3 - Review of Licensure and Continuing Training for Construction and Maintenance Staff

As discussed in Finding 1, certain positions within the Departments of Facilities Planning and Construction and Maintenance Operations, such as construction coordinators, require a bachelor's degree in a construction-related field and a specified level of work experience or, in the absence of a bachelor's degree, additional work experience may be substituted. Our review disclosed that the staff of the Departments of Facilities Planning and Construction and Maintenance Operations included 69 employees with degrees in architecture or engineering. Upon our request, 27 of these 69 employees provided us with documentation evidencing their certification as a registered architect or engineer in the State of Florida. Of the remaining 42 employees that did not provide us with certification documentation, 30 were employed in the Department of Facilities Planning and Construction, and 12 were employed in the Department of Maintenance Operations. Many of these 42 employees held highly responsible

positions within these departments including directors, managers, supervisors, and coordinators; however, the District's written qualifications for these positions did not require the employees to hold applicable State of Florida licenses. We noted that although some employees maintained licenses at their own discretion, the status of their licenses, i.e., active, inactive, or suspended, was not monitored by the District. While those employees maintaining active licenses would receive continuing training in order to keep their licenses current, other employees in highly responsible positions that are not maintaining an active license are not required to receive specified continuing training.

Given the significant size of the District's capital construction program, it is in the best interest of the District and its stakeholders to maintain a highly qualified staff. Requiring that employees having architecture or engineering degrees hold active licenses, or that employees in particular positions of responsibility receive specified continuing training, would provide additional assurance that these employees remain current with technical and professional standards. We recommend that the District's procedures be revised to require either active architecture or engineer licensure or other specified continuing training for particular positions of responsibility in the facility construction and maintenance areas. These revised procedures should provide for the monitoring of the licensure status or continuing training of these employees.

District Response

As indicated in the finding, the District's written job description for many of these positions do not require many of these employees to hold applicable State of Florida licenses. It is recognized, however, that having the technical staff appropriately licensed is in the best interest of the school system; therefore, in cooperation with Construction and Maintenance personnel, the Personnel Management and Services staff will develop procedures to monitor and evaluate licensure requirements. Enhanced training for select positions as identified will also be provided.

Finding No. 4 - Review of Employee Job Duties

We tested 34 employees working in the Departments of Facilities Planning and Construction and Maintenance Operations to determine whether they were performing

job duties consistent with the duties outlined in the job descriptions for their positions. We noted that 29 of the 34 employees tested were performing tasks that were not consistent with the job descriptions for their positions. The following are examples:

- An employee was directly appointed to a construction coordinator position in the Department of Maintenance Operations. Based on the job title, job description, and related qualifications, the employee should be performing construction-related duties. However, personnel records showed that the employee's education and experience were in the area of agriculture/grounds. District management indicated that the employee's job description was consolidated pursuant to a consultant's recommendation made in September 1997, and that the employee's actual responsibilities include supervision of agriculture, grounds, and playground equipment, which is a function of Maintenance Operations.
- An employee was promoted to a position of design and construction coordinator I in the Department of Facilities Planning and Construction. Based on the job title, job description, and related qualifications for the above position, the employee should be working in the construction area. However, personnel records showed that the employee's education, experience, and actual job duties were primarily in the areas of local area network and technical support. District management indicated that the employee's job description was never changed to match the duties to which he has been assigned since 1998.
- An employee was directly appointed to a construction coordinator position in the Department of Maintenance Operations. Based on the job title, job description, and related qualifications for the above position, the employee should be performing construction-related duties. However, personnel records showed that the employee's education and experience were in the area of safety inspections and training. District management indicated that the employee's job description was consolidated pursuant to a consultant's recommendation made in September 1997, and that the employee's primary responsibilities include reviewing contracted services for elevator safety inspections.

- An employee was directly appointed to a position of construction coordinator in the Department of Maintenance Operations. Based on the job title, job description, and related qualifications for the above position, the employee should be working in the construction area. However, personnel records showed that the employee's education and experience were in the area of electronics technology. District management indicated that the employee's job description was consolidated pursuant to a consultant's recommendation made in September 1997. According to District management, the employee's responsibilities include supervision of fire alarms, extinguishers, and automatic fire suppression systems.
- An employee appointed as a project manager (a construction-related position) in the Department of Facilities Planning and Construction is responsible for managing and coordinating furniture, fixtures, and equipment projects. Upon audit inquiry, the employee provided us with a written description of the actual duties in the area of furniture, fixtures, and equipment. The primary duties performed by this employee did not appear consistent with the job description for the project manager position.

Requiring employees to perform tasks that are not consistent with the job duties outlined for their positions could have a negative effect on employee morale and related work efficiency. Accurate job descriptions, properly reflecting the required duties for a given position, are beneficial when hiring for open positions and are also needed by District management for evaluating employee performance. We recommend that the District revise position descriptions as necessary to ensure that employees perform tasks that are consistent with those required for the position.

District Response

Existing Board Rule and the Miami-Dade County School Administrators' labor contract provide a 3-year review period for all job descriptions. Additionally, job description review procedures are in place prior to advertising a position. Supervisory staff will monitor and revise job descriptions as duties are modified to comply with the needs of the department.

Finding No. 5 - Direct Purchases of Construction Materials

The District's construction contracting procedures do not provide for the direct purchase of construction materials and, as a result, sales tax is included in the construction costs of facilities. Consequently, the District does not utilize the most cost efficient method for purchasing construction materials for major construction projects. Our inquiry of other governmental entities disclosed that the practice of direct purchases is being utilized by several large district school boards, community colleges, and universities within the State as a cost saving measure.

Section 212.08(6), Florida Statutes, provides an exemption from the Florida sales tax to governmental entities when payments are made directly to the vendor by the governmental entity. Department of Revenue Rule 12A-1.094, Florida Administrative Code, addresses the taxation of transactions in which contractors manufacture or purchase supplies and materials for use in public works. The Department of Revenue has also issued several Technical Assistance Advisements that describe in detail the steps the governmental entity, including district school boards, must take for sales tax exemptions. Basically, for there to be an exemption from payment of sales tax, the governmental entity must directly purchase, hold title to, and assume the risk of loss of the tangible personal property prior to its incorporation into realty, and satisfy various conditions provided in the Rule.

Our review of several major construction projects disclosed that the District could have realized significant sales tax savings had the District directly purchased construction materials. Although it may not be feasible to directly purchase all construction materials, the District could directly purchase a large portion of the required construction materials and benefit from sales tax savings. Examples of projects and estimated cost savings that could have resulted from direct purchase of materials for construction projects are shown below:

Site and Type of Construction (1)	Total Contract	Gross Materials (2)	Estimated Potential Sales Tax Savings (3)
Henry Filer Middle School Additions/Renovations	\$ 2,735,640	\$ 687,819	\$ 38,933
Thomas Elementary School New Prototypical Elementary School	9,716,299	1,293,168	73,198
Ludlam Elementary School Additions/Remodel/Renovations	1,112,566	486,515	27,539
Hialeah Senior SS GGG Replacement	18,235,083	7,698,096	435,741
Brownsville Middle School Remodel/Renovations	7,535,000	3,790,544	214,559
North Beach Elementary School Additions/Renovations	5,566,588	2,047,087	115,873
Campbell Middle School Learning Center Additions	4,885,000	2,017,950	114,224
Thena Crowder Elementary School Additions/Renovations	1,110,277	622,210	35,219
Phillis Wheatley Elementary School Additions/Renovations	2,197,000	964,395	54,588
Doral Middle School New Prototypical Middle School	13,177,688	7,337,690	415,341
State School "C" New Elementary School	11,397,900	4,830,967	273,451
ADA Merritt Ancillary Fac State School "B1"	3,507,795	469,708	26,587
TOTAL ESTIMATED SALES TAX SAVINGS			\$ 1,825,253

Notes:

(1) Does not include ongoing projects for two senior high schools, two new middle schools, a new technology center, and renovation projects amounting to \$107,802,052 for which a breakdown of materials and labor was not provided by the District.

(2) Gross Materials amounts were tabulated from each project's Schedule of Values and includes sales tax paid by contractor. Gross materials included items such as steel, doors, windows, seating, elevator, heating and air conditioning equipment, and food service equipment.

(3) Amount is computed at 6 percent of the Gross Materials amount after deducting the sales tax. This amount excludes the 0.5 percent sales tax levied by Miami-Dade County on the first \$5,000 of each purchase.

We recommend that the District evaluate the costs and benefits of implementing procedures to provide for the direct purchase of construction materials. Such procedures, if effectively implemented, could enable the District to realize significant cost savings in its capital construction program. In evaluating the costs and benefits of direct purchases of construction materials, the District should obtain information from other large school districts, or large community colleges or universities, which use the direct purchase method.

District Response

The District had unfavorable results with direct purchases of construction materials in the past at Miami Edison Middle School. However, the District will explore the methods used by other school districts. A cost benefit comparison will be made to determine if the estimated tax savings outweigh the estimated costs to implement the program via the most cost-effective model that can be identified.

In its previous efforts to take advantage of the tax saving opportunities offered, the District concluded that it did not save money and it did experience delays in the delivery of the construction project because of the added

layer of government processing to the otherwise efficient private sector work flow.

- There were staffing increases in purchasing, payments, and other personnel directly related to the process.
- There were additional insurance costs, claims that the contractor could have purchased the materials directly at industry discounts and accounting issues in determination of the "allowance" the contractor bids for materials.
- There were problems with deliveries, receipt of goods, demands for payment upon delivery, disputes over material defects, warranties, returns, warehousing and transportation arrangements, and overall delays in the opening of the school due to the delays in the arrival of materials.
- There were disputes with the bonding company over responsibility for job completion time and payments when the contractor underbid the job and the District had expended the contract balance on materials.

Finding No. 6 - Architect Errors and Omissions

The District contracts for architectural and engineering services for the development of project plans and specifications for its significant construction projects. Generally, contracts for architectural and engineering services provide for the architect/engineer (A/E) to be responsible for all costs of errors and any additional costs incurred as a result of omissions. Errors represent mistakes made by the A/E in the project drawings or specifications. Omissions are required facility/construction items which the A/E failed to include in the project drawings or specifications. A/E contracts entered into by the District include provisions which allow the District to recover, from the A/E and their liability insurance carriers, only a portion of the additional construction costs resulting from architectural or engineering errors and omissions. Additional construction costs are only those costs of correction that are determined to be greater than if the error or omission had not been made by the A/E. The District's A/E contracts contained a provision that the District would not claim or recover additional construction costs or damages for architectural or engineering errors and omissions when the costs of such errors and omissions

totaled from less than 1 to 1.5 percent of the total project construction costs.

In response to our inquiry, the District's Director of Professional Services Contracts indicated that A/E contracts contained the 1 percent allowance for architectural or engineering errors and omissions until sometime in the early 1990's. At that time, the Superintendent appointed a private attorney, who specialized in construction, to review all of the District's front-end construction documents and contracts. After meetings with the A/E community, the attorney recommended to the Superintendent that A/E contracts reflect certain changes, which included the revision of the errors and omissions allowance to 1.5 percent of total project construction costs. The Director did not recall whether the specific increase in the allowance was presented to the Board for their consideration.

The District's Facilities Management Tracking System provides for the tracking and accumulation of construction contract change orders, including change orders for construction costs associated with the correction of architectural or engineering errors and omissions. The following tabulation was prepared from information contained in the Facilities Management Tracking System to show examples of the construction costs incurred by the District as a result of architectural or engineering errors and omissions on several large projects:

Project Location	Project Number	Total Cost of Construction	Completion Date	Total Cost to Correct	
				Errors	Omissions
Miami Northwestern Sr High	A0354A	\$ 57,460,207	09/30/96	\$ 260,746	\$ 620,548
Barbara Goleman Sr High	A0302	35,901,123	01/06/96	159,681	224,250
Dr. Michael M. Krop Sr High	A0507	35,817,280	10/13/98	49,640	-
Nautilus Middle	A0345	18,228,292	04/23/97	92,917	542,969
Ernest R. Graham Elem	A0454	17,245,660	05/01/96	68,633	265,444
Howard A. Doolin Middle	A0506	16,376,433	08/27/97	87,443	397,761
Doral Middle	A0692	13,177,688	09/08/00	129,135	8,546
Paul W. Bell Middle	A0013	12,678,767	03/31/97	196,897	490,947
Broad Bay Harbor Elem	A0558	10,911,173	12/15/96	152,689	680,003
Eneida M. Hartner Elem	A0437	10,769,368	06/06/97	134,191	256,828
Santa Clara Elem	A0431	10,482,944	08/12/97	167,921	305,165
R.R. Moton Elem	A0554	10,339,761	08/15/97	47,733	108,957
Laura C. Saunders Elem	A0545	10,337,543	03/20/97	74,537	74,193
Redland Elem	A0553	10,047,774	08/27/96	109,637	309,204
Charles D. Wyche, Jr., Elem	A0436	9,879,902	01/15/97	127,243	230,268
Ethel Koger Beckham Elem	A0288	9,746,502	09/30/96	179,140	295,888
Eugenia B. Thomas Elem	A0702	9,691,772	05/29/01	7,760	24,425
Wesley Matthews Elem	A0242	9,527,830	06/26/96	31,101	268,175
Linda Lentin Elem	A0442	9,374,125	08/04/98	30,808	26,999
Zora Neale Hurston Elem	A0359	8,925,822	12/11/96	111,014	141,449
Christina M. Eve Elem	A0573	8,283,394	01/12/00	529	22,508
500 Role Models Academy	A0547	4,814,271	01/12/99	51,166	143,027
Key Biscayne Elem	A0568	4,503,230	07/10/98	39,626	229,141
Palm Springs Middle	A0512	2,914,098	08/04/99	29,094	96,253
Riviera Middle	A0430	2,800,236	03/23/01	21,101	14,892
Coral Terrace Elem	A0601	2,219,374	02/22/01	2,556	39,446
Hiialeah Elem	A0534	1,967,826	12/24/99	146,223	305,202
Emerson Elem	A0655	1,686,427	11/17/00	5,057	18,749
Thomas Jefferson Elem	A0672	1,210,300	03/05/01	11,874	29,486
Ludlam Elem	A0521	1,189,027	12/13/01	30,044	74,052
TOTAL		\$ 358,508,149		\$ 2,556,136	\$ 6,244,775

As a result of errors made by the architects/engineers on the 30 projects listed above, the District incurred additional construction costs totaling \$2,556,136; however, only \$341,577 of this amount exceeds the errors and omissions allowances provided for by the A/E contracts. Approximately \$16,709 of the \$341,577 was withheld from the A/E payments for four of the above projects. The District could have looked to the architects/engineers and their liability insurance carriers for reimbursements of the remaining additional construction costs totaling \$2,214,559 if the A/E contracts had not provided for the 1 or 1.5 percent errors and omissions allowances.

Although construction costs relating to the correction of architectural or engineering omissions on the 30 projects listed above totaled \$6,244,775, the District did not of record determine the amount of additional construction costs beyond those which would have been incurred

without the omissions. Consequently, we were precluded from making any determination as to the amount of additional construction costs incurred by the District as a result of those architectural or engineering omissions. We did note that A/E contracts entered into since the beginning of the year 2000 contain a provision that 15 percent of the costs to correct omissions are considered an additional cost to be recovered from the A/E.

Architect/engineer contract provisions which preclude the District from recovering a portion of the additional construction costs resulting from architectural or engineering errors and omissions appears to benefit only the architects/engineers and their professional liability insurance carriers. It was not evident what public benefit was served by the errors and omission allowances provided for in the District's A/E contracts. Our review of selected A/E contracts entered into by four other Florida school boards and two Florida community colleges disclosed that those contracts contained no allowances for architectural or engineering errors and omissions.

Considering the amount of additional construction costs that the District could incur as a result of architectural and engineering errors or omissions (e. g., \$450,000 for a \$30,000,000 project with an errors and omissions allowance of 1.5 percent), the Board should consider revising future A/E contracts to eliminate these allowances. Furthermore, the Board should explain and document in its public records the benefits accruing to the District from the allowances when approving any new A/E contracts that provide for an architectural or engineering errors and omissions allowance.

District Response

The District will address the incorporation of the audit recommended change into the A/E contracts, and will begin to work with the local chapter of the American Institute of Architects before November 2002 to achieve the desired result.

Finding No. 7 - Project Closeout

Section 4.2(3) of the Florida Department of Education's publication, STATE REQUIREMENTS FOR EDUCATIONAL FACILITIES, requires the Board to establish policies and procedures for all construction contracts and for making payments to contractors. Such

policies and procedures should provide for final acceptance of the project, including the criteria and conditions for project completion, substantial completion, punch lists of items to be completed by the contractor, building code inspections, warranties, equipment manuals, as-built documents, occupancy, the value of incomplete items if the Board should accept the facility for occupancy prior to completion of the items, and other issues as appropriate. In addition, final payment shall not be made until an Occupancy Certificate has been issued, the project has been completed, and the Board has accepted the project.

The District's Facilities Planning, Design and Construction Procedures Manual, dated November 7, 2000, includes procedures for construction contracts, project closeout, project acceptance, and final payment. Construction projects are assigned a project manager who is the District's representative/designee responsible for the management and coordination of the project, including project closeout and final payment.

Our review of construction project closeout procedures and payments to architects/engineers and building contractors disclosed that the District had not timely and efficiently closed out construction projects. Architects/engineers and building contractors in some instances were paid in full, although work required by their contracts had not been completed. Subsequently, it was necessary to hire new architects/engineers, contractors, building code inspectors, and cost estimators at significant costs to the District to complete and close out those construction projects.

The District utilized its Department of Construction Management at Risk and its Department of Job Order Contracts to close out unfinished construction projects. Closeout work included the completion of building code deficiencies and other punch list items, additional building code inspections, the obtaining of warranties, equipment manuals, and as-built documents. District records indicate that between January 2000 and April 2002 the Department of Construction Management at Risk completed the closeout of 272 construction projects and were in the process of closing out 119 additional construction projects. The Department of Job Order Contracts had 44 active closeout projects during the same period. We noted that such projects had substantial completion dates between March 1991 and July 2000. The District's written procedures state that substantial

completion occurs when the A/E confirms that the project can be used by the Board for its intended purposes. Records provided by District personnel indicated that project closeout costs included costs resulting from architectural and engineering errors and omissions, contractor errors and default, and scope changes (i.e., State, City, and local requirements, owner's requests, and unforeseen conditions). District records show that as of April 2002, project closeout costs totaled approximately \$7.8 million as follows:

Project Closeout Costs (1) January 2000 - April 2002	
Department of Construction Management at Risk:	
Projects Closed Out	\$ 2,622,996
Work Orders Issued for the Closeouts in Progress (119 Projects)	3,374,198
Department of Job Order Contracts:	
Estimated Cost to Close Out 44 Projects	1,822,044
Total	\$ 7,819,238

Note: (1) Project closeout costs do not include salaries and benefits of District employees involved in the closeout process.

During our review of the above project closeouts, we noted that in some instances construction contract change orders were approved to adjust for the incomplete work. Consequently, those contractors were relieved of their contractual obligations for completing the work identified on the change orders. A listing of change order credits received from contractors for not completing punch list items on the above projects was requested from District personnel. A search of the Facilities Management Tracking System data base by District personnel identified change order credits totaling \$322,064 for not completing certain punch list items of those projects. Based on the records provided for our review, it was not practicable in the circumstances for us to determine the portion of the total reported project closeout costs (\$7.8 million) that related to architectural and engineering errors and omissions and contractor errors and default.

Our review of project closeouts also disclosed that many building code deficiencies reported at the time of substantial completion had been corrected before the District's Department of Construction Management at Risk started the project closeout process. In many instances, the substantial completion date was several years prior to the initiation of the project closeout process. District personnel indicated that some building

code deficiencies corrected prior to the closeout process may have been corrected by the District's Maintenance Operations Department after being observed and reported by school or site personnel subsequent to occupancy or reported on annual firesafety, casualty safety, and sanitation inspection reports. As shown below, many building code deficiencies reported at the time of substantial completion were corrected prior to the initial inspection by project closeout personnel:

School Name	Project Number	Building Code Deficiencies			Total Reported Closeout Costs
		Reported at Substantial Completion	Observed During Closeout Initial Inspection	Diff. (1)	
Southwest Miami HS	A0433	54	34	20	\$ 541,119
Kendal Lakes Elem	A0261	49	46	3	406,610
Ethel K. Beckham Elem	A0288/0251	162	81	81	266,780
Laura C. Saunders Elem	A0545/2941	144	39	105	250,077
Frank C. Martin Elem	A0334	33	19	14	181,180
Flamingo Elem	A0498	66	38	28	168,474
Miami Northwestern HS	A0354A	319	38	281	154,551
Wesley Matthews Elem	A0242	14	7	7	146,275
Miami Central HS	A0353	22	14	8	132,347
Carol City Middle	A02919A	15	2	13	105,661
West Homestead Elem	A0387	41	24	17	72,882
Total					\$ 2,425,956

Note: (1) Building code deficiencies corrected after substantial completion and prior to the closeout process.

District records indicated that, for these 11 projects, closeout costs incurred for contractor errors and default totaled approximately \$540,000 of the approximately \$2.4 million in total closeout costs incurred. District records indicated that the District received total change order credits from the contractors totaling approximately \$609,000 for these 11 projects. For these projects, the District provided an analysis which indicated that the total contract change order credits were comprised of approximately \$479,000 for scope changes, approximately \$109,000 for contractor errors and default, and approximately \$21,000 for architectural errors and omissions and other contractual adjustments. For these 11 projects, based on coding in records provided for our review, closeout costs for contractor errors and default exceeded change order credits by approximately \$431,000.

Retainage represents amounts withheld from contractor payments to help ensure that construction projects are properly completed. The District's procedures provide

that contractor retainage is partially or totally released upon the approval of the District's project manager and A/E of record. Our testing of project closeouts disclosed that, in some instances, retainage amounts had been totally released and the retainage amounts for some projects were significantly less than closeout costs incurred by the District.

Contracts between the District and its architects/engineers usually provide that five percent of the architects/engineers fees are for services provided subsequent to substantial completion. Such services include punch list completion, submittal of record drawings, shop drawings, Florida Inventory of School Houses (FISH) data and drawings, warranty and operations manuals, releases of lien, and project summary. In view of the additional costs incurred to complete unfinished projects, we recommend that the District review and enhance its procedures as necessary for the following:

- To provide for the timely closeout of construction projects after substantial completion has occurred.
- To ensure that contractor retainage is sufficient to cover project closeout costs, including the correction of any building code deficiencies and other punch list items, and ensure that such retainage is not released until all work has been completed.
- To ensure that the final five percent of A/E fees are not paid until all services to be provided for by that portion of the fees have been completed.

Additionally, we recommend that the Board consider recovering from the contractors or their sureties, and the architects/engineers, the closeout costs that were incurred as a result of architectural and engineering errors and omissions and contractor errors and default.

District Response

Documentation will support the District's response that it has made positive efforts to assure that the projects are completed within the dollars provided in the contracts, that it has covered the completion of the projects by others within original contract costs, and that the final payments are withheld until the projects are completed. It will agree that the data retrieval systems are cumbersome and difficult to manage. The OPPAGA Best Practices report and the Land Acquisition and Facilities Maintenance Operations Advisory Board both

recommend that major information systems be developed for the facilities construction processes. Our conclusions are based on the following:

The District attempts to recover costs incurred to complete closeout of construction projects whenever these are legally recoverable. The Department of Construction Management at Risk and Closeout was created and charged with centralizing the closeout effort in April 2000. This was done in order to provide for timely closeout of construction projects after substantial completion, to ensure retainage is sufficient to cover closeout and to notify contract management when projects have been successfully closed so that final payments to the A/E may be released. Our intent is always to withhold the retainage until there is full compliance by the A/E and the contractor with their contracts.

Project closeout costs are also caused by increases in project scope, such as additional requirements added by other government agencies or by the user. However, the credits identified as scope changes totaling \$479,000 in the sample of 11 projects cited represent, to some extent, credits that also relate to incomplete work. To the extent that the credits coded as scope changes also relate to incomplete work, the \$431,000 overage would be reduced.

In most cases the District withholds from contractors sufficient retainage to cover costs due to the contractors deficiencies. As has been shown above, costs to closeout construction projects include other costs not attributed solely to the contractor, such as A/E errors and additional requirements added by other government agencies or by the user. In fact, members of the industry have criticized the District for excessively withholding retainage for long periods of time.

There have been a few cases, however, where credits or retainage have been insufficient to cover the costs of correcting deficiencies that were the responsibility of the contractor. One of the reasons for this is work that was bid too low and/or the approved schedule of values was insufficient to cover the cost of the correction. This has been the subject of a finding by the internal auditors in the past. Many of these cases experience claims and various degrees of litigation as well. We have prevailed in some of these legal cases and received substantial reparations. For example, of cases in litigation, which are fully completed, the Board was sued for \$48,337,855 but

paid out only \$2,372,047, and recovered \$1,402,500 in suits against A/E firms.

The District endeavors to improve performance in these areas through better planning and an improved information system. The District also is standardizing the closeout process so that it begins immediately upon the project's substantial completion in order to assure that retainage is always sufficient to cover the costs of incomplete work. Better selection and prequalification procedures ensure that contractors who fail to complete work are not eligible for future work with the District. It should be noted that the original contracts for these 11 facilities were commissioned an average of 10 years ago, which was before the implementation of the contractor prequalification process. The District has achieved much better results in recent years.

It should be noted that from 1988 through April 30, 2002 the district constructed 95 new schools and 213 major additions, and renovations. During this period, payment procedures have been established that are consistently implemented. The District has controls in place to ensure the performance, efficiency, and effectiveness of the construction program and the District's approach to project management is effective.

Although in a program as large as has been undertaken there have been a few cases where the District has experienced greater costs to complete projects in the past than it has been able to recover from certain contractors and A/Es, in general, the District has operated responsibly in closing out construction projects.

Finding No. 8 - Warranty Process

The District requires that every construction or renovation project have a one-year warranty period, during which the contractor must rectify any malfunction or deficiency in the performance of a facility. In addition, manufacturers provide longer warranty periods for such items as roofing, paint, and mechanical equipment. According to the District's Facilities Planning, Design and Construction Procedures Manual, dated November 7, 2000, the warranty period essentially begins on the date of substantial completion as determined by the architect of record.

The District's Department of Facilities Design and Quality Control is responsible for the warranty process. The Department monitors warranty beginning and

ending dates, identifies warranty items, tracks warranty problems identified by school principals, zone mechanics, and others, and helps to facilitate the resolution of warranty problems. The District's Construction/Renovation Warranty Procedures Manual, dated October 1999, establishes the duties of the project managers, warranty administrators, contractors, and site administrators. Project managers are responsible for notifying warranty administrators of each project's warranty start date, coordinating the warranty start-up meeting with the warranty administrator and site administrator, ensuring that warranty documents are provided to the District warranty administrators, and providing the warranty administrator with the project punch list which identifies incomplete construction items the contractor must rectify. The warranty administrator is responsible for tracking and resolution of warranty related problems.

To determine if the District was properly tracking the warranties on completed construction and renovation projects, we tested projects with warranty beginning or ending dates that were within the period from January 1, 1999, to December 31, 2001. Our testing disclosed that the District was not tracking the warranties on two completed projects. A \$2.7 million addition and renovation project at Henry Filer Middle School, with a substantial completion date of August 15, 2001, and a \$3.6 million addition and renovation project at North Dade Middle School, with a substantial completion date of November 30, 2001, were not being tracked at the time of our inquiry in May 2002. The monitoring of warranties on completed construction and renovation projects helps to ensure that expenditures are not made for building and equipment repairs that may otherwise be covered by warranties.

The results of our review and testing of the District's administration of warranty procedures indicated that improvements were needed as shown below:

- The District started using a database in March 1999 to track warranty information for buildings and equipment. All input to the warranty tracking system is performed manually by District warranty personnel, including initial capture of projects to be tracked. Warranty personnel must rely on information obtained through attendance at monthly regional construction-in-progress meetings and information provided by project managers to

determine the beginning dates for project warranties. This procedure for identifying project warranty start-up dates does not ensure the timely capture of completed projects entering the one year warranty period. For example, in response to our inquiries concerning the project at Henry Filer Middle School, District personnel indicated that the project warranty was not being tracked due to oversight on the part of District warranty personnel. Also, the project manager was new and did not advise the warranty administrator that the project was in the warranty period.

- The warranty tracking database is not made available to District personnel outside of the warranty administration department. The project manager, school principal or other site administrator, head custodian, zone mechanic and maintenance department personnel should have access to the warranty information contained in the database to determine whether building and equipment repairs and deficiencies are covered by a warranty and help with the processing of warranty claims with contractors and manufacturers.
- The District's warranty procedures manual requires that the project manager ensure that all punch list items are identified to the participants involved in the warranty process so as to avoid confusion with warranty related items. District personnel advised us that punch lists were not always provided to the warranty administrators. A final punch list is necessary for the warranty administrator to determine whether a needed repair or deficiency is a warranty item or a pending punch list item.

To ensure that all construction and renovation project malfunctions and deficiencies identified within warranty periods are corrected at no cost to the District, we recommend that procedures be revised as necessary to provide warranty administrators with project completion information on a timely basis. The close and timely monitoring of warranties on completed construction and renovation projects helps to ensure that expenditures are not made for building and equipment repairs that may otherwise be covered by warranties. Additionally, we recommend that the District's warranty tracking database be made available to project managers, school principals and other site administrators, head custodians, zone mechanics and maintenance department personnel to

assist in the warranty process and resolution of warranty problems. We also recommend that final punch lists be provided to the warranty administrators for all completed projects, as required by the District's warranty procedures, since repairs and the correction of deficiencies included on punch lists are managed and supervised by project managers.

District Response

The District will immediately begin to develop proposals to address the recommendations, and will complete the work by June 2003.

Finding No. 9 - Contractor Prequalifications

Section 235.31, Florida Statutes, as amended by Laws of Florida 98-35, and Section 4.1, of the Florida Department of Education's publication, STATE REQUIREMENTS FOR EDUCATIONAL FACILITIES, require the Board to establish procedures and criteria for prequalifying bidders for construction contracts. In accordance with these requirements, the Board established policies and procedures for contractor prequalification and appointed a committee to review contractors' applications and recommend prequalification or denial to the Board. Prequalification certificates are issued for a period of 12 months and contractors must reapply every 12 months. Contractors must be prequalified prior to bidding on construction work.

Evaluation criteria for contractor prequalification includes proof of contractor's license, financial condition, experience, and evidence of satisfactory resolution of claims filed by or against the contractor asserted on projects of the same or similar size within the five years preceding submission of application. The Board's policy provides for the suspension and revocation of a contractor's prequalification for unsatisfactory performance on District construction projects.

Our audit tests of previous unfinished projects disclosed 10 contractors who were awarded the original contracts for 16 of the unfinished projects that were currently approved as prequalified bidders for new construction contracts. The costs incurred by the District to complete and closeout 15 of the 16 unfinished projects totaled approximately \$1 million. The 15 projects were completed by the District between October 2000 and November 2001. One project had not been completed as

of April 2002, and its accumulated project closeout costs to-date totaled approximately \$19,000.

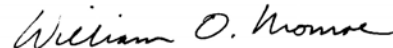
The continued prequalification of building contractors that have failed to complete District construction projects in a satisfactory manner may result in those contractors being awarded construction contracts in the future. We recommend that the District enhance its contractor prequalification procedures to ensure that appropriate consideration is given to past performance of contractors.

District Response

Some contractors included in the audit sample may have had projects with substantial completion dates that fell outside of the 5-year review period for completed projects. SREF 4.1.8(a)(4) and SREF 4.1.8(c)(5) provide for a 5-year review of claims against the contractor, and a list of projects that were completed within the previous five years. Relative to the enhancement of the prequalification policy, the District is developing a recommendation for Board review that would incorporate the contractor debarment procedures currently in use by Miami-Dade County.

AUTHORITY

Pursuant to the provisions of Section 11.45, Florida Statutes, I have directed that this report be prepared and submitted to the President of the Senate, the Speaker of the House, and the Legislative Auditing Committee.



William O. Monroe, CPA
Auditor General

To promote accountability in government and improvement in government operations, the Auditor General makes operational audits of selected programs, activities, and functions of district school boards. This operational audit was made in accordance with applicable Governmental Auditing Standards issued by the Comptroller General of the United States. This audit was conducted by Ramon A. Gonzalez, CPA. Please address inquiries regarding this report to David W. Martin, CPA, Audit Manager, via e-mail at davidmartin@aud.state.fl.us or by telephone at (850) 487-9039.

This audit report, as well as other reports prepared by the Auditor General, can be obtained on our Web site at www.state.fl.us/audgen; by telephone at (850) 487-9024; or by mail at G74 Claude Pepper Building, 111 West Madison Street, Tallahassee, Florida 32399-1450.

