

A Report on Organizational Structure

for

Baltimore City Public Schools System's

**Department of Facilities Planning
and School Construction**



February 2002

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I. Organizational Development

Introduction

Currently BCPSS Facilities Planning and School Construction department contracts out most of the technical work associated with implementing capital planning and construction projects. This approach allows the department to supplement its in-house staff with the specific technical expertise needed to implement capital projects. In general, the process involves engaging the services of separate contractors for each primary activity of professional services needed to implement each major capital project. An architect is contracted with to assist in educational specification development, a separate architect conducts design feasibility studies, a third architect is contracted with to perform design and construction administration services. A construction management firm is also contracted with to provide overall project implementation management. Finally, a BCPSS project manager is employed to oversee the work of the various contractors.

Summarized below is a description of the elements associated with the department achieving its mission through an operating model that involves the use of a complete complement of full-time BCPSS staff of managers, technical supervisors and project managers, and contract administrators. A core assumption of this approach is that the department's annual cost and operating efficiencies will offset cost associated with the current approach. The anticipated result is that the effectiveness of the System's capital improvements program processes will be significantly improved.

Departmental Scope of Services:

The primary goal of the Department of Facilities Planning and School Construction is to provide facilities planning and construction management services as a part of the BCPSS capital facilities implementation process. The department's scope of services comprise the following major services:

- Facilities Programming
- Capital Improvements Program (CIP) Development
- Facilities Design
- Construction Management
- Real Estate Management
- Technology Systems Installations
- Special Facilities Projects
- Financial Management
- Contracts Management

Stakeholders:

Following is a list of the diverse set of groups and individuals comprising its stakeholder base:

- BCPSS School Communities and PTA's
- BCPSS Administrative Management
- BCPSS Instructional and Departmental Management
- City of Baltimore Citizens
- City of Baltimore Businesses
- State of Maryland Department of Education
- State of Maryland Board of Public Works
- State of Maryland Legislature
- Federal Government Agencies
- Other Resource Providers

Organizational Challenges:

Under its current structure and workload the Facilities Planning and School Construction Department is confronted with several major and minor challenges to its success. Many of these challenges are addressable through the organizational structure and components described in sections of this report. A partial list of the performance, accountability and management challenges confronting the facilities department include:

- Improving organizational responsiveness, efficiency and effectiveness;
- Maintaining continuity of the facilities design and construction delivery process while transitioning to the in-house organizational format;
- Recruiting and retaining qualified staffing capable of maintaining consistent levels of responsiveness and performance;
- Developing an organizational format and culture to a level sufficient to meet the organization's near and long-term goals;
- Creating and implementing strategic and performance planning processes and procedures that yield consistent results across the full gamut of organizational responsibilities;
- Developing a technology infrastructure of systems and protocols that address the need for accuracy and timeliness in all aspects of the planning and construction, as well as information and financial management processes;
- Addressing the need for improved coordination between BCPSS and governmental agencies responsible for program funding and approvals;

- Achieving a high level of timeliness and cost effectiveness in implementing facilities upgrades for an aging facility infrastructure; and
- Achieving and maintaining a reasonably high level of customer and stakeholder satisfaction.

Leadership and Management:

Table 1 describes the proposed organizational structure comprising four functional and one administrative component. This proposed structure address the main components of the department's responsibilities through placement of the service responsibilities into a logical and manageable set of major functional components. Detailed descriptions of the mission of each functional component are described below.

Departmental Leadership:

The mission of the Department of Planning and School Construction is to provide customer-focused, cost-effective design and construction project management services that facilitate implementation of BCPSS' Capital Improvements Programs in the areas of new construction, modernization of existing facilities, and additions and upgrades to existing facilities. Additional responsibilities of the department entail providing program management services for the System's Technology in Maryland Schools (TIMS) program, system-wide real estate management services and special projects involving State-supported modernization of instructional science classrooms.

Responsibilities of the leadership team is to provide overall management of the implementation of BCPSS' Capital Improvements Program (CIP) in the areas of:

- Program implementation management;
- Annual Capital Improvements Program development;
- Strategic planning and management to ensure effective implementation of the System's capital improvements program;
- Decision support to the Board of Education and executive BCPSS management staff;
- Capital budgeting;
- Quality assurance and program effectiveness evaluation;
- Procurement of professional services needed for program implementation;

- MBE and WBE participation monitoring;
- Organization staffing and supervision; and
- Ensuring continuous improvements leadership in support of the system's facilities goals.

Capital Projects Management Unit:

The mission of the Capital Projects Management unit is to provide capital project planning and design services necessary to implement timely, economical and effective Capital Improvements Program projects.

Responsibilities of the unit include facilities design coordination, user interface and construction code compliance with emphasis on:

- Capital projects design coordination and management;
- Design services contract management;
- Building and life safety code compliance;
- Construction cost control and value engineering;
- Facilities program compliance and space planning;
- Capital facilities modifications;
- Coordinating agency reviews and approvals;
- Systemic facilities asset replacement support;
- Project cost and schedule control;
- User/community participation in facilities planning process; and
- Continuous improvements in support of the System's facilities goals.

Construction Management Unit:

The mission of the Construction Management unit is to provide cost effective and timely implementation management services during the construction phase of Capital Improvement Program projects.

Responsibilities of the unit include construction management and product quality control with emphasis in the following areas:

- Program implementation management;
- Capital project bidding and award;
- Contracts management;
- Construction progress and schedule control;
- Construction inspection and contract administration support;
- Change order review, justification and cost validation;
- Representing the owner on legal and contracts and related areas;
- Building systems commissioning oversight;
- Contractor relations;
- User transition support;
- Design constructibility review, and
- Continuous improvements in support of the System's facilities goals.

Administrative Services Unit:

To provide administrative, financial management and real estate management services for the department. This unit's responsibilities also include office management, staff and organizational development, coordinating contracts, invoices and payment requests, and facilitating general organizational operations. The responsibilities of the Administrative Support unit is for financial accounting and management decision support in the areas of:

- General operations and business management support;
- Financial accounting and decision support;
- Development and maintenance of departmental policies and procedures;
- Processing contractor payments;
- Operations and business analysis;

- Office technology implementation;
- Records control and management;
- Contracts and finance related legal matters;
- Real estate management; and
- Continuous improvements in support of BCPSS' facilities goals.

Proposed Pay and Salary Structure:

Table 2 is a summary of the proposed pay and compensation structure for the various members of the departmental units. It should be recognized that the salary amounts shown do not represent a range with step increments, as they are derived from a general survey of miscellaneous data found from the Internet regarding general salaries in the Maryland/Mid-Atlantic region for the various position classes. In general, that information was used to develop wage midpoints, not the full ranges. These proposed wages were adjusted by BCPSS management to account for factors such as refinements to position responsibilities, anticipated market condition, seniority and experience of the preferred employee, salaries of some existing employees who are already in a position, and other general alignments based on experienced judgment.

Departmental Missions, Mandates and Position Descriptions:

Following are mission statements and position descriptions for the Capital Projects Management, Construction Management, and Administrative & Real Estate Management services units of the proposed departmental organizational structure.

Table 1: Facilities Planning and School Construction

Proposed Organization Chart

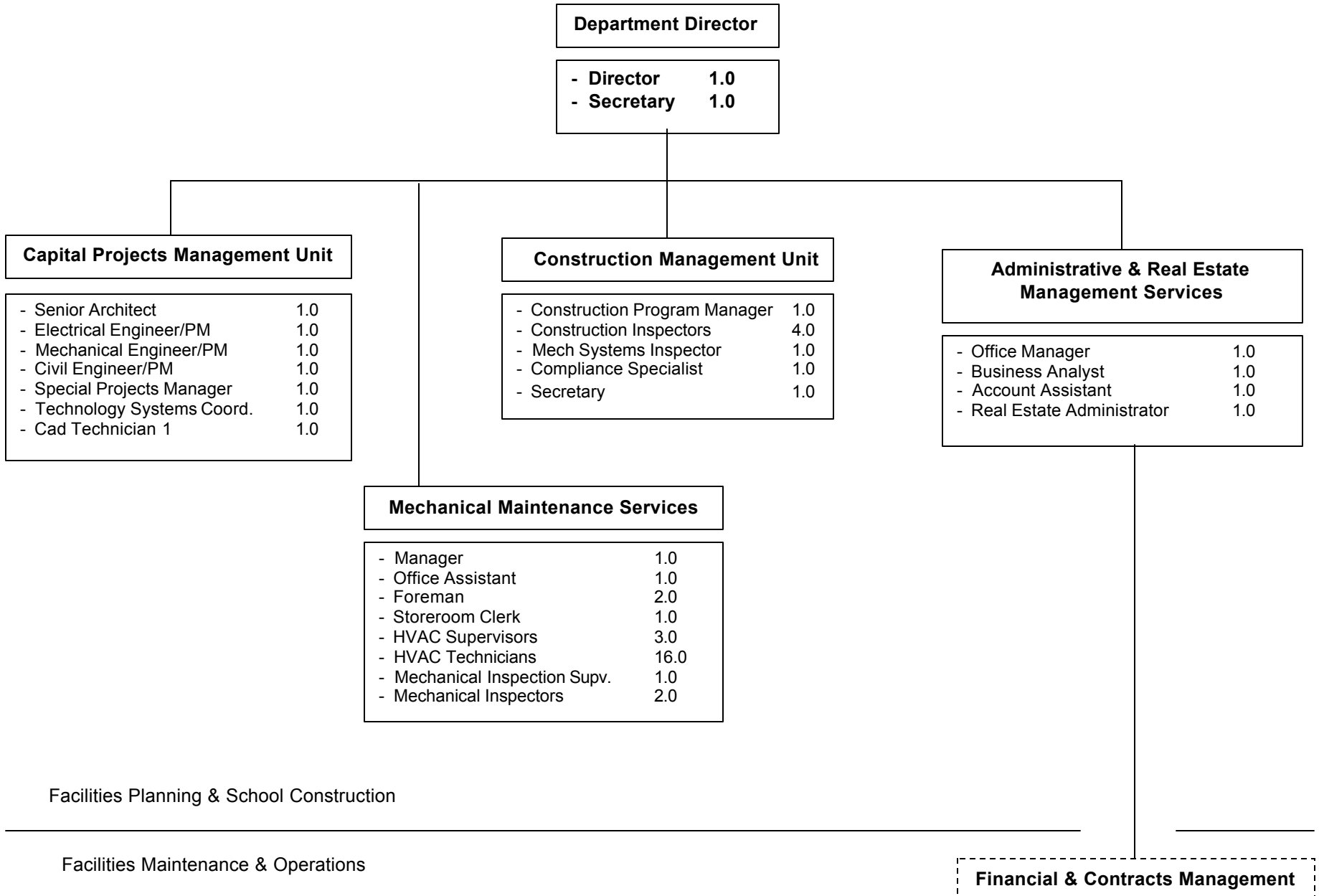


Table 2: Department of Facilities Planning and School Construction (FY2003 Staffing Plan)

(Updated: 02/12/02)

Positions	Filled	Filled By	Salary		% of Total
			Hourly	Annual	
Department Director (2)					
Director	Yes	Emerson Hamilton (P)	\$50.49	\$105,019	
Secretary	Yes	Catherine Bumbray (T)	\$17.00	\$35,360	
				\$140,379	11.7%
Capital Projects Management (7)					
* Program Manager/Senior Architect	Yes	Carroll Hunter (P)	\$40.00	\$83,200	
* Project Mgr./Mechanical Engineer	No		\$31.00	\$64,480	
* Project Mgr./Electrical Engineer	No		\$31.00	\$64,480	
* Project Mgr./Civil/Structural Engineer	No		\$31.00	\$64,480	
* Special Projects Coordinator	Yes	Robert Hawkins (P)	\$25.00	\$52,000	
* Technology Systems Coordinator	Yes	Herbert Lee (T)	\$30.00	\$62,400	
* CAD Technician	No		\$21.00	\$43,680	
				\$434,720	36.4%
Construction Management Services (8)					
* Construction Manager	Yes	Sheridan Ciscle (T)	\$35.00	\$72,800	
* Construction Inspector	Yes	Don Grimm (T)	\$30.00	\$62,400	
* Construction Inspector	Yes	George Harris (T)	\$30.00	\$62,400	
* Construction Inspector	No		\$30.00	\$62,400	
* Construction Inspector	No		\$30.00	\$62,400	
* Mechanical Systems Inspector	No		\$26.00	\$54,080	
* Compliance Technician 1	No		\$20.00	\$41,600	
Secretary	Yes	Josephine Schneider (T)	\$16.00	\$33,280	
				\$451,360	37.8%
Administrative Services & Real Estate Management (4)					
* Office Manager	Yes	Tia Turner (T)	\$21.00	\$43,680	
Accounting Assistant III	Yes	Debbie White (P)	\$16.00	\$33,280	
Real Estate Agent	Yes	Albert Harris (P)	\$20.00	\$41,600	
Business Analyst	Yes	Richard Donald (T)	\$24.00	\$49,920	
				\$168,480	14.1%
			Total	\$1,194,939	100.0%

* Indicates new position titles

Personnel Summary

Total No. of Positions = 21
 No. Professionals = 8
 No. Non-Prof'l Technical = 8
 No. Non-Prof'l Support = 3
 No. Clerical = 2

Miscellaneous Expenditures

Wage Pool (Temps) \$40,000
 Local Transportation \$27,500
 Furniture & Equipment \$18,000
 Technology Systems & Equipment \$94,000
 General Office Supplies \$6,000
 Training & Professional Development \$16,000
 Telephone Service \$8,400

Total = \$209,900

Capital Projects Management

Mission:

To provide capital project management services necessary to implement a timely, economical and effective Capital Improvements Program (CIP).

Mandate:

To administer technical and administrative matters relating to the work of project architects and other design professionals during the planning and design phase of Capital Improvements Program projects. Personnel assign to this unit will act on behalf of BCPSS to ensure effective compliance by design professionals with all BCPSS design standards, user educational, administrative and operational needs, design drawings and specifications, BCPSS design standards, as well as local, state and federal codes and standards. Capital projects to be managed by this unit's staff includes major school renovations, systemic renovations asbestos abatement projects, roof replacements, as well as window and chiller replacements. The construction manager will work in collaboration with the construction contractors and the project architect to ensure timely and high quality outcomes.

Proposed Staffing:

Senior Architect	1.0
Electrical Engineer/PM	1.0
Mechanical Engineer/PM	1.0
Civil Engineer/PM	1.0
Special Projects Manager	1.0
Technology Systems Coord.	1.0
Cad Technician	1.0

Duties and Responsibilities:

Facilities Planning

- Coordinates design feasibility studies and other facilities assessments
- Architect selection
- Assists in educational specifications development
- Capital budgeting and scheduling
- Conducts planning meeting with users and other stakeholders

Facilities Design Coordination

- Defines scope and budgets for capital projects
- Design phase financial management
- Design review and coordination
- Agency review submittals
- Construction cost management
- Facilities records management

Performance Measures:

- Effective financial management
- Timely completion of project designs
- Customer satisfaction

Mission: Project Management Unit

Created: 1/2/2002

Updated: 1/7/2002

Construction Management Unit

Mission:

To provide cost effective and timely construction management services during the construction phase of Capital Improvement Program (CIP) projects.

Mandate:

To administer technical and administrative matters relating to the work of general and sub-contractors during the construction phase of Capital Improvements Program projects. Personnel assign to this unit will act on behalf of BCPSS to ensure effective compliance by construction contractors with all BCPSS contract requirements, design drawings and specifications, BCPSS design standards, as well as local, state and federal codes and standards. Capital projects to be managed by this unit's staff includes major school renovations, systemic renovations asbestos abatement projects, roof replacements, as well as window and chiller replacements. The construction manager will work in collaboration with the construction contractors and the project architect to ensure timely and high quality outcomes.

Proposed Staffing:

Construction Manager	1.0
Construction Inspectors	4.0
Mechanical Systems Inspector	1.0
Compliance Specialist	1.0
Admin Assistant/Secretary	1.0

Duties and Responsibilities:

Pre-Bid Reviews

- Conducts design reviews for constructability, code compliance and economy.
- Conducts Value Engineering Studies.

Project Bidding and Contract Award

- Solicits construction bids.
- Holds pre-bid meetings.
- Conducts Bid openings.
- Conducts Bid evaluation.
- Makes Bid award recommendations.

Construction Administration and Coordination

- Conducts Project Kick-off meetings.
- Advises facility users of construction impacts.
- Attends construction progress meetings.
- Ensures compliance with contract documents.
- Reviews and approves contractor progress payment.
- Represent the owner in contract related matters.
- Track construction time and work progress.
- Reviews and makes recommendations on change orders.
- Coordinates Architect's construction phase services.
- Submits construction progress reports.
- Negotiates contract cost change

Construction Inspections

- Conducts quality and compliance inspections.
- Recommends products and other design features to design unit for continuous improvement purposes.
- Reviews and approves contractor-requested substitutions.

Project Close-out

- Coordinates building systems commissioning prior to user occupancy.
- Obtains and file warranties.
- Evaluates contractor's performance.
- Coordinate change of responsibility to maintenance and operations personnel.
- Obtain final records of as-built conditions.
- Ensures punch list resolution.
- Recommends release of contract retainages.

Key Outcomes:

- Ensure timely and economic construction process.
- Avoids adverse impacts on school educational and administrative processes.
- Ensure knowledgeable and effective representation of BCPSS' real estate interests.
- Provide system-wide planning services.

Performance Measures:

- Effective financial management results.
- Timely implementation of assigned projects.
- Customer satisfaction

Mission: Construction Management Unit
Created: 1/2/2002
Updated: 2/11/2002

Administrative and Real Estate Management

Mission:

To provide administrative, financial management and real estate management services for the department. This unit's responsibilities also include office management, staff and organizational development, coordinating contracts, invoices and payment requests, real estate management and facilitating general organizational operations.

Mandate:

To provide administrative support in the areas of financial accounting, contracts management, and departmental workflow. Predominant responsibilities are supervising and training staff, coordinating unit workflow and periodically reviewing completed work. This unit functions as liaison between management and staff.

Proposed Staffing:

- Office Manager	1.0
- Business Analyst	1.0
- Account Assistant	1.0
- Real Estate Administrator	1.0

Duties and Responsibilities:

General

- Maintains administrative, archival and/or personnel files for the department.
- Analyzes routine operating practices and procedures to include personnel, record keeping, performance standards, workflow, and cost reduction, equipment and supply utilization, etc., to ensure smooth and efficient office operation.
- Maintains systems, procedures and methods for record keeping, cost gathering and accounts reporting.
- Prepare a variety of reports on financial activities and status for budget preparation. Coordinates the review and approval of contractor payments and invoices.
- Coordinates the development of and maintains departmental policies and procedures.
- Interacts with vendors and other organizational departments to answer questions and resolve account and billing discrepancies.

- Obtains, organizes and drafts financial and administrative materials for public information or organizational use.
- Provides guidance and consultation to officials, employees and general public on organizational and administrative matters.
- Provides a variety of supportive services as directed by an administrative superior.
- Performs other related duties as required in support of the day-to-day departmental operations.

Real Estate Administration

- Locates and leases commercial space to address BCPSS' administrative needs.
- Administers property appraisals through real estate professionals.
- Coordinate property transfers between BCPSS and the City. Coordinates the administrative and legal requirements associated with real property disposal.
- Coordinates right-of-way grants.
- Conducts deed book searches as necessary to maintain legal entitlement to school property. Administers receipt of property acquired by or dedicated to BCPSS.
- Negotiates rights-of-entry to BCPSS properties.
- Coordinates the requirements associated with the State Public Construction Program relating to archeological surveys of schools sites identified by the MD Historic Trust.
- Archive and maintain record drawings for all BCPSS real properties. Coordinates boundary and topographical surveys of properties as needed.
- Provide monthly status report summarizing all Joint-Tenant leasing activity.

Records Maintenance

- Develops and maintains archives of all facilities related documents and records.
- Establishes and maintains databases for storage and retrieval of data and documents.

Key Outcomes:

- Effective use of resources to ensure accurate and timely processing of contractor's payment requests.
- Create and maintain electronic databases containing all general correspondence documents, reports, and real estate related records and construction drawings.
- Ensure knowledgeable and effective representation of BCPSS' real estate interests.
- Provide business analysis as needed in support of departmental goals and objectives.

Performance Measures:

- Accuracy of facilities management accounting and periodic reporting.
- Effective use of buildings and grounds as measured by client requests for space and amenities to support complimentary and compatible community uses.
- Effectiveness and adequacy of departmental procedures and policies.
- Time and cost to complete facilities inventory database and documents archive.

Mission: Administrative and Real Estate Management Services

Created: 1/2/2002

Updated: 2/11/2002

II. Capital Projects Management Process

Pre-Design Phase Analyses Process:

Project Implementation Scheduling:

The most critical element of a process that delivers capital projects on consistently timely basis is scheduling. The process begins as soon as a project is identified for improvements. The major activities that need to be addressed in the initial schedule of a typical school capital project are shown in Table 3 below.

Table 3: Approximate Times Needed to Complete Major Project Implementation Phases

Phase	Activity	Time to Complete (Months)		
		Elementary	Middle	High
Pre-Design	Preliminary Program Development:	1	2	3
	Feasibility Study:	2	3	4
	Final Program Development:	1	1	1
	Architect Selection:	2	2	2
	Total Pre-design Time Needed:	6	8	10
Design	Schematic Planning:	3	4	5
	Design Development:	5	7	9
	Construction Documents:	6	8	10
	Total Design Time Needed:	14	19	24
Construction	Bidding:	2	2	2
	Construction:	14	18	22
	Move-in:	1.5	2	2
	Total Construction Time Needed:	16	22	25
Total Approx. Project Time (Months):		37.5	49.0	60.0

In general, the construction time needed to perform full renovation of the building and site of an unoccupied, 60-80,000-sf elementary school is approximately 14 months from issuance of a Notice to Proceed; while an unoccupied 250-300,000-sf high school will require approximately 22 months to undergo full renovation.

Design Feasibility Studies:

A technical pre-design phase analysis of all major capital projects should occur before design and other project implementation phases begin. Generally referred to as Feasibility Studies, these studies are conducted to evaluate existing conditions and may include geotechnical reports, land surveys (including boundaries, topography, and utilities), existing building analysis, and surveys of existing hazardous materials (environmental due diligence). The study report describes the investigations made and the measurements taken, and often contain recommendations for incorporating the results of the investigations into the building design. The outcome of such studies should include an

adequate compliment of knowledge, data, and information needed to fully describe a project's scope and prepare project-funding requests. Pre-design phase studies are conducted to ensure the quality and completeness of the project's scope and include the following focus:

- Comparatively analyze space and program requirements against existing conditions;
- Resolution of issues relating to the facilities program and space requirements;
- Identify the constraints and opportunities of the proposed site;
- Develop a construction cost and overall project implementation budget;
- Evaluate cost comparisons of new construction versus renovation;
- Identify critical community and user instructional, administrative and operational needs;
- Develop a proposed project implementation schedule, highlighting critical milestones;
- Obtain input from building code officials and funding agencies about project proposals, and
- Identify other requirements that can adversely impact the project delivery process.

The amount of funding needed to conduct adequate pre-design phase studies varies based upon the size and complexity of the project. An architect and other consultants having the specific expertise required typically perform these studies. Typical costs associated with such studies for K-12 schools range from \$20,000 for an elementary school to \$80,000 for a complex high school project. Based on the existing funding cycle for BCPSS' capital projects, such funds should be made available in the fiscal year prior to the beginning of the project planning (design) process. Pre-design studies of this type usually require three to five months to complete.

Benefits of pre-design studies for school capital projects are:

- Obtaining a full scope of the project;
- Allows for developing a more accurate project cost estimate;
- Identify major obstacles and issues well in advance of actual project implementation;
- Many requirements of the educational specifications can be identified during the study;
- Allows for the early identification of critical project elements such as scope, budget, schedule, and special requirements;

- Encourages early identification of project;
- Project construction cost estimate through an independent estimator; and
- Ensures broad knowledge of the project implementation challenges.

Drawbacks of this approach are:

- Cost to conduct the studies and the effort required coordinating the work involved.

Educational Program Development:

Development of the educational program or specifications is a highly critical element in the capital project implementation process. The program is used to determine the scope, budget and schedule of the project. In order to accommodate the design process described above a preliminary space summary is needed at the time the feasibility study begins. This information provides the architect conducting the study with information to determine the adequacy of an existing facility to accommodate the program, or for developing preliminary building and site space allocation layouts for new facilities. It also serves as a starting point for program refinements prior to production of the final program. The final program should be developed and approved prior to selection of the project architect.

Currently BCPSS contracts out the tasks of developing educational program specifications. Typical cost to have design professionals produce the specifications is \$30,000. In general, these specifications comprise sections containing the following information, provided by the indicated sources. Table 4 below outlines the major elements included in a typical education specification.

Table 4: Educational Specifications Contents

Specification Contents	Source	Responsibility	How Generated
1 Program Overview	BCPSS	Curriculum & Instruction	Program Specific
2 Program Descriptions	BCPSS	Curriculum & Instruction	Program Specific
3 Space Allocations	BCPSS	Facility Planner	Std by school type
4 Space Amenities	BCPSS	Facility Planner	Std by school type
5 Space Utility Requirements	BCPSS	Facility Planner	Std by school type
6 Existing Building & Site Layouts	BCPSS	Facility Planner	Std by school type
7 Existing Condition Reports	BCPSS	Facility Planner	3D/I Reports
8 Reference Documents	Architect	Facility Planner	Std for all schools

Notes:

- Items 1&2 are currently provided by the office of Curriculum and Instruction.
 - Items 3-5 are contained in many of the existing program specification documents. A separate set should be developed for each grade-level school. The specifications for Mosher E/M schools contain an excellent description of the requirements of these sections for E/M schools and is usable in its current format.
 - The information needed for Item 6 is currently on file in the Facilities Management department.
 - The information needed for Item 7 is also currently available in the Department of Facilities Management as sections for individual schools in the 3D/I facilities condition survey report.
 - The information proposed for section 8, reference documents, include applicable design-related codes and standards such as City building codes, industry standards, State of Maryland standards for indoor air quality, design of science labs, etc.
-

It is recommended that since BCPSS provides the bulk of the information included in the educational program, that this activity be accomplished using in-house staff. A facilities planner position has been included in the departmental staffing proposal to address this need.

Capital Budgeting:

Capital budgeting is by far the most important aspect of capital planning. Capital budgeting policies and procedures are primarily determined by the State of Maryland Department of Education guidelines. Those guidelines primarily address factors such as the eligible building area allocation per student, the age of the facility under consideration, and miscellaneous project implementation expenses.

Although those guidelines comprise specific criteria and calculation methods used in determining the maximum State funding allocation, the actual project costs may vary considerably and is determined by the total work involved in a specific facility project. Since many BCPSS schools are experiencing declining enrollments, calculations of the anticipated costs to renovate an entire facility may exceed State guideline allocations considerably. This is primarily due to the size of the existing building being larger than the per-student allocation of space for the renovated building based on reduced enrollments.

The challenge is to strike a balance between the State's funding allocation and the additional construction cost. Demolition of the building area in excess of the State allocation does not always represent a cost-effective approach to reducing overall construction cost due to demolition and associated repair costs, which can exceed the cost of renovating the excess area. Either approach will require that the actual renovation cost to be accounted for. The ultimate goal is to predict anticipated project costs as accurately as possible.

Described below are some alternative approaches to accurate capital budgeting. All of the alternatives discussed assume that the estimator has detailed knowledge of the project's particulars.

- 1) *Using industry data* allows owners to identify orders of magnitude estimates of construction costs. Several companies monitor and document construction costs on a real-time basis and offer direct estimating services or published data. The published data is usually available based on building type, e.g., educational facilities, etc, and is updated once or twice annually. Published cost data is also classified by geographical region, and usually include provisions for applying a local construction cost multiplier.
- 2) *Using in-house historical data* is one of the best approaches to accurate construction cost estimating. This approach yields exceptionally good results when there is a high degree of standardization of materials, features, finishes and amenities amongst various projects, and a reasonably stable inflation rate. The biggest challenge to this approach is exercising the diligence in data collection that is needed. This approach can be simplified by applying electronic data capturing protocols to those organizational functions involved in the construction funds flow processes. Construction funds flow processes include invoices and payment requests, reviewing contractor schedule of values, change orders, etc. It works particularly well when projects are being bid at staggered intervals throughout the year.
- 3) *Using professional estimating services* can often produce fairly accurate cost estimates, depending on the quality of the data used and the detail level to which the estimating process extends. For a cost of approximately .2-.4% of the total construction estimate, professional cost estimators will work along with the project architect to track and report anticipated construction cost during design. Consistent accuracy is not always achieved though this process.
- 4) *Using State-provided square foot cost* is by far the simplest approach to capital budgeting, albeit that it does not always address specific needs of the facility under consideration. This approach assumes an average state-wide average unit cost per square foot of building area, multiplied times the number of students to be housed in the facility. The results of this approach require that supplemental calculations be made to quantify, and add to the total, items not included in the unit cost amount.

Cost containment begins with careful evaluation of alternative solutions to design problems as a part of a comprehensive planning process. It begins with cost estimating from preliminary planning to, more detailed analysis during design and construction phases. Cost analysis and reporting becomes more detailed as the project develops, allowing for adjustments in location, scope, construction time and other factors. Estimating construction costs typically involves using costs from similar prior projects and applying those costs to the present project, allowing for adjustments in location, scope, construction time period, and other factors.

Contingencies are normally used with all of the methods of cost estimating to allow for unknowns. Avoid adding explicit contingencies on top of implicit contingencies. The design contingency allows for the fact that projects often contain more elements when they are fully designed than could have been anticipated earlier in the design process. The project contingency is for use in resolving unknowns during construction. The project contingency allows for unknown factors that could increase construction and related costs beyond the estimate. Project contingency is not the same as the escalation factor.

Listed below is some typical project costs that are not traditionally included in construction budgets as line item costs.

Pre-Design Phase	Design Phase	Construction Phase
Feasibility Studies	Architect/Design Fees	Asbestos Removal
Geotechnical Surveys	Energy Conservation Analysis	Asbestos Air Monitoring
Topographical & Boundary Surveys	City/County Permit Fees	Site Signage
Publications/Advertisement Costs	Value Engineering	Electric Service Upgrades
Special Studies	Cost Estimators	Construction Management
	Special Studies	Demolition
	EMS Design	Play Equipment
		Building Electronic Systems
		HVAC Commissioning

Architect Selection:

Selection of the project architect is the final activity in the pre-design phase. The selection process is accomplished using Board-approved procedures entailing advertising for firms interested in providing design and construction administration services, short-listing qualified firms for interview, interviewing and selection of one firm or team using standard criteria, negotiating, and contract approval and award by the Board. Detailed responsibilities of the project architect are outlined in the document contained in Appendix III.

Agency submissions required during or upon completion of this project phase are:

- PSCP review and approval of educational specifications.
- Submit A/E services contract to PSCP for filing

Design Phase Activities

Schematic Planning:

Schematic planning involves a collaboration between the architect, the school administration, PTA and community representatives, as well as curriculum and facilities management staff, to develop alternative proposals that satisfy the program requirements, consistent with program requirements and applicable construction codes and standards. The process is an interactive one using a series of meetings and presentations that

successively updates the selected scheme to include comments and suggestions from previous meetings.

Design goals and objectives achieved during the schematic planning process include the following areas of consideration:

- *Instructional:* Relates to the school's instructional/academic program(s). The focus is on achieving optimized relationships between academic and support spaces. The general focus of the school's general academic programs, with particular emphasis on signature and magnet programs. Thoughtful consideration of these areas can significantly enhance how well the facility design compliments the instructional program.
- *Administrative:* Speaks to the issues and concerns associated with administration of the school's overall academic programs, community-based programs, media programs, as well as general staff development and academic program delivery.
- *Operational:* Relates to issues associated with the operation of the school facility. Concerns in this area center around interior circulation, pedestrian and vehicular access, security, public use of the facility, the availability of operational utilities, and overall facility management.

Approvals to obtained following this project phase include:

- Approval by the school planning committee.
- Submission to the State of Maryland IAC program staff for review and approval by September 1.

Design Development:

During this design phase the design team begins detailed design for the building and site. In general, design details are advanced to a point of 35-40% completion by the end of this phase. An additional requirement involves development of life cycle cost and energy conservation analysis of the proposed building design for review by the Department of General Services. This phase is concluded with a submission of drawings and outline specifications for review by BCPSS Facilities Management and State of Maryland PSCP staffs.

Specific submissions required at the conclusion of this project phase are:

- Drawings and outline specifications for review and approval of design development documents by the PSCP staff, by November 1 of each year.
- Review and approval of life cycle cost and energy conservation analysis by the State Department of General Services.

Construction Documents:

As one of the most important design phases, construction documents are finalized to include all comments and design details that are to be included in the bid documents. At approximately 95% design completion the architect submit plans and specifications to plans examiners at the Department of Housing and Community Development to review for compliance with related ordinances.

Specific submissions required at the conclusion of this project phase are:

- Final plans and specifications provided to the State IAC staff for review, comment and approval.
- Final plans and specifications provided to the State Department of General Services for review, comment and approval.
- Final plans and specifications submitted to Department of Facilities Management staff for review, comment and approval.
- Architect's update of the anticipated project construction cost for review by BCPSS staff.
- Upon review and approval of CD's the PSCP will issue an authorization to bid.

Construction Phase Activities

Bidding and Contract Award:

During the bidding phase the project is advertised to solicit bids from prospective bidders. A pre-bid meeting is held for the purpose of answering questions regarding the project design details, contractual matters, or any other aspect of the project. Bid documents are distributed to prospective bidders through the project architect or a public plan reading room. Award of a contract is made to the lowest responsive and responsible bidder.

Submissions required following this activity include:

- Submit one copy of each addendum to DGS on day of release to bidders.
- Submit tabulated bids to the PSCP for approval.
- Board of Education approval of construction contract.
- Contract awarded after PSCP approval of bid.
- Provide copy of contract to PSCP for filing.

Construction:

During the construction phase the project is administered by the project architect, the BCPSS project manager, and when applicable, a construction manager. During this phase the BCPSS project manager is responsible for ensuring resolution of all technical and financial issues associated with the work occurring during this phase. The architect's specific responsibilities include periodically answering questions relating to the design intent of specific design details, approving shop drawings, approving change orders, approving contractor payment requests, performing quality and workmanship inspections, and ensuring interpretation of the design documents. The BCPSS project manager is responsible for conducting quality, quantity and workmanship inspections; review and approve change proposals and change orders, ensure timely completion of the project, monitors progress of the work, provide status, monitors the work of the architect, and proposes action on payment requests. When applicable, the construction manager's role is similar to that of the BCPSS project manager.

Submissions required during and following construction are:

- Copies of all change orders to the PSCP.
- Provide monthly status reports to the PSCP.
- Obtain all warrantee certificates and equipment operating manuals.

General Recommendations

Pre-Design Phase:

- Obtain advance funds from the City to include a design feasibility study to be completed for each major capital project prior to preparing and application. Such a study would cost approximately \$30K for elementary schools, \$40K for middle schools, and \$60K for high schools pending new construction or modernizations. Benefits of this approach are as follows:
 - 1) Provides a full scope of the project, if properly conducted.
 - 2) Allows for developing a more accurate project cost estimate.
 - 3) Identify major obstacles and issues well in advance of actual project implementation.
 - 4) Many requirements of the educational specifications can be identified during the study.

- 5) Allows for the early identification of critical project elements such as scope, budget, schedule, and special requirements.

Construction Phase:

- Include the asbestos removal activity in the general contractor's contract. This change from the current approach offers the following benefits:
 - 1) Reduces staff time needed to accomplish.
 - 2) Provides increased flexibility to the general contractor for scheduling the work and obtaining an earlier contract.
 - 3) Maintains a competitive bidding atmosphere.

General:

- After completing departmental staffing, conduct a 1 or 2-day staff retreat off-site focusing on orienting all employees to the organizational mandates such as its mission, near and long term goals, challenges, etc., as well as applicable organizational operating processes and procedures. This approach allows employees to get to know one another professionally, as well as provide an opportunity to understand the entire challenge confronting the organization. If properly formatted this kind of activity can engender group and interpersonal camaraderie, inform employees of the larger dimensions of the department's challenges and responsibilities, and enhance appreciation of how they, individually and collectively, play a role in the overall success of the department and the System. Using actual technical vignettes of existing projects and challenges, small groups of individuals can obtain real-world experience attempt to solve some of the more critical challenges confronting the organization.

III: Facilities Management Technology Plan

Overview:

Microelectronic technologies continue to play a significant role in modern industrial societies, integrating technology into technical organizations help give a decided advantage to those seeking to achieve high levels of effectiveness and efficiency. As was reported recently in a Walls Street Journal article, many American enterprise organizations are still achieving employee productivity gains, even during periods of general economic downturns due, primarily, to the exploitation of electronic technologies.

To ensure that technology is effectively integrated into public service organizations operating managers must collaborate to create a formal technology plan. Developing a plan for using technology to support facilities management operations means more than providing for the acquisition of computers, software and training. In order to extract full benefit an organization's technology plan must promote meaningful collaboration among employees and their stakeholders to accomplish critical operational and performance goals.

In order to take full advantage of the power and ubiquitous features of networked data systems enterprising organizations are taking advantage of the broad range of available technologies, processes, and practices to leverage their accomplishments into organizational successes and reputations as leaders in their fields. As can be demonstrated, collaboration and cooperation between public agencies and entities with common goals can lead to new levels achievement and customer satisfaction. Following is a discussion of the strategic opportunities and operational implications of employing technology systems as the backbone of a modern facilities management organization.

Goals of the Information Technology Strategy:

Recognizing the diversity of its customer and stakeholder base, a successful information technology plan for a public facilities management organization will comprise the following goals and objectives.

- Ensure the greatest level of collaboration among service providers and service recipients;
- Define its customer base as broadly as necessary to include all possible stakeholders to ensure inclusiveness;

- Ensure that key data and information services are available to departmental staff, other BPCSS employees and management, and external stakeholders on a 24 hours per day, 7 days a week basis;
- Reduce the time and effort needed to achieve harmonious dissemination of data and information to the organization's internal and external stakeholders;
- Promote collaboration and data sharing through common data and information frameworks;
- Leverage information technology as a strategic asset to facilitate delivery of superior experiences and services; and
- Creating an organizational culture and infrastructure that recognizes the value proposition offered through broad-based data and information interchange.

Exploiting the Technology Value Proposition:

For a public K-12 facilities management organization to take advantage of the value and power of today's technology systems it must consider implementing the following operational components:

- Capture data at its source, or as near as possible to its originating source. This tenet recognizes that most of the data is created outside the immediate organization by consultants and other contractors. When facilitated, the information can be introduced to the data infrastructure through Internet or other electronic interfaces for follow-on processing and decision making. Once captured the data can be shared, used to generate reports, manipulated to indicate its relationship to acceptable tolerances or benchmarks, categorized, prioritized, archived or processed using perfunctory protocols.

For example, construction change orders contain information critical to several members of the organization. If it is required of construction contractors that data relating to change orders is input to the data system through an electronic interface that includes critical parameters relating to the various aspects of the anomaly involved, team members at all levels can focus on those most important to their vested role.

- Share data and information as freely as possible, without compromising the integrity of that which is sacred, secure, or proprietary. Most facilities management data of the type under consideration has value to many process participants. Sharing such data empowers employees to act decisively and expeditiously in accomplishing their work.

- Recognize the need for the combination of Intranet and Internet access to data and information.
- Archive documents in electronic format in order to allow for ubiquitous access.
- Create a departmental Internet web site to allow for communication to the broadest possible audience of stakeholders as possible.

Appendix IA

Capital Projects Management Personnel Position Descriptions

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Baltimore City Public School System

Position Description

Title:

Senior Architect / Facilities Program Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the department director, the facilities program manager supervises architectural staff responsible for managing a comprehensive program of schools and related facilities during the planning and design phases. The incumbent provides overall technical and administrative leadership associated with planning and design of school facilities; acts a senior project manager for school-related capital design and construction projects; oversees the development of design, materials and construction standards appropriate for school facilities; develops budgets and schedules for proposed capital projects; proposes and manages budgets and expenses associated with the capital planning and design function and operations; ensures the timely execution of all commitments relating to the CIP; coordinates State and local requirements for funding, submissions, as well as compliance with ordinances, codes, regulations, standards, etc.; formulates and enforces standards for construction and alteration of public school facilities throughout the jurisdiction; performs related work as requested.

Specific duties and responsibilities:

- Serves as senior project manager responsible for overseeing implementation of the planning and design phases of Capital Improvements Program (CIP) projects. Supervises professional and support staff in the management of capital projects during their planning and design phases of implementation.
- Oversees the preparation of plans and specifications for new and renovated school capital projects taking into consideration such factors as contemporary K-12 learning environments, school administrative and operational needs, program-specific requirements, local community development goals; user's health, safety, climate and air quality; vehicular and pedestrian traffic patterns, security, technology systems, construction costs and budgets, project schedules, building materials and finishes, accepted principles of school construction, and local codes and standards.
- Assists in development of long range comprehensive master plans for facilities maintenance and renewal. Participates in capital budget formation for CIP projects.
- Evaluates the condition of schools and makes recommendations for facilities improvement projects. Inspects schools under construction or undergoing alteration to enforce applicable standards. Provides technical information and recommendations regarding planning, design and construction or renovation of school facilities. Researches, formulates and enforces standards for design, materials, and quality of construction and alteration of public school facilities.

- Performs financial management responsibilities associated with formulating capital budgets; hiring architects consultants and other contractors; reviewing and processing payment invoices; ensuring project cost stability; processing change orders; analysis of bids and contractors; developing an annual operating budget for the planning and design unit operations; and maintaining accurate records of expenditures and commitments.
- Performs feasibility studies and life cycle cost analyses to ensure optimization of value in major design and construction projects.
- Ensures user and community involvement in capital facilities projects.
- Represents client in obtaining bids and awarding construction contracts. Assists in arbitrating difficult and unusual construction disputes.
- Prepares scale drawings and contract documents for locally designed and building contractors. Directs the activities of workers engaged in preparing drawings and specification documents. Consults with users to determine functional and spatial requirements of new structure or renovation, and prepares information regarding design, specifications, materials, color, equipment, estimated costs, and construction time. Plans layout of project and integrates engineering elements into unified design for user review and approval.

Qualifications and experience:

- Graduation from an accredited college or university with a Bachelor's degree in Architecture, and four (8) years practical building design experience.
- Possession of a valid Professional Architect's license issued by the State of Maryland Board of Professional Engineers and Land Surveyors, or capability to obtain such within one calendar year of employment.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Proficient in the use of AutoCad and other common software.

Created: 1/2/2002
Updated: 1/23/2002

Baltimore City Public School System

Position Description

Title:

Electrical Engineer/Facilities Project Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the electrical engineer is responsible for the planning and design of up-to-date electrical systems for various public buildings and installations. The incumbent provides overall technical guidance over electrical engineering work associated with facilities design, construction and maintenance programs; acts as project manager for school-related capital design and construction projects; develops design standards appropriate for school facilities; and performs related work as requested.

Specific Duties and Responsibilities:

Oversees the development of electrical and electronic systems plans, specifications and cost estimates prepared by consulting engineers and architects, ensuring compliance with applicable building codes and standards, including main and emergency electric power, interior and exterior lighting systems for buildings and installations of various types. Specifies design requirements for related systems such as electronic intrusion detection, fire alarm, security, energy management, and data networks. Ensures that design proposals conform to NEC standards, as well as local codes and regulations. Develops and maintains design standards for school electrical power and lighting systems.

- Prepares preliminary estimates of the costs of specific electrical systems projects. Performs and/or reviews load and other related calculations to ensure electrical system capacity and adequacy. Makes field surveys of existing electrical systems, including load checks. Inspects construction work for conformance with designs, plans, and specifications.
- Prepares clear, technically sound, accurate, and informative engineering and other reports containing findings, conclusions, and recommendations. Plans and conducts surveys, tests, and investigations pertaining to electrical systems associated with construction and maintenance operations.
- Maintains close contact with manufacturers of various types of equipment and machinery used by the department in order to maintain up-to-date equipment specifications and become knowledgeable of new equipment developments.
- Provides technical assistance and support to building maintenance operations, and for in-house projects involving alterations to existing electrical installations.
- Serves as capital facilities project manager responsible for facilities design and construction projects; facilitating activities relating to the design feasibility analyses, development of

project scope, identifying user needs and concerns, architect selection, design review coordination, agency submissions, and obtaining construction bids. Reviews and approves consultant's invoices and construction phase change orders. Coordinates design phase studies, reports and field surveys. Schedules, facilitates and conduct community meetings with users and project design professionals. Makes presentations to community groups, senior management, the Board of Education, and other public officials, relating to assigned projects.

Qualifications and Experience:

- Graduation from an accredited college or university with a Bachelor's degree in Electrical Engineering, and four (4) years practical building electrical system design experience. Knowledge of project management for multiple, concurrent facilities design and construction projects.
- Possession of a valid Professional Engineer's license issued by the State of Maryland Board of Professional Engineers and Land Surveyors, or capability to obtain such within one calendar year from date of employment.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Electrical Engineer/Facilities Project Manager
Created: 1/3/2002
Updated: 1/5/2002

Baltimore City Public School System

Position Description

Title:

Mechanical Engineer/Facilities Project Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the mechanical engineer is responsible for the planning and design of up-to-date mechanical systems for various public buildings and installations. The incumbent provides overall technical guidance over mechanical engineering work associated with facilities design, construction and maintenance programs; acts as Project Manager for school-related capital design and construction projects; develops design standards appropriate for school facilities; and performs related work as requested.

Specific Duties and Responsibilities:

- Oversees the development of building mechanical systems plans, specifications and cost estimates prepared by consulting engineers and architects, ensuring compliance with applicable building codes and standards. Primary mechanical systems include, but not limited, environmental comfort systems (HVAC), automatic temperature controls, energy conservation, domestic plumbing, and fire protection systems. Incumbent should be experienced and knowledgeable of design, installation and operating considerations associated with boilers, chillers, unitary HVAC equipment, domestic water systems, mechanical equipment room design, building energy simulation calculations, digital and pneumatic controls, as well as standards published by ASHRAE, NEC, BOCA.
- Prepares preliminary estimates of the costs of specific mechanical systems projects. Performs and/or reviews load and other related calculations to ensure mechanical system capacity and adequacy. Makes field surveys of existing mechanical systems, including performance checks. Inspects construction work for conformance with designs, plans, and specifications.
- Prepares clear, technically sound, accurate, and informative engineering and other reports containing findings, conclusions, and recommendations. Plans and conducts surveys, tests, and investigations pertaining to mechanical systems associated with construction and maintenance operations.
- Maintains close contact with manufacturers of various types of equipment and machinery used by the department in order to maintain up-to-date equipment specifications and become knowledgeable of new equipment developments.
- Provides technical assistance and support to building maintenance operations, and for in-

house projects involving alterations to existing mechanical installations.

- Serves as capital facilities project manager responsible for facilities design and construction projects; facilitating activities relating to the design feasibility analyses, development of project scope, identifying user needs and concerns, architect selection, design review coordination, agency submissions, and obtaining construction bids. Reviews and approves consultant's invoices and construction phase change orders. Coordinates design phase studies, reports and field surveys. Schedules, facilitates and conduct community meetings with users and project design professionals. Makes presentations to community groups, senior management, the Board of Education, and other public officials, relating to assigned projects.

Qualifications and Experience:

- Graduation from an accredited college or university with a Bachelor's degree in Mechanical Engineering, and four (4) years practical building mechanical systems design experience. Knowledge of project management for multiple, concurrent facilities design and construction projects.
- Possession of a valid Professional Engineer's license issued by the State of Maryland Board of Professional Engineers and Land Surveyors, or capability to obtain such within one calendar year from date of employment.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Mechanical Engineer/Facilities Project Manager

Created: 1/3/2002

Updated: 1/23/2002

Position Description

Title:

Civil Engineer/Facilities Project Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the electrical engineer is responsible for the planning and design of civil, site development and related areas systems for various public facilities and installations. The incumbent provides overall technical guidance over civil engineering work associated with facilities design, construction and maintenance programs; acts as project manager for school-related capital design and construction projects; develops design standards appropriate for school facilities; and performs related work as requested.

Specific Duties and Responsibilities:

- Oversees the development of civil engineering and site plan development, specifications and cost estimates prepared by consulting engineers and architects, ensuring compliance with applicable site development codes and standards, including storm water management, site grading, land use, soils, environmental compliance, and site egress for various capital and retrofit projects. Specifies design requirements for related systems. Ensures that design proposals conform to local, State and federal standards. Develops and maintains design standards for school site development.
- Responsible for the oversight of grading, drainage, sanitary sewer and water design for small-to-medium scale commercial development projects. Requires proven ability to review design proposals for cost effectiveness. Reviews and approves design computations that include dimensions, grades, hydrology, hydraulics, water system design, cut and fill calculations and quantity estimates.
- Prepares preliminary estimates of the costs of specific site development projects. Performs and/or reviews hydrology other related calculations to ensure conformance to applicable codes, as well as adequacy of design proposals. Makes field surveys of sites. Inspects construction work for conformance with designs, plans, and specifications.
- Prepares clear, technically sound, accurate, and informative engineering and other reports containing findings, conclusions, and recommendations. Plans and conducts surveys, tests, and investigations pertaining to site development proposals associated with construction and maintenance operations.
- Maintains close contact with manufacturers and code compliance officials for various types of equipment and machinery used by the department in order to maintain up-to-date equipment specifications and become knowledgeable of new equipment developments.

- Provides technical assistance and support to building maintenance operations, and for in-house projects involving alterations to existing site development conditions.
- Serves as capital facilities project manager responsible for facilities design and construction projects; facilitating activities relating to the design feasibility analyses, development of project scope, identifying user needs and concerns, architect selection, design review coordination, agency submissions, and obtaining construction bids. Reviews and approves consultant's invoices and construction phase change orders. Coordinates design phase studies, reports and field surveys. Schedules, facilitates and conduct community meetings with users and project design professionals. Make presentations to community groups, senior management, the Board of Education, and other public officials, relating to assigned projects.

Qualifications and Experience:

- Graduation from an accredited college or university with a Bachelor's degree in Civil Engineering, and four (4) years practical site development design experience. Knowledge of project management for multiple, concurrent facilities design and construction projects.
- Possession of a valid Professional Engineer's license issued by the State of Maryland Board of Professional Engineers and Land Surveyors, or capability to obtain such within one calendar year from date of employment.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Civil Engineer/Facilities Project Manager

Created: 2/11/2002

Updated: 2/11/2002

Baltimore City Public School System

Position Description

Title:

Special Projects Manager/Facilities Project Manager
Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the special projects manager is responsible for the planning and design of special-use facilities and systems for various public facilities and installations. The incumbent provides overall technical guidance over architectural and engineering work associated with facilities design, construction and maintenance programs; acts as project manager for school-related capital design and construction projects; develops design standards appropriate for school facilities; and performs related work as requested.

Specific Duties and Responsibilities:

Oversees the development of kitchens, ADA compliance requirements and other special facilities amenities and retrofit projects. Develops specifications and cost estimates for projects under consideration. Specifies design requirements for related systems. Ensures that design proposals conform to local, State and federal standards. Develops and maintains design standards for school-related facilities.

- Prepares preliminary estimates of the costs of specific special facilities projects. Performs and/or reviews related calculations to ensure conformance to applicable codes, as well as adequacy of design proposals. Makes field surveys of facilities under consideration. Inspects construction work for conformance with designs, plans, and specifications.
- Prepares clear, technically sound, accurate, and informative engineering and other reports containing findings, conclusions, and recommendations. Plans and conducts surveys, tests, and investigations pertaining to development of proposals associated with construction and maintenance operations.
- Maintains close contact with manufacturers and code compliance officials for various types of equipment and machinery used by the department in order to maintain up-to-date equipment specifications and become knowledgeable of new equipment developments.
- Provides technical assistance and support to building maintenance operations, and for in-house projects involving alterations to existing facilities.
- Serves as capital facilities project manager responsible for facilities design and construction projects; facilitating activities relating to the design feasibility analyses, development of project scope, identifying user needs and concerns, architect selection, design review coordination, agency submissions, and obtaining construction bids. Reviews and approves consultant's invoices and construction phase change orders. Coordinates design phase

studies, reports and field surveys. Schedules, facilitates and conduct community meetings with users and project design professionals. Make presentations to community groups, senior management, the Board of Education, and other public officials, relating to assigned projects.

Qualifications and Experience:

- Graduation from an accredited college or university with a Bachelor's degree in Architecture or Engineering, and four (4) years practical facilities design experience. Knowledge of project management for multiple, concurrent facilities design and construction projects.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Special Projects Manager/Facilities Project Manager

Created: 2/11/2002

Updated: 2/11/2002

Baltimore City Public School System

Position Description

Title:

Technology Systems Coordinator/Facilities Project Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the technology systems coordinator is responsible for the planning, design and implementation of electronic networks and systems for various public facilities and installations. The incumbent provides overall technical guidance over contracts involving the installation of voice, video and data network infrastructures, as well as supporting electrical and mechanical systems for work associated with facilities design, construction and retrofit programs. Acts as project manager for school-related capital design and construction projects; develops design standards appropriate for school facilities; and performs related work as requested.

Specific Duties and Responsibilities:

- Oversees the development and installation of network data, voice and video systems projects for new and existing facilities. Develops specifications and cost estimates for projects under consideration. Specifies design requirements for related systems. Ensures that design proposals conform to industry, local, State and federal standards. Develops and maintains design standards for network-related installations in school facilities.
- Administers procedures, budgets, contracts and payments associated with networked systems design and installations. Executes special project assignments and program initiatives associated with managing and monitoring vendors, consultants and contractors.
- Prepares preliminary estimates of the costs of specific networked technology projects. Performs and/or reviews related design proposals to ensure conformance to applicable codes. Makes field surveys of facilities under consideration. Inspects construction work for conformance with designs, plans, and specifications.
- Develops and maintains procedures for testing, validating and certifying operability and adequacy of networked technology installations for various business and instructional clients.
- Prepares clear, technically sound, accurate, and informative engineering and other reports containing findings, conclusions, and recommendations. Plans and conducts surveys, tests, and investigations pertaining to networked systems development proposals associated with new and retrofit situations.
- Maintains close contact with manufacturers and code compliance officials for various types of equipment and machinery used by the department in order to maintain up-to-date

equipment specifications and become knowledgeable of new equipment developments.

- Provides technical assistance and support to building maintenance operations, and for in-house projects involving alterations to existing data networks.
- Serves as capital facilities project manager responsible for facilities design and construction projects; facilitating activities relating to the design feasibility analyses, development of project scope, identifying user needs and concerns, architect selection, design review coordination, agency submissions, and obtaining construction bids. Reviews and approves consultant's invoices and construction phase change orders. Coordinates design phase studies, reports and field surveys. Schedules, facilitates and conduct community meetings with users and project design professionals. Make presentations to community groups, senior management, the Board of Education, and other public officials, relating to assigned projects.

Qualifications and Experience:

- Graduation from an accredited college or university with a Bachelor's degree in Technology Stems Architecture or Engineering, and four (4) years practical experience with networked data systems. Knowledge of project management for multiple, concurrent facilities design and construction projects.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Technology Coordinator/Facilities Project Manager

Created: 2/11/2002

Updated: 2/11/2002

Baltimore City Public School System

Position Description

Title:

Facilities CAD Operator

Department of Facilities Planning and School Construction

Summary:

Under direction of the facilities program manager, the CAD operator is responsible for the planning, preparation, layout and drafting of design documents using information provided by departmental engineers and architects. The incumbent provides general CAD services as needed by program and project managers for school and related facilities projects. Performs related work as requested.

Specific Duties and Responsibilities:

- Performs CAD design layouts as instructed by supervisor or as needed by staff design engineers and architects. Develops and maintains CAD design standards for school-related facilities.
- Provides facilities drawings and document management support by archiving, updating, printing, or filing electronic project data.
- Prepares high quality, construction quality documents and drawing as needed.
- Maintains close contact with manufacturers and code compliance officials for various types of equipment and machinery used by the department in order to maintain up-to-date equipment specifications and become knowledgeable of new equipment developments.
- Provides technical support to building maintenance operations for in-house projects involving alterations to existing facilities.

Qualifications and Experience:

The successful candidate will have a certificate/degree from an accredited technical training school or community college with concentration in CAD and/or architectural or Engineering Technology, or equivalent CAD work experience with HS diploma. AutoCAD 2000 experience in a production setting a plus. CAD Operator will support facilities design and construction projects.

- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer Aided Design proficiency is required.

CAD Operator/Facilities Project Manager
Created: 2/11/2002
Updated: 2/11/2002

Appendix IB

Construction Management Personnel Position Descriptions

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▪ Construction Compliance Specialist	24

Baltimore City Public School System

Position Description

Title:

Construction Program Manager

Department of Facilities Planning and School Construction

Summary:

Under direction of the department director, the construction manager acts as the lead construction administrator and inspector for all construction projects under the department's purview. The incumbent provides construction inspection services on behalf of the owner to ensure contractor compliance with contract documents, building codes, quality standards, cost controls, and timeliness. Supervises construction phase work of the project architect to ensure fulfillment of contractual requirements. Supervises the construction management unit's staff. Performs inspections of construction work during the construction, commissioning, and warranty phases of the implementation of Capital Improvements Program (CIP) projects. Does related work as required.

Specific Duties and Responsibilities:

- Manages day-to-day and overall operations of the construction management unit. Provides leadership to the employees and contractors assigned to the unit's projects. Develops and maintains policies and procedures relevant to the unit's responsibilities. Coordinates the unit's administrative and technical activities with respect to staff, users, consultants, contractors, other internal units and other agencies. Is responsible for ensuring that all problems encountered during construction or warranty periods are resolved to the best interest of the owner.
- Monitors the performance of the unit's activities through a tracking system comprising appropriate performance measures and benchmarks, and develop and implement alternatives to achieve continuous performance improvements.
- Plans, organizes and assigns work of the unit and evaluates employee performance, determines training requirements, perform other supervisory and administrative task as necessary for continuing effectiveness of the unit. Coordinates the work of the architect during construction phases. Assists inspection staff in resolving difficult technical and contractual situations.
- Conducts pre-bid design reviews of plans and specifications during the design phases to ensure constructibility and conformance to internal design standards and user needs.
- Facilitates bidding and contract award activities for capital facilities projects. Schedules and conducts pre-bid conferences to explain contracting procedures and pre-construction conferences to discuss contract requirements. Conducts meetings with contractors to discuss project progress and administration.

- Manages the department's on-site construction inspection program to ensure quality, quantity, adequacy and conformance with code and contract requirements. Develops inspection deficiency reports; notifies contractors of defective work; issued stop work orders and recommend corrective action; reviews and approves change authorizations and cost estimates; reviews project payment requests and recommends disbursement of funds. Identifies potential construction delays and takes appropriate action to eliminate or minimize their cause and/or impact on the project schedule. Maintains logs of construction progress and inspection activities and prepares frequent construction progress reports. Monitors and ensures the maintenance of safe working conditions for workers and/or occupants.
- Reviews and recommends change requests, claims, performance notices, and/or other actions that require written approval. Computes monthly estimates of work completed and recommend payments to be made to the contractor. Acts as the administrative contracting officer, and issue determinations, performance notices and approves field changes within delegated authority.
- Develop standards and procedures, and oversee commissioning of all building systems prior to user occupancy. Establish materials testing programs for soils, site-poured concrete, and other appropriate construction materials.
- Prepares architect/engineer and contractor evaluations upon completion of design and construction projects.
- Acts as general contractor on specific project to plan, direct and coordinate building construction. Prepares specifications and obtain cost estimates for special projects.

Qualifications and Experience:

- Eight (8) years experience in the field of construction management, architecture, engineering, construction project management, financial management, facilities management, construction quality assurance, or related areas involving complex building construction projects, of which at least two (2) years involved personnel supervision.
- Knowledgeable of modern construction principles, practices, techniques, and procedures and the ability to interpret and evaluate specifications, blue prints, drawings and plans. Knowledgeable of State codes, rules and regulations pertaining to the construction and inspection of building construction projects. Ability to organize administrative and supervisory works and establishes effective program schedules and work procedures. Ability to inspect construction projects for the purpose of determining conformance with design plans and specifications.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Construction Program Manager
 Created: 1/2002
 Updated: 2/13/2002

Baltimore City Public School System

Position Description

Title:

Construction Inspector

Department of Facilities Planning and School Construction

Summary:

Under direction of the Construction Manager, the construction inspector performs inspections of construction work during the construction, commissioning, and warranty phases of the implementation of Capital Improvements Program (CIP) projects. The incumbent provides inspection services on behalf of the owner to ensure contractor compliance with contract documents, building codes, quality assurance, cost control, and timeliness. Does related work as required.

Specific Duties and Responsibilities:

- Conduct continuous inspections of buildings and other types of construction work to ensure compliance with contracts, plans, specifications, and reasonable standards of workmanship. Is responsible for identifying problems during construction or warranty periods on behalf of the owner. Monitors and ensures the maintenance of safe working condition for workers and/or occupants.
- Observes construction work in progress to ensure that procedures are followed and materials used conform to specifications. Examines workmanship of finished construction for conformity to owner's standards.
- Assist in interpreting details in drawings and specifications with contractor and discuss deviations from specified construction with Architect to ensure compliance with the design intent.
- Ensures that samples of unapproved construction materials are processed for laboratory testing. Review logs of materials testing and report conditions deviating from tolerances.
- Maintains daily log of construction and inspection activities and document progress and construction anomalies identified during inspections. Computes monthly estimate of work completed by contractors.
- Ensures that approved deviations from plans, specifications, or blueprints are incorporated into the record drawings of as-built conditions.
- Conducts pre-bid design reviews of plans and specification during the design phases to ensure constructibility and conformance to internal design standards, and user needs.

- Monitors activities during commissioning of building systems to ensure compliance with standards and procedures.
- Assists in the expeditious resolution of punch list items. Ensures receipt and filing of warranties, guarantees, record drawings, and other project records provided for in the contract documents.
- Provide feedback for Architect/Engineer and contractor evaluations upon completion of design and construction projects.

Qualifications and Experience:

- Two (2) years of experience in the field of construction contract management, facilities management, construction quality assurance, or related area involving complex building construction projects.
- Reasonably knowledgeable of modern construction principles, techniques, and procedures, and ability to interpret and evaluate specifications, drawings, and plans. Knowledge of local building codes, rules, and regulations pertaining to the construction and inspection of projects. Ability to inspect construction projects for the purpose of determining conformance with design plans and specifications.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Construction Inspector
Created: 1/2002
Updated: 1/23/2002

Baltimore City Public School System

Position Description

Title:

Construction Inspector, Mechanical

Department of Facilities Planning and School Construction

Summary:

Under direction of the construction program manager, the mechanical construction inspector performs inspections of mechanical systems construction work during the construction, commissioning, and warranty phases of the implementation of Capital Improvements Program (CIP) projects. The incumbent provides inspection services on behalf of the owner to ensure contractor compliance with contract documents, building codes, quality assurance, cost control, and timeliness. Does related work as required.

Specific Duties and Responsibilities:

- Conducts continuous inspections of building mechanical systems and related construction work to ensure compliance with contracts, plans, specifications, and reasonable standards of workmanship. Is responsible for identifying problems during construction or warranty periods on behalf of the owner.
- Observes mechanical construction work in process to ensure that procedures are followed and materials used conform to specifications. Examines workmanship of finished construction for conformity to owner's standards.
- Assist in interpreting details in drawings and specifications with contractor and discuss deviations from specified construction with Architect and mechanical engineer to ensure compliance with the design intent.
- Ensures that approved deviations from plans, specifications, or blueprints are incorporated into the record drawings of as-built conditions.
- Conducts pre-bid design reviews of mechanical systems plans and specification during the design phases to ensure constructibility and conformance to internal design standards, and user needs.
- Monitors activities during commissioning of building systems to ensure compliance with standards and procedures.
- Assists in the expeditious resolution of punch list items. Ensures receipt and filing of warranties, guarantees, record drawings, and other project records provided for in the contract documents.
- Provide feedback for Architect/Engineer and contractor evaluations upon completion of design and construction projects.

Qualifications and Experience:

- Two (2) years of experience in the field of mechanical systems construction, facilities management, construction quality assurance, or related area involving complex building mechanical systems construction projects.
- Reasonably knowledgeable of modern construction principles, techniques, and procedures, and ability to interpret and evaluate specifications, drawings, and plans. Knowledge of local building codes, rules, and regulations pertaining to the construction and inspection of projects. Ability to inspect construction projects for the purpose of determining conformance with design plans and specifications.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Construction Inspector, Electrical

Created: 1/7/02

Updated: 1/23/2002

Baltimore City Public School System

Position Description

Title:

Construction Inspector, Electrical

Department of Facilities Planning and School Construction

Summary:

Under direction of the construction program manager, the electrical construction inspector performs inspections of electrical systems construction work during the construction, commissioning, and warranty phases of the implementation of Capital Improvements Program (CIP) projects. The incumbent provides inspection services on behalf of the owner to ensure contractor compliance with contract documents, building codes, quality assurance, cost control, and timeliness. Does related work as required.

Specific Duties and Responsibilities:

- Conducts continuous inspections of building electrical systems and related construction work to ensure compliance with contracts, plans, specifications, and reasonable standards of workmanship. Is responsible for identifying problems during construction or warranty periods on behalf of the owner.
- Observes electrical construction work in progress to ensure that procedures are followed and materials used conform to specifications. Examines workmanship of finished construction for conformity to owner's standards.
- Assist in interpreting details in drawings and specifications with contractor and discuss deviations from specified construction with Architect and electrical engineer to ensure compliance with the design intent.
- Ensures that approved deviations from plans, specifications, or blueprints are incorporated into the record drawings of as-built conditions.
- Conducts pre-bid design reviews of electrical systems plans and specification during the design phases to ensure constructibility and conformance to internal design standards, and user needs.
- Monitors activities during commissioning of building systems to ensure compliance with standards and procedures.
- Assists in the expeditious resolution of punch list items. Ensures receipt and filing of warranties, guarantees, record drawings, and other project records provided for in the contract documents.
- Provide feedback for Architect/Engineer and contractor evaluations upon completion of design and construction projects.

Qualifications and Experience:

- Two (2) years of experience in the field of electrical systems construction, facilities management, construction quality assurance, or related area involving complex building electrical systems construction projects.
- Reasonably knowledgeable of modern construction principles, techniques, and procedures, and ability to interpret and evaluate specifications, drawings, and plans. Knowledge of local building codes, rules, and regulations pertaining to the construction and inspection of projects. Ability to inspect construction projects for the purpose of determining conformance with design plans and specifications.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Construction Inspector, Electrical

Created: 1/7/2002

Updated: 1/23/2002

Baltimore City Public School System

Position Description

Title:

Construction Compliance Specialist

Department of Facilities Planning and School Construction

Summary:

Under direction of the construction program manager, the construction compliance specialist coordinates close-out activities of completed construction projects. The incumbent provides inspection services on behalf of the owner to ensure contractor compliance with contract documents, building codes, quality assurance, cost control, and timeliness. Does related work as required.

Specific Duties and Responsibilities:

- Conducts continuous inspections of building electrical systems and related construction work to ensure compliance with contracts, plans, specifications, and reasonable standards of workmanship. Is responsible for identifying problems during construction or warranty periods on behalf of the owner.
- Observes electrical construction work in progress to ensure that procedures are followed and materials used conform to specifications. Examines workmanship of finished construction for conformity to owner's standards.
- Assist in interpreting details in drawings and specifications with contractor and discuss deviations from specified construction with Architect and electrical engineer to ensure compliance with the design intent.
- Ensures that approved deviations from plans, specifications, or blueprints are incorporated into the record drawings of as-built conditions.
- Conducts pre-bid design reviews of electrical systems plans and specification during the design phases to ensure constructibility and conformance to internal design standards, and user needs.
- Monitors activities during commissioning of building systems to ensure compliance with standards and procedures.
- Assists in the expeditious resolution of punch list items. Ensures receipt and filing of warranties, guarantees, record drawings, and other project records provided for in the contract documents.
- Provide feedback for Architect/Engineer and contractor evaluations upon completion of design and construction projects.

Qualifications and Experience:

- Two (2) years of experience in the field of electrical systems construction, facilities management, construction quality assurance, or related area involving complex building electrical systems construction projects.
- Reasonably knowledgeable of modern construction principles, techniques, and procedures, and ability to interpret and evaluate specifications, drawings, and plans. Knowledge of local building codes, rules, and regulations pertaining to the construction and inspection of projects. Ability to inspect construction projects for the purpose of determining conformance with design plans and specifications.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Construction Compliance Specialist

Created: 1/7002

Updated: 1/23/2002

Appendix IC

Administrative Services & Real Estate Management Unit

Personnel Position Descriptions

▪ Office Manager / Administrative Assistant	27
▪ Business Analyst	29
▪ Account Assistant	31
▪ Real Estate Administrator	33

Baltimore City Public School System

Position Description

Title:

Office Manager/Administrative Assistant

Department of Facilities Planning and School Construction

Summary:

Under direction of the department director, the office manager is responsible for providing administrative support in the areas of operation, personnel, financial management, organization analysis. Coordinates and oversees the day-to-day operations of the department. Processes invoices and other financial obligations. Does related work as required.

Specific Duties and Responsibilities:

- Maintains systems, procedures and methods for record keeping, cost gathering and financial accounts reporting. Develops and implements an electronic documents management system, providing broad yet secure access to documents by departmental staff.
- Analyzes routine operating practices and procedures to include personnel, record keeping, performance standards, workflow, and cost reduction, equipment and supply utilization, etc., to ensure smooth and efficient office operation.
- Prepare a variety of reports on financial activities and status for budget preparation. Ensures accuracy of details for financial charges for all encumbrances and disbursements. Processes invoices and other authorized payments. Resolves account and billing discrepancies.
- Obtains, organizes and drafts technical and administrative materials for public information or organizational use.
- Assists in the development of the department's operating and capital budgets.
- Provides assistance to all departmental units in directing work and information flows.
- Assist in the development of and maintains departmental operating policies and procedures.
- Provides direct assistance to the department director during facilitation of operating and administration budgets.

- Coordinates processes associated with obtaining approval or resolution of contractor invoices and payment requests.
- Serve as the departmental champion to illuminating the work of the department to other BCPSS units and the public.
- Provides personnel and settling assistance to new employees.
- Provides a variety of supportive services as directed by an administrative superior.
- Supervise assigned temporary, volunteer and other support personnel.

Qualifications and Experience:

- Minimum three years experience of varied and progressive secretarial responsibilities and two years office management experience with administrative/supervisory responsibilities. Knowledge of principles and practices of organization, planning, records management, and general organization administration. Ability to communicate effectively both verbally and in writing with staff, employees and public.
- High school diploma or equivalent, plus knowledge of principles and practices of basic accounting, office management and personnel supervision.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency with standard hardware and general office-related software applications is required.

Created: 1/7002
Updated: 1/28/2002

Baltimore City Public School System

Position Description

Title:

Business Analyst

Department of Facilities Planning and School Construction

Summary:

Under direction of the department director, the facilities business analyst performs operational, organizational studies to improve the efficiency and effectiveness of the facilities management department. The incumbent performs analysis documents and data, constructs information databases, and conducts general studies of organizational and financial aspects of the department. Does related work as required.

Specific Duties and Responsibilities:

- Performs operational, organizational management and procedure analysis. Documents and presents finding resulting from such analyses.
- Conducts studies of operating anomalies and procedures, such as organizational change, communications, information flow, cost analysis, and comparisons of economic alternatives between existing and substitute opportunities.
- Consults with organization management and conducts research and analysis necessary to clarify cost and other issues relating to facilities design and construction.
- Analyzes and documents study findings and drafts alternative plans for implementation of new systems, procedures policies to ensure organizational effectiveness.
- Prepares narrative, statistical and graphical reports and assists in the preparation of presentations to staff and citizen groups, and makes recommendations for courses of action.
- Assists in the development, testing and documenting of new business solutions.
- Assists in the development of operating manuals and organizational policies.
- Analyzes operational systems and processes for potential improvements.

Qualifications and Experience:

- Two (2) years of experience in the field business management or a bachelors degree in business administration or a related field.

- Reasonably knowledgeable of modern organization development and business management procedures and processes. Analytical skills in the areas of business statistics, operations research and business process modeling.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Created: 1/7002
Updated: 2/13/2002

Baltimore City Public School System

Position Description

Title:

Accounting Assistant

Department of Facilities Planning and School Construction

Summary:

Under direction of the office manager, the accounting assistant performs duties associated with processing of financial and contracts-related payments, invoices and construction change requests for various types of capital construction projects. Performs financial analyses relating to project payment history and fund encumbrances. The incumbent performs analysis of program and project accounts to ensure the integrity of the owner's financial exposure and commitments. Does related work as required.

Specific Duties and Responsibilities:

- Reviews proposals for contracted technical services to ensure conformity of cost and project scope with RFP and specification requirements.
- Reviews and verifies the accuracy of contractor payment requests and change orders prior to approval.
- Processing payment of invoices and payment claims submitted by contractors.
- Prepares periodic reports for management review relating to payments to contractors for approved services and proposed changes.
- Assembles contract documents for distribution to contractors prior to publishing bid solicitations.
- Interprets contract documents for the purpose of clarifying policies and procedures, and resolving contract-related disputes.
- Prepares responses to departmental management regarding inquiries about project status and expenditures.
- Other related duties as assigned.

Qualifications and Experience:

- Two (2) years of experience in the field of accounting, bookkeeping and finance.

- Reasonably knowledgeable of modern accounting and bookkeeping practices for high-valued capital construction projects.
- Computer proficiency is required.

Created: 2/11/2002
Updated: 2/11/2002

Baltimore City Public School System

Position Description

Title:

Real Estate Administrator

Department of Facilities Planning and School Construction

Summary:

Under direction of the department director, the real estate administrator provides system-wide real estate management services in the forms of leasing of unused space for use by providers of compatible youth services, coordinating property transactions for the System, and coordination with other public agencies on related matters. Responsible for urban planning that ensures community-wide compatibility. Does related work as required.

Specific Duties and Responsibilities:

- Administers and coordinate all matters relating to BCPSS' real estate acquisition needs, property dispositions, and lease agreements. Leases of unused space within BCPSS' 177-site facilities inventory to 123 clients of educationally complementary programs. The employees involved in the Real Estate Management function maintains detailed records of the utilization of System's inventory of schools to match client's needs with spatially and geographically available facilities. Typical joint-tenant programs include child day care, public Charter schools, non-public schools, public agency programs, etc.
- Coordinates lease and occupancy of unused space in public schools. Develops, negotiate and administers joint tenant lease and occupancy agreements on behalf of BCPSS. Resolve users facilities-related complaints.
- Locates and leases commercial space to address BCPSS' administrative needs. Administers property appraisals. Coordinate property transfers between BCPSS and the City. Coordinates the administrative and legal requirements associated with real property disposal. Coordinates right-of-way grants. Conducts deed book searches as necessary to maintain legal entitlement to school property. Administers receipt of property dedicated to BCPSS. Administers acquisition of real property for BCPSS. Negotiates rights-of-entry to BCPSS properties.
- Coordinates the requirements associated with the State Public Construction Program relating to archeological surveys of schools sites identified by the MD Historic Trust. Serves as public school representative on City of Baltimore Liquor License Commission. Serves on City of Baltimore Real Estate Committee.
- Archive and maintain record drawings for all BCPSS real properties. Coordinates boundary and topographical surveys of properties as needed. Provide monthly status report summarizing all Joint-Tenant leasing activity.

Qualifications and Experience:

- Five (5) years experience in the real estate management and property management.
- Knowledgeable of local codes, rules and regulations pertaining to real estate acquisition, disposal and management. Knowledgeable of administration of leases and other single and joint tenant services.
- A driver's license valid in the State of Maryland is required if operation of a vehicle is necessary to perform the essential duties of the position.
- Computer proficiency is required.

Created: 1/2002

Updated: 2/13/2002

Appendix II

Proposed Capital Projects Implementation Schedules

▪ Projects initially funded prior to FY2003	1
▪ Projects to be initially funded in FY2003	4
▪ Projects proposed for initial funding in FY2004	12

Proposed Implementation Schedules

for

Capital projects which were initially funded prior to FY2003

Project	Completion Date
▪ Lexington Terrace Elementary/Middle School Modernization	August 2004

Project Status Summary: Lexington Terrace Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Lexington Terrace E/M
School No.:	019
Grades Served:	PK-8
Project Type:	Capital
Project Class:	New
PSCP No.:	30.000.99
Initial Funding Year:	FY02
Construction Budget:	\$12,800,000
BCPSS PM:	C. Hunter
Architect:	Construction Dynamics Gp.

Project Description: This project involves a new facility to replace the building that was demolished in 1999, to serve PK-8 graders. The renovated facility's total student capacity will be 597, including 300 PK-5 students and 297 middle school students in grades 6-8. The curriculum focus of the new school will be Math/Science.

Project Status:

Current Phase: Planning
Completion Date: August 2004

Comments

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP. Educational specification were completed August 1999. The architectural firm Construction Dynamics Group (CDG) was selected as the project architect.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$1,166	\$909	\$0	\$257							
Construction: \$12,813			\$3,203	\$9,610						
Equipment: \$1,281					\$1,281					
Totals: \$15,304	\$ 909	\$0	\$3,504	\$9,610	\$1,281					

Calendar Year >	2001		2002				2003				2004				2005				2006	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:	■																			
Architect Selection:	■	■																		
Schematics:			■																	
Design Documents:			■	■																
Construction Documents:					■	■														
Design Close-out/Bidding:							■	■												
Construction:									■	■	■	■	■	■	■	■	■	■	■	■
Move in:																				■

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Lexington Terrace Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Lexington Terrace E/M
School No.:	019
Grades Served:	PK-8
Project Type:	Capital
Project Class:	New
PSCP No.:	30.000.99
Initial Funding Year:	FY02
Construction Budget:	\$12,800,000
BCPSS PM:	C. Hunter
Architect:	Construction Dynamics Gp.

Project Description: This project involves a new facility to replace the building that was demolished in 1999, to serve PK-8 graders. The renovated facility's total student capacity will be 597, including 300 PK-5 students and 297 middle school students in grades 6-8. The curriculum focus of the new school will be Math/Science.

Project Status:

Current Phase: Planning
Completion Date: August 2004

Comments

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP. Educational specification were completed August 1999. The architectural firm Construction Dynamics Group (CDG) was selected as the project architect.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning:	\$1,166	\$909	\$257							
Construction:	\$12,813		\$3,203	\$9,610						
Equipment:	\$1,281				\$1,281					
Totals:	\$15,304	\$ 909	\$0	\$3,504	\$9,610	\$1,281				

Calendar Year >	2001		2002		2003		2004		2005		2006	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:												
Program Development:	█											
Architect Selection:	█	█										
Schematics:			█	█								
Design Documents:				█	█	█						
Construction Documents:						█	█					
Design Close-out/Bidding:							█	█				
Construction:							█	█	█	█	█	█
Move in:										█		

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved	Total	
Planning:							
Construction:							
Construction Mgt.:							
Totals:							

Proposed Implementation Schedules
for
Capital projects which were initially funded in FY2003

Project	Completion Date
▪ Mt. Washington Elementary/Middle School Modernization	August 2004
▪ Booker T. Washington Elementary/Middle School Modernization	August 2004
▪ Violetsville Elementary/Middle School Modernization	August 2004
▪ New Southeast Elementary/Middle School	August 2004
▪ Frankford/Moravia Elementary/Middle School Modernization	August 2004
▪ Pimlico Middle School Modernization	August 2004
▪ Dunbar Senior High School Modernization	August 2005

Project Status Summary: Mt. Washington Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Mt. Washington E/MS
School No.:	221
Grades Served:	PK-8
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$9,500,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete modernization of an existing elementary school to will serve PK-8 graders when completed. The renovated facility will have a total capacity for 477 students, including 327 PK-5 students and 150 middle school students in grades 6-8.

Project Status:

Comments

Current Phase: Planning
Completion Date: August 2004

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 623			\$623							
Construction: \$9,495					\$2,491	\$7,004				
Equipment: \$ 678							\$678			
Totals: \$10,796	0	0	\$ 623	0	\$2,491	\$7,004	\$ 678			

Calendar Year >	2001		2002				2003				2004				2005			2006		
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Booker T. Washington Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	B. T. Washington MS
School No.:	130
Grades Served:	PK-8
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$11,200,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete modernization of an existing middle school to serve PK-8 graders. The renovated facility will have a total capacity for 477 students, comprising 327 PK-5 students and 150 middle school students in grades 6-8.

Project Status:

Comments

Current Phase: Planning
Completion Date: August 2004

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 652			\$652							
Construction: \$11,205			\$4,317	\$6,888						
Equipment: \$ 918					\$918					
Totals: \$12,775	0	0	\$4,969	\$6,888	\$ 918					

Calendar Year >	2001		2002				2003				2004				2005			2006		
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Total (PO's + CO's)
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Violetsville Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Violetsville E/M
School No.:	226
Grades Served:	PK-8
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$12,166,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete renovation and modernization of an existing elementary school to serve PK-8 graders. The renovated facility will have a total capacity for 376 students serving 265 students in grades PK-5 and 111 middle school students in grades 6-8.

Project Status:

Comments

Current Phase: Planning
Completion Date: August 2004

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06			
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State		
Planning: \$ 576			\$576									
Construction: \$12,166					\$3,383	\$8,783						
Equipment: \$ 539							\$539					
Totals: \$13,281	0	0	\$ 576	0	\$3,383	\$8,783	\$ 539					
Calendar Year >	2001		2002		2003		2004		2005		2006	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:												
Program Development:												
Architect Selection:												
Schematics:												
Design Documents:												
Construction Documents:												
Design Close-out/Bidding:												
Construction:												
Move in:												

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary			Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved		
Planning:							
Construction:							
Construction Mgt.:							
Totals:							

Project Status Summary: New Southeast Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Southeast E/M
School No.:	TBD
Grades Served:	PK-8
Project Type:	Capital
Project Class:	New
PSCP No.:	TBD
Initial Funding Year:	FY02
Construction Budget:	\$12,800,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project entails design and construction of an all new PK-8 school with a total capacity for 777 students. The school's capacity will accommodate 543 elementary students in grades PK-5 and 234 middle school students in grades 6-8.

Project Status:

Current Phase: Planning
Completion Date: August 2004

Comments

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP. Site acquisition efforts with the Dept. of Planning are underway. Educational specification are to completed in March 2002. The architect will be selected in March 2002.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 700	\$700		\$305							
Construction: \$12,791					\$3,181	\$9,610				
Equipment: \$1,000							\$1,000			
Totals: \$14,796	\$ 700	\$0	\$ 305	\$0	\$3,181	\$9,610	\$1,000			

Calendar Year >	2001		2002				2003				2004				2005				2006	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Frankford/Moravia Elementary/Middle School

Date: 1/29/2002

Project Data:

Facility:	Frankford/Moravia MS
School No.:	216
Grades Served:	PK-8
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$14,500,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete modernization of an existing Moravia Intermediate facility to serve as a consolidated PK-8 facility for students currently attending Moravia Intermediate and Frankford Elementary schools. The renovated facility will have a total capacity for 703 students, comprising 471 PK-5 students and 232 students in middle school grades 6-8.

Project Status:

Comments

Current Phase: Planning
Completion Date: August 2004

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 952			\$952							
Construction: \$14,519					\$5,593	\$8,926				
Equipment: \$ 667							\$667			
Totals: \$16,138	0	0	\$ 952	0	\$5,593	\$8,926	\$ 667			

Calendar Year >	2001		2002				2003				2004				2005				2006	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Pimlico Middle School

Date: 1/29/2002

Project Data:

Facility:	Pimlico MS
School No.:	222
Grades Served:	PK-8
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$10,032,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete modernization of an existing elementary school to serve PK-8 graders. The renovated facility will have a total capacity for 477 students, of which 150 will be for middle school grades 6-8.

Project Status:

Comments

Current Phase: Planning
Completion Date: August 2004

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 658			\$658							
Construction: \$10,032					\$3,865	\$6,167				
Equipment: \$ 534							\$534			
Totals: \$11,224	0	0	\$ 658	0	\$3,865	\$6,167	\$ 534			

Calendar Year >	2001		2002				2003				2004				2005			2006		
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Dunbar Senior High School

Date: 1/29/2002

Project Data:

Facility:	Dunbar HS
School No.:	414
Grades Served:	9-12
Project Type:	Capital
Project Class:	Renovation
PSCP No.:	TBD
Initial Funding Year:	FY03
Construction Budget:	\$24,600,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project involves a complete modernization of an existing high school to serve 9-12 graders. The renovated facility will have a total capacity for 881 students.

Project Status:

Current Phase: Planning
Completion Date: August 2005

Comments

This project is currently on hold waiting approval of planning funds by the State of Maryland PSCP. Educational specifications are currently under development.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY02		FY03		FY04		FY05		FY06	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 913			\$913							
Construction: \$24,668					\$6,012	\$18,656				
Equipment: \$1,521							\$1,521			
Totals: \$27,102	0	0	\$ 913	0	\$6,012	\$18,656	\$1,521			

Calendar Year >	2001		2002				2003				2004				2005			2006		
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Total (PO's + CO's)
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Proposed Implementation Schedules
for
Capital projects to be initially funded in FY2004

Project	Completion Date
▪ Leith Walk Elementary School Modernization	August 2005
▪ Johnson Square Elementary School Modernization	August 2005
▪ Frederick Douglas High School Modernization	August 2006

Project Status Summary: Leith Walk Elementary School

Date: 1/29/2002

Project Data:

Facility:	Leith Walk ES
School No.:	245
Grades Served:	PK-5
Project Type:	Capital
Project Class:	Modernization
PSCP No.:	TBD
Initial Funding Year:	FY04
Construction Budget:	\$13,000,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project entails the modernization of the school for a total capacity for 711 PK-5 elementary students.

Project Status:

Current Phase: Planning
Completion Date: August 2005

Comments: Funds have been requested to begin the planning process in FY2004.

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY03		FY04		FY05		FY06		FY07	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 860			\$860							
Construction: \$13,110					\$5,051	\$8,059				
Equipment: \$1,075							\$1,075			
Totals: \$15,045	0	\$0	\$ 860	\$0	\$5,051	\$8,059	\$1,075			

Calendar Year >	2002		2003				2004				2005				2006			2007		
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:																				
Program Development:																				
Architect Selection:																				
Schematics:																				
Design Documents:																				
Construction Documents:																				
Design Close-out/Bidding:																				
Construction:																				
Move in:																				

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Total	Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved			
Planning:								
Construction:								
Construction Mgt.:								
Totals:								

Project Status Summary: Johnson Square Elementary School

Date: 1/29/2002

Project Data:

Facility:	Johnson Square ES
School No.:	016
Grades Served:	PK-5
Project Type:	Capital
Project Class:	Modernization
PSCP No.:	TBD
Initial Funding Year:	FY04
Construction Budget:	\$7,200,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project entails the modernization of the school for a total capacity for 422 PK-5 elementary students.

Project Status:

Comments

Current Phase: Planning Funds have been requested to begin the planning process in FY2004.
Completion Date: August 2005

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY03		FY04		FY05		FY06		FY07	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 475			\$475							
Construction: \$7,244					\$1,900	\$5,344				
Equipment: \$ 593							\$593			
Totals: \$8,312	0	\$0	\$ 475	\$0	\$1,900	\$5,344	\$ 593			

Calendar Year >	2002		2003		2004		2005		2006		2007	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:												
Program Development:												
Architect Selection:												
Schematics:												
Design Documents:												
Construction Documents:												
Design Close-out/Bidding:												
Construction:												
Move in:												

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary			Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved	
Planning:						
Construction:						
Construction Mgt.:						
Totals:						

Project Status Summary: Frederick Douglass High School

Date: 1/29/2002

Project Data:

Facility:	Frederick Douglass HS
School No.:	450
Grades Served:	9-12
Project Type:	Capital
Project Class:	Modernization
PSCP No.:	TBD
Initial Funding Year:	FY04
Construction Budget:	\$18,200,000
BCPSS PM:	C. Hunter
Architect:	TBD

Project Description: This project entails the modernization of the school for a total capacity for 1,135 high school students.

Project Status:

Comments

Current Phase: Planning Funds have been requested to begin the planning process in FY2004.
Completion Date: August 2006

Construction

% Completion:
 % Contract Time:

Fiscal Year >	FY03		FY04		FY05		FY06		FY07	
Funding Schedule (\$000)	Local	State	Local	State	Local	State	Local	State	Local	State
Planning: \$ 918			\$918							
Construction: \$18,213					\$4,439	\$13,774				
Equipment: \$1,530							\$1,530			
Totals: \$20,661	0	\$0	\$ 918	\$0	\$4,439	\$13,774	\$1,530			

Calendar Year >	2002		2003		2004		2005		2006		2007	
Calendar Quarters >	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Implementation Schedule:												
Program Development:												
Architect Selection:												
Schematics:												
Design Documents:												
Construction Documents:												
Design Close-out/Bidding:												
Construction:												
Move in:												

Expenditure Summary:

Activity	Approved Purchase Orders		Change Order Cost Summary				Totals
	No.	Amount	No.	Amt. Pending	Amt. Approved	Total	
Planning:							
Construction:							
Construction Mgt.:							
Totals:							

Appendix III

Sample Architect Scope of Services

ARCHITECT SCOPE OF SERVICES

A. GENERAL REQUIREMENTS:

1. **PURPOSE** - The purpose of this statement of work is to define the requirements and procedures associated with the coordination and development of construction documents and administration of the construction for the above referenced project.
2. **SCOPE** - Described herein are the detailed requirements for architectural and engineering services for the design of school facilities that may entail new and/or renovated construction resulting in a project which meets the space and other requirements documented in the project's educational specifications, and detailed elsewhere in this document. The scope of services applicable to this project include, but are not limited to, all requirements documented herein as well as other reasonable requirements requested by the owner in conjunction with this capital project.
3. **RESPONSIBILITY** - The work requested of the architectural and engineering (A/E) firm in executing this "Scope of Services" is to be performed under the direction of an architect or professional engineer registered in the State of Maryland. The A/E is to provide a design concept and documentation consistent with good engineering practices and in compliance with all applicable codes and standards. The A/E is fully responsible for the design, selection and application of all materials, systems, components, processes and methods documented in the final contract documents. The A/E will ensure that the final product is adequate for, but not in excess of, what is required to perform the intended function. It should be clearly understood that A/E design consultation extends through construction and initial building occupancy.
4. **PROJECT COORDINATION** - The architectural firm and their sub-consultants, comprising the Architectural Design Team, are responsible for completing design and coordination work associated with the project in phases as described in sections B, C, D, E, F and G of this document.
5. **PROJECT ADMINISTRATION** - Routine coordination of the day-to-day activities associated with the technical design, submissions and reviews included in this "Scope of Services" are to occur through the project manager assigned to the project. Administrative items such as deviations from the project scope, budget, schedules, or other contract related parameters are to be coordinated through the Director, Department of Facilities Planning and School Construction. All requests or notifications of changes in contract related parameters are to be documented in writing to the Director stating the reason(s) for and impact of the proposed changes. All increases in the architects scope of work involving changes in fees require the approval of the Department prior to starting the work.
6. **PROJECT COMMUNICATION** - The project architect is responsible to the project manager for submitting documentation in the form of letters, memorandum, and summary reports of all meetings and conferences relating to

the referenced project, within five (5) days including, but not limited to the following:

- a) Coordination with BCPSS staff;
- b) Federal, state and municipal agencies outside BCPSS;
- c) Meeting with schematic planning committees;
- d) Meeting with utility agencies;
- e) Review of the project by local boards and committees;
- f) Review of the project by the Board of Education;
- g) Minutes of pre-bid conferences;
- h) During the design and bidding phases, the project architect is to submit a monthly project status report, by the third Friday of each month, summarizing the status of the work and problems affecting each architectural/engineering discipline and status of all permits and approvals required to start implementing the project.

B. SCHEMATIC PLANNING PHASE: The architectural/engineering design team is responsible for the following:

1. Participate in schematic planning work session with the schematic planning committee, as necessary, to develop a schematic plan which includes all programmatic, functional, and operational requirements as outlined in the educational specifications and as described elsewhere herein.
2. Perform an analysis of site utilities to determine the structural and administrative requirements necessary to meet applicable codes and standards.
3. Perform an analysis of the proposed site inclusive of, but not limited to, consideration of the following:
 - a) Vehicular ingress and egress;
 - b) Service deliveries;
 - c) Bus turn-around and passenger drop-offs;
 - d) Pedestrian traffic flow;
 - e) Site master planning for future expansions;
 - f) Site grading and drainage;
 - g) Storm water management approaches;

- h) Playgrounds and athletic fields;
 - i) Vegetative buffering and landscaping;
 - j) Perimeter and intersecting vehicular traffic;
 - k) Site lighting;
 - l) Geotechnical features and conditions;
 - m) Land use and zoning requirements;
 - n) Location of modular day-care facilities;
 - o) Fire fighting access; and
 - p) Non-tidal wetland reserves.
4. Meet with fire, building, storm water management, transportation, and other code officials as necessary to determine and summarize the impact of their requirements for the project.
 5. Analyze the approved schematic plans to determine the probable construction cost on a cubic and square foot basis, using AIA standard methods.
 6. Provide add and deduct design alternates totaling ten percent (10%) of the projected construction budget for this project.
 7. Develop and submit a project schedule, in Gantt chart format, describing the time/event relationship between each major project phase and milestone, from schematic planning through client occupancy.
 8. Perform energy conservation analysis requirements as applicable to the schematic phase design proposal.
 9. Prepare a preliminary plan brochure which summarizes the results of planning work sessions, energy analysis, site analysis, analysis of existing facilities, a cost summary and schedule.
 10. Attend a meeting with the members of the Board of Education to respond to questions or comments during the presentation of the preliminary plan brochure. Present plans to other BCPSS officials as requested.
 11. Schematic phase submissions shall comprise of the following:
 - a) A preliminary, unbound, typewritten, draft of all proposed inclusions in the schematic planning brochure, at least three (2) weeks prior to final brochure submission. Convert all report documents to Adobe *PDF* format for all final document submissions.
 - b) Summary of meetings with code officials and utility regulators;

- c) Provide two full size (min. 36 x 24) blueprints of each site and/or floor plan drawing included in the preliminary plan brochure; and
- d) Provide copies of the final preliminary plan brochure and an electronic file of the report in Adobe PDF format.

C. **DESIGN DEVELOPMENT PHASE:** The architectural design team is responsible for providing the following services:

1. Immediately following receipt of notice to proceed to design development, the project architect, along with key sub-consultants for the project, shall attend a "Pre-design Development Coordination Meeting" to discuss proposed design of systems and equipment with BCPSS staff. The architect is to prepare minutes of this meeting with copies to the project manager.
2. Prepare and submit plans and outline specifications describing design details developed to at least 35% completion of each technical discipline included in the project. Include an architectural floor plan showing the net square feet of each room and the location of all fixed equipment.
3. Conduct reviews with all applicable code officials and prepare summaries of each meeting. Summaries shall highlight major problems and a status of the solution. Forward copies of each transmittal indicating submission to code officials to the project manager.
4. Perform an energy conservation analysis as applicable to the design development phase as required by the State of Maryland Department of General Services.
5. Provide an update of the quantitative estimate of the probable construction cost, as described in schematic planning phase section.
6. Prepare and submit a site plan, in required quantity, for review along with application for site stormwater management permits.
7. Prepare and submit a site plan identifying the locations of test boring and radon testing.
8. Attend meetings, as necessary, with owner's staff to discuss problems or issues affecting the project design or construction requirements.
9. Assist the owner in reviewing and interpreting special reports submitted by other technical consultants and professionals, as they relate to the project.
10. Provide large-scale layouts of special areas of the facility as needed to analyze and resolve problems and concerns regarding the proposed design.
11. Design development phase submissions shall consist of the following:

- a) Full sets of plans and outline specifications reflecting at least 35% design completion;
- b) An energy conservation analysis (as described in item C.4);
- c) Summaries of meetings with code officials (as described in C.3);
- d) A statement of the most up-to-date quantitative construction cost estimate;
- e) Three copies of load and equipment sizing calculations for mechanical and electrical systems, in Adobe *PDF* format;
- f) A site plan indicating all subsurface geotechnical exploration requirements to be obtained by the owner.
- h) Proposed concept plans as directed by the project manager.

D. **CONSTRUCTION DOCUMENTS PHASE:** The architect's responsibility during the construction documents phase are as follows:

1. Upon notice to proceed to Construction Documents phase, the architects shall develop a complete, coordinated set of construction documents inclusive of cover sheet, site/civil, landscaping, architectural, mechanical, electrical, structural, plumbing, fire protection, and specialty drawings and plans, including sections, elevations, details, material selections, finishes, hardware, and equipment schedules, which conform to the project scope and all County, State, and Federal codes, ordinances, and which are in accordance with engineering and architectural standards.
2. Provide bound, typewritten, integrated specifications inclusive of standard divisions in accordance with Construction Specification Institute (CSI) format for all disciplines included in the project, coordinated with and inclusive of project manual general conditions.
3. Apply for and coordinate requirements associated with obtaining all temporary and permanent permits required to construct and operate all elements of the project, including building, site grading utilities, general and special construction, vehicle entrances, storm and ground water management, and other as required and necessary to implement all phase of the project.
4. Submit at 65% completion of construction documents, two (2) sets of mechanical and electrical drawings for review of progress status.
5. Provide for all temporary and permanent project signage and notifications.
6. Attend and participate in any public meetings and hearings necessary to meet and engender public and regulatory support for implementation of the project.

7. Consult with local utilities and coordinate delivery of utility services as necessary to construct and operate all aspects of the project.
8. Attend a pre-construction conference to answer questions relating to the design and construction of the project.
9. Provide documentation and coordination of design requirements associated with air conditioning system commissioning, energy management systems, internal cable television networks, telephone systems, security systems and public address systems.
10. Provide a statement of the net and gross square footage of proposed new and renovated construction.
11. Construction document, 99% review, phase submissions shall comprise:
 - a) Eight (8) complete sets of construction plans and specifications at the conclusion of the construction document phase. All specifications and report documents shall be converted to electronic Adobe *PDF* format.
 - b) Five (5) complete sets of plans, submitted at an interim stage for review by energy management, cable television, and LAN systems coordinators.
 - c) Three (3) sets of plumbing plans, and two (2) utility site plans sealed and signed by a registered engineer, along with two (2) copies of the associated hydraulic calculations showing water demands.
 - d) An updated estimate of the probable project construction cost. Advise Owner of special conditions and provision associated therewith.

E. BIDDING AND NEGOTIATION PHASE: The architect's responsibility during the bidding phase are as follows:

1. Provide data to owner for "Notice to Bidders" information to include:
 - a) Amount of deposit for bid documents including procedure for refund
 - b) Date and place drawing and specifications will be available
 - c) Pre-bid conference date and time
 - d) Other data pertinent to project
2. Distribute contract documents to prospective bidders. Architect to verify with the Division of Construction that a current contractor's qualification form is on file before issuing documents.
3. Provide a maximum of forty-five (45) sets of plans and specifications for public bidding purposes, and ten (10) sets directly to the owner.

4. Schedule and conduct a pre-bid conference approximately 10 days prior to bid date.
5. Attend the project bid opening and assist in bid opening proceedings.
6. Analyze bids and recommend a contractor to which a contract should be awarded to the project manager. The recommendation is to include:
 - a) General recommendation based upon a cursory background and reference check of the three lowest bidders.
 - b) Cost of site
 - c) Square footage of building
 - d) Cost per square foot excluding site
 - e) Cost per square foot including site
 - f) Net square footage of building
 - g) Square footage of circulation, etc.
7. Provide all plans and specifications, including bid addenda, in an electronic format as designated by the project manager. All drawings should be derived from or directly compatible with AutoCAD 2000 CAD software program. All specifications and report documents shall be submitted in Adobe *PDF* format.

F. **CONSTRUCTION ADMINISTRATION PHASE:** The Architect's responsibilities during the construction phase of the project are as follows:

1. Attend and document the proceedings of a pre-construction meeting and answer questions relating to the design and construction of the project.
2. Review and approve all shop drawing submissions.
3. Conduct bi-monthly construction progress meetings at the construction site, analyze contractor progress schedule, and submit minutes of each progress meeting summarizing the items discussed and an assessment of the contractor's job progress. Design consultants are required to attend on an "as-needed" basis.
4. Develop and coordinate change orders.
5. Represent the owner on technical issues relating to the project.
6. Inspect the construction contractor's work as required to determine its consistency with the contract documents.
7. Develop and review with the owner, a planned scheme of colors and other aesthetic materials and finishes proposed for the project.

8. Review construction contractor's pay requests with the owner's representative and recommend approval.
9. Review and coordinate the construction contractor's requests for reductions in retainage.
10. Provide advice and direction to the construction contractor on technical matters relating to the project's design requirements.
11. Develop and coordinate the resolution of construction punch list items.
12. Review and coordinate maintenance manuals, provided by the construction contractor, for all major equipment requiring regular or periodic maintenance.
13. Develop mechanical and electrical systems diagrams for mounting on the wall of the mechanical rooms for use by school custodial staff.

G. **POST-CONSTRUCTION PHASE:** The Architect is responsible for completing the following:

1. Prepare a full set of record drawings documenting "as-built conditions, for delivery to the owner within 90 days of completion of construction.
2. Developing system flow diagrams of major mechanical and electrical systems and equipment.
3. Attend and prepare minutes of a post-occupancy review meeting to be held at the project site.
4. Prepare a report to the owner outlining major deficiencies, defects, and functional and operational inadequacies identified by the owner's staff relating to systems, materials, spaces, site, or other elements included in the construction documents, or the architect's responsibility.

□□□□□

Study conducted by:

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