

Duke University

Box 90144
DURHAM, NORTH CAROLINA
27708

FACILITIES MANAGEMENT DEPARTMENT

114 S. Buchanan Blvd.

MEMORANDUM

TO:

Dean William Chameides
Ms. Tracy Futhey
Dean Eddie Hull
Dean Gregory Jones
Dean Tom Katsouleas

Mr. Bill Lefevre
Dean George McLendon
Professor Tom Metzloff
Dr. Larry Moneta

Dr. James Roberts
Mr. Scott Selig
Mr. Kevin White
Dean Jill Worthington

FROM: John J. Noonan 
Associate Vice President for Facilities

DATE: October 20, 2008

SUBJ: **FACILITIES MANAGEMENT REPORT OF THE OFFICE OF PROJECT
MANAGEMENT**

Facilities Management is working diligently to implement the Strategic Initiatives recently created to help improve departmental functions and provide better service to our customers. As a result, one of our goals is to produce reports in the various functional areas within the organization.

Attached is the report of the Office of Project Management (OPM) which will be distributed annually. This report includes a budget overview, benchmarking data, project information and the initiatives within OPM.

Please contact Paul Manning, Director of Project Management, paul.o.manning@duke.edu, 919-660-4221 or me, john.noonan@duke.edu, 919-660-4252, for any questions.

JJN

Attachment/

cc: Provost Peter Lange
Dr. Tallman Trask III
Mr. Kemel Dawkins
Mr. Hof Milam
Mr. John Clements
Mr. Paul Manning
Mrs. Ellie Jimenez

Duke University
Facilities Management



***REPORT OF
THE OFFICE OF PROJECT MANAGEMENT***

October 20, 2008

**Building Tomorrow's
Duke Today**

CONTENTS

Introduction..... 2

The Office of Project Management (OPM) 2

Budget Overview..... 3

Benchmarking OPM..... 3

Project Production at Duke..... 4

Looking Ahead for 2009..... 8

Attachment “A”- Facility Coordinator Roles..... 10

Attachment “B”- Guidelines for Internal Projects..... 11

INTRODUCTION

Facilities Management prepared the report of the Office of Project Management (OPM) at the request of Tallman Trask III, Executive Vice President and Peter Lange, Provost. The report provides a financial status of the office after one year of the implemented change to a fee structure for services. In addition, it includes benchmark data, a summary of initiatives, guidelines for Department managed projects and a look ahead to the current 2009 fiscal year.

THE OFFICE OF PROJECT MANAGEMENT

The OPM is led by Director, Paul Manning who reports to the Associate Vice President for Facilities, John Noonan. The FY08 and FY09 staffing breakdown remain constant with 27 positions, two of which are vacant. The office is organized into three primary functions: Planning, Small Projects and Large Projects. The Planning function includes the responsibilities of applying standard project management methodology, processes, and tools to project managers and ensuring that the information entered into the project database is clear and consistent. This function also includes oversight of the Department's Information Technology (IT) and Computer Aided Design and Geographic Information Systems (CAD/GIS). In total there are eight positions that comprise the Planning, IT, CAD/GIS function. The Small Projects and Large Projects functions are managed separately due to differences in scope, cost, timing and deliverables. An Assistant Director and 14 Project Managers comprise these functions. The Department's Contract Manager also reports to the Director of OPM and there are also two Administrative Assistants that support the OPM. In addition, there are two Project Accountants that currently reside within Business Services; however they work exclusively with the OPM for project support. The project management staff includes three registered architects, two professional engineers, one professional engineer in training, one certified planner and two LEED certified individuals.

FY08 OPM INITIATIVES

The processes, methodologies and overall functions within the OPM are vital to the smooth transition from the initiation of a project through its completion. As such, the OPM continually seeks opportunities to better improve its ability to serve the needs of the University. Below are a few highlights of the initiatives completed in FY08:

- Establishment of Planning function to better service the Duke Schools and Departments with early programming studies.
- Selection of Project delivery methods which were more appropriate to a project's specific parameters and goals to maximize consultant's expertise and minimize our risk.
- Improved interdepartmental communication and interface to expedite design, review and construction processes.
- Ensured best costs received from consultants and contractors by reducing overhead and profit percentages to better match market rates and reduce project costs.
- Improved control and usage of project contingency by the project manager for improved cost control.
- Began third party project audits to verify actual costs in accordance with contract agreements.
- Reviewed the roles of the Department or Schools Facility Coordinators as well as the Guidelines for internally managed projects to help alleviate any questions or concerns in these areas. Refer to Attachment "A", *Facility Coordinator Roles* and Attachment "B", *Guidelines for Internal Projects*.

BUDGET OVERVIEW

In July 2007, the University implemented a percentage-based fixed fee system for all projects managed by Facilities. The fees were established by applying a certain percentage to the approved total project budget. During this transitional year, an hourly rate structure was maintained on several projects that were already underway and in cases in which changing the fee structure was deemed inappropriate.

The OPM managed 177 projects valued in excess of \$152 million from July 2007- June 2008 with an operating budget of \$3.6 million. It collected approximately \$3.3 million in project management fees and incurred total expenses of \$3.2 million. The OPM completed FY08 with a favorable variance of approximately \$100,000. This year's revenue surplus of \$100,000 is a result of the following items:

- Less costs incurred for outside professional services for auditors and costs incurred for early studies of projects that did not become projects.
- Two vacant positions unfilled to better match the actual workload to staffing.

After discussion with Financial Services this surplus was moved to a reserve account for OPM. The reserve will be utilized to offset any future deficits and to help in holding the fee structure constant for FY09.

The table below depicts the OPM FY08 Budget/Actual/Variance and the FY09 Budget:

	FY08 Budget	FY08 Actual	FY08 Variance	FY09 Budget
Salaries	\$2,058,272	\$1,811,775	\$246,497	\$2,185,510
Training & Travel	\$44,000	\$17,132	\$26,868	\$36,000
Professional Services	\$120,000	\$61,712	\$58,288	\$100,000
Space Rental	\$49,380	\$29,494	\$19,886	\$35,181
University G&A	\$598,538	\$610,017	-\$11,479	\$731,523
CAD, GIS, HR, Engineering	\$680,787	\$564,590	\$116,197	\$422,561
Expenses	\$112,190	\$58,536	\$53,654	\$124,050
Total Expenses:	\$3,663,167	\$3,153,256	\$509,911	\$3,634,825
Revenue	\$3,663,167	\$3,270,458	-\$392,709	\$3,634,825
Gain/Loss:	0	\$117,202	\$117,202	

The budget remains steady with a change of -0.8% from FY08-FY09

BENCHMARKING OPM

The fee structure implemented last year was structured as noted below:

- 4.0% for projects less than \$2.5 million
- 2.5% for projects greater than \$2.5 million and less than \$50 million
- Calculated for individual projects greater than \$50 million

Ivy Plus

OPM stays current with fee percentages for project management services at peer Institutions which are not centrally funded and that have similar size building programs. These fees, range from flat fees of 3.4% at Stanford to 6.5% at Columbia. MIT uses a flat fee of 5.0%. Duke's incremental fee structure continues to be at the low end of the range providing best management at an effective cost.

Private Sector

The OPM fees of 2.5% and 4.0% are all inclusive of personnel, reimbursables, CADD and GIS support, and overhead costs. Comparable fees with the same costs included when using outside project management consultants for similar size projects from both local to international consultant firms range between 3.0% for large projects and 6% for small projects as profit is included in these fees. Profit targets are normally a multiplier of two times the projected direct personnel expense or 1% of the cost of the managed work.



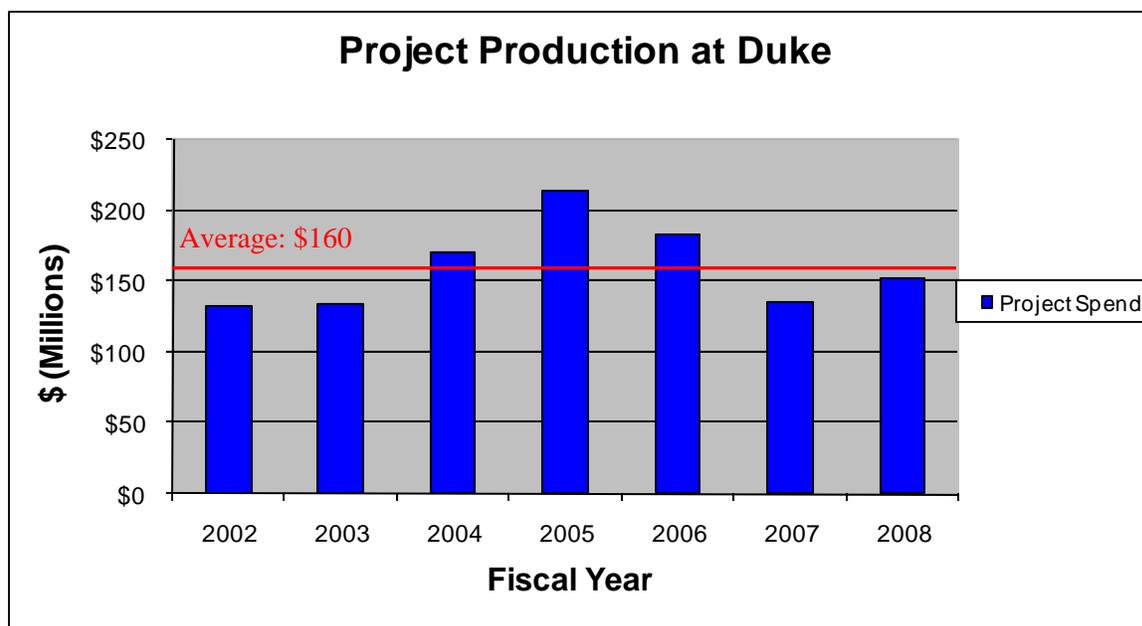
Movement of Mechanical Equipment at the Bryan Center

Another benchmark data point is on an hourly rate basis. In other words, what is the cost to purchase project management services from the private sector? The equivalent hourly rate for Duke's OPM is \$125/hour for 2009 for any projects that carry over from FY08. In checking with an internationally recognized firm specializing in full-service architecture, interior design, engineering, construction management and program management, it is estimated that the average hourly rate for project management services is \$130-\$150/hour for private sector work. This firm provides services for both the cities of Raleigh and Durham as well as here at Duke.

Consequently, the structure provided here at Duke is well within the peer institutions and the private sector.

PROJECT PRODUCTION AT DUKE

Duke's capital project work is among the busiest of our peer institutions. Last year, Duke's volume of projects and costs were on par with the last several years. During FY08, the project volume included 177 projects with a total spend of \$152 million. The table below shows that this is close to the average for the last 7 years.



In addition, the chart below depicts the 177 total projects broken down by Tier and total cost:

Tier #	# Projects	Total Amount (\$ Millions)
Tier 3	14	\$101
Tier 2	38	\$41
Tier 1	42	\$7
Tier 0	83	\$3
	177	\$152

The vast majority of projects completed on campus last year were on time and within budget. In addition, many of the projects were complex in nature. The portfolio of projects includes a range from renovations to roof replacements, clean rooms, data centers, classrooms and athletic facilities.



Smith Warehouse



Old Art Museum



Fuqua School of Business

HIGHLIGHTS OF MAJOR PROJECTS:

The table below highlights the major projects for the year:

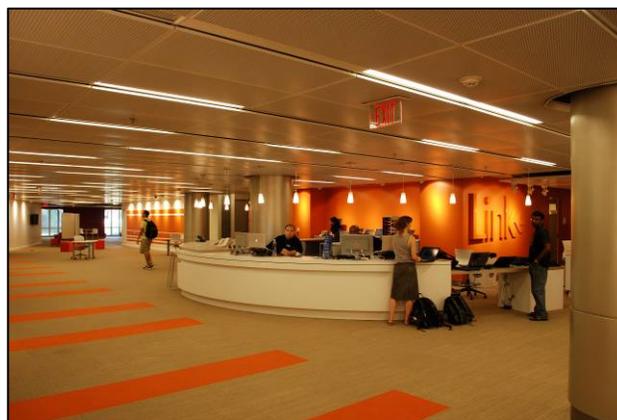
Project Title	Comments
Home Depot Smart House	First Platinum University Residential Building in the U.S., completed January 2008
Shared Material Instrumentation Facility (SMIF) Clean Room	First highly complex Nanotechnology research facility completed at Duke
Center for Academic and Athletic Excellence	Completed on time and on budget
Old Art Museum (East Campus Science Building)	A historic renovation completed October 2007 and 8% under budget
Library Technical Services Module #2	Completed 5% under budget in July 2007
East Data Center Phase I	First Tier 3 data center on campus completed March 2008

Home Depot Smart House



In addition, the following is a list of major projects that were ongoing throughout FY07/08 and were completed during the summer of 2008 for the Fall semester:

- Fugua 2E Addition:
- Law Commons and Library Renovation
- Perkins Library Phase 2.1 and 2.2 (1968 addition)
- Teaching and Learning Center (The Link) at Lower Level 1 of Perkins Library
- Multiple Bryan Center Projects including coffee shop, Panda Express, Student Activities
- Classroom Modernization of 5 classrooms in Allen, Carr and Hudson
- Teer Library Renovation Phase 1
- Smith Warehouse Core and Shell and multiple tenants
- Outdoor Alert System



*Perkins Library
Technical Services*

CONSTRUCTION MARKET ECONOMICS:

The economics of the construction market during FY08 were significant. Several indices that track construction costs in materials, labor and geographically all indicated an escalating market. Escalation was almost entirely a result of the dramatic increase in the cost of steel, copper and gas. The *Engineering News-Record* (ENR) provides news, analysis and data for the construction industry and features information regarding infrastructure, buildings, business management, policy, products, technology, education and economics. Facilities Management uses the information to stay abreast of the changes in the construction industry to help manage the projects at Duke in the best possible manner. The construction economics cost indices last year included the following information:

ENR's Market Indices	
Construction Cost Index	+ 6.3%
Building Cost Index	+ 6.5%
Materials Cost Index	+ 11.4%

Developing and maintaining the total project budgets are always challenging. Often times, there are many influences and drivers that affect these budgets to include schedule desires, program and scope changes, and economic conditions from the time the budget is developed/approved to the point when work actually begins.

Despite the various influences and drivers that affect project budgets, the Tier 3 projects this past fiscal year averaged an approximate 2 - 4% total underrun of the actual final costs, versus the approved final budget. Thus, this allowed the unused contingencies to be returned to the client.

LOOKING AHEAD FOR FY2009

Budget

As indicated earlier, the budget and the fee structure were both held flat for this year. The basis of the structure is historical and includes large and small projects. Fiscal year 08/09 appear to have less Tier 3 major projects with the delay of several previously anticipated major projects such as the Nicholas School of the Environment, New Campus enabling projects and the West Campus Union. This may result in a reduction of revenue below the budgeted expenditures. The following list depicts the FY09 major projects noted at this time:

FY09 Major Projects

LSRC Annex
Lemur Center Expansion
Perkins Phase 2.3 (1928/48)
Thomas Center Renovation
Few Quad Infrastructure Upgrade
West Campus Union Dining Pavilion
Indoor Practice Facility and Half Time House
Baldwin Auditorium. Biddle Music Renovation
Sands Parking Garage (PG 9) ongoing construction



Law Commons and Library Renovation

Sensitivity Analysis

Based upon the FY09 current list of projects, Facilities Management conducted a sensitivity analysis to help understand the volume of work that will be completed this year without some of the larger projects noted above. The results of the study indicate that the OPM could incur a surplus of \$200k based on the lowest average spend or could incur a loss of \$600k based on fewer projects as indicated below:

Sensitivity Analysis

	Lowest Avg. Project Spend		Fewer Large Projects Spend		Results
Project Base	Proj Spend	Fee	Proj Spend	Fee	Needed Total
4.0% on <2.5m	34,000,000	1,360,000	34,000,000	1,360,000	936,406
2.5% on >2.5m	99,000,000	2,475,000	66,000,000	1,650,000	2,726,594
Model Total	133,000,000	3,835,000	100,000,000	3,010,000	3,663,000

Despite this current analysis, the OPM is tracking on budget for the first quarter. In order to cover the projected variance in the event of a decrease in the volume of work, the following items are potential offsets as previously discussed with Financial Services:

- Do not fill vacancies next year
- Cover loss with reserve funds and increase FY10 fees accordingly

FY09 Initiatives

In the fall of 2007, Facilities Management completed the reorganization of its leadership, and thus began a series of strategic planning sessions in order to re-evaluate its goals and priorities to help prepare the department for a future that is both desirable and achievable. The result is a summary of ten strategic initiatives for the department that clearly states our new mission, vision, goals and actions required to fulfill them. One of the ten strategies is **Processes**, which is described as developing a project execution plan that clearly defines the roles and responsibilities during all phases of a project to include updating the design and construction standards for all University projects. Listed below are some highlights of the actions that will be completed in the **Processes** initiative:

- Update and streamline Project Delivery Processes from concept to commissioning to simplify and expedite the process and make it transparent to the client groups.
- Revise and update the Design Guidelines to current best practices
- Update the Project Management Manual and standardize all documents and processes.
- Summary level Project Status Reporting to internal clients and stakeholders for regular and accessible cost reporting.
- Continue to build internal Programming and Space Planning Group to assist clients with early programming options.
- Continue to improve interdepartmental communication and interface for improved project coordination.

ATTACHMENT "A" - FACILITY COORDINATOR ROLES

Facility Coordinators within Schools or Departments are responsible for the following tasks:

1. Internal space allocation and day to day management
2. Faculty and staff interface
3. Long term space planning
4. Move coordination
5. Day to day keying, security, Data/Voice and AV modifications
6. Paint/Carpet/FF&E replacement within University design guidelines
7. Call-in for maintenance items to the Facilities Management Department
8. Equipment and furniture purchases within University guidelines
9. Draft initial Program Statement for Capital Projects
10. Develop School/Department finishes and furniture standards within University design guidelines
11. Define requirements for Voice/Data/AV/Security/Keying for Capital Projects
12. Inventory existing FF&E prior to relocation for a Capital Project
13. Review design documents for a Capital Project and provide comments to the Facilities Management Department's Office of Project Management
14. Coordinate any needed equipment or utility shut downs with occupants
15. Contact the Facilities Management Department once a Capital Project has been identified for assignment of a Project Manager

Facility Coordinators within Schools or Departments are not responsible for the following tasks:

1. Bidding or contracting with architects, engineers and contractors
2. Directing architects, engineers and contractors during a Capital Project
3. Modifying Scope during a Capital Project
4. Determining contingency usage during a Capital Project
5. Financial reporting to the Capital Budget Office

ATTACHMENT "B" - GUIDELINES FOR INTERNAL PROJECTS

The work conducted within the parameters of internally managed projects within a School or Department must follow the guidelines set forth below. The work must:

1. Not include any modification or replacement of components for mechanical, electrical, fire alarm or plumbing/fire protection systems.
2. Not require permits of any kind including Building, HVAC, Plumbing or Electrical Permits.
3. Not include any modification or addition of permanent partitions.
4. Not include work on the building exterior or major interior public spaces.
5. Not include any modification to the means of egress.
6. Be a Non-Capital Project (less than \$100,000).

Internally managed projects must also be communicated to the Director of Project Management via the Capital Project Request Form (CPRF) before initiation. Furthermore, the following Duke Departments must also be notified when dealing with the specified functions as noted below:

Duke Department

Office of Information Technology
 Facilities Management Key & Lock Shop
 Facilities Management Mechanical & Electrical Shops
 Duke Card
 Public Safety
 Facilities Management Grounds & Sanitation
 Occupational & Environmental Safety Office
 Disability Management System Office

Specified Function

Data & Voice
 Keys & Locks
 MEP Systems
 Card Access
 Security
 Grounds/Landscaping
 Safety/Hazardous Materials
 Disability Management/ADA

Projects that meet these guidelines may include items such as repainting, carpeting, finishes and furniture project or minor interior renovations with the agreement of the Director of Project Management via the Capital Project Request Form (CPRF).