Agendum
Oakland University
Board of Trustees Formal Session
October 31, 2011

SCHEMATIC DESIGN FOR THE ENGINEERING CENTER

A Recommendation

1. **Division and Department:** Academic Affairs Division, School of Engineering and Computer Science, Finance and Administration Division, Facilities Management Department

2. **Introduction:** In December 2010, the Governor of the State of Michigan signed a Capital Outlay Appropriation, House Bill No. 5858, Public Act 329 of 2010, allocating a capital appropriation of $30,000,000 for Oakland University (University) to build an Engineering Center at a total cost of $74,551,739.

Since 2001, the Engineering Center has been submitted annually to the State Budget Office as the Board of Trustees' (Board) approved top priority capital outlay request. The most recent preliminary program statement for the Engineering Center was approved by the Board at its December 9, 2010 Formal Session and submitted to the State. The Engineering Center will be the new home for the School of Engineering and Computer Science (SECS) and general purpose classrooms.

The $44,551,739 University match will be funded primarily from bond proceeds, upon approval of the Board, under a separate Board action. As with previous capital projects, the University will solicit private support and also attempt to identify and apply for external grants to further support the design and construction of the Engineering Center. Such grants, if available, would add value to the Engineering Center at no incremental cost to the University, and would be reported to the Board.

Per the Board's Contracting and Employment Appointment Authority Policy, revised January 9, 2008, "for any capital improvement project that has major aesthetic considerations, the administration shall obtain Board approval of the schematic design." Board approval of the schematic design of the Engineering Center is requested to proceed with project planning.

The timing of Board approval is critical in order to meet State of Michigan funding deadlines, as noted in an April 1, 2011 State Budget Office letter (Attachment A) which states "Institutions that seek consideration of their projects in fiscal year 2013 must submit their draft planning documents to the State Budget Office for review no later than Friday, November 4, 2011."

Enclosed for the Board's consideration are the following components of the Engineering Center Schematic Design documents (Attachment B):

- Executive Summary
- Project Cost Summary
- Program and Cost / SF Analysis
- Annual Operating Budget
- Design and Construction Schedule
- Site Plan
- Blocking and Stacking Diagrams
- Building Representation

The Schematic Design has been developed based on extensive discussions with and between the University's architectural and engineering firm, SmithGroup, Inc., SECS leadership, faculty and students, and the Engineering Center Steering Committee.

The Engineering Center Steering Committee, which met on four occasions, is comprised of the following members:

Ronald E. Robinson, Board Liaison
Jayprakash B. Shah, Board Liaison
Virinder K. Moudgil, Senior Vice President for Academic Affairs and Provost
Louay M.Chamra, Dean, SECS
Lorenzo M. Smith, Associate Dean SECS
John W. Beaghan, Vice President for Finance and Administration and Treasurer
Terry Stollsteimer, Associate Vice President for Facilities Management
Steve L. Zmich, Director, Capital Planning and Design

The Engineering Center Steering Committee recommends Board approval of the Engineering Center Schematic Design.

3. **Previous Board Action:** On December 9, 2010, the Board approved the Fiscal Year 2012 Capital Outlay Project Request which included the Engineering Center as the University's top priority capital outlay request. On March 30, 2011, the Board approved the Engineering Center reimbursement resolution. On June 8, 2011, the Board approved SmithGroup Inc. as the architectural and engineering firm for the Engineering Center.

4. **Budget Implications:** Beginning in FY2015, upon Board approval, debt service and operating costs for the Engineering Center will be budgeted in the General Fund.

5. **Educational Implications:** The Engineering Center will be the new home for the School of Engineering and Computer Science, as well as general purpose classrooms.

6. **Personnel Implications:** None.

7. **University Reviews/Approvals:** This recommendation was formulated by the Associate Vice President for Facilities Management and reviewed by the Engineering Center Oversight Committee, and President.

8. **Recommendation:**

RESOLVED, that the Board of Trustees approves the Engineering Center Schematic Design (Attachment B, as may be immaterially amended during continuing design and construction phases of the project); and, be it further

RESOLVED, that the Board of Trustees authorizes the Vice President for Finance and Administration to proceed with the completion of design for the Engineering Center, and perform all acts and deeds required by this resolution, consistent with the project scope, Schematic Design, and

budget (budget is inclusive of all design, construction, furnishings, equipment, and project management), not to exceed $74,551,739; and, be it further

RESOLVED, that the Board of Trustees approves the submission of the Engineering Center Schematic Design to the State Budget Office for approval.

9. **Attachments:** A. April 1, 2011 letter from the State Budget Office
B. Engineering Center Schematic Design Documents

Submitted to the President
on 10/20, 2011 by

John W. Beaghan
Vice President for Finance and Administration
and Treasurer to the Board of Trustees

10/20/11

Virinder K. Moudgil
Senior Vice President for Academic Affairs
and Provost

Recommended on 10/20, 2011
to the Board of Trustees for Approval

Gary D. Russi
President

ATTACHMENT A

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
STATE BUDGET OFFICE
LANSING

JOHN E. NIXON, CPA
DIRECTOR

April 1, 2011

Dr. Gary Russi, President
Oakland University
204 Wilson Hall
Rochester, Michigan 48309

Dear President Russi:

A fiscal year 2011 appropriations act, Public Act 329 of 2010, was enacted at the conclusion of the prior legislative session that authorizes planning for twenty university and community college capital outlay projects. Your institution was included among those with a project authorized for planning.

The capital outlay process requires two specific authorizations – one for planning, and a second for construction. There is no guarantee that a project authorized for planning will subsequently be authorized for construction. Planning documents submitted to the State Budget Office will be carefully reviewed and evaluated, and the state's ability to participate in the cost of the project will be assessed relative to other budgetary needs.

Institutions may proceed with planning activities as authorized in Public Act 329 of 2010, however, the State Budget Office will only review planning documents and evaluate the state's ability to participate in the cost of projects in concert with the Fiscal Year 2013 Executive Budget Recommendation. Institutions that seek consideration of their projects in fiscal year 2013 must submit their draft planning documents to the State Budget Office for review no later than **Friday, November 4, 2011**. If your institution does not anticipate submission by this date, the plans may be presented at a later date for consideration in the Fiscal Year 2014 Executive Budget Recommendation.

Planning Process

Institutions electing to move forward with planning as authorized in Public Act 329 of 2010 are to follow the capital outlay process outlined in the Management and Budget Act (M.C.L. 18.1101 to 18.1594). The Management and Budget Act requires universities and community colleges to competitively select a design professional and develop project program statements and schematic plans with their own resources.

If the planning documents are recommended for approval with the Fiscal Year 2013 Executive Budget Recommendation, a request for construction authorization will be transmitted to the Legislature and the Joint Capital Outlay Subcommittee (JCOS). Approval of the construction authorization in an enacted appropriations act is required before a project is eligible to proceed to design development, bidding and any construction-related activity.

If a project is authorized for construction, universities and community colleges electing to self-manage construction must enter into a Project Management Agreement with the Department of Technology, Management and Budget (DTMB). DTMB oversight of projects is required to ensure they are constructed consistent with the approved scope outlined in the program statement and preliminary plans, and within authorized costs. Failure to follow requirements of the Management and Budget Act or the Project Management Agreement may jeopardize the state's ability to provide matching funds for capital outlay projects. Any alterations in project scope or cost once a project has been authorized for construction requires the approval of the State Budget Office and the Legislature.

In addition, the state share of project financing is provided through the issuance of long-term notes via the State Building Authority (SBA). Such financing requires that the project land and facility be conveyed by the university or community college to the SBA, with the state then entering into a lease with the SBA for the institution's use. Rental income paid by the state to the SBA is used to retire the long-term notes issued by the SBA. Once the SBA's debt obligation for a project is retired, the land and facility are conveyed back to the institution.

Summary documents with more detailed information regarding the capital outlay process and State Building Authority financing are attached. To assist with your planning efforts, the following provides a link to the DTMB website and the Major Project Design Manual: http://www.michigan.gov/dmb (search: Major Project Design).

Please feel free to contact Lisa Shoemaker, Capital Outlay Coordinator, at (517) 373-8883, if you have any questions regarding the capital outlay process or the development of your project.

Sincerely,

John E. Nixon, CPA
State Budget Director

Attachments

cc: Rep. Eileen Kowall, Chair, Joint Capital Outlay Subcommittee
Sen. Darwin Booher, Vice-Chair, Joint Capital Outlay Subcommittee
Senate Fiscal Agency
House Fiscal Agency
DTMB Design & Construction
State Building Authority
Office of Education and Infrastructure

State of Michigan Primary Contact Information:

Lisa Shoemaker
Capital Outlay Coordinator
Office of the State Budget
111 South Capitol Avenue
P.O. Box 30026
Lansing, Michigan 48909
(517) 335-7192 phone
(517) 241-5485 fax
shoemakerl@michigan.gov

Questions Relating to: Appropriations Process, Capital Outlay Process, Program Statement & Schematic Plan Reviews, JCOS, Project Management Agreement, etc.

Robert Hall, Director
Design & Construction Division
Facilities Administration
Department of Management & Budget
530 West Allegan Street
P.O. Box 30026
Lansing, Michigan 48909
(517) 373-6311 phone
(517) 373-3562 fax
hallr5@michigan.gov

Questions Relating to: Major Project Design Manual, Project Management, Competitive Bidding, Procurement Policies, Prevailing Wage, Construction Documents, Change Orders, Monthly Reporting, etc.

Deborah Roberts, Executive Director
State Building Authority
Department of Management & Budget
320 South Walnut Street
P.O. Box 30026
Lansing, Michigan 48909
(517) 373-3806 phone
(517) 335-1638 fax
robertsd1@michigan.gov

Questions Relating to: State Building Authority Financing, Project Cash Flow, Conveyances, Lease, Property Titles, Surveys, etc.

CAPITAL OUTLAY PROCESS
UNIVERSITY (U) and COMMUNITY COLLEGE (CC) PROJECTS

I. Program and Planning Phase (for projects authorized for planning only):

A. Legislature authorizes planning for a U/CC project in an appropriation bill. U/CC competitively selects a design professional. Planning is done by U/CC at U/CC expense.

B. U/CC submits draft Program Statement and Schematic Planning documents to the State Budget Office (SBO) consistent with the Department of Technology, Management and Budget's (DTMB) *Major Project Design Manual* by date specified for consideration in the next year's Executive Budget Recommendation.

C. If recommended for approval, the SBO will submit the Program Statement and Schematic Planning documents to the Legislature and the Joint Capital Outlay Subcommittee (JCOS), for review and approval.

D. If approved, the Legislature will authorize the project for final design and construction as a line-item in an appropriation bill.

II. **Design and Construction Phase (for projects authorized for final design and construction):**

A. U/CC notifies SBO/DTMB how they propose to manage the project, either: 1) through DTMB; or 2) self-managed by the U/CC.

B. If self-managed by U/CC, SBO will forward a Project Management Agreement for signature outlining various oversight responsibilities, reviews, monthly reporting, etc. The Project Management Agreement must be executed in order to proceed with final design and construction.

IF MANAGED IS TO BE MANAGED BY DTMB, NO FURTHER ACTION OR SUBMITTALS ARE REQUIRED BY THE U/CC, OTHERWISE PROCEED TO STEP C.

C. U/CC signs and returns Project Management Agreement to SBO prior to submission of preliminary and final construction documents to DTMB and prior to construction.

D. U/CC submits Preliminary Plans and updated budget sheet to DTMB for document review and approval.

E. U/CC submits the final construction documents to DTMB for review. DTMB notifies U/CC of approval and authorizes bidding of the project. **If an accelerated/phased delivery of the project is anticipated, DTMB must be notified, and complete construction documents and bid results submitted for each phase, unless otherwise agreed to by DTMB.**

F. U/CC submits bid results to DTMB for review and submission to JCOS. DTMB authorizes U/CC to award contract(s).

G. U/CC starts construction and submits the following:

1. Monthly Status Reports, including Change Orders, to DTMB as outlined in the Project Management Agreement.

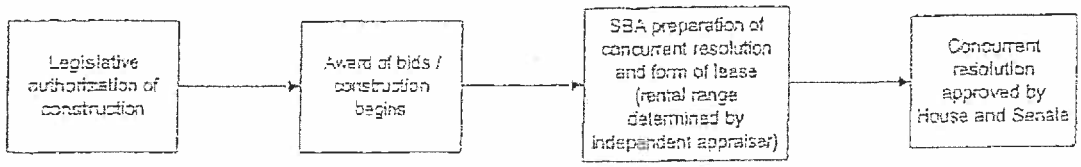
2. All project expenditures are submitted to DTMB on behalf of the State Building Authority (SBA), for review and approval. Please note that reimbursement by the SBA will not start until the U/CC share has been expended and all items above, as well as the requirements of the Project Management Agreement, have been completed, submitted and approved.

H. Contact Lisa Shoemaker, SBO, at (517) 335-7192 regarding approvals of Program Statements and Schematic Plans and execution of Project Management Agreements.

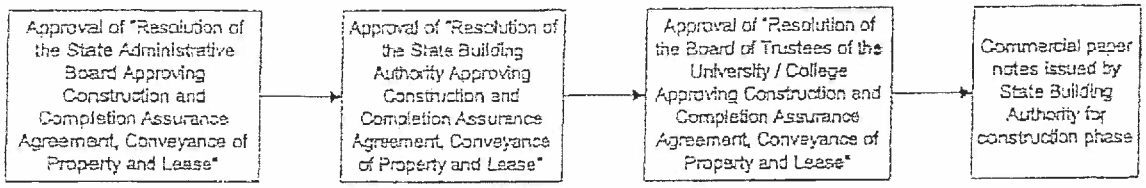
I. Contact Robert Hall, DTMB, at (517) 373-6311 regarding the format, review and approval of program/schematic plans, preliminary plans, bid results, final construction plans and monthly status reports. The formats for these documents are detailed in the *Major Project Design Manual*, available through DTMB and online at www.michigan.gov/dmb

State Building Authority
Process Flowchart

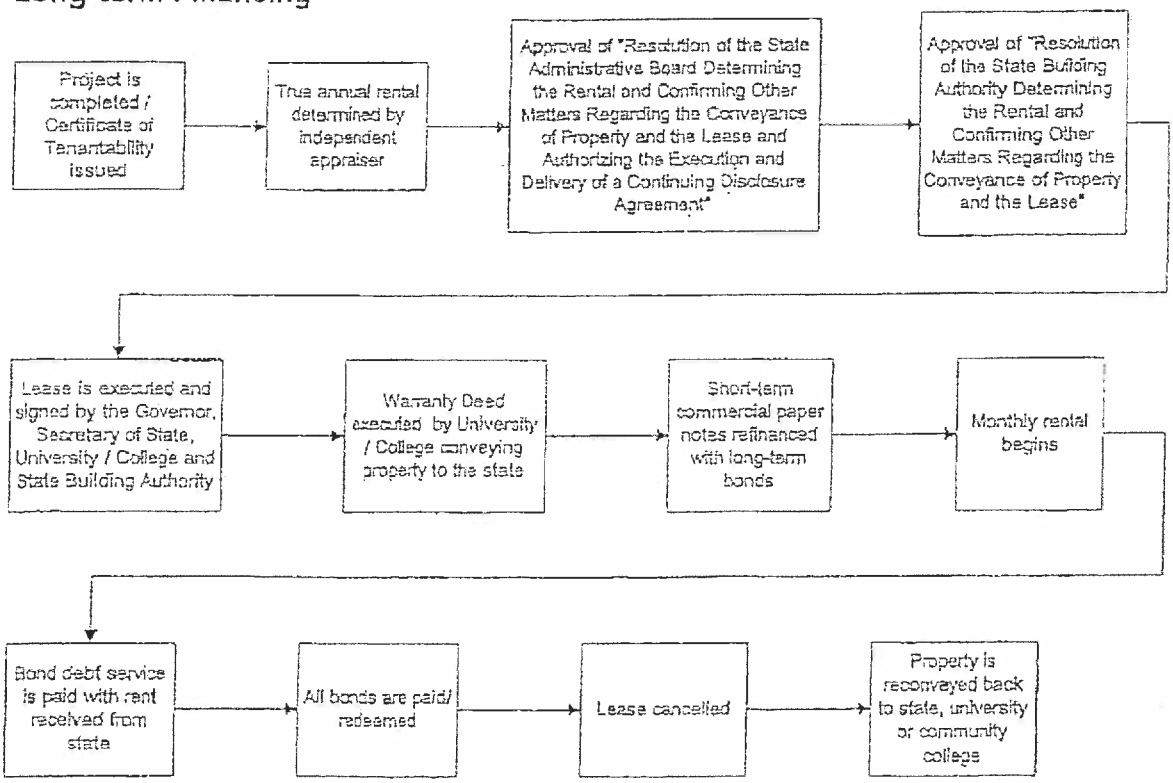
Project Authorization



Short-term Financing



Long-term Financing



Subject: File No. 332/11155.PEM
Oakland University
Engineering Center
Rochester, Michigan

Schematic Design prepared by: SmithGroup, Incorporated

Executive Summary

The proposed 128,428 square foot Oakland University Engineering Center (OUEC) building will provide state-of-the-art instructional, research and development space for Oakland University's School of Engineering and Computer Science (SECS). The proposed building is designed to provide high quality twenty-first century instructional and research facilities for OU's engineering and computer science programs that are vital to the revival of the economy of Southeast Michigan as well as the State of Michigan in general. The mission of the SECS includes supporting the global competitiveness of US alternative energy, health care and bio-medical, automotive, defense, and other high-tech industries. The OUEC will not only provide a highly visible focal point to the instructional, research and development activities of the SECS, but will also provide an opportunity to highlight our contributions to the economic development of the region. In addition, the proposed OUEC is designed to accommodate the growth in size and diversity of the stakeholders being served by the SECS, and to enable and promote the growth in size and quality of our educational, scholarly, and community outreach activities.

The new building will house much-needed instructional and research facilities for four current departments and two new focus areas:

- Mechanical Engineering
- Computer Science and Engineering
- Electrical and Computer Engineering
- Industrial and Systems Engineering
- Biomedical Engineering (new focus area)
- Power and Energy Systems (new focus area)

In addition, the new building will support the existing research centers in other buildings:

- Fastening and Joining Research Institute (FAJRI)
- Cyber Physical Systems Research Center
- Center for Robotics, Unmanned and Intelligent Systems
- Clean Energy Research Center
- Automotive Tribology Center
- Stephan and Rita Sharf Computer Integrated Manufacturing Laboratory

Additional space is provided in the new building and in backfill renovations for 1,000 additional general purpose classroom seats, in a range of classroom sizes from 30 to 200 seats.

The on-campus functions of the School of Engineering and Computer Science are currently dispersed over five buildings and nine floors in Dodge Hall of Engineering, Hannah Hall of Science, Science and Engineering Building, Shotwell-Gustafson Pavilion,

and the Police and Support Services Building. These SECS functions will be consolidated into a more collaborative environment in the new OUEC building plus parts of two floors of Dodge Hall of Engineering and one floor of the Science and Engineering Building. The new OUEC building will be located in close proximity to the remaining existing SECS functions in Dodge Hall and the Science and Engineering Building, and to collaborating entities in the College of Arts and Sciences and the School of Business Administration.

The design and function of the new Oakland University Engineering Center will follow today's state of the art standards for educational systems, which concentrates on the concept of living and learning communities and the centrality of student-related functions. Goals that will be achieved through the introduction of the new building include:

- Increased emphasis on hands-on learning
- Increased emphasis on informal and peer learning
- Enabling student organizations as a learning channel
- Enhancement of project-based laboratories
- Increased student involvement in original research
- Additional high-tech, appropriately equipped and designed learning spaces
- More flexibility to allow evolution and change in technologies, programs and pedagogies

The new Engineering Center will allow the incorporation of new technologies that are impossible or cost-prohibitive to retrofit within the existing buildings. These technologies may require high-bay space, low vibration space and/or clean room space, all of which will be provided in the new building. The new building will have an extensive and flexible infrastructure of building mechanical and electrical systems that will enhance the efficiency and functionality of existing programs as well as provide flexibility for program growth and change over time.

SECS' increasing emphasis on hands-on and collaborative learning will enhance the preparation of engineering students for entry into the contemporary workforce. Students who are trained in the new Engineering Center will transition easily into the demanding and collaborative work environments in the high-technology industries of Michigan. These students will learn the collaborative, adaptive and entrepreneurial skills required in today's fast-moving economy, and are expected to emerge as leaders in 21st century innovation.

The added space and enhanced capabilities provided to SECS in the new Oakland University Engineering Center will enable increased recruitment and retention of students, and support the University's goal of significantly increased enrollments by 2020.

The new OUEC building is placed immediately east of the existing Dodge Hall to ease the movement between the two buildings. Oriented north/south the plan creates an L-shaped footprint to reach north to the existing campus green and access toward the Oakland Center. This design orientation also creates a semi-enclosed outdoor court that may be utilized for robotic and vehicle tests, ceremonies and students social activities.

Sustainable features will be incorporated into the overall design to facilitate a USGBC LEED rating and provide for an energy efficient campus building.

Subject: File No. 332/11155.PEM
Oakland University
Engineering Center
Rochester, Michigan

Schematic Design prepared by: SmithGroup, Incorporated

Project Cost Summary

Estimated Construction Cost:

1. Building Structure (General, mechanical, electrical, fixed equipment) $50,250,415
   Includes escalation for a construction start date of October 2012
2. Services from outside five feet of the structure, Site Improvements..... $3,059,897

   Sub-Total Construction Cost $53,310,312

3. Movable furnishings and equipment $8,428,580
4. Professional Fees, surveys, site investigations, state supervision $6,874,825
5. Other $5,938,022

   Total Estimated Project Cost..... $74,551,739

Subject: File No. 332/11155.PEM
Oakland University
Engineering Center
Rochester, Michigan

Schematic Design prepared by: SmithGroup, Incorporated

Program and Cost / SF Analysis

Program Analysis

Program (New Building) ..... 128,428 GSF

Program (Renovation) ..... 15,000 GSF

Program Total ..... 143,428 GSF

Construction Cost / SF Analysis

Estimated construction cost (building structure)/ SF ..... $350 / GSF

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Oakland University
Engineering Center
Rochester, Michigan

Schematic Design prepared by: SmithGroup, Incorporated

Annual Operating Budget

Following is a summary of the projected annual operating budget based on $/year and 128,428 gross square feet:

Plant Engineering @ $0.04/gsf	$ 5,137
Custodial Cleaning @ $1.70/gsf	$ 218,328
Bldgs. & Grounds @ $1.00/gsf	$ 128,428
Plant Maintenance @ $0.21/gsf	$ 26,970
FM Admin. @ $0.02/gsf	$ 2,569
Skilled Trades Positions (1-1/2)	$ 123,520
Purchase Utilities @ $2.00/gsf	$ 256,856
Security	$ 25,000
Insurance	$ 20,000
TOTAL ANNUAL OPERATING BUDGET	**$ 806,807**

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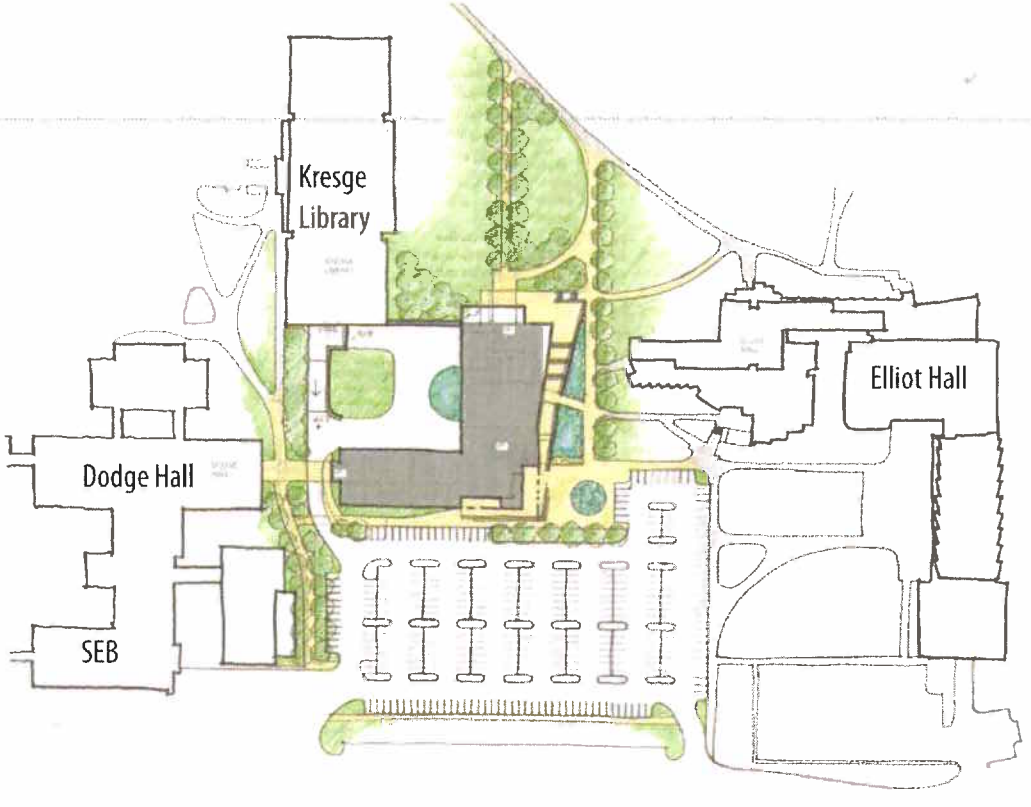
Schematic Design prepared by: SmithGroup, Incorporated

Design and Construction Schedule

Study / Program Analysis / Schematic Design Phases	July - October 2011
State of Michigan DTMB Program Schematic Review	November 2011
Design Development Phase	November 2011 – March 2012
State of Michigan DTMB Preliminary Design Review	April 2012
Final Design	May – October 2012
Groundbreaking Ceremony	April 2012
State of Michigan DTMB Early Bid Package Review	August 2012
Bid and Award Early Bid Package	August – September 2012
State of Michigan DMB Review	September 2012
Bid and Award Final Package	September - December 2012
Construction	September 2012 – August 2014
Occupancy	August 2014

This project will be executed using a construction management delivery method. A construction management firm will be selected through a competitive process during the design phase.

Site Plan



Oakland University

Engineering Center

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

SMITHGROUP

architecture engineering interiors planning

Blocking & Stacking Diagrams

Level 01

Oakland University

Engineering Center

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

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architecture engineering interiors planning

Blocking & Stacking Diagrams

Level 02

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Blocking & Stacking Diagrams

Level 03

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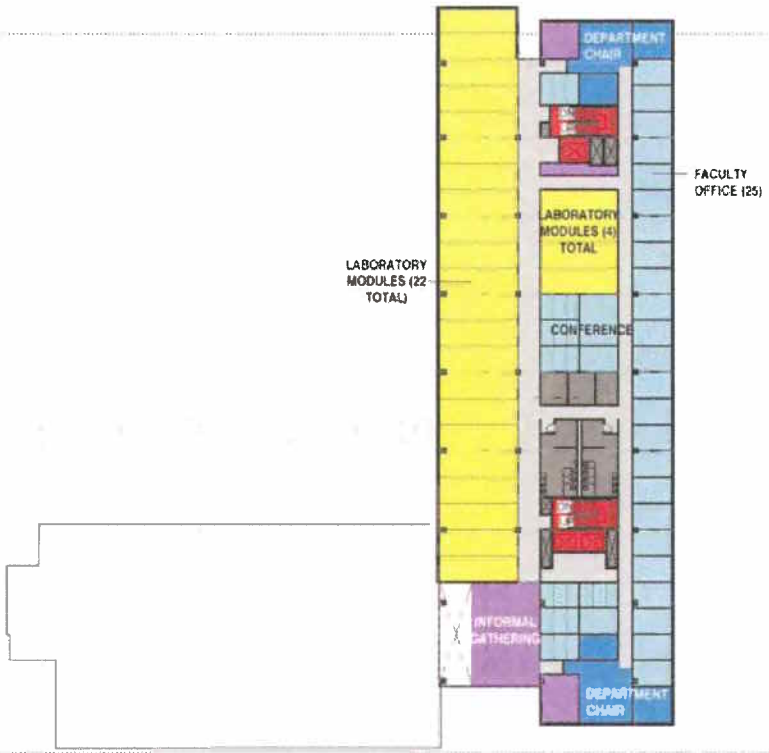
Blocking & Stacking Diagrams

Level 04



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Blocking & Stacking Diagrams

Level 05

Oakland University

Engineering Center

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

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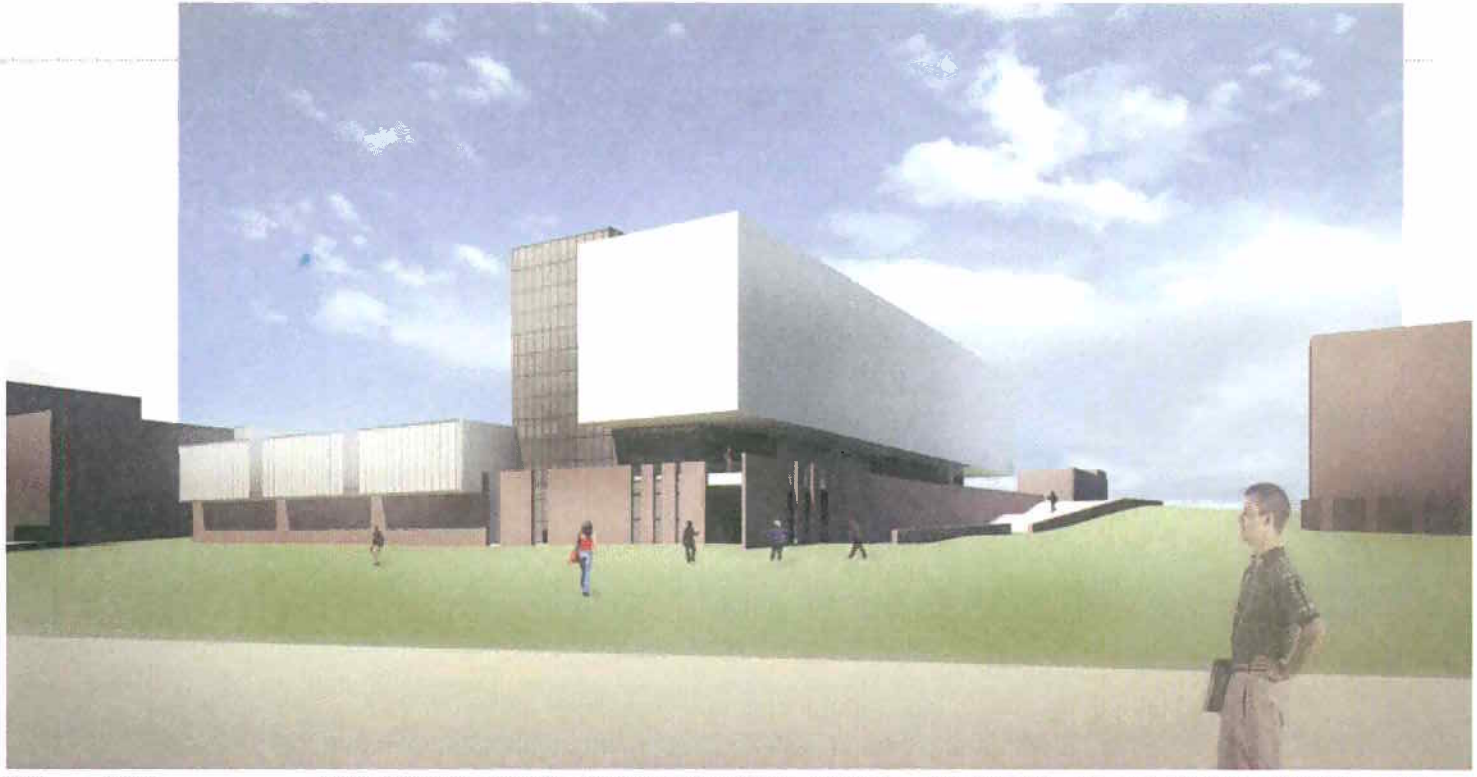
Building Representation



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