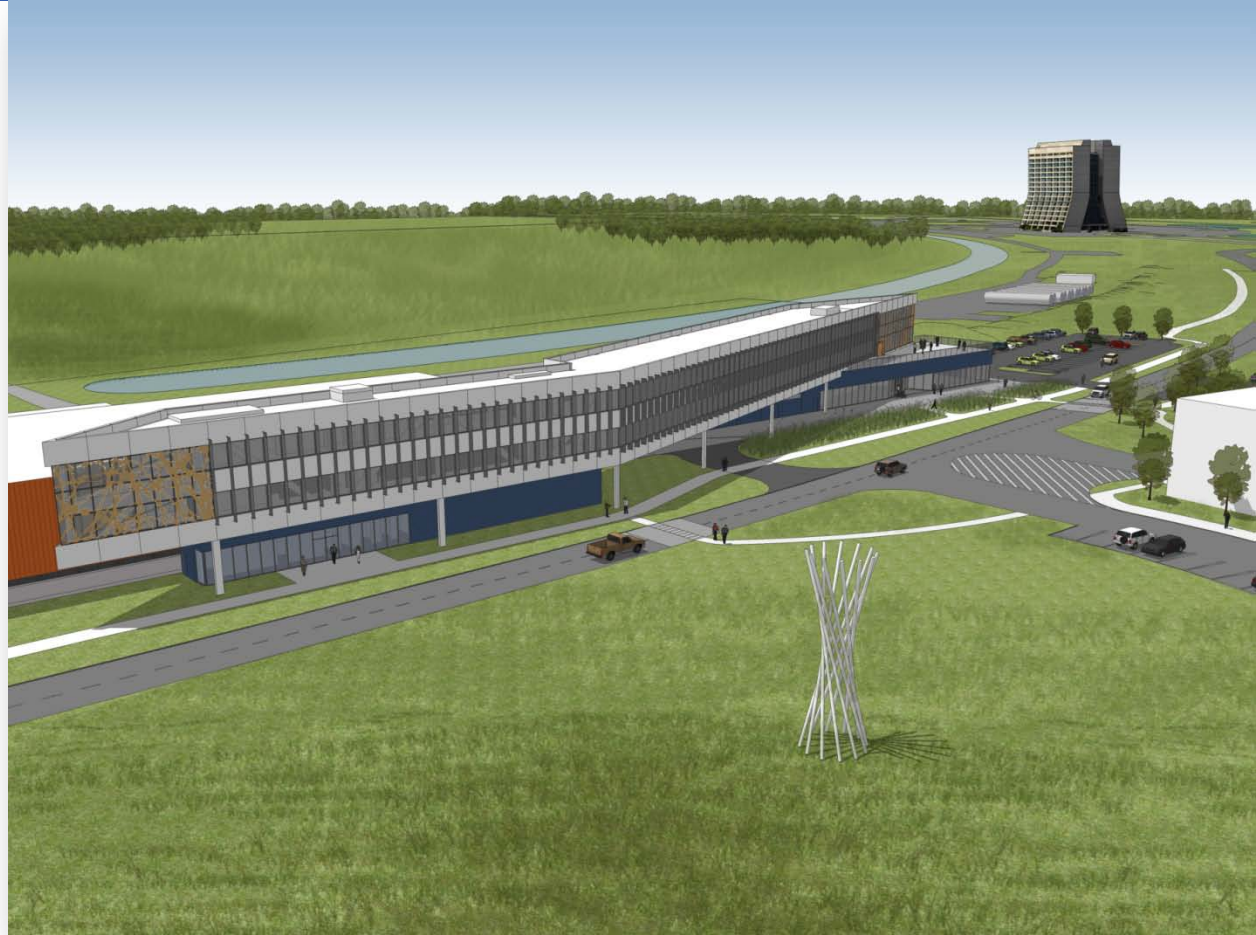




SECTION 1: Project Charter



**Office, Technical, and Education
Building**

FESS/Engineering Project No. 10-8-1



1.1 PROJECT JUSTIFICATION

Office, Technical, and Education Building

Project Charter

The mission of the High Energy Physics (HEP) program in the DOE Office of Science is “to understand how our universe works at its most fundamental level.” Further, “HEP underpins and advances the DOE missions and objectives through this research, and by the development of key technologies and trained manpower needed to work at the cutting edge of science.”

The beams produced by today’s particle accelerators address many of the challenges confronting our nation in the 21st century: energy, the environment, good jobs and economic security, health care, national defense and the war on terror. The next-generation accelerators of tomorrow have the potential to make still greater contributions to the nation’s health, wealth and national security. The powerful new accelerator technologies created for basic science and developed by industry will produce particle accelerators with the potential to address key economic and societal issues confronting our nation.

In October 2009, the DOE’s Office of High energy Physics sponsored the “Accelerators for America’s Future” symposium and workshop. Its purpose was to elicit the views and opinions of a wide range of accelerator users on the challenges and opportunities for developing and deploying accelerators to meet the national needs. The symposium identified “A critical challenge is the translation of breakthroughs in accelerator science and technology into applications that benefit the nation’s health, wealth and security.”

As part of the Industrial Area Upgrade Program (IAUP), the Office, Technical, and Education (OTE) Building in the Illinois Accelerator Research Center (IARC) at Fermi National Accelerator Laboratory will provide a center of excellence for accelerator research, education, and industrialization and initiate/promote/support related industry. IARC will bring together scientists and engineers from Fermilab, Argonne, Illinois Universities, and private industry with the goal of encouraging development of accelerator based industry and accelerator projects. The work at IARC will serve to promote Fermilab as the leading accelerator laboratory acting as a steward of Accelerator Development within the Office of Science in the Department of Energy. In partnership with industry and local university accelerator programs, IARC will make critical contributions to the technological and economic health of Illinois and provide unique education opportunities for a new generation of engineers and scientists.

In support of the IAUP, the OTE Building will be the first phase of the physical plant of IARC.



1.2 EXECUTIVE SUMMARY

Office, Technical, and Education Building

The OTE Building will house offices, technical space and education space for use by Fermilab scientists and engineers, scientists and engineers from Argonne and other national labs, university researchers, educators, and collaborating industrial partners. The space will be used for the study, research, development and application of cutting edge accelerator technologies. Emerging new accelerator technologies will enable the construction of new large scientific instruments necessary for the advancement of fundamental research and the development of new technological applications of accelerators. The OTE Building will be utilized as incubator space for emerging accelerator technologies providing a central point for cutting-edge accelerator research and industrialization. The building and infrastructure will be optimized for the development of advanced accelerator technology.

The approximately 40,000 square foot building will provide a mixture of specialized technical space, education areas, and office space. As an incubator space, it is anticipated that private industry clients will occupy part of the building office and technical space on a rotating basis. Therefore, the OTE Building is anticipated to be a highly flexible building with a high degree of modular building components including demountable/movable partitions and a raised flooring system. In addition, state-of-the-art computing and video capabilities will be provided to facilitate international collaborations.

Project Funding

The primary funding for this project is provided through two grants from the State of Illinois Department of Commerce and Economic Opportunity (DCEO): Grant Award No. 10-203828 in an amount not to exceed \$17,000,000 and Grant Award No. 10-203829 in an amount not to exceed \$3,000,000. Funds in the total amount for both grants have been received by Fermilab, with an authorization to incur costs beginning 06/01/2010 and ending 5/31/2012.

Additional funding in the amount of \$2,000,000 is provided by DOE.

Authorization

The primary work is authorized by U.S. Department of Energy Work For Others (WFO) FRA-2010-0002. See Appendix C.

Project Costs

This project is being executed on a design-to-cost basis with a not to exceed TEC of \$22,000,000.

The TEC includes the DOE funded Construction, State-funded Construction, Architectural/Engineering contracted Engineering and Design with related construction support services, Management Reserve and Indirect Costs. All estimates are based on FY2011 dollars, escalated to 2012 per DOE Guidelines.

The Indirect Costs associated with this project are based on current laboratory rates.



1.2 EXECUTIVE SUMMARY

Office, Technical, and Education Building

The current effective MSA and G & A rate are 14.4% on A/E and subcontractor costs.

Schedule

The OTE Building project is the second component of the Industrial Area Program. It is necessary for the first component, Industrial Area Site Upgrades project to be substantially complete prior to the start of the OTE Building to avoid construction site conflicts. This schedule further assumes that a one-year time extension for good cause will be received from DCEO as identified under Risk Management, Project Execution Plan section 3.6.

Director's Review	October '10
Engineering Start	November '10
Construction Start	November '11*
Construction Complete	May '13
Engineering Complete	October '13
Project Complete	November '13

* External Milestone: IASU partial beneficial occupancy October, 2011.

A separate tracking milestones plan is identified in the Project Execution Plan



1.3 PROJECT ORGANIZATIONAL STRUCTURE

1.3.1 DOE MANAGEMENT

The U.S. Department of Energy (DOE) provides partial funding for this project to Fermilab. The Fermi Site Office (FSO) will make these funds available to Fermilab for the project based on the existing directive system.

The Manager of the FSO has been delegated the authority and responsibility for field oversight of the project. This includes line management authority, responsibility and accountability for overall project implementation and contract administration.

The FSO administers the Maintenance and Operations (M&O) contract with Fermi Research Alliance (FRA) for the operations of Fermilab and exercises oversight of Fermilab. The FSO Manager has been delegated responsibility and authority for execution of the project. The specific responsibilities of the FSO manager are:

- Supervision of DOE Federal Project Director and Fermi Site Office staff;
- Review of and concurrence with this Project Plan;
- Review documents as required by federal regulations or departmental orders or notices;
- Approval of Fermilab subcontract actions, within the authority delegated to FSO;

The Chicago Office (CO) of DOE can provide support to the FSO in the following areas as requested:

- Quality Assurance
- Implementation of ES&H
- Project Management Systems
- Design Review
- Legal

1.3.1.1 Federal Project Director

The FSO Manager has delegated authority and responsibility for management and direction of the project to the DOE Federal Project Director, Stephen Webster.

The specific responsibilities of the DOE Project Director include:

- Oversight of the Integrated Project Team;
- Participates in regularly scheduled Project Management Group meetings;
- Tailors DOE project management requirements to the project;
- Review and approval of this Project Plan and changes thereto;
- Integrates and manages the timely delivery of government reviews, approvals, services, and information;
- Manages DOE provided funds;



1.3 PROJECT ORGANIZATIONAL STRUCTURE

- Measurement of performance against established goals including technical performance, cost levels, and schedule milestones;
- Overseeing Fermilab's management of construction activities;
- Monitoring project progress via reports prepared by the Fermilab Project Manager;
- Coordinating the approval by the FSO Manager, the construction project directives and modifications thereto.

The DOE has delegated the responsibility for design and construction of this project to Fermilab.

1.3.2 Fermi Research Alliance, LLC – M&O Contractor (FRA)

The OTE Building is part of the Industrial Area Upgrades Program which will provide leadership and oversight at the Directorate level through Project Management Group Meetings, Director's reviews, and Integrated Project Team meetings for the OTE Building.

Fermilab's Facilities Engineering Services Section (FESS) will lead the project and provide the project management and facility expertise needed to successfully complete the project. FESS will manage the design and conventional construction activities associated with this project, as well as accept line management responsibility for safety. This effort will be accomplished using the resources of the FESS Engineering Department. The FESS/Engineering department head shall assure proper attention to the coordination and timely completion of the project. This project's leadership is composed of individuals having several years of experience managing or supporting similar projects. The Federal Project Director will be supported by a project team that includes a Project Director, Project Manager, and other Fermilab support as shown on the project organization chart and as required by the project. Senior Fermilab management support includes involvement by the Chief Operating Officer, who works directly with the project team to facilitate and assist the team with best practices.

The project management team structure shown in Figure 1(below) identifies the organizational structure that will be responsible for design, procurement and construction of the Project.



1.3 PROJECT ORGANIZATIONAL STRUCTURE

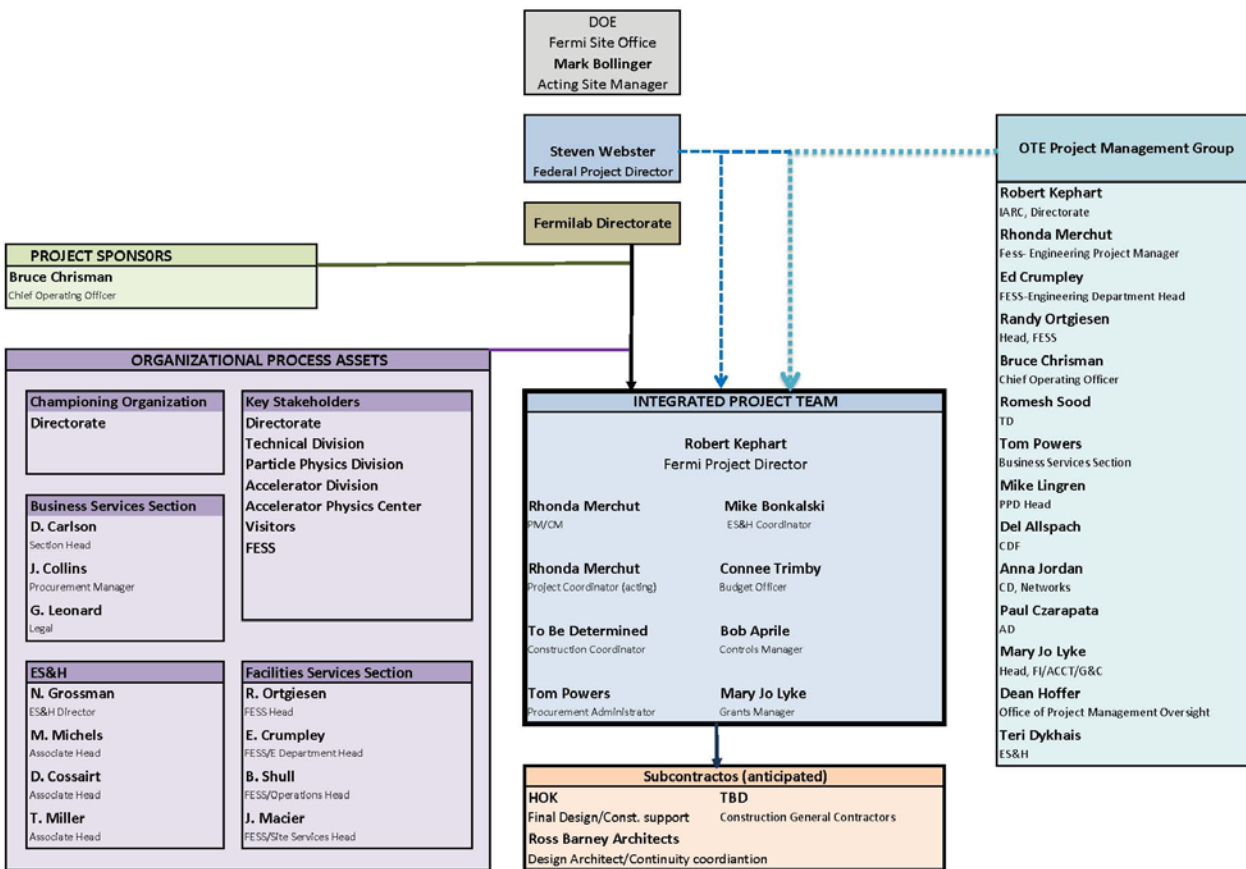


Figure 1 - OTE Project Organization Structure



1.3 PROJECT ORGANIZATIONAL STRUCTURE

1.3.2.1 Directorate

As with all activities at Fermilab, the Fermilab Directorate is at the highest level of responsibility.

1.3.2.2 Project Sponsors

The Fermilab Chief Operating Officer (COO), Bruce Chrisman and Randy Ortgiesen Head, Facilities Engineering Section are the Project Sponsors championing the project.

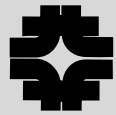
1.3.2.3 OTE Project Management Group (PMG)

The PMG has the responsibility of providing oversight to the OTE Building project as it relates to the Lab operations and changing accelerator research, development, and manufacturing activities.

The PMG is comprised of key stakeholders, including personnel from the Directorate, PPD, TD, AD, CD, CDF, and FESS, as indicated in Figure 1 (above). The PMG has the responsibility of insuring the OTE Building project is integrated into the long-range goals of the Industrial Area as well as coordinated with on-going GPP/IGPP projects in the Industrial Area.

The PMG approves the mission need for the OTE Building. PMG will provide oversight to insure the OTE Building Project meets the programmatic requirements, State Grant requirements, and schedule requirements. Oversight of the Project will include:

- Conducting periodic reviews of the project by way of the regularly scheduled Project Management Group meetings;
- Monitoring project progress and milestones via monthly reports;
- Monitor change control by oversight of the Change Control board;
- Proactively identify and resolves critical issues as they relate to Lab operations and safety;
- Oversee the management and mitigation of project risks;
- Ensures timely completion and quality of required project documentation



1.3 PROJECT ORGANIZATIONAL STRUCTURE

1.3.2.4 Integrated Project Team

The mission of the Integrated Project Team (IPT) with the Fermilab Project Director serving as the team leader is to provide leadership, strategic planning, coordination, and communication for the successful design and construction of the OTE Building project. The Integrated Project Team is responsible for ensuring the project's objectives are achieved on schedule, within budget, and consistent with quality, environment, safety, and health standards. The Integrated Project Team is also responsible for making sure that project management is carried out with integrity and in compliance with applicable laws.

The interface with FNAL Management and affected personnel will be necessary for coordination with activities that may impact project performance or where the project activities may have broader Lab impacts. The FNAL project manager will be the IPT point of contact for day-to-day interface with FNAL Management and other affected personnel to obtain input for coordination of project activities and planning.

The Integrated Project Team shall meet on a bi-weekly basis to accomplish the stated project goals and mission. Special meetings, when necessary, will be called to address and/or resolve specific issues

The objective of the integrated project team is to provide professional management and subject matter expertise to ensure the safe, timely, and cost-effective completion of the project.

1.3.2.4.1 Fermilab Project Director

The Fermilab Director has delegated certain responsibilities and authorities to the Fermilab Project Director who holds primary responsibility for Fermilab's management oversight of the Project. The Fermilab Director has designated Robert Kephart as the Fermilab Project Director. The Fermilab Project Director is a key stakeholder that has accepted the scope of work as described within this project's Conceptual Design Report as being appropriate and complete. The specific responsibilities of the Fermilab Project Director include:

- Leads the Integrated Project Team;
- Allocates funds;
- Reviews and approves this Project Plan and changes thereto;
- Manages the State Grant, including State Line Item Contingencies and initiates all scope changes as indicated in the Project Execution Plan.
- Secures any additional funding authority as defined by the Fermilab Project Manager.



1.3 PROJECT ORGANIZATIONAL STRUCTURE

- Organizes and serve as the leader of the Project Management Group Meetings and is main point-of-contact for the Federal Project Director.

A summary of the Fermilab Project Director's functions and responsibilities is provided in the Integrated Project Team Responsibilities Matrix included in Appendix B.

1.3.2.4.2 Fermilab Project Manager

The project manager is responsible for project implementation and evaluating and mitigating project risks. Specific responsibilities of the project manager include:

- Manages day-to-day execution of the project.
- Establishes technical and administrative controls to ensure the project is executed within the approved cost, schedule, and technical scope.
- Implements a tailored Earned Value Management System (EVMS), coordinated with the State grant requirements to track performance against the approved project baseline and in accordance with the State reporting requirements.
- Prepares DCEO Project Status Report;
- Ensures that project activities are conducted in a safe and environmentally sound manner.
- Ensures ES&H responsibilities and requirements are integrated into the project.
- Participates in IAU-PMG meetings and communicates the project status and issues.
- Identifies and manages project risks.
- Prepares and provides recommendations for baseline change control proposals.
- Ensures project deliverables as defined in the contract are on time and within budget.
- Serve as Construction Manager.
- Serves as first line of contact with the Architectural/ Engineering firm(s) and Construction Subcontractor(s).

The Fermilab Project Manager will utilize the resources of the FESS/Engineering Department as appropriate for oversight of design, construction phase support, and construction coordination. The building design will be subcontracted to an Architectural/Engineering firm(s). A summary showing the functions and responsibilities of the Fermilab Project Manager/Construction Manager is



1.3 PROJECT ORGANIZATIONAL STRUCTURE

provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.2.4.3 Fermilab Project Coordinator

The Project Coordinator assists in planning, researching, and oversight of the design, contributing in areas such as the oversight of the design review, procurement, manufacture, installation, testing, and initial operation in compliance with all applicable local, state and federal regulations, requirements and standards and all DOE orders. A summary of the Project Coordinator functions and responsibilities is provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.2.4.3.1 Design Support

In order to maintain continuity of the conceptual design documented in the CDR, the design architect, Ross Barney Architects will be retained to provide project coordination throughout the project (subject to successful proposal negotiation). Anticipated services include review and oversight of Conceptual Validation Process, provide responses to RFI's from the final design A/E including design details and drawings as needed; interface with final design A/E on key design issues; oversight and coordination of reviews; perform informal and formal reviews of final design documents and submittals for the purpose of completeness and coordination; oversight of LEED Gold documentation and HPSB Guiding Principles documentation, and review of key construction submittals.

LEED Management: Ross Barney Architects would continue as the LEED Project Manager insuring the project obtains Gold certification by providing design oversight, managing and coordinating documentation by other team members, and providing the on-line documentation as needed to achieve LEED Gold certification.

1.3.2.4.4 Fermilab Construction Coordinator

Job coordination during construction phase activities will be accomplished through the Fermilab Construction Coordinator (FCC), who shall be responsible for the oversight of daily monitoring of all work at the site, including the environment, safety and health (ES&H) program. The FCC reports to the Construction Manager for this project.



1.3 PROJECT ORGANIZATIONAL STRUCTURE

1.3.2.4.5 Fermilab Procurement Administrator

The Fermilab Procurement Administrator(s) (PA) is a member of the Business Services Section (BSS). Separate PA's may be assigned for the procurement of the architectural/engineering services (A&E) and for the construction subcontract(s). Through the head of the BSS the Fermilab Procurement Administrators will execute all subcontracts. The details of the PA's functions and responsibilities are provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.2.4.6 Fermilab ES&H Coordinator

The Fermilab ES&H Coordinator develops, integrates and implements aspects of project-related Environmental, Safety, and Health (ES&H) processes, plans, procedures, systems, methods and policies critical to the success of the project. The ES&H Coordinator ensures that technical complex requirements are properly interpreted by evaluating and applying appropriate ES&H principles and formulating scopes of work, plans, and methodologies suitable for achieving and maintaining compliance with Fermilab ES&H requirements, maintains overall responsibility for project ES&H execution, ensuring project is adhering to contract requirements, standards of quality, and to Fermilab and DOE ES&H performance expectations. The details of the ES&H coordinator's functions and responsibilities are provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.2.4.7 Fermilab Grants Manger

The Fermilab Grants Manger is responsible for insuring compliance with all requirements and conditions of the DCEO Grant, including quarterly financial reporting in accordance with the terms of the grants. The details of the Grant's Manager's functions and responsibilities are provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.2.4.8 Fermilab Budget Officer

The Fermilab Project Budget Officer manages the project budget, coordinates budget reviews and reporting with the project manager and project control account manager. The budget officer consolidates data for budget presentations, State of Illinois reporting requirements, and also maintains and reports the financial status of the project budget, submits budget reports to the project team and monitors the budget throughout the project. The details of the Budget Officer's functions and responsibilities are provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.



1.3 PROJECT ORGANIZATIONAL STRUCTURE

1.3.2.4.9 Fermilab Controls Manager

The Fermilab Project Controls Manager is responsible for the project's controls systems that support the project manager in planning project cost and schedule control functions for the project. The Project Controls Manager coordinates the work, resources, and costs using project controls tools, is responsible for the coordination, preparation, consistent application, and analysis of trends, Earned Value (EV) performance reports and the project risk management plan, ensuring that the results of risk analysis are incorporated into the project baseline. The details of the Control Manager's functions and responsibilities are provided in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.3 FERMILAB ORGANIZATIONAL PROCESS ASSETS

Organizational process assets are those Fermilab organizations that can be used to influence the project's success and provide additional resources beyond the IPT. These assets and organizations are described below.

1.3.3.1 Championing Organization

The championing organizations provide support for the project throughout the project process by providing objectives for the eventual operational use of the project. Since the championing organization will be the primary beneficiary of the project, the input of the organization is vital to establishing the goals and objectives for the project.

1.3.3.2 Stakeholders

All project stakeholders are considered to be organizational project assets and are considered invaluable during the planning and execution of the project. The Fermilab Project Director and Fermilab Project Manager will identify those key stakeholders and obtain the relative inputs critical to the project's success. Prospective users, landlord ES&H personnel and building managers are always key stakeholders that are included in the process.

1.3.3.3 Business Services Section

The Business Services Section (BSS) has the responsibility for subcontract administration, providing budget status and subcontract/requisition information. The details of the Fermilab Procurement Administrator's, a member of the Integrated Project Team, responsibilities have been identified and described in the Integrated Project Team Responsibility Matrix contained in Appendix B.

1.3.3.4 ES&H Management



1.3 PROJECT ORGANIZATIONAL STRUCTURE

The Environment, Safety and Health (ES&H) Section has the responsibility for providing safety coordination support and oversight of safety throughout the project. As with all Fermilab projects, attention to ES&H concerns will be part of project management and safety will be incorporated into all processes. Line management for safety on this project will be the responsibility of the Facilities Engineering Services Section.

The ability to perform the construction work in a safe, environmentally acceptable manner will be designed into the project. Construction documents (drawings and specifications) will be reviewed as the documents are developed, by Fermilab engineering, construction, and safety professionals to ensure ES&H concerns are addressed. Project specific safety and health requirements for construction will be outlined in the construction documents.

The potential construction subcontractors will be qualified for bidding by submitting specific information about their safety and health program with the proposals. During construction the subcontractors will utilize Project Hazard Analyzes (PHA) to plan the work and mitigate hazards. The Fermilab Construction Coordinator will audit the subcontractor's compliance with the PHA's and with their overall Safety Plan. The Fermilab ES&H Section will augment the FCC with appropriate safety personnel during construction.

1.3.3.5 Facilities Engineering Services Section

The Facilities Engineering Services Section (FESS) has the responsibility of coordinating existing and proposed infrastructure, including water, power and communication systems. FESS will provide criteria and project reviews for systems and areas that they will maintain and service. The ability to safely maintain and service the project's deliverable will be designed into the project documents. Construction documents (drawings and specifications) will be reviewed as the documents are developed for appropriateness, ES&H concerns and life cycle value.



1.4 ALTERNATIVES ANALYSIS

The location for the OTE Building was selected based on the Illinois Accelerator Research Center programmatic requirement for a high-bay component for accelerator construction.

Multiple Sites were evaluated and presented to the Directorate fourth quarter of FY 2009. It was determined that locating the building adjacent to the CDF building would provide the most appropriate type of high bay space for the expected R&D work that will take place. Repurposing the CDF building after the Tevatron shut down for this R&D work is considered an appropriate use for the CDF high bay building. A summary of the evaluated sites is located in Appendix D.

Further studies were conducted in conjunction with possible building massing options that the available buildable area surrounding CDF would afford. Representative sketches of these massing studies are located in Appendix D.

Meetings and a design charrette were conducted and 2 design directions emerged: a tower scheme to be located in the west parking lot of CDF, and, a horizontal scheme that would be located adjacent to the north side of CDF and extend west into the CDF parking lot.

The two design directions were further developed and presented to a Functional Review Committee and distributed for review to FESS. The Functional Review Committee was comprised of high-level Fermilab personnel from throughout the lab and chaired by Steve Holmes. The group was charged with reviewing the two design directions for functionality of the design. The Committee charge and comments are located in Appendix D. The two designs were further refined in response to the Functional Review Committee and FESS comments.

On June 15, 2010, the two refined design directions were presented to the Director and the horizontal Façade Scheme was selected as the building conceptual design. Selected images presented to the Director are located in Appendix D.