

Belmont Public Library

Executive Summary - Schematic Design Phase

Oudens Ello Architecture, December 2019

Overview

The following executive summary is intended to describe the process and primary goals of the schematic design phase for a new, two-story, 41,500 gross square foot public library facility for the Town of Belmont, Massachusetts. This phase of work was completed in the eleven months between December 2018 and October 2019. Key participants in this phase of work are listed at the end of this summary.

Project Background: 2017 Feasibility Study, Formation of the Library Building Committee and Selection of an Owner's Project Manager and Architect

In 2016, the Town of Belmont initiated a feasibility study at the request of the Library Trustees. Led by Johnson Roberts Associates and completed in early 2017, the study outlined a preliminary building program and ruled out renovation only and renovation-addition design scenarios, concluding that a new library building on the current site at 336 Concord Avenue was the most effective way to meet the Town's future library needs. The 2017 study provided an important road map for a new library building in the 40,000 gross square foot range, and became an important reference document during the schematic design process that lay ahead.

At Town Meeting in late 2017, the Town of Belmont authorized the appointment of a building committee to initiate the next phase of design development for a new public library. By early 2018, the Library Building Committee had formally been established, followed by the Committee's selection of Daedalus Projects, Inc. (DPI) as the owner's project manager (OPM) and Oudens Ello Architecture (OEA) as the architectural firm to lead the schematic design process. OEA's team of consultants included, among others, Stimson, as Landscape Architects for the project, and The Green Engineer, as sustainability consultant. By late early December 2018, work on schematic design for the new library had begun in earnest, with the process that followed structured by three overarching tasks outlined below.

Task 1: Fact-Finding and the Establishment of Project Goals

December 2018 - March 2019

The first four month's of work (Task 1) began with a review of the 2017 feasibility study building program and project goals, as well as a preliminary assessment of the existing library's Concord Avenue site. Site analysis included a preliminary zoning review, a

series of "test fit" parking studies and the development of a stormwater management strategy that effectively protects and enhances the site's existing resources, such as Wellington Brook, a Dawn Redwood heritage tree and the Woodland Garden. Later in Task 1, benchmarking visits were carried out to libraries in the Boston Metro region. This exercise took in visits to the Cambridge Public Library, the Central Branch of the Boston Public Library, the Scituate Town Library and Stoughton Public Library; all new, or recently renovated public libraries. Jointly attended by the Building Committee, OEA and DPI, the purpose of the exercise was to experience, compare and contrast these facilities, thereby developing consensus and a common language around recent library design trends and elements that might be suitable to consider for the new Belmont Public Library project. The benchmarking effort was soon followed by a series of small focus group meetings with various stakeholders, including the Belmont Historical Society, Veterans Memorial Committee, Belmont Garden Club and representatives from the Beech Street Center (home of the Belmont Council on Aging). These meetings enabled each stakeholder group to articulate their concerns and needs to the design team and select members of the Building Committee prior to the library design taking shape.

Design discussion that followed the feasibility study review, benchmarking visits and focus group sessions resulted in a refined building program that introduced several new program elements not found in the 2017 Study. Key enhancements included five additional small-group meeting rooms, secure outdoor reading and activity areas for both children and adults, specialized creative spaces for music and film as part of an expanded maker-space suite, additional accessible restrooms, a stroller parking area, a dedicated wellness room for nursing mothers and a state-of-the-art automated book return system. In late March 2019, Task 1 fact-finding efforts were brought to a conclusion with an initial public forum, held to gather additional input from Community members. Led by OEA, Stimson and The Green Engineer, findings from the forum included overwhelming support for a zero net energy (ZNE) design solution and enthusiasm for outdoor library programming and activity space. Most important to building planning and design, the community expressed a high degree of interest in having warm, inviting and light-filled spaces throughout a new building that can support socialization, quiet study and collaboration, envisioning the new library as a true center of community; i.e., Belmont's new "living room."

Task 2: Development of Initial Design Concepts and Zero Net Energy (ZNE) Study

April - June 2019

The work of Task 2 centered on the development of a series of two and three-story building planning and massing options for the new library. The conceptual design studies were all informed by the Task 1 refined building program and site analysis,

which established a viable buildable area on the existing library site. A community online survey and meetings with Library departmental heads and Town agencies carried out at this time further influenced planning development. While initial options were being considered, the design team carried out a parallel independent study intended to identify potential options for optimizing energy performance and to identify a pathway for achieving a ZNE building. Spearheaded by The Green Engineer, the study analyzed energy use in the context of difference approaches to HVAC, lighting and building envelope design, as well as on and off-site renewable potential. The study concluded that an all-electric (no fossil fuels) strategy, combined with enhanced thermal envelope and electric lighting performance and some on-site renewable energy would set the stage for "Class D" zero net energy, a classification that assumes the balance of energy needed to operate the building would come by way of yet-to-be-determined off-site renewables, or purchased renewable energy certificates.

After several rounds of design refinement in Task 2, the Building Committee selected its preferred option, a 41,500 gross square foot, two-story plus mechanical attic building design that places the children's wing on the ground level and the primary adult spaces on the upper level. The preferred design featured a 10,000 SF photovoltaic array as the primary on-site renewal energy source and accommodates reductions in the percentage of exterior wall to glazing, in order to meet the ZNE study's expectations for enhanced thermal envelope performance. In May 2019, the preferred option was presented to the Community in a second public forum. The presentation provided a recap of the findings of the first public forum, revealed the range of design options that were considered in Task 2, and showcased design elements informed by Community feedback that were actively being considered.

Task 3: Refinement of the Preferred Design Concept

July-October 2019

The final four months of the schematic design process were devoted to the development of the preferred concept and to the establishment of a project budget and schedule. Architectural refinement of the building design included the selection of an exterior building materials palette, assignment of interior finishes and development of the exterior building enclosure details involving a new round of wall-to-glazing ratio adjustments to further increase the thermal performance of the structure. At this time, OEA also engaged its full team of engineers and consultants, all of whom contributed drawings and specifications to further inform the design. By mid-August, schematic design level drawings, specifications and design narratives were complete and final renderings, diagrams and programming documents for the project were underway. By mid-September, two professional construction cost estimates for the new building were in hand (one by A.M. Fogarty, OEA's professional estimator, and one by DPI), which

were then reconciled to establish a future construction cost for the project, including contingencies and escalation. Thereafter, OEA, DPI and the Building Committee established a total project cost budget and schedule for the project. By late October, all project material had been finalized, setting the stage for project outreach to begin.

Beginning in November, the Building Committee and Design Team jointly presented the schematic design of the new Belmont Public Library to the Library Board of Trustees, Friends of the Belmont Public Library and Belmont Library Foundation, the Belmont Select Board and to the Belmont community at large at a third open public forum, effectively launching a private multi-million dollar promotional and fundraising campaign for the project led by the Belmont Library Foundation. Continued fundraising efforts are expected to take three years prior to a town vote in late 2022 to seek funding for the balance of the total project cost. The timetable for the completion of design is tentatively set for 2023, with completion of construction and the new library's opening occurring at some point in 2025 or 2026.

Project Participants

Belmont Public Library Building Committee

Clair Colburn, *Chair*
Stephen Sala, *Secretary*
Sally Martin, *Treasurer*
Madeline Fraiser Cook
Steve Engler
Jenny Fallon
Marcie Schorr Hirsch
Kathy Keohane
Robert McLaughlin
Bart Nelson
Robert Schafer
Heli Tomford
Peter Struzziero, *Staff Liaison (Library Director)*

Owner's Project Manager - Daedalus Projects, Inc. (CHA)

Alicia Monks, AIA, LEED AP

Architect - Oudens Ello Architecture

Conrad Ello, AIA, LEED AP, *Principal-in-Charge*
Matthew Oudens, AIA, LEED AP, *Consulting Principal*
Noel Murphy, RA, *Project Manager*

Landscape Architect - Stimson

Glen Valentine, ASLA, *Principal-in-Charge*
Michael Lindquist, *Project Manager*

Sustainability Consultant - The Green Engineer

Chris Schaffner, PE, LEED Fellow, WELL AP, *Principal-in-Charge*
Allison Zuchman, *Project Manager*

Structural Engineer - LeMessurier

Craig Blanchet, PE, *Principal-in-Charge*

MEP/FP Engineer - WSP

Scott Robbins, PE, CEM, LEED AP BD+C, *Principal-in-Charge*

Civil Engineer - Nitsch Engineering

David Conway, PE, *Principal-in-Charge*

Code / Life Safety Consultant - Code Red Consulting

Peter Harrod, PE, *Principal-in-Charge*

Cost Estimation - A. M. Fogarty

Pete Timothy, *Principal-in-Charge*

Specifications - Kalin Associates

Mark Kalin, FAIA, FCSI, LEED, *Principal-in-Charge*