

Newton Center for Active Living (NewCAL) project

NewCAL Design Review Committee (DRC) Project Update				
Date: Wednesday, June 15, 2022				
Date: Zoom Meeting (online)				
Time: 6:00PM				
Attendees:				
See attached Sign-In List for Design Review Committee, Project Community Representatives and Guests who were in attendance.				
CITY COMMITTEE STAFF				
Josh Morse	Public Buildings Dept.	<input checked="" type="checkbox"/>	Alex Valcarce	Public Buildings Dept. <input checked="" type="checkbox"/>
CONSULTANTS				
Tom Murphy	NV5	<input checked="" type="checkbox"/>	Joel Bargmann	BH+A <input type="checkbox"/>
Melissa Gagnon	NV5	<input checked="" type="checkbox"/>	Dan Chen	BH+A <input checked="" type="checkbox"/>

Josh Morse opened the meeting at 6:05PM. The primary agenda item was to provide a 5-58 Site Plan Review presentation and meeting of the DRC. Provided the DRC is ready following the presentation and discussion, they will be taking a vote. There will be ample opportunity for Q+A following the presentation. The DRC noted official business would need to be concluded prior to opening up for public comment.

Dan Chen of BH+A provided a brief overview of design developments relative to building siting, program, floor plans and exterior elevations followed by a focused update on the proposed site and landscape plans. Two team members were introduced: Kyle Zick (KZLA, landscape designer) to review landscape elements and Chris Weber (Pare Associates, civil engineer) to review civil components, utilities, and site lighting. Following these updates BH+A will provide an energy analysis update based on an initial report on embodied carbons which is based on both operations and building construction.

Design Progress Update

The proposed building is sited at the former library/current senior center at 345 Walnut Street, at a corner lot bordered by Highland Avenue, Walnut Street and Walnut Place. The proposed new building is a 3-story structure with a 2-story wing that faces Walnut Street.

Parking – It was noted that there is a total of (125) municipal off street parking spaces in the Austin Street lot in addition to (31) onsite parking spaces as well as street parking on both sides of Highland Ave. A traffic impact assessment is currently ongoing.

Landscape Overview

Kyle Zick, landscape architect with KZLA, provided an overview of the proposed landscape plan going clockwise around the building explaining various components of the site. Highlights included the following:

Landscaping

- The primary pedestrian building entrance will be at the corner of Highland Avenue and Walnut Street. The plaza space will have unit pavers which would be match the streetscape.
- Flanking the entrance will be a couple of benches, one under the canopy and one open air, both with plantings to either side.
- There is an existing tree and a proposed tree. The existing tree, along Highland Ave, would be protected during construction. The intent is for the other tree, be transplanted along Walnut Street, from an existing garden area on site.
- A paved space broken up by planters with some seating with perhaps small-scale tables and chairs, open to the public along Walnut Street.
- Further down Walnut Street, closer to the corner of Walnut Place, is a garden space which fills the space from the building face to the back of the sidewalk, with benches, open to the public.
- The existing tree at the corner of Walnut Street and Walnut Place would remain. A few additional trees would be planted with a few benches at the back of the sidewalk bordering the garden area.
- The terrace along Walnut Place is a paved space accessed from inside the building, separate from public access, with tables and chairs. The existing wrought iron fence and granite curbing, which are currently part of the Walnut Street streetscape, would be salvaged to enclose the terrace as it goes along the building. There would be plantings on either side of the fence to provide a buffer and seasonal interest as part of the streetscape.
- Vehicles enter the site via a one-way circulation at Walnut Place, flanked with proposed trees.
- Existing granite pillars which are along Walnut Street would be reset at the drive entrance.
- A 6-foot-high solid screen fence is proposed along the west property line. The intent is for the two large existing trees to remain.
- At the Highland Avenue parking exit, there is an emergency generator to the left near the property line, screened by a solid fence. Salvaged granite bollards would flank each side of the exit driveway.
- A vehicular drop off/pickup area is along Highland Avenue, with a few benches within a planted space.
- Designated ADA parking spaces are in the covered parking area, with spaces located very close to the pedestrian entry from the parking lot.

Benches, Site Furnishings and Lighting

- Based on feedback from the prior meetings, benches would be a combination of either all wood or wood and metal with arm rests on the ends as well as intermediate for additional support.
- A Unilock paver product would match the tan and gray color palette which is part of the existing streetscape. The pavers would be impervious standard pavers.
- The parking area would consist of one (1) light pole fixture with three (3) wall surface mounted fixtures as well as additional surface mounted fixtures at the underside of the gymnasium. All other exterior lights would be surface mounted.
- Images were presented of possible movable tables and chairs for the terrace and streetscape as well as the existing fence and granite piers. Furnishings would need to be tested for both senior and public use.
- Lighting calculations were presented. The Intent is not to throw any light onto adjacent properties. Selected light fixtures have full cut offs.

Civil Engineering Site Plan Approval Submission

- BH+A noted that two (2) test pits were conducted last month at the existing site. The initial stormwater report is available. Per the City of Newton, the assumption of design is a “design storm” with 8.78” of rainfall. The proposed stormwater management plan is designed to meet the design storm criteria as well as the Peak Stormwater Runoff Flow Rates (CFS) were presented for 24-hour events for a 2-, 10- and 100- year event. The current site is slightly over .5 acres with approximately .4 acres of impervious surface. The proposed design results in a .05 improvement of the impervious area in comparison with the existing site.
- Per the proposed erosion and sediment control plan, there would be preventions all along the perimeter as well as utility connections which ideally would be focused to Highland Avenue. Construction entrance will likely be coming off from Walnut Place.
- Pavers would be located on the south terrace, entry plaza and seating area along Walnut Street.
- Vehicular circulation is one-way entering from Walnut Place and exiting to Highland Avenue.
- Utility connections are anticipated to be from Highland Avenue for both fire water and domestic water. Transformers are anticipated to be tied into Highland Avenue.
- The infiltration system is proposed to be beneath the surface parking area with the overflow connected to the City right of way. The building drain will be connected to the infiltration system.
- Based on the two test pits conducted ground water table was detected approx. 10’ from the surface. The proposed infiltration system is approx. 6’ below the surface which is approx. 4’ above the estimated high groundwater table.

Energy Model Analysis

Overall Energy and Green House Gas - Comparison to Code

It was recommended at the last DRC meeting to push the building design to the highest efficiency alternative. Per the current proposed design, the percent of greenhouse gas reduction is 44% for the highest efficiency alternative in comparison with 30% per the design case GHG. Both are working goals as the project moves towards the next phase of design development.

Energy Usage Intensity Comparison

The existing building uses 108 EUI and with the highest efficiency, and based on the current design, the new building would use between 36 EUI and 29 EUI. This calculation is based on the new building being open seven days/week, from 7:00AM to 7:00PM, at 84 hours of operation. The proposed operational hours would yield considerably more energy use in comparison with the current building usage.

A breakdown of the 29 and 36.5 EUI was presented in the form of pie charts. A large % of energy usage will be attributed to ventilation and heating.

Solar panels are being proposed for renewable energy. The roof would have 4500 SF of solar panels and based on the highest efficiency alternative, approx. 29% of the energy usage will be achieved from the panels.

Glazing to Wall Analysis New Building

The total glazing area calculates to 5722 SF with a total wall/surface area of 24,123 SF resulting in a 24% ratio of glazing to wall/surface area, which is less than the prescriptive path of 30%.

A Detailed Energy Analysis was presented as back up to how 29% reduction of GHG as well as 44.3% which the project is targeting.

Life Cycle Assessment

The proposed building baseline model would be comprised of steel structure with concrete composite and a concrete foundation. Results of an embodied carbon footprint were presented. The total of 1.4 kilograms of CO₂ is comprised of 82% from construction materials plus 7% from transportation to the site, 9% from materials being replaced and 2% attributed to end of life.

Construction materials are a large portion of the embodied carbons. The following three (3) construction material components encompass close to 75% of the embodied carbons: Concrete and steel foundation (35.1%), structural steel (27.6%) and fiberglass windows (17%). The design team will study and test alternative construction materials during design development including a CLT type of system in lieu of structural steel as well as fly ash in the concrete and foundations to help reduce embodied carbons.

Primary construction elements will be studied to identify components which offer the most potential gain such as wood frame construction (in lieu of steel and concrete), glazing reduction and low embodied carbon concrete.

Floor Plans

- The main lobby is entered off the corner of Walnut Street and Highland Avenue. Pick up and drop off are along Highland Avenue, near the corner, near the main entry. Immediately upon entry, there is a double height space.
- First floor – Most public programming - lounge, library, and two multi-function spaces, at 1500SF each. Additionally, there is a reception area, administration and a commercial kitchen which services the two (2) multi-function spaces.
- The vehicular entrance and surface level parking are at the rear and take visitors to the same reception area on the first floor, entering from Walnut Place.
- Main circulation throughout the building is organized around a single elevator or by taking the main communicating open stair to the upper floors.
- Second floor – Activity programs – 6500SF multi-function gym which can be divided into two courts, classrooms, conference rooms, art rooms, as well as senior services administration spaces.
- Third floor – Destination/physically focused programming – walking track above the gym, game room and a large fitness room. There is also an outdoor roof deck covered by an overhanging room which covers the roof approximately 50%. Roof options are currently being studied to provide as much shade as possible without requiring structural columns.
- There are two (2) egress communicating stairs.
- A cupola will provide natural daylighting from above to the third-floor main corridor.

Exterior Elevations

Conceptual rendered elevations and perspectives were presented relative to building organization and programming. Some highlights noted are:

- The main entrance is directly off the street, at the corner of Highland and Walnut without any barriers, at grade. All indoor programs and outdoor spaces are connected, at the same level, without any barriers.
- The proposed building materials are brick with a stone base, shingle roof, stone precast coping, high density fiberglass cement panel cladding, wrought iron ornamental railings, decorative metal panels and the Connick Foundation stained glass panels. Along Highland and Walnut, large window bays flood the interior with natural light.
- The glass cupola is a recreation of the 1938 design.
- Many existing elements are being incorporated into this building: Connick Foundation stained glass, ornamental decorative railing, decorative panels and the 1938 cupola design.

- The overhanging roof will provide at least 50% shading on the roof deck.
- At the back of the building, at the vehicular entry, the primary materials are brick, stone and cladding with the roof above.
- Incorporation of existing Connick Foundation stained glass pieces are currently being proposed at the lower level of the east elevation, to be more accessible to the public.
- Windows are fiberglass and some of the larger windows are a curtainwall and spandrel system.
- The design intent is to bring the building scale down to more of a pedestrian level with horizontal banding of varying materials.

Wall Section Diagram

It was noted that in an effort to achieve the highest energy alternative, insulation, exterior cladding, and air penetrations are all hitting passive house conditions.

The current proposed wall assembly design was presented. With an increase in insulation there may be a slight increase in the building embodied carbon while there may be a decrease in the operational embodied carbon. The energy model will continue to be studied to reflect the increase and decrease. The wall assembly presented represents the goal of achieving the highest efficiency net zero alternative.

Discussion, Comments and Questions

- Accessibility of pavers vs. concrete pathways to the front door. KZLA explained the approach would be to place pavers on a concrete sub-base to prevent settling. Concrete pavers may be better suited for universal access and given the population that will be using this facility.
- Bollard installation around the emergency generator was suggested.
- Potential building light spillage should be considered and factored into photometric modeling.
- Light output from surface mounted fixtures. BH+A explained the intent is to wash the building and provide light straight down to light adjacent walking paths and garden areas.
- Sources used by the Green Engineer for embodied carbons. BH+A noted concrete is the cast in place concrete (ready mix). It is assumed materials would be delivered within 50 miles radius of the site which seems reasonable in terms of sourcing. Looking at alternatives to fiberglass windows.
- Cupola design. The language of this building is similar to the Newton Free Library which speaks more closely to a more modern architectural language. The proposed cupola does not seem to be in the same language. BH+A explained the proposed cupola emulates the 1938 design which was never built. The cupola design functions as a skylight providing natural light to the third floor which is important given the deck roof coverage. Further study is needed to balance the architectural style of the building with the cupola design.

- Cupola design. Seems to be out of character with proposed building. The concave roof form and Palladian windows do not tie in well with the building roof and mullion design. Translucent glass may offer a soft glow as an alternative to transparent glazing.
- Size of windows at walking track and distance from the floor. It may be safer if there was more wall and less window. BH+A will continue to study the window design.
- Glare from walking track windows. Less glazing would be preferred or alternatively, translucent glass would create a soft glow and reduce glare.
- If glazing is not creating value added, there should be less glazing and more wall surface.
- Glazing in stairwells (light spillage). Stairwell glazing and lighting, in particular at Highland Avenue, should be studied to ensure light spillage to the neighborhood will not be an issue. The lower the height of glazing within the stairwells will reduce the impact of possible light spillage.
- Glazing in stairwells (ornamental appearance). Vision glass tends to create an ornamental stair as a point of focus. Insulated panels or spandrel glass may be appropriate alternatives to consider.
- Acoustics and vibrations relative to fitness center. Acoustical separation between fitness center and the rest of the building should be studied.

Draft Conditions

Based on comments and discussion relative to the presentation made to the DRC, the City of Newton compiled the following DRAFT conditions for review, along with feedback from the DRC, NV5 and BH+A:

- The design team should continue to take an integrated design approach to the building's design through its mechanical systems, building envelope, floor to floor heights, ceiling heights including the height and extent of glass and glazing, methods of sun control, day lighting, electrical lighting, and sound control. All components should be designed to promote efficient building performance and reduce overall energy consumption, consistent with both its purpose and context. This process should include life cycle cost analysis in the vetting of building systems.
- The design team should continue to strive to meet, or exceed, our sustainability goals. This should include further study and application of passive house principles, on-site PV, and other methods of driving down our energy use intensity, as Newton strives to reduce its' carbon footprint and pushes towards net zero buildings. The building will be heated and cooled using no fossil fuels on site. The design team will continue to work with the Design Review Committee and City of Newton to analyze the embodied carbon of the various design elements, striving to minimize our embodied carbon footprint as much as possible.
- All facades of the proposed building should be refined to address concerns regarding massing and buffering of the building from the abutting properties.

- Include in the photometric analysis the building light spillage from interior sources and minimize direct and indirect impacts to the abutters. This study should also include analysis of existing offsite light sources to ensure that more light is not provided than necessary.
- Evaluate the use of exterior pavers and develop an exterior surfacing plan that promotes a universally accessible and durable design, and a welcoming facility.
- Continue to study the design of the cupola and the stairwells and their relationship to the architectural details of the building design.
- The traffic and parking study and recommendations should be completed and presented to the DRC to ensure that the site plans work well with the site distribution, pedestrian safety, including vehicular drop off/pick up.
- The details of how the existing historical elements and fixtures like the Connick stained glass windows shall be presented to the DRC to allow for review and comment.
- Study options to limit glazing along the lower perimeter of the walking track and the stairwells.

VOTE: Motion by Peter Barrer to approve the Site Plan Approval presentation which was made to the Design Review Committee at the meeting on June 15, 2022, including the Draft Conditions noted above. The motion was seconded by David Gillespie. All members present were in favor, with no votes in opposition and no abstentions.

Recently Filed Lawsuit

The City noted that several members of the community have filed suit with the City of Newton challenging the decision of the Newton Historic Commission with regards to the landmark application.

Change in DRC Membership and Appointment

It was discussed that Peter Barrer would be stepping down from his role as DRC co-chair. Peter served in this role for seven years.

VOTE: Motion by Peter Barrer to nominate and appoint Tom Gloria to step into the role as co-chair of the Design Review Committee (DRC). The motion was seconded by Jonathan Kantar. All members present were in favor, with no votes in opposition and one abstention (Tom Gloria).

Respectfully submitted,

Melissa Gagnon

NV5, Inc.

[End of 06/15/2022 Meeting Minutes]