

b. SPECIAL PERMIT APPLICATION – SUMMARY OF APPLICATION

<p>Project Name: Vélo Address of Site: 95 Elmwood Street Applicant: 95-99 Elmwood Street, LLC Planning Board Project Number: (CDD)</p>

Hearing Timeline (CDD)

Application Date: _____

Planning Board 1st Hearing Date: _____ *

(PUD Development Proposal, other special permit)

Planning Board Preliminary Determination: _____ *

(PUD Development Proposal)

Second Submission Date: _____ *

(PUD Final Development Plan)

Planning Board 2nd Hearing Date: _____ *

(PUD Final Development Plan)

Final Planning Board Action Date: _____ *

(PUD Final Development Plan, other special permit)

Deadline for Filing Decision: _____ *

**Subject to extension by mutual agreement of the Applicant and the Planning Board*

Requested Relief: (include other boards and commissions)

- See special permits requested above, as more particularly described in the project narrative below.

Project Description

Brief Narrative: Special permit to allow construction of a residential development consisting of thirty four (34) residential units and approximately four hundred eighty (480) square feet of commercial retail, thirty four (34) underground parking spaces and thirty five (35) bicycle spaces.

Project Size:

- Total GFA: 36,274 sf
- Non-residential uses GFA: 480 sf
- Site Area (acres and SF): .40 acres, 17,535 sf
- Number of Parking Spaces: 34
- Number of Bicycle Spaces: 35

Proposed Uses:

- **Number of Dwelling Units:** 34
- **Other Uses:** Commercial/retail
- **Open Space** (% of the site and SF) 15% or 2678 SF

Proposed Dimensions:

- Height: Range of Heights Maximum 45'
- FAR: 2.07

OWNERSHIP CERTIFICATE

Project Address: 95-99 Elmwood Street

Application Date:

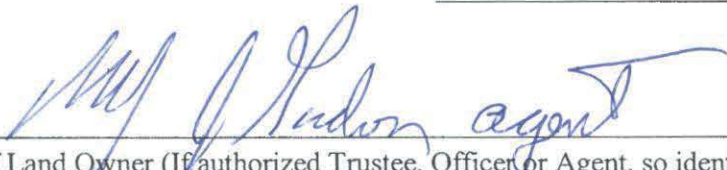
This form is to be completed by the property owner, signed, and submitted with the Special Permit Application:

I hereby authorize the following Applicant: 95-99 Elmwood Street, LLC c/o Adam Siegel
at the following address: 485 Massachusetts Ave., Suite 309, Cambridge, MA 02139
to apply for a special permit for: Project Review Special Permit
on premises located at: 95-99 Elmwood Street
for which the record title stands in the name of: Rona Realty Limited Partnership
whose address is: 369 Cutler Road, Hamilton, MA 01936

by a deed duly recorded in the:

Registry of Deeds of County: S. Middlesex Book: 30779 Page: 52-54

OR Registry District of the Land Court, Certificate No.: _____ Book: _____ Page: _____



Signature of Land Owner (If authorized Trustee, Officer or Agent, so identify)

To be completed by Notary Public:

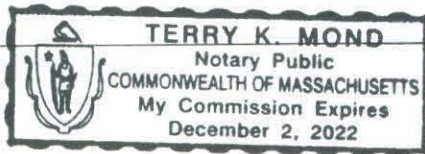
Commonwealth of Massachusetts, County of Norfolk

The above named Barry J. Gordon personally appeared before me,

on the month, day and year January 13, 2016 and made oath that the above statement is true.

Notary: 

My Commission expires: _____



DIMENSIONAL FORM

Project Address: 95 Elmwood Street

Application Date: December 10, 2015

	Existing	Allowed or Required (max/min) BA2/MAO/NMAO	Proposed	Permitted
Lot Area (sq ft)	17535	NONE	17,535	
Lot Width (ft)	140.69	NONE	140.69	
Total Gross Floor Area (sq ft)	18,121	39,279	36,274	
Residential Base	NA	29,846	27,534	
Non-Residential Base	NA	480	480	
Inclusionary Housing Bonus	NA	8953	4130 affordable + 4130 bonus	
Total Floor Area Ratio	1.03	2.24	2.07	
Residential Base	NA	1.7	1.57	
Non-Residential Base	NA	0.03	0.03	
Inclusionary Housing Bonus	NA	0.51	0.47	
Total Dwelling Units	0	37	34	
Base Units	NA	29	26	
Inclusionary Bonus Units	NA	8	4 affordable+ 4 bonus	
Base Lot Area / Unit (sq ft)	NA	600	604	
Total Lot Area / Unit (sq ft)	NA	474	515	
Building Height(s) (ft)	±21	45 , 35 w/in 50' res	45 , 35 w/in 50' res	
Front Yard Setback (ft)	0.1	5	5	
Side Yard Setback – Right (ft)	±0.4	10	10	
Side Yard Setback – Left (ft)	0.5	10	10	
Rear Yard Setback (ft)	1.2	20	20	
Open Space (% of Lot Area)	0	NONE	15	
Private Open Space	0	NONE	0	
Permeable Open Space	0	NA	15	
Other Open Space (Specify)	NONE	NA	0	
Off-Street Parking Spaces	UNDELINEATED		34	
Bicycle Parking Spaces	0		39	
Loading Bays	0		0	

Use space below and/or attached pages for additional notes:

**95 -99 Elmwood St- Proposed Commercial & 34-Unit Residential Development
Bus. A-2 Base District, Mass Ave Overlay District, North Mass Ave Subdistrict
Cambridge –Zoning Compliance Table**

	Existing Conditions		Proposed Conditions	Ordinance Requirements/Allowed	
Total Gross Floor Area	95 Elmwood	10,769-SF	36,274-SF ^{note 1}	39,279 ^{note 2}	<i>Complies</i>
	99 Elmwood	<u>7,352-SF</u> 18,121-SF			
Lot Area	17,535-SF		17,535-SF No Change	None	<i>Complies</i>
Gross Floor Area to Lot Area Ratio (FAR)	1.03		2.07 ^{note 2}	1.0 non-res/1.75res base + (inclusionary + bonus) = 2.24 ^{note 2} (max.)	<i>Complies</i>
Lot Area for Each Dwelling Unit	N/A		515-SF	1 unit/600-SF/before inclusionary bonus 1 unit/474 after inclusionary bonus (min.)	<i>Complies</i>
Size of Lot	Width	140.69'	140.69' No Change	None	<i>Complies</i>
	Depth	100.00'	100.00' No Change	N/A	<i>Complies</i>
Setbacks in Feet (See A1.1 & A1.2)	Front (Elmwood)	0.1'	5'	5' min.	<i>Complies</i>
	Left Side	0.5'	10'	10' min.	<i>Complies</i>
	Right Side	±0.4'	10'	10' min.	<i>Complies</i>
	Rear	1.2'	20'	20' min.	<i>Complies</i>
Size of Building	Height	±21'	45' overall. 35' within 50' of Res B lot line.	45' max. per §5.33. 35' max. within 50' of Res B lot line per §5.33.k.	<i>Complies</i>
Dwelling Units	0		34 ^{note 3}	29 base / 37 with bonus	<i>Complies</i>
Car Parking Spaces	Undelineated		34	1/dwelling unit = 34	<i>Complies</i>
Bicycle Parking Spaces	0		35 long term + 4 short term = 39	39 ^{note 5}	<i>Complies</i>
Glazing % at Retail Use	N/A		50%	50% min. per §20.107.1.3	<i>Complies</i>
Glazing % for façade			±20%	75% max. per §20.107.1.3	<i>Complies</i>

Notes for Zoning Calculations:

1. **Calculation of Proposed Building Area:** 480 Comm GSF 27,534 Res Base GSF x 0.15 = 4,130 GSF Affordable Unit Increase. 27,534 Base GSF x 0.15 = 4,130 GSF Bonus for Inclusionary. **Total Proposed Building Area** = Comm + Res Base + Affordable Unit Increase + Bonus for Inclusionary = 480 + 27,534 + 4,130 + 4,130 = **36,274 GSF.**

2. **Calculation of Max FAR**

Proposed ratios prior to application of Inclusionary FAR Bonus:

1.0 = 0.0273738 Nonresidential + 0.9726262 Residential

$[(0.0273738 \times 1.0 \text{ FAR1}) \times 17,535\text{-SF Lot Area}] + [(0.9726262 \times 1.75 \text{ FAR2}) \times 17,535\text{-SF Lot Area}] =$

480-SF Nonresidential + 29,846-SF Residential Max = 30,326-SF Base SF Total Max

Calculate and Add 30% Inclusionary Bonus to Residential Component: 29,846-SF X 0.30 = **8,953-SF Bonus**

Calculate Total Allowable Building Area

480-SF Nonresidential + 29,846-SF Residential Base Max + 8,953-SF Residential Bonus = 39,279-SF Total Allowable Gross Floor Area

Total Proposed Gross Floor Area = 480-SF Nonresidential + 35,794-SF Residential (Base+Bonus) = 36,274-GSF

Calculate FAR

Proposed Nonresidential: 480-SF / 17,535-SF Lot Area = 0.03

Proposed Residential: 35,794-SF / 17,535-SF Lot Area = 2.04

Proposed Total: 36,274-SF / 17,535-SF Lot Area = 2.07

Max Composite with Base Residential: 30,326-SF / 17,535-SF Lot Area = 1.73

Max Inclusionary Bonus: 8,953-SF / 17,535 = 0.51

Max Composite with Inclusionary Bonus: 39,279-SF / 17,535 = 2.24

3. **Proposed Number of Affordable Units & Number of Inclusionary Bonus Units Calculation:** Base number of units x 0.15 = 26 x 0.15 = **4 Affordable Units min.**

Base number of units x 0.15 = 26 x 0.15 = **4 Units for Inclusionary Bonus allowed.**

Base + Affordable Unit Increase + Bonus for Inclusionary = 26 + 4 + 4 = **34 Units Proposed.**

4. **Calculation of Maximum Number of Units Allowable:** 29 Units max by-right. 29 Units x 0.15 = 4 Affordable Units increase. 29 Units x 0.15 = 4 Unit Bonus for Inclusionary. Base + Affordable Unit Increase + Bonus for Inclusionary = 29 + 4 + 4 = **37 Units Max.**

5. Required Number of Bicycle Parking Calculation:

Long-Term: First 20 units at 1 space/unit = 20 units x 1 = 20 LT spaces. Plus 1.05 spaces/unit thereafter = 1.05 x 14 units (unit 21-34) = 14.7 (15 LT spaces).

Total Long-Term Bicycle Spaces Required = 20 + 15 = 35.

Short Term: 0.1 spaces/unit = 0.1 x 34 units = 3.4 (4 ST Bicycle Spaces Required).

Total Number of Bicycle Parking Required = 35 LT + 4 ST = 39.

Because over 19 Bicycle Spaces are required, 5% of required bike spaces (0.05 x 39=1.95) or 2 bike spaces are required to accommodate tandem bicycles with a trailer.

FEE SCHEDULE

Project Address: 95 and 99 Elmwood

Application Date: 2/8/16

The Applicant must provide the full fee (by check or money order) with the Special Permit Application. Depending on the nature of the proposed project and the types of Special Permit being sought, the required fee is the larger of the following amounts:

- If the proposed project includes the creation of new or substantially rehabilitated floor area, or a change of use subject to Section 19.20, the fee is ten cents (\$0.10) per square foot of total proposed Gross Floor Area.
- If a Flood Plain Special Permit is being sought as part of the Application, the fee is one thousand dollars (\$1,000.00), unless the amount determined above is greater.
- In any case, the minimum fee is one hundred fifty dollars (\$150.00).

Fee Calculation

New or Substantially Rehabilitated Gross Floor Area (SF): 36,274 × \$0.10 = \$3,627.40

Flood Plain Special Permit Enter \$1,000.00 if applicable:

Other Special Permit Enter \$150.00 if no other fee is applicable:

TOTAL SPECIAL PERMIT FEE Enter Larger of the Above Amounts:

Project Narrative

2/01/2016

A. General Narrative

The Applicant proposes to construct Vélo, a multifamily residential development sited on two adjoining parcels totaling 17,535 sf at 95 and 99 Elmwood Street (the "Site"). The site is entirely in Cambridge, however Elmwood Street is a dead-end spur and accessible only adjacent through street in Somerville. The present conditions include a large automotive commercial building operated by Dick's Auto Body with intense commercial activities, no sidewalks and the remainder of the site is covered by asphalt paving. As listed in the application the proposed residential development is in the Massachusetts Avenue and North Mass Avenue Overlay District with a base zoning district of Business A-2.

The Applicant proposes to demolish the existing building and construct thirty four (34) residential dwelling units on four (4) levels above one level of underground parking. Additionally there will be a small community oriented retail space on the first floor fronting linear park. The residences will be supported by a total of thirty four (34) parking spaces contained primarily in a single underground floor level for parking with ADA compliant Van parking space at grade. The Project will provide a variety of unit types: approximately 29% will be studios, 9% will be one bedrooms, 35% will be two bedrooms, and 26% will be three bedrooms.

The site is adjacent to the Alewife Linear Park bicycle and walking path, which is approximately two (2) miles long running through Cambridge and Somerville and connecting the Minuteman Bikeway to Bedford via Alewife. This mixed use path will be an open space amenity directly accessible to the residents of the proposed building and allow for a non-vehicular alternative means of transportation.

Elmwood Street dead ends at the building's edge and connects directly to the Linear Path. Historically this portion of Elmwood Street is not regulated for parking nor maintained by the City of Cambridge. The Applicant proposes to make street edge improvements with the understanding that any improvements or betterments into the public way would need support and approval from the City of Cambridge.

The primary pedestrian entrance for the residential units will be located at the ground floor on Elmwood Street set in a large covered portico. There is a secondary side entry that provides more direct access to the Linear Path and adjoining bicycle storage.

The sites existing frontage (approximately 150' +/-) will be greatly improved by adding sidewalks, street trees and permeable landscaping. This new landscaped street edge will further transform the historically industrial character of the lot to be compatible with the surrounding residential neighborhood. The Project will additionally include thirty nine (39) sheltered and secured bicycle parking spaces consistent with ordinance requirements.

Zoning Relief Requested:

The Applicant is requesting the following relief under the Ordinance in connection with the project.

- The proposed new construction and proposed Gross Floor Area is below the article 19.00 50,000sf threshold but greater than 20,000 sf thereby requiring an article 19.20 project review special permit pursuant to section 19.23.
- Special permit pursuant to Ordinance section 10.43 Generally applicable Special Permit criteria.

Zoning Requirements for Granting Requested Relief

The provisions of the Ordinance set forth below apply to the requested Special Permits for the project. Application of each provision of the Project follows the provision in italics.

A. Generally Applicable Criteria for Approval of a Special Permit

Pursuant to section 10.43 of the Ordinance, Special Permits will normally be granted where provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of the uses permitted in it, would cause granting of such permit to be to the detriment of the public good because:

- a) It appears that requirements of this Ordinance cannot or will not be met

With the requested Special Permits, the Project will meet all requirements of the Ordinance.

- b) Traffic generated and or patterns of access or egress would cause congestion, hazard or substantial change in established neighborhood character.

This Project is sited in the Business A-2 Zoning District and is currently occupied by commercial and Automotive repair. Although the projects size doesn't require a Transportation Impact Study the site is well served by public transportation with a several transit options in close proximity including six MBTA buses within .3 miles, directly adjacent to the property, ten (10) car share options within .3 miles, Davis Square train station a short 6 minute walk, and Hubway terminals.

- c) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use or

The Project will not adversely affect continued operation or future development of adjacent uses and will further the residential character of the adjacent multifamily

residential neighborhood. The project design will be sensitive to the adjacent lower scale residences on Cameron Avenue by stepping back the maximum height within fifty (50) feet of the residence B district. Further the proposed decks on the upper floor are oriented towards the Elmwood Street and the Liner Park to mitigate any noise or privacy concerns. All mechanical equipment facing residential areas will be adequately screened improve aesthetics as well as to meet or exceed the City Noise Reduction requirements

- d) Nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the Citizens of the City or

The Project will not create any nuisance or hazard to the detriment of the health, safety and or welfare of the occupants of the Project nor the citizens of the City. In fact, the Project includes demolition of an existing commercial building containing an auto-body shop, garage bays and loading docks. It will also increase pedestrian safety by adding sidewalks and curb cuts on the properties frontage.

This Project is consistent with Cambridge's goals of health, safety and welfare as set forth in Section 19.30 (Citywide Urban Design Objectives) of the Ordinance to foster development which is responsive to the existing or anticipated patterns of development.

- e) For other reasons, the proposed use would impair the integrity of the district or adjoining district, or otherwise derogate from the intent and purpose of this Ordinance and

The Project will not impair the integrity of the district in which it is located or the adjoining district. The Project will not derogate from the intent and purpose of the Ordinance as the proposed residential use is allowed in this district and the project requires no additional relief beside the requested Special Permits. When complete, the Project will add high quality family friendly housing to the district consistent with smart growth principles, and serve to improve the pedestrian connection along the western most portion of Elmwood Street to the Alewife Linear Park.

Further, this project will revitalize an underutilized industrial property into a thriving residential development that is consistent with the stated purpose of the zoning ordinance (section 1.30) which includes encouraging the most rational use of land throughout the city.

The Project's design is consistent with the design guidelines of the Massachusetts Avenue and North Mass Avenue Overlay district. Also the exterior façade, uses a variety of colors and materials, creating an architecturally diverse development.

The Project is consistent with the urban design objectives of the city as set forth in Section 19.30 of the Ordinance.

As described below, the Project conforms with the Citywide Urban Design Objectives set forth in Section 19.30 of the Ordinance.

B. 19.30 Citywide Urban Design Objectives

1. Pursuant to Section 19.31 of the Ordinance, new projects should be responsive to the existing or anticipated pattern of development. Indicators include:

- a) Heights and setbacks provide suitable transition to abutting or nearby residential zoning districts that are generally developed to low scale residential uses.

The proposed building height is below the maximum allowed in the district and is not incongruous to neighboring properties. The project will comply with all the required setbacks including a reduced height of thirty five (35) feet within fifty (50) feet of the adjacent residence B district.

Also the mechanicals required for the dwelling units will be designed to satisfy Cambridge's Noise Control Ordinance (Chapter 8.16).

- b) New buildings are designed and oriented on the lot so as to be consistent with the established streetscape on those streets on which the project lot abuts. Streetscape is meant to refer to the pattern of building setbacks and heights in relationship to public streets.

The existing western most portion of Elmwood Street has a commercial character with an undeveloped auto-centric streetscape. The abutting properties are either office, residential or the Alewife Linear Park. The proposed development will promote a diversity of uses while improving the streetscape with street plantings and sidewalk.

- c) In mixed-use projects, uses are to be located carefully to respect context, e.g. retail should front onto a street, new housing should relate to any adjacent existing residential use etc.

The project is predominantly multifamily residential and will provide a community-benefit commercial space provided on the southwest corner of the project related to the community path.

- d) Where relevant, historical context are respected e.g. special consideration should be given to buildings or buildings that are preferably preserved on adjacent to the Site.

There are no neighboring historic buildings that are preferably preserved on or adjacent to the site.

2. Pursuant to Section 19.32 of the Ordinance, development should be pedestrian and bicycle-friendly, with a positive relationship to its surrounding. Indicators include

(a) Ground floors, particularly where they face public streets, public parks, and publicly accessible pathways, consist of spaces that are actively inhabited by people, such as retail stores, consumer services businesses and restaurants where they are allowed, or general office, educational or residential uses and building lobbies. Windows and doors that normally serve such inhabited spaces are encouraged to be prominent aspect of the relevant building facades. Where a mix of activities are accommodated in the building, the more active uses are encouraged facing public street, parks and pathways.

The ground floor will contain uses associated with a residential multifamily development including a lobby, open space amenities, elevator access and bicycle parking (sheltered and unsheltered) with the number of spaces meeting the Ordinance requirement for bicycle parking.

In commercial districts, such active space consists of retail and consumer service stores and building lobbies that are oriented towards the street and encourage pedestrian activity on the sidewalk. However, in all cases such ground floor spaces should be occupied by uses (a) permitted in the zoning district within which the structure is located, and (c) compatible with the principal use for which the building is designed.

The commercial space is to be leased to a business providing a community amenity, adding life and pedestrian activity to the community path.

(b) Covered parking on the lower floors of a building and on-grade open parking, particularly where located in front of a building, is discouraged where a building faces a public street or public park and publicly accessible pathways.

Thirty 33 of the parking space will be located in a below grade parking garage. The remaining parking space will be a handicapped accessible van space located on grade adjacent to the building outside of the required front yard setback.

(c) Ground floors should be generally 25-50% transparent. The greatest amount of glass would be expected for retail uses with lesser amount for office, institutional or residential use.

The architectural treatment of the ground floor facing Elmwood Street will satisfy the design standards of section 20.107.1 with a minimum of 25% clear glass for facades facing the street. The façade of the commercial space will contain approximately 50% clear glass.

(d) Entries to buildings are located so as to ensure safe pedestrian movement across street, encourage walking as preferred mode of travel within the city and to encourage the use of public transit for employment and other trips. Relating building entries as directly as possible to crosswalks and to pathways that lead to bus stop and transit stations is encouraged; siting buildings on a lot and developing site plans that reinforce expected pedestrian pathways over the lot and through the district is also encouraged.

The building has been sited to encourage pedestrian access by providing ADA accessible access to the residential lobby, parking and onsite open space amenities.

(e) Pedestrians and bicyclists are able to access the site safely and conveniently; bicyclists should have, secure storage facilities conveniently located on-site and out of the weather. If bicycle parking is provided in a garage, special attention must be paid to providing safe access to the facilities from the outside.

Pedestrians and bicyclists can access the site safely on ADA-compliant paths and sidewalks along the streets and within the site. Secured, covered bicycle parking is provided in the rear of the property adjacent to the community path. Additionally transient bicycle space are provided in the front of the building. Ramps to bicycle parking are sloped gently to allow safe, easy access.

(f) Alternate means of serving this policy objective 19.32 through special building design, siting, or site design can be anticipated where the building form or use is distinctive such as freestanding parking structures, large institutional buildings such as churches and auditoriums, freestanding service buildings, power plants, athletic facilities, manufacturing plants, etc.

The Project complies with the policy objective 19.32.

3) Pursuant to Section 19.33 of the Ordinance, the building and site design should mitigate adverse environmental impacts of the development upon its neighbors. Indicators include:

a) Mechanical equipment that is carefully designed, well organized or visually screened from its surroundings and is acoustically buffered from neighbors. Consideration is given to the size, complexity and appearance of the equipment, its proximity to residential areas, and its impact on the existing streetscape and skyline. The extent to which screening can bring order, lessen negative impacts and enhance the overall appearance of the equipment should be taken into account.

The project is designed to minimize negative impacts on its surroundings and enhance the overall appearance of the existing streetscape and skyline. In fact the Project significantly improves the appearance of the Site by demolishing the existing non-residential building and its exhaust systems. The required mechanicals for the residential use will be incorporated and/or shielded from the public view. Rooftop mechanical equipment will be set back from the roof edge so that it is shielded from the public view and be screened by a combination of walls, louvers or metal screening as appropriate.

b) Trash that is handled to avoid impacts (noise, odor, and visual quality) on neighbors e.g. the use of trash compactors or containment of all trash storage and handling within a building is encouraged.

The trash/recycling storage and handling for the Project is contained within the building to avoid noise, odor and visual impacts to the extent possible. The limited outdoor trash/recycling area will be screened from view by an opaque fence and dense landscaping . In compliance with the Ordinance, no refuse storage areas are located in the front yards.

c) Loading Docks that are located and designed to minimize impacts (visual and operational) on neighbors.

n/a

d) Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.

Stormwater Service Infrastructure

A Stormwater Management Plan has been developed to be in compliance with the City of Cambridge Stormwater Policy and State Regulations. The proposed condition will have a reduction of impervious area, compared to the existing condition, thereby reducing site runoff. Additionally, as required by the City, onsite storage has been provided to capture the difference between the pre-construction 2yr peak and the post-construction 25yr peak. An overflow 8" drain line will be extended from the proposed facility infiltration system through an easement with the MBTA property on the south side of the project in Linear Park and connect to the existing 24" RCP storm water main in Cameron Ave.

Design and installation will follow the City of Cambridge standard specifications, details and procedures.

e) Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of storm water runoff compared pre-development conditions.

The Project has incorporated Low Impact Development Design features into overall Stormwater Management design of the site including an increase permeable surfaces and natural landscape features and grading.

f) The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar System as defined in Section 22.60 of the Ordinance.

The structure steps down in height, as required by §5.33.k, toward the abutting Residential B district. This minimizes the impact of shadows onto the abutting Residential B district.

g) Changes to the grade across the lot are designed in ways to minimize the need for structural retaining walls close to the property line.

The project will maintain existing grade in general, making small adjustment to enhance drainage and ground coverage.

h) Building Scale and wall treatment, including the provision of windows, are sensitive to existing residential uses on adjacent lots.

The Project is designed to be congruous with the rear residential abutters by stepping down in height, as required by §5.33.k, toward the abutting Residential B district, implementing dense plantings of shrubs and trees along the side property line, maintaining the appropriate setbacks adjacent to residential uses, and limiting light spillage along the sensitive edges of the property.

i) Outdoor lighting is designed to provide minimum lighting necessary to ensure adequate safety, night vision and comfort, while minimizing light pollution.

Architectural lighting will be designed to shield lamps from view and minimize light pollution. Pedestrian lighting along the front and side yard areas and rear parking areas will provide safe lighting enhancing the visual landscape in the evenings. Additionally all lighting will be low emittance LED type fixtures with excellent light control.

j) The creation of Tree Protection Plan that identifies important trees on the site, encourages their protection, or provides for adequate replacement of trees lost to development on the site.

The site is covered with existing structures and paved surfaces containing no significant trees within the property boundaries. The new tree species being proposed are consistent with Ordinance requirements. The Applicant will submit plans to the City Arborist for review and approval.

4) Pursuant to Section 19.34 of the Ordinance, projects should not overburden the City infrastructure services, including roads, city water supply system and sewer system.

a) The building and site design are designed to make use of water-conserving plumbing and minimize the amount of stormwater run-off through the use of best management practices for stormwater management.

As described above, the Project's stormwater management system has been designed to incorporate best management practices and has been reviewed and approved by the

Department of Public Works. Water-conserving plumbing fixtures will be used in keeping with industry standards, and as required to meet LEED standards where applicable.

b) The capacity and condition of drinking water and wastewater infrastructure systems are shown to be adequate, or the steps necessary to bring them up to an acceptable level are identified.

Sanitary Sewer Service Infrastructure

The existing building use is automotive retail. Using Title 5 design values, retail spaces produces 50 gallons per day of waste water per 1,000 square feet(sf). The existing building's retail space is approximately 14,400 sf, which would produce 70 gallons of wastewater per day.

The proposed building use is residential with 430 sf of ground floor retail. The project proposes 34 total units with 64 bedrooms. The Title 5 design value for residential use is 110 gallons per day per bedroom. The combination of the proposed residential and retail is expected to produce 7,240 gallons per day. A 6" sanitary sewer line will be extended from the proposed facility through an easement with the MBTA property on the south side of the project in Linear Park and connect to the existing 8" VC sewer main in Cameron Ave.

Design and installation will follow the City of Cambridge standard specifications, details and procedures.

Water Service – Domestic and Fire

The existing building is serviced via a 1" pipe in Elmwood St. and connects to the 10" main in Tannery Brook Row. This service is to be abandoned and cut and capped at the main and is part of the Somerville water system.

The proposed facility will be serviced via a new 4" and 6" ductile iron (cement lined) pipes for domestic and fire protection. These lines will be extended through an easement with the MBTA property on the south side of the project in Linear Park and connect to a proposed extension of the existing 8" main in Cameron Ave. The extension of the 8" main is approximately 100' from a point where it transitions from 6" to 8" to a point just north of the new services. There are only two known services along this section of the water main in Cameron Ave. and they will be tied into the new 8" main.

Design and installation will follow the City of Cambridge standard specifications, details and procedures.

c) Buildings are designed to use natural resources and energy resources efficiently in construction, maintenance, and long-term operation of the building, including supporting mechanical systems that reduce the need for mechanical equipment generally and its

location on the roof of a building specifically. The buildings are sited on the lot to allow construction of adjacent lot to do the same. Compliance with the Leadership Energy and Environmental Design (LEED) certification standards and other evolving environmental efficiency standards are encouraged.

NEED LEED NARRATIVE

See LEED certification and Narrative submitted with this application.

5) Pursuant to Section 19.35 of the Ordinance, new construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically.

Indicators include

a) New Educational institutional construction that is focused with the existing campuses.

N/A to the Project.

b) Where institutional construction occurs in commercial areas, retail, consumer service enterprises, and other uses that are accessible to the general public are provided at the ground (or lower) floors of buildings. Where such uses are not suitable for programmatic reasons, institutional uses that encourage active pedestrian traffic to and from the site.

N/A to the Project

c) In large, multiple-building, non-institutional developments, a mix of uses, including publicly accessible retail activity, is provided where such uses are permitted and where the mix of uses extends the period of time the area remains active throughout the day.

N/A to the Project

d) Historic structures and environments are preserved.

N/A to the Project

e) Preservation or provision of facilities for start-up companies and appropriately scaled manufacturing activities that provide a wide diversity of employment paths for Cambridge residents as a component of the development; however, activities heavily dependent on trucking for supply and distribution are not encouraged.

N/A to the Project

6) Pursuant to Section 19.36 of the Ordinance, expansion of the inventory of housing in the City is encouraged. Indicators include

a) Housing is a component of any large, multiple building commercial development. Where such development abuts residential zoning districts substantially developed to

low-scale residential uses, placement of housing within the development such that it acts as a transition/buffer between uses within and without the development.

b) Where housing is constructed, providing affordable units exceeding that mandated by the Ordinance. Targeting larger family-sized middle income units is encouraged.

The Project is a residential development adding thirty four (34) residential dwelling units to the housing inventory of the City. A range of unit types are provided, of which 29% will be studios, 9% will be one bedrooms, 35% will be two bedrooms, and 26% will be three bedrooms. The Project will include four (4) affordable units in compliance with the Ordinance.

7) Pursuant to Section 19.37 of the Ordinance, enhancement and expansion of open space amenities in the city should be incorporated into new development in the city. Indicators include:

a) On large-parcel commercial development, publicly beneficial open space is provided.

N/A to the Project

b) Open space facilities are designed to enhance or expand existing facilities or to expand networks of pedestrian and bicycle movement within the vicinity of the development.

The project abuts Alewife Linear Park and will be a significant open space amenity to the occupants of the building. The landscaping and proposed betterments at the western end of Elmwood Street if supported by the City of Cambridge have the potential to enhance and expand pedestrian and bicycle movement along the street.

c) A wider range of open space activities than presently found abutting area is provided.

The Project enhances and expands open space amenities in the City by increasing the available open space at the site. Additionally the project improves the pedestrian streetscape by the addition of street tree plantings and improved access across the site.

IV. CONCLUSION

As described above, the Project is appropriate for the site and surroundings providing additional housing and developing and otherwise isolated and industrial street. The Project is consistent with the design standards of the Massachusetts Avenue and North Massachusetts Avenue Overlay district and is compatible with both the adjacent

residential dwellings and open space amenities. Accordingly, for the reason set forth in this application, the Applicant respectfully requests that the Board find that the Project satisfies all applicable requirements of the Ordinance in connection with the granting of the requested Special Permits.

95-99 Elmwood St, Cambridge, MA Sustainability Narrative and Strategies



City of Cambridge
Green Building Narrative
Preliminary Submission
January 14, 2016



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Executive Summary

This Project is being submitted for review to the Green Building Department in Cambridge, MA by Adam's Construction & Development for the project at 95-99 Elmwood Street, Cambridge. This proposed project is primarily a residential project with a small community oriented retail space (1.2% of the total area of the project) on the first floor. The project site is comprised of two adjoining parcels with a total lot size of 17,535 sf. The proposed new building will accommodate 34 residential units, approximately 408 gross square feet of street level retail use and a total of 34 parking spaces in a one-level, below-grade garage. A handicapped space will be provided on street level.

The project will replace vacant land covered by asphalt and a large automotive commercial building to add needed housing in a high demand, livable community. It will provide a convenient, affordable housing alternative for the neighborhood, serving existing residents and those wishing to return to the City of Cambridge. The site is conveniently located within walking distance of Davis Square, a center of extensive local activity, supporting many community resources such as restaurants, theaters, and stores.

Adam's Construction & Development is fully committed to the community's green building goals. The current plan will easily meet the minimum green building requirements of the "Certified" level (35 pts) with the team aggressively working to integrate more points. The current checklist is targeting 84 points, with total of 12 additional points being evaluated for inclusion as the project moves further with design and construction. The developer is considering whether to obtain official LEED For Homes certification from the USGBC and ENERGY STAR certifications from the EPA. Also under consideration is to make the building "solar ready" so that the option of adding an on-site solar system in the future with minimum investment is preserved. Adam's Construction & Development is intending to build a structure that is energy and water efficient, has minimal impact on the environment, and contributes to a healthy community for the surrounding neighbors and the City of Cambridge.

Adam's Construction & Development has hired Peter Quinn Architects, a Somerville MA-based Architecture and Planning firm to design the project with Sustainable Energy Analytics (SEA) as the energy conservation and sustainability consultant to ensure the project meets its sustainability goals.

The following sections will detail the specific green building strategies the team has selected that will be used in the design and construction of this project. Also included is the preliminary LEED for Homes Checklist. The checklist demonstrates that the project, when complete, will meet the LEED Platinum certification level.



Project Description

The Applicant proposes to construct 95-99 Elmwood Ave, a multifamily residential development sited on two adjoining parcels totaling 17,535 sf at 95 and 99 Elmwood Street (the "Site"). The site is almost completely covered by asphalt and a large automotive commercial building operated by Dick's Auto Body with intense commercial activities and no sidewalks. As listed in the application the project is in the Massachusetts Street and North Mass Avenue Overlay District with a base zoning district of Business A-2. The site is entirely in Cambridge, however Elmwood St is a dead-end spur terminating at the Community Path in Cambridge and accessible only through streets in the City of Somerville.

The Applicant proposes to demolish the existing building and construct thirty four (34) residential dwelling units on four (4) levels above one level of underground parking. Additionally there will be a small community oriented retail space on the first floor fronting linear park. The residences will be supported by a total of thirty four (34) parking spaces contained in a single underground floor level for parking (one van space will be provided at grade). As of the current plan, the Project will provide a variety of unit types: approximately 29% will be studios, 9% will be one bedrooms, 35% will be two bedrooms, and 26% will be three bedrooms.

The site is adjacent to the Alewife Linear Park bicycle and walking path, which is approximately two (2) miles long running through Cambridge and Somerville and connecting the Minuteman Bikeway to Bedford via Alewife. This mixed use path will be a significant open space amenity for the residents of the proposed building and allow for a non-vehicular alternative means of transportation.

The primary entrance for the residential units will be located at the ground floor on Elmwood St along with a direct secondary entrance from the Community Path on the modest westerly facing community space with views of the Linear Park and proposed outdoor patio area. Because Elmwood Street dead-ends at the building's edge the front yard area presents an opportunity to creatively improve the streetscape a sidewalk and plantings, improving the experience of pedestrians and path users. Historically this portion of Elmwood Street is not regulated for parking or maintained by the City of Cambridge but any improvements or betterments would need the support and approval from the City of Cambridge. The developer is proposing to undertake improvement to the Elmwood termination to provide a pedestrian friendly environment provided that City and abutters are able to cooperate on the effort.

The site's existing frontage (approximately 150' +/-) will be greatly improved by adding sidewalks, street trees, and permeable landscaping. This new landscaped area will help mitigate storm-water runoff issues and further transform the historically industrial character of the lot to something much more compatible with the surrounding residential neighborhood. The Project will additionally include thirty nine (39) sheltered and secured bicycle parking spaces consistent with ordinance requirements.



Sustainability Strategies:

This Building is being designed to meet and exceed the prevailing environmental and energy efficiency standards in force in the City of Cambridge and will meet the following standards:

- LEED for Homes “Platinum” Level Certification (“Certified” level compliance is required)
- Massachusetts Stretch Energy Code compliance
- ENERGY STAR Homes Version 3.1, Rev 8 Standard (ENERGY STAR Version 2 required)
- IECC 2009

Adam's Construction & Development has hired Sustainable Energy Analytics (SEA), a Lexington, MA-based construction services firm centered on sustainability, durability, and energy efficiency as a team member to ensure LEED for Homes, Massachusetts Stretch Energy Code, and Utility Program compliance.

This document summarizes the specific LEED for Homes strategies that are being targeted or investigated during the design phase of the project to meet the City of Cambridge green building requirements for buildings. Also included is the preliminary LEED for Homes Rating checklist. There is not sufficient information available at this time to determine HERS ratings for each of the different unit configurations present in the building, but the project team will share the information when it is available.

As required by the City of Cambridge the project team is using the LEED for Homes methodology and checklist to quantify the “level” of green building practices. The city requires that a level of “certified” be attained. Based on the attributes of this project, for a multi-family building, a minimum of 35 points must be documented to be considered “certifiable” as stipulated by Cambridge Green Building Review Guidance (Article. 22.20). Based on the preliminary rating the project team is expecting a point total of between 84 to 98 or 140% to 180% above target. These targets are preliminary but do reflect the attention the team is giving to building green.



SUSTAINABLE ENERGY ANALYTICS

The following table summarizes the initial strategies that are being considered.

Category	Possible	Min #	Planned	Maybe
Innovation and Design Process	11	0	7	0
Location and Linkages	10	0	10	0
Sustainable Sites	22	5	18.5	1
Water Efficiency	15	3	10	0
Energy and Atmosphere	38	0	15	3
Materials & Resources	16	2	7.5	8
Indoor Environmental Quality	21	6	13	0
Awareness and Education	3	0	3	0
Total	136	16	84	12
Points Required for "Certifiable"			35	



Minimum Green Building Requirements

The green building requirements include a set of practices that are mandatory in order to fulfill the requirements of certification. These requirements earn no points. The verification team from Sustainable Energy Analytics will verify that a plan is in place to meet this requirements by the time construction permits are issued and will verify that these requirements have been met by the project's conclusion (i.e. issuance of certificates of occupancy). There are times when the attainment of these requirements cannot be met by the project conclusion. If this situation arises, the project team will inform the City of Cambridge of the issue and provide a plan for compliance for the city to approve.

Mandatory Requirement	Status
1. Innovation and Design	
a. ID 1.1 Preliminary Rating	Completed
b. ID 1.2 Integrated Project Team	By Project Completion
c. ID 2.1 Durability Planning	By Permitting
2. Sustainable Sites	
a. SS 1.1 Erosion Controls	By Project Completion
b. SS 2.1 No Invasive Plants	By Project Completion
3. Energy And Atmosphere	
a. EA 1.1 Energystar 2 for Homes	By Project Completion
b. EA 11.1 Refrigerant Charge Test	By Project Completion
4. Materials and Resources	
a. MR 1.1 Framing Order Waste Factor	By Project Completion
b. MR 2.1 FSC Certified Topical Wood	By Project Completion
c. MR 3.1 Construction Waste Management	By Project Completion
5. Indoor Environment Quality	
a. EQ 2.1 Basic Combustion Venting Measures	By Project Completion
b. EQ4.1 Basic Outdoor Air Ventilation	By Project Completion
c. EQ 5.1 Basic Local Exhaust	By Project Completion
d. EQ 6.1 Room-by-Room Load Calculations	By Permitting
e. EQ 7.1 Good Air Filters	By Project Completion
f. EQ 9.1 Radon Resistant Construction	Not Applicable
g. EQ 10.1 No HVAC in Garage	By Project Completion
6. Awareness and Education	
a. AE 1.1 Basic Operations Training Manual	By Project Completion



Green Measures – Narrative

The following sections detail the specific green measures that will be implemented in this project. All targeted measures will be implemented and verified. Each point would be evaluated on a worst case basis so the final score would reflect the worst case scenario.

Innovation and Design Process (ID)

Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace, and up-to-date scientific research influences building design strategies. Occasionally a strategy that has been implemented results in building performance that greatly exceeds that required by code or changes currently accepted building practices. The strategies in this section are being considered to ensure that the project team leverages the knowledge and experience of the entire team. The project team includes an experienced LEED Green Rater, an experienced HERS Rater, a LEED for Homes Accredited Professional and Construction Project Managers practiced in energy-efficient construction techniques. Regular core-design team meetings will be held through the duration of design and construction to ensure that all opportunities to improve building performance are capitalized on, all LEED credit opportunities are met, and all building durability measures are employed. In this project 7 out of 11 points (or 63.6%) have been targeted.

Targeted Point Strategies:

1.1 Preliminary Rating: This has taken place on 12/23/2015. The owners, architects, construction project managers, green rater and sustainability consultant (LEED for Homes AP) were present. All green measures, compliance criteria, and strategies were reviewed and preliminary decisions were made. As design activities continue these decisions will be reviewed and finalized with the entire project team.

1.2 Integrated Project Team: Regular meetings with the core project team will be held to manage the continuity between design and construction of green building measures. Current and upcoming work will be discussed to ensure the design meets all requirements and to identify additional opportunities to cost effectively implement additional measures.

1.3 Professional Credentialed with Respect to LEED for Homes: Sustainability Consultant in this project is a principle member of the project team who is credentialed with respect to the LEED for Homes.

1.4 Design Charrette: The project leadership will hold a series of design reviews with the expanded team to review and improve the design. To get this point the review sessions must total 8 or more hours of meeting time.

2.1 Durability Planning: A Durability Evaluation analysis will be conducted, a plan developed and discussed, and specific responses designed to accommodate the unique site conditions will be



integrated. The following items will be considered for incorporation into the Durability Inspection Checklist and the contract documents:

- Non-paper-faced backer board used in all tubs, showers, and spa areas.
- Water-resistant flooring in the kitchen, bathroom, laundry rooms, and spa areas.
- Water-resistant flooring within 3 feet of all exterior doors.
- Drain and drain pan installed for any tank water heaters in or over living spaces.
- Drain and drain pan OR single-throw supply valve installed for any clothes washers in or over living spaces.
- Conventional clothes dryers exhausted directly to outdoors; Condensing clothes dryer has drain and drain pan.
- Whole house ventilation and local kitchen and bathroom exhaust systems that comply with ASHRAE Std. 62.2 (62.1)
- Thermal bypass inspection checklist passed
- All local exhaust systems vented directly to the outdoors.
- Interstitial spaces are never used to supply or return forced air.
- Duct leakage to the outdoors limited to 6 cfm / 100 sq.ft.
- Exposed concrete slab edge insulated.
- Refrigerant charge test conducted.

2.2 Durability Management: On an on-going basis the site supervisor will work with employees and subcontractors to ensure that all items on the durability inspection checklist are completed. When necessary, additional training for workers will be provided so that current best practices are used.

2.3 Third-Party Durability Management Verification: As an added check on quality, Sustainable Energy Analytics will regular walk-throughs and inspections and independently verify that all durability management measures listed on the Durability Management Checklist have been implemented. The Durability Management Checklist will include 18-20 strategies with at least 3 strategies in every medium or high durability risk area.

3. Innovative or Regional Design: This project will implement irrigation measures beyond the maximum 3 points in WE2.1: High Efficiency Irrigation System and will earn 1 exemplary performance point.



Location and Linkages (LL)

Location and Linkages address the site-related environmental effects, in terms of both the impact to the site itself and the impact that stems from the location of the site. The strategies in this section describe how well the site was selected to minimize the environmental impact of the site location and to promote sustainable land-use and living practices. The project is targeting 10 out of a possible 10 points (100%)

Targeted Point Strategies:

2.0 Site Selection: The site engineer is verifying that the existing site is above the 100 year flood plain, has no threatened species habitat, is not within 100' of wetlands, is not public parkland, and has no unique or prime soils.

3.2 Infill Location: The site is bordered by over 75% developed land.

3.3 Previously Developed: The site was previously developed and will be eligible for this credit.

4.0 Existing Infrastructure: The site is located within 1/2 mile of existing water and sewer lines.

5.3 Outstanding Community Resource: The site is located within 1/2 mile of transit services providing 125 rides per weekday. Red line Davis Square subway station and MBTA Bus number 77 which in total is more than 125 rides per weekday.

6.0 Access to Open Space: The site is located within 1/2 mile of more than ¾ acre public open space. Cedar Square Park which is more than 1 acre, is in less than 0.3 mile walking distance from the project.



Sustainable Sites (SS)

Well thought-out site design and landscaping decisions can lead to easily maintained landscaping that protects native plant and animal species and contributes to the health of local and regional habitats.

The ways in which a building is, or is not, integrated into the site can have various effects: Rain that falls on a site can be either a detriment, by causing soil erosion and runoff of chemicals and pesticides, or a benefit, by offering an opportunity to offset potable water demand and recharge underground aquifers. There are a potential of 22 points available to earn with a minimum of 5 necessary to achieve certification status. Certification requires a minimum of 5 points in this category. The project is targeting 18.5 points or 84% of total points and more than the necessary minimum points. 1 additional point is being considered.

Targeted Point Strategies:

1.1 Erosion Controls: The builder will follow DPW guidelines to prevent erosion, control runoff, and protect existing watersheds from silt and sediment damage. Erosion control fences will be installed as necessary to either side of the building site to protect the abutting properties from any unusual drainage caused by temporary or unanticipated runoff. New rainwater control systems will be installed and, during construction, protected by filter fabric to insure that they remained clean.

1.2 Minimize Disturbed Area: The project will have 34 unit in a 0.4 acre lot which is over 82 units per acre and eleven times the required level of density (7 units/acre) respectively.

2.1 Invasive Plants: No invasive plant species will be introduced into this project by the landscape designer.

2.2 Basic Landscaping Design: Turf grass will be drought-tolerant, will not be located in dense shade, and will not be placed on steeply sloped areas. Mulch will be added to amend soil as required, and compacted soil will be filled to at least 6" with screened loam.

2.3 Limit Conventional Turf: Conventional turf requires more water and maintenance than other types of landscaping. The landscape designer is planning to design the landscaping such that the area of conventional turf is limited as possible. This design feature reduces the amount of water necessary to maintain the greenery.

2.4 Drought tolerant plants: Another strategy that was used to limit water use is that only drought tolerant plants are present on the site.

4.1 Permeable Lot: in this project 80% of the built environment, excluding area under roof, is Vegetative landscape, Permeable paving or Impermeable surfaces that are designed to direct all runoff toward an appropriate permanent infiltration feature.



4.2 Permanent Erosion Control: one tree, four 5-gallon shrubs, or 50 square feet of native groundcover will be design and install per 500 square feet of disturbed lot area, including area under roof, of this project.

4.3 Management of Runoff from Roof: The storm water control for the site will be designed by a licensed professional to ensure that all roof runoff will be infiltrated on site.

5.0 Pest Control Alternatives. The following pest control strategies are currently being integrated into the project specifications.

- Keep all exterior wood at least 12" above soil
 - Seal external cracks, joints, etc. with caulking and install pest-proof screens
- Include no wood-to-concrete connections, or separate connections with dividers

6.3 Very High Density Development: The project will have over 82 units per acre and qualify for very high density development.

Strategies Under Consideration:

3.0 Reduce Heat Island Effects: materials with the appropriate material characteristics are being investigated for building science and cost effectiveness.



Water Efficiency (WE)

Historically, green building has focused mostly on energy efficiency, but sound water conservation measures are becoming an increasingly more important focus of the green community. Water efficiency measures can easily reduce water usage by 30% or more. In a typical home, savings of 30,000 gallons of water a year can be achieved very cost-effectively. This results in average annual water utility savings of about \$100 per year. On this project the focus is on installing measures that have the highest savings to investment. There is a minimum requirement of 3 points out of 15 in this category. Of the total 15 available points, the project is targeting 10 points (66% of total) or more than three times the minimum requirement.

Targeted Point Strategies:

2.1 High-Efficiency Irrigation System: Owner considering using systems so that minimal amount of water is provided for the plants. System components may include irrigation system with head-to-head coverage, central shut-off valve, separate zones for each type of bedding area, timer, check valves in head, and weather-related sensor control.

2.2 Third Party Inspection: Owner will determine if project is to pursue third-party inspection of the irrigation system.

3.1 Indoor Water Use/High Efficiency Fixtures: Plumbing fixtures shall be high-efficiency:

1. Lavatory faucet flow rate \leq 1.5 gpm,
2. Shower flow rate \leq 1.75 gpm,
3. Toilet flow rate \leq 1.10 gpf



Energy and Atmosphere (EA)

When building “green” houses the most important aspect is to minimize the energy use and the associated environmental/atmospheric impacts. For this reason this category has the most available points to earn (38) and offers two methodologies or paths for compliance. For the Parsons Crossing project the performance path was chosen. The performance path relies on the RESNET HERS rating system and translates the HERS score into an equivalent number of points. The project is targeting a HERS score of 70 (maximum allowed by Stretch Code) which translates to 13 points toward certification and 2 points for other credits. 3 additional points is considered as "Maybe" since the maximum final HERS score might be less than 70. Another view of the energy efficiency of the project is to compare the projected energy efficiency of the proposed housing units with a typical new home in Massachusetts. Using the MASS SAVE Reference Home as a baseline the project team is targeting an energy efficiency level for this project at between 10% and 20% more efficient than the standard. Renewable Energy is not currently part of the design but solar energy is being considered and at the minimum, the buildings will be constructed “solar ready” so that solar panels can be added later with minimum investment.

Targeted Point Strategies:

1.1 Performance Path for ENERGY STAR for Homes compliance: All units at Pearson Crossing will meet the checklist requirements of Energystar Version 2, the Massachusetts Stretch Energy Code, and the MASS SAVE for New Homes with Energystar incentive program. At the conclusion of the project the documents will be on file with the builder and the energy rating company (Sustainable Energy Analytics) in conformance with the RESNET technical standards.

1.2 Exceptional Energy Performance. The units are targeting HERS scores of between 60 and 70. Because LEED for Homes guidelines require the use of “worst case” the points awarded for this requirement for all units is set at 70 or 13 points. If the final HERS score is less than 70, more points will be achieved in this credit. We considered HERS score of 65 which gives us 3 points as Maybe points.

7.2 All domestic hot water piping including pipe elbows shall have R-4 insulation.

11.1 Refrigerant Charge Test: Project specifications to include requirements for refrigerant charge test in accordance with California Energy Commission Appendix RD to Title 24.

11.2 Appropriate HVAC Refrigerants. The choice of refrigerant used in the cooling system is critical to protecting the atmosphere. R410a refrigerant is specified to be used in the project and will be verified by Sustainable Energy Analytics. Additionally, all systems will be tested for the appropriate refrigerant charge to insure that the rated performance will be achieved.



Materials and Resources (MR)

Good design decisions on the selection and sourcing of materials, particularly in the framing of houses, can significantly reduce demand for framing materials, as well as the associated waste and embedded energy. Without even changing the home design, a builder can save framing materials and reduce site waste by planning appropriately and communicating the design to the framing team through detailed framing documents or scopes of work. The project focused their efforts on framing efficiencies and effective recycling of waste to minimize the impacts. Out of the maximum 16 points, 7.5 points (47%) were earned, which is more than three times the requirement for this category (2 points minimum) and 8 points are under consideration.

Targeted Point Strategies:

1.1 Framing Order Waste Factor Limit: Waste factor shall be 10% or less for all framing components.

1.2 Detailed Framing Documents: Prior to construction, detailed framing plans or scopes of work and accompanying architectural details with indication of the specific locations, spacing, and sizes of all framing members in the floors, walls, roof, and ceiling for use on the job site will be created for this project.

1.4 Framing Efficiencies: Precut framing packages and open-web floor trusses will be used for this project which gives the project 2 points. Other strategies of efficient framing will be under consideration during the design and construction.

2.1 FSC-Certified Tropical Wood: Specifications to include requirement to notify wood product suppliers that all tropical wood shall carry FSC certifications including country of manufacture. In addition, wood product suppliers are to provide list of FSC-certified product that they carry.

2.2 Environmentally Preferable Products: EPP strategies, Low emission and Local Products will be used throughout this project where cost effective. The project team is anticipated gaining 2 credits in this category, but will continually be looking for cost effective opportunities to achieve more.

3.1 Construction Waste Management Planning: Construction Waste Management Planning includes finding local options for diversion and requirement for contractor to provide documentation of actual diversion rate of construction waste. The diversion rate for construction waste will be documented.

3.2 Construction Waste Reduction: Construction waste will be tracked and reported through the use of experienced waste hauling companies accustomed to doing business in Cambridge, to achieve lower than average waste. 90% is under consideration for percentage diversion.



Strategies Under Consideration:

1.4 Framing Efficiencies: Mentioned above some strategies for efficient framing will be used in this project, but other strategies will be under consideration during the design and construction.

1.5 Off-site Fabrication. The project team is considering Panelized construction for this project. This decision is under consideration which is an alternate to MR1.2 and MR 1.3

2.2 Environmentally Preferable Products: Mentioned above EPP strategies, Low emission and local productions is considered for the project with the value of 2 points, but other strategies will be considered throughout the project.



Indoor Environmental Quality (EQ)

Over the past 20 years, research and experience have improved our understanding of what is involved in attaining high indoor environmental quality and revealed manufacturing and construction practices that can prevent problems from arising. Preventing indoor air quality problems is generally much less expensive than identifying and solving them after they occur. Generally, there are three types of strategies used to improve air quality: source removal, source control, and dilution. Since the release in 1987 of EPA reports that designated indoor air pollution as a top environmental risk to public health, assessing and managing indoor pollutants have become the focus of integrated governmental and private efforts.

The Indoor Environmental Quality category encourages builders to prevent air pollution and improve air quality and comfort in the homes they build. The importance of the category is indicated by the number of required points, which is 6, and the highest of all categories. Of the 21 points available the team is targeting 13 points or 61% of the total with 1 additional point under consideration.

Targeted Point Strategies:

2.1 Basic Combustion Venting Measures: There will be no unvented combustion appliances, carbon monoxide monitor will be installed in each unit, there will be no fireplace or wood stove, closed combustion space and water heating equipment with power-vented exhaust will be installed.

2.2 Enhanced Combustion Venting: There will be no fireplace or wood stove.

4.1: Basic Outdoor Air Ventilation: Outdoor air ventilation to be designed in accordance with ASHRAE Standard 62.2-2007. There will be continuous ventilation.
(Outdoor air ventilation will be designed in accordance with ASHRAE Standard 62.1-2007 for the commercial spaces.)

4.3 Third-Party Performance Testing of Outdoor Air Ventilation: SEA will complete testing of all units, document, and verify that the ventilation systems comply with ASHRAE 62.2, section 3 ventilation requirements.

5.1 Basic Exhaust: Bathroom exhaust, fans and ducts are designed to ASHRAE Standard 62.2-2007. Exhaust airs are to the outdoors and bathroom exhaust fans are ENERGY STAR labeled.
(Commercial bath exhaust fans will be designed in accordance with ASHRAE Standard 62.1-2007 for the commercial spaces by the tenant.)

5.2 Enhanced Local Exhaust: The units at Parson Crossing Apartments will install continuously-operating bath exhaust fans, in compliance with ASHRAE 62.2 guidance.
(Commercial bath exhaust fans will be designed in accordance with ASHRAE Standard 62.1-2007 for the commercial spaces by the tenant.)



5.3 Third-Party Performance Testing of Local Exhaust: SEA will complete testing of all units, document, and verify that the local exhaust systems comply with ASHRAE 62.2, section 5 Exhaust Requirements.

6.1 Room by Room Load Calculations: HVAC designer will do the load calculation for all the rooms.

7.2 Better Filters: Install air filters \geq MERV 10.

8.1 Indoor Contaminant Control during Construction: Ductwork will be sealed during construction to prevent contaminants from entering the system. All systems will be spot checked and confirmed clean.

8.2 Indoor Contaminant Control: Six feet (in the direction of travel) permanent walk-off mats will be designed and installed at entryways of the building and any additional entryways to the units will have at least 4 feet in length permanent walk-off mats.

8.3 Preoccupancy Flush: Prior to occupancy and after all phases of construction the units will be flushed in conformance with LEED for Homes guidelines in order to exhaust moisture, chemicals, and other air contaminants from the living spaces.

9.2 Radon-Resistant Constructions in Moderate-Risk Area: According to EPA Map of Radon Zone, the proposed project is in a moderate risk Radon Zone. This project will be designed and built with accepted radon-resistant construction techniques.

10.1 No HVAC in Garage: There will be no air-handling equipment and ductwork in the garage.

10.2 Minimize Pollutants from Garage. All penetrations between the garage and first floor/conditioned floor areas will be totally sealed and fire-stopped. Spaces adjacent to the garage will also be sealed, weather stripped and provided with carbon monoxide detectors.

10.3 Exhaust Fan in Garage: Non-ducted fan must be minimum 70 cfm and to be operated thru an automatic timer control linked to occupant sensor, light switch, garage door opening, or CO sensor. Timer to be set at minimum 3 air changes each time fan is on.



Awareness and Education (AE)

Most home buyers, building managers, and renters know very little about green home construction and how to take full advantage of the advanced features of their new home. They may be unaware of the green features in the home, or they may be unfamiliar with how to use and maintain them. Without adequate training, the full benefit of the green measures likely will not be achieved. Of the total 3 available points, the project is targeting 3 points

Targeted Point Strategy:

1.1 Basic Operations Manual: The team will produce an operations manual using the standard USGBC LEED for Homes manual template. Copies will be available and distributed in digital format with paper format available on request. All tenants will receive a one-hour walk-through and receive instruction on the use of the heating, cooling, and other green features.

1.2 Enhanced Training: Two hours of training for the occupants in addition to the training for AE 1.1 will be provided.

1.3 Public Awareness: The team will conduct a sequence of at least 4 open houses, prominently present on the building website information about the green features of the building, write or sponsor an article to be published in a local paper informing the public of the green aspects of the project and submit the project to USGBC to gain LEED certification and display the LEED signage on the exterior of the building.

2.0 Education of Building Manager. The building manager will be given a basic operations manual, and will be instructed, via a one-hour walk through, on the use of heating, cooling, hot water and ventilation systems.



Appendix A: Projected HERS Ratings

HERS ratings will be supplied on request and when available.



Appendix B: LEED For Homes Checklist

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LEED for Homes Project Summary

This documentation package must be submitted to USGBC by the designated LEED for Homes Provider. The certification fee should be paid through LEED Online.

E-mail certification package to: homescertification@usgbc.org

Certification Package

- | | |
|-----------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Project Summary page | <input type="checkbox"/> Durability Evaluation Form |
| <input type="checkbox"/> Signed LEED for Homes Checklist | <input type="checkbox"/> Multi-home or Multi-building page (if appl.) |
| <input type="checkbox"/> Signed Accountability Forms | <input type="checkbox"/> Conflict of Interest Form (if appl.) |
| <input type="checkbox"/> Signed Durability Inspection Checklist | |

Project Information

Registration #:	<input type="text"/>	Reg Date:	<input type="text"/>
Project name	95- 99 Elmwood St		
Project address(es)	95 Elmwood Street		
City	Cambridge		
Metro. Area	Boston		
State	MA		
Zip Code	02144		
Subdivision / Dev.	NA		

Project Team Information

Team Leader	Adam Siegel
Company	Adam's Construction & Development
Address	485 Massachusetts Ave, Suite 305
E-mail	adam@Adamsremgmt.com
Builder / Developer	Adam's Construction & Development
Other project team members	Blair Hines - Landscape
	Peter Gammie - Civil
	<input type="text"/>

Verification Team Information

Provider QAD	TBD	QAD Company	TBD
Green Rater	Jeffrey Rhodin	Rater Company	Sustainable Energy Analytics
Green Rater	<input type="text"/>	Rater Company	<input type="text"/>
Energy Rater	Roy Chatalbash	Rater Company	Sustainable Energy Analytics

Project Information

Type of building:	Multi-family	# of stories	3
Type of builder / project:	Multi-family Develop	Avg. # of bedrooms:	1.9
Affordable project?	No	Gut-rehab?	No
# of bldgs in this submittal:	1	Avg. floor area (square feet):	850
# of units in this submittal:	34	Avg. Home Size Adjustment:	calculate -10
IECC climate zone	5	EA pathway?	Performance
EPA radon zone	2	HERS Index (if any)	70

LEED for Homes Multi-family Home Size Adjuster Calculator

This approach can be used to determine an overall home size adjuster for multi-family buildings, but it cannot be used to determine an overall home size adjuster for a complex with multiple multi-family buildings. If a project includes multiple multi-family buildings, each building must have its own home size adjustment. This weighted approach cannot be used for multiple single-family homes.

Please input the floor area for each type of space within the building below. Input the # of units in each building, and the average square footage for units with the corresponding bedroom number. For example, if the building has three 2-bedroom units that are 1300, 1400, and 1500 square feet, insert "3" in cell G24 and "1400" in cell H24. Please leave zeros or blanks where appropriate.

Types of Spaces	Floor area, total square feet
Conditioned	35975
Unconditioned	307
Total	36274

Areas of the Building	Floor area, total square feet
In-unit	28906
Common areas, residential	3450
Non-residential	408

	0-Bedroom		1-Bedroom		2-Bedroom		3-Bedroom		4-Bedroom		5-Bedroom		6-Bedroom		Total Units
	# of units	Avg. ft ²	# of units	Avg. ft ²	# of units	Avg. ft ²	# of units	Avg. ft ²	# of units	Avg. ft ²	# of units	Avg. ft ²	# of units	Avg. ft ²	
LEED Building	10	512	3	595	12	960	9	1165							34

	Unit Adjustment	Unit Adjustment	Unit Adjustment	Unit Adjustment	Unit Adjustment	Unit Adjustment
LEED Building	-10.0	-10.0	-9.8	-10.0		

Overall average adjustment:	-10.0
-----------------------------	-------

Average # of bedrooms per unit:	1.6
---------------------------------	-----

Average square footage per unit:	850.3
----------------------------------	-------

[Return to the Summary tab](#)



for Homes

LEED for Homes Project Checklist

Builder Name:	Adam's Construction & Development
Project Team Leader:	Adam Siegel, Adam's Construction & Development
Home Address (Street/City/State):	95 Elmwood Street, Cambridge, MA

Project Description

Building Type: **Multi-family**
 # of Units: **34**

Project type: **Multi-family Developer**
 Avg. Home Size Adjustment: **-10**

Adjusted Certification Thresholds

Certified: **35.0** Gold: **65.0**
 Silver: **50.0** Platinum: **80.0**

Project Point Total	Final Credit Category Point Totals
Prelim: 84 + 12 maybe pts Final: 17	ID: 0 SS: 4 EA: 13 EQ: 0
Certification Level	LL: 0 WE: 0 MR: 0 AE: 0
Prelim: Platinum Final: Not Certified	<i>Minimum Point Thresholds Not Met for Final Rating</i>
Date Most Recently Updated:	Updated by:

Indicates that an Accountability Form is required.

Max Pts. Preliminary Rating Project
 Available Y / Pts Maybe No Points

Innovation & Design Process (ID) (Minimum 0 ID Points Required)	Max: 11	Y: 7	M: 0	Notes	Final: 0
1. Integrated Project Planning					
1.1 Preliminary Rating <i>Prereq.</i>					
Target performance tier: Platinum					
1.2 Integrated Project Team (<i>meet all of the following</i>)	1	1	0		0
<input checked="" type="checkbox"/> a) Individuals or organizations with necessary capabilities				<input checked="" type="checkbox"/> c) Regular meetings held with project team	
<input checked="" type="checkbox"/> b) All team members involved in various project phases					
1.3 Professional Credentialed with Respect to LEED for Homes	1	1	0		0
1.4 Design Charrette	1	1	0		0
1.5 Building Orientation for Solar Design (<i>meet all of the following</i>)	1	0	0	N	0
<input type="checkbox"/> a) Glazing area on north/south walls 50% greater than on east/west walls				<input type="checkbox"/> c) At least 450 sq. ft. of south-facing roof area, oriented for solar applications	
<input type="checkbox"/> b) East-west axis is within 15 degrees of due east-west				<input type="checkbox"/> d) 90% of south-facing glazing is shaded in summer, unshaded in winter	
2. Quality Management for Durability					
2.1 Durability Planning (<i>meet all of the following</i>) <i>Prereq.</i>					
<input checked="" type="checkbox"/> a) Durability evaluation completed				<input checked="" type="checkbox"/> c-v) Install drain and drain pans for clothes washers in/over living spaces; OR	
<input checked="" type="checkbox"/> b) Strategies developed to address durability issues				<input type="checkbox"/> no clothes washers in/over living spaces	
<input checked="" type="checkbox"/> c-i) Nonpaper-faced backer board in tub, shower, spa areas				<input checked="" type="checkbox"/> c-vi) Exhaust conventional clothes dryers directly to outdoors	
<input checked="" type="checkbox"/> c-ii) No carpet in kitchen, bathroom, laundry, and spa areas				<input checked="" type="checkbox"/> c-vii) Install drain and drain pan for condensing clothes dryers	
<input checked="" type="checkbox"/> c-iii) No carpet within 3 ft of each entryway				<input checked="" type="checkbox"/> d) Durability strategies incorporated into project documentation	
<input checked="" type="checkbox"/> c-iv) Install drain and drain pans in tank water heaters in/over living spaces; OR				<input checked="" type="checkbox"/> e) Durability measures listed in durability inspection checklist	
<input type="checkbox"/> no tank water heaters in/over living spaces					

2.2 Durability Management (<i>meet one of the following</i>)		<i>Prereq.</i>				
<input type="checkbox"/> Builder has a quality management process in place		<input checked="" type="checkbox"/> Builder conducted inspection using durability inspection checklist				
2.3	Third-Party Durability Management Verification	3	3	0	Changed by JTR	0
3. Innovative or Regional Design						
3.1	<input checked="" type="checkbox"/> Innovation 1 (ruling #): WE 2.1 Exemplary Performance	1	1	0		0
3.2	<input checked="" type="checkbox"/> Innovation 2 (ruling #):	1	0	0		0
3.3	<input checked="" type="checkbox"/> Innovation 3 (ruling #):	1	0	0		0
3.4	<input checked="" type="checkbox"/> Innovation 4 (ruling #):	1	0	0		0
Location & Linkages (LL) (Minimum 0 LL Points Required)		Max: 10	Y:10	M:0	Notes	Final: 0
1. LEED for Neighborhood Development						
1	LEED for Neighborhood Development	10	0	0	N	0
2. Site Selection						
2	<input checked="" type="checkbox"/> Site Selection (<i>meet all of the following</i>)	2	2	0		0
<input checked="" type="checkbox"/> a) Built above 100-year floodplain defined by FEMA		<input checked="" type="checkbox"/> d) Not built on land that was public parkland prior to acquisition				
<input checked="" type="checkbox"/> b) Not built on habitat for threatened or endangered species		<input checked="" type="checkbox"/> e) Not built on land with prime soils, unique soils, or soils of state significance				
<input checked="" type="checkbox"/> c) Not built within 100 ft of water, including wetlands						
3. Preferred Locations						
3.1	Edge Development	1	0	0		0
OR	3.2 Infill	2	2	0		0
AND/OR	3.3 Previously Developed	1	1	0		0
4. Infrastructure						
4	Existing Infrastructure	1	1	0		0
5. Community Resources / Transit						
5.1	Basic Community Resources / Transit (<i>meet one of the following</i>)	1	0	0	N	0
<input type="checkbox"/> a) Within 1/4 mile of 4 basic community resources		<input type="checkbox"/> c) Within 1/2 mile of transit services providing 30 rides per weekday				
<input type="checkbox"/> b) Within 1/2 mile of 7 basic community resources						
OR	5.2 Extensive Community Resources / Transit (<i>meet one of the following</i>)	2	0	0	N	0
<input type="checkbox"/> a) Within 1/4 mile of 7 basic community resources		<input type="checkbox"/> c) Within 1/2 mile of transit services providing 60 rides per weekday				
<input type="checkbox"/> b) Within 1/2 mile of 11 basic community resources						
OR	5.3 Outstanding Community Resources / Transit (<i>meet one of the following</i>)	3	3	0		0
<input type="checkbox"/> a) Within 1/4 mile of 11 basic community resources		<input checked="" type="checkbox"/> c) Within 1/2 mile of transit services providing 125 rides per weekday				
<input type="checkbox"/> b) Within 1/2 mile of 14 basic community resources						
6. Access to Open Space						
6	Access to Open Space	1	1	0		0

Sustainable Sites (SS) (Minimum 5 SS Points Required)		Max: 22 Y:18.5 M:1			Notes	Final: 4
1. Site Stewardship						
1.1	Erosion Controls During Construction (<i>meet all of the following</i>)	<i>Prereq.</i>				
	<input checked="" type="checkbox"/> a) Stockpile and protect disturbed topsoil from erosion.				<input checked="" type="checkbox"/> d) Provide swales to divert surface water from hillsides	
	<input checked="" type="checkbox"/> b) Control the path and velocity of runoff with silt fencing or equivalent.				<input checked="" type="checkbox"/> e) Use tiers, erosion blankets, compost blankets, etc. on sloped areas.	
	<input checked="" type="checkbox"/> c) Protect sewer inlets, streams, and lakes with straw bales, silt fencing, etc.					
1.2	Minimize Disturbed Area of Site (<i>meet the appropriate requirements</i>)	1	1	0		0
	Where the site is not previously developed, meet all the following:					
	<input type="checkbox"/> a) Develop tree / plant preservation plan with "no-disturbance" zones					
	<input type="checkbox"/> b) Leave 40% of buildable lot area, not including area under roof, undisturbed					
	OR Where the site is previously developed, meet all the following:					
	<input type="checkbox"/> c) Develop tree / plant preservation plan with "no-disturbance" zones AND					
	<input type="checkbox"/> Rehabilitate lot; undo soil compaction and remove invasive plants AND					
	<input type="checkbox"/> Meet the requirements of SS 2.2					
	OR <input checked="" type="checkbox"/> d) Build on a lot of 1/7 acre or less, or 7 units per acre.					
2. Landscaping						
2.1	2.1 No Invasive Plants	<i>Prereq.</i>				
2.2	2.2 Basic Landscaping Design (<i>meet all of the following</i>)	2	2	0		0
	<input checked="" type="checkbox"/> a) Any turf must be drought-tolerant.				<input checked="" type="checkbox"/> d) Add mulch or soil amendments as appropriate.	
	<input checked="" type="checkbox"/> b) Do not use turf in densely shaded areas.				<input checked="" type="checkbox"/> e) All compacted soil must be tilled to at least 6 inches.	
	<input checked="" type="checkbox"/> c) Do not use turf in areas with slope of 25%					
AND/OR	2.3 Limit Conventional Turf	3	3	0		0
	<input type="text"/> Percentage of designed landscape softscape area that is turf					
AND/OR	2.4 Drought-Tolerant Plants	2	2	0		0
	<input type="text"/> Percentage of installed plants that are drought-tolerant					
OR	2.5 Reduce Overall Irrigation Demand by at Least 20%	6	0	0	N	0
	<input type="text"/> Percentage reduction in estimated irrigation water demand				<i>(calculate)</i>	
3. Reduce Local Heat Island Effects						
3	3 Reduce Local Heat Island Effects (<i>meet one of the following</i>)	1	0	1		0
	<input type="checkbox"/> a) Locate trees / plantings to provide shade for 50% of hardscapes				<input type="checkbox"/> b) Install light-colored, high-albedo materials for 50% of sidewalks, patios, and driveways	

4. Surface Water Management						
4.1	Permeable Lot	4	2	0	0	
	<input type="checkbox"/> vegetative landscape					
	<input type="checkbox"/> permeable paving					
	<input type="checkbox"/> impermeable surfaces directed to infiltration features					
	<input type="checkbox"/> other impermeable surfaces (areas not counted towards credit)					
4.2	Permanent Erosion Controls (meet one of the following)	1	1	0	0	
	<input type="checkbox"/> a) For portions of lot on steep slope, use terracing and retaining walls					
	<input checked="" type="checkbox"/> b) Plant trees, shrubs, or groundcover					
4.3	Management of Runoff from Roof (meet any, see Rating System for pts)	2	2	0	0	
	<input type="checkbox"/> a) Install permanent stormwater controls to manage runoff from the home					
	<input type="checkbox"/> b) Install vegetated roof to cover 50% of roof area					
	<input type="checkbox"/> c) Install vegetated roof to cover 100% of roof area					
	<input checked="" type="checkbox"/> d) Have lot designed by professional to manage runoff from home on-site					
5. Nontoxic Pest Control						
5	Pest Control Alternatives (meet any of the following, 1/2 pt each)	2	1.5	0	0	
	<input checked="" type="checkbox"/> a) Keep all exterior wood at least 12" above soil					
	<input checked="" type="checkbox"/> b) Seal external cracks, joints, etc. with caulking and install pest-proof screens					
	<input checked="" type="checkbox"/> c) Include no wood-to-concrete connections, or separate connections with dividers					
	<input type="checkbox"/> d) Install landscaping so mature plants are 24" from home					
	<input type="checkbox"/> e) In 'moderate' to 'very heavy' termite risk areas:					
	<input type="checkbox"/> i) Treat all cellulosic material with borate product to 3' above foundation					
	<input type="checkbox"/> ii) Install sand or diatomaceous earth barrier					
	<input type="checkbox"/> iii) Install steel mesh barrier termite control system					
	<input type="checkbox"/> iv) Install non-toxic termite bait system					
	<input type="checkbox"/> v) Use noncellulosic wall structure					
	<input type="checkbox"/> vi) Use solid concrete foundation walls or pest-proof masonry wall design					
6. Compact Development						
6.1	Moderate Density	2	0	0	0	
	<input type="text" value="34"/> # of total units on the lot	<input type="text" value="0.4"/> lot size (acres)	<input type="text" value="82.9"/> density (units/acre)			
OR	6.2 High Density	3	0	0	0	
OR	6.3 Very High Density	4	4	0	4	
Water Efficiency (WE) (Minimum 3 WE Points Required)		Max: 15	Y:10	M:0	Notes	Final: 0
1. Water Reuse						
1.1	Rainwater Harvesting System	4	0	0	N	0
	<input type="text"/> Percentage of roof area used for harvesting					
	<input type="text"/> Application					
AND/OR	1.2 Graywater Reuse System	1	0	0	N	0
OR	1.3 Use of Municipal Recycled Water System	3	0	0	N	0

2. Irrigation System							
	2.1	≥ High-Efficiency Irrigation System (meet any of the following, 1 pt each)	3	3	0	Exemp Performance	0
		<input type="checkbox"/> a) Irrigation system designed by EPA Water Sense certified professional <input checked="" type="checkbox"/> b) Irrigation system with head-to-head coverage <input checked="" type="checkbox"/> c) Install central shut-off valve <input type="checkbox"/> d) Install submeter for the irrigation system <input type="checkbox"/> e) Use drip irrigation for 50% of planting beds <input checked="" type="checkbox"/> f) Create separate zones for each type of bedding		<input checked="" type="checkbox"/> g) Install timer or controller for each watering zone <input type="checkbox"/> h) Install pressure-regulating devices <input type="checkbox"/> i) High-efficiency nozzles with distribution uniformity of at least 0.70. <input checked="" type="checkbox"/> j) Install check valves in heads <input checked="" type="checkbox"/> k) Install moisture sensor or rain delay controller			
AND/OR	2.2	Third-party Inspection	1	1	0		0
OR	2.3	≥ Reduce Overall Irrigation Demand by at Least 45%	4	0	0	N	0
		<input type="text"/> Percentage reduction in estimated irrigation water demand				(calculate)	
3. Indoor Water Use							
	3.1	High-Efficiency Fixtures and Fittings (meet any of the following, 1 pt each)	3	0	0		0
		<input type="checkbox"/> a) Average flow rate of lavatory faucets is ≤ 2.00 gpm <input type="checkbox"/> b) Average flow rate for all showers is ≤ 2.00 gpm per stall		<input type="checkbox"/> c) Average flow rate for all toilets is ≤ 1.30 gpf; OR <input type="checkbox"/> Toilets are dual-flush; OR <input type="checkbox"/> Toilets meet the EPA Water Sense specification			
	3.2	Very High-Efficiency Fixtures and Fittings (meet any, 2 pts each)	6	6	0		0
		<input checked="" type="checkbox"/> a) Average flow rate of lavatory faucets is ≤ 1.50 gpm; OR <input type="checkbox"/> Lavatory faucets meet the EPA Water Sense specification		<input checked="" type="checkbox"/> b) Average flow rate for all showers ≤ 1.75 gpm per stall <input checked="" type="checkbox"/> c) Average flow rate for all toilets is ≤ 1.10 gpf			
Energy & Atmosphere (EA) (Minimum 0 EA Points Required)			Max: 38	Y:15	M:3	Notes	Final: 13
<i>Important note: projects registered after October 1st, 2014 that use the performance path must achieve a HERS Index of 70 or lower.</i>							
1. Optimize Energy Performance							
	1.1	Performance of ENERGY STAR for Homes	Prereq.				
	1.2	Exceptional Energy Performance	34	13	3		13
		<input type="text"/> 5 IECC climate zone		<input type="text"/> 70		HERS Index	
7. Water Heating							
	7.1	≥ Efficient Hot Water Distribution System (meet one of the following)	2	0	0	N	0
		<input type="checkbox"/> a) Structured plumbing system <input type="checkbox"/> b) Central manifold distribution system		<input type="checkbox"/> c) Compact design of conventional system			
	7.2	Pipe Insulation	1	1	0		0
11. Residential Refrigerant Management							
	11.1	Refrigerant Charge Test	Prereq.				
	11.2	Appropriate HVAC Refrigerants (meet one of the following)	1	1	0		0
		<input type="checkbox"/> a) Use no refrigerants <input checked="" type="checkbox"/> b) Use non-HCFC refrigerants		<input type="checkbox"/> c) Use refrigerants that complies with global warming potential equation			

b) Use non-HCFC refrigerants

Materials & Resources (MR) (Minimum 2 MR Points Required)		Max: 16 Y:7.5 M:8			Notes	Final: 0
1. Material-Efficient Framing						
	1.1 Framing Order Waste Factor	<i>Prereq.</i>				
	1.2 Detailed Framing Documents	1	1	0		0
AND/OR	1.3 Detailed Cut List and Lumber Order	1	1	0		0
	<input type="checkbox"/> Requirements of MR 1.2 have been met				<input type="checkbox"/> Detailed cut list and lumber order corresponding to framing plans or scopes	
AND/OR	1.4 Framing Efficiencies (<i>meet any of the following, see Rating System for pts</i>)	3	1	2		0
	<input checked="" type="checkbox"/> Precut framing packages				<input type="checkbox"/> Stud spacing greater than 16" on center	
	<input checked="" type="checkbox"/> Open-web floor trusses				<input type="checkbox"/> Ceiling joist spacing greater than 16" on center	
	<input type="checkbox"/> Structural insulated panel walls				<input type="checkbox"/> Floor joist spacing greater than 16" on center	
	<input type="checkbox"/> Structural insulated panel roof				<input type="checkbox"/> Roof rafter spacing greater than 16" on center	
	<input type="checkbox"/> Structural insulated panel floors				<input type="checkbox"/> Two of the following: Size headers for loads; ladder blocking; drywall clips; 2-stud corners	
OR	1.5 Off-site Fabrication (<i>meet one of the following</i>)	4	0	4		0
	<input checked="" type="checkbox"/> a) Panelized construction				<input type="checkbox"/> b) Modular, prefabricated construction	
2. Environmentally Preferable Products						
	2.1 <input checked="" type="checkbox"/> FSC Certified Tropical Wood (<i>meet all of the following</i>)	<i>Prereq.</i>				
	<input checked="" type="checkbox"/> a) Provide suppliers with a notice of preference for FSC products; AND <input checked="" type="checkbox"/> Request country of manufacture for each wood product				<input checked="" type="checkbox"/> b) No tropical wood installed (exceptions for FSC-certified or reclaimed wood)	
	2.2 <input checked="" type="checkbox"/> Environmentally Preferable Products (<i>meet any, 1/2 pt each</i>)	8	2	4		0
	Assembly : component	(a) EPP		(b) Low emission		(c) Local production
	Exterior wall: framing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Exterior wall: siding or masonry	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Floor: flooring	<input type="checkbox"/> (45%) type: _____		<input type="checkbox"/> 90% hard flooring		<input type="checkbox"/> (45%)
	Floor: flooring	<input type="checkbox"/> (90%) type: _____		<input type="checkbox"/> SCS FloorScore		<input type="checkbox"/> (90%)
	Floor: flooring			<input type="checkbox"/> Green Label Plus		
	Floor: framing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Foundation: aggregate	<input type="checkbox"/> type: _____				<input checked="" type="checkbox"/>
	Foundation: cement	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Interior wall: framing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Interior wall, ceiling: gypsum board	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Interior wall, ceiling, millwork: paint	<input checked="" type="checkbox"/> type: _____		<input checked="" type="checkbox"/> type: _____		
	Landscape: decking and patio	<input checked="" type="checkbox"/> type: _____				<input type="checkbox"/>
	Other: cabinet	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Other: counter	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Other: door	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Other : interior trim	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Other : adhesive, sealant			<input type="checkbox"/> type: _____		
	Other : window frame	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Roof: framing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Roof: roofing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Roof, floor, wall: cavity insulation	<input type="checkbox"/> type: _____		<input type="checkbox"/> type: _____		<input type="checkbox"/>
	Roof, floor, wall (2 of 3): sheathing	<input type="checkbox"/> type: _____				<input type="checkbox"/>
	Other: water supply piping	<input checked="" type="checkbox"/> type: PEX				
	Other: driveway	<input type="checkbox"/> type: _____				

3. Waste Management						
3.1	Construction Waste Management Planning (<i>meet both of the following</i>)	<i>Prereq.</i>				
	<input type="checkbox"/> a) Investigate local options for waste diversion	<input type="checkbox"/> b) Document diversion rate for construction waste				
3.2	Construction Waste Reduction (<i>use one of the following methods</i>)	3	2.5	0		
	<input type="text"/> a) pounds waste / square foot					
	<input type="text"/> cubic yards waste / 1,000 square feet					
	<input type="text"/> b) percentage of waste diverted					
Indoor Environmental Quality (EQ) (Minimum 6 EQ Points Required)		Max: 21	Y:13	M:0	Notes	Final: 0
1. ENERGY STAR with Indoor Air Package						
1	ENERGY STAR with Indoor Air Package	13	0	0		0
2. Combustion Venting						
2.1	Basic Combustion Venting Measures (<i>meet all of the following</i>)	<i>Prereq.</i>				
	<input checked="" type="checkbox"/> a) no unvented combustion appliances	<input type="checkbox"/> d) space, water heating equipment designed with closed combustion; OR				
	<input checked="" type="checkbox"/> b) carbon monoxide monitors on each floor (of each unit, if applicable)	<input checked="" type="checkbox"/> space and water heating equipment has power-vented exhaust; OR				
	<input checked="" type="checkbox"/> c) no fireplace installed, OR	<input type="checkbox"/> space and water heating equipment located in detached or open-air facility; OR				
	<input type="checkbox"/> all fireplaces and woodstoves have doors	<input type="checkbox"/> no space- or water-heating equipment with combustion				
2.2	Enhanced Combustion Venting Measures (<i>meet one of the following</i>)	2	2	0		0
	Type of Fireplace or stove	Better practice (1 pt)		Best practice (2 pts) <i>(must also meet Better Practice)</i>		
	None			<input checked="" type="checkbox"/> granted automatically		
	Masonry wood-burning fireplace	<input type="checkbox"/> masonry heater		<input type="checkbox"/> back-draft potential test		
	Factory-built wood-burning fireplace	<input type="checkbox"/> listed by testing lab and meets EPA standards		<input type="checkbox"/> back-draft potential test		
	Woodstove and fireplace insert	<input type="checkbox"/> listed by testing lab and meets EPA standards		<input type="checkbox"/> back-draft potential test		
	Natural gas, propane, or alcohol stove	<input type="checkbox"/> listed, power- or direct-vented, fixed doors		<input type="checkbox"/> electronic pilot		
	Pellet stove	<input type="checkbox"/> EPA certified or meets safety requirements		<input type="checkbox"/> power- or direct-venting		
3. Moisture Control						
3	Moisture Load Control (<i>meet one of the following</i>)	1	0	0	N	0
	<input type="checkbox"/> a) Additional dehumidification system	<input type="checkbox"/> b) Central HVAC system equipped with additional dehumidification mode				
4. Outdoor Air Ventilation						
4.1	2 Basic Outdoor Air Ventilation (<i>meet one of the following</i>)	<i>Prereq.</i>				
	<input type="checkbox"/> a) Qualifies under ASHRAE Std. 62.2-2007 climate exemption.	<input type="checkbox"/> c) Intermittent ventilation				
	<input checked="" type="checkbox"/> b) Continuous ventilation	<input type="checkbox"/> d) Passive ventilation				
4.2	2 Enhanced Outdoor Air Ventilation (<i>meet one of the following</i>)	2	0	0	N	0
	<input type="checkbox"/> a) Meets EQ 4.1 part (a), active ventilation system installed	<input type="checkbox"/> b) Install heat recovery system				
4.3	Third-Party Performance Testing	1	1	0		0

5. Local Exhaust					
5.1	<input checked="" type="checkbox"/> Basic Local Exhaust (meet all of the following)	<i>Prereq.</i>			
	<input type="checkbox"/> a) Bathroom and kitchen exhaust meets ASHRAE Std. 62.2 air flow requirement		<input type="checkbox"/> c) Air exhausted to outdoors		
	<input type="checkbox"/> b) Fans and ducts designed and installed to ASHRAE Std. 62.2		<input type="checkbox"/> d) ENERGY STAR labeled bathroom exhaust fans		
5.2	Enhanced Local Exhaust (<i>meet one of the following</i>)	1	1	0	0
	<input type="checkbox"/> a) Occupancy sensor		<input type="checkbox"/> c) Automatic timer tied to switch to operate fan for 20+ minutes post-occupancy		
	<input type="checkbox"/> b) Automatic humidistat controller		<input checked="" type="checkbox"/> d) Continuously operating exhaust fan		
5.3	Third-Party Performance Testing	1	1	0	0
6. Distribution of Space Heating and Cooling					
6.1	<input checked="" type="checkbox"/> Room-by-Room Load Calculations	<i>Prereq.</i>			
6.2	Return Air Flow / Room-by-Room Controls (meet one of the following)	1	0	0	0
	A. Forced-Air Systems		B. Nonducted HVAC Systems		
	<input type="checkbox"/> a) Return air opening of 1 sq. inch per cfm of supply		<input type="checkbox"/> Flow control valves on every radiator; OR		
	<input type="checkbox"/> b) Limited pressure differential between closed room and adjacent spaces		<input type="checkbox"/> Radiant floor system with thermostatic controls in every room		
6.3	Third-Party Performance Test / Multiple Zones (meet one of the following)	2	0	0	0
	A. Forced-Air Systems		B. Nonducted HVAC Systems		
	<input type="checkbox"/> Have supply air flow rates in each room tested and confirmed		<input type="checkbox"/> Install at least two distinct zones with independent thermostat control		
7. Air Filtering					
7.1	Good Filters	<i>Prereq.</i>			
7.2	Better Filters	1	1	0	0
OR	7.3 Best Filters	2	0	0	0
8. Contaminant Control					
8.1	<input checked="" type="checkbox"/> Indoor Contaminant Control during Construction	1	1	0	0
8.2	Indoor Contaminant Control (<i>meet any of the following, 1 pt each</i>)	2	1	0	0
	<input checked="" type="checkbox"/> a) Design and install permanent walk-off mats at each entry		<input type="checkbox"/> c) Install central vacuum system with exhaust to outdoors		
	<input type="checkbox"/> b) Design shoe removal and storage space near primary entryway				
8.3	<input checked="" type="checkbox"/> Preoccupancy Flush	1	1	0	0
9. Radon Protection					
9.1	<input checked="" type="checkbox"/> Radon-Resistant Construction in High-Risk Areas	<i>Prereq.</i>			
9.2	<input checked="" type="checkbox"/> Radon-Resistant Construction in Moderate-Risk Areas	1	1	0	0

10. Garage Pollutant Protection					
10.1	No HVAC in Garage	<i>Prereq.</i>			
10.2	Minimize Pollutants from Garage (meet all of the following)		2	2	0
	a) In conditioned spaces above garage:				
	<input checked="" type="checkbox"/> Seal all penetrations and connecting floor and ceiling joist bays				
	b) In conditioned spaces next to garage				
	<input checked="" type="checkbox"/> Weather-strip all doors				
	<input checked="" type="checkbox"/> Carbon monoxide detectors in rooms that share a door with garage				
	<input checked="" type="checkbox"/> Seal all penetrations and cracks at the base of walls				
AND/OR	10.3 Exhaust Fan in Garage (meet one of the following)		1	1	0
	<input type="checkbox"/> a) Fan runs continuously				
	<input checked="" type="checkbox"/> b) Fan designed with automatic timer control				
OR	10.4 Detached Garage or No Garage		3	0	0
Awareness & Education (AE) (Minimum 0 AE Points Required)			Max: 3	Y:3	M:0
				Notes	Final: 0
1. Education of the Homeowner or Tenant					
1.1	Basic Operations Training (meet both of the following)	<i>Prereq.</i>			
	<input type="checkbox"/> a) Operations and training manual				
	<input type="checkbox"/> b) One-hour walkthrough with occupant(s)				
1.2	Enhanced Training		1	1	0
1.3	Public Awareness (meet three of the following)		1	1	0
	<input checked="" type="checkbox"/> a) Open house on at least four weekends				
	<input checked="" type="checkbox"/> b) Website about features and benefits of LEED homes				
	<input checked="" type="checkbox"/> c) Newspaper article on the project				
	<input checked="" type="checkbox"/> d) Display LEED signage on the exterior of the home				
2. Education of the Building Manager					
2	Education of the Building Manager (meet both of the following)		1	1	0
	<input type="checkbox"/> a) Operations and training manual				
	<input type="checkbox"/> b) One-hour walkthrough with building manager				