TROLLEY SQUARE STUDY RECOMMENDATIONS

City of Cambridge

Trolley Square Committee
Cambridge Community Development Department

December 2002

TROLLEY SQUARE STUDY

RECOMMENDATIONS TO

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TROLLEY SQUARE COMMITTEE

FRAMEWORK FOR RECOMMENDATIONS

INTRODUCTION

The City Manager appointed the Trolley Square Committee in December 2001 to advise him on future uses and the configuration of buildings for the 37,645 square foot Trolley Square site at the corner of Massachusetts Avenue and Cameron Avenue. The first meeting of the Committee was held on February 6, 2002. Since that time the Committee has met twelve times and has held one community meeting. The Committee has explored a wide range of potential uses and neighborhood considerations. In an early letter to the Committee outlining the opportunity offered by this site, the City Manager urged the Committee to consider affordable housing as a significant component of development on the site. This document summarizes the Committee's comments and recommendations.

BACKGROUND

The City of Cambridge received the Trolley yard site on North Massachusetts Avenue from the Massachusetts Bay Transportation Authority (MBTA) in a land transfer as part of the Red Line extension to Alewife. The land transfer agreement with the MBTA requires that the site be used for 'public benefit purpose'. This site, therefore, presents a valuable opportunity for the citizens of Cambridge to create a use that benefits the City's residents. Investment in the Trolley Yard site is also a way to improve this portion of Massachusetts Avenue.

VISION

Based on discussion at a number of Committee meetings and input from the community meeting held on June 26, 2002 the Trolley Square Committee formulated the following vision for the future of the site:

- Convert the site from a gap in the urban fabric along Massachusetts Avenue to a strong and vibrant area that enhances the character along Massachusetts Avenue.
- Create a mix of uses that provides public benefit such as a component of affordable housing and a publicly accessible open space, activated by public use such as retail and community uses.
- Integrate the site development into the neighborhood and address the site edges (Linear Park, the MBTA trolley yard, and Massachusetts Avenue) through appropriate uses and site layout.
- Create a strong focal point at the Trolley Square site to serve as an anchor for the neighborhood.

This vision is expressed in the recommendation for a mix of uses on the site, consisting of:

- **Open space**
- **Affordable housing**
- **Retail and community uses**

In addition, the importance of high design quality was noted for any use on the site. Details of recommendations related to each category of use and design quality are described in subsequent sections.

OPEN SPACE

Discussion

Committee members emphasized the value of a community gathering space as well as green/planted areas along this stretch of Massachusetts Avenue. Committee members noted the potential that exists for more development along Massachusetts Avenue in the future, making opportunities to create green space increasingly rare. While this area is not one of the top priorities (areas of greatest need) for open space identified in the Green Ribbon Report of March 2000, the report encourages capitalizing on opportunities to increase open space, particularly adjacent to existing parks. The Committee emphasized that the site should contain a significant component of publicly accessible open space, which would be an important resource for the neighborhood and provide additional green space for the area. Although the Committee discussed a range of concepts with 3,000-18,000 square feet of open space, some Committee members favored more open space, up to 100% of the site, while others suggested no more than 25% of the site. The preferred concepts show 13,000-18,000 square feet (or 30 – 50%) of open space. Linear Park is a key open space in the area, though different in character from the open space that could be created on the site. The two spaces should be connected.

Recommendation

The Committee recommends that publicly accessible open space should be a significant component of the site, approximately 30-50% of the site. It is important that the open space feel public and welcoming as a gathering space. The following guidelines provide additional direction on the desired character of the open space.

- Design open space to be accessible from the neighborhood and welcoming to the public. (This also applies to the building design element.)
- Include a strong focal point in the design of the open space. Use features such as sculpture, fountain, relief, or changes in topography to create interest and to incorporate aspects of the site's historic past. (This also applies to the building design element.)
- Trees and greenery at this significant crossroads of auto, bicycle, bus and walking traffic would offer a welcome respite from the paved landscape. (This also applies to the building design element.)
- Consider designing the space to accommodate active public uses such as play area, skating, pushcarts, performance area, etc. (This also applies to the building design element.)
- Orient the open space along a desired public connection between Massachusetts Avenue and Linear Park/Cameron Avenue. Create strong visual and physical links between the open space and Linear Park and the open space and Massachusetts Avenue.

AFFORDABLE HOUSING

Discussion

As noted by the City Manager in a letter to the Committee, preserving and expanding the supply of affordable housing is a key goal of the City Council and the City administration. The Committee emphasized the importance of maintaining a diverse population in the neighborhood and maintaining a vital and stable neighborhood. Although the Committee discussed a range of housing units on the site, the number settled on was 15-25 units, depending on the location of parking. The Committee heard presentations regarding cost considerations summarized in the attached goals and considerations matrix. However, the group felt that mixed-income housing and below-grade parking were very important for the site and urged the City to consider creative funding sources, including municipal funding and Community Preservation Act funding, to incorporate these elements. The Committee and members of the public felt that a higher number of units would not be compatible with the neighborhood character. The neighborhood expressed particular concern about the negative impact that a high number of housing units would have on parking in the neighborhood; therefore the Committee also felt that more than one parking

space per unit should be provided. The Committee also suggested that the City consider creating additional parking spaces available for lease to accommodate existing local business and residential demand.

Recommendation

A majority of the Committee recommends mixed-income housing for a portion of the site. The final number of housing units would depend on how other design and programmatic elements can be accommodated on the site. The Committee recommends up to 20 - 25 units with below-grade parking and up to 12 - 15 units with screened surface parking. The Committee feels it is critical to have retail and community uses enlivening the ground floor of housing on the site, as described in later sections. The following guidelines provide additional direction on the desired character of housing on the site.

A majority of the Committee wanted mixed-income housing provided on the site to cater to a variety of incomes, ages, household / unit sizes, and community need.

- Design the housing to a high standard, and ensure that it is consistent with the Massachusetts Avenue Overlay District requirements and guidelines.
- Lay out height on the site to respond to the scale of the neighborhood by locating lower buildings and components of the building closer to the neighborhood and Cameron Avenue and taller sections closer to the trolley yard.[1]
- Consider a mix of rental and home-ownership units as well as non-traditional models such as co-housing.
- Incorporate sufficient parking on the site for residents in order to minimize impact on neighborhood parking. It is preferable that parking be located substantially under the structure and screened from the street. Explore the possibility of additional parking being secured from the MBTA on a non-abutting portion of the lot.
- Ensure that the site is professionally managed.
- Explore the possibility of providing preference to neighborhood and/or city residents for affordable housing for this site.

RETAIL

Discussion

A majority of the Committee would like to see some retail uses on this site to serve neighborhood residents and establish a retail edge on Massachusetts Avenue. This is seen as an important way to enliven the street edge and activate the publicly accessible open space.

Recommendation

The Committee recommends that retail be incorporated on the ground level of buildings(s) on the site. Additional guidelines follow.

- Locate retail space to be in a high traffic location along the Massachusetts Avenue edge.
- Give preference to local retail that serves the immediate neighborhood, such as a café, pharmacy, or bike shop. The City should investigate how other communities encourage such uses.
- Consider providing affordable leasing opportunities for businesses.
- Consider creating retail that faces both Massachusetts Avenue and the publicly-accessible open space.

[1] Zoning in this area allows heights of 45 feet (45 degree bulk control plan starting at 35 feet along Massachusetts Avenue)

COMMUNITY USES

Discussion

A number of committee members expressed interest in providing some community use on this site, as an additional way to help activate the open space. This could include meeting space, space for art groups (such as North Cambridge Arts), teens, and children, among others. The Committee considered community uses on the site in light of the need the community uses might create for continuing management, and that existing facilities such as the Fitzgerald School are located in the area. The committee discussed a variety of community uses, including meeting room, art gallery or class space, or teen recreation space and noted that the North Cambridge Arts (NOCA) expressed an interest in managing the community space.

Recommendation

The Committee recommends that some community uses be incorporated on the ground level of buildings on the site. Additional guidelines follow.

- Community use on the site could include a meeting room, practice rooms, space for classes, teen activities, and/or revolving art gallery.
- The management of the space might be facilitated by leasing to a community organization, using an open process for selecting the group.

URBAN DESIGN / BUILDING DESIGN

Recommendation

The entire Committee strongly recommends that the site, including buildings and open space, demonstrate high design quality. This would include site planning, building design, and materials to be used.

Site Planning & Design

- Create a visual statement on the site that identifies Trolley Square and the character of this stretch of Massachusetts Avenue, noting that this is a Civil War campground and the terminus for the trolley line.
- Configure development and open space on the site to establish a consistent street edge and define Massachusetts Avenue.
- Plan the site so that people in the neighborhood feel welcome in the public areas, particularly the open space.
- Strengthen the link between the two sides of Massachusetts Avenue.
- Use environmental and hydrologic best practices while planning and developing the site. It is assumed that any additional environmental investigation and all utilities investigations will occur during the design development and pre-construction process.
- Provide sufficient parking on-site to prevent spillover parking on neighborhood streets.
- The Committee strongly recommends placing parking below grade to make it less visible and to allow greater flexibility in site design. The Committee also suggested that additional below-grade parking spaces might be built under the site to alleviate existing demand from residences and businesses in the neighborhood, especially at night. A fee could be charged for these surplus spaces.
- Incorporate the design of the bus stop along Massachusetts Avenue so that it is well integrated with the public open space.
- Preserve and enhance pedestrian access to the site, both along Massachusetts Avenue and Linear Park, especially as Linear Park crosses Massachusetts Avenue.

Open Space

- Orient the open space along a desired public connection between Massachusetts Avenue and Linear Park/Cameron Avenue. Create strong visual and physical connections linking the open space to Linear Park and to Massachusetts Avenue.
- Design the open space to encourage positive social interaction and to discourage inappropriate use of the open space.
- The space should include a mix of paved and green areas, including substantial planting of trees. Add street furniture like benches, picnic and chess tables, and seating areas to create welcoming spots for people to gather, talk, and rest.
- Include elements that reflect the area's history as a Civil War campground, its use as a racetrack, and the North Cambridge trolley etc.
- Use planted materials and topography, incorporating different types of trees and plants, to create a vibrant and interesting landscape; use large trees to provide significant shade opportunities, and to creatively screen the trolley yards.
- Utilize a mix of high quality, preferably natural, materials for paving, fencing, bollards, and curbs.
- Incorporate features such as water, sculpture, public art, and a performance area or pavilion into the design of the space to draw people in and create interest. Include references to North Cambridge's history within such elements. Try to make such elements accessible, approachable, and enjoyable for all ages.
- Provide facilities such as bike racks and drinking fountains for bikers, walkers, and other visitors.

Building Design

- Future development should be well integrated into the neighborhood and address North Massachusetts Avenue Overlay District guidelines. Key guidelines include:
    - Create a strong neighborhood identity with any residential development.
    - Create links from the residential fabric to Linear Park.
    - Use creative massing to allow higher densities and compatibility with the surrounding neighborhood to preserve a significant portion of the site for other uses.
    - Incorporate some commercial uses on ground floor of large developments.
    - Create diverse building forms along the avenue with small-scale elements to relate to pedestrian scale.
- Ensure that all aspects of the site and facilities on the site are accessible to persons with disabilities.
- Consider incorporating energy efficient practices into the building and site design such as LEED design standards.

SUMMARY

While each of the elements discussed (open space, affordable housing, retail, community uses, and high design quality) yielded a range of recommendations among Committee members, there was an emerging consensus around the overall vision for the site. Committee members see the City's acquisition of the site as an opportunity to convert the site from a gap in the urban fabric along Massachusetts Avenue to a strong and vibrant area that provides a mix of uses to serve the needs of the neighborhood. They agree that the public benefit purpose served by this site is significant, and therefore recommend that the City Manager extend this public benefit to last in perpetuity.

The Committee makes the following recommendations to maximize the public benefit for the site:

- Incorporate publicly accessible and inviting open space on a significant component of the site (30-50%;

- Devote another portion of the site to mixed-income housing (up to 20-25 units with below-grade parking and up to 12-15 units with surface parking);
- Provide retail and community space on the ground level of buildings(s) on the site; and,
- Ensure high design quality in site planning, building design, and materials used.

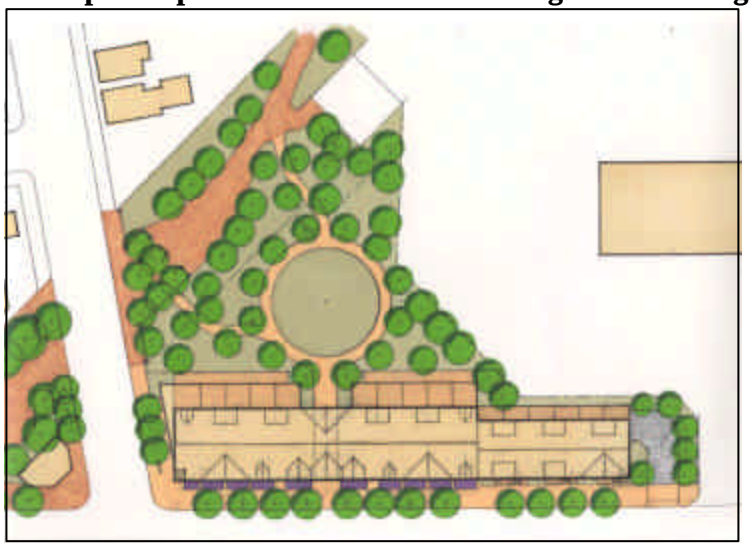
The Committee urges the City to research creative, non-traditional funding options to implement the Committee's recommendations for open space, affordable housing, below-grade parking, retail, community uses, and good design quality. The Committee is interested in ongoing participation in the process started by this study and would like to be kept informed of public meetings on key phases of the Trolley Square development.

By using these recommendations as a framework for the development of the Trolley Square site, the Committee believes that the City of Cambridge will provide an enduring resource for the residents of this neighborhood and the city as a whole.

DESIGN CONCEPTS

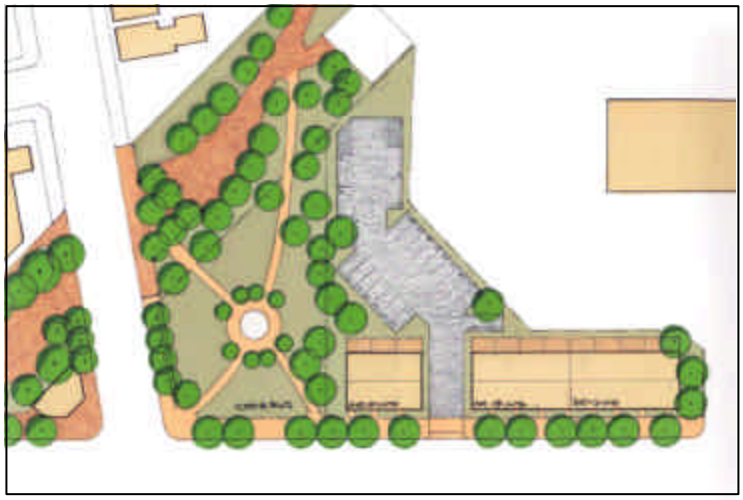
The following design and site planning concepts were discussed at the Committee and would accommodate the Committee's goals of creating public open space, affordable housing, retail, community uses, and good design quality. The two concepts are shown below along with key differences between them. It is important to note that these are only concepts, meant to illustrate how the site might be configured. They are not intended to be detailed plans.

Concept A: Up to 20 - 25 Units with Underground Parking



- Approx. 18,000 square feet publicly-accessible open space
- 20 - 25 housing units
- Below-grade parking
- Increases open space
- Open space integrated with Linear Park and separated from Massachusetts Avenue
- Defines and activates Massachusetts Avenue
- Screens Trolley Yard from Massachusetts Avenue
- 25% units overlook Trolley Yard
- Strong retail and community use potential along Massachusetts Avenue

Concept B: Up to 12 - 15 Units with Surface Parking



- Approx. 13,000 square feet publicly-accessible open space
- 12 - 15 housing units
- On-grade parking
- Increases open space
- Open space integrated with Linear Park and open to Massachusetts Avenue
- Screens Trolley Yard from Mass Avenue
- 50% units overlook Trolley Yard
- Housing units in narrow section of the site close to both street and trolley yard and not of optimal dimension for unit layout
- Minimal informal surveillance of open space

ADDITIONAL MATERIAL:

- Considerations
- Goals and Considerations Matrix
- Other Design Concepts Discussed
- Area Map
- Trolley Square Zoning

CONSIDERATIONS

As the Committee deliberated on the vision for Trolley Square, the interaction of different elements was also discussed. A matrix of these relationships follows on the next page. In summary, these interactions included:

- **Urban Design** – Important for full project and each element – from quality of overall design to quality of materials. High design quality adds fixed costs.

- **Cost** – Costs for all elements (housing, open space, retail, community space) require both capital and operating costs. The costs for affordable housing must work within Federal and State guidelines.

- **Open Space** – A key interest of the Committee, open space competes for space with both housing and parking. It involves both initial capital cost and operating (maintenance) costs.

- **Affordable Housing** – A key interest of the City Council and City Manager, housing competes for space with open space. At the same time, higher numbers of housing units discussed, 45-55 units, allow more flexibility for spreading fixed costs, such as open space or underground parking.

- **Below-grade Parking** – Unusually expensive to consider for small number of units, particularly for affordable housing. However, if feasible, it allows significantly more flexibility in design of the site and balancing of a mix of uses.

Goal / Consideration	**Public Open Space**	**Affordable Housing**	**Retail / Community Uses**	**Design Quality (Urban Design, Building Design)**
Consistency with Neighborhood Character	▪ Public gathering space ▪ Increased green ▪ Link to Linear Pk	▪ Design guidelines ▪ Provides housing opportunities for Cambridge residents	***Retail:*** ▪ Supportable? ▪ Design guidelines ***Comm Uses:*** ▪ Need?	▪ Site design guidelines ▪ Open space character ▪ Building design ▪ City history of producing quality housing and open space
Cost	▪ Capital cost ▪ Operating cost	▪ Capital cost ▪ Operating cost ▪ Federal/state funding guidelines for cost (e.g. total development cost, $/unit cap) ▪ What can be included	***Retail:*** ▪ Capital cost ▪ Operating cost – rent subsidy – management cost ***Comm Uses:*** ▪ Capital cost ▪ Operating/progra--mmatic cost	▪ Increases cost ▪ Quality of materials ▪ Design details / guidelines
Public Open Space	▪ Public gathering space ▪ Increased green ▪ Link to Linear Pk	▪ Direct tradeoff – land (sq. ft.) ▪ Residents would animate space	▪ May be mutually supportive	▪ Capital cost ▪ Maintenance ▪ Activate the area ▪ Safe, open, public feel
Number of Units	▪ Direct tradeoff – land (sq. ft.) ▪ Residents would animate space	▪ City Council / City Manager goal ▪ Overall need for housing ▪ Mixed Income	▪ Direct tradeoff – sq. ft. ▪ Residents would help support retail ▪ Amenity for residents	▪ Defines space – holds edge of Mass Ave ▪ Eyes on the space – oversight
Below-grade Parking	▪ Direct benefit – additional available land ▪ Competes for $	▪ Adds cost/unit ▪ Added cost shared over # units	▪ Direct benefit – additional available land ▪ Competes for $	▪ No surface parking ▪ May allow more open space ▪ Greater design flexibility

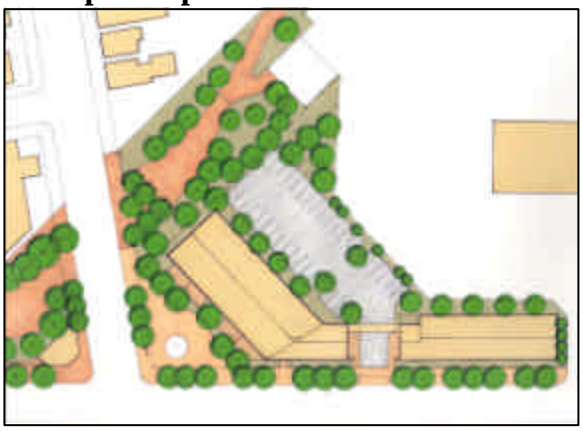
OTHER DESIGN CONCEPTS DISCUSSED

The following represent other design concepts that were presented to the committee. Through discussion, the Committee determined that these did not meet important priorities they had set for the site and are not part of their recommendations.

Concept C: Up to 55 Units with Underground Parking

- Approx. 5,000 square feet publicly-accessible open space
- 45 - 55 housing units
- Below-grade parking
- Defines & makes a better Massachusetts Avenue and Cameron Avenue
- Provides connection to Linear Park
- Creates two distinct types of open space
- Enhances safety by providing more means of informal surveillance
- Blocks north winds/creates sun trap
- Screens Trolley Yard from Massachusetts Avenue
- 75% of units overlook open spaces
- Larger building, more visible building from Cameron Ave
- Strongest retail potential

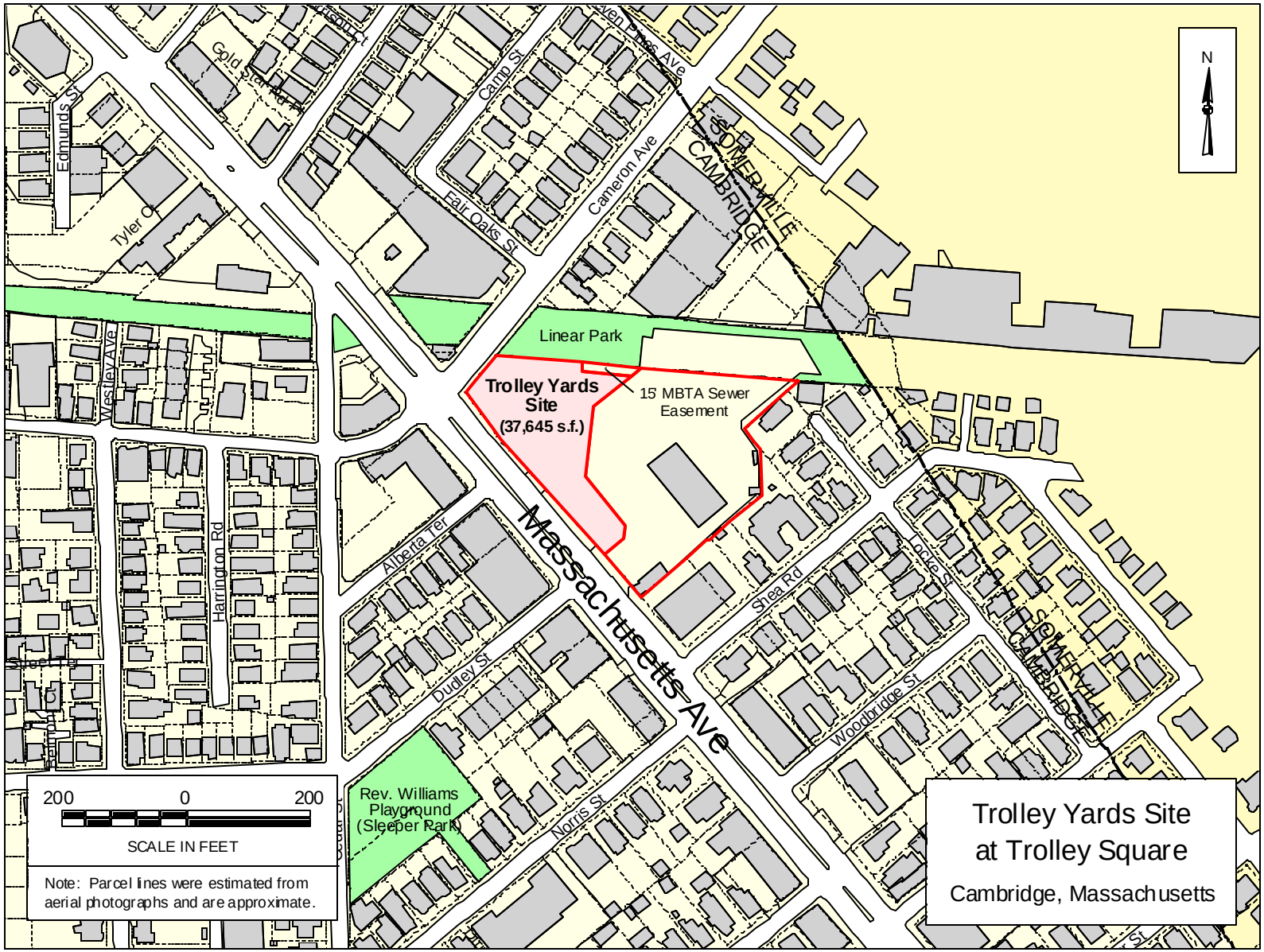
Concept D: Up to 40 Units with Surface Parking



- Approx. 3,000 square feet publicly-accessible open space
- 35 - 40 housing units
- On-grade parking
- Defines Mass Avenue edge
- Splits building into two with bridge
- Creates small open space at corner
- Development too thin at south site
- Screens parking lot from Mass Avenue
- 50% units face parking and Trolley Yard
- 25% units face Mass Ave. at first floor
- Poor service access
- Parking visible from Linear Park
- Minimal retail potential

Concept E: Up to 30 Units with Surface Parking

- Approx. 8,000 square feet publicly-accessible open space
- 25-30 housing units
- Below-grade parking
- Increases open space
- Open space replication at Cameron Ave
- Screens Trolley Yard from Mass Avenue
- 50% units overlook Trolley Yard
- Makes Cameron Avenue more important
- Serious services issues without service lane
- Poor potential retail location



CDD GIS: d:\projects\trolley_square\arcview_projects\tsq_basemap.apr, Map 8.5x11 Layout

TROLLEY SQUARE
ZONING

The Trolley Square site is located in the Business A-2 (BA-2) zoning district. The following is a brief overview of the zoning information that is relevant to the development of Trolley Square. The full text of the zoning ordinance can be found at http://www.ci.cambridge.ma.us/~CDD/commplan/

Permitted Uses	Residential, institutional, educational, health care and social services facilities, government uses, office and R&D, retail, and some transportation, communication, and utility uses.*
Floor Area Ratio (FAR)	1.0 for non-residential development 1.75 for residential development
Maximum height	45 feet (45 deg. bulk control plan starting at 35 feet along Massachusetts Avenue)
Yards (Setbacks)	5 feet (front) 10 feet (side) 20 feet (rear)
Minimum Open Space	None

* Uses permitted on this site are further limited to "public benefit" by the agreement of transfer between the City and the MBTA.

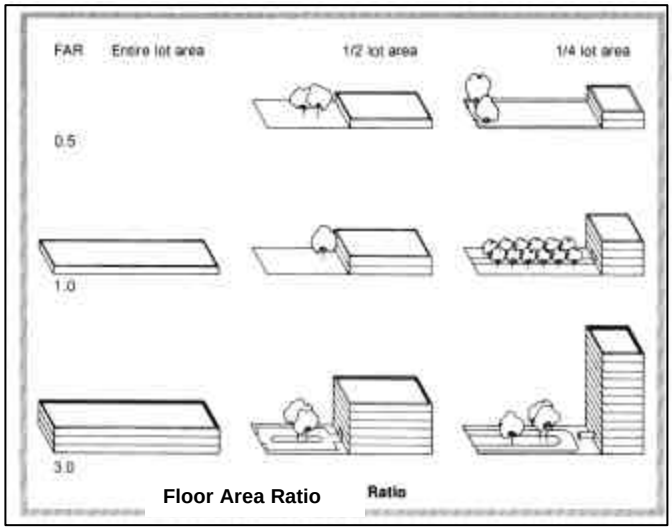
ZONING IN CAMBRIDGE

The Cambridge Zoning Ordinance is the law that governs how land and buildings in the city may be used. While zoning is a local law, adopted by the City Council, the local regulations and procedures must comply with the State Zoning Act (Chapter 40A of the General Laws of the Commonwealth).

Use Regulations specify which types of land use (e.g. apartment building, store, restaurant, warehouse) may be located in each zoning district. Residential, institutional, educational, health care and social services facilities, government uses, office and R&D, retail, and some transportation, communication, and utility uses are allowed on the Trolley Square site by zoning. Uses permitted on this site are further limited to "public benefit" by the agreement of transfer between the City and the MBTA.

Dimensional Regulations limit the intensity of activity and the size and location of buildings on a piece of land. These regulations specify maximum gross floor area, density, height and minimum yards and open space.

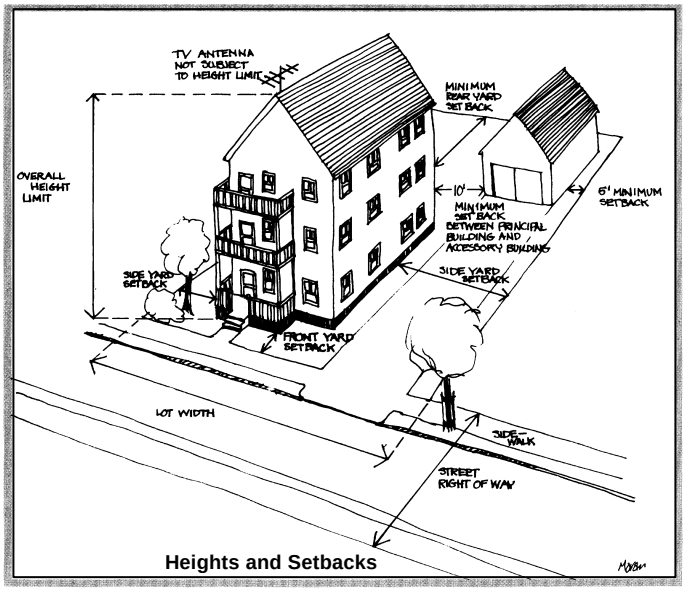
- ***Floor area ratio (FAR)*** limits how intensively a lot may be built upon. Indirectly it controls building volume. FAR is the gross floor area of the building divided by the area of the lot. Areas devoted to parking, to building mechanical systems and certain other areas are not counted when calculating gross floor area, Business districts such as Harvard Square and Central Square have much larger FAR limits than most residential neighborhoods. The above diagram shows how floor area ratio allowances are applied.



An FAR of 1.0 for non-residential development and 1.75 for residential development is permitted on the Trolley Square site.

- ***Density regulations*** limit the number of dwelling units that may be built on a piece of land by requiring a minimum number of square feet of lot area per dwelling unit. A dwelling unit is a portion of a building containing the living space for one family or household. A 6,000 square foot lot in an apartment district with a 1200 square foot minimum lot area could contain a five unit (6000/1200) apartment building. It is often useful to convert the minimum required lot area for one dwelling unit to units per acre. This provides a measure of how many new units exist or are allowed on a city block or other larger tract of land. ***The minimum lot area per dwelling unit permitted on the Trolley Square site is 600 sq. ft.***

- ***Height regulations*** limit how tall buildings may be. This is expressed as a maximum number of feet. As a rule of thumb, a single story of a residential building is about 10 feet high. Some districts have different height limits at the edge of the district than at other locations within the district. This diagram shows how height regulations are applied. ***On the Trolley Square site, the zoning allows for a height of up to 45 feet (45 deg. bulk control plan starting at 35 feet along Massachusetts Avenue)***



Heights and Setbacks

- ***Setback regulations*** control the distance between the building and street and lot lines. These distances define the yards on a lot. The Zoning Ordinance specifies minimum front, side and rear

yard setbacks for residential and office districts and for some business and industrial districts. The above diagram shows how setback regulations are applied. ***Setback requirements on the Trolley Square site are 5 feet for the front yard, 10 feet for side yard, and 20 feet for rear yard.***

- ***Open space regulations*** require that a specified minimum portion of a lot remain open and usable. ***Open space is not required in the Business A-2 district and the Trolley Square site.***

Overlay District regulations. The Trolley Square site falls within the Massachusetts Avenue Overlay District. This special regulation encourages the creation of bays, active ground floors, pedestrian oriented front setbacks, and establishes design guidelines for development as outlined in the Northern Massachusetts Avenue Design Guidelines.