

Galileo Lofts: A Real Estate Development Feasibility Study

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ABSTRACT

In August 2004, a development proposal titled “Galileo Lofts at MIT: Housing and Urban Park” was submitted to the Cambridge Redevelopment Authority for the provision of new housing and a public park on Parcel 7, in Kendall Square, Cambridge, MA. This study is a feasibility analysis of the development proposal.

A market analysis and a marketability study were conducted to determine the appropriateness of the proposal for the East Cambridge, Kendall Square market. Demographic analysis identified two primary submarkets: 1) Cambridge Condo Submarket (i.e. demand for the location); 2) Loft Product Submarket (i.e. demand for the product type). To analyze supply and pricing, transaction data for the sale of condominiums within a one-mile radius of the proposed site, and data for the sale of comparable loft condominiums in the Greater Boston Area, were downloaded. Tests performed include descriptive statistics, regression analysis, and attribution analysis. A capital budget was estimated and a development model created to determine the financial feasibility of the proposal.

Results indicated that the demand for residential products in the East Cambridge neighborhood priced for the “entry-level buyer” (i.e. up to \$550,000) was not being met by current levels of supply, and it was predicted that demand for products priced at the entry-level would continue. It was also illustrated that demand for “luxury” products does exist in East Cambridge, but that the luxury consumer has demonstrated a preference for properties with high-end amenities and water adjacency.

The Feasibility Analysis concluded that the proposed project is not viable in financial terms. It was suggested that the original proposal is not ideally suited to capture the demand in either the entry-level or luxury markets. The primary observations were that the planned residential units are too large to target the entry level buyer, and that the location, lack of amenities and rental townhouses at the ground level are expected to be problematic in the pursuit of the “luxury” buyer. It was recommended that the developers reduce the unit sizes in order to satisfy the requirements of the primary target market and redistribute the affordable rental units within the building to avoid a potential problem with marketability and management. These changes, however, would not be sufficient to turn the proposed Galileo Lofts at MIT into a financially viable project because 40% of the units are required to be affordable, and these units cost \$180,000 more to produce than they would generate in sales revenue. Other relief would be needed: some suggestions are given.

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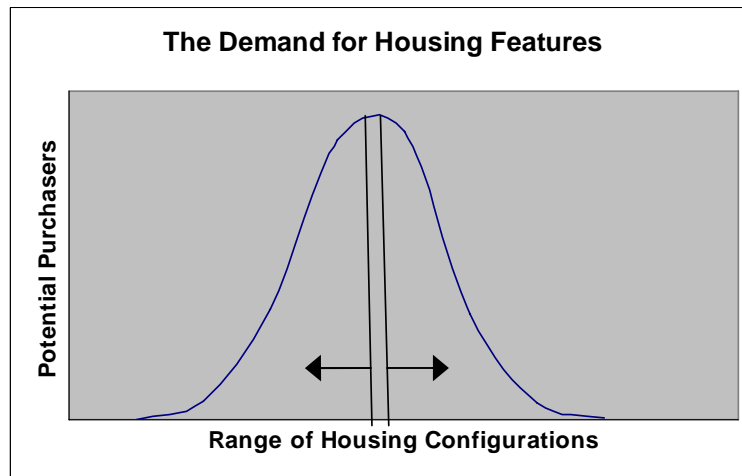
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PROLOGUE



The students huddled intently around the table. Kent Larson, Director and Principal Investigator for MIT's House_n Research Consortium, had just sketched a bell curve on a scrap of paper. You could see the passion in his eyes as he explained, "Most real estate developers can deliver housing units in just a very narrow range of configurations. Given this narrow range, they all aim for the largest number of buyers, which means building for the middle of the market, but ignore the rest. Imagine the response if developers had the flexibility in design and construction to create units at a single development that could appeal to many more people! That's what our Open Source Building Alliance will make possible."

He continued, "Borrowing from innovations in the automobile and electronics industries, our researchers are developing concepts for creating buildings from an integrated 'chassis' that can be rapidly installed with minimal field labor. One integrated assembly provides structure, ductwork, power, signal, plumbing connections, mechanical attachments for infill, HVAC systems, floor finishes, and ceiling finishes. At the point of sale, demising walls are added to create the size unit required, and the buyer engages in a design process to define the interior design, systems, and services. The chassis provides the necessary physical, power, and signal connections for mass-customized infill components to be quickly installed."

In the back of his mind, Larson had been thinking that now was the time to put some of his research into practice by actually developing a building incorporating the new techniques. But where?

Meanwhile, an official of a municipal agency had been wondering how to actualize his Board's directive to create affordable housing. He had in mind a small parcel owned by the agency: it wasn't good for much else, but it would be great for housing.

A chance ride in an elevator brought the two men together. Thus began the story of the Galileo Lofts.

SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

In August 2004, a development proposal titled “Galileo Lofts at MIT: Housing and Urban Park” was submitted in response to a Request for Proposals (“RFP”) issued by the Cambridge Redevelopment Authority (“CRA”) for the provision New Housing and a Public Park on Parcel 7 in the Kendall Square Urban Renewal Area, East Cambridge, MA.¹ The study included herein is a feasibility analysis of that development proposal.

As the gap between the median income and single-family housing prices in the Greater Boston area continues to widen, the demand for “affordable”² residential space continues to grow. With accessibility to and from downtown Boston, and favorable residential tax rates,³ the popularity of East Cambridge as a desirable residential location has dramatically increased over the last decade. In keeping with the surge in demand for “affordable” products, multi-unit residential development in East Cambridge has also substantially increased in recent years, with even greater numbers of product in the pipeline. This feasibility analysis is intended to be a formal demonstration of whether the Galileo Lofts proposal is or is not viable. This will be accomplished by first conducting a Market Study intended to ascertain the market characteristics (i.e. the intersection of supply and demand) in the defined location for the defined product.

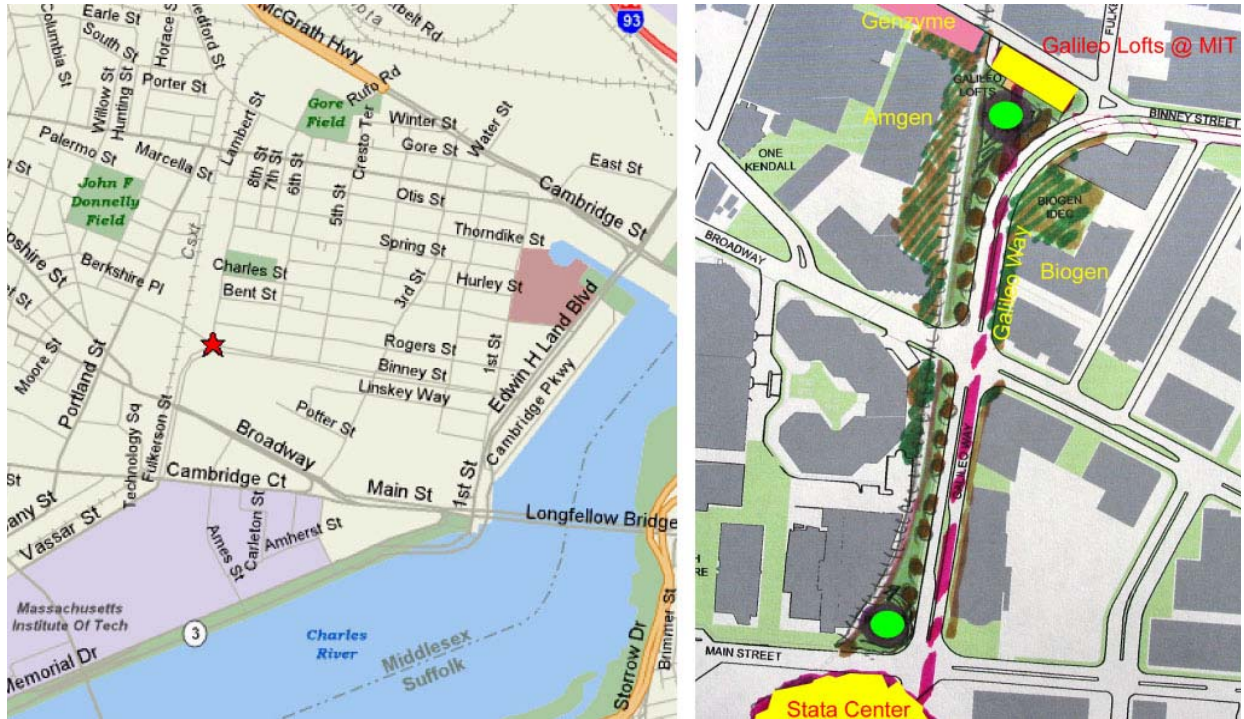
¹ The RFP was issued by the CRA in the summer of 2004 and a notice was published in a local business journal. The Proposal was submitted on August 27, 2004. It was authored by Kent Larson of the MIT School of Architecture and Planning, Ling Yi Liu of HomePrime and Oaktree Green, development and design-build companies, and Barbara Shaw of Just-A-Start Corporation, a non-profit community development corporation.

² In this case, the term “affordable” is meant to illustrate a consumer’s purchasing power, and is not a reference to “affordable housing” as defined by the City of Cambridge.

³ The current (fiscal year 2005) residential tax rate in Cambridge is roughly 2/3s that of Boston, with a residential exemption that is approximately 1/3 greater than Boston’s.

Second, the project’s capital budget and development pro forma financial analysis will be prepared and analyzed in order to determine the financial feasibility of the proposal.

1.2 Overview of the Proposal: “Galileo Lofts at MIT: Housing and Urban Park”



Map 1: Galileo Lofts Proposed Site: Parcel 7 Kendall Square Redevelopment Plan

The proposal is to provide a nine-story residential development, roughly 75,000 square feet in size with underground parking and a public urban park, on Parcel 7 of the Kendall Square Urban Renewal Area.

The site is located on the corner of Binney Street and Galileo Galilei Way (formerly Fulkerson Street), in Kendall Square. The project is intended to be situated at the northern most limits of the site, relating to the massing and orientation of the Genzyme Building along Binney Street.

THE SITE

At the time of writing, the site is vacant land with some at-grade parking. The site is relatively isolated, with railroad tracks creating the west boundary and the busy Galileo Galilei Way constituting the eastern

edge. It is a high traffic area, and at the present time is predominantly surrounded by large-scale R&D buildings.⁴ The parcel was once home to a small children’s play area (i.e. a “tot lot”) which was underutilized and closed. The community organization has voiced a strong preference for the site to house a “park” component. In keeping with this desire, the proposal outlines the provisions of a “Master Plan” for a park on the site. It should be made clear that the proposal involves the provision of a green space only as it relates to the housing component (basic landscaping) and the planning for the development of a larger urban park encompassing the remainder of the sight, and potentially Parcel 5 to the south, but not the actual construction of the park. The orientation of the proposed building on the site enables southern exposure, and the narrow site dimension makes it probable that the rest of the site will not be built up.

THE BUILDING

The building proposal (hereafter referred to as “Option 1”) outlined a 44 unit development with a mix of 12 affordable rental townhouses on the ground floor, 6 inclusionary condominiums and 26 market rate condominiums, for a total of 41% of the units being affordable. The 12 townhouse units designed for the ground floor were intended to be sold as one condominium and operated as rental units for families of low income. The townhouses are designed to be two-story units with individual street access onto Binney Street. An estimated 50% (or more) of the affordable units were intended to have 3 bedrooms. The remaining condominium units range in size from 1,485 sq. ft. to 2,310 sq. ft. There are two floor layouts which alternate between odd and even floors, with units located along a single-loaded corridor. There is a public common room on the roof level with amenity space and roof terrace. The units are based on a

⁴ The neighborhood is in transition, and is currently evolving from what is largely a commercial area into one with a significant residential component. The development of rental loft units at 321 Binney Street, across the street from the project site, and developed by Lyme Properties was the first in a series of residential developments in the pipeline for the area. The evolving residential nature of the site is demonstrated at length in Section 6 of this document.

module of 10'0" high, 13'9" wide and 42'0" deep.⁵ The proposal does not include any other amenity spaces or facilities.

Type	No Units	Unit SF	Total SF
Option 1: Original Scheme, Single Loaded Corridor			
Live/Work	11	1,155.0	12,705
Live/Work	1	1,055.0	1,055
Condo	8	1,732.5	13,860
Condo	8	1,485.0	11,880
Condo	8	2,310.0	18,480
Condo	8	1,620.0	12,960
Penthouse spaces	2	810.0	1,620
Penthouse spaces	1	1,155.0	1,155
Corridors			
Lobby			
Total	47		73,715
less Common Area	(3)		(2,775)
Net Units	44		70,940

Table 1: Unit Mix, Option 1

The Proposal specifies concrete spread footing foundations that would limit disruption to existing underground telephone services. The building superstructure is specified to be structural steel framework. The exterior cladding is to be of curtain wall type. The units are intended to be based on a building prototype currently in development by the House_n Research Consortium and Open Source Building

Alliance at MIT's Department of Architecture, which will enable the buyer to customize the interior layout of their suite.⁶ Given that the Open Source Building typology is in the early stages of development, for the purposes of this feasibility analysis, it is assumed that the project would be delivered by conventional construction techniques. As outlined in the proposal, it is assumed that the units will be delivered complete with demising walls, wet facilities (bathrooms, and kitchens) and interior finishes.

⁵ The module was derived from the dimension of 27'6" that would best fit 3 cars across between columns, with a double loaded drive isle.

⁶ Led by Kent Larson at the MIT School of Architecture and Planning, the House_n Research Group and the affiliated Open Source Building Alliance are developing a new residential prototype wherein multi-unit products are delivered in an unfinished shell condition that serves as the building "chassis"; the interior of the units would then be designed by the buyer with the aid of a computer program that will allow one to customize his or her suite according to a series of options (similar to the way in which one can order a Dell computer or customize a car). Market research suggests that a significant proportion of consumers would like to customize their condominium; however, to date there has been no research done to quantify the premium consumers would be willing to pay for the option.

PARKING

The proposal outlines provisions for one level of underground parking that would accommodate 37 cars. The parking is to be accessed from Binney Street, and is only 5' below grade (accordingly, the townhouses are about 4' above street level). The City of Cambridge Zoning Ordinance requires that one stall per dwelling unit be provided.⁷

Parking provisions for this proposal require careful consideration. The Option 1 design does not provide adequate parking for 44 units, and it is reasonable to presume there would be community opposition voiced against surface parking.⁸ There are existing telephone cables that run through the site, which make multiple levels of underground parking problematic. If the proposal is to be approved by the City, it will have to more effectively address the need for adequate parking. (See Appendix B: Option 1 Drawings).

Further analysis and recommendations regarding the provision of adequate parking are addressed in later sections of the feasibility analysis.

⁷ City of Cambridge zoning often allows a ratio of 0.7:1 parking stalls per dwelling unit for the affordable component of the development. Because parcel 7 is currently undergoing zoning revisions, it is not possible to make an affirmative statement regarding this provision, but it should be confirmed once zoning is in place.

⁸ The neighborhood association of East Cambridge has consistently voiced opposition to surface parking lots as well as visible structured above ground parking. Current zoning reflects this attitude and strongly encourages underground parking for all new development.

SECTION 2: ENTITLEMENT PROCESS

2.1 Pertinent Zoning Considerations

Parcel 7 is currently zoned Cambridge Center Mixed Use Development (MXD) and is zoned in conjunction with the remaining parcels of the Kendall Square Urban Renewal Area. As part of the MXD area, parcel 7 is subject to an aggregate district cap for gross floor area of 2,773,000 square feet for non-residential uses and an additional 200,000 square feet for residential uses (exclusive of parking).⁹ This total of 2,973,000 has either been built, permitted for building or contractually committed by the CRA for other sites in the district. The Cambridge Redevelopment Authority is in the process of seeking a zoning amendment which would enable an additional 75,000 gross square feet of residential development.

The provisions of the MXD zoning district also require a minimum of 100,000 square feet of permanent public open space in the district. Given the open space already developed or proposed for the district, the amount of open space will considerably exceed the required minimum. This development proposes that a minimum of 15,000 square feet, or approximately 33% of the site, be permanently designated as public open space.

Category	MXD Zoning	Galileo Lofts Proposal
Permitted Use:	Mixed Use including Residential	Residential
Height:	250' 0" Max Height	90'0" Height
FAR:	Max FAR = 8.0	1.5 FAR (Site 49,500SF)
Parking:	1 Stall per 1 Residential Unit	37 Stalls for 44 Units

⁹ Galileo Lofts Proposal, p. 21.

2.2 Entitlement Process

The Cambridge Redevelopment Authority started the process by issuing its RFP in the summer of 2004, receiving proposals in August. It voted on October 20, 2004 to amend the Urban Renewal Plan to allow an additional 75,000 sq. ft. of residential space to be constructed within the Urban Renewal Area, which was intended to be on Parcel 7. It sought and obtained a ruling on March 1, 2005 from the Commonwealth of Massachusetts Department of Housing and Community Development (“DHCD”) that the “proposed amendment changes to section 402(a) of the plan to allow for an additional 75,000 sq. ft. of multi-family residential use in the urban renewal area” constituted a “Minor Plan Change.”¹⁰ The Authority also sought a determination from the Commonwealth’s Executive Office of Environmental Affairs that the Amendment “is insignificant in terms of its environmental impact” (including traffic issues) and that additional environmental review is not required under the Massachusetts Environmental Policy Act.¹¹ The CRA tentatively designated the team of HomePrime Corporation and Oaktree Development (with Just-A-Start Corporation as purchaser of the affordable rental units) as the developers for the parcel.

¹⁰ Letter from Commonwealth of Massachusetts Department of Community Development, to: Ms. Jacqueline S. Sullivan, Chair of Cambridge Redevelopment Authority, Regarding: Kendall Square Urban Renewal Plan Amendment #7 – Approved, March 1, 2005. The letter confirmed that the documentation submitted in support of the amendment satisfies the requirements of the Departments regulations under 760 CMR 12.03 “Plan Changes”.

¹¹ Letter from Douglas M. McGarrah of Foley Hoag, LLP, counsel to the CRA, to James Hunt, Assistant Secretary and MEPA Director, Commonwealth of Massachusetts Executive Office of Environmental Affairs, dated January 31, 2005.

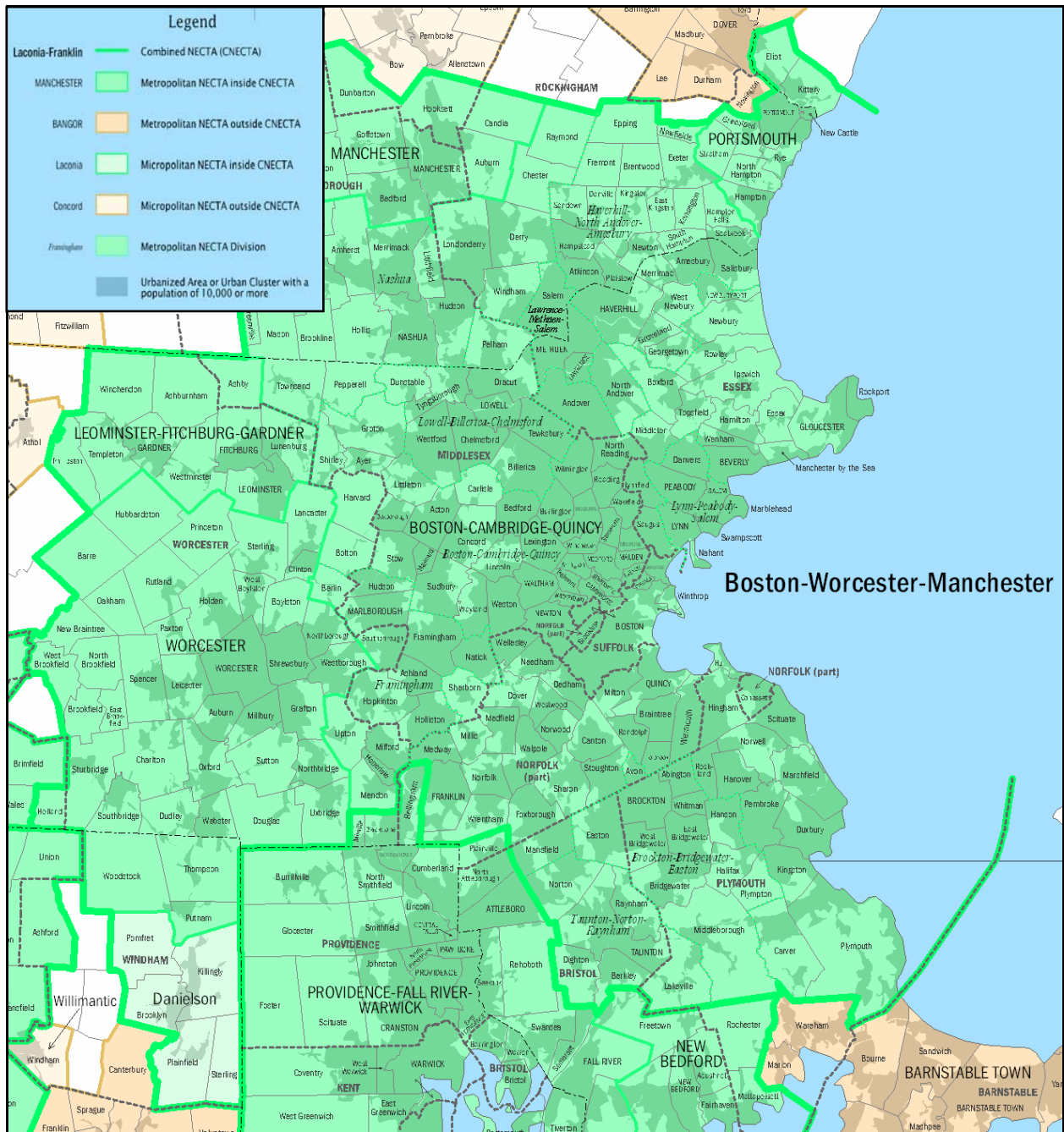
The CRA introduced the necessary petition for a zoning amendment to City Hall. The City Manager submitted it to the City Council, which appropriately referred it to its Committee on Ordinances and to the Planning Board. The CRA set up the necessary community meeting with the East Cambridge Planning Team, the local neighborhood organization. In a reversal of the usual procedure, the Committee on Ordinances held its hearing in early July, before the community meeting was held. Unexpectedly, the amendment met with considerable public opposition from community members who did not want to see the parcel developed as anything other than green space. The community had little interest in the creation of housing, or specifically of affordable housing. The City Councilors present at the hearing echoed these concerns. (Nonetheless, the Committee did vote to pass the amendment along to the full City Council for the final two votes). Results were no better at the community meeting on July 13, where virtually every resident present opposed the plan.

It appears that the CRA and the developers misjudged the level of community interest and opposition. They did not undertake enough informal contacts with city councilors and community leaders ahead of the public meetings, to try to promote the proposal, gauge the level of potential support for the proposal and determine what the issues were apt to be (so they could make changes to address them). The public presentations by the CRA and developers did not seem to put enough emphasis on how this project would benefit the community by enabling the creation of significant park space comprising over a third of the site. In fact, based on the placement of the building on the site, the developers could have doubled the proposed parkland to 35,000 sq. ft., or 70% of the site, with no effect on the project.

The Planning Board is set to hold a public hearing on the proposal on August 16, 2005. The Planning Board has traditionally been heavily in favor of developing housing with significant affordable components, and thus might be expected to give the project a better reception. Even if the Planning Board endorses the zoning change, however, it is difficult to foresee the City Council approving it after such community opposition and statements of opposition from many of the Councilors themselves. If the Councilors had had a different response to the proposal, the normal procedure would be for the Council to

approve the zoning amendment, and approve a curb cut at the time of the final vote. The zoning amendment would then need to be submitted to DHCD for a final imprimatur.

At the time of writing, it is not certain whether the developers will be able to continue to pursue the development of Galileo Lofts on Parcel 7. Other sites within the Kendall Square Redevelopment Area have been cited as possibilities, but no formal agreements have been made. However, it is the opinion of these authors that the proposal discussed herein is not specifically grounded on the proposed site, but would work as well on other nearby sites in the Kendall Square Urban Renewal Area. For this reason the feasibility analysis included herein is applicable to both the current proposed site, and other sites under consideration within the Urban Renewal Area.



Map 2: Metropolitan Boston: The Boston-Cambridge-Quincy, MA-NH Metropolitan NECTA

Source: Cartographic Products Management Branch, U.S. Census Bureau.

SECTION 3: REGIONAL MARKET CONTEXT

Cambridge is located across the Charles River from Boston, the core city of the Boston metropolitan area. Boston itself, with a population of 589,000, is not among the very largest cities (it ranks twentieth in the U.S.), but the Boston metropolitan area, with a population of 4,540,000 (2000), is the tenth largest in the United States.¹² It consists of over 100 cities and towns in a radius of approximately 30 miles¹³. The metropolitan area contains well over half the population and generates over half the personal income of the Commonwealth of Massachusetts.

3.1 Economy

Greater Boston, with its diverse economic base, is widely recognized as a vibrant center of innovation and as the economic engine of New England. The region is home to scores of institutions of higher education,¹⁴ which have spawned many scientific and technical centers of research and development. Most of the region's key industry clusters—healthcare, financial services, information technology, business and professional services, and tourism and hospitality—are knowledge-intensive.¹⁵ As a result,

¹²Population figures for the City of Boston and the Boston-Cambridge-Quincy, MA-NH Metropolitan NECTA. U.S. Department of Commerce, Census Bureau, Population Division. *Census 2000 Summary File 1 (SF 1)*.

¹³ U.S. Department of Commerce, Census Bureau, Cartographic Products Management Branch. "New England City and Town Areas, December 2003." April 13, 2005. <http://www.census.gov/geo/www/maps/msa_map2003/main_necta_2003.htm>. July 10, 2005.

¹⁴ The website of the New England Association of Schools and Colleges lists 65 accredited institutions of post-secondary education in the metropolitan area. <<http://www.neasc.org/roster/pssma.htm>>.

¹⁵ The Boston Foundation. "Economy Overview," *Boston Indicators Report 2002*. <<http://www.tbf.org/indicators/economy/overview.asp?id=240>>; U.S. Department of Commerce, Bureau of Economic Analysis.

Massachusetts has the highest number of patents per capita (a key measure of innovation) among the leading technology states.¹⁶ As the home of the Massachusetts Institute of Technology and Harvard University, Cambridge is at the center of the area's innovation economy.

Greater Boston had one of the strongest regional economies in the country when it reached a peak in early 2001. All major sectors were on the upswing. Unemployment was low (2% in October and November, 2000) and had been consistently lower than the national unemployment rate since 1993.¹⁷ Personal income was rising rapidly (at an exceptional annual rate of 12.1% in 2000).¹⁸ The real estate market was exceptionally strong; commercial real estate vacancies were historically low (2% in 2000 and 4% in 2001);¹⁹ and newer industries such as biotechnology were showing enormous promise. Construction was also booming, as a result of extensive real estate development and the Central Artery Tunnel project (the "Big Dig").

Following the collapse of the high tech "bubble" and the severe decline in the stock market that ensued, the nation entered a recession. It hit Boston particularly hard. By 2002 several key sectors of Boston's economy, particularly information technology, financial and business services, had experienced

¹⁶ Massachusetts Technology Collaborative. *2004 Index of the Massachusetts Innovation Economy*. Westborough, MA: November 23, 2004. <http://www.mtpc.org/institute/the_index/index_11_23_04final.pdf>. July 5, 2005.

¹⁷ U.S. Department of Labor, Bureau of Labor Statistics. "Unemployment Rate, Boston-Cambridge-Quincy Metropolitan NECTA," Data Series LAUMT25716503, LAUMT25716504, LAUMT25716505, LAUMT25716506. <<http://data.bls.gov/PDQ/outside.jsp?survey=la>>. July 6, 2005.

¹⁸ U.S. Department of Commerce, Bureau of Economic Analysis. "CA1-3 Personal Income, Metropolitan and Micropolitan Statistical Areas." April, 2005. <<http://www.bea.doc.gov/bea/regional/reis/drill.cfm>>.

¹⁹ The Boston Foundation. *Op. cit.*

significant job losses. For the past several years the Boston market has suffered from considerable consolidation and restructuring in the above-cited industries, and most recently with Proctor & Gamble’s acquisition of Gillette. Economic activity in the state fell by 4.8% between the peak in January, 2001 and the trough in April, 2003, as measured by the Philadelphia Fed’s Index of Economic Activity.²⁰ It has only recently returned to pre-recession levels.

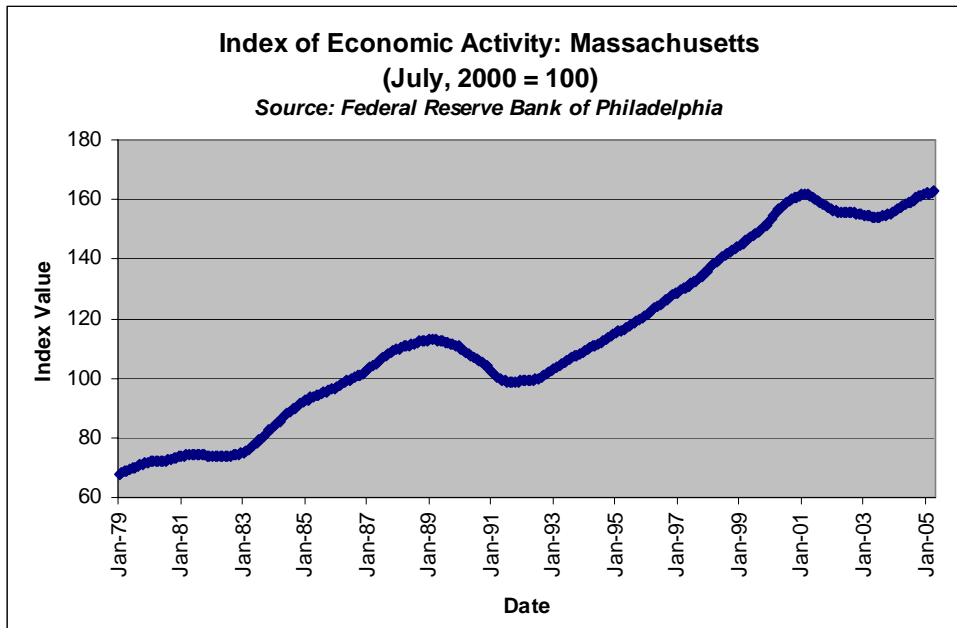


Figure 1: Index of Economic Activity: Massachusetts

During the recession, total (seasonally-adjusted) employment in metropolitan Boston plunged by 7.1%, representing the loss of 183,000 jobs.²¹ After its historic low in 2000, the unemployment rate tripled to

²⁰ Federal Reserve Bank of Philadelphia. “Economic Activity Index: Massachusetts.” <<http://www.phil.frb.org/econ/stateindexes/index.html>>. June 28, 2005.

²¹ U.S. Department of Labor, Bureau of Labor Statistics. “Total Nonagricultural Employment, Massachusetts Metropolitan NECTAs.” Data Series LAUMT25716503, LAUMT25716504, LAUMT25716505, LAUMT25716506. <<http://data.bls.gov/PDQ/outside.jsp?survey=la>>. June 28, 2005.

6.2% by June, 2003.²² The rate of increase in personal income fell to near zero in 2002.²³ These indicators started to improve toward the end of the recession in 2003, but have not yet reached their pre-recession peaks. Regional unemployment was down to 4.3% as of May, 2005 (below the national rate of 5.1%), but total employment had barely started to increase (32,000 jobs regained since the bottom). Statewide, personal income started increasing at a healthy pace (6% annually and trending upward by 2004, compared with an average of 7.3% in the four years prior to the pre-recession peak).²⁴

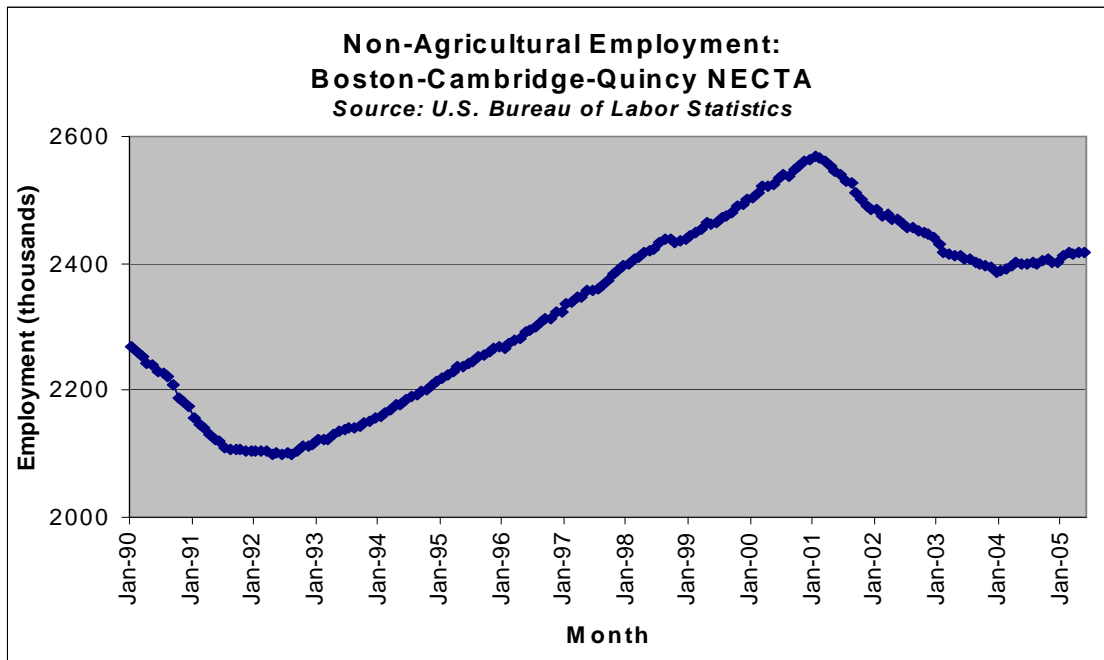


Figure 2: Non-Agricultural Employment

²² U.S. Department of Labor, Bureau of Labor Statistics. “Unemployment Rate, Boston-Cambridge-Quincy Metropolitan NECTA,” *op. cit.*

²³ U.S. Department of Commerce, Bureau of Economic Analysis. *Op. cit.*

²⁴ Personal income for metropolitan areas is available only through 2003, so we use state figures for this part of the analysis. U.S. Department of Commerce, Bureau of Economic Analysis. “SQ4 State Quarterly Personal Income Tables.” June 22, 2005.

<http://www.bea.doc.gov/bea/regional/sqpi/sqpi_download.csv?table_id=259877>.

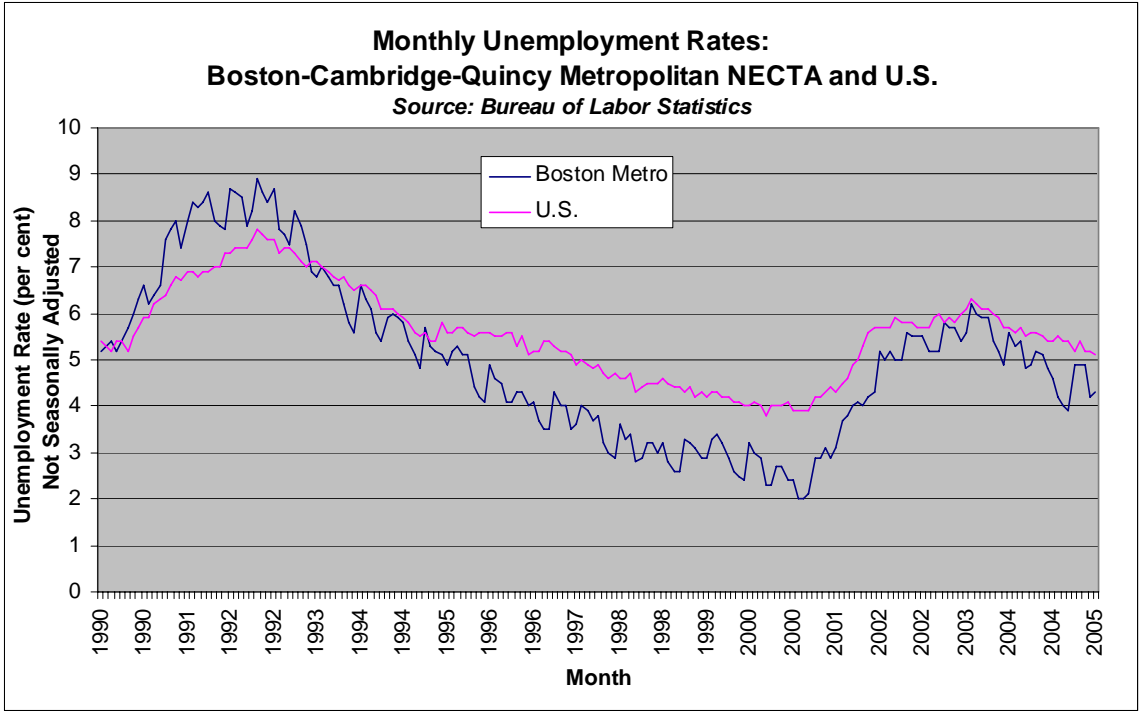


Figure 3: Monthly Employment Rates

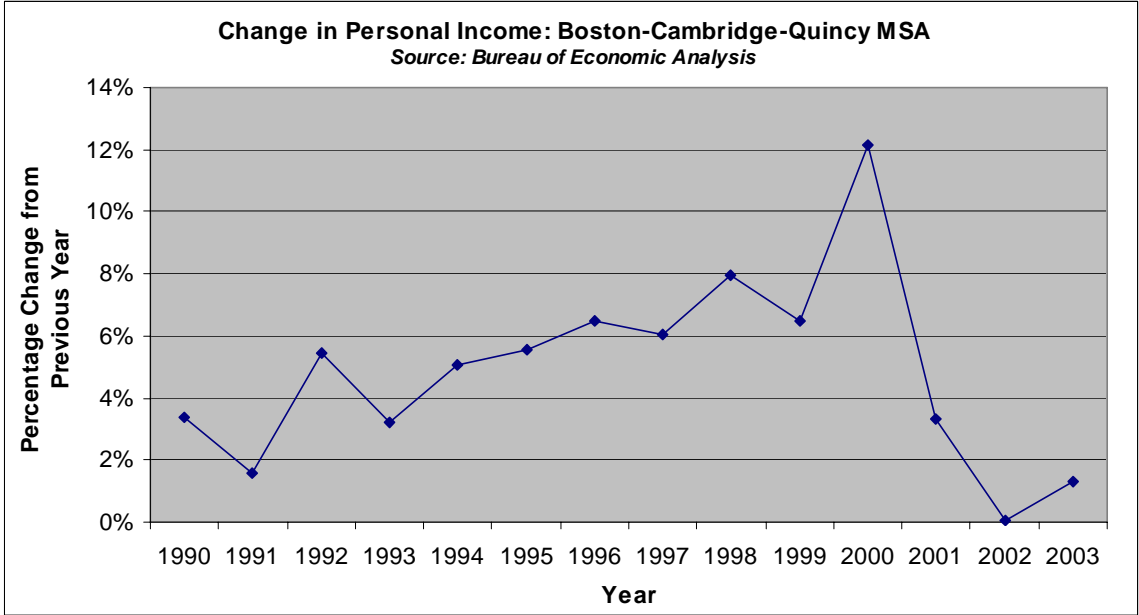


Figure 4: Change in Personal Income: Boston-Cambridge-Quincy MSA

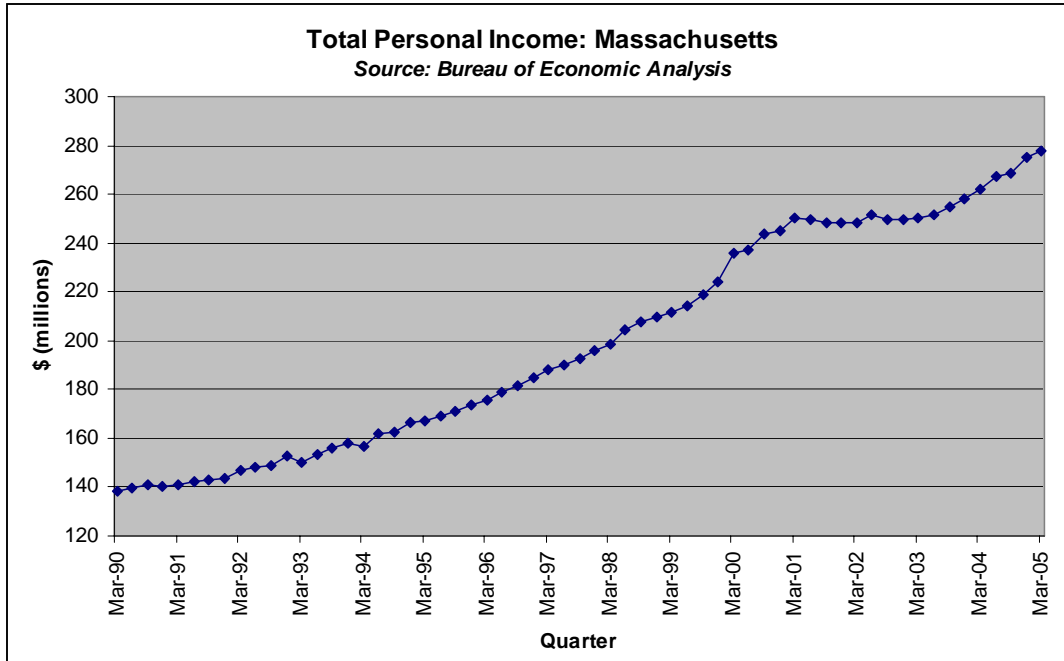


Figure 5: Total Personal Income: Massachusetts

3.2 Population

Metropolitan area population had been slowly increasing during the 1990s, but spiked up in 2000 as people moved to the area in response to the growth in available jobs.²⁵ The recession-era reduction in employment ended this brief population spurt, however, as people instead started moving to other states in search of work and a lower cost of living. The impact was more dramatic in Boston and Cambridge,

²⁵ U.S. Department of Commerce, Census Bureau, Population Division. “Ranking Tables for Population of Metropolitan Statistical Areas, Micropolitan Statistical Areas, Combined Statistical Areas, New England City and Town Areas, and Combined New England City and Town Areas: 1990 and 2000 (Areas defined by the Office of Management and Budget as of June 6, 2003.) (PHC-T-29).” December 30, 2003. <http://www.census.gov/population/www/cen2000/phc-t29.html>; and unpublished data; U.S. Department of Commerce, Census Bureau, Population Division, Population Estimates Program. “(MA-99-9b) Population Estimates for New England County Metropolitan Areas (NECMAs) and Components, Annual Time Series April 1, 1990 to July 1, 1999 (includes April 1, 1990 Population Estimates Base).” October 20, 2000. Data interpolated by the authors to yield consistent time of year (April 1).

which had been slowly losing population until the spike in 2000. They have been losing population since then (see Figure 6).

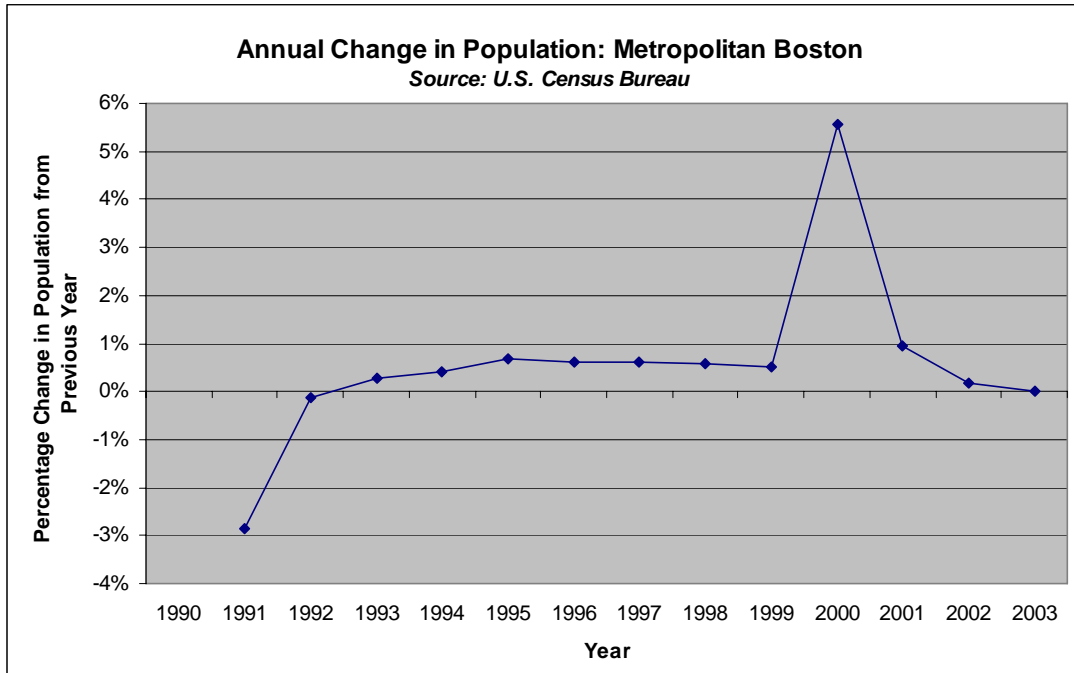


Figure 6: Annual Change in Population: Metropolitan Boston

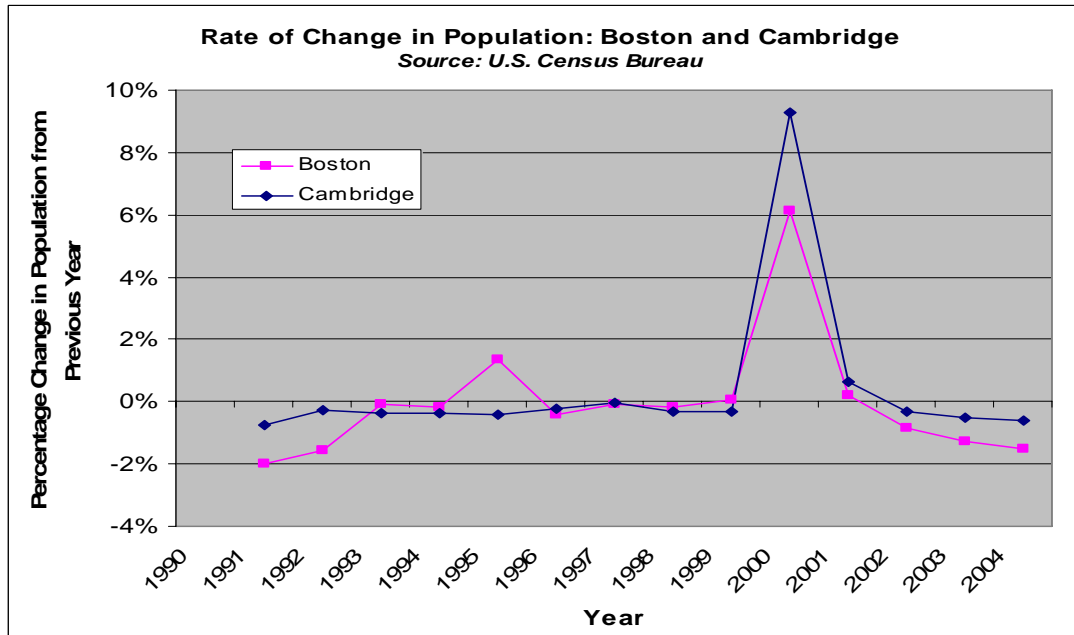


Figure 7: Rate of Change in Population: Boston & Cambridge

The changes in the preceding figures explain how the unemployment rate could be declining with very little improvement in total employment: people were leaving the area.²⁶ Figure 8 presents the nature of migration into and out of Massachusetts. Immigration from abroad has been a constant in the recent years. Net inter-state out-migration fluctuates with the relative strength of the economy and the cost of living.

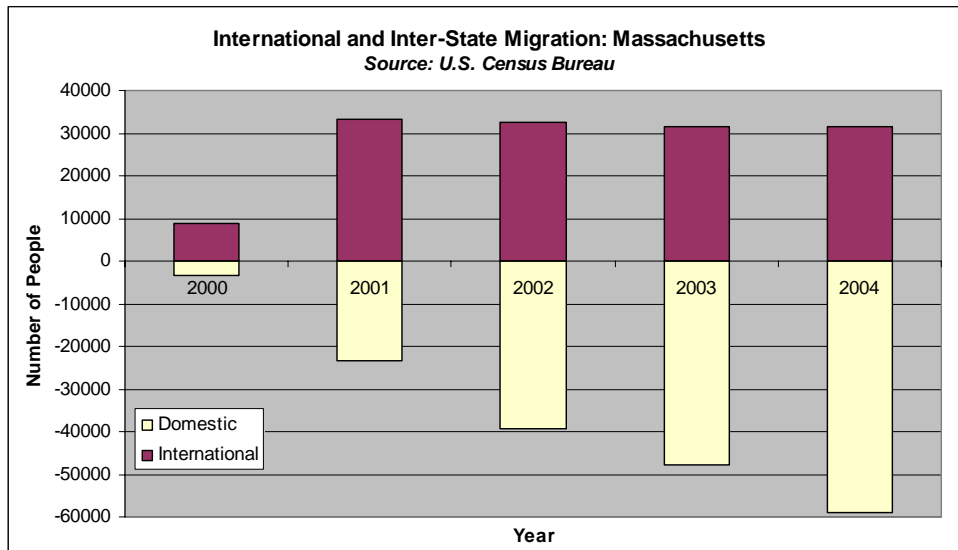


Figure 8: International and Inter-State Migration

The Metropolitan Area Planning Council (MAPC), a regional planning organization created by the Massachusetts Legislature, projected future population for the 101 communities in its membership area, which encompasses approximately two-thirds of the Boston-Cambridge-Quincy Metropolitan NECTA. Table 1 shows MAPC’s population projections for 2005 through 2025.²⁷

²⁶ U.S. Department of Commerce, Census Bureau, Population Division, Population Estimates Program. “Estimates of Population, Population Change and Estimated Components of Population Change: April 1, 2000 to July 1, 2004 (NST-EST2004-ALLDATA.csv).”

²⁷ Metropolitan Area Planning Council. *Community Population Forecasts, 2005-2025*. Boston: March 17, 2003.

Population Projections									
Year	Metropolitan Boston			City of Boston			City of Cambridge		
	Population	Annual Change	Annual Rate of Change	Population	Annual Change	Annual Rate of Change	Population	Annual Change	Annual Rate of Change
1990	2,921,784			574,283			95,802		
2000	3,066,394	14,461	0.48%	589,141	1,486	0.26%	101,355	555	0.57%
2005	3,001,536	-12,972	-0.43%	583,317	-1,165	-0.20%	108,878	1,505	1.44%
2010	3,106,416	20,976	0.69%	607,977	4,932	0.83%	117,938	1,812	1.61%
2015	3,167,422	12,201	0.39%	625,541	3,513	0.57%	122,633	939	0.78%
2020	3,173,517	1,219	0.04%	636,404	2,173	0.34%	126,566	787	0.63%
2025	3,192,049	3,706	0.12%	637,213	162	0.03%	126,298	-54	-0.04%

Source: Metropolitan Area Planning Council

Table 2: Population Projections

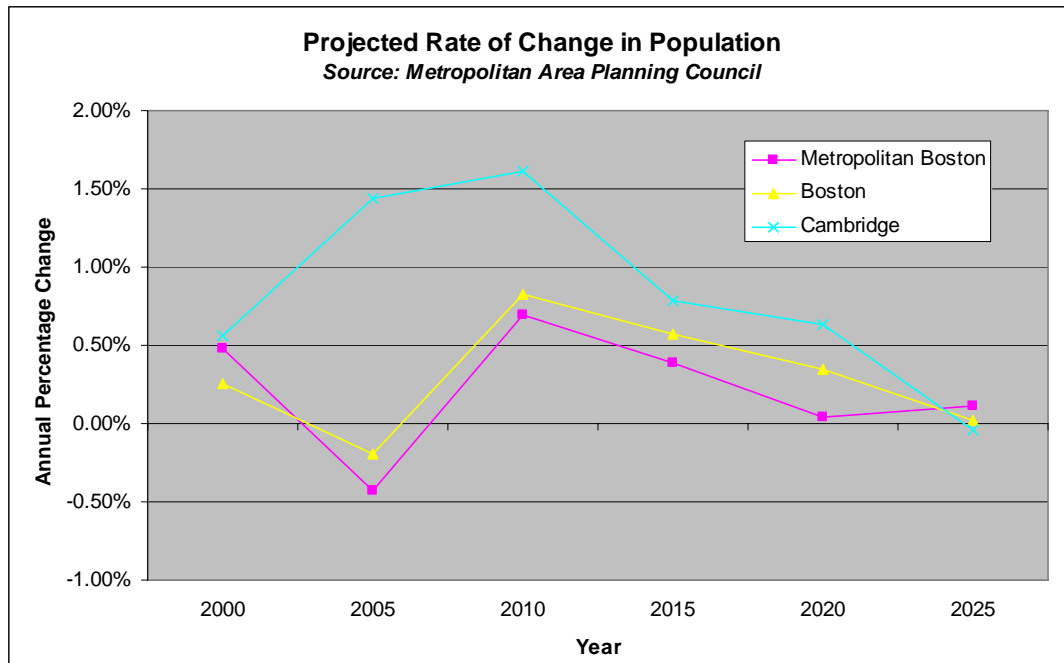


Figure 9: Projected Rate of Change in Population.

3.3 Households

The change in number of households is most relevant to real estate marketing, since it translates directly into demand for housing units. While Metropolitan Boston and the City of Boston are projected to have experienced virtually no change in number of households between 2000 and 2005, Cambridge will have

seen an increase of nearly 2% per year.²⁸ Looking ahead five years, the period most relevant to our feasibility study, both Metropolitan Boston and the City of Boston itself will see households increase by over 1.1% per year, translating into 19,500 additional households in the metropolitan area and 2,800 in the City of Boston each year. Cambridge is expected to continue adding households at a rate of 1,000 new households each year. This strong projected household growth will provide the underpinnings of significant demand for new housing units.

Household Projections									
Year	Metropolitan Boston			City of Boston			City of Cambridge		
	Households	Annual Change	Annual Rate of Change	Households	Annual Change	Annual Rate of Change	Households	Annual Change	Annual Rate of Change
1990	1,509,851			228,464			39,405		
2000	1,644,930	13,508	0.86%	239,528	1,106	0.47%	42,615	321	0.79%
2005	1,644,528	-80	0.00%	240,369	168	0.07%	46,929	863	1.95%
2010	1,742,106	19,516	1.16%	254,202	2,767	1.13%	51,937	1,002	2.05%
2015	1,814,176	14,414	0.81%	265,154	2,190	0.85%	54,830	579	1.09%
2020	1,857,514	8,668	0.47%	273,295	1,628	0.61%	57,386	511	0.92%
2025	1,900,170	8,531	0.46%	276,978	737	0.27%	57,817	86	0.15%

Source: Metropolitan Area Planning Council

Table 3: Household Projections

²⁸ Metropolitan Area Planning Council. *Community Household Forecasts, 2005-2025*. Boston: March 17, 2003; rev. December, 2003. Metropolitan area projections are for the 164-community area of the Metropolitan Planning Organization.

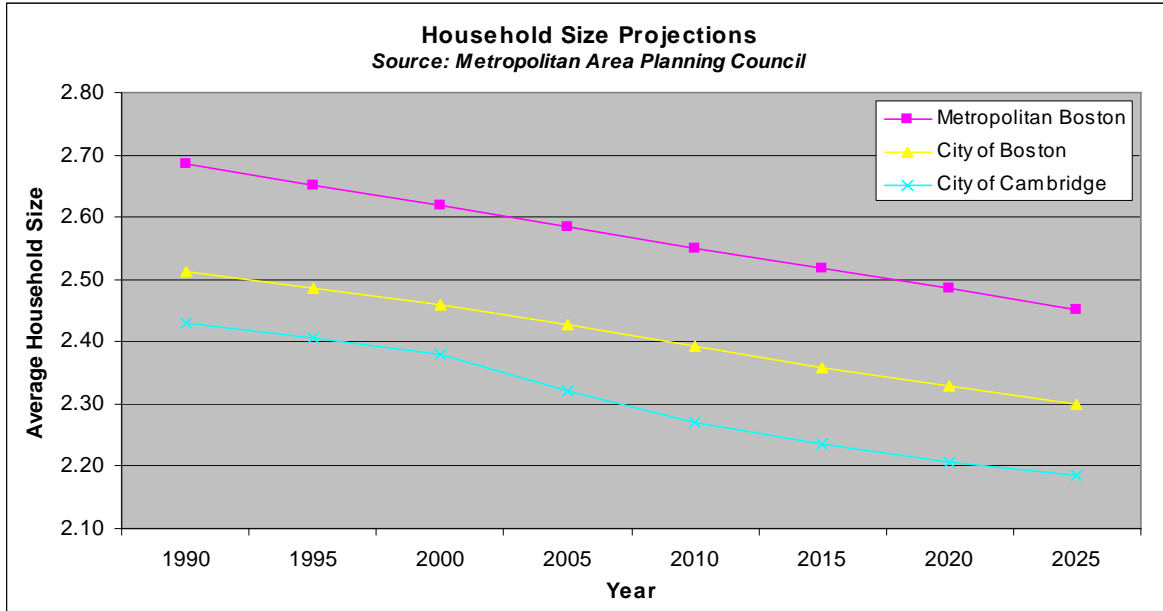


Figure 10: Household Size Projections

The projected rate of growth in number of households exceeds the rate of growth in population. This can only happen when the average size of households is shrinking, which is indeed the case. According to DiPasquale and Wheaton, “Lower birthrates, continued high rates of divorce, and fewer remarriages have all contributed to smaller household sizes.”²⁹

²⁹ Denise DiPasquale and William C. Wheaton. *Urban Economics and Real Estate Markets*. Upper Saddle River, NJ: Prentice Hall, 1996. 184.

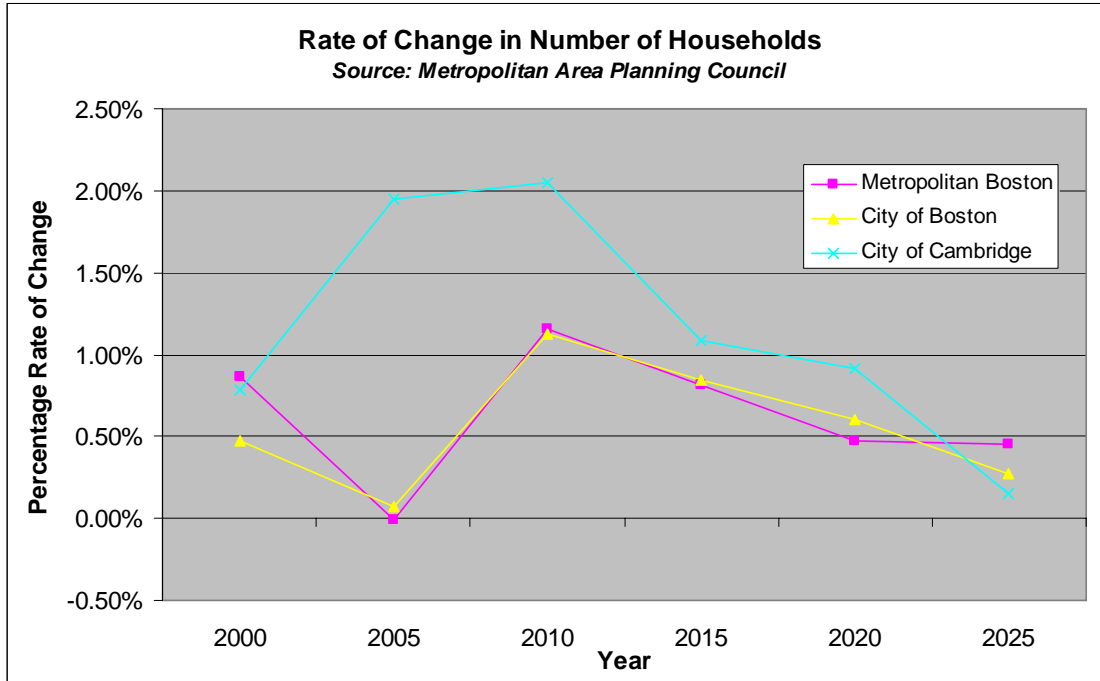


Figure 11: Rate of Change in Number of Households

3.4 Residential Real Estate Market

SALE PRICES AND VOLUME

The residential real estate market did not follow the recessionary trends of the general regional economy. Home prices and sales volume kept increasing throughout this period, which in fact helped sustain the economy. On a statewide basis, median prices have increased every year since 1993.³⁰ The average annual increase in the median price over the past five years has been an astonishing 11.6%. Sales volume (i.e., number of units sold annually) declined in 2000 and 2001 after attaining a record in 1999, but started recovering ahead of some of the other economic indicators in 2002.

³⁰ Statewide figures from National Association of Realtors. “Statistical Review of Massachusetts Single-Family Housing Market (Detached Single-Family Homes and Condominiums)” Chicago: NAR, 2005. <http://www.marealtor.com/content/AssetMgmt/Documents/Member%20Resources/Research/ResidentialMarketOverview.pdf>.

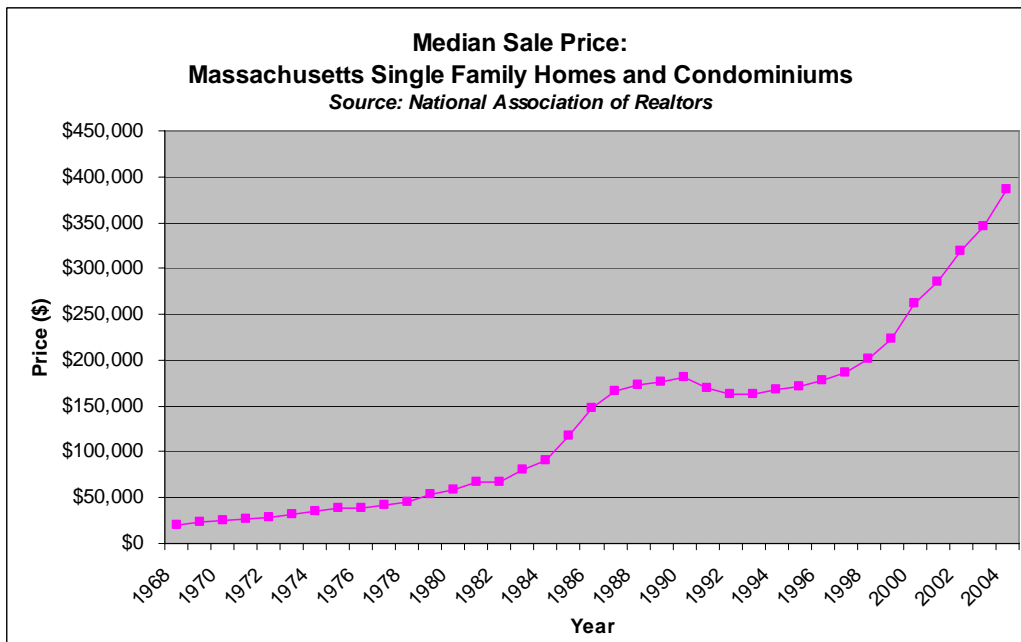


Figure 12: Median Sales Price

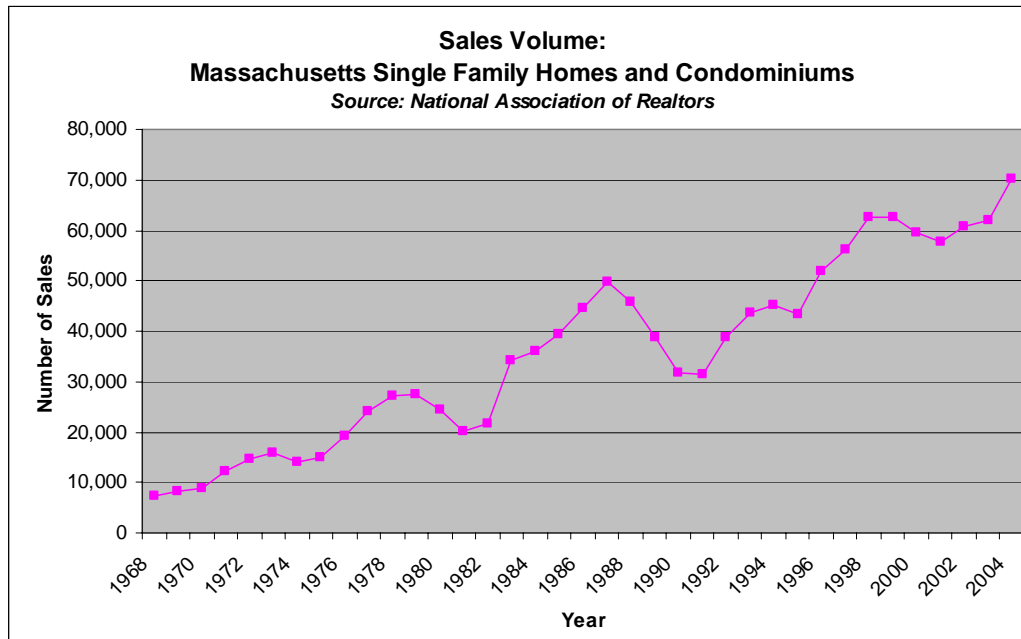


Figure 13: Sales Volume

Figure 14 shows median single family home sale prices for the Boston metropolitan area (condominium median prices were not available for this period).³¹ Quarterly prices are quite volatile: the data are not seasonally adjusted. The chart shows that prices typically rise by varying amounts during the warmer months and decline by an average of 4.7% during the fourth quarter (this seasonal decline sometimes extends into the first quarter). Keep in mind, however, that sales volume is typically lower during the first and fourth quarters of each year, so these declines have less impact on the annual median than one might expect. There was a more significant decline of 20.7% in the winter of 2002-2003, following a record median price of \$415,800 in the third quarter of 2002.

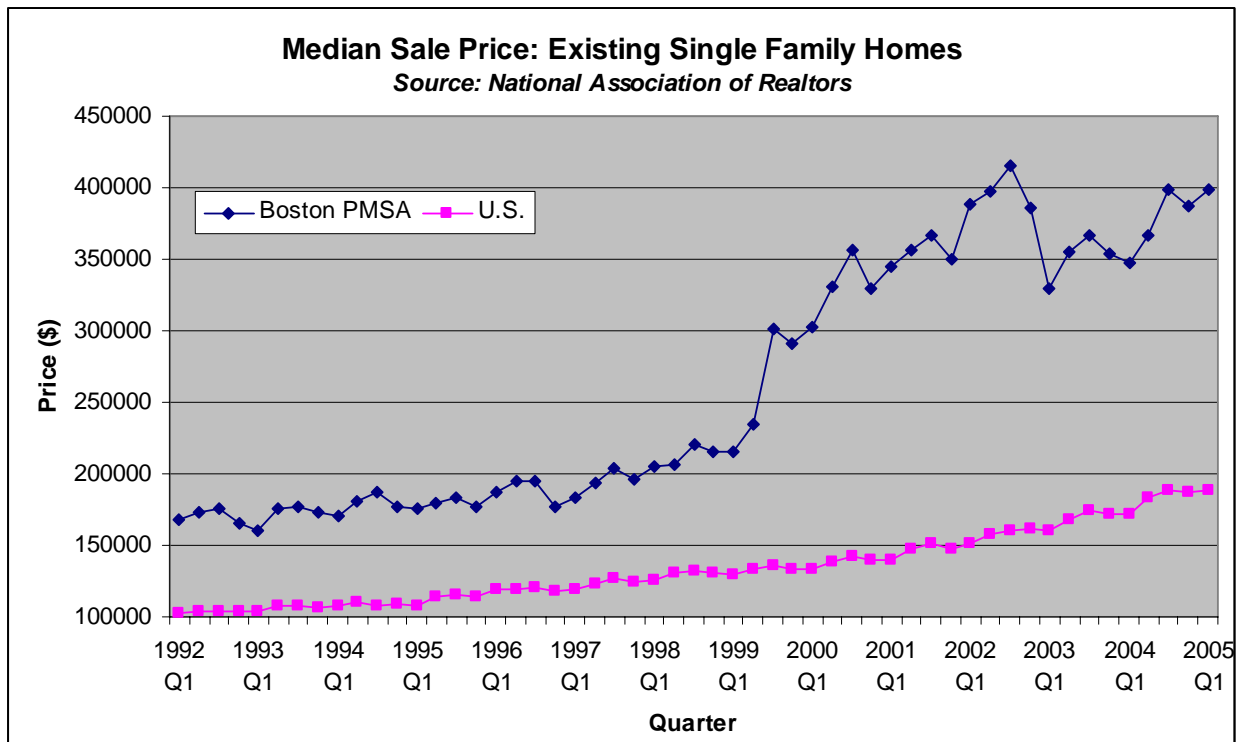


Figure 14: Median sales Prices of Existing Single Family Homes

³¹ National Association of Realtors. "Median Price: Existing Single Family Homes: Boston PMSA." Chicago: NAR, 2005.
 <<http://www.marealtor.com/content/AssetMgmt/Documents/Member%20Resources/Research/BostonMSA2005.xls>>

The Freddie Mac Conventional Mortgage Home Price Index (the “CMHPI”) is based on changes in the prices of repeat sales of the same properties over time. The index for metropolitan Boston over the past thirty years is attached Figure 15.³² While the repeat-sales methodology cannot make allowance for price increases based on improvements to individual properties or externalities such as changing neighborhood characteristics, it does at least control for overall changes in the housing stock over time, such as, for example, a trend toward the construction of larger, more expensive homes. This enables one to get a truer picture of house price appreciation. There isn’t even a blip in the index for metro Boston after 1995, let alone during the recession of 2001-2003. The CMHI increased an astonishing 71.1% from the first quarter of 2000 to the first quarter of 2005. The curve is very similar to the statewide median price curve.

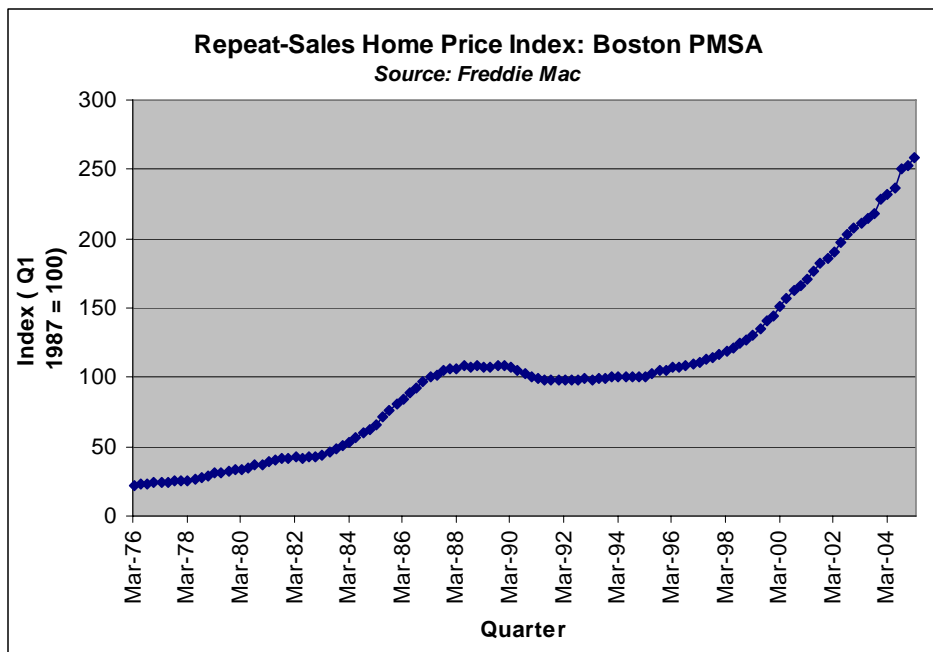


Figure 15: Repeat-Sales Home Price Index

³² Federal Home Loan Mortgage Corporation, Office of the Chief Economist. “Conventional Mortgage Home Price Index: MSA Indices, Q1 2005 Release.”
<http://www.freddiemac.com/finance/cmhpi/current/excel/msas.xls>.

Figures 14 & 15 are based on single family home sales and exclude condominiums and multi-family homes, which make up a large portion of the housing stock in Greater Boston. Nonetheless, it seems reasonable to assume that price trends in one type of property correlate somewhat with those of a substitutable type of property.

The market was not totally free of any effects from the recession. The rate of growth in home prices reached a peak of 16.2% per year in the first half of 2000, immediately prior to the start of the recession, and then declined to “only” 7.3% at the trough in the third quarter of 2003 (Figure 16).³³ Then it resumed climbing again.

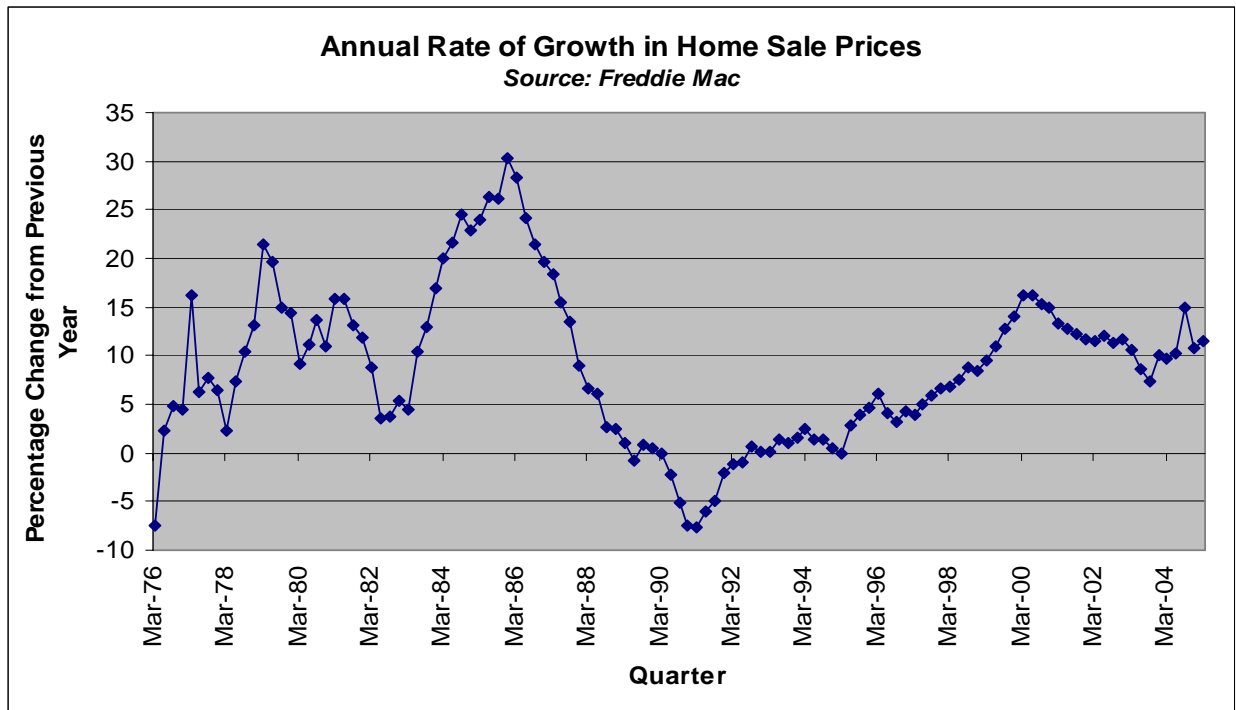


Figure 16: Annual Rate of Growth in Home Sale Price

³³ Office of the Chief Economist, Federal Home Loan Mortgage Corporation. “Conventional Mortgage Home Price Index: MSA Annual Growth Rates, Q1 2005 Release.”
<http://www.freddiemac.com/finance/cmhpi/current/excel/msas.xls>.

DEMAND DRIVERS

Decreasing interest rates made homes much easier to afford. Mortgage payments for a given principal amount in 2003-2004 were only 66% of what they would have been in 1990 and only 42% of what they were at the peak in 1981. Put another way, with a 20% down payment, a household earning \$60,000 per year would have qualified to buy a house costing 2.4 times as much in 2004 as one they could have qualified for in 1981 (Table 4).³⁴

Qualifying to Purchase a Home		
Year	Interest Rate	Maximum Value of House
1984	16.63%	\$123,000
1990	10.13%	\$193,000
2004	5.84%	\$295,000

Source: Authors' Computations

Table 4: Qualifying to Purchase a Home

³⁴ Ignoring the effect of taxes and insurance, and employing a conservative 28% ratio of mortgage payment to income.

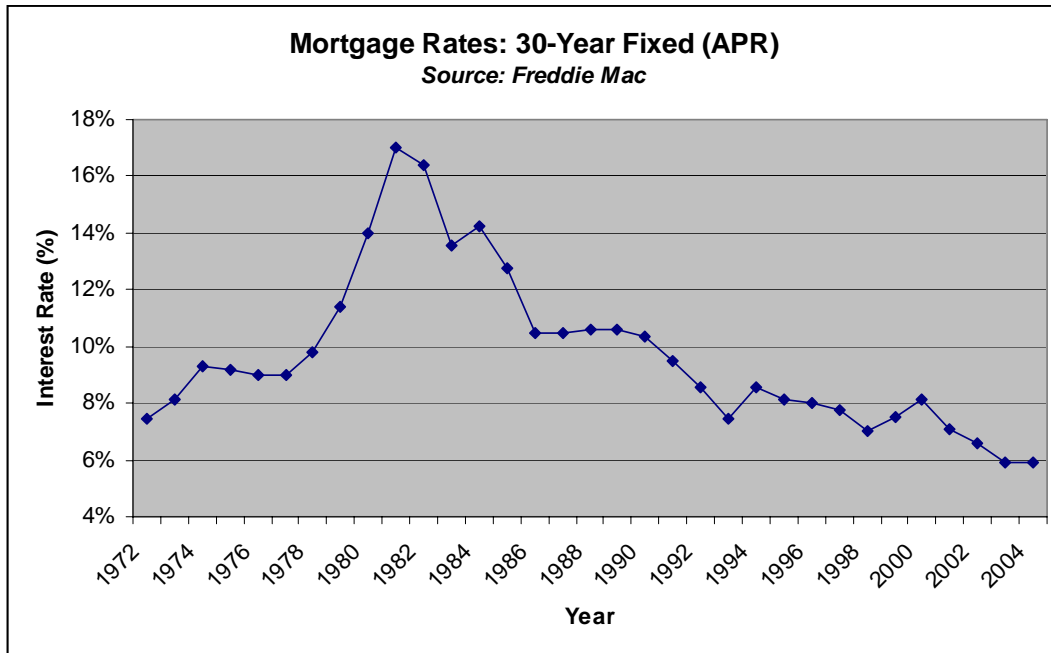


Figure 17: Mortgage Rates

Another part of the reason for the robust residential market was the increase in personal income reported in above. Until 2002, increases in personal income were actually running ahead of median sale prices (Figure 18).³⁵ Even though prices have since run ahead, the current low interest rates as compared to prior years helps make current home prices affordable to more people than in 1990. As long as interest rates remain low, there is still room for prices to rise further without hitting the limits of affordability.

³⁵ All numbers adjusted as ratio of 1990 level. Personal income data from U.S. Department of Commerce, Bureau of Economic Analysis. *Op. cit.* Personal income for 2004 projected by applying the statewide rate of increase in personal income to the 2003 metropolitan personal income figure. Repeat sales home price data from Federal Home Loan Mortgage Corporation, *op. cit.* Interest rates for 30-year fixed-rate mortgages from Federal Home Loan Mortgage Corporation. “Primary Mortgage Market Survey: Conventional, Conforming Fixed-Rate Mortgage Series since 1971.” http://www.freddiemac.com/pmms/docs/30yr_pmmsmth.xls. July 16, 2005.

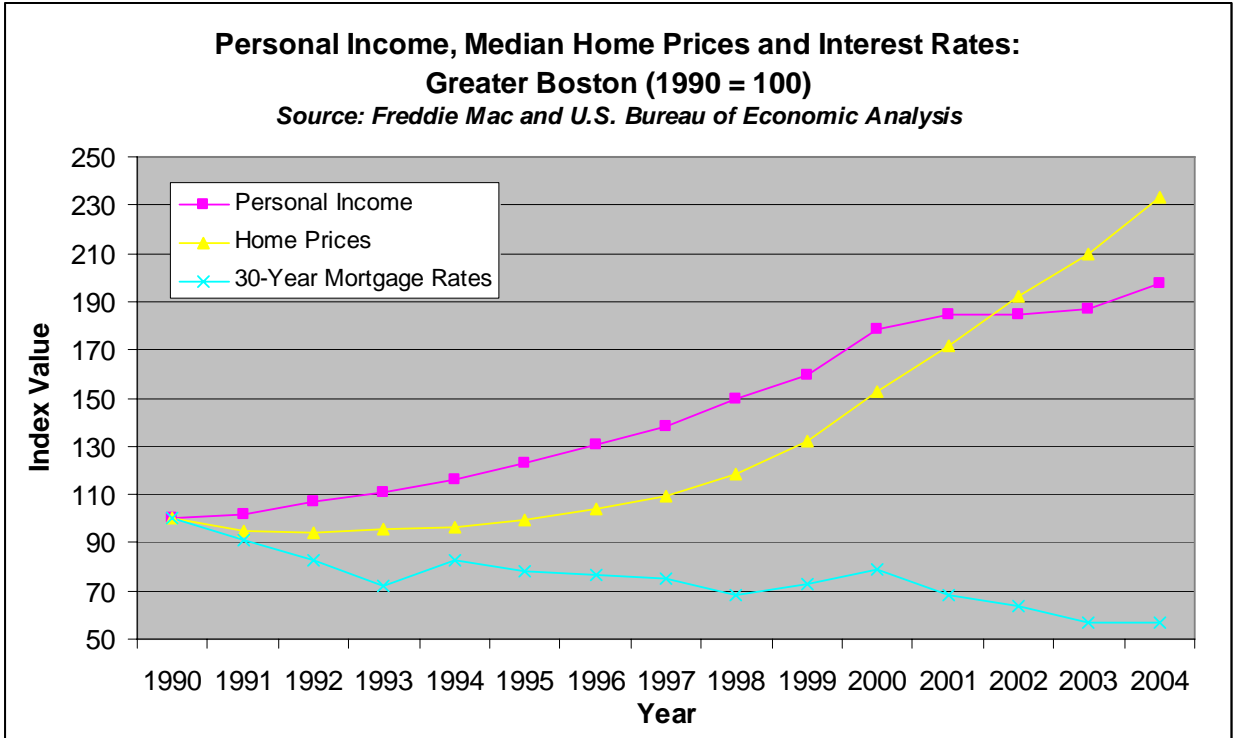


Figure 18: Personal Income, Home Prices and Interest Rates

Another reason why prices have increased so much is the difficulty of constructing new housing in many localities. First, in this urbanized area most of the more desirable sites for development have been built upon. Second, there are strong local regulatory constraints on development through local conservation commissions, planning boards and zoning boards. Chapter 40A of the Massachusetts General Laws gives enormous power to cities and towns to regulate development through the zoning process. There are no significant regional or statewide planning or zoning authorities to limit local control,³⁶ other than a much-maligned statewide anti-snob zoning law (Chapter 40B). This law allows developers of affordable

³⁶ There is an appeal process but its scope is limited.

housing to override local zoning in communities in which less than 10% of the housing is deemed affordable. It has been credited with much of the housing that has gotten built.

Residents of many cities and towns have been fighting the construction of housing for any of several reasons:

- it will increase the cost of governmental services (especially schools) in excess of any property taxes that it will bring in;
- to the extent it includes subsidized housing, it will lower the value of nearby homes;
- it will increase traffic and congestion; and
- it will eliminate open space.

Regardless of the validity of these arguments, the pressure generated has been effective at limiting new construction. The governor and other public officials, as well as local housing advocates, have been trying to promote the construction of more housing, particularly housing located near mass transit. They argue that the run-up in housing prices caused by the imbalance between supply and demand is hurting the commonwealth's competitive position in attracting and retaining business. As a result of these efforts, as well as a more profitable market for development, building permits issued for housing units in metropolitan Boston have increased in 27% in 2003 and an additional 10% in 2004³⁷

³⁷ Since the boundaries of the Boston metropolitan area were changed after 2002, data prior to that date were estimated by multiplying total state permits for each size of building by the metropolitan area's average share of statewide permits in 2003-2004. "Table 2au: New Privately Owned Housing Units Authorized – Unadjusted Units for Regions, Divisions and States." and "Table 3au: New Privately Owned Housing Units Authorized – Unadjusted Units by Metropolitan Area." Census 2000. U.S. Department of Commerce, Census Bureau.
<<http://www.census.gov/const/www/C40/table2.html#annual>> July 16, 2005.

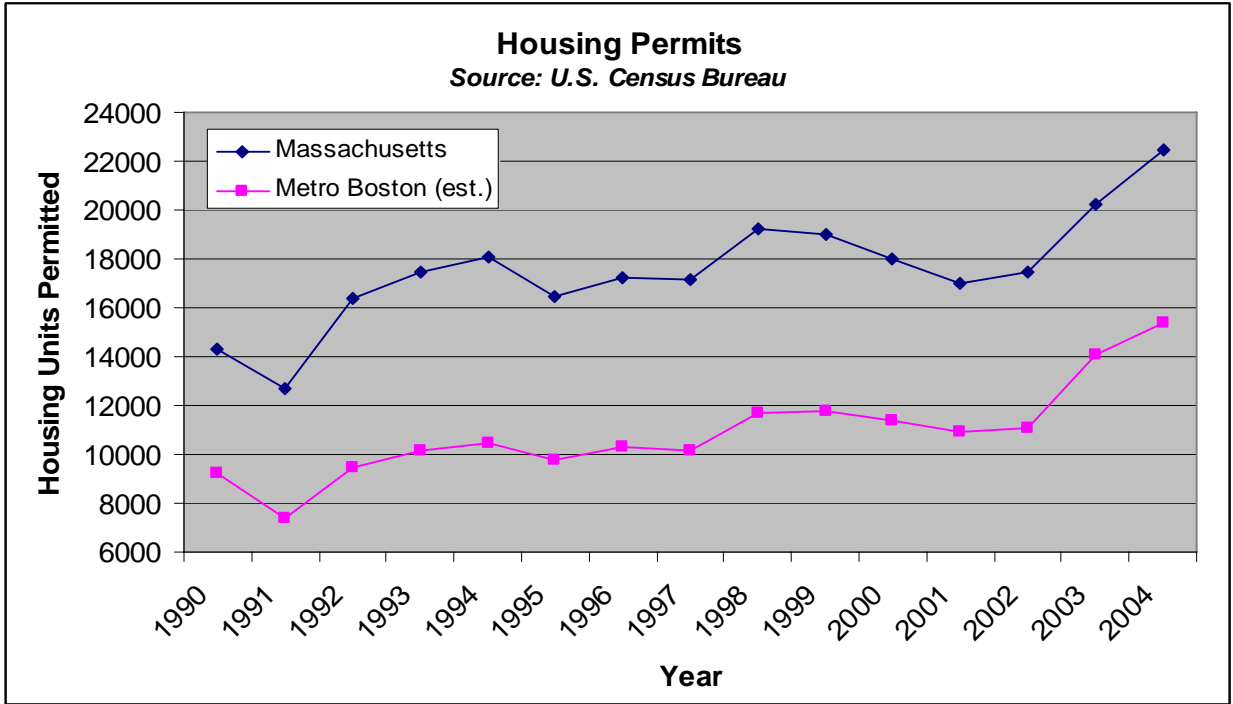


Figure 19: Housing Permits

Even if housing construction continues at this level, it will not likely be enough. The recent increase in construction occurred at a time when the formation of new households was projected to be flat. Yet vacancy rates did not increase much during this time, and not much housing was demolished (in other words, construction equals absorption). One must therefore conclude that the new housing was absorbed by people who had been under-housed or doubled up, people who had been waiting to move into a new unit (i.e., pent-up demand). The number of new households in the metropolitan area is projected to average 19,516 annually over the next five years, yet only 15,423 units of new housing were permitted in the peak year of 2004 – not all of which were built.³⁸ On the assumption that construction is unlikely to

³⁸ Please note that the building permit information is based on the Boston-Cambridge-Quincy, MA-NH NECTA, which is a larger area than the MAPC membership area which is used for household projections. Moreover, the shortfall computation does not include the number of units demolished each year. Thus, if anything, the projected housing shortfall is understated.

grow much faster, there is likely to be a shortfall of over 4,000 units per year.

IS THERE A HOUSING BUBBLE?

Looking at the seemingly relentless upward climb of housing prices, one has to ask, Has Boston's housing market become immune to the effects of the larger economy? How could this have happened? Will nothing impede the relentless run-up in real estate prices? Or is Boston in the midst of a housing bubble? The latter is what many in the media profess to be concerned about, and it is certainly in the backs of the minds of many home buyers at this time. While this paper is not an economic treatise, it is appropriate to address the question here since all developers must make some assumptions about the future direction of the local economy and real estate market. And there is an obvious concern: real estate prices simply cannot indefinitely increase faster than personal incomes. People will eventually run out of money. Following is a summary of the significant points on the issue:

Reasons for high price appreciation to date:

- The booming economy and stock market of the late 1990s gave people higher incomes.
- Declining interest rates made it easier to purchase more expensive homes and made it relatively more attractive to own than to rent.
- Local regulatory constraints on new construction made it more difficult – and more expensive – to increase the supply.

Concerns:

- Interest rates are rising, increasing mortgage payments for current and future buyers (as well as those owners who have adjustable mortgages).
- Incomes have not been keeping up with the latest increase in prices.
- Rents have come down.

- The high price of housing is making Greater Boston less competitive in attracting and retaining workers for area businesses, which may become a drag on the economy.

Why a sudden price decline is unlikely:

- The metropolitan economy is strong and diversified and the job-creating economic expansion is expected to continue.
- Unemployment is low and declining; total personal income is rising.
- Strong household growth is projected.
- The Baby Boomers are entering their key earning years and the Echo Boomers are ready to form new households.
- Immigration over the past 20 years will result in more home purchasers.
- Unlike the case in previous downturns, the region does not now have an oversupply of housing; in fact, quite the opposite.
- Regulatory constraints on construction of additional housing supply are not likely to ease much.
- Interest rate increases have been moderate and are predicted to remain between 5.5% and 7.5% due to low inflation expectations.
- There are many sources of financing and as a result there is plenty of liquidity in the system (unlike the late 80's and early 90's).

This analysis has shown that the Boston area is not experiencing a housing bubble. Home prices have risen in response to market fundamentals, notably the increase in personal income, the decline in mortgage rates and the constrained supply of new homes.

Expectations of rapid price appreciation do not appear to be a major factor behind the strong housing market. Our observations also suggest that home prices are not likely to plunge in response to deteriorating fundamentals to the extent envisioned by some analysts. Furthermore, our state-level

analysis of home prices finds that while prices have risen much faster recently for some states than for the nation, the supply of housing in those states appears to be inelastic, making prices there more volatile. We therefore conclude that much of the volatility at the state level is the result of changing fundamentals rather than regional bubbles.³⁹

We have projected that population and personal income will increase in the next five years (and beyond). New households will demand additional units of housing. Freddie Mac is predicting that the average rate for a fixed rate mortgage will be 6.3% at the end of 2006, up just a bit from 5.7% at present.⁴⁰ Interest rates are likely to continue to increase at a moderate pace thereafter. While this will eliminate some buyers at the margins, it will not dampen the overall affordability of for sale housing. Limited availability of desirable parcels of land plus governmental constraints on construction will keep new supply restricted in the near future so that demand is not met. Higher interest costs will also increase the cost of construction. The consequence is continued upward pressure on prices. It therefore appears to us that the most likely course is a slowdown in the rate of price appreciation in response to a gradual increase in interest rates. We will assume a rate of price increase of 5% per year from now until the sell-out of the project in approximately two years.

³⁹ Jonathan McCarthy and Richard W. Peach. "Are Home Prices the Next 'Bubble?'" *FRBNY Economic Policy Review*. X, 3. December, 2004. Federal Reserve Bank of New York. <<http://www.newyorkfed.org/research/epr/forthcoming/mccarthy.pdf>>. July 16, 2005.

⁴⁰ Federal Home Loan Mortgage Corporation, Office of the Chief Economist. "Economic and Housing Market Outlook." July, 2005. <<http://www.freddiemac.com/news/finance/docs/outlook.xls>>.

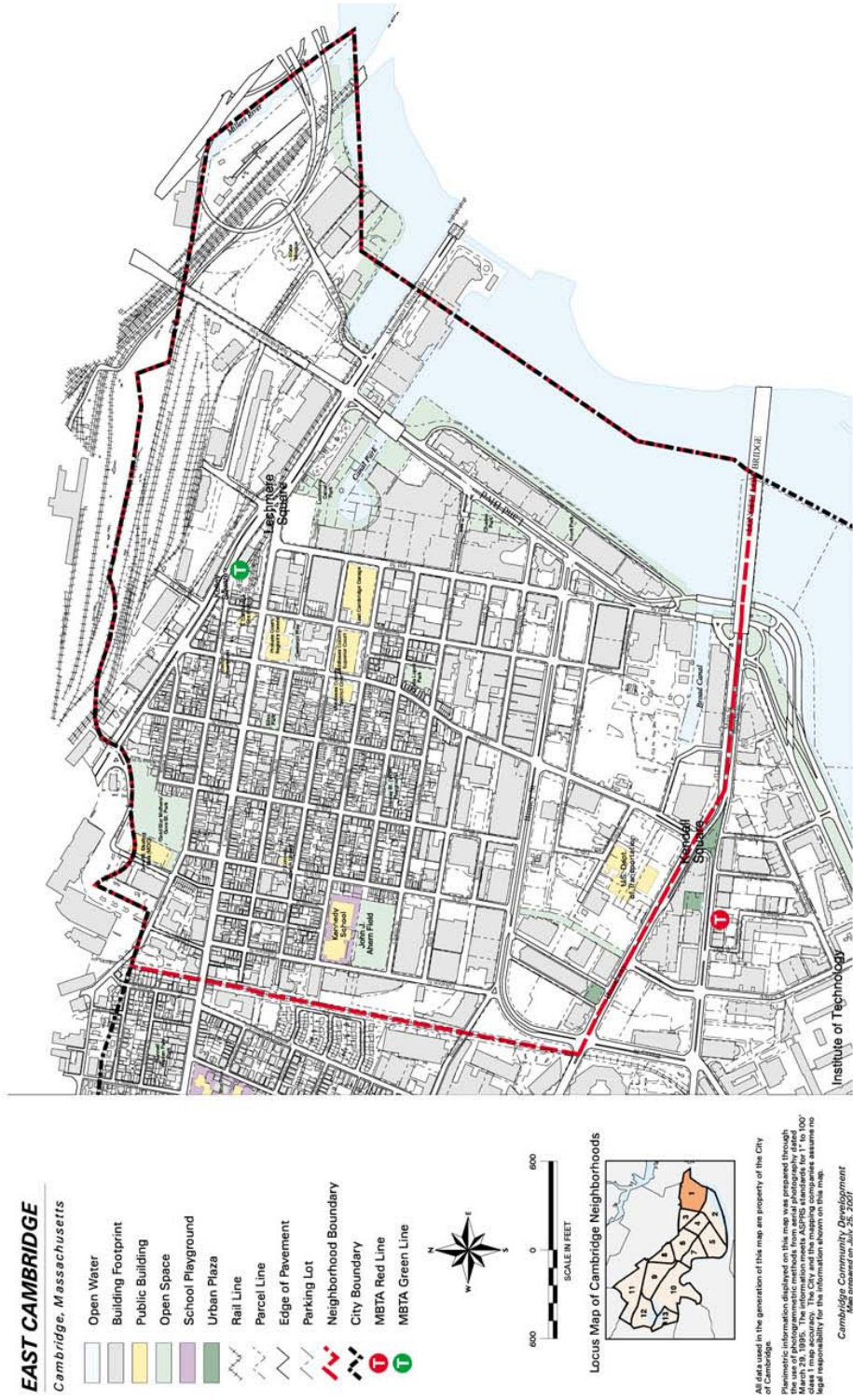
SECTION 4: EAST CAMBRIDGE MARKET CONTEXT

The Cambridge Community Development Department regards the city of Cambridge Massachusetts as being composed of 13 unique neighborhoods. The area referred to as East Cambridge, is located on the southeast tip of the city of Cambridge, flanked by the Charles River to the East and Charlestown and Somerville to the North.

4.1 Historic Context of Eastern Cambridge Development

The development of Eastern Cambridge began in 1795 when local businessman Andrew Craigie acquired the farmland, fields and marshland that then made up the area. Craigie and partner Harrison Grey Otis formed the Lechmere Point Corporation in 1809 and built the Canal Bridge across the Charles River (adjacent to what is now the Museum of Science). The construction of the bridge lead to the development of the first two streets in the area: Cambridge Street and Monsignor O'Brien Highway (then Bridge Street). By 1811 the corporation laid out a street grid that aligned with Cambridge Street that covered the peninsula, and extended into the surrounding marshlands of the Charles River. Then in 1813 the Lechmere Point Corporation sold its first parcel for industrial purposes to the Boston Porcelain & Glass Company, and so began an era of intense industrialization in Eastern Cambridge.⁴¹

⁴¹ Cambridge Community Development Department, Eastern Cambridge Planning Study Committee, The Eastern Cambridge Planning Study (City of Cambridge, 2001), Section 2.1.



Map 3: East Cambridge Neighborhood



Map 4: East Cambridge Aerial View

After the civil war, demand for industrial sites close to water increased, and much of the marshlands along the Charles River were filled in to meet the demand. At this time most of the land south of Charles Street and Monsignor O'Brien Highway, including Kendall Square, North Point and Lechmere Square was either marshland or water.⁴² One of the critical historic moments that were to shape the development of Cambridge was decision to relocate the Massachusetts Institute of Technology from Back Bay to its current site along the Charles River in 1916.

Eastern Cambridge experienced a major decline in manufacturing between 1950 and 1980. The increasing popularity of truck transportation refocused much of area's industrial energies around the new interstate highway system. By the end of the Second World War in 1944, many of East Cambridge's industrial buildings sat vacant and scheduled for demolition. The decline in land values resulted in the area being overtaken by light industrial uses including parking lots, service centers and auto repair shops. In the late 1960's and the advent of urban renewal, approximately 14 acres in the heart of Kendall Square were designated an "Urban Renewal Area". Over the next 20 years, Kendall Square was gradually rebuilt as a mix of commercial uses, including a major research center for the U.S. Department of Transportation.

In the late 1980's, fueled by its proximity to MIT, the Kendall Square Area experienced a dramatic increase in development of research-based facilities. Following a brief interruption by the recession of the early 1990's, office and research development was stimulated by a biotechnology boom in the mid and late 1990's. The surge of development in Eastern Cambridge, particularly that spurred by the significant influx of research and development firms, and their large employee base, has resulted in a series of

⁴² *Ibid.* Section 2.2.

planning studies and initiatives over the last few decades, the most recent being the East Cambridge Planning Study published by the City of Cambridge in October 2001.

4.2 Eastern Cambridge Planning Initiatives

KENDALL SQUARE URBAN RENEWAL AREA

The Cambridge Redevelopment Authority (CRA) established an Urban Renewal Plan for the Kendall Square area in the 1960's; included in this plan were the expectations that NASA (the National Aeronautics and Space Administration) would establish a center in Kendall Square. In 1969 NASA closed operations in Cambridge and the complex was occupied by the Department of Transportation in 1970. In the 1970s and early 1980s, much of the Kendall Square area consisted of vacant factories and warehouses. Planning and investment in this area focused on the availability of uniquely large parcels of land in close proximity to MIT and an MBTA Red Line station.

The development of the Riverfront area and Kendall Square progressed, a committee led by the City met for over a year in 1990 – 1991 to produce a series of zoning recommendations. Ultimately these zoning recommendations were not adopted by city council, but did serve to influence the development of a series of guidelines and planning documents published between 1993 and 2000. In 1997, the Citywide Growth Management Advisory Committee (CGMAC) was formed in response to growing community concerns over the quality and density of new development, traffic growth, and housing affordability. The CGMAC committee included broad representation from Cambridge neighborhoods, businesses, and institutions, as well as City staff. This three-year planning effort culminated in a Citywide Rezoning Petition, submitted by the Planning Board to the City Council in September 2000. The Petition was approved by the City

Council in February 2001 after a five month public review process.⁴³ A critical outcome of the rezoning petition was the result of 17 commercial districts being rezoned to residential, and housing became allowed in all parts of the city.

In the late 1990s, many residents felt that the pace and scale of development in the City needed to be checked. In 1999, several East Cambridge residents, seeking a moratorium on development in East Cambridge, filed the Larkin Petition requesting that the city council impose an 18 month moratorium on all new commercial development over 20,000 square feet and new residential development over 20 units. The primary concern expressed in the document was the encroachment of commercial development into residential neighborhoods. The City Council approved the moratorium from January 2000 to July 2001, and the City Manager established the Eastern Cambridge Planning Study Committee to consider the appropriate zoning measures and policies for the moratorium area.

EASTERN CAMBRIDGE PLANNING STUDY

The Eastern Cambridge Planning Committee identified six primary areas in their planning study: East Cambridge; Wellington/Harrington; Area IV; Transition Areas (1 and 2); Kendall Square; North Point. The East Cambridge neighborhood is one of the oldest residential areas in this part of the city, and is bounded by the Cambridge/Somerville line to the north, the Charles River to the east, Broadway to the south, and the rail right-of-way to the west. The Wellington-Harrington neighborhood is bounded by the Cambridge/Somerville line to the north, the railroad tracks to the east, and Hampshire Street to the south and west. The Area IV neighborhood is bounded by Hampshire Street to the north, the railroad tracks to the east, Massachusetts Avenue to the south, and Prospect Street to the west. The Transition Areas

⁴³ *Ibid.* Section 2.5.

include a broad swath of commercial and industrial development separating the residential neighborhoods from Kendall Square and the Lechmere Canal. Kendall Square is the office/R&D core of Eastern Cambridge, centered on the transit station, Marriott Hotel, and the shops and restaurants along Main Street. North Point is a triangular area approximately sixty acres in size, bounded by the Somerville and Boston City lines to the north, the Charles River Basin to the east, and Monsignor O’Brien Highway to the south and west.

The proposed site for the Galileo Lofts (parcel 7) is located on the periphery of an area defined by the CRA as a “transition area”, and is currently zoned MXD – Mixed Use Development. It is interesting to note that this particular parcel is neither clearly articulated nor considered within the context of the planning study, it seems really to be a leftover or afterthought parcel that is lost in the planning and projections for the rest of the area.

ECAPS RECOMMENDATIONS / PROPOSALS

The ECaPS (Eastern Cambridge Planning Study) proposes strong incentives for residential development, and the reduction of commercial FARs. The ECaPS proposal suggests over seven million square feet of development in the study area over the next twenty years, with over three-quarters being designed housing, and the remaining quarter as office and R&D. This recommendation gives a clear indication that the City of Cambridge favors the development of residential amenities in the East Cambridge Area.

	Existing Zoning				PS Proposal					
	Commercial	Residential	Total		Commercial	Residential	Total			
North Point	851,000	19%	3,574,000	81%	4,425,000	992,000	27%	2,695,000	73%	3,687,000
Volpe	1,127,000	38%	1,804,000	62%	2,931,000	675,000	26%	1,873,000	74%	2,548,000
Transition Areas	1,283,000	85%	226,000	15%	1,509,000	113,000	11%	950,000	89%	1,063,000
Total	3,261,000	37%	5,604,000	63%	8,865,000	1,780,000	24%	5,518,000	76%	7,298,000

Table 5: Comparison of development potential under existing zoning and ECaPS proposal.

The ECaPS zoning proposal highlights three primary areas as being those most suitably posed for

development: North Point, the site of the Volpe Transportation Center and the Transition Areas. Table 3.1 illustrates the projected development over the next two decades utilizing existing zoning and the ECaPS zoning proposals. The most obvious observation is the shift towards residential zoning, particularly in the Transition Areas (including the project site). It seems reasonable to comment that the Planning Board seems to strongly encourage the development of residential neighborhoods in this area.

Section 3.2 of the ECaPS outlines the proposal for the Eastern Cambridge area, including the proposed project site. In accordance with Figure 2, the ECaPS suggests that Parcel 7 be developed as green space adjacent to a proposed bike path, with new and existing residential neighborhoods to the north, and flanked by existing R&D uses on the east and west. Other recommendations include high density mixed use zoning for North Point, as well as mixed uses with a strong emphasis on residential development for the Volpe site. There is a recommendation of a 7.5 acre public park in conjunction with the development of the Volpe site.

4.3 Kendall Square Context: Biotech, Office and MIT

Kendall Square is the epicenter of Cambridge's high technology and biotechnology industries. This world-renowned area of commercial and industrial activity is home to firms such as Genzyme, Biogen, Draper Laboratory and Akamai, as well as MIT.⁴⁴

BIOTECHNOLOGY

In their 2004 Biotechnology Issue, NAI Hunneman Commercial Real Estate Services reports that "the region's biotech sector is creeping back up to normal, especially compared to 2003."⁴⁵ The issue reports

⁴⁴ James Daniel. *Wikipedia Online Encyclopedia*.

that due in part to the increasing rental rates in the Cambridge area, the biotech industry is demonstrating expansion, and Lexington and Watertown are both becoming hot biotech areas. The expansion has had the effect of flattening the Cambridge market, and that as with the office market, biotech sublets are renting at a discount.

CURRENT IMPACTS ON THE CAMBRIDGE R&D MARKET

- Lyme Properties has sold a 3.7 million square foot portfolio, most of which is located in East Cambridge and Boston.
- The Whitehead Institute for Biomedical Research, a nonprofit research and educational institution with close ties to MIT, recently signed a 23, 987 sq. ft. lease at 5 Cambridge Center in the heart of Kendall Square.
- The Broad Institute, an alliance of MIT, Harvard and the Whitehead Institute, has chosen the 7 Cambridge Center site for its proposed 7-story, 231,000 square foot headquarters, which is now before the City for zoning approval (developed by Boston Properties).
- Schlumberger, a large international oilfield services company, is setting up an initial 15,000 square foot facility at Lyme Properties' 320 Bent Street, and is reportedly planning a 200,000 square foot research center in Cambridge.
- Demand for biotech in the state remains "spotty,"⁴⁶ although it does appear to be moving towards recovery; it is anticipated that as the economy strengthens, smaller startups will

⁴⁵ NAI Hunneman Commercial Real Estate Services Worldwide. "The Biotechnology Issue." Fall, 2004. p. 1

⁴⁶ *Ibid.*, p. 4.

increase. The following Table 3.2 illustrates the R&D / Office and University affiliated projects currently in the pipeline for the East Cambridge area.

Project	Project Use	Developer	Status	FAR	Fir Area
320 Bent Street; 301 Binney Street	Office/R&D	Rogers St. LLC (Lyme Properties)	In Const.	3.0	505,904
320 Charles Street	Office/R&D	Whitehead Institute	In Const.	0.7	9,600
265 First Street; Kendall Square Electric Plant	Utilities	Mirant New England	In Const.	n/a	11,800
585 Kendall Street / Cambridge Research Park	Theatre	Lyme Properties	Permitted	3.0	75,000
650 Kendall Street / Cambridge Research Park	Office/R&D	Lyme Properties	In Const.	3.0	217,398
675 Kendall Street / Cambridge Research Park	Office/R&D	Lyme Properties	In Const.	3.0	247,000
Total Currently Under Construction					991,702
Total Including Permits Granted					1,066,702

Table 6: Pipeline of R&D (and related) projects in East Cambridge as of Sept. 2004

Current rent rates for existing Life Science space is quoted as being in the range of \$30 - \$40 per square foot based on a triple net lease, offered either “as is” or with retrofit allowances up to \$25 per square foot. New first class lab-ready shell space is asking \$40-\$50/psf NNN with allowances of \$100-\$120/psf.

CAMBRIDGE OFFICE MARKET

Market reports of the first quarter of 2005 indicate that the office market in Cambridge is still weak. Class A vacancies slightly increased to 21.4 percent from 21.1 percent in Q4 2004.⁴⁷ In Q4 2004 the East Cambridge / Kendall Square availability hovered around 30%. In contrast the Class B market experienced a drop in vacancy from 10.4 percent in Q4 2004, to 9.3 percent in Q1 2005. Effective rents in the area are in the range of \$23-\$33 per square foot gross for class a space, and \$17 - \$22 per square foot gross for class B space, with asking rents being on average \$1 - \$3 per square foot higher.

⁴⁷ NAI Hunneman Commercial Real Estate Services, Worldwide, Metro Boston Real Estate Market Update, Spring 2005 (Q1, 2005), p.2.

Developers have been awaiting a turn around in the office market since 2000, and it appears that the market is now beginning to stabilize; however, vacancies are still high, and so far the recovery has not been dramatic.

	Total (1,000 SF)	Vac. (%)	Abs. (1,000SF)	Rent Class A	Rent Class B
Cambridge Office	10,634	21.2%	67	\$29.02	\$18.75
Cambridge Lab	6,236	20.1%	12	\$27.95	\$23.63
Total	16,870	20.65%	79	\$28.49	\$21.19

Table 7: Summary of Q1 2005 Cambridge Office & Lab Market⁴⁸

MIT

According to the Cambridge Chamber of Commerce, MIT is ranked second (after Harvard University) as the largest employer in Cambridge Massachusetts with 7,114 employees. The top ten employers are rounded out by a list of biotechnology and research laboratories that constitute a significant percentage of Cambridge's 120,000 employment force. Much of the MIT research laboratories and institutes are located in Neighborhood 2 – MIT, just to the west of East Cambridge, and adjacent to Kendall Square. The high volume of employees in related to MIT will have an impact on the population of the area.

The Cambridge Innovation Center has recently expanded 29,549 SF of office space at One Broadway in Kendall Square, which is owned by MIT. One Broadway has also benefited from the relocation of 30,000 SF of Patni Computer Systems.

⁴⁸ Grubb & Ellis Company, First Quarter Report (Q1, 2005), p.1.

4.4 The East Cambridge Housing Market

RENTAL MARKET

For the last few years there has been a concern for the rental market in Cambridge; soft since about 2002, many analysts feel that the market is poised for a recovery. David Begelfer, chief executive officer of the Massachusetts chapter of the National Association of Industrial and Office Properties, said until the latest downturn, Cambridge had one of the best rental markets in the Northeast. “The Cambridge market will probably be the first to recover and recover fairly strong.” High housing prices will have an impact on the rental market, in the short term, said Gleb Nechayev, senior economist at Torto Wheaton Research. Nechayev said Boston is due for a correction in home prices, which includes condos. “In Boston, in general, it certainly looks like the pendulum is swinging in favor of rental,” he said. The apartment market has been soft since 2002 and employment in Cambridge has been on the decline. If home prices continue to escalate, renting will be more attractive and condominium sales could be at risk.⁴⁹

CONDO MARKET

The most significant change in the multifamily investment market over the past year has been the onslaught of condominium conversions. Of the 22 properties over \$10 million that traded in Greater Boston in 2004, eight were traded to condominium converters totaling \$365 million and 1,371 units. Capitalization rates on these transactions are routinely in the low 5s with some trading as low as 3.1%. With interest rates remaining relatively stable post election, this trend is expected to continue into 2005, particularly in the first-time, “affordable” housing arena (i.e. condominiums).⁵⁰

⁴⁹ In “Taking a Risk on Rental” Boston Business Journal, April 22, 2005.

⁵⁰ In CBRE Northeast Housing Market Review, Year End 2004.

CB Richard Ellis Northeast Multi-housing group made the following comments regarding the onslaught of potential condominium development in the Greater Boston Area:

With a total rental housing stock base of approximately 875,000 units for the greater Boston market (includes four families to large garden complexes) and the condo conversion phenomena, we do not believe that the potential supply will materially impact the market. The potential of 3,924 units in the greater Boston market pales in comparison to the 40,000 units that are routinely delivered in the Atlanta market each year. What has become evident as we have tracked developments throughout Boston in the last five years is that the peak deliveries keep getting pushed out farther as developers have struggled to complete the permitting and as partnerships have not been able to capitalize the developments due to busted construction budgets or poor site fundamentals.

We expect the multi-family market to continue to improve in 2005. We expect gains in effective rents as concessions burn off and the overall economy improves. We do not see the potential new supply as a significant factor, as many developments will not break ground and the potential new supply is a small fraction of the overall inventory. Additionally, condo conversions will continue to remove inventory from the market. While there may be some re-pricing in the smaller private capital transactions as interest rates rise, the pent-up capital in the institutional arena is likely to continue to drive the pricing on larger multi-family assets. Additionally, we expect to see more condo conversions as investors look to satisfy the demand of first-time home buyers and the lack of affordable housing.⁵¹

⁵¹ *Ibid.* p. 3.

SECTION 5: DEMAND / DEMOGRAPHIC ANALYSIS

Much of the analysis included in Section 5 draws upon the regional market context evaluated in depth in Section 3. The following section attempts to “zoom in” on the East Cambridge neighborhood and summarize trends in the micro-context that are pertinent for the discussion of multi-housing development in the area.

5.1 City of Cambridge Housing Stock

The City of Cambridge is currently dominated by multi-family residential neighborhoods. Condominium properties make up an aggregate of 21% of all dwelling units, and when taken in conjunction with multi-family residential properties with nine or more units, the total percentage of multi-family housing is 52% of all Cambridge City Units. East Cambridge was traditionally a community of single-family and duplex residences. In the last few years the community has demonstrated a dramatic shift towards multi-unit residences. In the last few years the community has demonstrated a dramatic shift towards multi-unit residential development, particularly in the Kendall Square area. If the popularity of East Cambridge as an “affordable” option for urban workers continues (as expected), it is predicted the proportion of housing stock will gradually shift towards for multi-unit development.

Type of Housing	# of Bldgs	# of Units	% of Units
Single Family	3,718	3,718	8.6%
Two Units	3,115	6,230	14.4%
Three Units	1,623	4,869	11.3%
Four to Eight Units	726	3,808	8.8%
Nine or more units	276	13,223	30.6%
All Condominium	1,296	9,145	21.2%
Mixed Use (Res & Comm.)	339	1,383	3.2%
Rooming Houses	40	784	1.8%
TOTAL	11,133	43,160	100.0%

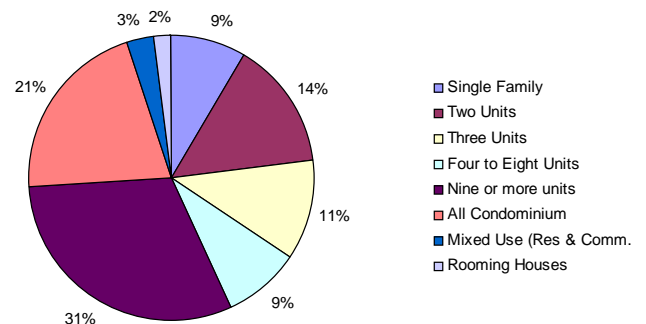


Table 8: City of Cambridge 2002 Housing Stock⁵²

⁵² From the “City of Cambridge Massachusetts, Housing Market Information”, published by the Cambridge Community Development Department, June 2003.

INCOME REQUIRED TO BUY MEDIAN PRICED HOME

The cost of housing in the City of Cambridge has demonstrated a steady increase over the last 15 years, and for about the last decade the income required to purchase housing (of all types) has been almost consistently higher than the HUD estimated median income for a family of four. As the gap between average incomes and the price of housing continues to widen, “affordable” options, such as condominiums will continue to be popular alternatives.

The housing data available from the City of Cambridge includes statistics up to the year end of 2002. However, as discussed in Section 3 of this document, and supported by market reports by CB Richard Ellis’s Housing Division, the trends represented in Table 7 and Figure 20 continued through 2004 (see

Year	<u>Single Family</u>		<u>Duplex</u>		<u>Condominium</u>		HUD Est
	Median Price	Income Required	Median Price	Income Required	Median Price	Income Required	Median Income for Family of 4
1990	\$240,000	\$61,740	\$250,000	\$38,220	\$168,300	\$48,660	\$46,300
1991	\$253,500	\$65,610	\$230,000	\$33,740	\$160,000	\$46,940	\$50,200
1992	\$261,000	\$69,290	\$240,000	\$36,400	\$160,000	\$48,050	\$51,100
1993	\$277,000	\$74,430	\$242,000	\$37,820	\$160,000	\$48,640	\$51,200
1994	\$305,000	\$82,180	\$235,000	\$36,360	\$155,000	\$48,580	\$51,300
1995	\$275,250	\$74,740	\$263,000	\$36,520	\$159,000	\$49,830	\$53,100
1996	\$321,000	\$85,870	\$279,000	\$39,940	\$169,000	\$51,980	\$56,500
1997	\$347,500	\$92,420	\$301,000	\$45,360	\$217,000	\$64,250	\$59,600
1998	\$359,500	\$96,020	\$391,500	\$57,360	\$209,000	\$63,470	\$60,000
1999	\$425,000	\$109,890	\$412,000	\$59,600	\$252,000	\$72,670	\$62,700
2000	\$525,000	\$132,690	\$457,500	\$68,950	\$302,500	\$84,010	\$65,500
2001	\$540,000	\$135,630	\$575,000	\$91,260	\$335,000	\$91,590	\$70,000
2002	\$610,000	\$149,000	\$656,000	\$109,600	\$348,500	\$92,600	\$74,200

Figure 12, page 29), and are expected to continue through 2005.

Table 9: City of Cambridge: Income required to purchase Median Priced Home⁵³

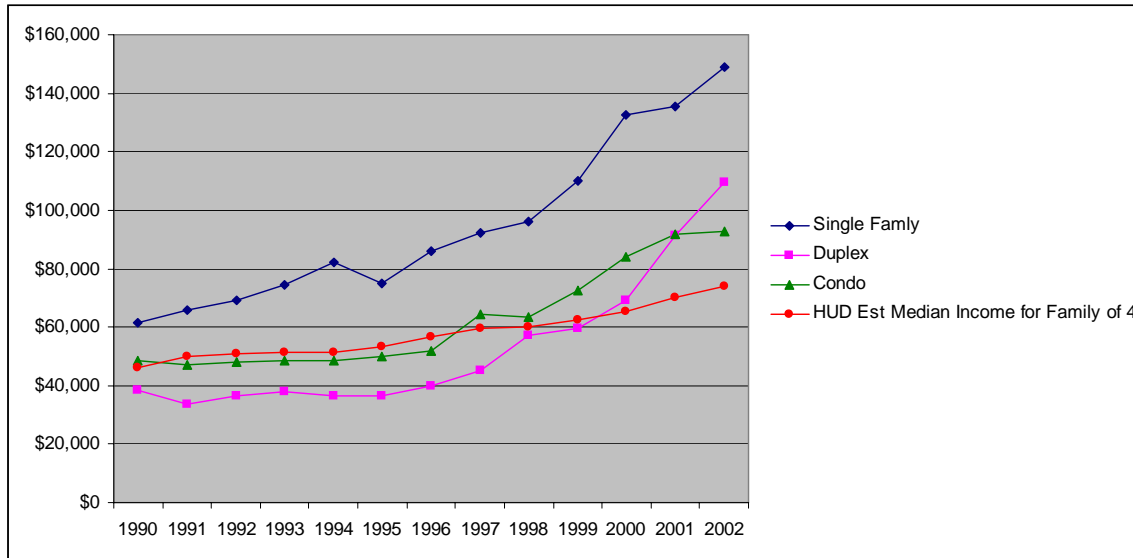


Figure 20: City of Cambridge: Income Required to Purchase Median Priced Home

Note the increasing gap between single family homes and HUD estimated Median Income; as this trend continues the demand for “affordable” residential options will continue to increase (see Figure 20).

TENURE OF CAMBRIDGE HOUSING BY NEIGHBORHOOD

The City of Cambridge has demonstrated a positive shift in the proportion of homeowners versus renters. East Cambridge has demonstrated the same trend, with a net increase in housing units of 608 (more than double) the number in 1980. The split between renters and owners is relatively consistent with that demonstrated in Cambridge in the city as a whole. Interestingly, the percentage of owners to renters is higher in East Cambridge, than in the other three adjacent Neighborhoods, most notably MIT with a total of five owner-occupied units in the year 2000. The phenomenon of home buying that has been

⁵³ From the City of Cambridge Massachusetts: “Neighborhood Demographics Profile”, Cambridge Community Development Department, March 2004.

demonstrated in recent years is typically linked (in part) to current low interest rates. Many forecasters predict that when interest rates begin to rise the rental market will “perk up” again.

CITY OF CAMBRIDGE	Housing Units			Change 1980-2000		% of Neighborhood Units		
	1980	1990	2000	Net	%	1980	1990	2000
Owner Occupied	8,889	11,959	13,760	4,871	54.8%	21.5%	28.5%	30.8%
Renter Occupied	29,947	27,446	28,855	-1,092	-3.6%	72.5%	65.4%	64.5%
Vacant	2,464	2,574	2,110	-354	-14.4%	6.0%	6.1%	4.7%
Total	41,300	41,979	44,725	3,425	8.3%	100%	100%	100%
EAST CAMBRIDGE (Area 1)								
Owner Occupied	530	867	1,138	608	114.7%	21.9%	27.1%	28.0%
Renter Occupied	1,769	1,866	2,550	781	44.1%	73.1%	58.4%	62.8%
Vacant	120	464	374	254	211.7%	5.0%	14.5%	9.2%
Total	2,419	3,197	4,062	1,643	67.9%	100%	100%	100%
MIT (Area 2)								
Owner Occupied	1	0	5	4	400.0%	0.1%	0.0%	0.6%
Renter Occupied	853	838	747	-106	-12.4%	98.4%	97.0%	92.1%
Vacant	13	26	59	46	353.8%	1.5%	3.0%	7.3%
Total	867	864	811	-56	-6.5%	100%	100%	100%
WELLINGTON-HARRINGTON (Area 3)								
Owner Occupied	514	719	735	221	43.0%	17.8%	24.6%	23.5%
Renter Occupied	2,171	2,031	2,286	115	5.3%	75.1%	69.5%	73.2%
Vacant	204	172	104	-100	-49.0%	7.1%	5.9%	3.3%
Total	2,889	2,922	3,125	236	8.2%	100%	100%	100%
Area 4								
Owner Occupied	364	476	618	254	69.8%	12.9%	17.7%	22.7%
Renter Occupied	2,083	1,981	2,012	-71	-3.4%	73.7%	73.5%	74.0%
Vacant	379	237	90	-289	-76.3%	13.4%	8.8%	3.3%
Total	2,826	2,694	2,720	-106	-3.8%	100%	100%	100%

Table 10: Tenure of East Cambridge Housing 1980 – 2000

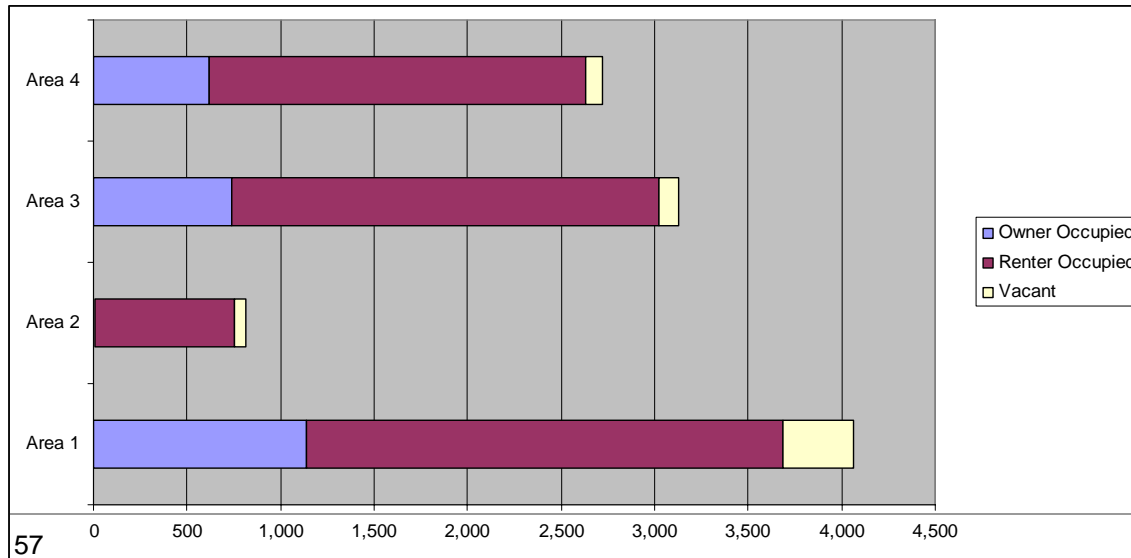


Figure 21: Tenure of East Cambridge Housing in 2000

CAMBRIDGE CITY SALES BY NEIGHBORHOOD

The following Table 11 illustrates the sales pattern for Cambridge citywide statistics as well as by neighborhoods. The data set available includes the five years from 1997 – 2002. The city wide statistics demonstrate roughly a 20% price increase between the years 1997 – 2000, with only a 10% and 4% increase in the years 2001, and 2002 respectively. The lack of price increase in these years is assumedly correlated with the increase in the number of units sold in 2001 (20% increase) and 2002 (7.5% increase) as compared to the relatively stable number of sales in the previous three years (average of -3.6%). It is

	2002		2001		2000		1999		1998		1997	
	Sales	Median Price	Sales	Median Price	Sales	Median Price	Sales	Median Price	Sales	Median Price	Sales	Median Price
Area 1	90	\$391,000	71	\$408,000	71	\$410,000	68	\$272,000	76	\$253,000	76	\$276,000
Area 3	29	\$325,000	10	\$299,450	10	\$232,000	10	\$210,000	7	\$137,000	5	\$123,000
Area 4	29	\$320,000	42	\$308,500	20	\$198,000	16	\$238,000	20	\$168,000	19	\$120,000
Area 5	83	\$354,000	85	\$350,000	44	\$307,500	40	\$278,000	39	\$199,000	43	\$167,500
City Wide	733	\$348,000	682	\$335,000	571	\$302,500	615	\$252,000	614	\$209,000	638	\$177,500

interesting to observe that the median sales price in Area 1 (East Cambridge) has been on average 19.7% higher than the citywide median price.

Table 11: Number of Sales & Median Prices by Neighborhood

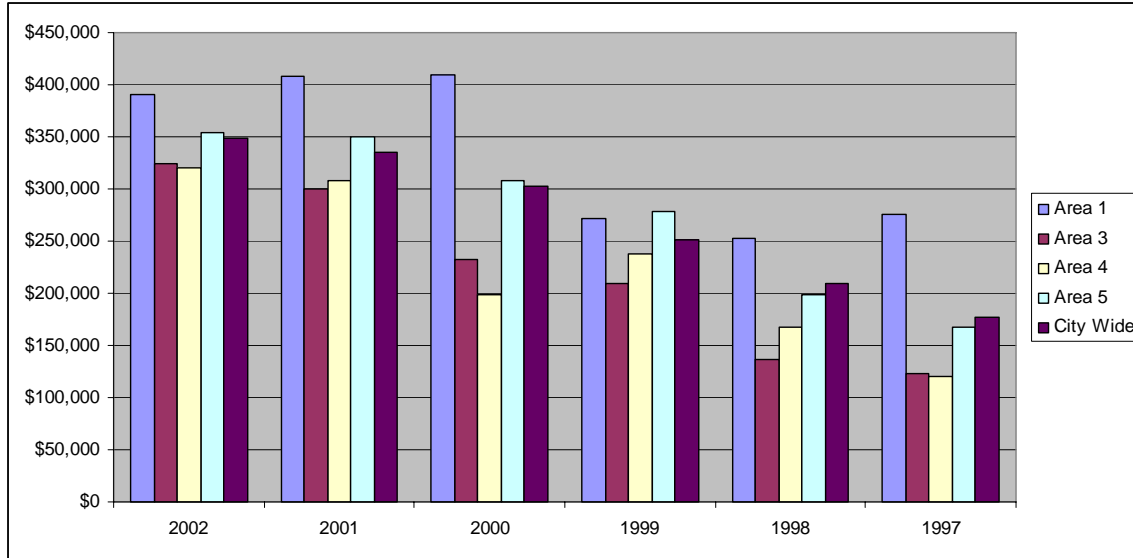


Figure 22: Median Sales Price Trends by Neighborhood

5.2 Demographic Trends in East Cambridge

POPULATION & HOUSING DENSITY

East Cambridge has experienced significant densification between the years of 1980 and 2000. The City of Cambridge experienced an aggregate population increase of about 6% over the two decades; in comparison East Cambridge demonstrated density increases of 35.6% and 67.9% for population and housing respectively. Despite this increase, East Cambridge is still less dense in population or housing units than the city as a whole.

	Land Area(SM)	Population per Square Mile			Net Change	Housing per Square Mile			Net Change
		1980	1990	2000		1980	1990	2000	
CITY OF CAMBRIDGE	6.36	14,988	15,063	15,936	6.33%	6,494	6,600	7,032	8.28%
East Cambridge (Area 1)	0.63	8,479	9,114	11,496	35.58%	3,812	5,039	6,402	67.94%

Table 12: Population and Housing Density

POPULATION BY AGE

The age mix of the East Cambridge has also changed in the last two decades. The most noteworthy observation is the net change in the 25 – 44 age groups representing an increase of 132% from 1980. This group includes individuals in the prime home buying years. As discussed earlier in this analysis, East Cambridge has enjoyed a significant increase in its popularity as an alternative location for young urbanites. The favorable tax rates and proximity to downtown have made it a suitable location for densification.

	Population			Change 1980-2000		% of Neighborhood Population		
	1980	1990	2000	Net	%	1980	1990	2000
0 - 4	3,928	4,759	4,125	197	5.0%	4.1%	5.0%	4.1%
5 - 17	11,049	8,853	9,322	-1,727	-15.6%	11.6%	9.2%	9.2%
18 - 24	22,445	18,997	21,472	-973	-4.3%	23.5%	19.8%	21.2%
25 - 29	14,237	12,852	14,721	484	3.4%	14.9%	13.4%	14.5%
30 - 34	10,098	11,013	10,481	383	3.8%	10.6%	11.5%	10.3%
35 - 44	9,086	15,430	13,942	4,856	53.4%	9.5%	16.1%	13.8%
45 - 64	13,608	13,827	18,010	4,402	32.3%	14.3%	14.4%	17.8%
65 +	10,871	10,071	9,282	-1,589	-14.6%	11.4%	10.5%	9.2%
Total	95,322	95,802	101,355	6,033	6.3%	100%	100%	100%

Table 13: CITY OF CAMBRIDGE: Population by Age

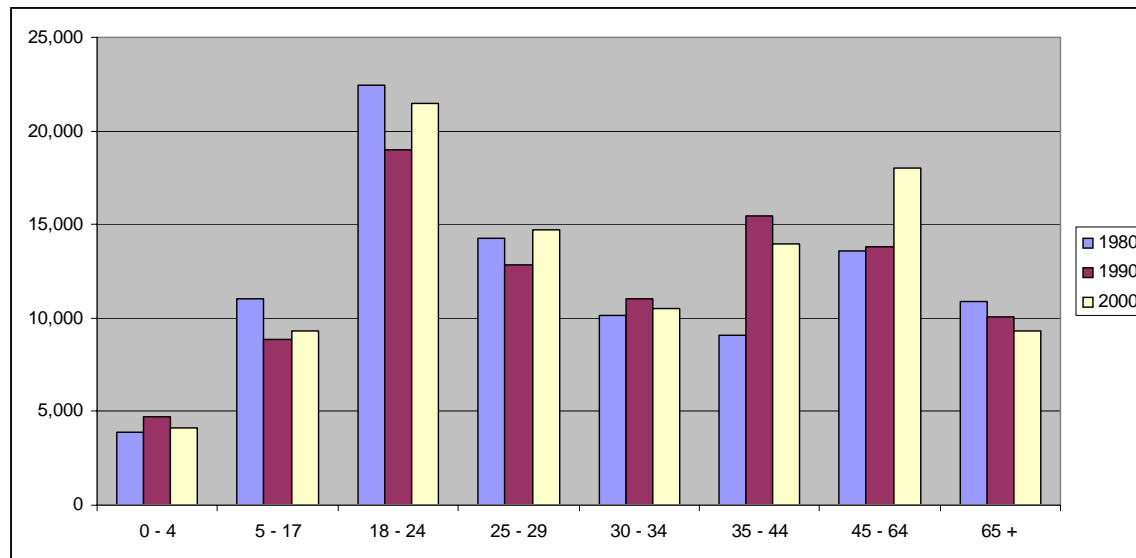


Figure 23: City of Cambridge: Population by Age

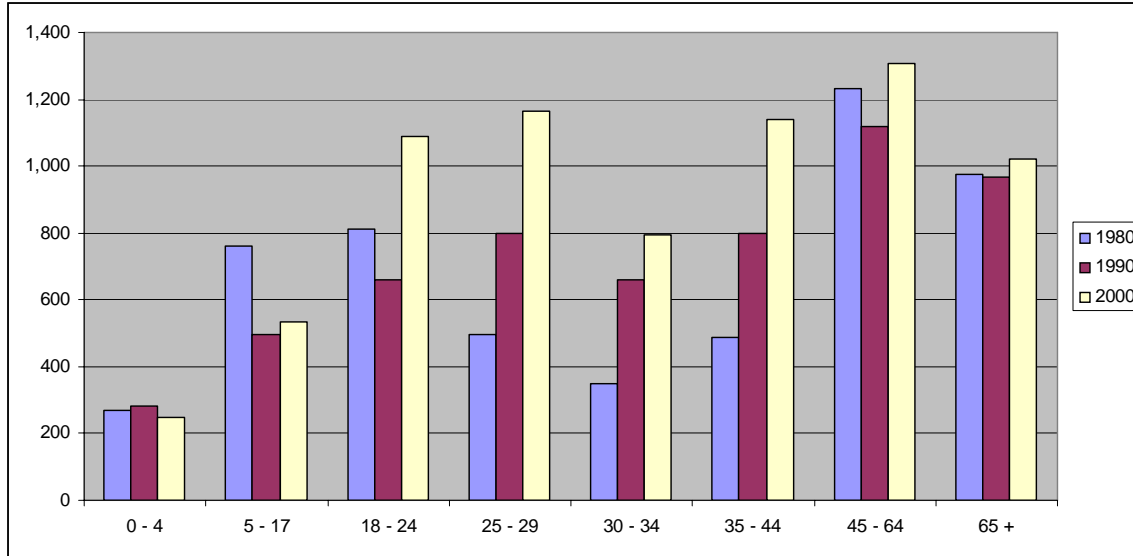


Figure 24: East Cambridge (Area 1): Population by Age

Note the different profiles observable in Figure 23 and Figure 24. East Cambridge has seen a sharp increase in the numbers of 25 – 44 years olds, while the population existing mature age groups (45+) has remained relatively stable. That is, the numbers are not increasing for the mature resident, nor are they

	Population			Change 1980-2000		% of Neighborhood Population		
	1980	1990	2000	Net	%	1980	1990	2000
0 - 4	270	282	248	-22	-8.1%	5.0%	4.9%	3.4%
5 - 17	759	495	532	-227	-29.9%	14.1%	8.6%	7.3%
18 - 24	810	660	1,089	279	34.4%	15.1%	11.4%	14.9%
25 - 29	497	797	1,166	669	134.6%	9.2%	13.8%	16.0%
30 - 34	348	662	793	445	127.9%	6.5%	11.5%	10.9%
35 - 44	488	798	1,139	651	133.4%	9.1%	13.8%	15.6%
45 - 64	1,231	1,117	1,307	76	6.2%	22.9%	19.3%	17.9%
65 +	977	969	1,020	43	4.4%	18.2%	16.8%	14.0%
Total	5,380	5,780	7,294	1,914	35.6%	100%	100%	100%

diminishing. This suggests that this age bracket prefers to stay in the East Cambridge neighborhood.

Table 14: East Cambridge (Area 1): Population by Age

In general there appear to be two primary target demographics in the East Cambridge residential market.

The primary demographic consists of individuals in the 25 – 44 age group, many of whom work in the downtown or Cambridge area. With affordable housing options in the downtown Boston area continuing to dwindle, this trend of “young urbanites” flocking to the area is expected to continue. The secondary

demographic profile is of mature persons age 45+. While the numbers of this demographic are not increasing, they are stable, and still represent the largest proportion of East Cambridge residents in terms of total numbers.

SECTION 6: SUPPLY ANALYSIS

Supply analysis was conducted using resources from Multiple Listing Service – Property Information Network (MLS-PIN and The Warren Group listing services), and takes into consideration the following factors:

- Inventory & quality of existing space
- Construction of New Space
- Features functions and benefits of existing and proposed space
- Overall vacancies and characterization of vacant stock
- Recent absorption of space
- Market Rents / Sales price
- Lease terms and concessions

The supply analysis in this report is organized into three broad categories: 1) Analysis of Geographic Submarket, 2) Analysis of Loft Product Submarket, and 3) Analysis of the development pipeline.

DATA COLLECTION AND METHODOLOGY

For the purposes of the present supply analysis, sales data was collected via MLS-PIN and Warren Group listings. Neither data set is ideal. MLS-PIN includes only those sales handled by real estate brokers who are subscribers of the service, amounting to approximately 85% of all sales. Sales handled by an owner directly, or by non-member real estate brokers, are not represented. The listing information is collected and provided by the listing brokers: while generally accurate, there is no independent verification of the information provided. The Warren Group obtains independent information on all sales from the Registries of Deeds and municipal tax assessors, but the records have less detail than that in MLS-PIN. Information on newer projects is incomplete, often excluding number of rooms, floor area, parking (etc.), because that

data has not yet been collected by the local assessors. The information listed with the Warren Group is subject to both transcription error, and errors in the assessor's database. Since this supply analysis relies heavily on newer projects, we have placed primary reliance on MLS-PIN data.

The data set was sub-categorized into two relevant data series: 1) Cambridge Condo Data, 2) "Loft" Product Data. Data was collected for the dates 6/1/04 – 5/31/05.

CAMBRIDGE CONDO SUBMARKET

The first series, "Cambridge Condo Data," included data pertaining to condominium units within a radius of approximately one mile from 322 Binney Street. The one-mile radius surrounding the proposed project site was coined the "Primary Area" and was defined as those properties with zip codes 02139, 02141, and 02142. The intention of collecting this geographic data was intended to reflect the neighborhood defined as East Cambridge by the City of Cambridge, together with any adjacent neighborhoods that a purchaser interested in East Cambridge would likely consider. As demonstrated in Section 5, each of the defined neighborhoods is considered to have enough similarity to constitute a "community" within the City of Cambridge. The intention of defining this subcategory was to be consistent with the geographic definitions as outlined by the city of Cambridge, and to assess housing transactions for this community. As with any real estate transaction, "location" (in this case the East Cambridge neighborhood) is assumed to be a significant factor relating to supply and demand for product in the area.

LOFT PRODUCT SUBMARKET

The second series reflected "'Loft" Product Data" and was defined as loft condominiums within a 5 mile radius of 322 Binney Street. It was hypothesized that analysis of East Cambridge data would only provide "part of the picture" with respect to the supply and demand forces affecting the Galileo Lofts Proposal. It was felt that in addition to demand for housing in the defined East Cambridge area, there is also a submarket that is less geographically constrained, and primarily motivated by preference for

specific housing typologies; in this case, “Loft Condominiums”. For the purposes of this analysis a “Loft” product was defined as a residential unit with an open floor plan (most commonly a simple rectangular plan, with or without enclosed bedrooms), and high ceilings (11’ – 16’ on average) and typically with large windows. The five mile radius was defined as an effort to capture transactions with relative proximity to the city center. It was felt that the urban “loft” buyer would still want access to the city, but that the specific community may be less important. Condominium sales data was sorted by zip code and all transactions occurring within the defined 5-mile radius for the one year period from June 1, 2004 to May 31, 2005 was compiled. The data set was then searched by the keyword “loft”, appropriate transactions were then reviewed line by line to ensure the product was consistent with the above definition of a “loft”. Any properties that did not meet the above criteria, or were incomplete were removed from the data set. Analysis was conducted on those condominium units that were listed as: 1) Sold, 2) Under Agreement (UAG), and 3) On the Market (On Mkt).

6.1 Geographic Submarket: East Cambridge Condominiums

HISTORIC SALES ANALYSIS

Analysis was conducted on the sales data collected for the zip codes 02139, 02141, and 02142 from June 1st, 2004 to May 31st, 2005. A set of 516 sales, 183 under agreement, and 134 on the market listings were assessed. The data sample for the sales transitions was plotted in an effort to illustrate the relationship between sales price (\$) and unit floor areas (SF). It should be noted that the correlation between Sale Price and List Price within the 516 transactions was 99.6%; as such it was decided that List Price would be used as a proxy for Sold Price. The decision to use List Price was based on a desire to be able to

effectively compare data from sold properties to those currently on the market or under agreement.⁵⁴ As illustrated by Figure 25 below, there was a fairly consistent linear relationship between List Price and Floor Area, particularly in the units sized 2,000 square feet or smaller. This linear relationship supports the hypothesis that within the defined geographic area, unit size is a primary determinant of sales price. It was therefore determined that the sample set was acceptable, and there were no outliers of concern.

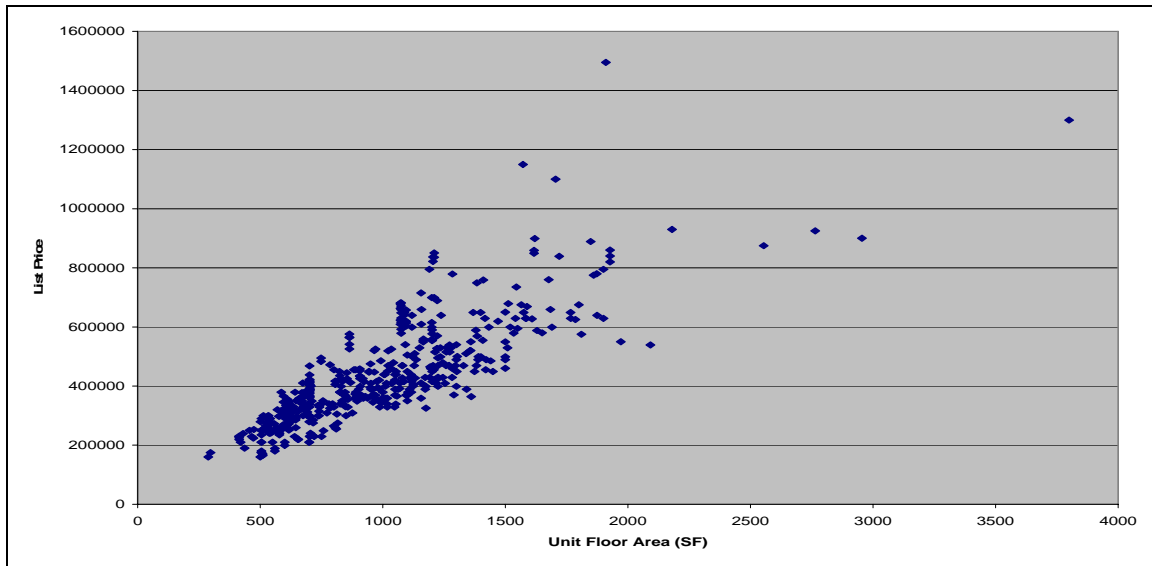


Figure 25: Scatter Plot of Sales Price (\$) as a function of Unit Floor Area (SF) for Condos sold in 02141, 02142 & 02139 from 6/1/04 – 5/31/05

⁵⁴ The ability to assess UAG and on MKT transactions enables analysis of the newest units to come on the market (particularly in subsequent sections); new properties are most relevant as comps for Galileo Lofts.

SOLD	#	Med	Mean	Med	Mean	Mean	Mean SoldPrice /	Mean	Mean	Med.	Mean	Med.	Mean
BRs	Units	ListPrice	ListPrice	SoldPrice	SoldPrice	DOM	Mean ListPrice	BR	Baths	SF	SF	\$/SF	\$/SF
0	13	258,166	266,450	258,166	264,466	21	99.3%		1.0	531	544	486	488
1	166	328,482	333,697	324,576	331,540	32	99.4%		1.1	665	672	513	496
2	258	429,000	456,105	425,000	451,181	38	98.9%		1.5	1,049	1,017	428	444
3	68	534,500	545,813	520,500	538,143	43	98.6%		1.8	1,404	1,410	375	380
4	10	787,500	711,280	788,700	694,390	63	97.6%		2.8	1,900	2,003	327	348
5	0											0	0
6	1	1,300,000	1,300,000	1,300,000	1,300,000	52	100.0%		2.5	3,800	3,800	342	342
												0	0
All	516	389,000	430,350	390,000	425,806	37	98.9%	1.8	1.4	906	970	441	452

Table 15: Summary of Condos Sold in 02141, 02142, 02139 from 6/1/04 – 5/31/05

UAG	#	Med	Mean	Med	Mean	Mean	Mean	Med.	Mean	Med.	Mean			
BRs	Units	ListPrice	ListPrice	DOM	DOM	BRs	Baths	SF	SF	\$/SF	\$/SF			
0	1	312,500	312,500			64			1.0	433	446	589	618	
1	51	351,000	381,769			12			1.0	655	719	557	535	
2	95	469,000	498,903			13			1.5	1,072	1,088	476	476	
3	34	585,000	610,647			29			1.8	1,460	1,544	424	432	
4	2	840,000	840,000			73			2.3	2,335	2,311	370	353	
5	0													
6	0													
All	183	449,000	489,730			14			1.9	1.5	958	1,095	481	483

Table 16: Summary of Condos Under Agreement (UAAG) in 02141, 02142, 02139 from 6/1/04 – 5/31/05

Data was sorted by number of bedrooms (BRs) and descriptive statistics were calculated. As evidenced by Table 15 & Table 16 above, the majority of sales transactions were for one and two-bedroom units. As one would expect, the mean statistics are on average slightly higher than median stats as the result of the few high prices transactions. However, for the studio to three-bedroom units the mean and median values are not significantly different. It is interesting to note that for this sample set, the mean price per square foot of floor area appears to be inversely related to number of bedrooms. In an effort to get a sense of where the highest price per square foot of floor area fell, a graph was created to observe the relationship between price per unit area (\$/SF).

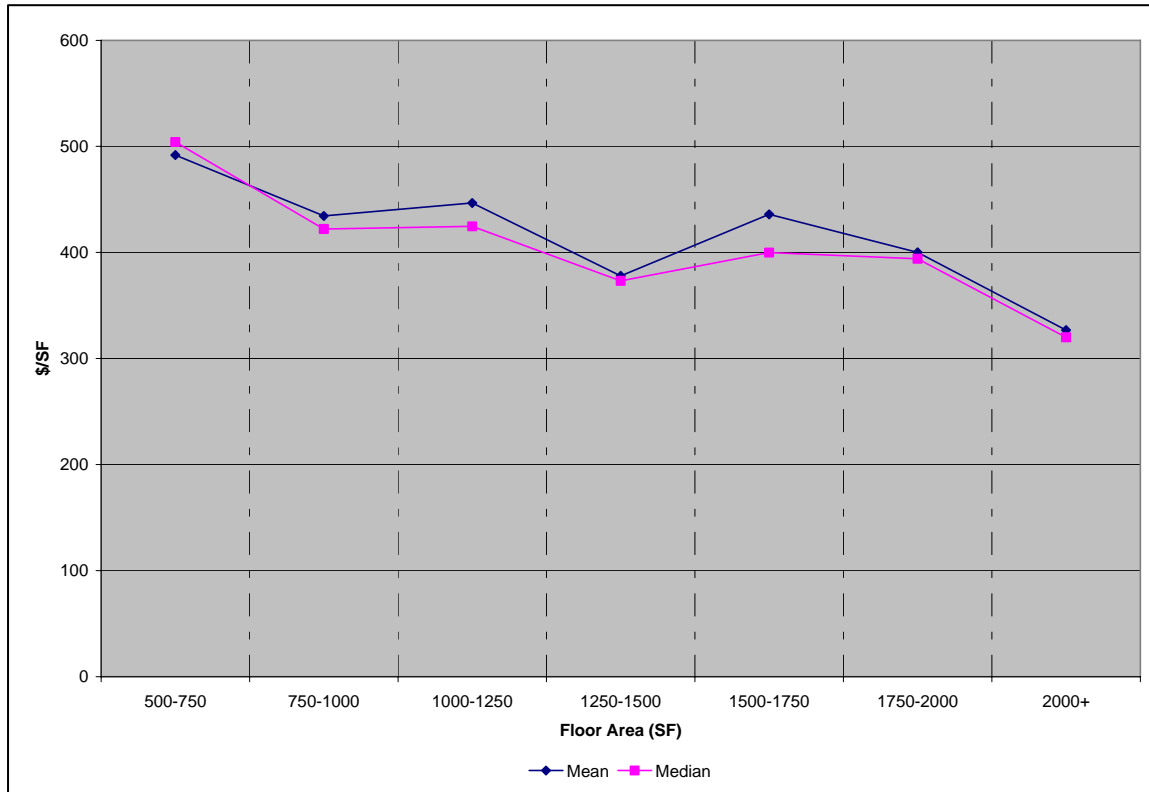


Figure 26: Relationship between Floor Area and Price per Square Foot Condos Sold in 02141, 02142, and 02139 from 6/1/04 – 5/31/05

As illustrated in Figure 26 above, the relationship between \$/SF and floor area is not a simple inverse relationship, indicating that unit area and price do not tell the “whole story”. To estimate the significance of “Major Value Drivers” on list price, it was decided that further analysis was required to assess the relative importance of variables commonly associated with variance in condominium sales pricing.⁵⁵

⁵⁵ “Major Value Drivers” are variables consistently associated with variation in condominium sales pricing and are often used by assessors in property valuation. These variables commonly include: Floor Area (SF), # of Bedrooms (Beds), # of Bathrooms (Baths), # Parking Stalls (Pkg), Building Type (i.e. low-rise, mid-rise & hi-rise), Year Built (Age), and Neighborhood Characteristics. “Minor Value Drivers” are variables such as heating type, air conditioning, finishes, plumbing, deck, pool, fireplaces and exterior cladding.

LINEAR REGRESSION ANALYSIS

A simple linear regression was conducted to assess the statistical significance of the relationship between List Price and a number of variables defined as “Major Value Drivers”. A “time” variable (Quarter) was also included as it is presumed prices appreciate over time.⁵⁶ It is worth comment that other variables such as vertical location (i.e. floor level), views, and proximity to water would be expected to be related to List Prices; however, given the limitations of the data sample, it was not possible to assess these characteristics. We attempt to address the relative value of some of these characteristics when we analyze comparable properties in subsequent sections. The independent variables were defined as follows:

- **Quarter:** The List Date was organized into 6 quarters from Q1 2004 to Q2 2005: Q1/04 = 1; Q2/04 = 2; Q3/04 = 3; Q4/04 = 4, Q1/05 = 5; Q2/05 = 6.
- **FlrArea:** The unit floor area is measured as the square feet of the unit.
- **Beds:** The real number of bedrooms in the unit.
- **Baths:** The real number of bathrooms in the unit.
- **BlgType:** Building types were assigned the following values: Townhouse/Duplex = 1; Low-rise = 2; Mid-rise = 3; Hi-rise = 4.
- **Pkg:** The real number of parking spaces included with unit price.

⁵⁶ The extremely high demand for condominiums in East Cambridge during the time the data set was taken (June 1, 2004 – May 31, 2005) meant that a difference of even a few months could result in significant appreciation in condo pricing.

Regression Statistics	
Multiple R	90.09%
R Square	81.16%
Adjusted R Square	80.93%
Standard Error	69610.47
Observations	507

ANOVA					
	df	SS	MS	F	Significance F
Regression	6	1.04344E+13	1.7E+12	358.8933996	1.297E-177
Residual	500	2.42281E+12	4.8E+09		
Total	506	1.28572E+13			

Variables	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-16946.88	14006.05	-1.21	0.226863	-44464.85	10571.08	-44464.85	10571.08
Quarter*	8890.56	2379.77	3.74	0.000209	4214.98	13566.13	4214.98	13566.13
FlrArea****	332.80	14.14	23.54	0.000000	305.03	360.58	305.03	360.58
Beds	-6777.09	6333.68	-1.07	0.285132	-19220.99	5666.81	-19220.99	5666.81
Baths*	27026.37	5719.08	4.73	0.000003	15789.98	38262.76	15789.98	38262.76
BlgType**	22125.07	3321.03	6.66	0.000000	15600.17	28649.96	15600.17	28649.96
Pkg**	55190.09	7379.70	7.48	0.000000	40691.05	69689.13	40691.05	69689.13

Table 17: Summary Output of Linear Regression Using Quarter, FlrArea, Beds, Baths, BlgType, & Pkg as predictors of ListPrice.⁵⁷

The results of the linear regression analysis elicited an R^2 of 0.811, demonstrating that roughly 81.16% of the variation in ListPrice was attributable to the identified variables. This is a reasonable finding given the limitations of the data set. Each of the independent variables (with the exception of number of bedrooms) was found to be significantly related to ListPrice. In this regression, t-stats above (or below) +2 and -2 are considered to be statistically significant. At a 95% confidence level, each variable (excluding “Beds”) was demonstrated to be statistically significant and demonstrative of a positive relationship with sales price. The results were consistent when the regression was re-run using a 99% confidence level. Expectedly, floor area was demonstrated to be most strongly correlated with ListPrice. Interestingly, the number of bedrooms was found to have a negative correlation with list price (although this correlation was not statistically significant; t-stat: -1.07).

Using the above linear regression, the following basic model was created:

⁵⁷ The independent variables are rated according to the magnitude of the statistical relationship: * t-stat = 2.0 - 5.0; ** t-stat = 5.1 – 10.0; ***t-stat = 10.1 – 20.0; ****t-stat = 20.1⁺

$$\text{List Price} = \alpha + \beta_Q Q + \beta_F F + \beta_B B + \beta_{Ba} Ba + \beta_T T + \beta_P P$$

$$\text{List Price} = -16946.88 + Q(8890.56) + F(332.80) + B(-6777.09) + Ba(27026.37) + T(22125.07) + P(55190.09)$$

Where :

Q = Quarter (1-6)

F = Floor Area (SF)

B = Number of Bedrooms

Ba = Number of Bathrooms

T = Building Type (1-4)

P = Number of Parking Stalls

The model above is a method of understanding the magnitude of the relationship between variables in the sample set. A linear model is however limited with respect to its appropriateness as a forecasting tool as it reflects a presumed linear relationship between variables, and does not account for diminishing marginal utility. The concept of diminishing marginal utility reflects the fact that the value placed on a variable (say floor area, or number of bathrooms) is not a linear one; for instance a buyer may be willing to pay more for the first 700 SF or bathroom, and less for additional area or bathrooms. The linear model in this case was developed to be used as the base case from which to develop and measure more elaborate forecasting models.

LOG PRICE REGRESSION ANALYSIS

In an effort to get a better understanding of how the independent variables relate to List Price, a second “one-sided” log regression was conducted. To produce the analysis, the natural log of the dependent variable (ListPrice) was calculated and constituted the “left side” of the regression equation. The independent variables (the “right side” of the equation) were then converted to dummy variables.⁵⁸ For

⁵⁸ The “dummy variables” are a binary series containing only “1” and “0” values. For example a variable Q2 indicating the second quarter of 2004 was created and all listing occurring in Q2 were assigned values of “1” and all other listings were assigned values of “0”.

each variable a “base case” was defined and excluded from the regression.⁵⁹ By converting the independent variables into a binary series related to the log of ListPrice, it is possible to interpret the coefficients as a percentage measure of relative magnitude affecting variance in ListPrice. The coefficients should not be interpreted as absolute measure of the relationship, but are appropriate to give a general sense of the magnitude of ListPrice fluctuation.

<i>Regression Statistics</i>	
Multiple R	92.57%
R Square	85.69%
Adjusted R Squa	85.40%
Standard Error	13.53%
Observations	507

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	10	54.40089866	5.440089866	297.046245	3.4318E-202
Residual	496	9.083718844	0.018313949		
Total	506	63.4846175			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	11.893	0.033	356.636	0.000	11.827	11.958	11.827	11.958
FlrArea	0.11%	0.000	18.387	0.000	0.001	0.001	0.001	0.001
2005*	4.95%	0.015	3.365	0.001	0.021	0.078	0.021	0.078
2-Bed	0.77%	0.018	0.430	0.667	-0.027	0.043	-0.027	0.043
3-Bed+*	-6.37%	0.029	-2.214	0.027	-0.120	-0.007	-0.120	-0.007
2-Bath**	9.66%	0.018	5.248	0.000	0.060	0.133	0.060	0.133
2.5-Bath+*	9.32%	0.030	3.090	0.002	0.034	0.152	0.034	0.152
Hi-Rise***	22.07%	0.019	11.317	0.000	0.182	0.259	0.182	0.259
1 Pkg**	10.88%	0.016	6.957	0.000	0.078	0.140	0.078	0.140
2 Pkg+	4.47%	0.050	0.897	0.370	-0.053	0.143	-0.053	0.143
SQ(FlrArea)	0.00%	0.000	-8.666	0.000	0.000	0.000	0.000	0.000

Table 18: Summary of Regression Output Using Quarter, FlrArea, Beds, Baths, BlgType, & Pkg as predictors of Log(ListPrice)

The model illustrates several noteworthy observations. There was roughly a 5% appreciation in price from listing made in 2005 versus those in 2004; this is consistent with what analysts reported.⁶⁰ It was observed that the provision of 3 bedrooms or more was statistically associated with roughly a -6.37%

⁵⁹ A “base case” was the set of transactions that constitute a base condition from which incremental increases can be measured. For example, no parking stalls would constitute the base case from which the incremental value of additional parking spots could be assessed.

⁶⁰ See CB Richard Ellis Northeast Multi-family Market report 2004.

decrease in price. This observation is likely capturing the effects of other factors associated with the multi-bed units rather than just the effect of multiple bedrooms;⁶¹ however, it is a statistically significant correlation and should be balanced against the analysis in subsequent sections (i.e. Loft Submarket). The provision of a second bathroom was associated with roughly a 9.66% increase in price, and the provision of additional bathrooms (or ½ baths) was associated with an additional 9.32% increase. One of the most noteworthy observations is that there was approximately a 22.07% premium associated with high-rise units; it is likely this observation is capturing some of the “Major Value Drivers” that could not be independently identified (i.e. views, amenities, etc.). Finally, one parking stall was associated with a 10.88% increase in price, and an additional stall with another 4.47% increase. Table 19 below illustrates the descriptive statistics for the historical sales data sorted by number of bedrooms, bathrooms, and parking. The highest price/SF values were for one-bed, one-bath, and two-bed, two-bath units with parking at an average of about \$510 - \$550/SF.

⁶¹ For instance, the multi-bedded units are typically in older buildings, and are not necessarily associated with a relative increase in unit floor area.

SOLD				Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	Baths	Pkg	# Units	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
1	1	0	91	287,431	282,682	38	98.3%	632	456
1	1	1	66	382,358	384,250	19	100.5%	694	553
1	all	all	160	331,468	329,435	32	99.4%	669	495
2	1	0	120	347,132	343,526	38	99.0%	857	411
2	1	1	10	434,320	429,500	26	98.9%	961	454
2	2	0	37	488,735	489,996	41	100.3%	1,131	438
2	2	1	49	610,585	603,542	28	98.8%	1,136	530
2	2	2	4	589,250	583,125	49	99.0%	1,137	510
2	2.5	0	6	547,117	525,417	55	96.0%	1,296	408
2	2.5	1	7	665,986	652,500	86	98.0%	1,454	449
2	2.5	2	2	1,322,500	1,230,000	133	93.0%	1,741	706
2	all	all	236	454,773	449,606	38	98.9%	1,003	447
3	1	0	19	408,032	400,063	24	98.0%	1,124	356
3	1	1	1	339,000	334,000	188	98.5%	1,053	317
3	2	0	13	518,262	512,577	35	98.9%	1,337	384
3	2	1	6	641,750	631,250	32	98.4%	1,570	402
3	2.5	0	10	640,800	637,300	37	99.5%	1,683	382
3	2.5	1	8	781,375	770,813	107	98.6%	1,707	455
3	2.5	2	1	549,900	510,000	70	92.7%	1,971	259
3	all	all	61	550,892	542,921	44	98.6%	1,419	381

Table 19: Summary of Descriptive Statistics for Condo Sales Data sorted by Beds, Baths, & Parking.

It should be noted that predicting condo sales prices is not a simple mathematical process, and ideally should consider a myriad of locationally specific as well as macroeconomic variables. The analysis conducted here is intended to produce a picture of general historic trends in condominium sales within a one-mile radius of the proposed project site. The intention is to use quantitative data to produce a sense of historical benchmarks that can be used to anchor the qualitative analysis of brokers and forecasters.

6.2 Geographic Submarket: Comparable Cambridge Condominium Units

“The axis of luxury living in Cambridge is Memorial Drive. The crème de la crème reside at the upper end of the road, yards from the Galleria Mall and a five-minute walk to the Lechmere MTBA station.

Here are the Esplanade, the Glass Factory and the Regatta Riverview, all with units that routinely fetch \$1

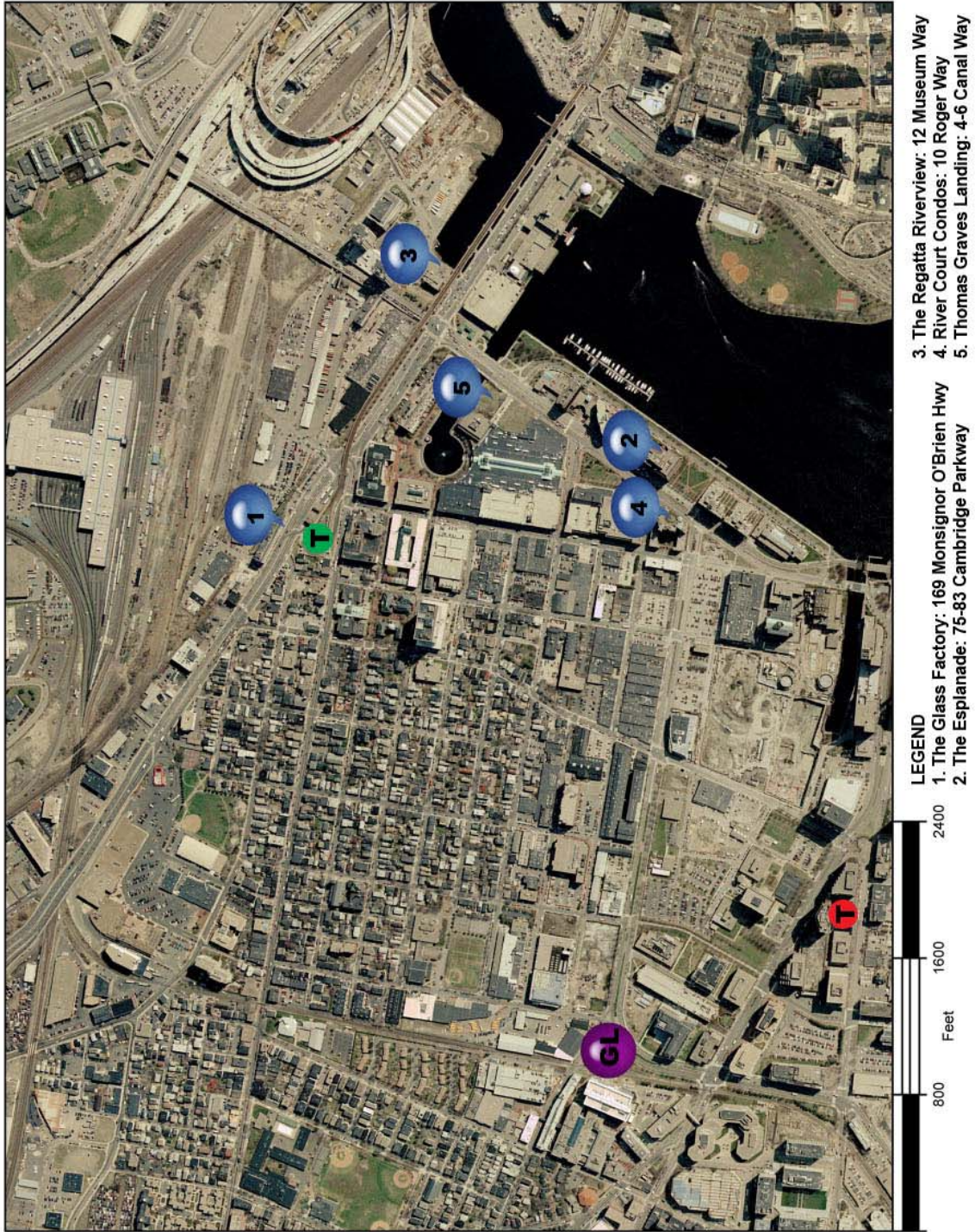
million or more. “All luxury condos in Cambridge have two requirements,” says Ellen Brockman, a real estate agent with Coldwell Banker. “It has to be near the river, and it has to be pretty.”⁶²

The analysis of locational comparable properties was intended to illicit information regarding the nature of sales of condos within a one mile radius of the proposed project site. Five appropriate comparable were identified through market research, and were confirmed by the Boston real estate analyst and appraiser, Pamela McKinney and MLS market data for the dates of August 2004 thru June 1st, 2005 were compiled for analysis. The individual property statistics are included with each property summary. Particular attention should be paid to The Cambridge Glass Factory and the Regatta River View Projects, as they are the most recent to come on the market.

Project Name	Address	New/ Cnv	Year Blt	Year Cnv	# Units	# Sales
1 Cambridge Glass Factory	169 Monsignor O'Brien Highway, Cambridge, MA 02141	Cnv	1925	2005	199	60
2 Regatta River View	12 Museum Way, Cambridge, MA 02141	Cnv	1998	2005	187	62
3 The Esplanade	75-83 Cambridge Parkway, Cambridge, MA 02142	New	1989	n/a	206	8
4 The River Court Condos	10 Rogers Street, Cambridge, MA 02142	New	1989	n/a	160	11
5 Thomas Graves Landing	4-6 Canal Park, Cambridge, MA 02141	New	1986	n/a	175	8

Table 20: Summary of Locational Condominium Comparable Properties.

⁶² Matt Kelly, “Executive Domains”, The Boston Business Journal, November 12 – 18, 2004.



Map 5: Comparable East Cambridge Condominiums

1. CAMBRIDGE GLASS FACTORY

Project Name	Address	New/Cnv	Year Blt	Year Cnv	Units
Cambridge Glass Factory	169 Monseignor O'Brien Hwy.	Cnv	1925	2005	199

The Cambridge Glass Factory is an 8-story 104 Unit Condominium located at 169 Monsignor O'Brien Hwy. in Cambridge. The project offers homes of one or two bedrooms ranging from the low \$300's - \$559,000. Building amenities include a fitness center, media room with flat screen TV and business center with conference room that are included in the condo fee.

Cambridge's real estate tax rate is approximately two thirds that of Boston with a residential exemption that is approximately one third greater than Boston's.⁶³ In addition to the low property tax environment, the developer, Crescent Heights a national developer of luxury condominiums is offering to buy down 1 point of the buyer's mortgage, paying ½ the condo fees for 1 year and the buyer receiving a \$1,000 savings at closing. Hypothetically then, one "can own a \$308,000 one bedroom with 5% down for about \$1700 a month including principal, interest, taxes and condo fees" according to Richard Drinkwater of Otis & Ahearn Residential Brokers.

The project is currently approximately 70% sold out, with the larger two-bed, two-bath units still available for list prices starting at about \$460,000 and ranging to the high \$500,000. The condos are renovated at the time of purchase, providing buyers with a selection of finishes with which to customize their homes. According to the developer, it takes about 45 days to build each condo to the buyer's specifications. Standard features include hardwood floors in the living room, new carpeting in the

⁶³ In "Crescent Heights Names Local Marketing Team for The Cambridge Glass Factory Condominiums", Nickerson's Newsletter, February 18th, 2005.

bedrooms, and kitchens with granite counters and floors, stainless steel appliances, new cabinets, and marble baths. Garage parking is available from \$35,000 and outdoor parking for \$21,000.

SOLD			Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	Baths	# Units	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
0	1	9	261,017	259,906	16	99.6%	552	473
1	1	35	323,694	324,425	25	100.2%	617	526
2	2	16	492,800	499,359	40	101.3%	1,026	488
All		60	359,388	361,396	28	100.6%	716	508

Table 21: Summary of Condos Sold at 169 Monsignor O'Brien Hwy 09/08/2004 – 31/05/2005

2. THE REGATTA RIVER VIEW

Project Name	Address	New/Cnv	Year Blt	Year Cnv	Units
Regatta River View	12 Museum Way	Cnv	1998	2005	187

The Regatta River View Condominiums is the project originally named “Museum Tower Apartments”, a 435 unit complex with a mix of four studio units, 180 one-bedrooms, and 251 two-bedroom units. The complex is composed of two towers (north & south) that are situated at 12 Museum Way adjacent to North Point on the Charles River. The total lot size is 90,169 square feet (2.07 acres), a gross building area of 618,710 and rentable area of 410,444 square feet. There is a 103,200 square foot underground parking garage with 490 spaces.

The project was purchased by Crescent Heights, residential developers who spent \$10,000,000 to convert the North Tower to condominium units that were opened in April 2005. The amenities include a new Fitness Center, lap pool, private screening theater, business center and club suite. The south tower currently remains rental units that are currently 90% occupied, with monthly rents ranging from \$1,300 for a studio to \$5,000 for a two-bedroom penthouse. The intention is to convert the 425 apartments to condos in stages as not to flood the market. The first 187 went on sale in fall of 2004, and the second phase is set to start late summer 2005. The condominiums in the north tower are 70 percent sold, and the prices range from \$380,000 to \$675,000 with an average sale price of \$530,000.

The developers have reportedly chosen to leave the old apartment kitchens in place and allow buyers to customize their suites on an individual basis. “Kitchens are very important,” sales associate Tony Zarbano says, even to people who don’t cook. “They still enjoy a beautiful kitchen and a nice lifestyle that goes with it.” Buyers can pick their own appliances, faucets, and cabinets - and decide how much they want to spend.⁶⁴

SOLD				Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	Baths	# Units	ListPrice	SoldPrice	DOM	Mean ListPrice	Mean SF	Mean \$/SF	
1	1	35	413,098	420,755	8	101.9%	716	586	
2	1	2	533,250	542,900	2	101.8%	864	628	
2	2	25	664,407	667,510	12	100.5%	1,101	605	
All		62	518,309	524,193	10	101.1%	876	595	

Table 22: Summary of Condos Sold at 12 Museum Way 09/08/2004 – 31/05/2005

3. THE ESPLANADE

Project Name	Address	New/Cnv	Year Blt	Year Cnv	Units
The Esplanade	83 Cambridge Parkway	New	1989	n/a	206



The Esplanade is a very high-end condominium development of The Cohen Companies, a Boston-based developer, owner and manager of commercial and residential real estate. The project was designed by world-renowned architect Moshe Safdie. The design of two L-shaped towers steps back from the river from a three story base, creating landscaped 12’ x 18’ canopied terraces. The Esplanade features bays, balconies and floor-to-ceiling windows. Residents at The Esplanade have the exclusive use of a health club with an indoor lap and wading pool, fully equipped exercise room, his and hers saunas and a function/conference room. The condo fee is approximately \$0.44 per square foot. Some of the notable features include:

⁶⁴ “A Good Investment” The Boston Globe, June 12, 2005.

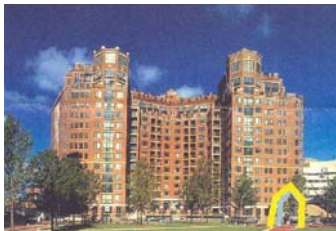
- Terrace and/or balcony with wood decking at each residence.
- A Gathering Room for residents' private parties and meetings.
- Four levels of secured resident parking, as well as guest parking.
- Double-glazed, floor-to-ceiling windows in each residence.
- An assigned storage locker for each residence.
- Fireplaces in 12th- and 13th-floor residences.

SOLD	Mean	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean	
BRs	Baths	# Units	ListPrice	SoldPrice	Mean ListPrice	SF	\$/SF	
1	1.75	2	615,500	605,000	97	98.3%	1,098	559
2	2.17	6	947,833	895,021	139	94.4%	1,473	601
All	2.06	8	864,750	822,516	128	95.1%	1,379	590

Table 23: Summary of Condos Sold at 83 Cambridge Parkway 09/08/2004 – 31/05/2005

4. THE RIVER COURT CONDOMINIUMS

Project Name	Address	New/Cnv	Year Blt	Year Cnv	Units
The River Court Condos	10 Rogers Street	New	1989	n/a	160



The River Court Condominiums built in 1989 at 10 Rogers Street is a high-rise residential development with a total of 160 one, two, and three-bedroom units. Developed by H.J. Davis Co., it is a luxury property featuring 24-hour concierge, health club, lap pool, sauna/steam rooms a common rooftop terrace. River Court also incorporates 12,600 square feet of retail space, three levels of underground parking. Steffian Bradley Architects, designers of the building, included three courtyards to resolve the constraints of the site, drawing upon European tradition to create environmental niches within the building. The units enjoy views of the Charles River, Front Park and the Boston skyline. The association fee is about \$0.44 per sq. ft. The fee includes heat, water, sewer, master insurance, security, elevator, exterior maintenance, landscaping, snow removal, laundry facilities, refuse removal, swimming pool, exercise room, sauna/steam rooms.

SOLD		Mean	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	# Units	Baths	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
1	3	1	444,967	438,333	62	98.5%	848	518
2	5	2	704,400	685,500	35	97.3%	1,187	567
3	3	3	849,000	840,333	30	99.0%	1,651	509
All	11	1.82	673,082	660,318	41	98.1%	1,221	538

Table 24: Summary of Condos Sold at 10 Rogers Street 09/08/2004 – 31/05/2005

5. THOMAS GRAVES LANDING

Project Name	Address	New/Cnv	Year Blt	Year Cnv	Units
Thomas Graves Landing	4-6 Canal Park, Cambridge, MA 02141	New	1986	n/a	175



Thomas Graves Landing is a 175 unit condominium project located on the Lechmere Canal, next to the Museum of Science in Cambridge. The building is 78% owner occupied, and the association fee is about \$0.48 per sq. ft. The fee includes Hot Water, Gas, Water, Sewer, Master Insurance, Security,

Swimming Pool, Elevator, Exterior Maintenance, Landscaping, Snow Removal, Park, Exercise Room, Sauna/Steam, Clubroom, Extra Storage, 24/hrs concierge service.

SOLD		Mean	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	# Units	Baths	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
0	3	1	291,600	289,633	16	99.3%	523	554
1	3	1	424,333	417,333	23	98.4%	833	501
2	2	2	649,000	649,000	29	100.0%	1,198	543
All	8	1.25	430,725	427,363	22	99.2%	808	531

Table 25: Summary of Condos sold at 4-6 Canal Park 09/08/2004 – 31/05/2005

ANALYSIS OF CAMBRIDGE CONDO GEOGRAPHIC SUB-MARKET COMPARABLES

The five locational comparables represent products currently available in the defined area that are considered to be potential competition for the proposed Galileo Lofts development. It is worth noting there are very few “loft” condominiums that were available for purchase in the East Cambridge neighborhood over the last year. As such, “luxury condominium” products that have been recently built or converted whose features and location were most similar to the profile of the Galileo Lofts product were identified as the most appropriate comparable products available in the vicinity of Kendall Square.

It is important to recognize a key variable that is consistent in the identified properties that is lacking at the proposed Galileo Lofts site: that being the proximity to water, in this case the Charles River. As repeatedly confirmed by residential brokers, and common sense, one of the key historic factors drawing the luxury buyer to Cambridge was the opportunity to have water front access and views. It should be noted that the “top of the line” buyer will likely continue to demonstrate an affinity to waterfront properties. Given that the majority of luxury condos in Cambridge are water adjacent it is difficult to statistically hypothesize a premium for water frontage, suffice to say it is implied.

An analysis of the sales data for the five comparables illustrates a mean sales price per square foot of \$552, with an average sales price of \$479,505. Noteworthy observations include the average time on the market increases with sales price, which is strongly correlated with unit size. Simply speaking, the smaller units (studio and one-bedrooms) with lower sales price tend to have been purchased more quickly than the larger units (2+ bedrooms).

SOLD			Min	Max	Mean	Min	Max	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	Baths	# Units	ListPrice	ListPrice	ListPrice	SoldPrice	SoldPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF	
0	1	12	240,399	299,900	268,663	240,399	299,900	267,338	16	99.5%	545	493	
1	1	76	266,987	575,694	373,627	266,987	575,694	376,951	19	100.9%	680	552	
1	1.5	1	472,000	472,000	472,000	460,000	460,000	460,000	69	97.5%	785	586	
1	2	1	759,000	759,000	759,000	750,000	750,000	750,000	124	98.8%	1,410	532	
2	1	2	525,400	541,100	533,250	529,100	556,699	542,900	2	101.8%	864	628	
2	1.5	1	525,000	525,000	525,000	513,000	513,000	513,000	77	97.7%	970	529	
2	2	50	412,000	1,100,000	618,660	430,000	1,045,000	618,322	33	99.9%	1,101	559	
2	2.5	3	899,000	1,495,000	1,181,333	883,999	1,360,000	1,114,666	92	94.4%	1,701	652	
3	2	1	839,000	839,000	839,000	832,000	832,000	832,000	49	99.2%	1,720	484	
3	2.5	2	849,000	859,000	854,000	830,000	859,000	844,500	21	98.9%	1,617	522	
All					479,638			479,505			861	552	

Table 26: Sales Summary of Locational Comps 09/08/2004 – 31/05/2005

In an effort to identify the relative value of underground parking analysis was conducted using the 5 comparable properties. Sales data was sorted according to number of bedrooms, bathrooms, and number of indoor parking stalls. Sales data illustrates parking stalls were on average \$30,000 - \$55,000 (approx \$50/SF premium).

SOLD	Garage			Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	Baths	Pkg	# Units	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
0	1	0	8	256,932	255,683	18	99.5%	555	463
0	1	1	1	293,692	293,692	1	100.0%	531	553
1	1	0	18	328,223	332,494	22	101.3%	635	523
1	1	1	55	385,720	389,298	17	100.9%	687	565
2	2	0	11	536,509	554,868	39	103.4%	1,036	534
2	2	1	34	640,776	635,002	29	99.1%	1,111	569
All		0							513
		1							566

Table 27: Summary of Parking Premium Price/SF of Comparable Units

6.3 Loft Product Submarket

HISTORIC SALES ANALYSIS

In an effort to complement the findings of the geographic submarket historic sales analysis, further analysis was conducted using the “loft” product submarket within a 5 mile radius of the proposed project site. It was determined and generally agreed that the loft market represented the closest comparable product type to the units being developed in conjunction with the Galileo Lofts proposal. For the purposes of this analysis a “Loft” product was defined as being a residential unit with an open floor plan, and high ceilings (11’ – 16’ on average) and typically large windows. Condominium sales data was sorted by zip code and all transactions occurring within the defined 5-mile radius for the one year period from June 2004 to June 2005 was compiled. The data set was then searched by the keyword “loft”, appropriate transactions were then reviewed line by line to ensure the product was consistent with the above definition of a “loft”. Any properties that did not meet the above criteria, or were incomplete were removed from the data set.

SOLD	0	Med	Mean	Med	Mean	Med	Mean Sold Price/	Mean	Mean	Med.	Mean	Med.	Mean	
BRs	# Units	ListPrice	ListPrice	SoldPrice	SoldPrice	DOM	Mean List Price	BRs	Baths	SF	SF	\$/SF	\$/SF	
0	31	284,900	350,429	279,000	349,918	36	99.85%		1.03	899	930	354	376	
1	107	359,000	393,718	346,000	387,840	26	98.51%		1.17	890	969	383	405	
2	112	509,000	579,793	510,000	568,665	41	98.08%		1.67	1,269	2189	417	429	
3	26	469,000	579,723	469,000	571,635	21	98.60%		1.94	1,513	1556	361	362	
4	2	627,000	627,000	625,000	625,000	18	99.68%		2.00	2,370	2370	261	261	
All	278	439,000	482,931	431,000	475,357	30	98.4%		1.6	1.4	1,136	1,521	384	406

Table 28: Summary of Loft Condominiums Sold in 5 Mile Radius 6/1/04 – 5/31/05

A noteworthy observation is that the Average Sold Price in the loft submarket was higher than that in the locational condo submarket, \$475,593 (lofts) and \$42,806 (condos) the average sold price per square foot is higher in the condo submarket (\$452/sf and \$406/sf).

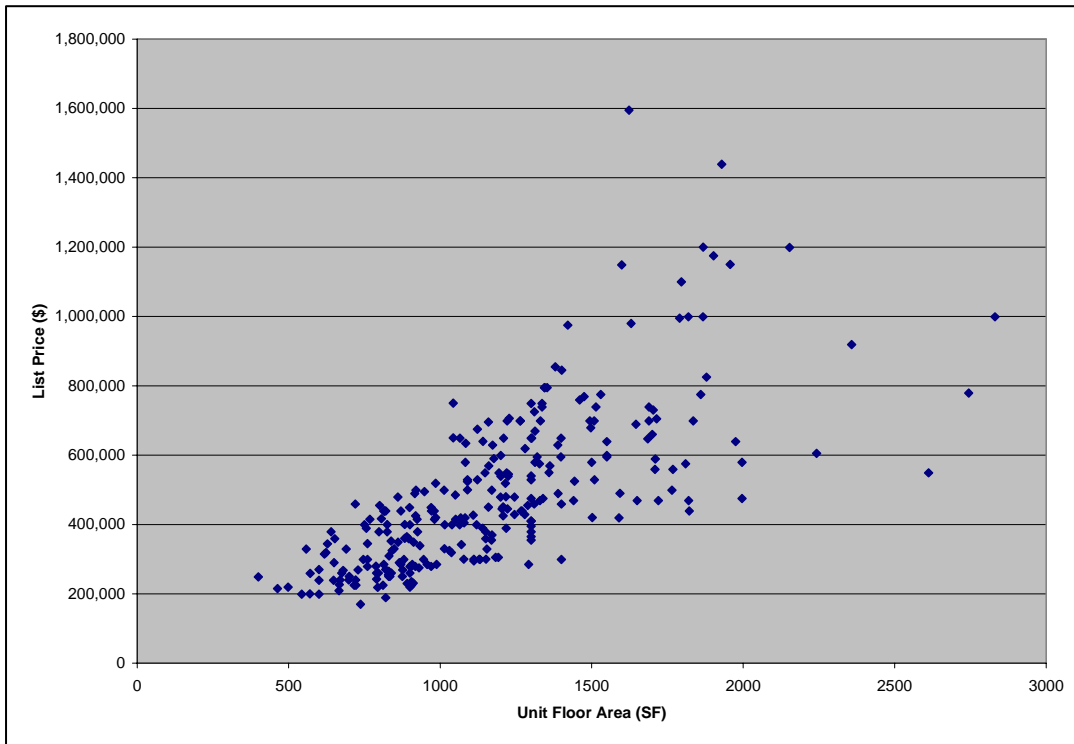


Figure 27: Scatter Plot of List Price (\$) as a function of Unit Floor Area (SF) for Lofts sold from 6/1/04 – 5/31/05

LINEAR REGRESSION ANALYSIS

The methodology described in section 6.1 was repeated using the historic sales data for Loft Products located within a 5-mile radius of the proposed project site. The data was first graphed, one outlier was removed and a linear regression was conducted.

Regression Statistics	
Multiple R	77.35%
R Square	59.83%
Adjusted R Squar	58.94%
Standard Error	144398.4159
Observations	277

ANOVA					
	df	SS	MS	F	Significance F
Regression	6	8.38654E+12	1.39776E+12	67.03575393	1.11676E-50
Residual	270	5.62974E+12	20850902502		
Total	276	1.40163E+13			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-184105.788	43306.214	-4.251	0.000	-269366.583	-98844.992	-269366.583	-98844.992
Year*	47760.060	14008.630	3.409	0.001	20180.023	75340.097	20180.023	75340.097
Beds	6999.752	13705.570	0.511	0.610	-19983.622	33983.127	-19983.622	33983.127
Baths*	55186.160	22805.144	2.420	0.016	10287.645	100084.675	10287.645	100084.675
FlrArea***	359.929	28.577	12.595	0.000	303.667	416.191	303.667	416.191
BlgStyle**	52779.671	9076.571	5.815	0.000	34909.819	70649.523	34909.819	70649.523
Pkg	17735.357	18895.474	0.939	0.349	-19465.844	54936.558	-19465.844	54936.558

Table 29: Summary Output of Linear Regression Analysis for Loft Sales.

As expected, year, baths, floor area, and building style were significantly correlated with variation in list price; however, somewhat unexpectedly parking did not demonstrate a statistically significant relationship. Further, the R^2 in this regression was only 59.83% suggesting that only about half of the variance in list price can be attributed to the defined variables. It was hypothesized that due to the geographic heterogeneity of the sample, locational effects (and others) were not being accounted for in the regression analysis.

In order to define a data set wherein some of the other “Major Value Drivers” could be quantified transactions data for comparable loft properties was collected. The loft transaction data was sorted by address, and properties with a minimum number of 10 transactions were extracted. Each of the properties was then researched and quantified with respect to its location, age, and amenities. The properties were all constructed (or converted) in the last 2 years, and each advertises a comparable high level of finish and amenities. Data for nine properties were collected, and the sales transactions are illustrated in

Figure 28 below.

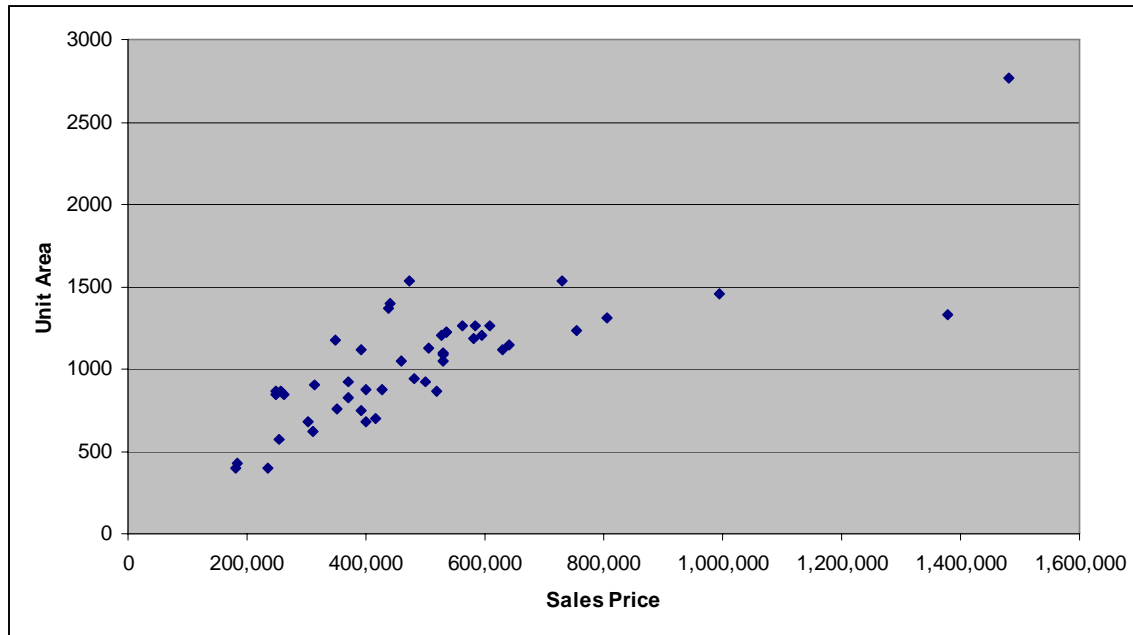


Figure 28: Scatter Plot of Loft Comps Sales Price related to Unit Area

	Project Name	Address
1	Court Square Press	9 West Broadway, South Boston, MA 02210
2	Paris Landing	42 Eighth Street, Charlestown, MA
3	MacCallen Building	140 Dorchester Avenue, South Boston, MA 02127
4	The Foundry	320 W. 2nd St, South Boston, MA 02127
5	Strada 234	226-234 Causeway Street, Boston, MA 02114
6	Charleston Lofts	210 Broadway, Everett, MA 02149
7		316 Ringe Ave., Cambridge MA, 02140
8		335 West 2nd Street, South Boston, MA 02127
9		80 A Street, South Boston, MA 02127

Table 30: Comparable Loft Properties

The two “outliers” (sales over \$1.3 million) were removed from the sample and regression analysis was conducted. The following previously defined variables were used:

- **ListMos:** The Month the property was listed was assigned a numerical value from Jan. 1, 2003 to June 31, 2005.
- **FlrArea:** The unit floor area is measured as the square feet of the unit.

- **Beds:** The real number of bedrooms in the unit.
- **Baths:** The real number of bathrooms in the unit.
- **Pkg:** The real number of parking spaces included with unit price.
- **Style:** Building types were assigned the following values: Townhouse/Duplex = 1; Low-rise = 2; Mid-rise = 3; Hi-rise = 4.

To further investigate the loft submarket, new variables were created. Given the data sample targets a fairly broad geographical area, a variable to account for the effects of location was created (Location). The comparable properties constitute five different geographical locations, which were coded on the following numerical scale: 1) North End, 2) South Boston, 3) Charlestown, 4) North Cambridge, and 5) Everett. The scale demonstrates a movement away from the central business district of downtown Boston. Many loft products currently on the market in Boston are conversions of old warehouse or industrial buildings, to capture the possible effects of new construction versus historic conversion, a variable NewConst was created to reflect those properties that are “new”. Finally, one of the most obvious factors in hi-end residential development in Boston is the proximity to water. To reflect this dimension, a scale was created to reflect the project’s proximity to water: 0) not close to water, 1) within 2 blocks of water (i.e. potential views and/or access), 3) waterfront. The results of the analysis are illustrated below.

Regression Statistics	
Multiple R	90.29%
R Square	81.53%
Adjusted R Square	80.77%
Standard Error	121424.434
Observations	227

ANOVA					
	df	SS	MS	F	Significance F
Regression	9	1.41245E+13	1.56939E+12	106.4436791	1.54648E-74
Residual	217	3.19942E+12	14743893181		
Total	226	1.7324E+13			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-264135.792	73995.539	-3.570	0.000	-409977.762	-118293.823	-409977.762	-118293.823
FlrArea***	570.466	35.820	15.926	0.000	499.866	641.065	499.866	641.065
ListMos*	5317.625	1514.633	3.511	0.001	2332.349	8302.901	2332.349	8302.901
Location**	-50603.116	8454.486	-5.985	0.000	-67266.539	-33939.693	-67266.539	-33939.693
Beds**	-79393.391	19807.871	-4.008	0.000	-118433.837	-40352.945	-118433.837	-40352.945
Baths	20418.565	30950.510	0.660	0.510	-40583.537	81420.667	-40583.537	81420.667
Style*	37967.076	13955.959	2.720	0.007	10460.492	65473.661	10460.492	65473.661
Pkg	1143.114	19422.129	0.059	0.953	-37137.052	39423.281	-37137.052	39423.281
NewConst	-13758.655	24453.185	-0.563	0.574	-61954.813	34437.504	-61954.813	34437.504
Water**	101995.323	19810.685	5.149	0.000	62949.329	141041.316	62949.329	141041.316

Table 31: Summary Output of Linear Regression of ListPrice of Loft Comparables

The R^2 in this case was 81.53%, illustrating that a significant portion of variance in list price was captured by the inclusion of additional variables. It should be noted that unit floor (i.e. vertical location) would be expected to be associated with variance in ListPrice; unfortunately, MLS transaction listings do not consistently list unit numbers or building level, as such there is no way to determine the vertical location of the units in question.

LOG PRICE REGRESSION ANALYSIS

In keeping with the methodology used for the condo data, a second “one-sided” log regression was conducted.⁶⁵ To produce the analysis, the natural log of the dependent variable (ListPrice) was calculated and constituted the “left side” of the regression equation. The independent variables were then converted to dummy variables. For each variable a “base case” was defined and excluded from the regression. The analysis enables the interpretation of the coefficients as a percentage measure of relative magnitude affecting variance in ListPrice.

⁶⁵ See Section 6.1 for detailed explanation.

Regression Statistics	
Multiple R	0.960117347
R Square	92.18%
Adjusted R Square	91.67%
Standard Error	12.76%
Observations	227

ANOVA					
	df	SS	MS	F	Significance F
Regression	14	40.68127835	2.905805596	178.5625361	6.8203E-109
Residual	212	3.449944204	0.016273322		
Total	226	44.13122255			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	12.073	0.095	126.688	0.000	11.885	12.260	11.885	12.260
FlrArea**	0.112%	0.000	10.282	0.000	0.001	0.001	0.001	0.001
SQ(FlrArea)	0.000%	0.000	-3.740	0.000	0.000	0.000	0.000	0.000
Year(2004)	-2.710%	0.043	-0.626	0.532	-0.112	0.058	-0.112	0.058
Year(2005)*	13.954%	0.042	3.330	0.001	0.057	0.222	0.057	0.222
SouthBoston*	-14.528%	0.042	-3.480	0.001	-0.228	-0.063	-0.228	-0.063
Charlestown*	-29.773%	0.055	-5.412	0.000	-0.406	-0.189	-0.406	-0.189
N. Cambridge***	-72.909%	0.053	-13.630	0.000	-0.835	-0.624	-0.835	-0.624
Everett**	-46.091%	0.049	-9.468	0.000	-0.557	-0.365	-0.557	-0.365
Mid-Rise*	8.320%	0.033	2.520	0.012	0.018	0.148	0.018	0.148
Hi-Rise*	10.164%	0.038	2.710	0.007	0.028	0.176	0.028	0.176
1 Pkg**	19.926%	0.033	6.042	0.000	0.134	0.264	0.134	0.264
2 Pkg*	10.721%	0.038	2.792	0.006	0.032	0.183	0.032	0.183
2+ Beds	4.278%	0.080	0.532	0.596	-0.116	0.201	-0.116	0.201
2+ Baths	9.247%	0.047	1.955	0.052	-0.001	0.186	-0.001	0.186

Table 32: Summary Output of Regression: Variables Related to Log (ListPrice)

By converting the independent variables into a binary series related to the log of ListPrice, it is possible to interpret the coefficients as a percentage measure of relative magnitude affecting variance in ListPrice. In each case a “base condition” is used as the benchmark; for example, in the case of Style, low-rise is the base case, this enables the interpretation of coefficients from the base case. The coefficients should not be interpreted as absolute measure of the relationship, but are appropriate to give a general sense of the magnitude of ListPrice fluctuation. It should be noted the variable “water” was removed as it was found to be linearly related to “location” in this set (i.e. the information was “doubled”); however, it should be acknowledged that proximity to water is consistently associated with higher condominium prices.

Based on the output of the regression, it appears that for the given sample data, there was roughly a 14% price appreciation from listing made in 2004 and those in 2005. This value is much higher than that in the geographic analysis (recall 5%); while it is presumed a 14% appreciation is exaggerated, it is consistent with the increased popularity of loft units in the last few years. As one would expect, there is a negative correlation between location (as one moves away from the CBD) and ListPrice. Because the neighborhoods are often represented by only one or two properties, it is not reasonable to presume the coefficients are definitive percentages, but it is noteworthy to recognize the decrease in price. Building

type was demonstrated to have a positive relationship with ListPrice, with units in Mid-Rise buildings being roughly 8% higher than low-rises, and hi-rises 10% higher than mid-rise buildings. It is reasonable to interpret this finding is at least partially impacted by the buyer’s access to views, light and air in higher buildings. There was roughly a 20% premium on transactions including one parking stall (over a base case of no parking) and an 11% premium for an additional stall (2 total).

6.4 Loft Product Sub-Market: Comparable Units

Given the lack of “loft” products that have been historically available in the East Cambridge area, it was considered appropriate to do an investigation of product comparables, focusing specifically on those projects which share characteristics of the Galileo Lofts product, as well as proximity to the Red Line. Five appropriate comparable properties were identified through market research, and were confirmed by local Residential Broker Pam McKinney⁶⁶ and MLS market data for the dates of August 2004 thru June 1st, 2005 were compiled for analysis. The individual property statistics are included with each property summary. The comparables represent the newest products currently available in the defined area.

	Project Name	Address	New/ Cnv	Year Blt	Year Cnv	# Units	Unit Sizes (SF)	Unit Prices (K)	Unit \$/SF
1	Court Square Press	9 West Broadway, South Boston, MA 02210	Cnv	1906	2004	119	750 - 2770	399 - 1,500	\$510
2	Channel Center	35 Channel Center Street, South Boston, MA 02210	Cnv	1912	2004	44	n/a	141 - 1,050	n/a
2	Channel Center	25 Channel Center Street, South Boston, MA 02210	New	2004	n/a	76	n/a	504 - 2,315	n/a
3	Aberdeen Lofts	1 Aberdeen Way, Cambridge, MA 02138	Cnv	1914	2005	55	682 - 1,567	360k - 690k	\$490
4	Paris Landing	42 Eighth Street, Charlestown, MA	Cnv	1800	2004	367	579 - 1400	250 - 650	\$496
5	MacCallen Building	140 Dorchester Avenue, South Boston, MA 02127	New	2005-06	n/a	144	663 - 2,755	520 - 2,100	\$682
6	323 at Cypress Lofts	323 Boylston Street, Brookline, MA 02445	New	2005	n/a	29	499 - 880	1,082 - 1,709	\$475
7	Building Five Lofts	80 Elmwood Street, Somerville, MA 02144	Cnv	1900	2003	n/a	992 - 1,94	485 - 995	\$505
8	Strada 234	226-234 Causeway Street, Boston, MA 02114	Cnv	1910	2002	108	940 - 1,460	529 - 995	\$562
9	Charleston Lofts	210 Broadway, Everett, MA 02149	New	2004	n/a	200	684 - 1,850	250 - 626	\$378

Table 33: Summary of Comparable Loft Products

⁶⁶ From interview with Pamela McKinney, *op. cit.* July 18th, 2005.

1. COURT SQUARE PRESS CONDOMINIUMS

Project Name	Address	New/Cnv	Blt	Cnv	Units
Court Square Press	9 West Broadway, South Boston, MA 02210	Cnv	1906	2004	119



The Court Square Press Building stands at the head of the Fort Point Channel in South Boston, across the street from the Broadway Red Line “T” Station. Originally constructed in 1906, the building contains over 210,000 square feet arranged in a six-story rectangle surrounding an open central courtyard. The building initially housed the factory and offices of the Macallen Manufacturing Company; by mid-century the building was taken over by its current namesake - the Court Square Press Company. Court Square enjoys recognition as a Significant Structure by the Boston Landmarks Commission, and is an example of 20th Century brick-and-beam construction.

The majority of the loft-style units feature exposed brick and 11+ foot ceilings supported by the original heavy wood timbers. Many of the new construction units include floor-to-ceiling glass in several living rooms. A thick concrete floor-topping and new demising walls utilizing staggered-stud acoustically insulated construction were installed in an effort to minimize noise transfer between apartments. Each

individual residence has its own forced-air unit for heating and cooling. The building is pre-wired for telephone, cable, satellite television and high-speed Internet throughout. Open kitchens in every unit feature gas cooking and top of the line stainless steel appliances from brands such as JennAir and Bosch, countertops are granite. Garage will be available in 20 months in phase II Macallen building at a list price of \$40,000 - \$60,000 per stall.

SOLD		Mean	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	# Units	Baths	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
1	9	1.5	477,690	537,919	82	112.6%	980	538
2	9	2.1	573,100	567,100	143	99.0%	1,179	483
3	1	1.0	1,470,000	1,480,496	363	100.7%	2,766	535
All	20	1.80	566,355	591,283	120	104.4%	1,153	510

UAG		Mean	Mean	Mean	Mean	Mean SdPrice /	Mean	Mean
BRs	# Units	Baths	ListPrice	SoldPrice	DOM	Mean ListPrice	SF	\$/SF
1	7	1.5	653,571	0	64	0.0%	1,175	565
2	10	2.3	885,080	0	62	0.0%	1,490	583
All	17	1.94	789,753	0	63	0.0%	1,360	576

Table 34: Summary of Court Square Press Units SOLD and UAG 06/01/04 - 07/22/05

2. CHANNEL CENTER

Two buildings, 25 and 35 Channel Center, constitute the first phase (about 20%) of the Beacon Capital Partner’s new mixed use development at Channel Center. Located in South Boston across the Summer Street Bridge from South station (and Red Line T-stop), the project is composed of new, and converted condominium “loft” units.



35 Channel Center is a \$17 million dollar conversion of a five-story, 103,000 square foot warehouse building into 44 loft-style condominium units which have sold-out since they were ready for occupancy in March 2004. The units were designed to “retain their historic ambiance” and feature high ceilings, exposed brick and timber, and finish concrete

floors over acoustic underlayment. Other features include new energy-efficient industrial scale windows (placed in existing openings), individual climate control, high-speed internet-ready wiring, and

contemporary kitchens with custom cabinetry, granite counters, stainless steel appliances, and task and ambient lighting.



25 Channel Center is a new \$35 million dollar, 13 story, 184,000 square foot property featuring 76 units on 12 floors. Completed in June 2004, many different floor plans are available, including 2-story open plans, flats and penthouses. Several units have balconies, skylights and views of the city. All residences feature Viking kitchen appliances, four-fixture bathrooms, wall-of-glass windows, garage parking, and concierge services.

The Channel Center is not listed with MLS, therefore sales data was collected from the Warren Group data; the Warren sales data do not include unit areas, or parking information. The average list price for the converted units at 35 Channel center is \$498,000 (sold out), and the average list price for newly-constructed units at 25 Channel Center is \$854,000.

3. ABERDEEN LOFTS, 1 ABERDEEN WAY, CAMBRIDGE, MA 02138

Developed by Prospectus LLC a New England based developer, and designed by Bargmann Hendrie + Archetype, Inc. (BH+A) a Boston-based architectural firm, the 55 unit project is targeted for occupancy in the fall of 2005. Built in 1914, the building was used for lumber storage, then as a laundry supply, then as a factory (first for uniforms and coats and later for wooden boxes). More recently it has been used for book storage (by the Coop) and as office space. The project is located two blocks from Brattle Street and 10 minutes by public transportation to Harvard Square. The existing 2-story brick building is being renovated into 55 condos, priced from \$360,000 to \$690,000. Each unit will be on 2 levels with an internal staircase. There will be 3 types of units: 1-bay, 1.5-bay, and 2-bay. “Bay” refers to the width of the unit and the windows. Unit sizes will range from 682 sf to 1,567 sf. All units will have a full bathroom on the first level. The 1.5-bay and 2-bay units will have a 2nd bath on the mezzanine level. Every unit will have one deeded parking space in the outdoor lot. Additional parking will be available for

purchase on a first-come, first-serve basis. The kitchen counters will be Black Raven granite. The kitchen cabinets will be white wood with raised panels. Kitchens will include Bosch gas cook-tops, electric wall ovens, built-in microwaves and dishwashers; GE Profile refrigerators. All stainless steel appliances, InSinkErator disposals and CAT-5 wiring throughout. 13 of the first floor units will have a small private patio. There will be a large common outdoor area that will be landscaped with trees, benches and lighting.

The product available at Aberdeen Lofts is in many ways comparable to the product proposed for Galileo Lofts. There are several pertinent observations to be drawn from the analysis of the listings at Aberdeen Lofts. The smaller 1-bay units command the highest price per square foot which decreases proportionately from smaller to larger units. In addition, for this 10 story building, when identical units are compared (i.e. units 114 and 214) there is an average premium of \$20,000 for the second floor unit.

1-Bay: 1-Bed, 1-Bath				1.5 Bay: 1-Bed, 2-Bath				2-Bay: 2-Bed, 2-Bath						
Unit #	Unit Area	List Price	Status	\$/SF	Unit #	Unit Area	List Price	Status	\$/SF	Unit #	Unit Area	List Price	Status	\$/SF
105	765	\$375,000	Available	\$490	107	993	\$480,000	Available	\$483	101	1,392	\$670,000	Available	\$481
106	765	----	Reserved		108	898	\$465,000	Available	\$518	102	1,506	\$670,000	Available	\$445
111	765	----	Reserved		109	993	\$480,000	Available	\$483	103	1,259	\$620,000	Available	\$492
112	748	----	Reserved		110	920	\$465,000	Available	\$505	104	1,248	\$600,000	Available	\$481
117	765	\$375,000	Available	\$490	113	993	\$480,000	Available	\$483	127	1,429	\$650,000	Available	\$455
118	765	\$370,000	Available	\$484	114	993	\$480,000	Available	\$483	128	1,312	----	Reserved	
123	722	\$370,000	Available	\$512	115	955	\$480,000	Available	\$503	201	1,392	\$690,000	Available	\$496
124	765	\$375,000	Available	\$490	116	955	\$470,000	Available	\$492	202	1,567	\$680,000	Available	\$434
126	730	\$360,000	Available	\$493	119	993	\$480,000	Available	\$483	203	1,259	\$650,000	Available	\$516
205	765	\$395,000	Available	\$516	120	993	----	Reserved		204	1,248	\$620,000	Available	\$497
206	765	\$380,000	Available	\$497	121	1,083	\$480,000	Available	\$443	225	1,046	----	Reserved	
211	765	----	Reserved		122	980	\$470,000	Available	\$480	227	1,424	\$680,000	Available	\$478
212	765	\$380,000	Available	\$497	207	993	----	Reserved		228	1,312	----	Reserved	
217	765	\$395,000	Available	\$516	208	993	----	Reserved						
218	765	\$380,000	Available	\$497	209	993	----	Reserved						
219	682	----	Reserved		210	993	\$490,000	Available	\$493					
221	682	\$365,000	Available	\$535	213	993	\$495,000	Available	\$498					
223	682	----	Reserved		214	993	\$490,000	Available	\$493					
224	765	----	Reserved		215	955	----	Reserved						
226	730	\$375,000	Available	\$514	216	955	----	Reserved						
					220	993	\$490,000	Available	\$493					
					222	980	\$490,000	Available	\$500					
Mean Values:	\$376,538			\$502		\$480,313			\$490		\$653,000			\$477

Table 35: Current Listing for Aberdeen Lofts, July 2005-07-31

4. PARRIS LANDING, 42 EIGHTH STREET, CHARLESTOWN, MA

Located in the historic neighborhood of Charlestown Navy Yard, Parris Landing is an existing residence being upgraded and converted to condominium units by celebrity designer and architect Philippe Stark

and his design firm YOO. The project includes the renovation of 367 units of studios, one, and two-bedrooms. The listing prices range from the mid \$200,000 to mid \$600,000. Each unit includes one parking stall in structured above ground parking. Located in the Navy Yard, the project has waterfront access and is adjacent to a water taxi system that runs to downtown Boston's Financial District. The purchase price include a number of upgrade options, including choice of new entry and bath flooring choices of ceramic tile, marble tile, or hardwood, new stainless steel appliances & fixtures, granite counters in kitchen, and new plush carpet in bedrooms. Amenities include a new business center, pool & sundeck, courtyard & community spaces.

1-Bed, 1-Bath					2-Bed, 2-Bath				
Unit #	Unit Area	List Price	Status	\$/SF	Unit #	Unit Area	List Price	Status	\$/SF
2318	681	301,500	SLD	\$443	1302	926	381,500	SLD	\$412
5304	679	377,900	SLD	\$557	5306	1400	493,500	SLD	\$353
4302	782	425,900	ACT	\$545	1202	947	527,900	ACT	\$557
5309	624	399,900	ACT	\$641	1503	1281	547,900	ACT	\$428
	579	339,000	PCG	\$585	5514	1217	579,900	UAG	\$476
1308	682	299,500	UAG	\$439					
4104	720	381,900	UAG	\$530					
Mean Values:		\$360,800		\$534			\$506,140		\$445

Table 36: Summary of MLS Listings for Parris Landing 42 Eighth Street, Charlestown, MA June 2004 – June 2005

5. THE MACALLEN BUILDING, 140 DORCHESTER AVENUE, SOUTH BOSTON, MA 02127

Developed by local developers Pappas Enterprises (See Court Square Press Condos), the Macallen Building Condominiums is an 11-story residential building which will be situated at the intersection of South Boston, the South End, The Fort Point Channel Arts District, and the Financial District. The project is scheduled to open in the fall of 2006. The Macallen Building will incorporate 144 units as well as three-and-a-half levels of structured parking with a total capacity of 289 cars.⁶⁷

⁶⁷ http://www.bostonmagazine.com/citystyle_2005/index.php?text=macallen.txt

The Macallen is a modern design by Design Architects, Office dA, recipients of the 2002 Harleston Parker Medal, and Architects of Record Burt Hill Kosar Rittleman and Associates. Macallen touts luxury amenities such as an elevated terrace garden, screening room, gym, pool, and spa. Additionally, the building is across the street from the MBTA Red Line Broadway stop. There are eight different floor plans per building level, many of which include roof decks, balconies, or gardens.

This building will be the first of a series of green buildings to be developed by Pappas Enterprises, Inc.,” says Tim Pappas, vice president. “We feel ecologically responsible real estate development is the only way forward.”⁶⁸ Macallen will serve as a model of innovative, sustainable green design for urban housing development. The building was designed to capture the most natural light, promote healthy living conditions and reduce energy consumption. Macallen will also feature a sustainable, “green roof” that will not only reduce storm water runoff volumes, but will also offer landscaped views to the surrounding neighborhood. Pappas Enterprises intends to seek LEED (Leadership in Energy and Environmental

0-Bed, 1-Bath				1-Bed				2-Bed					
Unit Area	List Price	Status	\$/SF	Unit Area	# Baths	List Price	Status	\$/SF	Unit Area	List Price	# Baths	Status	\$/SF
812	519,900	ACT	\$640	1006	1	578,090	ACT	\$575	1530	869,900	2	ACT	\$569
792	519,900	ACT	\$656	1324	1	764,900	ACT	\$578	1605	1,134,600	2	ACT	\$707
1113	829,900	ACT	\$746	1100	1	636,900	ACT	\$579	1288	839,900	2	UAG	\$652
792	599,900	ACT	\$757	1327	1	769,900	ACT	\$580	1701	944,255	2.5	ACT	\$555
727	641,900	ACT	\$883	1109	1	671,900	ACT	\$606	1720	959,900	2.5	ACT	\$558
663	610,000	ACT	\$920	977	1	679,900	ACT	\$696	1359	899,900	2.5	ACT	\$662
667	619,900	ACT	\$929	1055	1	669,900	UAG	\$635	1855	1,409,900	2.5	ACT	\$760
				1700	1.5	1,209,900	ACT	\$712	1892	1,481,900	2.5	ACT	\$783
				1009	1.5	899,900	ACT	\$892	2315	1,424,900	2.5	UAG	\$616
				1195	2	675,500	ACT	\$565	2158	1,299,900	3	ACT	\$602
				1194	2	728,900	ACT	\$610	2755	2,100,000	3	ACT	\$762
All:	\$620,200		\$790	\$790		\$753,245		\$639		\$1,215,005			\$657

Design) Certification from the U.S. Green Building Council.

Table 37: Summary of MLS Listings for Macallen Big, June 2004 – June 2005.

⁶⁸ Reported by: Michèle M. Meagher, Globe Magazine “Be It City, Country or In-Between Revel in the Lap of Luxury”, The Boston Globe, May 20, 2005.

6. 232 AT CYPRESS LOFTS, 323 BOYLSTON STREET, BROOKLINE, MA 02445

Cypress Lofts Phase I consists of 45 luxury loft-style condominiums, one unit of ground-floor retail, and 124 underground parking spaces. Demand for this project has been very strong, with all units under agreement prior to completion of construction. Amenities include concierge service, hardwood floors, granite countertops, stainless steel appliances, and full size washer/dryers in each unit. The project is located steps from the Brookline Hills MBTA stop (“D” Green Line). The four-story project connects new construction with a historic restoration of the Ritchie Building. The Ritchie Building is on the Area Registry of Historic Places as the headquarters of the inventor of the liquid compass.

323 at Cypress Lofts (Phase II) will consist of 29 condominiums, 63 underground parking spaces, and ground-floor retail space. Although it will be fully integrated and share concierge and other services with Phase One, 323 will have its own distinct architectural identity. The design, by Spagnolo Gisness & Associates, is a fresh, modern take on traditional urban living. All units will feature maple floors in the living areas, premium Berber carpet in the bedrooms, and solid core doors with stainless steel hardware. Kitchens will include solid wood kitchen cabinets, black granite countertops, stainless steel GE Energy Star rated appliances, and recessed, under cabinet, and pendant lighting. Bathroom features will include tumbled marble floor tiles, European-style vanities, granite counters, and “subway” tile tub and shower surrounds accented with glass tile trim. And, many units will feature terraces, balconies and garden areas, and exciting urban views.

Unit #	List Price	List Date	SF	#/SF	Comments	Unit #	List Price	List Date	SF	#/SF	Comments	
101	UAG	02-Feb	1,616		Corner apartment with yard	401	UAG	02-Feb	1,453		Corner unit.	
102	\$499,000	01-Jan	1,082	\$461	Apartment with yard	402	UAG	02-Feb	1,309		Corner unit.	
201	\$639,999	02-Feb	1,533	\$417	Corner unit.	403	\$669,000	02-Feb	1,474	\$454		
203	\$639,000	02-Feb	1,474	\$434		404	UAG	02-Feb	1,294			
205	\$599,000	02-Feb	1,393	\$430	Corner unit.	405	\$649,000	02-Feb	1,393	\$466	Corner unit.	
206	\$665,000	02-Feb	1,592	\$418	Corner unit.	406	UAG	02-Feb	1,560		Corner unit.	
301	UAG	02-Feb	1,533		Corner unit.	501	UAG	02-Feb	1,662		Dramatic view of Boston's skyline with private terrace.	
303	\$639,000	02-Feb	1,474	\$434		502	UAG	02-Feb	1,709		Dramatic view of Boston's skyline with private terrace.	
304	UAG	02-Feb	1,294			503	UAG	02-Feb	1,489		Spectacular with walk out terrace.	
305	\$639,000	02-Feb	1,393	\$459	Corner unit.	504	UAG	02-Feb	1,195		Spectacular with walk out terrace	
306	UAG	02-Feb	1,560		Corner unit.	601	UAG	02-Feb	1,505		Penthouse with walk out terrace. Dramatic views.	
						602	\$695,000	2/1.5	1,231	\$565	Penthouse with walk out terrace. Dramatic views.	
						603	UAG	02-Feb	1,410		Penthouse with 750 s.f. terrace & spectacular panoramic views.	
						604	\$679,000	02-Feb	1,195	\$568	Penthouse with 750 s.f. terrace & spectacular panoramic views.	
All:			617,143	\$436					673,000	\$513		

Table 38: Listings for 323 Boylston Street July 2005.

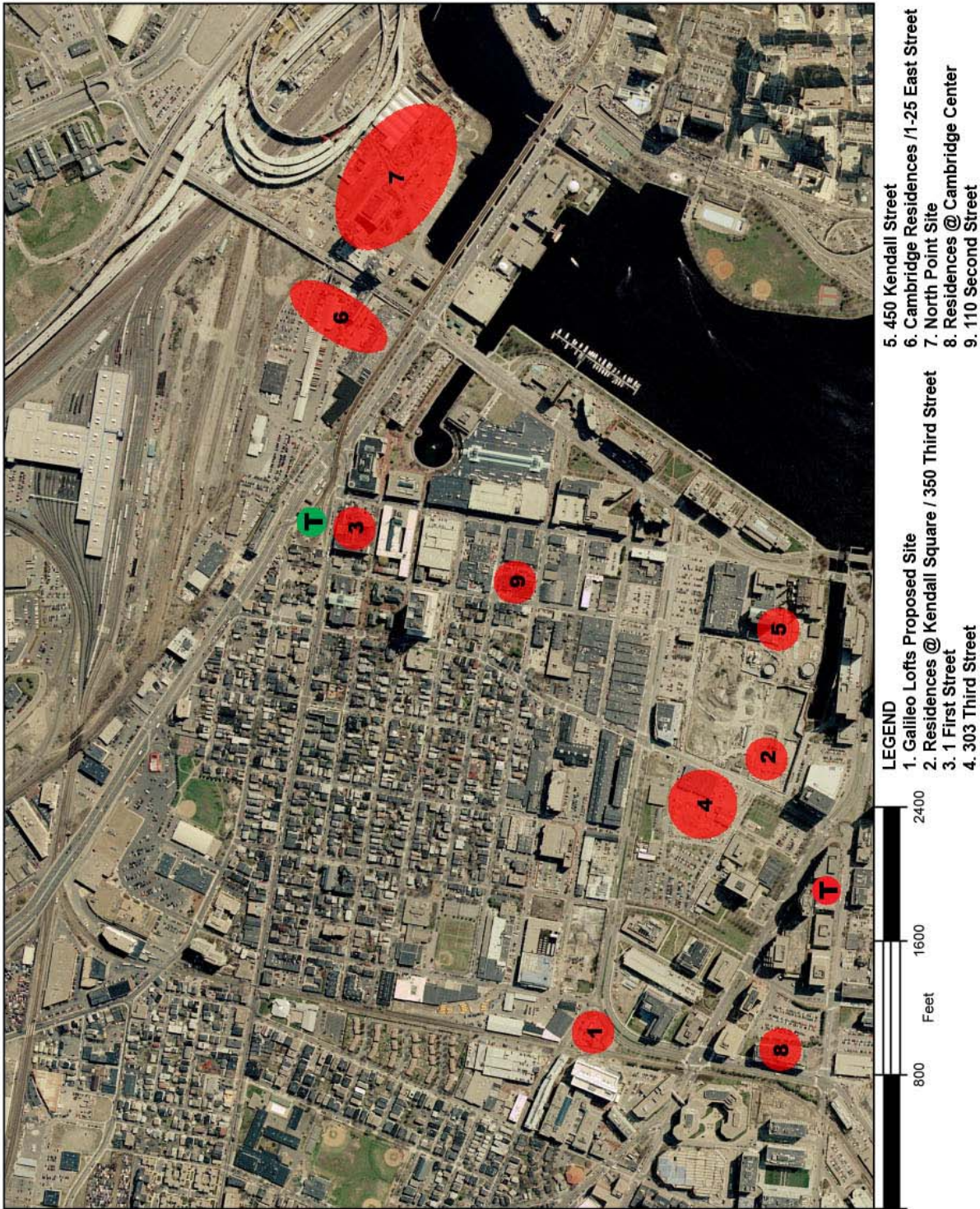
6.5 Analysis of the Development Pipeline

In the years between 1970 and 2002, East Cambridge saw a supply of 754 newly constructed, and 175 converted condominium units come onto the market. This supply of roughly 1000 units over thirty years lies in stark contrast to the 2,316 units currently in the pipeline, and scheduled for delivery in the next 36 – 48 months (4,467 units total including the remaining North Point Master Plan). The amount of new stock scheduled for delivery by appears 2007 is startling; however, forecasters as CB Richard Ellis have reported that the greater Boston area has demonstrated a history of pipeline schedules failing to materialize. As written in their multi-housing 2004 overview “Our pipeline the schedule from two years ago anticipated peak deliveries of in excess of 7,000 units for 2004, which obviously has not occurred. Again, this is a result of delayed permits and poor market fundamentals. Despite the potential for in excess of 10,000 units of deliveries in 2006, we do not expect that they will all get built, nor have a material impact on the market.”⁶⁹ The analysts at CB Richard Ellis further predict the amount of new product scheduled for delivery in East Cambridge is a small fragment of the overall stock, as such it is predicted the new stock will not have a significant impact on the demand for condominium housing, particularly in the entry-level submarket.

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
350 Third Street	Twinning Properties	3.00	0	357,000	321	In Construction
1 First Street	Leggat McCall Properties	4.10	72,418	291,006	199	In Construction
303 Third Street	Intell Cambridge LLC	3.90	148,693	579,779	526	Permitted
450 Kendall Street	Lyme Properties	3.00	0	46,293	8	Permitted
1-25 East Street	C.E. Smith / Archstone	2.90	247,431	935,215	767	Permitted
North Point Building "S"	Guildford/Spaulding Slye	2.66	19,500	113,955	99	Permitted
North Point Building "T"	Guildford/Spaulding Slye	2.66	32,000	236,223	230	Permitted
Remaining NP Master Plan	Guildford/Spaulding Slye	2.66	3,256,310	4,134,318	2,151	Permitted
3 Cambridge Center	Boston Properties	3.30	61,302	202,600	135	Permitting
110 Second Street	Jonathon Leavitt	1.95	19,995	39,000	31	Permitting
TOTAL			3,857,649	6,935,389	4,467	

Table 39: Summary of Residential Units in the Pipeline for East Cambridge

⁶⁹ In CBRE Multi-Housing Year End Report 2004, page 4.



Map 6: Projects in the Pipeline for East Cambridge

1. THE RESIDENCES AT KENDALL SQUARE

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
350 Third Street	Twinning Properties	3.00	0	357,000	321	In Construction



The residences at Kendall Square (350 Kendall Street, adjacent to the Genzyme Building) are part of a 1,300,000sqft mixed use development slated for completion by fall 2005. Constructed on top of an existing structured parking garage, the project developed by Twinning Properties (with Lyme properties) is a 24 story residential tower which will contain 321 rental apartments, a 15,000 sq. ft. health

club, and 10,000 sq. ft. of retail space over an operational 4 story underground garage.

The residences will range from studio, one bedroom, one bedroom with den and two bedroom units with walk-in closets/ dressing rooms, tiled bathroom with architectural faucets and designer lighting. Kitchens will feature one-foot square porcelain tile floors and birch shaker style cabinets, individually controlled heating and cooling, “green” washer/dryer, large windows, high-speed internet connectivity and telephone service. The penthouse residences will have views of the Charles River, Cambridge, Back Bay, Beacon Hill and the Harbor, deluxe carpeting and granite countertops and GE Profile appliances in the kitchen.

2. ONE FIRST STREET

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
1 First Street	Leggat McCall Properties	4.10	72,418	291,006	199	In Construction



One First Street is a 211 unit residential development by Leggat McCall Properties in cooperation with ING Real Estate Development. Designed by the recognized firm of Elkus Manfredi Architects, One First sits directly across the street from the Lechmere Green Line MBTA Station. Located on property that was most recently owned by the NECCO Candy Company, the project is a redevelopment

of nearly an entire city block in East Cambridge. Five residential buildings are being carved out of this historic city block and will surround a private courtyard. The transformation will include the demolition of several buildings, the gut-rehabilitation of others, and the construction of two completely new structures. The original structures that will be retained were built between 1866 and 1929 and represent several styles of American Industrial Architecture; the new residential units scheduled for these spaces are planned to have ceilings with heights up to 16'.

The project is intended to appeal to a broad market with one, two, and three-bedroom apartment style, loft and duplex condominiums ranging in size from 692 to 2,193 square feet, with prices ranging from \$395,000 to more than \$1,000,000. Construction started in early 2005, and units are scheduled to be ready for occupancy beginning in the spring of 2006. The units all feature the following elements:

- High ceilings
- Granite counter tops
- Hardwood cherry kitchen floors
- In-unit washer and dryer hookups

- Marble floor and vanity top in master bath
- Individually controlled heating and cooling

No customization is allowed, but the developers offer a choice of either standard or upgrade packages for kitchen appliances; cabinets and countertops; and living room, dining room and hall flooring.

According to John Soininen, project manager at Boston-based Leggat McCall, approximately 30 percent of the 159 units in the first phase of the project have been pre-sold, and there is already a waiting list for the 23 units that are deemed affordable.⁷⁰

⁷⁰ Interview with John Soininen. June 12, 2005.

3. 303 THIRD STREET

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
303 Third Street	Intell Cambridge LLC	3.90	148,693	579,779	526	Permitted



303 Third Street is a 554,000 sq. ft. two-phase residential project that is planned to include both condominium and rental units and is located in Kendall square, adjacent to the existing Volpe site. The first phase is planned to begin in either the late 2005 or early 2006. The project incorporates a total of 527 units and 527 below grade parking stalls. Façade materials include pre-cast concrete, zinc “shingles”, brick, and a terra cotta rain-screen system

4. 450 KENDALL STREET

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
450 Kendall Street	Lyme Properties	3.00	0	46,293	8	Permitted



450 Kendall Street is a residential component in Cambridge Research Park, which also includes proposals on the table for a hotel at 250 Kendall Street, and theater at 585 Kendall Street. Developed by Lyme Properties, and immediately adjacent to the Genzyme Building, 450 Kendall Street is a mixed-use project being developed as part of the Kendall Square development. The ground floor of the project is scheduled for retail use, including at least one “fine dining” restaurant with outdoor seating. The other retail spaces are planned for a limited number of retail uses. The ground and second floors are each approximately 12,000 gross square feet, and the second floor is planned to house Lyme Properties Corporate Head Office.

450 Kendall Street and the adjacent landscaped park are the result of an international design competition sponsored by Lyme Properties. The building architect is Architects Alliance of Toronto, and Landscape design by Michael Von Valkenberg of New York and Cambridge. The project proposes eight “loft style” residential condominiums delivered in a “luxury shell condition”. The building is intended to be of high

quality, and is planned to be constructed out of architectural grade concrete, with a curtain wall façade system that incorporates clear anodized metal, vision glazing, and sandstone panels. The residential units are going to be delivered completely unfinished, with only exhaust vents roughed into the ceiling. All other layout, finishes and features, including all plumbing, are to be determined by the buyer. There are two loft units per floor, each roughly 2,500 gross square feet. The top of the building features a “penthouse suite” which takes up the whole floor, and includes a very large enclosed balcony. In addition to the private balconies on the upper two floors, there is a shared roof garden on level three for the remainder of the residential units. It is worth noting that the original proposal includes private terraces for each of the loft units; these were subsequently deleted as a cost-savings measure.

4. NORTH POINT

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
North Point Building "S"	Guildford/Spaulding Slye	2.66	19,500	113,955	99	Permitted
North Point Building "T"	Guildford/Spaulding Slye	2.66	32,000	236,223	230	Permitted
Remaining NP Master Plan	Guildford/Spaulding Slye	2.66	3,256,310	4,134,318	2,151	Permitted

“It’s a dreary patch of land: a 54-acre, underutilized rail and industrial facility in Cambridge, tucked between Monsignor O’Brien Highway and the northern approaches to the Zakim-Bunker Hill Bridge. And it is being hyped as the region’s “next great urban neighborhood.”⁷¹ The vast majority of the site, 48 acres, is under the control of a joint venture between Guilford Transportation Industries of Portsmouth, N.H., and Boston real estate firm Spaulding & Slye Colliers International. Guilford is a railroad and airline concern owned largely by Timothy Mellon, son of the late philanthropist Paul Mellon.

The North Point development includes a 5.5-acre “Central Park,” which will serve as the starting point for a boulevard modeled on Boston’s Commonwealth Avenue, street-level retail, on-street parking and a

⁷¹ James McCown, “North Point Exposure”, Boston Business Journal, March 15th, 2002.

continuation of east Cambridge's street grid. The plan, also calls for 2,300 to 2,700 units of residential housing, 15 percent of which are required to be affordable housing; up to 2.2 million square feet of office and industrial space; and 75,000 square feet of retail space.



Ground broke for phase 1 in March of 2005. This first phase is reported to cost over \$100 million⁷², and includes two buildings, Building "S" and Building "T", with 329 Condominium units. The architectural firms Childs Bertman Tseckares (CBT) of Boston and architectsAlliance (aA) of Toronto designed buildings "S" and "T" respectively. The price range for most units is \$300,000 to \$500,000 with a few as high as \$700,000. Most one and two bedroom units will be

between 700 and 1,500 square feet, with the majority being 900 square feet. Based on pure extrapolation, it appears these units will be priced at roughly \$450 - 500 per square foot. The prices listed are intentionally "on the low side"⁷³ in an effort to lure first-time buyers to an unproven location. The ground floor units on both S & T will be "town home-like", with exterior doors and some with private stoops.

The current plan is to move Lechmere Station east, to the other side of Monsignor O'Brian Highway, when NorthPoint is about half completed.

Building S is an 8-story loft-style residential building, which will contain 103 condominium units.

Building S will feature one-bedroom units with 1.5 baths averaging approximately 900 square feet. The

⁷² Chris Reidy, "15-Year, 3-City NorthPoint Project Kicks Off Today", The Boston Globe, March 21st, 2005.

⁷³ Thomas Palmer Jr, "Phase 1 for a City within a City", The Boston Globe, Sunday, September 19, 2004.

units offer double height living spaces with a loft and floor-to-ceiling windows. Upper floor units will feature views of the Central Park and adjacent courtyard.

Building T is a 12-story residential high-rise that will contain 237 one and two bedroom condominium units. Building T will be comprised of a blend of flat and duplex condominium units offering a variety of



unit types. Upper level units will feature roof terraces overlooking the Central Park, and corner penthouse units with views toward the Leonard Zakim Bridge.

5. CAMBRIDGE RESIDENCES: CHARLES E. SMITH HOUSING

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
1-25 East Street	C.E. Smith / Archstone	2.90	247,431	935,215	767	Permitted



The “hole in the donut”⁷⁴ across the street from the Spaulding Slye Colliers North Point development is a 6 acre site fronting O’Brien Highway. The parcel is being developed by local McKinnon Company, and Charles E. Smith Residential, a unit of the publicly traded residential REIT Archstone-Smith of Englewood Colorado. The public private venture is permitted to deliver 767 residential apartment units housed in two buildings, with underground parking for 870 cars. Designed by the well-known architectural firm ADD Inc.⁷⁵, the project is scheduled to progress in two phases. The first, scheduled to start in 2005 and be completed by 2006, is a rental residential high rise at the eastern edge of the site; the second phase will be comprised of low-rise residential buildings. The project will also contain a 2, 400 square-foot retail space, office space, cafés, and a fitness centre. The project is slated to be the first development in the transformation of the North Point area.



“Our parcel is not as big, but it’s much more visible because it fronts right on O’Brien Highway,” comments Jeffrey Millman, a former principal of the Cambridge Co. and now in a private architecture practice. Millman says that a variety of mixes were considered before the venture decided on all rental housing.

12 percent of the units have been set aside as affordable, said Dunlop. The average rent for the remaining units will be \$2,500 per month.

⁷⁴ David Vickery, Principle Spaulding and Slye Colliers, North Point Exposure. Boston Business Journal, March 15, 2002.

⁷⁵ ADD Inc. has offices in Cambridge MA, and has done several residential projects in the Boston Area, including the prominent Atelier 505

6. THE RESIDENCES AT CAMBRIDGE CENTER

Project Address / Name	Developer	FAR	Lot Area	GFA	Units	Status
3 Cambridge Center	Boston Properties	3.30	61,302	202,600	135	In Permitting

Located at the center of Kendall Square, Cambridge Center is a 2.7 million square foot mixed-use urban center. The 24-acre site contains Class A office, research lab, retail, restaurants, hotel facilities, and public parks and gardens with on-site rapid transit access at the Kendall Station of the MBTA Red Line and parking for over 3,000 cars in the North, East and West Garages. Cambridge Center is directly across the Charles River from downtown Boston and immediately adjacent to Massachusetts Institute of Technology.⁷⁶

Currently under schematic design review by the Cambridge Redevelopment authority is a proposal for the Residences at Cambridge Center proposed by Boston Properties in April of 2005. Part of the Cambridge Center Site, and tentatively scheduled for completion in 2007, the proposal is to develop a residential high rise on Parcel 3. The proposal is for a twenty-four (24) story building totaling approximately 200,000 SF of residential area and 2,600 SF of retail space. The proposal includes provisions for structured parking for 120 cars. The structured parking includes one level of below grade parking, and 8 levels above ground (9 floors of parking at 9'11½" floor to floor).

The proposal illustrates 135 dwelling units incorporating 43 one-bedroom units of 719 sq. ft. average size, 78 two-bedroom units of 1,137 sq. ft. size, and 14 three-bedroom units of 1,410 sq. ft. size. The majority of the one-bedroom units are on the lower floors, with two-bedrooms dominating floors 11 – 22 and three-bedrooms on levels 23 & 24.

⁷⁶ Boston Properties webpage: http://www.bostonproperties.com/site/boston/seven_cambridge_center.htm

The project is proposed as a steel and concrete structure (conventional construction typology) with foundations of: i) pre-cast piles, ii) pressure injected footings, iii) combo of strip footings, spread footings and mat foundation. The exterior cladding is a combination of the following: white/grey limestone toned pre-cast panels; grey stone base at the residential, buff stone base at retail; bronze & cobalt grey metal panels; champagne silver framed curtain wall glazing.

6.6 The Rental Market in Kendall Square

The existing rental Market in Kendall Square is integral in bringing multi-unit residential uses to the neighborhood. Existing rental lofts have been very successful, and demonstrated a demand for such housing in the area. An example is Worthington Place.

WORTHINGTON PLACE



Worthington Place, located at 195 Binney Street adjacent to Kendall Square, houses 186 “luxury” loft-style apartments in a converted industrial building. The units are consistent with many of the features associated with “loft” apartments, specifically the typically rectangular floor plans and the high ceilings (13’4” – 14’0”). Converted to apartments in the late 1990’s, Worthington place has a history renting to MIT students, in fact in 1998 (prior to the construction of new MIT graduate residences) MIT reserved 66 apartments to rent to MIT students at below market rates, and another 25 were reserved to rent to graduate students (at market rates).

Current asking rents are as follows: studios range from \$1300 to about \$1700; one bedrooms range from \$1850 to about \$2250; two bedrooms range from \$2,250 to \$2,600. Rents include one off street parking space, hot water, and a portion of the heating and cooling cost.

SECTION 7: MARKETABILITY AND PRICING OF GALILEO LOFTS

7.1 Overview of Galileo Lofts Proposal

The proposal for the Galileo Lofts at MIT puts forth a plan to construct a nine story building that includes approximately 75,000 square feet of housing and common space. The new building has been located at the extreme northern end of the site. It is intended to relate to the massing and orientation of the Genzyme building along Binney Street, and would complete the building line of Binney Street as viewed from the movie theaters and the entry to One Kendall Square. The proposed building is designed to be as narrow as practical to maximize the area for a public park to the south. This new building terminates the Galileo Galilei Way axis that runs north from MIT's Stata Center, creating a public open space.⁷⁷

OPTION 1: PROPOSAL DATED AUGUST 27, 2004

The original proposal (Option 1) outlined a unit mix of 21 market rate condominiums, 3 inclusionary condominiums (i.e., units that are required under Cambridge's zoning ordinance to be affordable to low income persons, where low income is defined as less than 80% of the area median income) and 12 affordable rental units.⁷⁸ Since the Cambridge Redevelopment Authority's Request for Proposals included a requirement that 40% of the units be affordable to low income households, the proposed

⁷⁷ Development Proposal to the Cambridge Redevelopment Authority. "Galileo Lofts at MIT: Housing and Urban Park," August 27, 2004.

⁷⁸ Note that the proposal submitted on August 27th, 2004 outlines provisions for 36 units, however the drawings submitted to the authors for "Case A" dated April 28th, 2004 illustrate the provision of 44 units in total. In fact, page a5 of the proposal designates condominiums on eight floors, which at 8 units per floor plus 12 townhouses yields 44 units. It is assumed that when the proposal was submitted 36 units were intended to meet zoning requirements for parking, since the design incorporates 36 parking spaces on the lower level; the 36 unit scheme on nine levels is not however financially viable. The staff of the CRA has suggested that dedicated parking might be leased at a nearby garage, thereby satisfying the zoning requirement. Therefore, this analysis assumes the proposal (Option 1) is for 44 units.

percentage of inclusionary and affordable units in this proposal is 41%. The proposal further states that at least half of the affordable rental units shall have three bedrooms to accommodate families. The original proposal envisions a building with a level of parking a half story below grade, two-story townhouses on the ground level and condominiums above. The 12 townhouses are intended to comprise a single condominium unit to be purchased and managed as rentals by Just-A-Start Corporation, a non-profit community development corporation providing a range of services for low and moderate income people, including expanding affordable housing opportunities. The townhouses are planned to be delivered through traditional construction methods, and will have individual access to the street level. The condominiums on the upper floors are all served by a central lobby at ground level. There are two floor layouts with 4 units per floor that alternate on odd and even levels.

One of the fundamental objectives of the proposal (from the perspective of the developers, HomePrime & Oaktree Green) is to develop a project that will serve as a laboratory to test new design and delivery methods currently in development by the MIT House_n Research Group and MIT's Open Source Building Alliance (hereafter, collectively the "Alliance"). The condominium units are intended to be configurable lofts. Each unit will be constructed with bathrooms, demising walls, wood floors, washer/dryer, individual HVAC system, and carefully located connections for kitchen plumbing, power, and data. At the point of sale (during or before the construction process), a set of options will be offered to the buyer, including a variety of kitchen layouts, cabinetry storage/organizing units, and special purpose components for work and entertainment. The Alliance is currently developing a software package that is intended to allow buyers to customize their suites by selecting a variety of options (much in the same way a car purchaser can customize his car purchase). At the time of this analysis, the construction and delivery methods hypothesized by the Alliance were at a very conceptual stage; as such, the market and financial feasibility analysis included herein had to proceed based on the assumption that construction cost estimates will use conventional construction pricing.

Since the original proposal submitted in August, 2004, there have been several iterations of the proposed building scheme. An alternate scheme (Option 2) is currently underway and seeks to locate parking in a two-level above-ground structured garage. This scheme eliminates the townhouse component, and utilizes 61 single-level units, of which 16 would be affordable rentals, 8 would be affordable condominiums (40% affordable in total), and 37 would be market rate condominiums. Because at the time of this writing the revised scheme is still in process, the majority of the analysis herein reflects Option 1, the original scheme with 44 units.

7.2 Market Segmentation

The developers have chosen the site and the basic features of the product type. These decisions have narrowed the possible target market for the project. Some buyers will be primarily attracted by the project's location in Kendall Square: we will call them "**Cambridge Condo Buyers.**" Other buyers will be attracted primarily by the product, i.e. project's design and configuration as lofts: we will call them "**Loft Buyers.**"

CAMBRIDGE CONDO BUYERS

The primary group of Cambridge Condo Buyers consists of people who work (as scientists, professors, technicians, programmers, analysts, technical salespersons and staff) in Kendall Square's labs and offices. They already know the area and would gain the ability to walk to work. The secondary group of Cambridge Condo Buyers is expected to be people employed in Boston's downtown.⁷⁹ For these

⁷⁹ As mentioned in the market analysis, Cambridge's tax rate is approximately 2/3 Boston's with a residential exemption that's approximately 1/3 greater than Boston's. This difference in tax rates, combined with locational proximity to downtown, has been cited as one of the factors influencing the increased residential development in Eastern Cambridge. "Crescent Heights Names Local Marketing Team for The Cambridge Glass Factory Condominiums." *Nickerson's Newsletter*. February 18, 2005.

“locational commuters,” proximity to the Red Line T-Station at Kendall Square makes it easy to get to work, and East Cambridge prices are not as high as locations right in downtown. The target demographic for both groups falls in the young professional (25 – 44) group, which has demonstrated a dramatic influx into the East Cambridge area in recent years, as shown in Section 5.2.

A third group consists of mature buyers looking for a retirement condo or second city home, who tend to rate proximity to urban amenities very highly in their consideration of geographic relocation. In the greater Boston area this demographic has traditionally favored downtown locations, and is not anticipated to be a large component of the potential market for Galileo Lofts. However, there is a potential to attract mature buyers who have affiliations with East Cambridge, and specifically MIT. These are people who have worked in the area for many years, who want to live in a familiar area and be close to former colleagues and the activities of MIT. There is, in fact, a group of MIT-affiliated retirees who are seeking a site near MIT on which to develop a condominium or cooperative with an MIT-centered community orientation. As of April, 2005, they had obtained deposits from 75 potential buyers.⁸⁰ Galileo Lofts is not suitable to serve as this group’s residence, because of its small scale; its features, which will not be oriented to appeal to most retirees; and its lack of extensive common rooms, which this particular group desires. Nonetheless, the existence of this group demonstrates that there is a demand for housing in Kendall Square among MIT retirees; accordingly, we expect a small portion of this segment to be interested in a design concept a little different from what some of their contemporaries are pursuing.

Eastern Cambridge is a stable residential community, with particularly strong Portuguese and Italian ethnic identities. Typical neighborhood housing consists of one-, two- and three-family homes on small lots. The area has been gentrifying in recent years as older properties have been renovated and upgraded,

⁸⁰ O. Robert Simha. Presentation to Class on Topics in Housing Finance. MIT. April, 2005.

and as newer properties have been built on the periphery of the neighborhood (Thomas Graves' Landing, River Court, Esplanade, Glass Factory, One First, Museum Towers/Regatta Riverview, etc.) As a result of this gentrification, the population of the area has been getting younger. We believe that Galileo Lofts can appeal to both: the younger entry-level buyer in search of residential options close to work or to commuting lines, and the mature residents, particularly ones who have ties to the area through having worked in Kendall Square or MIT and who are ready to leave their houses. We will discuss below how to accommodate the differing design and amenity requirements of the younger and older groups.

LOFT MARKET

The "Loft Buyers" constitute the second potential target market group. This group is made up primarily of younger singles and couples, typically first-time buyers, who are technologically savvy and "wired." Many work in design or technical fields throughout the metropolitan area. They are attracted by the features of the loft product and its value and location compared to other lofts. Accordingly, they have less connection to a specific neighborhood and tend to look over a wider geographic range than most condominium buyers. There is also a small segment of loft buyers consisting of empty-nesters, people in their 50s and 60s whose children (if any) are no longer living at home. These aging baby boomers are seeking to sell their suburban home and make the transition to a smaller, urban residence offering minimal upkeep responsibilities and access to cultural activities and urban vitality. It is anticipated that the proportion of older buyers who would be interested in an East Cambridge address would be significantly less than those looking in Boston areas such as the South End; however, both qualitative and quantitative demographic analysis support the hypothesis that there are a smaller number of older buyers who through either historic geographic preference, or MIT affiliation would look to buy product in the East Cambridge / Kendall Square neighborhood. Given the small number of units proposed for the Galileo Lofts, it is reasonable to expect older loft buyers for a small percentage of target sales.

THE MARKET FOR GALILEO LOFTS

The most suitable buyers for the Galileo Lofts will be those who find appeal in both the Kendall Square location (Cambridge Condo Buyers) and the loft product (Loft Buyers). Combining the two groups, the project's target market has two demographic segments:

Primary market segment: Younger (25-44), work in technical, scientific or design fields, are technically savvy, edgy, willing to live in transitioning neighborhoods and willing to experiment with unconventional living spaces. Many of them work in the area; others will take the subway. Some are attracted by the Cambridge location (Cambridge Condo Buyers); others will be attracted by the loft product (Loft Buyers). Most of them are first time buyers; their household incomes are in the range of \$75,000 to \$125,000 (with some higher); they tend to be price-conscious (although there is a small percentage of this segment with substantial income or equity who are drawn to a luxury product)⁸¹. At mortgage rates projected to be in effect at the time Galileo Lofts come to market, in the range of 6.5%, and using conservative underwriting guidelines (30% PITI to income), this segment will be able to afford \$260,000 to \$500,000 with a down payment of up to 5% to 20% of the price. This market segment may constitute 60% - 70% of buyers at Galileo Lofts.

Secondary market segment: Adult (45+) childless couples ("empty nesters"), some of whom are retired, many of whom work at MIT or in Kendall Square. Some of them are seeking to refute their previous identification as suburbanites. Others are just moving to a condo at the edge of the neighborhood where

⁸¹ Tim Pappas, (son of the developer James. Pappas) and his brother Andrew work for Pappas Enterprises out of Boston MA, and have developed many of the luxury loft products currently on the market (i.e. the Macallen Building, Court Square Press etc.). Interviewed in the *Boston Globe* on June 22, 2005 "Playing to their Peers", Tim Pappas articulated their strategy of targeting young artists and entrepreneurs, "many of whom take their work home in the evening and are drawn to a loft product". The developers target young, hip design conscious clients.

they have lived for most of their adult life. Many will have an MIT connection. Since they typically will be selling a home that gives them substantial equity, they are less price-conscious than the primary market group, but few of them are upper income. This market segment may constitute 10% - 15% of the buyers at Galileo Lofts. Most will not be specifically seeking a loft product, but may become intrigued by the space and particularly by the Cambridge location.

DESIGN FACTORS

As discussed in Section 4.1, Kendall Square has a long industrial history. In recent decades, with the proximity of MIT, it has become known for scientific and technical research, and now it is a center of the high technology and biotech industries. This suggests a theme of technical innovation and a high tech industrial look and feel. The project must be equipped with the latest in technological amenities: it must be “wired.” Design should be edgy and industrial: open, flexible spaces; exposed structural elements; exposed concrete floors rather than wood or carpet; stainless steel appliances and accents.

These are exactly the features that will appeal to the primary market segment. Although there have been surveys conducted by the U.S. Department of Housing and Urban Development (HUD) that demonstrate a significant proportion of buyers express a desire to be able to customize their living space, the entry-level buyer is unable to pay a premium for the opportunity. It is reasonable to extrapolate that the young urban loft buyer likes the flexibility that a loft plan enables (often for future renovations), but affordability limitations would minimize the number of buyers in this market able to pay for extensive customization at the time of sale. The unit needs to be finished and livable, but perhaps in a “rougher” state than an older buyer would prefer.

The empty nesters have different requirements: they will be looking for conventional flats but will appreciate the loft design’s exceptionally high ceilings and large windows (substituting cubic footage for square footage). They will expect large rooms in the living area, but will want most of the space partitioned, rather than open; they are more concerned with high quality of finishes than with edgy

design.⁸² This suggests that interior partitions should be an available option (as planned), that all construction work be of high quality and that there should be various grades of finishes available (lower priced finishes to meet the purchase price concerns of the younger, first-time buyers, and premium finishes to appeal to the older buyers). Most of these empty nesters have no design background, nor have they ever worked with architects or designers in connection with their own homes (as wealthier persons may have), so they will not want anything less than fully finished space.⁸³

CUSTOMIZATION

Market research has demonstrated the luxury buyer is willing to pay to customize.⁸⁴ For instance, 450 Kendall Square, currently in development by Lyme Properties, is targeting the very top of the market of luxury products and is going to deliver the building as an unfinished shell (even bathrooms and kitchens are not located). It will be up to the buyer to finish her or his suite (either with the aid of the developer or independently). The target market for this property will be upper income buyers who can afford to hire design professionals to plan and finish the space.

⁸² Market research has demonstrated that many mature buyers who are “down-sizing” or purchasing a city home have a variety of house-scaled furniture in their possession that they do not want to part with. Therefore part of the appeal of the loft product to this demographic is the open plan that is spacious enough to accommodate such items.

⁸³ The authors are indebted to Robert Salisbury, Vice President of Bonz and Company, and John Ranco, marketing agent with Gibson Domain Domain, for insights into the nature of loft buyers.

⁸⁴ Many of the top of the market luxury condominium developments in recent years (such as One Charles, 500 Atlantic Avenue, etc.) have found it necessary to provide the option of customization to their buyers. Many developers have struggled to find a way to satisfy this demand, and still deliver the projects in a cost effective way. Evidence suggests there would be a strong demand for a product that both appealed to the needs of the luxury buyer, and offered a viable method of customization.

The Open Source Building Alliance's design and construction process is intended to accommodate varied requirements and preferences in a more cost-effective manner. Using special software (and perhaps a design consultant) to assist consumers in designing their space based on a flexible "chassis," the Alliance intends to make many of the benefits of custom design available to middle income homebuyers. It should be possible to configure the same space to accommodate open live-work spaces, multiple bedrooms, or libraries and dens. A wide range of customizable cabinetry (including closet-sized cabinetry serving as room partitions), finishes and built-in electronic components will be available. We anticipate that if the Alliance is able to develop this system of configurable lofts that can be delivered cost-effectively, there may be a strong market for the product.

Once the Alliance solves this problem, the question that remains is whether these different groups spread along the bell curve (see the Prologue) will want to live together. Will the thirty-something stockbroker whose unit has premium finishes and customized electronics want to live next to the young family with three children who could barely afford the cheapest finishes? Will the sixty-something couple selling a home in Somerville want to live next to an artist or programmer who works at home day and night? The final answer may require a sociologist, but we think the answer is generally likely to be yes, most of them probably will. Part of the appeal of city living is the variety of individuals one meets and the interesting communities that form. The most sought-after neighborhoods harbor an incredible diversity of uses and residents. People buy lofts almost in anticipation of running into an artist or other "hip" person occasionally. At the same time, there is an expectation of privacy in the city.⁸⁵ People can live side by side without necessarily intruding on each others' lives. Neighbors don't necessarily know each others' circumstances – at least not at first. If you don't know whether your neighbors are rich or poor, you

⁸⁵ Jane Jacobs. *The Death and Life of Great American Cities*. New York: Vintage Books, 1961. Ch. 2 & 3.

assume they are like you. In the absence of specific knowledge to the contrary⁸⁶, most buyers will assume that people in the building are similar enough to themselves to be comfortable.

This assumption breaks down in two circumstances. The first of these is when the differences in incomes and social situations are too extreme, when peoples' lives are too different. The very affluent are able to afford to live only with others like themselves should they so choose; the poorest may not be able to avoid it. The second is if the residents impinge on each other's quiet enjoyment of their homes. Children create noise, messes and occasional other problems. Artists (not that Galileo Lofts is targeting artists) who work in their lofts may make noise or use materials like paint that emit fumes. As long as the differences in circumstances are not too great, and the units are well soundproofed, it should be possible to appeal to a broader range of purchasers than the conventional development could. But there will some buyers who are sufficiently uncomfortable with this kind of diversity that they will buy elsewhere.

7.3 Analysis and Critique: Positioning of the Galileo Lofts

Considering the onslaught of new product coming on the market in East Cambridge in the next few years, the Galileo Lofts developers will have to be extraordinarily vigilant at ensuring the competitiveness of their proposal in terms of pricing and features. Given the small scale of the project, it doesn't need to attract large numbers of buyers and thus is not particularly vulnerable; however, it is apparent the developers should have a very clear strategy of product differentiation to help promote the success of the project. The immediate location in Kendall Square will give Galileo Lofts a certain uniqueness.

Positioning the project in the loft submarket will distinguish it from nearly all existing properties, but two new ones will be offering similar products: One First is developing units with high ceilings and other loft-

⁸⁶ See below for a discussion of the anticipated effects of the very visible affordable rental townhouses.

like characteristics, and Building S at NorthPoint will consist entirely of lofts. (For the following reasons we do not consider 450 Kendall Street, presently permitted but not yet under construction, to be a competitive property, even though it will consist of lofts: it is aimed at the very high end, the unit interiors will be delivered in essentially raw condition for the buyers to design and complete; and there will only be eight units.)

UNIT SIZES AND AMENITIES

The Galileo Lofts project as proposed consists of units at an average size of 1,787 sq. ft., which are too large, and therefore too expensive, for the target market. The average floor area of the sold units in the East Cambridge locational data series was 969 sq. ft. The average floor area of sold units in the five properties most directly comparable to the project was even lower: 861 sq. ft.⁸⁷ Looking at the most logical comparable properties that are presently in marketing, One First is in part targeting the same demographic to which Galileo Lofts would potentially appeal, and is offering units that range in size from 692 square feet and price from the \$400,000s on up. The units at the lower end of the price range have been the first to sell. Similar units at NorthPoint are advertised to start at \$360,000 for units in the low 600 sq. ft. range. The loft building there is reported to consist primarily of units in the 900 sq. ft. range.

The floor areas of the 44 units in Galileo Lofts (Option 1) were set forth in Table 2, Section 1.2. Clearly a major consideration is that there are no condominium units less than 1,485 square feet in size (assuming the townhouses are all to be affordable rental units). This implies that even using a low price of \$406 per square foot (which is the lowest price recorded in any sale at the five closest comparable properties in the year ended May 31, 2005), the average unit price will be \$727,300 (the range is \$604,400 – \$940,200):

⁸⁷ Please see Tables 15 and 26 in Section 6.1 above.

this is nearly twice as expensive as the typical unit currently on the market targeting the entry level demographic. It is fair to say that at this rate, the project will be priced out of its most appropriate target market.

On the other hand, the project lacks many of the characteristics that are expected by the luxury buyer. For instance, the scale of the project dictates that there are no luxury amenities on site (i.e. fitness center, pool, valet parking and concierge). A property of only 26 market rate units cannot reasonably support such amenities. Furthermore, the location of the project site, situated away from water, away from existing amenities, in an area that is not yet an established residential neighborhood, and on a relatively busy vehicular thoroughfare, is an impediment in attracting the high-end consumer to the project. (Younger loft buyers, on the other hand, are prepared to purchase in less than prime areas.)

The inevitable conclusion is the project as initially proposed will have to be priced far above the level which the younger, primary market segment can afford, but will not have the amenities to support the high income buyer. The only market left is the empty nester, secondary market segment. But as stated above, the loft concept has less appeal to the older purchaser, as a result of which we were anticipating only 10% to 15% of the buyers would fall into this demographic. This is too slim a market, we believe, on which to base an entire development. The risk will be greater, the time to sell out longer and the profit (if any) less than if the units were sized to match the needs and incomes of the primary market segment.

AFFORDABLE HOUSING COMPONENT

Another potential impediment to the proposal's marketability is the differentiation of the affordable component. Locating the affordable rental units, which have been designed as three bedroom units to appeal to families, in a distinguishable block on the base of the building, with individual street access, has the potential for creating an image of the building that would discourage the high-end consumer from wanting to live there. People passing a building notice and interact with the lower floors: those are the ones that dominate our impressions of the building. The obvious marketing concern is that people will

think that it is a low income rental property, not an expensive and desirable condominium. Although it may be a politically sensitive issue, the fact that a significant component of the market may be put off by an impression that the building is dominated by low income residents should not be ignored.

The proposal states that the affordable component will be operated as rental units. The differentiation between the nature of the affordable buyer and renter is a cause for consideration. Ostensibly buyers may be more inclined to participate in the upkeep of a property in which they have an equity share; the same cannot necessarily be said of tenants. To the extent this is true, it may affect the appearance and management of the property.

This concern is supported by local residential brokers and appraisers who confirm they foresee significant marketing difficulty and a major reduction in price associated with creating a visibly family-oriented low income component at the entrance of the building.⁸⁸ Lyme Properties demonstrated their concern for the effects of a visible affordable component on the high-end loft buyer by choosing to limit their development at 450 Kendall Street to eight residential units with the specific intention of avoiding the affordability requirement.⁸⁹ Public policy now generally encourages—and often requires—the integration of affordable units with market units in mixed income developments, in order to keep the affordable units and their residents from being identified as such.⁹⁰ Sociologists have observed that non-working adults and their children, when living in a setting dominated by working families, are less likely to engage in anti-social behavior than when living in an environment of concentrated poverty. Mixed income

⁸⁸ Pamela McKinney, for example, agreed that affordable rentals on the ground floor could be a significant marketing impediment.

⁸⁹ Andy Reinach, Lyme Properties LLC. Interviewed on June 27, 2005.

⁹⁰ See Ian Colquhoun. *Designing Out Crime: Creating Safe and Sustainable Communities*. Boston: Architectural Press, 2004.

environments provide working adult role models for low income children and the potential for job networking for low income adults.⁹¹ The concern within an individual building is that segregating the low income residents may create an environment that does not discourage anti-social behavior or provide the other advantages of a mixed income community. That could create property management issues, which may in turn make the project a less hospitable environment for the market rate buyers as well.

All new residential developments larger than eight units in Cambridge are required to dedicate between 11% and 15% of the units as affordable, so mixed income housing is well known in the marketplace.

There are indeed some established urban neighborhoods where the presence of a large and visible proportion of low income rental housing in a building that also houses market rate condominiums does not affect unit prices. The Fenway and South End neighborhoods of Boston come to mind.⁹² But those locations appeal to a different demographic and they are more established areas. Many, though not all brokers consulted have expressed the concern that getting people to a neighborhood like Kendall Square, which is not an established residential area, will take some effort, but is certainly doable; however, overcoming a potentially negative image of the building is another matter entirely.⁹³

⁹¹ Charles S. Wilkins, Jr. "Concept Paper: Mixed Income Rental Housing." Millennial Housing Commission Preservation and Production Task Forces: September, 2001. <http://www.recapadvisors.com/pdf/mixedincome.pdf>. August 10, 2005. For an in-depth discussion of the problems associated with concentrations of extreme poverty, see William Julius

Wilson. *The Truly Disadvantaged: The Inner City, the Underclass and Public Policy*. Chicago: University of Chicago Press, 1987.

⁹² Interview with Robert Salisbury, Vice President, Bonz and Company. August 2, 2005.

⁹³ On the other hand, an MIT study has shown that the presence of mixed income housing has not adversely affected the value of nearby single family homes: Henry A. Pollakowski, David Ritchay and Zoe Weinrobe. "Effects of Mixed Income, Multi-Family Rental Housing Developments on Single-Family Housing Values." April, 2005. MIT Center for Real Estate. http://web.mit.edu/cre/research/hai/pdf/40B_report_HAI_0405.pdf. The study, however, focused on the

Townhouse units are often the most expensive units at a property that incorporates different unit types. People are willing to pay for direct access to the outside, which often includes a private yard. They will also pay for the additional interior space that usually comes with a townhouse (although in the present scheme the townhouses are the smallest units). Such units can enliven the streetscape with variety and activity at a human scale. The problem is not with the architecture, but rather with the segregation of the low income tenants in these units. This can be mitigated in part – but only in part—by strong management to keep the properties clean, well landscaped and well-maintained, and the behavior of the residents within acceptable bounds. Alternatively, the townhouses could be allocated between market and affordable units in the same ratio as the building as a whole: thus, 60% would be market condos. This would enable the developers to realize the higher prices of townhouses while still providing some family units, and it would protect the image of the building.

Another consideration is the identification of the affordable component as rental rather than for-sale housing. As outlined in the proposal, the intention is that the affordable component be organized as one condominium unit to be owned and managed by Just-A-Start. There are certainly precedents that combine for-sale and rental accommodations without problem; however, in the case of Galileo Lofts, the percentage of affordable units is sufficiently high that one can foresee building maintenance and upkeep as being a concern. Dependent upon government subsidies (which have been decreasing during the term of the Bush administration), low income housing is often operated on a tight budget. Many properties have had problems with inadequate budget allowances for the replacement of capital assets. If the project

presence of mixed income housing, not low income housing. Certainly there are persons of low income living in mixed income housing, but they are presumably integrated with the other residents. Here we are concerned about the effects of a *segregated* low income component. It would be interesting to expand the methodology of that study to the urban, mixed use building, but that is beyond the scope of this paper.

were to go forward as designed, it would be advisable that expectations for building upkeep and maintenance be clearly articulated and agreed upon with Just-A-Start.

The for-sale affordable condominiums may have similar problems meeting future capital needs. For-sale units would be targeting a different demographic that may be better suited for the specific requirements of the Galileo Lofts proposal, and may help moderate some of the concerns regarding day-to-day building upkeep. Nonetheless, the low income buyers of those units might very well have greater difficulty paying for future condominium capital needs assessments than would buyers at higher incomes.

SUMMARY

There are three primary criticisms of the original proposal (Option 1):

- The unit sizes are too large (and the units are therefore too expensive) to target the “entry-level” buyer, and this demographic constitutes the majority of residential demand in East Cambridge.
- The amenities, location, and building particulars are not consistent with the features that typically attract the “luxury” buyer, but the units are sized (and therefore priced) as if they would.
- The differentiation of a family-oriented low-income rental block at the building entrance could prove to be an impediment to the project’s marketability.

It is reasonable to conclude that Option 1 has poor potential marketability.

However, the notion of customizable residential units, which is integral to the plan, is promising, and it is believed that if the developers can address the potential issues highlighted above, and identify a method of delivering customizable units in a cost-effective way, they could have a very valuable marketing tool that might differentiate their project from others on the market.

7.4 Delineation of Pricing Strategy

The price of one property is determined by how it compares with other properties that are on the market or have recently sold. Buyers will weigh the various features and amenities of a property they are interested in against those of other properties they have seen to determine if the price of the one they like is reasonable. Appraisers will do the same, often assigning market-derived dollar values to specific features of the properties they are analyzing. To properly position and price the condominiums at Galileo Lofts, therefore, we need to compare them in detail with other similar units, both on the market and sold. Since there are few loft condominiums in Eastern Cambridge, we will need to review both conventional condominiums in the East Cambridge market and lofts in Greater Boston.

We earlier delineated the relevant primary market in Cambridge to be those areas included in the following zip codes: 02139 (Central Square), 02141 (East Cambridge) and 02142 (Kendall Square) – see Section 6: Supply Analysis. These are the areas that Cambridge Condo Buyers interested in Kendall Square are likely to consider. Loft Buyers, on the other hand, will have a much larger purview. We determined that lofts within a five-mile radius of the project would constitute the secondary market. Accordingly, we are looking at comparable sales in each of those two markets: condominium sales (not necessarily lofts) in the primary Cambridge market, and loft condominiums within the secondary market.

The following is a qualitative discussion of how the project stacks up against the comparable Cambridge condominium properties described in Section 6.2, along with One First, which has begun construction and marketing, and which is one of the “properties in the pipeline” described in Section 6.5. We then use the regression analyses from Section 6.1 and 6.3 to help us determine the property features most important to marketability and price. We rank each comparable property and come up with an overall score. Those scores help us determine the appropriate pricing of Galileo Lofts relative to the other properties.

COMPARISON OF GALILEO LOFTS WITH COMPARABLE CAMBRIDGE CONDOS

Galileo Lofts is considered to be in a low- to medium-desirable neighborhood. It is not on a noisy highway like Cambridge Glass Factory, but neither is it on the river. The site is located on a vehicular thoroughfare that is busy during rush hour and quiet at other times. It is isolated on two sides by streets and on the third by the railroad tracks. The noise and vibration caused by the occasional train going down the tracks immediately adjacent to the building is apt to be more of an impediment to sales than an actual bother to residents. (There are plans in discussion to remove the tracks at some point in the future and create a linear park.) The building will, however, abut a new park on the balance of Parcel 7. The area is not established as a residential neighborhood. At this time there are few neighborhood shops and the nearest supermarket is in Somerville. Most of the surrounding properties are commercial, although there are a few apartment buildings on Binney Street and more in the pipeline (as discussed in Section 6.5). The commercial properties are well maintained and landscaped, presenting a pleasant environment, if lacking somewhat in night time urban activity. There are some restaurants, movie theaters and a cultural center within walking distance; a performing arts center is planned nearby. Transit access is considered good; the property is approximately an 8-minute walk to the Red line. Views are considered good owing to the proximity to the new park and to the height of the building, but there is no water access.

With respect to building characteristics, the project is mixed. It will be brand new, and therefore enjoys the maximum premium for age. Owing to its small size, it will not offer much in the way of common building services, like health club, pool, concierge, etc., many of which are available at competitive properties. Parking is limited at the property (37 spaces for 44 units). We assume that all condominium units have one parking space and the shortfall is assigned to the affordable rental units; additional parking may be available at nearby garages.

We assumed a very high level of unit finishes, incorporating quality construction throughout, superior soundproofing, choice of wood cabinetry and granite countertops, premium appliances and high end

design accents. In other words, the lofts will not typically be delivered as shells. The recently constructed or converted properties (One First, Cambridge Glass Factory and Regatta Riverview Residences) all come with fairly high finishes and some choice of upgrades: it has become the market standard today. This gives them an advantage in this characteristic over older properties, even luxurious ones such as the Esplanade, where the initial finishes do not meet today's higher expectations (although individual owners may have upgraded their units).

SPECIFIC PROPERTY CRITERIA

We reviewed criteria that are expected to have an impact on marketability and pricing, in part as determined by the regression analyses in Section 6.1 and 6.3. The criteria were divided into locational and building characteristics. The locational criteria evaluated were: Desirability of the Neighborhood, Transit Access, Highway Access, Proximity to Water, and Views. The building criteria evaluated were: Age, Quality of Unit Finishes, Building Services and Amenities, Number of Bathrooms and Parking.

There are no specific quantitative measures for some of these criteria, such as Neighborhood Desirability. In section 6.1 we found that the limitations on the data set prevented us from assessing variables such as vertical location (i.e. floor level) of specific units, Views, and Proximity to Water that would be expected to be related to Sales Price. Accordingly, the authors evaluated and scored each property and neighborhood based on features that would appeal to the market (i.e. the primary and secondary market segments): proximity to other residential properties, parks, neighborhood shopping and the like. Transit Access was compared based on the time to walk to the nearest transit station, and the Red line was considered more desirable than the Green. Highway Access was deemed roughly equivalent for all properties in this sample and therefore was not a factor in distinguishing the properties (although the Galileo Lofts has another couple of minutes' drive to get to a highway than the others). Proximity to Water refers to being on the waterfront, or a block away with a direct view, or a few blocks away with

some water views. The Lechmere Canal was considered less desirable than the Charles River. The category of View is somewhat related to building height and Proximity to Water.

Age (or newness) reflects a premium placed upon new or recently renovated properties, which not only have the latest amenities and a fresh appearance, but which will cost less to maintain than older properties. Quality of Unit Finishes refers to the features of the units and has some relation to Age. Recently built or renovated properties are increasingly featuring high-end finishes, such as quality wood cabinets, granite countertops, premium grade stainless steel appliances, in-unit washer/dryers and the like. Some of these features were not available or expected in the late 1980s when some of the older properties were constructed. Also, the average condition of those units is somewhat more worn and depreciated than the newer ones. Building Services and Amenities refer to the common amenities that distinguish high end properties from less expensive ones. This category includes the presence of concierge, health club, pool, community rooms, media and business centers and the like. Parking is evaluated based on the ratio of parking spaces to units; the standard is one space per unit. Finally, Number of Bathrooms was not selected as a criterion for this comparison, because all of the listings, except the Esplanade, averaged one bath for the one bedroom units and two baths for two bedroom units. One in three sales at the Esplanade had an extra half bath; this is accounted for by a slight upward adjustment in Finishes for that building. We did not consider floor area or number of bedrooms because we were attempting to derive a per square foot price, rather than an average unit price. (We will discuss differences in price based on unit size later in this section.) The method of comparison by aggregating sales by property did not permit us to adjust out any price appreciation during the year.

Each of the properties, including the subject property, was scored on a scale of one to ten for each criterion, with ten being the most desirable. These scores were determined principally by reviewing the sales data and information obtained from brokers and developers. In determining the appropriate scores for some of the less quantitative criteria, the authors toured the buildings at various times and relied on their knowledge of the Cambridge market. The scores are intended to be set in the context of the primary

East Cambridge market as a whole, rather than just confined to this data set. Thus there may not be a 0 or a 10 for each category. The scores, which appear below in Table 40, give an indication of how the properties compare with each other in the various criteria.

Grid of Comparable Cambridge Condominium Sales								
	Weight	Galileo Lofts	Cambridge Glass Factory	One First	Thomas Graves Landing	River Court	Regatta River View	The Esplanade
Neighborhood	21%	4	3	5	6	7	3	7
Age	12%	10	8	10	3	3	8	3
Finishes	14%	7	6	8	4	6	7	6
Transit access	15%	6	7	8	7	2	5	2
Views	12%	6	5	3	6	8	10	9
Water	11%	0	3	0	6	8	6	10
Parking	10%	5	4	5	5	7	6	7
Services	5%	0	5	5	7	8	7	10
Weighted Score		6.6	6.4	7.3	6.7	7.3	7.7	7.8
Mean \$/SF		519	508	561	531	538	595	590

Table 40: Grid of Comparable Cambridge Condo Sales

PRICING

We wanted to determine how these relative rankings of property characteristics related to price, and further to see if we could use these rankings to predict a reasonable price for the Galileo Lofts. The criteria were given weights in relation to their expected impact on price per square foot. The regression analyses in Section 6 yielded some coefficients that indicated the relative impact on price of the various property characteristics. The log regression on the East Cambridge market data (Table 18), for example, showed that high rise buildings enjoyed a premium of 22% (the high rises in the data set have better Views, are generally closer to Water and have luxury Services); and Parking increased prices 10.9% for the first space and 4.5% for the second. One regression run on the loft database yielded a negative coefficient for New Construction, but the t-statistic was -0.563, indicating the result is not reliable (Table 30). We used coefficients these to inform the allocation of relative weightings to each of the building and locational criteria. The weightings do not equal those coefficients because the MLS data did not contain

any way to rank many of the criteria, such as Neighborhood Desirability, that we judged important to pricing. Certain items, such as Proximity to Water and Views, which have some overlap, were each therefore given lower weights.

Each property's individual scores were multiplied by the appropriate weighting percentage; then the total was readjusted to a scale of one to ten. The weighted total scores were then compared to the prices per square foot. (Asking prices were used for One First, since no sales have closed; as discussed in Section 6.1, List Prices are 99.6% correlated with Sales Prices. Actual Sale Prices were used for the others.) The resulting weighted scores for each property are shown in Table 40. Their relative ranking gives a good sense of the relative value (as expressed by price per square foot) of the comparable properties. Likewise, they seem to fit with the qualitative discussion: Regatta Riverview, the full service, just-renovated high rise with great water views, should be ranked among the highest; Galileo Lofts ranks higher than the Cambridge Glass Factory, which is located right on a major artery; nearly equivalent to Thomas Graves Landing, also located on a major artery, and beginning to show its age, but which has views of the Lechmere Canal; and a bit lower than One First, a new project adjacent to an established residential neighborhood and therefore better located, and with some services such as 24-hour concierge, community room and fitness center.

The weighted scores for each property were plotted against price per square foot and a linear equation was derived to relate the two variables (see Figure 29). Note that the high R^2 value of .997 may be a bit misleading given the factor of personal judgment involved in setting the individual rankings.

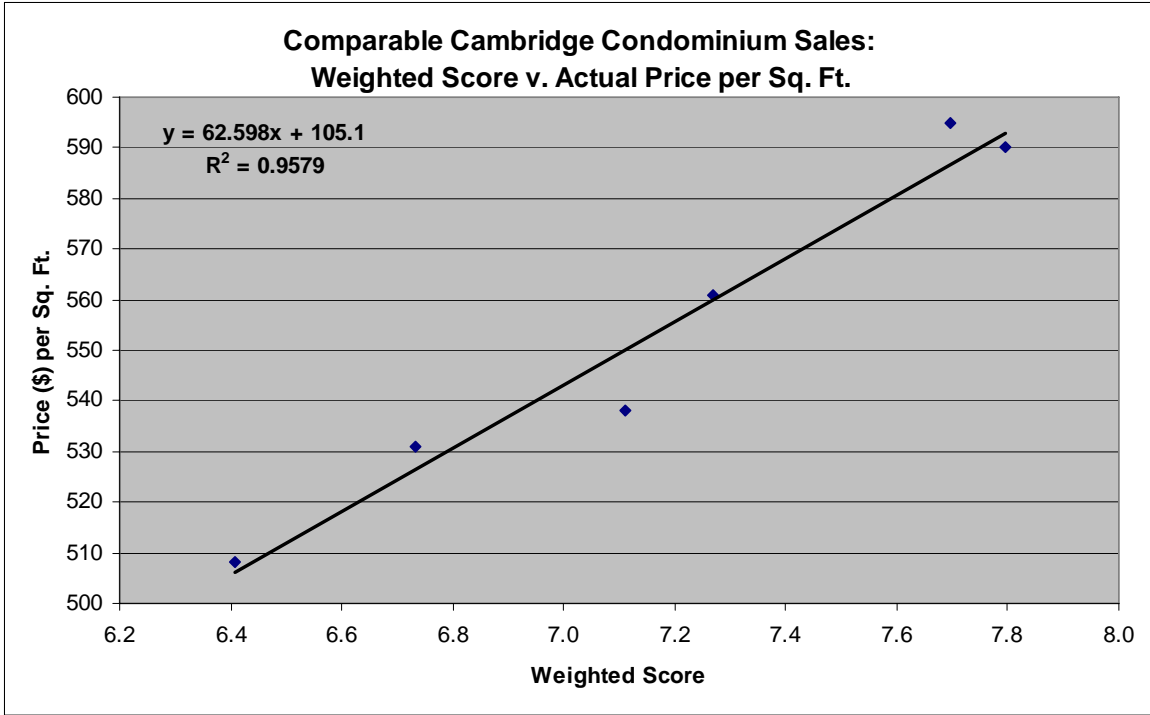


Figure 29: Weighted Score v. Price per Sq. Ft.

The weighted score of 7.0 for Galileo Lofts was inserted into the resulting equation:

$$y = 62.598 x + 105.1$$

where y represents price per square foot and x represents the weighted score. This yields an indicated price of \$519 per square foot, with a range based on of R² of \$497 to \$542. This range aligns fairly well with our qualitative sense of how the building relates to its comparables.

COMPARISON OF GALILEO LOFTS WITH COMPARABLE LOFTS

We performed the same exercise using the comparable loft properties described in Section 6.4. We utilized the same criteria and methodology. We relied on the regression analysis in Table 31 to give some indication of the relative effect on value of the different cities, but this was only generally helpful in assessing the relative Neighborhood Desirability. The greater variety of areas and property features in

these comparable properties made the result a less reliable (much lower value of $R^2 = 0.182$). The grid appears below.

Grid of Comparable Loft Sales								
	Weight	Galileo Lofts	Court Square Press	Aberdeen Lofts	Parris Landing	Macallen Blg	323 at Cypress	Strada 234
Neighborhood	20%	6	4	7	5	4	3	4
Transit access	15%	6	9	4	4	9	6	8
Finishes	14%	7	8	7	7	9	6	8
Age	13%	10	9	9	8	10	10	8
Views	11%	6	6	5	8	6	4	6
Water	11%	0	4	0	10	2	0	0
Parking	11%	5	3	6	5	8	8	6
Services	4%	0	5	2	5	7	2	6
Weighted Score		7.0	7.7	6.9	8.0	8.6	6.4	7.3
Mean \$/SF		541	576	531	497	600	531	561

Table 41: Grid of Comparable Loft Sales

Interestingly, Parris Landing has a high score, but a comparatively low price per sq. ft. It appears that the units there are priced below market, which explains why the rate of absorption is so high (270 of 367 units sold in less than 12 months).⁹⁴ This may be one reason why for the low R^2 value.

The specific data points are plotted in **Figure 30** below.

⁹⁴ According to Kevin Ahearn, president of Otis & Ahearn, which is marketing the property, as quoted by Jim Miara. "Converting from Rental to Condos Not Always as Easy as It Looks." *Banker & Tradesman*. August 1, 2005. 31.

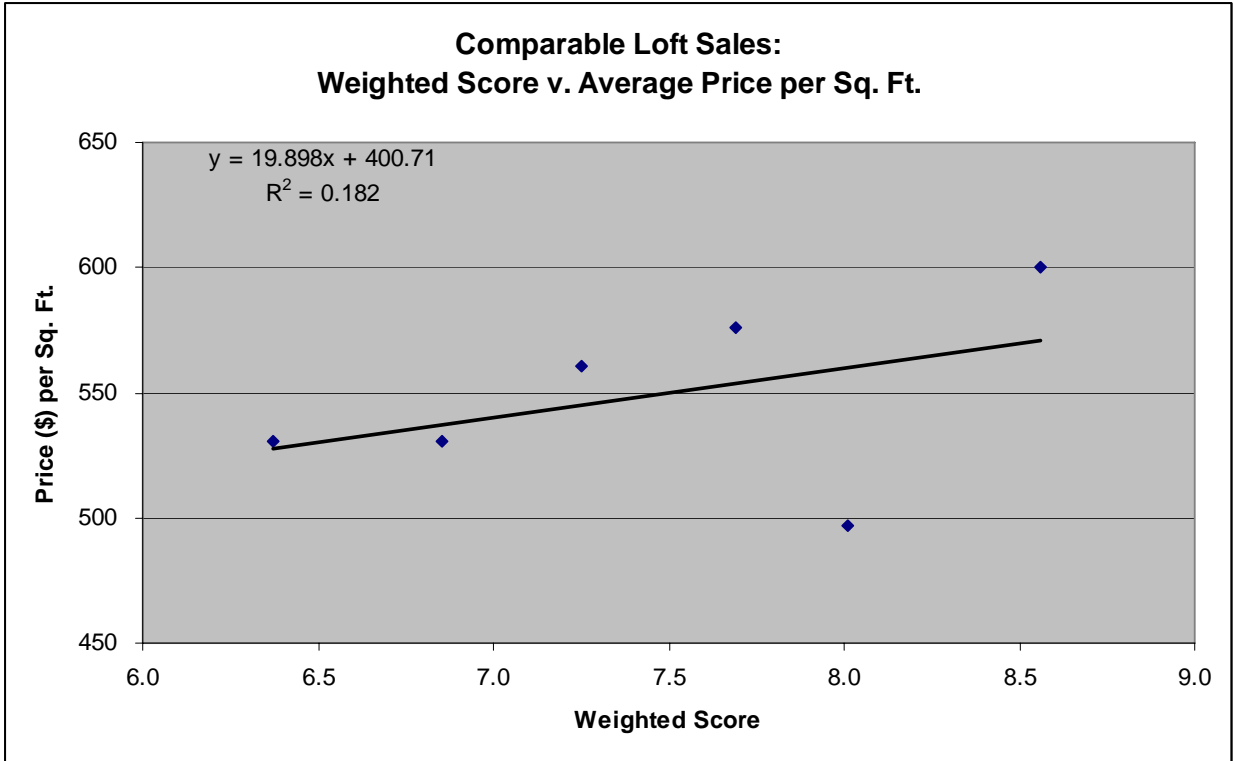


Figure 30: Comparable Loft Sales

Parris Landing is the point at a weighted score of 8.0 and a price of just under \$500 per square foot.

The resulting equation, $y=19.898 x + 400.71$, can be used to yield an estimated square foot selling price, as was done for the Cambridge Condo data above. It gives an indicated value of \$541 per square foot, which is just within the top of the range determined by the equation for the Cambridge Condos.

Based on our qualitative comparison of the properties, and our analysis of the two grids, we have determined that the indicated fair market price of the units at Galileo Lofts is \$530 per square foot. This indicated price is subject to property-specific adjustments below in order to come up with a final fair market price.

ADJUSTMENT FOR UNIT SIZE

The indicated prices need to be adjusted downward for two features unique to the building (unique, at least, among the comparable properties): the large unit sizes and the visible affordable component. Nearly all one bedroom units in the comparable properties are between 525 and 900 sq. ft. in area, with an average of 687 sq. ft. Typical two bedrooms average 1,149 sq. ft. and most range between 850 sq. ft. and 1250 sq. ft. (There are a few larger two bedrooms in excess of 1,250 sq. ft. They are located in the two high service buildings, The Esplanade and River Court, as well as One First, which has 86 different layouts dictated in part by the constraints of the existing buildings.) Prices per square foot generally decline as unit sizes increase, other factors being equal. This is illustrated in **Figure 31** below, using sales data for the primary Cambridge market. The low figure for R^2 , 0.1097, indicates that unit size accounts for about 11% of the variation in price per square foot. Obviously there are many other locational and building factors that affect price. One way to reduce the other variables is to look at a single project. We are able to obtain an R^2 of .0.3897 by considering the Aberdeen Lofts in West Cambridge (see **Figure 32**).⁹⁵ In this example, price per square foot declines \$5.14 (or about 1%) for every 100 sq. ft. (about 10%) increase in floor area. Although this is a limited sample, it is typical of the market as a whole, since the trend is the same. This concept makes sense, because the expensive components (kitchens and baths) have to exist in even the smallest units. Kitchens may get larger and fancier in larger units, but there is still only one. Larger units have more of the less expensive space in living rooms, bedrooms, closets and the like. Additionally, larger units are affected by the law of diminishing marginal utility, and because

⁹⁵ **This chart utilizes the data presented in**

Table 35: Current Listing for Aberdeen Lofts, July 2005-07-31, page 94, because it is a fairly complete data set, and is one of the most appropriate loft comparables for Galileo Lofts.

they are more expensive, their potential market is smaller, which in the absence of severe price constraints would tend to lower price per square foot.

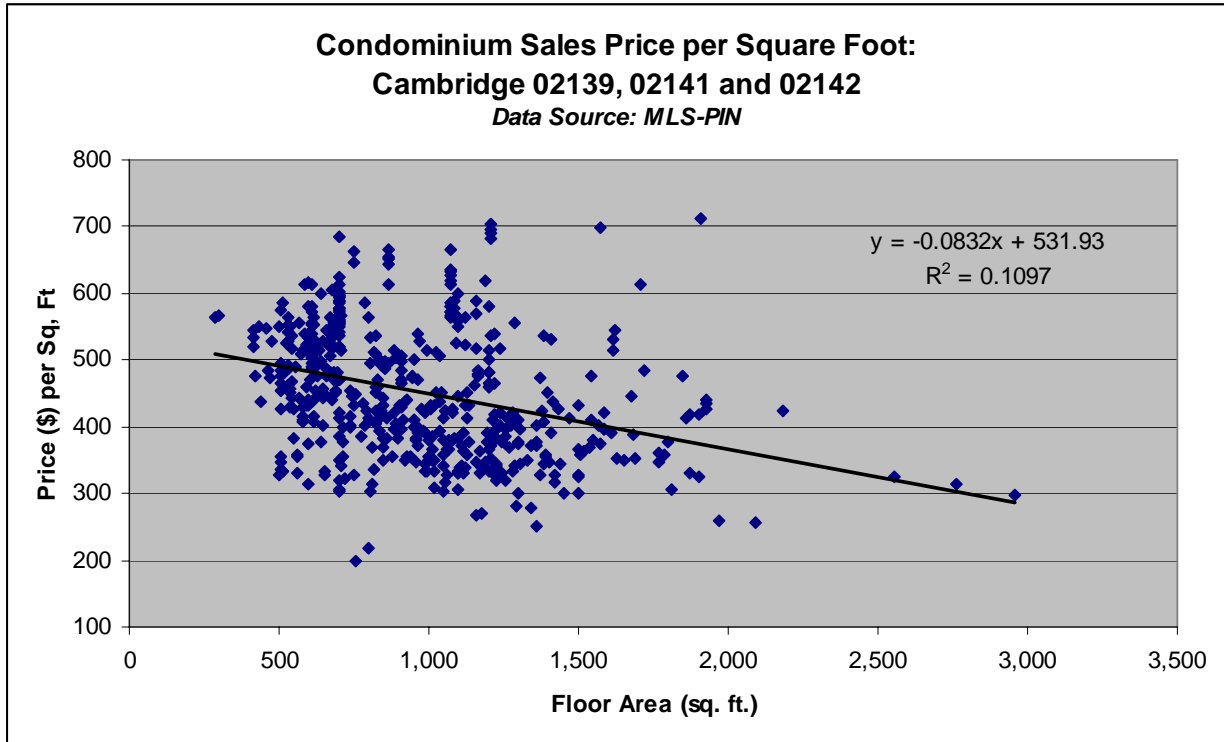


Figure 31: Price Per sq. Ft. v. Floor Area – Eastern Cambridge

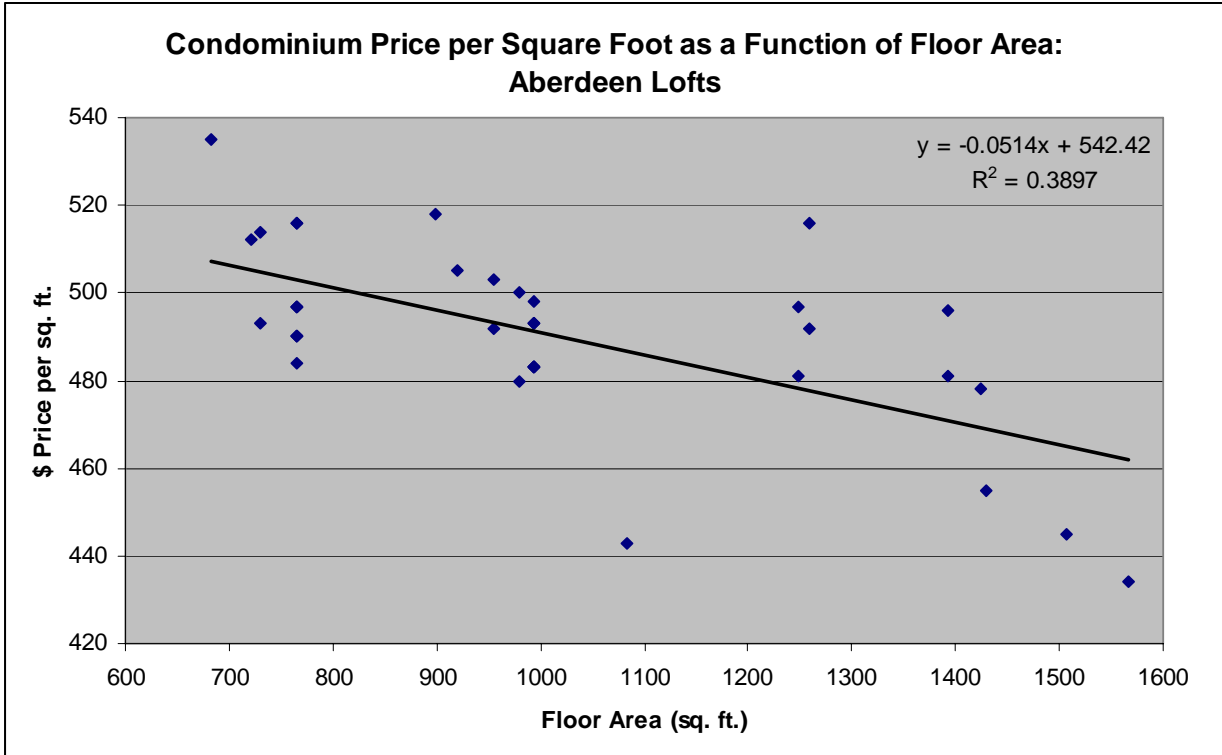


Figure 32: Price per Sq. Ft. v. Floor Area -- Aberdeen Lofts

The average condo at Galileo Lofts is planned to be 1,787 sq. ft. in size, or 818 sq. ft. larger than the average two bedroom unit in the primary market data set. Utilizing a formula similar to the one for Aberdeen Lofts would reduce the indicated price per square foot from \$530 to about \$490.

ADJUSTMENT FOR THE VISIBLE AFFORDABLE COMPONENT

It is harder to quantify the impact of the presence of the family-oriented affordable rental component at the base of the building. We could not find any useful data. We spoke with area appraisers and brokers, some of whom said it would not matter much and others of whom said, “Don’t do it -- it will kill the deal.” In asking them to quantify the impact, there was a range of \$10 per square foot to \$50 per square foot. The rough average seems to be that a further reduction in price of \$25 per square foot would be required to overcome the potential negative impact on the image and marketing of the building. We have concluded that the risk of a negative market impact is sufficiently great that this adjustment should be factored into the project financial projections. This would lower the average price to \$465 per square foot.

Both of these issues, the large size of the units (which put them beyond the reach of the target market) and the visible affordable rental component may have a more serious impact on the rate of absorption than on the price, as we will discuss later.

ENHANCING MARKETABILITY

Most of the weightings in the grid above relate to features that are site specific or otherwise beyond the developer's ability to change: Neighborhood Desirability, Transit Access, Age, Views, Water and the like. Perhaps Views can be improved by optimally situating the building on the site or by building higher, and a shrewd developer may find a way to add bring some transportation service to the property. But the major features a developer can change to affect price per square foot and differentiate a building from its competitors are Unit Finishes, the amount of Parking made available, and Building Services. There may be physical constraints or inadvisable financial trade-offs to adding Parking. Building Services, with the lowest weighting, are not very important in determining selling price. Thus any attention has to be on Unit Finishes (and the related overall quality of design). That is why there has been such an impetus among developers to use more granite, marble and hardwood, to install premium cabinets and appliances, to include wireless internet services, and the like. It may be the only way they can differentiate their property – except, of course, that now everyone is doing it. Talented, hip and celebrity architects are helping to differentiate their clients' projects through design. Indeed, the main marketing message for Parris Landing in Charlestown is that international design guru Philippe Starck is doing the project. It seems to be working – 270 of the 367 units have been sold in less than a year. The prices at Parris Landing may not be higher as a result (average prices are \$497 per sq. ft., as compared with \$526 for resales at the nearby Flagship Wharf), but the rapid absorption must have a considerable positive impact on the bottom line. We suspect that the high style design may increase development cost, but we do not have access to the data. Of course, it is too early in the process to know if the Galileo Lofts will have an exceptional design.

What the Galileo Lofts will have is the flexibility in layout and configuration arising from the Open Source construction methods. These will probably not have much impact on the price at which the units will sell. A buyer will purchase a layout that meets his or her needs and preferences, paying a market price for it. If the layout does not meet those needs the buyer will seek another property. Buyers, particularly the first time buyers in the primary market segment, rarely envision in detail what their space needs might be in coming years, or if they do it is in terms of needing more space, not in needing a different configuration. Thus flexibility in setting up the initial layout may help capture more buyers, but it will not induce them to pay a higher price (beyond what is already captured in the Age criterion for all new properties). Conventional lofts frequently offer considerable flexibility in layout and finish, and they generally do not sell for higher prices. This point must not be underemphasized. Should a unit be designed to incorporate enhanced finishes such as built-in media systems, it would increase the price (as well as the developer's cost) for such units. On the other hand, offering the option of lower-grade finishes would lower the price and the cost, thereby expanding the market. While there is a small impact on profit from such items, it is not significant at the scale of the overall project. In our discussions with brokers and appraisers, we have found no evidence that there is presently a significant demand in the target market segments for units which provide for extensive customization. Part of the developer's objective for this project is to test and create a demand for such options. But this unique feature can be used successfully in marketing the project to prospective purchasers: if promoted correctly, it will likely get more people in the door, but will not increase the price.

7.5 Absorption

Cambridge is expected to add about 1,000 households per year over the next five years.¹ Most of these new households will locate in Eastern Cambridge. There are presently 4,467 units in the pipeline for Eastern Cambridge.² This includes 2,151 units intended to be built over the next ten to fifteen years at North Point, so not all will be built in the next five years. Some of these units may never be built at all. On the other hand, there will be new residential properties constructed in other parts of town, including the Aberdeen Lofts in West Cambridge, the Brickworks now under construction on Rindge Avenue, Harvard and MIT-sponsored graduate student and faculty housing, and other projects. The City's Development Log lists 409 units under construction in other parts of town, 526 more permitted, and none in permitting.³ If half of North Point's additional units are built in the next five years (in addition to the 329 under construction), and if all other units are built, the situation over the next five years looks like:

Cambridge Housing Market: Demand and Supply	
Demand: Additional households	5,000
Supply:	
Eastern Cambridge pipeline	3,392
Other neighborhoods	935
Total Supply	<u>4,327</u>
Shortfall	<u>673</u>

Table 1: Cambridge Housing Market Demand and Supply

Of course, there will likely be other projects built over the next five years, but again it is likely for various

¹ See Section 3.3.

² See Table 38 in Section 6.5.

³ The Development Log lists all new projects of 8 units and up. City of Cambridge, Community Development Department. "Development Log March/April 2005." http://www.cambridgema.gov/~CDD/ed/realest/devlog/devlog_0305.pdf. August 2, 2005.

reasons that not all of these projects will be built. If it turns out that new supply exceeds 1,000 units per year, then the likely consequence is that Cambridge will attract additional households from surrounding areas. There are several reasons for this. The first is Cambridge's perceived desirability as a place to live and invest, which has been reflected in a real estate market that has historically been among the strongest in the region. Cambridge real estate enjoys the stabilizing presence of Harvard and MIT. Cambridge is a strong employment center. The second is the system of constraints on supply production in the region, which has led to a backlog of demand for housing, and which is expected to continue. Then there is the strong regional economy and the expectation of favorable (though climbing) interest rates for the foreseeable future.⁴ Accordingly, we conclude that the Boston area, and Cambridge in particular, will not experience an excess of supply in the next five years.

Therefore we can look to the experience of comparable properties for guidance on expected rates of absorption for the project. This information was gathered from MLS-PIN, The Warren Group and interviews with property developers and brokers.

Table 43 represents properties recently being marketed for sale. Note that the Cambridge properties had the highest sales absorption rates. Looking at the grid in Table 40 above, we see that the Galileo Lofts are closest in overall features to the Cambridge Glass Factory, which had an absorption rate of 6.3 units per month. It therefore seems reasonable to assume that a similar absorption rate should apply to Galileo Lofts, which is ranked as a superior property. However, this rate must be adjusted for the two special factors that will affect the marketability of the units: the large unit size and the visible affordable component.

⁴ Many of these points have been discussed in greater detail in Section 3.4.

Absorption Rates for Comparable Properties								
Property	City	Start	End	Months Sold	UAG	Total	Absorption	
Cambridge Condominium Comps								
Cambridge Glass Factory	Cambridge	6/6/2004	5/31/2005	12	60	15	75	6.3
One First	Cambridge	1/1/2005	7/27/2005	7	0	46	46	6.6
Regatta Riverview	Cambridge	9/15/2004	5/31/2005	8.5	62	56	118	13.9
Mean								8.9
Boston Area Loft Comps								
Aberdeen Lofts	Cambridge	5/20/2005	7/20/2005	2	0	16	16	8.0
Court Square Press	South Boston	6/1/2004	7/20/2005	13.5	20	17	37	2.7
25 Channel Ctr	South Boston	7/1/2004	7/1/2005	12	40	0	40	3.3
35 Channel Center	South Boston	1/24/2004	6/14/2005	17	43	0	43	2.5
323 at Cypress Lofts	Brookline	4/20/2005	6/9/2005	1.5	0	9	9	6.0
Mean								4.5

Table 2: Absorption Rates for Comparable Properties

It was briefly noted in Section 5 that the time it takes to sell a property increases as a function of unit size (and price). Using the MLS data set for the primary market Cambridge (02139, 02141 and 02142), this is illustrated in Figure 33. To get a rough idea of how we need to modify the absorption rates, we can use the equation that appears on the chart to predict the days on the market for each property based on their respective mean unit sizes. We can then multiply the ratio of the two by the indicated absorption rate of 6.3 per month. The computation appears in **Table 44** below. It yields an expected time on the market of 29 days for the Glass Factory. This is amazingly close to the actual time of 28 days, given the limitations on the data and the low R^2 value of .034 (indicating that unit size only contributed to 3.4% of the variability in time on market). The procedure above suggests that in order to make allowance for the exceptionally large unit sizes, we should reduce the expected absorption rate by nearly half to 3.3 units per month. This makes intuitive sense, inasmuch as a unit the size of the mean unit at Galileo Lofts on average took nearly twice as long to sell as one the size of the mean unit at Cambridge Glass Factory.

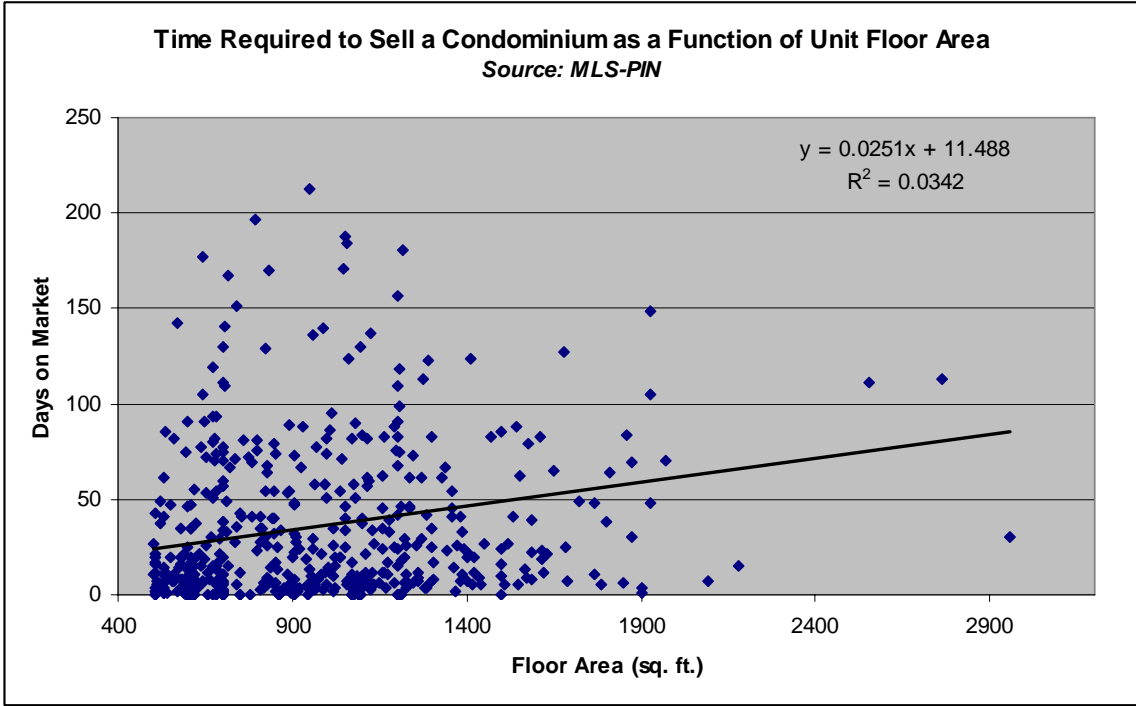


Figure 1: Time on Market v. Floor Area

Absorption: Adjustment for Unit Size		
Property	Mean Floor Area (sq. ft.)	Predicted DOM
Cambridge Glass Factory	716	29
Galileo Lofts	1787	56
Ratio		0.52
Preliminary Absorption Rate		x 6.3
Adjusted Absorption Rate		3.3

Table 3: Absorption Adjustment for Unit Size

Unfortunately, there is no quantitative method for determining how much the absorption rate should be reduced owing to the presence of the affordable housing at the base of the building. After speaking with area real estate brokers and appraisers, it is our judgment that this is a significant factor, as discussed in earlier in this chapter, and we believe a further reduction of 25% to the absorption rate will adequately account for the risk involved. This indicates an expected absorption rate of 2.5 units per month. Even at such a low rate (for Cambridge), with only 26 market rate units, sell-out would take approximately 10 months.

SECTION 8: FINANCIAL ANALYSIS

8.1: Option 1 (the Base Case)

Up until this point we have been focusing on the marketing of the property. We now take the findings from the earlier sections and turn to the financial feasibility of the project. First we discuss the assumptions for the base case (Option 1). Next, we present the financial model and discuss the results for the base case. Following that, we consider an alternative scenario (Option 2) that addresses some of the concerns with Option 1 that were discussed in Section 7. We review the results from the financial model for Option 2 and conduct sensitivity analysis to understand the risks and possibilities of the project.

DISCUSSION OF ASSUMPTIONS FOR BASE CASE (OPTION 1)

We intentionally employed conservative financial assumptions; they are summarized in the table below.

<u>Assumptions</u>		
Option 1: 44 units (the Baseline Case)	<i>Expected Return</i>	
General:		
New construction - gross area (n/i garage)	75,000	sf
Units - total	44	
Market rate condos	26	
Affordable condos	6	
Affordable rentals	12	
Average unit size	1,612	sf
Parking spaces	37	
Buildings	1	
Sales:		
Market Units: Base Price / Sq Ft:		
1 BR	1	500
2 BR	2	475
3 BR	3	450
4 BR	4	430
Floor Premium		5,000
Upgrade Package		12,000
Portion choosing upgrade package (market)		50%
Extra Parking Space		n/a
Percentage of expected price in this case		100%

Affordable rental unit sale price		325,000	
Affordable condo unit sale price:			
1 BR	1	160,000	
2 BR	2	185,000	
3 BR	3	200,000	
4 BR	4	225,000	
Absorption rate: market condos		2.5 units per month	
Expense of Sales:			
Deed stamps	0.456%		
Closing costs & concessions	200		
Commission (market)	4.50%		
Legal	500		
Condo working capital	300		
Projected future rates of inflation (annual):			
Sales price appreciation	5.0%		
Construction inflation	6.8%		
Land Purchase Price:			
Affordable Units	18	10,000	180,000
Market Units	26	30,000	780,000
Total Purchase Price			960,000
Profit Sharing	30%	Maximum:	1,540,000
Maximum price			2,500,000
Expenses:			
Construction contingency	15.0%		
Soft cost contingency	8%		
Developer's overhead	4%		
Developer Fee	3%		
Project Schedule:			
Time to permit (months)	9		
Time to construct (months)	15		
		<u>Month no.</u>	
Date of construction estimate		-13	
Start of permitting		0	
Receive approvals		5	
Close on land		8	
Start of construction (month #)		9	
Start of marketing (month #)		12	
Substantial completion (month #)		23	
CO and 100% completion (month #)		24	
Closings start		25	

Financing:			
<u>Construction loan:</u>			
Loan limits:			
Total Costs	82.5%	26,267,545	21,670,725
Net Sellout	72.5%	31,140,261	22,576,689
Max Construction Loan			21,700,000
Points & fees	1.5%		325,500
Closing costs & lender's legal			50,000
Rate	Libor + 2%	5.51%	
Term (years):	3		
<u>Equity:</u>			
Developer capital		deferred development fee	642,862
Investor capital required			5,900,000
Required total return to equity investors	25%		
Preferred return to equity	12%		
Residual to investor	80%	until IRR of 18%, then 50%	
Residual to developer	20%	, then 50%	
Investment banking fees	5%		295,000

Table 45: Base Case (Option 1) Assumptions

1. Unit mix: There are 36 three bedroom units and 8 four bedrooms (Number of bedrooms is based on floor area: how many bedrooms would a typical unit in the primary market area have that had the same floor area. The units may actually be configured differently by the buyers). A list of all units including floor area and pricing appears in Appendix C.

2. Unit pricing:

Market unit base prices per square foot: The Marketability and Pricing Analysis, Section 7.4, produced expected average per square foot prices for the different size classifications of units. These average prices are adjusted downward to create a set of base prices. To reflect actual marketing practices, the base prices are then increased for floor premiums and upgrade prices (see below for explanation) to come up with individual unit asking prices. The net result is that the average sale price of all units (after including the floor premiums and upgrade packages) equals the expected average price. We go through this exercise in

order to determine if the individual units will be affordable to the target market, something that the average price alone will not tell us.

Floor premium: a per floor estimate for the average increase in price commanded by units on higher floors, primarily for better views and light.

Upgrade package: upgraded unit finishes, including more expensive wood cabinetry, upgraded granite countertop selections and hardwood floors. The portion of buyers choosing the upgrade package is based on the authors' experience in Cambridge and Brighton condominium conversions and interviews with area brokers.

Appreciation: The average price for the market units is increased monthly at the projected rate of price appreciation, 5% per year, as determined in Section 3.4 above (also see paragraph 5 below).

Affordable rental townhouses: The developers intend to sell these units to Just A Start Corporation, a well-respected local non-profit developer and operator of affordable housing, who is joining the venture as a "development partner." The price is determined by projecting the average unit's net operating income, determining the amount of a loan that would support, and adding the expected amounts from the various municipal and state subsidies programs for the development of affordable housing. As outlined in the developer's Proposal (Appendix A), these programs include the Massachusetts Affordable Housing Trust, Massachusetts Housing Stabilization Funds, Cambridge Affordable Housing Trust, Cambridge HOME funds and several small programs such as LeadSafe Cambridge. Each program has its own

idiosyncratic requirements and funding limits. Barbara Shaw of Just A Start estimated the total price they would be able to pay at approximately \$325,000 per unit.¹⁰⁰

Affordable condominium units: The price is based on what an individual or family earning 80% of the area median income could afford to pay. For computations, please turn to Appendix C, worksheet entitled, “Buyer’s Underwriting: Affordable Condominiums.”

3. Absorption and Unit Closings: The rate of sale of the market condominiums, 2.5 units per month, is from the absorption analysis in section 7.5. Closings of each sale are projected to occur at the later of the month following the issuance of the Certificate of Occupancy (the “C.O. Date”) or two months after the unit is put under agreement. The affordable condominiums are assumed to have no problem with absorption since their price is so much below market. The public advertisement, application and lottery process needs be started at least six months before the C.O. Date in order to ensure that those buyers will all be ready to close the month afterwards. The sale of the affordable rental units to Just A Start, pursuant to a contract to be executed prior to the start of construction, is likewise projected to occur a month after the C.O. Date.

4. Expense of unit sales: These represent customary closing-related charges in area condominium sales. The commission rate (4.5%) on the sale of the market rate condominiums is based on similar projects. The deed stamps are based on the statutory tax rate of \$4.56 per \$1,000 of consideration. Other closing costs are typical for conventional condominium unit sales.

¹⁰⁰ Interview with Barbara Shaw, Director of Housing Development, Just A Start Corporation. Cambridge, MA: July 12, 2005.

5. Construction Cost Inflation: In the absence of reliable projections for inflation in construction costs, we used the most recent annual change in the Producer Price Index (the “PPI”) for multi-unit residential construction as the Construction Inflation Rate. The PPI is not prepared for the construction industry in general, but there are several special indices. We used the New Construction Index. For the year ended June 30, 2005, that rate was at 6.8%.¹⁰¹ By comparison, the Multi-Family Construction Index was 6.7%, but this may include renovation, so we selected the New Construction Index as the (slightly) more conservative indicator. Either rate is considerably above the Consumer Price Index, which may relate to shortages and increases in the price of steel, plywood, drywall and other construction materials in the face of increasing demand from China.¹⁰²

6. Purchase price of land: This is based on the Developer’s proposal to the Cambridge Redevelopment Authority, the Seller. It provides for a price of \$10,000 per unit for affordable units and \$30,000 per unit for market units. In addition, the Developer proposed to pay the CRA 30% of the profit earned, up to a maximum total price of \$2,500,000. The base price (before the profit participation) represents a reduction in what the price would be if there were no affordability requirements.

7. Construction expenses: See the “Construction Budget” worksheet in Appendix C. Most hard costs are based on a detailed budget estimate from Suffolk Construction dated May, 2004. The unit finishes are at the comparatively high level (i.e., granite countertops, marble bathrooms, whirlpool tubs, etc.) that we assumed in Section 7. The estimate was based upon conventional construction methods. The MIT Open

¹⁰¹ U.S. Department of Labor, Bureau of Labor Statistics. *Producer Price Index – Industry Data*. Series Id: PCUBRSM—BRSM. July, 2005. [http://data.bls.gov/PDQ/servlet/SurveyOutputServlet;jsessionid=f0309fa08fec\\$5B\\$3F\\$3](http://data.bls.gov/PDQ/servlet/SurveyOutputServlet;jsessionid=f0309fa08fec$5B$3F$3). July 30, 2005.

¹⁰² Jim Ostroff. “China’s Scramble for Raw Materials Will Broaden.” Kiplinger Business Forecasts. Vol. 6, week of May 6, 2005.

Source Building Alliance anticipates that their new construction methods, involving efficiencies of factory fabrication and less on-site labor, will be less expensive than conventional construction. Since the development of these new methods has not been completed, it is not possible to determine even approximate pricing at this time. Moreover, prototypes are apt to be more costly to build than the final product in mass production. Therefore, reliance on the price of conventional construction methods is the more prudent course.

The prices based on the May 2004 estimate have been adjusted for inflation at the Construction Inflation Rate from that date through the projected start of construction. (It is assumed that once a construction contract is signed, there will be no interim increases for costs, although this is not always the case.) An adjustment was made for the number of units (the original Suffolk Construction estimate was for 40 units, but the submitted proposal was for 44). This change does not involve increasing the total square footage of the building, just breaking up the space into a few more units. From the estimate we extracted the items specifically involved in adding a unit: kitchens, bathrooms, some extra interior partitions and doors, and the like, and came up with a price of approximately \$42,000 per unit. Other items have been estimated using R.S. Means construction cost data.¹⁰³

A customary construction cost contingency allowance is 10% of costs. We have increased it to 15% because the estimate from Suffolk Construction was done without detailed specifications or plans and is 15 months old; furthermore, back-up information was unavailable. If this increased contingency turns out not to have been necessary, it will of course increase the returns on the project.

¹⁰³ RS Means Building Construction Cost Data 2004. Kingston, MA: R.S. Means Co., 2005.

8. Project Schedule: The schedule was derived from the requirements of the permitting process, the Developer's project plan and the author's experience in marketing condominiums. In the absence of a schedule from the contractor, payments of hard costs were assumed to be made in equal monthly installments as follows: two thirds of total hard costs were expected to be spent during the first six months of construction, the balance after that extending to shortly after the issuance of the Certificate of Occupancy. Obviously, if construction is delayed for any reason, it may increase construction expenses as well as interest expenses, other carrying costs and returns due to the investors. If unit closings are postponed as a result, it could hurt marketing and postpone receipt of the sales proceeds necessary to repay the debt and equity capital.

9. Architectural/Engineering/Inspections/Appraisal Expenses: The budget items for permitting and for design, documents, plans, and construction administration were based on a proposal dated January 28, 2005 from Whitney Atwood Norcross Associates of Boston. The permitting expense is low because the Cambridge Redevelopment Authority was responsible for obtaining all approvals short of the building permit. Allowances for other items in this section were derived from budgets for similar projects.

10. Other Soft Costs: These are generally derived from budgets for similar projects. There is no allowance for a transportation study because one was completed for the Cambridge Redevelopment Authority, and the environmental approval for which the study was required has been issued. A soft cost contingency was included based on budgets for similar projects.

11. Developer fee and overhead: These are based on what a conservative construction lender would allow as a project expense in underwriting a construction loan: 3% of hard costs for the fee and 4% of

total costs toward overhead.¹⁰⁴ A for-profit developer would likely charge a higher fee if the project would warrant it.

FINANCING

Market interest rates, terms and underwriting guidelines were obtained from Tim O'Donnell of Fantini & Gorga, a Boston real estate financing firm, as well as other finance professionals.¹⁰⁵ The amount of the construction loan was limited to the greater of 80% to 85% of total project costs (we assumed 82.5%) or the "low 70 percent's" of net sales revenue (we assumed 72.5%). The rate was set at 200 basis points over the 3-month LIBOR. We used a projection for LIBOR through the end of 2005 prepared by the Financial Forecast Center.¹⁰⁶ LIBOR was thereafter projected to follow Freddie Mac's projection of one-year Treasury rates adjusted to a constant maturity.¹⁰⁷

It is anticipated that lenders will not seek any condo unit presale requirement as a condition of funding any portion of the loan. According to Tim O'Donnell, who has arranged financing for many condominium developments, lenders are comfortable with the strength of the market (particularly in any part of Cambridge) and know that serious buyers will rarely commit to buying before construction starts.

¹⁰⁴ Interviews with Tim O'Donnell, Managing Director and Principal, Fantini & Gorga. July 19, 2005 and August 2, 2005.

¹⁰⁵ *Ibid.*

¹⁰⁶ Financial Forecast Center. "3-Month London Interbank Offered Rate LIBOR Forecast." July 2005. <http://www.forecasts.org/3mlibor.htm>. July 30, 2005.

¹⁰⁷ Federal Home Loan Mortgage Corporation, *op. cit.*

In the base case we have assumed an equity investment sufficient to cover all cash needs in excess of the construction loan. Additionally, we are assuming the developer will agree to defer receipt of its fee until after the construction loan is repaid but prior to the repayment of the original equity investment.

Inquiries among Boston-area financial professionals have determined that most investors in condominium developments are seeking returns in the 20% to 25% range, and sometimes even higher, reflecting the risks they are taking. These risks are primarily market-related risks (sales prices, absorption and marketability) or construction risks (delays, cost overruns, labor disputes and design errors). The strong condominium sales market has created considerable demand for investments in condominium developments, driving down total returns to investors: some deals have reportedly been done in the high teens. This project, however, might have more risk than most for an investor. The marketability risks (a neighborhood not yet established for residential uses, large unit sizes (and high prices) that do not match the primary market segment's demand or ability to pay, and the visible affordable component) were discussed in Section 7. In addition, an investor in this project would have to accept the risks of new and untested construction methods, a new marketing wrinkle (buyers choosing their unit configurations as well as finishes) and an untested development team (although to the extent the principals of Oaktree Green are involved, this concern will be greatly alleviated). Although offsetting these risks is the opportunity to develop in Cambridge, we nonetheless conclude that investors will require a 22% to 27% internal rate of return in order to invest their capital: we are assuming 25% in the financial model. We envision setting up the ownership entity as an LLC with the developers as managing members. We assume the equity investors would receive a 12% preferred return and then return of capital, plus 80% of the residual until the investors have reached an IRR of 18% (including the preferred return), and thereafter 50% of the remaining cash. The balance of the residual goes to the developers.

SPREADSHEETS

We created a financial model including the following components (see Appendix C):

- Schedule of Units: size and pricing
- Analysis of pricing of affordable for sale condominiums
- Capital Budget: hard and soft costs
- Pro Forma Cash Flow Statement: monthly and life of project
- Sales and revenue projections
- Expense projections
- Financing
- Summary of Sources and Uses of Funds

The main Development Pro Forma comprises a project cash flow projection. There are columns for total project figures as well as per unit and gross per square foot numbers. The spreadsheet also indicates the totals drawn down in the construction loan and from equity investment, as well as the disposition of any profit. Finally, a month by month breakout of the above was prepared in order to compute interest costs, but is not included in the Appendix. A second spreadsheet, Sources and Uses of Funds, recasts these numbers into sources and uses for the life of the project and during the construction period. Please note that the return of the original equity investment is included as a use of cash; thus, a deficit equates to the amount of the original investment that will not be recovered, and a surplus equates to a return on that investment.

RESULTS: PROJECT PROFITABILITY AND RETURN TO EQUITY

A cash flow chart appears below as **Figure 34**. The sources of funds, on the top half of the chart, are primarily the equity investment, released to the project in a lump sum after approvals are in hand;

monthly disbursements from the construction lender commencing just after the start of construction; and sales proceeds immediately after completion of the project. The primary uses of funds include design work commencing immediately after approvals are received; purchase of the land a few months later; construction, for which the expenses are heaviest in the first six months; and repayment of the construction loan and equity investment after the unit closings.

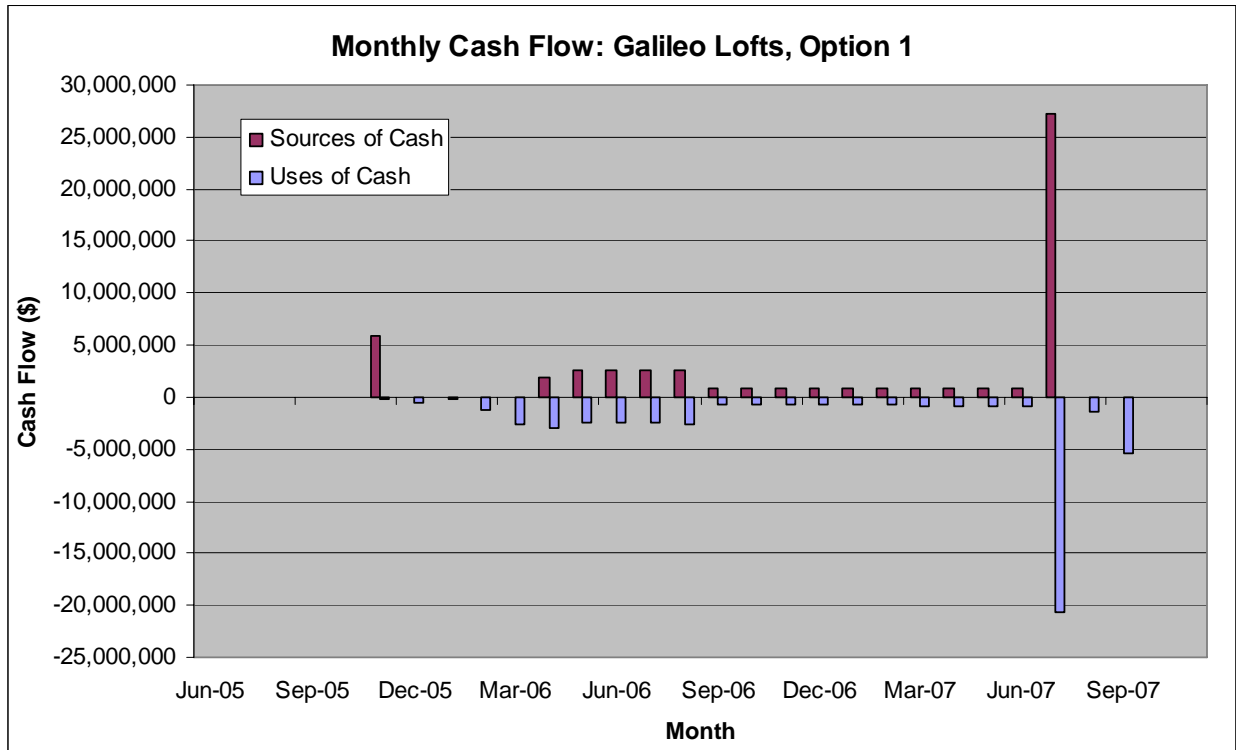


Figure 34: Monthly Cash Flow, Option 1

The spreadsheets show that the base case (Option 1) does not achieve profitability. The equity investor would receive back only 89% of its capital invested (i.e. the loss would be \$772,000); obviously, there is no residual payment to the developer. The IRR of -6.1% reflects the nearly two-year period of the investment. The project would not be able to get off the ground.

These results are not surprising, given our findings in Section 7. The units are too large, sale prices are too high for the target market, and there is the risk of a negative market reaction to the presence of affordable housing on the ground floor. There are also concerns about construction costs and the affordable units.

With respect to construction cost, the relatively high contingency of 15%, rather than 10%, increases construction expenses by over \$800,000. We discussed above why the 15% amount is appropriate, but if it were only 10%, the return to equity would at least be positive (3.1% per year).

The other issue is the net cost of the affordable units. With an average project cost of \$372 per square foot, the cost to build the affordable units greatly exceeds the revenue from selling them. Table 44 shows the cost to build each type of unit, the sales revenue and the total loss. The affordable rental townhouses are smaller and therefore cost less to build than the affordable condos. Moreover, the sale price is greater for the rental units (as discussed in the Discussion of Assumptions above). The requirement that 40% of the units be affordable results in a loss of \$3,858,000 compared to selling them at cost. This is an enormous strain on the project. If the units were sold at cost, rather than at a loss, the return to the equity investors would be 18.3% per year, instead of the present loss of -6.1%.

Cost of Affordable Units: Option 1		
	Affordable Rentals	Affordable Condos
Average unit size (sq. ft.)	1,147	1,728
Development cost per sq. ft.	372	372
Cost to build average unit	426,967	643,243
Average sale price	-325,000	-204,167
Loss on each unit	101,967	439,077
Number of units	12	6
Total loss	1,223,606	2,634,461
Combined total loss	3,858,067	

Table 46: Cost of Affordable Units - Option 1

8.2 Option 2: A Revised Scenario

At the time of the completion of this thesis, the developers were working on a revised proposal. This scheme, proposed July 21, 2005, has the potential of addressing some of the shortcomings of Option 1. It calls for 61 units above two levels of structured parking. The units were on average smaller than in the initial proposal and the affordable rental units were moved up to the third and fourth floors, where they

would not affect the image of the building, and given a separate entrance. The proposal eliminates the townhouse component on the ground floor in favor of amenity spaces and residential entries.

Although the average unit is smaller, the issue of unit size is not resolved by this proposal. Of the 45 condominiums, 12 are 539 sq. ft., which is particularly small, especially when taking into consideration the other product on the market. The historic sales analysis demonstrated that the average one bedroom unit is about 672 sq. ft. in the primary market area; units of this size, in new construction, have consistently been demonstrated to be the first and easiest to sell. The remaining 33 units are all over 1,200 sq. ft. As discussed in Section 7.4, the larger the unit, the less buyers are willing to pay per square foot. Even the revised proposal for Galileo Lofts does not offer a single unit in the 700 – 1200 sq. ft. range. Units larger than 1200 sq. ft. are present in the market, but have historically taken longer to sell, and sell for a lower price per square foot.

We prepared a new model (Option 2), based on the concept of the developers' revised scheme but increasing the number of units to 67. Besides further reducing the average unit size, we revised the unit mix to better meet the demand in the market, in particular including two bedroom units in the 900 sq. ft. range. (Since our intent was to demonstrate financial feasibility; we did not inquire into structural, mechanical and design issues which might restrict the combination of unit sizes and configurations. Obviously that will need to be addressed by the design team.) We adjusted the financial model's assumptions relating to the construction budget, unit mix and pricing accordingly (see Assumptions in Table 47 below). In particular, this option enables us to eliminate the reduction in price per square foot and absorption as a result of the visible affordable component. The presence of more small units increases the average per square foot sale price.

<u>Assumptions</u>	<i>Expected Return</i>	
Option 2: 67 units, 2 levels of parking		
General:		
New construction - gross area (n/i garage)	75,000	
Units - total	67	
Market rate condos	40	
Affordable condos	11	
Affordable rentals	16	
Average unit size	1,007	sf
Parking spaces	56	(2 levels)
Buildings	1	
Sales:		
Market Units: Base Price / Sq Ft:		
1 BR	1	525
2 BR	2	500
3 BR	3	475
4 BR	4	455
Floor Premium		5,000
Upgrade Package		12,000
Portion choosing upgrade package (market)		50%
Extra Parking Space		n/a
Percentage of expected price in this case		100%
Affordable rental unit sale price		325,000
Affordable condo unit sale price:		
1 BR	1	160,000
2 BR	2	185,000
3 BR	3	200,000
4 BR	4	225,000
Absorption rate: market condos	6 units per month	
Expense of Sales:		
Deed stamps	0.456%	
Closing costs & concessions	200	
Commission (market)	4.50%	
Legal	500	
Condo working capital	300	
Projected future rates of inflation (annual):		
Price appreciation	5.0%	
Construction inflation	6.8%	

Purchase Price:			
Affordable Units	27	10,000	270,000
Market Units	40	30,000	1,200,000
Total Purchase Price			1,470,000
Profit Sharing	30%	Maximum:	1,030,000
Maximum price			2,500,000
Expenses:			
Construction contingency	15.0%		
Soft cost contingency	8%		
Developer's overhead	4%		
Developer Fee	3%		
Project Schedule:			
Time to permit (months)	9		
Time to construct (months)	15		
		<u>Month no.</u>	
Date of construction estimate	-13		
Start of permitting (month #)	0		
Receive approvals	5		
Close on land	8		
Start of construction (month #)	9		
Start of marketing (month #)	16		
Substantial completion (month #)	23		
CO and 100% completion (month #)	24		
Closings start	25		
Financing:			
<u>Construction loan:</u>			
Loan limits:			
Total Costs	82.5%	28,923,918	23,862,232
Net Sellout	72.5%	29,976,026	21,732,619
Max Construction Loan			21,700,000
Points & fees	1.5%		325,500
Closing costs & lender's legal			50,000
Rate	Libor + 2%	5.51%	
Term (years):	3		
<u>Equity:</u>			
Developer capital		deferred development fee	699,197
Investor capital required			6,700,000
Required total return to equity investors	25%		
Preferred return	12%		
Residual to investor	80% until IRR of 18%, then 50%		
Residual to developer	20% , then 50%		
Investment banking fees	5%		335,000

Table 47: Assumptions, Option 2 (preceding two pages)

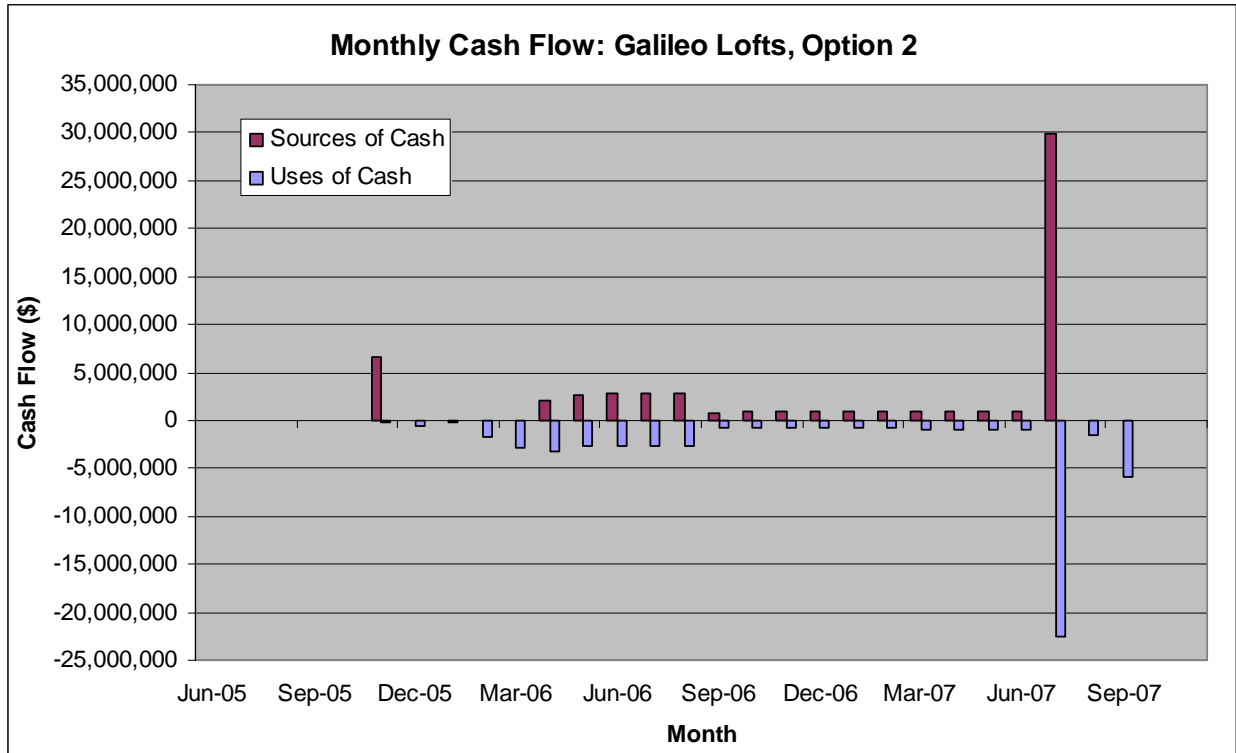


Figure 35: Monthly Cash Flow, Option 2

Unfortunately, these changes actually served to worsen the financial results slightly as compared with Option 1. A chart of the monthly cash flow projection appears above. As shown on the Option 2 Pro Forma and related spreadsheets (see Appendix D), the equity investor would lose 11.5% of invested capital; the IRR would be -6.7%.

Net sales revenue increases from \$27.3 million to \$30 million. This is a result of 1) having a greater number of (smaller) units selling at higher prices per square foot (aggregate floor area is unchanged), and 2) relocating the affordable rental component away from the ground floor, thereby removing the \$25 per sq. ft. reduction in price that the visible affordable component would have caused. The absorption rate also increases as a result. These improvements in price and absorption were not enough to recover the cost to build the required additional parking, kitchens and bathrooms and pay the additional purchase

price of the land. (The land price is based on \$10,000 per affordable unit and \$30,000 per market rate unit. The additional 9 affordable units and 14 market rate units would raise the land price by \$510,000 to \$1,470,000, without counting profit participation.) These changes increase total development costs from \$372 per sq. ft. to \$410 per sq. ft. The increased number of affordable units (40% of a larger total number of units) and the increased per square foot development cost is offset by the smaller size of those units (see Table 48). The aggregate loss from the affordable units decreases from \$3,858,000 (Option 1) to \$3,228,000. We assume that the price for the affordable rental units will not change much even though the units are smaller. The price for the affordable condos is ultimately based on median income for a given household size. For this purpose, the number of bedrooms in a unit (not floor area) determines applicable household size. Thus a 47% reduction in floor area for the average affordable condo unit reduces the development cost by \$269,000 per unit, while reducing the price by only \$26,000. Still, the fact remains that the affordable units in aggregate cost \$3,228,000 more to build than they produce in sales revenue.

Cost of Affordable Units: Option 2		
	Affordable Rentals	Affordable Condos
Average unit size (sq. ft.)	956	914
Development cost per sq. ft.	410	410
Cost to build average unit	392,038	374,568
Average sale price	-325,000	-178,636
Loss on each unit	67,038	195,931
Number of units	16	11
Total loss	1,072,609	2,155,243
Combined total loss	3,227,852	

Table 48: Cost of Affordable Units - Option 2

On the other hand, Option 2 addresses the issues of unit size, unit price and the visible affordable component, all of which would have impeded the marketing of the units under Option 1, and therefore it is in a very real sense less risky. But of course, a proposal expected to lose money will not obtain the equity or debt financing it needs to be built.

SENSITIVITY ANALYSIS

To explore the potential risks in the project, test the assumptions in the financial model, and see if there is any way to make the project profitable, we performed a sensitivity analysis. The major variables of concern are: sales prices, absorption rate and capital budget. Because the model already projects increases in prices at a 5% annual rate, we tested market unit sales prices in a limited range (2.5% and 5%) above the expected price, but over a larger range (5% and 10%) below the expected values. This range provides for the possibility that the pricing could be optimistic. Variations outside this range appear unlikely, for the reasons discussed in Section 3.4. A sensitivity analysis was not necessary for the pricing of the two types of affordable units. The price of the group of affordable rental units is to be finalized contractually at the outset of the project. The pricing of the affordable condominiums is tied to what a purchaser at 80% of median income can afford using standard guidelines, and is thus fairly stable. The most significant variable at this point is the mortgage interest rate, which we projected forward based on Freddie Mac's projections for 30-year fixed rate mortgages. In point of fact, there are first-time homebuyer programs available through MassHousing and the Massachusetts Housing Partnership in conjunction with local lenders. Often these programs offer below-market interest rates (one of the authors has seen a commitment letter dated July 27, 2005 for one such program offering a fixed rate of 4.625%, approximately 1% below prevailing rates). Absorption for Option 2 was projected at 6 per month, based on similar projects. Since the project is expected to sell out before completion of construction, there can be no more optimistic case. We tested 4 and 2 sales per month (see Table 49). A slowdown in the rate of sales does not have much impact until the rate gets to the range of only 2 per month.

Galileo Lofts					
Option 2: 67 units, 2 levels of parking					
Sensitivity Analysis: Sales Price and Absorption					
	Worst	Bad	Expected	Good	Best
Assumptions					
Sales price as % of expected	90.0%	95.0%	100.0%	102.5%	105.0%
Absorption (sales / mo)	2	4	6	6	6
Construction contingency	15.0%	15.0%	15.0%	15.0%	15.0%
Results					
Maximum construction loan	19,900,000	20,700,000	21,700,000	22,600,000	22,600,000
Equity required	8,150,000	7,650,000	6,700,000	6,300,000	5,850,000
Return on equity (IRR)	-19.9%	-18.1%	-6.7%	-1.9%	2.2%
Residual to developer	0	0	0	0	0

Table 49: Sensitivity Analysis – Sales Price

Please note that the maximum construction loan and amount of equity required are determined by the criteria set out in the discussion of assumptions in Section 8.1 above. It appears that there is more downside than upside to fluctuations in price. Increasing the price by 5% improves the IRR by 8.9 percentage points, whereas lowering price by 5% reduces IRR by only 11.4 percentage points. Part of the reason for this is how the financial model acts upon the slowdown in the rate of absorption that would accompany a price reduction. The model assumes that prices are reduced by the appropriate percentages but then resume appreciating (at 5% per year). This is actually a reasonable assumption for the near future, given the strong underlying economic fundamentals and the constraints on supply, as discussed in Section 3.4. Enough sales will have occurred by the time of completion of construction to pay off a significant portion of the construction loan, thereby reducing average carrying costs. The decrease in the rate of absorption by itself serves to increase total sales revenue because unit sales prices have more time to appreciate. Many Boston area condominium developers have actually observed this during the course of their marketing programs and have indeed come to regret that sales were so strong in the early phases of the project.

The other major variable is the capital budget. It appears high; hard costs at \$310 per sq. ft. and total project costs at \$410 per sq. ft. are both a bit above industry norms for this type of building.¹⁰⁸ The construction budget is based on an estimate from a well-known construction company, but is projected to increase at the high, but applicable, construction inflation rate of 6.8% per year. The construction contingency is a substantial 15%, reflecting some of the uncertainties in the final design and the changes in costs between the date of the estimate in May, 2004 and the projected start of construction in 2006. The contingency represents a lot of money, about \$3 million, but it seems prudent to keep it at that level given the uncertainties discussed earlier. The project is thus more likely to come in under this budget than over. The usual situation is that construction costs seem to come in over budget much more often than under. We therefore tested capital expenses by reducing hard cost contingencies to 12.5% and 10%, and by increasing them to 17.5% and 10%. This resulted in a variation of \$1,520,000 in hard costs from one extreme to another. The table below summarizes the assumptions and results of the analysis.

Galileo Lofts					
Option 2: 67 units, 2 levels of parking					
Sensitivity Analysis: Construction Costs					
	Worst	Bad	Expected	Good	Best
Assumptions					
Sales price as % of expected	100%	100%	100%	100%	100%
Absorption (sales / mo)	6	6	6	6	6
Construction contingency	20.0%	17.5%	15.0%	12.5%	10.0%
Results					
Maximum construction loan	21,700,000	21,400,000	21,700,000	22,600,000	21,700,000
Equity required	8,100,000	7,550,000	6,700,000	5,300,000	5,600,000
Return on equity (IRR)	-15.0%	-11.4%	-6.7%	-1.6%	2.8%
Residual to developer	0	0	0	0	0

Table 50: Sensitivity Analysis – Construction Costs

¹⁰⁸ Cf. RS Means Building Construction Cost Data 2004. Op. cit.

Reducing the construction contingency from 15% to 10% might be reasonable if we can obtain a better construction cost estimate. This would change the expected return from -6.7% to 2.8%, not enough to attract the equity capital, but at least not a loss. On the other hand, if construction costs get out of hand, which is not inconceivable with new methods and materials, an additional 5% contingency more than doubles the loss.

We did a final iteration of this analysis, varying both sale price/absorption and construction costs. It appears below. All three iterations are graphed in **Figure 36**. (In the graph, the worst case is labeled -2, the expected case is 0, and the best case is 2.)

Galileo Lofts					
Option 2: 67 units, 2 levels of parking					
Sensitivity Analysis: Sales Price and Construction Costs					
	Worst	Bad	Expected	Good	Best
Assumptions					
Sales price as % of expected	90.0%	95.0%	100.0%	102.5%	105.0%
Absorption (sales / mo)	2	4	6	6	6
Construction contingency	20.0%	17.5%	15.0%	12.5%	10.0%
Results					
Maximum construction loan	20,200,000	20,700,000	21,700,000	22,600,000	22,600,000
Equity required	9,250,000	8,200,000	6,700,000	5,750,000	5,300,000
Return on equity (IRR)	-26.4%	-22.2%	-6.7%	2.5%	6.3%
Residual to developer	0	0	0	0	0

Table 51: Sensitivity Analysis – Sales Price & Construction Costs

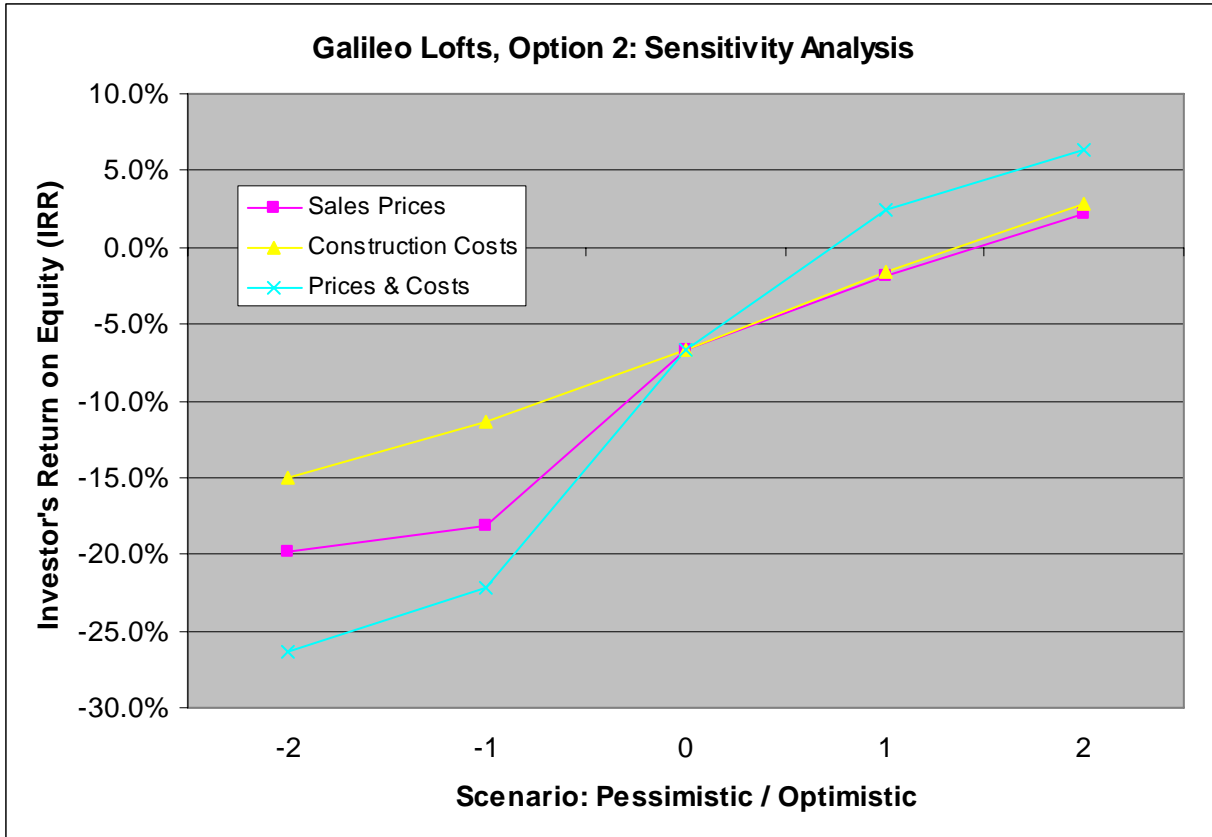


Figure 36: Sensitivity Analysis

The best case gives the equity investor an IRR of 6.3%, which is not enough to attract the equity (that would require a return of approximately 25%); nor does the developer receive a residual. The pessimistic scenarios are obviously significant losses. In the “Bad” scenario, the investor loses a third of its initial investment; in the “Worst” case, it loses 44%.

The assumed variations in sales prices and construction costs also cause variations in the maximum loan allowed and the equity required. The amount of equity appropriate to invest in a deal of this size, assuming normal returns, is in the range of 20% of total costs, or about \$6 million. The optimistic cases are below this limit, the expected case is a bit above, and the pessimistic cases are significantly above.

SECTION 9: CONCLUSION AND RECOMMENDATIONS

We have determined that the project has poor marketability and is not financially feasible as originally proposed (Option 1). The developers are preparing a modified building plan which, with some further changes (Option 2), would improve marketability significantly, but would not improve financial results. The sale prices attainable by the market-rate condominiums are not high enough to offset the enormous cost of selling the affordable units, particularly the affordable condominiums, at a price substantially below their development cost. This cost, estimated above to be \$3,228,000 under Option 2, vastly outweighs any potential subsidy provided via a below-market price for the land.

The upshot of this analysis is that there is no way that the project could work *as presently structured*. We have considered in detail the relevant aspects of the proposed project, including the following:

- the favorable regional and local economic and market context;
- the present and proposed residential development in the area (supply analysis);
- who are the logical prospective purchasers for the lofts (demand analysis);
- how the property compares to similar properties, including East Cambridge Condominiums and Lofts available in a wider market;
- how likely purchasers will respond to the proposed building configuration and design flexibility;
- factors affecting the marketing of the property and how to position it to maximize sales (marketability);
- factors that determine sales price in relation to other comparable properties;
- capital budget, adjusted for inflation and for unknowns related to the untried construction methods;
- conventionally available financing options;

- project cash flows; and
- sensitivity analysis to test the assumptions and evaluate the risks against likely outcomes.

We did not find any way within the structure of the transaction as currently proposed to produce a financially feasible project.

There are, however, several things the developers might do to enhance the profitability of the project:

- Construction costs remain a substantial question mark. We recommend that the developers focus the design, decide which innovative construction features will be included in the building (and which ones are close enough to production to be considered in time), and obtain current budget pricing for construction costs -- as soon as possible -- in order to minimize cost risks and determine if the contingency can be reduced.
- Given the net cost of developing and selling the affordable units, the developers are overpaying for the land. Under Option 2, the base land cost was \$1,470,000, or \$510,000 above what the CRA would have accepted for the same sized building, divided into fewer units, in Option 1. Additionally, if there were a profit, the CRA would be entitled to 30% of it up to a total price of \$2,500,000. We recommend that the developers renegotiate the base land price downward, possibly to zero, and agree only to pay CRA a share in the residual that would otherwise go to the developer (i.e., not affecting the portion going to the equity investors, which would make it harder to raise the capital.) If, as intended, the developer is a non-profit corporation, this should be palatable.
- To the extent that the base land cost is not reduced to zero, we recommend that the developers request the Cambridge Redevelopment Authority to lend the purchase price of the land at a minimal rate of interest, if any, subordinated to the construction loan, in order to reduce the equity needed and therefore the high returns required to be paid on the equity.

- We know that there are partial subsidies available for the construction and long-term financing of the affordable rental component; they are mentioned in the original Proposal. The Commonwealth of Massachusetts could potentially provide \$550,000 and the City of Cambridge had at least two sources: HOME funds and the city's Affordable Housing Trust, which together might provide approximately \$138,500 per unit. Once the design concept and unit mix are finalized, Just A Start and the developers should apply for these subsidies with the expectation that they would be available to the developers at the start of the construction process. This would reduce and postpone funds needed from equity investors, thus reducing the required returns to equity. The amount of the subsidies received by the developers would later be credited toward Just-A-Start's purchase price for those units.
- We recommend that the developers seek similar subsidies for the affordable condominiums, which are the most costly units. Some of the above-mentioned subsidies are available for the production of affordable housing, regardless of tenure. The state's Affordable Housing Trust and Housing Stabilization Funds are both potentially available; as are Cambridge's Affordable Housing Trust and HOME funds. There are two potential roadblocks, though: first, the subsidies are rarely approved if the construction of the units is mandated by an agency of government, and here the CRA's RFP included a 40% affordability requirement. The reasoning is that the subsidy providers want to apply the subsidies to produce the maximum number of affordable units. If a developer has to produce the affordable units anyway in order to get the project done, why waste the subsidy? In this case, however, a subsidy may be the only way to get the units built. Perhaps there is a way to change the CRA's requirement to a preference, which might make it easier to obtain a subsidy. (Cambridge zoning only requires a 15% affordability requirement: it seems most likely that no subsidies would be available if only 15% of the units were affordable.) The second roadblock is programmatic: some of these programs have a limit on the amount they will

contribute to any one project, regardless of the number of units, and those subsidies have already been eyed for the affordable rentals.

- Some of the affordable condos could be put aside for households earning moderate incomes at 100% or 125% of median. For example, under Option 2 the affordable condos could be designated as follows:
 - 25% of the units for households earning 80% of median income
 - 50% of the units for households earning 100% of median income
 - 25% of the units for households earning 125% of median income
- The sale prices of these units are based on the ability of persons at the various income levels to pay the mortgages and other housing costs, using conventional underwriting standards (as shown in Appendix C, Buyer's Underwriting: Affordable Condominiums). Thus, an increase in the maximum income level can result in an increase in the price. For the scenario above, the average price would be \$227,613, or nearly \$49,000 above the price with an income restriction of 80% of median. For the 11 affordable condo units, this would amount to an additional \$538,750 going to the bottom line. But the cost to develop these units would still exceed the sales price by \$147,000 each.
- The last option would be to reduce the requirement for 40% affordable units to a lower figure, and have most, if not all, of the reduction be to the affordable condos.

The implementation of enough of these changes could reduce the equity required and make it easier to raise equity returns to the level of 25% or more required by the market. If this were done, in addition to reducing unit sizes and eliminating the segregation of the low income rental units as proposed in Option 2, it is our expectation that the project could be a successful real estate development and a demonstration of the physical feasibility and market response to the innovative chassis and infill design and construction process being developed by House_n and the Open Source Building Alliance.

EPILOGUE

Kent Larson of MIT's House_n Research Consortium conferred briefly after the public hearing with the chagrined agency official. It didn't look good: the neighborhood was adamant in opposition.

A mischievous smile came over the official's face. He hinted that he might know of another parcel in the area. And it wouldn't need a zoning change.

After what they had been through, Larson was inwardly skeptical. But then he started thinking about how great it would be to put into physical form the concepts he and his team had been working on for the past few years. What a difference these new methods would make to the backward, inefficient process of constructing a building and to the way we live in our homes, he thought. He began to get energized once again.

He wondered what those students at the Center for Real Estate came up with. He looked forward to reading their thesis and finding out how his team could pull off this project. Surely some site would work out....

Thus continued the story of the Galileo Lofts.

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APPENDIX A: PROPOSAL -- GALILEO LOFTS AT MIT

August 27, 2004

Galileo Lofts at MIT: Housing and Urban Park

Proposal to the Cambridge Redevelopment Authority
for New Housing and a Public Park on Parcel 7

Developmant Team: A Joint Venture Between
HomePrime and Oaktree Development

Development Partner:
Just-A-Start Corporation

Design and Construction Team:
Suffolk Construction, Construction Manager
Sasaki Associates, Landscape Architects
Whitney Atwood Norcross Associates Inc., Architects

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August 27, 2004

Dear Members of the Cambridge Redevelopment Authority:

Homeprime, Oaktree Green, and Just-a-Start Corporation are pleased to submit this proposal for the development of new housing and public park on parcel 7.

This printed document contains the essential details of our proposal and the team we have assembled. Qualifications are submitted electronically on the accompanying compact disc, including references, CVs, and team member portfolios. If requested, we will provide printed versions of these electronic documents.

We look forward to meeting with the agency to discuss the details of our proposal.

Sincerely,

Kent Larson
Ling Yi Liu
Barbara Shaw

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	Just-A-Start Corporation	CD
	Suffolk Construction	CD
	Sasaki Associates	CD
	Whitney Atwood Norcross Associates, Inc.	CD

Galileo Lofts at MIT Housing and Urban Park Parcel 7, Kendall Square Urban Renewal Area

Introduction

Parcel 7, located in the Kendall Square Urban Renewal Area, is not currently zoned for new development. We believe, however, that carefully designed development project could be approved by the City if it achieves major goals of the community, which include:

- Create more housing with an emphasis on affordable units and housing close to place of work,
- Create additional well-designed open space
- Create 24-hour activity and animate streets with multiple entries.

This proposal has been developed to achieve each of these goals.

In addition, we believe there is a strong market in this area for customizable loft condominiums with rich amenities and services to serve the business and academic community in the immediate area.

To realize the potential of the site, a unique and broadly experienced team has been formed to manage the complex design, permitting, and construction process. This effort will take advantage of state-of-the-art design, visualization, construction, and building technology to produce a high-profile and distinctive project that will be an asset to the community.

1 Parcel 7 and the Eastern Cambridge Planning Study (ECaPS)

In the 1970s and early 1980s, much of the Kendall Square area consisted of vacant factories and warehouses. Planning and investment in this area focused on the availability of uniquely large parcels of land in close proximity to MIT and an MBTA Red Line station. Through the work of the CRA and others, collective visions became real. After two decades of steady real estate investment, Kendall Square is now the office / R & D core of the City of Cambridge.

In the late 1990s, many residents felt that the pace and scale of development in the City needed to be checked. In 1999, several East Cambridge residents, seeking a moratorium on development in East Cambridge, filed the Larkin Petition. The City responded by allowing a moratorium, defining an East Cambridge Study area, appointing an 18 member Study Committee and hiring a consultant to assist in the planning study. This study and resulting report, the Eastern Cambridge Planning Study, "ECaPS" allowed residents, CRA representatives and other interested parties to re-vision and recommend zoning for several East Cambridge areas including some parts of Kendall Square.

The only CRA controlled parcel included in ECaPS was Parcel 7. Although the ECaPS "Transition Area A and B" plan identified Parcel 7 as open space. Parcel 7 was further identified as in the "Transition Area". ECaPS identified three overall major goals for the Transition Area*:

1. Encourage new residential development,
2. Use finely graduated heights to create transitions in scale, and
3. Create better pedestrian and bicycle connections.

In ECaPS, as in other planning and zoning venues, conversations about Kendall Square have always included the desire to increase housing in the area in order to achieve the following results:

1. Decrease potential traffic by housing people who might otherwise drive to work
2. Meet the need for housing
3. Increase the supply of affordable housing
4. Create a 24-hour presence
5. Animate streets with multiple entrances

In keeping with the goals articulated in ECaPS, this proposal is for the development of Parcel 7 for housing, with a large portion of affordable housing, and public open space. The developer proposes to meet with East Cambridge residents including ECaPs study members and East Cambridge Planning Team members to seek agreement for the development of the site as proposed and to seek design ideas for the public open space.

* This paragraph updated from original submitted hardcopy.

2 Preliminary Design Proposal

A pre-schematic urban plan and building design have been developed to test the potential of the project and to generate a realistic budget. The proposed 9 story building includes approximately 60,000 square feet of housing and common space. Although carefully developed, the precise area, number of stories, and design elements may change during the development process due to input from the community, site utility constraints (particularly the existing telephone duct), negotiations with the city, and the marketing/budgeting process. This section describes the design attributes:

2.1 Urban Plan and Context

The new building has been located at the extreme northern end of the site. It relates to the massing and orientation of the Genzyme building along Binney Street, and completes the building line of Binney Avenue as viewed from the movie theaters and entry to One Kendall Square. The proposed building is as narrow as practical to maximize the area for public park to the south. This new building terminates the Galileo Galilei Way axis that runs north from the Stata Center, and creates a well-defined open space (see Public Park below).



Schematic site plan, urban context.



Schematic site plan, Parcel 7.



View of site looking north from sixth floor of Stata Center.



View of site looking west on Binney Street.



View of site looking east from movie theater on Binney Street.



View from site looking south down Galileo Galilei Way.

2.2 Parking

Parking is located under the building approximately five ft. below street level, with the access drive from Binney Street. This will likely minimize the cost of foundations by allowing spread footings (evaluation by McPhail Associates), will minimize the length of the ramp down from the street, and may result in the telephone cables to remain largely undisturbed. It also places the first level of housing at an elevation that allows for traditionally scaled townhouse entry stoops.

The high percentage of affordable units and the desire to produce a higher-quality-than-normal residential building requires that the building be designed as efficiently as possible. To maximize the use of construction funds, the units and demising walls are designed to transfer loads to the parking level on columns spaced 27ft. - 6in. (accommodating 3 cars), and the 42-foot building width relating to the drive aisle and parking depth. As required by the city, one parking space will be provided for each unit. The development team will investigate the possibility of off-site parking to meet some of the parking requirement. Time-shared spaces for townhouses may allow for fewer on-site parking spaces. In addition, with the CRA's approval, the development team may wish to request additional units if off-site parking is available and approved by the City.

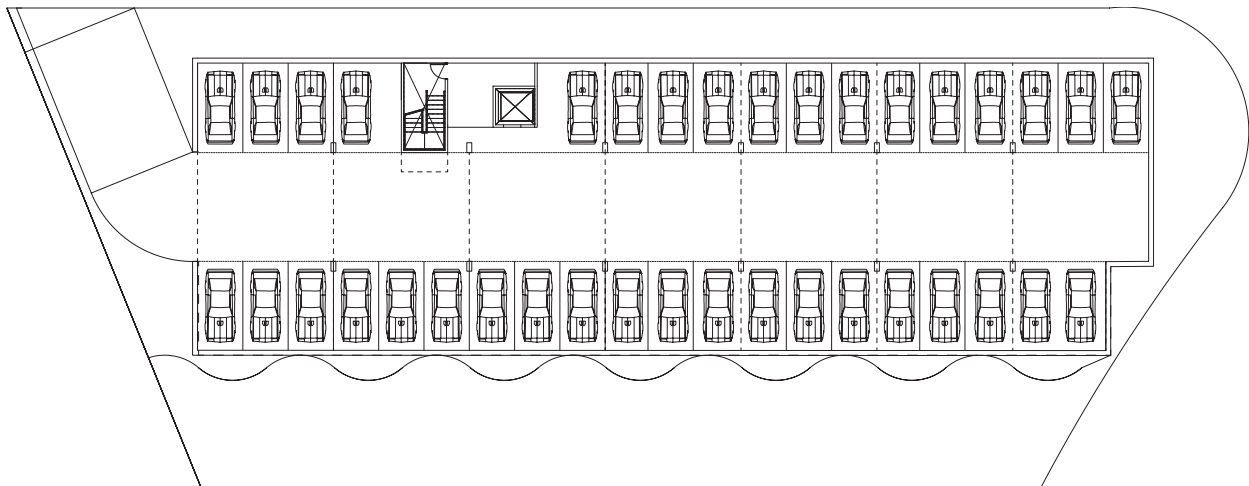
2.3 Proposed Unit Mix

While the final number and percent of affordable units is dependent upon the total number of units, which will be determined during the permitting, design and financing processes, our initial proposal is for 21 market rate condominiums, 3 inclusionary condominiums and 12 affordable rental units (organized as a single condominium unit). As defined in the CRA Request for Proposals, we propose a mixed income development with more than 40% of the units affordable to household at incomes of 80% of median or less. The percentage of inclusionary and affordable units in our proposal is 41%. Responding to the need for affordable rental housing for families with children, we are proposing that at least half (and perhaps all) of the affordable rental units have 3 bedrooms.

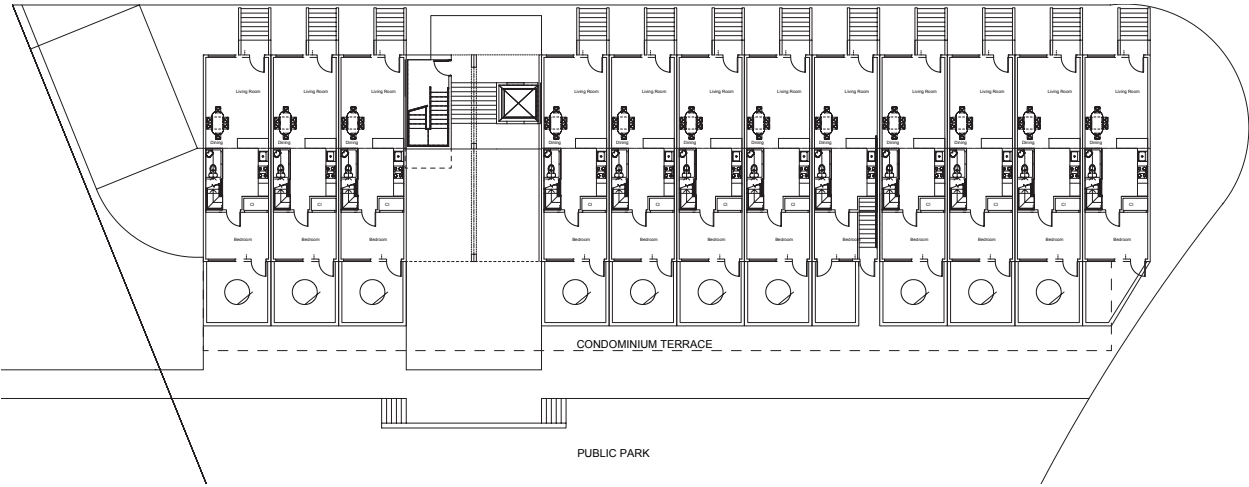
21	market condominiums (58%)
3	inclusionary condominiums (8%)
12	affordable rentals (33%)
36	condominiums and apartments

2.4 Affordable Townhouses

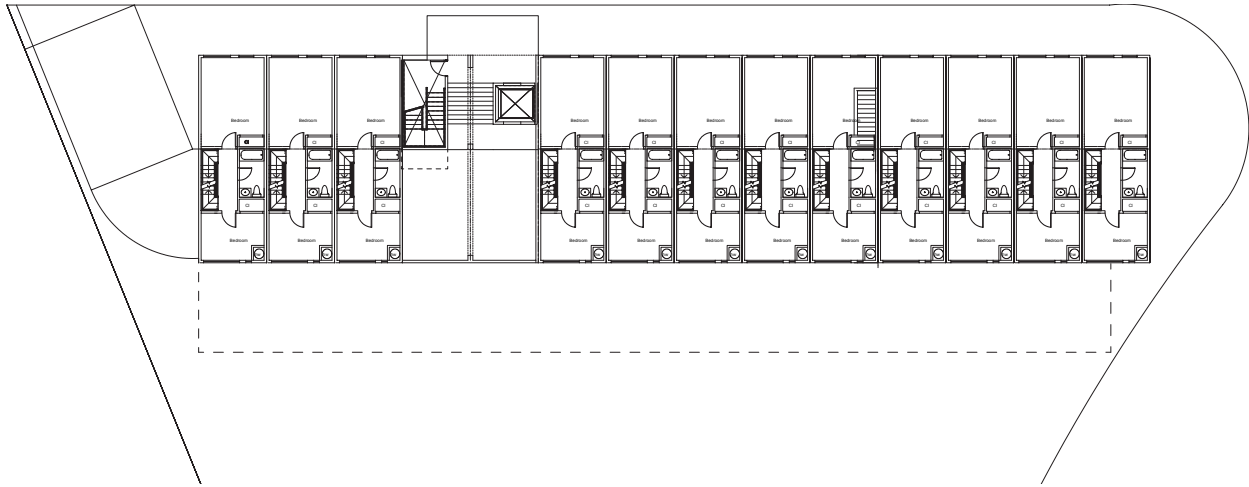
One level above parking, and approximately five feet above existing grade, are 12 two-story townhouses. This initial design places the affordable rental units in the most logical place for larger family-sized units housing families with children: close to the ground with multiple entries. We envision townhouse-scaled facades on the lower 2 ½ floors of the building facing Binney Street. In addition to best fitting the needs of residents, this design scheme achieves some of the goals articulated in ECaPS by enlivening the ground floor of the building with active residential use, articulated with multiple entries facing the East Cambridge residential neighborhood to the North. Each townhouse is approximately 1,150 square feet, and each has light from two sides (north and south).



Parking Plan



Affordable Townhouses : Level One



Affordable Townhouses : Level Two

2.5 Condominiums

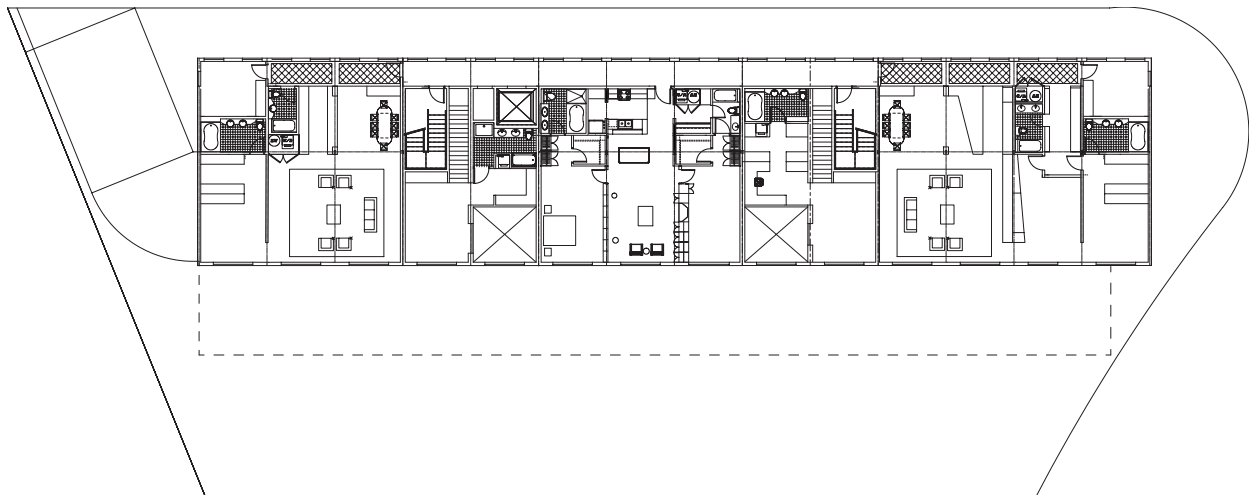
In our proposed building design, all condominiums are served by a common lobby that can be entered from both Binney Street and the park to the south. There is a mix of unit sizes, and both flats and duplexes are included. Each unit has unobstructed southern views and light. The two larger units on each floor have light and views on three sides. All units will be customizable (see Design and Construction Innovation, page 16).



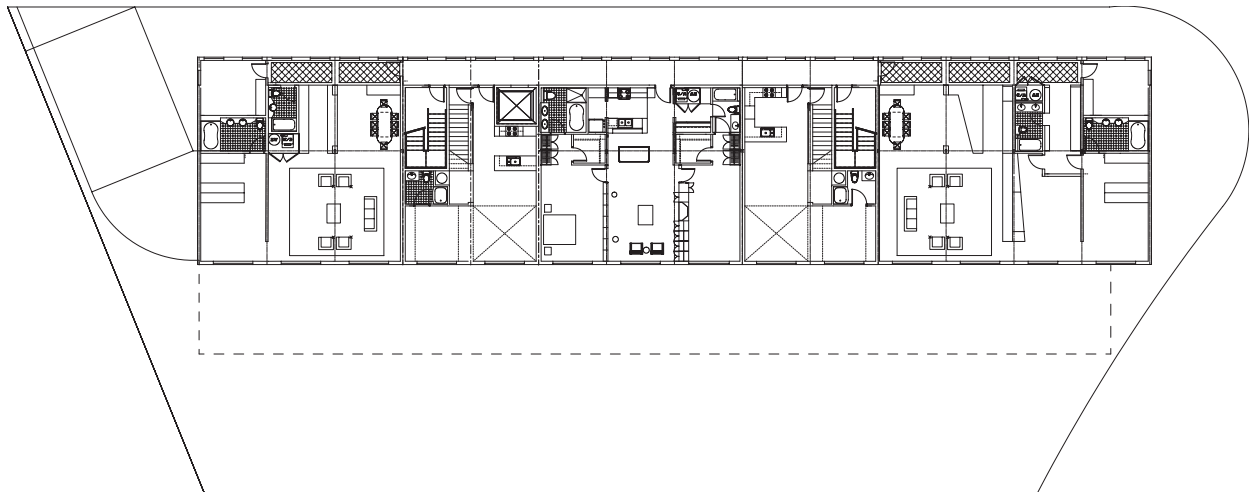
MIT House_n study of configurable apartments.

2.6 Common Space

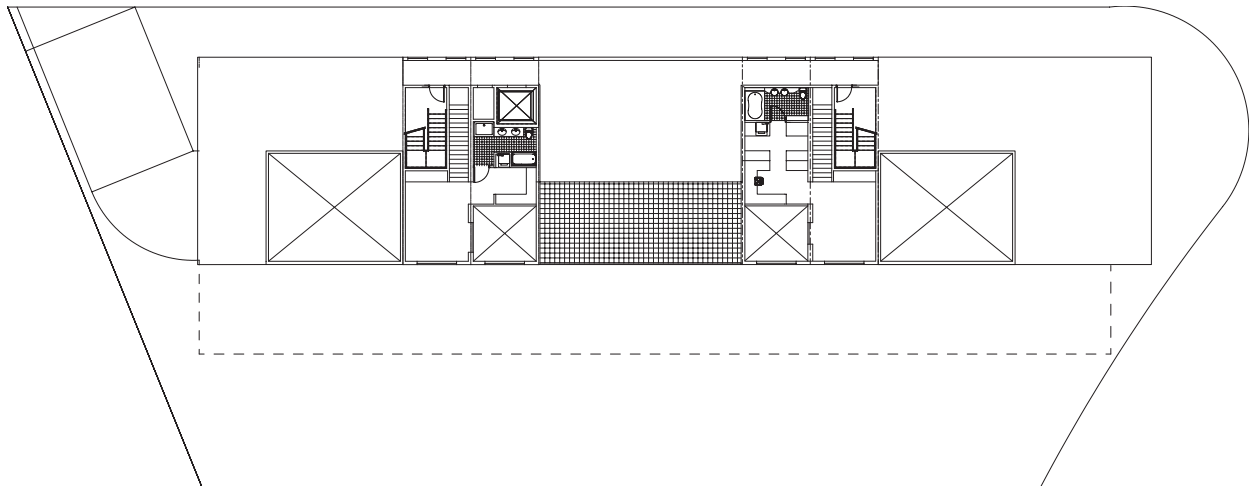
Space has been designated on the top floor and in the lobby for common space and a roof terrace has been provided. The common space may be adaptable for social events, private functions, and business meetings. The space would include both entertainment and work-related technologies.



Condominiums : Floors 2, 4, 6, and 8



Condominiums : Floors 3, 5, 7, and 9



Common Space at Penthouse

2.7 Public Park

We propose that our development team create a master plan that includes all of the open space visually defined by the new building, which includes the southern portion of parcel 7, the Biogen garden across Galileo Galilei Way, the railroad right of way, the opening to One Kendall Center between the Amgen and Genzyme buildings, and parcel 5 running from Broadway to Main Street to the south (see schematic site plan on page 10). Sasaki Associates has agreed to join the design team to generate the master plan and park design. This master plan will be used to inform the design of a new public park.

The development of new market rate housing will fund the development of a park master plan and basic green space amenities on Parcel 7. We propose that the design team and the Director of the CRA approach the adjacent major businesses to contribute to funding of design, construction, and maintenance of a public park beyond the scope of the housing development funded park. With appropriate funding and with the CRA's approval, the park may include emerging design and technologies being developed by industry and MIT (particularly the Media Lab), and could extend to parcel 5.

- Street furniture and technologies to create innovative public space and Garden "rooms" for lunch time work, leisure, etc.
- Responsive lighting.
- Places for public displays and public art.
- Directed audio spotlight for performance (non-disruptive to those outside a zone).
- Multi-use path for bikes and running.

A portion of the park – perhaps at the node on parcel 5 that currently houses the largely unused playground – could be developed as at "street lab" to prototype emerging public place technologies that are being developed by industry, the MIT Media Lab, and the MIT Lab for Artificial Intelligence and Computer Science across the street in the new Stata Center. Note: Kent Larson is currently working with the Boston Redevelopment Authority on a proposal to install such technologies on a Central Artery parcel.

2.8 Design and Construction Innovation

The building has been designed to accommodate both conventional steel and concrete construction, as well as prefabricated steel and concrete modules (each 10'-0" high, 13'-6" wide, and 45'-0" deep). The precise construction methodology would be determined during the design phase. The design team will first consider the use of prefabricated open-loft building "chassis" modules with standardized electrical, data, plumbing, and mechanical connections for rapid, low-labor assembly at the site. This methodology takes advantage of the work of the MIT Open Source Building Alliance, directed by Kent Larson, and the industrial sponsors. Two modular fabricators have reviewed the proposed design, and preliminary evaluation indicates that this approach may be cost effective, dramatically reduce construction time, and would result in higher-quality apartment interiors. This approach would also allow for the cost-effective articulation of the façade with varying length modules.

The exterior of the building would consist of a curtain wall, detailed to fit within the context of the adjacent office and institutional buildings. Discussions have been initiated with the Massachusetts Technology Collaborative to subsidize the inclusion of state-of-the-art energy-producing, energy conservation technologies, including building integrated photovoltaics. Other sources of subsidies, both industrial and governmental, may be available.

The condominium units are designed as configurable lofts. Each unit will be constructed with bathrooms, demising walls, wood floors, washer/dryer, individual HVAC system, and carefully located connections for kitchen plumbing, power, and data. At the point of presale (during or before the construction process), a set of options will be offered to the buyer, including a variety of kitchen layouts, cabinetry storage/organizing units, and special purpose components for work, and entertainment. If permitted by the City, buyers will have live-work design options, allowing residential space to be transformed to professional office space during the day.

2.9 Existing Utilities

The proposed design assumes that issues related to the existing telephone duct can be successfully resolved, either by reworking it's configuration to permit foundations and parking, or by relocation. It also assumes that no utility easement would prevent the development of the site. Immediately upon designation as developer, the CRA and the design team's structural and geo-technical engineer would be asked to investigate the issue and make recommendations to the development team.

3 Development Team

The development team will be led by a joint venture of Homeprime Corporation (a company committed to a new model for housing by deploying new technologies, design concepts, and services) and Oaktree Development (a premier residential developer in Cambridge). Just-A-Start Corporation (a non-profit community development corporation creating affordable housing) will pre-purchase the affordable units and will serve as project consultant. The design and construction team will include Sasaki Associates (landscape architects with significant experience in the redevelopment authority area), Suffolk Construction (a leading multifamily residential construction management firm in the Boston area), and WAN Architects (specialists in new construction methods for multi-family residential, dormitories, etc.).

3.1 HomePrime

HomePrime Corporation was founded to exploit the combination of the real world development insights accumulated in Oaktree over the years and innovative ideas originating from MIT housing research to improve housing development. It is a development process company offering design, construction, process, and technology innovations to developers and housing/redevelopment agencies.

3.2 Oaktree Green LLC

Oaktree was originally founded as Unihab, Inc. in 1969 as a design/build company specializing in factory-produced, urban, multifamily housing. In recent years, Oaktree has focused primarily on urban infill multifamily housing. It has completed many large and successful housing development projects in Cambridge, including Thomas Graves Landing, 1008 Massachusetts Avenue, 950 Massachusetts Avenue, 369 Franklin Street, and Cambridge Park Place near the Alewife T-stop. A 165-unit condominium project with the City of New London Redevelopment Authority is currently under construction in Connecticut.

3.3 Just-A-Start

Just-A-Start Corporation (JAS) is a non-profit community development corporation providing a range of services, resources and technical assistance related to expanding training/education and affordable housing opportunities for low and moderate income people. JAS began in 1968 as a program of the Cambridge Redevelopment Authority offering Cambridge teens enrichment opportunities including jobs in neighborhood improvement projects. Since its incorporation as a separate private non-profit corporation in 1970, JAS has expanded into the metro Boston area offering a range of services and resources. With a twelve member Board of Directors and forty-eight full-time employees, JAS has an annual operating budget of 4 million dollars and offices in Cambridge and Boston. Through direct ownership, or ownership by subsidiary corporations and partnerships, JAS now owns and operates 529 affordable apartments in Cambridge at 16 different sites. JAS will assign two staff members to work on this project; Gordon Gottsche is a former CRA employee who has been the Executive Director of Just-A-Start from its inception and Barbara Shaw, Housing Development Director, who has been a JAS employee for 20 years. Additional JAS Housing Development staff trained in architecture, construction and law may assist in the course of development.

3.4 Sasaki Associates

Founded in 1953 by Hideo Sasaki, Sasaki Associates is an interdisciplinary firm of more than 270 professionals. Sasaki has worked with its clients to create some of the most recognizable icons of modern landscape architecture. The landscape architecture practice is integrated with civil engineering and urban design to create new designs on diverse and challenging sites, including urban waterfronts, college campuses, sensitive environmental areas, and brownfields. Sasaki Associates produced the master plan and landscape design for the Biogen campus opposite Parcel 7, and for the nearby Technology Square @ MIT.

3.5 Suffolk Construction

Suffolk Construction was recognized by Boston Business Journal as the area's Largest General Contractor in 2003, employing over 650 people and with current annual billings totaling \$900,000,000. Suffolk's current project portfolio encompasses commercial, office, retail, educational, healthcare, senior living, hospitality, multi-family residential, research & development, and industrial sectors – with projects located in 22 states across the United States. Suffolk worked with Ling Yi Liu and Kent Larson on Oaktree Development's 369 Franklin Street multifamily housing project, completed last year. Michael Moise, Project Executive for 369 Franklin Street, will also work on Galileo Lofts.

3.6 Whitney Atwood Norcross Architects (WAN) Architects + Touloukian Touloukian Inc.

Whitney Atwood Norcross Associates, Inc. was founded in 1959. WAN offers a comprehensive range of professional architectural services. The firm has extensive experience in the preparation of feasibility studies and design documents, as well as expertise in construction administration. Recent projects include a number of college and university residence halls, science and research buildings, educational facilities, healthcare institutions, office buildings, and renovations. The construction documents produced by WAN are widely recognized as setting the standard in the profession. WAN has recently completed a number of successful projects with Suffolk Construction, and this relationship will be an asset to the project. WAN the prime architect will combine resources with Touloukian Touloukian Inc., the associated principal designer.

4 Approval Process Issues

Usually a parcel of land has an “as-of-right” amount of buildable square feet associated with it based on the size of the lot and the dimensional requirements of the zoning district in which it is located. A lot of 49,500 square feet (parcel 7 area) would have the potential for residential build-out as indicated in some other Cambridge zoning districts.

District	FAR	Allowed	+Inclusionary
Res C-3, O3, O3-A, Bus B, Bus B-2	3.0	148,500	193,050
Res C-2A	2.5	123,750	160,875
Res C-2B, Office 2, Business C	2.0	99,000	128,700
Res C-2B	1.75	86,625	112,613

As part of the “Cambridge Center Mixed Use Development” (MXD) area, parcel 7 is subject to an aggregate district cap for gross floor area of 2,773,000 square feet for non-residential uses and an additional 200,000 square feet for residential uses (exclusive of parking). This total of 2,973,000 has either been built, permitted for building or has been contractually committed to by the CRA for other sites in the District.

The provisions of the MXD zoning district also require a minimum of 100,000 square feet of permanent public open space in the district. Given the open space already developed or proposed for the district, the amount of open space will considerably exceed the required minimum. This development proposes that a minimum of 15,000 square feet, or approximately 33% of the site, be permanently designated as public open space.

If designated, this development team proposes to work with CRA staff, legal assistance and the Cambridge Community Development Department to identify the process by which Parcel 7 can be developed. It is likely that the final Cambridge permitting process may include an application to the Cambridge Board of Zoning Appeals for a variance and an application to the Cambridge Planning Board for a special permit. The proposal will* require an application to the Cambridge City Council for a curb cut.

Parcel 7 is located adjacent to the “Western Connector”, a railroad spur line. This proximity to the railroad triggers permitting requirements under state regulations. The development team will obtain the necessary permits to build on the site.

* Updated from original submitted hardcopy.

5 Affordable Housing Condominium

5.1 Purchase by Just-A-Start Corporation

Just-A-Start Corporation (JAS) proposes to purchase the single ground floor condominium of 12 units at the completion of construction. Commitments to purchase the units, along with financing commitments for the permanent financing, would be obtained at the start of construction. An anticipated sales price for the affordable rental units is approximately 4 million dollars. This is comparable to the development cost of other affordable initiatives with 2-3 bedrooms per unit under development in Cambridge.

5.2 Affordable Housing Financing

JAS will assemble permanent financing using multiple financing sources. Possible financing sources may include the following.

- HUD HOME allocated by the Commonwealth of Massachusetts
- Housing Innovation Funding through the Commonwealth of Massachusetts
- Housing Stabilization funding through the Commonwealth of Massachusetts
- HUD HOME allocated by the City of Cambridge
- Cambridge Affordable Housing Trust, including Community Preservation Act
- Massachusetts Affordable Housing Trust through MassHousing
- A state allocation of low income housing tax credits allowing investor equity
- A fixed rate amortizing loan from a conventional lender
- Allocation of project based HUD section 8 from Camb Housing Authority
- Recent State funding initiatives announced by Mass Housing Partnership and Mass Housing including funding for housing developed near mass transit.

The goal of the permanent financing package will be to assemble the funds required to purchase the units keeping the debt service ratio at 1.2%.

The development team will also explore the possibility of affordable housing financing that might be made available during the construction of the project due to the high overall percentage of affordable housing.

6 Business Proposal

6.1 Business Proposal Outline

Within 60 days of designation, Galileo Lofts LLC (a joint venture between Oaktree Green LLC and HomePrime Corporation) and CRA will sign a development agreement detailing the milestones that must be achieved before land transfer. It is expected that land transfer will occur at the closing of construction financing for the housing. Significant pre-sales are planned. The townhouses are to be pre-sold to Just-A-Start CDC. Some of the market-rate units may be sold as executive units, while others may be sold as live-work units. Using HomePrime Corporation's adaptable home designs, strong pre-sales are expected since buyers will be able to buy units more suited to their needs.

Since 40% of the units are to be affordable, the project may qualify for favorable construction financing from the Massachusetts Housing Finance Agency (MHFA). Just-A-Start will work on its own with various funding agencies to purchase of the affordable townhouses. Funding for specific innovative technologies may also be sought from entities such as the Massachusetts Technology Collaborative or corporations currently supporting research at MIT's House_n research project.

Oaktree and HomePrime are pleased to offer a base amount of \$30,000 per market rate unit and \$10,000 per affordable unit assuming no adverse site conditions payable at land transfer. At project end, CRA will receive 30% of the project profits up to a final purchase price of \$2.5 million. We believe that this method of payment is reasonable given the uncertainties in the permitting process and the high affordable component which makes an accurate determination of the purchase price difficult.

6.2 Term Sheet - Galileo Lofts @ MIT

The following terms are proposed for developing the property identified as Parcel 7 of Kendall Square Urban Renewal Area in Cambridge, Massachusetts

1	Developer	Galileo Lofts, LLC a Massachusetts Limited Liability Company to be formed as a Joint Venture between HomePrime Corporation and Oaktree Green, LLC.
2	Development Proposal	Develop approximately 60,000 square feet plus parking for 36 residential units comprising of 21 market rate units, 3 inclusionary units, and balance 12 "deep" affordable units.
3	Development Agreement	Developer to sign Development Agreement with CRA to cover decision making process and property transfer. Developer to retain final decision and control over project and marketing of units subject to terms of this agreement. Just-A-Start (JAS) will sign a purchase and sale agreement with the Developer before closing of the construction loan to purchase 12 affordable units at a price to be mutually agreed upon.
4	Land Purchase Price	\$30,000/market rate unit and \$10,000/affordable unit payable at closing of Construction Loan (\$780,000). Plus 30% of final project profit (up to \$1.72 M) after all costs including Developer Overhead / Management Fees are paid. Minus cost of soil remediation and any unusual site related cost (ie moving telephone duct).
5	Project Costs	Budget to be developed in consultation with CRA and Just-A-Start.
6	Developer Overhead and Management Fees	Developer overhead and fees will be 7% of project cost including land price. Project management team (included in the 7%) to be \$7,000/month from designation till project completion. Fee will accrue until zoning permits are received.
7	Park	Project will include the planning of a public park. Scope of park will be determined thru a community process. Contributions towards development and operation of the park will be sought from neighboring companies. CRA will have a lead role in this process. City ownership of park to be explored.
8	Assumptions	CRA to provide topographical survey including utility connections as well as borings to ascertain hazardous materials and geotech conditions. A development agreement between CRA and Galileo Lofts LLC will be signed within 60 days of acceptance of proposal. CRA will take the lead in obtaining zoning permits from the city.

7 Action Plan (Developer + CRA)

The following outlines the major steps in the development process. Immediately after designation as developer for the project, the development and design team, working with CRA staff, will develop a more detailed schedule.

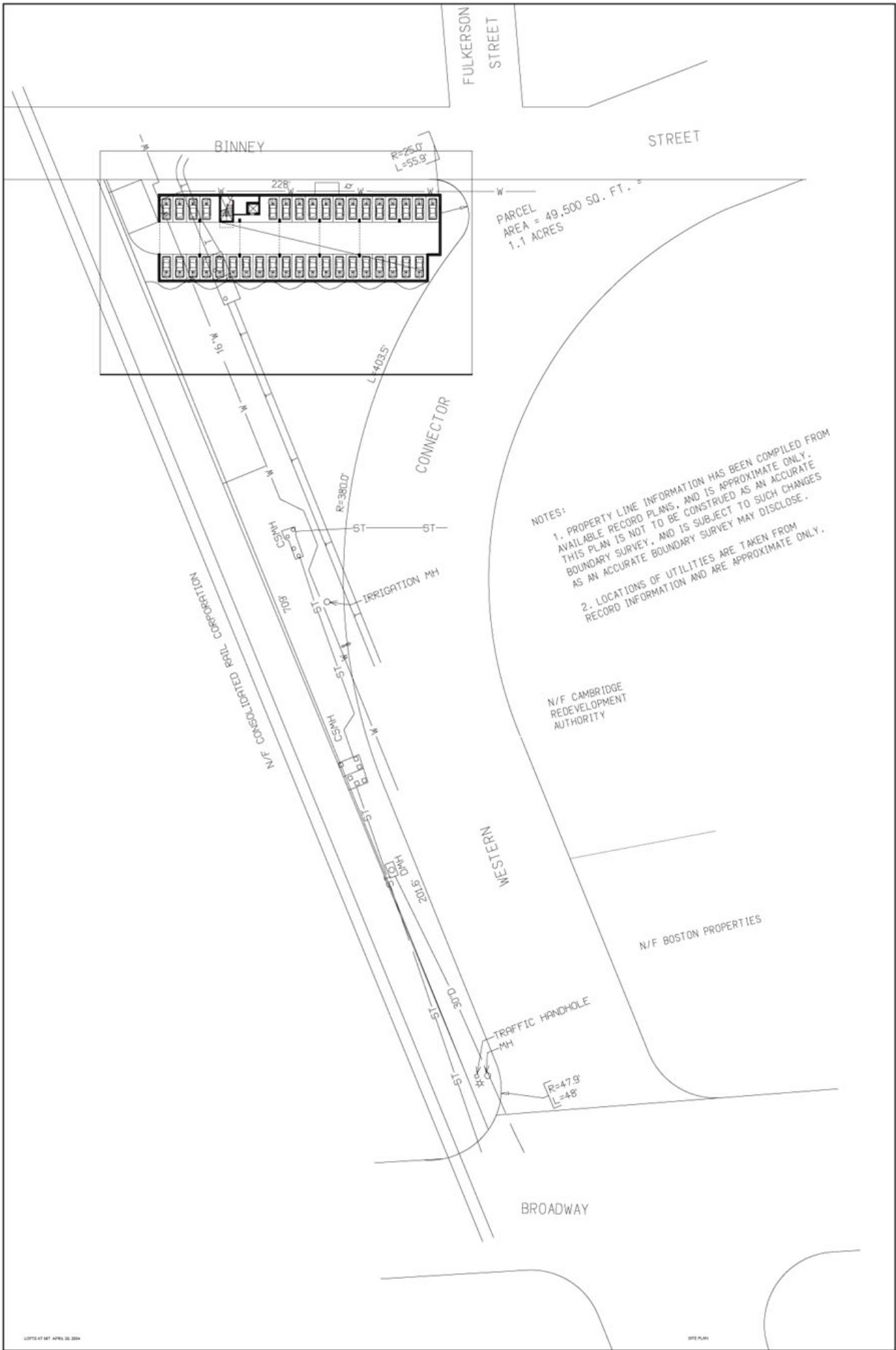
- Phase 1 Predevelopment and Planning (fall and winter 04)**
- Designation of developer
 - Negotiation of development agreement
 - Finalization of design team and consultants
 - Obtain survey, borings, etc.
 - Resolve site utility issues
 - Prepare informal community review documents
 - Discussions with Community Development to define process
 - Meet with EcaPS and other community members to review pre-schematic proposal
 - Meet with traffic, parking, city engineers, and building officials
 - Refine building and park design
 - Prepare review documents and applications to review bodies
- Phase 2 Regulator Process (spring and summer 05)**
- Variance process
 - Special permit process
 - Review triggered by adjacency to the railroad, if any
 - Etc.
- Phase 3 Financing and Presales (fall 05 thru winter 06)**
- Contract documents
 - Marketing for presales
 - Securing of financing
- Phase 4 Construction (spring 06 thru early spring 07)**
- Closing of construction loan and transfer title.
 - Construction
 - Sales

8 Conclusion

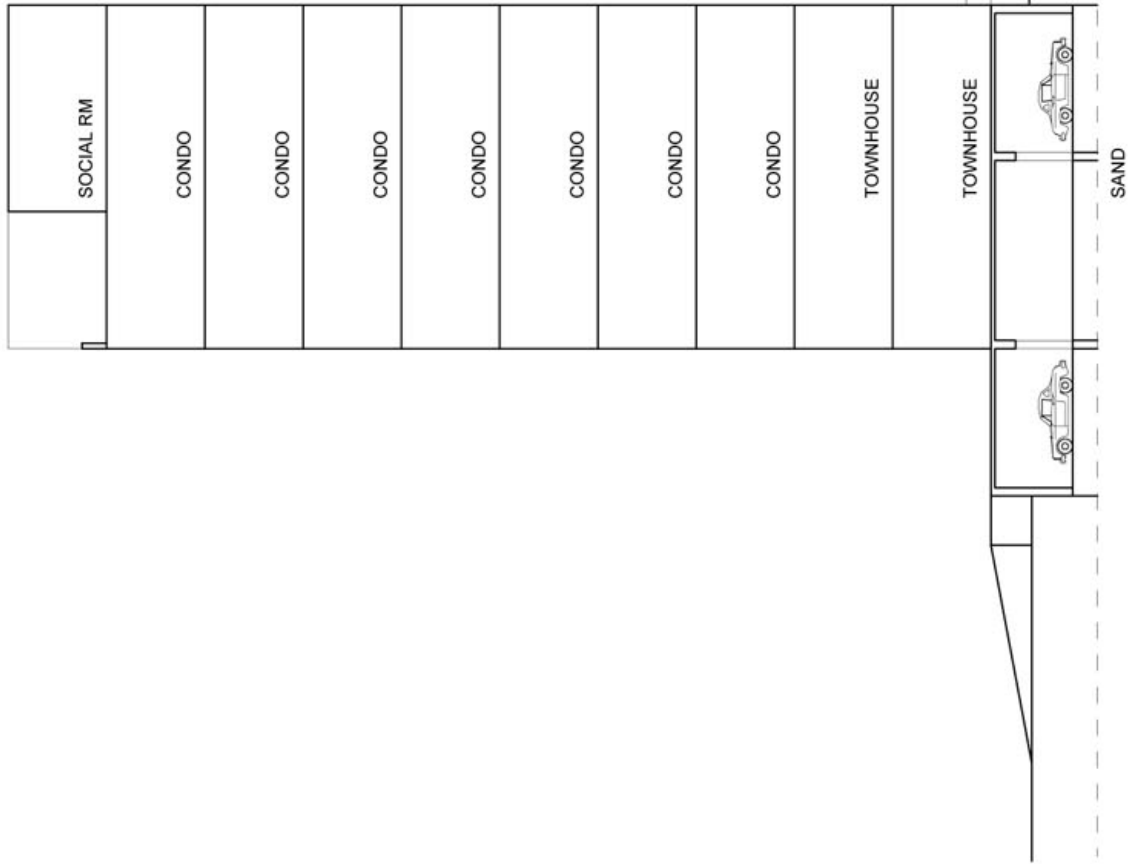
The entire development and design team will immediately begin Phase 1 activities upon designation as developer for this exciting project. We are available to discuss the details of this proposal with the Cambridge Redevelopment Authority.

APPENDIX B: DRAWINGS -- OPTION 1

April 28, 2004



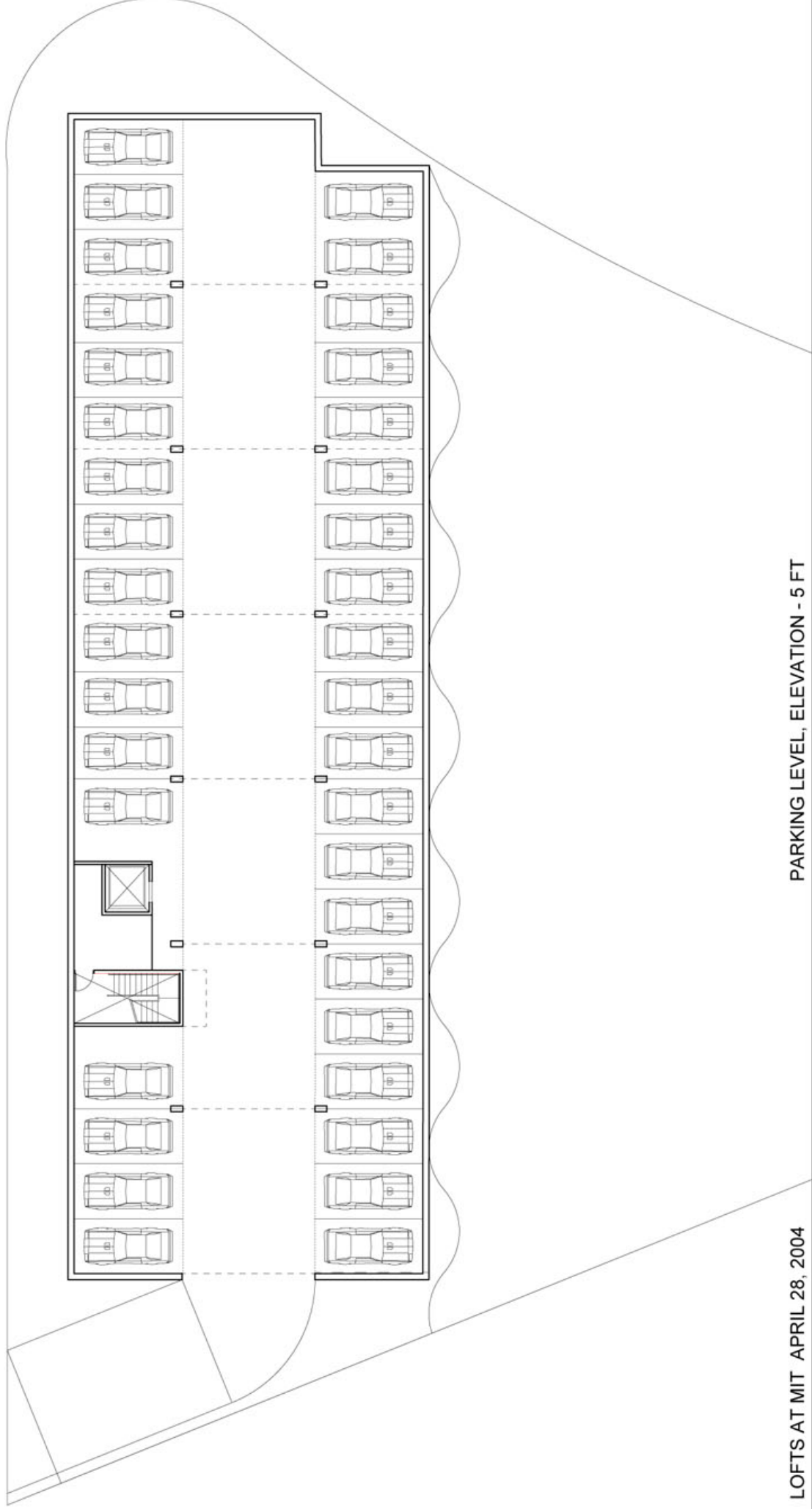
NOTES:
 1. PROPERTY LINE INFORMATION HAS BEEN COMPILED FROM AVAILABLE RECORD PLANS, AND IS APPROXIMATE ONLY. THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY, AND IS SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.
 2. LOCATIONS OF UTILITIES ARE TAKEN FROM RECORD INFORMATION AND ARE APPROXIMATE ONLY.



12 FEET FLOOR TO FLOOR
 (10 FEET FLOOR TO FLOOR IF MODULAR)

LOFTS AT MIT APRIL 28, 2004

SECTION



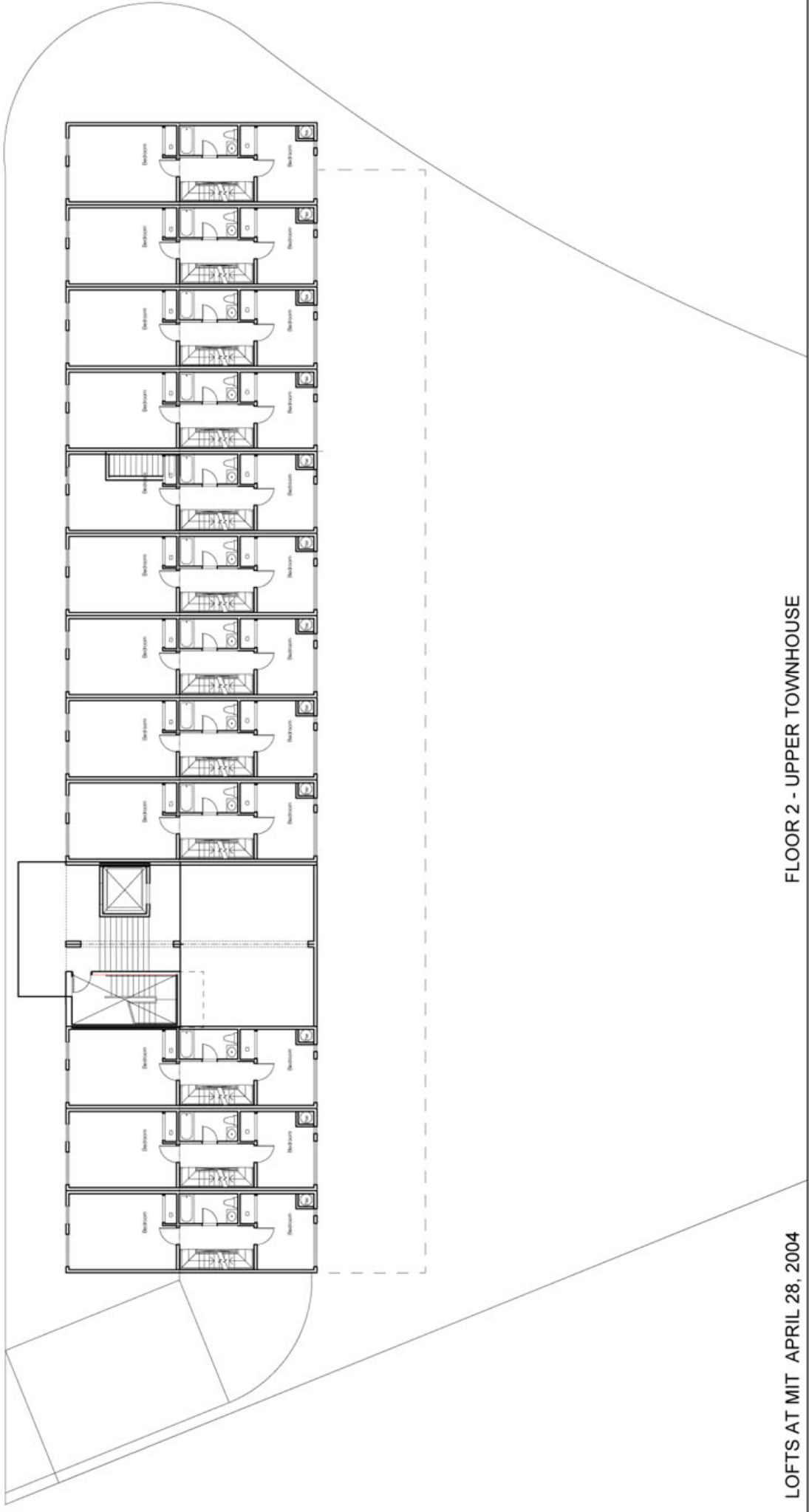
PARKING LEVEL, ELEVATION - 5 FT

LOFTS AT MIT APRIL 28, 2004



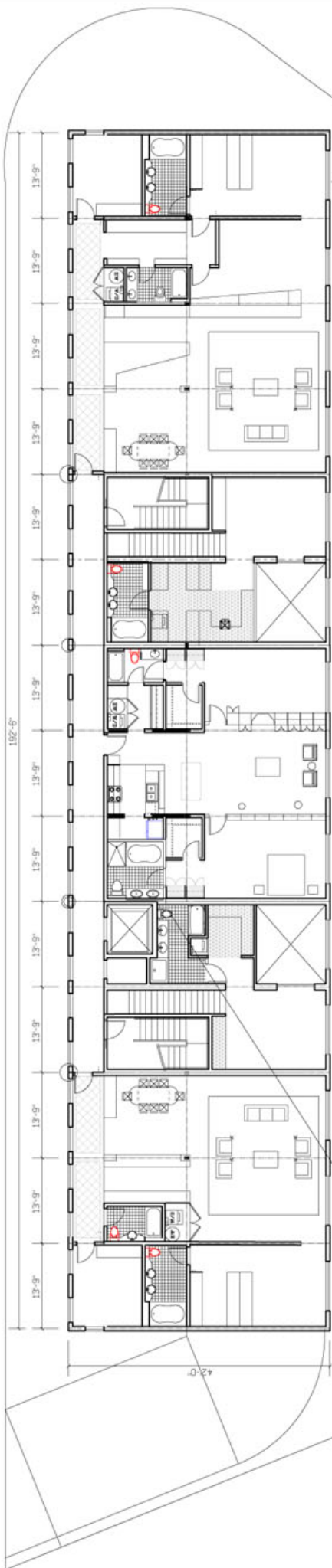
FLOOR 1 LOBBY AND LOWER TOWNHOUSE

LOFTS AT MIT APRIL 28, 2004



FLOOR 2 - UPPER TOWNHOUSE

LOFTS AT MIT APRIL 28, 2004

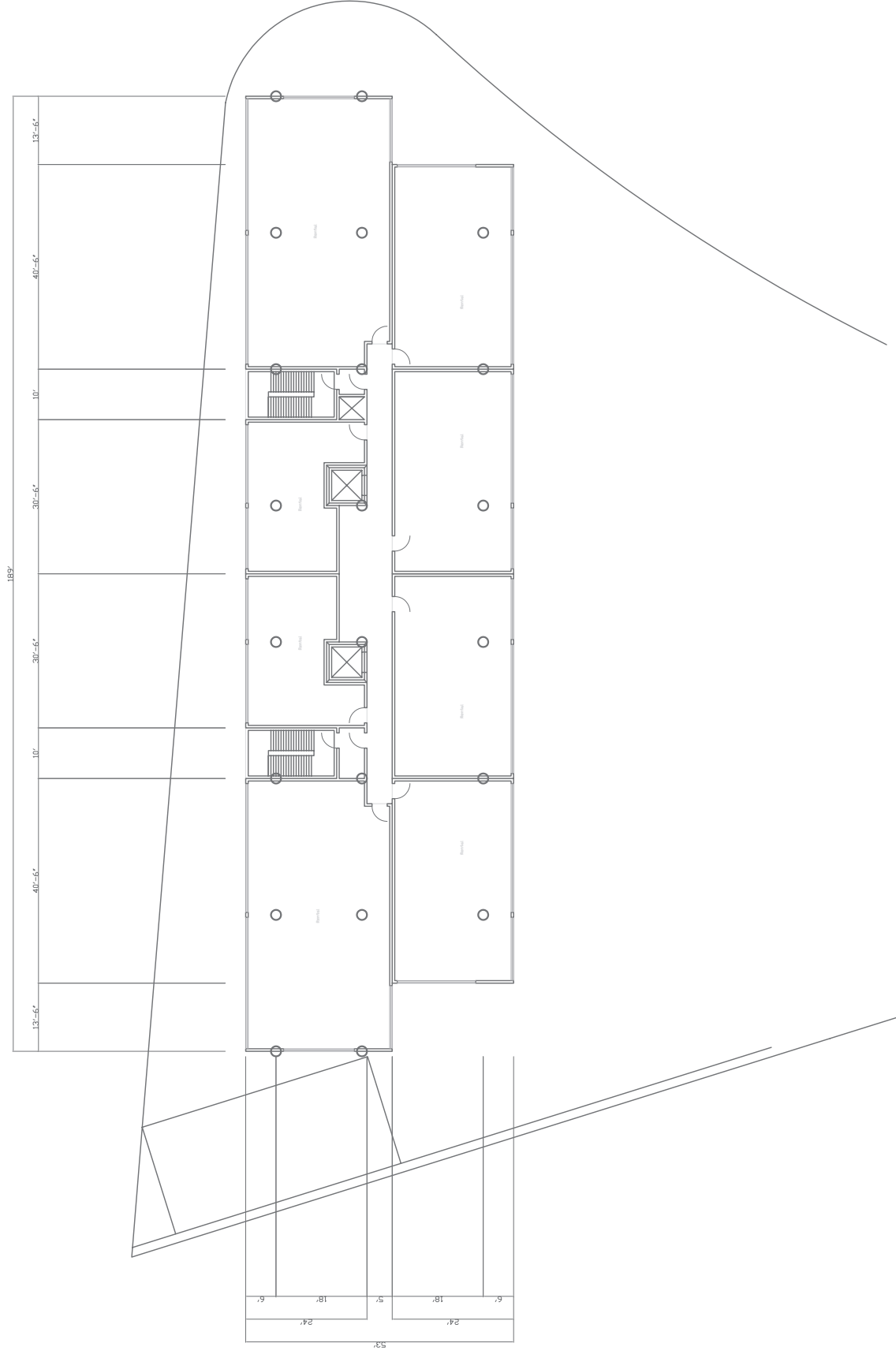


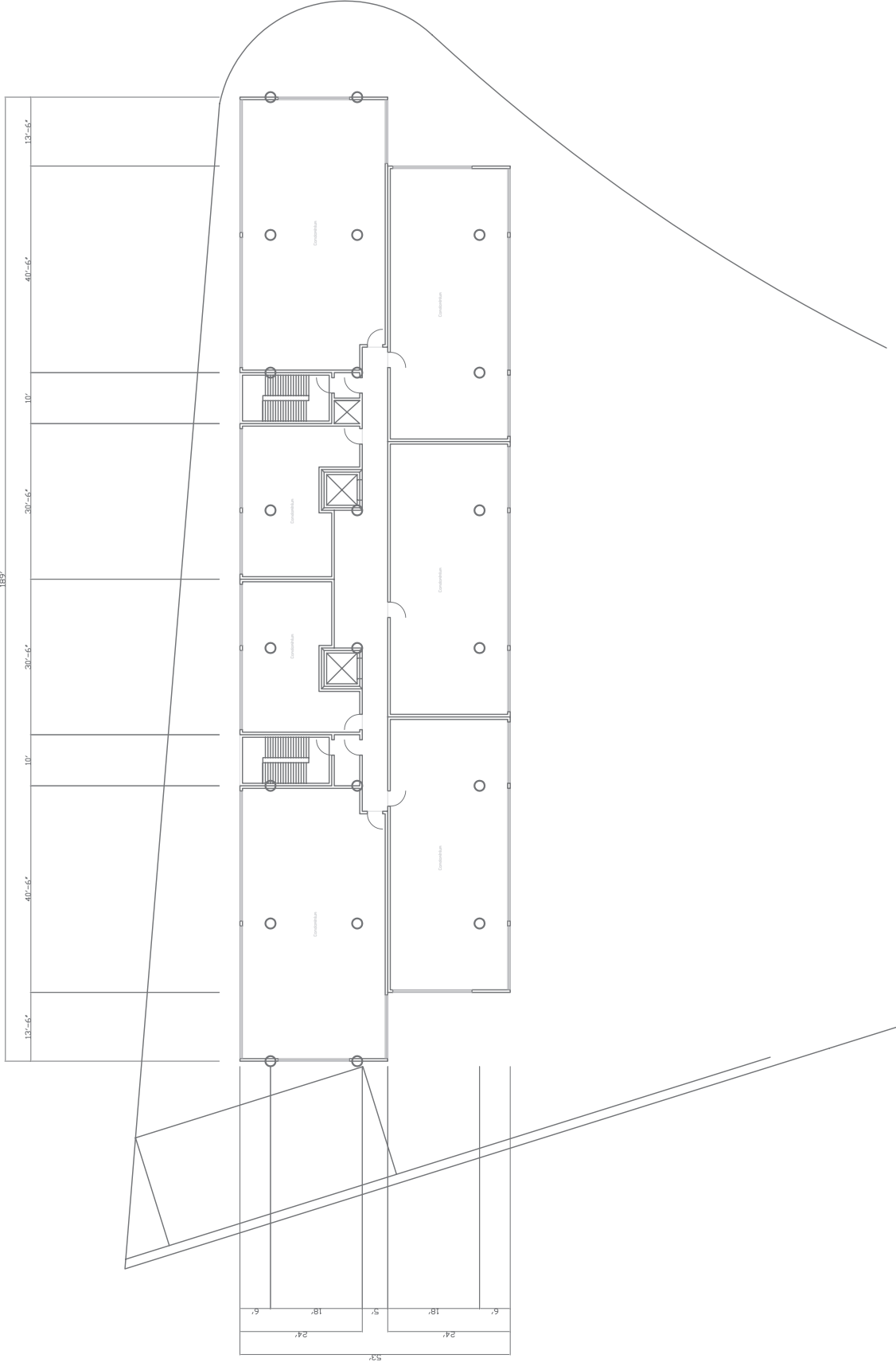
LOFTS AT MIT APRIL 28, 2004

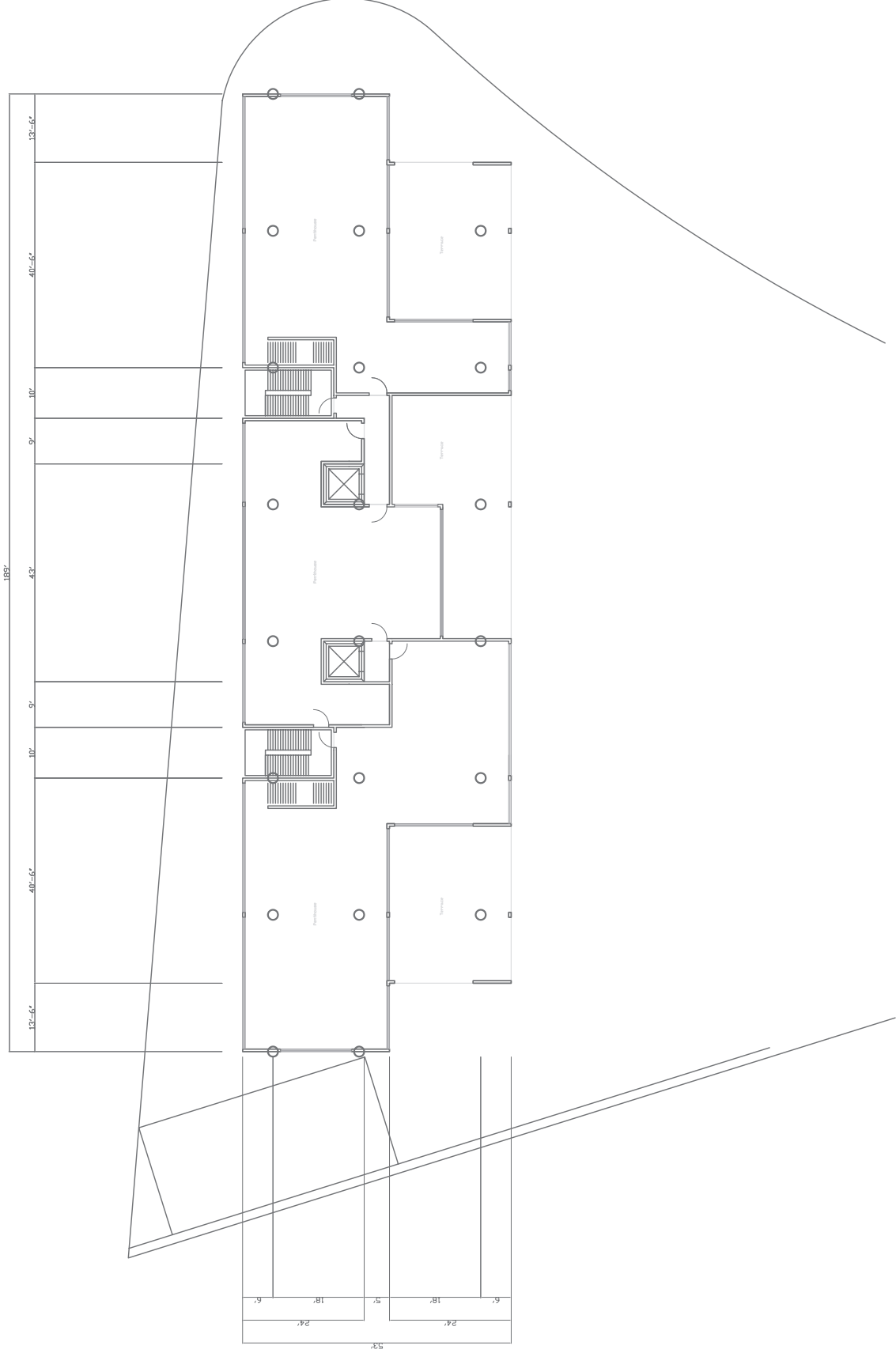
FLOORS 2,4,6,8

APPENDIX B: DRAWINGS -- OPTION 2

July 21, 2005







APPENDIX C: FINANCIAL PROJECTIONS -- OPTION 1

Unit Mix

Buyer's Underwriting: Affordable Condominiums

Capital Budget

Development Pro Forma

Sources and Uses of Funds

Unit Mix

Option 1: 44 units (the Baseline Case)

Unit No.	Status	Floor	Sq. Ft.	BRs	Price	Price/SF	Market			
							Sq. Ft.	BRs	Price	Price/SF
101	AR	1	1155	3	325000	281				
102	AR	1	1155	3	325000	281				
103	AR	1	1155	3	325000	281				
104	AR	1	1155	3	325000	281				
105	AR	1	1155	3	325000	281				
106	AR	1	1155	3	325000	281				
107	AR	1	1155	3	325000	281				
108	AR	1	1155	3	325000	281				
109	AR	1	1155	3	325000	281				
110	AR	1	1155	3	325000	281				
111	AR	1	1155	3	325000	281				
112	AR	1	1055	3	325000	308				
301	AC	3	1732.5	3	200000	115				
302	M	3	1485	3	689250	464	1485	3	689250	464
303	M	3	2310	4	1014300	439	2310	4	1014300	439
304	M	3	1620	3	750000	463	1620	3	750000	463
401	M	4	1732.5	3	805625	465	1733	3	805625	465
402	AC	4	1485	3	200000	135				
403	M	4	2310	4	1019300	441	2310	4	1019300	441
404	M	4	1620	3	755000	466	1620	3	755000	466
501	M	5	1732.5	3	810625	468	1733	3	810625	468
502	M	5	1485	3	699250	471	1485	3	699250	471
503	AC	5	2310	4	225000	97				
504	M	5	1620	3	760000	469	1620	3	760000	469
601	M	6	1732.5	3	815625	471	1733	3	815625	471
602	M	6	1485	3	704250	474	1485	3	704250	474
603	M	6	2310	4	1029300	446	2310	4	1029300	446
604	AC	6	1620	3	200000	123				
701	AC	7	1732.5	3	200000	115				
702	M	7	1485	3	709250	478	1485	3	709250	478
703	M	7	2310	4	1034300	448	2310	4	1034300	448
704	M	7	1620	3	770000	475	1620	3	770000	475
801	M	8	1732.5	3	825625	477	1733	3	825625	477
802	AC	8	1485	3	200000	135				
803	M	8	2310	4	1039300	450	2310	4	1039300	450
804	M	8	1620	3	775000	478	1620	3	775000	478
901	M	9	1732.5	3	830625	479	1733	3	830625	479
902	M	9	1485	3	719250	484	1485	3	719250	484
903	M	9	2310	4	1044300	452	2310	4	1044300	452
904	M	9	1620	3	780000	481	1620	3	780000	481
1001	M	10	1732.5	3	835625	482	1733	3	835625	482
1002	M	10	1485	3	724250	488	1485	3	724250	488
1003	M	10	2310	4	1049300	454	2310	4	1049300	454
1004	M	10	1620	3	785000	485	1620	3	785000	485
Total			70940		26899350		46815		21774350	
Mean			1612	3.18	611348.9	379	1801	3.27	837475	465
No.Units				44				26		

Unit Mix (continued)

Option 1: 44 units (the Baseline Case)

Unit No.	Affordable Rentals				Affordable Condos			
	Sq. Ft.	BRs	Price	Price/SF	Sq. Ft.	BRs	Price	Price/SF
101	1155	3	325000	281				
102	1155	3	325000	281				
103	1155	3	325000	281				
104	1155	3	325000	281				
105	1155	3	325000	281				
106	1155	3	325000	281				
107	1155	3	325000	281				
108	1155	3	325000	281				
109	1155	3	325000	281				
110	1155	3	325000	281				
111	1155	3	325000	281				
112	1055	3	325000	308				
301					1732.5	3	200000	115
302								
303								
304								
401								
402					1485	3	200000	135
403								
404								
501								
502								
503					2310	4	225000	97
504								
601								
602								
603								
604					1620	3	200000	123
701					1732.5	3	200000	115
702								
703								
704								
801								
802					1485	3	200000	135
803								
804								
901								
902								
903								
904								
1001								
1002								
1003								
1004								
Total	13760		3900000		10365		1225000	
Mean	1147	3	325000	283	1727.5	3.17	204167	118
No.Units		12				6		

Buyer's Underwriting: Affordable Condominiums

HUD Determination of low income: Boston,MA-NH PMSA

<u>Household size</u>	<u>80% of Median income</u>
1	46,300
2	52,950
3	59,550
4	66,150
5	71,450
6	76,750
7	82,050
8	87,350

Interest Rate Assumption: 6.30%
 Based on first time homebuyer program avail through MassHousing, rate 5.5% as of 8/2/05 projected forward at the rate of increase projected by Freddie Mac for conventional mortgages(see the last paragraph of Section 3.1).

1 Bedroom

Sales price	160,000
Down payment	5% <u>8,000</u>
Mortgage	152,000

Interest rate / term 6.30% 30 years

Monthly mortgage payment	941
Monthly insurance	15
Monthly RE Tax	6
Monthly common charge	<u>200</u>
	1,162

Annual income required at underwriting ratio of: 30% 46,487

Household size	<u>Minimum % Median</u>	<u>Minimum Income</u>	<u>Maximun Income</u>
1	80%	46,487	46,300
2	70%	46,487	52,950
3	62%	46,487	59,550
4	56%	46,487	66,150
5	52%	46,487	71,450
6	48%	46,487	76,750
7	45%	46,487	82,050
8	43%	46,487	87,350

Buyer's Underwriting: Affordable Condominiums (continued)

2 Bedroom

Sales price		185,000	
Down payment	5%	<u>9,250</u>	
Mortgage		175,750	
Interest rate / term		6.30%	30 years
Monthly mortgage payment		1,088	
Monthly insurance		15	
Monthly RE Tax		22	
Monthly common charge		<u>225</u>	
		1,350	
Annual income required at underwriting ratio of:	30%	54,000	

Household size	Minimum % Median	Minimum Income	Maximum Income
2	82%	54,000	52,950
3	73%	54,000	59,550
4	65%	54,000	66,150
5	60%	54,000	71,450
6	56%	54,000	76,750
7	53%	54,000	82,050
8	49%	54,000	87,350

3 Bedroom

Sales price		200,000	
Down payment	5%	<u>10,000</u>	
Mortgage		190,000	
Interest rate / term		6.30%	30 years
Monthly mortgage payment		1,176	
Monthly insurance		15	
Monthly RE Tax		32	
Monthly common charge		<u>250</u>	
		1,473	
Annual income required at underwriting ratio of:	30%	58,909	

Household size	Minimum % Median	Minimum Income	Maximum Income
3	79%	58,909	59,550
4	71%	58,909	66,150
5	66%	58,909	71,450
6	61%	58,909	76,750
7	57%	58,909	82,050
8	54%	58,909	87,350

Buyer's Underwriting: Affordable Condominiums (continued)

4 Bedroom

Sales price		225,000	
Down payment	5%	<u>11,250</u>	
Mortgage		213,750	
Interest rate / term		6.30%	30 years
Monthly mortgage payment		1,323	
Monthly insurance		15	
Monthly RE Tax		48	
Monthly common charge		<u>275</u>	
		1,661	

Annual income required at underwriting ratio of: 30% 66,422

Household size	Minimum % Median	Minimum Income	Maximum Income
4	80%	66,422	66,150
5	74%	66,422	71,450
6	69%	66,422	76,750
7	65%	66,422	82,050
8	61%	66,422	87,350

Capital Budget

Option 1: 44 units (the Baseline Case)

Proposed Units: **44**
 Total Gross Square Footage 75,000

Construction inflation 6.8%
 Applies to hard costs & architectural fees tied to cost of construction.

	Original estimates			Inflation Adjusted			
	AMOUNT	PER UNIT	PER SQ. FT.	AMOUNT	PER UNIT	PER SQ. FT.	
HARD COSTS							
SITE PREPARATION							
Excavation	50,000	1,136	0.67	56,300	1,280	0.75	
Demolition	0	0	0.00	0	0	0.00	
Site Remediation	20,000	455	0.27	22,520	512	0.30	
Utilities Installation/ Relocation	20,000	455	0.27	22,520	512	0.30	
Contingency	0	0	0.00	0	0	0.00	
SUBTOTAL	90,000	2,045	1.20	101,340	2,303	1.35	
SITE WORK							
Driveways & Isles	10,000	227	0.13	11,260	256	0.15	
Sidewalks, steps, rails	10,000	227	0.13	11,260	256	0.15	
Surface Parking	0	0	0.00	0	0	0.00	
Landscaping	50,000	1,136	0.67	56,300	1,280	0.75	
SUBTOTAL	70,000	1,591	0.93	78,820	1,791	1.05	
PROJECT REQUIREMENTS							
SUBTOTAL	365,337	8,303	4.87	411,366	9,349	5.48	
PERSONNEL HOIST							
SUBTOTAL	277,020	6,296	3.69	311,922	7,089	4.16	
PARKING CONSTRUCTION							
Underground Structured Pkg	37	925,000	21,023	12.33	1,041,542	23,671	13.89
Overhead Door(s) & Operator		5,500	125	0.07	6,193	141	0.08
Ramps	incl	0	0	0.00	0	0	0.00
SUBTOTAL		930,500	21,148	12.41	1,047,735	23,812	13.97
BASE BUILDING CONSTRUCTION							
Footings & Foundations		517,900	11,770	6.91	583,151	13,253	7.78
Concrete		819,558	18,626	10.93	922,815	20,973	12.30
Structural Steel		1,271,851	28,906	16.96	1,432,094	32,548	19.09
Miscellaneous Metals		251,950	5,726	3.36	283,694	6,448	3.78
Elevators		215,200	4,891	2.87	242,313	5,507	3.23
Stair (Wood)		21,850	497	0.29	24,603	559	0.33
Fire Protection		280,770	6,381	3.74	316,145	7,185	4.22
SUBTOTAL		3,379,079	76,797	45.05	3,804,815	86,473	50.73
BUILDING ENVELOPE							
Composite Metal Panels		604,193	13,732	8.06	680,316	15,462	9.07
Roofing (EPDM)		139,690	3,175	1.86	157,290	3,575	2.10
Waterproofing		156,482	3,556	2.09	176,197	4,004	2.35
Fireproofing		97,155	2,208	1.30	109,396	2,486	1.46
Curtainwall & Exterior Glazing		1,532,700	34,834	20.44	1,725,807	39,223	23.01
Skylights		86,240	1,960	1.15	97,106	2,207	1.29
SUBTOTAL		2,616,460	59,465	34.89	2,946,112	66,957	39.28

INTERIORS							
Framing & Drywall	1,960,383	44,554	26.14	2,207,375	50,168	29.43	
Finish Carpentry	340,150	7,731	4.54	383,006	8,705	5.11	
Tile	212,912	4,839	2.84	239,737	5,449	3.20	
Acoustic Ceilings	58,633	1,333	0.78	66,020	1,500	0.88	
Wood Flooring	380,283	8,643	5.07	428,195	9,732	5.71	
Resilient Flooring & Carpet	143,784	3,268	1.92	161,900	3,680	2.16	
Doors, Frames & Hardware	192,250	4,369	2.56	216,472	4,920	2.89	
Glazing	28,000	636	0.37	31,528	717	0.42	
Painting	166,565	3,786	2.22	187,551	4,263	2.50	
Louvers & Vents	10,500	239	0.14	11,823	269	0.16	
Misc Specialties	44,793	1,018	0.60	50,437	1,146	0.67	
Appliances	112,506	2,557	1.50	126,681	2,879	1.69	
Millwork	236,310	5,371	3.15	266,083	6,047	3.55	
Granite Counters	194,100	4,411	2.59	218,555	4,967	2.91	
Window Treatments	12,000	273	0.16	13,512	307	0.18	
Other	0	0	0.00	0	0	0.00	
SUBTOTAL	4,093,169	93,027	54.58	4,608,875	104,747	61.45	
PLUMBING							
Unit Plumbing	679,425	15,441	9.06	765,027	17,387	10.20	
Common Area Plumbing	93,500	2,125	1.25	105,280	2,393	1.40	
Gas Piping	52,225	1,187	0.70	58,805	1,336	0.78	
SUBTOTAL	825,150	18,753	11.00	929,112	21,116	12.39	
HVAC							
SUBTOTAL	1,084,586	24,650	14.46	1,221,235	27,755	16.28	
ELECTRICAL							
SUBTOTAL	895,804	20,359	11.94	1,008,668	22,924	13.45	
CONTRACTOR FEES							
Fee	620,355	14,099	8.27	698,515	15,875	9.31	
General Conditions	420,248	9,551	5.60	473,196	10,754	6.31	
Labour, Insurance & Taxes	203,678	4,629	2.72	229,340	5,212	3.06	
Preconstruction Services	50,000	1,136	0.67	56,300	1,280	0.75	
GLPD (?)	106,677	2,424	1.42	120,117	2,730	1.60	
Winter Conditions Premium	80,000	1,818	1.07	90,079	2,047	1.20	
Performance & Payment Bond	109,679	2,493	1.46	123,498	2,807	1.65	
Contingency	0	0	0.00	0	0	0.00	
SUBTOTAL	1,590,637	36,151	21.21	1,791,045	40,706	23.88	
PERMITS & FEES							
Building Permit (\$10 per 1K)	163,848	3,724	2.18	184,492	4,193	2.46	
SUBTOTAL	163,848	3,724	2.18	184,492	4,193	2.46	
ADDITIONAL UNITS							
SUBTOTAL	4	167,100	3,798	2.23	188,153	4,276	2.51
TOTAL BASE CONSTRUCTION COSTS	16,548,690	376,107	220.65	18,633,690	423,493	248.45	
CONSTRUCTION CONTINGENCY							
SUBTOTAL	15%	2,482,304	56,416	33.10	2,795,054	63,524	37.27
TOTAL HARD COSTS		19,030,994	432,523	253.75	21,428,744	487,017	285.72

SOFT COSTS							
ARCHITECTURAL, ENGINEERING, INSPECTIONS, APPRAISALS							
Architectural & Engineering:							
Permitting		20,000	455	0.27	20,000	455	0.27
Design, documents & plans, constr admin	6.5%	1,237,015	28,114	16.49	1,392,868	31,656	18.57
Geotechnical consultant		50,000	1,136	0.67	50,000	1,136	0.67
Structural engineering	incl	-	-	-	-	-	-
Mechanical/electrical engineer	incl	-	-	-	-	-	-
Condo floor plans		10,000	227	0.13	10,000	227	0.13
Landscape architect: project		20,000	455	0.27	20,000	455	0.27
Landscape architect: park		100,000	2,273	1.33	100,000	2,273	1.33
Subtotal A&E		1,317,015	29,932	17.56	1,472,868	33,474	19.64
Environmental assessment & testing		20,000	455	0.27	20,000	455	0.27
Constr Lender A/E Review & Inspections		40,000	909	0.53	40,000	909	0.53
Appraisal & Survey		30,000	682	0.40	30,000	682	0.40
SUBTOTAL		1,407,015	31,978	19	1,562,868	35,520	20.84
DEVELOPER'S LEGAL							
Permitting		10,000	227	0.13	10,000	227	0.13
Acquisition & financing		50,000	1,136	0.67	50,000	1,136	0.67
Title ins		20,000	455	0.27	20,000	455	0.27
Condo documents		15,000	341	0.20	15,000	341	0.20
Unit closings - incl above in exp of unit sales		-	-	-	-	-	-
SUBTOTAL		95,000	2,159	1.27	95,000	2,159	1.27
OTHER 3RD PARTY PROFESSIONALS							
Construction accounting		20,000	455	0.27	20,000	455	0.27
Transportation consultant		-	-	-	-	-	-
Clerk of the works		100,000	2,273	1.33	100,000	2,273	1.33
Project manager		200,000	-	-	200,000	-	-
SUBTOTAL		320,000	2,727	1.60	320,000	2,727	1.60
OPERATIONAL							
Constr period RE tax		5,000	114	0.07	5,000	114	0.07
Insurance- Builder's Risk & Liability		125,000	2,841	1.67	125,000	2,841	1.67
Utilities		10,000	227	0.13	10,000	227	0.13
SUBTOTAL		140,000	3,182	1.87	140,000	3,182	1.87
TOTAL BASE SOFT COSTS		1,962,015	44,591	26.16	2,117,868	48,133	28.24
SOFT COST CONTINGENCY							
SUBTOTAL	8%	156,961	3,567	2.09	169,429	3,851	2.26
TOTAL SOFT COSTS BEFORE DEV & FIN		2,118,976	48,159	28.25	2,287,298	51,984	30.50

ADDITIONAL UNITS

Tub surround marble	1,440
Bath floors marble	1,680
Bath accessories	450
Appliances	3,230
Kit & vanity cabs	5,000
Install kit & vanities	1,400
Granite	5,000
Carpentry	2,000
Plumbing	13,275
HVAC	1,000
Electrical	7,300
Total	41,775

Development Pro Forma

Option 1: 44 units (the Baseline Case)

Description		Budget Total	Per Unit	Per Sq Ft
REVENUES:				
Sales proceeds				
Average market unit sales price				
Market units sold (U/A)		26		
Cum market units U/A				
Sales price of units U/A @	100% of expected prices	23,401,958		
Cum sales price of units U/A				
Market units closed		26		
Affordable condos closed		6		
Affordable rentals closed		12		
Units closed		44		
Cum units closed				
Gross sales revenue (market)		23,401,958		
Gross sales revenue (affordable condos)		1,225,000		
Gross sales revenue (affordable rentals)		3,900,000		
Total gross sales revenue		28,526,958	648,340	380.36
Expense of unit sales:				
Deed stamps	0.456%	130,083	2,956	1.73
Closing costs & concessions	200	8,800	200	0.12
Commission (market)	4.5%	1,053,088	23,934	14.04
Legal	500	22,000	500	0.29
Condo working capital	300	13,200	300	0.18
Total expense of sales		1,227,171	27,890	16.36
Net sales revenue		27,299,786	620,450	364.00
EXPENSES:				
Acquisition: Land				
Initial price		960,000	21,818	12.80
(Profit share portion not included -- see below)				
Total		960,000	21,818	12.80
Hard Costs				
Total		21,428,744	487,017	285.72
Soft Costs				
Subtotal w/o developer OH & fee or financing		2,287,298	51,984	30.50
Developer's overhead	4%	23,716,041	948,642	21.65
Developer's fee	3%	21,428,744	642,862	14,611
Total Soft Costs		3,878,802	88,155	51.72
Total Costs excl financing		26,267,545	596,990	350.23
Net cash flow (if all equity)		1,032,241	23,460	13.76
Internal rate of return (all equity)	4.4%			

Development Pro Forma (continued)

Financing Costs (see detail below)		1,659,089	37,707	22.12	
Additional purchase price for land		-	-	-	
Total Project Cost		27,926,634	634,696	372.36	
Net cash flow	-	(626,848)	(14,247)	(8.36)	
Financing Costs					
Points & fees		592,000	13,455	7.89	
Closing costs & lender's legal		50,000	1,136	0.67	
Interest		1,017,089	23,116	13.56	
Total financing costs		1,659,089	37,707	22.12	
Construction Debt					
<i>LIBOR Projections</i>					
<i>Interest rate</i>	L+	2%			
Interest		1,016,067	23,092	13.55	
Beginning Balance					
Advances		19,800,000	450,000	264.00	
Repayments		(19,800,000)	(450,000)	(264.00)	
Ending Balance					
Loan net cash flow to project		-	-	-	
Net cash flow after this loan		(626,848)	(14,247)	(8.36)	
Cum net cash flow after this loan					
Short Term Loan					
Interest		18%	1,021	23	0.01
Beginning Balance			-	-	-
Advances			68,098	1,548	0.91
Repayments			(68,098)	(1,548)	(0.91)
Ending Balance			68,098	-	-
Loan net cash flow to project			-	-	-
Net cash flow after this loan					
Cum net cash flow after this loan					

Development Pro Forma (continued)**Equity**

Beginning Balance				
Capital Contributions		5,900,000	134,091	78.67
Return of capital		(5,273,152)	(119,844)	(70.31)
Ending Balance				
Equity net cash flow to project		626,848	14,247	8.36
Net project cash flow after equity		-	-	-
Cum project net cash flow after equity				
Internal rate of return (equity)				-6.1%

Final Distribution

Total "Profit"			-	-	-
CRA share	30%	1,540,000	-	-	-
Balance to equity investor & developer			-	-	-
Preferred return to equity investor	12%	5,900,000	-	-	-
Residual			-	-	-
Residual to equity investor	80%		-	-	-
Residual to developer	20%		-	-	-

Equity Investor's Cash Flow

Sources		53,067,884	792,058	707.57
Uses		(53,694,732)	(801,414)	(715.93)
Surplus/Shortfall		(626,848)	(9,356)	(8.36)

Galileo Lofts
Sources and Uses of Funds

Option 1: 44 units (the Baseline Case)

Description	Project Total	Per Unit	Per Sq Ft
Entire Project			
USES:			
Acquisition	960,000	21,818	12.80
Construction (hard costs)	21,428,744	487,017	285.72
Soft costs	3,878,802	88,155	51.72
Financing costs	1,659,089	37,707	22.12
Loan repayment	19,868,098	451,548	264.91
Return of investor equity	5,900,000	134,091	78.67
Total uses	53,694,732	1,220,335	715.93
SOURCES:			
Commonwealth of MA	-	-	-
Cambridge HOME/CAHT	-	-	-
Acquisition loan	-	-	-
Construction loan	19,800,000	450,000	264.00
Short term loan	68,098	1,548	0.91
Mezzanine debt 2	-	-	-
Developer equity	-	-	-
Investor equity	5,900,000	134,091	78.67
Net sales revenue	27,299,786	620,450	364.00
Total sources	53,067,884	1,206,088	707.57
Surplus/Deficit	(626,848)	(14,247)	(8.36)
Construction Period:			
USES:			
Acquisition	960,000	21,818	12.80
Construction (hard costs)	20,238,258	459,960	269.84
Soft costs	3,755,066	85,342	50.07
Financing costs	1,457,636	33,128	19.44
Total uses	26,410,960	600,249	352.15
SOURCES:			
Commonwealth of MA	-	-	-
Cambridge HOME/CAHT	-	-	-
Acquisition loan	-	-	-
Construction loan	19,800,000	450,000	264.00
Mezzanine debt (ST loan)	68,098	1,548	0.91
Mezzanine debt 2	-	-	-
Developer equity	-	-	-
Investor equity	5,900,000	134,091	78.67
Deferred developer fee	642,862	14,611	8.57
Total sources	26,410,960	600,249	352.15
Surplus/Deficit	-	-	-

APPENDIX D: FINANCIAL PROJECTIONS -- OPTION 2

Unit Mix

Capital Budget

Development Pro Forma

Sources and Uses of Funds

(Note: The spreadsheet entitled: “Buyer’s Underwriting: Affordable Condominiums” is the same as in Appendix C.)

Unit Mix

Option 2: 67 units, 2 levels of parking

Unit No.	Status	Floor	Sq. Ft.	BRs	Price	Price/SF	Market						
							Sq. Ft.	BRs	Price	Price/SF			
301	AR	3	650	1	325,000	\$ 500							
302	M	3	650	1	362,250	\$ 557	650	1	362,250	\$ 557			
303	M	3	900	2	471,000	\$ 523	900	2	471,000	\$ 523			
304	M	3	900	2	471,000	\$ 523	900	2	471,000	\$ 523			
305	M	3	900	2	471,000	\$ 523	900	2	471,000	\$ 523			
306	AC	3	1100	2	290,000	\$ 264							
307	M	3	1100	3	543,500	\$ 494	1100	3	543,500	\$ 494			
308	AR	3	1450	3	325,000	\$ 224							
401	M	4	650	1	367,250	\$ 565	650	1	367,250	\$ 565			
402	M	4	650	1	367,250	\$ 565	650	1	367,250	\$ 565			
403	AR	4	900	2	325,000	\$ 361							
404	M	4	900	2	476,000	\$ 529	900	2	476,000	\$ 529			
405	M	4	900	2	476,000	\$ 529	900	2	476,000	\$ 529			
406	AR	4	1100	2	325,000	\$ 295							
407	AC	4	1100	3	330,000	\$ 300							
408	M	4	1450	3	714,750	\$ 493	1450	3	714,750	\$ 493			
501	AC	5	650	1	255,000	\$ 392							
502	M	5	650	1	372,250	\$ 573	650	1	372,250	\$ 573			
503	AR	5	900	2	325,000	\$ 361							
504	M	5	900	2	481,000	\$ 534	900	2	481,000	\$ 534			
505	M	5	900	2	481,000	\$ 534	900	2	481,000	\$ 534			
506	AC	5	1100	2	290,000	\$ 264							
507	AR	5	1100	3	325,000	\$ 295							
508	AC	5	1450	3	330,000	\$ 228							
601	M	6	650	1	377,250	\$ 580	650	1	377,250	\$ 580			
602	AC	6	650	1	255,000	\$ 392							
603	M	6	900	2	486,000	\$ 540	900	2	486,000	\$ 540			
604	AR	6	900	2	325,000	\$ 361							
605	M	6	900	2	486,000	\$ 540	900	2	486,000	\$ 540			
606	M	6	1100	2	586,000	\$ 533	1100	2	586,000	\$ 533			
607	M	6	1100	3	558,500	\$ 508	1100	3	558,500	\$ 508			
608	AR	6	1450	3	325,000	\$ 224							
701	AR	7	650	1	325,000	\$ 500							
702	M	7	650	1	382,250	\$ 588	650	1	382,250	\$ 588			
703	AC	7	900	2	290,000	\$ 322							
704	M	7	900	2	491,000	\$ 546	900	2	491,000	\$ 546			
705	AR	7	900	2	325,000	\$ 361							
706	M	7	1100	2	591,000	\$ 537	1100	2	591,000	\$ 537			
707	M	7	1100	3	563,500	\$ 512	1100	3	563,500	\$ 512			
708	M	7	1450	3	729,750	\$ 503	1450	3	729,750	\$ 503			
801	AC	8	650	1	255,000	\$ 392							
802	AR	8	650	1	325,000	\$ 500							
803	M	8	900	2	496,000	\$ 551	900	2	496,000	\$ 551			
804	AC	8	900	2	290,000	\$ 322							
805	M	8	900	2	496,000	\$ 551	900	2	496,000	\$ 551			
806	AR	8	1100	2	325,000	\$ 295							
807	M	8	1100	3	568,500	\$ 517	1100	3	568,500	\$ 517			
808	M	8	1450	3	734,750	\$ 507	1450	3	734,750	\$ 507			
901	M	9	650	1	392,250	\$ 603	650	1	392,250	\$ 603			
902	M	9	650	1	392,250	\$ 603	650	1	392,250	\$ 603			
903	AR	9	900	2	325,000	\$ 361							
904	M	9	900	2	501,000	\$ 557	900	2	501,000	\$ 557			
905	AC	9	900	2	290,000	\$ 322							
906	M	9	1100	2	601,000	\$ 546	1100	2	601,000	\$ 546			
907	AR	9	1100	3	325,000	\$ 295							
908	M	9	1450	3	739,750	\$ 510	1450	3	739,750	\$ 510			
1001	AR	10	650	1	325,000	\$ 500							
1002	AC	10	650	1	255,000	\$ 392							
1003	M	10	900	2	506,000	\$ 562	900	2	506,000	\$ 562			
1004	M	10	900	2	506,000	\$ 562	900	2	506,000	\$ 562			
1005	AR	10	900	2	325,000	\$ 361							
1006	M	10	1100	2	606,000	\$ 551	1100	2	606,000	\$ 551			
1007	M	10	1100	3	578,500	\$ 526	1100	3	578,500	\$ 526			
1008	M	10	1450	3	744,750	\$ 514	1450	3	744,750	\$ 514			
PH1	M	11	2552	4	1,222,160	\$ 479	2552	4	1,222,160	\$ 479			
PH2	M	11	1957	4	951,549	\$ 486	1957	4	951,549	\$ 486			
PH3	M	11	1753	3	893,675	\$ 510	1753	3	893,675	\$ 510			
Total			67,462		30,565,634		42,112		22,235,634				
Mean			1007	2.1	456,203	\$ 453	1053	2.2	555,891	\$ 528			

Unit Mix (continued)

Unit No.	Affordable Rentals				Affordable Condos			
	Sq. Ft.	BRs	Price	Price/SF	Sq. Ft.	BRs	Price	Price/SF
301	650	1	325,000	\$ 500				
302								
303								
304								
305								
306					1100	2	290,000	\$ 264
307								
308	1450	3	325,000	\$ 224				
401								
402								
403	900	2	325,000	\$ 361				
404								
405								
406	1100	2	325,000	\$ 295				
407					1100	3	330,000	\$ 300
408								
501					650	1	255,000	\$ 392
502								
503	900	2	325,000	\$ 361				
504								
505								
506					1100	2	290,000	\$ 264
507	1100	3	325,000	\$ 295				
508					1450	3	330,000	\$ 228
601								
602					650	1	255,000	\$ 392
603								
604	900	2	325,000	\$ 361				
605								
606								
607								
608	1450	3	325,000	\$ 224				
701	650	1	325,000	\$ 500				
702								
703					900	2	290,000	\$ 322
704								
705	900	2	325,000	\$ 361				
706								
707								
708								
801					650	1	255,000	\$ 392
802	650	1	325,000	\$ 500				
803								
804					900	2	290,000	\$ 322
805								
806	1100	2	325,000	\$ 295				
807								
808								
901								
902								
903	900	2	325,000	\$ 361				
904								
905					900	2	290,000	\$ 322
906								
907	1100	3	325,000	\$ 295				
908								
1001	650	1	325,000	\$ 500				
1002					650	1	255,000	\$ 392
1003								
1004								
1005	900	2	325,000	\$ 361				
1006								
1007								
1008								
PH1								
PH2								
PH3								
Total	15,300		5,200,000		10,050		3,130,000	
Mean	956	2.0	325,000	\$ 340	914	1.8	284,545	\$ 311

Galileo Lofts: Draft Construction Budget
Construction Budget

Option 2: 67 units, 2 levels of parking

Proposed Units: **67**
 Total Gross Square Footage 75,000

Construction inflation 6.8%
 Applies to hard costs & architectural fees tied to cost of construction.

	Original estimates			Inflation Adjusted			
	AMOUNT	PER UNIT	PER SQ. FT.	AMOUNT	PER UNIT	PER SQ. FT.	
HARD COSTS				Estimate dated: May, 2004			
				As of Contract date: February, 2006			
SITE PREPARATION							
Excavation	50,000	746	0.67	56,300	840	0.75	
Demolition	0	0	0.00	0	0	0.00	
Site Remediation	20,000	299	0.27	22,520	336	0.30	
Utilities Installation/ Relocation	20,000	299	0.27	22,520	336	0.30	
Contingency	0	0	0.00	0	0	0.00	
SUBTOTAL	90,000	1,343	1.20	101,340	1,513	1.35	
SITE WORK							
Driveways & Isles	10,000	149	0.13	11,260	168	0.15	
Sidewalks, steps, rails	10,000	149	0.13	11,260	168	0.15	
Surface Parking	0	0	0.00	0	0	0.00	
Landscaping	50,000	746	0.67	56,300	840	0.75	
SUBTOTAL	70,000	1,045	0.93	78,820	1,176	1.05	
PROJECT REQUIREMENTS							
SUBTOTAL	365,337	5,453	4.87	411,366	6,140	5.48	
PERSONNEL HOIST							
SUBTOTAL	277,020	4,135	3.69	311,922	4,656	4.16	
PARKING CONSTRUCTION							
Underground Structured Pkg	56	1,400,000	20,896	18.67	1,576,388	23,528	21.02
Overhead Door(s) & Operator		5,500	82	0.07	6,193	92	0.08
Ramps	incl	0	0	0.00	0	0	0.00
SUBTOTAL	1,405,500	20,978	18.74	1,582,581	23,621	21.10	
BASE BUILDING CONSTRUCTION							
Footings & Foundations	517,900	7,730	6.91	583,151	8,704	7.78	
Concrete	819,558	12,232	10.93	922,815	13,773	12.30	
Structural Steel	1,271,851	18,983	16.96	1,432,094	21,375	19.09	
Miscellaneous Metals	251,950	3,760	3.36	283,694	4,234	3.78	
Elevators	215,200	3,212	2.87	242,313	3,617	3.23	
Stair (Wood)	21,850	326	0.29	24,603	367	0.33	
Fire Protection	280,770	4,191	3.74	316,145	4,719	4.22	
SUBTOTAL	3,379,079	50,434	45.05	3,804,815	56,788	50.73	
BUILDING ENVELOPE							
Composite Metal Panels	604,193	9,018	8.06	680,316	10,154	9.07	
Roofing (EPDM)	139,690	2,085	1.86	157,290	2,348	2.10	
Waterproofing	156,482	2,336	2.09	176,197	2,630	2.35	
Fireproofing	97,155	1,450	1.30	109,396	1,633	1.46	
Curtainwall & Exterior Glazing	1,532,700	22,876	20.44	1,725,807	25,758	23.01	
Skylights	86,240	1,287	1.15	97,106	1,449	1.29	
SUBTOTAL	2,616,460	39,052	34.89	2,946,112	43,972	39.28	

INTERIORS							
Framing & Drywall	1,960,383	29,259	26.14	2,207,375	32,946	29.43	
Finish Carpentry	340,150	5,077	4.54	383,006	5,717	5.11	
Tile	212,912	3,178	2.84	239,737	3,578	3.20	
Acoustic Ceilings	58,633	875	0.78	66,020	985	0.88	
Wood Flooring	380,283	5,676	5.07	428,195	6,391	5.71	
Resilient Flooring & Carpet	143,784	2,146	1.92	161,900	2,416	2.16	
Doors, Frames & Hardware	192,250	2,869	2.56	216,472	3,231	2.89	
Glazing	28,000	418	0.37	31,528	471	0.42	
Painting	166,565	2,486	2.22	187,551	2,799	2.50	
Louvers & Vents	10,500	157	0.14	11,823	176	0.16	
Misc Specialties	44,793	669	0.60	50,437	753	0.67	
Appliances	112,506	1,679	1.50	126,681	1,891	1.69	
Millwork	236,310	3,527	3.15	266,083	3,971	3.55	
Granite Counters	194,100	2,897	2.59	218,555	3,262	2.91	
Window Treatments	12,000	179	0.16	13,512	202	0.18	
Other	0	0	0.00	0	0	0.00	
SUBTOTAL	4,093,169	61,092	54.58	4,608,875	68,789	61.45	
PLUMBING							
Unit Plumbing	679,425	10,141	9.06	765,027	11,418	10.20	
Common Area Plumbing	93,500	1,396	1.25	105,280	1,571	1.40	
Gas Piping	52,225	779	0.70	58,805	878	0.78	
SUBTOTAL	825,150	12,316	11.00	929,112	13,867	12.39	
HVAC							
SUBTOTAL	1,084,586	16,188	14.46	1,221,235	18,227	16.28	
ELECTRICAL							
SUBTOTAL	895,804	13,370	11.94	1,008,668	15,055	13.45	
CONTRACTOR FEES							
Fee	620,355	9,259	8.27	698,515	10,426	9.31	
General Conditions	420,248	6,272	5.60	473,196	7,063	6.31	
Labour, Insurance & Taxes	203,678	3,040	2.72	229,340	3,423	3.06	
Preconstruction Services	50,000	746	0.67	56,300	840	0.75	
GLPD (?)	106,677	1,592	1.42	120,117	1,793	1.60	
Winter Conditions Premium	80,000	1,194	1.07	90,079	1,344	1.20	
Performance & Payment Bond	109,679	1,637	1.46	123,498	1,843	1.65	
Contingency	0	0	0.00	0	0	0.00	
SUBTOTAL	1,590,637	23,741	21.21	1,791,045	26,732	23.88	
PERMITS & FEES							
Building Permit (\$10 per 1K)	178,207	2,660	2.38	200,659	2,995	2.68	
SUBTOTAL	178,207	2,660	2.38	200,659	2,995	2.68	
ADDITIONAL UNITS							
SUBTOTAL	27	1,127,925	16,835	15.04	1,270,034	18,956	16.93
TOTAL BASE CONSTRUCTION COSTS	17,998,874	268,640	239.98	20,266,584	302,486	270.22	
CONSTRUCTION CONTINGENCY							
SUBTOTAL	15%	2,699,831	40,296	36.00	3,039,988	45,373	40.53
TOTAL HARD COSTS	20,698,705	308,936	275.98	23,306,572	347,859	310.75	

SOFT COSTS							
ARCHITECTURAL, ENGINEERING, INSPECTIONS, APPRAISALS							
Architectural & Engineering:							
Permitting		20,000	299	0.27	20,000	299	0.27
Design, documents & plans, constr admin	6.5%	1,345,416	20,081	17.94	1,514,927	22,611	20.20
Geotechnical consultant		50,000	746	0.67	50,000	746	0.67
Structural engineering	incl	-	-	-	-	-	-
Mechanical/electrical engineer	incl	-	-	-	-	-	-
Condo floor plans		10,000	149	0.13	10,000	149	0.13
Landscape architect: project		20,000	299	0.27	20,000	299	0.27
Landscape architect: park		100,000	1,493	1.33	100,000	1,493	1.33
Subtotal A&E		1,425,416	21,275	19.01	1,594,927	23,805	21.27
Environmental assessment & testing		20,000	299	0.27	20,000	299	0.27
Constr Lender A/E Review & Inspections		40,000	597	0.53	40,000	597	0.53
Appraisal & Survey		30,000	448	0.40	30,000	448	0.40
SUBTOTAL		1,515,416	22,618	20	1,684,927	25,148	22.47
DEVELOPER'S LEGAL							
Permitting		10,000	149	0.13	10,000	149	0.13
Acquisition & financing		50,000	746	0.67	50,000	746	0.67
Title ins		20,000	299	0.27	20,000	299	0.27
Condo documents		15,000	224	0.20	15,000	224	0.20
Unit closings - incl above in exp of unit sales		-	-	-	-	-	-
SUBTOTAL		95,000	1,418	1.27	95,000	1,418	1.27
OTHER 3RD PARTY PROFESSIONALS							
Construction accounting		20,000	299	0.27	20,000	299	0.27
Transportation consultant		-	-	-	-	-	-
Clerk of the works		100,000	1,493	1.33	100,000	1,493	1.33
Project manager		200,000			200,000		
SUBTOTAL		320,000	1,791	1.60	320,000	1,791	1.60
OPERATIONAL							
Constr period RE tax		5,000	75	0.07	5,000	75	0.07
Insurance- Builder's Risk & Liability		125,000	1,866	1.67	125,000	1,866	1.67
Utilities		10,000	149	0.13	10,000	149	0.13
SUBTOTAL		140,000	2,090	1.87	140,000	2,090	1.87
TOTAL BASE SOFT COSTS		2,070,416	30,902	27.61	2,239,927	33,432	29.87
SOFT COST CONTINGENCY							
SUBTOTAL	8%	165,633	2,472	2.21	179,194	2,675	2.39
TOTAL SOFT COSTS BEFORE DEV & FIN		2,236,049	33,374	29.81	2,419,121	36,106	32.25

ADDITIONAL UNITS

Tub surround marble	1,440
Bath floors marble	1,680
Bath accessories	450
Appliances	3,230
Kit & vanity cabs	5,000
Install kit & vanities	1,400
Granite	5,000
Carpentry	2,000
Plumbing	13,275
HVAC	1,000
Electrical	7,300
Total	41,775

Development Pro Forma

Option 2: 67 units, 2 levels of parking

Description		Budget Total	Per Unit	Per Sq Ft
REVENUES:				
Sales proceeds				
Average market unit sales price				
Market units sold (U/A)		40		
Cum market units U/A				
Sales price of units U/A @	100% of expected prices	24,105,360		
Cum sales price of units U/A				
Market units closed		40		
Affordable condos closed		11		
Affordable rentals closed		16		
Units closed		67		
Cum units closed				
Gross sales revenue (market)		24,105,360		
Gross sales revenue (affordable condos)		3,130,000		
Gross sales revenue (affordable rentals)		5,200,000		
Total gross sales revenue		32,435,360	484,110	432.47
Expense of unit sales:				
Deed stamps	0.456%	147,905	2,208	1.97
Closing costs & concessions	200	13,400	200	0.18
Commission (market)	4.5%	1,084,741	16,190	14.46
Legal	500	33,500	500	0.45
Condo working capital	300	20,100	300	0.27
Total expense of sales		1,299,646	19,398	17.33
Net sales revenue		31,135,714	464,712	415.14
EXPENSES:				
Acquisition: Land				
Initial price		1,470,000	21,940	19.60
(Profit share portion not included -- see below)				
Total		1,470,000	21,940	19.60
Hard Costs				
Total		23,306,572	347,859	310.75
Soft Costs				
Subtotal w/o developer OH & fee or financing		2,419,121	36,106	32.25
Developer's overhead	4%	25,725,693	1,029,028	13.72
Developer's fee	3%	23,306,572	699,197	9.32
Total Soft Costs		4,147,346	61,901	55.30
Total Costs excl financing		28,923,918	431,700	385.65
Net cash flow (all equity)		2,211,796	33,012	29.49
Internal rate of return (all equity)	8.2%			

Development Pro Forma (continued)

Financing Costs (see detail below)		1,838,739	27,444	24.52	
Additional purchase price for land		111,917	1,670	1.49	
Net cash flow after financing and land		484,974	3,898	3.48	
Total Project Cost		30,650,740	460,815	411.66	
Net Cash Flow		484,974	3,898	3.48	
Financing Costs					
Points & fees		674,000	10,060	8.99	
Closing costs & lender's legal		50,000	746	0.67	
Interest		1,114,739	16,638	14.86	
Total financing costs		1,838,739	27,444	24.52	
Construction Debt					
<i>LIBOR Projections</i>					
Interest rate	L+	2%			
Interest			1,114,739	16,638	14.86
Beginning Balance					
Advances			21,714,950	324,104	289.53
Repayments			(21,714,950)	(324,104)	(289.53)
Ending Balance					
Loan net cash flow to project			-	-	-
Net cash flow after this loan			373,057	5,568	4.97
Cum net cash flow after this loan					
Short Term Loan					
Interest		18%	-	-	-
Beginning Balance			-	-	-
Advances			-	-	-
Repayments			-	-	-
Ending Balance			-	-	-
Loan net cash flow to project			-	-	-
Net cash flow after this loan					
Cum net cash flow after this loan					

Development Pro Forma (continued)**Equity**

Beginning Balance				
Capital Contributions		6,700,000	100,000	89.33
Return of capital		(6,700,000)	(100,000)	(89.33)
Ending Balance				
Equity net cash flow to project		-	-	-
Net project cash flow after equity		373,057	5,568	4.97
Cum project net cash flow after equity				
Internal rate of return (equity)	2.1%			

Final Distribution

Total "Profit"			373,057	5,568	4.97
CRA share	30%	1,030,000	111,917	1,670	1.49
Balance to equity investor & developer			261,140	3,898	3.48
Preferred return to equity investor	12%	6,700,000	261,140	3,898	3.48
Residual			-	-	-
Residual to equity investor	80%		-	-	-
Residual to developer	20%		-	-	-

Equity Investor's Cash Flow

Sources			59,550,664	888,816	794.01
Uses			(59,289,524)	(884,918)	(790.53)
Surplus/Shortfall			261,140	3,898	3.48

Sources and Uses of Funds

Option 2: 67 units, 2 levels of parking

Description	Project Total	Per Unit	Per Sq Ft
Entire Project			
USES:			
Acquisition	1,581,917	23,611	21.09
Construction (hard costs)	23,306,572	347,859	310.75
Soft costs	4,147,346	61,901	55.30
Financing costs	1,838,739	27,444	24.52
Loan repayment	21,714,950	324,104	289.53
Return of investor equity	6,700,000	100,000	89.33
Total uses	59,289,524	884,918	790.53
SOURCES:			
Commonwealth of MA	-	-	-
Cambridge HOME/CAHT	-	-	-
Acquisition loan	-	-	-
Construction loan	21,714,950	324,104	289.53
Short term loan	-	-	-
Mezzanine debt 2	-	-	-
Developer equity	-	-	-
Investor equity	6,700,000	100,000	89.33
Net sales revenue	31,135,714	464,712	415.14
Total sources	59,550,664	888,816	794.01
Surplus/Deficit	261,140	3,898	3.48
Construction Period:			
USES:			
Acquisition	1,470,000	21,940	19.60
Construction (hard costs)	22,011,762	328,534	293.49
Soft costs	4,013,125	59,897	53.51
Financing costs	1,619,260	24,168	21.59
Total uses	29,114,147	434,540	388.19
SOURCES:			
Commonwealth of MA	-	-	-
Cambridge HOME/CAHT	-	-	-
Acquisition loan	-	-	-
Construction loan	21,714,950	324,104	289.53
Mezzanine debt (ST loan)	-	-	-
Mezzanine debt 2	-	-	-
Developer equity	-	-	-
Investor equity	6,700,000	100,000	89.33
Deferred developer fee	699,197	10,436	9.32
Total sources	29,114,147	434,540	388.19
Surplus/Deficit	-	-	-