The Graduate Student Anchored Project:
A New Approach to Incentivizing Multifamily Development in the City of Boston

by

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ABSTRACT

Despite a significant addition of new multifamily housing stock into Boston's residential rental market, Boston in 2014 faces a considerable shortage of middle income housing supply relative to demand. Both the supply shortage itself and the related city-wide prevailing high cost of residential rents arise out of conditions attributable in part to (i) high costs of construction within the Boston market and (ii) the greater Boston area's large graduate student population. Boston's public officials, under the new Walsh administration, have been actively searching for approaches that the city might adopt in trying to address this housing supply shortage and its impacts on the city's middle income households. This Thesis advances one such approach by exploring how Boston might implement a specialized permitting process to incentivize the private development of a certain type of large-scale multifamily or mixed-use project. Specifically, these projects are ones that incorporate a component devoted to graduate student housing under a master lease with a Boston area university or teaching hospital. The recommendation for this approach is delivered through an exploration of the various characteristics of this type of real estate development project, referred to as a Graduate Student Anchored Project ("GSAP"), including: (i) the ways in which the specialized permitting and zoning review process applicable to GSAPs might need to differ from existing regulatory conditions; (ii) GSAPs' design, cost and leasing dynamics, discussed both in general terms and with specificity through the use of a hypothetical GSAP development on two parcels of land in Boston; and (iii) an analysis of the financial feasibility of developing a GSAP within the current market conditions – and the types of participation which might be needed from the city, building trades union and/or university master lessees to ensure such feasibility – through the use of a pro forma model specifically designed to accommodate this type of real estate development analysis.

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Section I – Acknowledgements and Attribution

On a superficial level, this Thesis is the product of approximately six months of its author's work. In truth, however, this document simply could not have been prepared without the gracious assistance of many seasoned experts whose involvement with this Thesis' subject matter extends well beyond that brief period. Indeed, the information contained in this Thesis reflects insight which has been cultivated over years of working in different parts of the housing development world including public policy, union labor, city planning, private development (both for profit and non-profit), construction, architecture, law, finance, economics, facilities management and brokerage. Throughout the process of researching this Thesis, I have been amazed – and truly touched – by the willingness of so many people to carve time out of their busy schedules simply to help unravel the myriad of complex issues discussed herein. In many cases, the information which these sources shared with me is of a sensitive nature and in recognition of the candor offered by this Thesis' interviewees and survey respondents, specific attribution will be made sparingly. With that in mind, I wish to acknowledge and thank the following people (listed in alphabetical order), each of whom played an instrumental role in informing the design and content of this project:

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Student Anchored Project (a.k.a. "Millennial Village") to life in vibrant color. I have been extremely fortunate not only to have been able to bring their talents to bear in giving the GSAP its graphical form, but also to have had the benefit of their insight and wisdom in defining what that project should, fundamentally, be. So, while perhaps inadequate, I offer you gentlemen my most sincere words of gratitude for everything that you have done in the preparation of this Thesis.

Last – but by no means least of all – I wish to thank my advisor on this project, W. Tod McGrath. My relationship with MIT started in 2010 as a student in Professor McGrath's two-day Real Estate Finance: Fundamentals course offered through the Center for Real Estate's Professional Development Institute. That experience also marked the commencement of a process that would radically change my career trajectory, a process throughout which Professor McGrath has been a friend, a resource and, above all else, a teacher. The Center for Real Estate simply would not be the exceptional place that it is today were it not for Professor McGrath's daily herculean efforts and I am honored that he agreed to take on this project for which he by all rights should not have had the time. Thank you for everything that your have done for me since the beginning, Professor, I look forward to finally just calling you Tod.

Section II – Introduction

This Thesis is broken into six (6) sections. The foregoing Section I (Acknowledgments and Attribution) is devoted to an identification of the people whose insight informs much of the content contained throughout this Thesis. This Section II (Introduction) will provide some background information concerning a particular set of problems relating to middle income housing in the City of Boston and will provide an overview of this Thesis' suggested approach to addressing the same through incentivized private development. Section III (Proposed Revision to Article 80) lays out a proposal for amending existing regulatory policy to create the permitting conditions that would be conducive to the private development of a particular type of multifamily or mixed-use project aimed at advancing housing policy interests related to middle income housing. Section IV (The Graduate Student Anchored Project) describes the type of private development project referred to in Section III in further detail. Section V (Financial Feasibility Analysis) uses two specific examples of the type of development project in question to explore the financial feasibility of developing Graduate Student Anchored Projects and the ways in which various public and private parties might collaborate in ensuring such financial feasibility. Finally, Section VI (Conclusion) provides some final commentary concerning this Thesis' subject matter as well as an identification of how the approach described in this Thesis might be applied in connection with an infrastructure improvement project currently underway in the City of Boston.

Subsection A: Background Information

The City of Boston today faces a challenging set of issues with respect to housing policy. In particular, one of the most challenging – and best-documented – housing policy issues with

which City[1] officials are currently wrestling relates to its "scant inventory of moderately-priced housing." (Miller). Taken in a vacuum, it could seem paradoxical for Boston to be experiencing any market inadequacy of housing supply given that it is currently experiencing a "historic surge of residential construction". (Ross, "Walsh Initiative…"). Notwithstanding the largest addition to the greater Boston housing stock in seven years (Bluestone), multifamily development has been heavily weighted towards the upper ends of the cost spectrum: according to estimates from Boston's Department of Neighborhood Development ("DND"), only 525 (19.5%) of the nearly 6,300 housing permits issued between 2011 and 2013 represent "middle-income affordable units" (hereinafter, "Middle Income Units"). ("Report on the Middle Class").[2] Moreover, the scarcity *itself* is exacerbating the problem for middle income households where the limited supply of Middle Income Units relative to demand is causing prices to rise further. (Miller.) DND suggests that the way to meet demand and, in so doing, create a vacancy rate sufficient to alleviate pressures on Middle Income Unit housing costs will require "doubling the pace of middle-income housing production to 1,200 a year." ("Report on the Middle Class").

Although the *problem* related to Middle Income Units is manifest, the *solution* has proved more challenging to identify. As a real estate development product type, Middle Income Units fall into a kind of financial purgatory. In order for any real estate development to become a reality, the sponsor of that project must be able to expect a reasonable, risk-adjusted return for

[1] Reference to the City of Boston will hereinafter be simply to "Boston" or the "City".

[2] The term "middle income" is prone to having different and conflicting definitions. As discussed hereinafter, this Thesis seeks to provide a Boston-specific solution to a Boston-specific issue relating to middle income housing. Accordingly, this Thesis has elected to use the definition for "middle income" currently being used by the DND: as used herein, "middle income" housing is that which is affordable to Boston's 85,000 households earning between $50,000 and $125,000 in annual income (Id.) While not explicit in the cited document, the definition for the term "households" in this context is presumably similar to that used by the United States Census Bureau: "A household consists of all the people who occupy a housing unit." (http://www.census.gov/cps/about/cpsdef.html, visited 27 July 2014). Moreover, this definition almost certainly refers to *related* persons living within the same housing unit, a distinction of particular consequence in this context given the impact which *unrelated* undergraduate and graduate students have on the Boston rental housing market, a subject discussed somewhat extensively hereinafter.

his or her investment.[3] Even the most well intentioned real estate developer cannot deliver a product which he or she cannot finance and, in order to do so, the high cost inputs that go into a pro forma model need to be paired with high revenue outputs coming out sufficient to show the level of fair, risk-adjusted investment return needed to justify making the development investment. In the context of high end development in Boston, the prospects for that required return are relatively easy to see where Boston's emergence as the most rapidly gentrifying city in the United States is being paired with (and fueled by) the renewed interest among the Boston area's top wealthiest residents to move back into the city. (Miller). At the other end of the spectrum, lower income housing can be developed with the financial support of a myriad of state and federal programs. (Ross, "Walsh Initiative…") However, there are fewer government resources available for the development of Middle Income Units. (Id.). In addition, one industry expert notes that "financial markets… and the development industry are not organized around [Middle Income Unit development]" in part because "most banks are wary of lending for middle income projects because there are few examples of success." (Id., citing Bart Mitchell, CEO, Community Builders, Inc.)

In the context of modern-day Boston, the impasse between widespread recognition of a supply shortage in Middle Income Units and the private development of a product to meet that demand is fueled in large measure by prevailing high costs of construction. As one observer working with the Massachusetts Port Authority notes:

> In a location such as the City of Boston, relatively high construction costs…and high land costs mean that a project will need to ensure a steady stream of significant rent revenue to support the development. (Cahalane).

[3] Please refer to Section V.A.7.i for further discussion on this point.

This statement alone does much to explain the recent shortage of Middle Income Units relative to demand. The "rent revenue" aspect of the equation has not changed – by definition, rents on Middle Income Units must be those which are affordable to middle income households.[4] What has changed, however, is that the already significant costs of construction in Boston have recently risen to their highest historical levels. Among the exogenous factors which contribute to high construction costs, the supply-and-demand metrics of the building materials markets have had a dramatic impact. For instance, 2013 saw a 40% increase in the cost of drywall and a 30% increase in the cost of lumber, jumps fueled directly by the interplay between the laws of supply and demand and the residential construction boom noted earlier.[5] Unfortunately, short of hedging one's exposure to climbing commodity prices by, for instance, investing in the relevant commodities futures markets, there is little that any developer can do to counter these high costs such that he or she might develop multifamily projects without being able to generate high rental revenues.

There is greater hope, however, for ensuring the financial feasibility of multifamily development in Boston – including, perhaps, Middle Income Units – by addressing matters controlled by public policy. Indeed, it appears that City officials have recognized this fact and are actively looking for ways "to make it easier for private developers to ramp up [multifamily] production." (Bisnow, "Millennials…"). Towards that end, Mayor Walsh has assembled a taskforce compiled of Boston's "nonprofit and for-profit developers, academics, tenant representatives, neighborhood activists, union representatives and state representatives." (Miller). Without having openly discussed any specific policies, the City's public officials have mentioned zoning incentives, tax breaks and making publicly-owned land available for

[4] See fn. 2, above.
[5] Please refer to Section V.A.10 for further discussion of the current state of construction costs in Boston.

development. (Leung). Indeed, both the Mayor and DND have been laudably proactive in engaging with the private development community to find workable solutions. Exemplary of such efforts are the Mayor's and DND's outreach to the local chapters of real estate development industry organizations such as NAIOP and the Urban Land Institute ("ULI"). During a March 18, 2014 ULI panel presentation, DND director Sheila Dillon – noting that "making the numbers work" for a private development solution to the Middle Income Unit shortage is the "challenge of our day" – even went so far as to openly solicit a "roadmap" from the private development community for how that problem might be addressed. According to Mayor Walsh, "[e]very city in America has this problem – people being priced out [– but n]obody has come up with a solution that works. We're going to work on a solution. We're trying to be creative." (Miller). Indeed, the City's commitment to finding creative solutions is already starting to bear fruit: shortly before this Thesis was published the Mayor's office announced changes to the City's zoning review process specifically intended to "to make [that] permitting process more efficient and transparent for applicants and residents." (Grillo, "Boston to increase…").

While there are certainly some ways that City policy can be plied towards incentiving private development, there is a significant matter which technically falls outside the control of City Hall, a matter which has been the proverbial elephant in the room in current discussions concerning the relationship between construction costs and production of much needed multifamily housing stock: the role which Boston's union labor plays in contributing to Boston's high construction costs. Of all the issues being discussed in the context of finding a solution for the current Middle Income Unit supply shortage, this is perhaps the most challenging given a certain level of unique complexity – and, in some cases, personal sentiment – which it involves.[6] Unfortunately, that challenge is amplified by a striking divergence in the perspective of (at least

[6] Please see Section V.A.10 for further elaboration on the subject of union labor.

some) private developers and that of (at least some) the building trades' representatives. The severity of that disagreement was recently put on public display through two articles published in the Boston Business Journal ("BBJ"). The first article, published on June 10th, 2014, detailed the public statements of three prominent Boston developers in which the high cost of union labor was cited as among the chief impediments to the development of Middle Income Units, one developer noting that "[l]abor costs have gotten out of control." (Grillo, "Developers cite…"). In response to this article, a prominent union labor representative retorted, through a BBJ article published nine days alter, that those developers were misconstruing the relevant facts and making a "scapegoat" out of organized labor, stating that "pinning the [Middle Income Unit shortage] on the backs of working people is narrow-minded and, frankly, insulting." (Monahan). Theoretically, these two articles represent a disagreement between two parties about a factual matter. What lies beneath, however, may well prove much more challenging to address.

In contrast to the disagreement among private interests about the *economic* cause of the Middle Income Unit shortage in Boston, there exists some considerable consensus among the City's public officials and policy experts concerning the shortage's *demographic* cause. Put in concise and familiar parlance, these officials and academics have identified two groups as being the most significant contributors to the demand-side of the current housing supply imbalance: "Millennials and Seniors." (Bisnow, "Millennials"). The former demographic, the Millennial demographic aged 20-34, has been gaining particular attention of late. (Id.; See also Bluestone). As anyone who has tried to rent a U-Haul in Boston during the first weekend of September can attest, it is impossible to discuss greater Boston's Millennial population without bringing the area's student body into the conversation.[7] Indeed, the impact of this group on Boston's rental

[7] This is an opportune time to make an important point of clarification. In discussing the student population of the Boston area, this Thesis means to include those students who might live and/or study outside the City's strictly-

market dynamics has been a matter of public notice and concern since before Mayor Walsh came into office, as exemplified by a 2006 Briefing Report published by the Boston Redevelopment Authority ("BRA") noting that:

> The presence of large numbers of…students has special consequences in a city like Boston with a competitive real estate market. In dense neighborhoods with a limited supply of rental housing, the strong demand created by…students can drive up the cost of rents for all residents, especially when costs are shared and apartments are split. ("Mayor Menino's Report on Boston – America's College Town").

A significant amount of the recent media attention given to Boston's student demographic has been focused on the undergraduate population, most notably in a Boston Globe series focused on the deplorable conditions in which many off-campus undergraduates have traditionally resided – and the impact which that trend has had on rent prices market-wide. (Ross and Farragher). By contrast, media coverage of the graduate student population has been more sparse and, as exemplified by that same Boston Globe series, it is a demographic group which tends to get lumped in with the undergraduate population.

While the media coverage of the "student issue" might conflate these two groups of students, housing solutions will likely have to be significantly different for each: Boston's graduate student population is different from its undergraduate population in many ways that would suggest that a housing policy addressed at that specific demographic would be an appropriate complement to the policy adopted to address the well-documented undergraduate issues. Without needing to do any research, it can safely be observed that graduate students are

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delineated geographical boundaries. This discussion, and the analysis which follows it in later sections, assumes that students studying in Cambridge, for instance, have an impact on housing market conditions within the City of Boston itself. In addition to reliance on an intuition that the otherwise artificial divisions between these cities would not in and of themselves impact living decisions (or, consequently, rental market conditions), this assumption is supported by much of the scholarly work cited in this Thesis and it resonates with the way that the demographic resources relied upon herein – notably the US Bureau of Labor Statistics and Census Bureau – delineate relevant geographic study areas.

an older demographic than their undergraduate counterparts. That difference has implications for sensible housing solutions when one considers, for instance, the increased likelihood that those older students may need housing solutions that also accommodate their spouse. Perhaps most important of all, the community relations aspect of permitting graduate versus undergraduate housing developments is completely different as Boston's communities have proven to be much more receptive to the introduction of the older student demographic than the younger one, often viewed as disruptive to traditional residential communities.[8]

Fortunately, there has been some recent research into the needs of the graduate student renter population and the extent to which they are being served. In early 2014 MIT published the results of one such study. (Bell et. al.). Unsurprisingly, that study found that Cambridge and its surrounding communities are likely to "become increasingly inaccessible to graduate students in the near future." (Id., 50). Representative of the relationship between the high income earning capacity of graduate students leaving greater Boston's universities and the local rental market, the report also notes that "the intellectual talents…of MIT graduate students have contributed to the economic prosperity of…Greater Boston, although one consequence of this prosperity has been a highly competitive rental market that is increasingly challenging for students seeking affordable housing." (Id., 46). This observation suggests that graduate students and high rental costs effectively operate as a continuous feedback loop of sorts.

Approaching the topic of graduate student housing in the City of Boston from a different and somewhat broader angle, Dr. Barry Bluestone has conducted a study, through Northeastern University's Dukakis Center for Urban and Regional Policy of which he is the director, aimed at quantifying the size of greater Boston's graduate student population and tracking the impact which that population has on the area's rental housing market. Among that study's principal

[8] A special note of recognition and gratitude is owed to Jonathan Greeley of the BRA for insight on this point.

findings is its estimate that as of 2013 there were 102,000+ graduate students studying in Boston area universities, only 8% of which were living in university-affiliated housing. (Bluestone). According to this study, a significant segment of this group resides in the Boston area's double- and triple-decker houses which have historically served as the City's "workforce" housing option. (Id.). As a result of this graduate student tenancy – and, more to the point, that group's tendency to occupy these units in greater density than their original single-family, duplex or triplex design contemplated – high rental costs have come to permeate this rental market.

The magnitude of the impact which Boston's graduate student body has on local rental market dynamics has not gone unnoticed by Boston's public officials. Speaking with the Boston Globe, DND director Sheila Dillon noted that among the topics about which the City plans to have a "frank conversation" with area universities, a particular focus will be placed on "spurring construction of housing for graduate students, who have almost no choice but to live off campus." (Ross, "Walsh Initiative…"). While City officials might wish for the universities themselves to develop such housing, and to do so on their own campuses, that proposal may well prove a challenging one for the universities to effect. As one private developer of student housing notes, "[a] lot of schools need more student housing but find it difficult to allocate the capital [to build it] when they have pressing academic needs." (Bisnow, "More Student Dorms?", citing Jason Runnels, Executive Vice President, Phoenix Property Company). As with the production of Middle Income Units, then, the City's pursuit of further graduate student housing development might also face some significant challenges. That very intersection between the challenges Boston faces with respect to its Middle Income Units and with respect to its graduate student residents is precisely where this Thesis focuses its attention, and where it seeks to offer a solution by espousing an approach rooted in project-level financial feasibility analysis.

Subsection B: Overview of Thesis Proposal

For the purposes of this Thesis, the foregoing background information can be summarized through the following observations: (1) despite a recent surge of apartment development, Boston is currently facing a significant shortage of Middle Income Units; (2) development of the apartment product needed to address this shortcoming has been limited by high construction costs, driven at least in part by controversial and politically volatile issues related to Boston's identity as a "union town"; (3) one of the most significant demand-side factors driving the imbalance between housing supply and demand is the role played by Boston's Millennial demographic, a considerable portion of which is comprised of the Boston area's graduate student population; (4) studies suggest that finding a housing solution for that graduate student demographic which brings its renters out of the City's traditional workforce housing stock will tend to free up those otherwise middle-income units in the long run; and (5) Boston's universities alone might not be able to provide a sufficient graduate student housing solution themselves. Starting from those observations, this Thesis seeks to describe a way that the putative "problem" confronting greater Boston in the form of graduate student housing might actually serve to positively contribute to a mitigation of the City's middle income housing affordability issues.

In the sections to follow, this Thesis will propose that, through the passage of an amendment to Article 80 of the Boston Zoning Code, the City could establish a special permitting process applicable to a particular type of large-scale multifamily or mixed-use development that includes a graduate student housing component subject to a master lease ("Master Lease") between the development's private developer and a Boston-area university or

teaching hospital (collectively hereinafter, "Universities" or "Master Lessees") securing the provision of that graduate student housing at considerably below-market rents. In light of the unique contractual aspect (i.e., the Master Lease) of the graduate student housing component of these developments, and the crucial role which they play in securing the relevant public participation, the type of development described in the Thesis is one which includes a graduate student "anchor tenant"[9] ("Graduate Student Anchor Tenant") and is thus referred to herein as a "Graduate Student Anchored Project" ("GSAP"). The Thesis proceeds on the assumption that GSAP developers would agree to subject the Graduate Student Anchor Tenant component of their development to deed-restricted rental caps, at limits set in accordance with public policy objectives and incorporated into the Master Lease and/or relevant record documents, in exchange for some combination of one or more of the following (otherwise unavailable) incentives:

1. low land costs on publicly-provided development parcels;
2. permitting relief on density, parking, affordability and/or linkage payment requirements;
3. property tax incentives;
4. opportunity to take advantage of lower negotiated lower labor costs with Boston's powerful building trades unions; and/or
5. ease, certainty and expeditiousness of permitting.

This Thesis does not seek to identify any particular combination of the foregoing incentives that should be implemented in connection with GSAP permitting – that is a matter of public policy much better handled by Boston's policy experts and public officials. Rather, this Thesis will

[9] In the parlance of the real estate industry, an "anchor tenant" is typically one of a development's most significant tenants, if not *the* most significant, in terms of the size of the space it leases and/or the prominence of its use in creating a development's "identity". Familiar examples in contemporary development projects in Boston include Price Waterhouse Cooper at Skanska USA Commercial Development's 101 Seaport Boulevard, Converse at Related Beal's Lovejoy Wharf and City Target at Samuels and Associates' Van Ness projects.

explore the financial feasibility of developing GSAPs on two parcels located in the City of Boston – one privately-owned and one publicly-owned – and through that exposition reveal how these incentives might be implemented in spurring GSAP development.

Finally, although the Thesis is focused on an exposition of permitting mechanics and project-level real estate development financial feasibility, the argument made in this Thesis, together with its supporting analysis, is intended to serve the City's important housing policy objectives in two primary ways. First, by showing the conditions necessary to incentivize the development of GSAPs on publicly- and/or privately-owned land, this Thesis seeks to explore an affordable housing solution for the graduate student renter population. As discussed above, there is reason to believe that the provision of such a housing solution can help alleviate rental pressures in some of the City's traditional middle-income neighborhoods and, as such, lead to the reintroduction of some middle income housing to the City's housing stock.[10] The fundamental purpose of restricting the cost of GSAP housing, and specifically tailoring certain design and locational decisions (discussed in greater detail in Section IV), is to create a housing alternative which Boston's graduate student population would freely elect over other options, in particular those of public policy concern to the City.

The second way that GSAP development might help to serve Boston's housing policy needs relates to fundamental laws of supply and demand. Specifically, this thesis argues that by providing otherwise unavailable permitting relief and/or other forms of incentivization to GSAP developers, the permitting approach described herein could result in the addition of a greater amount of market rate housing stock (i.e., portions of the GSAPs not master leased to Universities for use by their students) to the Boston market than would be delivered into

[10] This assertion relies primarily on the Bluestone study, cited above, and has not been independently verified by the author.

currently prevailing market conditions. The Graduate Student Anchor Tenant component of the GSAP, in other words, would effectively work as a financing mechanism of sorts for those other units. The benefit of this aspect of GSAP development is well represented in Metropolitan Area Planning Council executive director Marc Draisen's comment that "[h]ousing prices in Greater Boston are too high…[t]he main reason for that is we're not building enough units." (Miller). Apart from dealing with the graduate students themselves, then, GSAP development might help in the development of the 14,000 units per year that are needed just to "keep pace with real estate demand." (Id.). Moreover, as will be exemplified in Section V.C., the market rate and affordable units delivered as ancillary development to the Graduate Student Anchor Tenant may well end up being delivered in parts of the City where prevailing market rate rents would dictate that these ancillary units bear a Middle Income Unit rent, in which case the GSAP would also help the City meet its goal of delivering 1,200 such units a year. ("Report on the Middle Class").

Section III – Proposed Revision to Article 80

Subsection A: Introduction

The first step in understanding how the City might be able to promote the development of GSAPs is to identify a mechanism that could be implemented to effect the required agreement between the City, labor unions, developer Master Lessors and University Master Lessees. In order for that goal to be accomplished, however, a varied set of complex public and private considerations would need to be duly accommodated. The balance that would have to be struck for all of those considerations to be addressed is one which has defied easy identification to date. Nonetheless, there is one approach which could, at least conceptually, enable the City to establish a permitting process to promote the delivery of GSAP developments while maintaining its role as the protector of the public interest with respect to such developments. Importantly, by focusing narrowly on a singular type of development project, this permitting process could be tailored to incorporate the requisite levels of incentivization for, and restriction on, GSAP development without having a collateral impact on other existing permitting regulations. Towards that end, this Thesis proposes that the City could amend Article 80 of the Boston Zoning Code ("Zoning Code") entitled "Article 80F – Graduate Student Anchor Project Review" ("Article 80F") as described in further detail in this section.

Approaching this issue by way of Zoning Code amendment has been favored over others – such as proposing state legislation like the recently adopted Massachusetts General Laws ("MGL") ch. 40R, a statute which addresses housing policy issues through a "smart growth" approach – because the public policy issue of housing affordability that this Thesis seeks to address is a Boston-specific one for which a Boston-specific response is optimal. This conclusion is based on the following observations: (1) as discussed in Section II, the

considerable graduate student population in Boston is one of the key contributors to the current imbalance between middle income housing supply and demand, a state of affairs that is relatively unique to Boston; (2) also as discussed in Section II and as will be explored in further detail in Section V, Boston's particular union labor dynamics and high land prices are commonly thought to contribute to the housing supply shortage by adding to the otherwise already high cost of construction within the City; and (3) the financial feasibility analyses that lie at the heart of this Thesis address dense, urban development of a type that might not be appropriate (or necessary) in other communities. [11] That all having been said, however, while the *regulatory* approach proposed in this Thesis is decidedly Boston-specific, this Thesis's broader *analytical* approach of viewing housing policy decisions through the lens of project-level financial feasibility is certainly one which could be adopted in other parts of the Commonwealth (and beyond) where market dynamics are similar to those currently prevailing in the City.

Subsection B: Current Regulatory Policy in Relation to GSAPs

In Boston, any proposed development projects in excess of 50,000 gross square feet ("GSF") in area ("Large Projects") are subject to a process known as "Article 80 Large Project Review" by the Boston Redevelopment Authority ("BRA"). ("A Citizen's Guide…", 5). In addition, the approval of the Boston Zoning Board of Appeal ("ZBA") is required for any Large Project that requires a conditional use permit, variance or other similar zoning relief. (Id., 24). Finally, the development of some Large Projects will entail the proposal to establish an overlay

[11] Not specifically included here, but certainly of consequence, is the fact that passage of a revision to the Boston Zoning Code would likely be much easier to accomplish than amending the Commonwealth's legislation.

zoning district applicable to the specific parcel, known as a "Planned Development Area" ("PDA"), which requires the approval of the Boston Zoning Commission ("BZC").[12] (Id.).

By definition, GSAP developments are ones which include both a graduate student housing component and other residential and/or commercial uses. Moreover, GSAP developments will have to provide a sufficient amount of housing so as to play a meaningful role in addressing the City's housing affordability problems. Given these characteristics, GSAPs are developments which would almost certainly constitute Large Projects and, as such, require Article 80 Large Project Review. Furthermore, graduate student housing master leased to a University would likely constitute a "College or University Use" under the applicable provisions of the Zoning Code ("Article 2A…"), a use which may require ZBA approval in different parts of the City.[13] Together, these two processes can be very time consuming; Article 80 Large Project Review alone could, under the regulations currently in place, take as long as 420 days. ("A Citizen's Guide…", 9).

In order to understand why the existing requirements of zoning and Article 80 compliance outlined above would not be conducive to the development of GSAPs, it is essential to understand the magnitude of the costs that a developer bears in simply preparing to apply for Article 80 Large Project Review and/or PDA review. Some developers who are familiar with the process note that upfront costs can range between $250,000 and $500,000 just to bring the

[12] It should be noted that a different approach than the one which will be explored herein involves the use of an Urban Renewal Overlay District (i.e. the so-called "U-district"). (Bobrowski, 436-37). However, the author has elected to ignore this possible route given the threshold requirement that land designated under this section of the Zoning Code either entail land assembly and redevelopment or land that meets the "substandard, decadent or blighted" threshold requirements of MGL ch. 121B. (Id.; see also http://www.mass.gov/hed/community/planning/urban-renewal-ur.html, visited 27 July 2014). These conditions may, of course, apply in areas where GSAP development would be otherwise appropriate, scenarios in which implementation of a U-district might make sense. The focus of this Thesis, however, is redevelopment on a whole parcel-by-whole parcel basis, and not necessarily in parts of the City which might qualify as blighted, decadent or substandard; the GSAP approach should ideally be capable of implementation on any parcel within Boston.

[13] This comment is based on the (limited) observation that such use would be conditional on Parcel 9 and forbidden on the Smookler Lot. See Sections IV for further detail on this matter.

project up for review, and going through an entire Article 80 review process can cost more than $2 million. Add on top of that the additional third-party legal costs that would almost certainly accompany the negotiations between the private developers and University Master Lessees (further detail on this dynamic, below) and it becomes clear that a developer would have to assume some considerable costs – and, thus, risk – just to bring a GSAP development forward for review. At least initially, GSAPs would be novel developments meaning that would-be developers of that product type would have little basis for evaluating the magnitude of that risk; unlike a typical multifamily development, for instance, the developer would not know the likelihood that required relief would be granted nor the types of conditions which such permitting approval might entail. In addition, if a given GSAP contained a "micro" housing component such as that contained in the hypothetical GSAPs described in Section IV it would be likely to face some difficulty in the Article 80 Large Project Review process, especially if it were not located in the City's "Innovation District" neighborhood (see Section IV.A.2 for further information on this matter). Finally, as noted above, the "College or University Use" aspect of a proposed GSAP might face significant zoning restrictions within a given neighborhood. Private developers would be less likely to assume the financial risk associated with proposing a GSAP development without knowing the magnitude of that risk, and would be even less likely to do so in light of the fact that these developments would almost require entail some considerable zoning within the existing Zoning Code guidelines.

Subsection C: Policy Recommendation

Based on the foregoing, it seems that *something* would have to change on the regulatory/permitting front in order for private developers to even consider pursuing a GSAP

development. There are a number of ways to do approach this matter, each with different associated benefits and problems. For reasons detailed below, this Thesis argues that the best way to promote the private development of GSAPs will be to establish a public review process tailored to handle the permitting of that new and novel development product type. That process would be codified in the new Article 80F and would be tailored to achieve the principal objectives of: (1) clearly defining the permitting process applicable to GSAP development; (2) ensuring that that permitting process would be an expedited one while maintaining an adequate level of public safeguard; (3) providing GSAP developers with increased certainty in the finality of the permit granted by establishing high barriers to appeal; and (4) in the event that labor unions agreed to a negotiated lower rate in connection with GSAP construction, ensuring that an appropriate Project Labor Agreement ("PLA") be executed with the applicable labor unions prior to the issuance of all permits for any given GSAP development. Put another way, this Thesis proposes a new permitting process, described in further detail below, through which the City could create a scenario where its housing policy interests could be served by serving the interests of Boston's private development community, residents and labor unions.

Article 80F would operate as a hybrid between the processes applicable to Large Projects under Article 80B and to PDAs under Article 80C.[14] The majority of the two review processes would occur simultaneously – something contemplated by the existing zoning code ("A Citizen's Guide…", 12) – in order to accomplish Article 80F's objective of establishing an expedited permitting process to promote GSAP development. Coming out of the Article 80F review process, an approved GSAP would have received all of the requisite BRA approvals and the

[14] Reference is made throughout this Subsection III.C to specific articles of the document cited as "Article 80: Development Review and Approval" in this Thesis' Reference section. For ease of reference, please see http://www.bostonredevelopmentauthority.org/getattachment/c4a33d0a-9718-409c-9614-cbc3ac694180 for that document's full text.

land[15] on which the GSAP is to be developed would have been zoned for that GSAP's specific use with the result of that use being "as of right". The procedure for Article 80F review and, as appropriate, the Thesis's rationale underlying each step so suggested are outlined below.

1) PDA Development Plan Submission. In the first step in the Article 80F process, the GSAP proponent submits a PDA Development Plan (as defined in Zoning Code Article 2A) which conforms to the requirements established by Article Zoning Code 80C-3.1.[16] Such PDA Development Plan shall include reasonably sufficient detail to show that the proposed GSAP meets the requirements applicable to such projects. Those requirements will primarily relate to the statutorily-prescribed number and rental cost of the graduate student housing units as well as to the units' design and/or the building's location requirements (discussed in further detail in Section IV). Importantly, in order to show that the proposed GSAP meets the threshold requirements needed for the project to be eligible for Article 80F review, the proponent must also submit (1) a binding Master Lease commitment from a University or Universities[17] to lease the entire graduate student housing component of the GSAP for no less than the statutorily-prescribed term (a "Master Lease Commitment") and (2) if the GSAP is to be developed on a

[15] Note that under current regulations PDA review is only available on parcels that are 1 acre or larger. (Bobrowski, 436). In the event that the City were to deem GSAP development worth promoting, and it elected to adopt the approach outlined herein, consideration should be given to lowering that parcel size threshold in order to accommodate otherwise appropriate GSAP development on smaller parcels.

[16] Note that Article 80C-3.2 and Article 3-1A.a allow for the submission of a PDA Master Plan containing less detail than a PDA Development Plan for developments on parcels in that are 5 acre or larger and are not located in residential zoning districts. This type of submission may be appropriate for GSAP developments on such a parcel but will not be explored any further in this part of the Thesis's proposal.
(For referenced articles, see:
http://www.bostonredevelopmentauthority.org/getattachment/11e2531e-a79d-4642-acdc-0abfc78b3c2b)

[17] The idea of leasing a Graduate Student Anchor Tenant component of a GSAP to different Universities is one rife with complexity. To be sure, case-by-case tripartite agreements would likely have to be struck governing matters many important matters ranging from marketing considerations to indemnification protections. Without getting into these details any further, single GSAP scenarios involving more than one University Master Lessee will likely be more realistically plausible in a GSAP development containing multiple housing "blocks", a concept exemplified in Section V.C.

privately-owned parcel, a Purchase and Sale Agreement ("P&S") for that parcel confirming that the land will not be conveyed for more than fair market value ("FMV") as established through some reliable process such as three (3) independent appraisals.[18] Any submission which does not meet the foregoing requirements will not receive further Article 80F review.

Ensuring that a proposed GSAP meets these three threshold requirements – to wit, that it will (i) provide the required number of units at the required rents, (ii) actually be master leased by a University or Universities for no less than the required term and (iii) be developed on a private parcel, as applicable, conveyed at no more than FMV – touches upon important policy objectives served by this first phase of the Article 80F review. The first threshold requirement ensures that the GSAP will provide the number and type of housing that the City has deemed appropriate in order to accomplish its overarching housing policy objectives. A more detailed study than that conducted in connection with this Thesis will have to be conducted in order to identify (a) the number of graduate students that each GSAP would need house in order to play a positive, meaningful role in mitigating the housing affordability problems and (b) the type of reduced rent, design and/or locational attributes which the units must have to incentivize the target graduate student population to elect that rental option over those of concern to the City (i.e. the so-called "workforce" housing located in places like Mission Hill).[19] Once those matters have been established, this first phase of Article 80F review will ensure that any proposed development will provide a sufficient level of benefit to the City to merit the type of relief/incentivization offered through the Article 80F process.

[18] Both the Master Lease Commitment and the P&S would likely have to be conditional, subject to the granting of Article 80F approval. Accordingly, the FMV in this case should be deemed to include any value which might be attached to a so-called "permitting contingency" of the requisite length to get through the Article 80F period. Establishing a value for that contingency, which effectively amounts to the conveyance of an option, might prove challenging but, as with a number of important matters, that is something beyond the scope of this Thesis.

[19] See Section II.A for further detail concerning this subject.

The second threshold requirement ensures that the City will not provide Article 80F relief/incentivization to a project that is not ultimately put to the use for which that specialized review process is established. Looked at another way, this second threshold requirement ensures that a purported GSAP developer will not enjoy the benefits of Article 80F review by simply subjecting a section of micro-unit housing to rental caps, an outcome which, although favoring the provision of middle-income/affordable housing, might not help mitigate the issues related specifically to the City's considerable graduate student population. Furthermore, this second threshold requirement might present an opportunity for the City to ensure that any conditions of that Master Lease arrangement which the City deems essential be included in all such Master Lease Commitments. A prime example of such conditions would be the required length of the Master Lease and a specification of what happens at the end of that Master Lease term in order to avoid unwanted outcomes – a matter of considerable concern for the City, discussed in further detail in Section IV.A.4. Caution is urged, however, as excessive interference with the private bargaining process by which these Master Lease arrangements would otherwise be established could render the entire development unappealing to the Universities and/or financially infeasible from the developers' risk-adjusted return perspective, a subject which will be further explored in Section V.

The final threshold requirement relates to a less obvious policy concern relating to the sale of a private parcel for GSAP development. At its most fundamental level, Article 80F review entails certain permitting conditions that do not apply in the context of developing other types of projects. Accordingly, any seller of one such private parcel to a GSAP developer would have an enhanced amount of negotiating leverage in demanding a higher price be paid for his or her parcel than he or she might be paid by any other developer. A fundamental policy concern

arises in this scenario given that, in short, the entire purpose of the Article 80F approach is to ensure the financial feasibility of an otherwise financially infeasible development project on the basis that that project serves the City's housing affordability objectives. Equipped with the knowledge that its buyer would be benefitting from participation in that arrangement, a private seller would have the incentive to share in the value created by that Article 80F process by demanding a higher sales price than they could otherwise achieve. The purpose of the Article 80F approach is not to subsidize private land sellers – indeed, that would entail the unjust enrichment of a private individual at the expense of a public good (i.e., permitting relief and other forms of incentivization yielded through the Article 80F process). By requiring the parcel be conveyed for no more than FMV, this third threshold requirement can serve to ensure that that outcome will be avoided.[20]

Before continuing on to a description of the next step in the Article 80F review process, it is important to note that the upfront costs imposed by the requirements of this first step are almost surely going exceed those borne by developers who would otherwise advance a project subject only to Article 80B Large Project review. Unlike the detailed submissions required in connection with the first step of the Article 80F process, the Article 80B review process can be initiated with the filing of a simple Project Notification Form, a document which contains much less project detail and, as such, requires the expenditure of less money. ("A Citizen's Guide…, 5). Even as compared to situations where the costly process of receiving ZBA approval is

[20] Once again, however, we confront the question of what "FMV" really means in this context given the likelihood that a permitting contingency would have to be inserted into any private parcel P&S presented at this stage of the Article 80F process. There are some considerable complications related to this issue. For one, this aspect of the Article 80F process seeks to avoid unjustly enriching a private land seller at the expense of a public good while at the same time potentially compensating him or her for the contingency (i.e., option) that the GSAP buyer was required to "buy" specifically because that developer is engaging in the Article 80F process. Further, there are likely some considerable valuation complications in establishing an appropriate allowable value for that option in the first place. Admittedly, the author has no answers on this front, but some such answers to at least the latter issue may lie in the field of option valuation theory. For some further insight into this interesting field of academic study, see Geltner et. al., 706 *et. seq.*)

involved in the permitting of a Large Project, the Article 80F process imposes the additional requirements of negotiating a Master Lease, possibly negotiating a PLA and possibly retaining third party experts to provide the appraisal required to meet the third threshold requirement. This cost differential is important to note when considering why the Article 80F process *should* be more favorable to a GSAP proponent in terms of permitting expeditiousness and finality. Plainly put, unless the Article 80F process compensates the proponent for imposing the requirement that he or she incur greater upfront costs (and, as such, risk), such proponent will simply be less likely to pursue such GSAP development – and fewer, if any, public policy-serving GSAP developments will end up being developed.

2) Compliance Review and Initial Compliance Determination. The second step in the Article 80F process is intended to be a relatively simple and brief one. Within a short period following the PDA Development Plan submission, the BRA will issue (i) a notification to the proponent stating whether the GSAP complies with the threshold requirements and (ii) for proposed developments meeting such threshold requirements, a published notification, the "Initial Compliance Determination" ("ICD"), identifying which parties will be needed to participate in the next phase(s) of the Article 80F review process. The first notification is significant as it informs the proponent whether his or her project complies with the requirements and, if not, what must be done in order to resubmit the GSAP proposal. Importantly, an affirmative finding in this notice will suffice to constitute an affirmative determination that the proposed GSAP's provision of graduate student housing meets the "public benefits" requirement applicable to all PDAs. ("A Citizen's Guide…", 12).

The ICD achieves two important objectives. First, the issuance of the ICD triggers the public review and comment period. Because the PDA Development Plan is subject to change in response to a notice of inadequacy of the initial filing, commencing the public comment section at this subsequent stage is intended to ensure that public comment only be received with respect to an otherwise feasible GSAP development. Moreover, the ICD signals the beginning of the simultaneous Large Project and PDA review process constituting the third step of the Article 80F review process.

The second important objective accomplished by the ICD is to notify the proponent and public bodies of the groups from which feedback will be required in connection with the Article 80F review. The BRA and BZC will always have to play a role in this review process as the arbiters of the Large Project and PDA review processes, respectively. In addition, scenarios which call for the input of any of the Boston Civic Design Commission, Boston Environment Department, Boston Landmarks Commission, Boston Transportation Department and/or the Mayor's Office of Neighborhood Services can be so identified through the issuance of the ICD. Furthermore, in instances where the proposed PDA would entail the permitting of a use which would otherwise require the issuance of a variance, the ICD would identify the ZBA as a group from which input would be required in connection with the Article 80F permitting. The objective here is to ensure that all parties that should exercise oversight and/or provide input in this review process do so – and that they all do so in a single, expedited process. Moreover, the input of the ZBA in approving PDA's otherwise entailing a variance is an important safeguard to ensure that the GSAP developer is not, whether merely as a matter of public perception or in reality, seeking to end-run the permitting process by avoiding the ZBA altogether in imposing an

otherwise forbidden use upon a neighborhood.[21] With the proponent, public and pertinent public review parties duly notified, the Article 80F process would continue to the third and final step.

3) Review, Revision and Approval of the Proposed GSAP. For this third and final step of the Article 80F review process, specific recommendations are hard to identify. The purpose of this step will be to have each proposed GSAP project reviewed by the requisite permitting/zoning bodies, informed in part by public comments concerning such project, have any needed revisions to the project be mandated and incorporated into the development plan, and finally to have the project approved for development. In other words, this step will be the one in which Boston's permitting/zoning bodies discharge their duties as protectors of the public interest while ensuring that Boston's real estate development market remain a well-functioning one that is not unduly restrictive of this brand of commerce. The focus of this Thesis is not to evaluate the way that those bodies operate. Rather, this Thesis is intended to serve as an exploration of the way that the public permitting process might be used to promote the private development of a particular type of asset type to serve public policy objectives, a narrow focus which is not intended to serve as a critique of any existing permitting processes.

While specific recommendations are not identified herein, this Thesis can suggest three general guidelines around which the particulars of this third Article 80F review step might be crafted. In large measure, these three guidelines are emanate from observations such as the following critique of the permitting process in greater Boston offered by noted urban economists in the context of identifying barriers to housing production meeting demand:

[21] This final consideration may prove especially significant as the BRA's use of PDAs has met with some public outcry in various neighborhoods where activists raise concerns about the propriety of such "spot zoning". In areas where this approach entails the introduction of an otherwise forbidden use into a neighborhood, review by both the BZC and ZBA may prove essential as a matter of public relations, if perhaps a bit of a redundant requirement.

> The high degree of ambiguity in regulations and uncertainty in the permitting process increase costs for developers and encourages frivolous court challenges. It is both hard and expensive for developers to raise money, and difficult for developers, local officials, and abutters to negotiate binding agreements. (Glaeser, Schuetz and Ward, 6).

Guideline 1: Expeditiousness. The first recommended guideline is to make the process quick and easy. In the world of real estate development, time truly is money and a protracted and/or complicated permitting process can entail a mix of significant costs including, for instance, property carrying costs which simply accrue pending permit approval, opportunity costs arising from the inability to deliver a development into a particularly favorable market cycle, and third party consultant costs associated with the need to navigate an overly complex review process. Boston is no stranger to the issues related to lengthy permitting processes where, for instance, applicants for ZBA can wait up to six month *just to have their appeal reviewed*. (Grillo, "Boston to increase…"). The impact between the length of permitting process and cost of development is significant enough, in fact, that economists have been able to calculate a "zoning tax" which developers have to bear to develop projects in municipalities where the permitting process is more time consuming. Specifically, a 2003 study identifies five different categories of municipalities based on the lag time between a zoning application and issuance of a building permit – (1) less than three months, (2) thee to six months, (3) seven to twelve months, (4) one to two years and (5) more than two years – and finds that "[i]ncreasing a single category in terms of permit issuance lag is associated with a nearly $7 per-square-foot increase in the implicit zoning tax." (Glaeser and Gyourko, 34).[22] Similarly, in addition to

[22] It should be noted that the findings of the study reported here are based on data collected in a 1989 survey of 45 central cities of metropolitan areas in the US. In addition, the variable upon which these findings is the permit issuance lag time for "a modest size, single-family subdivision of fewer than fifty units." Accordingly, the results of this survey may not be directly applicable in the context of permitting dense infill development in Boston; these findings, in other words, were not included to suggest that reducing issuance lag time in Boston would result in $7/SF cost savings. Rather, these findings have been included for the sole purpose of illustrating how permit lag and costs of real estate development are related generally.

removing a development's cost by avoiding a prolonged permitting process, shortening that review process can entail direct benefits to the very financial feasibility of a given development, a matter discussed further in Section V.

Obviously it is crucial for the permitting process to serve as an adequate safeguard for the interests of responsible urban development. The proposal here is not to replace such responsible, vigilant oversight with a proverbial rubber stamp. Rather, the proposal is simply to ensure that emphasis be placed on making that process as expeditious as possible by maintaining only those procedural safeguards which are absolutely necessary. This proposal fits the context of GSAP permitting especially well. For one, this is a narrow, particularized category of development project for which a narrow, particularized permitting process could be implemented without deteriorating – or needing to tamper with at all – existing procedural safeguards applicable more broadly. More importantly, the interests of both GSAP proponents and the public would be served by expediting review of these projects. The current housing shortage has been described as a "crisis" which could ultimately impede Boston's economic development and continued vitality. The response to this crisis, as with any, should be as fast as possible.

Guideline 2: Transparency. The second suggestion for a general guideline in crafting Article 80F is to make the process transparent. As will be explored in Section V, there are various ways that the City could help to economically incentivize GSAP development. As is the case with the specific permitting policies, the Thesis will not address any specific mix of economic incentives which might be introduced to incentivize GSAP development – both of those are matters best left to Boston's politicians and policy advocates. Irrespective of what the right mix of incentives might be, an emphasis should be placed on ensuring that that mix – and

the extent to which a developer can reasonably rely on receiving its benefits – is well understood and consistently applied in the Article 80F context.

To understand why such transparency is important, consider the example of California's Density Bonus Law ("CA Density Law")[23]. The CA Density Law was enacted specifically to ensure the feasibility of the urban infill multifamily development needed to mitigate housing issues throughout that state in the face of "considerable financial and political constraints" faced by the would-be developers of such developments. (Blackwell, 13). To accomplish this objective, the CA Density Law was designed to "allow developers whose housing development proposals meet certain [requirements] to receive density bonuses, incentives and development [restriction] waivers from the local [permitting] agency." (Id.). The idea, in other words, was to pass a law which conveyed to the development community a clear message that if the developer provided "X" public policy-oriented benefits through its development it could expect "Y" benefits afforded through the permitting process what would make their development one worth pursuing. While laudable in objective, however, the CA Density Law "is not well-organized…and its application by [California's different] cities and counties [] varies considerably throughout the state" with the result being that the "awkwardness of the statute and the uncertainty of its application sometimes *dissuades* developers…from utilizing its provisions." (Id., emphasis added). The objective of the CA Density Law is similar to the objective that Article 80F would serve; hopefully the design of that Zoning Code amendment would be crafted with the lessons learned from the history of the California law in mind.

Indeed, the importance of this type of transparency was underscored in the process of researching this Thesis. In discussing ways that the City might better incentivize multifamily

[23] Cal. Gvm't Code sec. 65915 *et. seq.* (http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=65915-65918, visited 27 July 2014).

development, Boston-area developers consistently cite the need for increased predictability in the linkage payment requirements a developer can expect to face in connection with the permitting as one of only a few key, realistically plausible suggestions. Understanding the costs and benefits inherent in the permitting process before entering into that process, in other words, can tend to make private developers more likely to engage in that process.

Guideline 3: Finality. The last general suggested guideline for the design of the third step in the Article 80F review process is to make the process final. As mentioned previously, development proponents face significant costs in preparing a proposal for review and awaiting a permitting determination. Those costs are augmented by further costs of a similar nature in the event that that permitting determination is appealed given that the appeal process involves the same type of carrying, opportunity and third party consultant costs. The Massachusetts legislation enabling the establishment and enforcement of that Zoning Code, Chapter 665 of the Acts of 1956 (the "Enabling Act"), provides for two ways in which different types of zoning decisions can be appealed.[24] First, Section 8 of the Enabling Act establishes an administrative appeal mechanism whereby, *inter alia*, "any person aggrieved…by reason of any order or decision of the building commissioner or other administrative official in violation of any provision of the state building code or any zoning regulation or amendment thereof" can file an appeal with the ZBA. Second, Sections 10-A through 12 of the Enabling Act provide for judicial appeal of permitting decisions to the superior court, land court or housing court (if the development in question received ZBA approval of a permit for "any building or place used, or intended or permitted for use, as a place of human habitation").

[24] As with Article 80, above, specific reference will be made to sections of the Enabling Act here and in Subsection D. For ease reference please refer to http://www.bostonredevelopmentauthority.org/getattachment/f44de6aa-8b2b-4cae-b110-0dd502ebc2bd, visited 27 July 2014.

There are, of course, legitimate reasons why an interested party would want to appeal a permitting decision – indeed, suits of that nature are the very reason for which the Zoning Code and Enabling Act provide the administrative and judicial review procedures referred to above. Just as certain, however, is the fact that parties who wish to delay a project to which they are opposed for extra-legal reasons can, and do, abuse these procedural rights with so-called "nuisance" actions. (Glaeser, Schuetz and Ward, 6). In part, these nuisance actions are made possible by the establishment of low economic barriers. Presently, an administrative appeal to the ZBA does not require the retention of an attorney by an appellant and entails only the cost of a filing fee equal to $150 per alleged violation of the Zoning Code.[25] Higher costs are more likely to be involved in the judicial review processes under Enabling Act Sections 10A – 12 given that those actions will be more likely to involve the use of legal counsel. Even so, however, appellants of permitting decisions made by bodies other than the ZBA are not required to post any kind of bond or surety to indemnify the person in whose favor the permitting decision was granted, and while the requirement that such bonds be posted in connection with appeals of ZBA decisions are left to the reviewing court's discretion they are not mandated. In other words, apart from the threat of having costs assessed against an appellant in any of these judicial review cases upon a finding of "bad faith", the filing of a nuisance appeal is not necessarily a sufficiently expensive proposition as to limit the use of this delay tactic.

The idea of incentivizing private development by enhancing the finality of the permitting process – and specifically doing so by increasing the costs/risk which permit appellants would have to face – is a central feature of the Chapter 40R "smart growth" legislation referred to in

[25] This fee is only $150 total for appeals filed with respect to residential buildings of 3 units or less. http://www.cityofboston.gov/isd/building/process.asp, visited 27 July 2014.

this Section's introduction.[26] All appeals of project approvals under Ch. 40R must be handled through a judicial, versus administrative, process (MGL ch. 40R sec. 11(j)) and the appellant in such action is required to post a bond "sufficient to cover twice the estimated: (i) annual carrying costs of the property owner… as may be established by affidavit; plus (ii) an amount sufficient to cover the defendant's attorneys' fees, all of which shall be computed over the estimated period of time during which the appeal is expected to delay the start of construction." (MGL ch. 40R sec. 11(h)). In the event that the reviewing court denies the appeal, that bond is forfeited to the owner in an amount equal to their actual carrying costs and legal fees incurred during the appeal, net of any income derived from the property during that same time. (Id.). The impact of this limitation is telling: as of the date of this Thesis there have only been two judicial appeals brought against projects approved in 33 districts throughout Massachusetts in which 1,913 housing units have been developed with more than 12,000 more permitted for future development.[27]

Insight into how 40R works to incentivize private development was recently shared at a panel discussion sponsored by the Boston Foundation and held on May 30, 2014. During that panel discussion one panelist noted that the confidence in permitting certainty afforded by the challenging 40R appeal process means that an individual developer will be more likely to incur significant up front permitting costs for a 40R project than they would be project permitted under other provisions of Massachusetts law, such as Chapter 40B. More significantly, the panelists noted that 40R's permitting certainty alters the cost/benefit analysis with respect to any particular development, meaning that projects which would be deemed financially infeasible in other

[26] For the third and final time, specific section references will be made herein to a specific body of codified law. For ease of reference, please refer to https://malegislature.gov/Laws/GeneralLaws/PartI/TitleVII/Chapter40R, visited 27 July 2014.

[27] For up-to-date data, see http://www.mass.gov/hed/docs/dhcd/cd/ch40r/40ractivitysummary.pdf (visited 7/12/14). Information concerning number of challenges arises from public comments made at the Boston Foundation panel discussion described hereinafter.

permitting contexts as not possessing the "critical mass" required to make them worth pursuing could nonetheless be viable if permitted under 40R for that very reason. At the risk of paraphrasing the highly respected panelists, these comments can be summarized as stating that the *process* associated with 40R has a direct impact on deal level *economics* by altering a development's risk profile.

The history of Chapter 40R's implementation is not one free of controversy. (Karki). Nonetheless, there are two aspects of that approach to project permitting which would serve Article 80F's goals well if implemented in the relevant context of permitting dense infill multifamily development in Boston. The first is 40R's ability to make otherwise infeasible projects attractive to private developers as discussed in the previous paragraph.[28] The second aspect relates to the interplay between design review and zoning determinations which lie at the heart of 40R. In 40R projects which are approved with respect to a specific project (versus the approval of a 40R development district intended to house multiple individual development, such as that which has been approved in Haverhill, MA), the town planners are able to use the permitting process as a venue for discussing the "complex issues" related to land use and development design – a process out of which emerges an as-of-right development permit. When implemented in a responsible way, this approach has resulted in the development of a project, described as an "economic engine" in the city of Lynnfield, MA, comprising 180 rental units, 400,000 square feet of retail space, 80,000 square feet of office space, senior housing use and a 9-hole golf course on a site for which preexisting zoning would have allowed for the

[28] This is one area where legislative action beyond a (relatively) simple amendment to the Zoning Code might be required. The venue for permitting appeals is established by provisions of the MGL and, as such, limiting this review to a specific court subject to a specific requirement like the posting of a bond may simply be something that a Zoning Code revision cannot legally accomplish. Although this Thesis's author is a member of the Massachusetts Bar Association, this note is not intended to suggest an opinion on the legality of this question. Rather, this is a simple caveat offered in connection with the broader suggestion that, by whatever method may be appropriate, implementation of a limitation to appealing Article 80F decisions in a way akin to that inherent in Chapter 40R could hold the promise of helping to incentivize the development of GSAPs in Boston.

development of only 56 units. Chapter 40R itself might not be the solution to the particular housing development needs of Boston, but this example alone suggests that it might offer some lessons on how Article 80F might be crafted to promote the responsible redevelopment of the city's underutilized parcels in order to address those City-specific needs.

Specific Recommendation: Make a Fair Deal with Union Labor. In addition to the three general guidelines suggested above – i.e. that this third step in the Article 80F review be quick, transparent and final – there is one specific recommendation which could help make that permitting tool as powerful as possible in the promotion of increased multifamily development in Boston. As will be discussed in further detail in Section V, one of the ways that GSAP development might become a reality in Boston involves an agreement on the part of Boston's labor unions to reduce wage rates and/or relax so-called "work rules" applicable to such projects in order to reduce construction costs and ensure project-level financial feasibility. Depending on the extent to which an arrangement vis-à-vis negotiated labor costs plays a role in GSAP development, this final step in the Article 80 could be one in which the unions' interests would be protected in connection with this compromise. Specifically, Article 80F could require the execution of a PLA for any GSAP development as a condition precedent to the issuance of all permits.

The purpose of a PLA is to memorialize the terms of a negotiated deal between a project developer, general contractor and union labor building a given development when those terms deviate from otherwise applicable market standards. Importantly, these agreements are put in place to establish specific guidelines for project development costs and guidelines which are geared towards ensuring that construction workers are able to operate in a safe environment.

PLAs can play an especially important role in facilitating construction projects that are expected to serve a public interest. For instance, a certain PLA dated October 29th, 2010 and entered into between the University of Massachusetts' construction manager, Walsh Brothers, Inc., and the applicable trades unions notes that "[t]he timely and successful completion of [construction work related to expanding and improving UMass's Boston campus]…is of vital importance to all the citizens of Massachusetts." ("Project Labor Agreement…", 2). That PLA goes on to say that because of the involvement of such public interest in those construction projects, "it is essential that the construction…be performed *in the most efficient and economical manner*..." (Id.). Given that GSAP development, by definition, is aimed at serving the City's housing policy interests, such construction projects might similarly merit the negotiation of PLA such as that cited above.

This Thesis is not in a position to make specific suggestions concerning labor rates, work rules or anything else to which the terms of a PLA might speak. Whatever the right agreement may be, Article 80F's requirement that a PLA be executed before a project gets underway is tantamount to a requirement that the unions affirmatively state that they have reached a deal with the GSAP developer which meets the financial and safety needs of the laborers who will construct that project. It is, in other words, a requirement that the interests of the unions be protected for projects that they may have agreed to build at a cost below that which they might otherwise have been able to command. This a concept which would likely be met with the approval of the trades unions and, as such, is one which might make reaching a negotiated lower labor rate more of a viable possibility in the context of GSAP development.

Subsection D: Final Commentary

Before moving on to Section IV and its detailed description of what GSAP developments might look like, one final note concerning the benefits offered by approaching the promotion of such development through an Article 80 amendment bears mention. Section 3 of the Enabling Act establishes the procedure applicable to any amendment of the Zoning Code (the "Amendment Requirements"). Generally speaking, the Amendment Requirements involve the publication of notice for a public hearing attended by no less than six members of the BZC and the affirmative approval of either (i) at least seven BZC members and the Mayor or (ii) at least nine BZC members if they are voting in support of a measure over the Mayor's veto for the adoption of any proposed amendment discussed at the public hearing. The political realities associated with these procedural requirements yields two important benefits to the Article 80F proposal.

The first benefit of having to comply with the Amendment Requirements is that in so doing Article 80F could be tailored to best reflect the needs of Boston's residents. Through the public hearing process, the very political viability of the GSAP concept, as well as the specific contours which the eligibility requirements and permitting process applicable to the same should take, would be tested and, as appropriate, revised in response to public feedback. Ideally, the result of that process would be a specific permitting mechanism, geared towards achieving a specific public policy objective, which will have received the support of all interested stakeholders.

The second benefit of complying with the Amendment Requirements is similar to the first but relates to a particularly thorny issue tied to the Article 80F concept and touched upon earlier in this Section: a lower negotiated union labor cost applicable to GSAP development.

Specifically, the requirement of having to comply with the Amendment Requirements forces the debate to be held in a public forum, ideally enhancing the potential for a universally agreeable deal to be struck between the public, private and union labor stakeholders. Given our current Mayor's professional background, his administration may be uniquely well-positioned to accomplish this challenging feat. (Leung). The idea is that perhaps labor would be willing to lower negotiated rates on these projects given that (a) they are of a specialized nature, meaning that they wouldn't have to agree to these lower rates on construction projects more broadly, (b) by definition they are large projects requiring significant amount of work and (c) as suggested in the specific policy recommendation discussed above, they are projects for which an agreed-upon PLA would have to be in place prior to the granting of any permits, thereby securing the role of labor without having to rely on the type of informal "gatekeeping" which unions currently exercise in their permitting review role.[29]

While the Amendment Requirements provide benefits, they also entail some cost. Going through the process of amending Article 80F might be more trouble than its worth, and might provide a broader solution than is needed. It is conceivable, for instance, that GSAP development could be permitted within existing regulatory guidelines; there is no conclusive evidence available whether private developers would or would not develop these types of projects under extant zoning regulations. The proposed Article 80F, moreover, is not offered as the *only* way that such permitting might be accomplished. Rather, the foregoing discussion of Article 80F has been intended merely to explore some of the key issues which the City might need to address in the event that it desires to foster GSAP development – or development like it – and provides a suggestion of one way that the City might use the tools at its disposal to accomplish the same.

[29] See fn.86 for further detail on this point.

Section IV – The Graduate Student Anchored Project

Having devoted the preceding Sections to a discussion of how the City might advance its housing policy objectives by promoting the private development of graduate student housing within larger developments, and to the exploration of one potential permitting mechanism which the City could implement towards that end, this Section will flesh out the GSAP concept by providing further detail concerning that type of GSAP development. Specifically, further detail concerning GSAP developments will be provided in three ways. First, Subsection A will discuss the characteristics of a prototypical GSAP development and the rationale informing the same. Next, Subsection B will identify the composition of a particular GSAP development (the "Subject GSAP") and two parcels of City land on which it might be placed (the "Target Parcels") to exemplify in a more concrete manner how the concept might work. The Subject GSAP and Target Parcels explored in this Subsection B will also serve as the basis for the financial feasibility analysis contained in Section V. Finally, graphical representations of the Subject GSAP are attached to this Thesis as Design Exhibits 1 through 5 in order to illustrate the development's composition, fit within each of the respective Target Parcels and how this may fit within the urban fabric of a particular part of the City.

Subsection A: Composition of the Prototypical GSAP

The prototypical GSAP development is a (i) multifamily or mixed-use development[30] (ii) permitted under Article 80F and containing an Graduate Student Anchor Tenant component having (iii) no fewer than a specified number of units leased to a University

[30] In the parlance of real estate development, a "mixed-use" development is, as suggested by its name, a development comprised of more than one type of space use, i.e. residential, office, hotel, industrial and/or retail (including restaurant). Although not applicable in the GSAP context for obvious reasons, mixed-use projects do not necessarily always contain a residential component, as exemplified in Boston by the Copley Place development.

through a Master Lease and then subleased by the University to its students[31] (iv) which such units are subject to deed-restricted rental caps at specified rates and other specified terms and conditions. The first of these four characteristics is fairly self-explanatory; these are simply the two types of developments in which a Graduate Student Anchor Tenant would be an appropriate use and, as such, could constitute a GSAP. The second characteristic has been discussed in the preceding Section and needs no further elaboration here. The third and fourth characteristics are discussed in the following paragraphs of this Subsection A through a description of the (1) number, (2) design, (3) cost and (4) leasing dynamics of the Graduate Student Anchor Tenant units.

1) Number of Graduate Student Anchor Tenant Units. As mentioned in the preceding Section III, for Article 80F to merit implementation GSAP development in Boston must hold the promise of providing an amount of graduate student housing that is sufficient to contribute to the overarching housing policy objectives in a meaningful way. That requirement, in turn, requires that each GSAP contain no less than a certain, specified number of graduate student housing units. In order to determine what that certain number might be, however, an investigation of a type not conducted in connection with this Thesis must be undertaken. Generally speaking, that investigation would have to identify the number of GSAP developments that would likely be delivered and what impact each of those developments would need to have to play a sufficiently helpful role in advancing the City's housing policy objectives. This complex economic analysis could be of tremendous value to the City – even if not conducted for the purpose of fostering the

[31] While a legal technicality not essential to this Thesis, it is worth noting that the University/graduate student sublease relationship would probably be best governed through the use of space licenses (versus actual "subleases", per se). Although somewhat different given that the University owns the building rather than being a Master Lessee in the building in question, an example of how this might work can be seen in the 815 Albany Street project discussed in some detail in this Section IV.

GSAP approach – but it is one falling outside the relatively narrow scope of this Thesis's focus on how the delivery of an appropriate number of units might be accomplished on a development-by-development basis. The number of Graduate Student Anchor Tenant units contained in the Subject GSAP developments explored in Subsection B and Section V is meant only to serve as an illustrative example without suggestion that that number, 102, would be the "right" one to serve the City's needs.

2) Design of the Graduate Student Anchor Tenant Units. Unlike the number of Graduate Student Anchor Tenant units each GSAP development would have to contain, the actual design of those units is not something which would necessarily need to be established with reference to Boston's housing policy needs. Generally speaking, if a proposed GSAP development contained the "right" number of graduate student housing – already leased to a University through a Master Lease – the actual design of those units would mostly be of little concern to the City vis-à-vis its housing policy objectives (assuming, of course, that that design did not render the project otherwise infeasible or contradictory to public policy). There is one caveat to that statement, however, relating to unit size.

It is important to bear in mind that whereas an end user (i.e. renter) of an apartment typically looks at the monthly rent for that apartment as a matter of cost relative to value (represented, for instance, in building amenities, locational attributes, unit finishes and size etc.) (Song and Knapp, 223), a developer will typically look at monthly rent as a matter of income per net square foot ("NSF")[32] of that apartment. This difference in perspective is of particular

[32] A quick note concerning "net" versus "gross" square feet could prove helpful at this point. Gross square feet ("GSF") is the measure of the entire size of a building that is located above ground (basements and underground parking are not included) and is the measure commonly used in discussing how much a building will cost to build, something explored in further detail in Section V. Net square feet, by contrast, is the measure of the size of each

consequence in the context of the Graduate Student Anchor Tenant units because it will likely have an impact on unit size. Specifically, because the rental income that these units can generate will be subject to significant limitations relative to market rate (discussed in the following Subsection A.3), a GSAP developer likely have to design these units to be quite small – even possibly "micro" – in order to ensure that the required number of units can be fit into a small enough part of the overarching building that the rental income per NSF of the entire GSAP project remains financially viable. This likely tendency to design these units to small specifications gives rise to two issues relating to policy considerations.

The first issue with designing small Graduate Student Anchor Tenant units has to do with existing BRA policy with regards to minimum apartment size. At present, BRA permitting guidelines allow for the development of units no smaller than 450 NSF for projects located in most parts of the city and no smaller than 350 NSF for projects located in the City's "Innovation District".[33] (Ross, "Boston backs development…"). In determining what role GSAP developments might play in the future development of housing in Boston, the BRA will have to establish a minimum unit size that fits within the Authority's city planning objectives while not creating a size restriction that would make GSAP development financially infeasible. One consideration – as explored in further detail in Section V – is the interplay between minimum unit size for these units and how much density relief might be needed should the City elect to use that permitting incentive to promote GSAP development. Plainly stated, higher minimum graduate unit sizes could translate into larger GSAP buildings; the BRA may have to weigh the

unit leased to renters and is the measure commonly used in discussing how much operating income and expenses the units of a building generate once built. Generally speaking, a building's NSF is equal to its GSF *minus* the building common areas and mechanical rooms.

[33] This statement reflects BRA policy in existence as of the end of the previous mayoral administration. Although the author did not uncover any evidence that this might be the case, it is possible that BRA policy concerning this matter of minimum apartment size may have changed under the current administration. Moreover, there is nothing actually *in* the Zoning Code restricting unit size – the limitations stated here reflect policy issued through a memorandum sent from the Director of the BRA to the BZC.

considerations informing such minimum sizes against its desire to contain the size of new developments.

The second issue relating to Graduate Student Anchor Tenant unit size has to do with end-user taste and housing preference. As compared to a University's undergraduate population which can be required to live in on-campus housing for at least part of their collegiate tenure, graduate students have free rein to select where they live.[34] For the purposes of establishing an appropriate design for these units, this means that they will have to be of sufficient appeal to the target renter market that such renters would freely elect to rent the units; if the units are built but not rented the GSAPs will play a less significant role in serving the City's housing policy objectives. The decision to rent one of the Graduate Student Anchor Tenant units will certainly be impacted by other attributes as well as unit/common area design such as location and monthly rent cost (the latter of which is addressed in Subsection A.3, below). However, the design of both the Graduate Student Anchor Tenant units and the common area amenities available to their renters will certainly play a significant impact in making those unit sufficiently appealing to Boston's graduate student population that they will elect to occupy the same.

Perhaps the best way to ensure unit appeal is to conduct a survey to determine the target renter market's housing preferences and needs. Generally speaking, renters in this age demographic have increasingly shown a willingness to trade unit size in favor for other building attributes (Ross, "Housing starved cities…"). Based on the assumption that "small is okay", then, the question becomes "what *type* of small". Boston University School of Medicine

[34] This comment reflects a generalized observation concerning prevailing University housing policy in Boston and is based in part on feedback from a senior faculty member at one Boston area University who is very familiar with such prevailing housing policy. The author is not aware of any *specific* restriction barring any University from requiring its graduate students to live in a specified location, but this Thesis assumes that Universities would not impose that requirement given its contradiction with "market standard" University policy and the impact that might have on the marketing (and, thus, financial) considerations.

("BUSM") and their development manager, Fallon Towle & Associates ("FTA"), sought to answer that very question in developing a 104-unit graduate student housing development located at 815 Albany Street and delivered in 2012, a project discussed in further detail in Subsection A.3.iii, below. By conducting a survey of its graduate student population, BUSM and FTA learned two facts that directly informed the project design: (1) medical students prefer not to live in a dorm-type of living arrangement with many roommates, viewing that as something they have outgrown, but those students often prefer to have one roommate versus a wholly private residence in order to live with someone with whom they can study; and (2) it is not uncommon for a medical student to be married to, or in a relationship with, another graduate student. In response to this feedback, BUSM and FTA designed every unit at 815 Albany Street to be a "convertible" two bedroom design where each unit has a common kitchen, sitting area and bathroom, and one bedroom slightly larger than the other. This design was adopted specifically for the purpose of appealing to both graduate roommate student pairs (who could each have a private bedroom) and married/coupled graduate student pairs (who could have a single bedroom and slightly smaller room to use, for instance, as a study). This approach appears to have been wildly successful: despite offering only a meager average 251 NSF per person (502 NSF per unit), the project has been fully-leased (with a waiting list) since its delivery.

Using 815 Albany Street as an example, however, is not to suggest that those results would be easily reproducible and the prospect of conducting a survey of Boston's graduate student population faces some considerable difficulty. While the best approach would be to have an outside surveyor – an expert in the language of housing demand, needs and preferences – work with a consortium of Universities to survey their students, coordinating with the

University stakeholders to provide access to their students will be time-consuming and politically layered. More importantly, even if the relevant field of survey subject could be accessed, there may not be a "one size fits all" design solution for "graduate students" broadly defined. According to an expert in this field, "previous studies have shown broad differences in graduate student needs and preferences based on demographics such as age, marital/partner status, and international background, as well as academic-specific factors such as length of academic program and daily time schedule."[35] As an interesting example showing how differences in needs and preferences can lead to different unit or building design programs, in one study conducted by that same expert, law students expressed a preference for unit design that incorporates an increased amount of hanging space in closets (interview suits) and storage space (books) that other types of graduate students might not share.[36] For GSAP development, then, it may make sense to adopt a similar approach to unit design, tailoring the Graduate Student Anchor Tenant designs to meet the needs of the targeted priority student population for the Master Lessee.

Despite the challenges facing the prospect of conducting this type survey, it would be an important and valuable one for the City, private development community and Universities to collaboratively support. As suggested above, from the City's perspective there is value in this survey that could result in optimal unit design to ensure that students would actually occupy those units versus, e.g., comparably priced options elsewhere in the City which comprise the traditional "workforce housing" discussed earlier in this Thesis. For the Universities and private developers, the ability to optimize the appeal of these units through their design can reduce the risk profile of that Master Lease arrangement. For the Universities, the relationship between

[35] Conversation with demographer and survey researcher Rena Cheskis-Gold, Principal of Demographic Perspectives, LLC. Proprietary research studies from Demographic Perspectives, LLC.
[36] Id.

optimized design appeal and risk is clear: one of the Universities' key concern – that it will have master leased units that it cannot sublease to its students – can be addressed by making those units as appealing to those students as possible. For the private developer, understanding what the target graduate student renter needs – and, more importantly, *doesn't* need – in the design of their unit helps reduce the risk of having to deliver a Graduate Student Anchor Tenant by increasing the efficiency of those units' design. More efficient design translates into a smaller block of the GSAP being subject to the deed-restricted rent caps, thereby serving the project's financial feasibility. As an example, based on feedback from his "millennial" target renter market, a micro-unit developer in Seattle provides only limited kitchen appliances in his renters' units in favor of enhanced common kitchen space. A studio unit in that building comprises only a tiny 190 NSF and at $880/month is able to command a $4.63/NSF/month rent. (Koch). In other words, optimized design in that instance helped both limit the size required to house a resident while at the same time yielding very healthy income per NSF.

3) Cost of the Graduate Student Anchor Tenant Units. The overarching objective informing the cost at which the Graduate Student Anchor Tenant units should be made available to Master Lessees' graduate students is the same objective informing its design: to make the units sufficiently appealing to the graduate student population that they would elect to live there versus other places in the City, the freeing up of which would help advance the City's housing policy objectives. Cost, however, is going to be a more significant consideration for the target renter population which will typically have limited monthly income (if any) and for whom, therefore, rent cost is a more significant factor for that population in making its housing elections

than it might be for others.[37] Given that, by definition, GSAPs are new construction development, these rents will almost certainly have to fall well below the prevailing market rental costs for other new construction apartments in Boston which, as discussed earlier, tend to reflect pricing inaccessible to all but the City's high income residents. (See Section II.A). While that fact is fairly clear and easy to understand, there are three subsidiary issues related to these below market rents that are a bit more complicated.

3.i – Establishing an Appropriate Rent. The first issue that needs to be addressed in establishing a below-market rent cost for the Graduate Student Anchor Tenant units is the identification of what, specifically, that rent should be. As noted above, the ultimate objective is to make this rental cost serve as a "draw" for the target renter population. The challenge is not only identifying what rent the target market *can* bear, but further what that market *will* bear. Ideally, these rental costs will be set at a level that is just low enough to draw graduate students but just high enough to minimize the need for incentivization of the GSAP development to ensure its financial feasibility (discussed in further detail in Section V). Survey data could doubtless serve to help identify this level of "just low enough" rent. However, it should be noted that there is almost certainly no single rent level that would be applicable to every part of the City, nor to every type of GSAP development. As noted above, the rent that a market will bear is impacted by a variety of factors, a significant one of which is a unit's locational attributes. It is easy to see, for instance, why a graduate student might be willing to pay more to live in a unit located close to public transportation in one of Boston's more desirable neighborhoods (assuming, of course, that that rent cost remains within his or her budget).

[37] For a detailed economic discussion of the relationship between specific renters' preferences and rent cost, see DiPasquale and Wheaton, 24-26, 44.

In setting this "just low enough" rent, it will also be important to evaluate *how much* of a particular graduate student renter market a given GSAP development hopes, or needs, to capture. For instance, one recent survey of some Boston area graduate students concluded that 25% of that population could afford a monthly rent at a certain price point, but that only 5% of that same population could afford a monthly rent cost set $1,000 higher. That latter, higher price point was closer to prevailing rents in the relevant market than the former, but still below that prevailing rate nonetheless. In tailoring the rental prices of the Graduate Student Anchor Tenant units, survey feedback such as that described above can be used to ensure that prices aren't being set too low as to unfairly handicap the GSAP's financial performance while at the same time are not being set too high as to provide an insufficient release valve on the impacted rental markets by appealing to only a small percentage of the relevant graduate student population.

Equally important in establishing this rental cost is an understanding of the impact which a given GSAP development's specific characteristics will have on the cost of delivering that building. For instance, building more or "fancier" amenity space would cost a GSAP developer more money due to lower rentable NSF generating income and to increased material costs, respectively. Furthermore, the location of a GSAP development will tend to impact that building's cost to deliver considerably. As explored in Section V, developing a GSAP on publicly-owned land provided to the developer at reduced (or zero) land cost will clearly be less expensive than developing that same building on privately-owned land located literally across the street. Moreover, the sale price of private land cost can vary widely; the estimated average $1.83 million per-acre cost to acquire privately-owned land located near the Target Parcels (as described in Section IV.B.5) is less than 10% of $19.26 million per-acre cost commanded by

development parcels elsewhere in the City.[38] As with the question of establishing the "right" number of Graduate Student Anchor Tenant units to be contained within each GSAP, establishing the "right" rent price to be set for each such unit will require a complex analysis of a sort not undertaken in connection with this Thesis. At the same time, the time and expense associated with the performance of that analysis would doubtless prove equally valuable to the City, Universities and developers as the analyses discussed above, and for largely the same reasons.

3.ii – Safeguarding against abuse. The second issue that needs to be addressed in establishing the below-market rent at which the GSAP units should be offered is a mechanical one relating to how those rent caps should be established and, as needed, enforced. Just as it will be important to ensure that the Article 80F process is not perceived, rightly or wrongly, as a mechanism that subsidizes private land sellers (see Section III.B), it will be equally important to ensure that it not be perceived as subsidizing the Universities. Indeed, the need to avoid that latter perception may be even more acute as one could argue that the Universities' failure to provide housing for their sizable graduate student population – including by doing so on their (property tax exempt) campuses – is a significant reason that something like GSAP development became necessary in the first place.[39] Those who may harbor that perspective could further argue that providing this housing as an amenity to the University constitutes an unfair enrichment of those Universities by providing them with a previously unavailable marketing tool. One wishing to counter that argument could point out that even if the housing option is provided for University use as a "net zero" proposition – i.e. one where the University Master

[38] This $19.3/acre figure reflects a $12.4 million purchase price for 0.64 acres located on Boylston Street in the Fenway neighborhood.

[39] This concern has been raised here based on feedback provided to the author by an interviewee while conducting research related to this Thesis; its inclusion here should not be read to suggest that personal bias or perspective of the author.

Lessee is obligated only to pay Master Lease rent equal to the rental cost of all Graduate Student Anchor Tenant units and nothing else (a matter discussed below and explored in further detail in Section V) – the fact remains that by signing the Master Lease the University is assuming a lease-up risk which it formerly did not have, and one which it is under no formal/legal obligation to assume. While there are merits to both of these arguments and this topic provides fodder for an interesting debate, that is a public policy debate into which this Thesis will not venture further.

Irrespective of whether the Universities can be deemed to receive the benefit of the public subsidy associated with GSAP development, it seems more certain that they should not be able to *profit* from that arrangement through their subleasing of the Graduate Student Anchor Tenant units to the end user students.[40] There are two legal mechanisms which could be implemented towards that end. The first is the Master Lease itself, a document in which the Master Lessee could make the binding contractual commitment – a so-called "negative covenant" – not to sublease the space for rents in excess of those it pays under the Master Lease. As with virtually every negative covenants, this one would likely be paired with a remedy which the developer-cum-Master Lessor would enforce. However, the nature of the Master Lessor's incentives to enforce those remedies against the Master Lessee – who is, after all, paying to the Master Lessor

[40] That said, there is a possible argument to be made here that specifically because the Universities are taking on any level of risk (i.e. lease up risk) not only *should* they be able to reap some risk-adjusted return (profit) from that arrangement, they *have to* be able to make that level of return or they will not enter into these Master Lease arrangements. At the same time, one could counter that they are indeed so profiting – albeit indirectly – by being able to offer this housing amenity in courting (or retaining) graduate students. (The relationship between risk and required return will be discussed in some further detail in Section V.A.7.i) Abstaining once again from taking sides in a policy debate, for now the author would simply note that the passage of an amendment to Article 80 which effectively "gives" housing to Boston Universities while also allowing them to directly profit from the subleasing of that housing would likely be very difficult to justify in a public forum and, as such, will not be considered further.

the agreed-upon rent – might not be a sufficient safeguard against this type of abuse, suggesting that a secondary line of defense might be in order.[41]

The second mechanism which could be implemented to ensure that Universities are unable to directly profit by subleasing the Graduate Student Anchor Tenant units is a deed restriction, recorded with the Suffolk Registry of Deeds, impacting that particular component of the overall GSAP development. It would likely be easiest to simply record the Master Deed versus drafting and recording a separate document, but the specific form that the recorded instrument is not the matter of importance underlying this concept; the important matter is ensuring that a public body – most likely the BRA – be able to enforce the rental caps applicable to these units. In Boston this type of arrangement is currently in place with respect to the deed-restricted affordable rental units where recorded Affordable Housing Agreements endow the BRA with oversight and enforcement powers.[42] Using that *exact* type of mechanism, however, might not be the best approach in the GSAP context. In discussions concerning potential middle income housing solutions that would involve increasing the amount of deed restricted units in a new development (albeit at higher rent limits than the current 70% AMI level), representatives of the private development community consistently maintain that increasing their ongoing certification and compliance requirements would tend to make the development of those project unappealing. Similarly, representatives from the non-profit development sector note that they often have to keep full-time employees on their payrolls *just* for the purpose of handling the paperwork associated with ongoing compliance requirements applicable to their subsidized

[41] This is not to suggest that Universities would so abuse this arrangement. Rather, this part of the exposition is targeted at establishing a framework to best insulate the public interest from the possibility of any misuse of the public incentives offered in connection with GSAP development – and, as such, possibly make the adoption of Article 80F more politically tenable.

[42] In the event that the Master Lease were to serve as the record document, the public body's enforcement rights could be secured by attachment of an agreement between the developer, University and such public body as an exhibit to the Master Lease. This approach is exemplified in the process by which deed-restricted condominium units are conveyed in Boston: each deed has an Affordable Housing Agreement attached thereto.

portfolios; one developer of tax credit-subsidized units reported needing eight such full-time employees. Subjecting the Graduate Student Anchor Tenant units to ongoing compliance requirements entails a direct overhead cost and will tend to negatively impact the attractiveness of developing GSAPs so a balance would need be struck between public policy concerns and private incentivization. This Thesis does not purport to being able to identify that balance and raises this matter herein for the sole purpose of identifying the issue for the consideration of its audience.

3.iii – Identifying a level of University participation. The final issue associated with the rental price set for the Graduate Student Anchor Tenant units relates to the level of direct financial contribution a University Master Lessee should be expected to make in connection with the satisfaction of the Master Lease payment obligations. The low- (or no) income graduate students who the rent caps are designed to attract out of other housing in the City will have definite, unavoidable financial limitations. As suggested in Subsection A.3.i, above, this group's monthly cost burden related to living in a GSAP development should be established with particular reference to those limitations. The fact that the target renter's monthly budget shouldn't be overburdened, however, does not mean that rent payments under the Master Lease themselves need be so limited; those rent payments could represent an amount equal to the rent paid by the graduate students to the Universities *plus* an amount funded directly by the Universities themselves. Indeed, having Universities augment the monthly rent that a graduate student renter could pay may be required for GSAP developments to meet financial feasibility criteria (a matter explored further in Section V). For now, it is worth noting some of the reasons why Universities might be inclined to make these payments despite being under no formal/legal

obligation to do so. Once again, the example of BUSM's graduate student project at 815 Albany Street is instructive.

The development of 815 Albany Street was spurred by three primary motivations, all of which – one would hope – would be shared by the City's Universities in general. First, BUSM wanted to help alleviate the high cost of pursuing a medical education, noting in particular that students graduating from these programs are often saddled with enormous debt. Second, BUSM's decision to provide a group residence for its graduate students was in some ways a response to various studies indicating that co-location among graduate students has a direct positive impact on those students' academic performance. Finally, BUSM was motivated by a desire to remain as competitive as possible in attracting the best and brightest medical students and felt that the provision of safe and affordable housing in close proximity to the school facilitates would play a significant role in making their program attractive to that group of applicants.

Given that safe and affordable group housing for graduate students can be of significant benefit to a University's students and to the University itself, BUSM's perspective is that that if there was student demand and if the economics worked out every University would house all of its students. To make the economics work out at 815 Albany Street, 1/3 of the equity required to complete the development was provided by outside donors in response to a capital campaign with the remaining 2/3 of the required equity being funded by BUSM. Importantly, it should be noted that BUSM could have provided 100% of the required development capital itself through debt financing. However, the reduced debt service costs enables BUSM to offer a monthly housing grant to 815 Albany Street residents in order to help offset some of the cost of renting an apartment there, currently set at $1,150 per person per month. As long as a graduate student is in

the medical program and meets certain other requirements, including a needs-based test, they are eligible for a monthly housing grant in the amount of $250 per person, funded by BUSM directly, which reduces their monthly rent cost to $900.

In sum, 815 Albany Street serves as a prime example of how a University can tailor its capital[43] and budgeting plans with respect to a certain graduate student housing solution in order to best serve the interests of its students and itself. Within the context of GSAP development, those plans would be reflected in the terms of the Master Lease and, as with 815 Albany Street, might include a monthly rent payment to be funded by the Master Lessee directly.

4) Leasing Dynamics of the Graduate Student Anchor Tenant Units. In general, the Master Lease will serve the basic purposes of all lease agreements between a landlord and tenant and establish the important terms and conditions applicable to the use of the units by the Master Lessee and maintenance of the same by the Master Lessor. Primary examples of these terms and conditions include the amount and timing of rent payment, use restrictions, maintenance obligations,[44] and identification of remedies arising in the event of default. The Master Lease would be somewhat distinct from the typical landlord-tenant agreement, however, in that a particularized approach would have to be adopted to establish the rights and/or obligations of the various parties – including the City – upon the expiration of the Master Lease term.[45] Indeed, from the public policy perspective this will be one of the most significant issues addressed in the Master Lease, an observation underscored by the controversy surrounding the private

[43] Note that the matter of having a University fund part of the up-front capital requirements of GSAP development is discussed in fn.97.
[44] See Section V.A.4 for further discussion on this point.
[45] In order to simplify this discussion, the "Master Lease" concept here is being used as representative of an agreement to which the City, Universities and developers might be parties. In practical terms, however, the City might not *actually* be a party to the Master Lease and the discussion hereinafter should be viewed as conveying a concept versus specific form of contractual documentation.

development of Northeastern's East Village dormitory which was focused in large measure on concerns that that facility might be converted to other uses in the future beyond the control of the University. (Bisnow, "Private Dorms Next?"). Given the significance of this concern it is one which merits further exploration here.

On the most basic level, the Graduate Student Anchor Tenant component of a GSAP development represents a specified housing product type delivered to serve a market-context-specific need for a specific period of time. Significant issues arise at the lapse of that specific period of time, however, if that market-context-specific need no longer applies and/or the appetite for that specific housing product type has materially evaporated. The City will doubtless want to avoid the promotion of a merely temporary solution at the cost of providing public permitting benefits. At the same time, the private interests of the Universities and developers might be such that they are not willing to shoulder the risks that they would need to shoulder in order to avoid the possibility of GSAPs providing more than merely temporary solutions – or, at least, they would likely be unwilling to do so without some form of compensation. The City has witnessed this dynamic first-hand in the context of publicly-subsidized but privately-developed low-income housing development where the developer agrees to maintain low income appropriate rent caps for a 30-year period. In the case of certain developments of this nature, the 30-year period between the effective date and lapse of those agreements witnessed significant changes to the Boston residential market. As the expiration date of those agreements approached, the City and developer were forced to engage in a contentious negotiation which pitted the private developer's profit-oriented motivations against the City's interests in preserving low-income housing (and, in many ways, the character of the neighborhood which houses the same). Absent contractual obligation, these negotiations –

which, it should be noted, were ultimately successful – required an otherwise unnecessarily combative use of negotiating leverage.

In order to avoid the contentiousness of this type of *ex post* negotiating dynamic, the Master Lease should take an *ex ante* approach and strike a balance between the myriad interests impacted by that agreement. To be sure, there is no clear way that this balance could be best struck and in many respects the outcome will likely be impacted by the amount of risk which each of the three parties has taken with respect to the GSAP development. These levels of risk will be discussed in further detail – and, to the extent possible, quantified – in Section V, but for the instant purposes it is worth noting that any GSAP development will likely entail the assumption of some level of risk by all of the parties involved and that at a certain point that risk might become so great for any of the three that the GSAP development becomes infeasible.

Although by no means the best way to strike the requisite balance of risk allocation – nor necessarily one that would work – one illustrative approach in particular is worth exploration here. Under this approach, the parties would agree that (i) the University would provide some level of housing grant/direct payment to the Master Lessor during the term of the Master Lease, a term which the University would have the option to extend, (ii) the developer would agree to subject the Graduate Student Anchor Tenant units to rent caps for a longer period than the Master Lease term (by way of example, if the GSAP were developed subject to a ground lease on City-owned land, that period might be coterminous with the term of the ground lease), and (iii) the City would provide the developer with some form of compensation upon the lapse of the Master Lease.[46] For the University, this approach would provide the flexibility of electing to extend the Master Lease term in exchange for an assumption of financial liability with respect to the Graduate Student Anchor Tenant units during that term. For the developer, this approach

[46] A special note of recognition is owed to Eleanor White for insight into this concept.

would provide some measure of compensation to offset the loss of the developer's option value with respect to those units.[47] For the City, this approach would provide an assurance that at the lapse of the Master Lease the rent on the Graduate Student Anchor Tenant units would not jump (and price its intended tenants back out into the housing stock which these GSAP developments were designed to open up for middle-income tenants) in exchange for the compensation discussed above.

As with many important issues, this Thesis cannot definitively identify a prescription for how the dynamics of the Master Lease should be tailored to address the relevant issues related to the allocation of risk among the parties to that agreement. Nonetheless, the public and private interests impacted by the Master Lease will almost certainly need to be taken into account in establishing policy around GSAP development and have been identified herein as a matter of consequence to the possible success of the GSAP approach.

[47] It is not clear what form that compensation should take – nor whether it should be conveyed at the time of the Master Lease lapse or in the Article 80F stage – but some possible examples include tax incentives or, for property subject to a ground lease, a reduced ground lease payment. Whatever form the compensation takes, however, it will need to adequately compensate the GSAP developer for agreeing to give up what is being referred to here "option value". While somewhat outside the parameters of this Thesis' focus, a few words concerning option value are appropriate here. First, it is important to bear in mind that by subjecting the Graduate Student Anchor Tenant units to deed caps which will remain in effect after the lapse of the Master Lease a GSAP developer is agreeing to forebear from taking action he or she would otherwise have the right to take in order to maximize the value of his or her property. In particular, the prospect of long-term deed caps involves two such limitations in particular: raising the rent on those units and/or redeveloping that part of the property (assuming that the deed restriction would also bar this action – a safe presumption given that redevelopment could render the rental cap meaningless). At the lapse of the Master Lease, prevailing market conditions could have undergone significant changes such that being able to rent at market rates and/or redevelop the property for a different use at that point could be of tremendous value. To a certain degree the GSAP developer will have already recouped some of that potential lost value from the onset of the development: it was the agreement to subject units to the deed restriction that enabled him or her to benefit from an otherwise unavailable permitting process in the first place. Depending on how much value the City and other participants in the Article 80F process are able and willing to give at that point will dictate what further compensation, if any, a GSAP developer must be able to access for longer-term restrictions. This, of course, gives rise to a host of complicated issues related to establishing the magnitude of the so-called "opportunity costs" many years down the road relative to the benefits provided during the Article 80F. Although more directly applicable to valuation of options related to the development of raw land, the so-called "call option model of land value" provides some helpful insight into unpacking this issue. (Geltner et. al. 706 *et. seq.*). Among other things, this subset of broader options valuation theory seeks to establish the value of a "landowner's option to demolish and/or redevelop any existing structures on [his or her] land." (Geltner et. al. 707). To be sure, this is a somewhat complex and – as with all forecast valuation – speculative theoretical approach. Nonetheless, this brand of investment valuation theory may hold some helpful lessons in the event that the City desires to pursue the type of arrangement described herein.

Subsection B: The Subject GSAP

Having described the composition of prototypical GSAP developments in the foregoing Subsection A, this Subsection specifies the characteristics of the Subject GSAP. The Subject GSAP, and Target Parcels on which it might be situated, will serve as the basis for the financial feasibility analysis set forth in Section V.

The Subject GSAP is a multi-family development with a Graduate Student Anchor Tenant containing 102 micro-units and comprising approximately 63,000 GSF of the larger Subject GSAP building and subject to a 15-year Master Lease. Other characteristics of the Subject GSAP building will change as the financial impact of different forms of incentivization are examined in the following Section V. In particular, the size of the entire building will change with density relief of varying degrees, and the "as of right" Subject GSAP located on one Target Parcel is larger than the Subject GSAP located on the other given the applicable zoning restrictions. In addition to the number of units and size of the Graduate Student Anchor Tenant, the characteristics of the Subject GSAP discussed below will remain constant throughout.

1) Graduate Student Anchor Tenant Unit Breakdown. The 102-unit Graduate Student Anchor Tenant will be comprised of the units shown and described below. All of the images presented below were prepared by Studio MAUD.

Studios: The most common unit type in the building, numbering seventy (70) per Graduate Student Anchor Tenant, is a studio of 398 NSF with a layout shown in Figure IV.1. These units are intended for use by one graduate student.

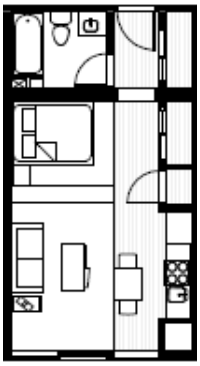

Figure IV.1 - Studio

"Studio Plus" units. The least common unit, numbering twelve (12) per Graduate Student Anchor Tenant, is a studio unit that shares a common area with another adjacent studio unit, each half having an allocated 598 NSF of space. In addition, these units each have private terraces as well as a common terrace off of the shared common space. Each Studio Plus unit is intended for use by two graduate students (i.e. four students per unit pair) and has been priced accordingly. Two (2) "Studio Plus" units are shown in Figure IV.2 along with the shared common space.

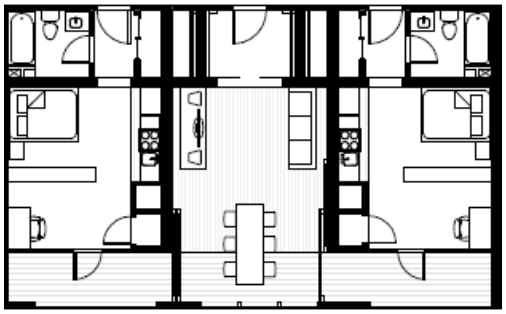

Figure IV.2 – "Studio Plus" Pair

Three-Bedroom Units. Finally, each Graduate Student Anchor Tenant contains twenty (20) three-bedroom units of 827 NSF each. These units, exemplified in Figure IV.3, are intended for use by three graduate students and have been designed to maximize efficiency.

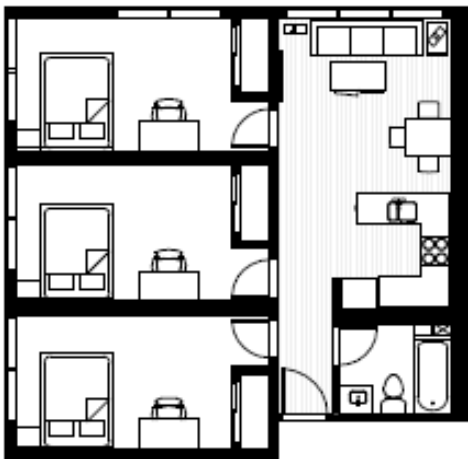

Figure IV.3 – Three-Bedroom Unit

The allocation has been weighted towards studios given a generalized observation that graduate students might tend to prefer private living space. The Studio Plus design is intended to accommodate either married graduate students for whom a shared common area, but private living area, is appealing. Alternatively, these units have been designed with private terrace space in order to appeal to non-married graduate students who might be willing to pay the higher rental amount in exchange for this type of amenity.[48] Finally, the allocation of 3-

[48] There might be some policy considerations to bear in mind on this matter – the question of whether a GSAP should house a student who can afford the rent set for two students is a philosophical one as much as it is one of practical economic consequence. For the instant purposes, this approach has been adopted to maximize marketability of the units only.

bedroom units is intended to maximize the housing block's efficiency by housing those students who might not require a private, separate residence.[49] Please refer to Design Exhibit 2 for the complete studioMAUD floor plans showing how the Graduate Student Anchor Tenant is laid out on a floor-by-floor basis.

This allocation represents a plausible approach to micro-unit development that is consistent with some prevailing market practices. However, as noted in Subsection B.2, above, this allocation might not be the ideal one for delivery to all graduate student populations. Furthermore, the Graduate Student Anchor Tenant floor plans were designed for the purpose of maximizing the number of housing units given the overarching production capacity public policy objectives. As a result, however, the Subject GSAP has relatively little amenity space (1,842 SF split between the ground floor and roofdeck), something which might need to be augmented to attract renters. Moreover, depending on the specifications to which these units need be constructed, this allocation may prove overly expensive as more individual units can result in more kitchens (and *will* result in more walls) with associated cost ramifications. As suggested in said Subsection B.2, further research would be needed to determine whether this allocation, suggested in this Thesis for illustrative purposes only, would represent an optimal design.

2) Rental Cost. Given the novelty of this housing type – one for which there is no precedent in the City of Boston – establishing a precise rental rate for these units is challenging. Moreover, without further research into the off-campus graduate student rental market, it is

[49] After extolling the approach adopted at 815 Albany Street and noting the describing of that project, it is worth noting that a similar 2-bedroom suite design was not adopted for the Subject GSAP design based on discussions with micro-unit developers who suggest that the market *for that product type* tends to prefer the privacy of a single dedicated living space. Additionally, the preference for 2-bedroom suites was described as being a medical-student-specific matter. That said, the market for these Subject GSAP micro-units may require a different configuration; indeed, that market might include the aforementioned medical students. This simply underscores the importance of conducting survey research to help resolve these matters.

challenging to gauge the relevant budget constraints. Nonetheless, this Thesis has established a monthly rental rate of $900 per person based on the 815 Albany Street example.

While 815 Albany Street project is different from the Subject GSAP in some important ways – most significantly because (i) it is comprised entirely of 2 bedroom (shared) units and (ii) is a student-only building located on University-owned property – it is a useful reference for the following key purposes: (a) the rents are expressly "structured dependent on prevailing market conditions" applicable for the demographic (graduate students) living in the same submarket (Dudley Square area, see Subsection B.5 below); and (b) 815 Albany Street's 11.5 month space license – and nearly 95% occupancy – indicate that graduate students can be relied upon to enter into full year space licenses notwithstanding the traditional 9 month length of the academic calendar.

Behind the monthly rent cost, of course, lie certain realities attendant to this specific building that will not be present at the subject GSAPs. Exemplary of the difference between 815 Albany Street and the subject GSAPs are the different types of tax liabilities and operating overhead which the University owner of 815 Albany and the private owner of the subject GSAPs would have with respect to the leased units, significant features that will impact end user rental costs. For instance, BUSM is able to capitalize on certain economies of scale in the operation of 815 Albany Street by handling property and asset management and the provision of security through the University's existing capacity the cost of which is spread across the University's considerable urban university campus. Moreover, the level of University financial participation will not necessarily be uniform in all cases, and is something which directly impacts the rental cost at 815 Albany Street in ways that might not apply to the Subject GSAP. In any event, 815

Albany does present a very clear price point that the relevant market has been deemed able to afford.[50]

3) Multifamily vs. Mixed-Use Development. The Graduate Student Anchor Tenant component is contained within a larger multifamily development, the balance of which would be built for rent at market rates. Because the focus of the Thesis – and much of the public discussion to which it relates – is focused on finding housing solutions by development of more housing units, the Subject GSAP is a multifamily (versus mixed-use) development. That said, the GSAP concept is one which could certainly be incorporated into a mixed use development, and indeed certain urban design objectives might favor that approach. While that concept is not explored in this thesis, for the purpose of thinking of how that might play out please note that commercial (retail) rents in the Dudley Square area are presently at approximately $24/SF which would equate a $2/SF residential rent, lower than the building average. (Larson).

4) Market Rate Housing. Just as 815 Albany Street played a significant role in informing this Thesis' assumptions concerning, and approach to, the Subject GSAP Graduate Student Anchor Tenant units, another project located in very close proximity to the Target Parcels informs this Thesis' approach to many of the Subject GSAP's other characteristics. This latter project is a proposed 1.6 million GSF mixed-use project known as "Tremont Crossing" and (to be) located southwest of the Target Parcels on Tremont Street. (Tremont Crossing (P-3) PNF). While the scale and scope of Tremont Crossing are such that the entire project would bear little resemblance to the Subject GSAP, the 240-unit, 200,000 GSF multifamily component of

[50] It should be noted that Rent payable under the Master Lease would be divided into Base Rent and OpEx Rent and subject to different annual increases as explained further in Section V.A.4.

Tremont Crossing provides a very useful guide with respect to the Subject GSAP's market rate units' breakdown, dimensions and rental costs. (Id.). In particular, these the market rate unit assumptions built into the design of the Subject GSAP are based on the highly nuanced rental market study included in public documents filed in connection with Tremont Crossing's Large Project Review. (Id.). These assumptions are all set forth in the Testing Model described in Section V.

5) Location of Subject GSAP. The location of the Target Parcels is shown in Figure IV.4, below. The first parcel is a publicly-owned, 1.31 acre parcel of land known as "Parcel 9". ("Request for Proposals; Parcel 9 + Parcel 10, Roxbury Massachusetts"). The Second parcel is a larger 2.8 acre parcel located across Washington Street from Parcel 9 and privately-owned by the Smookler Nominee Trust (the "Smookler Lot").

Figure IV.4 – Location of Target Parcels

Given the size difference between the two respective Target Parcels, a partial section of the Smookler Lot, roughly the same size as Parcel 9, has been identified for the illustrative

purposes of this Thesis in order to enables an "apples-to-apples" comparison of how the Subject GSAP might be financially feasible on private versus public property located in the same area.

The specific location for the Target Parcels was selected for a few reasons. The first reason is the most significant one for the purpose of evaluating how the City might be able to incentivize private development of GSAPs: as alluded to above, the two sites enable an examination of the way that providing City land at low, or no, cost might impact development financial feasibility. These two parcels represent a somewhat rare instance in Boston of a centrally-located, publicly-owned parcel lying undeveloped adjacent to a (largely) undeveloped, privately-owned parcel. As such, using these two parcels as a basis for a feasibility analysis permits realistic evaluation of what the economics of a particular development might look like on two otherwise similar parcels where the City can only control the land cost for one.

In addition to the foregoing analytically-significant reason underlying the selection of the Target Parcels' location, that selection was informed in many ways by the way that characteristics of the area surrounding the Target Parcels fit well with the overarching needs and objectives GSAP development. Perhaps most obviously, the Target Parcels are situated in close proximity to a significant Northeastern University facilities campus located to the Target Parcels' north and northeast. In addition, the area surrounding the Target Parcels has a characteristic which might prove a prerequisite for the development of any GSAP: proximity to public transportation. Specifically, the Target Parcels are situated near the MBTA's Ruggles Orange Line stop and Melnea Cass Boulevard Silver Line stop. Finally, the Target Parcels are located within walking distance of amenities in the (ever improving) Dudley Square and South End neighborhoods.

There is one further characteristic of the Target Parcel's location that makes them an excellent candidate for understanding how GSAP development might be used as a broader city planning tool by the City. As will be discussed in detail in Section V.C, the prevailing market rate rents in the relevant submarket make development of large-scale multifamily projects of the sort needed to help mitigate the City's housing supply shortage very hard to justify in that area given the cost of construction. Introduction of the Graduate Student Anchor Tenant component, however, enables this impediment to be avoided by boosting the building-wide rent per NSF revenues and providing for a financially feasible development project – one which includes a market rate housing component where such product, by itself, could not realistically be built. Put another way, the very *fact* of the Master Lease component of this development makes the entire development viable, exemplifying how the graduate student housing component of the larger development effectively acts as a kind of financing mechanism, discussed early in this Thesis. For the City, this observation holds a tremendous amount of potential because it means that much needed development can be fostered where it formerly would have been impossible. Further, one need only consider for a moment what the delivery of a vibrant, generally "Millennial"-aged renting population as a "bridge" between Dudley Square and the red hot South End neighborhoods might mean for both parts of the City to understand why the City might want to see development of this type used in other areas targeted for urban redevelopment. This matter will be discussed further in Section V.C and in this Thesis' Conclusion.

6) Design of the Subject GSAP. In addition to the floor plans shown on Design Exhibit 2, important characteristics of the studioMAUD design concept for the Subject GSAP design are shown in the Design Exhibits attached hereto. Design Exhibit 1 presents the "as of right"

designs for a Subject GSAP located on each of the respective Target Parcels. In addition to providing a sense of how the various components of the Subject GSAP might be laid out within a given development, each of these designs are crucial to Section V's financial analysis as they represent the type of massing which might actually be built on each parcel. As such, these designs enable the use of reasonable massing assumptions in the financial feasibility analysis. Design Exhibit 3 conveys a conceptual studioMAUD rendering of a GSAP to help the reader understand how this type of building might fit within the Target Parcel's neighborhood "feel". Design Exhibit 4 and Design Exhibit 5 serve the same important functions as Design Exhibit 1 but these two exhibits represent the massing, composition and site plans for two "workable" solutions representing financially feasible developments on each respective Target Parcel.

Section V – Financial Feasibility Analysis

Having described the composition of a typical GSAP and the proposed permitting mechanism to bring them to the Boston residential market in the preceding sections, this Section V is devoted to an exposition of the GSAPs' financial characteristics. Specifically, this section explains the results of an iterative process through which the financial feasibility of GSAP development was tested on Parcel 9 and the Smookler Lot, respectively, if the same were to be constructed under current market conditions. In order to conduct this testing process, a development pro forma model (the "Testing Model") was prepared to illustrate the ways that GSAP development might become financially feasible based on three key investment return metrics common to real estate development feasibility analysis: project-level net present value ("NPV"), equity-level return on cost ("ROC") and equity-level profit margin (the "20% Test"). Subsection A will describe the Testing Model and the basis for the assumptions which have been inserted into it. Subsection B will then explain the results of using the Testing Model to evaluate the financial performance of the Subject GSAP if constructed "as of right" within existing permitting conditions on each of Parcel 9 and the Smookler Lot. After showing why such "as of right" development would not be feasible, Subsection B will then explore the full impact which each of the myriad forms of possible incentivization might have on helping GSAP development on each site pass the three feasibility tests described above. Finally, Subsection C will give one example of a potential GSAP development on each parcel which meets these three threshold financial feasibility requirements through a mix of moderate levels of different types of incentivization in order to illustrate how the Article 80F process might be implemented to successfully yield GSAP development.

Subsection A: Describing the Testing Model.

At its most basic level, the Testing Model was created for the purpose of generating a simple "Yes-or-No" answer to the question of whether the Subject GSAP would be financially feasible. The answer to this question is crucial to the value of this Thesis for the following reason: any GSAP which the Testing Model shows to be financially feasible represents, by definition, a project that the private development community would be likely to actually develop under the conditions reflected in that Testing Model's inputs. In particular, this assertion rests on the Testing Model's use of a realistic – if perhaps somewhat conservative – "hurdle rate" assumption described in further detail in Subsection A.7.i, below.

The Testing Model has been divided into the following five spreadsheet components: (i) a Summary & Assumptions sheet making the Testing Model as easy to manipulate and read at a glance as possible; (ii) a Unit Breakdown showing the types of units contained within the GSAP development, their rent levels and the project's parking allocation; (iii) a Construction Budget showing the cost inputs for the construction of the GSAPs in their different iterations; (iv) a sheet showing the Annual Cash Flows at the Property level to reveal the net impact of money-in and money-out of the GSAP; and (v) an Annual Cash Flows page revealing what the University's direct financial contribution, if any, looks like on an annual basis. Please refer to Financial Exhibit 1 for a sample of the Testing Model.

With very few exceptions, spreadsheets (ii) through (v), inclusive, show the outputs that attend changes made to the Summary & Assumptions sheet. For instance, increasing the number of market rate units in the GSAP will increase the units shown in sheet (ii), impact sheet (iii)'s construction budget by adding further GSF[51] to a budget calculated on a per GSF basis (and in some cases that increase in GSF will involve a change from one building type to another,

[51] "Gross Square Feet"; see fn.32.

significantly increasing the per GSF cost measure itself), and have numerous impacts on the sheet (iv)'s Annual Cash Flows. The Testing Model, in other words, is fully automated with all of the input manipulation taking place on the Summary & Assumptions page. Given the wide-ranging significance of the inputs on this Summary & Assumptions page, certain of the items identified as "Exogenous Assumptions" by that sheet's Legend are explained below, starting from the sheet's top left hand corner and working towards the bottom right hand corner column-by-column.[52] Certain line items identified as Incentive Input/"Toggle" and Master Lease Term variables will be explored in further detail in Subsection B.

Excel copies of the Testing Model can be found by following this link:

https://www.dropbox.com/sh/c3t9mu23np76p1d/AADdKRPomvIm2gHNXT9acAvKa

1) High-Rise/Mid-Rise, Steel/Wood. This cell is the only Output cell to be explained in further detail in this Subsection because some significant exogenous assumptions directly inform its output. As part of the Testing Model's full automation, this output cell reflects the building height, a function of the GSF and footprint inputs above, a matter which has significant impact on the way that other parts of the Testing Model function. In keeping with Boston building code requirements, any building which is 5 stories or less will be mid-rise wood framed construction ("MR,W")[53], buildings which are more than 5 but no more than 7 stories are mid-rise steel construction ("MR,S") and everything else is high-rise steel construction ("HR,S"). The MR,W category is further broken down into two subcategories, 5-story buildings and buildings that are 4 stories or less, the former costing a reported $7/GSF more to build than the latter. Each of

[52] Any Exogenous Assumptions not discussed herein represent best estimates based on the Author's discussions with Boston-area developers.

[53] This is not technically required by Boston building code. However, the dramatic cost difference between building wood framed construction versus steel construction is such that the Thesis assumes that, given the option, wood framed construction will be the certain election.

these building types have significant per GSF costs associated with them, as discussed in Subsection V.10, below.

2) Building Efficiency. The building-wide efficiency – i.e. the ratio between NSF and GSF[54] – for the entire GSAP project represents a weighted average between the efficiency of the Graduate Student Anchor Tenant unit block and the rest of the building. The efficiency for the Graduate Student Anchor Tenant unit block reflects the actual NSF of the studioMAUD-designed units. The efficiency for the rest of the building, however, reflects an assumption based on feedback provided by architect interviewees and on a review of the types of efficiencies seen in other Boston-area multifamily developments; the market rate and affordable units have not been laid out in the same way that the graduate unit have.

3) Annual Base Rent and Annual OpEx Rent Increase for the Graduate Student units. There are a few important descriptive – and some *prescriptive* – matters which inform this line item. Rental growth in multifamily projects is typically forecast with regards to what the relevant renter market will bear, which is itself a product of prevailing economic trends.[55] That analysis, however, reflects the profit-focused approach of standard development underwriting. As discussed in the preceding Section IV.A.3.i, the prices established for the Graduate Student Anchor Tenant units is not designed to maximize profit but, rather, to meet the needs and budgetary constraints of its target renter market. At the same time, however, any private developer will be loath to assume the (fairly significant) risk of having to bear a disproportionate impact of significant increases in operating expenses and taxes – costs which he or she would

[54] To clarify with an example, a 100,000 GSF building with 85,000 NSF of rentable area would have an efficiency of 85%.
[55] For an example, see "Tremont Crossing (P-3) PNF", 188-189.

otherwise "pass through" to the renter through an annual rent increase. To accommodate these potentially competing needs, the rent payable with respect to the Graduate Student Anchor Tenant units has been divided into two components – a "Base Rent" and an "OpEx Rent" – representing 70% and 30% of the total monthly rent, respectively.[56] Although atypical for multi-family underwriting, this approach effectively establishes a "triple net" Base Rent equal to 70% of the first year's rent payment.[57] Over the course of the Master Lease term, the 70% base rent component is capped at a nominal growth rate, in this case the Bureau of Labor Statistics' average 12-month CPI-U increase in rent of primary residence in the Boston-Brockton-Nashua region from 2004 to 2014 (1.8%). The remaining 30% component of that rent stream is set to the actual annual increases in operating expenses and taxes for the building, forecast at 3%.

The impact of this cap on the base rent component can be seen in the charts labeled Figure V.1 and Figure V.2, below, showing the increase in the total rent amount as a function of its component Base Rent and OpEx Rent over the course of the Master Lease term. In both figures, Total Rent (purple line) starts at $900/month and is broken out into $630/month in Base Rent (i.e. 70% of Total Rent, represented by the blue line) and $270/month in OpEx Rent (i.e. 30% of Total Rent, represented by the green line). Figure V.1 represents the *ex ante* forecast rent increases included in the Testing Model, the dashed line above the Total Rent and Base Rent lines indicating the impact that growing the Base Rent component at the same 3% rate as the OpEx Rent component would have on the model's forecasted rent growth. Figure V.2 represents the same information but on an *ex post* basis showing the rent growth over the Master Lease term

[56] Note that the term "OpEx" in this context is meant to refer to the portions of both operating expenses and property taxes which are "passed through" to the Graduate Student Anchor Tenant. This 70%/30% allocation is based on the Subject GSAP Annual Cash Flows (Property) underwriting where the total projected tax and operating cost is equal to 30% of the total apartment rental revenues.

[57] "In a [triple net lease] all or almost all of the operating expenses of the building are charged to the tenant…[t]he total payments from the tenants to the landlord thus consists of two components: the net rent payment and the expense reimbursement." (Geltner et. al., 785).

as if there had been a temporary spike in operating expenses and/or taxes with the resulting increases in the actual OpEx Rent charged to the Master Lessee. The total 28% increase in Base Rent over the 15-year term is established by the terms of the Master Lease and so does not change between the *ex ante* and *ex post* scenarios. However, the total 74% OpEx Rent increase over this same period in the *ex post* scenario is 23% higher than the OpEx Rent increase which the Testing Model forecasts (51%). Because the OpEx Rent component of the Total Rent is relatively small, however, the impact of this increase is relatively muted in its impact on the Total Rent, which had a total increase (42%) only 7% higher than the *ex ante* scenario's forecast predictions (35%). In practical terms, then, Figure V.1 and V.2 illustrate how this approach of separating the Base and OpEx Rent components in the rents payable under the Master Lease can both minimize the rental burden to be born by graduate students (and/or Universities) while also affording the Master Lessor the protection of being able to pass through unexpected costs related to the ownership and operation of the GSAP.

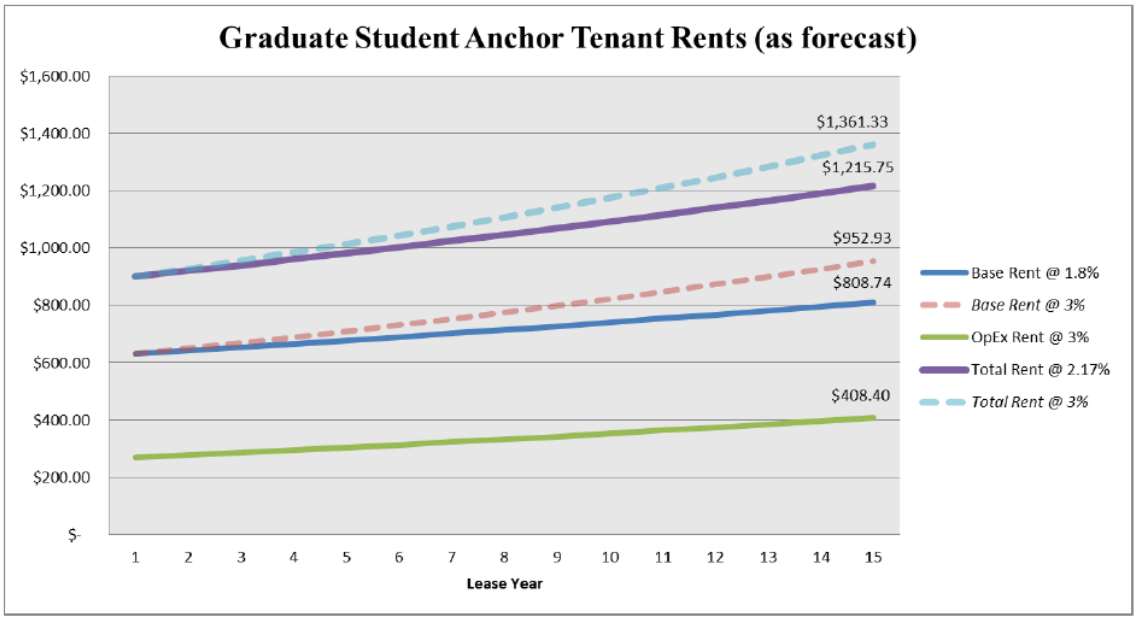

Figure V.1

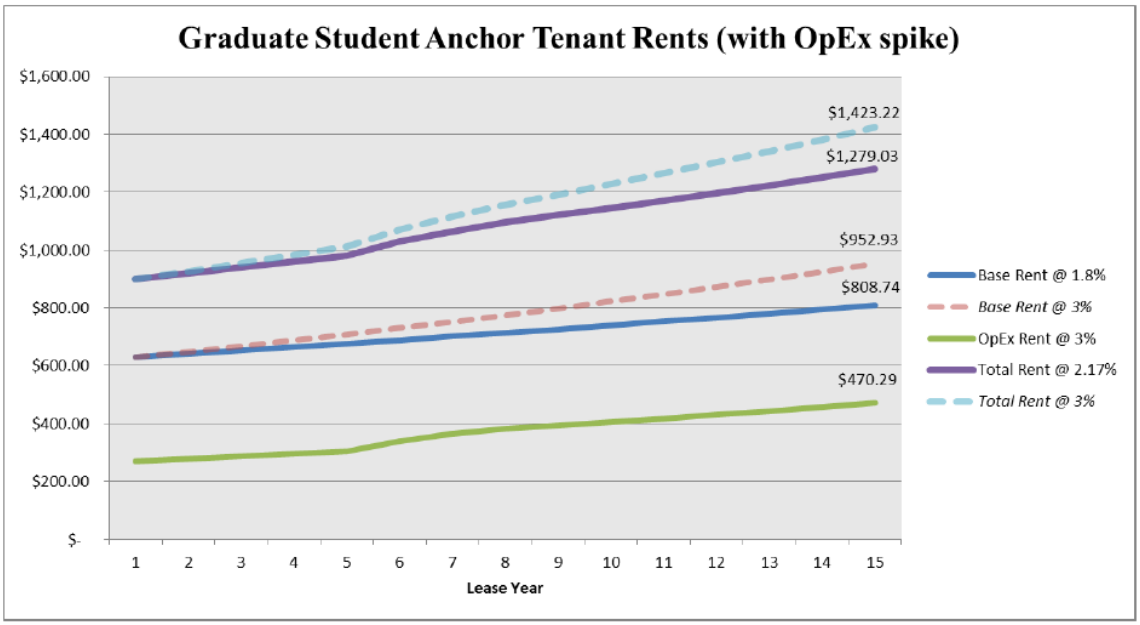

Figure V.2

It should be noted that is quite possible that the allocation between Base and OpEx Rent will have to vary on a property-by-property basis; the 70%/30% allocation in this instance is a case-specific matter. This is particularly true for any GSAP property at which the Master Lessee Universities elects to control operational management of their Master Leased premises. Indeed, there may be some instances where a University *demands* to maintain control over the Master Leased units. In researching this Thesis it was discovered that one of the key impediments standing in the way of master leased student housing in Boston relates to certain Universities' fundamental mistrust of private developers, the concern being that these profit-motivated investors will not provide adequate care and management to the student housing and, as such, indirectly damage the reputation of the University itself. A Master Lessee harboring such concerns would certainly want to manage its own units. Moreover, the ability to benefit from certain economies of scale (see Section IV.B.2) might be such that it is simply less expensive for the Master Lessee to maintain operational management responsibilities. This will be a case-

specific issue; for now it is sufficient to note that the specific breakdown described here would almost certainly change along with those types of arrangements.

4) Annual Rent Increase for Market Rate and Affordable Units. Forecasting rent growth, like any future-looking exercise, can be somewhat like reading tea leaves and is an imprecise science, at best.[58] For the purposes of establishing Testing Model assumptions, however, this Thesis relied on the conclusions of the Tremont Crossing market study and has included a 5% annual increase accordingly. ("Tremont Crossing (P-3) PNF, 188-189).

Rents for apartment units in Boston that are subject to Affordable Housing Agreements are set each year by the BRA and reflect changes in various macroeconomic conditions. While challenging to predict what these conditions may hold in the future, the assumption included in the Testing Model represents the rental rate changes set by the BRA from 2007 to 2014, weighted to reflect the Subject GSAP's affordable unit composition (25% studios, 50% 1-bedroom units and 25% 2-bedroom units).

5) Annual Property Taxes. Establishing the appropriate amount of annual property tax liability to incorporate into the Testing Model was especially challenging. For one, there is no precedent in Boston for the type of units comprising the Graduate Student Anchor Tenant, making it impossible to find examples of how the City's tax assessor evaluates each such unit. This process was complicated further by the fact that – as will be seen in the following subsections – the Testing Model was designed specifically to enable flexibility in quantifying different types of public incentives. Towards that end, the annual property taxes for each of the three unit types – graduate, market rate and affordable – needed to be broken out separately so (i)

[58] See fn.55, above.

reducing the number of affordable units in a GSAP development would be appropriately accounted for in the Annual Cash Flows and (ii) the impact of certain tax incentives related to the graduate units only could be specifically explored. The practical consequence of that flexibility requirement is that it makes precise assumptions challenging to make given that all of the data unearthed to start approximating an annual property tax amount was presented on a blended "per unit" or "per NSF" basis.

With the foregoing limitations in mind, the property tax rates shown in the Assumptions & Summary sheet represent the best estimate the Thesis could make based on information gleaned through a review of (i) certain development pro formas provided by Boston-area developers and (ii) a "$4,000 per door per year" rule of thumb reportedly applicable to new multifamily development in Boston under current conditions. The observed range of blended annual property taxes per door generally fell between $3,500 and $4,250. Given its location, taxes were assumed to fall closer to the lower end of that spectrum with the blended tax rate for the market and affordable units being $3,620 per unit per year in Year 0[59]. Pegging an assumption for the graduate units was even more challenging given that the level of income they are able to generate will fluctuate with the level of University housing grant participation. More participation from the University would render each unit more valuable, leading to higher annual property taxes per unit. Accordingly, each unit is deemed – admittedly somewhat arbitrarily – to have a $2,800 annual tax without University housing grant participation and $3,000 annual tax if income is generated through a housing grant.[60]

[59] Please see fn.95 for some clarification concerning the use of "Year 0" in this analysis.

[60] The detail-oriented observer might note that annual property tax for each unit type is an orange "Toggle" cell within the Testing Model. This was done for the purpose of enabling a flexible use of the Testing Model by anyone who might wish to play around with these assessment values – especially as a matter of policy – but that is a variable which is not manipulated in this particular analysis.

6) Financial Feasibility Testing: Relationship between the NPV, ROC and 20% Tests; Use of Sensitivity Tables. The Testing Model relies on three (3) metrics calculated for the purpose of describing the financial feasibility of a given development.[61] The first metric, a net present value ("NPV") test, looks at all of the annual property-level cash flows, and determines whether the projected value of the development will exceed its projected costs or, alternatively, whether the projected internal rate of return ("IRR"). The second metric, the ROC test, looks at the net operating income ("NOI") generated during the first year of the project's stabilized operation as a percentage of the project's total development costs ("TDC")[62] and determines whether the project is likely to generate enough operating NOI to justify the TDC expenditure. Finally, the 20% Test looks at the net profit generated at the property's sale as a percent of the TDC in order to determine whether it meets the rule-of-thumb 20% threshold, something which directly informs the decision of whether the project is worth pursuing by yielding a different risk-adjusted return metric to consider along with an indication of how much of a "buffer zone" the project equity has before losing money.

Each of the foregoing tests is described in further detail in the following Subsection A.7. For now, it should be noted that none of the three individual tests described in the following Subsection A.7 should be considered a definitive, stand-alone determination of development project financial feasiblility. Rather, the three tests described below should be considered in concert – each of the three tests describes a different part of a project's financial outcome, and there may be instances in which one test is "failed" even though the project, on the whole, is

[61] It is worth mention that in common "real world" practice, other return metrics – or different approaches to the types of metrics used in this Thesis – may be relied upon by different investors with differing investment objectives and/or limitations. In particular, it should be noted that the Testing Model does not rely upon the commonly used return metrics of levered IRR or equity multiple. The reasons for implementing unlevered return metrics is described in the following Subsection A.7.i.

[62] As shown on the Construction Budget component of the Testing Model spreadsheet, TDC = property acquisition costs + hard construction costs + soft costs.

otherwise financially feasible. The purpose of including these three different tests is to provide a comprehensive view of the property's performance on three levels – its overall performance (NPV), its stabilized performance (ROC) in a given year and its profitability upon sale (20% Test) – in order to inform the wholesale "go/no-go" financial feasibility determination. In addition, because the different tests reflect different aspects of the property's financial performance, having three tests to consider enables one to custom-tailor the type of incentivization needed to ensure financial feasibility; conveying a fee simple interests versus ground lease interest in City land, for instance, will tend to impact NPV and the profit margin measured in the 20% Test more significantly than it will impact ROC.[63]

Equally important, it should be noted that the methods by which the specific thresholds described in the following Subsection A.7 were identified lack the type of scientific rigor which would be needed to establish them as definitive rules with respect to the test results they inform – something particularly true of the "hurdle rate" assumptions discussed in Subsection A.7.i. Plainly stated, the novelty of this hypothesized type of real estate development project makes such scientific pursuit, at best, highly impractical. This Thesis seeks to incorporate the best possible assumptions, based on the best available information, into the metrics acting as inputs in these threshold tests. However, to compensate for the inability to pinpoint absolutely reliable metrics the Testing Model results are presented with a so-called "sensitivity table."

Sensitivity tables are used to facilitate easy comparison of a GSAP's financial feasibility, as a matter of meeting the NPV and 20% Test thresholds, by presenting the results of the each test along with the results which that same test would have produced if relevant assumptions are

[63] See Subsection C for further detail on how to use different incentives to impact different return metrics.

incorrect.[64] In other words, these tables show how "sensitive" the results of these tests are to the hurdle rate and/or exit cap rate assumptions made in conducting such tests. As used in this Thesis, the sensitivity table for the NPV Test shows the results of what that test would yield under different hurdle rate and/or exit cap rate assumptions, and the sensitivity table for the 20% Tests shows the results of what those test would yield under different exit cap rate and/or ground lease impact assumptions. (All of the foregoing will be explained in the following Subsection A.7.) As will be shown, the hurdle rate and exit cap rate assumptions play a crucial role in impacting the Testing Model results to varying degrees and so each sensitivity table should be considered before making any final judgments concerning a GSAP's financial feasibility. Special consideration should be given to "borderline" GSAP projects that might otherwise be financially feasible but for the results of any individual Testing Model's threshold test; the initial results might reflect infeasibility related to an inaccurate input assumption rather than a fundamental problem with the development itself. Similarly, the results shown on the sensitivity tables can be used to definitively rule certain projects out as infeasible – while a specific cap rate or hurdle rate assumption is hard to identify with precision, identifying the *range* within which those rates are very likely to fall is more reliable and any project not meeting the threshold requirements for any rates within the ranges presented can be definitively ruled out altogether.

7) The Three Threshold Financial Feasibility Tests. The following will describe each of the three tests shown in the Testing Model. Before proceeding further, however, it should be noted that the following, already somewhat dense exposition gives many, many important and interesting issues and concepts only a cursory treatment. While perhaps atypical for financial

[64] The ROC metric is one for which a sensitivity table would not be particularly instructive – that metric, unlike the other two, is not impacted by the "hurdle rates" or exit cap rates described hereinafter.

analyses of the sort undertaken by students of this Thesis' sponsor institution, this approach is as intentional as it is born of necessity (the latter being described further hereinafter). This Thesis is not intended to convey an academically rigorous exposition of the concepts inherent in this type of financial analysis; it is intended to derive the most realistic assumptions from best available information for the purpose of enabling a practical, "real world" analysis. Readers are encouraged to investigate the sources cited hereinafter for the type of academically rigorous exposition referred to above – this work largely draws upon invaluable lessons which they provide.

7.i – Financial Feasibility Threshold #1: The NPV Test. The first financial feasibility determination is based on an unlevered project-level (versus equity-level)[65] NPV analysis of the anticipated cash flows from the Subject GSAP over a 10-year period. The methodology of using discounted cash flow ("DCF") analysis in order to determine a given project's NPV was chosen for use in the model for two principal reasons. First, DCF analysis such as that embodied in the NPV test represents (arguably) the most commonly-used analytical tool in real estate investment today, serving the Thesis's goal of maximum applicability in varied scenarios.[66] Similarly, the NPV analysis was conducted on the Subject GSAP's unlevered cash flows, meaning that the

[65] For the purposes of this Thesis, this property-level versus equity-level distinction can be explained as follows. An equity-level metric relates to a certain amount of return generated with respect to an investment in a GSAP development. One such metric will be the unlevered IRR "hurdle rate" described hereinafter. That equity-level metric is inserted into the NPV test as a variable in the property-level NPV analysis which evaluates the property-level cash flows against the hurdle rate assumption input.

[66] "[D]iscounted cash flow valuation…has gained wide acceptance in recent decades, both in academic circles and in professional practice [and] is probably the single most important quantification procedure in micro-level real estate investment analysis." "The DCF valuation procedure…can be combined naturally with a very simple and intuitive investment decision rule known as the net present value (or NPV) rule [stating that an investor should] (1) [m]aximize the NPV across all mutually exclusive alternatives [and] (2) [*n*]*ever choose an alternative that has: NPV<0.*" (Geltner et. al, 204, 215-216, emphasis added).

analysis was conducted without consideration of the impact of third party debt.[67] Although the use of construction (and permanent) debt is very common – if not "ubiquitous" (Flowers, 16) – in current real estate development practice, in service of this Thesis' overarching goal of achieving the broadest possible applicability the analysis was focused on unlevered cash flows for two reasons: (1) there is considerable variability in the degree to which an individual investor will need to use (or find value in the use of) debt proceeds; and (2) there is likewise great variability in the levels of debt proceeds which a given developer would be able to access for construction of a specific project, as well as variability in the "cost" of those debt proceeds in the form of interest rates and fees.

The foregoing considerations make inclusion of realistic, broadly-applicable debt assumptions in the Testing Model very challenging, if the same is even possible in the first place. Moreover, the purpose of this Thesis is to explore the basic NPV of the Subject GSAP from the perspective of the broader real estate development market, not their NPV for any specific developer, and in general any debt which is introduced into the capital stack of a real estate development project has an NPV of zero in that project (even if it has a positive NPV for the developer pursuing that project).[68,69] Accordingly, ignoring the impact which debt could have on

[67] It should be clarified that "unlevered" in this case means only that that NPV analysis here does not contemplate the impact of *financial* leverage. Implicitly, however, this analysis does – if perhaps only indirectly – contemplate the impact of so-called "*operational* leverage" which exists in "every real estate development investment…regardless of how the investment is financed." (Flowers, 10). At the risk of dramatic oversimplification, operational leverage plays a role in the design of this NPV analysis because it helps explain why development-phase returns of the 10-year period analyzed in the NPV test requires a higher hurdle rate than the later, operational phase of the investment. (Id.). Separating out the hurdle rates applicable to different parts of a real estate development investment through a so-called "canonical method" is a fascinating matter that is just a bit more analytically technical than would be appropriate for the type of inquiry conducted in this Thesis. In part, that relates to the conflict between the need to make precise return assumptions inherent in the canonical method and the Thesis' goal of broad applicability (risk and return dynamics change with location, see, e.g., Flowers, 41) and its analysis of a development for which there is no precedent. Those who might be interested in learning more are encouraged to review the brilliant exposition of this subject matter contained within the Flowers article cited herein.

[68] "As the debt market is usually rather competitive and efficient, the [NPV of project debt financing] will usually have a value of zero from a [market value] perspective, assuming unsubsidized, market-rate financing of typical 'commodity-like' debt products (as would typically be obtained, for example, from a bank…). In these conditions,

the NPV of any GSAP development is consistent with both the broad-applicability goals of this Thesis as well as with the common practice of using debt in real estate development.

The second reason why the NPV test was adopted for the purposes of this Thesis relates to the way it can be used as a tool to ensure that the types of incentivization described hereinafter yield only "just enough" benefit in ensuring a GSAP's development and nothing more. In this sense, the NPV test is the most important from the standpoint of crafting policy around GSAP development. The other two tests described hereinafter show thresholds below which a GSAP's anticipated financial performance might deter development of that project. The NPV test, by contrast, is a test for which there is an important "ceiling" as well as a "floor". The floor of $0 NPV is crucial from the financial feasibility standpoint (see fn.66, above). The NPV ceiling is important from the standpoint of crafting policy because, by definition, any set of incentives which yield a result of positive NPV have given the GSAP developer "too much", a benefit which is otherwise unavailable in the investment marketplace within the same risk-adjusted return parameters.[70]

As suggested by the "D" in identifying the NPV test as DCF analysis, it is an analysis which requires one to identify an appropriate rate by which the annual cash flows it evaluates are discounted. The rate at which the Subject GSAP annual cash flows are discounted is described in the Summary & Assumptions sheet as the "Hurdle Rate". In real estate investing, the term

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therefore, the NPV of the equity investment (using debt) is the same as the NPV of an all-equity investment in the property without using debt…" (Geltner et. al., 325).

[69] Note, however, that this reflects the Memorandum's assumption that any debt issued in connection with the development of any GSAP would be of a "market standard" character and provided by private third party lenders. One of the ways in which the City might incentivize GSAP development – an avenue not explored in this Memorandum – could entail the issuance of debt proceeds by the City or other entity at below-market rates (through, for example, a TIFF bond issuance), creating otherwise unavailable value for a given developer of a specific GSAP. The author elected not to investigate this matter in any depth because the ability to evaluate the value of any such below-market debt costs would require the identification of the very debt value and cost assumptions which the focus on unlevered cash flows seeks to avoid altogether for the purposes outlined above. See Flowers, 23.

[70] "[T]he private real estate development market is competitive and non-zero NPV deals are rare…[the terms of zero NPV deals are] fair." Flowers, 7, 23.

"hurdle rate" is used to define the minimum return, measured as an internal rate of return ("IRR"), which an investor must reasonably expect to achieve in order for them to rationally make a given investment therein.[71] Accordingly, this is among the most significant assumptions incorporated into the Testing Model inasmuch as it establishes the threshold "go/no-go" level of investment return separating financially feasible and infeasible GSAP development projects. At the same time, it is also one of the most challenging assumptions to make with the ideal level of precision for two primary reasons. First, there is considerable variability in different investors' return requirements (i.e. their individual hurdle rate). An insurance company, for instance, might invest in a real estate development deal in order to achieve a return on that investment in the context of it large, mixed-asset investment portfolio which is wholly different than the type of return that would compel a private individual to make the same investment. Second, unlike other real estate development investments, GSAP development is one without precedent in the greater Boston area. Because of GSAP's novelty as an investment product, there is no concrete, objective evidence indicating how the capital markets would evaluate the risk of this type of investment, meaning that there is no such evidence indicating what the required hurdle rate would be. (Flowers, n.61).

Notwithstanding the foregoing challenges, however, this Thesis has taken two important steps to present a reasonably useful NPV test of a given GSAP development's financial feasibility. The first such step is the inclusion of sensitivity tables in the reported results of this analysis. Showing the results of an NPV test if conducted with hurdle rate assumptions 200 basis points higher and lower, respectively, than the hurdle rate assumption used can help identify "borderline" cases, as well as those which can be ruled out definitively. The use of a

[71] "[T]he [minimum] required return is the total return including a risk premium reflecting the riskiness of the investment, the same as the discount rate that would be used in [] DCF analysis…[and] is referred to as the 'hurdle rate'." (Geltner et. al., 219).

sensitivity table in this context is particularly important as the hurdle rate assumption reflects, in large measure, interviewees' and survey respondents' feedback that the novelty of this development type – that it is something "funky" with which capital markets are unfamiliar – would be viewed as a risk factor requiring a higher expected return. In the event that GSAP development were to become a more familiar approach, this risk factor could likely become less significant and hurdle rates would be likely to fall accordingly. (Flowers, n.61).

The second step taken to bolster the analytical value of the Testing Model's NPV test is to use the best possible approach to establishing a hurdle rate that is available in the absence of concrete data. For the instant purposes, this best approach involved interviewing and surveying a group of real estate developers, capital providers and real estate brokers who focus on multifamily development in the greater Boston area – an approach which, to be sure, lacks an optimal level of scientific rigor displayed in the previous explorations of this subject cited above. Furthermore, this approach was also complicated by the fact that most development projects involve the use of leverage meaning that interviewees and survey respondents were much better able to discuss hurdle rates as a *levered* IRR metric rather than as an unlevered one. On the other hand, however, this approach held the benefit of being able to discuss a specific type of project (the GSAP) with a group of eminently knowledgeable real estate professionals and, as such, understand not only the applicable baseline IRR metric but also some of the GSAP's inherent characteristics which these professionals viewed as being of concern and, as such, which would impact the hurdle rate. Finally, this process enabled the author to get some insight into the type of investor that would be likely to make an investment in a deal such as a GSAP in the City of Boston. Much of that feedback suggested that longer-term investors would be the more likely participants in these investments, due in large measure to the fact that shorter-term capital

typically has higher IRR requirements which are hard to reconcile with Boston's prevailing market conditions (notably the high cost of construction), and thus the Thesis adopted a 10-year hold period (versus a shorter hold period, e.g. 5 years) as the time over which the applicable IRR would be calculated.[72] This 10-year evaluation period is consistent with standard real estate development investment analysis. (Flowers, 22).

Establishing that (i) this is a real estate development investment (versus acquisition of an existing property) and (ii) the NPV analysis will be conducted over a 10-year hold inclusive of a development phase period has important implications for identifying a hurdle rate. First, real estate development entails higher risk than the acquisition of existing property, meaning that a higher level of risk-adjusted return must be generated for that development to be pursued. (Flowers, 14 *et. seq*.) That consideration is particularly useful in the context of understanding how to incorporate the reported 6% to 7% unlevered IRR return which institutional investors, in the current climate, are expecting to get from the purchase of "best of class" multi-family projects. (Foong). Second, as suggested in the foregoing paragraph, the relatively long-term, develop-and-hold nature of a GSAP development means that a certain type of investor, with a certain type of investment expectation, is the one whose perspective should be given the most credence. Based on extremely reliable information, investors who might be interested in a GSAP investment typically expect unlevered returns between 9% and 12% with downtown locations typically commanding the lower end of that range and suburban developments the higher. Based on the foregoing data – and cognizant of the Target Parcels' location, the novelty of the development type and the role which having a (presumably) good credit Master Lessee on an albeit temporary Master Lease plays in impacting the property's risk profile – the Thesis was

[72] To be clear, this 10-year hold period includes an assumed 24-month construction period.

best able to approximate the unlevered IRR on a 10-year hold of a GSAP development, i.e. the hurdle rate for the Testing Model's NPV test, as being roughly 10%.[73]

7.ii – Financial Feasibility Threshold #2: The ROC Test. Return on cost is a very simple real estate investment metric calculated by the following formula[74]:

$$ROC = \frac{\text{Stabilized NOI}}{\text{Total Development Costs}}$$

Generally speaking, this is the metric which real estate investors –in particular those from the development community – use to determine whether the income a property is expected to generate justify the costs required to construct it. Just as it proved difficult to identify a precise hurdle rate for the first test, pinpointing a specific ROC threshold for the second one was likewise challenging; there is simply no "magic number". Part of the difficulty lies in the fact that, as with hurdle rates, properties of different risk profiles will justify the use of different ROC thresholds. For instance, in public comments at a panel discussion sponsored by ULI and held in Boston on June 24, 2014, one investor discussed "building to core" in San Francisco at a 5% ROC, a threshold which falls below even the most adventurous estimates provided by interviewees and respondents surveyed in connection with this Thesis. Moreover, these figures

[73] It should be noted that one source cited extensively throughout this subsection might take issue with the approach adopted here, such source having posited that "the development and stabilized holding periods *should not* be mixed for the investment decision criteria (i.e. whether or not to do the deal)…" (Flowers, 22, emphasis added). While the author respectfully disagrees with this assertion in this particular context, it is a point well taken and one which underscores an important observation made in Subsection A.6: none of the three tests discussed herein should be considered stand-alone determinants.

[74] Note that in this context the metric is the *untrended* ROC, meaning that the numerator in the equation usd to calculate the ROC is the forecasted rent in the first year of a property's stabilized operation (i.e. when it is first leased to the fullest extent expected). Calculating trended ROC, by contrast, would involve the use of forecasted rent after the expected increases in market rates would have taken place. There was uniformity among interviewees and respondents in the identification of untrended ROC as the relevant measure.

are directly impacted by external factors in other realms of the investment universe and so ROC thresholds are likely to change over time; one panelist at the same ULI-sponsored presentation, for instance, identified a "150 to 250 basis point spread" above cap rates in the relevant property type in the relevant submarket as the threshold ROC metric for spec development.[75]

Nonetheless, a particular ROC threshold is something commonly discussed among developers of multifamily projects in Boston. More importantly, the ROC threshold is commonly cited as a primary impediment to the development of the much needed housing in Boston – the denominator part of the equation (i.e. costs) are just so high that the required return can only be achieved with a similarly high numerator (i.e. rental income). See in particular Ross, "Developer says Fenway…" Based on extensive discussions on the subject, the ROC threshold for multifamily development in the City of Boston under current market conditions *and at a location such as the Target Parcels* appears to be about 6%. Accordingly, that number has been incorporated into a second threshold test meant to complement the first.

7.iii – Financial Feasibility Threshold #3: The 20% Test. This final test, referred to herein as the 20% Test, proceeds by calculating a Subject GSAP's profit margin by dividing the profit generated at the sale of the project (i.e. the difference between net sales proceeds [sales price *minus* cost of sale] and project TDC) by the project TDC.[76] If the profit margin falls below the rule-of-thumb 20% level, the project is one which a developer, capital provider and/or lender might not find worthy of pursuing. This metric essentially tests two things: (1) whether it is

[75] "Spec" development refers to the development of a building for which there are not pre-existing lease commitments from future tenants.

[76] Not wanting to confuse my readers, an illustrative example might be helpful here. If a property that cost $10 million to build was sold for $12 million dollars and the cost of sale was 3%, the profit margin would be 16.4%, calculated as follows:
$12 million - $360,000 (i.e. 3% of $12 million) = $11.64 million net sales proceeds; $11.64 million - $10 million TDC = $1.64 million profit; $1.64 million profit/$10 million TDC = 16.4% profit margin.

worthwhile (i.e. whether there is a sufficient profit expectation) for the developer to commit the time and money needed to pursue this development; and (2) how much "cushion" the equity investment in the development has before it can be expected to lose money. The first part of the 20% Test is less important than the second part for the purposes of this Thesis. In some ways, the first part of this test is similar to the NPV test inasmuch as it returns a "yes or no" answer to the question of whether this project generates a sufficient level of return to pursue. However, that risk-adjusted return metric represents only one component of return – expected profit generated by selling an asset that cost "X" amount of money to build for "Y" amount of sales proceeds – of the entire returns generated by the project. That return level will be (potentially dramatically) different for different types of investors; a "merchant builder", for instance, will tend to be more motivated by this metric than a long-term holder would be, the latter tending to be more interested in the returns through the annual proceeds generated by the property *as well as* those generated on disposition of the asset. That longer term return perspective, as discussed above, can be better implemented in the context of a GSAP development specifically and has been accounted for through the use of the NPV test, as discussed in Subsection A.7.i above.

The second part of the 20% Test, however, is very valuable to the financial feasibility analysis. Rather than viewing the profit margin as a matter of *returns* like the first part of this test, this second part of the test views the profit margin as a matter of *risk*. Specifically, this second part of the test helps quantify the extent to which assumptions concerning sales proceeds can be "wrong" before the equity investment itself might be compromised. In other words, this second part of the test looks not at how much return on one's equity they can expect in the sale of a GSAP but, rather, how of a profit margin "cushion" stands between the expected sales proceeds and the loss of (at least some of) the equity invested in that development. This risk-

centric perspective, then, is useful in evaluating GSAP development financial feasibility because – mindful of the fact that all of these tests rely on forecast assumptions – it identifies the level of risk that equity invested in that ostensibly NPV and/or ROC-feasible development faces is the project's fails to perform as expected. Based on a rule-of-thumb threshold, any GSAP development which indicates less than a 20% cushion might be a riskier one than is worth pursuing.

Of all of the three tests shown here, this is perhaps the most intuitive one given that it addresses the simple question of whether a project can expect to be sold for at least as much as it cost to build – and by how much the sale price can be expected to exceed the development costs. That said, it is also the least rigorously researched; the 20% cushion reflects guidance from one Boston-area developer concerning how he or she looks at evaluating the risk associated with a development investment. This metric should by no means be considered as a hard and fast rule in the way that others cited above should but, rather, this metric should be used as a complement to the other metrics identified in making a wholesale financial feasibility determination.

8) "Exit" Cap Rate and the Impact of a Ground Lease. Forecasting an applicable exit cap rate[77] on the sale of a Subject GSAP in 2026 is, to say the least, not a matter which lends itself to scientific precision. Even if one were to deduce the cap rates for sales of multi-family projects of the relevant vintage in the relevant geography in the most precise way possible, the Subject GSAP will have the unique characteristic of the Master Lease (and related rental caps) both of which would be likely to negatively impact the price a buyer would be willing to pay for

[77] "Exit cap rate" in this context refers to the relationship between the property NOI at the time of sale and the sales price for that asset and is calculated as follows: Exit Cap Rate = (Year 11 NOI)/(Sales Price). Note, however, that the actual sales price cannot be known and thus the Exit Cap Rate here is an assumption which directly informs the expected sales price incorporated into the property Annual Cash Flows. Specifically, in this context Sales Price = (Year 11 NOI)/(Exit Cap Rate).

that asset as compared to a "normal" multi-family development and, accordingly, cause the exit cap rate to rise above otherwise-applicable levels. In order to establish an exit cap rate for this transaction, then, the Thesis started with a review cap rates for multifamily trades above $5 million for transactions in the greater Boston area during the first half of 2014 (ranging from 4.66% in Cambridge to 5.76% in Mission Hill)[78]. The likely impact of (i) current trends in the area surrounding the Target Parcels, notably the redevelopment efforts in Dudley Square and the pending delivery of Tremont Crossing, and (ii) the presence of a Master Lease and the associated rent caps were considered, the former tending to increase sales price (and lower the exit cap rate) and the latter tending to lower sales price to varying degrees depending on length of the Master Lease term, credit of the Master Lessee and whether the rent caps are coterminous with the Master Lease term. Based on conversations with Boston-area real estate developers, capital providers and brokers, the Thesis arrived at an exit cap rate of 5.75%.

The foregoing 5.75% cap rate assumption, however, relates to a sale of the Subject GSAP *and the land on which it is built*, a so called "fee simple" conveyance.[79] In the alternative scenario, where the GSAP is developed on Parcel 9 subject to a ground lease, the developer would be selling the building only, and not the land on which it is situated which would remain in the ownership of the City and the Massachusetts Department of Transportation.[80] This would cause the cap rate to be higher as the same NOI would be divided by the lower price that an incoming buyer would pay for property subject to the ground lease. Again, there is no clear way to determine this impact as even the best comps available – and there are very few – do not

[78] Based on public statements at NAIOP's Mid Year Round-Up Panel discussion June 12, 2014.
[79] This bit of "legalese" is explained as follows:
"A fee simple represents absolute ownership of land, and therefore the owner may do whatever he or she chooses wi th the land." <http://legal-dictionary.thefreedictionary.com/fee+simple>, visited 26 July 2014.
[80] At the time that the request for proposals was issued for the development of Parcel 9, it was owned in part by the City and in part by Massachusetts Department of Transportation. ("Request for Proposals; Parcel 9 + Parcel 10, Roxbury Massachusetts", 4). The author is unaware of any transfer of ownership in the interim.

necessarily reflect an accurate apples-to-apples comparison given the impact which specific ground lease terms are likely to have (e.g. length of remaining ground lease term at the time of sale and existence of renewal option). In order to determine the impact which this specific ground lease might have on the sale of a Subject GSAP on Parcel 9, the sales price which a conveyance at the base 5.75% cap rate would generate under a certain set of NOI assumptions was reduced by an amount equal to the present value[81] of the final 55 years of ground lease payments under the Urbanica ground lease agreement currently in place with respect to Parcel 9. ("Request for Proposals; Parcel 9 + Parcel 10, Roxbury Massachusetts", 36). The new effective cap rate which resulted from dividing the same NOI by this reduced sale price was 0.62% higher than the original 5.75% cap rate, meaning that the imputed impact of a ground lease was established at that 0.62% and that any sale of a Subject GSAP on a parcel subject to the ground lease under the existing terms have an exit cap rate of 6.37%.[82]

While challenging to predict and/or calculate with precision, the exit cap rate and impact which the presence of a ground lease might have on it are nonetheless *extremely* important assumptions in the Testing Model. Slight changes to either can have tremendous impact on the Year 11 sales price of a Subject GSAP which, in turn, can have tremendous impact on the results of the threshold NPV test. Accordingly, two sensitivity tables will be presented along with the

[81] The discount rate chosen for use in arriving at this present value amount was the 30-year treasury rate as of the date the calculations were made (3.29%). This effectively "risk free" rate was elected given the tremendous reversion value which ground leases entail – there is an extremely low risk of default, and a high level of security should any such default occur, based on the fact that the ground lessor in that case would get the land and the building contained thereon.

[82] As discussed in Subsection C.1, one way that a particular GSAP development on a public parcel, such as Parcel 9, might become a financially feasible development entails a reduction of ground lease payment costs. Under different ground lease payment assumptions, one might argue, this 0.62% impact would have to be recalculated to reflect the *actual* impact which subtracting the present value of these reduced payment amounts will have on adjusting sales price and, as such, cap rate. Point well taken, although it is crucial to bear in mind here that the approach adopted here represents only a *rough* attempt at deducing, as best possible, the expected impact of a market rate ground lease on exit cap rates for this specific location. For reasons alluded to in the foregoing Subsection 7.i relating to "zero-NPV deals", by virtue of having been executed by freely contracting parties, the Urbanica deal can be assumed to represent one such market rate deal.

results of each testing model outputs. First, the hurdle rate sensitivity table described in Subsection A.6, above, incorporates an exit cap rate sensitivity as well (the hurdle rate figures are presents across the top line of the table, the exit cap rate figures along its left-hand vertical). Second, for any Testing Model result reported for the sale of a property subject to a ground lease, a separate sensitivity table will be presented showing the impact of both changes in the exit cap rate (along the top line) and in the impact which the ground lease has on the same (along the left-hand vertical). As with the hurdle rate sensitivity discussed above, these tables should be consulted in particular for any "borderline" cases which might be financially feasible developments but for the impact of these assumptions.

9) University Cost of Capital. The 5.5% assumption cited here represents a weighted average cost of borrowing – including through the issuance of general obligation bonds – applicable to large Boston-area universities within the current market context. As will be discussed in some further detail in Subsection B, below, this figure is of significance only because it is used to calculate the estimation of the present value cost which any direct payment of Master Lease rent by a University over the term of a Master Lease represents.

10) Construction Costs and the Union Labor "Premium". The construction cost assumptions incorporated into the Testing Model reflect feedback gathered through interviews with developers, general contractors and construction managers who are engaged in large-scale multifamily development projects in the City of Boston. Accordingly, those cost assumptions included in this Memorandum represent a "snapshot" of construction pricing within the current relevant market context. It is important, however, to note that the labor and materials applied in

a development project are a commodity like any other in the sense that their pricing is directly impacted by supply and demand factors.[83] In particular, it should be noted that the cost assumptions incorporated into the Testing Model reflect realities specific to the context of 2013-2014 where (a) the pool of subcontractor talent is more shallow than pre-Great Recession levels, creating a supply shortage of labor, (b) reluctance of raw material suppliers, for whom the memory of economic pain caused during the Great Recession is still fresh, to produce at full capacity has created a relative supply shortage of construction materials and (c) the surge in demand represented by the construction "boom" that the City and its neighboring communities are currently experiencing have resulted in particularly high construction costs.[84] By way of anecdotal evidence of the increase which construction costs have experienced as the Boston economy has emerged from the Great Recession, one Boston area developer noted that hard costs for high-rise multifamily projects jumped from approximately $310/GSF to approximately $350/GSF over the course of a few weeks during the summer of 2014.[85] Further illustrating how the precipitous the jump in construction costs has been: market-wide costs were around $300/GSF in the second quarter of 2012.

It should be further noted that, in addition to being context-specific, the hard cost construction estimates here are a best estimate measure, albeit an overly simplified one. The Testing Model and its cost assumptions cannot account for the fact that different structures will have different costs associated with them. Consider, as a key example, the cost of building parking. The purpose of this Thesis, and the concept around which the Testing Model has been

[83] See, e.g., Fitzgerald, Jay. "Construction rebound…"
[84] Id.
[85] This observation should not be meant to imply that that this precipitous jump represents any dramatic change in any single individual components of hard costs. As will be discussed later in this subsection, the cost increases of late are owed to both material costs and to subcontractor costs, both reflective of the prevailing supply and demand context for materials and labor, respectively.

built, is to find a development solution on the Target Parcels that maximizes the production of housing; each GSF of above-ground structure has intentionally been devoted to residential use. That is not to say, however, that a sensible approach on these parcels might not involve the construction of above-ground structured parking below a wood-framed residential structure. Indeed, there is a new-construction example of this approach at 225 Centre Street in Jamaica Plain, near to the Target Parcels. While underground parking costs have been best estimated at roughly $80,000 per space, above-ground parking construction completed in Boston recently is priced closer to $45,000 per space. Moreover, each level of underground parking will tend to have different costs, especially given the impact which different soil compositions (or, worse, water table levels) can have on a location-by-location basis. The Testing Model's construction cost estimates are reasonable and have been verified through different sources. This is not to say, however, that they are going to be universally accurate, even with respect to buildings located on the Target Parcels. The Testing Model's simplicity in this regard is intentional: when considering the development of a project, a developer will tend to take a first look by way of "back of envelope" math where they consider general costs to construct something of that nature and the likely rents it can generally be expected to generate. If the deal "pencils out" on that basis, further examination might be warranted. This speaks to this Thesis's central focus: exploring ways of reducing, somehow, the cost to build residential-use-maximizing GSAPs such that they will pencil out more often than not. Towards that end, the Testing Model's generalized approach to establishing construction costs is a useful one.

In addition to the exogenous hard cost assumptions, this part of the Testing Model's Summary & Assumptions page identifies two categories of Incentive Input/"Toggle": Union Labor "Premium" and Linkage/Exactions. The way that the City might utilize these categories

in incentivizing GSAP development will be discussed in Subsection B, below. However, the baseline assumptions indicated in the Union Labor "Premium" section reflect some significant underlying exogenous assumptions, perhaps the most complicated of any informing this Testing Model, which require further elaboration here.

It is challenging to discuss construction costs in Boston without discussing the role of union labor. The private development community – rightly or wrongly – maintains that the high cost of construction within the City is related in many ways to the (unwritten) requirement of using union labor on any Large Project development within the City of Boston.[86] Moreover, as noted in this Thesis' Introduction, some developers maintain that the requirement of using high cost union labor directly contributes to a (perceived) inability to deliver privately developed solutions to Boston's housing affordability problems – a claim which, as also noted, is not without dispute or controversy. Indeed, the entire subject matter of "union labor" seems clouded with controversy, confusion and, lamentably, sentiment bordering on antipathy.

Although this is a challenging topic to discuss in an objective way, it is nonetheless crucial to understand – and quantify – the impact which Boston's relationship with union labor has. To approach this sensitive topic, it is helpful to start off by identifying the two matters on which people on both sides of the issue agree. First, there is no dispute that Large Projects – and many small ones – require the use of union labor; Boston is, for lack of any comparable term, a "union town". The second area on which there is universal agreement is the general assertion that jobs performed through the use of union labor cost more the same job would through the use of so-called "open shop" labor. There are, however, a number of important subtleties involved with this second point of agreement. First, it should be noted that the use of the term "union

[86] This "unwritten rule" reflects the prevailing wisdom – and overwhelming consensus – that any project in excess of 50,000 GSF, i.e. those requiring Article 80 Large Project Review, simply cannot get the requisite permits unless the developer uses union trades in the construction thereof.

labor" here might be overly broad – one must differentiate between "labor costs" and "subcontractor costs" in understanding what's going on. Labor costs – the wages of union workers – have only increased between 2% and 3% per year in the recent past; the labor-side construction cost which contributed to the recent precipitous increase in total development costs is more directly attributable to the costs charged by individual subcontractors now emboldened by being on the right end of the supply-and-demand equation.

The second important consideration in trying to understand the difference in labor costs between union and "open shop" labor is an identification of a reasonable baseline cost against which to compare others. Some trades simply have no "open shop" companies who can perform the work performed by union workers, meaning that there is no reasonable comparison that could be made. Similarly, it is not to be assumed that all contractors can do the same jobs for less money – some large shops have to offset the overhead required to run that organization while other, smaller shops lack the capacity to perform a given job, or volume of jobs. Finally, not all "open shops" are created equal but are rather divided between legitimate and "underground" operations. The latter, while (nominally) able to perform certain work at considerably lower costs, can tend to operate at such low costs through the employment of less-than-honorable business practices such as misclassification of workers as independent contractors and reliance on cash transactions to avoid the types of costs related to honest bookkeeping (income and payroll tax being two examples). Employment of these types of operations cannot be condoned or, at the very least, used as a baseline cost against which to evaluate other shops who operate legitimate businesses and provide an honest living wage and due benefits to their employees.

The final important consideration that one needs to bear in mind in comparing union and "open shop" labor costs is whether reduced union labor rates might *actually* decrease the cost of

using union labor. Boston's carpenters' union deserves applause for recognizing the need to be competitive in bidding for jobs outside the City's central core and for responding to that challenge by establishing a special rate for the construction of wood-framed residential construction in those areas. Those costs are 30% lower than the commercial rate applicable to other locations and product types, and are only slightly higher than (legitimate) "open shop" costs. The problem, however, is that some developers report not being able to actually take advantage of that lowered union labor costs for the simple reason that in times of healthy construction activity, subcontractor carpenters enjoy the option of being able to select between higher paying commercial rate jobs over these lower paying residential rate jobs. Plainly stated, the lower negotiated rate can result in challenges finding workers – or perhaps the best, most productive workers – and can render the union's willingness to negotiate less beneficial. This point will be especially important to bear in mind as the City thinks through how a lower negotiated rate on GSAP development – or any other type of project – might be best implemented.

Bearing in mind that Large Projects in Boston will require the use of union labor and that such labor will tend to be more expensive than what might be available through the use of an "open shop" alternative, it is now important to understand the magnitude of this cost differential. That cost differential is described hereinafter as the "union labor premium", a term meant only to refer to the difference between (a) the hard cost component of completing a job using union labor and (b) the hard cost component of completing that same job using as many legitimate "open shop" workers as possible (understanding that, as noted above, certain union trades simply have no viable "open shop" alternative). In addition, that "premium" is a blended one; without

identifying any trades in particular, some are significantly more expensive relative to "open shop" alternatives than others.

Based on information gathered in researching this Thesis, the union labor premium can be broken down into two categories: (1) the premium applicable with respect to the construction of urban, high-rise (above 70') buildings and (2) everything else.[87] Interviewees had difficulty identifying the former premium for the simple fact that all high-rise construction in the Boston area has taken place downtown and, as such, been bid out by union shops only. Nonetheless, based on a deep understanding of the trades needed to complete high-rise construction, and the field of available labor, interviewees can best estimate a 15% to 25% premium; the Testing Model incorporates the 20% figure falling in the middle.

Unlike high-rise construction projects, there exists more concrete evidence for the union labor premium applicable in the construction of other project types, due in large measure to the fact that more legitimate "open shop" alternatives exist for performance of the relevant trades. Before stating what that premium is, it is helpful to identify some of the objective facts reported by interviewees that inform this assumption. In general, wood-framed construction can be completed for $165/GSF through "open shop" labor versus a cost of $245 if completed by union labor (a 48% "premium"). One developer reports to having estimated the hard costs of a residential renovation project at $36 million on an "open shop" basis that ended up costing $50 million when performed by union workers (a 39% "premium"). Another developer of a wood-framed multifamily project built "open shop" outside of Boston for $200k/unit estimates that the

[87] It should be noted that three types of building type are identified in the Testing Model: Mid-Rise Wood-Framed, Mid-Rise Steel construction and High-Rise Steel construction. The union labor premium for the second product type – Mid-Rise Steel – might actually be lower than the figure applicable to Mid-Rise Wood-Framed buildings. However, this highly expensive construction technique is not commonly implemented given that the maximum 7-story height of these buildings limits their income-producing power in ways sufficient to offset those high construction costs. For the immediate purposes, this limited field of examples makes accurate assessment of the magnitude of the union labor premium for these developments challenging to pinpoint; the 45% figure represents the best information available.

requirement of using union labor alone would have driven that cost up to at least $298k/unit (a 49% "premium"). Many estimate that the union requirement represents approximately $85/GSF in costs above "open shop" alternatives (a 48% "premium" based on an assumed $260 union labor cost for that product type). Based on this input, the Testing Model starts from the assumption of a 45% union labor "premium" for mid-rise construction.[88]

Before moving away from the question of the magnitude of the union labor "premium", it is important to note its causes. According to various sources, the significant premium applicable in the context of mid-rise construction is due primarily to three factors: (1) higher union wage rates relative to "open shop" rates; (2) work rule restrictions which apply in the union, but not "open shop", context requiring, for instance, the presence on the job site of multiple laborers when only one would (at least arguably) be needed to complete the task in question; and (3) the declining productivity of an aging workforce. It is hard to address that final point in any positive way and, indeed, the suggestion will likely seem inflammatory to many people on the union labor side. Any indignation that statement might elicit may be wholly justified; this Thesis has not independently verified that assertion and is not purporting to make that claim. The other two factors, on the other hand, are less controversial and they should be the foci for any negotiated labor agreement with respect to GSAP development using, perhaps, the example of the carpenters' union's negotiated wood-framed residential rate as a guide.

11) Fair Market Value Cost of Land. The purchase price of the land on which a Subject GSAP would be built is clearly an important factor to consider in testing its financial feasibility.

[88] It should be noted that this 45%, as with other construction cost assumptions in this Thesis, represents a "snapshot" perspective of current conditions. The "premium" includes subcontractor costs which, as noted above, have risen dramatically recently given the construction boom's impact on the supply and demand metrics in the labor market. As the tide of this construction boom starts to ebb, it is quite possible that this "premium" would decline accordingly.

In addition, it is important to identify the fair market value of that land should the same be conveyed through a private sale for GSAP development for the public policy reasons outlined in Section III.C.3. In order to identify the fair market value sales price for the Target Parcels[89], seven recent sales of land parcels within relevant geographical proximity to the Target Parcels were reviewed. The total sales price of these parcels was then calculated as a matter of sale price per buildable square feet (as of right) by dividing the full sales price by square feet of the parcel times the parcel's as of right FAR.[90] This cost per buildable GSF figure was selected because per-acre sales prices alone do not account for the value which development at different densities would have played in determining the sales price for a given parcel. Importantly, the subjects reviewed included parcels for which residential development would have required securing a variance and where it would have been permitted as of right. The resulting figure ($20.26 per buildable square foot) represents the average across the sample reviewed, shown below in Figure V.3. Importantly, this figure reflects data collected from the sale of one site (225 Centre Street) zoned for multi-family development as well as others where such use would require a variance; pricing seems to be consistent throughout.

[89] Note that the possibility of conveying Parcel 9 at various land costs, versus conveyance subject to a ground lease, will be explored in Section V.C.2 as a possible approach in trying to ensure project-level financial feasibility.

[90] For example, the sale of a 50,000 SF parcel zoned for development at 2.0 FAR for a sales price of $2 million would equate a $20 per buildable GSF cost. A special note of gratitude is owed to Yanni Tsipis for his help in establishing these land costs.

Parcel Address	Sale Date	Price	Size	Price/Acre	Bldble GSF [1]	Price per BGSF	Zoning	MF Resi? [2]
83 Hampden Street	2/7/2011	$4,000,000	2.6 acres	$1,526,717.56	228,254	$17.52	Newmarket IDA	Forbidden
1403-1419 Tremont Street	6/30/2012	$4,100,000	1.9 acres	$2,169,312.17	329,314	$12.45	CC-2	Forbidden
76 Kemble Street	10/25/2013	$1,275,000	.5 acres	$2,451,923.08	45,302	$28.14	Newmarket IDA	Forbidden
225 Centre Street	12/19/2011	$1,022,000	1.4 acres	$740,579.71	60,113	$17.00	MFR	As Of Right
107-109 Terrace Street	4/19/2012	$570,000	.3 acres	$2,280,000.00	21,780	$26.17	LI	Forbidden
41 Newmarket Square	9/26/2013	$600,000	2.0 acres	$300,000.00	174,240	$3.44	Newmarket ICN	Forbidden
687 Columbia Road	4/13/2011	$1,504,114	.3 acres	$4,851,980.65	13,504	$111.39	LC	Conditional
			Average*:	**$1,833,706.50**	**Average*:**	**$20.26**		

Notes:

[1] Buildable Gross Square Feet calculated as follows: (Parcel Acre) * (43,560 [i.e.conversion acre -> ft]) *(as of right FAR [shown below])
Newmarket IDA 2.0
CC-2 4.0
MFR 1.0
LI 2.0
Newmarket ICN 2.0
LC 1.0

[2] Indicates whether multifamily residential construciton is allowed as of right in relevant zoning

**Averages exclude 687 Columbia & 41 Newmarket outliers*

Figure V.3 – Land Cost Comps

Subsection B: Testing Model Results

With the source for the Testing Model's exogenous assumptions having been identified in the foregoing Subsection A, this Subsection B will put that model to work in evaluating the impact which each of the myriad possible incentives could have on ensuring the financial feasibility of the Subject GSAP. The first step in this iterative financial feasibility testing process is to establish an "as of right" Subject GSAP within the applicable zoning conditions[91] and absent any other forms of public incentive. Please see Design Exhibit 1 for a graphic representation of this "as of right" Subject GSAP on each of the respective Target Parcels and Financial Exhibit 2 for the Testing Model Summary & Assumptions sheet applicable to both. In both cases, the 102-unit Graduate Student Anchor Tenant block has been inserted within a larger

[91] "As of right" in this context refers to development for which no special permit nor variance *with respect to project size* would be required under the applicable provisions of the Zoning Code. For Parcel 9, this assumes that the conditions approved for the Urbanica project establish the as-of-right conditions applicable to the site. While this is not technically the case – e.g. the Urbanica project received relief with respect to rear yard set back requirements – this assumption rests on a general observation that the Urbanica project represents a massing and use which the City deemed appropriate for this site. However, the "college or university use" aspect of GSAP development, as applicable, would require a conditional use permit here given this site's Dudley Square EDA zoning (see Zoning Code §50). For the Smookler lot, the zoning in place is Newmarket Industrial Development Area meaning that both the residential and college and university uses would require a use variance, but the GSAP positioned on that site is designed otherwise to be "as of right". (Id.).

multi-family development built to the maximum FAR. Additionally, attention was given in the design of these buildings to ensure that they did not exceed 5 stories in height given the increased building cost associated with exceeding that threshold. This approach seeks to maximize "pound-per-foot" value of the Subject GSAP keeping the graduate housing block as a constant factor.

With the as of right Subject GSAP in place, the iterative testing process then proceeds by changing one Incentive Input/"Toggle" or Master Lease Term at a time and recording the impact which that change has on the three threshold feasibility test results. In order to see the full impact which each variable can be expected to have in promoting GSAP development financial feasibility – to see whether any single approach could transform an otherwise infeasible GSAP development into a feasible one – the most extreme change is made to that variable as possible. For instance, rather than seeing what impact a *reduced* inclusionary zoning requirement[92] might have, this iterative process *removes* that requirement altogether. The effect of each iterative test is not cumulative; each one proceeds from an as of right starting point. Attached hereto as Financial Exhibit 3 is a graphic representation of the variables manipulated through this iterative testing process and the order in which they are tested.

The full results of the iterative testing process are attached hereto as Financial Exhibit 4. As with the foregoing Subsection A, this analysis starts at the top left-hand corner of the Summary & Assumptions page and works towards its bottom right-hand corner. Sensitivity tables are provided with the results of any iteration showing a positive NPV under different hurdle rate and/or exit cap rate assumptions. The results of each test identified on Financial Exhibit 4 follow the steps identified in Financial Exhibit 3. The variable change for almost all of

[92] To be clear, the use of the term "inclusionary zoning requirements" in this case relates to the requirements described in the "Inclusionary Development Program Guidance for Developers" resource cited in this Thesis' References section.

the iterations are self-explanatory based on the notes provided above the "Scenario" column of the table on Financial Exhibit 4, but four iterations in particular require some elaboration.[93]

First, it should be noted that the Testing Model starts with a baseline assumption of 12 months of permitting and 24 months of construction time, the same time frames stated in the Tremont Crossing EPNF.[94] ("Tremont Crossing (P-3) PNF", 37). In the Testing Model's Annual Cash Flows (Property) sheet, the first year – identified as "Year 0"[95] – represents the 12-month period prior to closing on the fee simple acquisition or execution of a ground lease, as applicable, for the Target Parcel in question during which permitting would be ongoing.[96] However, expediting that process will impact project-level financial feasibility by enabling the Subject GSAP to be delivered earlier than otherwise possible, with the commensurate head start on leasing the Market Rate and Affordable Units (the Master Lease is set to start at the beginning of

[93] Note that this Thesis does not explore impacts related to the other alternatives available for satisfying Boston's inclusionary zoning requirements, notably the option of making a $200,000/unit payment in lieu of constructing the same on-site. ("Inclusionary Development Program Guidance for Developers"). These are, to be sure, significant alternatives which have found favor among the development community. For the Subject Parcels, however, these alternatives have been ignored based on a general observation concerning the present value of the rent cash flows in this neighborhood. Using the same discount rate used to determine the project NPV (10%), the present value of each Market Rate unit falls below $200,000, meaning that – just as a matter of economic incentive – a developer would not elect to "buy out" an affordable unit for that amount of money in order to replace it with a market rate one which is not expected to compensate the developer through rental income. The complexities associated with provision of housing off-site (the third option) have been ignored for the sake of simplicity.

[94] This is not to suggest that development of the Subject GSAP would be of a similar complexity as Tremont Crossing, or similar otherwise. Nonetheless, these assumptions resonate with feedback provided by this Thesis' interviewees.

[95] This term should not be confused with "Time 0", a term of art commonly used in financial analysis to represent the point at which a given investment is made. (See, e.g., Flowers, 8, 16). In this context, Time 0 would be the time at which a GSAP developer takes legal possession of a Target Parcel either through a fee simple purchase or through the execution of a ground lease, as applicable. The use of "Year 0" here is intentional and enables the quantification of the benefit which expedited permitting might offer. Under normal permitting conditions (12 months) legal possession of a Target Parcel would take place on the final day of that 12-month period; "Time 0" would be the 365th day of that 12-month period (July 31, 2016). If, however, expedited permitting conditions exist and the permitting process takes only 6 months, for instance, "Time 0" would occur six months earlier and fall on January 31, 2016. 100% of the land acquisition costs, if any, occur in Year 0 in either case – the expedited permitting would just mean that construction starts earlier than anticipated (February 1, 2016 versus August 1, 2016). Technically that would mean that Year 1 should start on February 1, 2016 but the Testing Model has been set up in this way specifically for the purpose of showing the financial impact of expedited permitting even if it does so at the expense of technical compliance with standard real estate investment conventions/terminology.

[96] This assumption implies that the ground lease wouldn't be executed until permits had been granted and/or that closing under a P&S for the Smookler Lot had a so-called "permitting contingency." See fn.18 and fn.20.

Year 3 regardless of any early delivery of the rest of the project). To show this impact, the "No" toggle has been changed to "Yes" and 6 months of permitting lead time input as an assumption. This latter assumption is admittedly an arbitrary one chosen for illustrative purposes only; the Testing Model is set up to enable its user to manipulate this number to see varying impacts.

The second variable manipulation which merits some elaboration has to do with density. There is no way to take the "most extreme" stance with this variable as with others whose impact can simply be eliminated, so to show the impact which density relief might have two iterations were tested, one adding 1.0 FAR and the other doubles the as of right FAR. It should be noted that the increased building mass associated with this increased FAR is allocated in full to market rate units. As will be shown in Subsection C, increasing the density on the Graduate Student Anchor Tenant component of the GSAP might be better for the purposes of bolstering the project financial feasibility given the prevailing market rents in the relevant submarket. That dynamic would change in other submarkets where delivering increased Market Rate housing stock would entail the delivery of units that might rent at per NSF rates in excess of those possible through the rental of graduate student units.

The third variable which should be explained a bit further is the Exactions/Linkage iteration. By zeroing out these numbers, the implicit assumption is being made that these Development Impact Project Exactions would be required in the first place. (Bobrowski, 448). It should be noted, however, that this might not be the case for GSAP developments having less than 100,000 GSF of Graduate Student Anchor tenant use. Under Zoning Code Article 80B-7.2 Institutional uses are considered Development Impact Uses, but residential uses are largely not. (Id.). While this may not be an applicable requirement for the Subject GSAP, this exposition is

being undertaken for the purpose of showing what potential benefit this specific approach might have.

Finally, some of the Master Lease Term variable manipulations should be further described. Specifically, the impact of direct University financial participation is tested in two ways.[97] First, the assumption of a $250/student/month rent payment applicable in the context of 815 Albany Street is shown, albeit without necessarily representing the "most extreme" change in this context. Next, the model is changed to reflect an assumption that the University would pay its full proportional share of the operating costs, taxes and fees, with the amount of taxes being 100% of the taxes which are shown for the graduate units on the Annual Cash Flow (Property) and the operating costs and fees being calculated as a percent of the property's total amount of those costs and fees equal to the ratio of the Graduate Student Anchor Tenant NSF over the total development NSF.[98]

The iterative testing results are summarized in Financial Exhibit 4. As show in that exhibit, no single variable could be manipulated to make the Subject GSAP a financially feasible development on either of the Target Parcels. Certain variables, however, had a more dramatic impact on the results than others, and in two cases for each of the Parcel 9 and Smookler Lot testing a lower hurdle rate and exit cap than expected might cause the manipulation of either of

[97] Direct funding of development costs (equity investment) is not explored in this Thesis given the practical realities associated with making any material real estate development investment without having a concomitant ownership interest in the developed project. That said, implementation of a right of first refusal to purchase the Graduate Student Anchor Tenant (what would probably be a commercial condominium in this context) is something which parties might explore in the context of up-front development cost funding from the University.

[98] Based on Section V.A.4's discussion of the "triple net" character of the rent payable with respect to the Graduate Student Anchor Tenant units, this could seem like an absurd exercise in "double dipping". This is both correct and incorrect. On the one hand, the Master Lease 70%/30% split between Base and OpEx Rent is a fiction of sorts created primarily to keep this rent affordable for graduate students. On the other hand, the 30% OpEx component does "float" to protect the Master Lessor from expense surges; collecting further expense reimbursement sure does seem like collecting twice to cover the same cost. This discussion, however, misses the point for which this University participation feature was built into the Testing Model. As also noted in Section V.A.4, deal structures between Master Lessors and Master Lessees will likely vary on a case-by-case basis; this part of the Testing Model is designed to enable flexible analysis of Master Lease deal structures' impact on the project's financial feasibility.

these individual variables to result in positive NPV developments. Both of these results, however, place heavy incentivization burdens on the private parties involved in these arrangements – both Universities, union labor – and would require reduced return expectations from a GSAP developer. These factors seem to make this single variable outcome unlikely but sensitivity tables have been included in Financial Exhibit 4 to show what would need to happen for these manipulations to yield a financially feasible development.

Subsection C: Finding a Workable Solution

Having seen how no individual variable can be manipulated to make an as of right Subject GSAP "pencil out" on either the publicly-owned or privately-owned Target Parcels, this subsection will show three examples of Subject GSAP development on these parcels that would be financially feasible: (i) the "Parcel 9 Ground Lease Solution"; (ii) the "Parcel 9 Fee Simple Solution"; and (iii) the "Smookler Lot Solution". Two parallel presentations are made for each of these three solutions – one which assumes some reduction to the union labor "premium" and one developed under existing construction cost conditions – given the challenges inherent in that politically sensitive matter. University participation has assumed throughout this analysis because various tests showed that financial feasibility without that contribution would be extremely challenging to accomplish. The results for all three workable solutions and some commentary concerning the same are presented below together with tables showing the starting "base case" project-level NPV and the sequential steps taken to arrive at a financially feasible project. Summary & Assumption pages and sensitivity tables for each of the following solutions are attached hereto as Financial Exhibit 5. Before proceeding to a further description of these three solutions, however, a note of significant importance should be identified.

According to the market study compiled in accordance with the Tremont Crossing development, per NSF rents in the Target Parcels' submarket average $2.81. ("Tremont Crossing (P-3) PNF", 189). This is well below the $4-$5 per NSF (or higher) rents driving development in other parts of the city, rents which the developers of such buildings are tending to achieve without too much trouble. This observation has an important ramification for the Subject GSAP: more than 102 units of graduate student housing are needed for those developments to be financially feasible – the graduate units in these cases actually subsidize each of the three respective solutions. Towards that end, the graduate student component has been doubled to include 204 units in each Subject GSAP. In other parts of the City, developers would likely prefer to deliver further market rate units. To underscore the severity of the impact which prevailing market rents have on development financial feasibility, Figure V.4, below, shows the different results of developing the as of right, 102-graduate student unit Subject GSAP on Parcel 9 and for developing the exact same project under all of the same conditions but with an assumed $4.50/NSF average rent for the market rate units.

SUMMARY @ $2.81/NSF Avg. Market Rate Rents	
Project Feasible?	NO
NPV of Project:	($21,227,783)
Return on Cost (Stabilized NOI)	3.83%
Margin on Sale	-13%

SUMMARY @ $4.50/NSF Avg. Market Rate Rents	
Project Feasible?	MAYBE
NPV of Project:	($1,215,226)
Return on Cost (Stabilized NOI)	6.08%
Margin on Sale	42%

Figure V.4 – Summary of Prevailing Market Rent Impact

Readers should bear this stark contrast in mind as the following solutions – and the types of incentivization their financial feasibility would require – are described. This crucial issue relating to whether a Subject GSAP's graduate units subsidize the overarching development or whether it is the other way around will be explored a bit further in this Thesis' conclusion Section VI.

1a) The Parcel 9 Ground Lease Solution (with Union participation). Before discussing this solution, it should be noted that the change from a 102-graduate unit GSAP to a 204-graduate unit GSAP entailed some physical changes layout of the building on Parcel 9, along with a reduced amount of parking spaces at grade. This difference can be seen in Design Exhibit 4.

The steps taken to reach the Parcel 9 Ground Lease Solution with the use of union labor at a reduced "premium" are as follows:

Parcel 9 (Ground Lease, Reduced Union "Premium")		
	NPV	*$ Change*
204 Grad Units, 36 Pk. Spaces @ Grade	**($25,231,986)**	
$250 Housing Grant	**($15,321,277)**	*$9,910,709*
6 Months Expedited Permitting	**($13,111,630)**	*$2,209,647*
Parking Relief	**($5,232,515)**	*$7,879,115*
IZR (50% @ 80% AMI, 50% @ 100% AMI)	**($4,938,919)**	*$293,596*
No Linkage/Exactions	**($4,277,574)**	*$661,345*
Tax Freeze on Grad Units	**($2,977,881)**	*$1,299,693*
7.5% Reduction in Union Labor "Premium"	**($923,352)**	*$2,054,529*
$0 Ground Lease Payments	**$73,203**	*$996,555*
Return to Urbanica Terms	**($923,352)**	*($996,555)*
$0.18/GSF Starting Ground Lease PMT	**$615**	*$923,967*

There are a few points concerning this analysis which bear mention. First, here – and throughout each of the following solutions – a $250 per student per month Housing Grant is assumed as a baseline level of University participation, an assumption based solely on the 815 Albany Street "comp". Putting aside the question of whether this is the right level of University participation as a matter of principle[99], there are very good reasons to think that this level is both too low and too high. For one, whereas BUSM partially funded the construction costs for 815 Albany Street, zero equity investment was required on the part of the University for this

[99] See Section IV.A.3.ii

development, suggesting that the $250 level could be higher. Conversely, given that BUSM actually owns the 815 Albany Street project it is effectively paying itself rent suggesting that $250 might be too high – the present value of these cash flows is approximately $12M, a difficult investment to justify when it constitutes rent paid to 3rd parties. In any case, it is pretty clear that 815 Albany Street is not, in this respect, the best "comp" around which to base assumptions – but that fact is of limited consequence for the instant purposes. None of the assumptions reflected above or in the following analyses are intended to reflect actual or likely eventualities; this iterative process uses generally modest changes to the model to exemplify the interplay between the different types of incentivization explored herein. Readers are encouraged to access and download the Testing Model through the link provided above to further see this dynamic in action.

The foregoing caveat in mind, the sequential steps detailed above proceed from the ostensibly "easiest" changes and work towards land cost (in this case Ground Lease payments) to arrive at a project which approximates a zero-NPV as closely as possible in order to ensure that the level of incentivization provided does not yield a windfall for the developer.[100] These include expedited permitting (6 months), relaxed parking requirements (0.10 ratio for graduate students, 0.35 ratio for all other renters)[101], relaxed inclusionary zoning requirements (50% at 80% AMI and 50% at 100% AMI)[102] and full waiver of any linkage payments. The magnitude of the impact which different incentives have on the project-level NPV – represented here as dollar amounts – is telling. University participation through the housing grant has the most

[100] See Section V.7.i for discussion of "zero-NPV" deal and why that outcome reflects a fair and balanced deal.
[101] This relative ease of this assumption reflects the transit oriented nature of the Target Parcels' location and the increasing willingness of the BRA to approve developments without any parking at all, exemplified by the Lovejoy Wharf development in North Station and Ropewalk Building in Charlestown.
[102] This reflects existing policy applicable to the development of home ownership projects in Boston. ("Inclusionary Development Program Guidance for Developers", 1).

significant impact. Indeed, as mentioned above, the market rate rent which can be charged for the rest of the building make this participation a threshold requirement *in this neighborhood*.

A close second to University participation in terms of positive impact on project-level NPV is parking relief. Plainly stated, building underground parking at a development like this is prohibitively expensive so to make this type of development work under these types of market conditions, one of three things needs to happen: (1) a certain amount of GSF otherwise devoted to housing (or meeting height restrictions) needs to be sacrificed for above-ground structured parking, although that option has not been explored here[103]; (2) a *considerable* level of incentivization needs to be provide from other sources; or (3) parking requirements need to be relaxed in a manner such as that shown here. Fortunately, of all uses possible uses it seems that graduate student housing would be the best candidate for this type of relief.

The foregoing changes, along with an (arbitrarily identified) 7.5% reduction to the otherwise applicable 45% union labor "premium" bring the NPV of this solution within $1 million from a feasible solution. At this point, the cost of the ground lease is used to get as close to a net-zero NPV deal as possible. Along with certain tax incentives, discussed hereinafter, this variable affords a high level of specificity in identifying the appropriate level of total incentivization. Moreover, as discussed in this Thesis' Introduction section, the City seems interested in using this variable as a way to promote multifamily development. It is worth noting, however, that from the City's standpoint reducing this payment to a first year amount of $0.18/GSF of the parcel is effectively the same thing as giving the property to GSAP for free.[104] Inasmuch as the ground lease payments reflect an important revenue stream for the City, as

[103] See the second grammatical paragraph of Section V.10 for further detail on this point.

[104] At a 3% discount rate, the present value of the 65-year stream of lease payments under the Urbanica deal is approximately $8.36 million; under the same terms this PV falls to approximately $321,000 when the starting rent is reduced from $2.50/GSF to $0.18/GSF.

compared to a nominal payment for the use of land with which the City does not want to part, altering the other terms of the ground lease might be a better approach in using it as an incentivization mechanism,

1b) The Parcel 9 Ground Lease Solution (without Union participation). As shown in the following, the removal of a reduced union labor "premium" requires a little more flexibility with respect to property taxes on the part of the City.

Parcel 9 (Ground Lease, Standard Union "Premium")		
	NPV	*$ Change*
204 Grad Units, 36 Pk. Spaces @ Grade	**($25,231,986)**	
$250 Housing Grant	**($15,321,277)**	*$9,910,709*
6 Months Expedited Permitting	**($13,111,630)**	*$2,209,647*
Parking Relief	**($5,232,515)**	*$7,879,115*
IZR (50% @ 80% AMI, 50% @ 100% AMI)	**($4,938,919)**	*$293,596*
No Linkage/Exactions	**($4,277,574)**	*$661,345*
Tax Freeze on Grad Units	**($2,977,881)**	*$1,299,693*
Partial Abatement on Grad Units (30%)	**($948,039)**	*$2,029,842*
Return to Urbanica Terms	**($923,352)**	*$24,687*
$0.11/GSF Starting Ground Lease PMT	**$3,806**	*$927,158*

To understand this dynamic better, a few numbers will prove helpful. The full amount (FV) of tax payments, without any abatement or freeze, payable with respect to these 204 graduate units between Year 3 and Year 11 is equal to $6,340,965. That number falls to $5,617,491 when those taxes are frozen (an approximate $700,000 difference). When 30% of those taxes are then abated, the revenue stream falls to $3,932,244, an approximate $1.7 million difference from the frozen taxes and an approximate $2.4 million difference from the entire tax stream payable in the absence of any incentivization.

These figures have some pretty clear implications the use of property taxation as an approach to incentivizing development throughout the City. By the time this analysis reached the point of including property tax abatement, most of the other tools at the City's disposal had been

used and basically giving the ground lease up to a GSAP developer for free would not, by itself, suffice to ensure the project's financial feasibility. That feat required something which, in a manner of speaking, "cost" the City some real money ($1.7 million). This observation should be borne in mind as the City considers whether a given parcel should be conveyed to a GSAP developer – or any other developer – as a ground lease interest or in fee simple because, as will be seen in the next section, the latter type of conveyance might not require the same type costly tax incentivization. Of course, a fee simple conveyance also entails the loss of the City's option value with respect to that parcel that it would have had at the lapse of a ground lease.[105] This Thesis has the considerable luxury of observing these issues without having to recommend a course of action; this matter has simply been identified for the readers' consideration.

2) The Parcel 9 Fee Simple Solution (both with and without Union participation). Analyzing a conveyance of Parcel 9 in a fee simple transaction is useful because it shows the implications for replacing one incentivization "tool" (ground lease terms) with another (reduced land cost). This scenario is represented in the following tables, starting from the assumption that the conveyance would be at a FMV price established in Section V.11, above. The result in the scenario involving a reduced union "premium" is reached in largely the same way as the result in the parallel solution. The difference is that in the former solution, the implementation of the familiar array of incentives yields an approximate $1 million positive NPV for the project while the latter solution returns a negative NPV before the introduction of reduced land cost incentivization. As such, the process by which a zero-NPV deal is eventually reached commences from different staring points for the reduced sale price of the parcel: the positive NPV deal starts at the approximate amount of positive NPV ($1 million) and the negative NPV

[105] See fn.47 for further detail concerning the option value of land.

deal starts at $0 (i.e. the greatest amount of potential incentivization available in this scenario). From there, one simply adds-to-and-subtracts-from the sale price until a zero-NPV result arises.[106]

Parcel 9 (Fee Simple, Reduced Union "Premium")		
	NPV	*$ Change*
204 Grad Units, 36 Pk. Spaces @ Grade; FMV Fee Simple Sale	**($26,006,023)**	
$250 Housing Grant	**($15,503,814)**	*$10,502,209*
6 Months Expedited Permitting	**($13,243,192)**	*$2,260,622*
IZR (50% @ 80% AMI, 50% @ 100% AMI)	**($12,933,327)**	*$309,865*
No Linkage/Exactions	**($12,271,983)**	*$661,344*
7.5% Reduction in Union Labor "Premium"	**($9,752,220)**	*$2,519,763*
Tax Freeze on Grad Units	**($8,349,410)**	*$1,402,810*
Parking Relief	**($1,000,576)**	*$7,348,834*
Land Sale @ $1 million	**$1,552,718**	*$2,553,294*
Land Sale @ $2,552,718	**($46,582)**	*($1,599,300)*
Land Sale @ $2,506,136	**$1,398**	*$47,980*
Land Sale @ $2,507,534	**($42)**	*($1,440)*
Land Sale @ $2,507,492	**$1**	*$43*
Land Sale @ $2,507,493	**$0**	*($1)*

Parcel 9 (Fee Simple, Standard Union "Premium")		
	NPV	*$ Change*
204 Grad Units, 36 Pk. Spaces @ Grade; FMV Fee Simple Sale	**($26,006,023)**	
$250 Housing Grant	**($15,503,814)**	*$10,502,209*
6 Months Expedited Permitting	**($13,243,192)**	*$2,260,622*
IZR (50% @ 80% AMI, 50% @ 100% AMI)	**($12,933,327)**	*$309,865*
No Linkage/Exactions	**($12,271,983)**	*$661,344*
Parking Relief	**($4,457,915)**	*$7,814,068*
Tax Freeze on Grad Units	**($3,055,106)**	*$1,402,809*
Land Sale @ $0	**$528,188**	*$3,583,294*
Land Sale @ $528,188	**($15,846)**	*($544,034)*
Land Sale @ $512,342	**$476**	*$16,322*
Land Sale @ $512,818	**($15)**	*($491)*
Land Sale @ $512,803	**$1**	*$16*
Land Sale @ $512,804	**$0**	*($1)*

[106] This approach is, admittedly, a tad remedial and painstaking. Its use in this case is intended to showcase the Testing Model's flexibility in reaching a desired outcome. Here, the delta between a given NPV the Testing Model returned and zero was simply incorporated into the "Reduced Land Sale Price" cell until the model returned an NPV of zero.

3) The Smookler Lot Solution (both with and without Union participation). Analysis of the Smookler Lot solution is helpful for a number of reasons. First, given that this analysis is focused on development of a GSAP on a private parcel, the significant incentivization "tools" related to reduced land cost are not available to ensure the project's financial feasibility. Second, as with the Parcel 9 solutions, the number of graduate student units in this Smookler Lot solution has been doubled to 204. This change has certain impacts on the massing of this Subject GSAP and the number of parking spaces at grade which the Smookler Lot can accommodate accordingly, as shown on the attached Design Exhibit 5. This change also means that, with an FAR of 2.28, this is the first example to be reviewed where density relief can yield a positive impact for the purposes of incentivizing a Subject GSAP's development. Finally, this change – required in large measure because of prevailing market conditions – results in the Smookler Lot solution having no market rate or affordable units; the building is comprised entirely of the Graduate Student Anchor Tenant. This sets the stage for an interesting and different analysis of University participation, and it also means that the incentivization "tools" related to inclusionary zoning requirements are unavailable for use in promoting the project's financial feasibility.

The first analysis – in which a reduced union labor "premium" applies – is shown below:

Smookler Lot (With Reduced Union "Premium")		
	NPV	*$ Change*
204 Units, 15 Pk. Spaces @ Grade	**($24,039,645)**	
$250 Housing Grant	**($13,504,267)**	*$10,535,378*
6 Months Expedited Permitting	**($13,491,775)**	*$12,492*
Parking Relief	**($5,699,746)**	*$7,792,029*
No Linkage/Exactions	**($5,415,089)**	*$284,657*
Tax Freeze on Graduate Units	**($4,008,979)**	*$1,406,110*
10% Reduction in Union "Premium"	**($1,915,342)**	*$2,093,637*
25% Tax Abatement	**($122,965)**	*$1,792,377*
26.75% Tax Abatement	**$2,502**	*$125,467*

Given the "L-shaped" nature of this parcel (see Design Exhibit 5) and abutting use to its rear[107] it is not clear whether much more density could be added to this building without breaching the 5 story threshold, a level above which construction costs become quite challenging to work into a feasible development. As such, further density relief, even for the economically viable graduate student use, is less likely to be a tool the City could use to in significant ways to promote the development of this Subject GSAP. To accommodate for the relative shortage of incentivization "tools" available for the City's use in this scenario, a further 2.5% reduction in the union labor "premium" has been incorporated, lowering the premium to 35%.

An alternative to shifting the incentivization burden from the City to the labor unions on this project as in the foregoing involves increasing the level of University participation. That option is explored below in the second Smookler Lot Solution in which no reduction to the union labor "premium" is assumed:

Smookler Lot (Without Reduced Union "Premium")				
	NPV	*$ Change*	**PV to Univ.**	*$ Change*
204 Units, 15 Pk. Spaces @ Grade	**($24,039,645)**			
$250 Housing Grant	**($13,504,267)**	*$10,535,378*	**($12,298,629)**	
6 Months Expedited Permitting	**($13,491,775)**	*$12,492*		
Parking Relief	**($5,699,746)**	*$7,792,029*		
No Linkage/Exactions	**($5,415,089)**	*$284,657*		
Tax Freeze	**($4,008,979)**	*$1,406,110*		
25% Tax Abatement	**($2,216,601)**	*$1,792,378*		
Additional $50 Housing Grant	**$4,816**	*$2,221,417*		
Adjustment: Housing Grant = $299.91	**$818**	*($3,998)*	**($14,753,927)**	*($2,455,298)*

In this analysis, changes in University participation above the $250/student/month baseline described in this subsection's opening paragraphs is shown both as it impacts the project's financial feasibility and as the increased level of participation impacts present value of the

[107] For the sake of clarity, the "abutting use" described here is actually the same parcel. Only an approximate 1.3 acres of this total approximate 2.8 acre parcel is being used herein as the Smookler Lot. For those who might be familiar with this site, the area chosen is roughly the size of the existing parking lot used as a Boston public school bus depot.

University's Master Lease obligations. This increase of approximately $2.5 million of PV does not seem completely unreasonable in this context when one considers the fact that the University will reap the benefit of $42.1 million development in exchange for making this $14.8 million investment. (See the "Cost to University" section of the Summary & Assumptions page attached as Design Exhibit 5.c.i).

In closing, it is worth noting that, as with reduced land cost in the Parcel 9 Fee Simple conveyance, the level of University participation has been fine tuned in this analysis to as closely approximate a zero NPV deal as possible. That comparison is an intentional one because it highlights how this particular Smookler Lot Solution exemplifies the benefits inherent in the Article 80F process in striking ways. As of this writing, the Smookler Lot is an industrially-zoned parcel adjacent to an area undergoing a significant renaissance to the west (Dudley Square), a parcel slated for development of hotel, residential and retail use to the north (Parcel 9) and one of Boston's most desirable neighborhoods to the east (the South End). In a city that desperately needs housing development, and particularly of an affordable type geared towards a younger demographic, it might fairly be said that the current use at this site does not qualify as its "highest and best". While one cannot say for certain, it seems likely that there are two main impediments standing in the way of that highest and best use being realized: zoning and economics. The foregoing analysis has shown that the Article 80F process might be able to remove both barriers and – even without having the benefit of low cost land or labor – forging a deal that results in the development of a centrally-located, transit oriented housing solution for 308 graduate students.

Section VI – Conclusion

While this Thesis has covered a lot of ground, it has also left some significant questions unanswered. Would Universities *actually* enter into the Master Lease arrangements that serve as the very foundational basis for the entire GSAP concept? Is the passage of an amendment to Article 80 *actually* a viable possibility within Boston's current political climate? Might Boston's building trades unions *actually* agree to reducing costs to build GSAP projects and/or would these other forms of needed incentivization *actually* be available – and would that *actually* suffice to make such developments financially feasible given that other, uncontrollable forces also play significant roles in driving construction costs and impacting asset values? Will the delivery of GSAPs *actually* suffice to help mitigate Boston's middle income housing affordability problems in meaningful ways? Moreover, even if all of the foregoing pieces were to fall into place, would Boston's private development community *actually* engage in the development of this type of project? These are all questions which this Thesis simply cannot answer definitively. The foregoing pages have been devoted to an exploration of the issues underlying these important questions and this Thesis has sought to address each by providing the best information available – or, at least, by trying to identify the various aspects of each issue for its readers' consideration.

Perhaps the most significant question begged by the foregoing pages of this Thesis is this: why should anyone care about GSAP development in the first place? At best, each of the two projects described and analyzed in this Thesis (i.e. the Subject GSAPs) have been shown capable of delivering 204 units of graduate student housing – intended to house 308 students apiece – in addition to a minimal amount of market rate and affordable housing in only one of the two projects studied. Without having to engage in the type of economic analysis described in Section

IV.A.1 it seems pretty certain that housing 616 students and creating 52 new units will do little to mitigate Boston's middle income housing affordability problems. Moreover, achieving that ostensibly limited result in this Thesis' analysis involved no less than a Zoning Code amendment, a successful private developer-University negotiation around a 15-year Master Lease, union labor concessions and some permitting relief. How, one might wonder, can those ends possibly justify those means? Plainly, they cannot.

The point of this Thesis is not to suggest that anyone go to extraordinary lengths in order to reap limited benefit. Rather, this Thesis is intended to provide a way of approaching and analyzing some of the public policy and private bargaining issues discussed herein. That approach and analysis might find two applications in Boston: building "up" and building "out". In terms of the former, the GSAP approach might be applied towards incentivizing development within the City's downtown and centrally-located neighborhoods in a controlled way bringing graduate students into those locations. There is not a tremendous amount of developable publicly-owned land in these centrally-located areas, so much of the building "up" of GSAPs would likely have to happen on private parcels. As outlined throughout this Thesis, that prospect, while feasible, faces some considerable economic and regulatory challenges and complications.[108] For the purposes of building "out", however, GSAP development might have a different character altogether – and it might be able to provide a significantly different type of benefit to the City. To understand this, consider GSAP development in the context of the current efforts related to the improvement of the MBTA's Fairmount Line.

In 2012, the BRA announced a $200 million project involving the improvement of the Fairmount Line, the addition of four new stations to that line and related public improvements.

[108] To be clear, the issues to which this refers are the potentially high land costs discussed in Section IV.A.3.i and the public policy issues surrounding the FMV requirement discussed in Section III.C.1.

(Kronenberg). This considerable project was undertaken with the overarching objective of "put[ting] the economies of four [Boston] neighborhoods on the fast-track." (Id.). In addition, the BRA planned to put some focus on the development – specifically in some cases multifamily development – of the numerous publicly-owned parcels located in close proximity to the new stations. (Id.).

As with many large scale redevelopment projects in well-established neighborhoods, plans surrounding the Fairmount line improvement have been met with concern from citizens relating to the character of that development and what it means for their neighborhood. In particular, "residents want to ensure the new stations don't lead to gentrification that prices locals out." (Id.). Residents have expressed concerns that "the people who worked so hard to make the new stations happen [might be] displaced from the very places that they were trying to beautify." (Id., quoting Mela Bush, lead organizer of the Greater Four Corners Action Coalition). The same concern which these residents expressed in the early planning phases of the Fairmount line improvement process persists today as the City begins the process of effecting its desired changes. As noted by Paul McMorrow of the Boston Globe in a July 15, 2014 editorial:

> "Boston's dance with the Fairmount hinges on a pair of vacant, city-owned industrial properties, which hit the market this summer. They are the first of hundreds of publicly owned development parcels that should be sold, and redeveloped, in a big anti-gentrification effort along the line. But the properties will only really matter if the city, neighborhood residents, and outside developers can all agree to go big enough to make a real difference." (McMorrow).

Noting that, among other things, University of Massachusetts' Boston campus is located within a short distance from one of the two properties alluded to above (the Maxwell site in Dorchester), it seems that the targeted use of GSAP development could prove to be an exceptionally useful instrument in the realization of the City's goals with respect to the Fairmount line project while addressing the overarching concerns regarding gentrification. For

one, introducing GSAP developments into these neighborhoods might make large scale multifamily development a financially feasible proposition in the first place. As seen with the workable solutions to development on Parcel 9 discussed in Section V.10, a Graduate Student Anchor Tenant can effectively serve as a financing mechanism for the market rate and affordable unit components of a GSAP development in submarkets – such as those along the Fairmount line which "rank among the city's poorest" (McMorrow) – where prevailing market rents would otherwise make such developments financially unrealistic. Moreover, GSAP developments do not have the same "gentrification effect" that standard multifamily development does for a very straightforward reason: a significant number of their units are subjected to deed-restricted rental caps. It is also worth noting that these developments would bring in a type of young resident (and their concomitant impact on neighborhood vibrancy) but would typically *not* bring in children (and their concomitant impact on public services) to the same extent as pure multifamily projects might. Finally, the Fairmount line areas are ones in which the City might be less likely to have to "go it alone" in incentivizing development; as exemplified by the Boston Foundation's recent $10 million pledge to improvements along the Fairmount line, this is an area where a type of private incentivization not explored in this Thesis might be available.

GSAP development is a housing policy approach which inherently involves a significant amount of complication, and it is one which may well face considerable obstacles. Nonetheless, it is an approach which might be able to richly reward the City for wrestling with those challenging issues by helping it solve difficult issues through private development solutions, whether they are located in the Longwood Medical Area, Allston, the "Innovation District", Dudley Square/South End, along the Fairmount line or elsewhere. If nothing else, the process of exploring the GSAP concept, and the financial feasibility analysis presented in this Thesis to

show how that concept might become reality, holds important lessons that will hopefully help inform the City's housing policy as it changes under a new administration facing both the promise and the challenge of Boston's renewed economic vitality.

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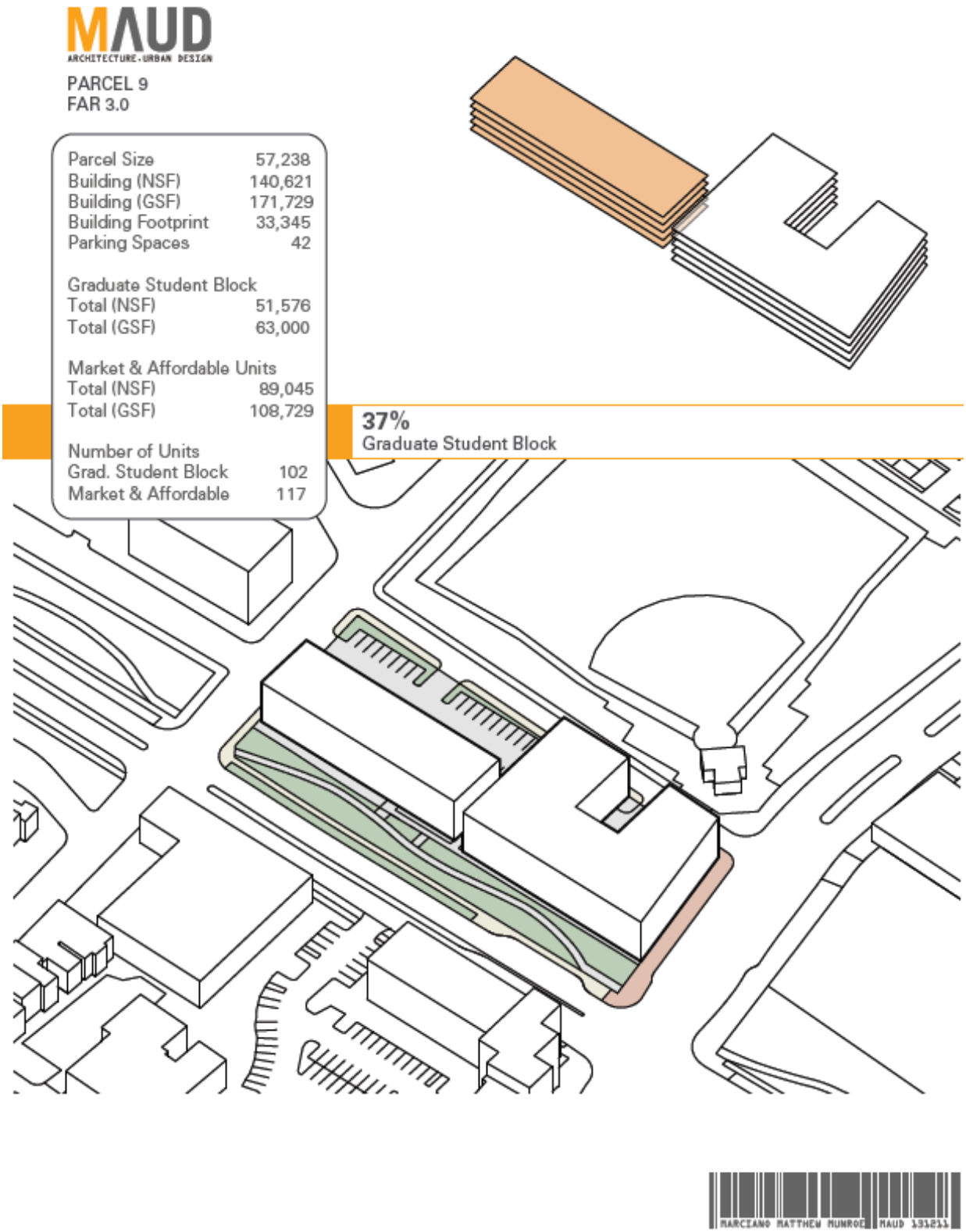
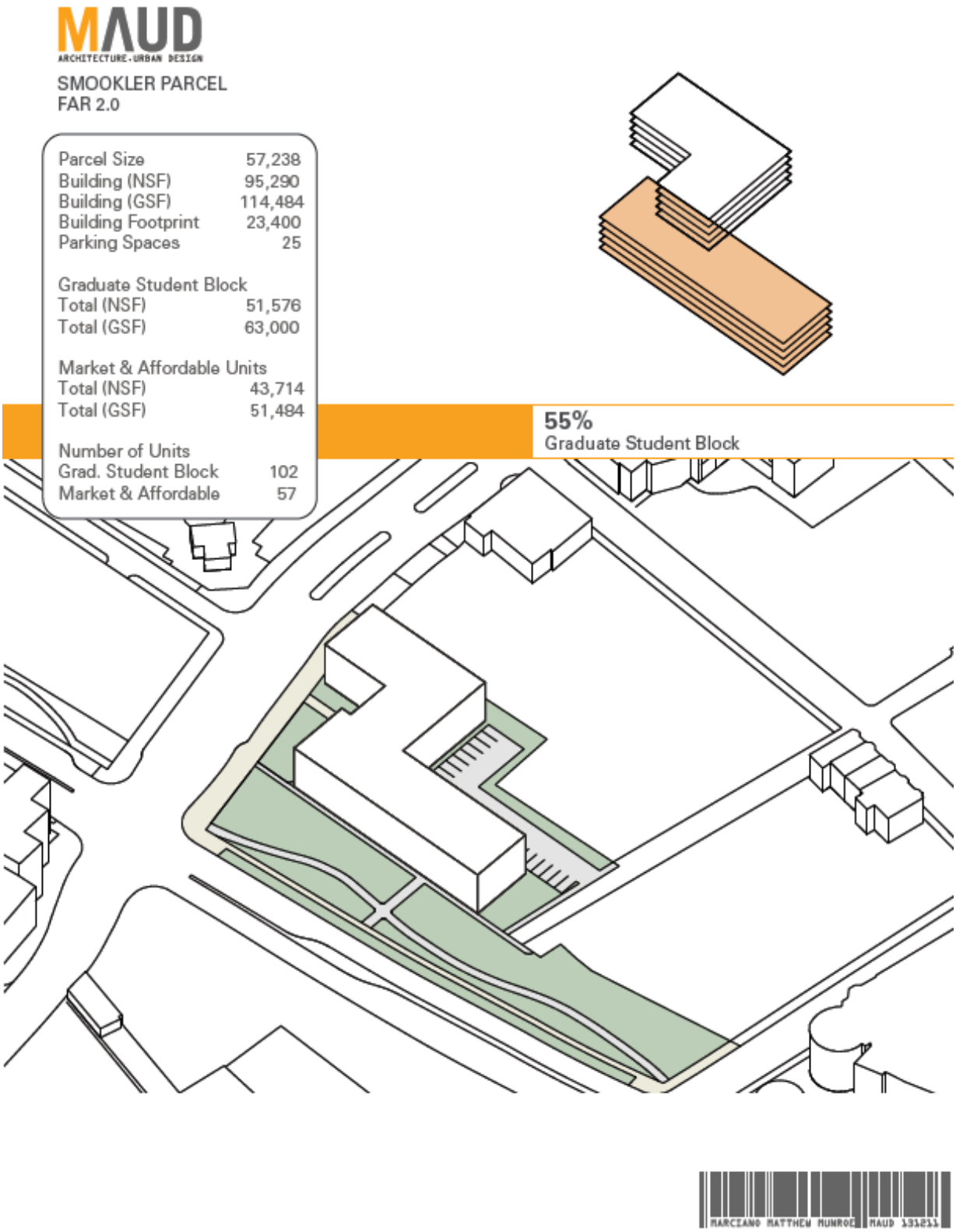
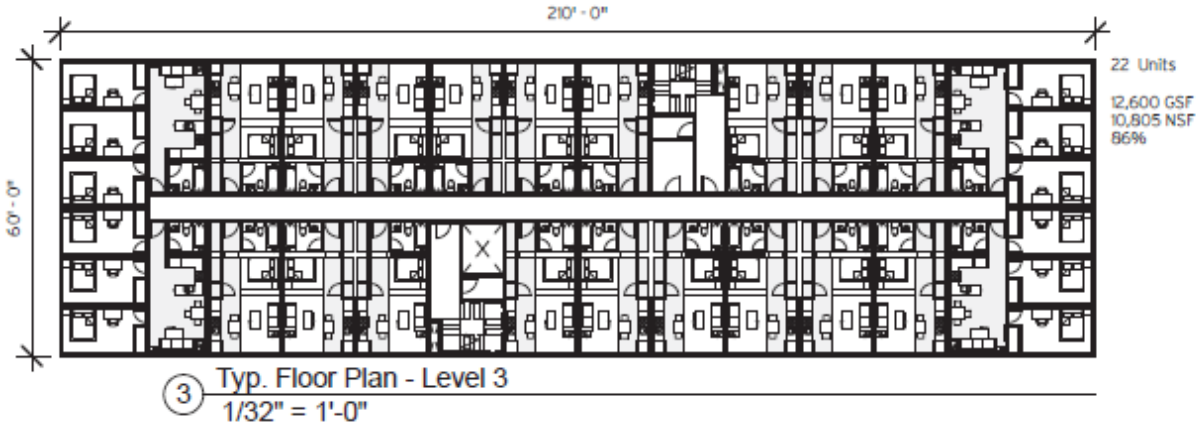
Design Exhibit 1.a – "As Of Right" Subject GSAP (Parcel 9)



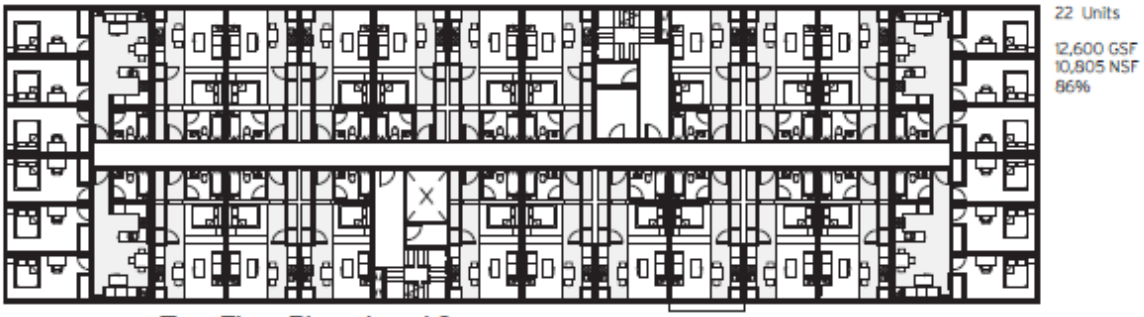
Design Exhibit 1.b – "As Of Right" Subject GSAP (Smookler Lot)



Design Exhibit 2 – Graduate Student Anchor Tenant Floor Plans (Floors 1-3)



3 Typ. Floor Plan - Level 3
1/32" = 1'-0"



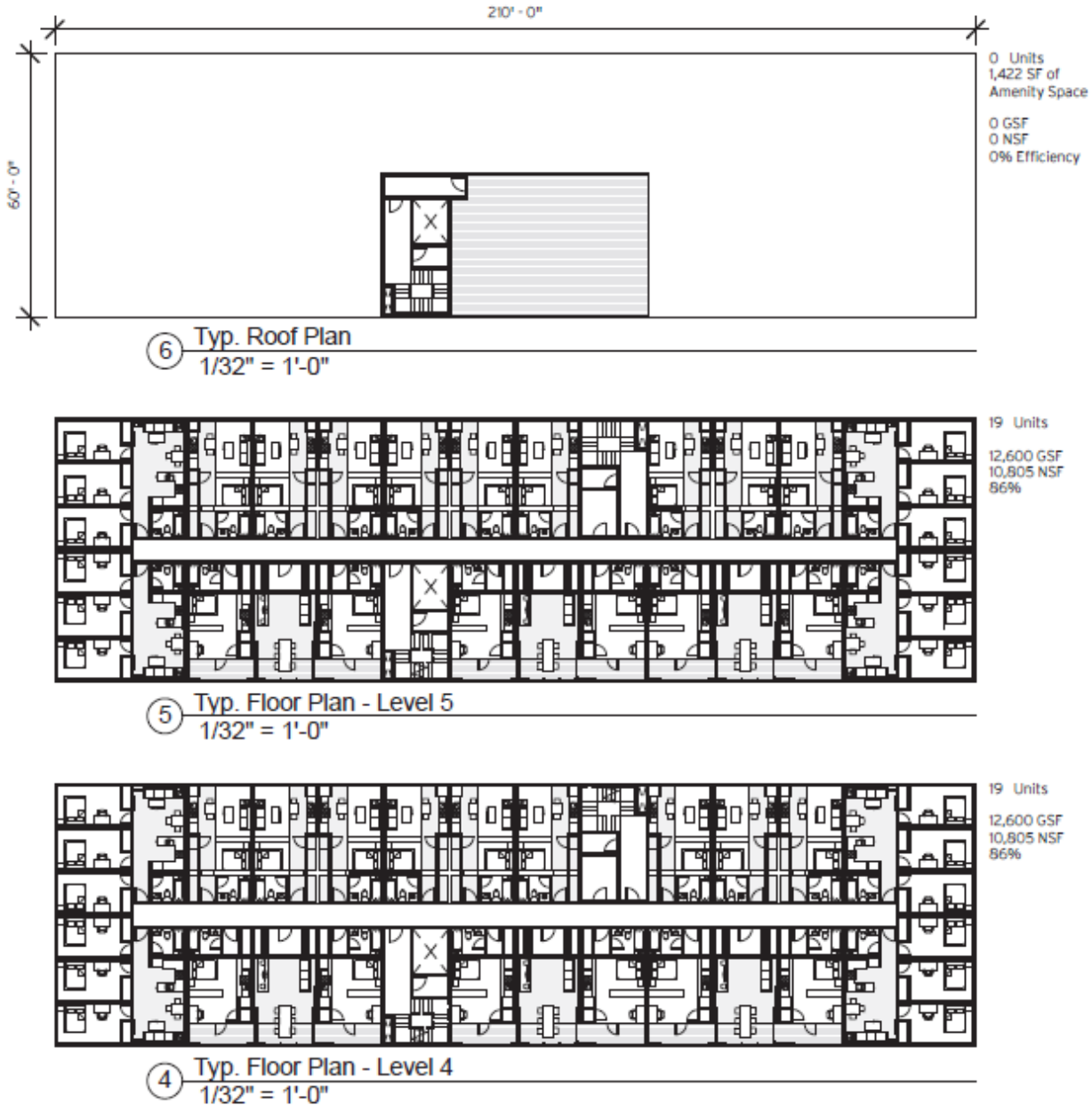
2 Typ. Floor Plan - Level 2
1/32" = 1'-0"

1 Typ. Floor Plan - Level 1
1/32" = 1'-0"

Level	Units	Amenity (SF)	GSF	NSF	Efficiency
1	20	420	12,600	9,974	79%
2	22	0	12,600	10,805	86%
3	22	0	12,600	10,805	86%
4	19	0	12,600	10,805	86%
5	19	0	12,600	10,805	86%
6	0	1,422	0	0	0%
Total	**102**	**1,842**	**63,000**	**53,194**	**84%**

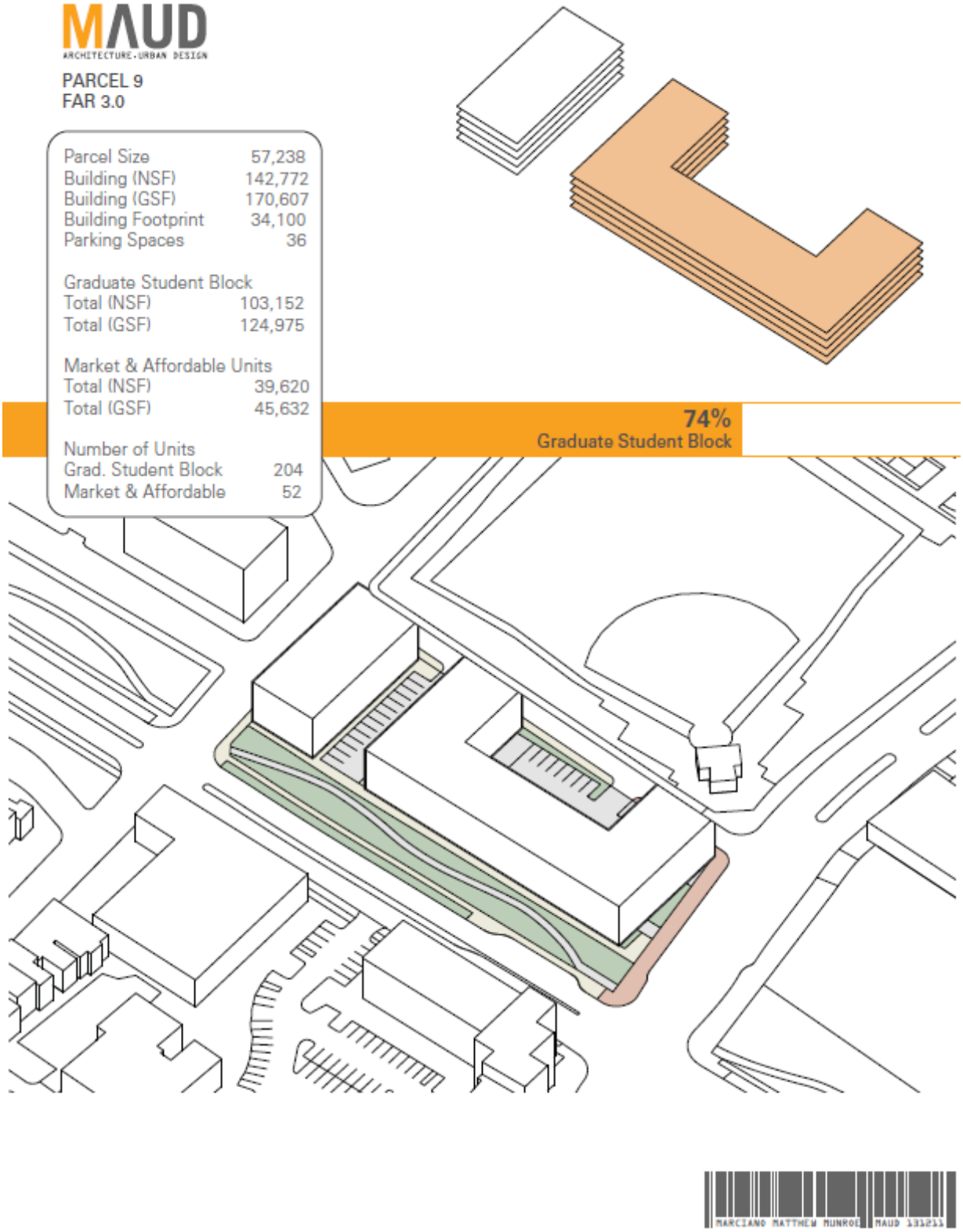
STUDIO MAUD ARCHITECTURE · URBAN DESIGN MARCIANO MATTHEW MUNROE MAUD 131211

Design Exhibit 2 – Graduate Student Anchor Tenant Floor Plans (Floors 4, 5 and Roof)



Design Exhibit 3 – Subject GSAP Conceptual Rendering
(Parcel 9 Southern Elevation)

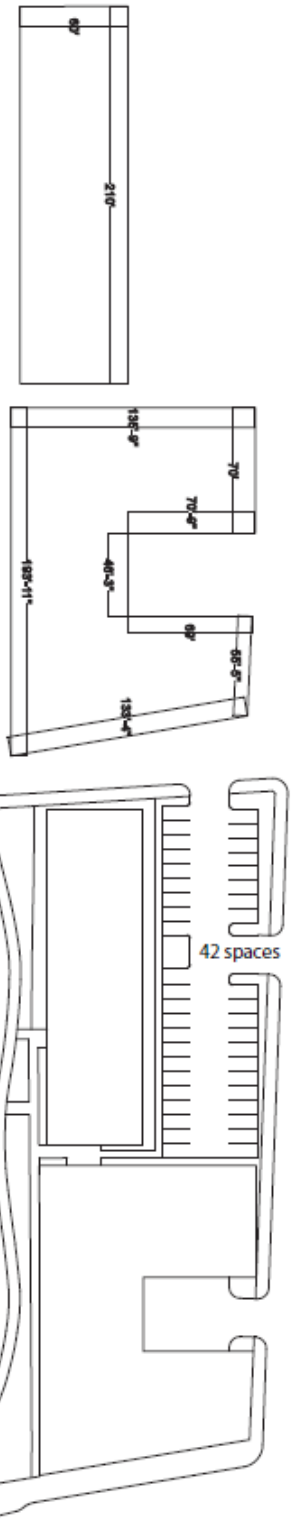
Design Exhibit 4.a – The Parcel 9 Solution



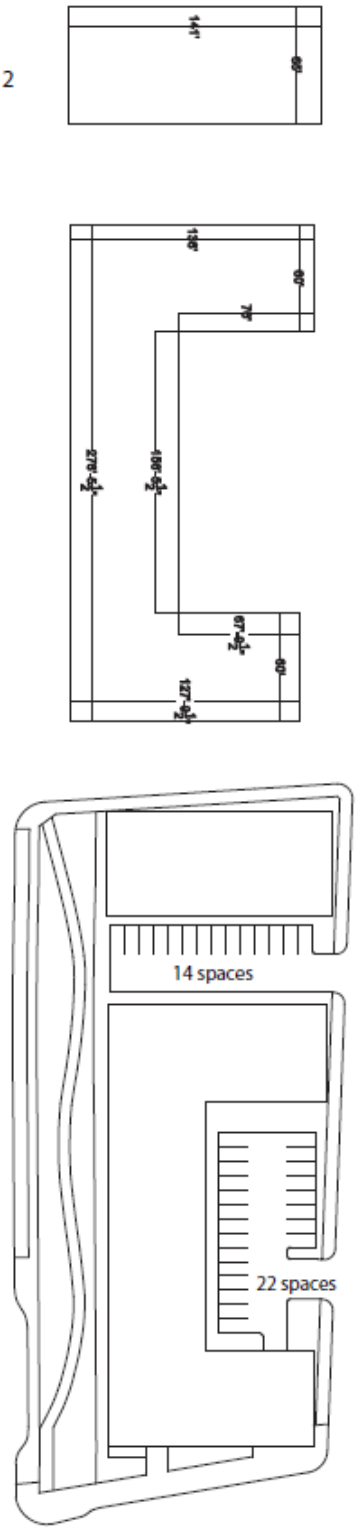
Design Exhibit 4.b – Parcel 9 Site Plans

(Option 1 = "As Of Right"; Option 2 = The Parcel 9 Solution)

Option 1



Option 2

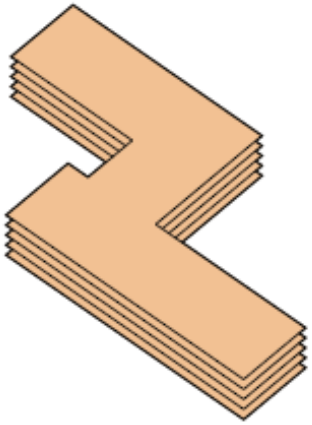


Design Exhibit 5.a – The Smookler Lot Solution

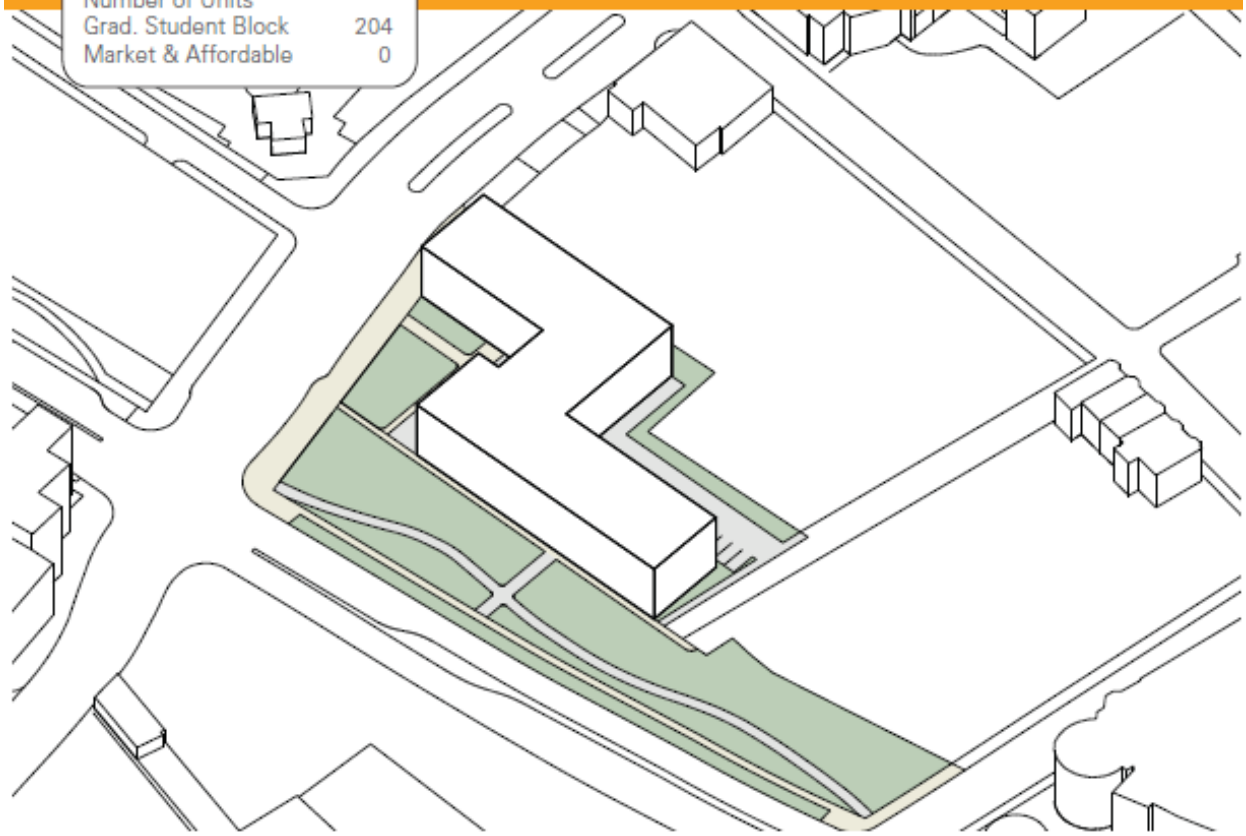
MAUD
ARCHITECTURE . URBAN DESIGN

SMOOKLER PARCEL
FAR 2.28

Parcel Size	57,238
Building (NSF)	103,439
Building (GSF)	130,391
Building Footprint	26,048
Parking Spaces	15
Graduate Student Block	
Total (NSF)	103,439
Total (GSF)	130,391
Market & Affordable Units	
Total (NSF)	0.0
Total (GSF)	0.0
Number of Units	
Grad. Student Block	204
Market & Affordable	0

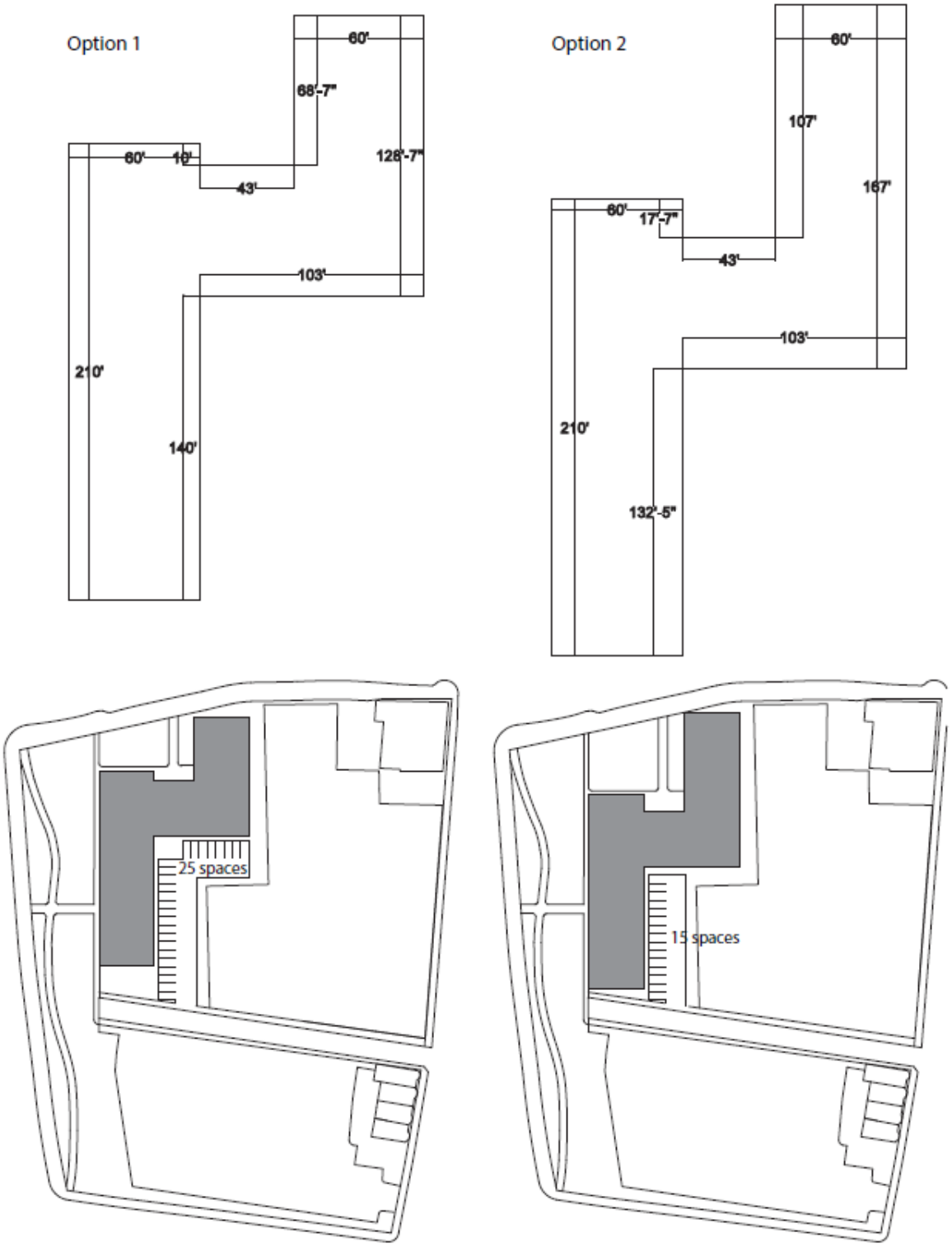


100%
Graduate Student Block

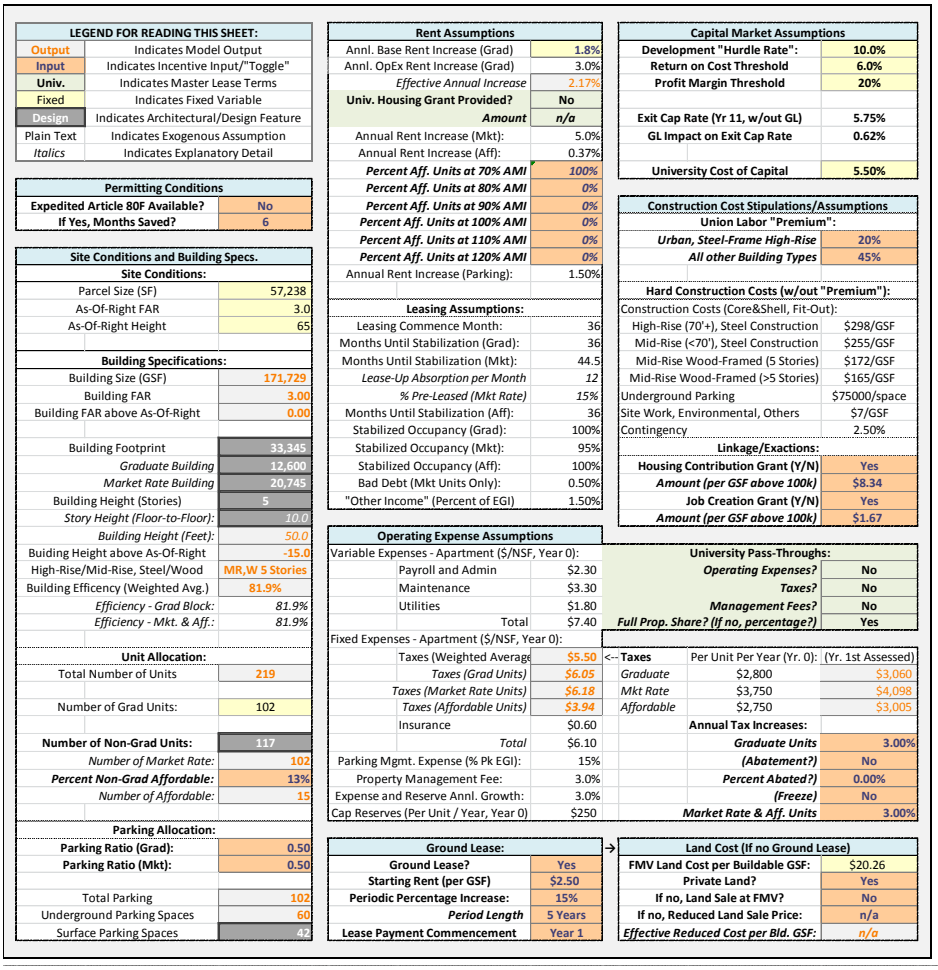


Design Exhibit 5.b – Smookler Lot Site Plans

(Option 1 = "As Of Right"; Option 2 = The Smookler Lot Solution)



Financial Exhibit 1.a – Sample Testing Model (Summary & Assumptions Page)



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	No
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	3.0
As-Of-Right Height	65
Building Specifications:	
Building Size (GSF)	171,729
Building FAR	3.00
Building FAR above As-Of-Right	0.00
Building Footprint	33,345
Graduate Building	12,600
Market Rate Building	20,745
Building Height (Stories)	5
Story Height (Floor-to-Floor):	10.0
Building Height (Feet):	50.0
Buiding Height above As-Of-Right	-15.0
High-Rise/Mid-Rise, Steel/Wood	MR,W 5 Stories
Building Efficency (Weighted Avg.)	81.9%
Efficiency - Grad Block:	81.9%
Efficiency - Mkt. & Aff.:	81.9%
Unit Allocation:	
Total Number of Units	219
Number of Grad Units:	102
Number of Non-Grad Units:	117
Number of Market Rate:	102
Percent Non-Grad Affordable:	13%
Number of Affordable:	15
Parking Allocation:	
Parking Ratio (Grad):	0.50
Parking Ratio (Mkt):	0.50
Total Parking	102
Underground Parking Spaces	60
Surface Parking Spaces	42

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	2.17%
Univ. Housing Grant Provided?	No
Amount	*n/a*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*100%*
Percent Aff. Units at 80% AMI	*0%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*0%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	36
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	44.5
Lease-Up Absorption per Month	*12*
% Pre-Leased (Mkt Rate)	*15%*
Months Until Stabilization (Aff):	36
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (>5 Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	Yes
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	Yes
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
Variable Expenses - Apartment ($/NSF, Year 0):			
	Payroll and Admin	$2.30	
	Maintenance	$3.30	
	Utilities	$1.80	
	Total	$7.40	
Fixed Expenses - Apartment ($/NSF, Year 0):			
	Taxes (Weighted Average	$5.50	<--
	Taxes (Grad Units)	*$6.05*	
	Taxes (Market Rate Units)	*$6.18*	
	Taxes (Affordable Units)	*$3.94*	
	Insurance	$0.60	
	Total	$6.10	
Parking Mgmt. Expense (% Pk EGI):		15%	
Property Management Fee:		3.0%	
Expense and Reserve Annl. Growth:		3.0%	
Cap Reserves (Per Unit / Year, Year 0)		$250	

University Pass-Throughs:	
Operating Expenses?	No
Taxes?	No
Management Fees?	No
Full Prop. Share? (If no, percentage?)	Yes

Taxes	Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Graduate	$2,800	$3,060
Mkt Rate	$3,750	$4,098
Affordable	$2,750	$3,005

Annual Tax Increases:	
Graduate Units	3.00%
(Abatement?)	No
Percent Abated?)	0.00%
(Freeze)	No
Market Rate & Aff. Units	3.00%

Ground Lease:	
Ground Lease?	Yes
Starting Rent (per GSF)	$2.50
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

→

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	*n/a*

SUMMARY:

Parcel:
Parcel 9 (Public)

Incentives:
None ("As Of Right")
Assumes Urbanica Ground Lease terms

University Participation:
None ("As Of Right")

Outcome:
Project Infeasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	NO
NPV of Project:	($19,598,636)
Return on Cost (Stabilized NOI)	3.96%
Margin on Sale	-11%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$0
Pass-Throughs (FV)	$0
Total Cost (FV):	$0
Apportioned Percent of TDC	*$21,551,322*
PV of All Master Lease Payments	$0

(Note: figures not representative of actual testing Model Results)

Financial Exhibit 1.b – Sample Testing Model (Sensitivity Tables)

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	($19,598,636)	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	($8,465,429)	($9,962,783)	($11,369,598)	($12,691,143)	($13,932,365)	($15,097,903)	($16,192,119)	($17,219,105)	($18,182,708)
	4.500%	($9,903,364)	($11,329,432)	($12,668,799)	($13,926,511)	($15,107,304)	($16,215,626)	($17,255,650)	($18,231,298)	($19,146,254)
	4.750%	($11,207,414)	($12,568,833)	($13,847,031)	($15,046,853)	($16,172,846)	($17,229,277)	($18,220,155)	($19,149,245)	($20,020,085)
	5.000%	($12,395,444)	($13,697,966)	($14,920,438)	($16,067,521)	($17,143,588)	($18,152,746)	($19,098,851)	($19,985,525)	($20,816,173)
	5.250%	($13,482,280)	($14,730,922)	($15,902,414)	($17,001,249)	($18,031,643)	($18,997,554)	($19,902,700)	($20,750,572)	($21,544,451)
	5.500%	($14,480,322)	($15,679,485)	($16,804,163)	($17,858,693)	($18,847,145)	($19,773,343)	($20,640,875)	($21,453,114)	($22,213,229)
	5.750%	($15,400,024)	($16,553,593)	($17,635,131)	($18,648,833)	**($19,598,636)**	($20,488,237)	($21,321,109)	($22,100,512)	($22,829,512)
	6.000%	($16,250,263)	($17,361,681)	($18,403,337)	($19,379,295)	($20,293,368)	($21,149,137)	($21,949,965)	($22,699,013)	($23,399,249)
	6.250%	($17,038,621)	($18,110,956)	($19,115,633)	($20,056,594)	($20,937,537)	($21,761,936)	($22,533,054)	($23,253,955)	($23,927,520)
	6.500%	($17,771,617)	($18,807,613)	($19,777,909)	($20,686,330)	($21,536,469)	($22,331,701)	($23,075,195)	($23,769,926)	($24,418,693)
	6.750%	($18,454,884)	($19,457,008)	($20,395,253)	($21,273,342)	($22,094,769)	($22,862,812)	($23,580,555)	($24,250,892)	($24,876,544)
	7.000%	($19,093,318)	($20,063,791)	($20,972,090)	($21,821,837)	($22,616,434)	($23,359,074)	($24,052,756)	($24,700,299)	($25,304,352)
	7.500%	($20,252,248)	($21,165,267)	($22,019,204)	($22,817,504)	($23,563,398)	($24,259,922)	($24,909,928)	($25,516,094)	($26,080,940)
	8.000%	($21,276,732)	($22,138,961)	($22,944,844)	($23,697,664)	($24,400,506)	($25,056,264)	($25,667,660)	($26,237,250)	($26,767,436)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	($19,598,636)	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	($11,953,870)	($14,557,997)	($16,688,645)	($18,464,186)	($19,966,566)	($21,254,321)	($22,370,375)
	0.50%	($13,324,463)	($15,674,051)	($17,615,014)	($19,245,424)	($20,634,291)	($21,831,590)	($22,874,399)
	0.62%	($13,932,365)	($16,172,846)	($18,031,643)	**($19,598,636)**	($20,937,537)	($22,094,769)	($23,104,957)
	0.75%	($14,557,997)	($16,688,645)	($18,464,186)	($19,966,566)	($21,254,321)	($22,370,375)	($23,346,922)
	1%	($15,674,051)	($17,615,014)	($19,245,424)	($20,634,291)	($21,831,590)	($22,874,399)	($23,790,807)
	1.25%	($16,688,645)	($18,464,186)	($19,966,566)	($21,254,321)	($22,370,375)	($23,346,922)	($24,208,582)
	1.50%	($17,615,014)	($19,245,424)	($20,634,291)	($21,831,590)	($22,874,399)	($23,790,807)	($24,602,483)
	2%	($19,245,424)	($20,634,291)	($21,831,590)	($22,874,399)	($23,790,807)	($24,602,483)	($25,326,410)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	-11%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	27%	14%	4%	-5%	-13%	-19%	-24%
	0.50%	20%	8%	-1%	-9%	-16%	-21%	-27%
	0.62%	17%	6%	-3%	**-11%**	-17%	-23%	-28%
	0.75%	14%	4%	-5%	-12%	-19%	-24%	-29%
	1.00%	8%	-1%	-9%	-16%	-22%	-27%	-31%
	1.25%	4%	-5%	-12%	-19%	-24%	-29%	-33%
	1.50%	-1%	-9%	-16%	-21%	-27%	-31%	-35%
	2.00%	-9%	-16%	-21%	-27%	-31%	-35%	-38%

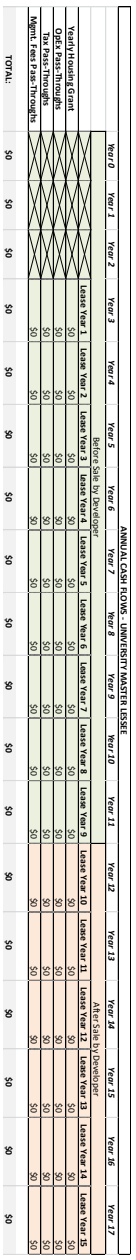
Financial Exhibit 1.c – Sample Testing Model (Construction Budget)
(Zero Land Acquisition Cost reflects Ground Lease)

Pertinent Project Specifics:			
Total Building GSF:	171,729	Construction Commence Month:	12
Total Number of Units:	219	Construction End Month:	36

Development Budget:					
	Total	**Per GSF**	**Per Unit**	**% Category**	**% TDC**
Land Acquisition:					
Land:	$0.00	$0.00	$0.00	0%	0.0%
Trans. Costs	$0.00	$0.00	$0.00	0%	0.0%
Subtotals:	**$0.00**	**$0.00**	**$0.00**	0%	**0.0%**
Hard Costs:					
Core & Shell and Fit-Out:	$55,293,757.01	$239.25	$252,482.91	82%	94.1%
Construction	*$28,335,243.64*	*$165.00*	*$129,384.67*	*57%*	*48.2%*
Union Labor "Premium"	*$12,750,859.64*	*$74.25*	*$58,223.10*	*25%*	*21.7%*
Underground Parking	$6,502,776.24	$37.87	$29,693.04	13%	11.1%
Construction	*$4,484,673.27*	*$26.11*	*$20,477.96*	*9%*	*7.6%*
Union Labor "Premium"	*$2,018,102.97*	*$11.75*	*$9,215.08*	*4%*	*3.4%*
Site, Envmtl, Others	$1,202,101.25	$7.00	$5,489.05	2%	2.0%
Contingency	$1,219,774.52	$7.10	$5,569.75	2.4%	2.1%
Subtotals:	**$50,010,755.29**	**$291.22**	**$228,359.61**	**100%**	**85.1%**
Soft Costs:					
Arch./Eng. + Legal	$2,000,000.00	$11.65	$9,132.42	23%	3.4%
Permitting Fees	$280,000.00	$1.63	$1,278.54	3%	0.5%
Linkage/Community Benefits	$718,004.78	$4.18	$3,278.56	8%	1.2%
Development Costs:	$2,677,743.92	$15.59	$12,227.14	31%	4.6%
Development & CM Fees	*$1,896,475.17*	*$11.04*	*$8,659.70*	*22%*	*3.2%*
Marketing & LCs	*$609,540.00*	*$3.55*	*$2,783.29*	*7%*	*1.0%*
Insurance	*$171,728.75*	*$1.00*	*$784.15*	*2%*	*0.3%*
Real Estate Taxes:	$394,976.12	$2.30	$1,803.54	5%	0.7%
Subtotals:	**$8,748,468.75**	**$50.94**	**$39,947.35**	**100%**	**14.9%**
Total Development Costs:	**$58,759,224.04**	**$342.16**	**$268,306.96**		**100.0%**

Financial Exhibit 1.d – Sample Testing Model (Annual Cash Flows (Property))

Financial Exhibit 1.e – Sample Testing Model (Annual Cash Flows (University))



ANNUAL CASH FLOWS - UNIVERSITY MASTER LESSEE

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17
				Before Sale by Developer									After Sale by Developer					
Yearly Housing Grant				Lease Year 1	Lease Year 2	Lease Year 3	Lease Year 4	Lease Year 5	Lease Year 6	Lease Year 7	Lease Year 8	Lease Year 9	Lease Year 10	Lease Year 11	Lease Year 12	Lease Year 13	Lease Year 14	Lease Year 15
OpEx Pass-Throughts				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Pass-Throughts				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Mgmt. Fees Pass-Throughts				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Financial Exhibit 2.a – "As Of Right" Summary & Assumptions Sheet (Parcel 9)

LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	No
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	3.0
As-Of-Right Height	65
Building Specifications:	
Building Size (GSF)	171,729
Building FAR	3.00
Building FAR above As-Of-Right	0.00
Building Footprint	33,345
Graduate Building	12,600
Market Rate Building	20,745
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50.0*
Buiding Height above As-Of-Right	-15.0
High-Rise/Mid-Rise, Steel/Wood	MR,W 5 Stories
Building Efficency (Weighted Avg.)	81.9%
Efficiency - Grad Block:	*81.9%*
Efficiency - Mkt. & Aff.:	*81.9%*
Unit Allocation:	
Total Number of Units	219
Number of Grad Units:	102
Number of Non-Grad Units:	117
Number of Market Rate:	102
Percent Non-Grad Affordable:	13%
Number of Affordable:	15
Parking Allocation:	
Parking Ratio (Grad):	0.50
Parking Ratio (Mkt):	0.50
Total Parking	102
Underground Parking Spaces	60
Surface Parking Spaces	42

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	2.17%
Univ. Housing Grant Provided?	No
Amount	*n/a*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*100%*
Percent Aff. Units at 80% AMI	*0%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*0%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	36
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	44.5
Lease-Up Absorption per Month	*12*
% Pre-Leased (Mkt Rate)	*15%*
Months Until Stabilization (Aff):	36
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (>5 Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	Yes
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	Yes
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions	
Variable Expenses - Apartment ($/NSF, Year 0):	
Payroll and Admin	$2.30
Maintenance	$3.30
Utilities	$1.80
Total	$7.40
Fixed Expenses - Apartment ($/NSF, Year 0):	
Taxes (Weighted Average	$5.50
Taxes (Grad Units)	*$6.05*
Taxes (Market Rate Units)	*$6.18*
Taxes (Affordable Units)	*$3.94*
Insurance	$0.60
Total	$6.10
Parking Mgmt. Expense (% Pk EGI):	15%
Property Management Fee:	3.0%
Expense and Reserve Annl. Growth:	3.0%
Cap Reserves (Per Unit / Year, Year 0)	$250

University Pass-Throughs:	
Operating Expenses?	No
Taxes?	No
Management Fees?	No
Full Prop. Share? (If no, percentage?)	Yes

<-- Taxes	Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Graduate	$2,800	$3,060
Mkt Rate	$3,750	$4,098
Affordable	$2,750	$3,005
	Annual Tax Increases:	
	Graduate Units	3.00%
	(Abatement?)	No
	Percent Abated?)	0.00%
	(Freeze)	No
	Market Rate & Aff. Units	3.00%

Ground Lease:	
Ground Lease?	Yes
Starting Rent (per GSF)	$2.50
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

→

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	*n/a*

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	NO
NPV of Project:	($21,227,783)
Return on Cost (Stabilized NOI)	3.83%
Margin on Sale	-13%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$0
Pass-Throughs (FV)	$0
Total Cost (FV):	$0
Graduate Unit Apportioned Percent of TDC	*$22,252,478*
PV of All Master Lease Payments	$0

Financial Exhibit 2.b – "As Of Right" Summary & Assumptions Sheet (Smookler Lot)

LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	No
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	2.0
As-Of-Right Height	55
Building Specifications:	
Building Size (GSF)	114,484
Building FAR	2.00
Building FAR above As-Of-Right	0.00
Building Footprint	23,400
Graduate Building	12,600
Market Rate Building	10,800
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50.0*
Buiding Height above As-Of-Right	-5.0
High-Rise/Mid-Rise, Steel/Wood	MR,W (5 Stories)
Building Efficency (Weighted Avg.)	83.3%
Efficiency - Grad Block:	*84.4%*
Efficiency - Mkt. & Aff.:	*81.9%*
Unit Allocation:	
Total Number of Units	159
Number of Grad Units:	102
Number of Non-Grad Units:	57
Number of Market Rate:	50
Percent Non-Grad Affordable:	13%
Number of Affordable:	7
Parking Allocation:	
Parking Ratio (Grad):	0.50
Parking Ratio (Mkt):	0.50
Total Parking	76
Underground Parking Spaces	51
Surface Parking Spaces	25

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	2.17%
Univ. Housing Grant Provided?	No
Amount. (ea. person per month, 1st yr)	*n/a*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*100%*
Percent Aff. Units at 80% AMI	*0%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*0%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	36
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	40.2
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	36
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	Yes
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	Yes
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions		
ariable Expenses - Apartment ($/NSF, Year 0		
Payroll and Admin	$2.30	
Maintenance	$3.30	
Utilities	$1.80	
Total	$7.40	
Fixed Expenses - Apartment ($/NSF, Year 0):		
Taxes (Weighted Average)	$5.66	
Taxes (Grad Units)	*$6.05*	
Taxes (Market Rate Units)	*$6.18*	
Taxes (Affordable Units)	*$3.94*	
Insurance	$0.60	
Total	$6.26	
Parking Mgmt. Expense (% Pk EGI):	15%	
Property Management Fee:	3.0%	
Expense and Reserve Annl. Growth:	3.0%	
Capital Reserves (Per Unit Per Year, Year 0)	$250	

University Pass-Throughs:	
Operating Expenses?	No
Taxes?	No
Management Fees?	No
Full Proportionate Share? (If no, percentage?)	Yes

<--- Taxes	Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Graduate	$2,800	$3,060
Market Rate	$3,750	$4,098
Affordable	$2,750	$3,005
Annual Tax Increases:		
Graduate Units		3.00%
(Abatement?)		No
(Percent Abated?)		0.00%
(Freeze)		No
Market Rate & Aff. Units		3.00%

Ground Lease:	
Ground Lease?	No
Starting Rent (per GSF)	n/a
Periodic Percentage Increase:	n/a
Period Length	n/a
Lease Payment Commencement	n/a

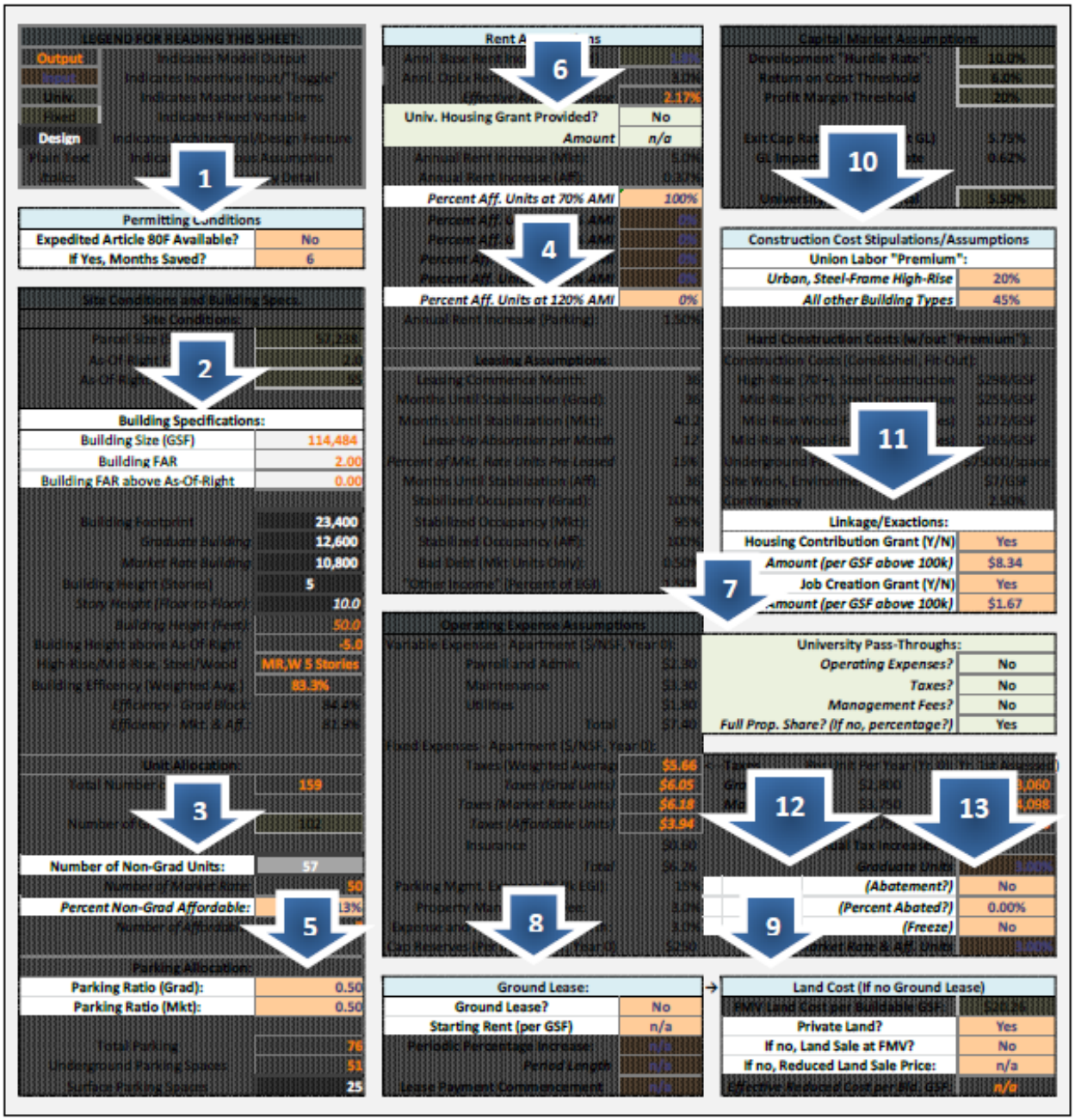
→

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	*n/a*

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	NO
NPV of Project:	($16,424,429)
Return on Cost (Stabilized NOI)	3.44%
Margin on Sale	-15%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$0
Pass-Throughs (FV)	$0
Total Cost (FV):	$0
Graduate Unit Apportioned Percent of TDC	*$24,026,923*
PV of All Master Lease Payments	$0

Financial Exhibit 3 – Variables Manipulated in Iterative Testing Process; Testing Order



Financial Exhibit 4.a – Iterative Testing Results

PARCEL 9 - ITERATIVE TESTING MODEL RESULTS								
Test #	**Scenario**	**NPV**	*$ Change*	*% Change*	**ROC**	*% Change*	**Profit Margin**	*% Change*
"AOR"	**As Of Right**	**($21,227,783)**			**3.83%**		**-13%**	
1	**Expedited Permitting (6 Months)**	**($18,783,997)**	*$2,443,786*	*12%*	**4.30%**	*12.3%*	**-8%**	*38%*
2	**Increased Density (+1 FAR)**	**($48,971,510)**	*($27,743,727)*	*-131%*	**3.21%**	*-16.2%*	**-33%**	*-154%*
2	**Increased Density (2X FAR)**	**($71,587,475)**	*($50,359,692)*	*-237%*	**3.20%**	*-16.4%*	**-31%**	*-138%*
3	**Relaxed IZR (0% Aff. Units)**	**($19,380,676)**	*$1,847,107*	*9%*	**4.07%**	*6.3%*	**-7%**	*46%*
4	**Relaxed IZR (all units @ 120% AMI)**	**($19,646,785)**	*$1,580,998*	*7%*	**4.08%**	*6.5%*	**-9%**	*31%*
5	**Relaxed Parking (0 Required Spaces)**	**($17,076,283)**	*$4,151,500*	*20%*	**4.03%**	*5.2%*	**-8%**	*38%*
6	**University Participation (Housing Grant @ $250)**	**($16,272,429)**	*$4,955,354*	*23%*	**4.54%**	*18.5%*	**-1%**	*92%*
7	**Univ. Participation (Full Proportionate Pass-Throughs)***	**($11,418,044)**	*$9,809,739*	*46%*	**5.14%**	*34.2%*	**13%**	*200%*
8	**$0 Land Cost (Ground Lease)**	**($20,232,129)**	*$995,654*	*5%*	**3.83%**	*0.0%*	**-13%**	*0%*
9	**$0 Land Cost (Fee Simple Conveyance)**	**($18,248,507)**	*$2,979,276*	*14%*	**3.83%**	*0.0%*	**-4%**	*69%*
10	**0% Union Labor Premium***	**($6,918,308)**	*$14,309,475*	*67%*	**5.30%**	*38.4%*	**20%**	*254%*
11	**Eliminated Linkage/Exactions**	**($20,564,166)**	*$663,617*	*3%*	**3.88%**	*1.3%*	**-12%**	*8%*
12	**Tax Relief (Full Abatement on Grad Units)**	**($17,463,726)**	*$3,764,057*	*18%*	**4.35%**	*13.6%*	**-3%**	*77%*
13	**Tax Relief (Freeze on Grad Units)**	**($20,621,259)**	*$606,524*	*3%*	**3.83%**	*0.0%*	**-11%**	*15%*

** indicates tests with sensitivity tables shown*

SMOOKLER LOT - ITERATIVE TESTING MODEL RESULTS								
Test #	**Scenario**	**NPV**	*$ Change*	*% Change*	**ROC**	*% Change*	**Profit Margin**	*% Change*
"AOR"	**As Of Right**	**($16,424,429)**			**3.44%**		**-15%**	
1	**Expedited Permitting (6 Months)**	**($14,156,700)**	*$2,267,729*	*11%*	**4.08%**	*18.6%*	**-12%**	*20%*
2	**Increased Density (+1 FAR)**	**($37,970,780)**	*($21,546,351)*	*-102%*	**2.81%**	*-18.3%*	**-30%**	*-100%*
2	**Increased Density (2X FAR)**	**($48,764,487)**	*($32,340,058)*	*-152%*	**3.12%**	*-9.3%*	**-28%**	*-87%*
3	**Relaxed IZR (0% Aff. Units)**	**($15,449,676)**	*$974,753*	*5%*	**3.54%**	*2.9%*	**-11%**	*27%*
4	**Relaxed IZR (all units @ 120% AMI)**	**($15,604,369)**	*$820,060*	*4%*	**3.61%**	*4.9%*	**-13%**	*13%*
5	**Relaxed Parking (0 Required Spaces)**	**($11,854,964)**	*$4,569,465*	*22%*	**3.85%**	*11.9%*	**-5%**	*67%*
6	**University Participation (Housing Grant @ $250)**	**($11,173,324)**	*$5,251,105*	*25%*	**4.41%**	*28.2%*	**4%**	*127%*
7	**Univ. Participation (Full Proportionate Pass-Throughs)***	**($6,017,945)**	*$10,406,484*	*49%*	**5.20%**	*51.2%*	**24%**	*260%*
8	**$0 Land Cost (Ground Lease)**	**n/a**	*n/a*	*n/a*	**n/a**	*n/a*	**n/a**	*n/a*
9	**$0 Land Cost (Fee Simple Conveyance)**	**n/a**	*n/a*	*n/a*	**n/a**	*n/a*	**n/a**	*n/a*
10	**0% Union Labor Premium***	**($6,535,488)**	*$9,888,941*	*47%*	**4.65%**	*35.2%*	**14%**	*193%*
11	**Eliminated Linkage/Exactions**	**($16,290,427)**	*$134,002*	*1%*	**3.45%**	*0.3%*	**-15%**	*0%*
12	**Tax Relief (Full Abatement on Grad Units)**	**($12,431,867)**	*$3,992,562*	*19%*	**4.14%**	*20.3%*	**0%**	*100%*
13	**Tax Relief (Freeze on Grad Units)**	**($15,769,784)**	*$654,645*	*3%*	**3.44%**	*0.0%*	**-12%**	*20%*

** indicates tests with sensitivity tables shown*

Financial Exhibit 4.b – Select Sensitivity Tables

Parcel 9 – Full Proportionate University Pass-Throughs

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	($11,418,044)	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$3,543,788	$1,473,195	($477,636)	($2,315,609)	($4,047,209)	($5,678,519)	($7,215,258)	($8,662,794)	($10,026,175)
	4.500%	$1,673,284	($304,578)	($2,167,670)	($3,922,608)	($5,575,601)	($7,132,482)	($8,598,727)	($9,979,481)	($11,279,581)
	4.750%	($23,057)	($1,916,823)	($3,700,346)	($5,379,979)	($6,961,685)	($8,451,066)	($9,853,381)	($11,173,572)	($12,416,283)
	5.000%	($1,568,479)	($3,385,630)	($5,096,663)	($6,707,690)	($8,224,452)	($9,652,338)	($10,996,411)	($12,261,426)	($13,451,855)
	5.250%	($2,982,263)	($4,729,326)	($6,374,042)	($7,922,309)	($9,379,658)	($10,751,288)	($12,042,079)	($13,256,619)	($14,399,218)
	5.500%	($4,280,542)	($5,963,242)	($7,547,061)	($9,037,694)	($10,440,485)	($11,760,454)	($13,002,317)	($14,170,505)	($15,269,182)
	5.750%	($5,476,915)	($7,100,305)	($8,628,006)	($10,065,529)	**($11,418,044)**	($12,690,407)	($13,887,183)	($15,012,657)	($16,070,860)
	6.000%	($6,582,928)	($8,151,486)	($9,627,309)	($11,015,733)	($12,321,769)	($13,550,123)	($14,705,216)	($15,791,203)	($16,811,988)
	6.250%	($7,608,445)	($9,126,163)	($10,553,882)	($11,896,781)	($13,159,721)	($14,347,268)	($15,463,712)	($16,513,086)	($17,499,177)
	6.500%	($8,561,945)	($10,032,393)	($11,415,387)	($12,715,958)	($13,938,828)	($15,088,434)	($16,168,944)	($17,184,274)	($18,138,108)
	6.750%	($9,450,758)	($10,877,142)	($12,218,446)	($13,479,559)	($14,665,078)	($15,779,317)	($16,826,330)	($17,809,928)	($18,733,693)
	7.000%	($10,281,249)	($11,666,462)	($12,968,810)	($14,193,056)	($15,343,674)	($16,424,867)	($17,440,581)	($18,394,528)	($19,290,197)
	7.500%	($11,788,816)	($13,099,291)	($14,330,924)	($15,488,245)	($16,575,510)	($17,596,714)	($18,555,613)	($19,455,736)	($20,300,402)
	8.000%	($13,121,491)	($14,365,898)	($15,535,020)	($16,633,181)	($17,664,442)	($18,632,617)	($19,541,291)	($20,393,834)	($21,193,415)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	($11,418,044)	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	($1,473,531)	($4,861,047)	($7,632,651)	($9,942,321)	($11,896,657)	($13,571,802)	($15,023,594)
	0.50%	($3,256,434)	($6,312,839)	($8,837,696)	($10,958,575)	($12,765,250)	($14,322,729)	($15,679,242)
	0.62%	($4,047,209)	($6,961,685)	($9,379,658)	**($11,418,044)**	($13,159,721)	($14,665,078)	($15,979,158)
	0.75%	($4,861,047)	($7,632,651)	($9,942,321)	($11,896,657)	($13,571,802)	($15,023,594)	($16,293,913)
	1%	($6,312,839)	($8,837,696)	($10,958,575)	($12,765,250)	($14,322,729)	($15,679,242)	($16,871,330)
	1.25%	($7,632,651)	($9,942,321)	($11,896,657)	($13,571,802)	($15,023,594)	($16,293,913)	($17,414,782)
	1.50%	($8,837,696)	($10,958,575)	($12,765,250)	($14,322,729)	($15,679,242)	($16,871,330)	($17,927,179)
	2%	($10,958,575)	($12,765,250)	($14,322,729)	($15,679,242)	($16,871,330)	($17,927,179)	($18,868,882)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	13%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	59%	43%	30%	20%	10%	2%	-4%
	0.50%	51%	37%	25%	15%	6%	-1%	-7%
	0.62%	47%	34%	22%	**13%**	4%	-3%	-9%
	0.75%	43%	30%	20%	10%	2%	-4%	-10%
	1.00%	37%	25%	15%	6%	-1%	-7%	-13%
	1.25%	30%	20%	10%	2%	-4%	-10%	-16%
	1.50%	25%	15%	6%	-1%	-8%	-13%	-18%
	2.00%	15%	6%	-1%	-7%	-13%	-18%	-22%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	**$0**
Pass-Throughs (FV)	**$15,149,322**
Total Cost (FV):	**$15,149,322**
Graduate Unit Apportioned Percent of TDC	*$22,252,478*
PV of All Master Lease Payments	**$12,057,517**

Financial Exhibit 4.b – Select Sensitivity Tables (Contd.)

Parcel 9 – 0% Union Labor "Premium"

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	($6,918,308)	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$4,608,505	$3,010,806	$1,504,957	$85,665	($1,252,037)	($2,512,814)	($3,701,048)	($4,820,855)	($5,876,101)
	4.500%	$3,170,569	$1,644,156	$205,756	($1,149,702)	($2,426,977)	($3,630,537)	($4,764,579)	($5,833,047)	($6,839,647)
	4.750%	$1,866,520	$404,756	($972,476)	($2,270,044)	($3,492,518)	($4,644,188)	($5,729,085)	($6,750,995)	($7,713,477)
	5.000%	$678,489	($724,378)	($2,045,884)	($3,290,712)	($4,463,260)	($5,567,657)	($6,607,780)	($7,587,275)	($8,509,565)
	5.250%	($408,346)	($1,757,333)	($3,027,860)	($4,224,441)	($5,351,316)	($6,412,466)	($7,411,630)	($8,352,321)	($9,237,843)
	5.500%	($1,406,388)	($2,705,897)	($3,929,609)	($5,081,884)	($6,166,818)	($7,188,254)	($8,149,805)	($9,054,864)	($9,906,621)
	5.750%	($2,326,091)	($3,580,005)	($4,760,577)	($5,872,024)	**($6,918,308)**	($7,903,149)	($8,830,039)	($9,702,262)	($10,522,905)
	6.000%	($3,176,329)	($4,388,093)	($5,528,783)	($6,602,486)	($7,613,040)	($8,564,048)	($9,458,895)	($10,300,763)	($11,092,641)
	6.250%	($3,964,687)	($5,137,368)	($6,241,079)	($7,279,785)	($8,257,209)	($9,176,847)	($10,041,983)	($10,855,705)	($11,620,912)
	6.500%	($4,697,683)	($5,834,025)	($6,903,354)	($7,909,521)	($8,856,142)	($9,746,612)	($10,584,124)	($11,371,676)	($12,112,085)
	6.750%	($5,380,951)	($6,483,419)	($7,520,699)	($8,496,534)	($9,414,441)	($10,277,724)	($11,089,485)	($11,852,642)	($12,569,936)
	7.000%	($6,019,384)	($7,090,202)	($8,097,535)	($9,045,028)	($9,936,106)	($10,773,985)	($11,561,686)	($12,302,049)	($12,997,744)
	7.500%	($7,178,315)	($8,191,678)	($9,144,650)	($10,040,695)	($10,883,070)	($11,674,833)	($12,418,858)	($13,117,844)	($13,774,332)
	8.000%	($8,202,798)	($9,165,373)	($10,070,289)	($10,920,855)	($11,720,178)	($12,471,175)	($13,176,590)	($13,839,000)	($14,460,828)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	($6,918,308)	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$726,457	($1,877,669)	($4,008,317)	($5,783,858)	($7,286,238)	($8,573,993)	($9,690,047)
	0.50%	($644,135)	($2,993,723)	($4,934,686)	($6,565,096)	($7,953,963)	($9,151,262)	($10,194,072)
	0.62%	($1,252,037)	($3,492,518)	($5,351,316)	**($6,918,308)**	($8,257,209)	($9,414,441)	($10,424,629)
	0.75%	($1,877,669)	($4,008,317)	($5,783,858)	($7,286,238)	($8,573,993)	($9,690,047)	($10,666,594)
	1%	($2,993,723)	($4,934,686)	($6,565,096)	($7,953,963)	($9,151,262)	($10,194,072)	($11,110,480)
	1.25%	($4,008,317)	($5,783,858)	($7,286,238)	($8,573,993)	($9,690,047)	($10,666,594)	($11,528,254)
	1.50%	($4,934,686)	($6,565,096)	($7,953,963)	($9,151,262)	($10,194,072)	($11,110,480)	($11,922,155)
	2%	($6,565,096)	($7,953,963)	($9,151,262)	($10,194,072)	($11,110,480)	($11,922,155)	($12,646,082)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	20%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	69%	53%	39%	27%	17%	9%	2%
	0.50%	61%	45%	33%	22%	13%	5%	-2%
	0.62%	57%	42%	30%	**20%**	11%	3%	-3%
	0.75%	53%	39%	27%	17%	9%	2%	-5%
	1.00%	45%	33%	22%	13%	5%	-2%	-8%
	1.25%	39%	27%	17%	9%	2%	-5%	-10%
	1.50%	33%	22%	13%	5%	-2%	-8%	-13%
	2.00%	22%	13%	5%	-2%	-8%	-13%	-18%

Financial Exhibit 4.b – Select Sensitivity Tables (Contd.)

Smookler Lot – Full Proportionate University Pass-Throughs

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	($6,017,945)	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$7,205,459	$5,457,000	$3,807,625	$2,251,638	$783,691	($601,238)	($1,907,863)	($3,140,615)	($4,303,656)
	4.500%	$5,432,735	$3,772,159	$2,205,937	$728,645	($664,806)	($1,979,195)	($3,219,012)	($4,388,472)	($5,491,541)
	4.750%	$3,846,613	$2,264,670	$772,847	($634,033)	($1,960,829)	($3,212,104)	($4,392,144)	($5,504,977)	($6,554,386)
	5.000%	$2,419,103	$907,930	($516,934)	($1,860,443)	($3,127,250)	($4,321,722)	($5,447,964)	($6,509,831)	($7,510,946)
	5.250%	$1,127,547	($319,597)	($1,683,879)	($2,970,053)	($4,182,583)	($5,325,663)	($6,403,230)	($7,418,984)	($8,376,405)
	5.500%	($46,595)	($1,435,531)	($2,744,737)	($3,978,788)	($5,141,977)	($6,238,336)	($7,271,653)	($8,245,487)	($9,163,186)
	5.750%	($1,118,637)	($2,454,427)	($3,713,348)	($4,899,808)	**($6,017,945)**	($7,071,646)	($8,064,561)	($9,000,121)	($9,881,551)
	6.000%	($2,101,343)	($3,388,414)	($4,601,240)	($5,744,076)	($6,820,916)	($7,835,513)	($8,791,393)	($9,691,868)	($10,540,053)
	6.250%	($3,005,433)	($4,247,683)	($5,418,101)	($6,520,802)	($7,559,649)	($8,538,271)	($9,460,079)	($10,328,276)	($11,145,874)
	6.500%	($3,839,977)	($5,040,854)	($6,172,127)	($7,237,780)	($8,241,557)	($9,186,971)	($10,077,327)	($10,915,729)	($11,705,094)
	6.750%	($4,612,703)	($5,775,272)	($6,870,299)	($7,901,649)	($8,872,953)	($9,787,619)	($10,648,853)	($11,459,667)	($12,222,890)
	7.000%	($5,330,234)	($6,457,232)	($7,518,602)	($8,518,099)	($9,459,249)	($10,345,364)	($11,179,556)	($11,964,752)	($12,703,701)
	7.500%	($6,621,790)	($7,684,758)	($8,685,546)	($9,627,708)	($10,514,582)	($11,349,304)	($12,134,822)	($12,873,905)	($13,569,160)
	8.000%	($7,751,902)	($8,758,844)	($9,706,623)	($10,598,616)	($11,437,998)	($12,227,752)	($12,970,679)	($13,669,415)	($14,326,436)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	($6,017,945)	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	0.50%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	0.62%	$783,691	($1,960,829)	($4,182,583)	**($6,017,945)**	($7,559,649)	($8,872,953)	($10,005,111)
	0.75%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	1%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	1.25%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	1.50%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)
	2%	$783,691	($1,960,829)	($4,182,583)	($6,017,945)	($7,559,649)	($8,872,953)	($10,005,111)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	24%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	68%	50%	36%	24%	14%	6%	-2%
	0.50%	68%	50%	36%	24%	14%	6%	-2%
	0.62%	68%	50%	36%	**24%**	14%	6%	-2%
	0.75%	68%	50%	36%	24%	14%	6%	-2%
	1.00%	68%	50%	36%	24%	14%	6%	-2%
	1.25%	68%	50%	36%	24%	14%	6%	-2%
	1.50%	68%	50%	36%	24%	14%	6%	-2%
	2.00%	68%	50%	36%	24%	14%	6%	-2%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	**$0**
Pass-Throughs (FV)	**$15,141,527**
Total Cost (FV):	**$15,141,527**
Graduate Unit Apportioned Percent of TDC	*$24,026,923*
PV of All Master Lease Payments	**$12,040,437**

Financial Exhibit 4.b – Select Sensitivity Tables (Contd.)

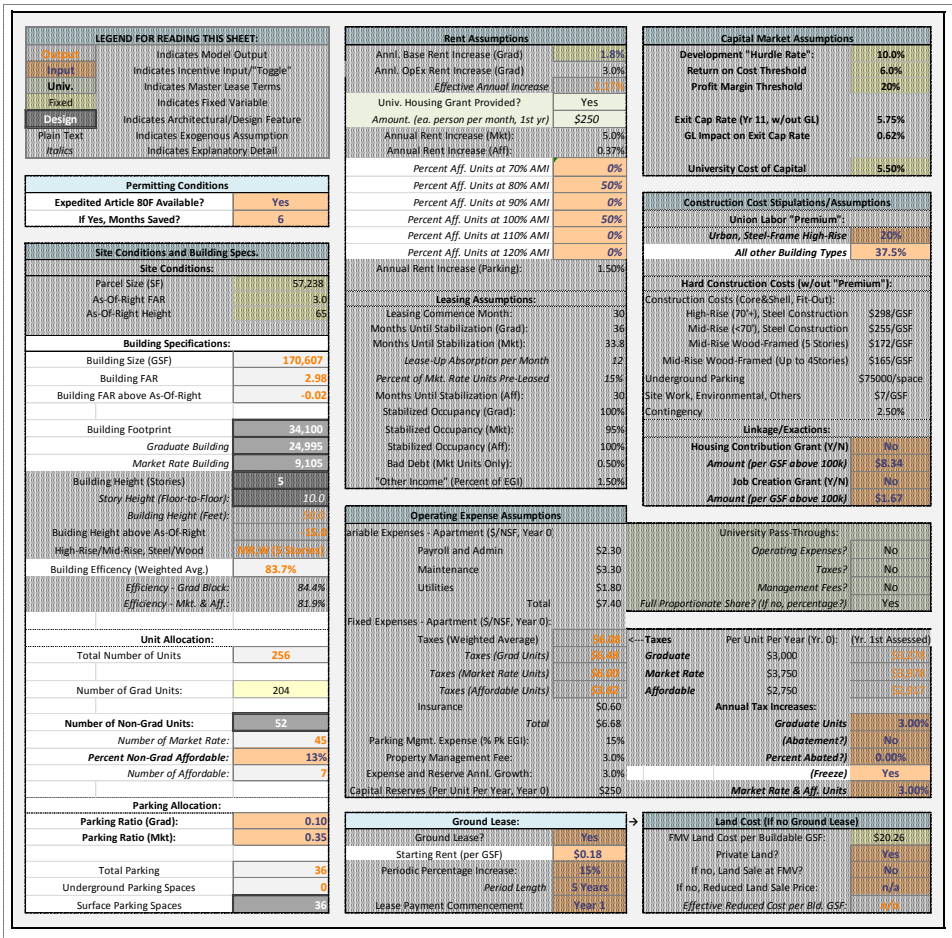
Smookler Lot – 0% Union Labor "Premium"

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	($6,535,488)	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$2,417,802	$1,241,595	$132,635	($912,952)	($1,898,803)	($2,828,331)	($3,704,744)	($4,531,053)	($5,310,090)
	4.500%	$1,209,333	$93,036	($959,239)	($1,951,179)	($2,886,245)	($3,767,687)	($4,598,556)	($5,381,720)	($6,119,873)
	4.750%	$128,072	($934,621)	($1,936,179)	($2,880,119)	($3,769,746)	($4,608,163)	($5,398,283)	($6,142,843)	($6,844,416)
	5.000%	($845,064)	($1,859,513)	($2,815,424)	($3,716,165)	($4,564,897)	($5,364,591)	($6,118,036)	($6,827,853)	($7,496,504)
	5.250%	($1,725,519)	($2,696,320)	($3,610,932)	($4,472,587)	($5,284,319)	($6,048,979)	($6,769,242)	($7,447,624)	($8,086,489)
	5.500%	($2,525,934)	($3,457,054)	($4,334,121)	($5,160,244)	($5,938,340)	($6,671,149)	($7,361,248)	($8,011,053)	($8,622,839)
	5.750%	($3,256,747)	($4,151,637)	($4,994,424)	($5,788,104)	**($6,535,488)**	($7,239,218)	($7,901,774)	($8,525,488)	($9,112,549)
	6.000%	($3,926,659)	($4,788,338)	($5,599,702)	($6,363,643)	($7,082,875)	($7,759,948)	($8,397,257)	($8,997,053)	($9,561,451)
	6.250%	($4,542,978)	($5,374,103)	($6,156,557)	($6,893,138)	($7,586,470)	($8,239,019)	($8,853,101)	($9,430,893)	($9,974,440)
	6.500%	($5,111,888)	($5,914,809)	($6,670,578)	($7,381,904)	($8,051,328)	($8,681,239)	($9,273,880)	($9,831,360)	($10,355,661)
	6.750%	($5,638,656)	($6,415,462)	($7,146,523)	($7,834,464)	($8,481,751)	($9,090,702)	($9,663,491)	($10,202,164)	($10,708,644)
	7.000%	($6,127,799)	($6,880,355)	($7,588,472)	($8,254,699)	($8,881,431)	($9,470,917)	($10,025,272)	($10,546,481)	($11,036,413)
	7.500%	($7,008,254)	($7,717,162)	($8,383,980)	($9,011,121)	($9,600,853)	($10,155,305)	($10,676,478)	($11,166,253)	($11,626,398)
	8.000%	($7,778,653)	($8,449,368)	($9,080,049)	($9,672,990)	($10,230,347)	($10,754,144)	($11,246,283)	($11,708,553)	($12,142,634)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	($6,535,488)	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	0.50%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	0.62%	($1,898,803)	($3,769,746)	($5,284,319)	**($6,535,488)**	($7,586,470)	($8,481,751)	($9,253,545)
	0.75%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	1%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	1.25%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	1.50%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)
	2%	($1,898,803)	($3,769,746)	($5,284,319)	($6,535,488)	($7,586,470)	($8,481,751)	($9,253,545)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	14%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	55%	38%	25%	14%	5%	-3%	-9%
	0.50%	55%	38%	25%	14%	5%	-3%	-9%
	0.62%	55%	38%	25%	**14%**	5%	-3%	-9%
	0.75%	55%	38%	25%	14%	5%	-3%	-9%
	1.00%	55%	38%	25%	14%	5%	-3%	-9%
	1.25%	55%	38%	25%	14%	5%	-3%	-9%
	1.50%	55%	38%	25%	14%	5%	-3%	-9%
	2.00%	55%	38%	25%	14%	5%	-3%	-9%

Financial Exhibit 5.a.i – The Parcel 9 Ground Lease Solution (Reduced Union "Premium")



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs.		
Site Conditions:		
Parcel Size (SF)	57,238	
As-Of-Right FAR	3.0	
As-Of-Right Height	65	
Building Specifications:		
Building Size (GSF)	170,607	
Building FAR	2.98	
Building FAR above As-Of-Right	-0.02	
Building Footprint	34,100	
Graduate Building	24,995	
Market Rate Building	9,105	
Building Height (Stories)	5	
Story Height (Floor-to-Floor):	*10.0*	
Building Height (Feet):	*50.0*	
Buiding Height above As-Of-Right	-15.0	
High-Rise/Mid-Rise, Steel/Wood	MR W (5 Stories)	
Building Efficency (Weighted Avg.)	83.7%	
Efficiency - Grad Block:	*84.4%*	
Efficiency - Mkt. & Aff.:	*81.9%*	
Unit Allocation:		
Total Number of Units	256	
Number of Grad Units:	204	
Number of Non-Grad Units:	52	
Number of Market Rate:	45	
Percent Non-Grad Affordable:	13%	
Number of Affordable:	7	
Parking Allocation:		
Parking Ratio (Grad):	0.10	
Parking Ratio (Mkt):	0.35	
Total Parking	36	
Underground Parking Spaces	0	
Surface Parking Spaces	36	

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	4.87%
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$250*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*0%*
Percent Aff. Units at 80% AMI	*50%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*50%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	33.8
Lease-Up Absorption per Month	12
Percent of Mkt. Rate Units Pre-Leased	15%
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	37.5%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
ariable Expenses - Apartment ($/NSF, Year 0		University Pass-Throughs:	
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (if no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$4.08	<---Taxes	Per Unit Per Year (Yr. 0): (Yr. 1st Assessed)
Taxes (Grad Units)	$4.48	***Graduate***	$3,000 $3,075
Taxes (Market Rate Units)	$4.02	***Market Rate***	$3,750 $3,844
Taxes (Affordable Units)	$3.82	***Affordable***	$2,750 $2,819
Insurance	$0.60	**Annual Tax Increases:**	
Total	$6.68	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	No
Property Management Fee:	3.0%	***Percent Abated?)***	0.00%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate & Aff. Units***	3.00%

Ground Lease:	
Ground Lease?	Yes
Starting Rent (per GSF)	$0.18
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	n/a

SUMMARY:

Parcel:
Parcel 9 (Public)

Incentives:
Expedited Permitting (6 mos)
Parking (.1 grad, .35 market)
IZR (80% and 100% AMI)
No Linkage/Exactions
Tax Freeze on Grad Units
7.5% Reduction in "Premium"
$0.18 first year GL PMT

University Participation:
Housing Grant
($250/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$615
Return on Cost (Stabilized NOI)	7.10%
Margin on Sale	35%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$16,176,832
Pass-Throughs (FV)	$0
Total Cost (FV):	$16,176,832
Graduate Unit Apportioned Percent of TDC	*$35,645,180*
PV of All Master Lease Payments	$12,260,414

Financial Exhibit 5.a.i – The Parcel 9 Ground Lease Solution (Reduced Union "Premium")

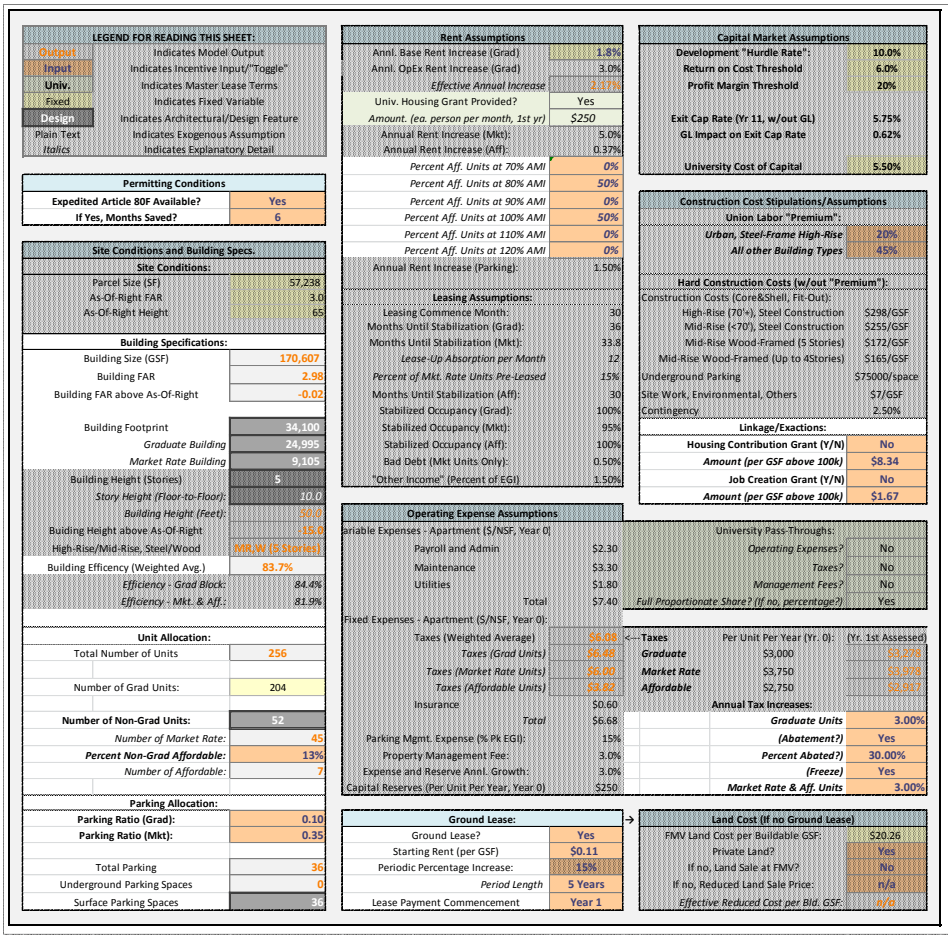
Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$615	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$15,023,916	$12,889,275	$10,873,482	$8,969,746	$7,171,686	$5,473,315	$3,869,005	$2,353,469	$921,737
	4.500%	$13,204,107	$11,159,683	$9,229,251	$7,406,300	$5,684,716	$4,058,758	$2,523,031	$1,072,467	($297,699)
	4.750%	$11,553,739	$9,591,133	$7,738,114	$5,988,427	$4,336,198	$2,775,910	$1,302,380	($89,262)	($1,403,594)
	5.000%	$10,050,201	$8,162,133	$6,379,640	$4,696,699	$3,107,654	$1,607,194	$190,328	($1,147,633)	($2,411,100)
	5.250%	$8,674,733	$6,854,855	$5,136,880	$3,514,999	$1,983,756	$538,028	($827,000)	($2,115,854)	($3,332,788)
	5.500%	$7,411,640	$5,654,380	$3,995,652	$2,429,843	$951,680	($443,787)	($1,761,214)	($3,004,972)	($4,179,174)
	5.750%	$6,247,691	$4,548,134	$2,944,002	$1,429,864	$615	($1,348,537)	($2,622,098)	($3,824,300)	($4,959,125)
	6.000%	$5,171,653	$3,525,441	$1,971,783	$505,412	($878,617)	($2,184,953)	($3,417,961)	($4,581,746)	($5,680,167)
	6.250%	$4,173,930	$2,577,180	$1,070,321	($351,758)	($1,693,859)	($2,960,494)	($4,155,900)	($5,284,064)	($6,348,732)
	6.500%	$3,246,271	$1,695,510	$232,165	($1,148,733)	($2,451,851)	($3,681,573)	($4,842,019)	($5,937,063)	($6,970,347)
	6.750%	$2,381,547	$873,655	($549,129)	($1,891,640)	($3,158,418)	($4,353,731)	($5,481,589)	($6,545,760)	($7,549,790)
	7.000%	$1,573,564	$105,728	($1,279,157)	($2,585,799)	($3,818,623)	($4,981,786)	($6,079,192)	($7,114,516)	($8,091,212)
	7.500%	$106,855	($1,288,268)	($2,604,355)	($3,845,887)	($5,017,074)	($6,121,874)	($7,164,005)	($8,146,963)	($9,074,039)
	8.000%	($1,189,702)	($2,520,548)	($3,775,818)	($4,959,792)	($6,076,493)	($7,129,701)	($8,122,969)	($9,059,637)	($9,942,849)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$615	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$9,675,612	$6,379,905	$3,683,417	$1,436,343	($465,026)	($2,094,772)	($3,507,218)
	0.50%	$7,941,029	$4,967,458	$2,511,031	$447,631	($1,310,080)	($2,825,347)	($4,145,097)
	0.62%	$7,171,686	$4,336,198	$1,983,756	$615	($1,693,859)	($3,158,418)	($4,436,884)
	0.75%	$6,379,905	$3,683,417	$1,436,343	($465,026)	($2,094,772)	($3,507,218)	($4,743,108)
	1%	$4,967,458	$2,511,031	$447,631	($1,310,080)	($2,825,347)	($4,145,097)	($5,304,877)
	1.25%	$3,683,417	$1,436,343	($465,026)	($2,094,772)	($3,507,218)	($4,743,108)	($5,833,600)
	1.50%	$2,511,031	$447,631	($1,310,080)	($2,825,347)	($4,145,097)	($5,304,877)	($6,332,110)
	2%	$447,631	($1,310,080)	($2,825,347)	($4,145,097)	($5,304,877)	($6,332,110)	($7,248,291)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	35%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	91%	72%	56%	43%	32%	23%	14%
	0.50%	81%	63%	49%	37%	27%	18%	11%
	0.62%	76%	60%	46%	35%	25%	16%	9%
	0.75%	72%	56%	43%	32%	22%	14%	7%
	1.00%	63%	49%	37%	27%	18%	11%	4%
	1.25%	56%	43%	32%	23%	14%	7%	1%
	1.50%	49%	37%	27%	18%	11%	4%	-2%
	2.00%	37%	27%	18%	11%	4%	-2%	-7%

Financial Exhibit 5.a.ii – The Parcel 9 Ground Lease Solution (No Union "Premium" Reduction)



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	3.0
As-Of-Right Height	65
Building Specifications:	
Building Size (GSF)	170,607
Building FAR	2.98
Building FAR above As-Of-Right	-0.02
Building Footprint	34,100
Graduate Building	24,995
Market Rate Building	9,105
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50.0*
Buiding Height above As-Of-Right	-15.0
High-Rise/Mid-Rise, Steel/Wood	Mid-Rise (5 Stories)
Building Efficency (Weighted Avg.)	83.7%
Efficiency - Grad Block:	*84.4%*
Efficiency - Mkt. & Aff.:	*81.9%*
Unit Allocation:	
Total Number of Units	256
Number of Grad Units:	204
Number of Non-Grad Units:	52
Number of Market Rate:	45
Percent Non-Grad Affordable:	13%
Number of Affordable:	7
Parking Allocation:	
Parking Ratio (Grad):	0.10
Parking Ratio (Mkt):	0.35
Total Parking	36
Underground Parking Spaces	0
Surface Parking Spaces	36

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	*4.17%*
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$250*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*0%*
Percent Aff. Units at 80% AMI	*50%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*50%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	33.8
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions		University Pass-Throughs:	
ariable Expenses - Apartment ($/NSF, Year 0]			
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (If no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$4.08	<--- **Taxes**	Per Unit Per Year (Yr. 0): (Yr. 1st Assessed)
Taxes (Grad Units)	$3.68	***Graduate***	$3,000 $3,276
Taxes (Market Rate Units)	$5.00	***Market Rate***	$3,750 $4,094
Taxes (Affordable Units)	$2.92	***Affordable***	$2,750 $2,917
Insurance	$0.60	**Annual Tax Increases:**	
Total	$6.68	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	Yes
Property Management Fee:	3.0%	***Percent Abated?)***	30.00%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate & Aff. Units***	3.00%

Ground Lease:	
Ground Lease?	Yes
Starting Rent (per GSF)	$0.11
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	n/a

SUMMARY:

Parcel:
Parcel 9 (Public)

Incentives:
Permitting (6 months)
Parking (.1 grad, .35 mkt+aff)
IZR (80% and 100% AMI)
No Linkage/Exaction
30% Tax Abatement + Freeze
$0.11/GSF starting GL rent

University Participation:
Housing Grant only
($250/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$3,806
Return on Cost (Stabilized NOI)	7.15%
Margin on Sale	34%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$16,176,832
Pass-Throughs (FV)	$0
Total Cost (FV):	$16,176,832
Graduate Unit Apportioned Percent of TDC	*$37,389,115*
PV of All Master Lease Payments	$12,260,414

Financial Exhibit 5.a.ii – The Parcel 9 Ground Lease Solution (No Union "Premium")

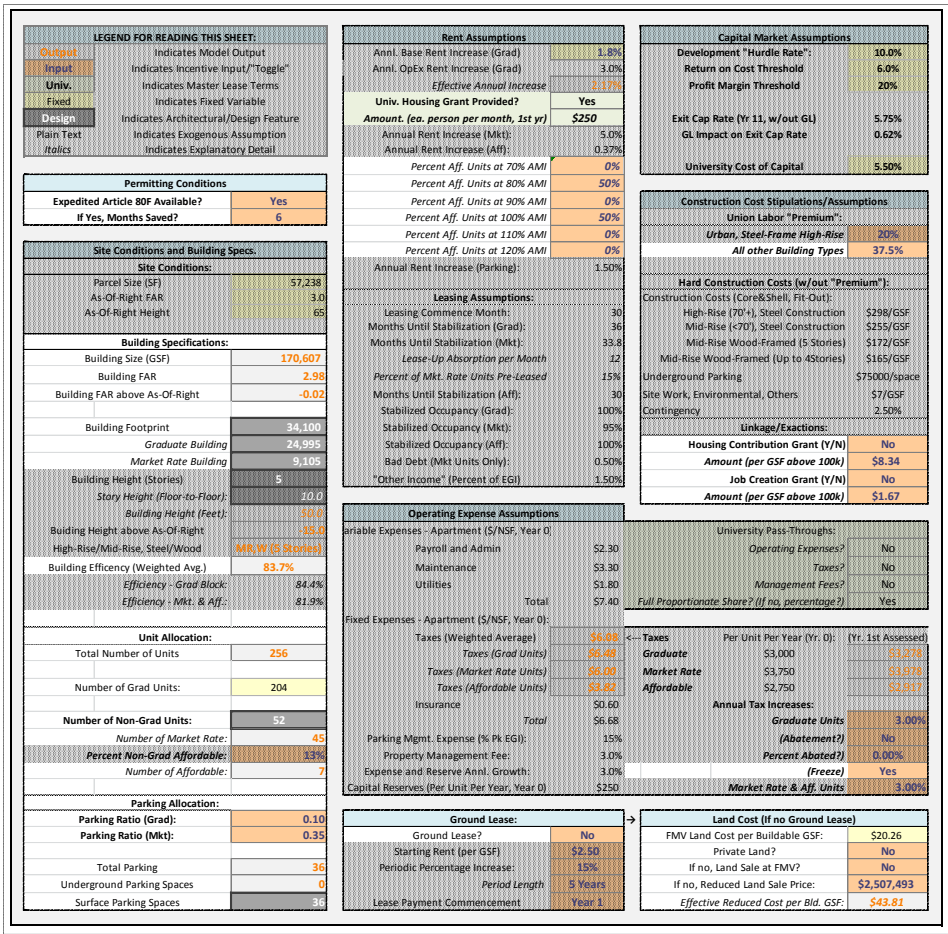
Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$3,806	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$15,731,636	$13,495,563	$11,383,956	$9,389,702	$7,506,125	$5,726,951	$4,046,289	$2,458,604	$958,691
	4.500%	$13,827,766	$11,686,077	$9,663,774	$7,754,038	$5,950,468	$4,247,052	$2,638,142	$1,118,430	($317,074)
	4.750%	$12,101,164	$10,045,072	$8,103,758	$6,270,670	$4,539,659	$2,904,947	$1,361,107	($96,962)	($1,474,053)
	5.000%	$10,528,175	$8,550,065	$6,682,533	$4,919,274	$3,254,366	$1,682,245	$197,687	($1,204,222)	($2,528,097)
	5.250%	$9,089,171	$7,182,400	$5,382,367	$3,682,989	$2,078,553	$563,693	($866,634)	($2,217,167)	($3,492,359)
	5.500%	$7,767,733	$5,926,472	$4,188,424	$2,547,708	$998,803	($463,475)	($1,844,001)	($3,147,355)	($4,377,842)
	5.750%	$6,550,019	$4,769,127	$3,088,196	$1,501,538	$3,806	($1,410,018)	($2,744,652)	($4,004,530)	($5,193,821)
	6.000%	$5,424,276	$3,699,193	$2,071,068	$534,383	($916,040)	($2,285,069)	($3,577,277)	($4,796,963)	($5,948,169)
	6.250%	$4,380,466	$2,707,130	$1,127,966	($362,381)	($1,768,939)	($3,096,434)	($4,349,304)	($5,531,723)	($6,647,617)
	6.500%	$3,409,957	$1,784,734	$251,093	($1,196,170)	($2,561,944)	($3,850,821)	($5,067,115)	($6,214,885)	($7,297,945)
	6.750%	$2,505,290	$924,916	($566,290)	($1,973,393)	($3,301,150)	($4,554,028)	($5,736,228)	($6,851,699)	($7,904,154)
	7.000%	$1,659,984	$121,517	($1,330,039)	($2,699,618)	($3,991,851)	($5,211,093)	($6,361,437)	($7,446,728)	($8,470,585)
	7.500%	$125,524	($1,336,871)	($2,716,451)	($4,017,911)	($5,245,661)	($6,403,845)	($7,496,359)	($8,526,866)	($9,498,811)
	8.000%	($1,230,923)	($2,626,073)	($3,942,027)	($5,183,270)	($6,354,017)	($7,458,226)	($8,499,620)	($9,481,698)	($10,407,753)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$3,806	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$10,125,712	$6,677,769	$3,856,724	$1,505,854	($483,344)	($2,188,371)	($3,666,061)
	0.50%	$8,311,005	$5,200,079	$2,630,183	$471,471	($1,367,432)	($2,952,694)	($4,333,405)
	0.62%	$7,506,125	$4,539,659	$2,078,553	$3,806	($1,768,939)	($3,301,150)	($4,638,670)
	0.75%	$6,677,769	$3,856,724	$1,505,854	($483,344)	($2,188,371)	($3,666,061)	($4,959,040)
	1%	$5,200,079	$2,630,183	$471,471	($1,367,432)	($2,952,694)	($4,333,405)	($5,546,757)
	1.25%	$3,856,724	$1,505,854	($483,344)	($2,188,371)	($3,666,061)	($4,959,040)	($6,099,903)
	1.50%	$2,630,183	$471,471	($1,367,432)	($2,952,694)	($4,333,405)	($5,546,757)	($6,621,441)
	2%	$471,471	($1,367,432)	($2,952,694)	($4,333,405)	($5,546,757)	($6,621,441)	($7,579,943)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	34%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	90%	71%	56%	43%	32%	22%	14%
	0.50%	80%	63%	49%	37%	27%	18%	10%
	0.62%	76%	59%	46%	34%	24%	16%	9%
	0.75%	71%	56%	43%	32%	22%	14%	7%
	1.00%	63%	49%	37%	27%	18%	10%	4%
	1.25%	56%	43%	32%	22%	14%	7%	1%
	1.50%	49%	37%	27%	18%	10%	4%	-2%
	2.00%	37%	27%	18%	10%	4%	-2%	-7%

Financial Exhibit 5.b.i – The Parcel 9 Fee Simple Solution (Reduced Union "Premium")



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	3.0
As-Of-Right Height	65
Building Specifications:	
Building Size (GSF)	170,607
Building FAR	2.98
Building FAR above As-Of-Right	-0.02
Building Footprint	34,100
Graduate Building	24,995
Market Rate Building	9,105
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50.0*
Buiding Height above As-Of-Right	-15.0
High-Rise/Mid-Rise, Steel/Wood	MR W (5 Stories)
Building Efficency (Weighted Avg.)	83.7%
Efficiency - Grad Block:	*84.4%*
Efficiency - Mkt. & Aff.:	*81.9%*
Unit Allocation:	
Total Number of Units	256
Number of Grad Units:	204
Number of Non-Grad Units:	52
Number of Market Rate:	45
Percent Non-Grad Affordable:	13%
Number of Affordable:	7
Parking Allocation:	
Parking Ratio (Grad):	0.10
Parking Ratio (Mkt):	0.35
Total Parking	36
Underground Parking Spaces	0
Surface Parking Spaces	36

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	0.17%
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$250*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*0%*
Percent Aff. Units at 80% AMI	*50%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*50%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	33.8
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	37.5%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
ariable Expenses - Apartment ($/NSF, Year 0		University Pass-Throughs:	
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (If no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$6.08	<--- **Taxes** Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Taxes (Grad Units)	*$6.48*	***Graduate*** $3,000	$3,078
Taxes (Market Rate Units)	*$6.09*	***Market Rate*** $3,750	$3,578
Taxes (Affordable Units)	*$2.82*	***Affordable*** $2,750	$2,817
Insurance	$0.60	**Annual Tax Increases:**	
Total	$6.68	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	No
Property Management Fee:	3.0%	***Percent Abated?)***	0.00%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate & Aff. Units***	3.00%

Ground Lease:	
Ground Lease?	No
Starting Rent (per GSF)	$2.50
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

→

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	No
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	$2,507,493
Effective Reduced Cost per Bld. GSF:	*$43.81*

SUMMARY:

Parcel:
Parcel 9 (Public)

Incentives:
Expedited Permitting (6 mos)
IZR (80% and 100% AMI)
No Linkage/Exactions
7.5% Reduction in "Premium"
Tax Freeze on Grad Units
Parking (.1 grad, .35 market)
Reduced cost land sale

University Participation:
Housing Grant
($250/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$0
Return on Cost (Stabilized NOI)	6.74%
Margin on Sale	42%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$16,176,832
Pass-Throughs (FV)	$0
Total Cost (FV):	$16,176,832
Graduate Unit Apportioned Percent of TDC	*$37,511,186*
PV of All Master Lease Payments	$12,260,414

Financial Exhibit 5.b.i – The Parcel 9 Fee Simple Solution (Reduced Union "Premium")

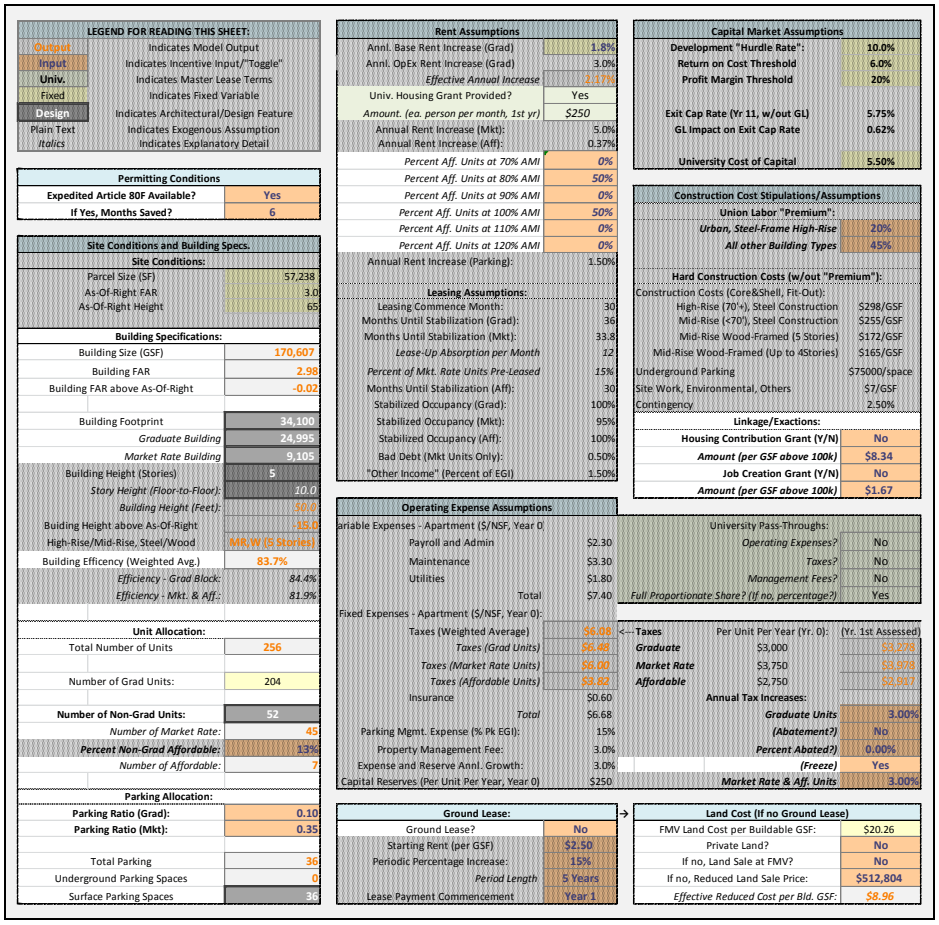
Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$0	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$17,957,337	$15,551,182	$13,278,462	$11,131,536	$9,103,233	$7,186,819	$5,375,970	$3,664,742	$2,047,551
	4.500%	$15,584,743	$13,296,210	$11,134,780	$9,093,179	$7,164,581	$5,342,577	$3,621,143	$1,994,623	$457,699
	4.750%	$13,461,895	$11,278,604	$9,216,748	$7,269,386	$5,429,998	$3,692,465	$2,051,035	$500,306	($964,800)
	5.000%	$11,551,333	$9,462,758	$7,490,520	$5,627,972	$3,868,874	$2,207,364	$637,938	($844,579)	($2,245,049)
	5.250%	$9,822,728	$7,819,850	$5,928,694	$4,142,884	$2,456,428	$863,702	($640,579)	($2,061,380)	($3,403,370)
	5.500%	$8,251,270	$6,326,297	$4,508,853	$2,792,803	$1,172,386	($357,809)	($1,802,866)	($3,167,562)	($4,456,389)
	5.750%	$6,816,460	$4,962,618	$3,212,476	$1,560,121	$0	($1,473,102)	($2,864,085)	($4,177,555)	($5,417,841)
	6.000%	$5,501,217	$3,712,579	$2,024,131	$430,162	($1,074,687)	($2,495,454)	($3,836,870)	($5,103,382)	($6,299,172)
	6.250%	$4,291,194	$2,562,543	$930,853	($609,400)	($2,063,400)	($3,436,018)	($4,731,831)	($5,955,143)	($7,109,996)
	6.500%	$3,174,250	$1,500,972	($78,327)	($1,568,996)	($2,976,057)	($4,304,230)	($5,557,950)	($6,741,383)	($7,858,450)
	6.750%	$2,140,042	$518,035	($1,012,753)	($2,457,510)	($3,821,110)	($5,108,131)	($6,322,874)	($7,469,384)	($8,551,462)
	7.000%	$1,179,707	($394,691)	($1,880,433)	($3,282,559)	($4,605,803)	($5,854,610)	($7,033,161)	($8,145,384)	($9,194,974)
	7.500%	($548,898)	($2,037,600)	($3,442,259)	($4,767,648)	($6,018,249)	($7,198,272)	($8,311,678)	($9,362,185)	($10,353,295)
	8.000%	($2,061,427)	($3,475,144)	($4,808,856)	($6,067,100)	($7,254,139)	($8,373,977)	($9,430,379)	($10,426,886)	($11,366,825)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$0	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.50%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.62%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.75%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1.25%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1.50%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	2%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	42%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	92%	72%	55%	42%	30%	21%	13%
	0.50%	92%	72%	55%	42%	30%	21%	13%
	0.62%	92%	72%	55%	42%	30%	21%	13%
	0.75%	92%	72%	55%	42%	30%	21%	13%
	1.00%	92%	72%	55%	42%	30%	21%	13%
	1.25%	92%	72%	55%	42%	30%	21%	13%
	1.50%	92%	72%	55%	42%	30%	21%	13%
	2.00%	92%	72%	55%	42%	30%	21%	13%

Financial Exhibit 5.b.ii – The Parcel 9 Fee Simple Solution (No Union "Premium" Reduction)



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	3.0
As-Of-Right Height	65
Building Specifications:	
Building Size (GSF)	170,607
Building FAR	2.98
Building FAR above As-Of-Right	-0.02
Building Footprint	34,109
Graduate Building	24,995
Market Rate Building	9,105
Building Height (Stories)	5
Story Height (Floor-to-Floor):	10.0
Building Height (Feet):	50.0
Buiding Height above As-Of-Right	-15.0
High-Rise/Mid-Rise, Steel/Wood	MR/W (5 Stories)
Building Efficency (Weighted Avg.)	83.7%
Efficiency - Grad Block:	84.4%
Efficiency - Mkt. & Aff.:	81.9%
Unit Allocation:	
Total Number of Units	256
Number of Grad Units:	204
Number of Non-Grad Units:	52
Number of Market Rate:	45
Percent Non-Grad Affordable:	13%
Number of Affordable:	7
Parking Allocation:	
Parking Ratio (Grad):	0.10
Parking Ratio (Mkt):	0.35
Total Parking	36
Underground Parking Spaces	0
Surface Parking Spaces	36

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	2.17%
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$250*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*0%*
Percent Aff. Units at 80% AMI	*50%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*50%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	33.8
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	20%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
ariable Expenses - Apartment ($/NSF, Year 0		University Pass-Throughs:	
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (If no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$4.08	<--- **Taxes** Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Taxes (Grad Units)	$6.48	***Graduate*** $3,000	$3,076
Taxes (Market Rate Units)	$6.00	***Market Rate*** $3,750	$3,076
Taxes (Affordable Units)	$3.82	***Affordable*** $2,750	$2,913
Insurance	$0.60	**Annual Tax Increases:**	
Total	$6.68	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	No
Property Management Fee:	3.0%	***Percent Abated?)***	0.00%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate & Aff. Units***	3.00%

Ground Lease:	
Ground Lease?	No
Starting Rent (per GSF)	$2.50
Periodic Percentage Increase:	15%
Period Length	5 Years
Lease Payment Commencement	Year 1

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	No
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	$512,804
Effective Reduced Cost per Bld. GSF:	*$8.96*

SUMMARY:

Parcel:
Parcel 9 (Public)

Incentives:
Expedited Permitting (6 mos)
IZR (80% and 100% AMI)
No Linkage/Exactions
Parking (.1 grad, .35 mkt)
Tax Freeze on Grad Units
Reduced Cost Land Sale

University Participation:
Housing Grant
($250/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$0
Return on Cost (Stabilized NOI)	6.70%
Margin on Sale	41%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$16,176,832
Pass-Throughs (FV)	$0
Total Cost (FV):	$16,176,832
Graduate Unit Apportioned Percent of TDC	*$37,770,729*
PV of All Master Lease Payments	$12,260,414

Financial Exhibit 5.b.ii – The Parcel 9 Fee Simple Solution (No Union "Premium" Reduction)

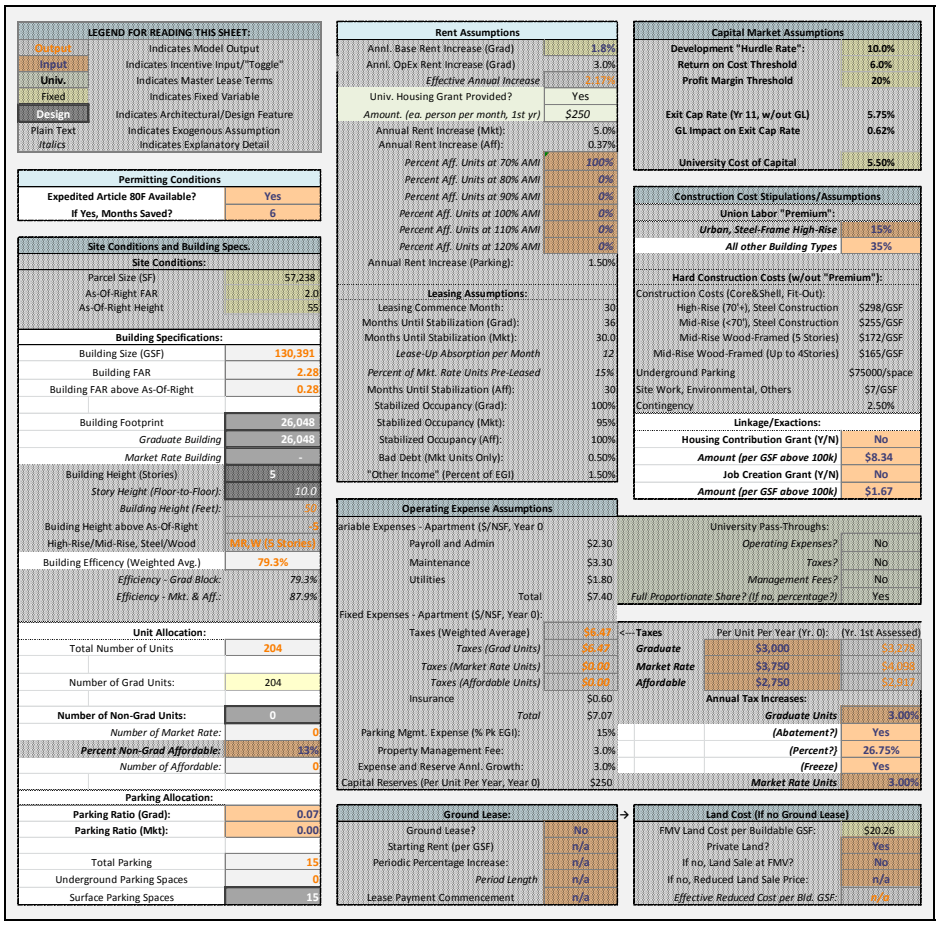
Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$0	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$17,893,202	$15,503,405	$13,246,824	$11,115,822	$9,103,233	$7,202,326	$5,406,780	$3,710,657	$2,108,374
	4.500%	$15,520,608	$13,248,433	$11,103,141	$9,077,465	$7,164,581	$5,358,083	$3,651,954	$2,040,538	$518,522
	4.750%	$13,397,760	$11,230,827	$9,185,110	$7,253,672	$5,429,998	$3,707,972	$2,081,846	$546,221	($903,977)
	5.000%	$11,487,198	$9,414,981	$7,458,882	$5,612,258	$3,868,874	$2,222,871	$668,748	($798,664)	($2,184,226)
	5.250%	$9,758,593	$7,772,072	$5,897,056	$4,127,170	$2,456,428	$879,209	($609,768)	($2,015,465)	($3,342,547)
	5.500%	$8,187,135	$6,278,520	$4,477,215	$2,777,089	$1,172,386	($342,303)	($1,772,056)	($3,121,648)	($4,395,566)
	5.750%	$6,752,325	$4,914,841	$3,180,838	$1,544,407	$0	($1,457,596)	($2,833,275)	($4,131,640)	($5,357,018)
	6.000%	$5,437,083	$3,664,802	$1,992,492	$414,448	($1,074,688)	($2,479,947)	($3,806,059)	($5,057,467)	($6,238,349)
	6.250%	$4,227,060	$2,514,766	$899,214	($625,114)	($2,063,400)	($3,420,511)	($4,701,021)	($5,909,228)	($7,049,173)
	6.500%	$3,110,115	$1,453,195	($109,965)	($1,584,710)	($2,976,057)	($4,288,724)	($5,527,139)	($6,695,468)	($7,797,627)
	6.750%	$2,075,907	$470,258	($1,044,391)	($2,473,224)	($3,821,110)	($5,092,624)	($6,292,064)	($7,423,469)	($8,490,639)
	7.000%	$1,115,572	($442,469)	($1,912,072)	($3,298,273)	($4,605,803)	($5,839,103)	($7,002,351)	($8,099,469)	($9,134,151)
	7.500%	($613,033)	($2,085,377)	($3,473,897)	($4,783,362)	($6,018,249)	($7,182,766)	($8,280,867)	($9,316,270)	($10,292,471)
	8.000%	($2,125,561)	($3,522,921)	($4,840,495)	($6,082,814)	($7,254,139)	($8,358,470)	($9,399,569)	($10,380,971)	($11,306,002)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$0	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.50%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.62%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	0.75%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1.25%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	1.50%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)
	2%	$9,103,233	$5,429,998	$2,456,428	$0	($2,063,400)	($3,821,110)	($5,336,378)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	41%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	91%	71%	54%	41%	29%	20%	12%
	0.50%	91%	71%	54%	41%	29%	20%	12%
	0.62%	91%	71%	54%	41%	29%	20%	12%
	0.75%	91%	71%	54%	41%	29%	20%	12%
	1.00%	91%	71%	54%	41%	29%	20%	12%
	1.25%	91%	71%	54%	41%	29%	20%	12%
	1.50%	91%	71%	54%	41%	29%	20%	12%
	2.00%	91%	71%	54%	41%	29%	20%	12%

Financial Exhibit 5.c.i – The Smookler Lot Solution (Reduced Union "Premium")



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs.	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	2.0
As-Of-Right Height	55
Building Specifications:	
Building Size (GSF)	130,391
Building FAR	2.28
Building FAR above As-Of-Right	0.28
Building Footprint	26,048
Graduate Building	26,048
Market Rate Building	-
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50*
Buiding Height above As-Of-Right	-5
High-Rise/Mid-Rise, Steel/Wood	Mid-R (5 Stories)
Building Efficency (Weighted Avg.)	79.3%
Efficiency - Grad Block:	*79.3%*
Efficiency - Mkt. & Aff.:	*87.9%*
Unit Allocation:	
Total Number of Units	204
Number of Grad Units:	204
Number of Non-Grad Units:	0
Number of Market Rate:	0
Percent Non-Grad Affordable:	13%
Number of Affordable:	0
Parking Allocation:	
Parking Ratio (Grad):	0.07
Parking Ratio (Mkt):	0.00
Total Parking	15
Underground Parking Spaces	0
Surface Parking Spaces	15

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	2.17%
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$250*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*100%*
Percent Aff. Units at 80% AMI	*0%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*0%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	30.0
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	15%
All other Building Types	35%
Hard Construction Costs (w/out "Premium"):	
Construction Costs (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
ariable Expenses - Apartment ($/NSF, Year 0		University Pass-Throughs:	
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (If no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$6.47	<---Taxes	Per Unit Per Year (Yr. 0): (Yr. 1st Assessed)
Taxes (Grad Units)	*$6.47*	***Graduate***	$3,000 $4,070
Taxes (Market Rate Units)	*$0.00*	***Market Rate***	$3,750 $4,088
Taxes (Affordable Units)	*$0.00*	***Affordable***	$2,750 $3,917
Insurance	$0.60	**Annual Tax Increases:**	
Total	$7.07	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	Yes
Property Management Fee:	3.0%	***(Percent?)***	26.75%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate Units***	3.00%

Ground Lease:	
Ground Lease?	No
Starting Rent (per GSF)	n/a
Periodic Percentage Increase:	n/a
Period Length	n/a
Lease Payment Commencement	n/a

→

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF:	*n/a*

SUMMARY:

Parcel:
Smookler Lot (Private)

Incentives:
Density Relief (+0.28 FAR)
Parking Relief (.07/unit)
No Linkage/Exactions
Tax Freeze
26.75% Tax Abatement
10% Reduction in "Premium"

University Participation:
Housing Grant
($250/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$2,502
Return on Cost (Stabilized NOI)	7.12%
Margin on Sale	44%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$16,227,253
Pass-Throughs (FV)	$0
Total Cost (FV):	$16,227,253
Graduate Unit Apportioned % of TDC	*$39,626,331*
PV of All Master Lease Payments	$12,298,629

Financial Exhibit 5.c.i – The Smookler Lot Solution (Reduced Union "Premium")

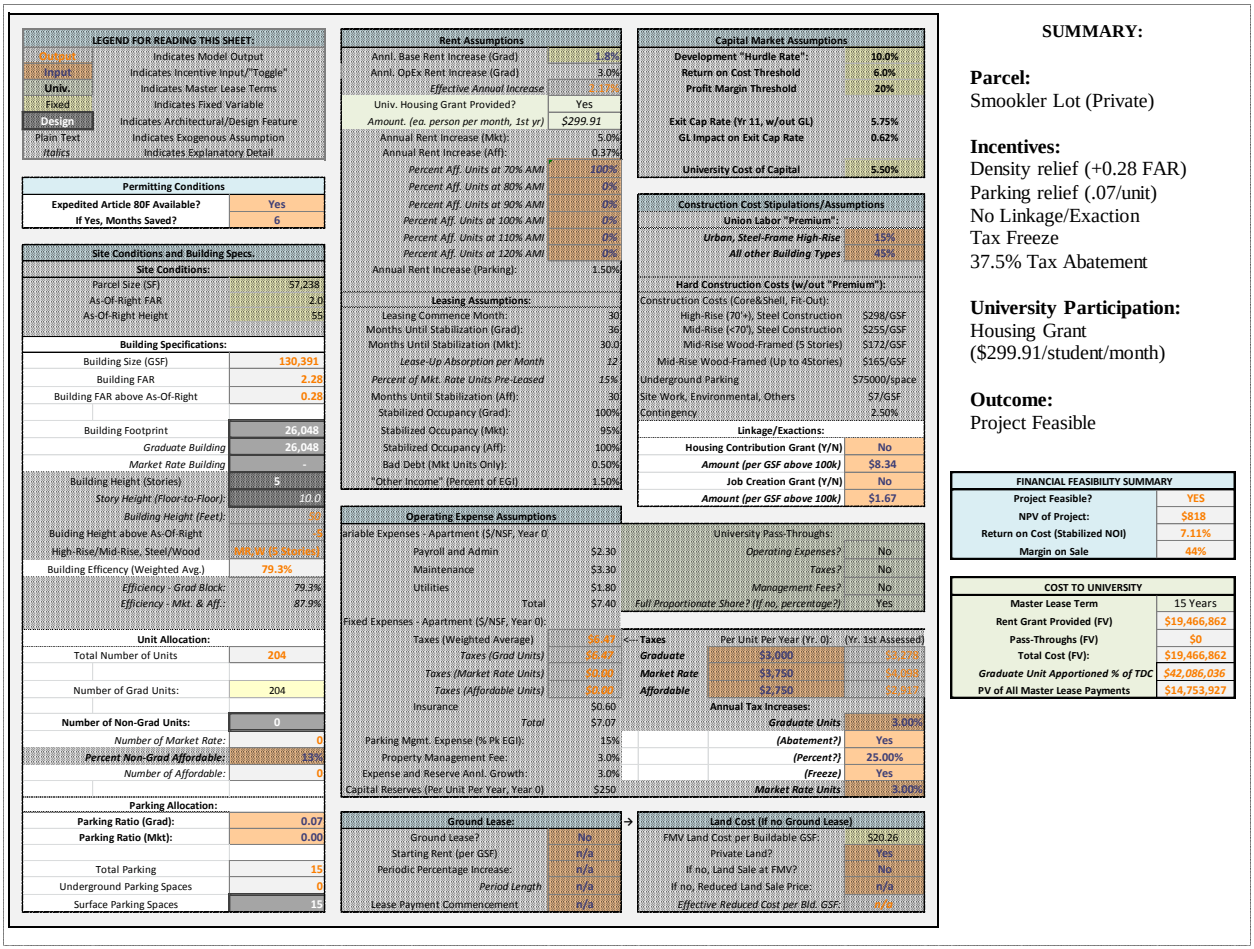
Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$2,502	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$13,944,674	$12,071,876	$10,302,755	$8,631,382	$7,052,190	$5,559,949	$4,149,750	$2,816,979	$1,557,299
	4.500%	$12,107,300	$10,325,590	$8,642,654	$7,052,847	$5,550,867	$4,131,739	$2,790,785	$1,523,612	$326,092
	4.750%	$10,463,333	$8,763,123	$7,157,300	$5,640,472	$4,207,579	$2,853,866	$1,574,868	$366,390	($775,514)
	5.000%	$8,983,763	$7,356,904	$5,820,482	$4,369,336	$2,998,619	$1,703,781	$480,543	($675,111)	($1,766,959)
	5.250%	$7,645,105	$6,084,609	$4,610,979	$3,219,260	$1,904,799	$663,227	($509,560)	($1,617,421)	($2,663,981)
	5.500%	$6,428,142	$4,927,978	$3,511,431	$2,173,736	$910,416	($282,731)	($1,409,654)	($2,474,066)	($3,479,456)
	5.750%	$5,317,003	$3,871,924	$2,507,497	$1,219,127	$2,502	($1,146,431)	($2,231,479)	($3,256,220)	($4,224,019)
	6.000%	$4,298,458	$2,903,874	$1,587,223	$344,069	($829,753)	($1,938,156)	($2,984,819)	($3,973,195)	($4,906,536)
	6.250%	$3,361,397	$2,013,268	$740,571	($460,984)	($1,595,427)	($2,666,544)	($3,677,891)	($4,632,812)	($5,534,451)
	6.500%	$2,496,418	$1,191,170	($40,953)	($1,204,110)	($2,302,204)	($3,338,902)	($4,317,650)	($5,241,689)	($6,114,066)
	6.750%	$1,695,511	$429,969	($764,587)	($1,892,190)	($2,956,626)	($3,961,455)	($4,910,020)	($5,805,465)	($6,650,745)
	7.000%	$951,812	($276,861)	($1,436,533)	($2,531,121)	($3,564,304)	($4,539,540)	($5,460,077)	($6,328,970)	($7,149,091)
	7.500%	($386,847)	($1,549,155)	($2,646,036)	($3,681,197)	($4,658,125)	($5,580,094)	($6,450,181)	($7,271,280)	($8,046,113)
	8.000%	($1,558,173)	($2,662,413)	($3,704,350)	($4,687,514)	($5,615,218)	($6,490,578)	($7,316,521)	($8,095,801)	($8,831,007)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$2,502	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	0.50%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	0.62%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	0.75%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	1%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	1.25%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	1.50%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)
	2%	$7,052,190	$4,207,579	$1,904,799	$2,502	($1,595,427)	($2,956,626)	($4,130,074)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	44%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	95%	74%	58%	44%	32%	23%	14%
	0.50%	95%	74%	58%	44%	32%	23%	14%
	0.62%	95%	74%	58%	44%	32%	23%	14%
	0.75%	95%	74%	58%	44%	32%	23%	14%
	1.00%	95%	74%	58%	44%	32%	23%	14%
	1.25%	95%	74%	58%	44%	32%	23%	14%
	1.50%	95%	74%	58%	44%	32%	23%	14%
	2.00%	95%	74%	58%	44%	32%	23%	14%

Financial Exhibit 5.c.ii – The Smookler Lot Solution (No Union "Premium" Reduction)



LEGEND FOR READING THIS SHEET:	
Output	Indicates Model Output
Input	Indicates Incentive Input/"Toggle"
Univ.	Indicates Master Lease Terms
Fixed	Indicates Fixed Variable
Design	Indicates Architectural/Design Feature
Plain Text	Indicates Exogenous Assumption
Italics	Indicates Explanatory Detail

Permitting Conditions	
Expedited Article 80F Available?	Yes
If Yes, Months Saved?	6

Site Conditions and Building Specs:	
Site Conditions:	
Parcel Size (SF)	57,238
As-Of-Right FAR	2.0
As-Of-Right Height	55
Building Specifications:	
Building Size (GSF)	130,391
Building FAR	2.28
Building FAR above As-Of-Right	0.28
Building Footprint	26,048
Graduate Building	26,048
Market Rate Building	-
Building Height (Stories)	5
Story Height (Floor-to-Floor):	*10.0*
Building Height (Feet):	*50*
Buiding Height above As-Of-Right	-5
High-Rise/Mid-Rise, Steel/Wood	Mid-Rise (5 Stories)
Building Efficency (Weighted Avg.)	79.3%
Efficiency - Grad Block:	*79.3%*
Efficiency - Mkt. & Aff.:	*87.9%*
Unit Allocation:	
Total Number of Units	204
Number of Grad Units:	204
Number of Non-Grad Units:	0
Number of Market Rate:	0
Percent Non-Grad Affordable:	13%
Number of Affordable:	0
Parking Allocation:	
Parking Ratio (Grad):	0.07
Parking Ratio (Mkt):	0.00
Total Parking	15
Underground Parking Spaces	0
Surface Parking Spaces	15

Rent Assumptions	
Annl. Base Rent Increase (Grad)	1.8%
Annl. OpEx Rent Increase (Grad)	3.0%
Effective Annual Increase	3.11%
Univ. Housing Grant Provided?	Yes
Amount. (ea. person per month, 1st yr)	*$299.91*
Annual Rent Increase (Mkt):	5.0%
Annual Rent Increase (Aff):	0.37%
Percent Aff. Units at 70% AMI	*100%*
Percent Aff. Units at 80% AMI	*0%*
Percent Aff. Units at 90% AMI	*0%*
Percent Aff. Units at 100% AMI	*0%*
Percent Aff. Units at 110% AMI	*0%*
Percent Aff. Units at 120% AMI	*0%*
Annual Rent Increase (Parking):	1.50%
Leasing Assumptions:	
Leasing Commence Month:	30
Months Until Stabilization (Grad):	36
Months Until Stabilization (Mkt):	30.0
Lease-Up Absorption per Month	*12*
Percent of Mkt. Rate Units Pre-Leased	*15%*
Months Until Stabilization (Aff):	30
Stabilized Occupancy (Grad):	100%
Stabilized Occupancy (Mkt):	95%
Stabilized Occupancy (Aff):	100%
Bad Debt (Mkt Units Only):	0.50%
"Other Income" (Percent of EGI)	1.50%

Capital Market Assumptions	
Development "Hurdle Rate":	10.0%
Return on Cost Threshold	6.0%
Profit Margin Threshold	20%
Exit Cap Rate (Yr 11, w/out GL)	5.75%
GL Impact on Exit Cap Rate	0.62%
University Cost of Capital	5.50%

Construction Cost Stipulations/Assumptions	
Union Labor "Premium":	
Urban, Steel-Frame High-Rise	15%
All other Building Types	45%
Hard Construction Costs (w/out "Premium"):	
Construction Costs: (Core&Shell, Fit-Out):	
High-Rise (70'+), Steel Construction	$298/GSF
Mid-Rise (<70'), Steel Construction	$255/GSF
Mid-Rise Wood-Framed (5 Stories)	$172/GSF
Mid-Rise Wood-Framed (Up to 4Stories)	$165/GSF
Underground Parking	$75000/space
Site Work, Environmental, Others	$7/GSF
Contingency	2.50%
Linkage/Exactions:	
Housing Contribution Grant (Y/N)	No
Amount (per GSF above 100k)	$8.34
Job Creation Grant (Y/N)	No
Amount (per GSF above 100k)	$1.67

Operating Expense Assumptions			
ariable Expenses - Apartment ($/NSF, Year 0		University Pass-Throughs:	
Payroll and Admin	$2.30	*Operating Expenses?*	No
Maintenance	$3.30	*Taxes?*	No
Utilities	$1.80	*Management Fees?*	No
Total	$7.40	*Full Proportionate Share? (If no, percentage?)*	Yes
Fixed Expenses - Apartment ($/NSF, Year 0):			
Taxes (Weighted Average)	$0.47	<--- **Taxes** Per Unit Per Year (Yr. 0):	(Yr. 1st Assessed)
Taxes (Grad Units)	$0.47	***Graduate***	$3,000
Taxes (Market Rate Units)	$0.00	***Market Rate***	$3,750
Taxes (Affordable Units)	$0.00	***Affordable***	$2,750
Insurance	$0.60	**Annual Tax Increases:**	
Total	$7.07	***Graduate Units***	3.00%
Parking Mgmt. Expense (% Pk EGI):	15%	***(Abatement?)***	Yes
Property Management Fee:	3.0%	***(Percent?)***	25.00%
Expense and Reserve Annl. Growth:	3.0%	***(Freeze)***	Yes
Capital Reserves (Per Unit Per Year, Year 0)	$250	***Market Rate Units***	3.00%

Ground Lease:	
Ground Lease?	No
Starting Rent (per GSF)	n/a
Periodic Percentage Increase:	n/a
Period Length	n/a
Lease Payment Commencement	n/a

Land Cost (If no Ground Lease)	
FMV Land Cost per Buildable GSF:	$20.26
Private Land?	Yes
If no, Land Sale at FMV?	No
If no, Reduced Land Sale Price:	n/a
Effective Reduced Cost per Bld. GSF	n/a

SUMMARY:

Parcel:
Smookler Lot (Private)

Incentives:
Density relief (+0.28 FAR)
Parking relief (.07/unit)
No Linkage/Exaction
Tax Freeze
37.5% Tax Abatement

University Participation:
Housing Grant
($299.91/student/month)

Outcome:
Project Feasible

FINANCIAL FEASIBILITY SUMMARY	
Project Feasible?	YES
NPV of Project:	$818
Return on Cost (Stabilized NOI)	7.11%
Margin on Sale	44%

COST TO UNIVERSITY	
Master Lease Term	15 Years
Rent Grant Provided (FV)	$19,466,862
Pass-Throughs (FV)	$0
Total Cost (FV):	$19,466,862
Graduate Unit Apportioned % of TDC	*$42,086,036*
PV of All Master Lease Payments	$14,753,927

Financial Exhibit 5.c.ii – The Smookler Lot Solution (No Union "Premium" Reduction)

Sensitivity Tables

NPV SENSITIVITY TABLE (HURDLE RATE AND EXIT CAP RATE)										
NPV Output:		Hurdle Rate								
	$818	8%	8.50%	9%	9.50%	10%	10.50%	11%	11.50%	12%
Exit Cap Rate (Year 11, No Ground Lease)	4%	$14,786,784	$12,801,098	$10,925,397	$9,153,388	$7,479,164	$5,897,181	$4,402,226	$2,989,406	$1,654,120
	4.500%	$12,837,687	$10,948,629	$9,164,352	$7,478,868	$5,886,554	$4,382,127	$2,960,628	$1,617,396	$348,050
	4.750%	$11,093,758	$9,291,156	$7,588,681	$5,980,614	$4,461,586	$3,026,553	$1,670,777	$389,808	($820,540)
	5.000%	$9,524,222	$7,799,430	$6,170,577	$4,632,186	$3,179,115	$1,806,536	$509,912	($715,021)	($1,872,270)
	5.250%	$8,104,166	$6,449,774	$4,887,530	$3,412,179	$2,018,784	$702,711	($540,395)	($1,714,629)	($2,823,836)
	5.500%	$6,813,206	$5,222,813	$3,721,124	$2,303,081	$963,938	($300,766)	($1,495,220)	($2,623,363)	($3,688,896)
	5.750%	$5,634,503	$4,102,545	$2,656,144	$1,290,427	$818	($1,216,984)	($2,367,016)	($3,453,076)	($4,478,733)
	6.000%	$4,554,026	$3,075,632	$1,679,913	$362,161	($882,043)	($2,056,850)	($3,166,163)	($4,213,647)	($5,202,750)
	6.250%	$3,559,986	$2,130,873	$781,780	($491,844)	($1,694,274)	($2,829,528)	($3,901,378)	($4,913,372)	($5,868,846)
	6.500%	$2,642,411	$1,258,787	($47,265)	($1,280,156)	($2,444,026)	($3,542,768)	($4,580,038)	($5,559,272)	($6,483,704)
	6.750%	$1,792,805	$451,300	($814,900)	($2,010,075)	($3,138,241)	($4,203,176)	($5,208,427)	($6,157,328)	($7,053,017)
	7.000%	$1,003,885	($298,509)	($1,527,704)	($2,687,856)	($3,782,870)	($4,816,412)	($5,791,931)	($6,712,666)	($7,581,665)
	7.500%	($416,171)	($1,648,165)	($2,810,750)	($3,907,863)	($4,943,200)	($5,920,237)	($6,842,238)	($7,712,273)	($8,533,230)
	8.000%	($1,658,720)	($2,829,115)	($3,933,416)	($4,975,369)	($5,958,490)	($6,886,083)	($7,761,256)	($8,586,930)	($9,365,850)

NPV SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
NPV Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	$818	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	0.50%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	0.62%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	0.75%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	1%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	1.25%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	1.50%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)
	2%	$7,479,164	$4,461,586	$2,018,784	$818	($1,694,274)	($3,138,241)	($4,383,041)

MARGIN ON SALE SENSITIVITY TABLE (EXIT CAP RATE AND GROUND LEASE IMPACT)								
Margin Output:		Exit Cap Rate (Year 11, No Ground Lease)						
	44%	4.25%	4.75%	5.25%	5.75%	6.26%	6.75%	7.25%
GL Impact on Exit Cap	0.25%	94%	74%	57%	44%	32%	22%	14%
	0.50%	94%	74%	57%	44%	32%	22%	14%
	0.62%	94%	74%	57%	44%	32%	22%	14%
	0.75%	94%	74%	57%	44%	32%	22%	14%
	1.00%	94%	74%	57%	44%	32%	22%	14%
	1.25%	94%	74%	57%	44%	32%	22%	14%
	1.50%	94%	74%	57%	44%	32%	22%	14%
	2.00%	94%	74%	57%	44%	32%	22%	14%