

RESOLUTION NO. 2016-26

**A RESOLUTION APPROVING THE WINTER AND
COMPANY ANALYSIS AND TESTING OF PROPOSED
DEVELOPMENT CODE REPORT**

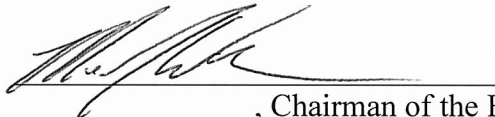
WHEREAS, the Board of Directors of the Downtown Community Improvement District (the "District") approved the Winter and Company Analysis and Testing of the Proposed Development Code Report.

WHEREAS, the Board of Directors of the District desires to approve the report attached hereto as Exhibit A.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF
THE DOWNTOWN COMMUNITY IMPROVEMENT DISTRICT AS FOLLOWS:**

1. The Board of Directors of the District hereby approves the Winter and Company Analysis and Testing of Proposed Development Code Report.

PASSED this 14th day of June, 2016.

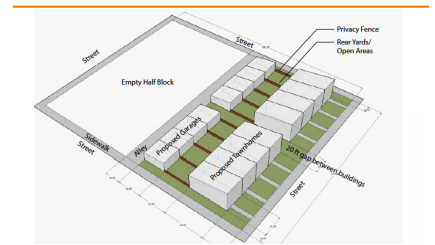

_____, Chairman of the Board
of Directors

Attest:

_____, Secretary of
the Board of Directors

DRAFT ZONING CODE ANALYSIS AND TESTING

Columbia, Missouri



June 2016



**Analysis and Testing
Document Team:**

Winter & Company
www.winterandcompany.net
Boulder, CO

Urban Advisors
www.urbanadvisors.com
Portland, OR

ACKNOWLEDGEMENTS

DOWNTOWN CID Staff:

Katie Essing,
Executive Director

CID Board Members:

Blake Danuser	Deb Sheals
Adam Dushoff	Steve Guthrie
Christina Kelley	Michael Wagner
Tony Grove	Marti Waigandt
Tom Mendenhall	Ben Wade
Michael McClung	Skip Walther
Allan Moore	Andy Waters
John Ott	

PROJECT Partners

Last Enterprises, Columbia Board of REALTORS
LLC

LIST OF REFERENCED DOCUMENTS:

Voluntary Design Guidelines

http://discoverthedistrict.com/wp-content/uploads/2013/08/Columbia-Design-Guidelines_low-copy.pdf

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INTRODUCTION

The City of Columbia is considering a new city-wide zoning code, which includes a special Form-Based Code (FBC) for the downtown. The Downtown Community Improvement District (Downtown CID) has been actively engaged in providing comments and suggestions for revisions to the code along the way. This report provides an analysis to facilitate continuing commentary on the proposed code.

Writing a new code is a complex undertaking. It involves many variables, including a “high level” implementation of land development policies and urban design principles as well as finer-grained tasks related to basic document organization, clarity of prescriptive standards, and enhanced predictability for property owners and the community at large.

The consulting team of Clarion Associate and Ferrell Madden (referred to as the “code consultants” in this paper) developed the draft of the code for downtown that is currently under consideration. They are widely recognized for their skills in developing zoning codes.

The draft code reflects the city’s goals to enhance the pedestrian experience and promote a sense of human scale. To do so, it introduces new standards that will shape the form of development, particularly as is perceived from the street, or public realm.

The draft code is a significant advancement over the existing zoning. It introduces a new level of standards that address building form and

placement and recognizes that different “contexts” exist in the single proposed downtown zoning district.

Even so, questions remain about how the code will be interpreted for specific projects, whether some of the standards may be difficult to meet and if some of them may in fact impede development outright. This paper provides comments on the draft code, focusing on how it will facilitate development and encourage appropriate investment in the area. These observations are based on a review of the code and testing of a series of potential development scenarios that study the application of the standards in terms of their physical requirements and the potential economic impacts.

Note that these comments are based on our understanding of the draft code. In some cases, our assumptions may be incorrect. Nonetheless, our misinterpretation may in itself demonstrate some issues about clarity of language that could affect the code’s application.

KEY FINDINGS:

While the draft code has many positive features our evaluation identifies these issues:

1. Some standards are difficult to interpret.

This may result in a permitting process that is not as swift, clear or predictable as is anticipated.

2. Some standards offer only limited options for compliance.

Certain standards prescribe only a few ways in which to meet a design requirement. This may inhibit some development and could yield a “cookie cutter” character for new projects.

3. Some standards may add cost to new development.

Some of these requirements may increase cost while not substantially enhancing the quality of a project. Other standards may increase cost, but may be beneficial in their overall contribution to the built environment and quality of life.

4. The draft standards work best on large scale projects.

Complying with some of the standards is easier when a large site is redeveloped. Complying with the standards when modifying an existing building or constructing a new, smaller building may more difficult, or at least less predictable and potentially time-consuming.



PROCESS & METHODOLOGY

This chapter presents an overview to the process used to test the potential impacts of the draft Form-Based Code.

1 - CODE REVIEW & PRELIMINARY ANALYSIS:

- Understanding the Draft Code, Additional Documents, and the applicability to the Mixed Use-Downtown area

2 - CODE TESTING & ANALYSIS:

- Application of the Draft Code to Preliminary Development Scenarios

Code Review & Preliminary Analysis

The Draft Code

A primary objective of the new code is to make development “by-right” as much as possible. This means that the code should be easy to understand and that sufficient options should be available to meet the intent of the standards.

The new M-DT Mixed Use-Downtown District in the FBC replaces the C-2 Central Business District and some areas of the M-1 General Industrial Zoning. In the downtown, the existing zoning system, which is based on the mapping of parcels into districts would be replaced with a form-based system of mapping streets into one of several “building form standards.” These define the form and development controls of properties that front those streets. (The M-DT form based controls are located in Section 29-4.2 of the FBC.)

Some key standards in the code are:

- **Regulating Plan** - The M-DT area is mapped as streets with several Building Form Standards
- **Building Form Standards (BFS)** - Form and development rules govern each site in four frontages:
 - Urban General
 - Urban General - West
 - Urban Storefront
 - Townhouse/Small Apartment
- **Required Building Line (RBL)** - Indicates where the buildings shall be built-to for each site
- **Minimum % of Open Area** - Indicates the required amount of public or private open area required for each BFS
- **Parking Setback Line** - At-grade vehicle parking is not allowed forward of this line unless otherwise noted in the individual BFS areas
- **Facade Composition** - The arrangement and proportion of facade materials and elements which include but are not limited to building facade articulation, fenestration, access and bays
- **Curb Cuts** - existing or proposed ramp that provides site access from the street
- **Forecourt** - area that is surrounded on three (3) sides by the building

The Code Analysis Process

The process of analyzing and testing the M-DT section of the draft code began with the review and comparison of the FBC with the existing code. Throughout this analysis process, document clarity, ease of administrative approval, and the appeal process were reviewed.

The code we reviewed is the draft published in October 2015, with a few modifications. These are based on a memo from Clarion dated November 16, 2015, which provides additional clarification for some items within the M-DT section of the code. For the purposes of this project, Clarion’s amendment suggestions have been incorporated as “assumed standards,” into our understanding of the M-DT section of the FBC.

As a final component of the preliminary review process, representatives of the Downtown Community Improvement District (CID) and City planning staff were interviewed to develop an understanding of early issues and to refine the objectives of the testing process.



Code Testing & Analysis

The testing of the FBC is based on a series of development scenarios that range from large scale, new infill projects to small redevelopment and additions.

Each of the case studies is further explored through a series of alternative development scenarios that test the feasibility and possible impacts of the FBC on future development.

Researching Case Studies

A series of potential case study sites were identified to serve as a starting point for evaluation. These were selected based on these variables:

1. Different locations as illustrated in the Regulating Plan
2. Building form variety as described in the Draft Code
3. Adaptive reuse and incremental alterations to existing buildings
4. Different land uses
5. Preliminary code questions and concerns

Testing Overview

Initially, eight (8) potential case studies were presented to the Downtown Community Improvement District (CID) board and reviewed for relevancy and testing value. Each case study was discussed and the applicable parameters for the conceptual development was outlined and initially, two (2) case studies were chosen for testing. After further review and discussion, the testing scope was expanded to include an additional four (4) case studies. These provide a greater understanding of the FBC in a wider variety of development situations. Each case study site was then modified to the more “generic” so as to test a set of typical existing conditions, rather than unique locations.

Each of the case studies has more than one development scenario. These illustrate how and when certain code provisions impact the conceptual development schemes. The case studies are further expanded through a financial feasibility analysis to identify the impacts of specific code requirements and market viability. The financial feasibility of these case studies was tested, using development costs and potential income projections based on information provided locally and from national data bases. This analysis serves as a general guide for feasibility of project, but readers should understand that actual project feasibility for any project will ultimately be determined by individual property owners, developers and their lenders. The financial analysis appears in Appendix C.

SPECIFIC PROJECT COST FACTORS

Street Wall Requirement

The code requires construction of a free-standing wall to screen open areas that abut the street.

Open Space Requirement

A requirement for open space on all sites may have a financial impact, in terms of “lost” building area.

Feasibility of Structure Parking

The vision for downtown is that parking will be minimized, visually and functionally, with respect to the impact on the public realm. This assumes that it will be provided internally to development, either as surface lots or parking structures. Individual development projects need not provide parking, except when housing is included. If parking is not to be provided in a general improvement district, then some amount must be provided (either on site or in an acceptable location) for larger residential projects. Preliminary economic analysis indicates that multi-level structured parking will only be feasible for very high density residential projects, roughly 100 units per acre.

Glazing Standards

The draft code establishes minimum percentages of glazing for the street level and upper portions of exterior, street-facing walls. The percentages are within the range that would normally be anticipated for large scale developments and the added costs are minimal. However, for a smaller infill project, in the range of 30,000 square feet, the standards may add a higher percentage cost, when distributed over the cost of the entire project. Nonetheless, the highest glazing standard set forth in the code only lowers returns by 0.01 percent.

Building Façade Articulation Standards

Building articulation standards mandate variation in street-facing walls every fifty feet. As with glazing, the impact is greater for smaller buildings. Again, a large scale infill development can absorb these costs with minimal impact on feasibility. However, for a smaller project, say of a quarter block or less, the façade articulation cost has about twice the impact as on a larger project.

These are among the cost factors that are discussed in the individual Case Studies that follow in this report.

UNDERSTANDING THE CODE

In this section, adjustments to the Draft Code are reviewed and the current version is analyzed for clarity & consistency.

1 - ADJUSTMENTS ASSUMED IN THE DRAFT CODE:

- Changes to the code that impact testing

2 - FORM-BASED CODE INTERPRETATION QUESTIONS:

- Clarifying aspects of the code

3 - GENERAL CODE TESTS:

- Examining the code in limited site scenarios

Adjustments Assumed in the Draft Code

The City of Columbia released the current version of the FBC in October of 2015. Shortly thereafter, the CID provided comments, which included a series of questions and suggestions for amendments. The Code Consultants then responded with a memo, dated November 16, 2015.

The Code Consultant's memo responded to a list of 36 comments that had not been previously addressed, including some from the CID. Within each response, the Code Consultants indicated whether or not changes to the Integrated Draft of the Development Code should be made based on those concerns. They also noted those instances where they believe no changes to the draft Code are merited. After talking with city staff, the comments and edited sections of the draft code from that memo were incorporated into the 'assumed standards' that are used in our analysis.

Below are items from the Clarion memo that were included in our testing and those that were not:

CODE AMENDMENTS ACCEPTED BY CLARION:

1. Eliminate the requirement to provide future alleys
2. Enlarge maximum ground floor footprint to 34,000 sf
3. Revise the parking setback line to apply to ground level development only (except for 9th and Broadway streets)
4. Clarification of requirement to have one entryway for each facade composition
5. Remove roofing requirement for balconies (NOT for porches)
6. Allow non-conforming structures to expand up to 25% of their existing building gross floor area without bringing the entire building into compliance (as long as the non-conformity isn't worsened and new non-conformities aren't created)
7. Clarify that the second story requirement means that both stories must be occupiable
8. Permit a one-story addition to an existing two-story building

CODE AMENDMENTS NOT RECOMMENDED BY CLARION:

1. Changes to Regulating Plan Boundaries
2. Elimination of Street Wall requirements
3. Window alternatives
4. No substitution of a new industrial use for an existing industrial use
5. RBL locations will not change due to right-of-way conditions
6. Deleting the .25 parking space per bedroom requirement
7. Provision for new development to match the average existing setbacks of the entire block

Form-Based Code Interpretation Questions

DOCUMENT CLARITY & CONSISTENCY:

A form-based code should be easy to interpret and clear in its desired outcomes. The document's organization, presentation of material, and consistency should support the ease at which future development is understood, approved, and undertaken. Additionally, the combination of text, graphics, and images should clearly illustrate a scenario or a complex series of standards.

With the case of the Columbia FBC, multiple questions pertaining to the general presentation of the new code were noted throughout the analysis process. A series of these interpretation questions were posed to Tim Teddy, Community Development Director for the City of Columbia. Mr. Teddy provided the Winter & Company team with feedback regarding our preliminary inquiries while also encouraging a review and testing process of the Draft Code. As a response we have compiled a list of items that were noted to be unclear, inconsistent, or difficult to interpret in the FBC.

Readability

The readability of the draft code document was noted as an issue. Some parts of the draft code are difficult to interpret. These are noted in the sections of the report that follow.

For More Information:

Draft Code Standards Chart
See Appendix A.9

BFS Frontage Types

In order to facilitate a quick comparison of alternative standards for the four different frontage types, we generated a chart (Appendix A) that summarizes the key provisions in the code that are tested. This chart organizes Building Form and Site Standards according to the each of the BFS Frontages:

- Urban Storefront
- Urban General
- Urban General - West
- Townhouse/Small Apartment

Note that this chart was developed to aid in our testing process and should not be relied upon for accuracy outside of the original code document. The intent of the Draft Code Standards Chart is to combine building form and site standard information in a way that supports consistent and easy comparison and review.

Concept Clarity

The clarity and consistency of the draft code document is another concern that impedes the comprehension of the FBC document. Some aspects of the draft code are difficult to interpret, in part because there are few supporting illustrations and charts, or due to a lack of clear terminology definition.

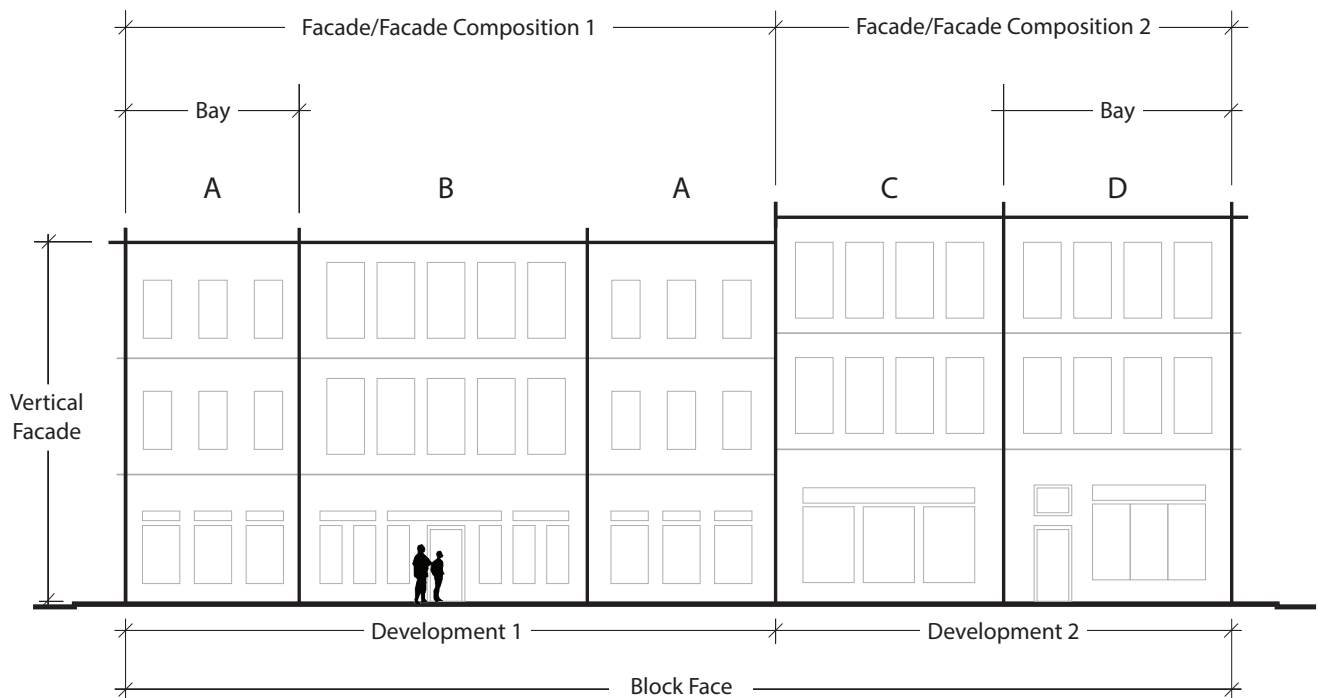
Facade Composition

Facade Composition is discussed in section 29-4.2 d(2) of the draft code. The definition provides a clear differentiation between the groundstory and upper floor elements, but it is difficult to understand the concept of “Vertical Facade Bay Composition” and its relationship to “Bays” and the other requirements for achieving articulation in a facade are unclear.

Further clarification is needed to adequately describe the distinct elements of facade composition. These terms need clarification:

- Facade Composition - the wall of a single development?
- Vertical Facade - is this the same as facade composition?
- Complete and Discrete - as used to distinguish an individual bay?
- Bay - a “module” of a facade?
- Block Face - an entire wall of buildings along a street?
- Street Entry Door - as required for a bay or a facade composition?

This graphic illustrates our interpretation of the concept of the term “Facade Composition” as it is used in the FBC:



Form-Based Code Interpretation Questions

Percentage of Building at the Required Building Line (RBL)

The concept of the RBL in the Regulating Plan is that buildings shall be located at the sidewalk edge. However, in Section 29-4.2e, the RBL is used to describe the percentage of “required building line length” for each building form standard, in an unclear manner. There is a question as to whether this requirement is based on total block face length or individual building frontage or facade composition length. This requirement should be more clearly explained and illustrated.

Street Wall Requirements

Gaps between buildings are to be filled with “street walls.” The street wall feature is presented in each of the Individual M-DT Building Form Standard Frontages sections. These walls vary in height and opacity for each area.

Clarity about the design parameters of street walls are needed to adequately understand the application of this requirement. There is no discussion regarding materiality, which leaves the use of vegetation, lattices or fences unclear. Although fenestration is discussed, measurement is also unclear due to a lack of graphic examples or appropriate description.

The current code refers to the sections of street walls as being “located along any RBL frontage that is not otherwise occupied by a building” (29-4.2 d (6xi)). Without additional language to describe the application for street walls, the requirements for phased developments, parking areas, and additions to existing/non-conforming lots are unclear. While the street wall concept may help to define an “urban” street edge, it may also raise some questions related to Crime Prevention Through Environmental Design (CPTED).

Parking Setback Line

The Parking Setback Line is located twenty-four feet (24') behind the RBL. This line provides a limit to all above ground vehicle parking on the ground level, with the exception of 9th Street & Broadway. No parking may be located front of this line and if this space remains open land, it cannot be counted to meet the open space requirements. The Parking Setback Line does not apply to vehicular parking above or below ground level when a development is located elsewhere.

A principal concern with this standard is the use of space left between the RBL and setback line when it is not occupied by a building. Since it is understood that this area cannot be used for open space calculations, there is little incentive for developers to make use of the area as an amenity.

A better description of this concept with alternatives for creative use and application would be helpful. Additionally, by providing this information, CPTED concerns may be alleviated.

Private Open Area Percentage

Each new development within the M-DT is required to have a minimum amount of public/private open space which is a percentage of the total buildable lot size.

Minimum Open Area percentages are:

- **Urban Storefront** - 15% total open area that must be located behind the parking setback line and side/rear setbacks (33% of total area can be available on a roof or balcony)
- **Urban General** - 15% total open area that must be located behind the parking setback line and side/rear setbacks (33% of total area can be available on a roof or balcony)
- **Urban General-West** - 10% total open area that must be located behind the parking setback line and side/rear setbacks (33% of total area can be available on a roof or balcony)
- **Townhouse/Small Apartment** - 15% total open area that must be located behind the parking setback line and side/rear setbacks (15% of total area can be available on a roof or balcony)

Noted Impact:

The Open Area standard and its related location requirements appear to directly impact physical feasibility of some projects. It is unclear how a project in the middle of a block would meet this requirement, especially if only 33% can go above ground level. Additionally, since the space between the RBL and parking setback line cannot count towards this area, this requirement may be cost prohibitive to some projects on smaller parcels.

Form-Based Code Interpretation Questions

Process Clarity

Administrative Variance vs. Board of Adjustment Review Process

The process outlined for review currently places much of the review on the Director or Board. The advantage of this is that a degree of flexibility is available administratively. However, this introduces a degree of unpredictability with standards that are difficult to interpret. There also is a question for which process would be required for certain levels of site/project modifications.

Curb Cuts

Curb cuts, as they pertain to new development, are discussed in section 29-4.2 c (2iii) of the FBC. There is a clear intent to limit and remove existing curb cuts during redevelopment. However, the requirements are unclear for situations where additions are being created or the owner is redeveloping with the intent to make use of the existing curb cuts.

Phased Development

Development in the downtown will not all be total redevelopment - some projects will include existing buildings and others will be phased. How the code addresses these conditions is unclear.

1. Additions to Existing

In the case of an addition to an existing building, an increase by more than 25% gross floor area limit is a threshold that requires bringing a property into full code compliance. However, this can limit improvements to existing non-conforming buildings, parking lots along RBLs, and simple additions. The removal of large amounts of parking and the addition of extensive lengths of street wall may be issues when additions are being considered.

2. Surface Parking

The proposed code clearly notes the intention to minimize surface parking in downtown Columbia. However, not all projects will be able to redevelop parking lots all at once. What process and requirements will be used for these situations? Will existing lots be required to relocate existing parking spaces to fit behind the parking setback areas when a phased development occurs? Similarly, will street walls

be required around surface lots and empty parcels that are not included in the initial development? The Planning Director has indicated that a simple phasing diagram, or a plan that demonstrates that a first phase would not preclude future code compliance would suffice, but this is not mentioned in the code.

General Code Tests

Three general tests illustrate our understanding of some of the code requirements in terms of how they might apply to specific site conditions. The code tests are:

FULL-BLOCK COMMERCIAL DEVELOPMENT

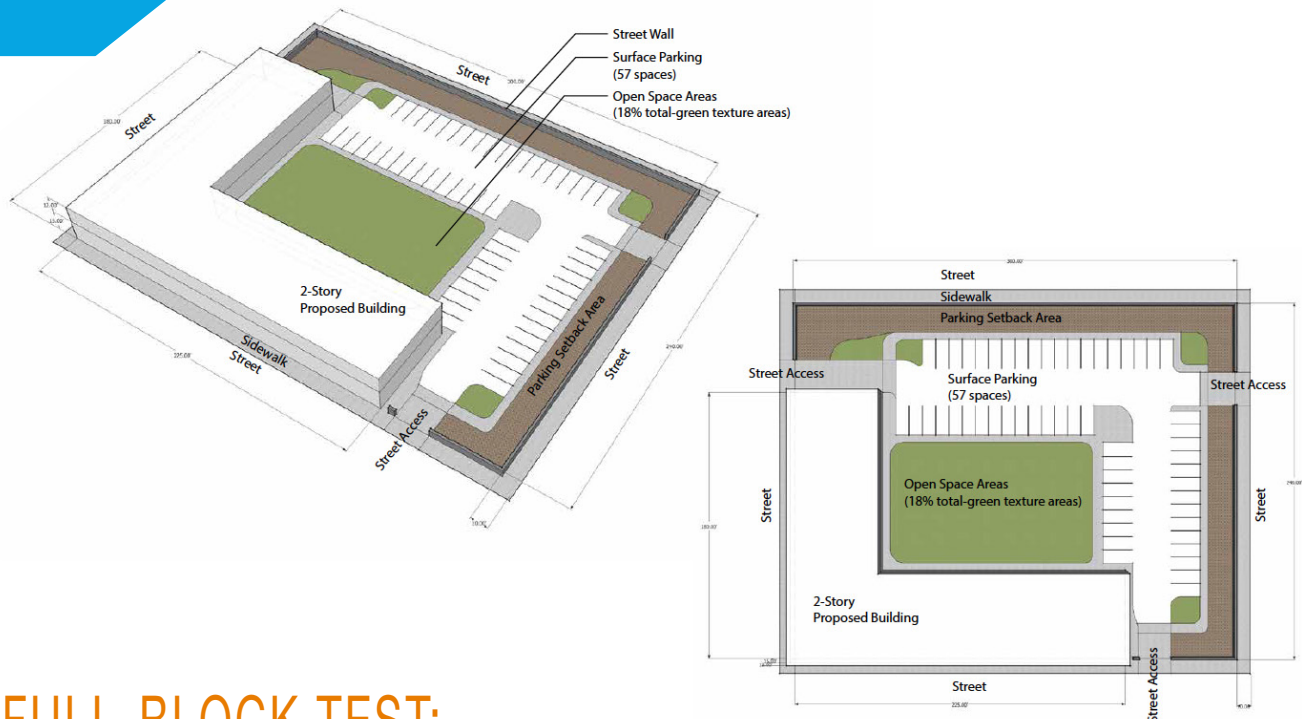
- Assumes phased development approach
- Minimum phase one building area
- Tests street wall/parking setback impacts
- Tests open space impacts

HALF-BLOCK COMMERCIAL DEVELOPMENT

- Maximizing 2-story development on the site
- Raises open space considerations
- Tests parking setback impacts

HALF-BLOCK TOWNHOME DEVELOPMENT

- Intended as a transition to a single family zone
- Tests general layout requirements



FULL-BLOCK TEST:

Minimum commercial/residential, phased development

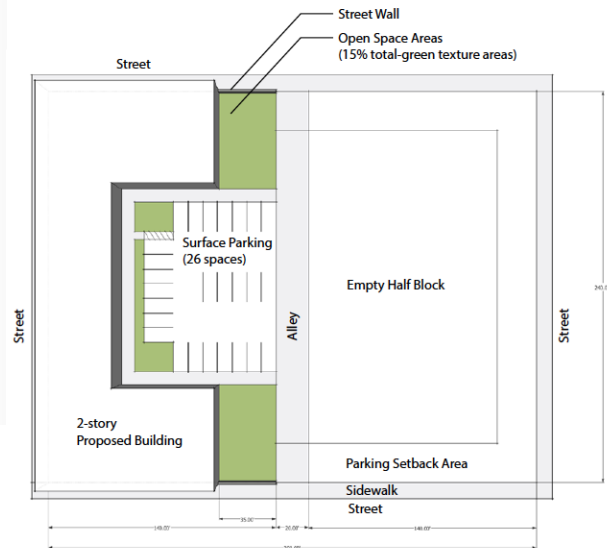
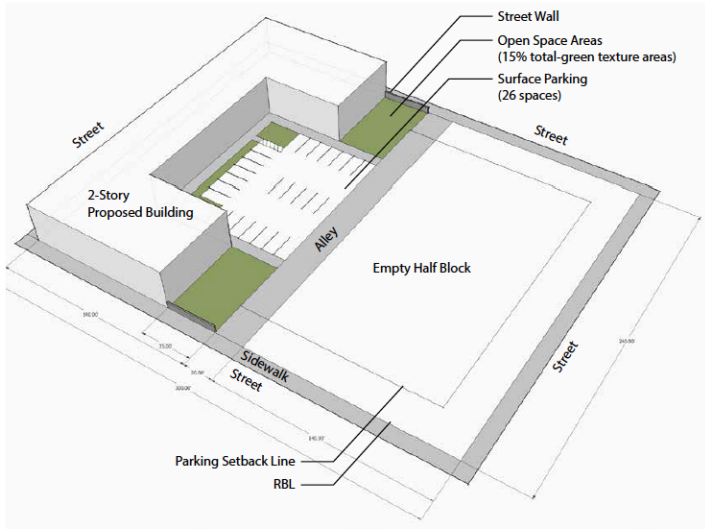
This examines the implications of a phased approach to developing a full city block. In this case, a new 2-story building is shown, which meets the building and site requirements, as we interpret the FBC. Each building face extends to 75% of the lot dimension. Surface parking is maximized for the remaining area of the site, within the code's requirements to provide a parking setback and street wall.

Site Data:

- 41,400 sf
- 2-stories
- 57 parking spaces
- ~13,000 sf of open space (18%)
- 600 lf of street wall

Areas of Question & Concern:

- **Parking setback area** - creates an expensive and unfavorable situation for phased development
- **Open area requirement** - limited to a prime site area rather than at the street
- **Street wall requirement** - adds cost; is this required?
- **Curb cuts/Street access** - new curb cuts: are they permitted?
- **Maximum groundfloor footprint** - no issues
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-to Line** - no issues anticipated beyond clarity of 75% code provision



HALF-BLOCK TEST:

Maximizing a 2-story commercial development

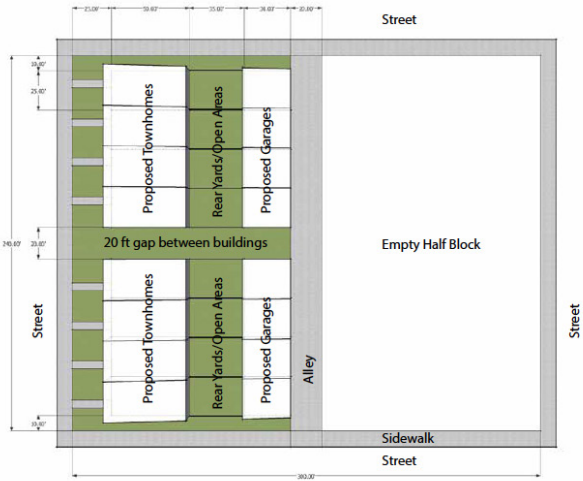
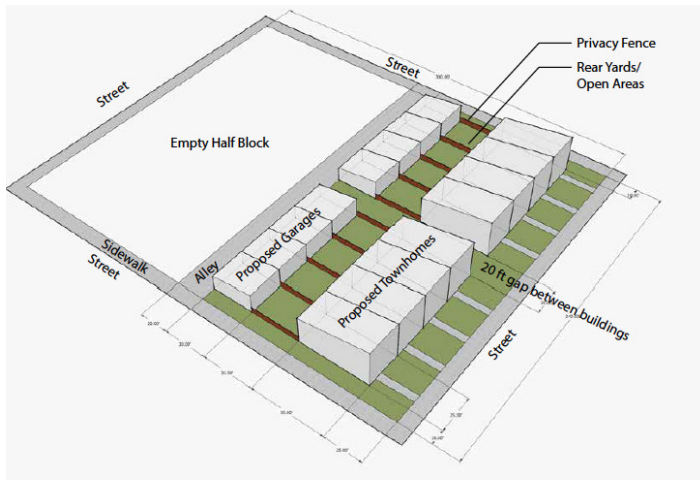
This examines a 2-story, half-block commercial/residential project. This case meets all building and site requirements, as we interpret them. The minimum 75% of each lot dimension is building wall, the open space requirement of 67% is located at the ground level and 33% is satisfied on the rooftop and balconies. Surface parking is maximized for the remaining area of the site within the requirements for parking setback and street wall included.

Site Data:

- 36,000 sf
- 2-stories
- 26 parking spaces
- ~13,000 sf of open space (15% of site area)
- 70 lf of street wall

Areas of Question & Concern:

- **Parking setback area** - creates a setback condition that is not useful for development needs
- **Open area requirement** - limited to prime site area due to provisions and parking setback area
- **Street wall requirement** - no issues anticipated beyond clarity of fenestration and measurement
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade Articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated beyond the need to clarify the 75% code provision



HALF-BLOCK TEST:

Maximizing a townhome development

This examines a typical half-block townhome development. In this case, the new townhomes meet all the building and site requirements. Townhomes and garages are placed to maximize yard space while meeting all setbacks and open space requirements.

Site Data:

- 8 townhome units
- 2-stories/ea
- 25' individual unit width
- ~875 sf of open space/unit (30%)

Areas of Question & Concern:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no street wall requirement in this frontage area
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade Articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated beyond clarity of 60% code provision

TESTING THE CODE

In this chapter, the current Draft Code is tested through six (6) site case studies. They illustrate likely development projects and include considerations of economic feasibility.

-INTRODUCTION

-CASE STUDY 1 - URBAN GENERAL FULL-BLOCK RESIDENTIAL:

- New Development Respecting the Character and Scale of Historic Properties.

-CASE STUDY 2 - URBAN GENERAL ADDITION:

- 40% Addition to a Non-Conforming Site, which triggers the “full compliance” requirement

-CASE STUDY 3 - URBAN GENERAL WEST DEVELOPMENT:

- Tests alternatives to building at the RBL

-CASE STUDY 4 - URBAN GENERAL MEDIUM REDEVELOPMENT:

- Tests open area requirements for medium sized lot

-CASE STUDY 5 - URBAN STOREFRONT SMALL REDEVELOPMENT:

- Tests open area requirements for small development

-CASE STUDY 6 - URBAN GENERAL SMALL REDEVELOPMENT:

- Examining the differences between additions, full redevelopment, and curb cut requirements

-SUMMARY OBSERVATIONS

Introduction

Throughout the review of the draft code special attention was paid to aspects of the code that could impact development. This section focuses on testing those requirements in a series of case studies. The goal is to examine the results of the code that we have found to be most impactful through site scenarios and economic feasibility.

The initial approach to the development of case study scenarios was based on finding a series of sites to test the proposed code at different locations, scales, and levels of intensity throughout the M-DT area. The Regulating Plan within the proposed code outlines four distinct Building Form Standard (BFS) areas; Urban General, Urban General-West, Urban Storefront, and Townhouse/Small Apartment. Our review process noted consistent questions and challenges in all of these areas with the exception of the Townhouse BFS and therefore it was not included in this portion of the testing process. Within the other three BFS areas, we were looking to test aspects of the code that could impede or discourage desirable development projects.

Multiple aspects of the draft code can have an impact on future development through the provisions outlined in the document. Therefore, once an understanding of downtown Columbia was achieved, non-specific sites were developed according to the inherent qualities of future development sites and scenarios. The development of these conceptual sites allowed us to create real-world development scenarios that focused on the constraints of each individual site and the challenges posed by the code, while avoiding issues with property ownership and other legal considerations.

In general, major impacts were noted with smaller developments, additions to existing sites, additions to non-conforming sites, residential vs. commercial uses, and phased projects. In order to further refine our understanding of the challenges for each site, multiple variations were constructed. When supported with the economic analysis information, these site variations provide additional information that helps further refine the testing process.

The results provide insight into the questions and concerns posed by the CID, the perceived clarity of the draft code document, and the areas of question previously noted. Along with these informed conclusions, we have provided a series of recommendations for areas of major concern.

Case Study #1: Scenario A - Urban General

FULL-BLOCK RESIDENTIAL & PARKING STRUCTURE

Location:

Urban General

Uses:

Residential & parking structure

Objective:

To test the balance between a medium density residential development and structured parking

Description:

- 5-story urban core residential development
- Townhome character at the ground floor
- Buildings constructed at the sidewalk edge
- Pronounced entries
- Private and public open space options
- Articulated building facade
- Promenade provides public/private open space
- Forecourt provides public/private open space
- Parking structure
- Additional project details available in Appendix, on pg. A.16

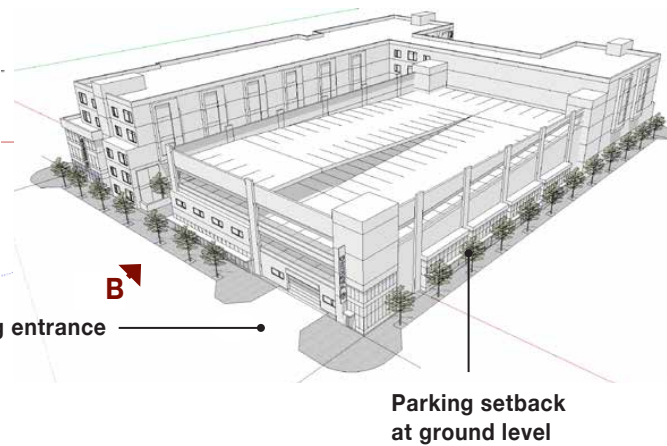
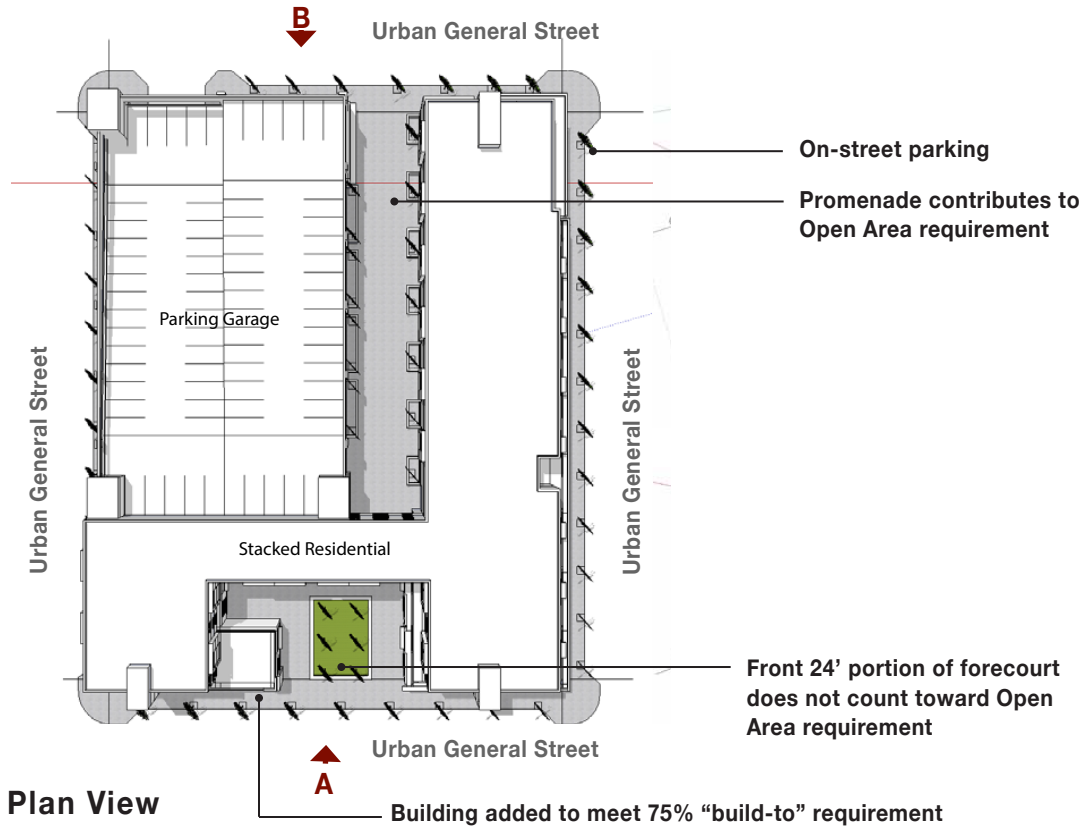
Standards Tested:

- **Parking setback area** - reduces the parking capacity by approximately 30 spaces on the ground floor
- **Open area requirement** - developed on ground floor, balconies, and roof to adhere to requirement
- **Street wall requirement** - feature not necessary in this project
- **Curb cuts/Street access** - no issues anticipated for this code provision
- **Maximum development area** - no issues anticipated for this code provision since parking garages do not count against the total
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - requires project to add “bump in “ to adhere to forecourt requirements

Observations

- This project scenario is financially feasible
- Parking structure adds cost but also a potential income
- Commercial link may not contribute to pro forma feasibility

FULL-BLOCK RESIDENTIAL & PARKING STRUCTURE



Case Study #1: Scenario A - Urban General

Case Study #1: Scenario B - Urban General

FULL BLOCK RESIDENTIAL & SURFACE PARKING

Location:

Urban General

Uses:

Residential, commercial and surface parking

Objective:

To test the balance between a medium density residential development and structured parking

Description:

- 5-story urban core residential development
- Townhome character at the ground floor
- Buildings constructed at the sidewalk edge
- Pronounced entries
- Private and public open space options
- Articulated building facade
- Promenade provides public/private open space
- Forecourt provides public/private open space
- Surface parking lot (non-conforming)
- Additional project details available in Appendix, on pg. A.16

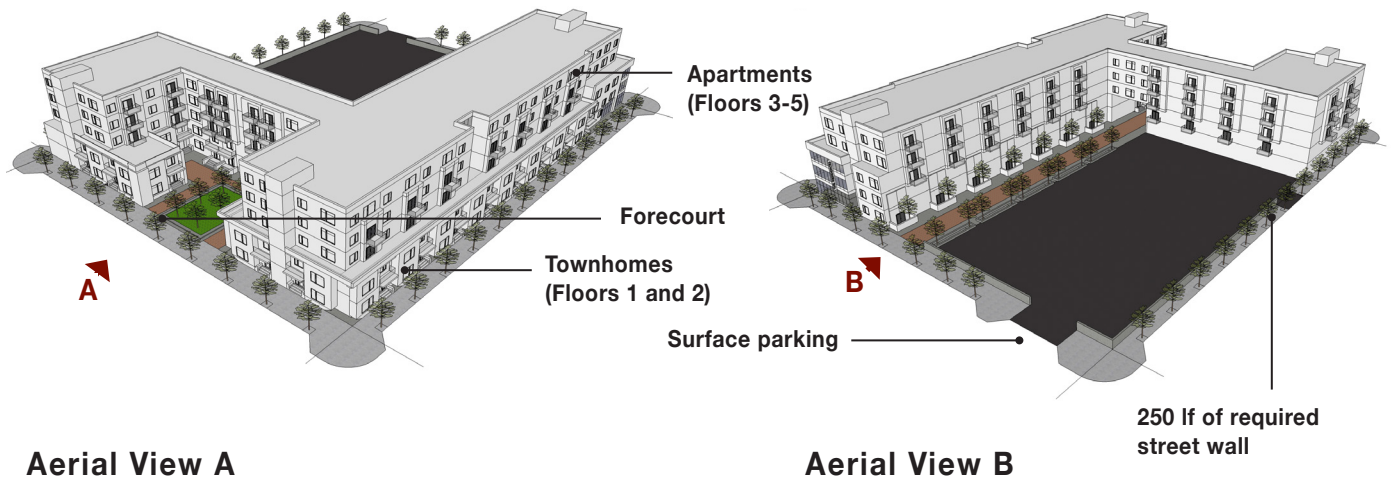
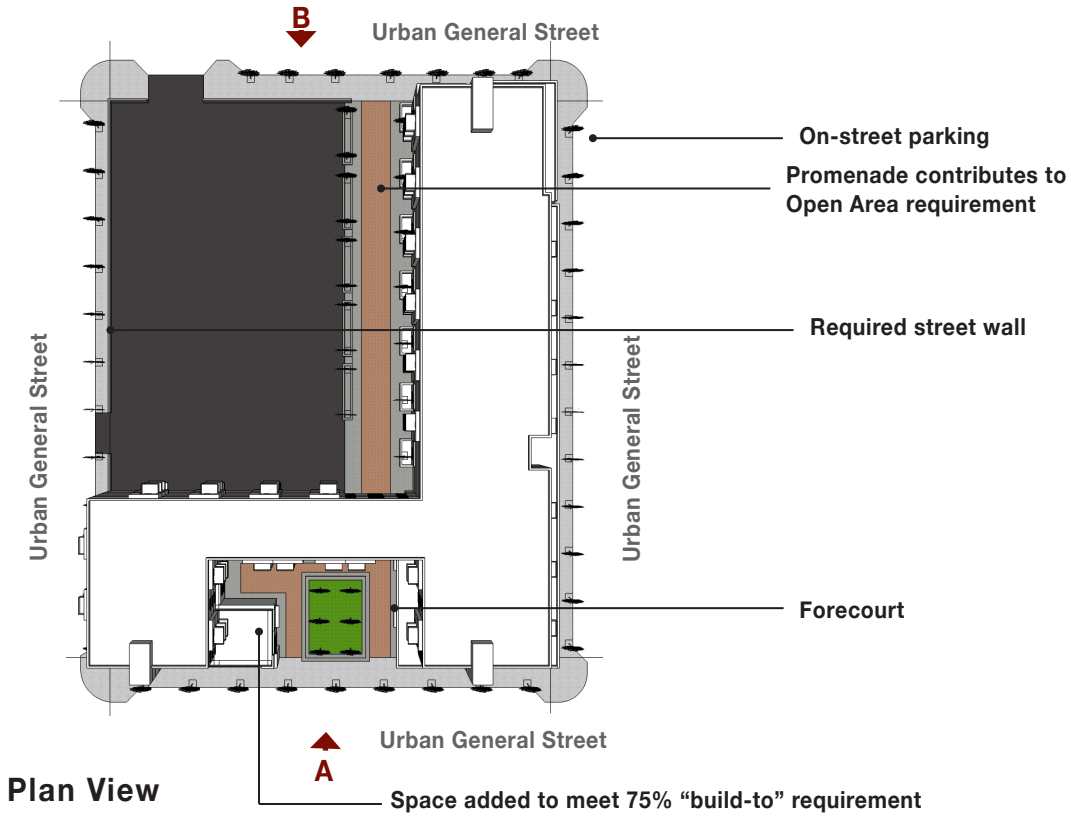
Standards Tested:

- **Parking setback area** - does not currently conform to this requirement, but would reduce the parking capacity by approximately 30 spaces
- **Open area requirement** - provided on ground floor, balconies, and roof to adhere to requirement
- **Street wall requirement** - application of this requirement is unclear in language of code
- **Curb cuts/Street access** - no issues anticipated for this code provision
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - requires project to add “bump in “ to adhere to 75% “build-to” requirement

Observations

- This scenario is the most feasible of the Case Study #1 different scenarios
- Add ground story ‘bump in’ to adhere to forecourt requirements
- Project is non-conforming due to the lack of a parking setback area for the parking lot

FULL BLOCK RESIDENTIAL & SURFACE PARKING



Case Study #1: Scenario B - Urban General

Case Study #1: Scenario C - Urban General

FULL-BLOCK RESIDENTIAL & STRUCTURED PARKING

Location:

Urban General

Uses:

Residential, commercial and structured parking

Objective:

To test the balance between a medium density residential development and structured parking

Description:

- 5-story urban core residential development
- Townhome character at the ground floor
- Buildings constructed at the sidewalk edge
- Pronounced entries
- Private and public open space options
- Articulated building facade
- Promenade provides public/private open space
- Forecourt provides public/private open space
- Parking structure with apartments above
- Additional project details available in Appendix, on pg. A.16

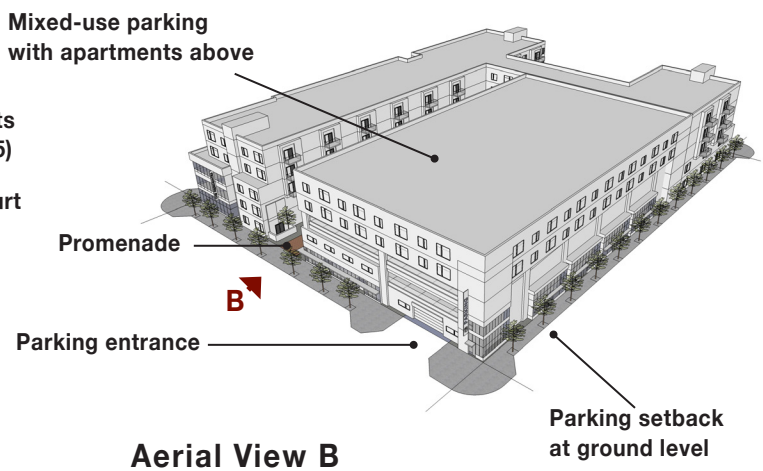
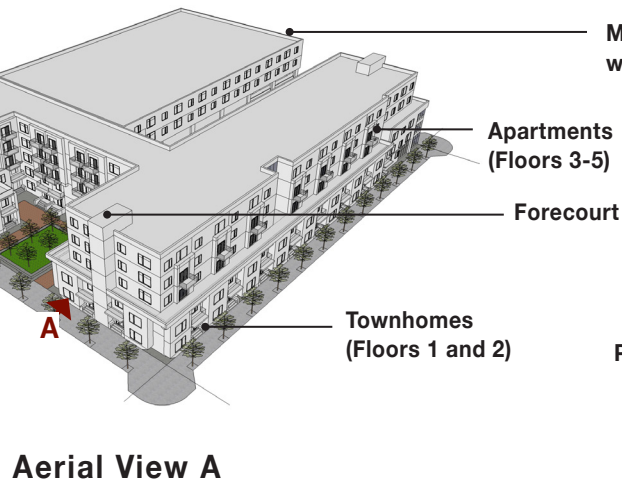
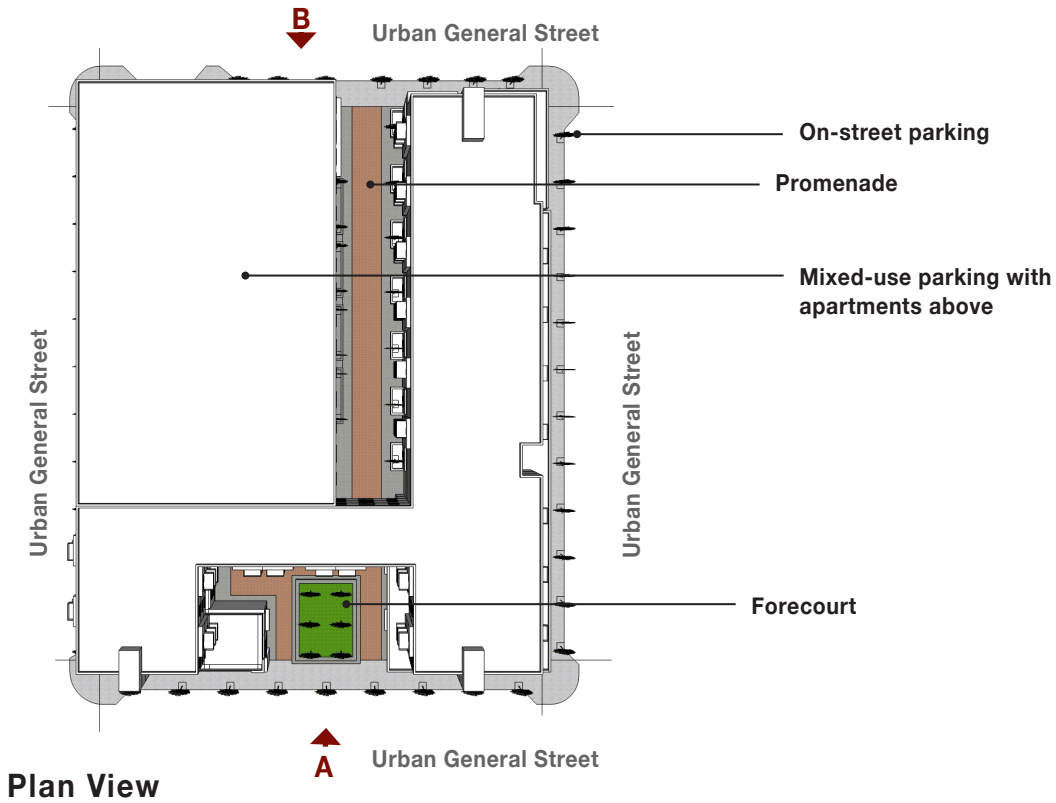
Standards Tested:

- **Parking setback area** - reduces the parking capacity by approximately 30 spaces on the ground floor
- **Open area requirement** - developed on ground floor, balconies, and roof to adhere to requirement
- **Street wall requirement** - feature not necessary in this project
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated for this code provision since parking garages do not count against the total
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - requires project to add “bump in “ to adhere to forecourt requirements

Observations

- This project scenario is financially feasible due to the addition of apartments over the parking garage

FULL-BLOCK RESIDENTIAL & STRUCTURED PARKING



Case Study #1: Scenario C - Urban General

Case Study #2: Scenario A - Urban General

CONFORMING ADDITION

Location:

Urban General

Uses:

Commercial/Restaurant

Objective:

To test the opportunity to expand a non-conforming, service-oriented building, at the Urban General boundary

Existing Description:

- Non-conforming lot
- Existing 1-story building with two different uses/tenants

New Development Description:

- 40% addition
- Addition is built to the RBL
- Street wall section is added near addition
- Additional project details available in Appendix, on pg. A.17

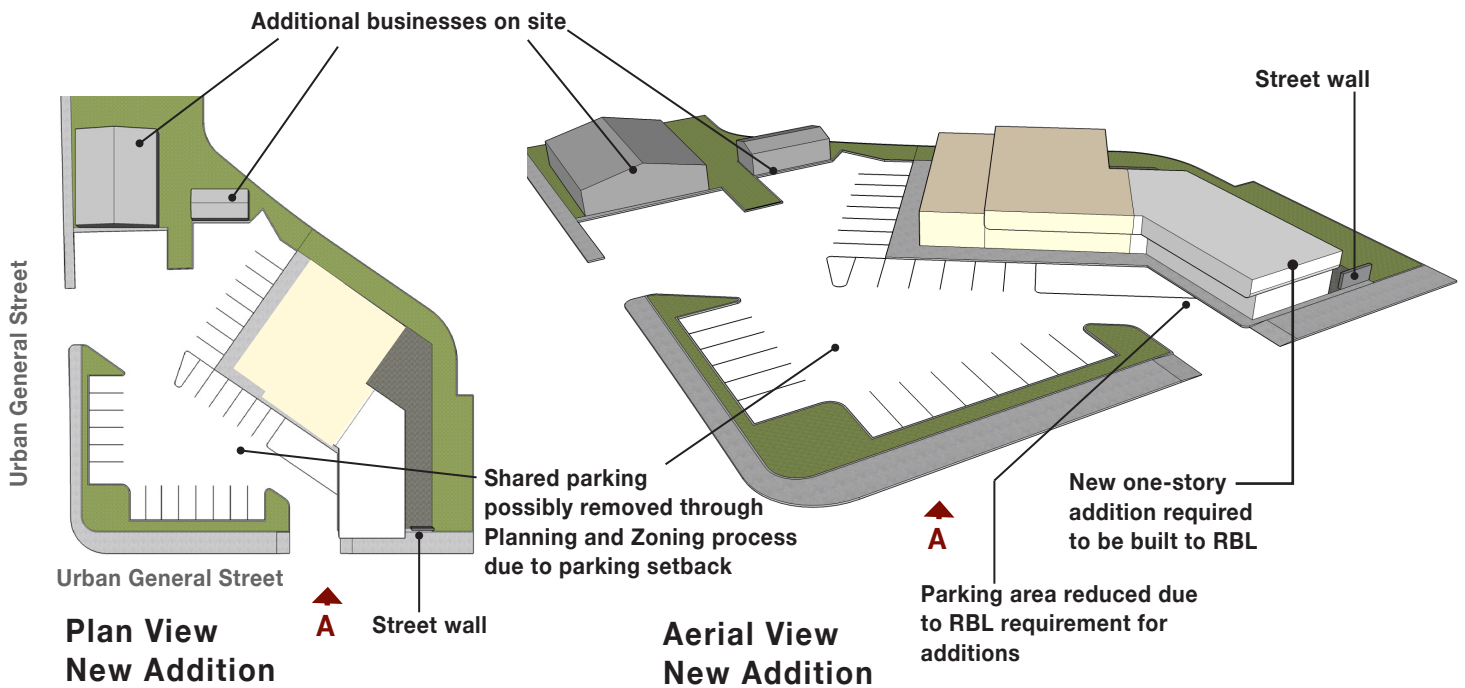
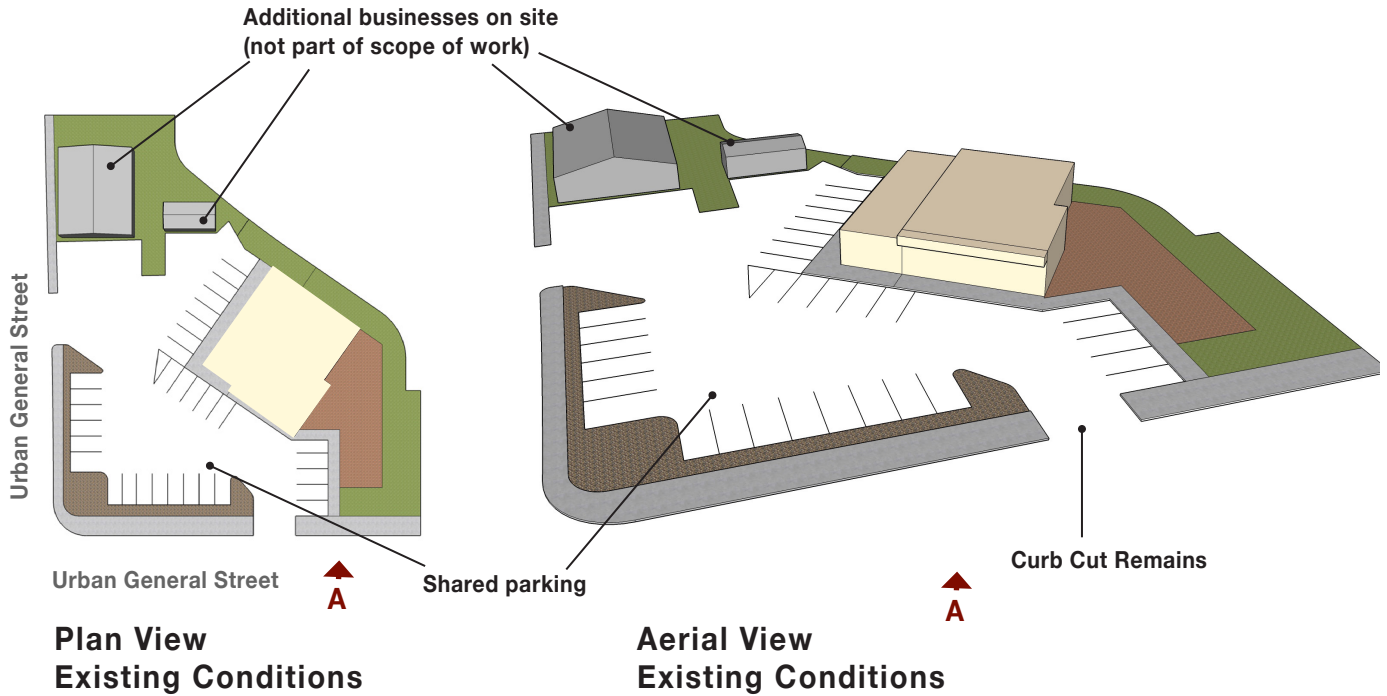
Standards Tested:

- **Parking setback area** - applicability for this provision is unclear due to site conformity requirements with addition. If site conformities are required, 16 spaces will be removed at corner interior.
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - applicability for this provision is unclear due to site conformity requirements with addition. If site conformities are required, 200' of street wall would be added at RBL around corner.
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - requires addition to be built to sidewalk edge

Observations

- Project is not financially feasible
- The addition meets the Required Build-to Line (RBL), but does not meet owner's functional requirements
- Questions regarding whole site compliance vs. specific addition compliance still remain
- Parking setback requirements may eliminate over half of the on site parking (16 spaces)

CONFORMING ADDITION



Case Study #2: Scenario A - Urban General

Case Study #2: Scenario B- Urban General

NON-CONFORMING ADDITION

Location:

Urban General

Uses:

Commercial/Restaurant

Objective:

To test the opportunity to expand a non-conforming, service-oriented building, at the Urban General boundary

Existing Description:

- Non-conforming lot
- Existing 1-story building with two different uses/tenants

New Development Description:

- 40% addition
- Addition is built alongside existing building
- Additional project details available in Appendix, on pg. A.17

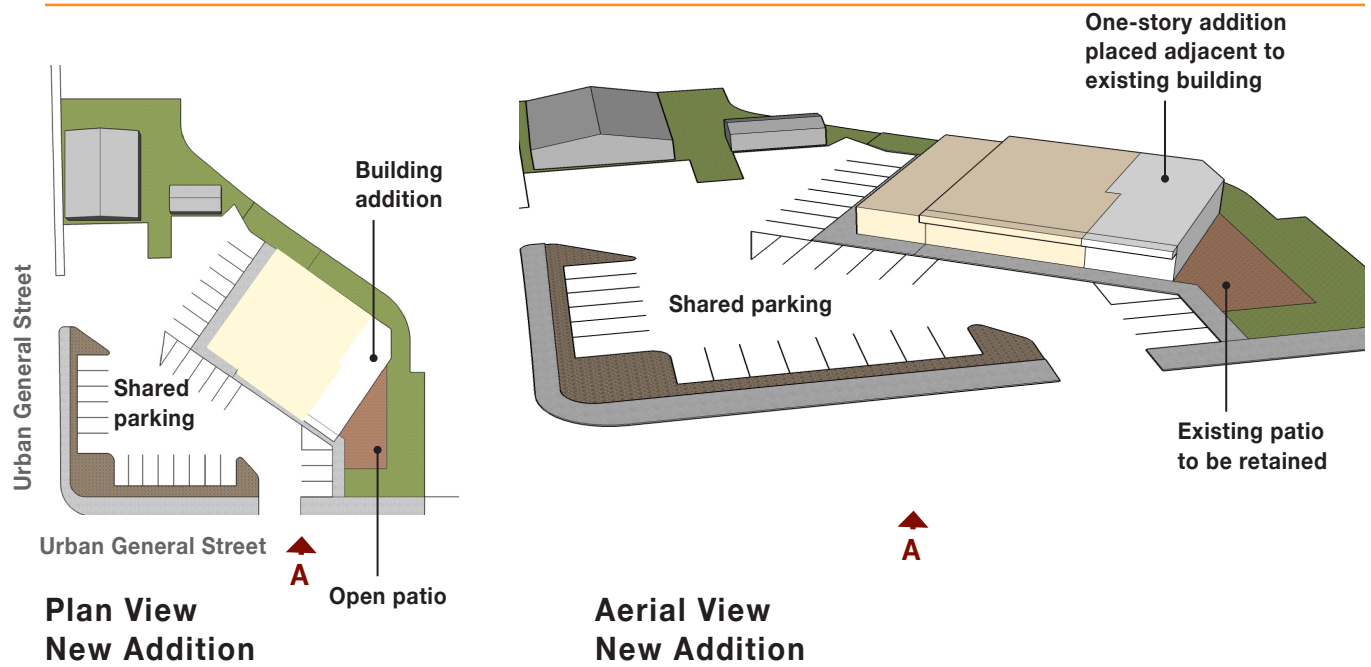
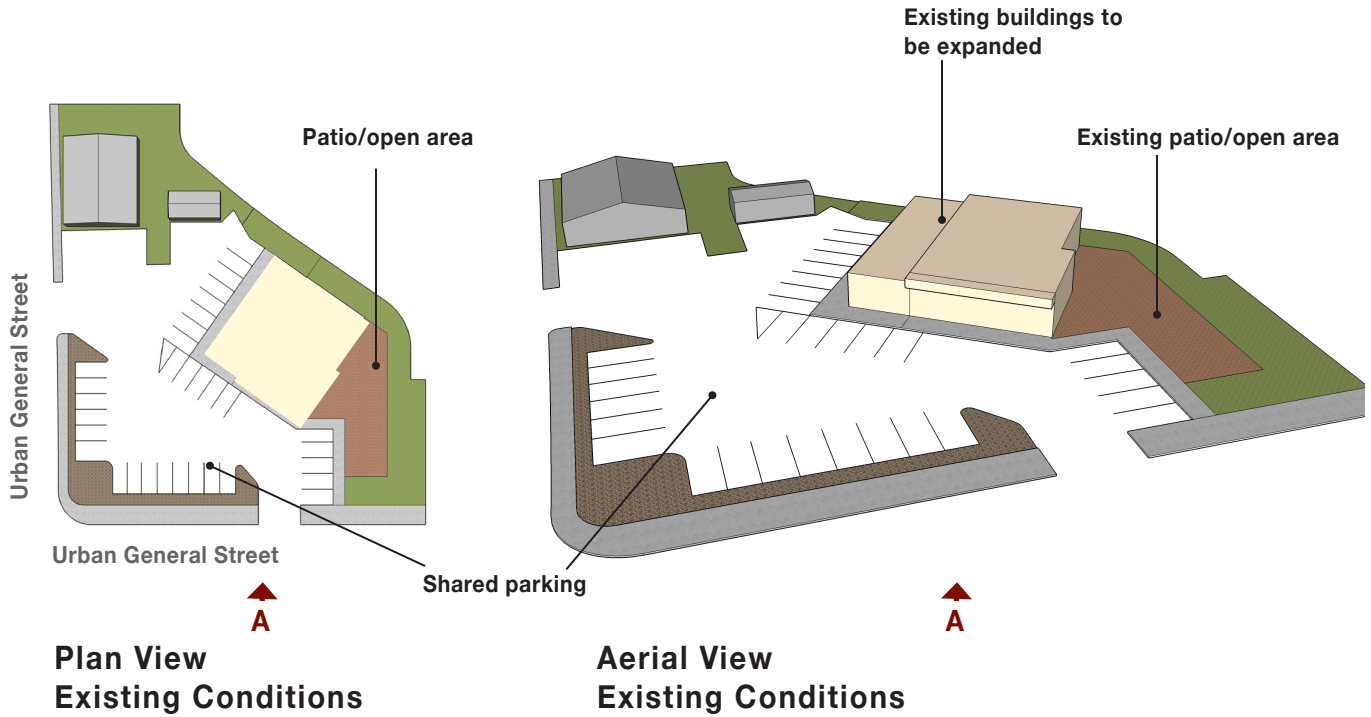
Standards Tested:

- **Parking setback area** - applicability for this provision is unclear due to site conformity requirements with addition. If site conformities are required, 16 spaces will be removed at corner interior.
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - applicability for this provision is unclear due to site conformity requirements with addition. If site conformities are required, 230' of street wall would be added at RBL around corner.
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - this scenario does not have an addition that is built to the RBL

Observations

- Project is financially feasible when the building addition and necessary site work are considered in financial analysis and no other site work for open area or landscaping is included
- Preferred project addition is challenged by Required Build to Line (RBL)
- Questions regarding whole site compliance vs. specific addition compliance
- Parking setback requirements eliminate over half of the onsite parking (16 spaces)
- Existing patio area is retained and reused

NON-CONFORMING ADDITION



Case Study #2: Scenario B - Urban General

Case Study #3: Scenario A - Urban General - West

CONFORMING NEW CONSTRUCTION

Location:

Urban General - West

Uses:

Commercial/Restaurant

Objective:

To test the opportunity to redevelop a non-conforming restaurant site, at the Urban General - West boundary

Existing Description:

- Non-conforming lot
- Existing 1-story fast-food restaurant
- Land-locked site on adjacent sides, neighboring a park along back of lot
- Two (2) existing curb-cuts

New Development Description:

- 9000 sf new restaurant
- Building is built to the RBL with required street walls along remaining sections
- Curb-cuts are retained
- Required open area located behind building
- Additional project details available in Appendix, on pg. A.18

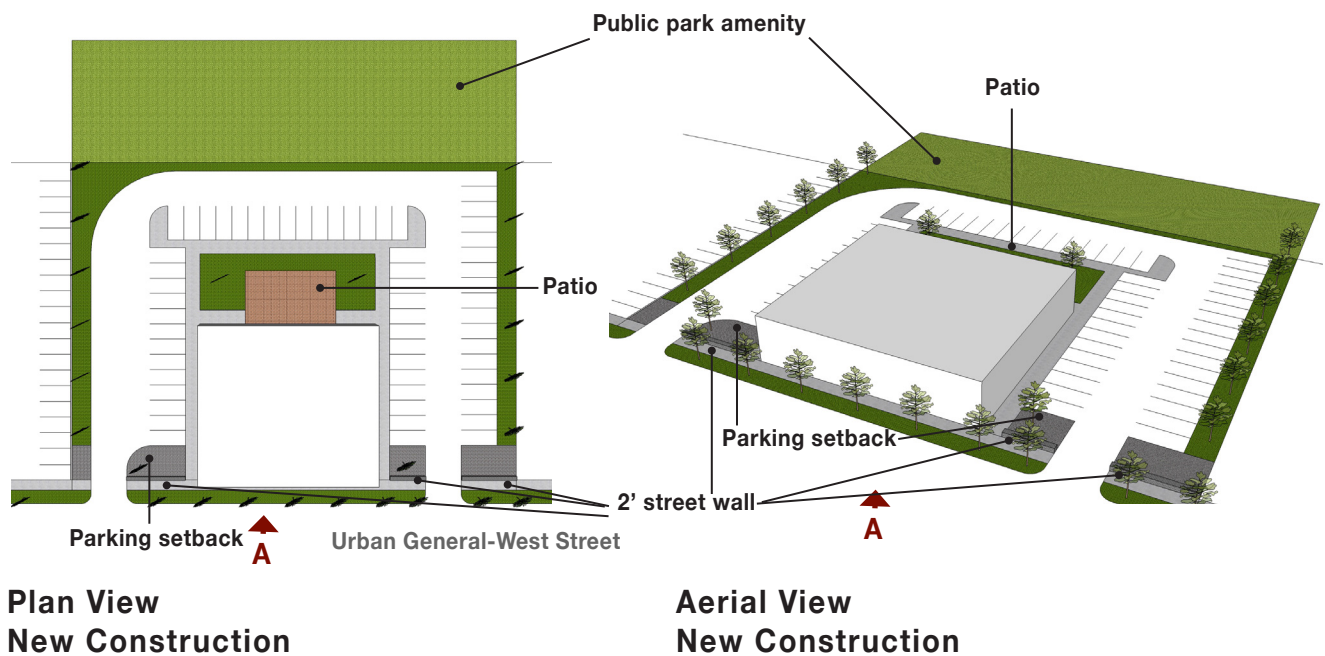
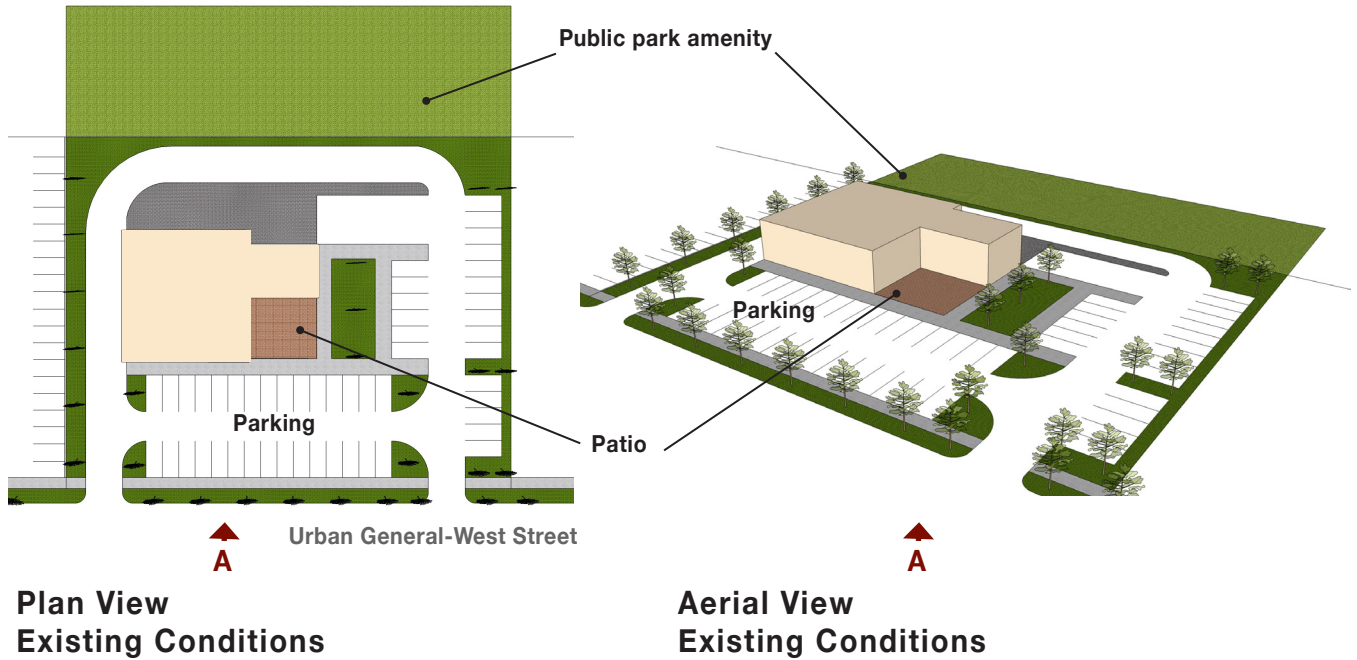
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

Observations

- This project adheres to all code provisions for this street frontage type as interpreted
- This new development is not financially feasible
- The project does not respond to the city park connection at the rear of the site

CONFORMING NEW CONSTRUCTION



Case Study #3: Scenario A - Urban General-West

Case Study #3: Scenario B - Urban General - West

NON-CONFORMING NEW CONSTRUCTION

Location:

Urban General - West

Uses:

Commercial/Restaurant

Objective:

To test the opportunity to redevelop a non-conforming, restaurant site, at the Urban General - West boundary while creating a connection between the new project and existing city park

Existing Description:

- Non-conforming lot
- Existing 1-story fast-food restaurant
- Land-locked site on adjacent sides, neighboring a park along back of lot
- Two (2) existing curb-cuts

New Development Description:

- 19,250 sf new mixed-use development
- Project retains the original parking layout and places the development at the rear of the lot
- Curb-cuts are retained
- Required open area located between buildings
- Additional project details available in Appendix, on pg. A.18

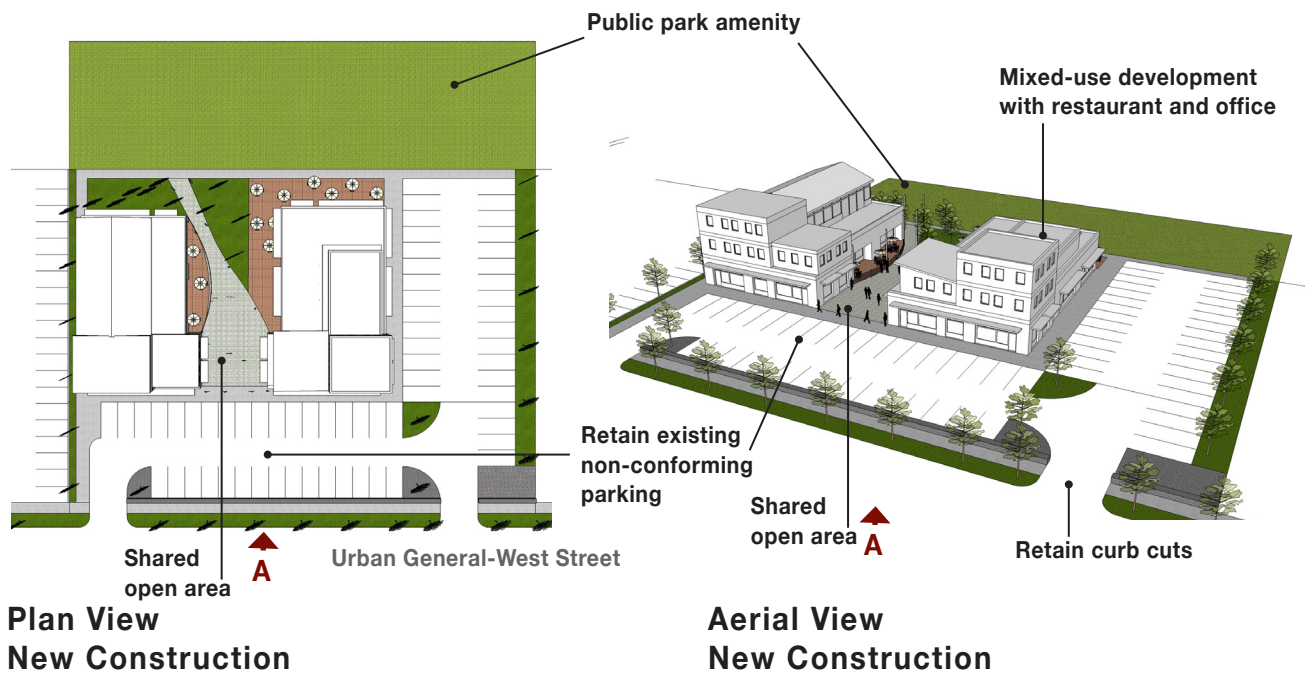
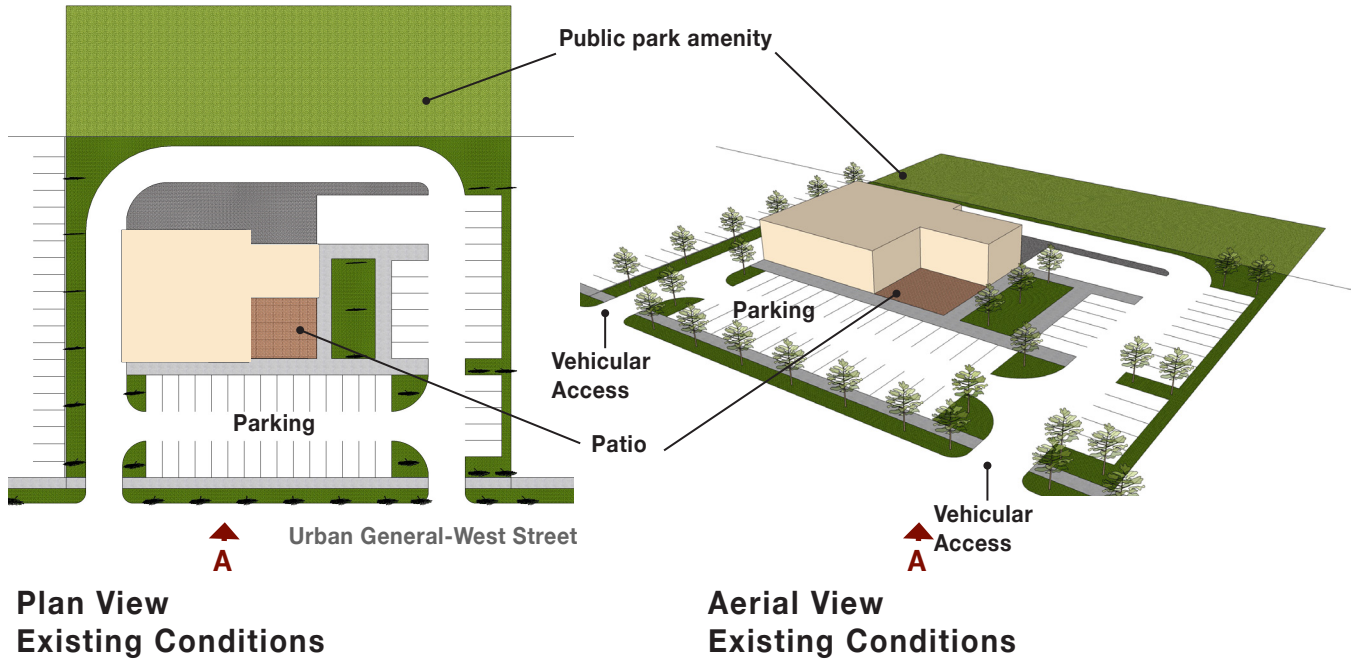
Standards Tested:

- **Parking setback area** - parking layout does not conform to this code provision
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - new development does not conform to this code provision

Observations

- Project makes use of connection to public amenity with shared open area
- Project is more feasible than previous design due to the re-use of existing parking layout
- This new development is not financially feasible; fails to meet an 9% return on asset

CONFORMING NEW CONSTRUCTION



Case Study #3: Scenario B - Urban General-West

Case Study #4: Scenario A - Urban General

FIVE-STORY COMMERCIAL BUILDING

Location:

Urban General

Uses:

Commercial

Objective:

To test the development and feasibility of a conforming, mixed use building on a corner lot

Description:

- Conforming corner lot
- New construction
- Additional project details available in appendix, on pg. A.19

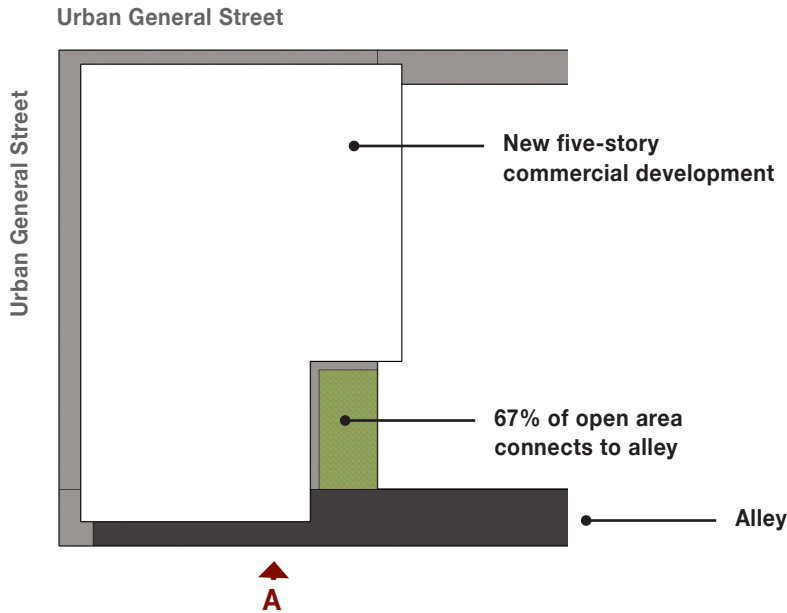
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade Articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

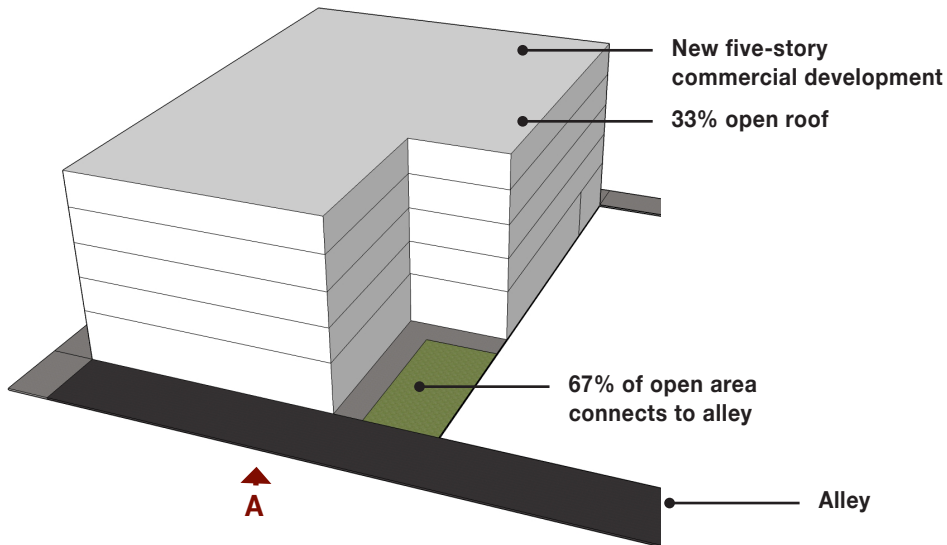
Observations

- Project is not financially feasible
- 67% open area requirement on ground level removes valuable rentable space
- Fails to meet an 9% return on asset

FIVE-STORY COMMERCIAL BUILDING



**Plan View - Alley
New Construction**



**Aerial View - Alley
New Construction**

Case Study #4: Scenario A - Urban General

Case Study #4: Scenario B - Urban General

FIVE-STORY MIXED USE BUILDING

Location:

Urban General

Uses:

Mixed Uses - Commercial & Residential

Objective:

To test the development and feasibility of a conforming, mixed use building on a corner lot

Description:

- Conforming corner lot
- New construction
- Minimal surface parking
- Ground level open space doubles as a pull through area for parking
- Additional project details available in Appendix, on pg. A.19

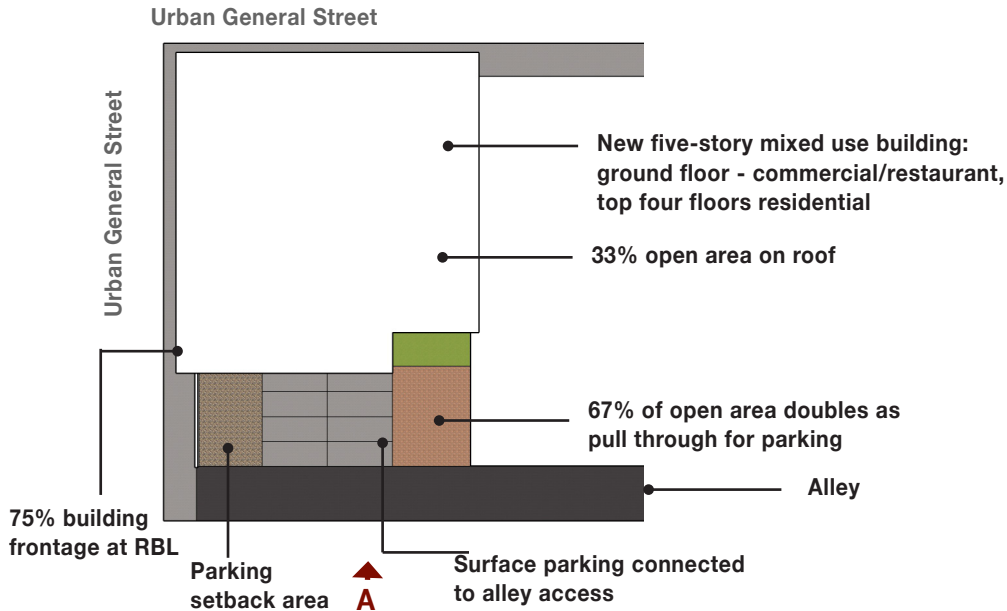
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

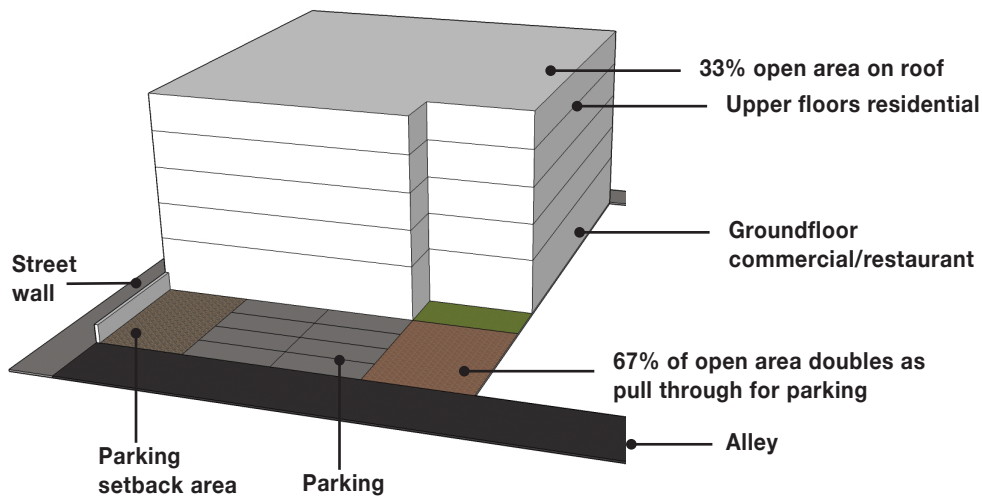
Observations

- Project is not financially feasible
- 67% open area requirement on ground level removes valuable rentable space
- Parking setback area is not available for parking needs or open area requirements
- Fails to meet an 9% return on asset

FIVE-STORY MIXED USE BUILDING



**Plan View - Alley
New Construction**



**Aerial View - Alley
New Construction**

Case Study #4: Scenario B - Urban General

Case Study #4 - Scenario C - Urban General

FIVE-STORY MIXED USE BUILDING

Location:

Urban General

Uses:

Mixed Uses - Commercial & Residential

Objective:

To test the development and feasibility of a conforming, mixed use building on a corner lot

Description:

- Conforming corner lot
- New construction
- Covered, tandem surface parking
- Ground level open space doubles as a pull through area for parking
- Additional project details available in Appendix, on pg. A.19

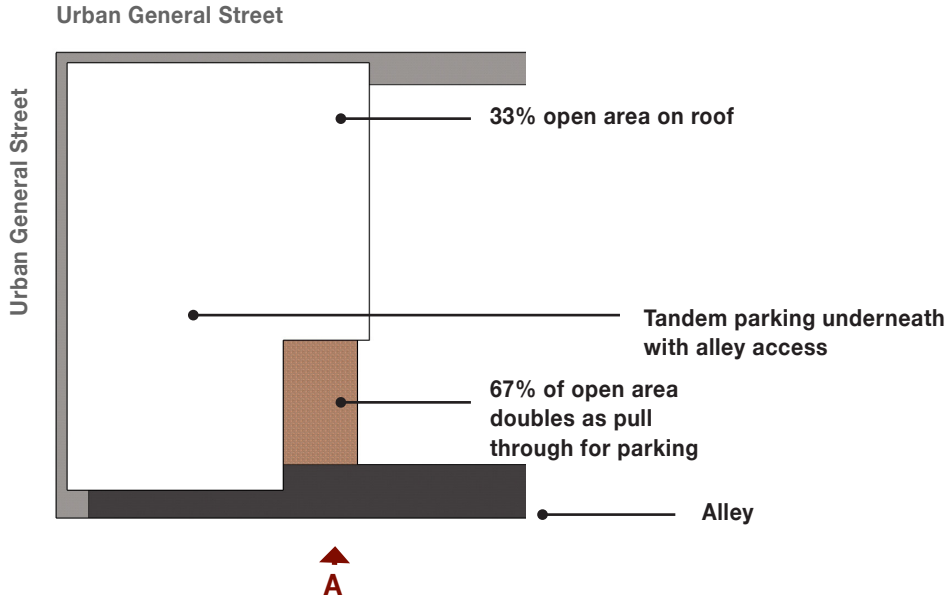
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

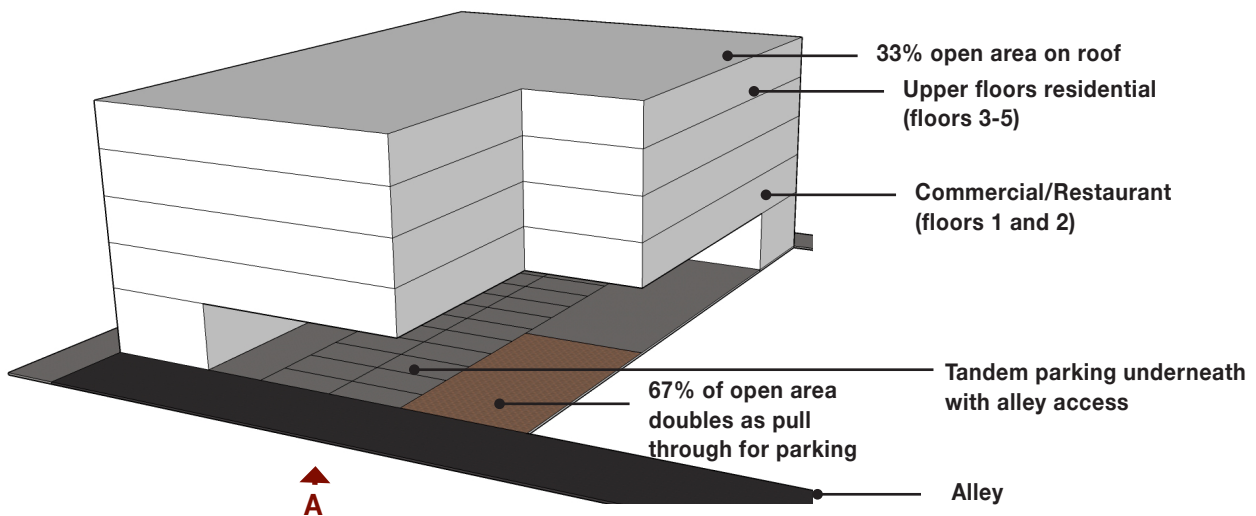
Observations

- Development provides necessary parking area onsite, for residential requirements
- Project is not financially feasible
- 67% open area requirement on ground level removes valuable rentable space
- Fails to meet an 9% return on asset

FIVE-STORY MIXED USE BUILDING



**Plan View
New Construction**



**Aerial View
New Construction**

Case Study #4: Scenario C - Urban General

Case Study #5 - Scenario A - Urban Storefront

ONE-STORY COMMERCIAL/OFFICE ADDITION

Location:

Urban Storefront

Uses:

Commercial/office

Objective:

To test the feasibility of a one-story conforming addition on a corner lot

Existing Description:

- Non-conforming building
- Land-locked corner

New Construction Description:

- Conforming building and lot
- Existing 1-story building with single uses/tenants
- 90% addition
- 67% open area/forecourt and 33% roof
- Additional project details available in Appendix, on pg. A.20

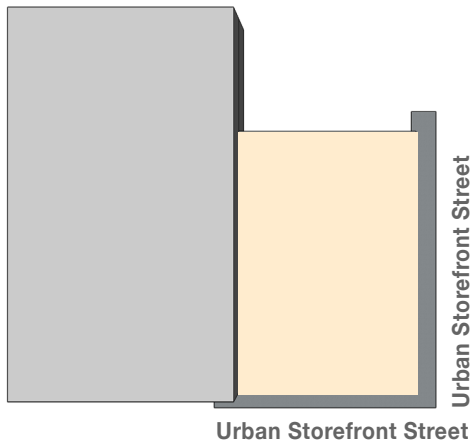
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

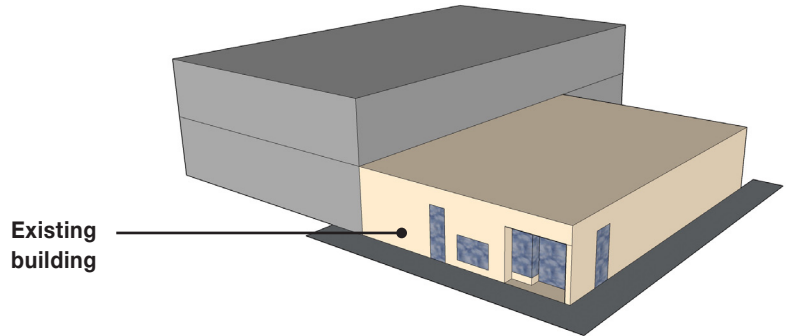
Observations

- Ground floor open area requirement removes valuable building space from this small lot
- Parking setback requirements compete with open area calculations of forecourt area
- Fails to meet an 9% return on asset

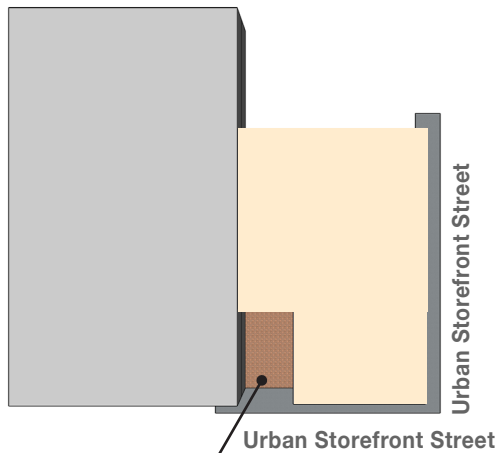
ONE-STORY COMMERCIAL/OFFICE ADDITION



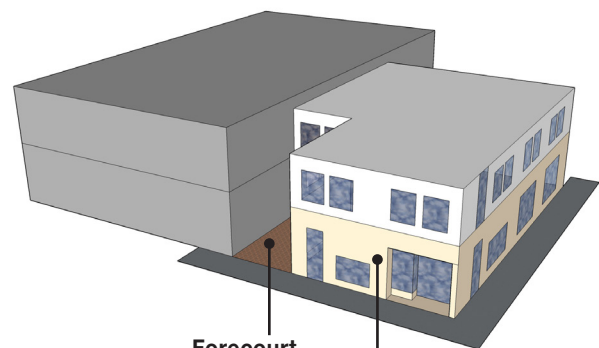
**Plan View
Existing Conditions**



**Aerial View
Existing Conditions**



**Plan View
New Construction**



**Aerial View
New Construction**

Case Study #5: Scenario A - Urban Storefront

Case Study #5 - Scenario B - Urban Storefront

NEW FIVE-STORY COMMERCIAL DEVELOPMENT

Location:

Urban Storefront

Uses:

Commercial/office & Residential

Objective:

To test the opportunity to redevelop a land-locked corner site with a 5-story mixed use building

Description:

- Conforming, land-locked corner lot
- New five-story building
- 67% open area in forecourt, 33% open area on roof
- Additional project details available in Appendix, on pg. A.20

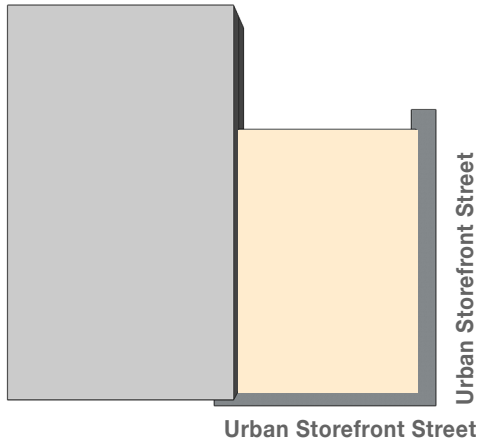
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - no issues anticipated
- **Curb cuts/Street access** - no issues anticipated
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - no issues anticipated

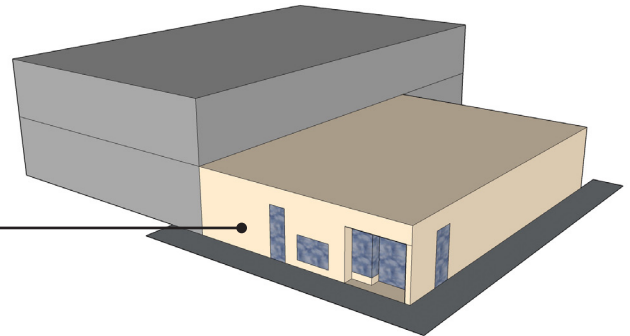
Observations

- Required open area greatly limits building space
- Parking setback requirements conflict with ground floor open area calculations
- .25 parking spaces per bedroom requirement not met due to limitations of site
- Fails to meet an 9% return on asset

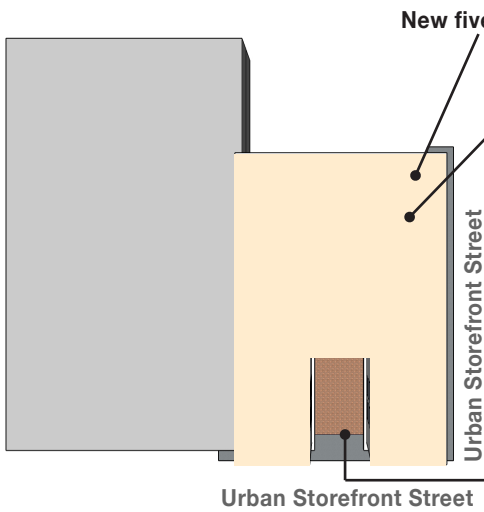
NEW FIVE-STORY COMMERCIAL DEVELOPMENT



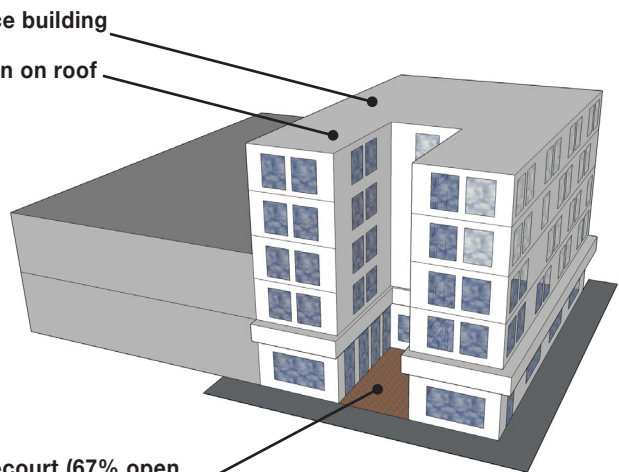
**Plan View
Existing Conditions**



**Aerial View
Existing Conditions**



**Plan View
New Construction**



**Aerial View
New Construction**

Case Study #5: Scenario B - Urban Storefront

Case Study #6: - Scenario A - Urban General

ONE-STORY COMMERCIAL/OFFICE ADDITION

Location:

Urban General

Uses:

Commercial/office

Objective:

To test the opportunity to expand a non-conforming, commercial building

Existing Description:

- Non-conforming building and corner lot
- Alley access
- Existing curb cuts
- Existing 1-story building with single uses/tenants

New Construction Description:

- Non-conforming corner lot
- 3-story building with commercial uses/tenants
- 50% addition
- Existing curb cuts maintained
- Alley access
- 67% open area on ground, 33% open area on roof
- Additional project details available in Appendix, on pg. A.21

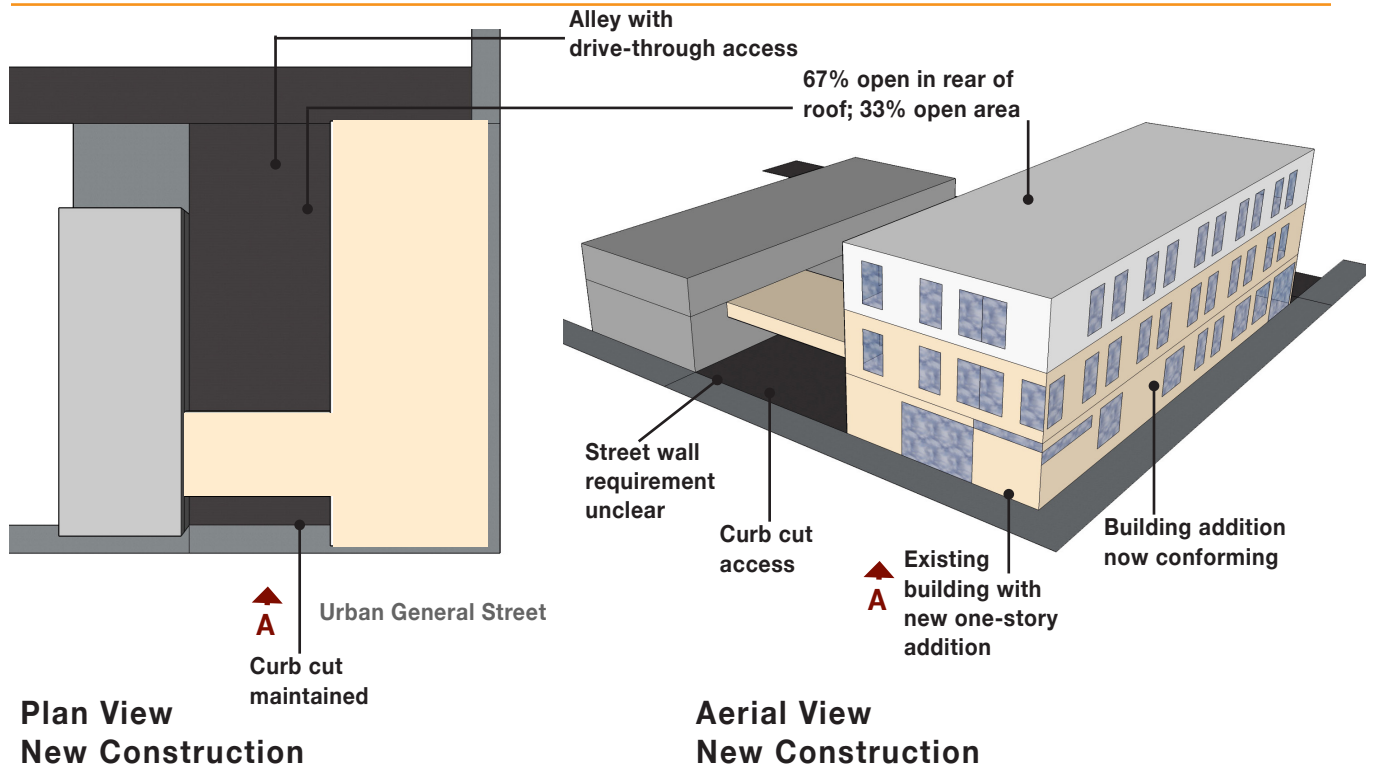
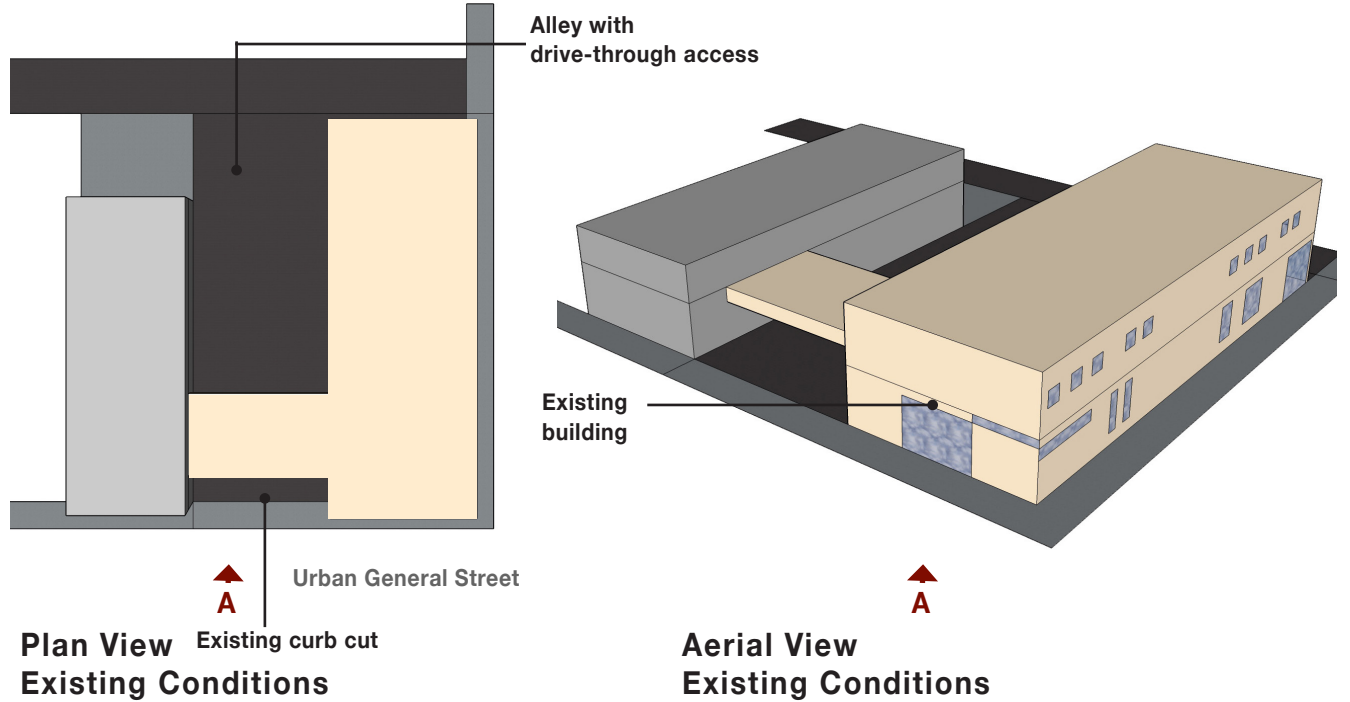
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - possible issues due to maintaining of curb cut access onto street
- **Curb cuts/Street access** - issues unclear due to clarity of code and review process
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - does not conform with standard 75% build-to requirement

Observations

- Curb cut requirements and process are unclear and may affect development
- Ground floor open area doubles as drive through access area
- Fails to meet an 9% return on asset

ONE-STORY COMMERCIAL OFFICE ADDITION



Case Study #6: Scenario A - Urban General

Case Study #6: - Scenario B - Urban General

FIVE-STORY COMMERCIAL/RESIDENTIAL NEW DEVELOPMENT

Location:

Urban General

Uses:

Commercial/office & residential

Objective:

To test the opportunity to expand a non-conforming, commercial building to include additional office space, residential apartments and necessary parking area on the ground floor

Existing Description:

- Non-conforming building and corner lot
- Alley access
- Existing curb cuts
- Existing 1-story building with single uses/tenants

New Construction Description:

- 5-story building with commercial & residential uses
- Existing curb cuts maintained
- Alley access
- 67% open area on ground, 33% open area on roof
- Residential parking requirements are met through the inclusion of a covered parking area
- Additional project details available in Appendix, on pg. A.21

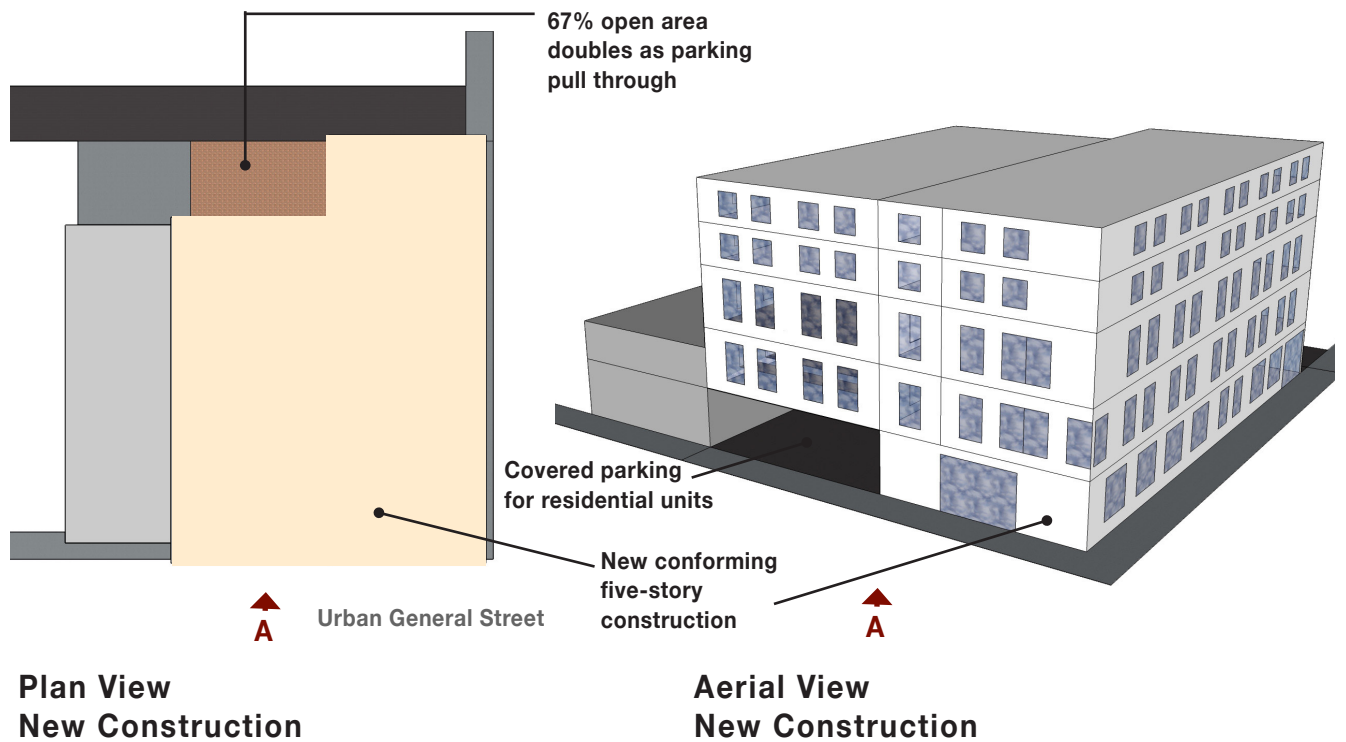
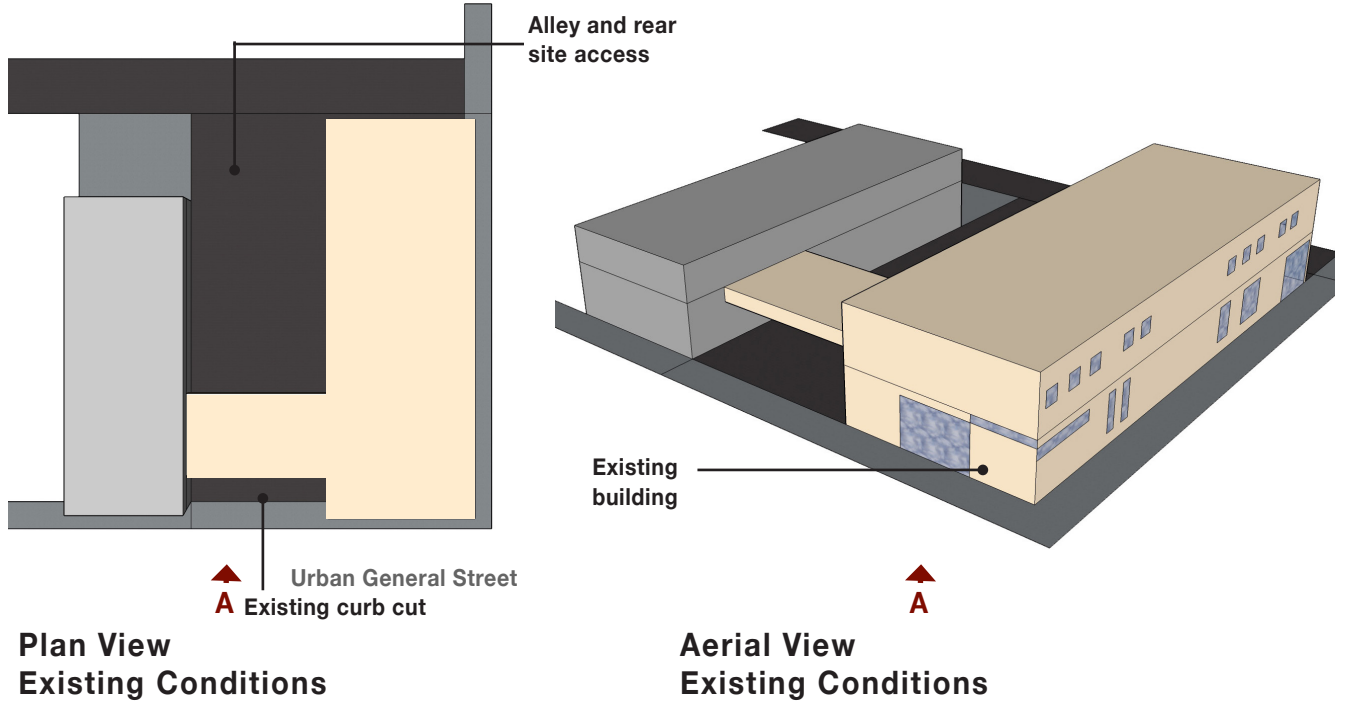
Standards Tested:

- **Parking setback area** - no issues anticipated
- **Open area requirement** - no issues anticipated
- **Street wall requirement** - possible issues due to maintaining of curb cut access onto street
- **Curb cuts/Street access** - issues unclear due to clarity of code and review process
- **Maximum development area** - no issues anticipated
- **Facade articulation & Fenestration** - no issues anticipated beyond clarity of code provision
- **Required Build-To Line** - possible issues due to maintaining of curb cut access onto street

Observations

- Curb cut requirements and street wall requirements are unclear and may affect development
- Ground floor open area doubles as drive through access area
- Fails to meet an 9% return on asset

FIVE-STORY COMMERCIAL/RESIDENTIAL NEW DEVELOPMENT



Case Study #6: Scenario B - Urban General

Summary Observations

The draft Form Based Code, with the potential revisions that we have assumed in this analysis, represents sound principles of city planning and urban design in that it focuses on enhancing the public realm by promoting new development with a more strongly defined street edge that is pedestrian-friendly. In doing so, it reduces the visual and physical impacts of cars and discourages uses less “urban” in character. The requirements for “build-to” lines, and the standards prescribing some articulation of building walls are some of the specific standards that work to achieve the objective of an enhanced public realm.

That said, there are areas of the code that could be refined. Some of these relate to clarifying the interpretation of a standard and some relate to re-thinking how a standard is to be applied. We understand that some of these questions could, in theory, be answered by the Director in an administrative review. However, with the goal of enhancing predictability and reducing the need for interpretation on a case-by-case basis, we suggest these refinements:

1. Add more clarity to the standards.

Some of the standards are difficult to interpret. As a result, it may be a challenge for property owners to anticipate how those standards will be applied. This leads to a degree of unpredictability, which is contrary to the objectives of the Form Based Code. Clarity would be enhanced by providing more charts and diagrams that help to explain those standards that are vague, as well as some thoughtful text editing.

2. Add more flexibility in meeting the intent of some of the standards.

Some of the standards offer very limited choices, in terms of design. Adding more flexibility to those standards should be considered.

3. Re-think some of the standards.

In a few cases a standard may not be reasonable to apply, at least in some distinct conditions.

Some specific topics to address are:

4. Clarify the Façade Composition requirement

The definitions of the terms “façade” and “façade composition” are unclear; this impacts the application of the “variations” that are required. It also appears that the tools to achieve variation are rather limited. Could this list be expanded?

5. Refine the Street Wall requirement

The design criteria for a street wall are unclear; the application of this requirement to a large lot with only a small new building to be constructed also should be clarified. For example: What constitutes a “street wall,” in terms of its material and design? A masonry structure, with openings similar to windows, is implied. May a lattice with plant material, a metal screen, or other alternatives qualify? (A footnote on page 184 note # 597 of the draft code indicates that “some communities” permit “wrought iron.” Will this be permitted in Columbia? A clear statement of the intent of this standard also would help in determining appropriateness of alternative materials and designs.

Also, how is the Street Wall Requirement to be applied to large areas of a site that are not within the scope of a proposed development project? And how is it to be applied to a small adaptive reuse project? Again, clarity is needed; or, perhaps the standard should not apply to those conditions?

6. Clarify the scope of work required for bringing an existing property into compliance:

A threshold is established that triggers a requirement to comply with the code. Does this apply only to the building itself, or does it also apply to site features, such as parking, open space and site walls? And, how does this threshold apply to a phased project and a small adaptive reuse project?

If an existing building is set back behind the RBL, it may be unreasonable to require that an addition be built to the RBL. While this could be addressed in administrative review, can some conditions be specified as a “by-right” condition to encourage adaptive reuse?

7. Clarify how the “Build-to” requirement is applied.

Must 75% of the property facing the street have a building face at the RBL, or simply must 75% of a building face be located at the RBL.) The diagram (Page 185 of the code) notes that there be a “building facade along min. 75% of RBL” for Urban General and Urban Storefront streets. For many conditions, where lot widths are relatively narrow, and especially in the Urban Storefront area, this is probably easily achievable. It may be more of a problem in outlying areas of Urban General.

8. Clarify the conditions for retaining existing curb cuts.

The code stipulates that existing curb cuts may be retained to serve the functional needs of a property, even when it has alley access, but it is not clear if this will be considered a “by-right” condition where a curb cut exists and the property is to be redeveloped, making use of the existing cut. How it may apply to a project that is less intense in its site development and requires a new curb cut also should be clarified.

9. Counting landscaped area in front of the Parking Setback Line

It appears that in current draft code, landscaping within the Parking Setback Line does not count toward the Open Area requirement. Consider permitting landscaping within the Parking Setback Line to count for Open Area, perhaps for some specific conditions, such as:

- If auto sales and rental display are to be permitted (as noted in the Clarion memo), could this count as Open Area?
- When a project has a plaza or courtyard abutting the sidewalk, could the portion in front of the Parking Setback Line, also count as Open Area?

10. Reconsider the Open Area requirement on a small site.

The draft code requires the same percentage of Open Area for all projects within an individual Building Frontage Zone and within that provision applies a fixed minimum percentage of that Open Area to be located at grade. On a small site, this can significantly constrain a project or it may result in the Open Area being located in the rear, where it may be less beneficial to users or the public realm. Consider tailoring this standard in these ways:

- Establish a minimum threshold related to lot size (or front width) below which the Open Area standard does not apply.
- Permit landscaping in the Parking Setback Line to count toward the Open Area requirement.
- Permit a higher percentage (perhaps even up to 100%) of the Open Area requirement to be met above grade level.

11. Reconsider the standard prohibiting parking in a structure at the street level for the Urban General category.

This is good idea but there may be cases where this will impact feasibility of the project on a constrained site. Could alternative façade design standards be considered for these situations that establish an enhanced street edge?

12. Consider how “rear of property” conditions may affect the application of frontage standards.

The code establishes a clear framework for enhancing the street and particularly promotes the use of alleys for service areas and auto circulation. While a “back of house” condition exists for most sites, some actually back on to amenities, including the creek or green space. In these cases, orienting a project to this amenity may be as beneficial as addressing the street. Can more flexibility be specified for these conditions?

APPENDIX

The following appendices provide supporting data related to interpretation of the proposed code, the scope of work for potential case studies, and financial feasibility analyses.

A. SUMMARY OF CODE

The following charts present a condensed overview of the Proposed Draft Zoning Code completed by the Code Consultants, including the amendments that they indicated could be appropriate. The charts identify the proposed code provisions for each of the Building Form Standard Frontage Types. This analysis was utilized to comprehend and compare the extents of the code when applied to building program and several different site scenarios.

Summary of Code

Columbia FBC Standards
Draft: May 4, 2016

BUILDING FORM	Vertical Façade Composition	OVERALL HEIGHT					FRONTAGE		FLOOR HEIGHT						FENESTRATION			SETBACKS		PERMITTED USES	
		Min. Stories at RBL	Height (Min.)	Height (max.)	Height (max.) in Overlay	Min. Stories at RBL on Broadway	Min. % at RBL	Forecourt max.	Non-Residential Use			Residential Use			Ground story	Upper façade	Max. Blank Wall Length	Parking Setback Line	Rear Setback	Ground Story	Upper Stories
									Ground story clear height min.	Upper story height min.	First floor elevation	Ground story clear height min.	Upper story height min.	First floor elevation							
Urban Storefront	< than the ave. street frontage length of 60 ft per block face	2 stories	2 stories	6 stories (72 ft)	10 stories (142 ft)	4 stories	75%	25%	15 ft (for 25 ft)	9 ft	0-18"	9 ft	9 ft	<3 ft	90% max; 50% min.	70% max; 20% min.	20 ft (at all RBLs)	24 ft (from RBL)	25 ft (no alley)	commercial, residential, public, institutional	residential or commercial
Urban General	< than the ave. street frontage length of 75 ft per block face	2 stories	2 stories	6 stories (72 ft)	10 stories (142 ft)	4 stories	75%	25%	15 ft (for 25 ft)	9 ft	0-18"	9 ft	9 ft	<3 ft	80% max; 33% min.	70% max; 20% min.	20 ft (at all RBLs)	24 ft (from RBL)	25 ft (no alley)	commercial, residential, public, institutional	residential or commercial
Urban General West	< than the ave. street frontage length of 75 ft per block face	1 story (18 ft)	1 story (18 ft)	6 stories (78 ft)	n/a	n/a	35%	n/a	12 ft (for 25 ft)	9 ft	0-18"	9 ft	9 ft	<3 ft	80% max; 33% min.	70% max; 20% min.	30 ft (at all RBLs)	24 ft (from RBL)	25 ft (no alley)	commercial, residential, public, institutional	residential or commercial
Townhouse/Small Apt.	< than the ave. street frontage length of 75 ft per block face	2 stories	2 stories	4 stories (58 ft)	sidewing or ancillary structure no higher than 18 ft	n/a	65%	With Porch 8 ft setback from RBL	Frontage Widths 18 ft min. width 10 ft-20 ft gap req. btwn buildings 100 ft max. street frontage			9 ft (for 80%)	9 ft	<8 ft	Total Façade 70% max; 20% min.	15 ft (at all RBLs)	24 ft (from RBL)	2 ft (no alley)	residential, guest, office	residential, guest, office	
Adjustment by Director		0	5%	5%	5%	0	5%		5%				5%	5%		<5 ft closer to street					

SITE STANDARDS	PUBLIC / PRIVATE OPEN AREA					GARAGE & PARKING		STREET WALL		
	Min. % of Buildable Area	Location	Above Grade Open Area			Max. Clear Height	Max. Clear Width	Height	Fenestration	Openings
			max. % of POA satisfied	Balcony Size Req.	Balcony Screening Req.					
Urban Storefront	15%	Behind parking setback line and side and rear setbacks	33% (Individual Balconies Units or Rooftops)	Min. 8 ft wide x 5 ft deep	<45% Transparency and open air above 42"	< 16 ft	<22 ft	5-12 ft	80% max; 33% min.	22 ft access gate / 5 ft pedestrian gate
Urban General	15%	Behind parking setback line and side and rear setbacks	33% (Individual Balconies Units or Rooftops)	Min. 8 ft wide x 5 ft deep	<45% Transparency and open air above 42"	< 16 ft	<22 ft	5-12 ft	80% max; 33% min.	22 ft access gate / 5 ft pedestrian gate
Urban General West	10%	Behind parking setback line and side and rear setbacks	Private/Public Open Area Requirements At least 67% of the POA shall comprise no more than two separate contiguous areas, located at grade.			< 16 ft	<22 ft	2-6 ft	80% max; 33% min.	22 ft access gate / 5 ft pedestrian gate
Townhouse/Small Apt.	15%	Behind parking setback line and side and rear setbacks	15% (Individual Balconies Units or Rooftops)	Min. 7 ft wide x 5 ft deep	<45% Transparency and open air above 42"	garage entries are not permitted at RBL. Access is gained from the alley		Privacy Fence 5 ft-8 ft high		
Adjustment by Director								10%	5%	10%

B. SUMMARY OF BUILDING PROGRAM

The following charts summarize the scope of work that is assumed for each of the Case Studies. The proposed zoning code structure is used as a framework to define the development program for each case study.

The first chart provides the site and ground-plane design elements for each site. The second chart describes the building form and facade design elements for each site.

This information was used in generating estimated construction costs that appear in Appendix C.

Site & Groundplane

		SITE & GROUNDPLANE															
		Parking (above ground)					Hardscape 1			Hardscape 2		Hardscape 3		Landscape/Plantings		Sidewalk (existing)	
		site area	garage	surface	area	on-street	open space (ground level)	area	material	area	material	area	material	Lawn (in open area)	trees	planter area (total)	concrete
Site 1:	scenario A:	72,000 sf	~248 spaces	0	86,800 sf	49 spaces	20% (14,500 sf)	5500 sf	brick pavers	5500 sf	concrete pavers	2300 sf	concrete	1200 sf	61 trees	640 sf	13,400 sf
Urban General Full Block Residential	A full site buildout that includes residential building(s) and parking garage																
New Development	scenario B:	72,000 sf	0	~67 spaces	26,000 sf	49 spaces	20% (14,500 sf)	5500 sf	brick pavers	5500 sf	concrete pavers	2300 sf	concrete	1200 sf	71 trees	1060 sf	13,400 sf
	A full site buildout that includes residential building(s) and surface park (asphalt)																
	scenario C:	72,000 sf	~248 spaces	0	86,800 sf	49 spaces	20% (14,500 sf)	5500 sf	brick pavers	5500 sf	concrete pavers	2300 sf	concrete	1200 sf	61 trees	640 sf	13,400 sf
	A full site buildout that includes maximum residential occupancy in building(s) and parking garage																
Site 2:	"existing"	16,000 sf	0	18	3250 sf		8300 sf	2650 sf	brick pavers	1700 sf	concrete	0		3900 sf	0	0	800 sf
Urban General Addition	Existing commercial and restaurant site																
Addition to existing	scenario A:	16,000 sf	0	18	3250 sf		6800 sf	2100 sf	brick pavers	1650 sf	concrete	0		3000 sf	10	0	800 sf
	Restaurant addition according to draft code requirements																
	scenario B:	16,000 sf	0	18	3250 sf		6700 sf	1150 sf	brick pavers	1700 sf	concrete	0		3900 sf	5	0	800 sf
	Restaurant 40% addition not to RBL																
Site 3:	"existing"	45,012 sf	0	51	15,500 sf	0	8200 sf	1250 sf	brick pavers	3000 sf	concrete			7000 sf	19	3300 sf	1250 sf
Urban General-West Development	Existing site if a fast food restaurant and is abutted with commercial uses on its flanking sides and a public park to the rear.																
New Development	scenario A:	45,012 sf	0	59	19,200 sf	0	8800 sf	1600 sf	brick pavers	4000 sf	concrete			7200 sf	16	1700 sf	1250 sf
	Converts the site to an Applebee's with all necessary code requirements																
	scenario B:	45,012 sf	0	65	20,100 sf	0	10,100 sf	3100 sf	brick pavers	2400 sf	brick pavers	5200 sf	concrete	4600 sf	25	1300 sf	1250 sf
	Converts the site to mixed use development with two buildings, restaurants on the ground floors, office space above																
Site 4:	scenario A:	14,250 sf	0	0	0	12	10% (1,425 sf)	564 sf	concrete	0		0		860 sf	4	0	3000 sf
Urban General Medium Redevelopment	full buildout on site with commercial on ground floor and apartments on top 4 floors with open space on ground and roof																
New Development	scenario B:	14,250 sf	0	8	1,733 sf	12	10% (1,425 sf)	1,040 sf	brick pavers	840 sf	cobble	0		384 sf	4	0	3000 sf
	full build along Broadway and 75% along 6th St., commercial on ground floor and apartments on top 4 floors, parking setback area, ground level parking off (parking setback area)																
	scenario C:	14,250 sf	28	0	7,580 sf	12	10% (1,425 sf)	1,425 sf	brick pavers	0		0		0	0	0	3000 sf
	full buildout on site with commercial on bottom 2 floors and apartments on top 3 floors, parking garage area maximized on ground floor, parking setback area, open space on ground and roof																
Site 5:	"existing"	6,800 sf	0	0	0	3	0	0		0		0		0	0	0	1780 sf
Urban Storefront Small Redevelopment	Existing retail shop site																
Addition to existing	scenario A:	6,800 sf	0	0	0	3	10% (687 sf)	687 sf	brick pavers	0		0		0	0	0	1780 sf
	One-story addition to existing building, forecourt for ground level open space, rooftop for remaining open space																
	scenario B:	6,800 sf	0	0	0	3	10% (687 sf)	687 sf	brick pavers	0		0		0	0	0	1780 sf
	Full scrape and redevelopment, 5-story building with central forecourt and rooftop open space																
Site 6:	"existing"	14,200 sf	0	2	350 sf	6	0	0	0	0		0		0	6		2520 sf
Urban General Small Redevelopment	Existing bank site																
Addition to existing	scenario A:	14,200 sf	0	0	0	6	1,430 sf	1,430 sf	brick pavers	0		0		0	6		2520 sf
New Development	One-story addition to existing building, fenestration requirements are met, all floors are used commercially, unresolved curb cuts and open space scenario...																
	scenario B:	14,200 sf	0	0	0	6	1,430 sf	1,430 sf	brick pavers	0		0		0	6		2520 sf
	Three-story addition to existing building while maximizing site area, bottom three floors are for commercial use and top two floors are residential/apartments, fenestration is correct, open space and curb cuts are unresolved...																

Building Form & Facade

		BUILDING FORM & FAÇADE																					
		building footprint	gross square feet (parking areas not included)	Height		Street Wall		Occupancy					Fenestration				Balconies			Open Roof or Shared Upper Balcony			
				min.	max.	length	height	office/restaurant/commercial	industrial	apartments	townhomes	single family	ground fl (façade 1)	upper fls (façade 1)	ground fl (façade 2)	upper fls (façade 2)	quantity	area/ea.	material	area	material		
Site 1:	scenario A:	31,500 sf	141,000 sf	2 fl	5fl	0	0	0	0	49	23	0	33%	25%	33%	25%	66	42 sf / ea	concrete	3000 sf	concrete		
Urban General Full Block Residential	A full site buildout that includes residential building(s) and parking garage																						
	scenario B:	31,500 sf	141,000 sf	2 fl	5fl	250'	5'	0	0	49	23	0	33%	25%	33%	25%	82	42 sf / ea	concrete	3000 sf	concrete		
New Development	A full site buildout that includes residential building(s) and surface parking																						
	scenario C:	31,500 sf	141,000 sf	2 fl	5fl	0	0	0	0	78	30	0	33%	25%	33%	25%	66	42 sf / ea	concrete	3000 sf	concrete		
	A full site buildout that includes maximum residential occupancy in building(s) and parking garage																						
Site 2:	"existing"	4000 sf	4000 sf	1 fl	1 fl	0	0	0	0	0	0	0	0% at RBL	0% at RBL							0		
Urban General Addition	Existing commercial and restaurant site																						
	scenario A:	5900 sf	7050 sf	1 fl	2 fl	11'	5'	0	0	0	0	0	33%	20%							350 sf	concrete	
Addition to existing	Restaurant addition according to draft code requirements																						
	scenario B:	5600 sf	5600 sf	1 fl	1 fl	0	0	0	0	0	0	0	0% at RBL	0% at RBL							0		
	Restaurant 40% addition not to RBL																						
Site 3:	"existing"	5700 sf	5700 sf	1 fl	1 fl	0	0	restaurant					33%									0	
Urban General-West Development	Existing site if a fast food restaurant and is abutted with commercial uses on its flanking sides and a public park to the rear.																						
	scenario A:	9000 sf	9000 sf	1 fl	1 fl	83'	2'	restaurant					33%									0	
New Development	Converts the site to an Applebee's with all necessary code requirements																						
	scenario B:	10,500	19,250 sf	1 fl	3 fl	200'	2'	2 bldgs - ea./restaurant ground floor, office upper floors					33%	20%								3350 sf	concrete
	Converts the site to mixed use development with two buildings, restaurants on the ground floors, office space above																						
Site 4:	scenario A:	12,825 sf	64,125 sf	5 fl (55')	5fl (55')	0	0	all floors	0	0	0	0	33%	25%	33%	25%	0	0				720 sf	as necessary
Urban General Medium Redevelopment	full buildout on site with commercial on ground floor and apartments on top 4 floors with open space on ground and roof																						
	scenario B:	10,215 sf	51,075 sf	5 fl (55')	5fl (55')	36'	5'	bottom floor	0	upper 4 floors	0	0	33%	25%	33%	25%	0	0				720 sf	as necessary
New Development	full build along broadway and 75% along 6th St., commercial on ground floor and apartments on top 4 floors, parking setback area, ground level parking off alley, open space on ground and roof																						
	scenario C:	5,244 sf	56,544 sf	5 fl (55')	5 fl (55')	0	0	1st & 2nd floors	0	upper 3 floors	0	0	33%	25%	33%	25%	0	0				720 sf	as necessary
	full buildout on site with commercial on bottom 2 floors and apartments on top 3 floors, parking garage area maximized on ground floor, parking setback area, open space on ground and roof																						
Site 5:	"existing"	6,800 sf	6,800 sf	1 fl (20')	1 fl (20')	necessary?		all floors	0	0	0	0	39%		4%							305 sf	as necessary
Urban Storefront Small Redevelopment	Existing retail shop site																						
	scenario A:	6,100 sf	12,200 sf	2 fl (35')	2 fl (35')	necessary?		all floors	0	0	0	0	50%	42%	50%	40%	0	0				305 sf	as necessary
Addition to existing	One-story addition to existing building, forecourt for ground level open space, rooftop for remaining open space																						
	scenario B:	6,100 sf	30,500 sf	5 fl (68')	5 fl (68')	necessary?		all floors	0	0	0	0	65%	44%	50%	55%	0	0				305 sf	as necessary
	Full scrape and redevelopment, 5-story building with central forecourt and rooftop open space																						
Site 6:	"existing"	6,800 sf	13,600 sf	2 fl (30')	2 fl (30')	0	0	both floors	0	0	0	0	56%	0%	29%	8%	0	0				0	
Urban General Small Redevelopment	Existing bank site																						
	scenario A:	6,800 sf	20,400 sf	3 fl (45')	3 fl (45')	?	?	all three floors	0	0	0	0	56%	43%	48%	35%	0	0				710 sf	as necessary
Addition to existing	One-story addition to existing building, fenestration requirements are met, all floors are used commercially, unresolved curb cuts and open space scenario...																						
New Development	scenario B:	6,800 sf	56,000 sf	5 fl (65')	5 fl (65')	?	?	bottom three flrs	0	top two floors	0	0	56%	35%	48%	33%	18	42 sf	concrete				
	Three-story addition to existing building while maximizing site area, bottom three floors are for commercial use and top two floors are residential/apartments, fenestration is correct, open space and curb cuts are unresolved...																						

General Site Notes:

* All ground floors are to be calculated at 15' clear height & upper floors will be 10' clear height

* Rooftop open spaces will be reinforced for public use and green roof opportunities

C. FINANCIAL FEASIBILITY ANALYSIS

The Financial Feasibility Analysis assesses each case study site. First the program of the site is defined, then a values and cost evaluation is calculated to present different development options and their associated economics.

Financial Feasibility Analysis

Site ProgramsProgram	Units	Sites			Site ProgramsProgram	Units	Sites		Site ProgramsProgram	Units	Sites			Site ProgramsProgram	Units	Sites		Site ProgramsProgram	Units	Sites					
		1A	1B	1C			2A	2B			3A	3B	4A			4B	4C			5A	5B	6A	6B		
Site Area	SF	72,000	72,000	72,000	Site Area	SF	16,000	16,000	Site Area	SF	45,012	45,012	Site Area	SF	14,250	14,250	14,250	Site Area	SF	6,800	6,800	Site Area	SF	14,200	14,200
Building Footprint W/O Pkg Stories	SF	31,500	31,500	31,500	Building Footprint W/O Pkg Stories	SF	5,950	5,600	Building Footprint W/O Pkg Stories	SF	9,000	10,500	Building Footprint W/O Pkg Stories	SF	14,250	10,215	12,825	Building Footprint W/O Pkg Stories	SF	6,800	6,800	Building Footprint W/O Pkg Stories	SF	6,800	6,800
Gross Square Feet Building	SF	157,500	114,000	190,000	Gross Square Feet Building	SF	5,950	5,600	Gross Square Feet Building	SF	9,000	19,250	Gross Square Feet Building	SF	71,250	51,075	56,544	Gross Square Feet Building	SF	13,600	34,000	Gross Square Feet Building	SF	20,400	56,000
Square Feet Exterior Skin		-	-	-	Square Feet Exterior Skin		-	-	Square Feet Exterior Skin		-	-	Square Feet Exterior Skin		-	-	-	Square Feet Exterior Skin		-	-	Square Feet Exterior Skin		-	-
Percent of Glazing		-	-	-	Percent of Glazing		-	-	Percent of Glazing		-	-	Percent of Glazing		-	-	-	Percent of Glazing		-	-	Percent of Glazing		-	-
Office Commercial Stories		-	-	-	Office Commercial Stories		-	1	Office Commercial Stories		1	3	Office Commercial Stories		5	1	2	Office Commercial Stories		2	5	Office Commercial Stories		3	3
Office/Commercial	SF	-	-	-	Office/Commercial	SF	1,950	1,600	Office/Commercial	SF	9,000	-	Office/Commercial	SF	71,250	9,615	18,069	Office/Commercial	SF	13,600	34,000	Office/Commercial	SF	20,400	31,400
Apartments	SF	97,500	54,000	130,000	Apartments	SF	-	-	Apartments	SF	-	-	Apartments	SF	-	40,860	38,475	Apartments	SF	-	-	Apartments	SF	-	24,600
Townhouses	SF	60,000	60,000	60,000	Townhouses	SF	-	-	Townhouses	SF	-	-	Townhouses	SF	-	-	-	Townhouses	SF	-	-	Townhouses	SF	-	-
Unit Balconies	FF+SF	66	82	66	Unit Balconies	FF+SF	-	-	Unit Balconies	FF+SF	-	2	Unit Balconies	FF+SF	66	66	66	Unit Balconies	FF+SF	-	-	Unit Balconies	FF+SF	-	18
Upper Shared Open Space	SF	3,000	3,000	3,000	Upper Shared Open Space	SF	350	350	Upper Shared Open Space	SF	-	3,350	Upper Shared Open Space	SF	720	720	720	Upper Shared Open Space	SF	305	305	Upper Shared Open Space	SF	3,000	710
Surface Parking	SF	-	12,048	-	Surface Parking	SF	-	-	Surface Parking	SF	19,200	-	Surface Parking	SF	-	2,160	-	Surface Parking	SF	-	6,480	Surface Parking	SF	-	6,750
Structured Parking	SF	26,550	-	36,300	Structured Parking	SF	-	-	Structured Parking	SF	-	-	Structured Parking	SF	-	14,301	9,619	Structured Parking	SF	-	-	Structured Parking	SF	-	-
Structured Parking Footprint		26,000	-	26,000	Structured Parking Footprint		-	-	Structured Parking Footprint		-	-	Structured Parking Footprint		-	-	2,405	Structured Parking Footprint		-	-	Structured Parking Footprint		-	-
Hardscape Pavers	SF	9,800	9,800	10,440	Hardscape Pavers	SF	109	1,150	Hardscape Pavers	SF	1,600	5,500	Hardscape Pavers	SF	-	1,040	1,425	Hardscape Pavers	SF	687	687	Hardscape Pavers	SF	1,430	1,430
Hardscape Concrete	SF	2,300	2,300	4,300	Hardscape Concrete	SF	1,650	1,700	Hardscape Concrete	SF	4,000	5,200	Hardscape Concrete	SF	564	840	-	Hardscape Concrete	SF	-	-	Hardscape Concrete	SF	-	-
Streetwall	FF	1,250	1,260	-	Streetwall	FF	55	-	Streetwall	FF	166	400	Streetwall	FF	-	180	-	Streetwall	FF	-	-	Streetwall	FF	-	-
Sidewalk	SF	13,400	13,400	13,400	Sidewalk	SF	350	350	Sidewalk	SF	-	-	Sidewalk	SF	3,000	3,000	3,000	Sidewalk	SF	1,780	1,780	Sidewalk	SF	2,520	2,520
Lighting	EA	-	-	-	Lighting	EA	-	-	Lighting	EA	-	-	Lighting	EA	-	-	-	Lighting	EA	-	-	Lighting	EA	-	-
Lawn/Groundcover	SF	1,200	1,200	1,200	Lawn/Groundcover	SF	3,000	3,900	Lawn/Groundcover	SF	7,200	4,600	Lawn/Groundcover	SF	860	384	-	Lawn/Groundcover	SF	1,200	1,200	Lawn/Groundcover	SF	-	-
Trees	EA	61	71	61	Trees	EA	10	5	Trees	EA	16	25	Trees	EA	4	4	-	Trees	EA	61	61	Trees	EA	6	6
Planters 16" High	FF	135	174	135	Planters 16" High	FF	-	-	Planters 16" High	FF	219	192	Planters 16" High	FF	-	-	-	Planters 16" High	FF	-	-	Planters 16" High	FF	-	-

Values, Costs and Return on Asset	1A			1B			1C			Values, Costs and Return on Asset	2A			2B			Values, Costs and Return on Asset	3A			3B			Values, Costs and Return on Asset	4A			4B			4C			Values, Costs and Return on Asset	5A			5B			Values, Costs and Return on Asset	6A			6B															
	Value Demolished	Land Value	Total Existing Value per SF	Cost of Apartments	Apartment ROA	Cost of Townhouses	Townhouse ROA	Cost of Commercial No TI's	Commercial ROA		Total Project Cost	Ratio of Acquisition/Project	Project Cost per SF	Project Return on Asset	Return No Requirements	Value Demolished		Land Value	Total Existing Value per SF	Cost of Apartments	Apartment ROA	Cost of Townhouses	Townhouse ROA		Cost of Commercial No TI's	Commercial ROA	Total Project Cost	Ratio of Acquisition/Project	Project Cost per SF	Project Return on Asset	Return No Requirements	Value Demolished	Land Value		Total Existing Value per SF	Cost of Apartments	Apartment ROA	Cost of Townhouses	Townhouse ROA	Cost of Commercial No TI's		Commercial ROA	Total Project Cost	Ratio of Acquisition/Project	Project Cost per SF	Project Return on Asset	Return No Requirements													
Value Demolished	\$ 582,000	\$ 582,000	\$ 582,000	\$ 17,716,547	7.0%	\$ 11,502,491	8.5%	\$ 29,219,038	4.8%	\$ 186	7.6%	7.7%	Value Demolished	\$ -	\$ -	\$ -	\$ -	0.0%	\$ 214	0.0%	\$ 214	0.0%	n/a	9.4%	Value Demolished	\$ 144,000	\$ 144,000	\$ 359,000	\$ 11	21.5%	\$ 260	5.4%	5.7%	Value Demolished	\$ 405,700	\$ 405,700	\$ 199,500	\$ 42	4.8%	\$ 178	7.8%	7.8%	Value Demolished	\$ 159,300	\$ 159,300	\$ 86,100	\$ 36	10.4%	\$ 173	8.1%	8.4%	Value Demolished	\$ 482,100	\$ 482,100	\$ 262,200	\$ 52	17.6%	\$ 207	6.7%	6.9%

Analysis of Development Options for Columbia

To evaluate and test the proposed downtown code the Downtown CID, six sites were chosen and Winter & Company prepared designs in accordance with the code. Costs for building shells are from R.S. Means Online. Leasing rates are from local realtors and from Loopnet. Capitalization rates for determining acceptable rates of return come from National Association of Realtors data for the Midwest, as requested by the Downtown CID board. The rates of return requested are 7 percent for residential and 9 percent for commercial use.

Currently, retail sales in Columbia are approximately twice the consumer spending available from city residents, indicating that Columbia is the retail hub for a wide geographic area. This is good for Columbia, but does not indicate obvious unfilled retail niches. Based upon average sales, restaurants can afford to pay total real estate costs of \$17 to \$20 per square foot. According to 42Floors.com, a real estate website, median rent for office in downtown Columbia is \$12 per square foot, while listings on Loopnet indicate \$18 per square foot asking rates.

General Findings

At a commercial shell cost from R.S. Means of \$138 per square foot, leasing rates for a 9 percent return were difficult to achieve. Using \$18 triple net none of the test sites achieved feasibility. A table showing shell cost versus leasing rates for a project cost at ±\$210 per square foot is shown in the following table.

Lease Rate	Commercial Hard Cost No TI's					
	\$125	\$130	\$135	\$140	\$145	\$150
\$14	5.9%	5.8%	5.6%	5.5%	5.3%	5.2%
\$15	6.4%	6.2%	6.0%	5.9%	5.7%	5.6%
\$16	6.8%	6.6%	6.4%	6.2%	6.1%	5.9%
\$17	7.2%	7.0%	6.8%	6.6%	6.5%	6.3%
\$18	7.6%	7.4%	7.2%	7.0%	6.9%	6.7%
\$19	8.1%	7.8%	7.6%	7.4%	7.2%	7.1%
\$20	8.5%	8.2%	8.0%	7.8%	7.6%	7.4%
\$21	8.9%	8.7%	8.4%	8.2%	8.0%	7.8%
\$22	9.3%	9.1%	8.8%	8.6%	8.4%	8.2%
\$23	9.7%	9.5%	9.2%	9.0%	8.8%	8.5%
\$24	10.2%	9.9%	9.6%	9.4%	9.1%	8.9%
\$25	10.6%	10.3%	10.0%	9.8%	9.5%	9.3%

For the target return rate this generic project requires a leasing rate of \$23 per square foot triple net with no tenant improvements. If tenant improvements are added to the base cost, none of the test projects achieves feasibility. Testing for higher density indicates that the higher cost of higher density construction, and the inability to claim higher leasing rates, prevent an increase in return and may lower returns.

Residential use has higher feasibility than commercial. The following table shows returns for a typical base project with shell cost from RS Means of \$130 and project cost of ±\$180 per square foot. Rental rates are from discussions with local realtors. For the purposes of testing an average unit of two bedrooms at 800 square feet is assumed to rent for \$1,600 per month.

The apartment cost-return table indicates feasibility but in a very narrow range. Downtown projects are more challenging than greenfield projects, and a \$5 rise in the base cost can drop the return just below feasibility.

Rent/Mo	Apartment Building Cost Per Square Foot						
	\$120	\$125	\$130	\$135	\$140	\$145	\$150
\$1,000	3.5%	3.4%	3.3%	3.2%	3.1%	3.0%	2.9%
\$1,100	4.2%	4.1%	3.9%	3.8%	3.7%	3.6%	3.5%
\$1,200	4.9%	4.7%	4.6%	4.4%	4.3%	4.2%	4.1%
\$1,300	5.6%	5.4%	5.2%	5.1%	4.9%	4.8%	4.7%
\$1,400	6.3%	6.1%	5.9%	5.7%	5.5%	5.4%	5.2%
\$1,500	6.9%	6.7%	6.5%	6.3%	6.1%	6.0%	5.8%
\$1,600	7.6%	7.4%	7.1%	6.9%	6.7%	6.5%	6.4%
\$1,700	8.3%	8.0%	7.8%	7.6%	7.3%	7.1%	6.9%
\$1,800	9.0%	8.7%	8.4%	8.2%	7.9%	7.7%	7.5%
\$1,900	9.7%	9.4%	9.1%	8.8%	8.5%	8.3%	8.1%
\$2,000	10.3%	10.0%	9.7%	9.4%	9.1%	8.9%	8.6%
\$2,100	11.0%	10.7%	10.3%	10.0%	9.7%	9.5%	9.2%
\$2,200	11.7%	11.3%	11.0%	10.7%	10.3%	10.1%	9.8%
\$2,300	12.4%	12.0%	11.6%	11.3%	11.0%	10.6%	10.4%
\$2,400	13.1%	12.7%	12.3%	11.9%	11.6%	11.2%	10.9%

To understand how the code affects project feasibility, individual factors need to be evaluated both quantitatively and qualitatively.

Factors Affecting Feasibility

Landscape, Hardscape, and Open Space Requirements

Since landscaping and open space are only at the ground plane, their cost has greater impact on smaller infill projects or small additions to existing businesses than on larger projects. On the smallest commercial test project, a minor addition, these requirements amount to almost 25 percent of project cost and prevent the project from achieving the target rate of return. On the largest test project, because of its size, the requirements on the ground plane only add ±10 percent to cost and do not prevent feasibility.

As a qualitative objective, many very good main streets do not have significant landscaping and yet are seen as attractive venues for public interaction and business viability. This is not to downplay the importance of these elements in the downtown, but rather to note that solutions that are site specific instead of district-wide throw costs that are usually in the public realm onto

the balance sheets of private projects. Qualitatively, it is better for district coherence if the public creates a unified and identifiable palette for public spaces, and landscape types, including street furnishings, lighting, and ground plane materials appropriate to the differing conditions in each district.

The requirement for individual open space on projects is an issue for small projects and especially for infill of existing urban fabric. For a small project downtown, an open space requirement can produce gaps in the urban street wall that may lend little to the street, and at the same time prevent efficient use of the land, increasing development risk. For larger projects this requirement has less effect because the cost of unused ground plane is spread over a larger site with many more building square feet.

Parking

Residential use requires parking in the code. Development at higher intensity downtown is limited if each project must have its own surface parking even at only one space per unit. Currently, structured parking is not feasible for private projects except at very high density. The following table illustrates the break even for structured parking in a for-profit scenario.

Typical Structured Parking Break Even

Monthly Parking	Market Rate	Break-Even Rate
Space Width	9	9
Length+Lane	28	28
Area per Space	252	252
Cost Per SF	55	55
Hard Cost	\$13,860	\$13,860
Soft	20%	20%
Total	\$16,632	\$16,632
Op & Maint	\$600	\$600
Debt 8%, 25	\$1,540	\$1,540
Debt+Ops	\$2,140	\$2,140
Occupancy	90%	90%
Rate/Mo	\$60	\$198
Annual Rev	\$648	\$2,141
Net Income	-\$1,492	\$0.00

This illustrates that structured parking requires a far higher rate to break even than what apartment residents are currently paying. The net project density required to overcome the liability imposed by structured parking is in the neighborhood of 80 units or more per acre. The only site that achieves this is Site 1, because of the project size. In effect, the requirement for parking minimums in residential use places a cap on downtown density by forcing the creation of surface parking.

Qualitatively, one might ask why a managed parking district has not been considered. In a managed district, rather than insisting on site requirements, the parking district relies upon a public-private agreement to produce and fund district-wide parking solutions so that smaller infill projects need not provide any parking. Managed parking may also include the use of parking maximum rather than a minimum to allow the market to set parking at the developers or lenders discretion.

Glazing Standards and Building Façade Articulation

A standard building is likely to have its street facing façade at a ±30 percent ratio. As the building footprint and interior increase in size, the added cost of glazing more than 30 percent on a cost per building square foot diminishes. The relative cost of windows, storefront and glass curtain wall are that storefront is about half the cost of curtain wall but without structural integrity, while windows do not affect structural integrity but cost half again as much as storefront per square foot of glazing. The tables below illustrate the incremental cost of glazing for a large project and a small project.

A typical building program is as follows:

Building SF	150,000
Floor Plate	30,000
First Floor Height	15
Other Floors	10
Floors	5
Building Height	55
Building Width	150
Building Length	200

The incremental cost on a square foot of building of glazing at differing percentages is shown for this program in the following table.

Skin SF, 2 Faces	16,500	Variance	Per Face F	Premium/Face F	Per Build. SF
Cost at Base	\$450,863	\$0	\$27	\$0	\$0.0
With Glazing at % of					
40%	\$480,150	\$29,288	\$29	\$1.78	\$0.20
50%	\$509,438	\$58,575	\$31	\$3.55	\$0.39
60%	\$538,725	\$87,863	\$33	\$5.33	\$0.59
70%	\$568,013	\$117,150	\$34	\$7.10	\$0.78
80%	\$597,300	\$146,438	\$36	\$8.88	\$0.98

The result shows that the cost difference varies by about \$7 per face foot but that the loaded cost per building square foot is nominal for a large structure. As a comparison, for a small building the results are more significant. A typical program and the incremental costs for a small infill project are shown below.

Building SF	30,000
-------------	--------

First Floor Height	15
Other Floors	10
Floors	3
Building Height	35
Building Width	100
Building Length	100

Skin SF, 2 Faces	7,000	Variance	Per Face F	Premium/Face F	Per Bld SF
Cost at Base	\$191,275	\$0	\$27	\$0	\$0.0
With Glazing at % of					
40%	\$203,700	\$12,425	\$29	\$1.78	\$0.41
50%	\$216,125	\$24,850	\$31	\$3.55	\$0.83
60%	\$228,550	\$37,275	\$33	\$5.33	\$1.24
70%	\$240,975	\$49,700	\$34	\$7.10	\$1.66
80%	\$253,400	\$62,125	\$36	\$8.88	\$2.07

Because the total square feet versus the skin square feet at smaller building sizes, the impact of an 80% standard on two facades is almost double the impact for the larger building. The standards may impose a burden on small infill, but considering returns, the highest glazing standard only lowers returns by 0.01 percent.

Building articulation standards mandate an articulation of the façade every 50 feet. As with glazing, the impact is greater for smaller buildings. A large program and an infill program are shown below.

Large Building SF	150,000
Floor Plate	30,000
First Floor Height	15
Other Floors	10
2F Art per 50F Length	1,212
Floors	5
Building Height	55
Building Width	173
Building Length	173
Skin without Art.	38,105
Linear Feet of Skin	520
Number of Articulations	10
SF Added From Articulation	12,124
Base Skin Cost/SF	\$27.33
Base Cost of Skin	\$1,041,222
Added From Art	\$331,298
Total Skin w/Art.	\$1,372,520
Articulation \$ Per Building SF	\$2.21

This shows that for a large building the loaded cost per building square foot increases by \pm \$2 per square foot. To understand the impact on a smaller or infill project the tables below show the incremental cost of articulation.

Typical Infill Building SF	30,000
Floor Plate	10,000
First Floor Height	15
Other Floors	10
2 Foot Articulation per 50 Feet	700
Floors	5
Building Height	55
Building Width	100
Building Length	100
Skin SF without Articulation	22,000
Linear Feet of Skin	300
Number of Articulations	6
SF Added From Articulation	4,200
Base Skin Cost/SF	\$27.33
Base Cost of Skin	\$601,150
Added From Art	\$114,765
Total Skin w/Art.	\$715,915
Articulation \$ Per Building SF	\$3.83

The difference in loaded cost between large and small suggests that some care may need to be taken with smaller projects in order to ensure feasibility. Both glazing and articulation standards may be candidates for a different approach to small projects, perhaps a quarter block or less. Note that the first example is five times the size, but the building façade cost of the larger is less than double the smaller building, not five times, meaning that the larger project will be less affected by the cost.

Street Walls and Parking Setbacks

The proposed street walls at parking and the 24-foot parking setback are intended to prevent the deadening effect on the public realm of large visible parking areas that offer little of interest to the pedestrian. The actual cost of the street wall is not a significant factor in returns, but as it may create blank five-foot high 250-foot long facades it is not clear that this is a major improvement for pedestrians.

The 25-foot parking setback on a larger project may have no effect upon design, but for small projects may create unusable areas on the site that represent a lost opportunity cost. This needs to be evaluated on a site-by-site basis rather than as a yes-or-no checklist item, to allow flexibility for infill and small projects.

The Test Sites

Sites 1A, 1B, and 1C

Site 1A includes structured parking for 5 floors, the first two of townhouses and the upper three for apartments. Site 1B is smaller because surface parking limits the number of units. Site 1C maximizes the structured parking and adds a layer of housing over the lid of the parking. The open space requirements, landscaping and street wall requirements have been met. The following tables show the information for Sites 1A, 1B, and 1C.

Site Programs		1A	1B	1C
Site Area	SF	72,000	72,000	72,000
Building Footprint W/O Pkg	SF	31,500	31,500	31,500
Stories		5	5	5
Gross Square Feet Building	SF	157,500	114,000	190,000
Office/Commercial	SF	-	-	-
Apartments	SF	97,500	54,000	130,000
Townhouses	SF	60,000	60,000	60,000
Unit Balconies	FF+SF	66	82	66
Upper Shared Open Space	SF	3,000	3,000	3,000
Surface Parking	SF	-	12,048	-
Structured Parking	SF	26,550	-	36,300
Structured Parking Footprint		26,000	-	26,000
Hardscape Pavers	SF	9,800	9,800	10,440
Hardscape Concrete	SF	2,300	2,300	4,300
Street wall	FF	1,250	1,260	-
Sidewalk	SF	13,400	13,400	13,400
Lighting	EA	-	-	-
Lawn/Groundcover	SF	1,200	1,200	1,200
Trees	EA	61	71	61
Planters 16" High	FF	135	174	135
Values, Costs and Return on Asset		1A	1B	1C
Value Demolished		\$582,000	\$582,000	\$582,000
Land Value		\$828,000	\$828,000	\$828,000
Total Existing Value per SF		\$20	\$20	\$20
Cost of Apartments		\$17,716,5	\$9,565,044	\$25,467,4
		47		34
Apartment ROA		7.0%	7.2%	6.5%
Cost of Townhouses		\$11,502,4	\$11,227,82	\$11,551,1
		91	6	24
Townhouse ROA		8.5%	8.7%	8.5%
Cost of Commercial No TI's				
Commercial ROA				
Total Project Cost		\$29,219,0	\$20,792,87	\$37,018,5
		38	0	58
Ratio of Acquisition/Project		4.8%	6.8%	3.8%
Project Cost per SF		\$186	\$182	\$195

Project Return on Asset	7.6%	8.0%	7.1%
Return No Requirements	7.7%	8.3%	7.2%

Because of the project size, the landscape, open space and balconies, and street wall cost lower returns by only a tenth of a percent. More significant is the mix of parking types and unit types. As the apartments increase beyond what can be parked, the apartment returns decrease because the structured parking increases, and the apartments take an increasing portion of parking garage costs. That said, all of the options are feasible.

Sites 2A and 2B

Sites 2A and 2B are small additions to an existing one-story commercial property to be built and used by the existing small business owner. The project is a simple addition, adding a smaller upper floor in the first case and adding a simple addition in the second. The following tables show the site information.

Site Program		2A	2B
Site Area	SF	16,000	16,000
Stories		2	1
Gross Square Feet Building	SF	5,950	5,600
Office/Commercial Stories		2	1
Office/Commercial	SF	1,950	1,600
Upper Shared Open Space	SF	350	350
Hardscape Pavers	SF	109	1,150
Hardscape Concrete	SF	1,650	1,700
Lawn/Groundcover	SF	3,000	3,900
Trees	EA	10	5
Planters 16" High	FF	-	-

Values, Costs and Return on Asset	2A	2B
Cost of Commercial No TI's	\$418,152	\$340,080
Commercial ROA	7.4%	7.5%
Total Project Cost	\$418,152	\$340,080
Ratio of Acquisition/Project	0.0%	0.0%
Project Cost per SF	\$214	\$213
Project Return on Asset	7.4%	7.5%
Return No Requirements	9.4%	9.4%

From the above, the determining factors for return after the basic costs are the increased landscape and paving in option 2A. Neither option meets a 9 percent return. In the case of 2A and 2B, removing those costs brings the project return to 9.4 percent. This is a case where an existing business would find it difficult to finance a simple addition due to the new code requirements. Assuming that existing businesses are valued, adding flexibility in these requirements may be desirable to maintain and reinforce existing business.

Sites 3A and 3B

Site 3 is an example of a simple stand-alone commercial building.

Site Program		3A	3B
Site Area	SF	45,012	45,012
Building Footprint W/O Pkg	SF	9,000	10,500
Stories		1	3
Gross Square Feet Building	SF	9,000	19,250
Office Commercial Stories		1	3
Office/Commercial	SF	9,000	19,250
Unit Balconies	FF+SF	-	2
Upper Shared Open Space	SF	-	3,350
Surface Parking	SF	19,200	20,100
Structured Parking	SF	-	-
Structured Parking Footprint		-	-
Hardscape Pavers	SF	1,600	5,500
Hardscape Concrete	SF	4,000	5,200
Street wall	FF	166	400
Lawn/Groundcover	SF	7,200	4,600
Trees	EA	16	25
Planters 16" High	FF	219	192

Values, Costs and Return on Asset	3A	3B
Value Demolished	\$144,000	\$144,000
Land Value	\$359,000	\$359,000
Total Existing Value per SF	\$11	\$11
Cost of Commercial No TI's	\$2,338,339	\$4,208,880
Commercial ROA	5.4%	6.4%
Total Project Cost	\$2,338,339	\$4,208,880
Ratio of Acquisition/Project	21.5%	12.0%
Project Cost per SF	\$260	\$219
Project Return on Asset	5.4%	6.4%

The difference in size of building versus the loaded acquisition and code-required improvement costs makes Site 3B less costly per square foot than Site 3A, yielding a one percent rise in return. Removing all code required improvements changes returns by a few tenths of a percent. To achieve a 9 percent return is not possible for Site 3A, and requires a triple net lease of \$25 per square foot for Site 3B. Adding building square feet to Site 3B raises the return by further diluting other costs, but not enough to achieve a 9 percent return. Also if the building rises to more than 5 stories, the base cost rises, lowering returns and cancelling the value gained by diluting costs. These returns indicate that new office may be a challenge at current asking rates.

Site 4A, 4B and 4C

Site 4A is a stand-alone commercial building with no parking, while 4B and 4C add residential above commercial, and add structured parking to satisfy the code.

Site Program		4A	4B	4C
Site Area	SF	14,250	14,250	14,250
Building Footprint W/O Pkg	SF	12,825	10,215	12,825
Stories		5	5	5
Gross Square Feet Building	SF	64,125	51,075	56,544
Office Commercial Stories		5	1	2
Office/Commercial	SF	64,125	9,615	18,069
Apartments	SF	-	40,860	38,475
Townhouses	SF	-	-	-
Unit Balconies	FF+SF	66	66	66
Upper Shared Open Space	SF	720	720	720
Surface Parking	SF	-	2,160	-
Structured Parking	SF	-	14,301	9,619
Hardscape Pavers	SF	-	1,040	1,425
Hardscape Concrete	SF	564	840	-
Street wall	FF	-	180	-
Lawn/Groundcover	SF	860	384	-
Trees	EA	4	4	-
Planters 16" High	FF	-	-	-

Values, Costs and Return on Asset	4A	4B	4C
Value Demolished	\$405,700	\$405,700	\$405,700
Land Value	\$199,500	\$199,500	\$199,500
Total Existing Value per SF	\$42	\$42	\$42
Cost of Apartments		\$7,702,809	\$6,861,736
Apartment ROA		6.7%	7.1%
Cost of Commercial No TI's	\$11,527,432	\$2,011,549	\$3,457,372
Commercial ROA	7.8%	7.1%	7.3%
Total Project Cost	\$11,527,432	\$9,714,358	\$10,319,108
Ratio of Acquisition/Project	5.3%	6.2%	5.9%
Project Cost per SF	\$180	\$190	\$182
Project Return on Asset	7.8%	6.8%	7.2%

Of note here is that the site value is high and the option with the highest return is the one that distributes that cost over a much higher number of leasable square feet. That said, lowering the land cost to \$11 per square foot only changes returns by several tenths of a percent. Site 4A would hit a 9 percent return if the leasing rate were between \$20 and \$21 a square foot triple net. Site 4C reduces the risk of commercial with residential that does meet its target return, and for some that might be sufficient if they do not mind buying into a market position for the future. Removing the cost of all of the improvements, other than parking, required by the code does add 1 percent to the return for 4B, and 0.7 percent for Site 4C.

Sites 5A and 5B

Sites 5A is a one story commercial addition and Site 5B is a five story commercial addition on a small lot. The site programs and returns are shown below.

Site Program	Units	Units	
		5A	5B
Site Area	SF	6,800	6,800
Building Footprint W/O Pkg	SF	6,800	6,800
Stories		2	5
Gross Square Feet Building	SF	13,600	34,000
Office Commercial Stories		2	5
Office/Commercial	SF	13,600	34,000
Upper Shared Open Space	SF	305	305
Surface Parking	SF	-	6,480
Hardscape Pavers	SF	687	687
Lawn/Groundcover	SF	1,200	1,200
Trees	EA	61	61

Values, Costs and Return on Asset	5A	5B
Value Demolished	\$159,300	\$159,300
Land Value	\$86,100	\$86,100
Total Existing Value per SF	\$36	\$36
Cost of Commercial No TI's	\$2,352,576	\$6,022,872
Commercial ROA	8.1%	7.9%
Total Project Cost	\$2,352,576	\$6,022,872
Ratio of Acquisition/Project	10.4%	4.1%
Project Cost per SF	\$173	\$177
Project Return on Asset	8.1%	7.9%
Return No Requirements	8.4%	8.0%

Both Site 5A and 5B fail to meet the target return rate at a leasing rate of \$18 per square foot. Site 5A reached the target return at \$20 per square foot net, while Site 5B reaches the target return at \$20.50 per square foot net. The code requirements diminish returns only slightly. The main difficulty is leasing rates versus construction costs. That said, the project on 5A might be close enough for a developer who wishes to buy into the market and will wait for leasing rates to rise. In a standard situation with a three-year time to stabilized operation this might make the project feasible for some.

Sites 6A and 6B

Site 6A is a commercial addition while 6B redevelops the entire site with commercial and residential uses. Programs and returns are shown in the following tables.

Site Program	Units	Units	
		6A	6B
Site Area	SF	14,200	14,200
Building Footprint W/O Pkg	SF	6,800	6,800
Stories		3	5
Gross Square Feet Building	SF	20,400	56,000
Office Commercial Stories		3	3
Office/Commercial	SF	20,400	31,400
Unit Balconies	FF+S F	-	18
Upper Shared Open Space	SF	3,000	710
Surface Parking	SF	-	6,750
Hardscape Pavers	SF	1,430	1,430
Sidewalk	SF	2,520	2,520
Trees	EA	6	6

Values, Costs and Return on Asset	6A	6B
Value Demolished	\$482,100	\$482,100
Land Value	\$262,200	\$262,200
Total Existing Value per SF	\$52	\$52
Cost of Apartments		\$6,374,102
Apartment ROA		5.0%
Cost of Commercial No TI's	\$4,228,440	\$8,544,250
Commercial ROA	6.7%	5.1%
Total Project Cost	\$4,228,440	\$14,918,352
Ratio of Acquisition/Project	17.6%	5.0%
Project Cost per SF	\$207	\$266
Project Return on Asset	6.7%	5.1%
Return No Requirements	6.9%	5.1%

Like Site 5 the interaction of construction cost, leasing rates, and in this case acquisition cost have more impact than the code requirements. Site 6A is closer to feasibility than 6B. In this case the imbalance between cost and leasing rates causes building more to result in a lower return.