

# **INCREMENTAL URBAN INTENSIFICATION**

MANAGING THE RE-URBANIZATION OF  
TORONTO'S AVENUES

by

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presented to the University of Waterloo  
in fulfilment of the  
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## **AUTHOR'S DECLARATION**

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.



## **ABSTRACT**

This thesis proposes facilitating the re-urbanization of Toronto's avenues to support the future growth of Toronto. The current guidelines for avenue buildings set out in the *Avenues and Mid-Rise Buildings Study* is not flexible enough to support the current amount of density that is required to facilitate the re-urbanization of the avenues. The current typology is producing uncomfortable buildings, and there is minimal capacity to accept future demands on density. This thesis proposes managing the re-urbanization of St. Clair Ave. W through the addition of carefully assembled residential properties, located to the rear of avenue properties, to an avenue property assembly. This combined larger assembly will offer the capacity to redevelop larger buildings at greater densities, without significantly impacting the existing residential properties because the larger assembly also allows for greater flexibility in the distribution of building mass. The thesis proposes the development of two buildings, one on the avenue and the other to the rear on the side street. The larger avenue building can accept greater density and rear building will be low mid-rise building that will be the types of building envisioned by the city and form a buffer zone to the residential neighbourhood. This thesis is focused on facilitating incremental re-urbanization and is not concerned with large scale master planned multi-building redevelopments. The thesis is concerned with the mechanisms that drive urban form and not the final design of the building. The thesis presents building design guidelines to guide the urban form of these two buildings and presents what this might look like through diagrammatic representations of buildings on case study sites and using street perspectives. St. Clair Ave. W is only one of many avenues in Toronto planned for re-urbanization, and while each avenue is similar, they are all different. This flexible approach to accommodating redevelopment could be used to inform the guidelines for new development along many different avenues.

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## **DEDICATION**

To my friends and family.





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 City of Toronto’s Open Data Catalogue, “Property Boundaries” [computer file], Toronto, Ontario: City of Toronto, [2018], <https://www.toronto.ca/city-government/data-research-maps/open-data/open-data-catalogue/#6daf835c-3b6c-107b-2c1e-777c822af2f3>.  
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# **INTRODUCTION**

This thesis examines the management of incremental urban intensification along Toronto’s avenues, specifically looking at St. Clair Avenue West. Through the limited assembly of residential properties to the rear of avenue properties the work seeks to expand the possible design solutions for buildings to more easily facilitate the increased urban densities desired by the private sector urban developers. These design solutions are not only geared towards facilitating redevelopment, but also towards enhancing the quality of urban and interior space. The thesis general design principles and case studies are concerned with how the street will develop and looks at the relationship between property structures, property values, and building typology and its consolidation into bigger properties. Large scale multi-building redevelopments or multi-storey commercial buildings are not the concern of this work, but the focus is on singular multi-storey residential buildings having a single layer of at-grade retail. The focus of the thesis is on the mechanisms that drive the design of avenue buildings, rather than the final design of the buildings themselves. The current building typology and the overall urban vision for transit supported avenues in Toronto consists of about six to eight storey mid-rise buildings (refer to Fig. 1.1) set along the avenues. These would replace the existing narrow two to three storey low-rise buildings typical of the City’s avenues. Despite its recent institution, this vision of these streets is already outdated and is not reflective of the density that these avenues require to facilitate redevelopment (this will be discussed later).

### 1.1.1 SITE

The sites of the case study works of this thesis are located along St. Clair Ave. W between Bathurst St. and Old Weston Rd. (Refer to Fig. 1.2.) This section of the avenue is identified as one of the main avenues of the City of Toronto in the *Toronto Official Plan (2015)*<sup>1</sup>. Toronto’s avenues are outlined as one of three major areas of urban intensification, the other two being the downtown and the centres such as Yonge and Eglinton. The direction of intensification and re-urbanization to these three areas outlined in the *Toronto Official Plan* stem from the planning goals set out by the Province of Ontario. The *Provincial Policy Statement (PPS)*<sup>2</sup> of 2014, which originally came into effect in 2005 for all of Ontario outlines the government’s policies on land use planning which is used to inform planning

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<sup>1</sup> City of Toronto, City Planning Division, *Toronto Official Plan*, (Toronto, 2015), 2.3, <https://www.toronto.ca/wp-content/uploads/2017/11/99b3-cp-official-plan-volume-1-consolidation.pdf>.

<sup>2</sup> Province of Ontario, Ministry of Municipal Affairs and Housing, *2014 Provincial Policy Statement*, (Toronto, 2014), 7-10, <http://www.mah.gov.on.ca/AssetFactory.aspx?-did=10463>.



**Fig. 1.1** Vision for the Avenues Presented in the *Avenues and Mid-Rise Buildings Study*

The final vision of the incremental plan for redevelopment along the avenues is often illustrated with six storey buildings continuously lining an avenue in the *Avenues and Mid-Rise Buildings Study*.



**Fig. 1.2** Site of St. Clair Ave. W between Bathurst St. and Old Weston Rd.

St. Clair Ave. W. is located to the north-west of the downtown of Toronto. The east boundary of this section of avenue is Bathurst St., a major arterial road running north-south from the lake to beyond the City of Toronto. The west boundary is Old Weston Rd., a very short minor arterial road located a block east of railway lines.

decisions and official plans for municipalities. The PPS identifies the need for redevelopment and intensification of compact urban form within existing built up areas of municipalities to promote smart land use and prevent urban sprawl. These goals originate from Ontario's *Places to Grow Act*<sup>3</sup> of 2005 in Ontario which was enacted to plan for the accommodation of future growth through the efficient and strategic use of land and existing infrastructure. The Act plans for where this growth will happen and it allows for province wide infrastructural investments to be made appropriately.

Intensification of Toronto needs to be directed towards these three major areas because not only does the *Toronto Official Plan* protect the neighbourhoods from redevelopment, but it would also be too difficult.<sup>4</sup> Rising land values in Toronto make assembly expensive and significant increases in density on the existing site would be required to justify any redevelopment effort. There would also be no possible building configuration at the density needed without impacting other existing residential properties' sky views, privacy and access to daylight. Any redevelopment of the neighbourhood would face fierce opposition by local residents and the local city councillor, given that residents had bought into an existing condition that they expect to be maintained. As a result, intensification around these neighbourhoods needs to be restricted to the avenue.

In 2003, the streetcar tracks along St. Clair Ave. W were required to be replaced. Given the large right-of-way of the avenue, the system was replaced and upgraded to become an at grade limited right-of-way transit line much like a light rail transit line with a larger car than existing streetcars, but with same frequent stops. It followed the same type of LRT line upgrade that had occurred on Spadina Ave. in Toronto in 2009. Both such multi-level governmental infrastructural investments were consistent with the efforts to plan for intensification along all of the city's main avenues and to support and encourage redevelopment of those streets. This upgraded streetcar is also connected to two subway stops, at Bathurst St. and Yonge St, offering a high level of transit accessibility. The access to two priority transit lines each with significant carrying capacity creates a significantly increased capacity for St. Clair Ave. W to accommodate more people.<sup>5</sup>

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<sup>3</sup> Government of Ontario, "Places to Grow Act, 2005," *Government of Ontario*, last modified June 20, 2012, <https://www.ontario.ca/laws/statute/05p13>.

<sup>4</sup> City of Toronto, City Planning Division, *Toronto Official Plan*, (Toronto, 2015), 1.1, <https://www.toronto.ca/wp-content/uploads/2017/11/99b3-cp-official-plan-volume-1-consolidation.pdf>.

<sup>5</sup> City of Toronto, Toronto Transit Commission, *Transit City Implementation – the St. Clair Project Experience*, (Toronto, 2010), 1-4, [http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2010/Jan\\_20\\_2010/Reports/Transit\\_City\\_Impleme.pdf](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2010/Jan_20_2010/Reports/Transit_City_Impleme.pdf).





**Fig. 1.3** Typical St. Clair Ave. W Existing Fabric

A typical street frontage of St. Clair Ave. W consists of narrow frontages with at grade retail and walk-up apartments above which are accessed from the front of the building. On corner properties the retail often spills out or has windows facing the local side street.



**Fig. 1.4** Typical St. Clair Ave. W Existing Fabric

On E-W oriented blocks, the same narrow frontages continue adjacent to one another the entire block without any curb cuts or vehicular access.

In support of the *Toronto Official Plan*, the *Provincial Policy Statement* and the significant transit investments, St. Clair Ave. W between Bathurst St. and Old Weston Rd. was rezoned for increased mixed commercial residential use in 2010 from 3 times site coverage and a five storey height limitation to 5 – 5.5 site coverage and between 7 – 9 storeys tall under the new By-law No. 1103-2009. This change was enacted following the *City Initiated Avenue Study for St. Clair Avenue West between Bathurst and Keele Street – Final Report (Final Report for St. Clair Ave. W)*<sup>6</sup> of 2009, which summarized consultant reports by Brook McIlroy Planning + Urban Design / Pace Architects and Office for Urbanism for the city. While this section of St. Clair Ave. W was studied independently from the *Avenues and Mid-Rise Buildings Study* of 2010, the early versions from those guidelines informed the *Final Report for St. Clair Ave. W*. The general principles of the guidelines for new development along all the avenues in Toronto are consistent. Despite the rezoning of St. Clair Ave. W, only a small amount of actual redevelopment has been planned or built. The majority of the street continues to consist of narrow and relatively shallow lots with predominantly two storey buildings with at-grade retail and walk-up apartments above. (Refer to Fig. 1.3, 1.4.) Intensification of Toronto’s avenues is meant to be incremental. Over the last nine years, the limited number of proposals suggest a lack of appetite for this type of development. Greater intensification is required to support the Provincial and City planning goals.

St. Clair Ave. W also contains several character buildings, including places of worship and existing walk-up apartments, some of which carry historical designations such as St Michael and All Angels Anglican Church. Others like 646 St. Clair Ave. W do not but is one of many buildings that should be considered worth preserving to maintain some of the character of St. Clair Ave. W as it redevelops. These buildings are well maintained and of better architectural quality than most of the typical buildings on St. Clair Ave. W. (Refer to Fig. 1.5.) Also, existing walk-up apartments of good architectural quality can also be found on the side streets off St. Clair Ave. W. (Refer to Fig. 1.6.)

## 1.1.2 ZONING GUIDELINES

Two of the main guidelines for new urban development in City of Toronto are the *Tall Building Design Guidelines* of 2013 and the *Avenues & Mid-Rise Buildings Study* of 2010 (already mentioned). The guidelines focus on two different

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<sup>6</sup> This document is referred will be referred to as the *Final Report for St. Clair Ave. W*; City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 4, 48-49, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.



**Fig. 1.5** 646 St. Clair Ave. W

646 St. Clair Ave. W is a well crafted and ornate brick constructed building of the early 1900s and appears well maintained by it's current occupant, Mothercraft, an early childhood education and care centre. The building is of high architectural quality and unique architectural form and style for St. Clair Ave. W.



**Fig. 1.6** Local Side Street

The majority of the local side streets consist of two storey single and semi-detached narrow houses (pictured right). However, there a number of existing high quality walk-up apartments located a few properties in from the avenue. These walk-up apartments tend to be older and often have detailed brick facades, with generous units inside. A number of these high quality walk-up apartments can also be found directly on St. Clair Ave. W.

types of development. As well, they are structured differently in their respective approaches to guiding external building form as part of larger civic goals for street form. The *Tall Building Design Guidelines* offer more flexibility because they are structured broadly around the mitigation of the impacts of tall developments.<sup>7</sup> (Refer to Fig. 1.7.) Focus is on maintaining sky views at street level and limiting overshadowing, instead of prescribing detailed restrictions in the guidelines.<sup>8</sup> The *Avenues & Mid-Rise Buildings Study* is more detailed and does more to mitigate impact.<sup>9</sup> While the *Tall Building Design Guidelines* can be prescriptive in their attention to the building podium or on smaller building sites, in general, these guidelines usually govern significantly larger redevelopments and offer flexibility in the distribution of building mass on a site especially the tower location even with prescribed setbacks applied.<sup>10</sup>

The *Avenues & Mid-Rise Buildings Study* governs mid-rise buildings (defined as five to eleven storeys or less than or equal to the street's right-of-way width) and smaller scale development compared to the *Tall Building Design Guidelines*. Such proposals are generally located along main streets, especially those which are adjacent to the residential urban fabric of Toronto. Additionally, they are designed to produce a very specific building form, one driven by a desire to almost entirely eliminate any impact on the neighbouring single and semi-detached houses of the City's residential areas and work through the use of detailed setbacks and angular plane restrictions.<sup>11</sup> (Refer to Fig. 1.8.) This approach is different than the *Tall Building Design Guidelines*, which work with an existing and standard building typology, the high-rise tower, instead of inventing a new building form for every site configuration.

### 1.1.3 AVENUES & MID-RISE BUILDINGS BASICS

*By-law No. 1103-2009* was enacted by the City of Toronto to update the *General Zoning By-law No. 438-86* along St. Clair Ave. W between Bathurst St. and Old Weston Rd. The update was based on suggestions from consultant reports

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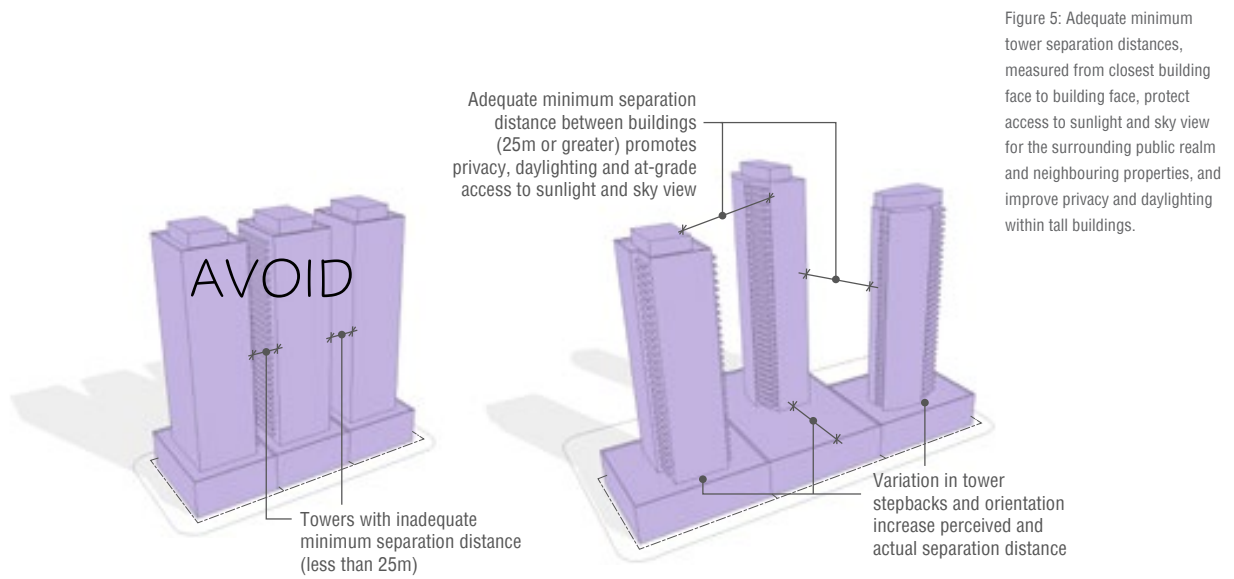
<sup>7</sup> City of Toronto. City Planning Division, (Toronto, 2013), 9, <https://www.toronto.ca/city-government/planning-development>.

<sup>8</sup> Ibid, 25-26.

<sup>9</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 31-36, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

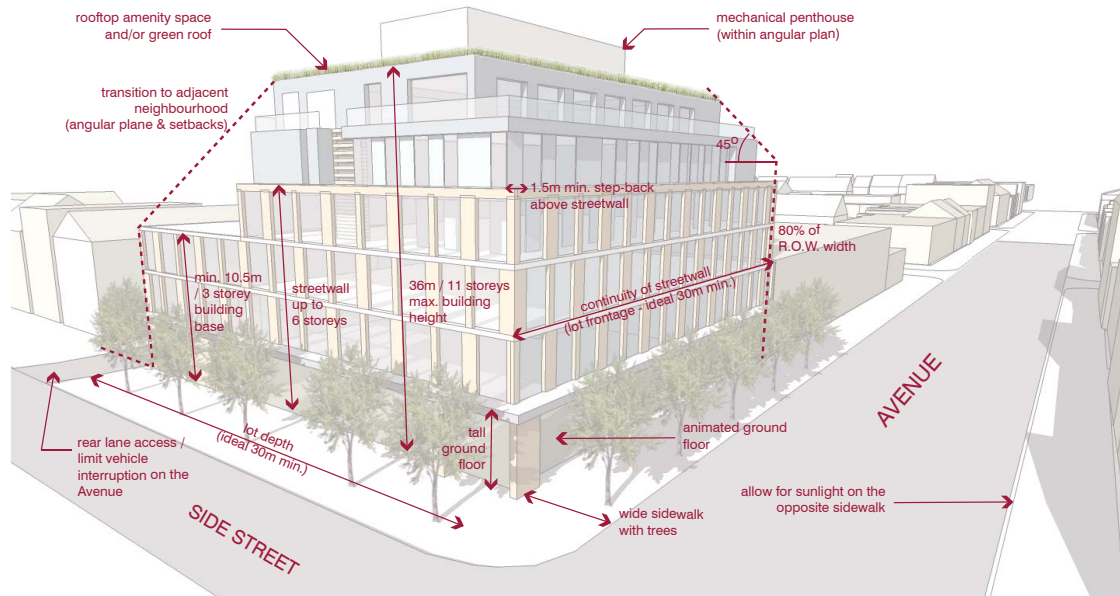
<sup>10</sup> City of Toronto. City Planning Division, (Toronto, 2013), 18-24, <https://www.toronto.ca/city-government/planning-development>.

<sup>11</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 36, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.



**Fig. 1.7 Tall Building Design Guidelines**

The *Tall Building Design Guidelines* respect the conventional building type of the high-rise tower, and provide suggestions to mitigate the impact of these new buildings. Terminology is used such as avoid and maintain adequate separation.



**Fig. 1.8 Diagram of the Ideal Building in the Avenues and Mid-Rise Buildings Study**

The ideal building developed by the *Avenues and Mid-Rise Buildings Study* is excessively prescriptive, which produces a highly specific building type. Most measures that could govern built form are prescribed in the guidelines.

that were consistent with the broad strategic principles in the *Avenues and Mid-Rise Buildings Study* for new development along Toronto's avenues. Principles contained in *By-law No. 1003-2009* govern the built form of new development and consist of four parts: a maximum FSI (floor space index) allowance, defining the overall bulk of a building on a site, a maximum height allowance, mandatory front, side and rear yard setbacks and a rear angular plane restriction.<sup>12</sup> The maximum FSI and height allowances are indicated on zoning maps and are specific down to the level of individual properties in the broader urban area. Despite the listed height allowances in *By-law No. 1103-2009*, the maximum height allowed for any avenue in Toronto is broadly stated in the *Avenues and Mid-Rise Buildings Study* as being equivalent to the width of the main street right-of-way.<sup>13</sup> The right-of-way on St. Clair Ave. W is for example 30m and translates into a maximum 9 storey building height on each side of the avenue, although not all properties were zoned for this height due to the shallower main street property depths. In addition, a setback of 1.5m at 5 and 7 storeys from a street frontage is required along with a 7.5m setback from the rear residential property line this is to allow for a 2 lane rear laneway with 1.5m of landscaped space.<sup>14</sup> At corner properties, a 1.5m setback is required from the side street to widen the sidewalk.<sup>15</sup> Lastly, there are angular plane restrictions. A rear angular plane restriction is measured from a height of 7.5m and 10.5m from the rear residential property line and is aligned to an angle of 45 degrees for properties on the north side of St. Clair Ave. W, and at 60 degrees for properties on the south side.<sup>16</sup> Additional to the above, a 45 degree angular plane restriction is measured at a height of 80% of the street right-of-way width from the front of the building on both sides of the street.<sup>17</sup> On St. Clair Ave. W, this means an additional setback is required at the ninth storey on the street frontage. Refer to Fig. 1.8 for the diagram of these principles illustrated through an ideal avenue building.

These detailed principles combine to prescribe the mid-rise building form desired by the City of Toronto. Typically, such restrictions translate into a double loaded corridor slab building that terraces to the front and rear. This typology is

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<sup>12</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 3-8, 21-28, <https://www.toronto.ca/legdocs/by-laws/2009/law1103.pdf>.

<sup>13</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 14-15, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>14</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 5, 9, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

<sup>15</sup> *Ibid*, 6.

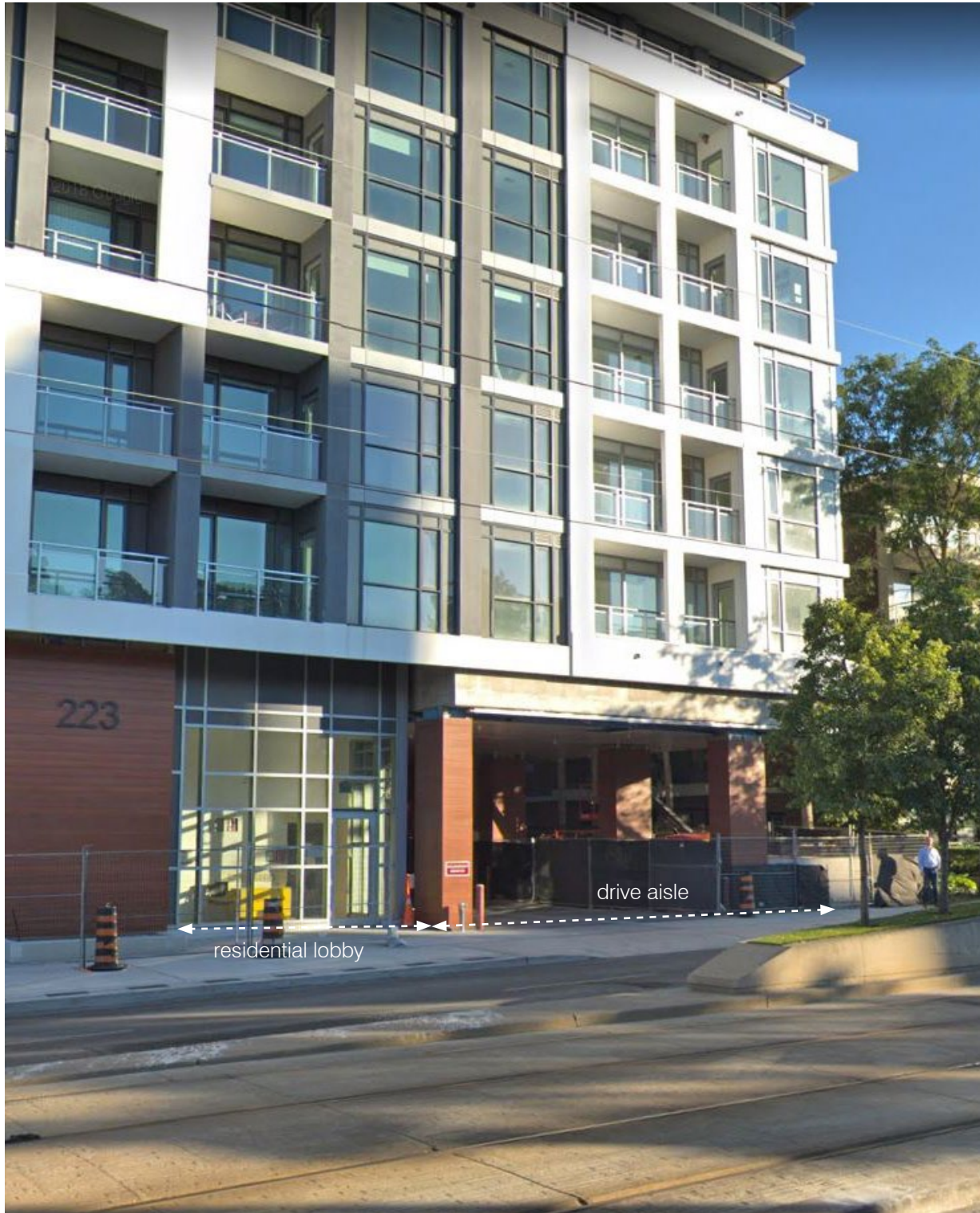
<sup>16</sup> *Ibid*, 7-8, 14-15.

<sup>17</sup> *Ibid*.



**Fig. 1.9** A New Nine Storey New Development

This nine storey building is located on the south side of St. Clair Ave. W and meets all of the envelope restrictions including the 7.5m setback from the rear and a 60 degree angular plane. However, it provides an inadequate buffer zone to the two residential houses. The buildings lower floors are deeper than ideal producing poorer quality units. The location of the lobby on the avenue frontage also reduces the amount of retail frontage.



**Fig. 1.10** Mid-Block Vehicular Access at 223 St. Clair Ave. W

Although not located within the same stretch of St. Clair Ave. W as covered by By-Law No. 1103-2009, this building on St. Clair Ave. W features a mid-block drive aisle that interrupts the continuous building frontage at grade and disrupts pedestrian traffic. The residential lobby access also reduces the amount of retail frontage on the street.

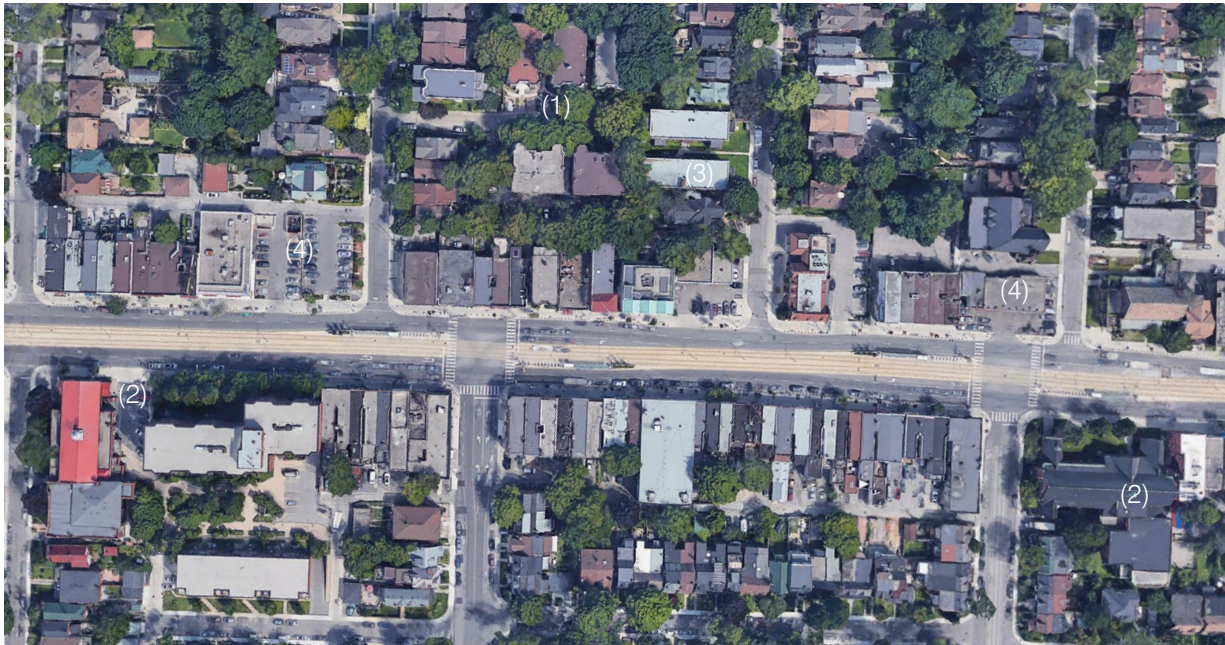


primarily driven by the desire to prevent the buildings from overshadowing or having an overbearing presence on the neighbourhoods and the avenue itself. The setbacks at the front of the buildings are designed to produce a streetscape that is not overbearing to a pedestrian, maintaining direct sunlight access and minimizes wind effect impacts.

The new avenue buildings governed by these principles have literally translated building envelope guidelines into the final building form. This results in deeper floorplates on the lower floors to make up for the shallow floorplates that are required towards the top of the building to meet the angular plane restriction. The deeper floorplates tend to produce uncomfortable unit layouts without adequate access to daylight. The angular plane restriction is also intended to provide a visual transition to the single and semi-detached houses in the neighbourhood, but this is hardly perceived from the residential side streets. The new building still looks like a nine storey building, directly adjacent two a storey house. (Refer to Fig. 1.9.) At the ground floor, where no rear laneway exists, drive aisles are created to provide vehicular access that interrupts the pedestrian traffic and this also minimizes amount of retail frontage. (Refer to Fig. 1.10.) These vehicular access points connect to rear laneways that provide access for the parking garage and loading dock, which are required for each new building and take up a substantial amount of space on the ground floor.

#### **1.1.4 CIRCUMSTANTIAL DEVELOPMENT & A VARYING URBAN FABRIC**

Although Toronto is laid out in a regular grid from the main streets to residential side streets, anomalies become apparent at the fine grain scale of the street. Irregular or non-orthogonal streets and the presence of community facilities including schools and places of worship often disrupt the grid. (Refer to Fig. 1.11, Fig. 1.12.) In developing secondary plans and zoning by-laws governing the built form of development in any neighbourhood in Toronto, it is important to understand that a general and overarching strategy for a large area requires enough embedded flexibility to work with anomalies to be an effective solution. The need to consider St. Clair Ave. W from Bathurst St. to Old Weston Rd. as a series of unique conditions was accounted for in the *Final Report for St. Clair Ave. W* by the City Planning Division, as City staff studied the street block by block, determining how to ensure that the building types proposed for these sites are



**Fig. 1.11** Anomalous Property Structure of St. Clair Ave. W

In the center block on the north side of St. Clair, a set up of walk up apartments are accessed off a private rear laneway (1). Two churches are located on south side of St. Clair, picture in each corner (2). A couple walk-up apartments can be accessed of the side street to the right of the center north block (3). Existing surface parking lots are also present along the avenue (4).



**Fig. 1.12** Anomalous Property Structure of St. Clair Ave. W

There is deviation from the typical grid of the side streets along St. Clair, producing abnormal blocks with different functions and zoning; a deep parking lot is zoned for commercial use in the top left corner (1), while there is a small parkette in the top right corner (2).

feasible.<sup>18</sup> Interestingly, they noted that an assembly of a single residential property would assist in conformance to the guidelines.<sup>19</sup> Feasible in the guidelines does not mean realistic.

Recent proposals for new developments along St. Clair Ave. W are for properties that are not typical of the overall street typology; they are often wide single lots and unusually deep which can result in buildings not representative of expected guideline-based development. Despite the detailed analysis conducted by the consultants, every building as land is assembled and building designed is a product of specific local circumstance in some way. If impossible to accurately predict the impact of development despite best intentions by consulting professionals in the study and drafting of guidelines. Even though the redevelopment on St. Clair Ave. W is in its early stages, a problem has already emerged in the case of a resident and the proposed development at 898 St. Clair Ave. W.

A resident in a single-detached house located a few properties north of St. Clair Ave. W, and their solar panels on their roof, are set to be cast in shade during peak hours.<sup>20</sup> While their complaint is about their access to light, the root of the problem is that the zoning by-law failed to fully account for the impact of new avenue development on neighbourhoods. The intention of *By-law No. 1103-2009* was to produce buildings that stepped back from the main street down to the residential neighbourhood north and south of St. Clair Ave. W. The specific noted problem is a product of local circumstance because the development is situated on one of the few properties on St. Clair Ave. W with a property zoned for commercial use to its rear which eliminated the need for the same angular plane restriction. It was located however, diagonally adjacent to the property with the solar panels. While this case is the product of a very specific set of circumstance, it occurred relatively early in the redevelopment of the avenue and highlights the potential for many more of these cases to arise despite thorough anticipatory planning studies. It also suggests the need to look more broadly at the effects of new developments on adjacent properties beyond direct adjacencies and illustrates the need to offer some flexibility in the distribution of building form to deal with unforeseen conflicts.

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<sup>18</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 16, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.

<sup>19</sup> Ibid.

<sup>20</sup> Michael Smee, “Throwing shade could cost developers, councilor says,” CBC News, October 12, 2017. <http://www.cbc.ca/news/canada/toronto/throwing-shade-should-cost-developers-councillor-says1.4350846>.

### 1.1.5 THE FEASIBILITY OF THE BUILDING TYPE

One main problem with the feasibility of actually building the typology set out on the guidelines is that it offers almost no flexibility in the distribution of mass. As new developments approach their maximum allowable FSI it can be very difficult to achieve given the angular plane restrictions which ultimately tend to be the real governing factor of height and bulk and more so on the north side of St. Clair Ave. W. For new buildings, numerous restrictions governing built form tend to overlap and lend themselves to producing highly prescribed buildings when they attempt to accommodate as much bulk as is allowed while respecting the angular plane.

Layering of restrictions also puts into question the scalability of the avenue typology beyond the current allowable density, since the angular plane restrictions limit the vertical scalability of the typology. There is some implied scalability of the typology in suggested in *Appendix H, Prototypical Sites to the Avenues and Mid-Rise Buildings Study*, but only as it relates to the depth of the property and the right-of way of the street.<sup>21</sup> Refer to Fig. 1.13, 1.14 which are two of four prototypical sites illustrated in the appendix. Each case study building for a larger street right-of-way is simply a slightly larger version of the previous case study. There exists no suggested solutions to possible vertical scalability.

The typical property structure along St. Clair Ave. W presents another problem in the *Avenues and Mid-Rise Buildings Study*. The study describes the ideal lot depth for a 30m right-of-way street such as St. Clair Ave. W as 45 m, yet the typical property structure for the avenue consists of lot depths equal to 31m.<sup>22</sup> For avenues the 45m ideal depth comes from the capacity to comfortably fit a 9 storey building while meeting the 45 degree angular plane restriction on the north side of the street. In practice, however, it illustrates the difficulty in prescribing a very specific type of building across an entire city. This contradiction between the study and actual urban property structure is recognized in the *Final Report for St. Clair Ave. W* by proposing the assembly of a single residential property to the rear of the avenue site to be included in assemblies for development for very specific sites to help comply with the angular plane restriction.<sup>23</sup>

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<sup>21</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Appendices*. (Toronto, 2010), A.88-A.92.

<sup>22</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 53, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>23</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 16, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.

While this current avenue building typology is not economically realistic for the density required for redevelopment to occur and be speculatively profitable (this will be discussed later), there is also the broader problem of a lack of recognition in the study of how buildings generally work in a building code framework in the establishment of these urban design guidelines. *Appendix H, Prototypical Sites to the Avenues and Mid-Rise Buildings Study* presents buildings as single massings without being realistic about how they are internally organized and function. The diagram for the 30m right-of-way building illustrates a design that is 37.1m deep (refer to Fig. 1.0). Given that the building would be organized as a double loaded corridor due to building code necessities and running parallel to the main street, 37.1m is beyond excessively deep to produce comfortable units with rooms with adequate access to natural light among many design problems. This body of architectural problems is not recognized since the total estimated units for the case study was likely derived simply by multiplying the Gross Floor Area (GFA) by an estimated floor plate efficiency, divided by an average unit size. The residential GFA estimated for the typical 30m right-of-way building was 6,884sqm. Assuming a 90% core efficiency and an average 80sqm unit across the building (this derived from project proposals submitted for development on St. Clair Ave. W), one gets 77 units. The estimated number of units presented in the Appendix is between 75-80.<sup>24</sup> (refer to Fig. 1.13)

The development of this avenue building typology appears to come from a long-standing European like vision by the City of Toronto for developing the avenues as streets lined with 6 storey medium density buildings. Since the 1970s, the St. Lawrence Neighbourhood and the 1990s Ataratiri project in today's West Don Lands area, the City has pressed an avenue vision inspired by European corridor street precedents, this despite the push for tower-based solutions favoured by the private sector. The avenue typology in the study emerges from the need to achieve this vision without necessarily drawing from conventional building typologies. Instead it creates one. In the study, planning principles guide the built form of buildings, not existing conventional building typologies. For the private land development industry, multi-storey buildings tend to function generically in two ways: with a centralized core for towers and a double loaded corridor with a distributed core. Problematically, these types shaped by building codes are made into workable formulae and are not considered enough in the development of this typology or vision for the street.

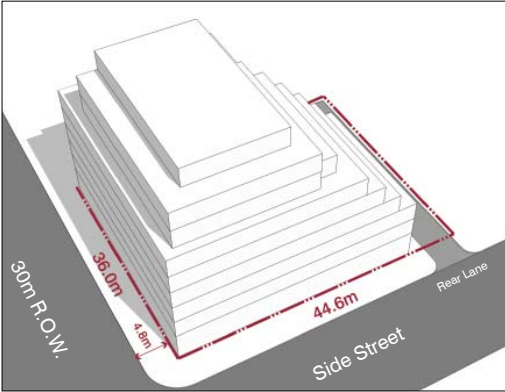
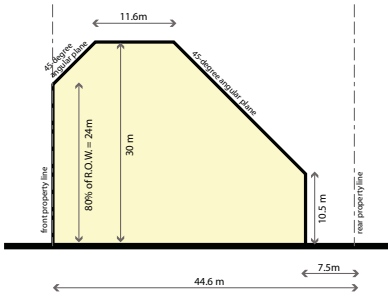
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<sup>24</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Appendices*. (Toronto, 2010), A.91.

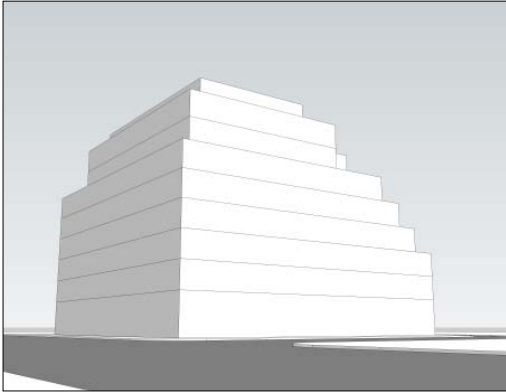
# Prototypical Site #3

## 30 metre R.O.W.

Site Info	
Lot Frontage	36 m
Lot Depth	44.6 m
Lot Area	1,605 sm
R.O.W. Width	30 m
Building Info	
Height	9 storeys, 30m + Mech. Penthouse
Residential GFA	6,884 sm
Retail-Commercial GFA	1,119 sm
Total GFA	8,003 sm
Density (FSI)	4.99
Number of Suites	± 75-80
Number of Parking Spaces	± 44/level
Parking Levels	1.5 - 2 levels below grade



Aerial view



Street-level view from opposite R.O.W.

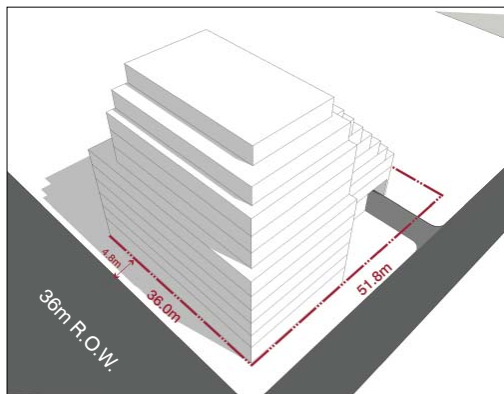
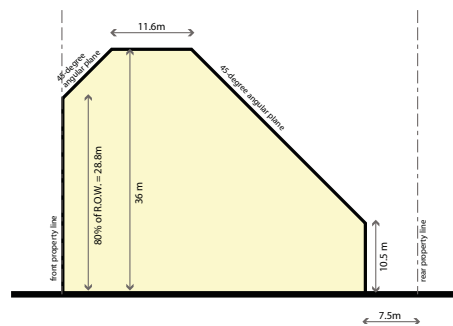
**Fig. 1.13** 30m Right-of-Way Prototypical Site

There were four prototypical sites presented in the Appendices which was based for four different street right-of-way widths: 20m, 26m, 30m and 36m, and their respective ideal lot depths. Only sites #3 & #4 (next page) are included here. The prototypical site for a 30m right-of-way site is illustrated as just a building mass. Any unit calculations are derived from considering the building area and not the internal organization of the building.

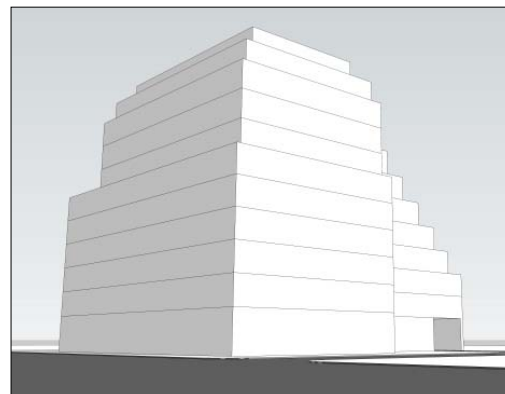
# Prototypical Site #4

## 36 metre R.O.W.

Site Info	
Lot Frontage	36 m
Lot Depth	51.8 m
Lot Area	1,865 sm
R.O.W. Width	36 m
Building Info	
Height	11 storeys, 36m + Mech. Penthouse
Residential GFA	8,975 sm
Retail-Commercial GFA	1,236 sm
Total GFA	10,211 sm
Density (FSI)	5.48
Number of Suites	± 100-105
Number of Parking Spaces	± 52/level
Parking Levels	2 levels below grade



Aerial view



Street-level view from opposite R.O.W.

**Fig. 1.14** 36m Right-of-Way Prototypical Site

The prototypical site for a 36m right-of-way building begins to understand that the building would need to be organized as an L shape, but for the most part, continues to consider the building as just a building mass, and is simply scaled up from the 30m right-of-way building.

### 1.1.6 SUMMARY

While the current zoning by-law could immediately produce some small problematic relationships through unforeseen adjacencies such as primary setback windows facing blank facades 5.5m away or overshadowing, two larger issues emerge. The first is that by the Ontario *Planning Act*, zoning by-laws that govern street character and built form are not designed or legally allowed to place requirements on the interior layout of buildings.<sup>25</sup> There is however, an inherent relationship between the building's internal layout and the external form of a building, one which becomes more apparent as buildings reach their maximum allowable FSI . More importantly, the second issue is that the inflexible nature of the by-law prevents the typology from being able to manage future growth that is needed to accommodate redevelopment on St. Clair Ave. W. Guidelines for buildings along this stretch of street need to prepare to handle more density for three reasons:

1. The City of Toronto's Committee of Adjustment, likely with support from planning staff are currently approving greater densities on sites on St. Clair Ave.<sup>26</sup> W. The *Provincial Policy Statement* and adjacent properties with greater height allowances are cited as justification and precedents for these approvals of greater density and solve the great need for urban housing. If it is very difficult to develop in the neighbourhood streets, which is why there is a need for the avenues to take up the need for growth in the City's housing stock.
2. Many properties, especially the smaller ones, on St. Clair Ave. W are already being used for their highest present value, making redevelopment not financially feasible. While the long-term plan for growth along the City's avenues is incremental, and these more established buildings don't need to be immediately redeveloped (compared to empty lots), in the long-term plan greater densities or intelligent assembly will be required to justify redevelopment on many sites.
3. This section of St. Clair Ave. W has many character buildings (not all with historical designations) that should be preserved and saved from demolition. These properties should be able to transfer their development

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<sup>25</sup> Planning Act, R.S.O. 1990, c. P.13, s. 40, (4.1).

<sup>26</sup> Multiple Notices of Decision by the Committee of Adjustment for different projects were available, but only the Notice of Decision for 840 St. Clair Ave. W was cited here for ease; City of Toronto, City Planning Division, Standing Committee of Adjustment, *Notice of Decision for 834-840 St Clair Ave W*, (Toronto, June 13, 2018), 2, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.



rights along the street to other properties, and other properties should have the capacity to accept more density to allow a character building to capture its redevelopment value without being demolished.

In its proposal for an expanded urban intensification strategy for St. Clair Ave. W, this thesis proposes the assembly of residential properties to the rear of main street properties on St. Clair Ave. W. Those rear buildings on the existing side street residential fabric to the rear of the avenues would be developed as low mid-rise buildings between 4 to 6 storeys. The main street building could then be developed with a narrower frontage and a smaller floor plate through the transfer of density and granting of additional height to produce a financially feasible and denser residential project. The thesis proposal accepts the uneven development that will emerge through the re-urbanization of the avenue and that there will be difficulty in unifying the built form of buildings across St. Clair Ave. W. However, the thesis facilitates more economically viable development which is greatly needed along the avenue.

The thesis begins with a review of the long-standing efforts by the City of Toronto to encourage redevelopment of main streets which can be traced back to studies in the 1990s. Recent major transit investments across the city and specifically along St. Clair Ave. W support provincial goals of urban intensification of cities in order to accommodate future growth in the Province of Ontario. The current building typology that has emerged through these redevelopment efforts is at the limits of its capacity to accept density, especially residential density. Pushing such limits produces difficult building layouts, but more importantly limits overall redevelopment efforts by making intensification projects economically unfeasible. In response, this thesis presents a new set of urban design guidelines and strategies for redevelopment along St. Clair Ave. W that are possible through the intelligent assembly of residential properties. The thesis-based guidelines also include limiting the vehicular access to the site to rear laneways and suggestions of consolidation of servicing requirements. Avoiding parking and service entrances off St. Clair Ave. W improves the streetscape and flexibility of the commercial space at grade. These guidelines in the thesis are also developed considering private sector building typologies in Toronto and illustrates them through six different sites along the street. An image of how this development could unfold across a variety of sites is provided through development diagrams and streetscape images.

There is no perfect solution to managing the necessary growth of Toronto along its avenues and managing the impacts on adjacent neighbourhoods. At the basis of *By-Law No. 1103-2009* are trade-offs such as the privileging and prioritizing of

certain criteria over others. The City's attitude towards the protection of Toronto's neighbourhoods is explicitly stated in the *Toronto Official Plan*.<sup>27</sup> In the plan, the City is highly concerned with the encroachment of the development on St. Clair Ave. W onto the surrounding neighbourhoods. Any visual or overshadowing impacts from these developments is going to be a problem, noting in *Final Report for St. Clair Ave. W* that physical encroachment of more than a single residential lot is unacceptable.<sup>28</sup> Much of the constraining of new built form occurs on the north side of St. Clair Ave. In general, the current guidelines for redevelopment also do not adequately develop buffer zones between the main street and residential fabric. Providing rear angular plane restrictions to transition from the main street to the neighbourhood does not change the fact that a two-storey detached house will be directly adjacent to a nine storey building. The present guidelines are centered around the protection of neighbourhoods and simply mitigating any impact onto them, even though this may only affect a few residents. Amenities of urban intensification including improved streetscapes, higher quality retail and priority transit lines are absolutely needed for the City as it makes a transition to a city with substantial and desirable new buildings on its avenues, streets are needed to house an ever increasing urban population. The redevelopment of the avenues should be considered an opportunity to re-urbanize the entire neighbourhood together as a whole, and not just a street.

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<sup>27</sup> City of Toronto, City Planning Division, *Toronto Official Plan*, (Toronto, 2015), 1.1, 2.1, <https://www.toronto.ca/wp-content/uploads/2017/11/99b3-cp-official-plan-volume-1-consolidation.pdf>.

<sup>28</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 16, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.





2

## **BACKGROUND REVIEW**

## 2.1 ORIGIN & DEVELOPMENT OF THE AVENUE TYPOLOGY

### 2.1.1 HOUSING ON MAIN STREETS INITIATIVE & ATARATIRI: BUILDING AND BLOCK STUDY

The City of Toronto initiated studies aimed at encouraging redevelopment along the avenues in Toronto in the early 1990s with the publishing of a series of reports including *The City of Toronto's Housing on Main Streets Initiative Implementation (Housing on Main Streets Initiative)* of 1991<sup>1</sup> and *Housing on Toronto's Main Streets Economic Feasibility* of 1990. The *Housing on Main Streets Initiative* proposed a streetscape of generally five storey buildings, a vision drawn from a typical European city's fabric. The report outlined targeting small and medium scale developers, suggesting that individual property owners could redevelop their own properties. Also proposed was a system of modifiers, such as additional height on corners of main intersections that could allow a building up to seven storeys.<sup>2</sup>

Variations in the type and form of the building that could be built were offered, refer to Fig. 2.1. Building types suggested included a combination of single and double loaded corridors with possible at grade and walk-up units for family based units, refer to Fig. 2.2. An angular plane restriction of 45 degrees from the rear property line was added to maintain adequate sunlight and privacy to the neighbourhoods.<sup>3</sup> (Refer to Fig. 2.3) This drew from the *Sun, Wind, and Pedestrian Comfort* study (1991), where a 44 degree angular plane restriction on a building on the south side of an east-west street was outlined to guarantee the street five hours of sun during the equinoxes.<sup>4</sup> The angular plane restriction developed with an existing typology of buildings and at a low enough density which allowed for flexibility in the distribution of building bulk and made it manageable with how

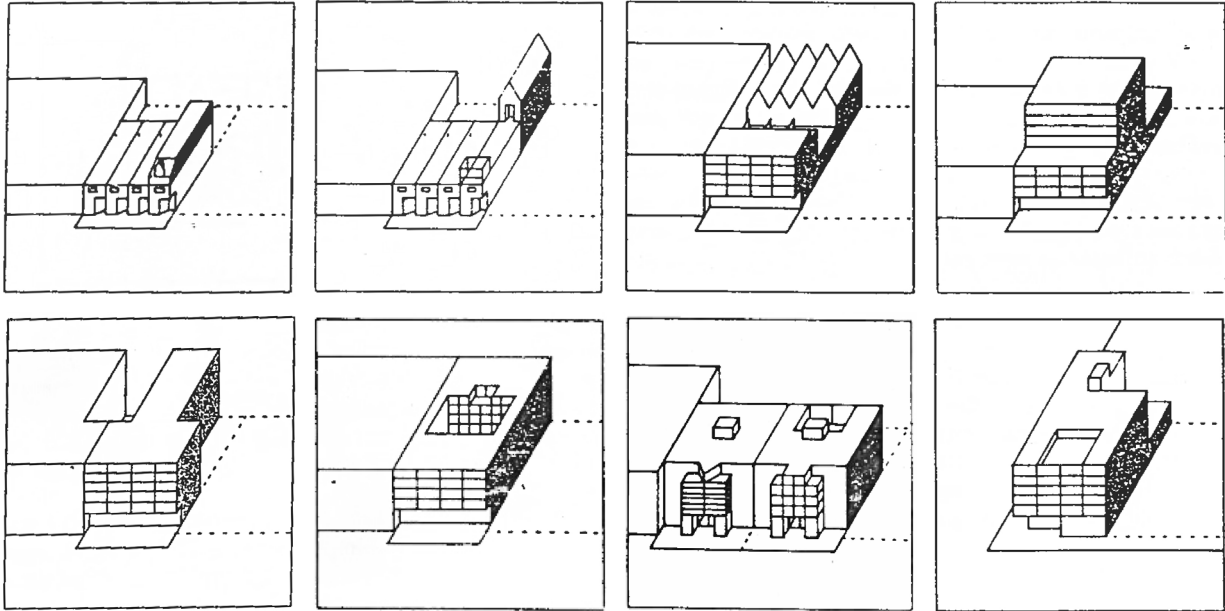
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<sup>1</sup> This document contains 4 sections: *Building on Main Streets, Housing on Main Streets Initiative, Parking Strategy for Housing on Main Streets* and *Principles and Proposed Strategy for implementing the Main Streets Initiative*, but will be referred to broadly as *Housing on Main Streets Initiative* in this thesis; Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative*, (Toronto: City of Toronto Planning and Development Dept., 1991).

<sup>2</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Building on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 11-14.

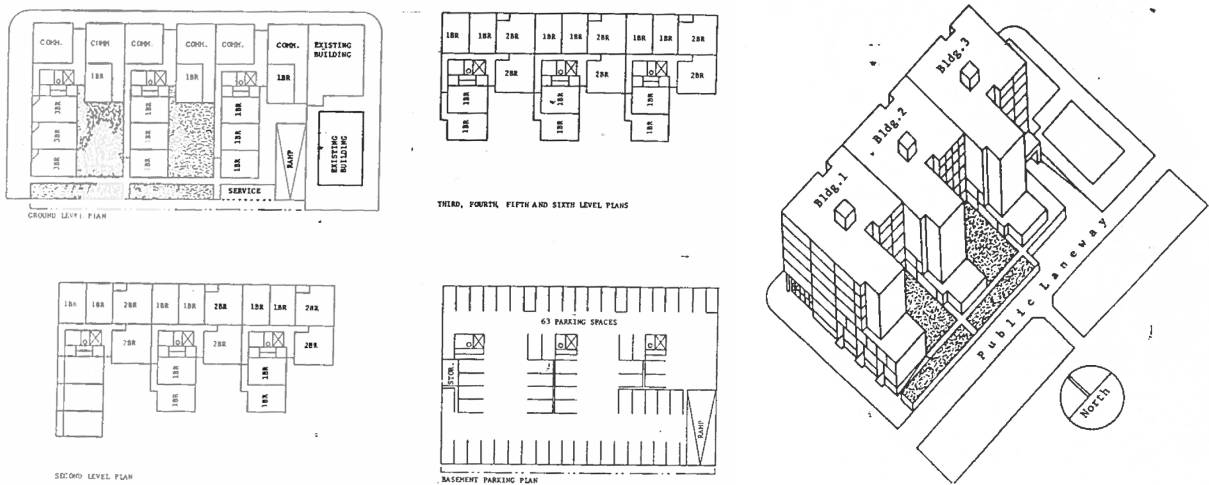
<sup>3</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Housing on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 36.

<sup>4</sup> E. Arens, P. Bosselmann, K. Dunker, R. Wright, and City of Toronto Planning and Development Dept., *Sun, Wind, and Pedestrian Comfort: A Study of Toronto's Central Area*, (Toronto: City of Toronto Planning and Development Dept.), 1990, 103-112.



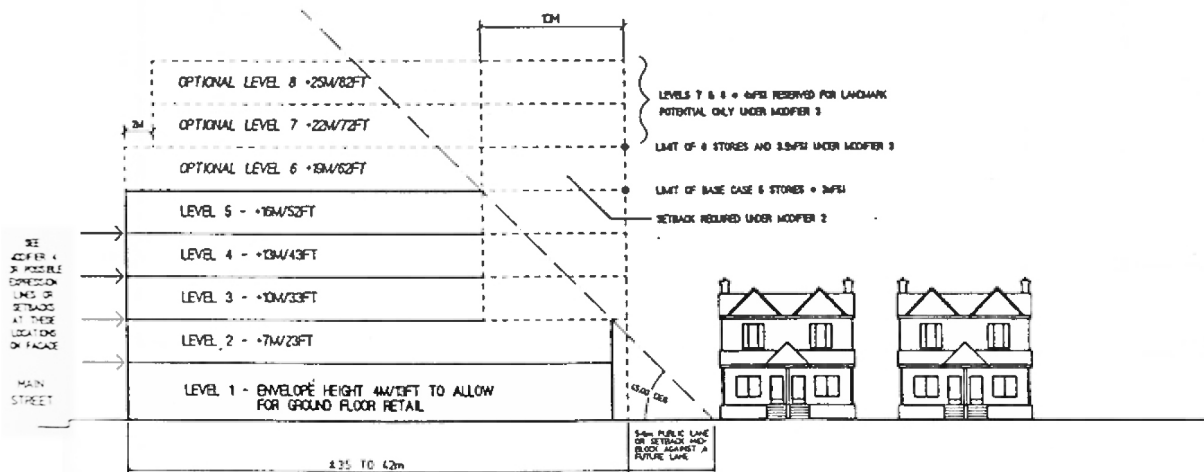
**Fig. 2.1** Varying Proposals for Main Street Building Types

Varying proposals for different building types that could be accommodated on the main streets considered building types that promoted the creation of through unit types. The building type that could be accommodated based varying property frontages was also considered.



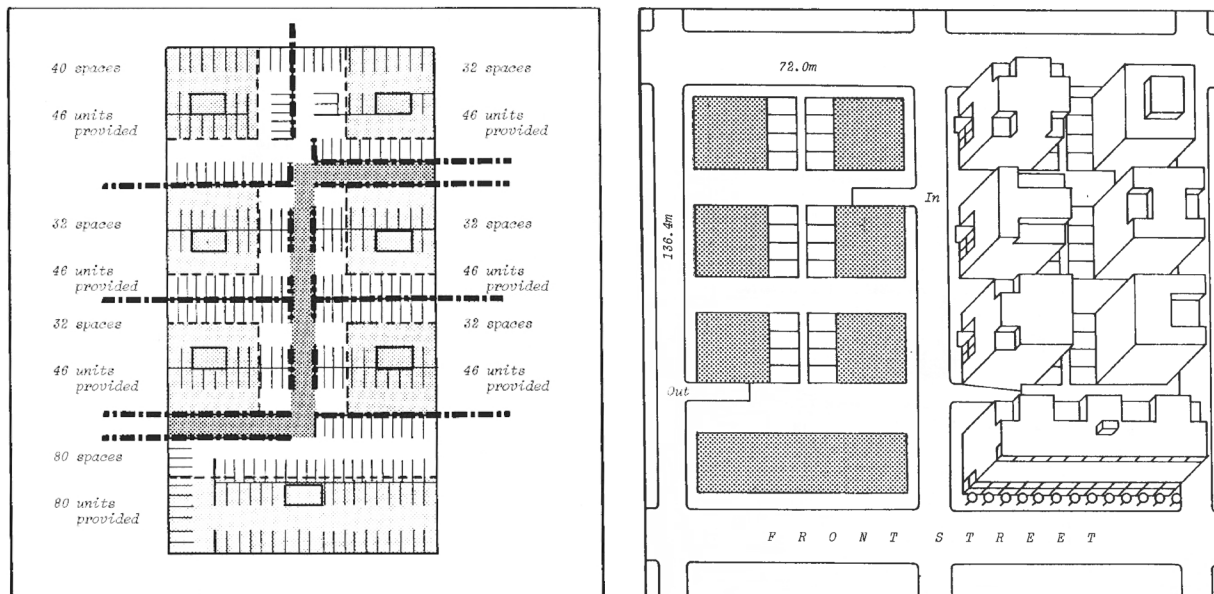
**Fig. 2.2** A Proposed Building Type for Main Streets

A proposed building type for the main streets includes a single and double loaded corridor, producing an L shape building that could accommodate up to seven storeys within the 45 degree angular plane. The proposed building type includes diagrammatic drawings illustrating an internal organization of this proposal.



**Fig. 2.3** The 45 Degree Angular Plane Proposed in the *Housing on Main Streets Initiative*

The 45 degree angular plane is proposed in the *Housing on Main Streets Initiative* and is located at the rear residential property line. The proposed building type's envelope complies with the restriction, but is not a literal translation of it.



**Fig. 2.4** A Proposed Block Configuration in the *Ataratiri: Block and Building Study*

The entire block would be served by two entrances (on opposite streets) to a consolidated underground parking garage, with separate parking areas for the building above served by a common laneway.



such buildings function internally. Laneways for providing access to the buildings, and completing unfinished laneways systems through redevelopment where they existed, was also noted. The *Housing on Main Streets Initiative* was focused on incremental development and avoiding large scale redevelopment to maintain the fine grain scale of the existing streetscape, especially the frontage of shops. Here the reports stated that they were not in favour of slab apartment buildings.<sup>5</sup>

What emerged, however, from the development pressures for more density over time was a literal translation of the envelope restriction into the external form of building at a slightly larger scale in order to maximize the density that could be accommodated within the angular plane. While density could be scaled up, the interior layout was not scalable beyond a certain density. A shift in the interior layout of the building proposed by the *Housing on Main Streets Initiative* was required to efficiently organize the additional bulk in a double loaded corridor slab building type.

The *Housing on Main Streets Initiative* also looked at the City of Toronto's parking requirements as a barrier to redevelopment and suggested limiting them to 0.75 and 0.5 spaces for two-bedroom plus units and one-bedroom units respectively based on the *Housing on Main Streets Residential Parking Study* by Marshall Macklin Monaghan Limited.<sup>6</sup>

The *Ataratiri: Building and Block Study* of 1990 for the redevelopment of the West Don Lands in Toronto consists of a series of studies for redevelopment at the scale of an urban block because there was no real developed existing fabric to negotiate. This was not possible in the *Housing on Main Streets Initiative*. While the block studies have less relevance to the avenues of Toronto which are geared towards incremental development, it does present ideas of consolidation of servicing and parking, and limiting vehicular access. The proposed building case studies in the *Ataratiri* study all illustrated an entire block being serviced by two entrances on opposite streets, refer to Fig. 2.4. A consolidated underground parking garage was divided into sections that were serviced by a common laneway through. This would then serve multiple buildings. The project proposals illustrate an existing discussion of consolidation in the City of Toronto, that could be applied to developments with an existing fabric and translated to a smaller scale.<sup>7</sup>

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<sup>5</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Housing on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 31.

<sup>6</sup> *Ibid*, 45.

<sup>7</sup> Michael Spaziani, and Steven Fong, *Ataratiri: Building and Block Study* (Toronto: City of Toronto Housing Dept., 1990), 150-163.

## 2.1.2 AVENUE & MID-RISE BUILDING GUIDELINES

The updated plan for the re-urbanization of Toronto's avenues in the *Avenues and Mid-Rise Buildings Study* maintains the same European vision desired by the City of Toronto, effectively scaling up the building design guidelines developed in the 1990s. (Refer to Fig. 2.5.) The angular plane restriction in the current guidelines originates from the *Housing on Main Streets Initiative* and could be accommodated with the building types proposed including their external form and how they functioned. The guidelines proposed by the *Avenues and Mid-Rise Buildings Study* effectively scales up the guidelines from the 1990s literally into the final building form. However, unlike the studies from the 1990s, the *Avenues and Mid-Rise Buildings Study* does not illustrate how the new avenue building type is organized. (Refer to Fig. 2.6.) This new type can only really be organized as a double loaded corridor to accommodate the maximum density. The principles of guidelines are borrowed from the past, but the building types are different. The angular plane restriction has been carried through in the development of the avenue building typology without a careful recognition that the functional layout of buildings implied by the new guidelines are different than from the previous zoning.

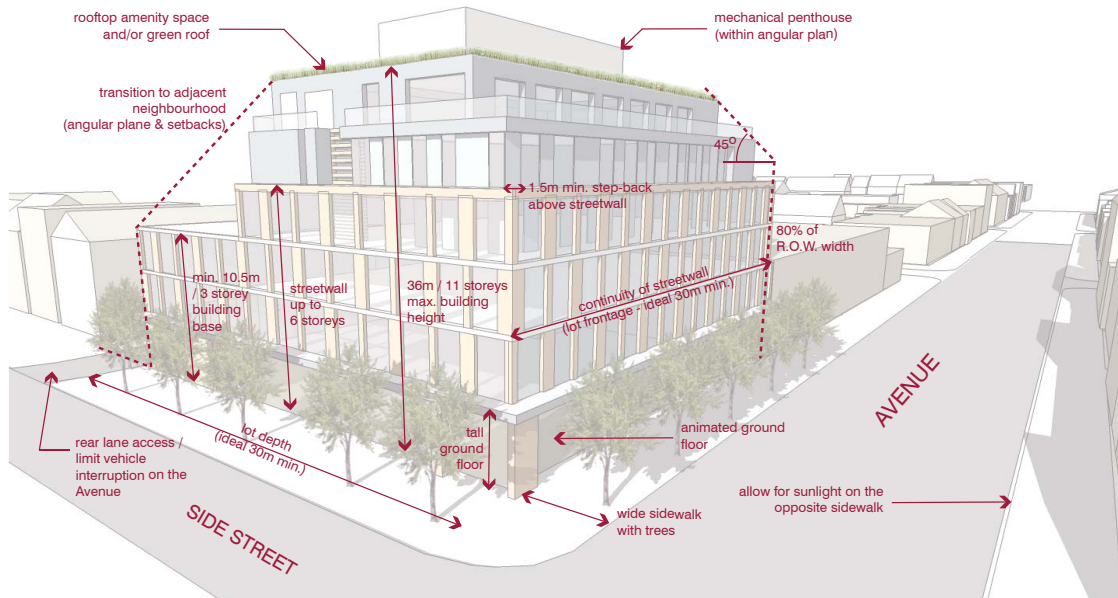
While the intention of the *Avenues and Mid-Rise Buildings Study* guidelines is to continue to promote incremental development<sup>8</sup>, the policy that emerged from the *Housing on Main Streets Initiative* took the fine grain characteristic of the existing urban fabric into account by limiting redevelopments to 25m in street frontage.<sup>9</sup> This has increased to require a minimum of 30m of street frontage to develop a building to its allowable height in *By-law No. 1103-2009*, otherwise limiting it to a maximum of 5 storeys, which was the maximum allowed under the previous by-law.<sup>10</sup> Larger scale redevelopment is now encouraged and it will likely now be medium and large scale developers responsible for the re-urbanization of the avenues. The significant increase in allowable density between the zoning policy that emerged from the 1990s and the updated zoning by-law for St. Clair Ave. W in 2009 (from 3 to between 4 – 5.5 FSI) didn't necessarily require a larger

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<sup>8</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 4, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

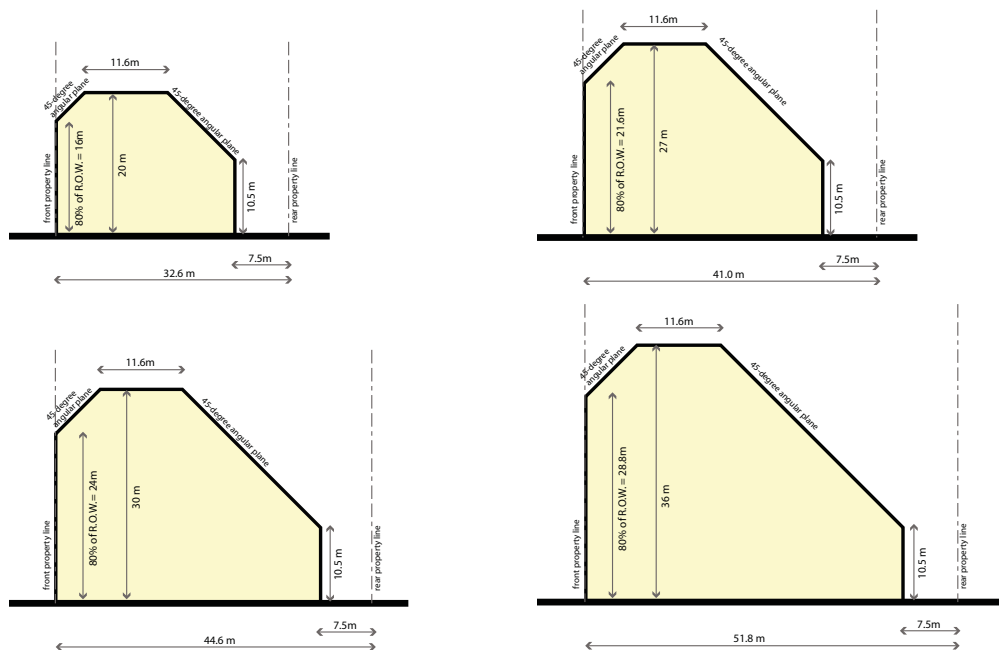
<sup>9</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Building on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 39.

<sup>10</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 4, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.



**Fig. 2.5** Diagram of the Ideal Building in the *Avenues and Mid-Rise Buildings Study*

The typical mid-rise building desired by the city is often represented at height of 6 to 7 storeys, on streets with narrower right-of-ways than St. Clair Ave. W.



**Fig. 2.6** *Avenues and Mid-Rise Buildings Study* Avenue Building Diagram

The scalability of the building guidelines in the *Avenues and Mid-Rise Buildings Study* presents buildings as simply envelopes, without addressing the typical internal organization of the buildings.

rethinking of building typology. There was already some flexibility in the building envelope guidelines produced by the *Avenues and Mid-Rise Buildings Study* to allow this increase in density. However, even more density will be required to make new development more economically viable today. This typology needs to be revised because the density has already been maximized to the limits of the envelope restrictions and cannot be simply scaled up.

### **2.1.3 FINAL REPORT FOR ST. CLAIR AVE. W & BY-LAW NO. 1103-2009**

The *Final Report for St. Clair Ave. W* consolidated the ideas from two consultant reports for St. Clair Ave. W between Bathurst St. & Old Weston Rd. into measurable factors such as setbacks and building heights that were then used to govern the built form through a zoning by-law. This allowed for the specific identification of height limits, density limits, etc. for each property, but left out the broader and more difficult to measure suggestions related to architectural and street character. Since the early findings from the *Avenues and Mid-Rise Buildings Study* informed the built form desired for the avenues, the zoning *By-law No. 1103-2009* that emerged from *The Final Report for St. Clair Ave. W* is almost identical to the guidelines presented in the study. However, the by-law is far more explicit and detailed in the break down of height and density limits. Despite the efforts by consultants and planning staff to account for the actual property structure and existing site in their reports, the process involved making this relatively prescriptive typology developed by the *Avenues and Mid-Rise Buildings Study* guidelines feasible for new development on St. Clair Ave. W.<sup>11</sup>

The *Avenues and Mid-Rise Buildings Study* addressed providing vehicular access to constrained sites, noting the importance of limiting mid-block vehicular access to improve the quality of the pedestrian realm.<sup>12</sup> However, *By-law No. 1103-2009* can be more explicit stating that there should be no midblock vehicular access where there is an existing rear laneway or side street.<sup>13</sup> On St. Clair Ave. W this is more of a concern mostly for E-W oriented blocks where numerous mid-block avenue properties do not have access to a rear laneway. Realistically, directing all

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<sup>11</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 16, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.

<sup>12</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 86-89, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>13</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 10, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

vehicular traffic to laneways is problematic for E-W mid-block properties because the existing laneways are very narrow and often not continuous through a block. As a result, any new redevelopment of mid-block properties will require a drive aisle through the sidewalk. While the intentions of the planning staff and consultants are good, they do not take the opportunity to provide a plan that could further limit this problematic street condition.

While the *Avenues and Mid-Rise Buildings Study* guidelines aim to provide an adequate transition from the avenue building to the residential properties, *By-Law No. 1103-2009* makes two acceptances to allow for more building bulk. First, the *Final Report for St. Clair Ave. W* introduced the idea of a 60 degree angular plane for the south side of the street.<sup>14</sup> This was instead of the universal 45 degree angular plane suggested in the *Avenues and Mid-Rise Buildings Study*. The lower angle was not necessary since there be no overshadowing, but an angular plane was still desired to transition to the neighbourhood. Second, the *Avenues and Mid-Rise Buildings Study* guidelines suggested a minimum 10m setback for primary windows facing the neighbourhood but was reduced to 7.5m in *By-Law No. 1103-2009*.<sup>15</sup>

#### 2.1.4 EXISTING CONDITIONS OF DEVELOPMENT IN TORONTO

Both the *Housing on Main Streets Initiative* and the *Avenues and Mid-Rise Buildings Study* both cited the development approvals process in Toronto and the minimum parking requirements as two barriers to redevelopment in each report.<sup>1617</sup> The parking ratios were modified in response to the suggestions offered by the *Housing on Main Streets Residential Parking Study* in the 1990s, but were not modified following the suggestion to reduce them where an avenue is supported by a high level of transit in *Section 4: Recommendations* in the *Avenues and Mid-Rise Buildings Study*.<sup>18</sup>

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<sup>14</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 41-42, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.

<sup>15</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 5, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

<sup>16</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Housing on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 25, 28.

<sup>17</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 105, 108-111, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>18</sup> Ibid.

One the goals of the *Avenues and Mid-Rise Buildings Study* was to create guidelines that could be turned into updated zoning by-laws that would allow for as-of-right development. The expectation was that this would encourage mid-rise redevelopment on avenues by speeding up the approvals process.<sup>19</sup> In addition to these goals, the consultants from both the current study and the study in the 1990s had suggested modifications to streamline and speed up the review process.<sup>20</sup> The *Avenues and Mid-Rise Building Study* also suggested setting up a team from the City to specifically help mid-rise development applications to further accelerate and encourage this kind of development.<sup>21</sup> The *Housing on Main Streets Initiative* noted in the report that some changes to the development review process were made at the time the document was published.<sup>22</sup> However, the suggestions from the *Avenues and Mid-Rise Buildings Study* did not translate into any notable changes in the development review process in the City of Toronto. Despite the efforts to update the zoning to allow for seven to nine storey as-of-right buildings on St. Clair Ave. W, a review of the current proposals on St. Clair Ave. W notes that almost all were not designed completely as-of-right. As a result they had to either go through at least a Committee of Adjustment meeting and in some instances and application for rezoning or a hearing with the Ontario Municipal Board (OMB).<sup>23</sup>

The need for some variances from the zoning by-laws in a development proposal, along with the current parking ratios and development review process is simply acknowledged as the existing condition of development in the City of Toronto in this thesis. Reiterating the same types of suggestions from previous reports is unlikely to translate into any changes today if it has not significantly done so already. Therefore, this thesis focuses on building typology and property

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<sup>19</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 105, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>20</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Housing on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 25.

<sup>21</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 108-109, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>22</sup> Berridge Lewinberg Greenberg Ltd., Steven Fong Architect, and City of Toronto Planning and Development Dept., *The City of Toronto's Housing on Main Streets Initiative: Housing on Main Streets*, (Toronto: City of Toronto Planning and Development Dept., 1991), 25.

<sup>23</sup> City of Toronto, City Planning Division, Standing Committee of Adjustments, *Notice of Decision for 898-900 St Clair Ave W*, (Toronto, May 18, 2017), Item 15. [https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C\\_of\\_A\\_Etobicoke\\_York\\_May\\_18\\_2017.pdf](https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C_of_A_Etobicoke_York_May_18_2017.pdf).

assembly to encourage and facilitate economically feasible re-urbanization of the Toronto's avenues.

## 2.2 CURRENT REDEVELOPMENT ON ST. CLAIR AVE. W

### 2.2.1 APPROVAL OF MINOR VARIANCES

While there are only two new avenue buildings, there are a handful of proposed projects (fewer built) on both sides of the St. Clair Ave. W. Each are at varying stages of approval, some under review for site plan approval, while others are at the Ontario Municipal Board. Almost all these proposals requested variances to at least conformance with the building envelope restrictions, height or density limitations.

Two proposals for new developments on St. Clair Ave. W are 840 and 898 St. Clair Ave. W which are located around the intersection with Winona Dr. Notices of decision by the Committee of Adjustment to the applications for the approval of a list of minor variances by both new developments highlights significant increases in density granted by the Committee of Adjustment. 898 St. Clair Ave. W is not a typical mid-rise building by the city's definition, because it was allowed to be 12 storeys as-of-right and did not require the same angular plane restrictions because the property to the rear is zoned for commercial use.<sup>24</sup> This development was granted an additional 1 FSI (from 5 to 6.04) for residential floor area by the Committee of Adjustment.<sup>25</sup> Although the guidelines for this unique site allowed the additional building bulk to be accommodated within the more flexible envelope restrictions. 840 St. Clair Ave. W is a building that will be typical of the intended built form of avenue buildings, although it is not completely as-of-right. An additional 0.83 residential FSI was requested and granted through the Committee of Adjustment along with variances to the building's conformance with the height and angular plane restrictions as the additional FSI requested could not otherwise fit within the envelope restrictions.<sup>26</sup> While the granting of significant extra density should raise questions about the role of the Committee of Adjustment, and 1 FSI as a minor variance, what's critical to this thesis is that significant bumps in density are being approved along St. Clair Ave. W.

Both cases illustrate an acceptance of more when it comes to new development by the City of Toronto. While this can be problematic, this thesis understands and accepts this as a fact of redevelopment in Toronto and something

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<sup>24</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 5, 7, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

<sup>25</sup> City of Toronto, City Planning Division, Standing Committee of Adjustments, *Notice of Decision for 898-900 St Clair Ave W*, (Toronto, May 18, 2017), Item 15. [https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C\\_of\\_A\\_Etobicoke\\_York\\_May\\_18\\_2017.pdf](https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C_of_A_Etobicoke_York_May_18_2017.pdf).

<sup>26</sup> City of Toronto, City Planning Division, Standing Committee of Adjustment, *Notice of Decision for 834-840 St Clair Ave W*, (Toronto, June 13, 2018), 1, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.



that should be able to be accommodated within the guidelines and zoning by-laws that govern built form. The above projects are granted the additional density because they are consistent with the broader planning goals of the City and Province as outlined in the *Toronto Official Plan* and *Provincial Policy Statement*. A reason for the incremental economic push or pressure to increase allowable densities on a property comes from the fact that Committee of Adjustment allows it. Given that precedents also play heavily into cases supporting greater densities, either through the Committee of Adjustment or the rezoning process, this ultimately produces a positive feedback loop. The Ontario *Planning Act* sets out the allowance rezoning applications only two years after an area has been rezoned.<sup>27</sup> This allows plans to become quickly outdated and can support the push for increased density.

The granting of additional density can be seen as problematic, but it is impossible to keep the *Toronto Official Plan* and secondary plans perpetually up-to-date. Therefore, proposed developments that require official plan amendments and/or zoning by-law exceptions can be quite reasonable, so the planning mechanisms that allow increased density are not inherently problematic. It is important to anticipate that there will be continual pressures for additional density in any plan.

This thesis acknowledges that the speculative value of a property changes from site to site and from developer to developer. While some developments may comfortably proceed with an as-of-right proposal, others may request for amendments and exceptions. The Committee of Adjustment and other planning authorities are likely to accept them to some degree on the grounds they represent good land-use planning and generally align to the *Toronto Official Plan* and guidelines. In response, flexibility is needed in building design guidelines to meet the intensification goal of re-urbanizing St. Clair Ave. W in accordance with the *Toronto Official Plan* and the *Provincial Policy Statement*.

## **2.2.2 ABNORMAL DEVELOPMENT – PROPERTY STRUCTURES & ECONOMY FEASIBILITY**

There are currently two mid-rise buildings that have been constructed on St. Clair Ave. W. One is located at 829 St. Clair Ave. W and the other is located at 743 St. Clair Ave. W which was exempted from the zoning *By-law No. 1103-2009*. The new building had already gone through the rezoning process at the time the new by-law was enacted, although its urban form is aligned with the principles of the by-law. However, both projects are located on the south side of St. Clair Ave. W, where the 60 degree angular plane restriction is required instead of the

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<sup>27</sup> Planning Act, R.S.O. 1990, c. P.13, s. 34, (10.0.0.1).

45 degree angular plane applied to the north side of the street. This offered the projects more flexibility in accommodating the allowable density on the site.

In addition to the two built projects, all the proposed projects do not represent typical redevelopment of St. Clair Ave. W because they have been built on assemblies of atypical properties that are significantly wider and often deeper. (Refer to Fig. 2.7.) Two proposed projects, 1771 and 1779 St. Clair Ave. W lie within the same area, on the south side of St. Clair Ave. W under *By-law No. 1103-2009*, but are not actually included in it.<sup>28</sup> However, both proposed projects consistent with the guidelines in the *Avenues and Mid-Rise Buildings Study*. While these projects do conform to the envelope guidelines, they are a little larger in height and FSI than comparable properties on St. Clair Ave. W nearby that are covered by By-law No. 1103-2009. 1779 St. Clair Ave. W is an 11 storey proposal at 5.1 residential FSI<sup>29</sup> while the next closest property zoned by *By-Law No. 1103-2009* is located on the south side of the street, three blocks to the east and zoned for 9 storeys and 4.5 residential FSI.<sup>30</sup>

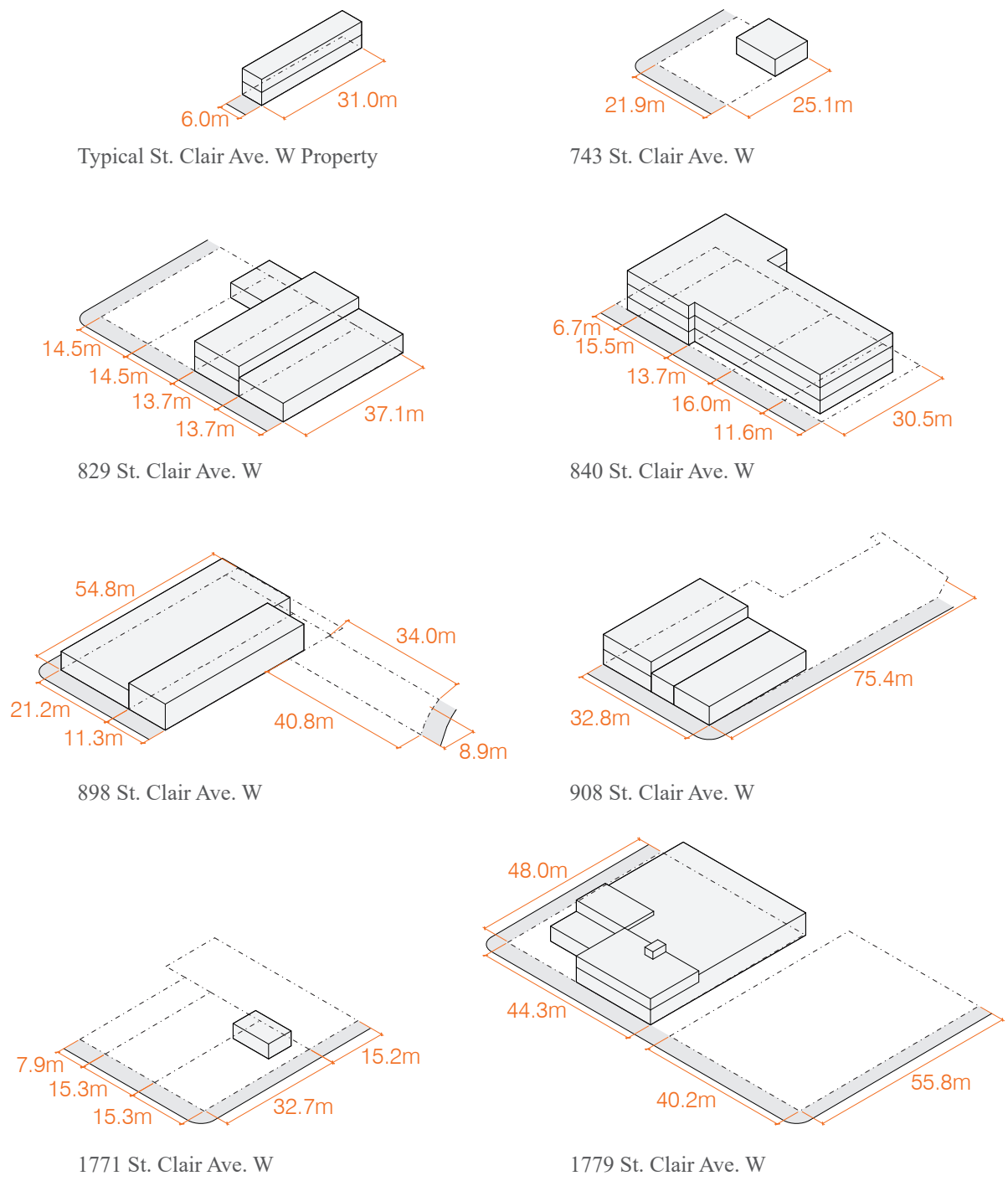
The larger atypical properties of St. Clair Ave. W assembled for redevelopment are more attractive because they reduce assembly time and cost, and deeper sites also tend to offer more allowable building area. A redevelopment of typical St. Clair Ave. W properties would require an assembly of at least five two to three storey narrow main street properties to meet the minimum 30m of street frontage required. All the built or proposed projects to date are assembled from properties that previously contained only single or two storey buildings, with surface parking lots. The properties had a much lower existing use value than typical properties on St. Clair Ave. W. This makes development more economically viable. For any redevelopment to happen, the redevelopment value of the property needs to be greater than its current use value, otherwise nothing will happen. The easy sites that are larger and have low current use values are always going to be the first to be developed. This is expected and desired by the City in order to begin re-urbanizing the avenue. With the exception of 1771 & 1779 St. Clair Ave W. which had no great previous use value beyond surface parking, all the other projects are pushing the limits of the density capacity of the avenue building typology. If

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<sup>28</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 17, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

<sup>29</sup> SMV Architects, *Proposed Mixed Use Development at St. Clair Ave. and Ford Street: 1779 - 1791 St. Clair Avenue West, Toronto, ON*. (Toronto, 2017), A.101, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

<sup>30</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 21, 25, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.



**Fig. 2.7** The Existing Buildings on St. Clair Ave. W Properties Assembled for Redevelopment  
 All the properties assembled for current of built proposals for redevelopment on St. Clair Ave. W were larger than the typical St. Clair Ave. W lot and had significantly lower current use values.

these unique property assemblies already require the maximum density possible to justify redevelopment, the redevelopment of typical avenue properties is likely going to cost more money and require greater densities. This is why there aren't any proposals to redevelop typical St. Clair Ave. W properties and why they are not likely to be any.

The current building guidelines have become outdated by a need for greater density than the building typology can accommodate. The guidelines need to be revised to plan for long-term re-urbanization efforts. The lack of a typical new development on St. Clair Ave. W also highlights the atypical characteristics that exist along the street. The approach to urban design guidelines needs to not only handle additional density but should also offer flexibility in the distribution of building area across a range of varying sites.



## 2.3 IMPLICATION OF GUIDELINES ON BUILDING LAYOUT

### 2.3.1 GROUND FLOOR

Multi-storey residential buildings have numerous space requirements on the ground floor required for the functioning of the building including lobbies, waste rooms and parking ramps. The current zoning *By-Law No. 569-2013* for entire City of Toronto also requires the provision of both a type G loading space for collecting waste from the residential units and a type B loading space for serving the commercial space at grade.<sup>31</sup> This requirement for two loading spaces has generally been reduced to one single type G loading space through the Committee of Adjustment.<sup>32</sup> All of these space requirements on the ground floor also tend to require a large and fixed amount of space, which limits the flexibility in the distribution of the rest of the free space on the ground floor, especially on smaller sites. *By-law No. 1103-2009* also requires developments to provide a large rear setback to allow for a wider laneway, which further reduces the amount of space on the ground floor.<sup>33</sup> The limited flexibility in the placement of these functional requirements tend to constrict the free space on the ground floor. Combined, this not only reduces the amount of potential at grade retail space but also produces awkward spaces that limit the flexibility of how the space can be used.

The location of vehicular and residential lobby access points to the site and building plays a large role in the impact on the streetscape. *By-Law No. 1103-2009* is more explicit than the *Avenues and Mid-Rise Buildings Study*, limiting mid-block vehicular access to the site where a rear laneway or side street exists.<sup>34</sup> However, the fractured and narrow nature of most existing laneways is problematic, primarily for E-W oriented blocks with avenue properties without direct access to a side street. Interrupting pedestrian traffic for vehicular traffic is highly problematic and also interrupts the continuous at grade retail spaces that are characteristic of the neighbourhood. Lobby entrances to buildings on E-W oriented blocks have no option but to be located on St. Clair Ave. W. Developments on corners which will likely make up the majority of new development on the street can locate the lobby on either St. Clair Ave. W or the side street. Neither the *Avenues and*

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<sup>31</sup> City of Toronto, *City of Toronto By-law No. 569-2013*, (Toronto, 2013), c. 220 s. 5.1.10, [https://www.toronto.ca/zoning/bylaw\\_amendments/ZBL\\_NewProvision\\_Chapter220.htm](https://www.toronto.ca/zoning/bylaw_amendments/ZBL_NewProvision_Chapter220.htm).

<sup>32</sup> City of Toronto, City Planning Division, Standing Committee of Adjustments, *Notice of Decision for 898-900 St Clair Ave W*, (Toronto, May 18, 2017), Item 15. [https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C\\_of\\_A\\_Etobicoke\\_York\\_May\\_18\\_2017.pdf](https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/M/C_of_A_Etobicoke_York_May_18_2017.pdf).

<sup>33</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 5, 9, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.

<sup>34</sup> *Ibid*, 10.

*Mid-Rise Buildings Study* nor *By-Law No. 1103-2009* discuss lobby entrances, but the presence of a lobby on St. Clair Ave. W reduces the amount of retail frontage possible on a block and detracts from the existing character of the neighbourhood.

Providing flexibility in the layout of a ground floor along with the maximizing the retail frontage of a building on St. Clair Ave. W improves the flexibility in the layout of the ground floor space. This allows for a greater and more flexible commercial space at grade which would more easily facilitate its subdivision into narrow, small storefronts characteristic of the existing main street. While more storefronts may be more difficult to manage than a single tenant, they do offer wider marketability allowing for new retailers to lease space, supporting the existing retail character of the street.

## UNIT LAYOUTS

### 2.3.2

Standard parking stall dimensions set out by the City of Toronto have the capacity to impact the layout of units on floors above, but not exclusively as variation tends to exist in the structural grid of a building. Structural bays can range from about 5.8m on center (2.6m x 2 spots + 0.6m for structure) to 9.0m (2.6m x 3spots + 1.2m for structure) and can be further adjusted to meet a certain desired structural bay dimension for the upper floors. For example, a 5.8m on center structural grid could be slightly expanded to provide a wider bay that would produce more comfortable standard unit layouts on the upper floors. Transfer slabs can also be used to free the structural grid on upper floors from the parking grid, either entirely across the development or just in certain locations. The structural bays that inform unit layouts for a building are flexible and it is an unfair assumption to state that standard parking stall dimensions are the primary driver of unit plans in mid-rise buildings.

Unit layouts appear to be far more driven by a desire to meet a specific floor area target than anything else. In all the built and proposed developments for St. Clair Ave. W, one-bedroom units are in the range of 45-60m<sup>2</sup> and two-bedroom units are in the range of 70-85m<sup>2</sup>.<sup>35</sup> Units with dens tend to be 5-10m<sup>2</sup> larger. These areas are driven by the market; the unit needs to be sellable to its targeted demographic. There is generally a pretty fixed range of what people are willing to spend, especially when investors look to maximize the value of their

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<sup>35</sup> Data was compiled from all the available project statistics and architectural plans available through the development applications portal for the City of Toronto. Only the architectural plans for 898 St. Clair Ave. W is here cited for simplicity. All the proposal's architectural plans are included in the bibliography; Quadrangle Architects Limited, *898-900 St. Clair Ave. W Toronto, ON: Re-Issued for Site Plan Approval*, (Toronto, 2017), <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

investment when purchasing a unit. More glazing also improves the value of the unit. Therefore, the key for developers is to maximize the number of units and then the amount of glazing on the building. This statement is obvious, but the problem with mid-rise buildings is that they encourage compact buildings where the allowable building area is forced into a small volume. This produces deeper than ideal floorplates on the lower floors of a mid-rise building. This leads to deep units and since the area for the different unit types is fixed to a certain range, the width of each unit is then fixed based on a target area, not what is necessarily conducive to a well laid out unit.

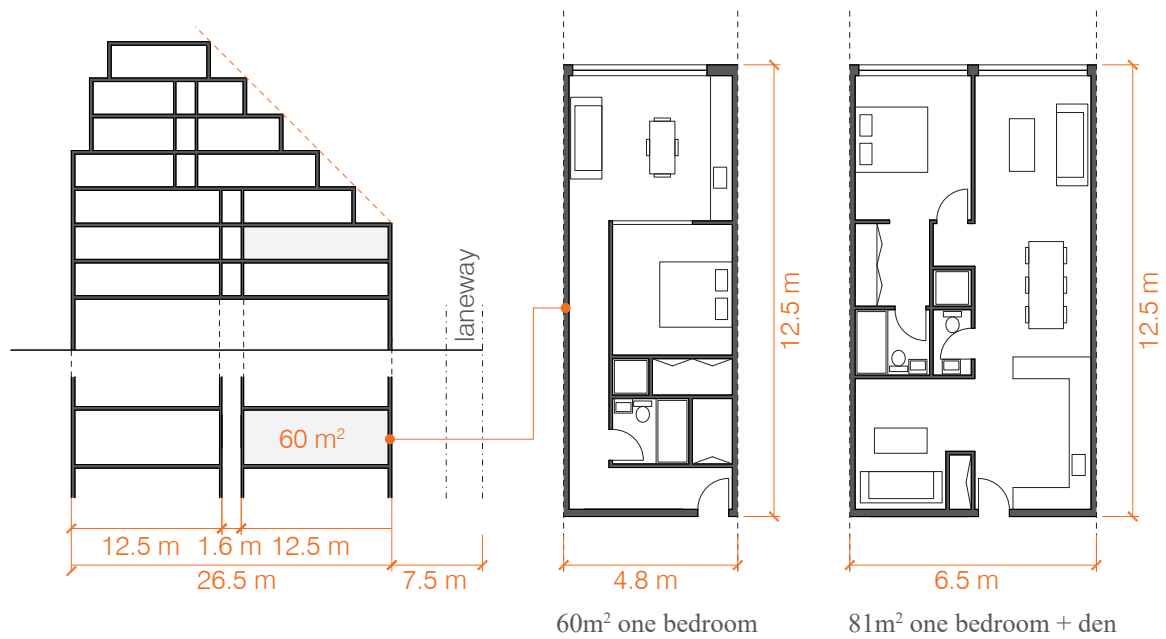
A typical 31m deep St. Clair Ave. W property with a 3m rear laneway is used to illustrate this problem, refer to Fig. 2.9. A building on this property would be 26.5m deep at the second and third floors, setback 7.5m to accommodate the widened laneway. With a 1.6m corridor, the units would be at a minimum a 12.5m deep. To keep a one-bedroom unit at about 60m<sup>2</sup>, which is at the upper range of one-bedroom units, the unit would need to be 4.8m wide. Such a narrow unit eliminates the potential for a living room and bedroom to have direct window access and a rear windowless bedroom is produced. A 6.5m wide unit would provide enough width to allow for both rooms to have windows, but at 12.5m deep, the one-bedroom unit would be 81m<sup>2</sup>. While this produces quite a nice unit, it is not as widely marketable, since for the same amount of area, one could purchase a two-bedroom unit.

The production of these deep and narrow units on the lower half of mid-rise buildings is not necessarily a developer's preference. Rather, it is a necessity to accommodate as much building area and number of units to make the project financially feasible. 1779 St. Clair Ave. W met the developers desired FSI without surpassing the envelope restrictions. This unique site offered flexibility in the distribution of building area and is designed with relatively shallower units between 7-10m deep.<sup>36</sup> This unit depth is really a developer's preference so long as there is flexibility within the envelope restrictions to accommodate the amount of density they desire. Shallower floor plates do not eliminate the potential for some uncomfortable unit layouts, but they can significantly limit them. Corner units with two exterior walls with glazing also improve the quality of the interior space, but mid-rise buildings mostly produce units that typically have only one exterior wall with glazing. This is unlike a typical high-rise residential tower, which will have a much greater proportion of corner units.

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<sup>36</sup> SMV Architects, *Proposed Mixed Use Development at St. Clair Ave. and Ford Street: 1779 - 1791 St. Clair Avenue West, Toronto, ON*. (Toronto, 2017), A.101-A.401, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.





**Fig. 2.8** Building Depth Related to Unit Layout

The unit width is determined by a target area for a unit. In deeper buildings, the width is reduced, producing more uncomfortable units. At a more comfortable 6.5m width, an 81m<sup>2</sup> one bedroom unit is significantly more comfortable as a result of the added width compared to the narrower unit.



**Fig. 2.9** 840 St. Clair Ave. W: Two Bedroom Units Replacing One Bedroom Units

The revision in the proposal for 840 St. Clair Ave. W widened and elongated the bays slightly to include a second bedroom without significantly increasing the area. As a result, a second windowless bedroom was created.

The first proposal submitted to the City for 840 St. Clair Ave. W consisted of almost entirely one-bedroom units. However, the Committee of Adjustment wanted a minimum of 30% of the units to be two and three-bedroom units (from the proposed 13%) in exchange for the approval of the variances which included increased density.<sup>37</sup> The project was redesigned to accommodate two-bedroom units in unit bays on lower floors that had been planned for one-bedroom units with dens, only increasing the area of the units from about 60m<sup>2</sup> to 65m<sup>2</sup>.<sup>38,39</sup> (Refer to Fig. 2.9.) The added bedroom was located at the rear of the unit without a window directly to the exterior. The majority of the two-bedroom units in the original space planning for the building were located on the upper floors of the building which required setbacks and allowed for shallower and wider units.<sup>40</sup> This upper level unit configuration is significantly more conducive to a well laid-out two-bedroom unit than the new two-bedroom units on the lower floors. Allowing the project to reorganize the same floor area of the building into a taller but shallower building would allow for the extra two-bedroom units desired by the City to be designed with both bedrooms with a window to the exterior and would ultimately produce a nicer place to live. The suggestion of a need for flexibility in the distribution of building area reinforces the problem of a building typology that prioritizes the mitigation of any impact on a few residential houses over the interior conditions of potentially many units.

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<sup>37</sup> City of Toronto, City Planning Division, Standing Committee of Adjustment, *Notice of Decision for 836 St Clair Ave W*, (Toronto, June 10, 2015), 2, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

<sup>38</sup> SMV Architects, *Proposed Residential Development, 8 Storeys: 834-840 St. Clair Ave West, Toronto, ON*, (Toronto, 2017), A.202-A.206, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

<sup>39</sup> City of Toronto, City Planning Division, Standing Committee of Adjustment, *Notice of Decision for 836 St Clair Ave W*, (Toronto, June 10, 2015), A2.4 – A2.5, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

<sup>40</sup> City of Toronto, City Planning Division, Standing Committee of Adjustment, *Notice of Decision for 836 St Clair Ave W*, (Toronto, June 10, 2015), A2.6 – A2.8, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.



## 2.4 RESIDENTIAL ASSEMBLY FOR REDEVELOPMENT

### 2.4.1 ENHANCEMENT ZONES ON ST. CLAIR AVE. W

An enhancement zone along St. Clair Ave. W is a designation given to a specific series of single residential properties directly to the rear of avenue properties, outlined in *By-law No. 1103-2009*.<sup>41</sup> The goal of the enhancement zones is to allow developers to assemble a deeper property. This would allow buildings on St. Clair Ave. W to meet the allowable FSI and to comply with the angular plane restrictions. The ideal property depth for St. Clair Ave. W new developments is 44.6m according to the *Avenues and Mid-Rise Buildings Study*.<sup>42</sup> The addition of a single residential property to a typical 31m deep property would bring the total assembly depth to about 40m where an existing rear laneway is present. Below grade, the deeper property would also help produce a more functional parking garage. None of the residential land property included in the assembly would be allowed to contain any aboveground structure above. In the *Final Report for St. Clair Ave. W* different consultants had each suggested allowing for the assembly of residential properties for the same reasons above. One consultant had suggested even allowing up to three or four residential properties to the rear of avenue properties be assembled to produce a total 50m lot depth.<sup>43</sup> This consultant suggested that the additional space could be used for the provision of surface parking and again, would facilitate a more efficient underground parking garage. However, City staff were only comfortable allowing a single property to be assembled.<sup>44</sup> All suggestions that included residential assembly as a strategy for redevelopment of St. Clair Ave. W only proposed parking or landscaped space in this portion of the assembly at grade. There was no suggestion of extending the building foot print or allowing any structure to be built there. While enhancement zones were included in the *Final Report for St. Clair Ave. W* and the subsequent by-law, they were redacted in the final draft of the *Avenues and Mid-Rise Buildings Study*. Given that the Committee of Adjustment already allows developments to exceed the envelope restrictions and FSI restrictions, the idea of enhancement zones only as a means to allow the building to comply with guidelines makes no financial sense. It would require adding the cost of a property at an above market rate without providing

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<sup>41</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 10-11, 29-32, <https://www.toronto.ca/legdocs/by-laws/2009/law1103.pdf>.

<sup>42</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 34, <https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

<sup>43</sup> City of Toronto, City Planning Division, *City Initiated Avenue Study for St. Clair Avenue West between Bathurst Street and Keele Street – Final Report*, (Toronto, 2009), 16, <http://www.toronto.ca/legdocs/mmis/2009/pg/bgrd/backgroundfile-21310.pdf>.

<sup>44</sup> Ibid.

any ability to generate added value through additional floor area and units. Only parking space revenue could be earned but would ultimately be negligible in the grand scheme of things. Only one of the new developments proposed for St. Clair Ave. W had a residential property to the rear zoned for an enhancement zone and it was not included in the redevelopment.

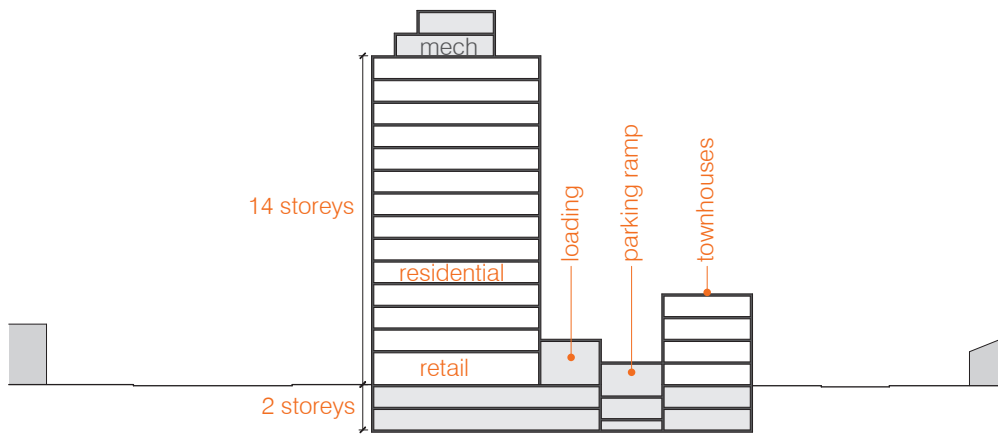
The capacity to add buildings to this rear portion of an assembly would allow developers to recoup some of the costs of assembling additional properties. An additional building included in a proposed redevelopment and would also provide a much better buffer zone than an extended landscaped because it can begin to visually block the presence and ground floor servicing of a larger avenue building. While this type of redevelopment is discouraged by the City on St. Clair Ave. W, it should be considered in the redevelopment of the avenue because it is already happening on another avenue of Toronto, Sheppard Ave. W.

#### **2.4.2 SHEPPARD AVE. W**

Sheppard Ave. W between Yonge St. and Dufferin St. is also identified as an avenue to be re-urbanized by the City of Toronto in the *Toronto Official Plan* and is similarly going through redevelopment like St. Clair Ave. W. However, it does not have the same existing at grade retail and is comprised of an E-W oriented blocks. Although several mid-rise buildings were built between Bathurst St. and Dufferin St., there are no built projects between Yonge St. and Bathurst. St. However, there are two proposals for new developments on the south side of Sheppard Ave. W along this stretch of avenue. Both proposals have assembled the residential properties to the rear as part of the redevelopment. This exact type of assembly was considered too much encroachment into the residential fabric by planning staff in the *Final Report for St. Clair Ave. W*. The two projects are comprised of a multi-storey residential slab building (12 and 14 storeys) on Sheppard Ave. W with three to four storey townhouses replacing the existing single detached house in the neighbourhood; a consolidated parking garage extends beneath both structures.<sup>45</sup> (Refer to Fig. 2.10, 2.11.) The avenue building heights correspond to the wider street right-of-way on Sheppard Ave. W of 36m. Since the residential properties to the rear of avenues properties are not planned to be rezoned for greater density in

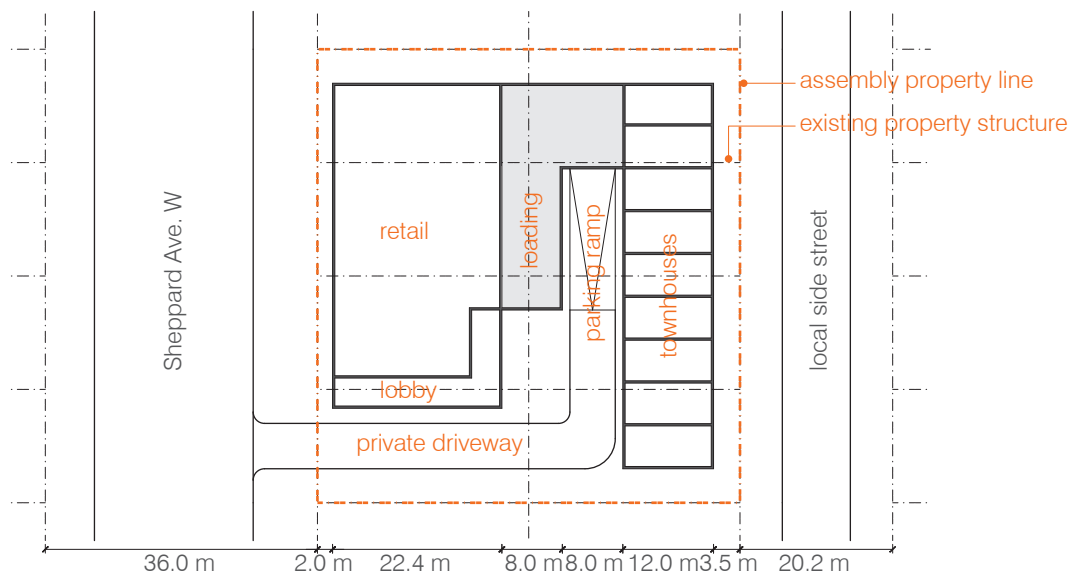
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<sup>45</sup> WZMH Architects, *53-63 Sheppard Ave W + 62-68 Bogert Ave. Development: Toronto, ON*. (Toronto, 2015), PD.5-PD.6, PD.11, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.



**Fig. 2.10** Diagrammatic Section of Proposed Sheppard Ave. W Developments

A consolidated parking garage extends across the entire site, access from a ramp parallel to Sheppard Ave. W in the middle of the site.



**Fig. 2.11** Ground Floor Layout of Proposed Sheppard Ave. W Developments

A parking ramp to the below ground parking, along with a loading dock are arranged parallel to Sheppard Ave. W, separating the ground floor of the larger building and the rear townhouses.

the Sheppard Avenue Commercial Area Secondary Plan<sup>46</sup>, only townhouses are proposed on the residential side street.

While both these building types and sizes are contextually appropriate, the ground floor layout of the developments set up future problems. There is no plan for how to manage the cumulative effects of these developments across an entire block since there is no existing laneway. One development is mid-block and will require a break in the building and streetscape for vehicular access<sup>47</sup>, while the other is on a corner and vehicular access will be provided off the site street.<sup>48</sup> In both proposals, the avenue and residential side street buildings are separated by a parking entrance and loading dock (refer to Fig. 2.21), which eliminates the potential for the rest of the block to be served by a common service lane. A common service lane could limit vehicular interruption of the sidewalk in future developments. Considering the E-W oriented property structure, this sets up a pattern of mid-block developments that will each require a break in the sidewalk for vehicular access, significantly detracting from the walkability and desirability of the street.

The relatively tall height of the avenue buildings compared to the 4 storey townhouses is not problematic but does highlight a need to consider relative scale of buildings to one another in order to develop adequate buffer zones. The rear building should adequately transition the building height to the residential neighbourhood and provide a visual buffer. There is the opportunity to allow more density on the rear residential properties producing the middle density buildings desired by the city, acting as a buffer zone between the avenue and existing residential fabric without generating concerns of overshadowing. Despite the assembly of any residential properties being considered significant encroachment on the residential fabric of by the City on St. Clair Ave. W, it is already happening on Sheppard Ave. W. Therefore, it is important to consider this type of property assembly in the re-urbanization of the avenues and how it could unfold on St. Clair Ave. W.

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<sup>46</sup> City of Toronto, City Planning Division, *Sheppard Avenue Commercial Area Secondary Plan Review – Official Plan Amendment - Supplementary Report*, (Toronto, 2017), 13-14, 21-22, <https://www.toronto.ca/legdocs/mmis/2017/ny/bgrd/backgroundfile-99749.pdf>.

<sup>47</sup> WZMH Architects, *53-63 Sheppard Ave W + 62-68 Bogert Ave. Development: Toronto, ON*. (Toronto, 2015), PD.6, <http://app.toronto.ca/DevelopmentApplications/mapSearch-Setup.do?action=init>.

<sup>48</sup> WZMH Architects, *245, 249, 253, 255 Sheppard Ave W, 150, 256, 258 Bogert Avenue Development*. (Toronto, 2016), 1, <http://app.toronto.ca/DevelopmentApplications/mapSearch-Setup.do?action=init>.

### 2.4.3 ECONOMY & EFFICIENCY OF ASSEMBLY & CONSOLIDATION

The proposals for new development on Sheppard Ave. W highlight the benefits of a larger redevelopment including the sharing of functional requirements between two buildings, along with the consolidation of underground parking. The mid-rise avenue building desired by the City of Toronto can be difficult to develop alone because there are space requirements for amenity space, parking spaces and waste management that need to be accommodated in less building areas than high-rise developments. The mid-rise building type becomes more feasible and flexible to organize when it is incorporated into a larger redevelopment. Loading spaces and amenity space could be consolidated and organized more efficiently. Larger redevelopments also produce more efficient underground parking garages as already noted by consultants in the *Final Report for St. Clair Ave. W*. The consolidation of avenue redevelopment begins to address some other recommendations provided in *Section 4: Recommendations* in the *Avenues and Mid-Rise Buildings Study*. These recommendations discuss alternative performance considerations for loading, parking and amenity space, that would see these requirements reduced for mid-rise development.<sup>49</sup>

Drawing from the *Ataratiri: Block and Building Study* and suggestions from the *Avenues and Mid-Rise Buildings Study*, the consolidation of access and servicing for multiple buildings on a single block and the site improves the flexibility in the organization of the ground floor.

Additional economy in redevelopment is found through the development of more building area. The cost of applications to the City can be spread over more building. Some savings in construction costs can also be found in simply building more. While this economy in simply building more can be found by building taller, on avenue sites, where there are tight building envelope restrictions, this efficiency can be achieved by assembling more avenue properties. However, a capacity to assemble deep instead of wide across a block, the redevelopment could maintain more of the fine grain character of the avenues and still be economically viable.

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<sup>49</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 110-112, <https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.







3

**PROPOSED DESIGN GUIDELINES**

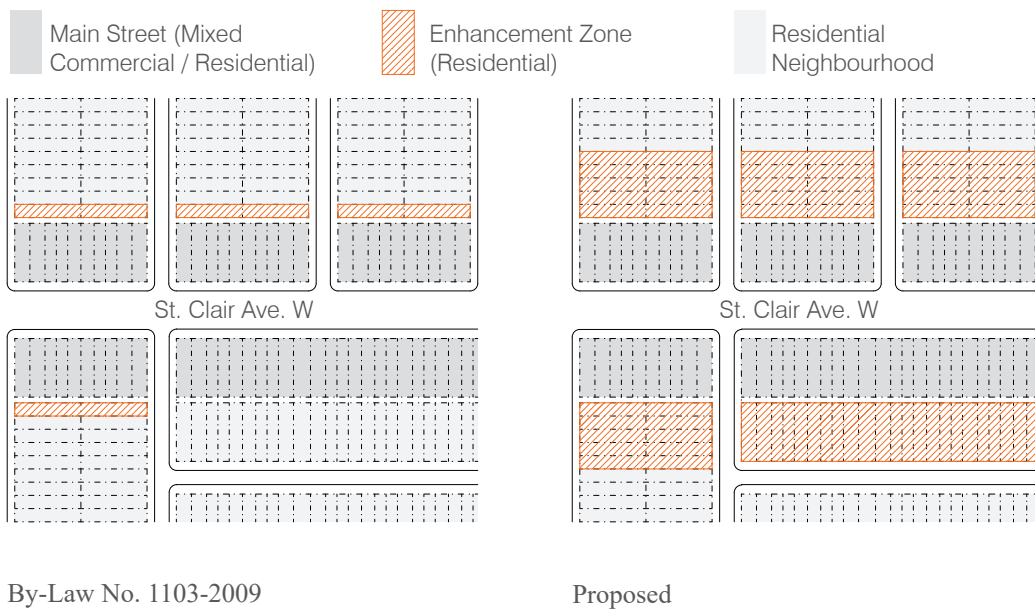
## 3.1 PROPOSED GUIDELINES

### 3.1.1 THE PROPOSAL

Since the current typology prescribed for the avenues of Toronto is outdated and has a diminished capacity to accommodate more density, the thesis proposal centers around a typological rethinking of the redevelopment along St. Clair Ave. W that is also reflective of its typical property structures. The principle goal of the urban design guideline proposal in this thesis is to allow for greater ease in proposing density beyond that allowed in *By-Law No. 1103-2009* on St. Clair Ave. W that will facilitate more economically feasible projects. Greater densities are required today to economically justify redevelopment. This thesis proposes a general strategy for increasing the depth of area permitted for redevelopment through the inclusion of some smaller local street residential properties. (Refer to Fig. 3.1.) When they are assembled with avenue properties, it allows for the construction of two conventional and not driven by envelope restrictions, but differing buildings. The first larger building will front on to St. Clair Ave. W with a smaller one located to the rear which will front on to the side street, refer to Fig. 3.2. The larger avenue building will contain retail at grade with residential units above and the rear building will contain at grade residential units with the possibility of additional units above. Both buildings will consist of shallower floor plates which are conducive to better unit layouts. The distribution of non-uniform density across two buildings creates flexibility in the distribution and amount of density that can be handled by the entire site. This general approach will reduce the impact of shadowing and bulk on adjacent existing single and semi-detached properties. This flexibility prevents the construction of awkwardly constricted buildings and allows developers to construct conventional building types at shallower depths. The result will be better unit layouts and an increase to amount of density required to justify the original land assembly and redevelopment costs. Along with the accommodation of greater density through the layering of buildings at decreasing heights, included within the thesis proposal are other suggestions which work towards facilitating the incremental re-urbanization of St. Clair Ave. W and improving the quality of the building and the neighbourhood.

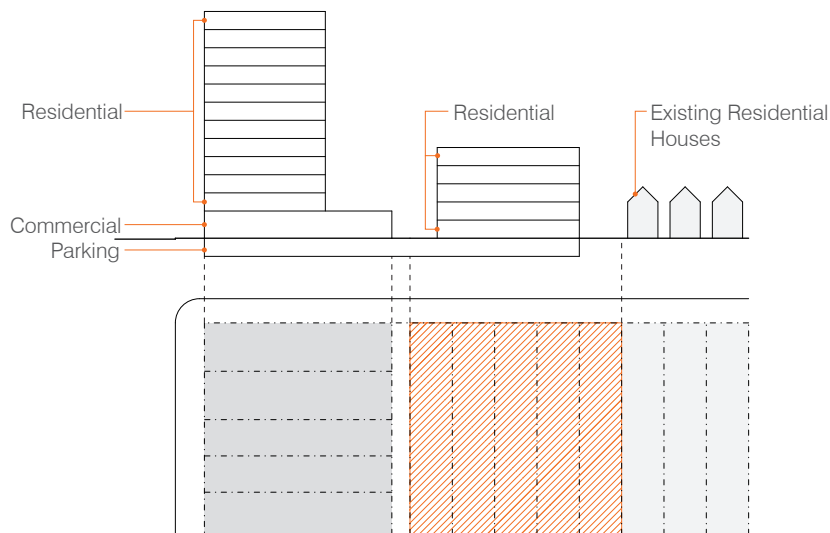
Broadly, the thesis proposal consists of four suggestions to facilitate and support this layered redevelopment:

1. An extended enhancement zone to allow for the development of two buildings at differing heights to transition from the avenue to the residential properties.



**Fig. 3.1** Revised Enhancement Zones for Redevelopment

The current enhancement zones that are selected on site specific sites in *By-law No. 1103-2009*, are replaced by a deeper, flexible enhancement zone. It will produce a strip of urban fabric that wil contain both low mid-rise residential buildings and existing single and semi-detached houses.



**Fig. 3.2** Development Strategy Achieved through Extended Assembly

The assembly of more residential properties will allow for the redevelopment of the land into two different buildings. The avenue building will be larger and will be separated from the existing residential houses by a low mid-rise rear building, built on the existing residential properties. The existing laneway is maintained at grade, and a consolidated parking garage below connects both buildings.

2. Limiting vehicular and lobby access to buildings from St. Clair Ave. W.
3. The consolidation of functional requirements across multiple properties or buildings.
4. Pushing the expanded rear laneway desired by the City of Toronto back into the residential portion of an assembly.

### **3.1.2 3.1.2 EXTENDED ENHANCEMENT ZONE**

This thesis proposes extending the current enhancement zone created in *By-Law No. 1103-2009* beyond a single residential property. This new enhancement zone will also allow for an additional four to six storey building to be constructed on the residential portion of the assembled property, while maintaining the widened laneway desired by the City. On N-S oriented blocks, up to about 30-35m width of residential properties could be assembled. On E-W oriented blocks, the residential properties to the rear on the same block could be assembled. (Refer to Fig. 3.1.) Allowing for the redevelopment of a small swath of the residential fabric of Toronto into a low to mid-rise building would produce a much more comfortable adjacency between the avenue building and the single and semi-detached homes than exists in the current guidelines. These small buildings would create a more effective buffer zone by providing a visual buffer to the avenue building and by physically and visually separating the residential properties from the servicing of the avenue building at grade. This would also produce the middle density building desired by the city in its broader intensification efforts across the city. However, the building would not contain any commercial use, which allows it to fit comfortably into the neighbourhood that already has some existing small walk-up apartment buildings sporadically located across local side streets. The added assembly depth with the addition of this smaller rear building allows for a much taller avenue building than is currently allowed under *By-Law No. 1103-2009*. This would help recoup additional costs incurred by the assembly of more properties. Any additional density desired by developers to make a development economically feasible could be easily accommodated in the avenue without significant overshadowing and privacy impacts on the neighbourhood. The deeper overall assembly also offers more flexibility in the distribution of building area to meeting envelope restrictions that are primarily driven by a desire to limit overshadowing, that allow for the creation of buildings that are driven by convention, and not a physical translation of envelope restrictions. When there is flexibility in the distribution of building

are, a building can be laid out according to a developer driven convention which is likely to produce more comfortable units.

The significant number of heritage buildings along St. Clair Ave. W which do not necessarily have a historical designation are important to maintain the character of the neighbourhood. However, they should still be able to capture their redevelopment value. However, the current building typology proposed by the Avenues and Mid-Rise Buildings Study cannot accept much more density, which eliminates the ability for these character avenue buildings to sell or transfer their development rights to other projects. Properties along the St. Clair Ave. W do not have room within their envelope restrictions to accept density from another property. The capacity for larger avenue buildings in this proposal because of an extended enhancement zone, allows for new avenue buildings on St. Clair Ave. W to readily accept density from other sites. While the transfer of development rights is geared towards preserving character buildings, any avenue property on St. Clair Ave W. could sell their development rights. A local property owner may want to keep the building they own but capitalize on the re-urbanization of the avenue. Additionally, some individual properties contain buildings that are physically constructed together with buildings on directly adjacent properties. This could allow a developer to include a single property of this type in the additional site area for a proposed development, without demolishing the building which could be problematic structurally or difficult construction wise. The ability transfer of development rights between properties across St. Clair Ave. W would help to maintain pieces of the fine grain character of the street and allow for diversity in the urban built form of the street as it redevelops.

The capacity for the new avenue building type to accept more density offers the opportunity to encourage the development of buildings on narrow frontages. Any additional density desired to accommodate a smaller floorplate could be accepted typologically. However, this would need to be negotiated with the City. The capacity to build more building across the entire property assembled also provides savings in the construction of building more and having it all under a single application or permit. Narrow buildings with at grade retail are a strong part of the character of St. Clair Ave. W. While redevelopment will ultimately produce buildings with wider frontages, the economy offered by the extended enhancement zone does presents opportunities to produce economically feasible narrow buildings that would reinforce the fine grain character of the street.

The creation of an extended enhancement zone allows for tall avenue buildings to be adjacent to the rear building because both buildings are new. Any overshadowing or privacy concerns are not a change to an existing condition. New

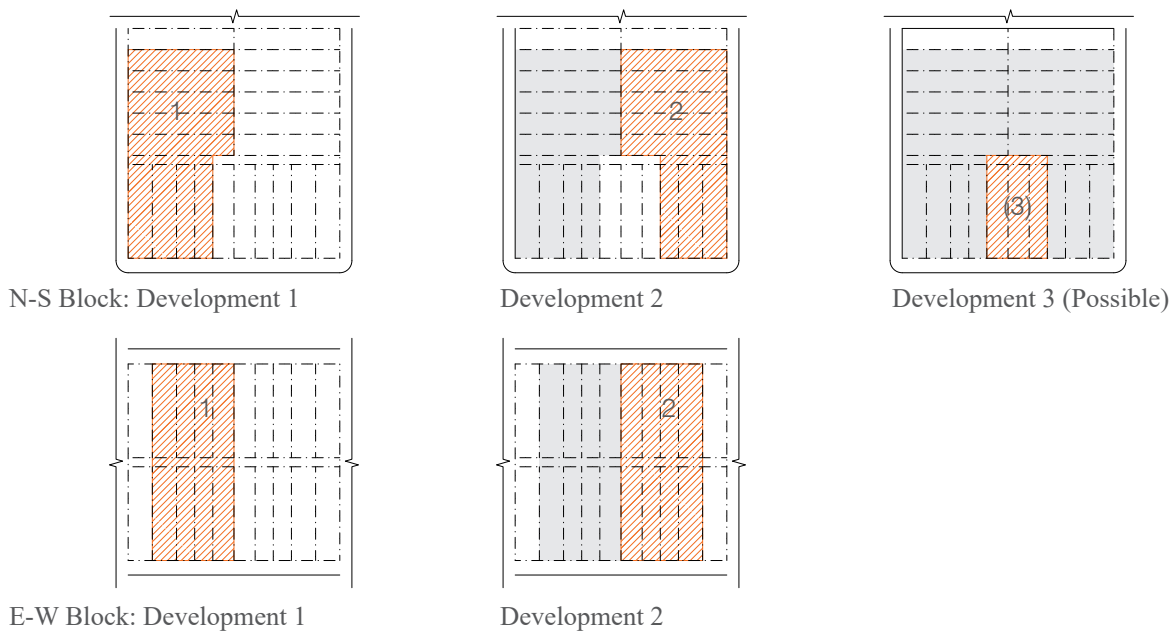
residents in these buildings will have bought in to this condition. This limits the problem of intensification that changes the existing condition of a neighbourhood. People will continue to be able to live in single and semi-detached houses, but it will simply be a luxury.

### **3.1.3 3.1.3 LIMITING ACCESS**

*By-Law No. 1103-2009* is explicit in limiting vehicular access to sites to rear laneways and side streets where they exist. The plan for St. Clair Ave. W also requires the widening of existing laneways to allow for two lanes of traffic and to allow waste collection vehicles to navigate them and access new developments. This is well resolved for N-S oriented blocks which will most likely redevelop only two buildings, with one on each corner, but presents problems for mid-block developments along E-W oriented streets. (It is possible for a N-S oriented block to be redeveloped into three separate developments, although the mid-block would develop after the corners, which will have provided an extended rear laneway, refer to Fig. 3.3.) While there are currently existing laneways to the rear of avenue properties on St. Clair Ave. W on E-W oriented blocks, they are too narrow (3m) and often undeveloped. Restricting vehicular traffic including cars and waste collection vehicles to the laneways is likely unrealistic and would force mid-block developments to provide a curb cut and vehicular access off St. Clair Ave. W. A subsequent development could provide vehicular access off the rear laneway by using the drive aisle of the first development. However, this would all have to be negotiated because the access would be via private property and could require the creation of an easement through the first building. This could all still lead to the creation of another vehicular access off St. Clair Ave. W for any subsequent mid-block development. Alternatively, requiring a development pattern where the corners of an E-W oriented block are developed first, and then subsequent development occurs inwards, would stymie any redevelopment.

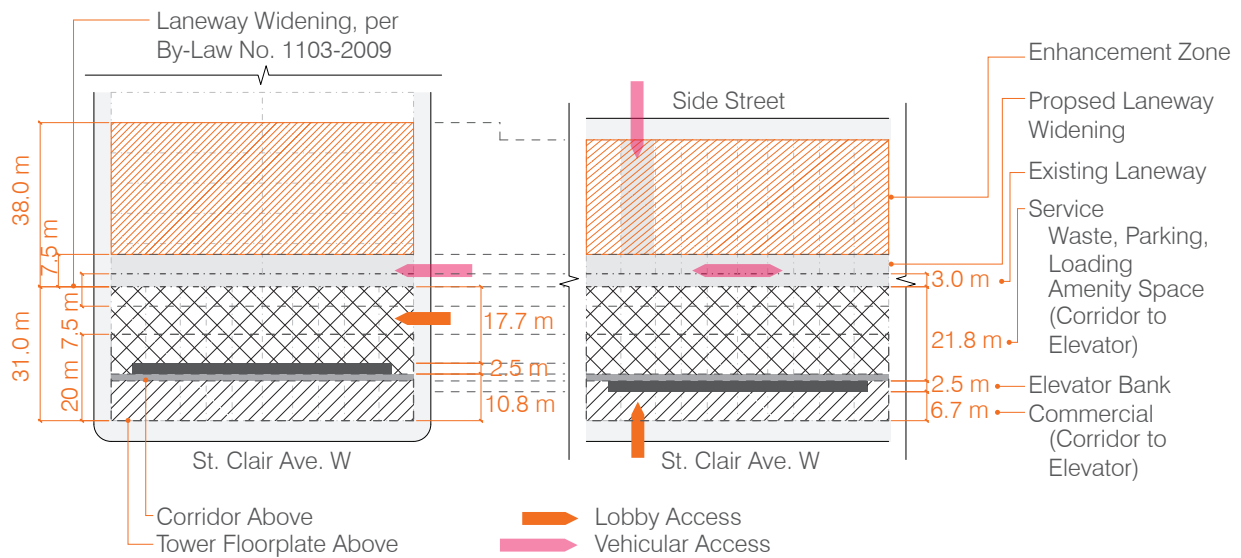
The extended enhancement zone in the proposed guidelines would produce sites with access to a residential side street on E-W blocks. As a result, the urban design guidelines in thesis propose that all vehicular access be restricted to this parallel street to the rear. The vehicular access created between the side street and laneway would be ceded to the city to become part of its laneway system. This would then allow subsequent developments to freely use this new access point. Additional vehicular access may be created to the side street but should be kept to a minimum to limit the number of vehicular entrances off the side street. While redirecting all vehicular traffic to the side streets would increase the amount of traffic on side streets, St. Clair Ave. W would significantly benefit from an





**Fig. 3.3** Development Pattern Along St. Clair Ave. W

On N-S oriented blocks, development is likely to occur first on either one of the corners. Where there's sufficient frontage leftover, a third development is possible. On E-W oriented blocks, the first development could easily occur at any point along the block. The next development is likely to be directly adjacent to the first development to use the widened laneway and vehicular access it provided.



**Fig. 3.4** General Configuration of Developments

The general ground floor of the avenue building contained on the avenue frontage consists of a commercial space at the front and a service space to the rear, separated by an elevator bank. The elevator bank is positioned on either side of the corridor on floor plates above. Both vehicular access on E-W oriented blocks and lobby access to developments on N-S oriented blocks is required to be provided from the local side street.

uninterrupted streetscape. This proposal would substantially increase the frontage of buildings at grade and retail frontage, likely allowing for more shops, which benefits the entire neighbourhood.

Neither *By-Law No. 1103-2009* nor the *Avenues and Mid-Rise Building Guidelines* mention the location of the residential lobby access to the building, although it will have an impact on the lay-out of buildings. While any mid-block development will require the lobby to be accessed off St. Clair Ave. W, all corner developments should require the residential lobby to be accessed off the side street. Locating the lobby off the side street may slightly restrict the depth of the commercial space at grade that could be created; however, it would significantly increase the retail frontage on St. Clair Ave. W. (Refer to Fig. 3.4.) Increased retail frontage makes the street a much more vibrant place to walk along. This also increases the ability for the commercial space to be subdivided, which would help to maintain the characteristic small shops along the street within the new building.

#### **3.1.4 3.1.4 CONSOLIDATION OF FUNCTIONAL REQUIREMENTS**

The urban design guidelines in this thesis also propose limiting the number of loading spaces required for new developments to a single type G loading space for an entire N-S oriented block. Multiple developments will be allowed to share this one space. The requirement for loading spaces on buildings for E-W oriented blocks would similarly be reduced. The City of Toronto's loading requirements are excessive; requiring one type G loading space for every new avenue building, which would already include a reduction from two total spaces by the City. 1779 St. Clair Ave. W is a proposal for the avenue frontage across an entire N-S oriented block that plans to provide only a single type G loading space.<sup>1</sup> While it is under review for site plan approval, this variance will likely be granted because all other developments on St. Clair Ave. W are proposing to provide one type G loading space for the entire building. Therefore, the proposed reduction of the number of loading spaces in this thesis is a reasonable suggestion.

The first new development on the block would be required to build the loading space with more than enough staging room. The use of this loading space by any other development on the block would be secured by the City through negotiations with the first project. The use of the loading space by other developments would likely be provided in exchange for additional density. Any subsequent development on the block could then use this loading space, and

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<sup>1</sup> SMV Architects, *Proposed Mixed Use Development at St. Clair Ave. and Ford Street: 1779 - 1791 St. Clair Avenue West, Toronto, ON.* (Toronto, 2017), A.202, <http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init>.

somebody hired by the building would be required to move the building's waste bins from storage to the staging area of the development with the loading space on garbage day. This ability to use the first loading space built would be the choice of the subsequent developers. However, the elimination of the loading space requirement on the ground floor of a building, significantly increases the amount of space for either commercial or amenity space at grade and allows for a more flexible distribution of space.

The extended enhancement zone allows for a large consolidated underground parking garage that is more efficient as was noted by consultants that proposed larger enhancement zones in the *Final Report for St. Clair Ave. W.* However, the construction of two buildings on the assembled site for redevelopment offers flexibility in the location of the parking ramp to the garage below. Locating the parking ramp in the ground floor of the avenue building which occurs under the current guidelines, eliminates the need for an entrance in the low-rise residential building to the rear. This then simplifies the rear building's design, making it more conducive to better layouts and easier to organize. Locating the parking ramp in the ground floor of the low-rise residential building offers significantly increased flexibility in the distribution and amount of commercial space at grade in the avenue building. The single parking ramps eliminates the need for a parking ramp in one of either building. This significantly improves the quality and flexibility of space of the ground floor as a whole and offers developers choice in the amount and type of space they want at grade.

The capacity to eliminate large fixed space requirements in the parking ramp and loading space on the ground floor of the avenue building significantly increases the amount of space that could be used for either amenity or commercial space. The reduction in the functional space requirements also offers improved flexibility in the distribution of these spaces, which could produce a more flexible commercial space at grade. A flexible commercial space is more easily divisible although this would be a decision made by the developer who may prefer the ease of a single retail tenant. However, the subdivision of retail spaces would be more feasible to organize in this proposal and would allow for a more widely marketable space that could be occupied by small businesses. This maintains the vibrancy and character of St. Clair Ave. W while also benefiting the entire neighbourhood.

The development of two buildings under a single project allows for the consolidation of amenity space and waste management requirements for the low-rise rear building into the avenue building. The avenue building could provide an additional waste room or a larger waste room to collect the refuse from the smaller building. Further eliminating functional requirements for the rear building that can

make middle density projects difficult to develop, improves the feasibility of the project.

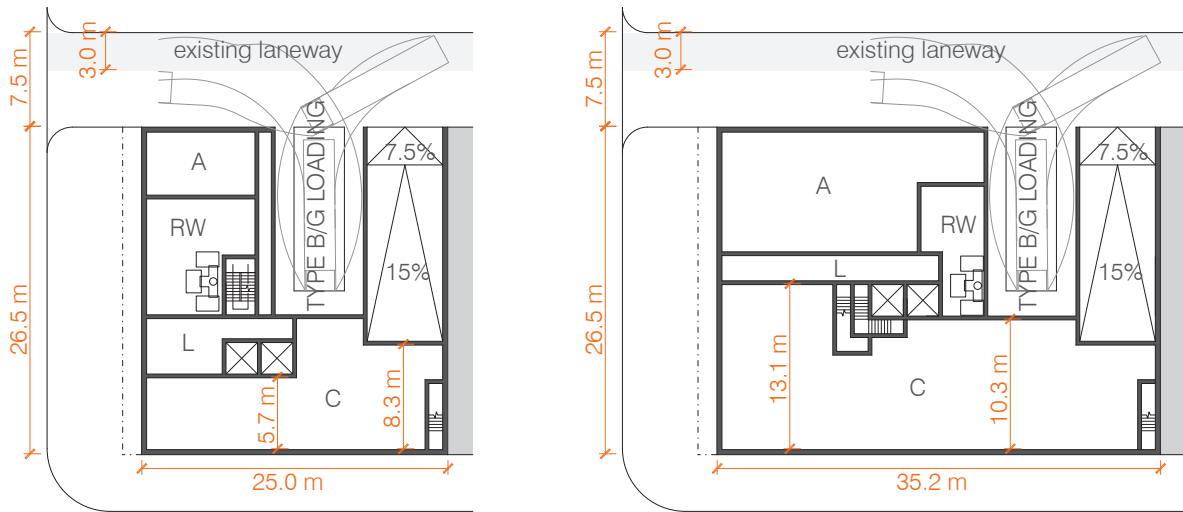
### **3.1.5 3.1.5 LANEWAY PLACEMENT**

The City of Toronto desires a two-lane rear laneway to be produced through the redevelopment of the avenues, which allow for all vehicular access to the buildings to be provided off the laneway. The plan for extended laneway requires the ground floor be setback by the 4.5m where an existing 3m laneway is present or 7.5m where no existing laneway is present.<sup>1</sup> The resultant building depth where an existing laneway is present would be 26.5m on a typical 31m deep lot.

The ground floor of double loaded corridor multi-storey residential buildings can be generalized into an elevator core and lobby with circulation which separates a commercial zone at the front and a service zone to the rear of the building. The service zone includes space for waste management, a loading space, parking ramps, mail rooms, bicycle storage and amenity space. The depth of commercial space at the front of the building is mostly determined by the placement of the core, which is determined by the location of corridors on floors above. (Refer back to Fig. 3.4 on page 61.) While the depth of the service zone is also determined by the placement of the core, loading spaces and parking ramps have minimum required dimensions and can dictate the placement of the core on narrow sites. (Refer to Fig. 3.5) A type G loading space requires a 13m depth along with an additional couple metres for staging room, which would require the elevator core to be pushed forward towards the street to allow the loading space to be in line with the elevator core on a typical lot. The elevator could be pushed further to the rear to increase the depth of the commercial space, but this requires the loading space to be shifted over, which is less efficient. Wider assemblies allow for some flexibility in the distribution of the ground floor functional requirements, but narrow assemblies do not offer much flexibility. This thesis proposes pushing the laneway to the rear, locating any added width desired by the city on the assembled residential properties. (Refer to Fig. 3.6) This allows for the ground floor to span the entire avenue property depth. This allows the coupling of a loading space and elevator bank in line with each other and some circulation space between them. This allows narrower developments to be organized more efficiently, preventing the need for assemblies with wider avenue frontages in order to achieve some flexibility. This further supports an effort in the proposed guidelines in this thesis to

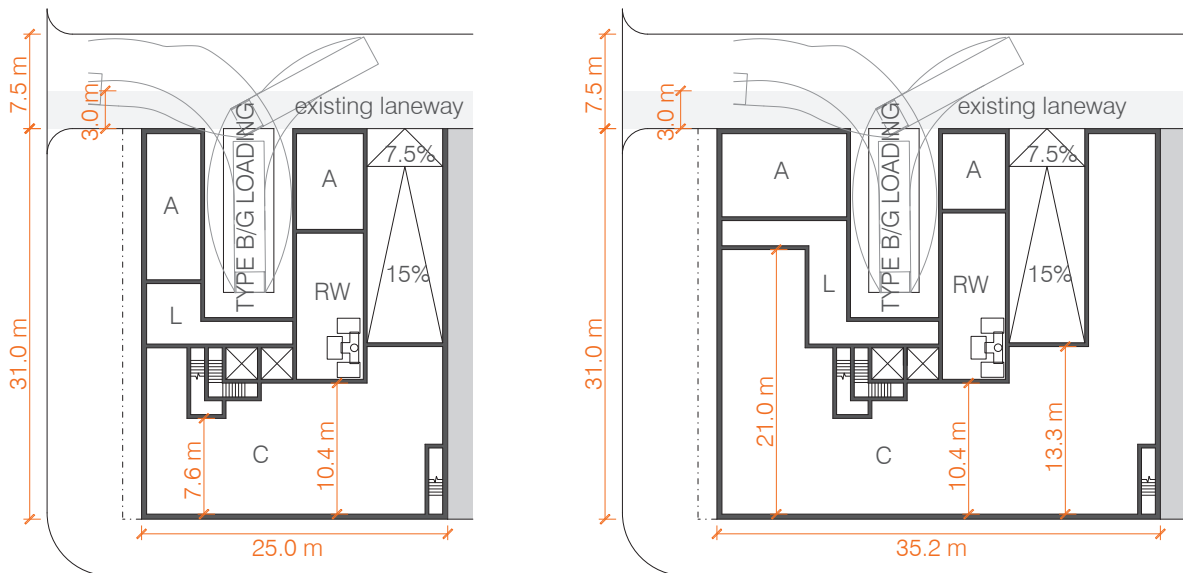
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<sup>1</sup> City of Toronto, Planning and Growth Management Committee, *City of Toronto By-law No. 1103-2009*, (Toronto, 2009), 5, <https://www.toronto.ca/legdocs/bylaws/2009/law1103.pdf>.



**Fig. 3.5** 26.5m Deep Ground Floor

Under the current guidelines, the added width for the new laneway is taken from the typical 31m property depth, resulting in a 26.5m deep ground floor. At a narrow (25m) assembly, the functional requirements on the ground floor significantly constrict each other and limit the flexibility in the ground floor of the building. Flexibility in negotiating the placement of these requirements can be found in wider frontages such as 35m.



**Fig. 3.6** 31m Deep Ground Floor

Pushing the widened laneway back towards the residential properties adds 4.5m to the ground floor depth. This now allows the elevator bank to be pushed back to the other side of the corridor (on floors above). This significantly improves the depth and flexibility of the commercial space on the ground floor and makes narrower frontages (25m) more feasible to develop. The same typical wide assemblies (35m) offer even more flexibility.

allow for the feasible development of narrower buildings to maintain and reinforce some of the character of St. Clair Ave. W.

The proposed placement of the laneway further to the rear is significantly beneficial to N-S oriented blocks in meeting the City's goal of developing complete and widened rear laneway systems. Since the additional width in the laneway comes from the residential properties, N-S oriented blocks do not require every main street property to be redeveloped to achieve a complete laneway. Since there are only two residential properties across the width of a N-S oriented block, only two corner redevelopments are required to produce a complete rear laneway system. The depth of the residential property should and will likely always be greater than the assembled avenue frontage. Therefore, even a single corner redevelopment would create a widened laneway to the rear of a few existing avenue buildings.

### **3.1.6 3.1.6 SUMMARY**

While these proposed urban design guidelines aim to be aligned with the *Toronto Official Plan* in terms of its goals for the re-urbanization of the avenues and protection of Toronto's neighbourhoods, it does request an acceptance of slightly more impact by new development. The redevelopment of some residential properties is required. However, this proposal does not at all suggest an extended and incremental redevelopment of the residential fabric, but rather for a very specific zone to be redeveloped. An acceptance of slightly more shadowing to the north of St. Clair Ave. W over residential properties is requested. This includes morning shadowing which would already occur under a development built as-of-right to *By-Law No. 1103-2009*, and a single hour of overshadowing of backyards in the afternoon to accommodate taller buildings. (Refer to the shadow studies in the Appendix) However, while the proposed guidelines are flexible to allow a significant increase in density, most proposals would not likely reach the maximum height allowance until much later in the redevelopment of St. Clair Ave. W. This proposal also calls for taller buildings on St. Clair Ave. W than it is currently zoned for. This would limit the amount of direct sun access to the north sidewalk and would increase wind velocities experienced by pedestrians at grade. The current guidelines in the *Avenues and Mid-Rise Buildings Study* require setbacks to the front of the building to limit wind velocities and allow for direct sunlight based on the *Sun, Wind and Pedestrian Comfort* study. However, these existing guidelines are based upon maintaining pedestrian comfort under a complete redevelopment of the street into seven to nine storey buildings. This is not likely to happen. It is far more likely, based on current development patterns, that St. Clair Ave. W will accept many sporadic new developments along the street, but plenty of existing

properties will remain undeveloped for a while, if not ever. The resultant urban fabric will likely be fractured. While any new developments under the proposed guidelines in this thesis will have the create greater overshadowing of the north sidewalk and of increased wind velocities at grade, this impact won't be felt across the entire street, and would be made up for in sections of the street that remain undeveloped.

The following section includes envelope guidelines for the avenue building and rear building. The general principles are derived from existing guidelines and by-laws, but also from a general understanding of how these buildings are typically laid-out. Each set of guidelines is followed by a series of floor plans illustrating how these guidelines for the built form can accept developer driven conventional building types.

## **3.2 AVENUE BUILDING**

### **3.2.1 AVENUE BUILDING ENVELOPE GUIDELINES**

This section contains envelope design guidelines for the avenue building. It proposes a shallow and relatively narrow slab building at about 20m deep. This sits above a ground floor that covers the entire site area. The deeper ground floor would produce either private outdoor space for units or outdoor amenity space above the ground floor at the back of the building.

The maximum height limit for the avenue building on the north side of St. Clair Ave. W is set by two factors. The base maximum height limit for this building typology is determined by a 45 degree plane set at a height of 10.5m, 7.5m from the rear residential property line. This is the same position of the angular plane relative to the adjacent residential property in *By-Law No. 1103-2009* to limit overshadowing. The proposed guidelines develop from an understanding of what the City of Toronto considers acceptable shadowing based on a shadow study which examines the shadow impact of a currently as-of-right mid-rise building (based on the *Avenues and Mid-Rise Buildings Study*) from 9:18am – 6:18pm on March 21. (Refer to Shadow Study 6.1.1 in the Appendix.) An as-of-right building will overshadow the rear yard of a single property in the morning, but not at all in the afternoon. Extrapolating this acceptability for morning overshadowing, it was not a concern for the proposed guidelines. Direct sunlight is not also likely key to the use of one's backyard on the equinoxes. However, all efforts were taken to limit the overshadowing of rear yards in the afternoon.

Due to the uneven redevelopment that will occur along St. Clair Ave. W, portions of the extended enhancement zone with low-rise buildings would be adjacent (east or west) to single or semi-detached houses. Shadow studies were completed to understand the shadowing impact of buildings on diagonally adjacent residential properties to determine a secondary height limit for new avenue buildings.

One shadow study series contained in the Appendix (Shadow Study 6.1.2) modeled a 20m deep building on the west corner (on the north side) of a N-S oriented block from 9 to 18 storeys. At a height of 10 storeys, this building would overshadow the diagonally adjacent residential properties' rear yards on the east side of the block for more than a single hour. Therefore, the avenue building on the west portion of the block should be limited to 9 storeys, unless the east portion of the same N-S block has been redeveloped. In this scenario, the height restriction would only be determined by the angular plane. From the same shadow study series, Shadow Study 6.1.3, it was determined that a development of the east corner (on the north side) of a N-S oriented block is not impacted by any development to its west. However, but if the west portion of the adjacent block to the east is



undeveloped, at 15 storeys, the main street building would overshadow rear yards in the mid to late afternoon on the adjacent block. Therefore, the avenue building on the east portion of the block should be limited to 14 storeys. Again, when the portion of the adjacent block is redeveloped, then the height restriction would then be governed by the angular plane. A subsequent shadow study (6.1.4) noted that adding two extra floors that setback from the back and sides of the building by 3m and 6m would produce negligible differences in shadow. One of these floors would contain the mechanical penthouse and possible amenity space, so the height restrictions based on the order of development were updated to 10 and 15 storeys on the west and east side of the block respectively. (Refer to Fig. 3.8.)

While, there are very few E-W oriented blocks on the north side of St. Clair Ave. W, these guidelines over height restrictions based on development pattern can be translated to this orientation. A development on an E-W block is first limited to 10 storeys (with a setback top storey), a development adjacent to it to the west is permitted 15 storeys (with a setback top storey), and a third development adjacent is permitted the height determined by the angular plane restriction. (Refer to Fig. 3.9.)

There is no height restriction for avenue buildings on the south side of St. Clair Ave. W since overshadowing of residential properties is not a problem. This does not suggest that there should be extremely tall buildings on the south side of the street as the height be driven a permitted density on the site.

A setback on the avenue frontage for both sides of the street is required at between 6-8 storeys to reduce the perceived height of the development from the street. The pedestrian perception setback is derived from the *Avenues and Mid-Rise Buildings Study*.<sup>1</sup> However, the amount of stepping back is decreased and at a greater height to limit the number of prescriptive envelope restrictions placed on the building, while still producing a cornice line that can be read across the street. Additionally, some stepping back will help to slightly reduce increased wind velocities down the face of the building. A 1.5m setback from side street property lines to widen the sidewalks on the side street was preserved from the previous by-law as this setback was desired by the City and does produce a more comfortable pedestrian realm.

While these proposed guidelines illustrated in the diagram of the avenue building envelope guidelines presents buildings up to 18 storeys as feasible, this thesis does not imply that should be the height of the buildings on St. Clair Ave. W.

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<sup>1</sup> Brook McIlroy Planning + Urban Design/Pace Architects et al., *Avenues & Mid-Rise Buildings Study*, (Toronto, 2010), 48, <https://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Urban%20Design/Mid-rise/midrise-FinalReport2.pdf>.

Rather the thesis is arguing that buildings of that density and height should be able to be accommodated as the need for greater density occurs over the course of the re-urbanization of the avenue. Developments should incrementally increase in height and density from the current 9 storey height limit. The current densities permitted under *By-Law No. 1103-2009* should be used as the starting point, and the amount of density a developer wants should be negotiated with the City. Once density is negotiated, an allowable height would be derived from the how the developer wants to distribute the negotiated density. Given the amount of flexibility offered by these urban design guidelines to accommodate greater density, the height desired by the developer would be less likely to exceed the height restrictions outlined.

The next section illustrates how a proposed typical 20m deep avenue building could be typically laid out through typical parking and unit floor plans at two standard assembly widths, 25 and 30m, which are based upon functional parking layouts. This is followed by the study of typical ground floor configurations at these same assembly widths and how the elimination of a parking ramp and/or loading space in the avenue building can offer more flexibility in the distribution of the ground floor programming and could lead to more flexible commercial spaces.

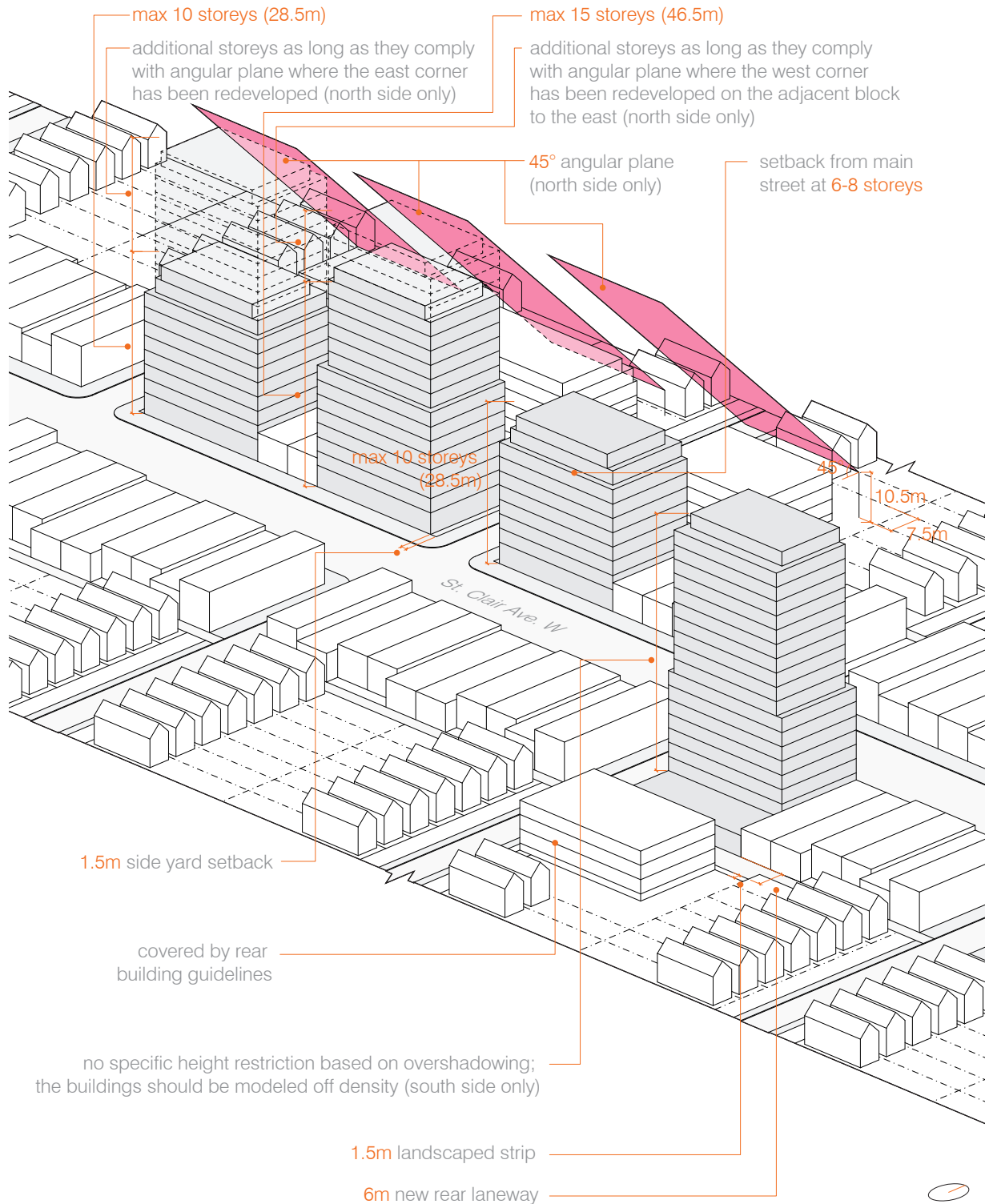
### **3.2.2 SUMMARY OF AVENUE BUILDING ENVELOPE GUIDELINES**

- Height: North Side:
  - N:S Block:
    - max 10 storeys on the west side of a block, where the east portion has NOT been redeveloped
    - max 15 storeys on the east side of a block, where the west portion of the adjacent block to the east has NOT been redeveloped
    - max height allowed by angular plane on the west and east side of a block, where the east and west portion of the adjacent block to the east has been redeveloped, respectively
  - E-W Block:
    - max 10 storeys on property, where the property to the east has NOT been redeveloped
    - max 15 storeys on property, where there is only one redevelopment directly to the east
    - max height allowed by angular plan where there are two redevelopments directly to the east
- Height: South Side:
  - no maximum height restriction
- Setbacks
  - top floor setback of 3m from back and side of building if the building has reached the max allowable height
  - setback from avenue frontage at between 6 - 8 storeys
  - 1.5m side yard setback from the side street property line for corner properties

### **LEGEND TO FLOOR PLANS**

- L • lobby
- C • commercial space (including commercial waste)
- RW • residential waste
- ADD RW • additional residential waste; residential waste from rear building
- A • amenity space (including mail room, bicycle parking)
- SC • service corridor, to be used for waste management and exiting

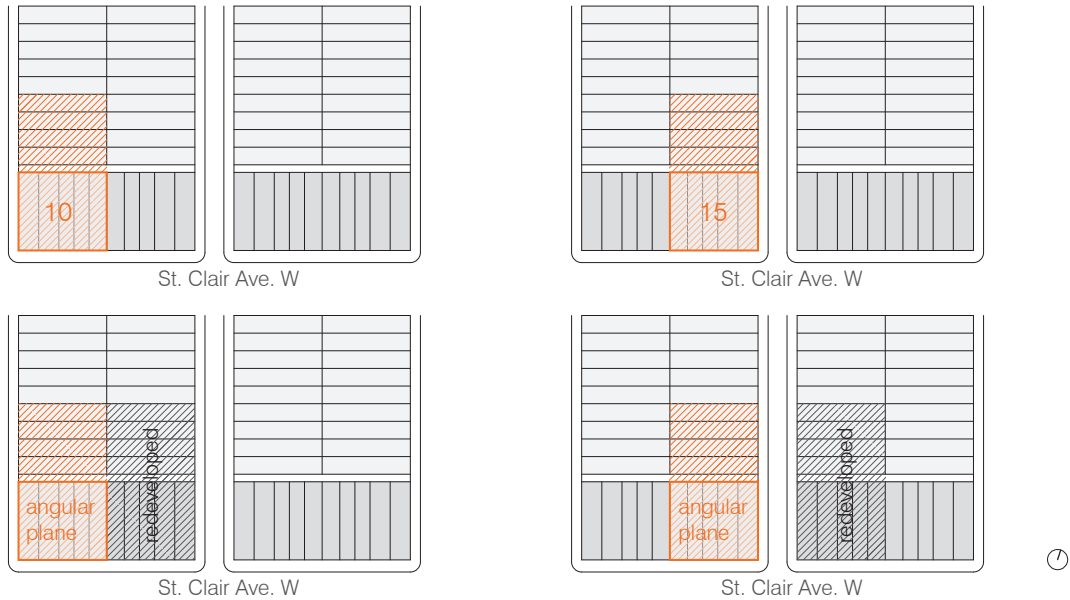
### 3.2.3 AVENUE BUILDING GUIDELINES



**Fig. 3.7** Avenue Building Guidelines

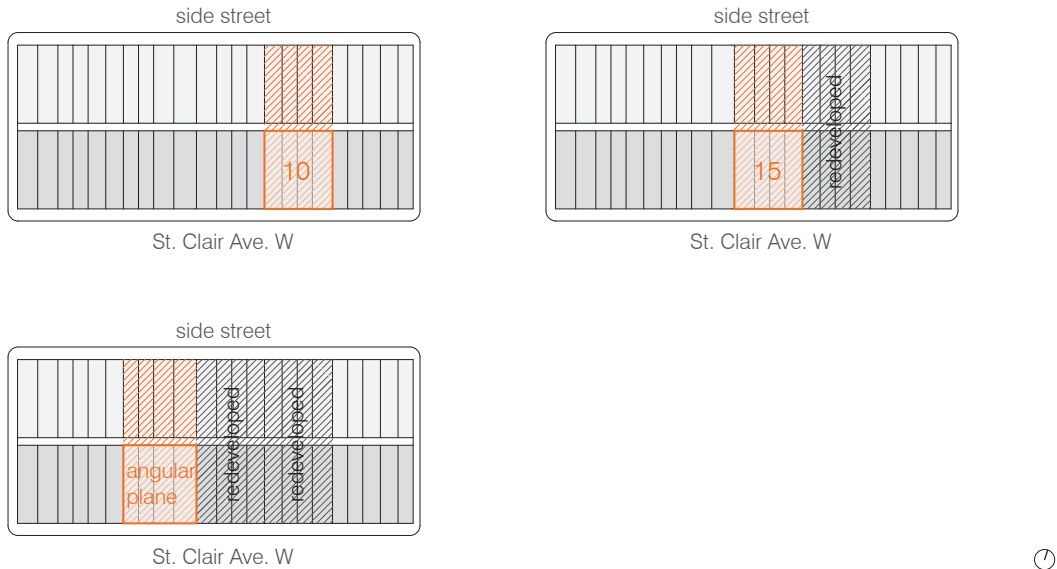
This diagram presents the maximum building heights allowable under the proposed design guidelines in this thesis, allowing buildings up to about 18 storeys. However, the actual maximum height limit is based upon compliance with the 45 degree angular plane. Additionally, more restrictive height limits are set to mitigate the shadowing impact of uneven development in the extended enhancement zone.

### 3.2.4 AVENUE BUILDING HEIGHTS & ORDER OF DEVELOPMENT



**Fig. 3.8** N-S Block: Avenue Building Height Related to Order of Development

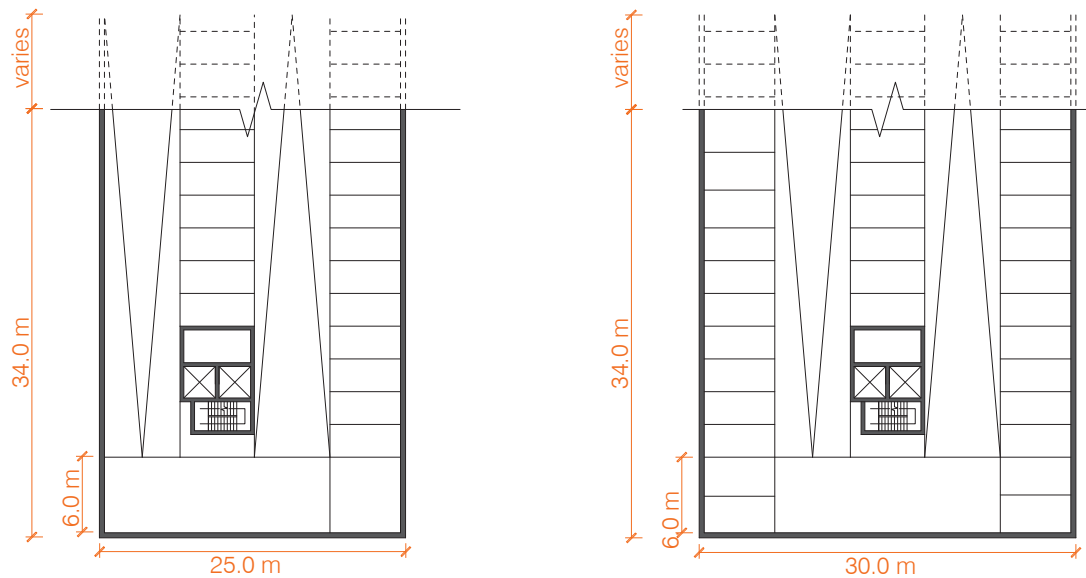
This diagram lists the maximum height in storeys for the avenue building in a new development. A 10 and 15 storey building are permitted where the properties adjacent to the east are undeveloped (top row). When those properties have been redeveloped, the angular plane is used to determine the maximum allowable height. These height restrictions only apply to the properties on the north side of St. Clair Ave. W.



**Fig. 3.9** E-W Block: Avenue Building Height Related to Order of Development

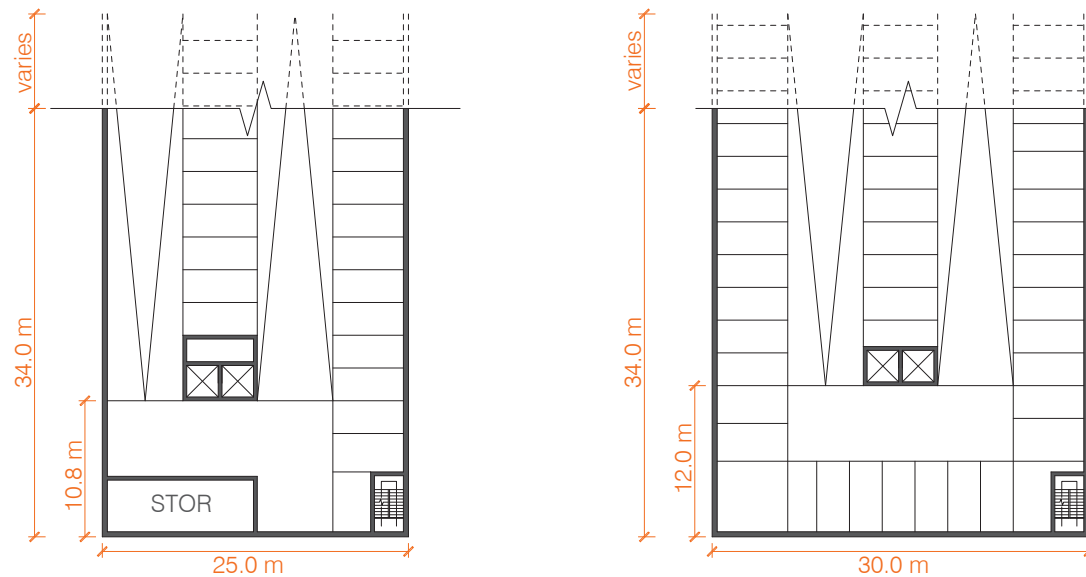
This diagram lists the maximum height in storeys for the avenue building in a new development. A 10 storey building is permitted where there is no other development. A new development to the east, increases the height restriction to 15 storeys. Two adjacent developments to the east increases the height restriction to be determined by the angular plane. These height restrictions only apply to properties on the north side of St. Clair Ave. W.

### 3.2.5 TYPICAL PARKING FLOOR PLANS



**Fig. 3.10** Parking Ramp Provided in the Avenue Building

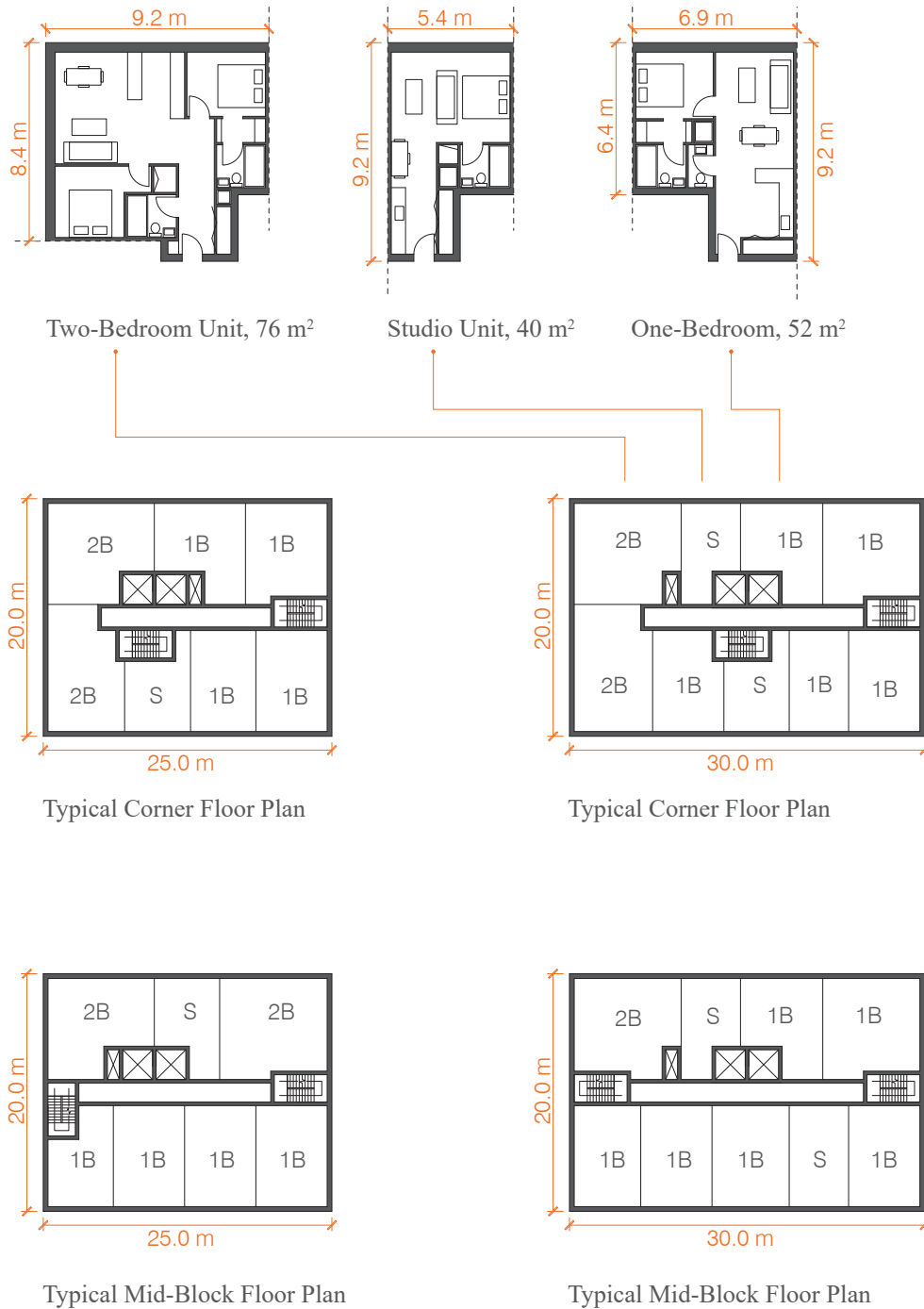
A 25m wide parking garage fits in two bays of parking, while a 30m wide parking garage can accommodate 3 bays of parking. A 5% continuous sloping ramp connects the first level of parking to the rest of levels of parking. The entrance parking ramp is steeper, but still requires almost the entire property depth to ramp down to the parking level. This forces the drive aisle to be adjacent to the front foundation wall.



**Fig. 3.11** Parking Ramp Provided in the Rear Building

Entering the parking garage from the rear building allows for a more efficient parking garage layout where an additional row of parking spaces can be located along the front foundation wall. This added space could also be used for storage lockers as illustrated in the 25m wide parking layout.

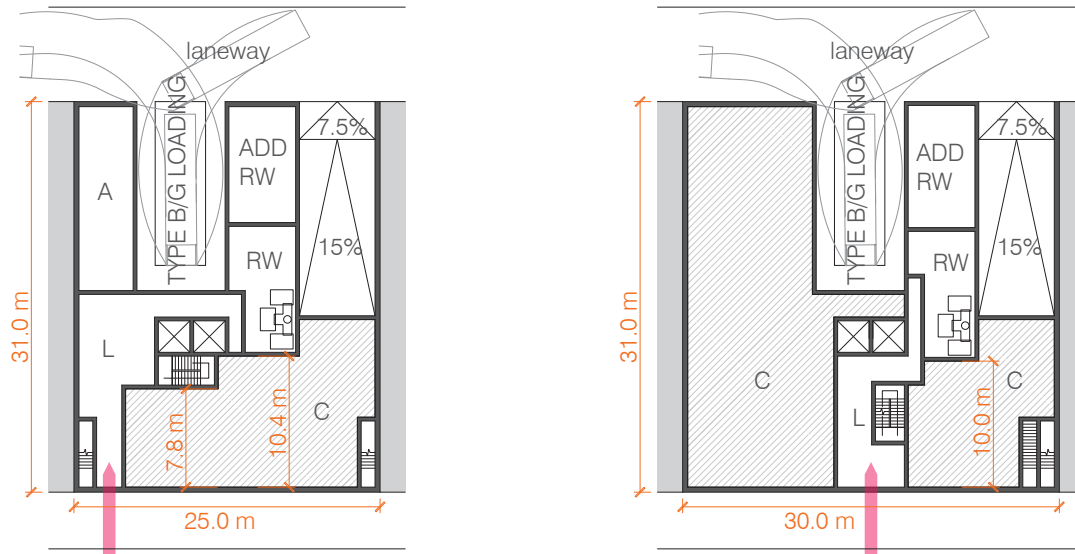
### 3.2.6 TYPICAL UNIT FLOOR PLANS



**Fig. 3.12** Typical Unit Floor Plans

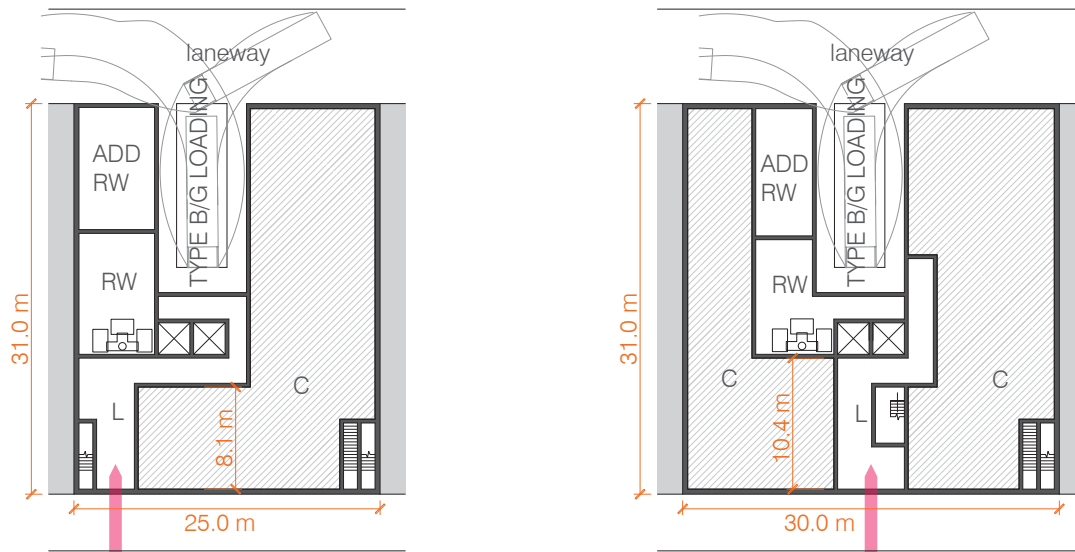
This diagram illustrates that narrow and shallow floor plates can be organized efficiently. However, there is less flexibility in the organization of, and unit types that can fit on a narrower floorplate. For mid-block developments, placement of the exiting stairs in line with the corridor of the hallway minimizes the impact on standard unit layouts. Corner units require one exiting stair to be brought in to allow for corner units with glazing.

### 3.2.7 DEVELOPMENT 1: MID-BLOCK



**Fig. 3.13** Parking Ramp + Loading Space Provided

At a 25m frontage, the functional requirements on the ground floor constrict each other and limit the flexibility in the ground floor of the building, producing a small commercial space at grade with limited flexibility. The wider 30m frontage offers more flexibility producing two commercial spaces. While the one on the right is limited to being small, the one on the left offers the opportunity for a larger commercial space.

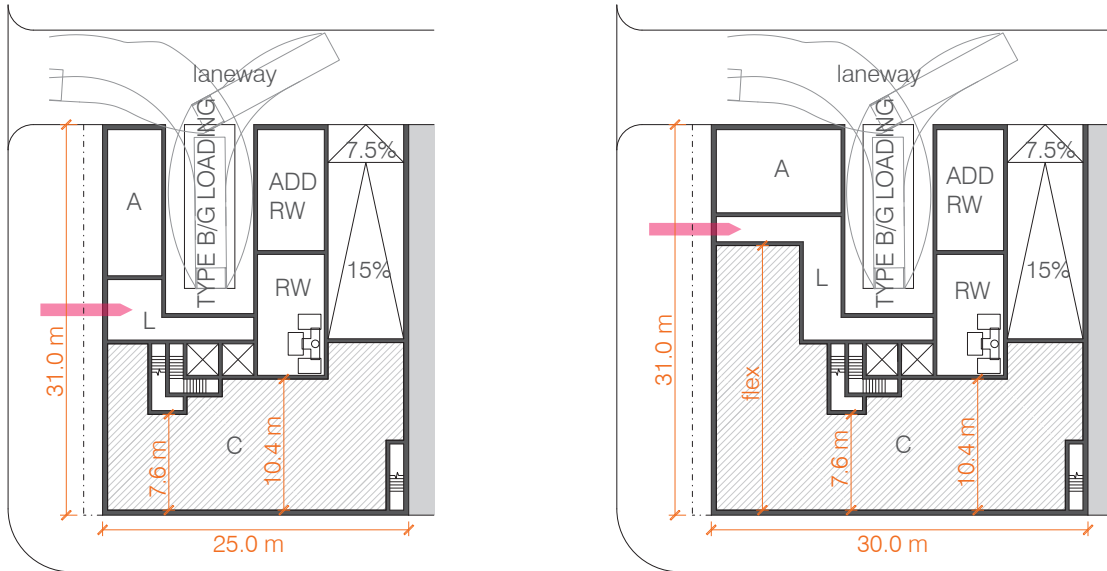


**Fig. 3.14** No Parking Ramp + Loading Space Provided

Eliminating the parking ramp, offers the same opportunity for a large and flexible ground floor space at a 25m frontage as the 30m frontage which provided both a parking ramp and loading space. At 30m wide, two deep commercial spaces are now feasible.

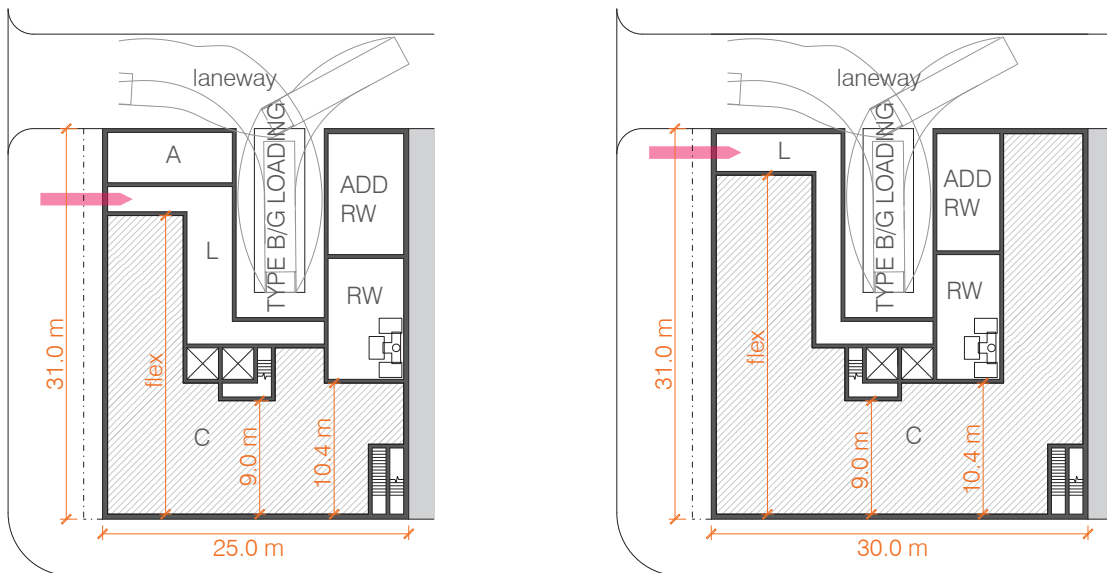


### 3.2.8 DEVELOPMENT 1: CORNER



**Fig. 3.15** Parking Ramp + Loading Space Provided

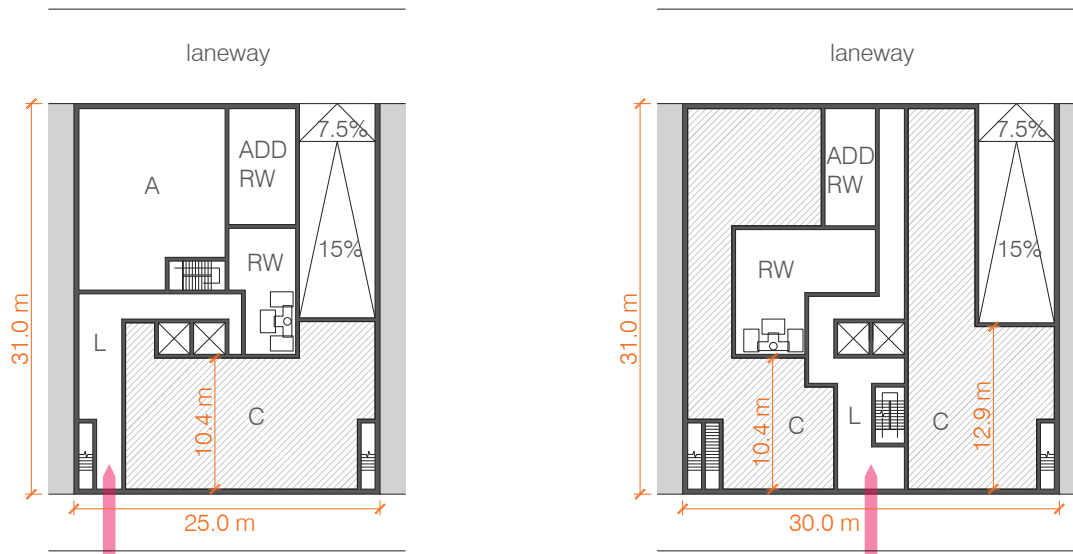
The corner frontage offers the opportunity to enter the lobby on the side street maximizing the retail frontage on the avenue and extend it around the corner. The 30m wide frontage offers some greater flexibility over the 25m wide building at the rear, allowing for either an extended commercial space or larger amenity space.



**Fig. 3.16** No Parking Ramp + Loading Space Provided

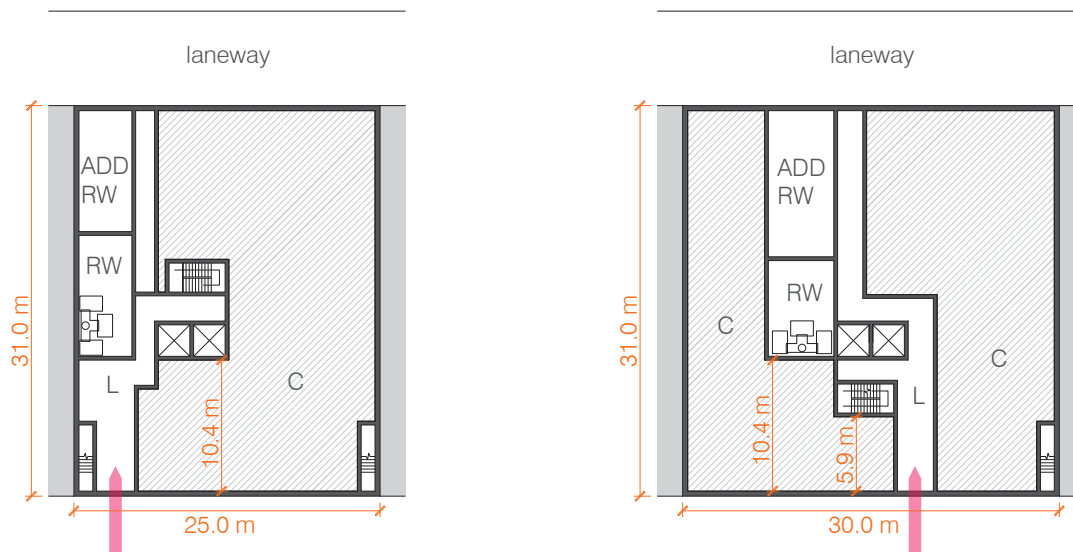
At the 25m frontage, the elimination of a parking ramp now offers the ability to produce a deeper commercial space on the corner. At the 30m frontage, the commercial space becomes quite flexible allowing for the commercial space to possibly extend to the rear of the building. Along with a maintained minimum 9m depth, this configuration of commercial space could more easily accommodate multiple tenants.

### 3.2.9 DEVELOPMENT 2, 3, n: MID-BLOCK



**Fig. 3.17** Parking Ramp + No Loading Space Provided

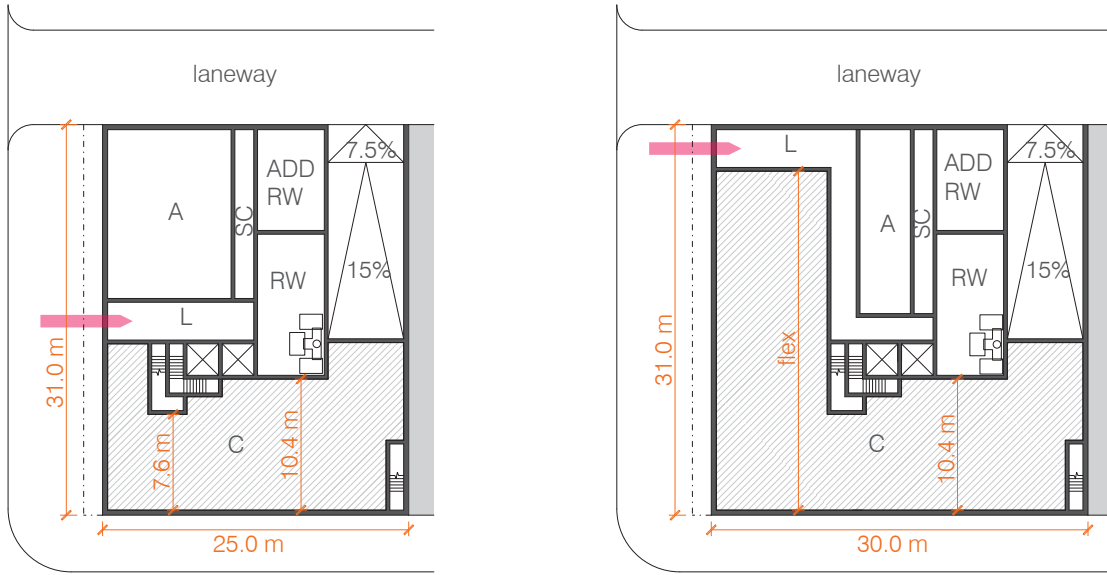
At 25m wide, eliminating the loading space allows for a more flexible back of house, but would still be limited to non-commercial uses. This allows for the stair to the parking garage to be pushed to the rear, increasing the depth of the commercial space. At both building widths, the amount and flexibility of the commercial space is improved by the elimination of the loading requirements, but not as much as eliminating the parking ramp.



**Fig. 3.18** No Parking Ramp + No Loading Space Provided

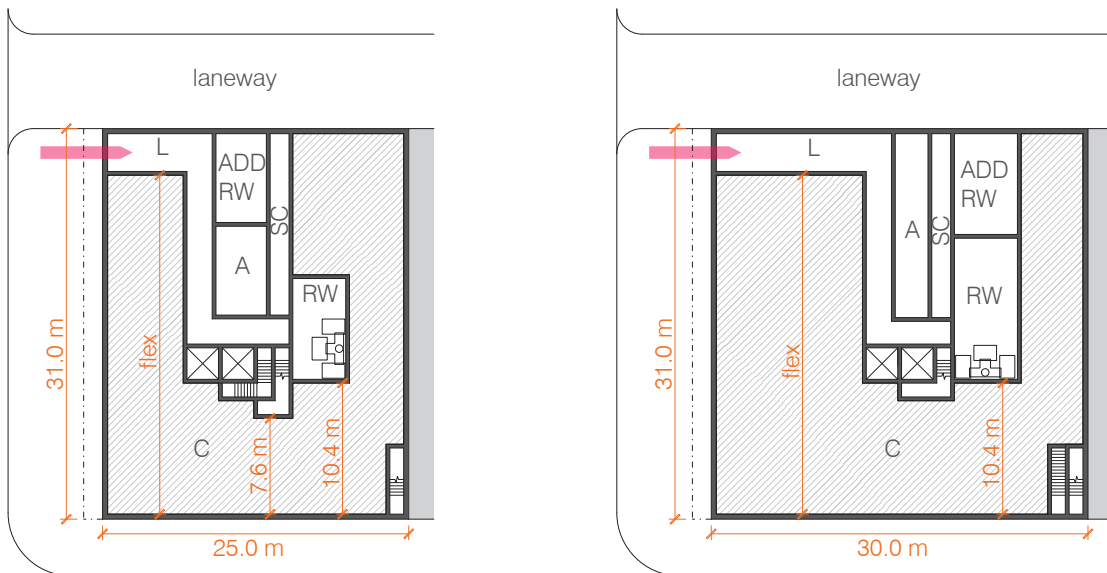
The elimination of both the loading space and parking ramp entirely frees up the entire ground floor at both building widths. This offers great flexibility in being able to easily accommodate a wider range and multiple tenants.

### 3.2.10 DEVELOPMENT 2, 3, n: CORNER



**Fig. 3.19** Parking Ramp + No Loading Space Provided

Unlike a single loading space, which can be stacked to the rear of the elevator bank, the parking ramp needs to be offset. This produces a ground similarly flexible to, but less flexible than the building with just the elimination of the parking ramp. However, not as much space to the rear of the commercial space is being used for servicing of the building, allowing for more building amenities / amenity space to be provided at grade.



**Fig. 3.20** No Parking Ramp + No Loading Space Provided

The elimination of both the loading space and parking ramp entirely frees up the entire ground floor at both building widths. This offers great flexibility in being able to easily accommodate a wider range and multiple tenants. This corner development is more flexible than the comparable mid-block development because there is no lobby on the avenue frontage dividing the commercial space in two, allowing for more ease in subdivision.

## **3.3 REAR BUILDING**

### **3.3.1 REAR BUILDING ENVELOPE GUIDELINES**

This section contains building envelope guidelines for buildings that will be located on formerly single and semi-detached residential properties as part of an assembly that includes avenue properties. It proposes design guidelines for four to six storey buildings in five different orientations that are feasible on the side streets off St. Clair Ave. W on N-S and E-W oriented blocks. This is followed by a general outline of how these low mid-rise building types are conventionally organized, and how a parking ramp could be accommodated within each of them for access to a consolidated underground parking garage.

The proposed design guidelines presented draw heavily from the guidelines produced by the *Avenues and Mid-Rise Buildings Study* and *By-Law No. 1103-2009* because these guidelines represent the City of Toronto's idea of acceptable adjacencies between the existing residential fabric and new multi-storey residential buildings. They are used as a base for these proposed guidelines which also consider additional shadow studies to ensure any new development does not overshadow or overbear a residential property an unacceptable amount. (See Appendix for shadow studies.) Just as with the avenue building shadow studies, the guidelines do not consider morning overshadowing a concern. However, all efforts were taken to eliminate or significantly limit overshadowing of rear yards and roofs of residential properties from midday till late afternoon.

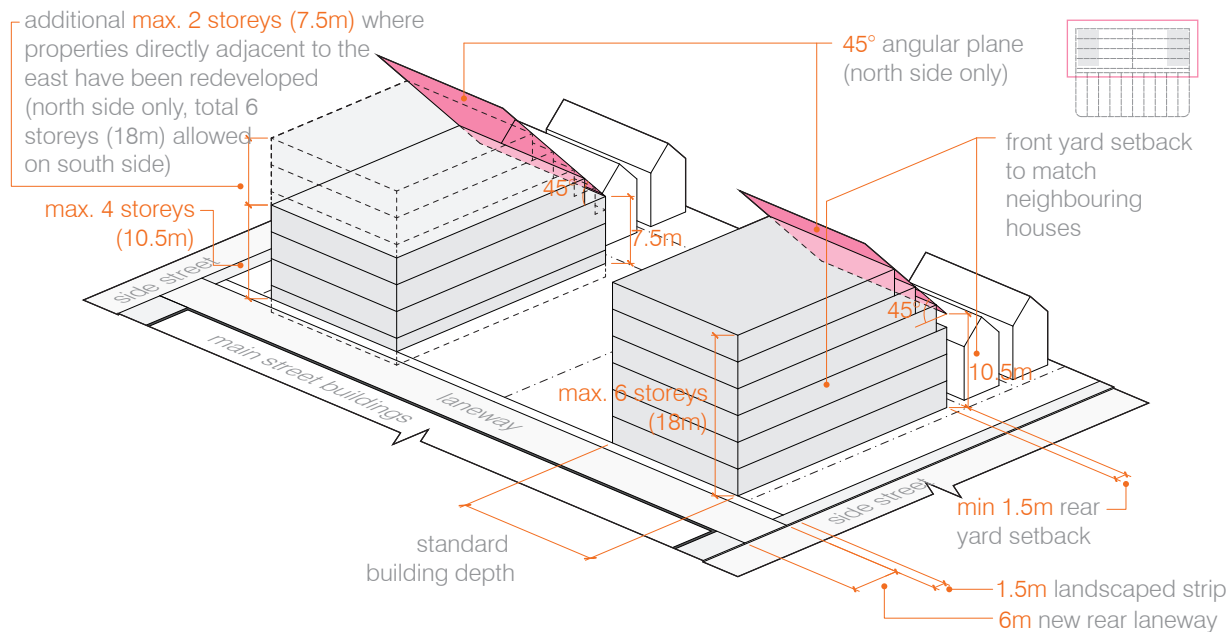
The pattern of incremental redevelopment along St. Clair Ave. W will likely produce conditions where certain rear yards may be redeveloped into low mid-rise buildings, but others are not, even if they are included in the extended enhancement zone. In consideration of unforeseen overshadowing with diagonally adjacent properties (as per the problem highlighted in the introduction), shadow studies were completed to account for overshadowing not just directly to the north, but also diagonally and to the east. This was to ensure that at all stages of the redevelopment of St. Clair Ave. W, the impact on residential single and semi-detached properties would be limited.

The guidelines are also designed to minimize the impact on the lay-out of conventional building types. Multi-storey slab buildings can more easily accept angular plane setbacks than townhouses, since each individual unit is contained to a single floor. Townhouses can accept some minimal setbacks, but they are already generally narrow units and requiring multiple tiered setbacks makes the units more difficult to organize. This is present in the guidelines for N-S oriented development on a N-S oriented block where the angular plane restrictions were placed at heights that were consistent with the floor heights of the building typology. While starting the angular plane restriction lower in this situation would further minimize

overshadowing, requiring setbacks on two levels of a townhouse would be difficult to accommodate. Shadow studies were also used to develop height restrictions that would limit overshadowing directly to the east. Although angular plane restrictions could have also been used instead to limit overshadowing to the east instead of setting height restrictions, the angular planes would have had to be at a low angle to achieve similar results. This would have complicated the envelope restrictions too much and would not produce a feasible building. For example, two angular plane restrictions applied to perpendicular two faces of a building, would simply make it not possible to accommodate a core required for five and six storey buildings.

The overall ambition in these set of proposed guidelines is to allow for four to six storey conventional buildings that, while encroach on the residential fabric, they are consistent with the City's existing policy on producing comfortable adjacencies between new avenue developments and existing single and semi-detached properties.

### 3.3.2 N-S BLOCK: N-S ORIENTED BUILDING GUIDELINES



**Fig. 3.21** N-S Oriented Building Guidelines on a N-S Oriented Block

Guidelines for rear buildings oriented N-S on a N-S block. This orientation of development is ideal for assemblies or residential properties that are relatively shallow to maximize the FSI on the site. It is also ideal for sites with extensive and significant vegetation as this orientation generally maintains the existing footprint of buildings.

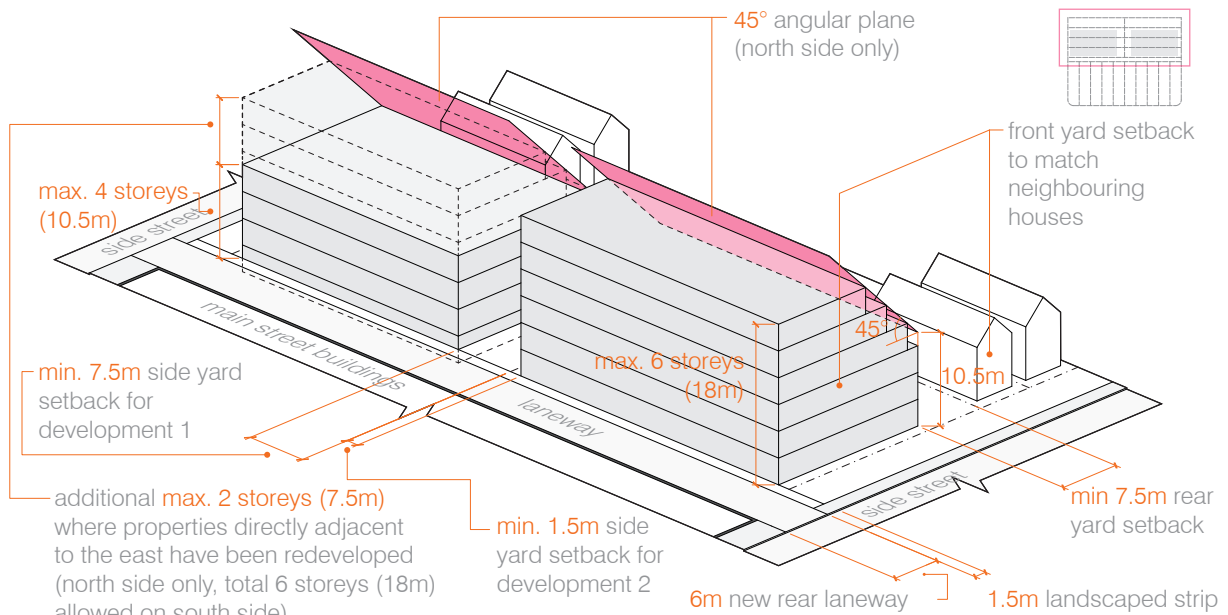
#### RATIONALE

Minimal setbacks are required between the new development and adjacent buildings because this orientation maintains the existing footprint of the existing building. Setbacks from the shared side yard property line dividing the block are not required because the blocks are sufficiently wide. Angular plane and height restrictions are required on the north side of St. Clair Ave. W. On the west side, the angular plane setback is required primarily to limit afternoon overshadowing of the backyards of properties to the north. On the east side, the angular plane setback is required to eliminate any overshadowing of roofs on properties adjacent to the north. A height limit of 4 storeys is required where residential properties on the east side have not been redeveloped, to limit late afternoon overshadowing of their backyards, otherwise 6 storeys is allowed.

#### SUMMARY

- front yard setback to match adjacent properties
- min. 1.5m rear yard setback
- max. 4 storeys (10.5m) (excluding mechanical penthouse) on the west side of a block, where the east portion has NOT been redeveloped (north side only)
- max. 6 storeys (18m) (excluding mechanical penthouse) on the west side of a block, where the east portion has been redeveloped (north side only)
- a 45 degree angular plane applied at a height of 7.5m, 1.5m from the rear property line on the west side of the block (north side only)
- max. 6 storeys (18m) on the east side of a block or on the south side of St. Clair Ave. W
- a 45 degree angular plane applied at a height of 10.5m, 1.5m from the rear property line on the east side of the block (north side only)

### 3.3.3 N-S BLOCK: E-W ORIENTED BUILDING GUIDELINES



**Fig. 3.22** E-W Oriented Building Guidelines

This orientation of development is ideal for assemblies or residential properties that are relatively deep to maximize the FSI on the site. It is also ideal for sites with little existing vegetation because it has a different footprint than the existing buildings and will help produce a more substantial visual buffer to the avenue building.

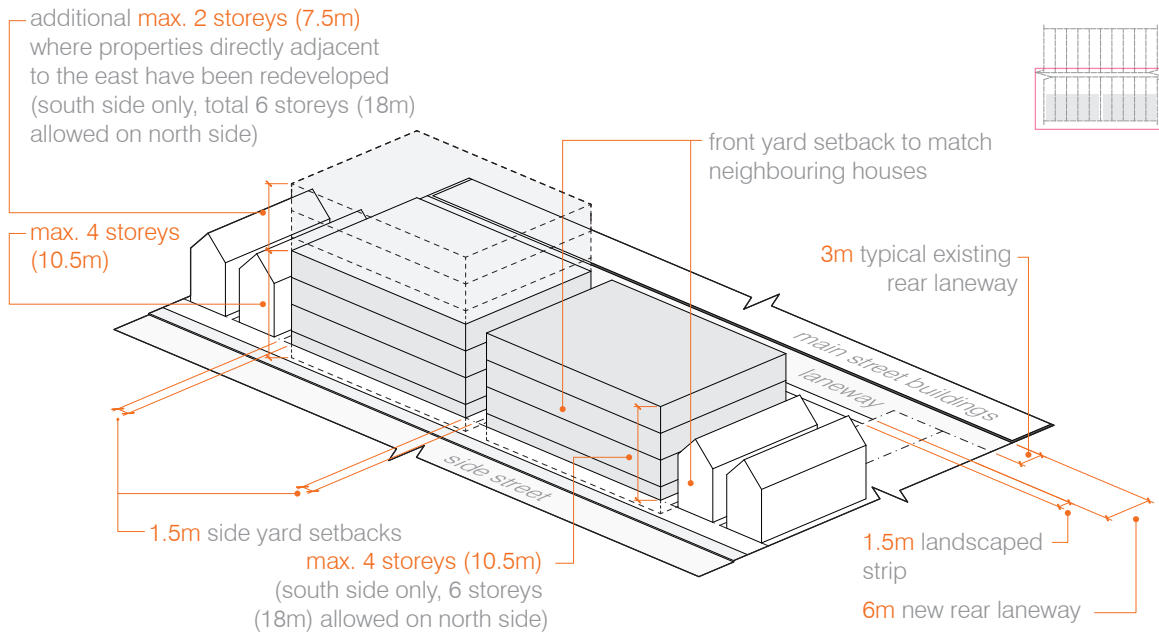
#### RATIONALE

The guidelines for this orientation are generally identical to the *Avenues and Mid-Rise Buildings Study* to be consistent with the City’s goals. Buildings must be set back 7.5m from the rear property line and an angular plane setback is required at 10.5m high, 7.5m from the rear residential property line. A minimum 7.5m side yard setback is required for the first development to maintain the acceptable buffer zone set out by the city. The second development only requires a minimum 1.5m side yard setback. A height limit of 4 storeys is required where residential properties on the east side have not been redeveloped, to limit late afternoon overshadowing of their backyards, otherwise 6 storeys are allowed. This height limit and angular plane restriction are only applicable on the north side of St. Clair Ave. W.

#### SUMMARY

- front yard setback to match adjacent properties
- min. 7.5m rear yard setback
- min. 7.5m and 1.5m side yard setbacks for the first and second development respectively
- max. 4 storeys (10.5m) (excluding mechanical penthouse) on the west side of a block, where the east portion has NOT been redeveloped (north side only)
- max. 6 storeys (18m) (excluding mechanical penthouse) on the west side of a block, where the east portion has been redeveloped (north side only)
- max. 6 storeys (18m) on the east side of a block or on the south side of St. Clair Ave. W
- a 45 degree angular plane applied at a height of 10.5m, 7.5m from the rear property line across the block (north side only)

### 3.3.4 E-W BLOCK: E-W ORIENTED BUILDING GUIDELINES



**Fig. 3.23** Laneway Building Guidelines

This orientation is ideal because it maintains the footprint of the existing buildings which allows it to have minimal setbacks. This maximizes the FSI, and will save any existing vegetation.

#### RATIONALE

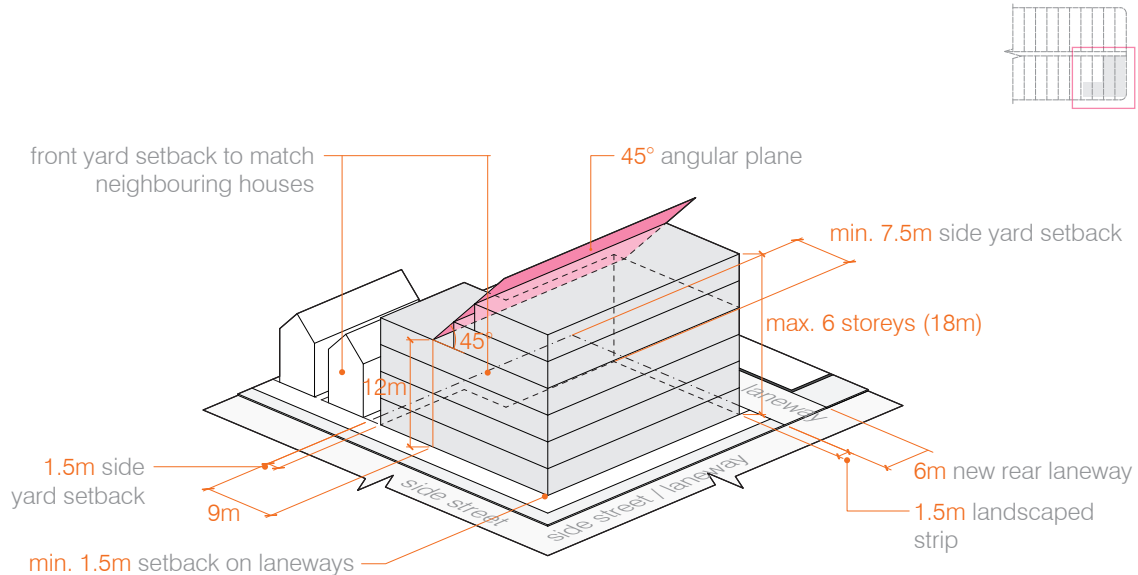
Minimal setbacks are required between the new development and adjacent buildings since it maintains the footprint of the existing buildings. Larger setbacks would be required to accommodate vehicular access if desired. A height limit of 4 storeys is required where residential properties to the east of the development have not been redeveloped, to limit late afternoon overshadowing of their backyards, otherwise 6 storeys are allowed. This height restriction is only applicable to the south side of St. Clair Ave. W.

#### SUMMARY

- front yard setback to match adjacent properties
- min. 1.5m rear yard setback
- max. 4 storeys (10.5m) (excluding mechanical penthouse) for the portion of a block, where the east portion has NOT been redeveloped (south side of St. Clair Ave. W only)
- max. 6 storeys (18m) (excluding mechanical penthouse) for the portion of a block, where the east portion has been redeveloped (south side) or is on the south side of St. Clair Ave. W



### 3.3.5 E-W BLOCK: N-S ORIENTED / CORNER BUILDING GUIDELINES



**Fig. 3.24** E-W Oriented Building Guidelines

This orientation is ideal for developments on E-W oriented blocks with deep residential properties to maximize the FSI, since it has the largest footprint. The L configuration is also ideal because it provides a greater amount of building face that is visually blocking the servicing of the avenue building to the rear.

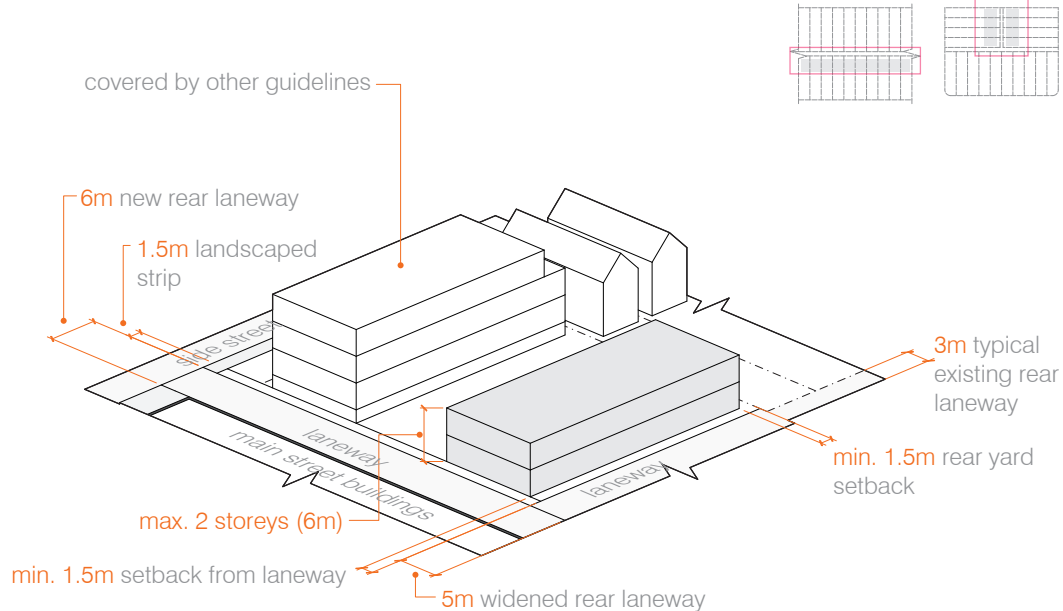
#### RATIONALE

The guidelines are drawn from the guidelines for N-S Blocks: E-W Buildings because it is effectively the same condition. However, only a 1.5m side yard setback should be provided to produce an L shape building. The minimal setback maintains the character of the street and provides a visual buffer to the rear laneway and larger main street building. A 7.5m side yard setback is required for the N-S portion of the building to maintain acceptable separation from the rear yard of the adjacent property. An angular plane at 12m high, 9m from the side property line allows for 4 storeys without setbacks in a 4+ storey building. The setbacks allow for greater privacy and would also reduce some morning or afternoon overshadowing of adjacent residential properties. This is only applicable to the south side of St. Clair Ave. W.

#### SUMMARY

- front yard setback to match adjacent properties
- min. 1.5m side yard setback (at front)
- min. 7.5m side yard setback (at back)
- min. 1.5m setback from laneway (where applicable)
- max. 6 storeys (18m) (excluding mechanical penthouse)
- a 45 degree angular plane applied at a height of 12m, 9m from the side residential property line

### 3.3.6 N-S & E-W BLOCK: LANEWAY BUILDING GUIDELINES



**Fig. 3.25** E-W Oriented Building Guidelines

The addition of a second layer of development is ideal for deep residential properties without significant vegetation in the backyard. It is also ideal for rear laneways that are lined with garages, maintaining the same visual presence on the laneway.

#### RATIONALE

The guidelines are drawn from *Changing Lanes: The City of Toronto's Review of Laneway Suites Final Report* on laneway housing, which require a 1.5m setback from the laneway and limiting the building to a maximum of 2 storeys (6m).<sup>1</sup> The proposed floor plate areas would be larger than allowed, but in keeping with the principal guidelines so that the impact of these laneway buildings represents the same acceptable amount of impact. These developments need to also allow for the widening of residential laneways to 5m as desired by the City of Toronto<sup>2</sup>.

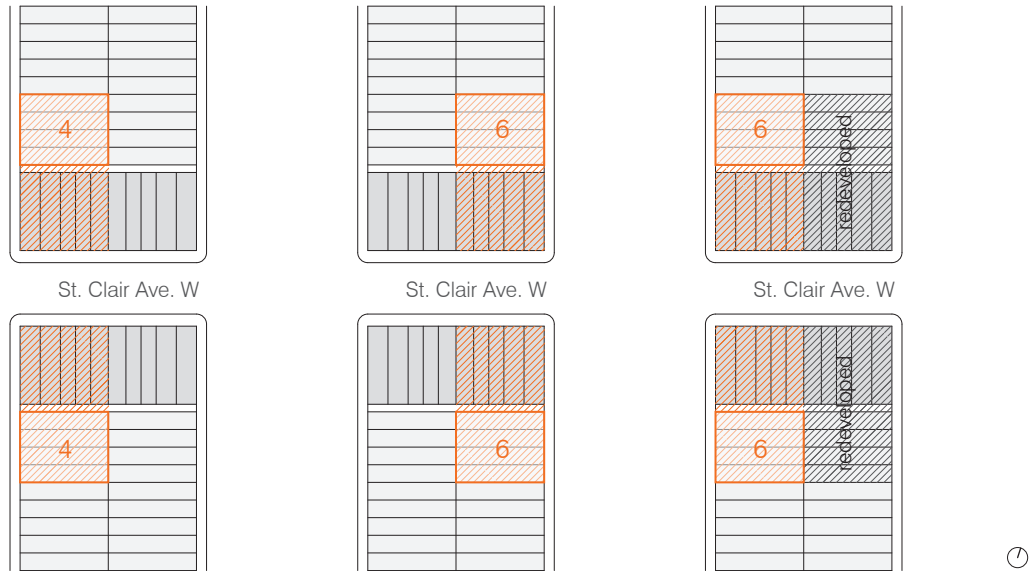
#### SUMMARY

- min. 1.5m rear yard setback
- min. 1.5m setback from laneway
- max. 2 storeys (6m)
- widening of residential laneway to 5m

<sup>1</sup> City of Toronto, City Planning Division, *Changing Lanes: The City of Toronto's Review of Laneway Suites – City-Initiated Official Plan Amendment and Zoning Amendment – Final Report*, (Toronto, 2018), 25, <https://www.toronto.ca/legdocs/mmis/2018/te/bgrd/backgroundfile-114992.pdf>.

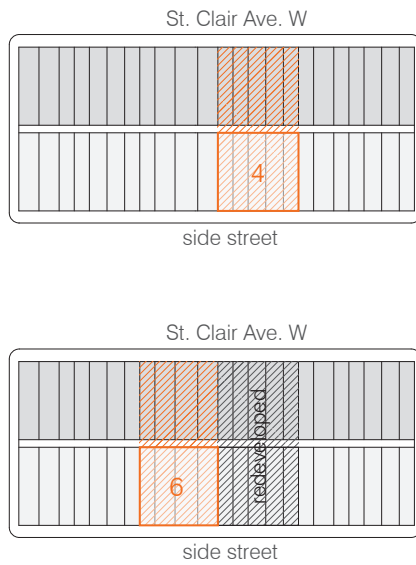
<sup>2</sup> Ibid, 31.

### 3.3.7 REAR BUILDING HEIGHTS & ORDER OF DEVELOPMENT



**Fig. 3.26** N-S Block: Rear Building Height Related to Order of Development

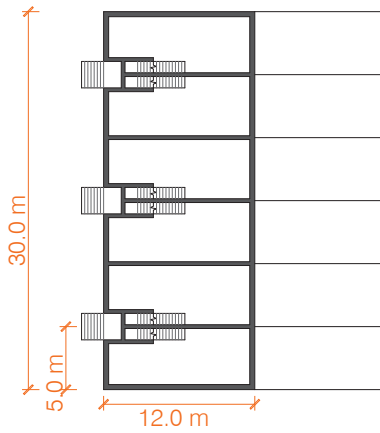
This diagram lists the maximum height in storeys for the rear building in a new development. A development on the west portion of a block is limited to 4 storeys unless the property to the east has already been redeveloped. The east portion of a block is limited to 6 storeys. These height restrictions only apply to properties on both the north and south side of St. Clair Ave. W.



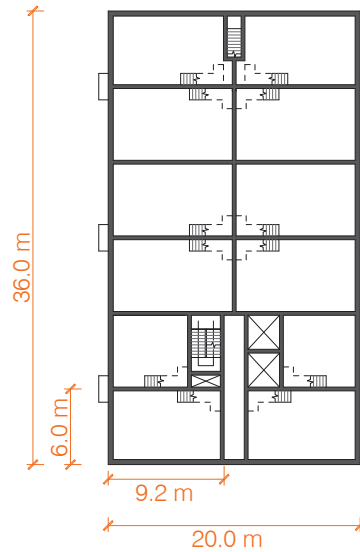
**Fig. 3.27** E-W Block: Rear Building Height Related to Order of Development

This diagram lists the maximum height in storeys for the rear building in a new development. A development is permitted a maximum of 4 storeys unless the property directly adjacent to the east has already been redeveloped. If this is the case, the height restriction is now 6 storeys. These height restrictions only apply to properties on the south side of St. Clair Ave. W.

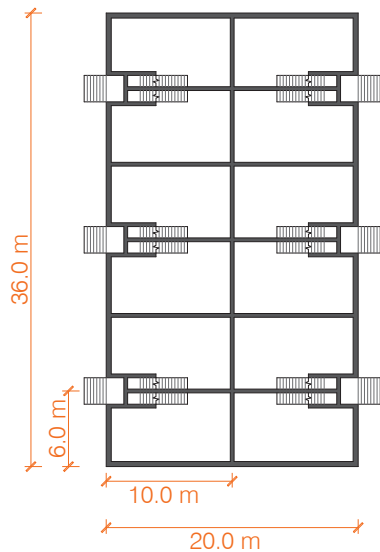
### 3.3.8 REAR BUILDING TYPES



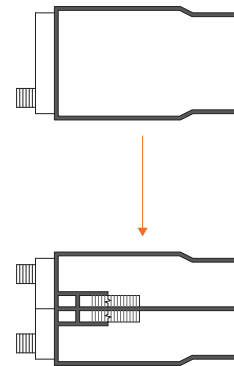
**Fig. 3.28** Stacked Through Townhouses  
 This building type offers the highest quality unit of the rear building types. It's comparable size to existing houses in the neighbourhood allows this building type to maintain the existing footprint.



**Fig. 3.29** Low-Rise Apartment Building  
 This building type offers the greatest density, while still providing at grade units on the lower floors. The additional height improves the building's ability to be a buffer zone.

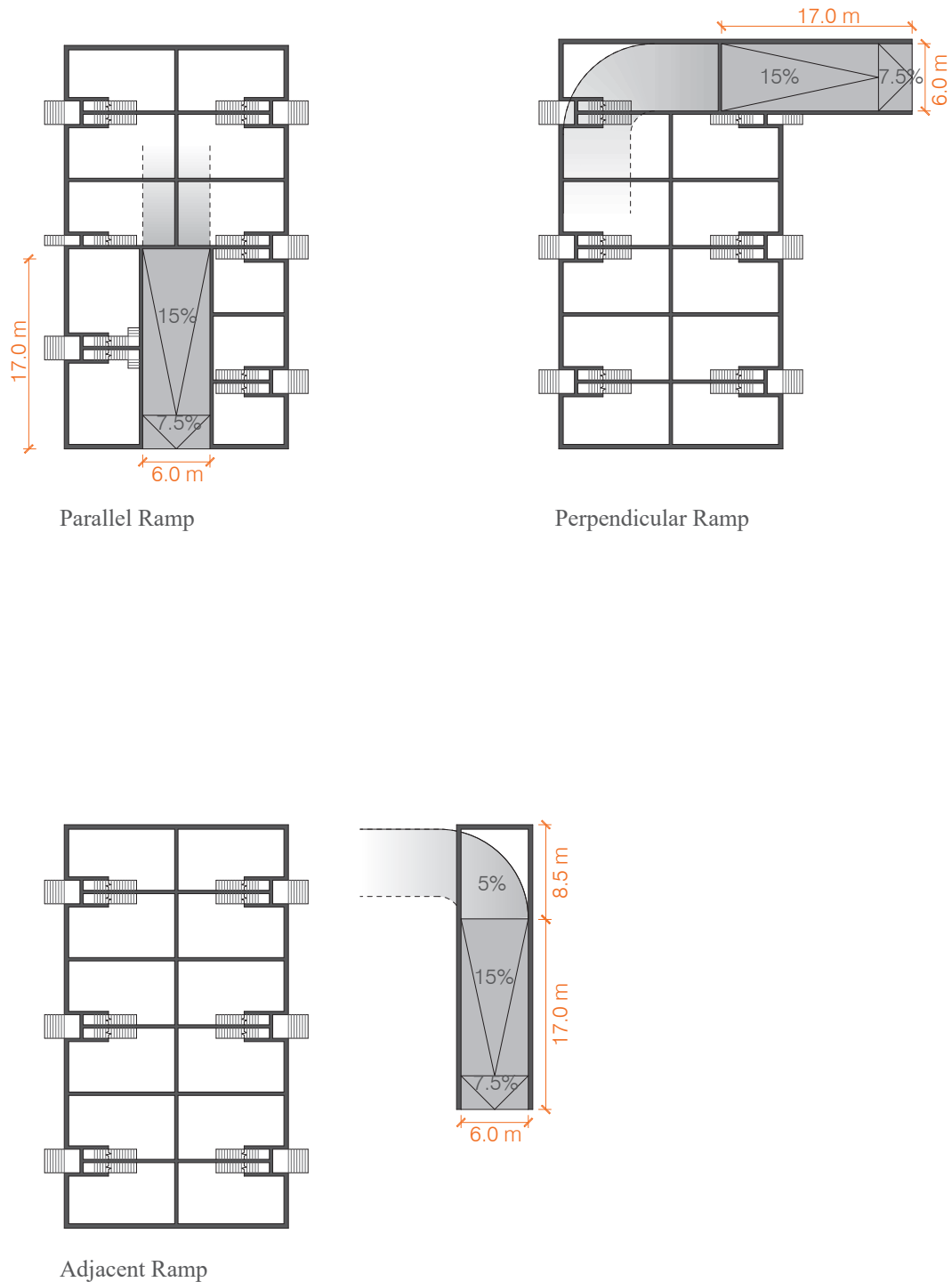


**Fig. 3.30** Stacked Back-to-Back Townhouses  
 This building type offers the ability to add the greatest number of at grade units. It is slightly larger than the existing residential houses, which could require the removal of vegetation.



**Fig. 3.31** Re-Use Existing Building (Multiplexes)  
 This method prevents houses from being demolished and maintains the look of the street. However, this will not provide a great physical and visual buffer, nor a great number of units.

### 3.3.9 PARKING RAMP CONFIGURATIONS



**Fig. 3.32** Parking Ramp Configurations

All three ramp configurations can be incorporated into the back-to-back townhouses (illustrated here) or low-rise apartment building type. However, only an adjacent or perpendicular ramp configuration can be incorporated into a stacked through townhouse building.



4

**PROTOTYPICAL CASE STUDIES  
FOR ST. CLAIR AVE. W**

This section illustrates how the proposed building design guidelines in this thesis could translate into new buildings on six sites on St. Clair Ave. W between Bathurst St. and Old Weston Rd. This section is also a response to *Appendix H, Prototypical Sites to Avenues and Mid-Rise Buildings Study*, which outlined how the guidelines in that study would translate into urban form, without consideration for how the buildings would actually be laid-out. Six sites, each of which are urban blocks, were chosen to illustrate the flexibility offered by the proposed guidelines and how incremental development could unfold across each of them. The sites chosen represent a cross section of the street and include both N-S and E-W oriented blocks, ranging from normative sites to sites with greater anomalies (in the order listed). The following six sites on St. Clair Ave. W were selected:

- Site 1: between Earls court Ave. & Nairn Ave. on the north side
- Site 2: between Dufferin St. and Via Italia on the south side
- Site 3: between Lauder Ave. & Glenholme Ave. on the south side
- Site 4: between Rushton Rd. & Humewood Dr. on the north side
- Site 5: between Vaughan Rd. & Wychwood Ave. on the south side
- Site 6: between Vaughan Rd. & Wychwood Ave. on the south side

For each proposal on a block, the development is modeled off density, which was then used to calculate the number of storeys required to meet the density. The number of storeys calculation assumed a 20m deep building and the calculated value for the number of storeys was rounded up. The density for the first development on a block was modeled at 0.5 FSI higher than the total FSI allowed on the property as per *By-Law No. 1103-2009*. Any subsequent development was modeled off the previous development's base FSI and then added an additional 1 FSI. For example, on a block zoned for a density of 5.5 FSI under *By-Law No. 1103-2009*, the first development is modeled based on 6 FSI and the subsequent one is modeled based on 7 FSI. The actual FSIs would be slightly higher due to rounding up the number of storeys although the modeled FSI is presented in the project data for each case study building for clarity. The incremental increase in density, along with the rounding up of storeys is an effort to account for the continual push for increased density required to facilitate the re-urbanization of St. Clair Ave. W. These measures also help account for the fact these proposed buildings' FSIs are based on gross building area, not gross floor area, which would include specific deductions. Additionally, any redevelopment on a site with an existing surface parking lot was assumed to be required by the City to incorporate

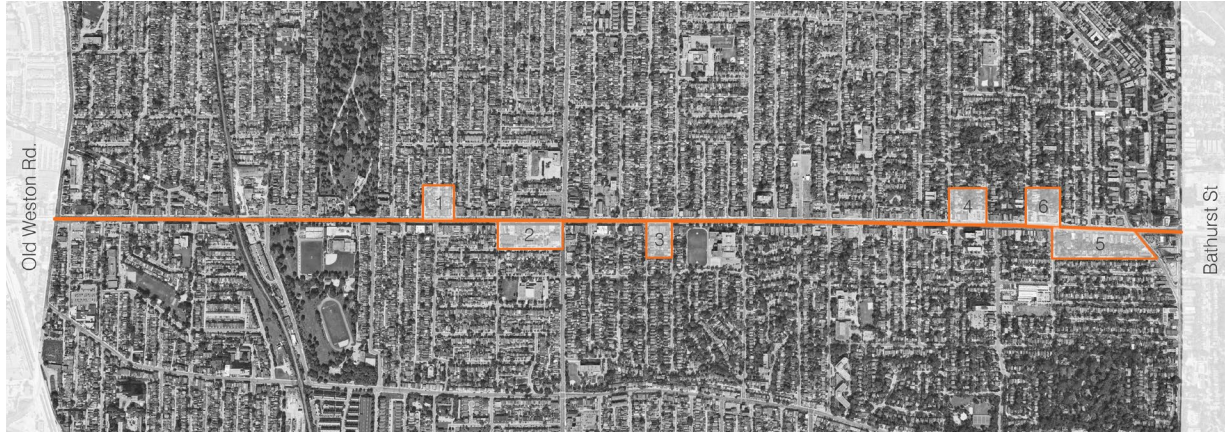


an extra level of parking for public use, which would be provided in exchange for an additional 1 FSI.

Each site selected is provided with a description of the site and a rationale for the selection and how this block would likely develop under the proposed urban design guidelines in this thesis. Each development on the block is illustrated as a separate phase of development with a ground floor plan, building sections, axonometric and a shadow study in accordance with the City of Toronto standards. The first two sites which represent the most typical conditions on St. Clair Ave. W also include a comparative spread between how this block could develop under this proposal with how it would have likely developed under *By-Law No. 1103-2009*. Each development also includes a project data table with information including the estimated number of units in the project. The estimated number of units was calculated based off an assumed average 80m<sup>2</sup> unit (derived from the current proposed developments on St. Clair Ave. W) and an approximate 85% gross building area efficiency. These calculations along with the density and number of storey calculations can be found in the appendix.

The assembly required for each site is realistic accounting for buildings that are on separate properties but were physically constructed together and would be unlikely to be only partially included in a redevelopment scheme. The designs for the proposals are also realistic, although it is assumed that details such as transfer stairs, exiting and clearance height for waste collection vehicles could be resolved through coordination.


## OVERVIEW OF SITES



**Fig. 4.1** Selected Sites

The six prototypical sites were selected along the site of this thesis which is St. Clair Ave. W between Bathurst St. and Old Weston Rd., which alligns with area covered under *By-Law No. 1103-2009*.

## LEGEND TO DRAWINGS

- L • lobby
- C • commercial space (including commercial waste)
- RW • residential waste
- ADD RW • additional residential waste; residential waste from rear building
- A • amenity space (including mail room, bicycle parking)
- SC • service corridor, to be used for waste management and exiting
-  • denotes buildings located across multiple separate properties, but constructed together



## 4.1 SITE 1

### ST. CLAIR AVE. W BETWEEN EARLSCOURT AVE. & NAIRN AVE. (NORTH SIDE)



**Fig. 4.2** Site 1, Location Key

The site is located within a stretch of typical urban fabric, without any anomalies. It is located a few blocks east of Prospect Cemetery.

#### **SITE DESCRIPTION:**

This site consists of narrow two and three store avenue buildings and semi-detached houses to the rear on the local side streets. There is an existing rear laneway behind both the avenue properties, and between the residential properties. Additionally, there is limited existing vegetation in the backyards of the residential properties.

#### **SITE RATIONALE:**

N-S oriented blocks are the most predominant block type on St. Clair Ave. W and the redevelopment pattern of the avenue properties as illustrated in this case study could be expected along most of the street. A typical block on the north side also illustrates the limited overshadowing impact. The semi-detached houses can make deep assemblies more costly, but a rear laneway between these residential properties offers flexibility in locating access points to the rear building.

#### **DEVELOPMENT RATIONALE:**

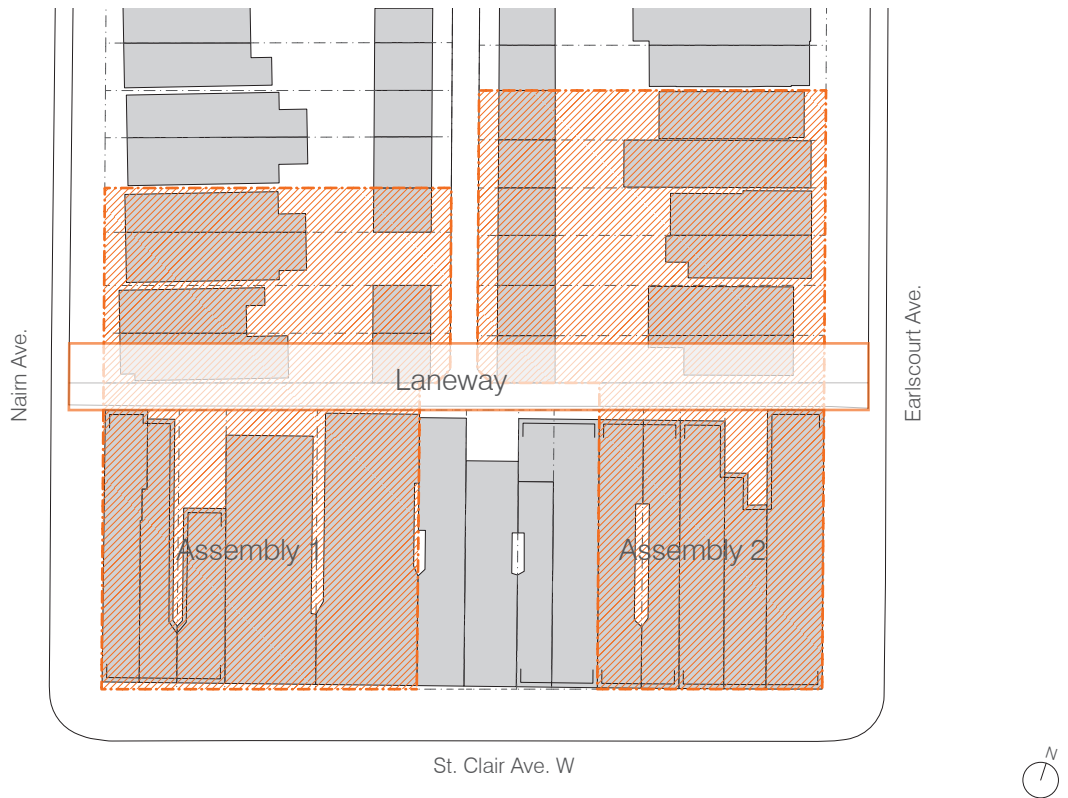
The corner of any N-S oriented block would be the first property developed because access is only to be provided via a rear laneway, and corner properties also allow for three faces of glazing. Both corners are very similar and therefore, neither one appears more likely to be redeveloped than the other first.

This case study assumes the west corner would develop first. The east corner would then be developed next. Narrower avenue assemblies should be encouraged on this block as the property structure could allow for three narrow (25m) developments to be built on it. While a third mid-block development is possible, it would likely happen much later in the future because other corner sites on the St. Clair Ave. W would be far more desirable to redevelop and the small site would make producing a functional parking garage layout difficult.



**Fig. 4.3 Site 1, Aerial Image**

The site contains relatively typical avenue buildings with semi-detached houses to the rear, and with limited existing vegetation in the rear yards of the residential properties; most significant vegetation is in the front yards.



**Fig. 4.4 Site 1, Development Order**

Two corner redevelopments could be possible with the laneway pushed to the rear. A third development (not shown) could be possible, but is not likely.

### 4.1.1 SITE 1, DEVELOPMENT 1

The residential property structure would allow for two layers of through townhouses parallel to the side streets. No substantial existing vegetation would need to be removed to permit the laneway building and consolidated parking garage. Only a minimal assembly of two sets of semi-detached houses (four properties) would be needed to provide enough depth to limit overshadowing since through townhouses cannot accommodate a parking ramp. An avenue building height of 10 storeys is required to reach the desired 6 FSI on the site, and is in keeping with the lower height restriction based on the order of development. This building would be required to provide a loading space and parking ramp.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	8	8
	Total Units	60	8	68
FSI	As-of-Right	5.5	0.6	
	Modeled	6	1.1	
Storeys	As-of-Right	9	10m	
	Modeled	10	10m	
Number of Lots Assembled		5	4	9
Loading Space		Y	N	
Parking Ramp		Y	N	

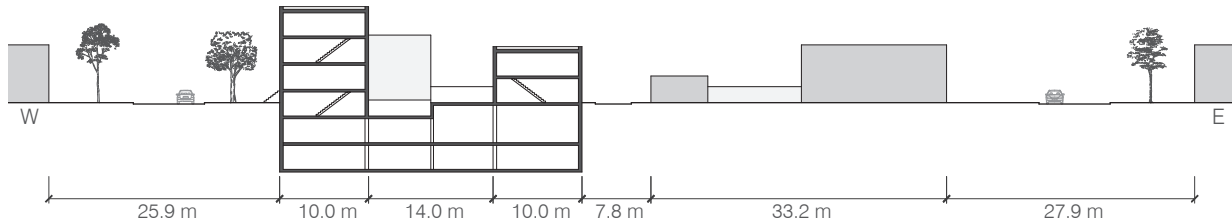
**Fig. 4.5** Site 1, Development 1, Project Data

The FSI modeled for the rear building is double what is currently permitted, although the building footprint is comparable or even less than adjacent properties.



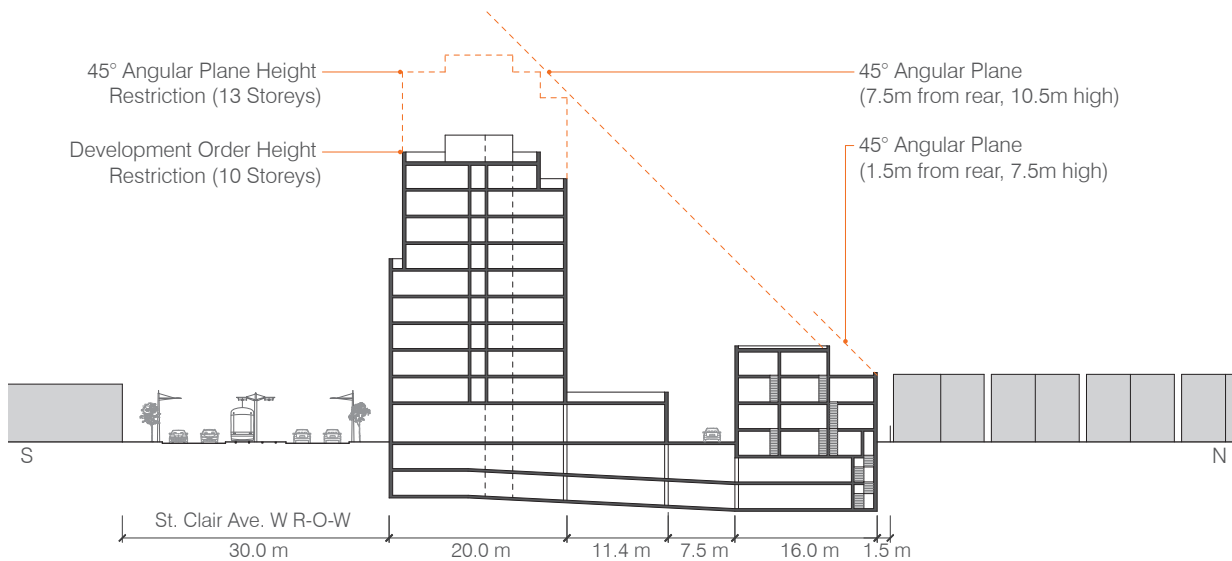
**Fig. 4.6** Site 1, Development 1, Ground Floor Plan

A widening of the rear N-S laneway is included to accommodate the City’s goal of widening these laneways where possible. This widened laneway provides at grade access to the laneway townhouses. The corner location of the development allows for a continuous retail frontage along St. Clair Ave. W, locating the lobby of the building on Naim Ave.



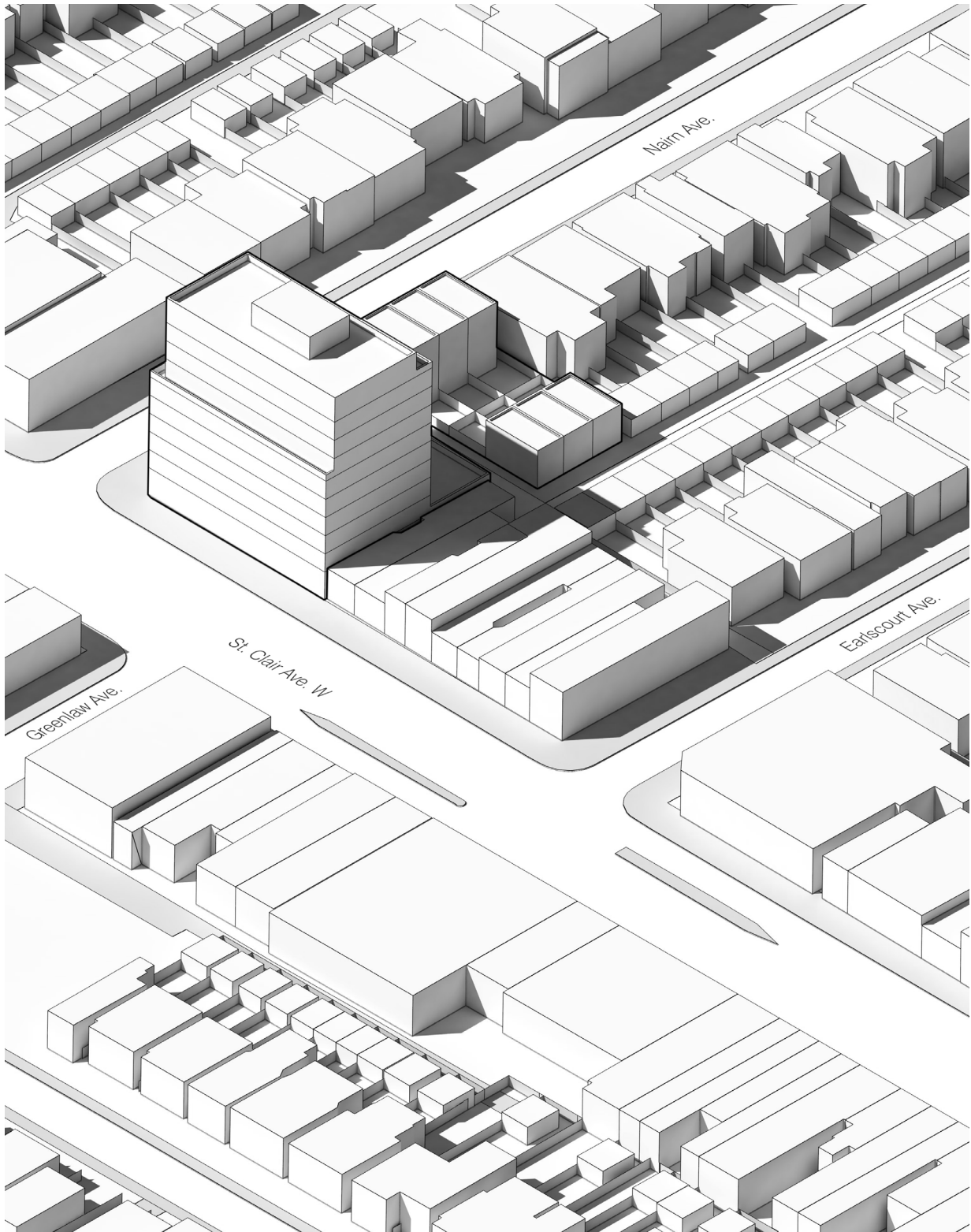
**Fig. 4.7** Site 1, Development 1, E-W Section

Only the townhouses on Nairn Ave. are stacked, while the rear portion of this development is only two storeys, to limit overshadowing to what would be acceptable shadowing by a laneway house. The different heights create a second height transition from Nairn Ave. to the laneway. (The first height transition being from the avenue building to the semi-detached houses, below.)



**Fig. 4.8** Site 1, Development 1, N-S Section

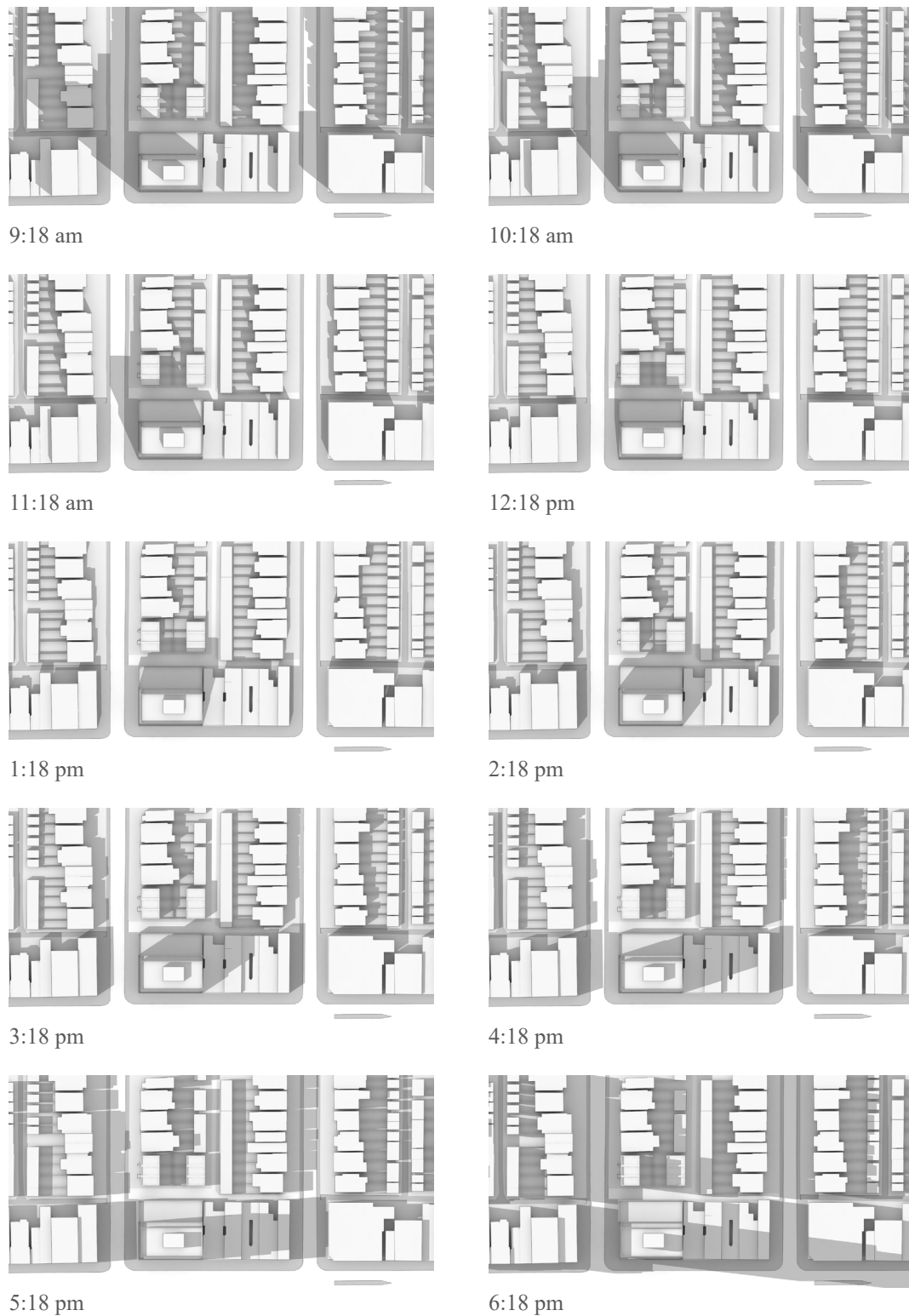
The furthest townhouse to the north is a single three storey townhouse to accommodate the smaller angular plane. The larger angular plane would limit the avenue building to 13 storeys. However, that height limit is reduced to 10 storeys since the east corner of the block has not already been redeveloped.



**Fig. 4.9** Site 1, Development 1, Axonometric

The new townhouses offer the addition of a number of high-quality units, while producing a building form that is not substantially larger.





**Fig. 4.10** Site 1, Development 1 Shadow Study, Mar. 21

The avenue building would only shade a single residential properties' rear yard for one hour in the afternoon at 3:18pm. The morning shadow impacts are also minimal as the avenue building only overshadow significantly shadows any backyards at 9:18am.

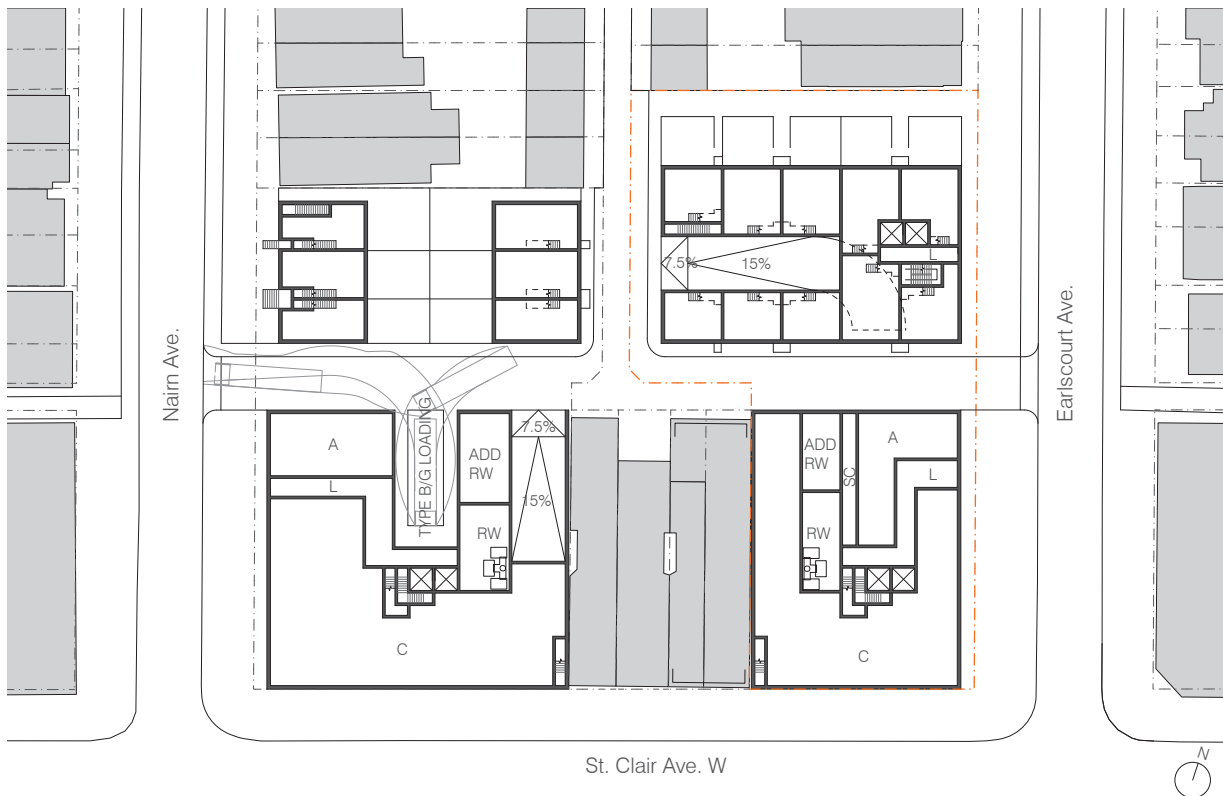
#### 4.1.2 SITE 1, DEVELOPMENT 2

The second development on the east corner could incorporate a 5 storey rear building perpendicular to the local side street. This would require a deeper residential property assembly, which the additional floor could support. The relatively large depth of the residential properties and the existing residential rear laneway allows for a parking ramp to be included in the rear building without disrupting the placement of the core. A height of 12 storeys is required to reach the desired 7 FSI for the avenue building and both building heights are well within the limits set by the order of development and angular planes. The avenue building requires neither a loading space nor a parking ramp.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	10	10
	Total Units	51	30	81
FSI	As-of-Right	5.5	0.6	
	Modeled	7	2.6	
Storeys	As-of-Right	9	10m	
	Modeled	12	15m	
Number of Lots Assembled		5	6	11
Loading Space		N	N	
Parking Ramp		N	Y	

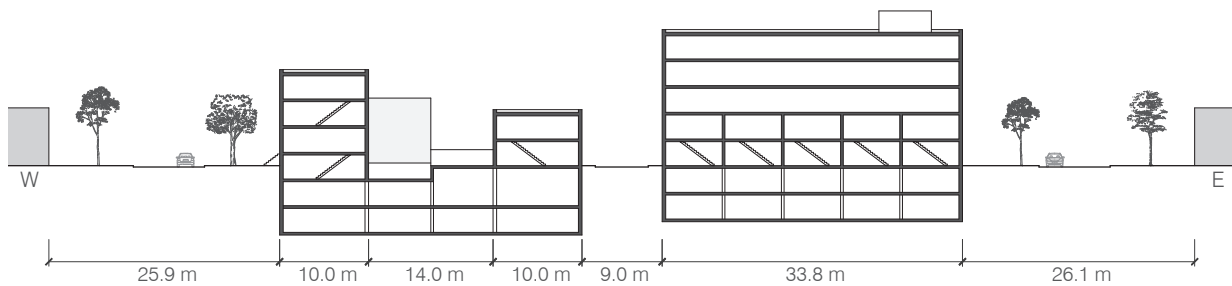
**Fig. 4.11** Site 1, Development 2, Project Data

A significant portion of the project's total units are located in the rear building.



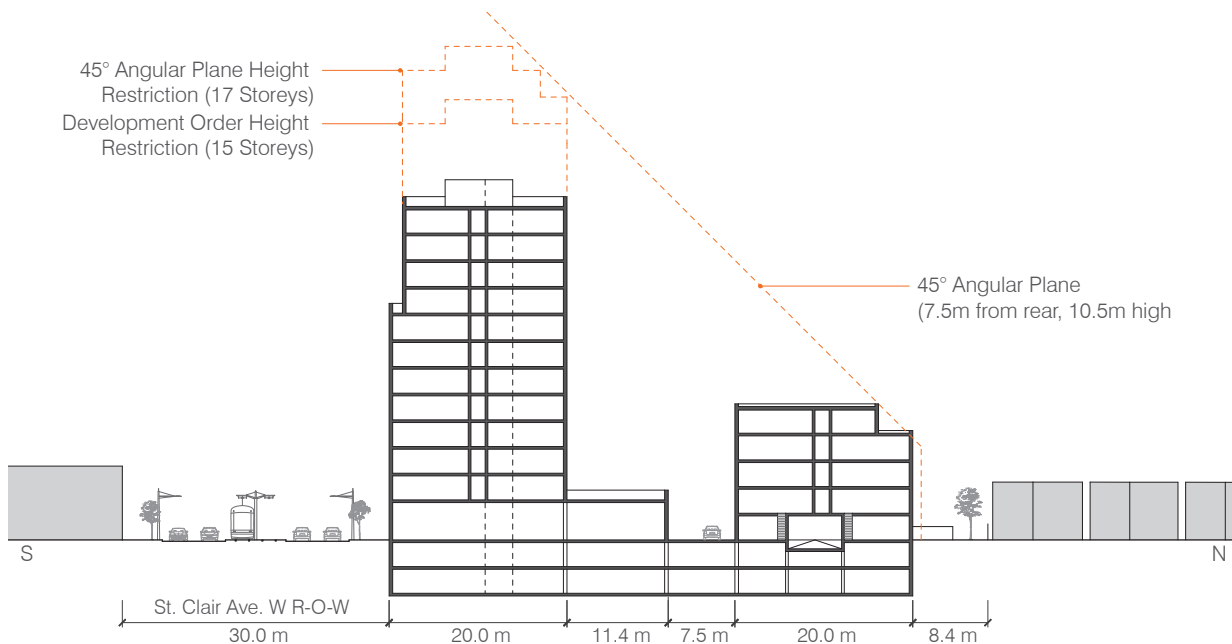
**Fig. 4.12** Site 1, Development 2, Ground Floor Plan

The alleviation for the requirement of a loading dock, and the placement of the parking ramp off of the residential assembly allows for the maximum flexibility in the amount of space allocated towards either commercial space or amenity space. The parking ramp along with the need for a core in the smaller residential building reduces the depth, but not total number, of the back-to-back two storey at grade townhouses.



**Fig. 4.13** Site 1, Development 2, E-W Section

The redevelopment of the second portion of the residential lot allows for the creation of a 6m two lane rear laneway between these two buildings, providing parking access for the second development. At five storeys, the building does not overbear over neighbouring properties across the street to the east.



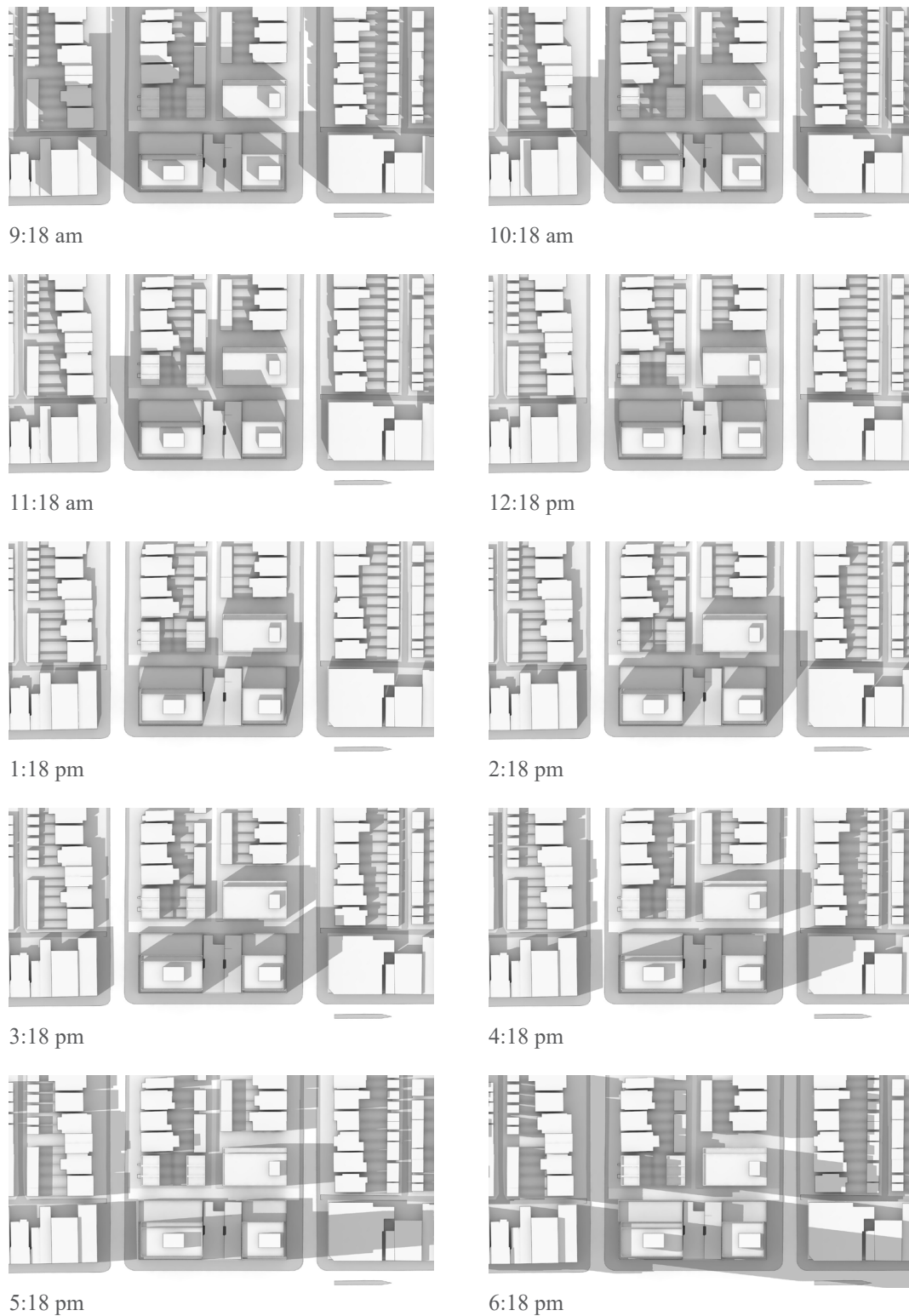
**Fig. 4.14** Site 1, Development 2, N-S Section

The small five storey building is limited by 45 degree angular plane, but fits comfortably with a single top storey setback. The building is modeled at 12 storeys based on the FSI projection. Height restrictions would be located at 15 and 17 storeys for the avenue building. Since the rear building runs along most of the width of the site, it would visually block the avenue building from sight in the backyards of the adjacent residential properties.



**Fig. 4.15** Site 1, Development 2, Axonometric

The narrow width of the second avenue building allows for some of the existing properties to be retained and maintain the character of the street. While the second avenue building is relatively tall, the added setback from the side street creates a wider sidewalk.



**Fig. 4.16** Site 1, Development 2, Shadow Study, Mar. 21

While the rear building only overshadows a residential property at 9:18am, the avenue building does not at any point overshadow the rear yard of a residential property.

### 4.1.3 SITE 1, BLOCK DEVELOPMENT, BY-LAW NO. 1103-2009



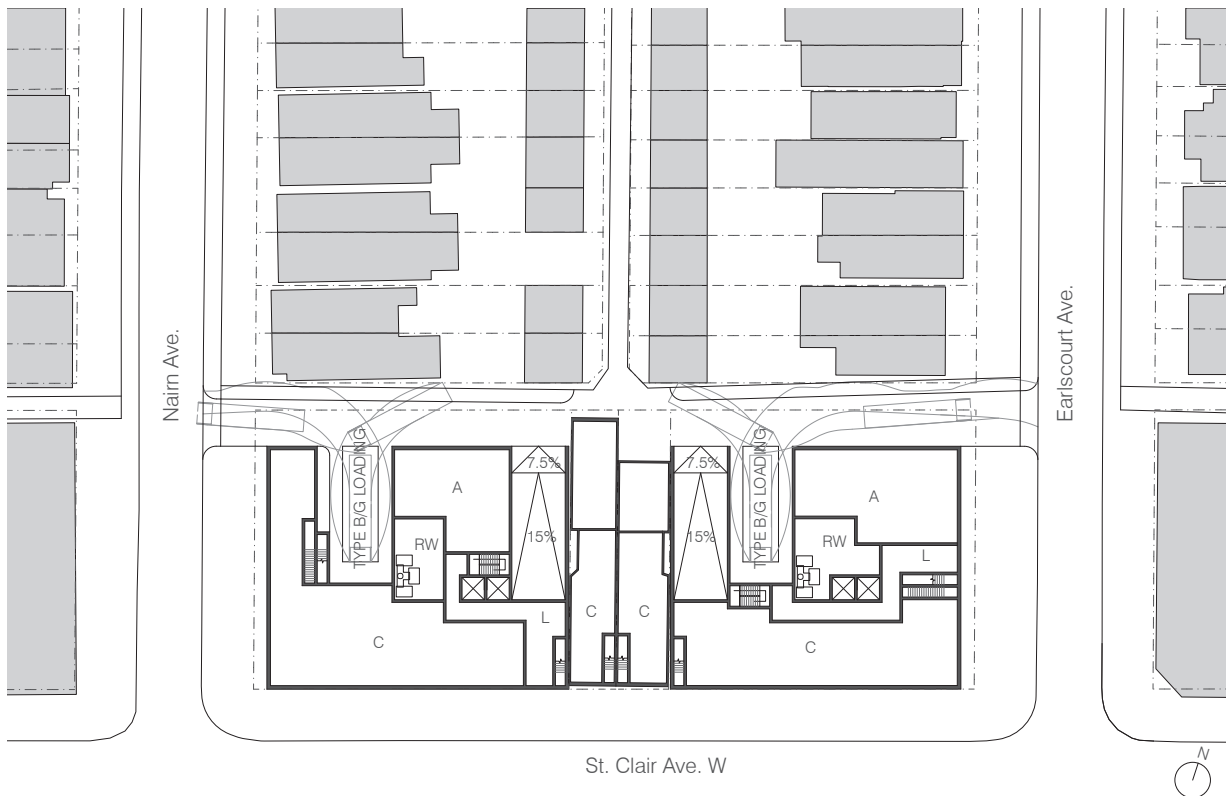
**Fig. 4.17** Axonometric, By-Law No. 1103-2009

The current by-law and guidelines would also likely produce two corner developments, although the buildings would step back at the rear and not redevelop any residential properties.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	N/A	0
	Total Units	97	N/A	97
FSI	As-of-Right	5.5	0.6	
	Modeled	5.5	N/A	
Storeys	As-of-Right	9	10m	
	Modeled	10	N/A	
Number of Lots Assembled		10	N/A	10
Number of Loading Spaces				2
Number of Parking Ramps				2

**Fig. 4.18** Site 1, Project Data, By-Law No. 113-2009

There would no creation of any at-grade units; although some existing semi-detached properties would be maintained.



**Fig. 4.19** Site 1, Ground Floor Plan, By-Law No. 1103-2009

The added functional requirements for developments under the current by-law and guidelines would likely lead to wider avenue assemblies to allow for some flexibility in the distribution of the ground floor programming. This would eat up more of the existing avenue fabric, while creating less units than the proposal overall. A lobby access on to St. Clair Ave. W would reduce the amount of retail frontage on the block.

#### 4.1.4 SITE 1, BLOCK DEVELOPMENT, PROPOSAL



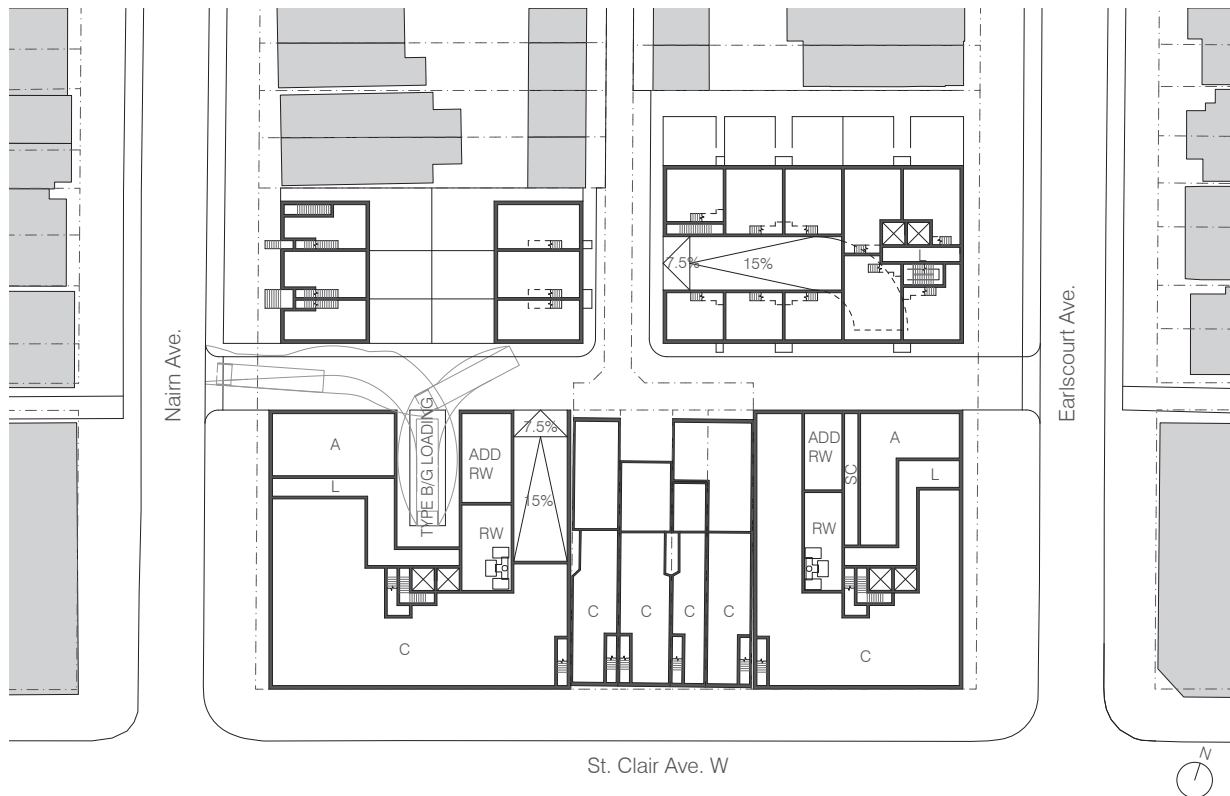
**Fig. 4.20** Axonometric, Proposal

The proposal would include the redevelopment of the residential properties to the rear. All buildings would have the same floorplate.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	18	18
	Total Units	111	38	149
FSI	As-of-Right	5.5	0.6	
	Modeled	7	2.6	
Storeys	As-of-Right	9	10m	
	Modeled	12	15m	
Number of Lots Assembled		10	10	20
Number of Loading Spaces				1
Number of Parking Ramp				2

**Fig. 4.21** Site 1, Project Data, Proposal

Even considering the existing semi-detached properties that would be maintained by the guidelines, there is still a much higher net total of at grade units in this proposal.



**Fig. 4.22** Site 1, Ground Floor Plan, Proposal

This proposal would produce a significantly larger and more flexible ground floor plan that also maintains more of the existing fabric. The redevelopment of the residential properties to the rear would also produce a continuous rear laneway system, unlike the current guidelines, allowing for clear vehicular access. However, the rear buildings offer a separation from the servicing of the avenue buildings.

## 4.2 SITE 2

### ST. CLAIR AVE. W BETWEEN DUFFERIN ST. & VIA ITALIA (SOUTH SIDE)



**Fig. 4.23** Site 2, Location Key

This site is an E-W oriented block located at about the middle of the stretch of St. Clair Ave. W in this thesis. It is located at the intersection of two main streets: St. Clair Ave. W & Dufferin St.

#### SITE DESCRIPTION:

This site is a typical E-W oriented block with narrow two to four storey buildings on St. Clair Ave. W and semi-detached properties to the rear. The east corner is at the intersection with Dufferin St. which has similar narrow avenue buildings on it. There is a proposal for a three storey commercial building on the west corner, with a two level parking garage. A partial rear laneway exists behind the avenue buildings.

#### SITE RATIONALE:

This site illustrates how E-W blocks are likely to develop and this block orientation is almost exclusively located on the south side of the street. This site also outlines how the rear laneway system would likely develop and provide vehicular access to avenue buildings without curb cuts.

#### DEVELOPMENT RATIONALE:

Redevelopment of the parking garage or the corner with two commercial fronts would require a larger redevelopment than is proposed by this thesis. Avenue redevelopment with the building types proposed in this thesis would occupy the middle of the block. The first development would likely be right in the middle where there are only two storey avenue buildings. Subsequent developments would then follow on either side.





**Fig. 4.24** Site 2, Aerial Image

The site contains relatively typical avenue buildings with semi-detached houses to the rear, and with limited existing vegetation on site.



**Fig. 4.25** Site 2, Development Order

Three mid-block developments could be possible, with a laneway pushed to the rear, connecting to the existing laneway. The redevelopment of the properties on the corner of the Dufferin St. and St. Clair Ave. W and the parking garage would require a more substantial redevelopment than proposed by this thesis. An existing proposal for a small commercial building on the north-west corner of the block prevents a corner redevelopment.

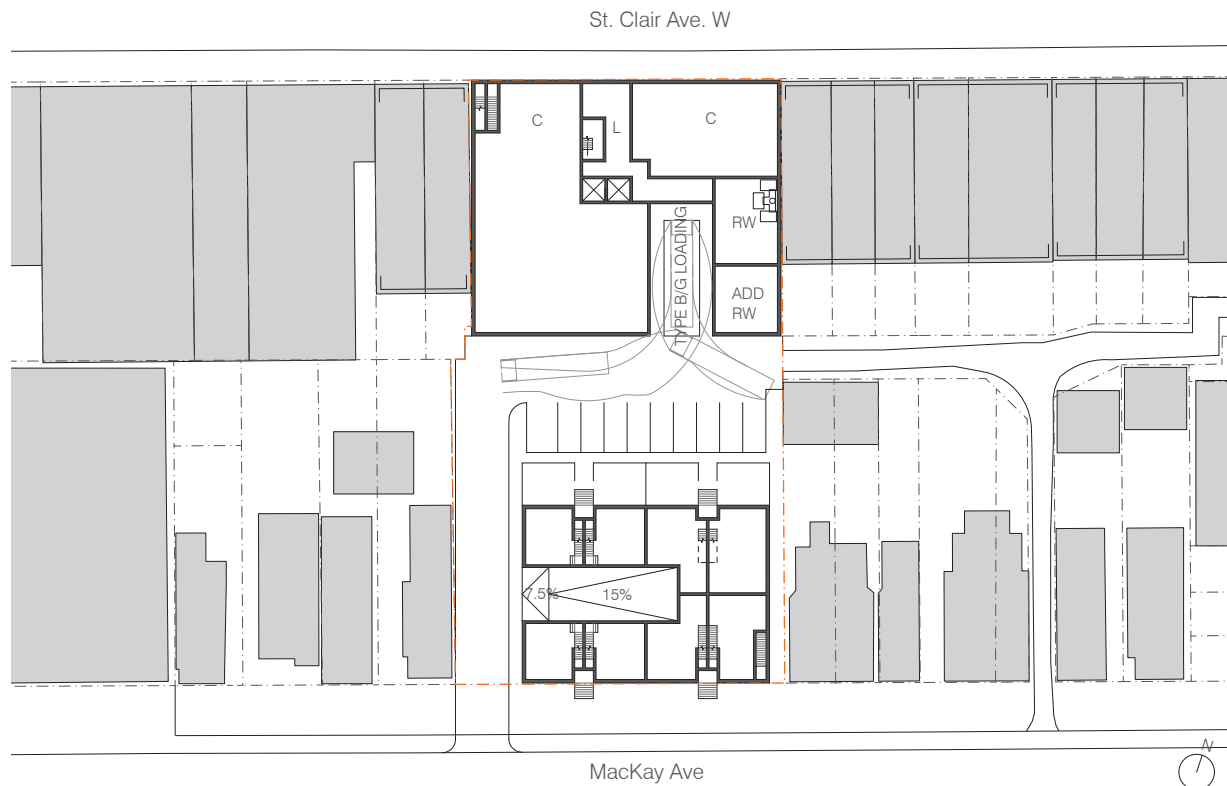
### 4.2.1 SITE 2, DEVELOPMENT 1

The first development would require a vehicular access from the side street. This new laneway could allow for a parking ramp to be included in a row of back-to-back townhouses, requiring only a loading space in the avenue building. The deep residential properties allow for surface parking off the extended laneway. No height restrictions on the avenue building allows the desired 8 storeys to be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	16	16
	Total Units	48	16	64
FSI	As-of-Right	5	0.6	
	Modeled	5.5	1.7	
Storeys	As-of-Right	7	10m	
	Modeled	8	18m	
Number of Lots Assembled		5	7	12
Loading Space		Y	N	
Parking Ramp		N	Y	

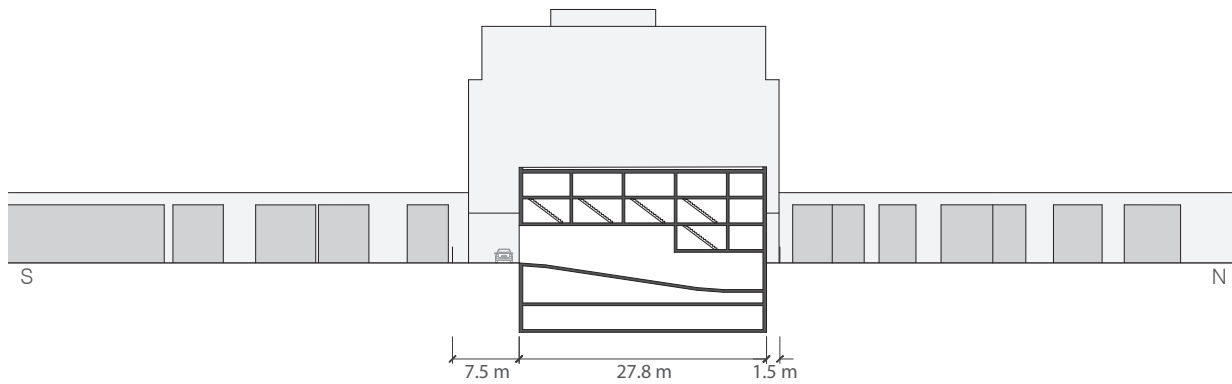
**Fig. 4.26** Site 2, Development 1, Project Data

This development requires a great number of properties to be assembled, although this is feasible given the increased densities modeled across the entire assembly.



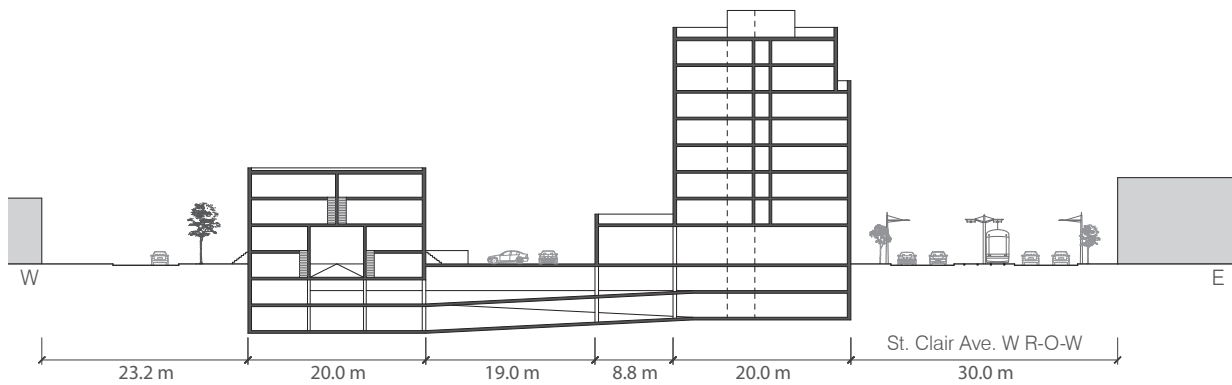
**Fig. 4.27** Site 2, Development 1, Ground Floor Plan

The new vehicular access creates two access points to the existing laneway system. The elimination of the parking ramp in the avenue building allows the left half of ground floor to be freely divided as desired by developer and could accommodate a range of different retailers.



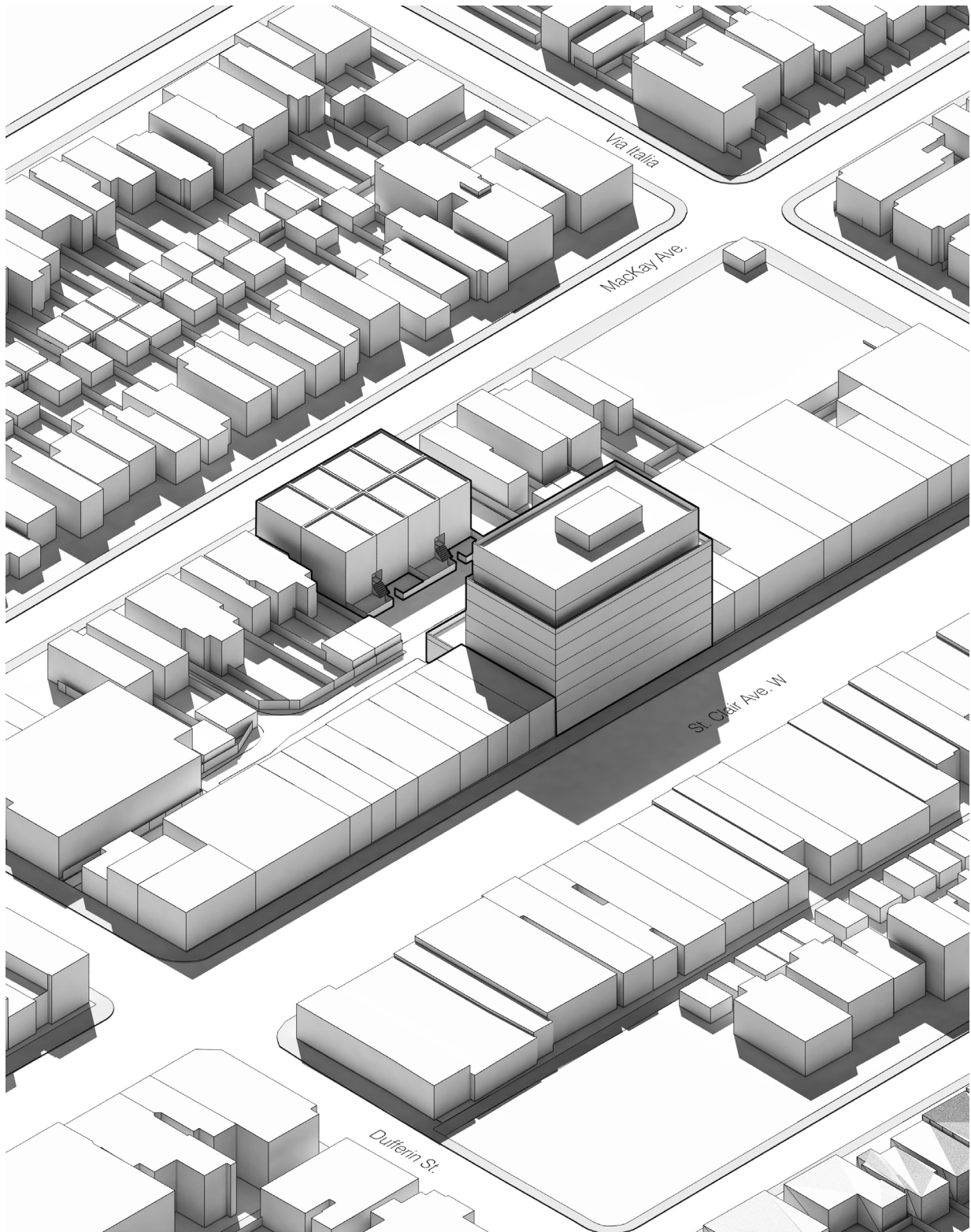
**Fig. 4.28** Site 2, Development 1, E-W Section

The parking ramp to the consolidated parking garage is accessed from the new vehicular access created.



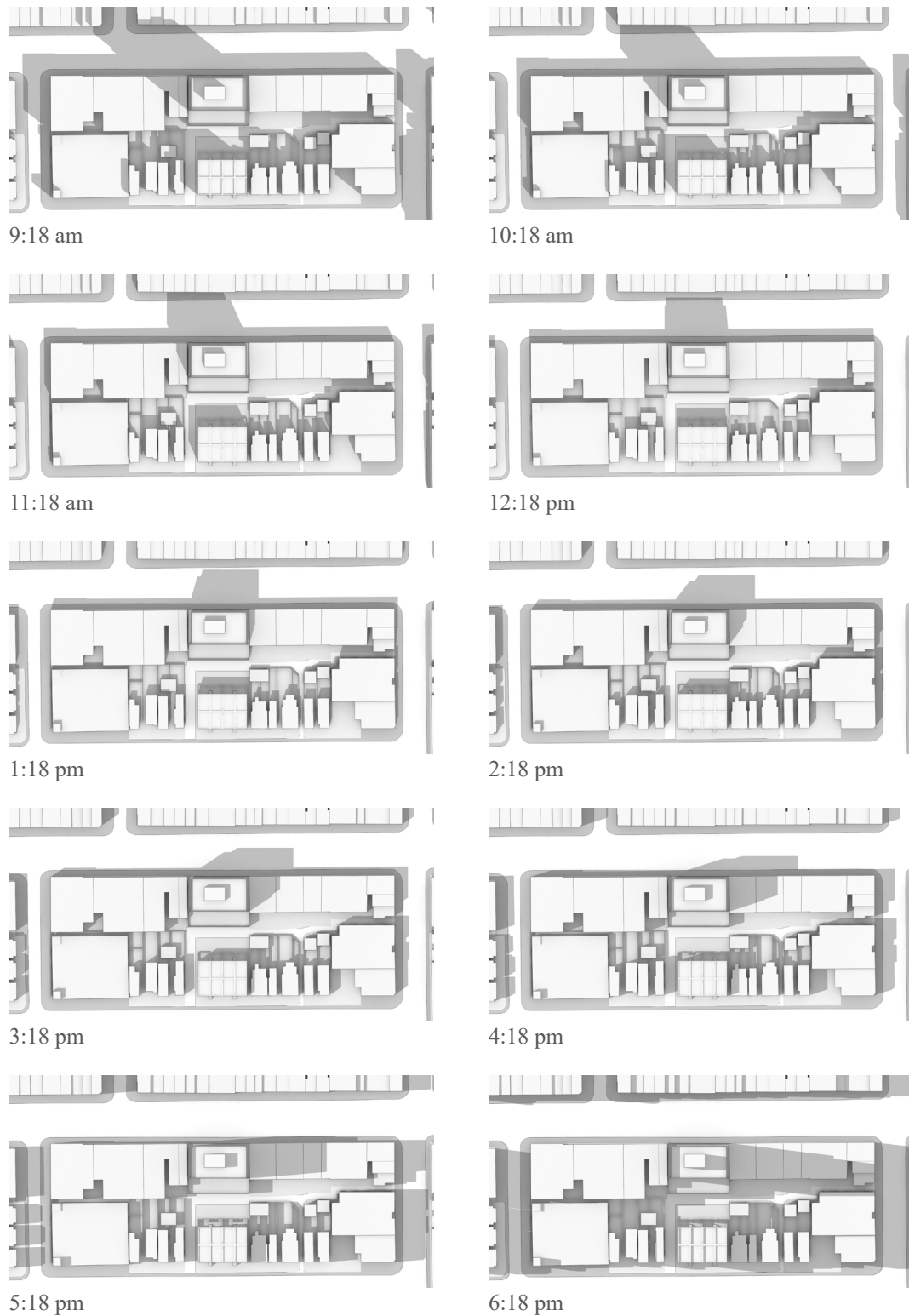
**Fig. 4.29** Site 2, Development 1, N-S Section

The parking ramp in the rear building reduces the depth, but not the number of townhouses. At eight storeys, the avenue building is even within the height limits set out by the current guidelines, but only because the overall development as a whole is significantly more feasible.



**Fig. 4.30** Site 2, Development 1, Axonometric

While larger, the back-to-back townhouses mimic the existing pattern of semi-detached houses along MacKay Ave. At eight storeys, the avenue building does not overbear on the street.



**Fig. 4.31** Site 2, Development 1, Shadow Study, Mar. 21

The avenue building only notably shadows the north sidewalk at 11:18am. The rear building does cast some small shadows over adjacent rear yards in the morning and late afternoon.

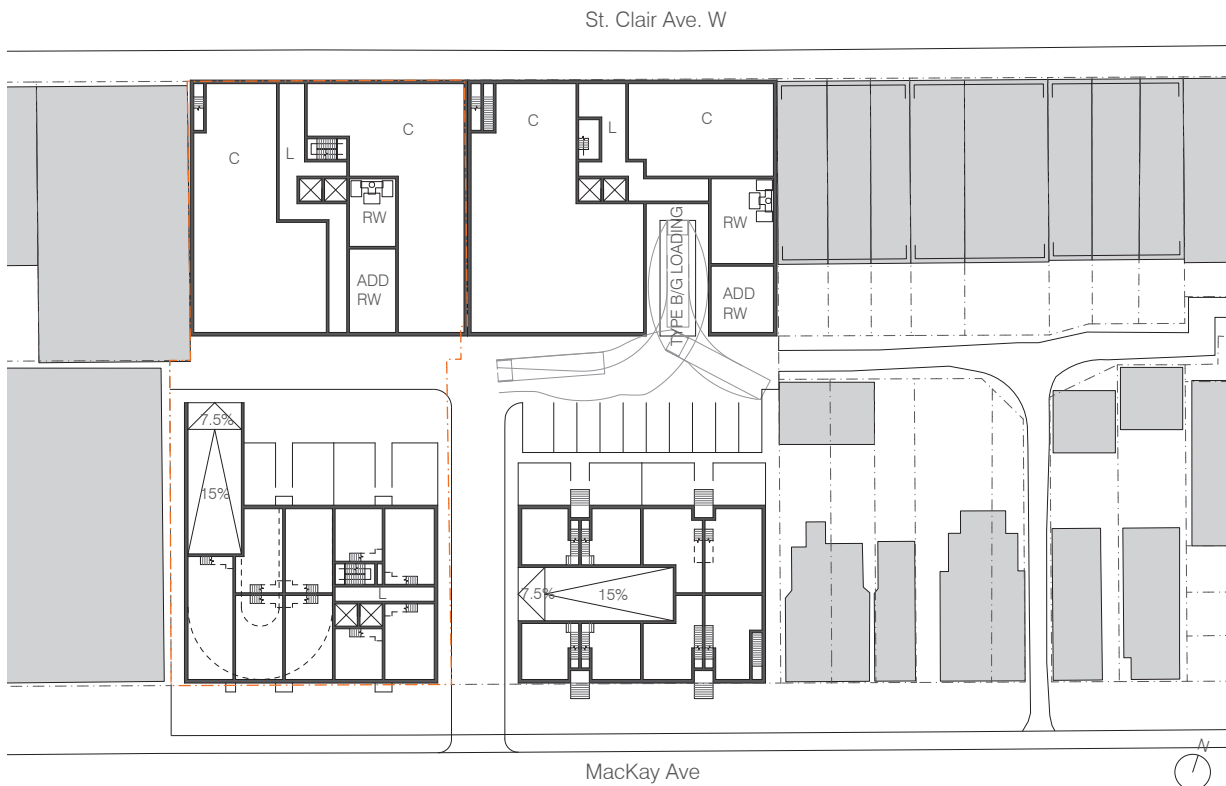
## 4.2.2 SITE 2, DEVELOPMENT 2

The second development would be located to the west of the first development to allow for a six storey apartment building on the side street. A parking ramp could be accommodated in the rear building, while only slightly impacting the at-grade townhouses in exchange for a more flexible commercial space in the avenue building. No height restrictions on the avenue building allows the desired 10 storeys to be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	10	10
	Total Units	58	34	92
FSI	As-of-Right	5	0.6	
	Modeled	6.5	3.0	
Storeys	As-of-Right	7	10m	
	Modeled	10	18m	
Number of Lots Assembled		4	4	8
Loading Space		N	N	
Parking Ramp		N	Y	

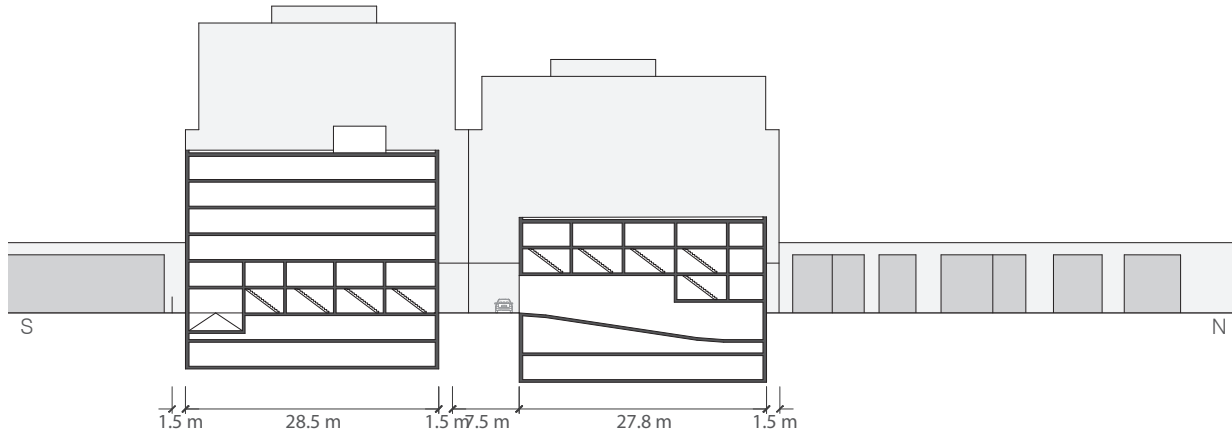
**Fig. 4.32** Site 2, Development 2, Project Data

Developing a six storey rear building significantly increases the number of units that could be created.



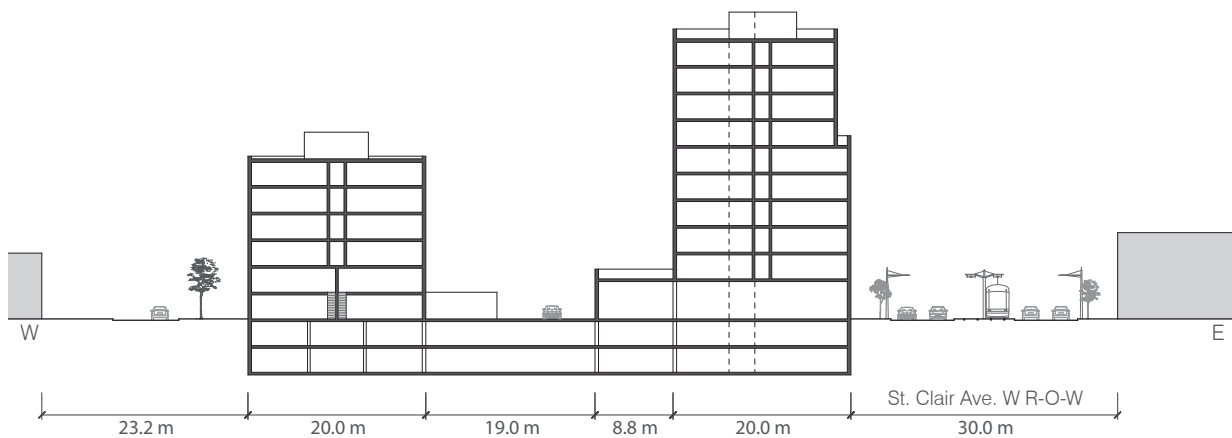
**Fig. 4.33** Site 2, Development 2, Ground Floor Plan

The depth of the residential properties allows for the parking ramp to the second development to be accommodated perpendicularly to the units, which prevents the parking ramp interfering with the elevator core. The elimination of parking space frees up the majority of the avenue building, with the capacity for two deep commercial spaces.



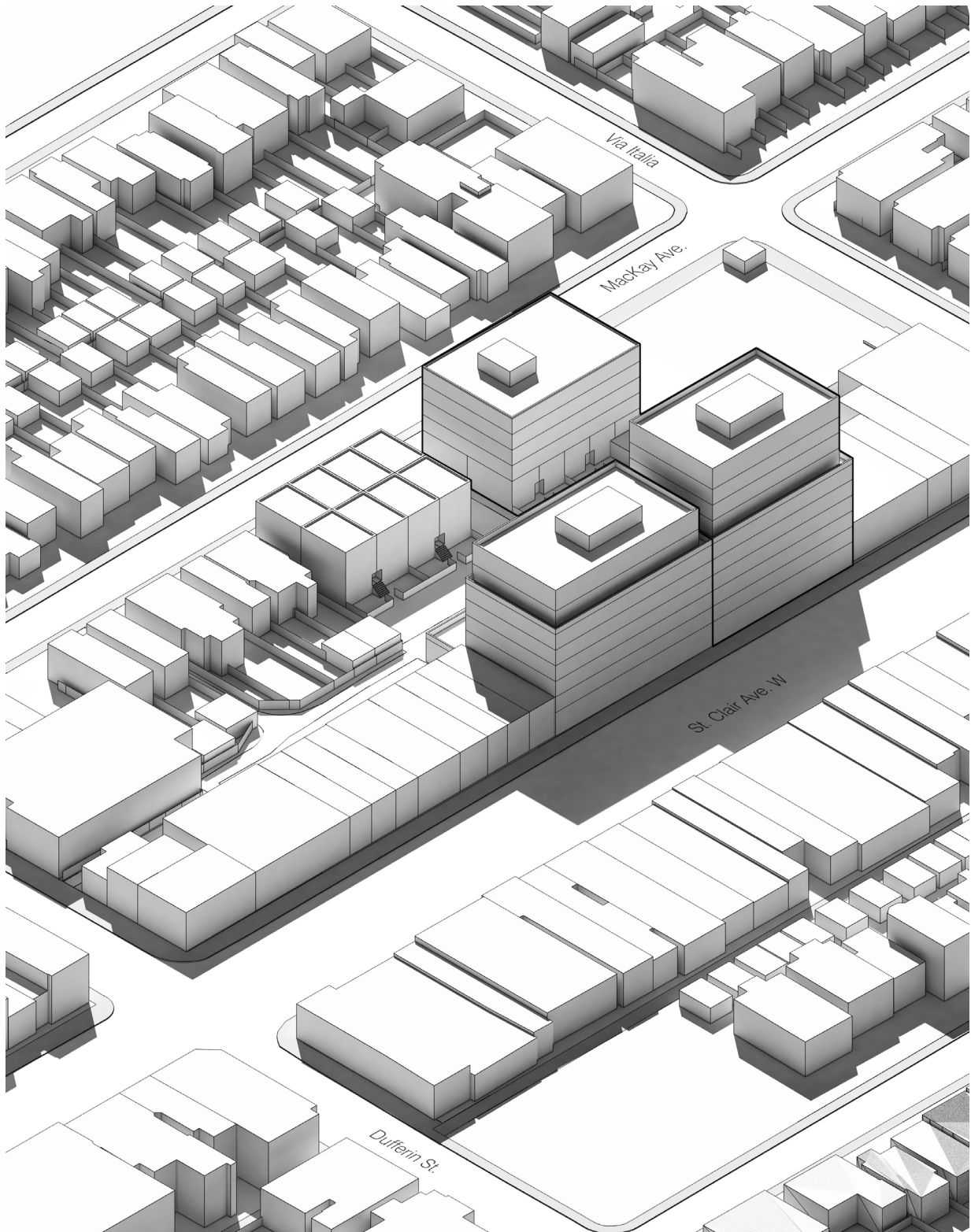
**Fig. 4.34** Site 2, Development 2, E-W Section

The six storey building is possible because of the adjacent development, but is also not overbearing on the neighbouring property to the west, which is a parking garage.



**Fig. 4.35** Site 2, Development 2, N-S Section

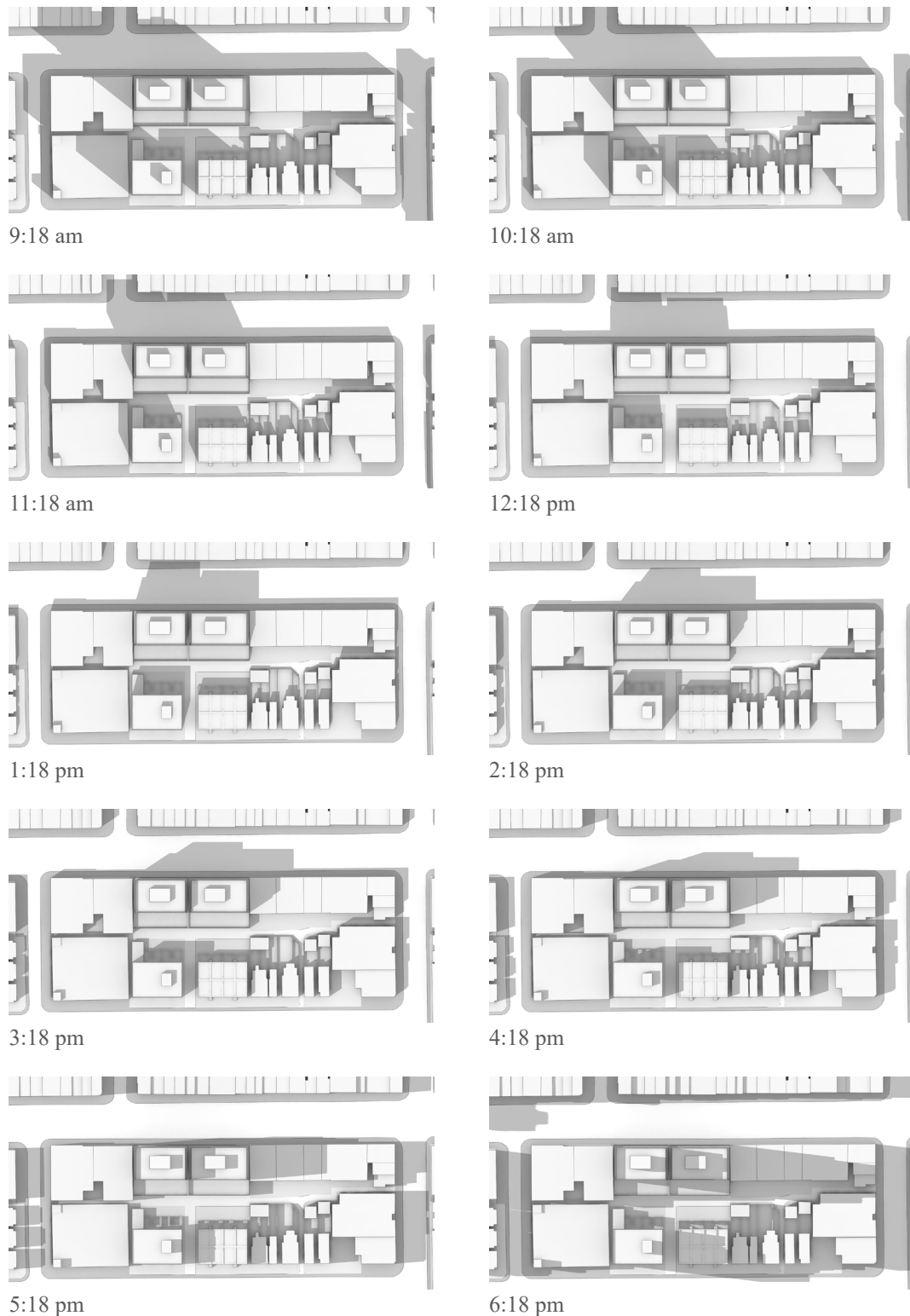
The relative height of the rear building to the new avenue buildings, allows it to visually block the avenue from certain points along the sidewalks on Mackay Ave. The consolidated parking garage prevents significant vegetation from being planted inbetween the two buildings, although the space between could be slightly landscaped for use by residents of either building.



**Fig. 4.36** Site 2, Development 2, Axonometric

The same height of the setback on the avenue buildings begins to produce a street wall on St. Clair Ave. W. The rear building is not directly adjacent to any other residential properties, and is comfortably setback from the avenue building, significantly increasing the overall density of the site without overbearing on the neighbourhood.





**Fig. 4.37** Site 2, Development 2, Shadow Study, Mar. 21

The avenue building will overshadow the north sidewalk during peak hours 11:18am - 2:18pm, although the majority of the sidewalk is still sunlight during those hours. The first rear building development allows the six storey building to cast a longer mid afternoon shadow without shadowing any residential properties.

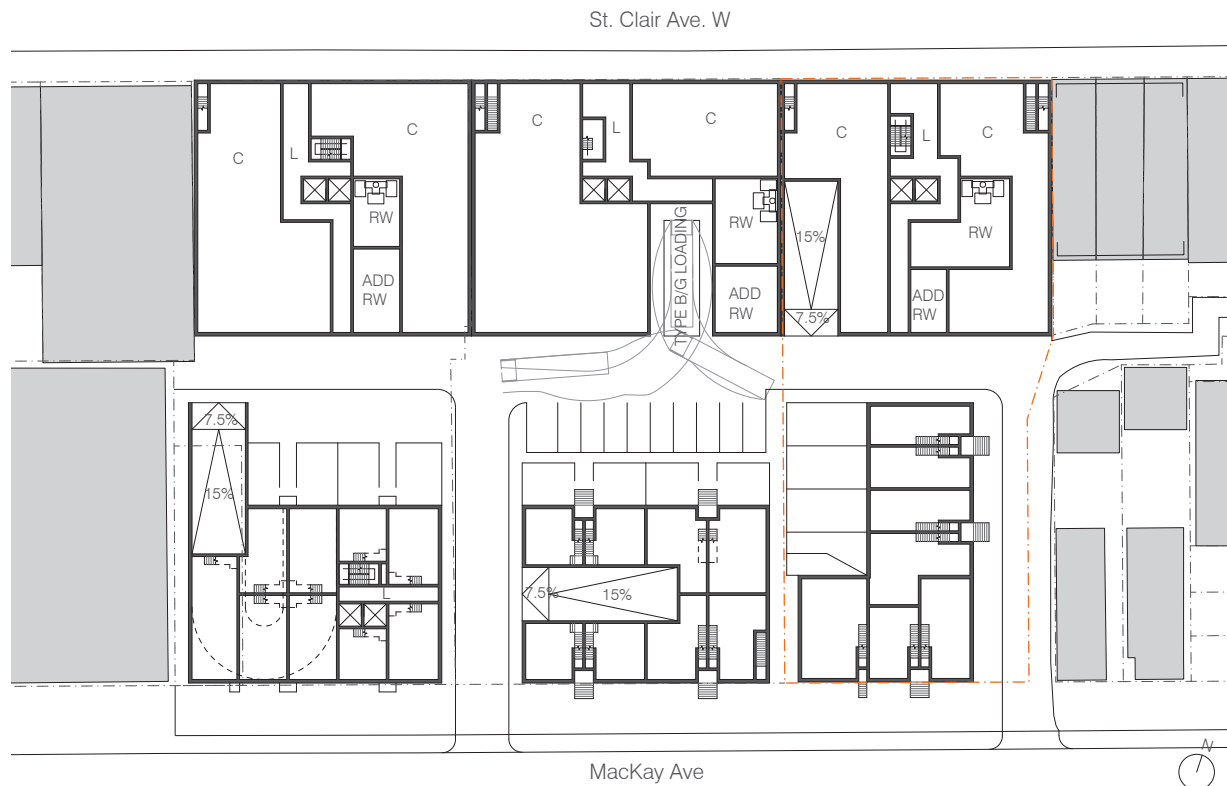
### 4.2.3 SITE 2, DEVELOPMENT 3

The third development would be located to the east of the first development and would include a widening of the existing laneway that connects to the side street. An L shape arrangement of stacked through houses would maximize the FSI on the rear portion of the assembly and visually block the avenue building. This rear building configuration could not accommodate a parking ramp, so one would be required in the avenue building. No height restrictions on the avenue building allows the desired 10 storeys to be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	14	14
	Total Units	61	14	75
FSI	As-of-Right	5	0.6	
	Modeled	7.5	2.0	
Storeys	As-of-Right	7	10m	
	Modeled	11	10m	
Number of Lots Assembled		5	5	7
Loading Space		N	N	
Parking Ramp		Y	N	

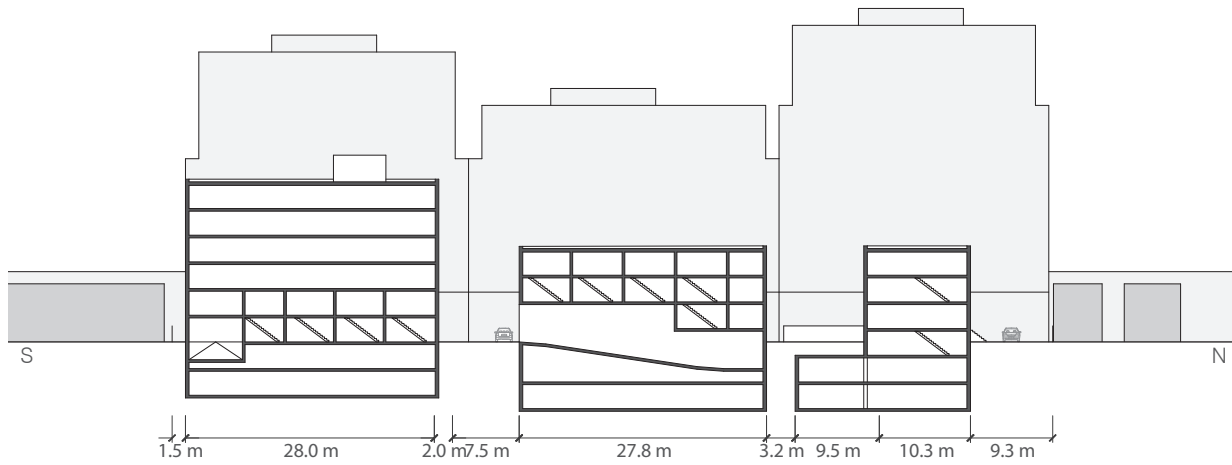
**Fig. 4.38** Site 2, Development 3, Project Data

This development creates 14 high quality stacked townhouses, most of which are through units and about half which have access to a private rear yard.



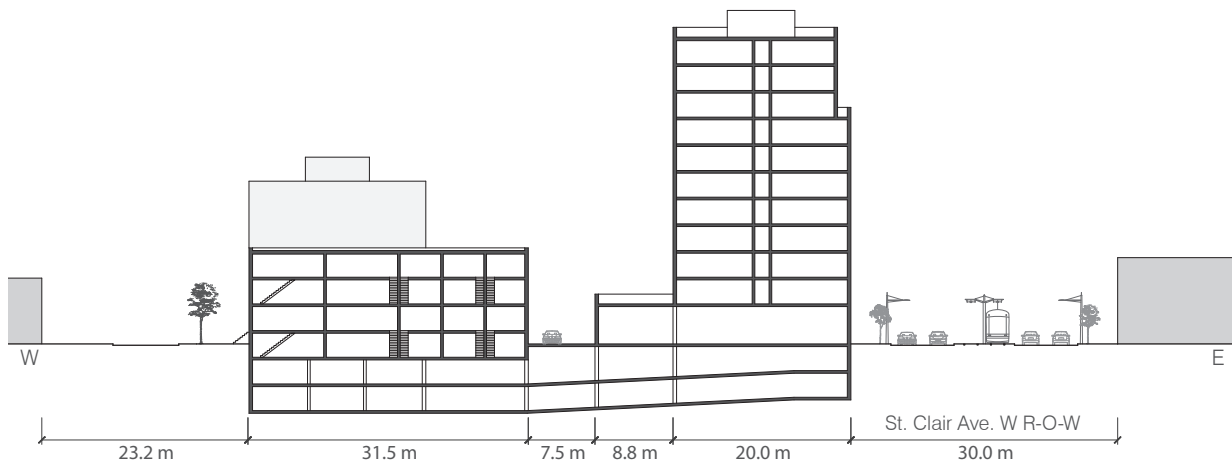
**Fig. 4.39** Site 2, Development 3, Ground Floor Plan

The inability to accommodate a parking ramp in the rear building forces it in the avenue building. While this does constrict the ground floor, this configuration still offers some flexibility in how the back of the building is subdivided. The existing laneway is widened to complete the laneway system and allows for townhouses to front onto the side street and laneway.



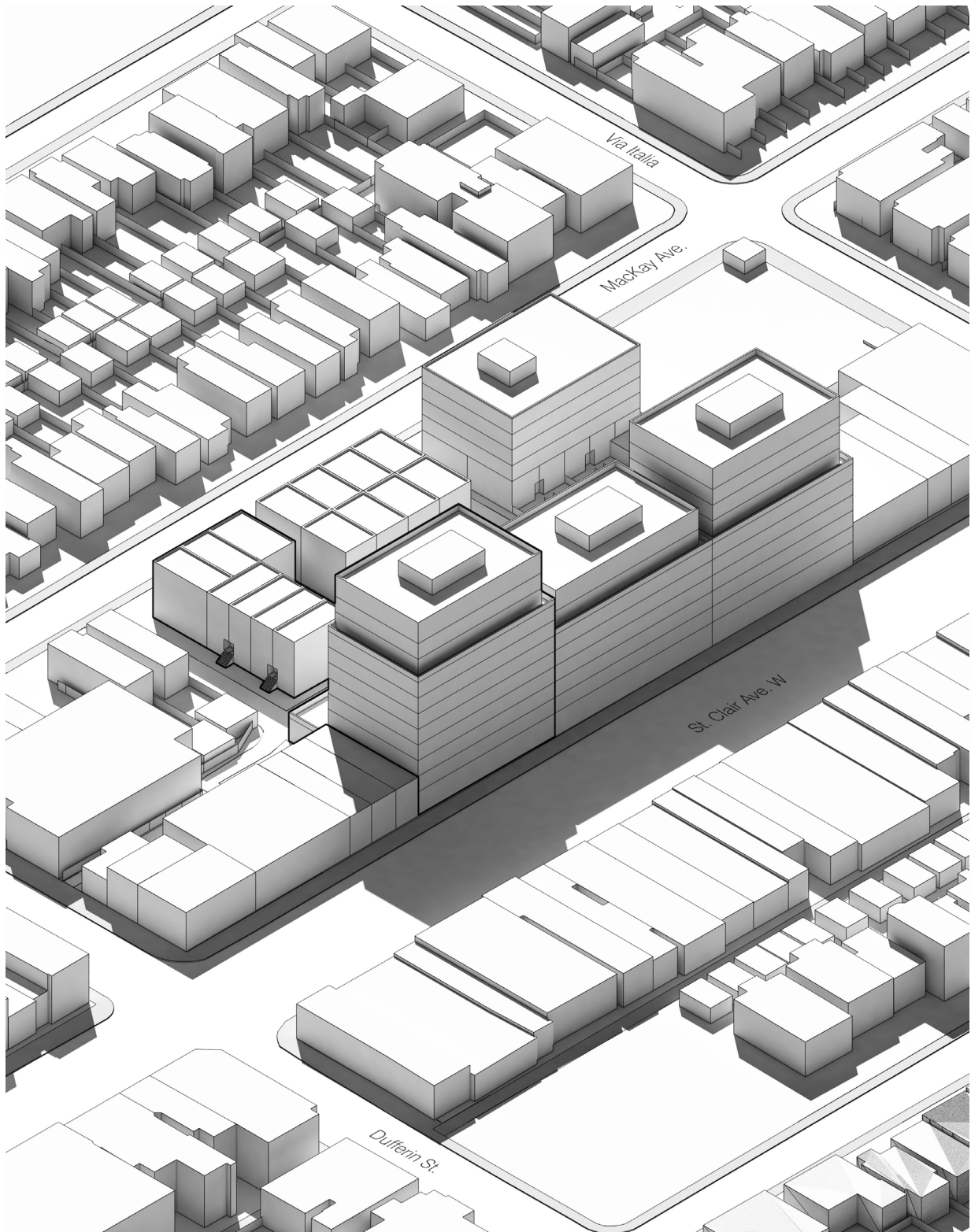
**Fig. 4.40** Site 2, Development 3, E-W Section

The townhouses are only four storeys and sufficiently setback from the residential property to the east. Although the new backyards for each townhouse are tight and will have limited privacy, this is a new condition, and does not impact existing properties.



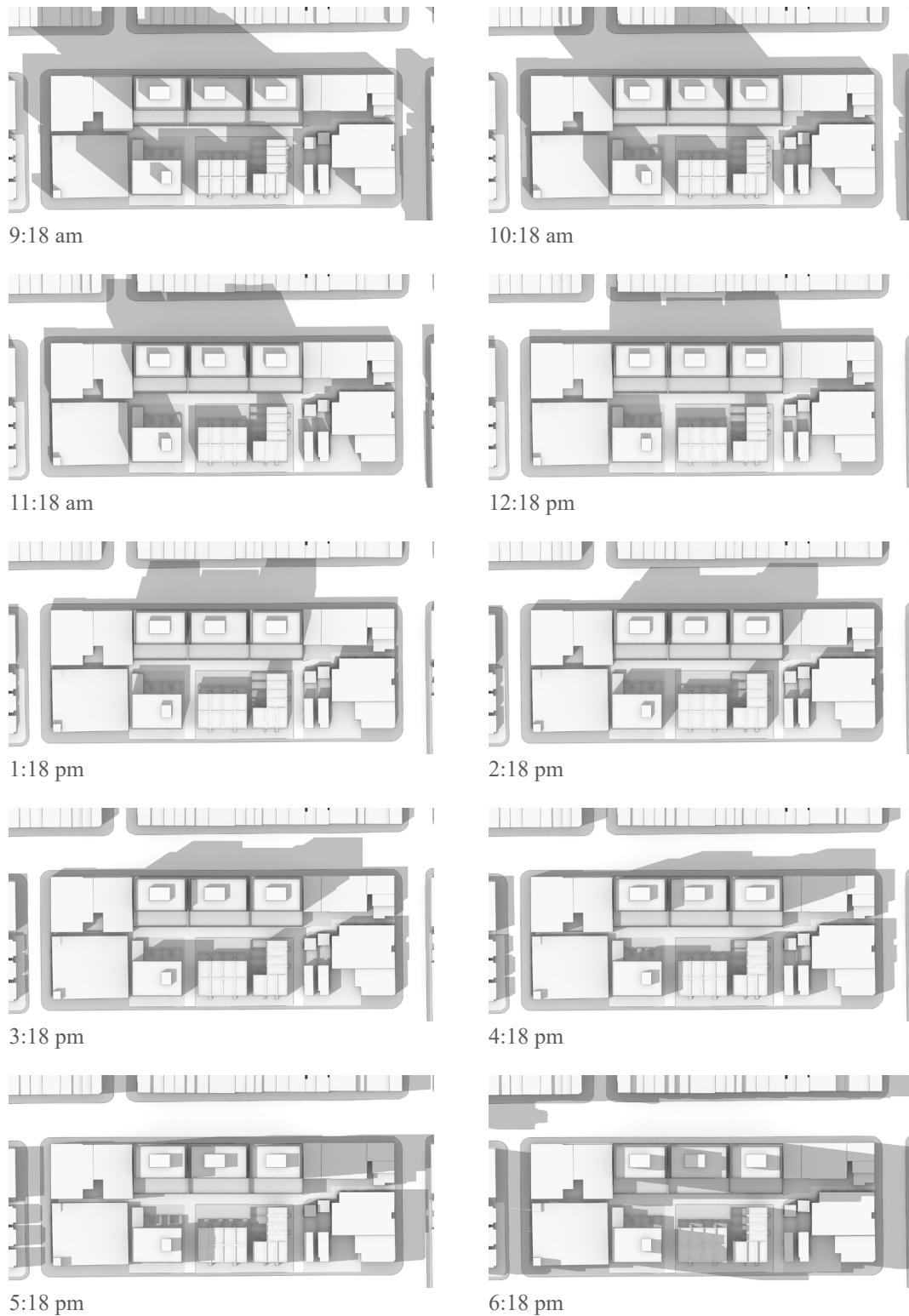
**Fig. 4.41** Site 2, Development 3, N-S Section

The 11 storeys desired for avenue building would be easily accommodated and although it would not overshadow properties to the south, the rear building helps create a height transition.



**Fig. 4.42** Site 2, Development 3, Axonometric

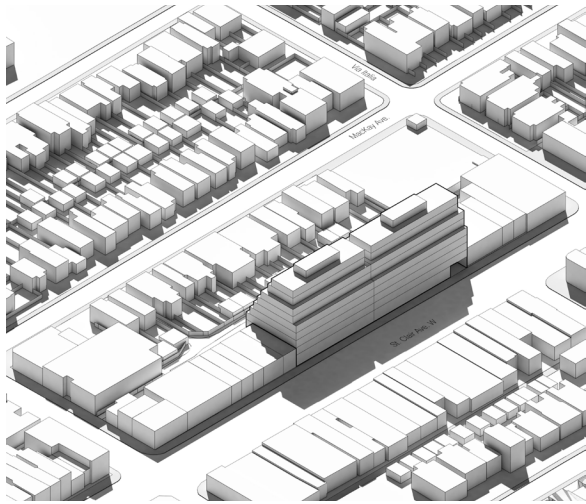
The rear building contains townhouses that face onto the rear yard of the adjacent residential property to the east, however it is sufficiently setback and the existing properties already had garages at the rear of the property. While the ability to redevelop properties directly adjacent to one another, there are existing buildings to either side of the overall development which help to maintain the character of the street.



**Fig. 4.43** Site 2, Development 3, Shadow Study, Mar. 21

The rear building only shadows the adjacent property to the east for an hour at 4:18pm. The avenue building shadows the north sidewalk; however, the shadow impact of the entire development moves across the block, so only the center portion of the north sidewalk is continually in shadow from 11:18am - 2:18pm.

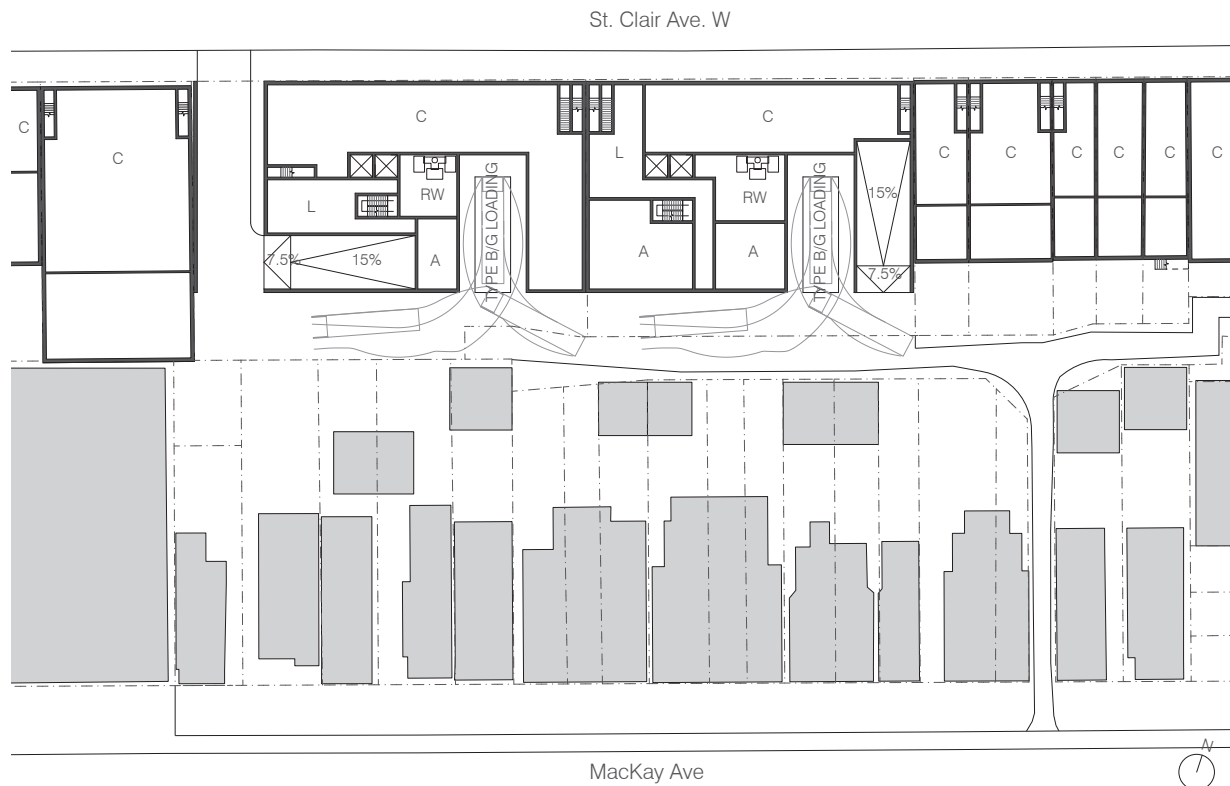
#### 4.2.4 SITE 2, BLOCK DEVELOPMENT, BY-LAW NO. 1103-2009



**Fig. 4.44** Axonometric, By-Law No. 1103-2009  
Only two wider buildings that step back would likely be feasible in the middle of this block.

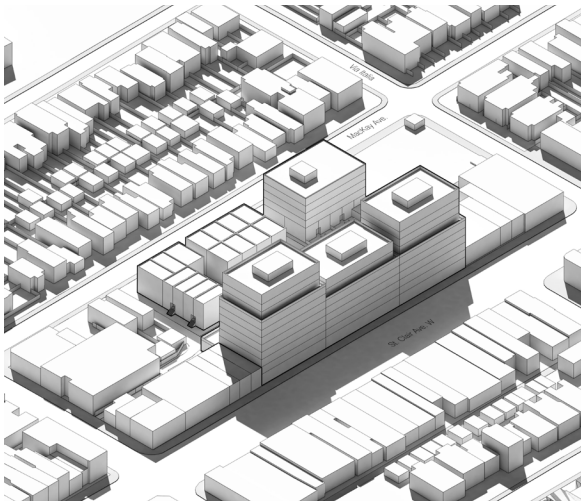
		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	N/A	0
	Total Units	123	N/A	123
FSI	As-of-Right	5	0.6	
	Modeled	5	N/A	
Storeys	As-of-Right	7	10m	
	Modeled	9	N/A	
Number of Lots Assembled		9	N/A	9
Number of Loading Spaces				2
Number of Parking Ramps				2

**Fig. 4.45** Site 1, Project Data, By-Law No. 113-2009  
There would no creation of any at-grade units; although some existing semi-detached properties would be maintained.



**Fig. 4.46** Site 1, Ground Floor Plan, By-Law No. 1103-2009  
The first development on the block would require a drive aisle off St. Clair Ave. W since the existing laneway was too narrow and not continuous. While the current guidelines would still produce plenty of commercial frontage, there would be limited flexibility to expand the commercial space to the rear. Much of the space to the rear would contain the functional requirements for the building.

## 4.2.5 SITE 2, BLOCK DEVELOPMENT, PROPOSAL



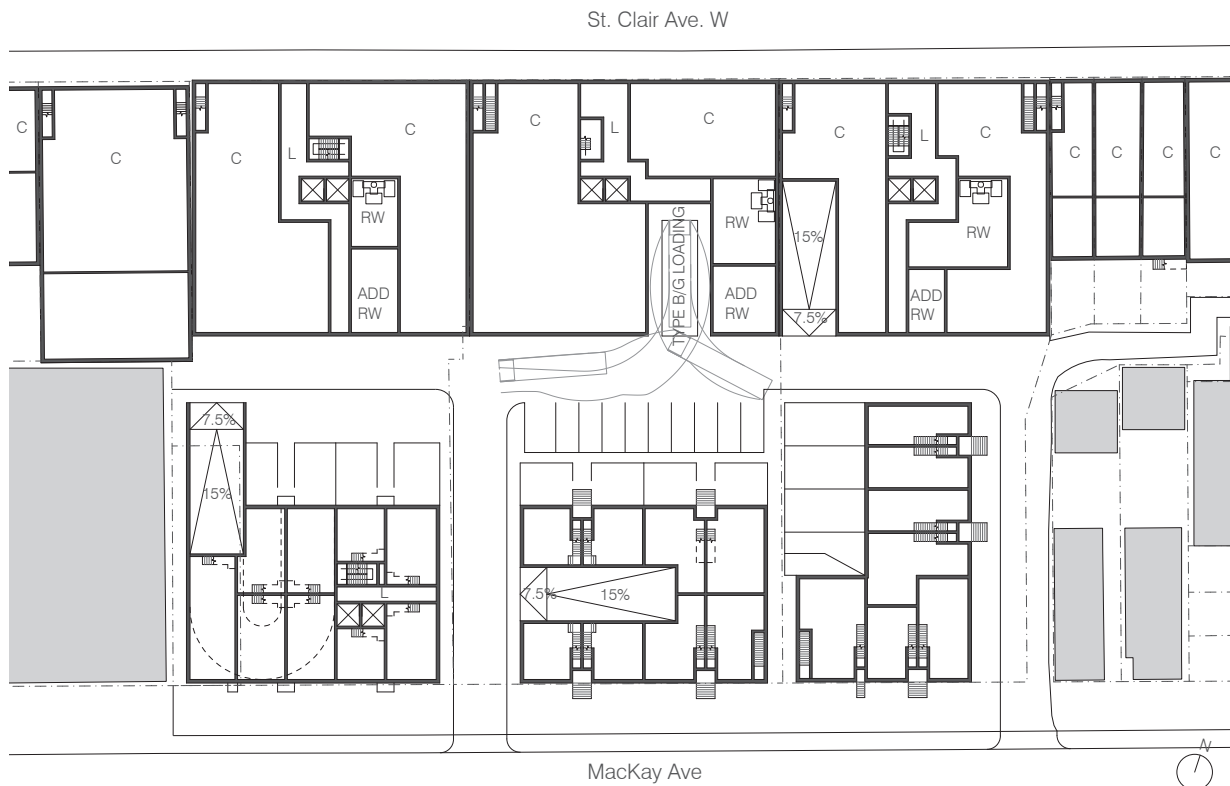
**Fig. 4.47** Axonometric, Proposal

The current proposal would allow for the creation of three large avenue buildings and the creation of a great number of at-grade units to the rear.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	40	40
	Total Units	167	64	231
FSI	As-of-Right	5	0.6	
	Modeled	7.5	3.0	
Storeys	As-of-Right	7	10m	
	Modeled	11	18m	
Number of Lots Assembled		14	16	30
Number of Loading Spaces				1
Number of Parking Ramps				3

**Fig. 4.48** Site 1, Project Data, Proposal

Even considering the existing semi-detached properties that would be maintained by the guidelines, there is still a much higher net total of at grade units in this proposal.

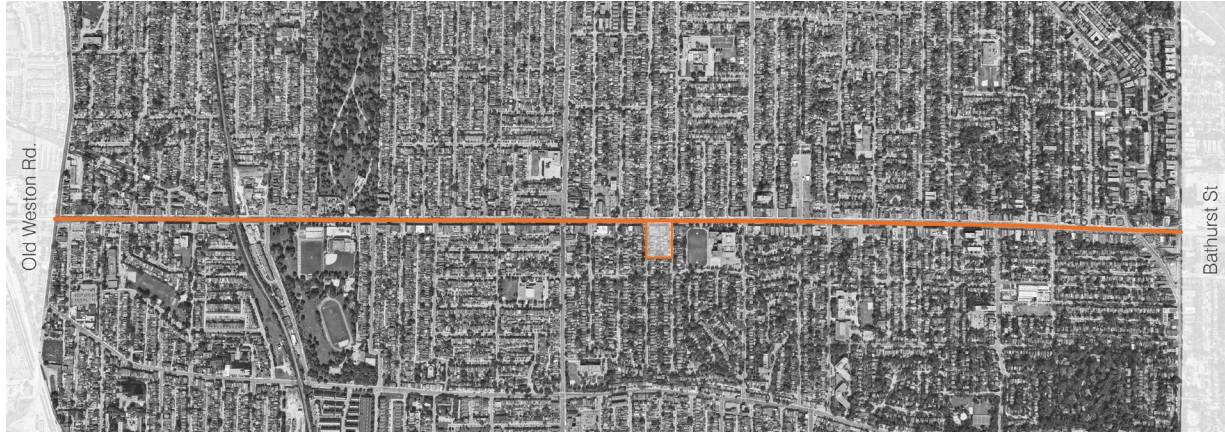


**Fig. 4.49** Site 1, Ground Floor Plan, Proposal

This proposal would allow for three avenue buildings with only one loading space and parking ramp contained in their ground floors. This significantly frees up on the ground floor of those buildings. Locating the drive aisles to the local side street, allows for an uninterrupted streetwall on St. Clair Ave. W.

## 4.3 SITE 3

### ST. CLAIR AVE. W BETWEEN LAUDER AVE. & GLENHOLME AVE. (SOUTH SIDE)



**Fig. 4.50** Site 3, Location Key

This site is located a few blocks east of Dufferin St. and is one block west of Oakwood Collegiate Institute.

#### **SITE DESCRIPTION:**

Like site 1, this site is a fairly typical N-S oriented block with two to three storey narrow avenue buildings. To the rear are narrow single detached homes on lots about 9m wide by 33m deep. The main street properties do have an existing laneway, but the residential properties do not. The site contains a number of significant trees, except all but one are located on the front yards of properties.

#### **SITE RATIONALE:**

Like site 1, this site is most predominant block configurations along St. Clair Ave. W, although it is located on the south side of the street and the wider lots of single detached houses allow for greater ease in assembling more site area to the rear.

#### **DEVELOPMENT RATIONALE:**

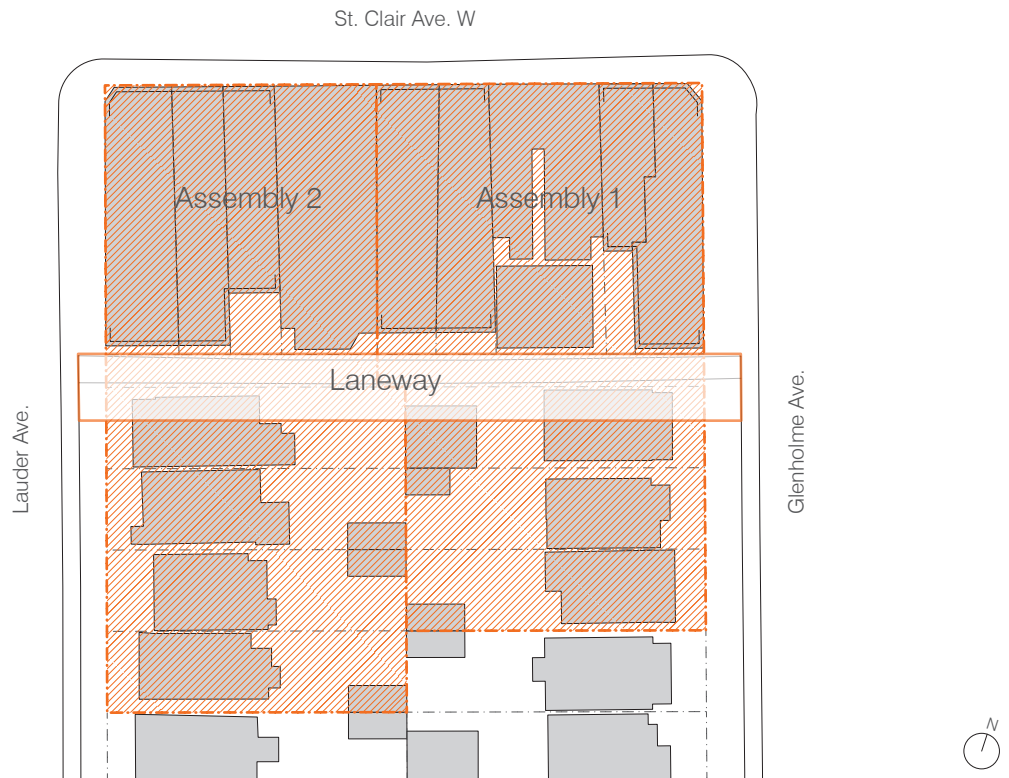
This is a typical site and there is no clear indication that a development would occur on either corner first. It is assumed the east corner would be developed first, the opposite scenario of site 1. Only two properties could be developed on this site, which would likely require all the existing properties on the block to be redeveloped. The single tree in the rear yards of the residential properties is far enough back from the existing laneway to allow the added width of the new laneway to come from the residential properties.





**Fig. 4.51** Site 3, Aerial Image

The site contains typical narrow avenue buildings, with single detached houses to the rear. Significant vegetation is limited to front yards, with the exception of a large tree between the residential properties.



**Fig. 4.52** Site 3, Development Order

Two corner developments could be possible, and based on the property widths would redevelop the entire avenue frontage.

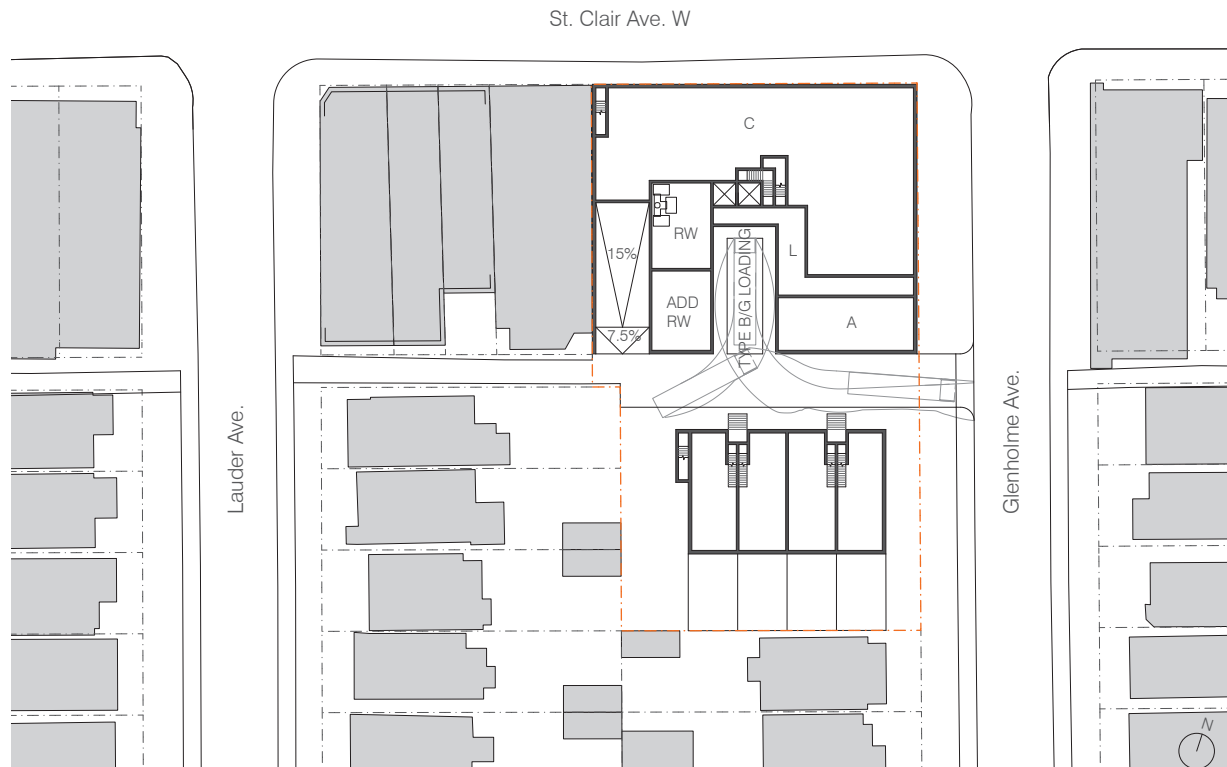
### 4.3.1 SITE 3, DEVELOPMENT 1

An assembly of only three residential properties, would be tight too tight to provide enough depth to build back to back towns parallel to the avenue building. However, this could very comfortably fit stacked through townhouses. This configuration would make it difficult to accommodate a parking ramp, requiring the avenue building to provide both a loading space and parking ramp. The side yard setbacks on the rear building would not likely interfere with the root structure of the existing tree. The lack of the height restriction on the avenue building on the south side of St. Clair Ave. W allows for the desired 9 storeys.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	8	8
	Total Units	59	8	67
FSI	As-of-Right	5.5	0.6	
	Modeled	6	1.3	
Storeys	As-of-Right	9	10m	
	Modeled	9	10m	
Number of Lots Assembled		5	3	8
Loading Space		Y	N	
Parking Ramp		Y	N	

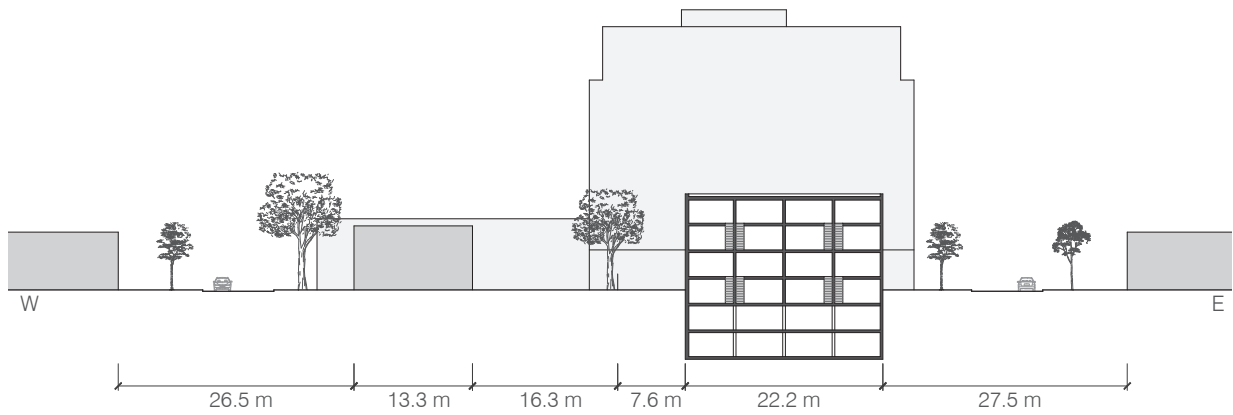
**Fig. 4.53** Site 3, Development 1, Project Data

This rear development doesn't add a substantial amount of density, but creates a number of high quality at grade units.



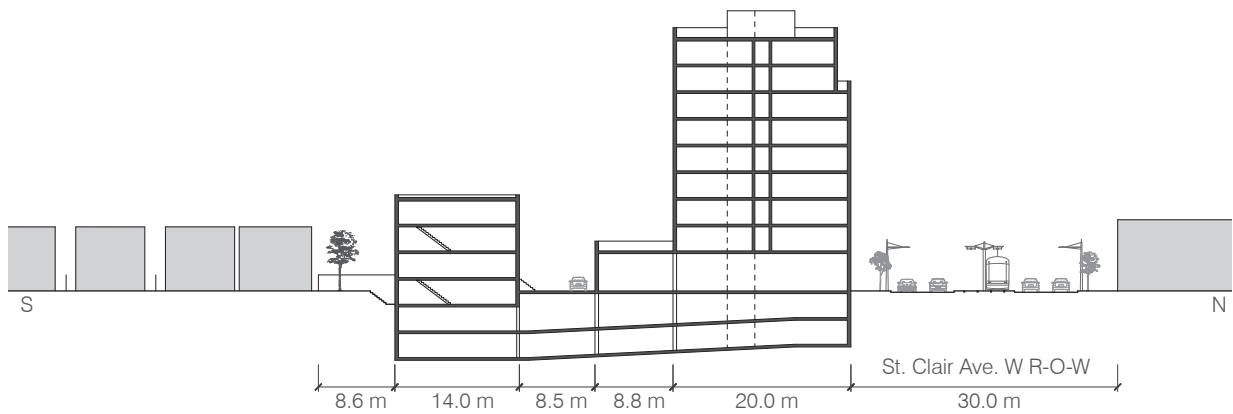
**Fig. 4.54** Site 3, Development 1, Ground Floor Plan

Although the avenue building requires both the parking ramp and loading space, the wider avenue assembly which is required based on the existing property structures, allows the ground floor layout to still be relatively flexible. Locating these requirements in the avenue building allows for the development on neat and ideal stacked through townhouses.



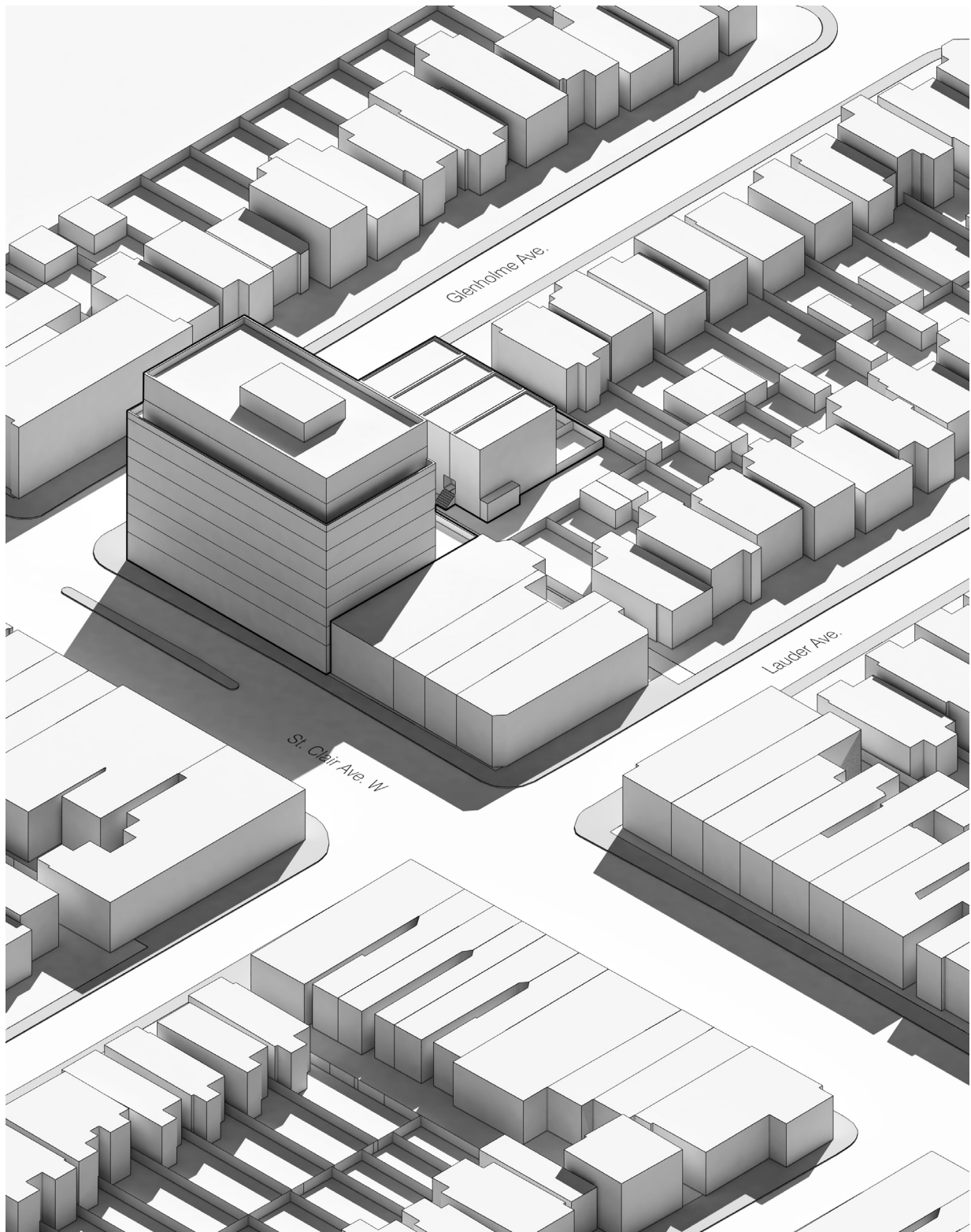
**Fig. 4.55** Site 3, Development 1, E-W Section

The required 7.5m setback from the side property line prevents the rear building from interfering with the existing tree's root structure.



**Fig. 4.56** Site 3, Development 1, N-S Section

The through townhouses are accessed off the rear laneway, which allows for each of them to have private backyards adjacent to the residential properties.



**Fig. 4.57** Site 3, Development 1, Axonometric

The rear stacked townhouses are at a very similar scale to the adjacent single detached houses, while the avenue building is within the general height limits established for the avenue under the existing guidelines.



**Fig. 4.58** Site 3, Development 1, Shadow Study, Mar. 21

By being located on the east corner of a block on the south side of the street, there are no afternoon shadow impact on residential properties by the new development.

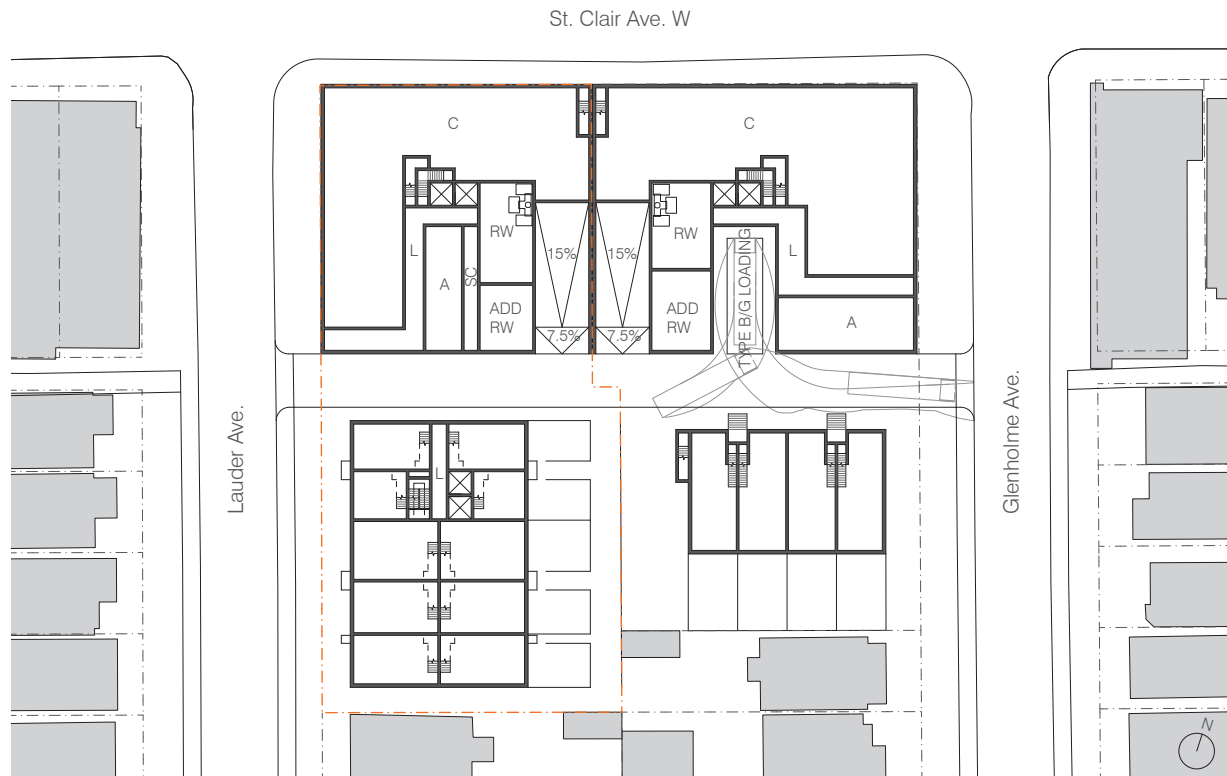
### 4.3.2 SITE 3, DEVELOPMENT 2

A residential property assembly depth of 34m could be assembled from 4 houses. This would allow for a 6 storey rear building. Orienting the building parallel to Lauder Ave. maintains the general footprint of the existing houses, which helps to maintain some character of the local street. This orientation also prevents any building from interfering with the large tree's root structure. The limited footprint of parking garage below the rear building, along with the requirement for an elevator core forces the parking ramp to be accommodated in the avenue building. The lack of the height restriction on the avenue building on the south side of St. Clair Ave. W allows for the desired 11 storeys.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	10	8
	Total Units	59	31	90
FSI	As-of-Right	5.5	0.6	
	Modeled	7	2.4	
Storeys	As-of-Right	9	10m	
	Modeled	11	18m	
Number of Lots Assembled		4	4	8
Loading Space		N	N	
Parking Ramp		Y	N	

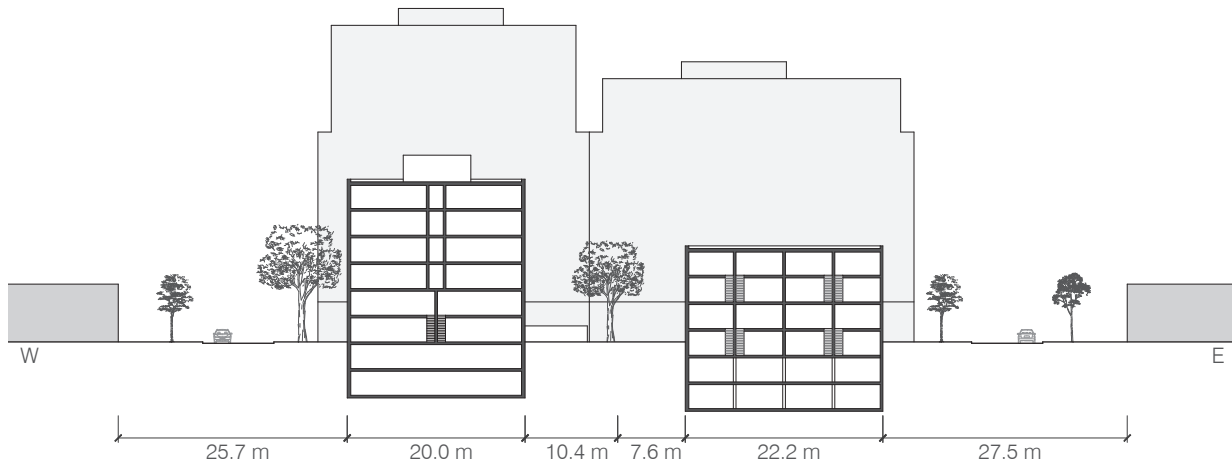
**Fig. 4.59** Site 3, Development 2, Project Data

The significant increase in site coverage of the rear building adds a greater number of units to the overall project.



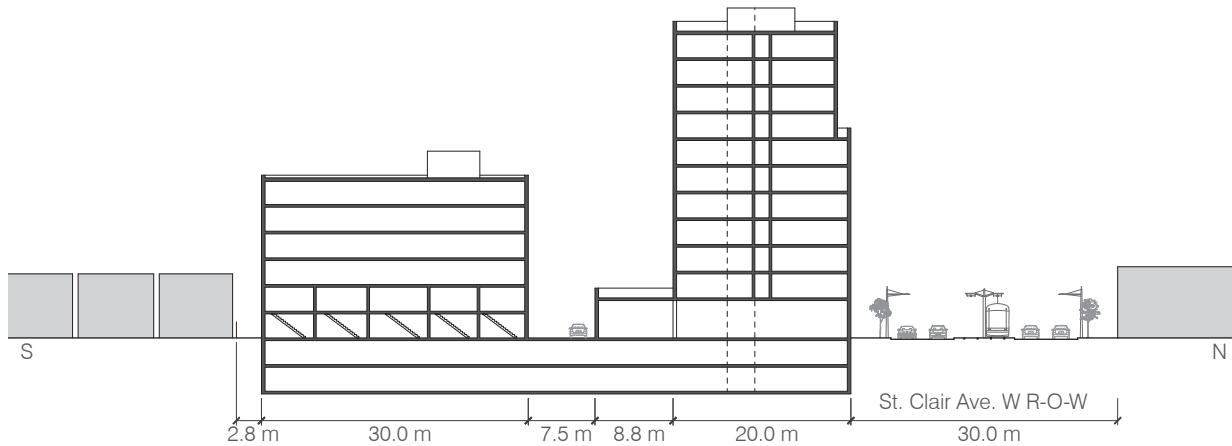
**Fig. 4.60** Site 3, Development 2, Ground Floor Plan

The requirement for only a parking ramp in the avenue building allows for a commercial space that could extend around the corner. The rear building lobby would be accessed off the laneway. At grade units on the east side of the building would access their units by a path running along the side yard property line, allowing for a small private outdoor area.



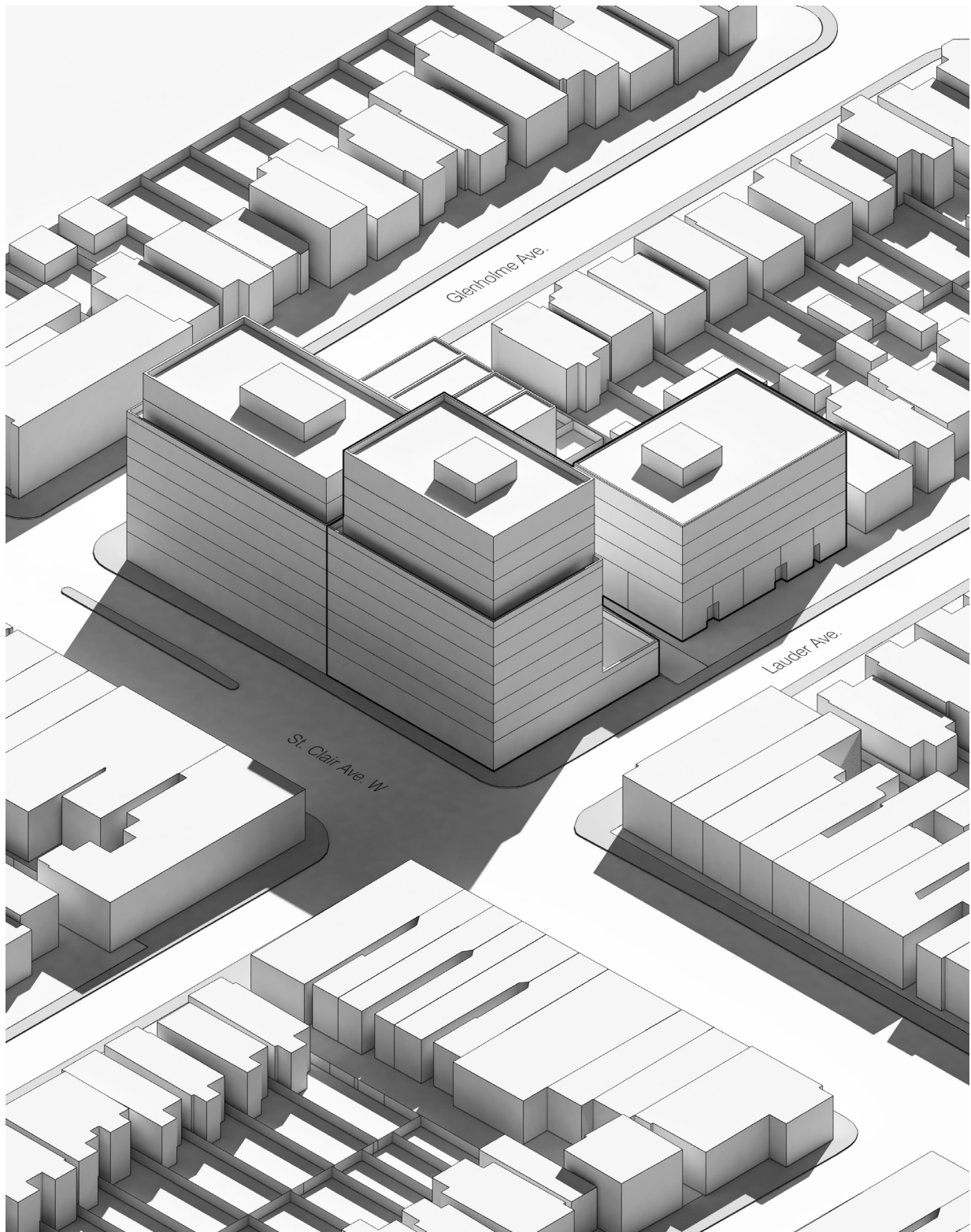
**Fig. 4.61** Site 3, Development 2, E-W Section

The portion of the underground parking garage below the six storey building is limited to the width of the building above instead of across the entire property width in order to not interfere with the existing tree's root structure.



**Fig. 4.62** Site 3, Development 2, N-S Section

Although the six storey building is noticeably larger than the adjacent single detached houses, it maintains the same footprint of the existing buildings. It also provides at grade units on Lauder Ave. to help maintain the character of the local street. No setbacks are required on either building since any overshadowing is not problematic.



**Fig. 4.63** Site 3, Development 3, Axonometric

The 6 storey rear building maintains the same character of the neighbourhood by orienting the building parallel to Lauder Ave. and allows for a comfortable height transition to the much taller avenue building.





**Fig. 4.64** Site 3, Development 2, Shadow Study, Mar. 21

This development does not add any new shadowing of rear yards of residential properties.

## 4.4 SITE 4

### ST. CLAIR AVE. W BETWEEN RUSHTON RD. & HUMEWOOD DR. (NORTH SIDE)



**Fig. 4.65** Site 4, Location Key

The site is located relatively close to Bathurst St. on a relatively wide N-S oriented block.

#### **SITE DESCRIPTION:**

This site varies from the typical N-S oriented blocks as there are two adjacent wider than average avenue properties on the east corner of the block with surface parking. The rest of the avenue properties are typically narrow. The residential properties to the rear have established and well maintained single detached houses with significant vegetation in the backyards. These properties are some of the largest residential lots in the larger site at about 12m wide by 53m deep.

#### **SITE RATIONALE:**

This site illustrates that ideal narrow redevelopment of avenue properties are sometimes not even possible due to anomalies in the property structure. As well, this site is selected to illustrate how the inclusion of larger and more established houses as part of a residential assembly can still accommodate intensification without tearing down the existing building.

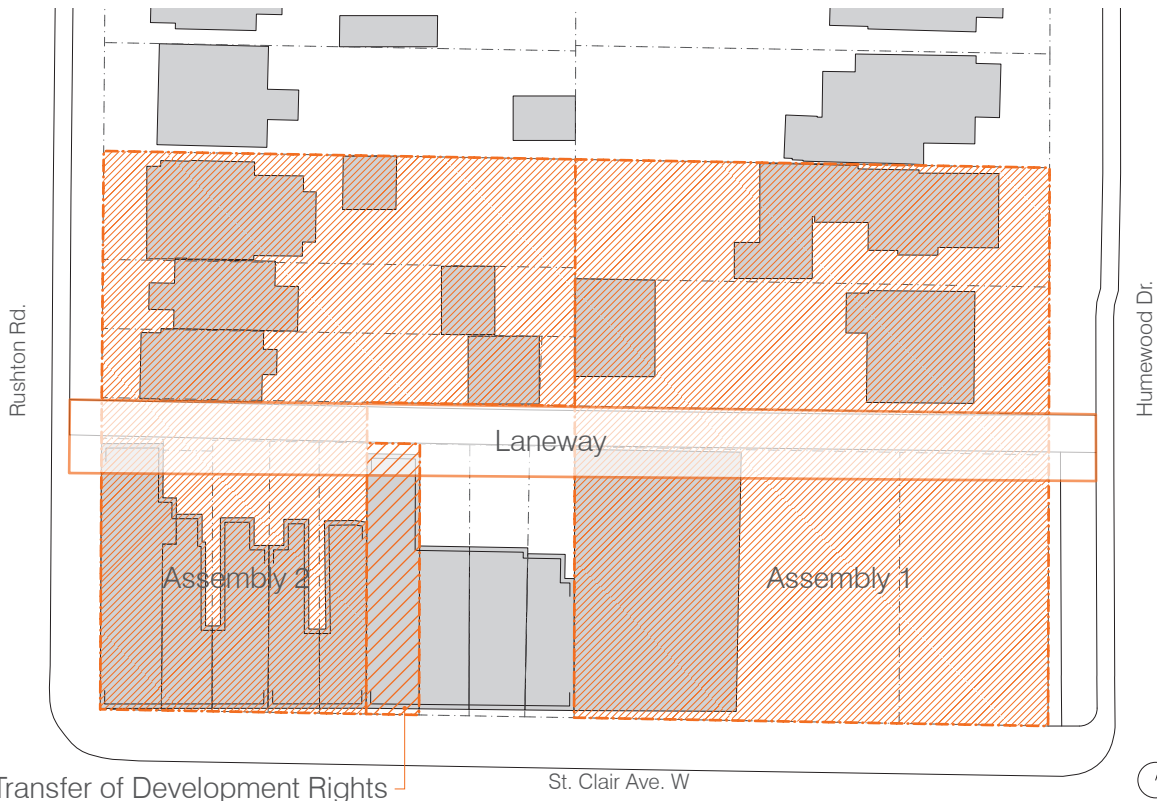
#### **DEVELOPMENT RATIONALE:**

The south-west corner of the site will get developed first because the two wider avenue properties, containing mostly parking lots, significantly reduces the current existing use value for the properties and the amount of assembly that would be required. In order to maintain the existing residential buildings and vegetation in their backyards on the east side of the block, the additional width for the new laneway will come from the avenue building. The next development would then occur on the west corner of the block. The fact that the middle of the block is composed of four buildings on properties that are constructed together limits the ability to add a single property into the redevelopment scheme. However, a single building could transfer their development rights to the project, which is illustrated in the second development.



**Fig. 4.66** Site 4, Aerial Image

A large portion of the main street frontage consists of a surface parking lot, with established single detached houses to the rear with significant vegetation.



**Fig. 4.67** Site 4, Development Order

Two developments could happen on this block, with a laneway extended into the main street properties to protect the existing vegetation and houses. A single property owner could transfer their development rights to adjacent redevelopment.

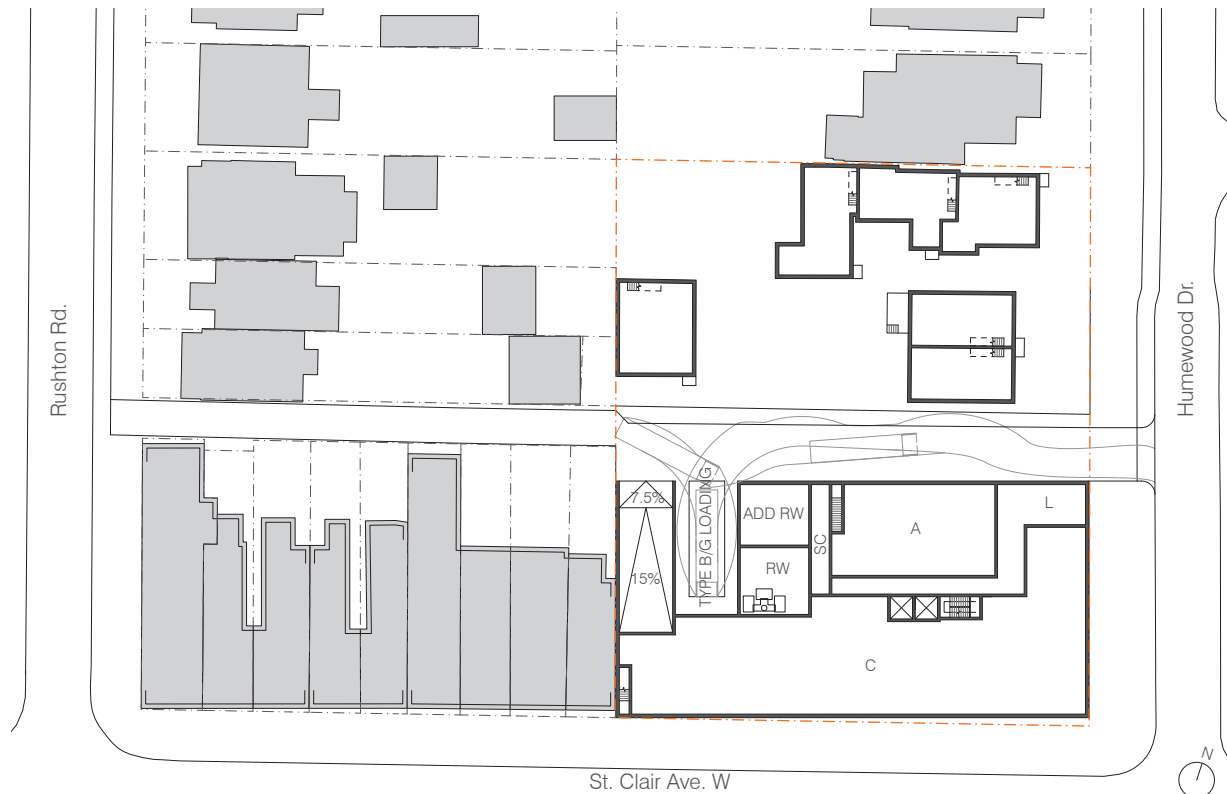
#### 4.4.1 SITE 4, DEVELOPMENT 1

The residential houses to the rear are quite large and well maintained and should be preserved in this redevelopment scheme. The first house to the rear is already subdivided into a multiplex. However, the adjacent house and rear garage could be renovated into separate units as well. Given the need to preserve the residential properties, the parking ramp and loading space would need to be provided in the avenue building. In order to retain the parking spaces that previously existed on the site, it is assumed the City would negotiate for an extra level public parking in exchange for an additional 1 FSI. At the desired 11 storeys, the project fits comfortably within the height restrictions.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	8	8
	Total Units	106	8	114
FSI	As-of-Right	5.5	0.8	
	Modeled	7	0.8	
Storeys	As-of-Right	9	11m	
	Modeled	11	11m	
Number of Lots Assembled		2	2	4
Loading Space		Y	N	
Parking Ramp		Y	N	

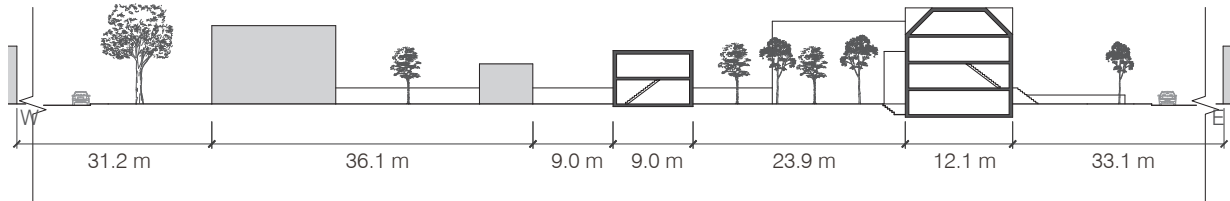
**Fig. 4.68** Site 4, Development 1, Project Data

This development requires minimal assembly, and the added density granted for providing parking significantly increases the number of units created due to the large floorplate.



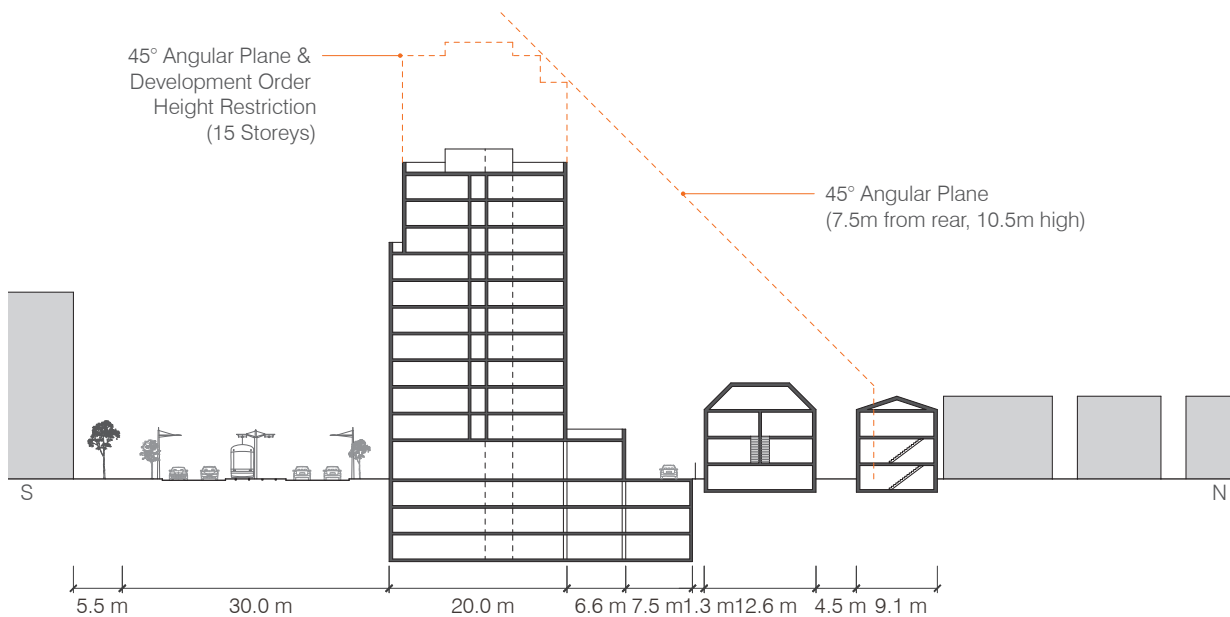
**Fig. 4.69** Site 4, Development 1, Ground Floor Plan

The wide properties with limited existing use value are ideal for redevelopment and allows for a flexible ground floor even with both a parking ramp and loading space and despite the added width in the new laneway coming from the avenue building.



**Fig. 4.70** Site 4, Development 1, E-W Section

The repurposing of the existing buildings into multi-unit buildings allows for the established and well maintained houses to be kept, along with the substantial vegetation on site. The former garage could be repurposed into a two-storey laneway house.



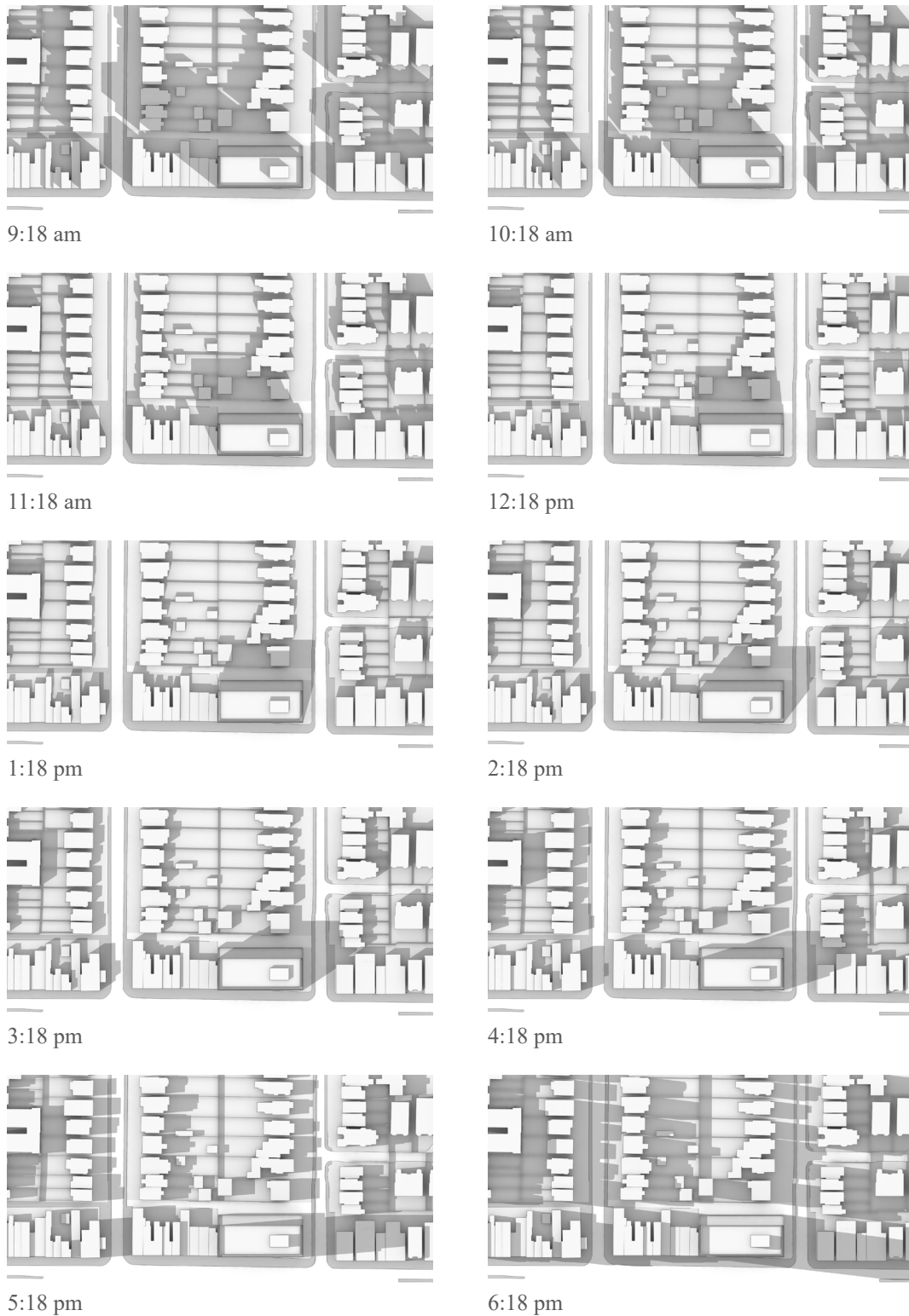
**Fig. 4.71** Site 4, Development 1, N-S Section

A third level of below grade parking is accommodated since there is the elimination of a lot of surface parking in this proposed redevelopment. The desired 11 storeys fit comfortably within the allowable 15 storeys permitted by both the angular plane and order of development.



**Fig. 4.72** Site 4, Development 1, Axonometric

The avenue building is significantly wide, which is uncharacteristic of the street. However, the inclusion and re-use of established houses into the development scheme supports the character of the existing neighbourhood.



**Fig. 4.73** Site 4, Development 1, Shadow Study, Mar. 21

There are no notable overshadowing impacts by this development because the rear buildings are being re-used and the redevelopment is on the east corner of a block.

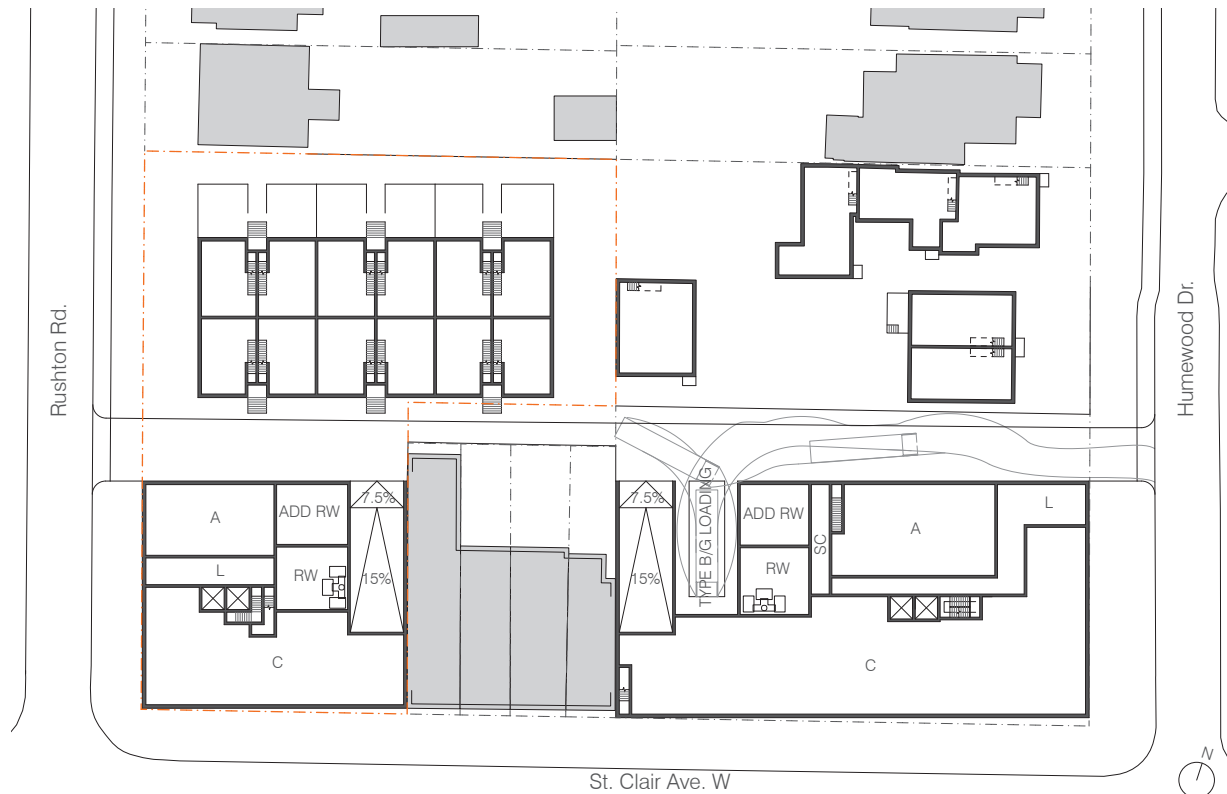
#### 4.4.2 SITE 4, DEVELOPMENT 2

The rear residential houses on this side of the block are not as established nor have as much existing vegetation as on the east side, making them more easily redeveloped. The larger residential properties and forward placement of the laneway allow for back-to-back townhouses oriented parallel to the avenue building which maximizes the building footprint. The parking ramp would be in the avenue building because the laneway placement makes it difficult to locate in the rear building. The avenue building will also use the development rights from the adjacent avenue property allowing for greater density and glazing on all four faces of the building, while still conforming to the height restrictions.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	20	20
	Total Units	67	20	87
FSI	As-of-Right	5	0.6	
	Modeled	6.5	2.1	
Storeys	As-of-Right	9	10m	
	Modeled	12	10m	
Number of Lots Assembled		5+1	3	8+1
Loading Space		N	N	
Parking Ramp		Y	N	

**Fig. 4.74** Site 4, Development 2, Project Data

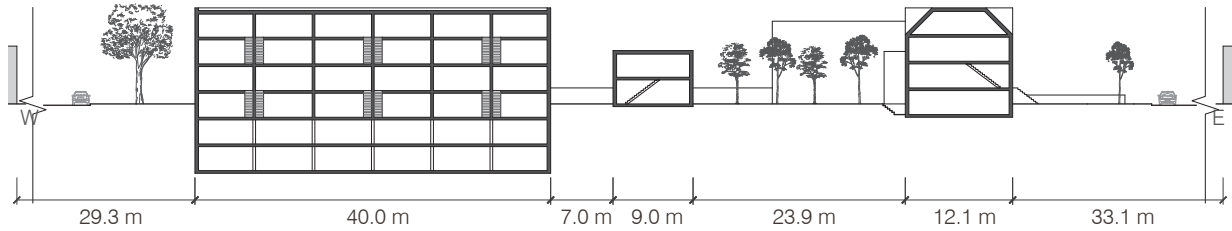
The +1 represents the additional property's transfer rights used in the project, but does not actually get redeveloped.



**Fig. 4.75** Site 4, Development 2, Ground Floor Plan

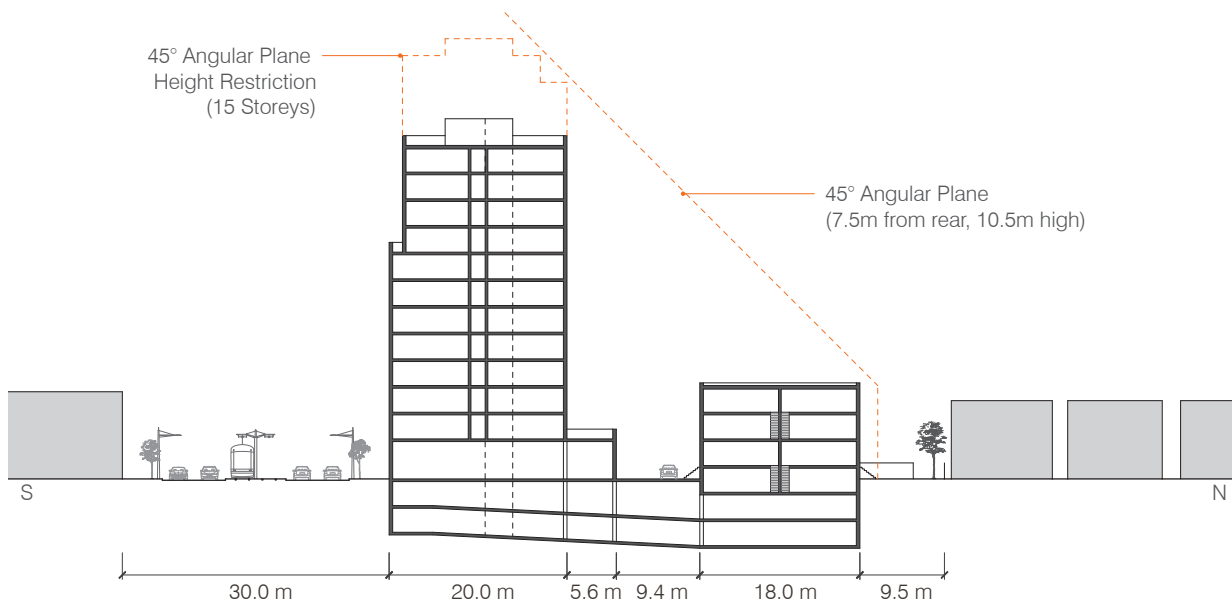
The laneway placement set by the east portion of the block allows for back-to-back townhouses without significant assembly required, but limits the flexibility in the location of the parking ramp. Despite the smaller ground floor of the avenue building, it still produces a flexible and open commercial space with continuous street frontage.





**Fig. 4.76** Site 4, Development 2, E-W Section

The E-W orientation of the townhouses allows for the maximum site coverage and a great number of units without producing a building that is out of scale with the adjacent residential houses in the neighbourhood.



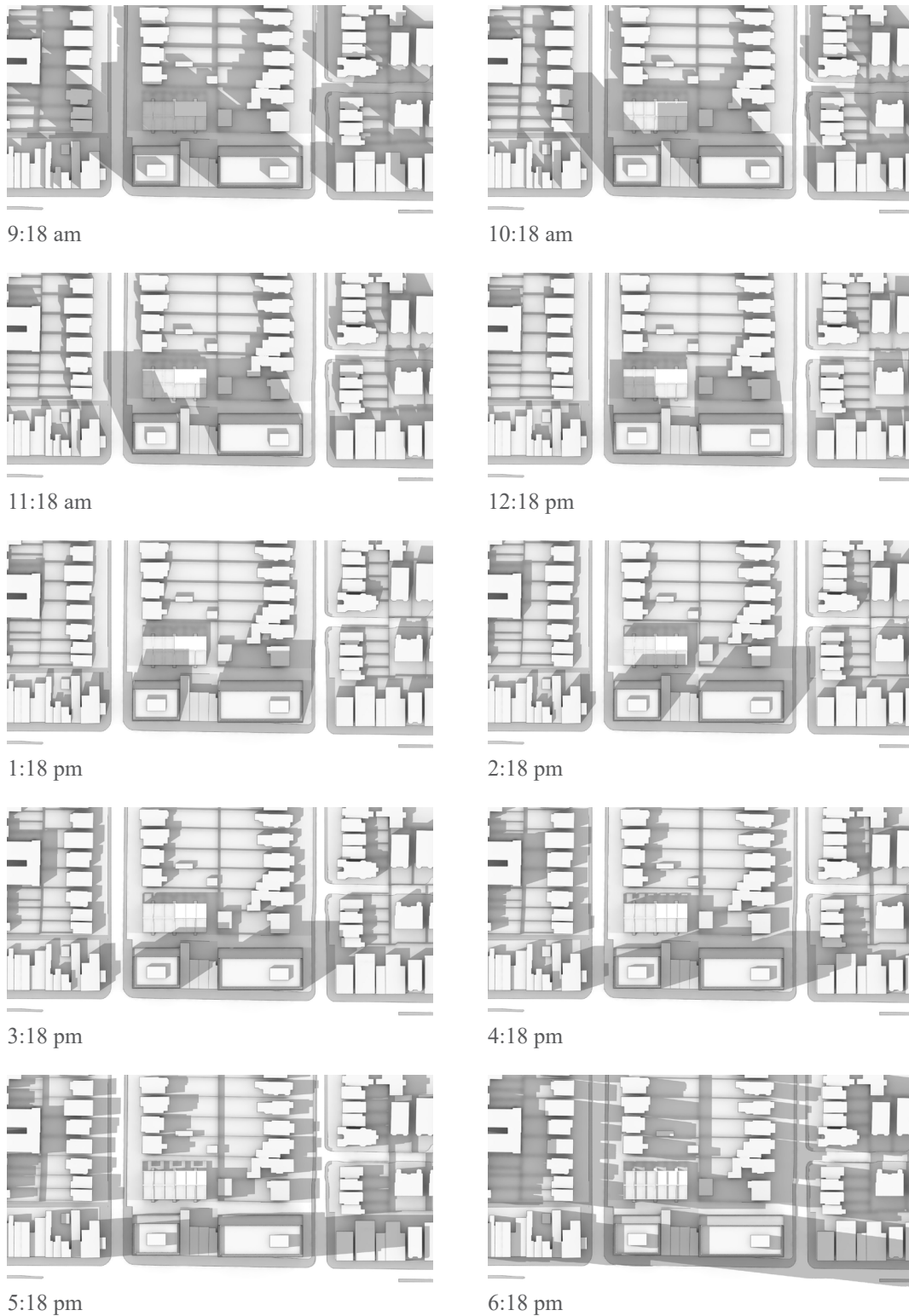
**Fig. 4.77** Site 4, Development 2, N-S Section

Added density from the adjacent avenue property is easily accommodated by the height restrictions.



**Fig. 4.78** Site 4, Development 2, Axonometric

The capacity to transfer development rights allows some of the existing avenue buildings to be maintained on the block. The rear townhouses are completely in line with the scale of the existing houses which tend to be larger and up to three storeys in this area.



**Fig. 4.79** Site 4, Development 2, Shadow Study, Mar. 21

This developments add no notable afternoon shadowing impacts on to residential properties.

## 4.5 SITE 5

### ST. CLAIR AVE. W BETWEEN VAUGHAN RD. & WYCHWOOD AVE. (SOUTH SIDE)



**Fig. 4.80** Site 5, Location Key

The site is located just a block west of Bathurst St., with St. Michael and All Angels Anglican Church on the north-west corner.

#### **SITE DESCRIPTION:**

This site is located a short block west of Bathurst St. and the St. Clair West subway station. It is one of the E-W oriented blocks with avenue property depths ranging from 31m to 37m. The residential properties to the rear are well maintained with substantial tree cover across the properties. The avenue frontage also contains numerous existing walk-up apartments and a historically designated church on the south west corner. The rear laneway only runs behind the properties fronting onto Vaughan Rd.

#### **SITE RATIONALE:**

This site would follow a similar pattern of development as site 2 but differs in that assembly and redevelopment is more difficult because of the existing character buildings and high quality houses to the rear. This block is representative of how the street will develop unevenly and the need to capture density where possible.

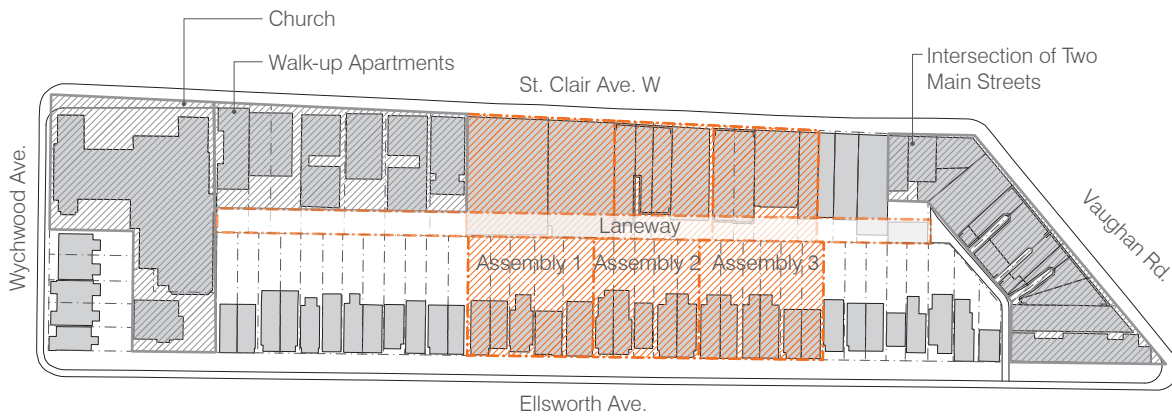
#### **DEVELOPMENT RATIONALE:**

Development would likely happen along the middle of the block due to the presence of a church and a number of existing walk-up apartments on the west portion of the block. The east corner of the block is an intersection with two main street frontages. Redevelopment of that corner would likely require a redevelopment at a much larger scale than proposed by this thesis to justify the assembly. The first redevelopment would include the wider than average avenue properties with only a single or two storey building on them. Subsequent developments would then occur to the east in order to use the newly created laneway. The added width to the new laneway should be come from the avenue property to preserve the substantial vegetation in the backyards of the residential houses and is feasible because of the slightly deeper avenue frontages.



**Fig. 4.81 Site 5, Aerial Image**

The site consists of typical narrow avenue buildings on the eastern portion of the block, with some existing walk-up apartments towards the western portion of the block. Established single and semi-detached houses are located to the rear, with significant vegetation in the rear yards.



 requires larger redevelopment (out of scope)



**Fig. 4.82 Site 5, Development Order**

A few mid-block developments could happen with a laneway pushed into the avenues properties to protect the existing vegetation. The properties at both the corners will likely require more substantial redevelopment than is proposed by this thesis. The walk-up apartments are difficult to redevelop based on their existing use value and will maintain a part of the street for a while.

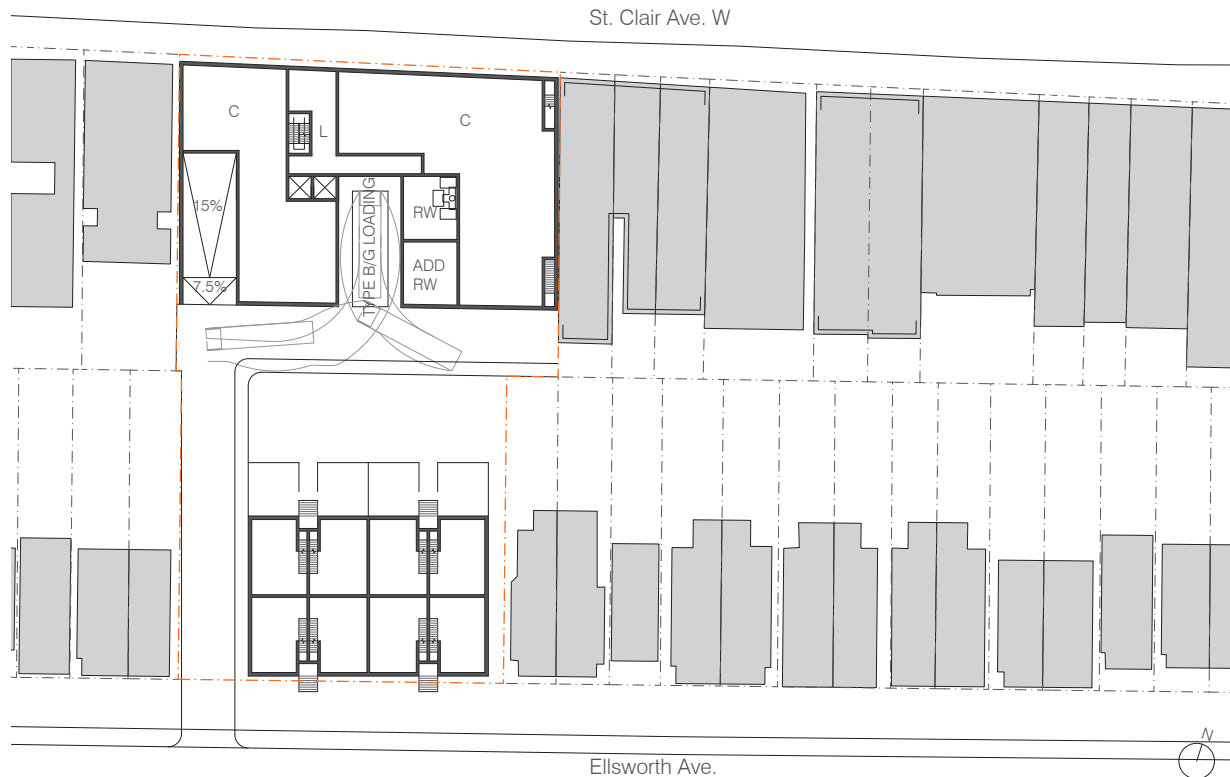
### 4.5.1 SITE 5, DEVELOPMENT 1

There is enough depth to redevelop the residential buildings into a row of stacked back-to-back towns, while still providing landscaped space for the entire project. A rear laneway on the east portion of this assembly could connect the residential street to the rear laneway without the removal of any trees. The presence of vegetation limits the ability to consolidate parking garage across the entire assembly. As a result, the avenue building would be required to provide both a loading space and parking ramp. No height restrictions on the avenue building allows the desired 10 storeys to be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	16	16
	Total Units	83	16	99
FSI	As-of-Right	5.5	0.6	
	Modeled	6	1.5	
Storeys	As-of-Right	9	12m	
	Modeled	10	10m	
Number of Lots Assembled		2	5	7
Loading Space		Y	N	
Parking Ramp		Y	N	

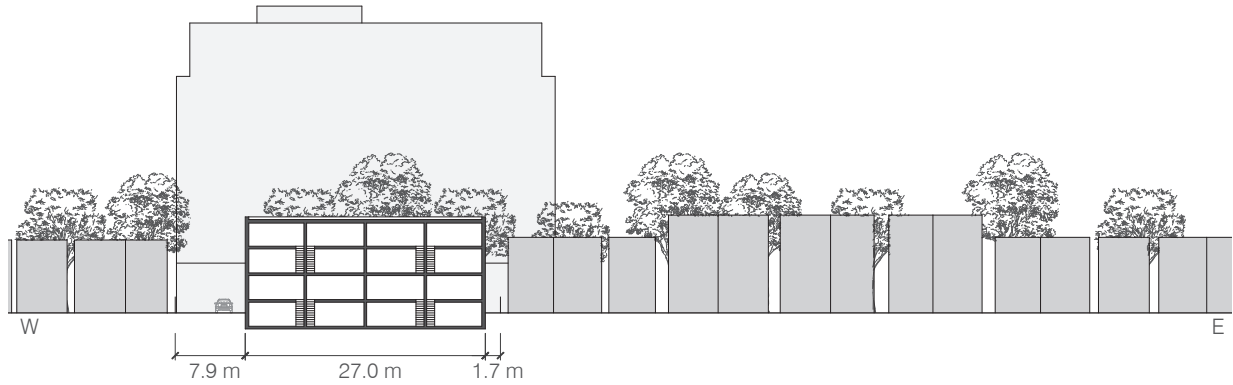
**Fig. 4.83** Site 5, Development 1, Project Data

This development creates a great number of at grade units.



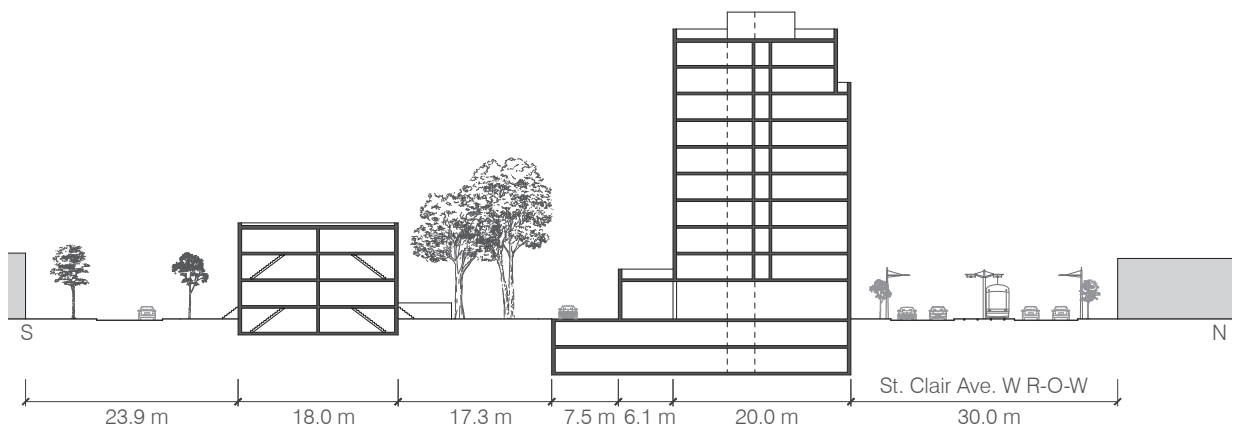
**Fig. 4.84** Site 5, Development 1, Ground Floor Plan

The organization of the laneway around the rear yard of the former residential property allows for the preservation of the large trees on the site.



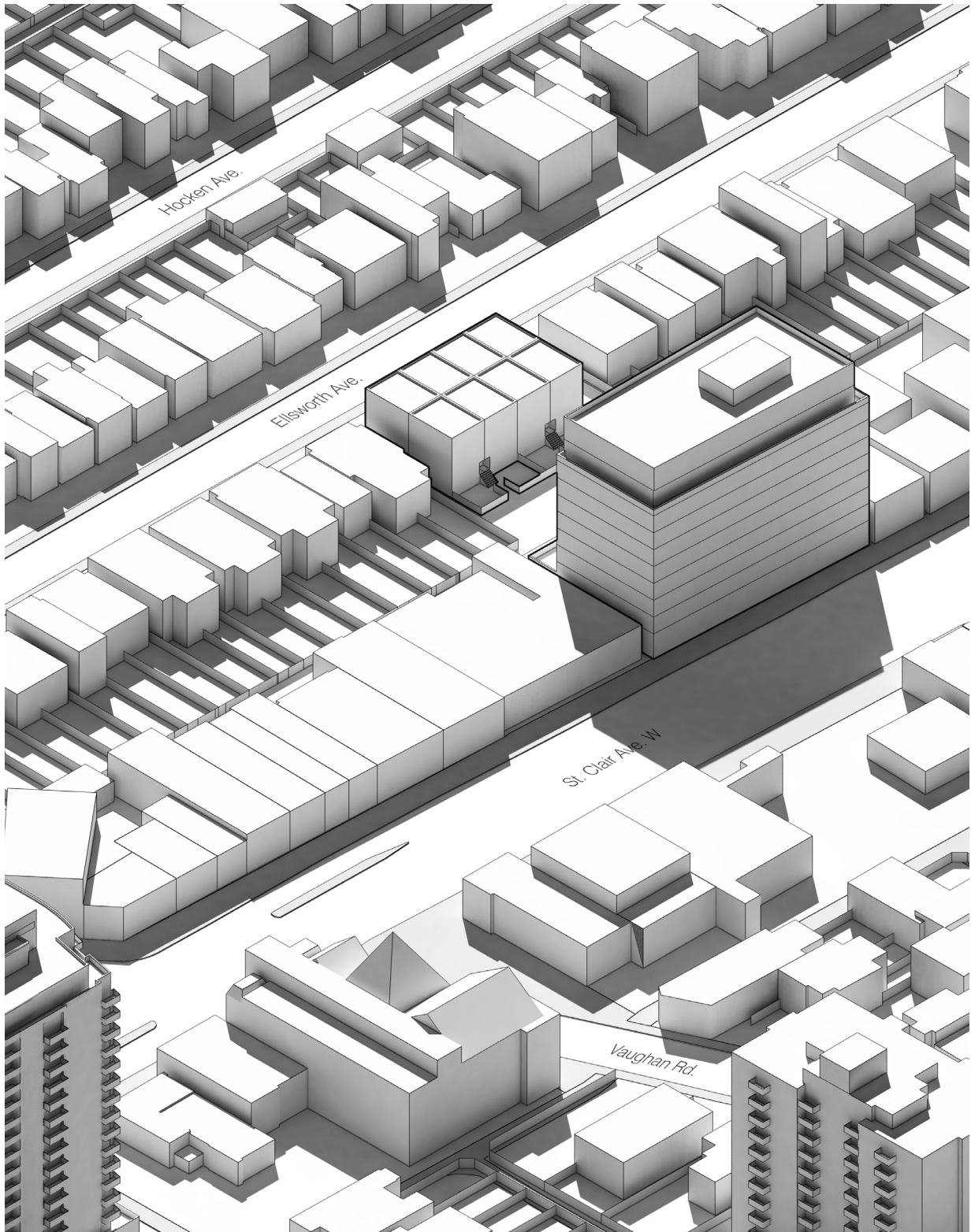
**Fig. 4.85** Site 5, Development 1, E-W Section

The four storey building is relatively the same size as the existing houses on the street which tend to be larger.



**Fig. 4.86** Site 5, Development 1, N-S Section

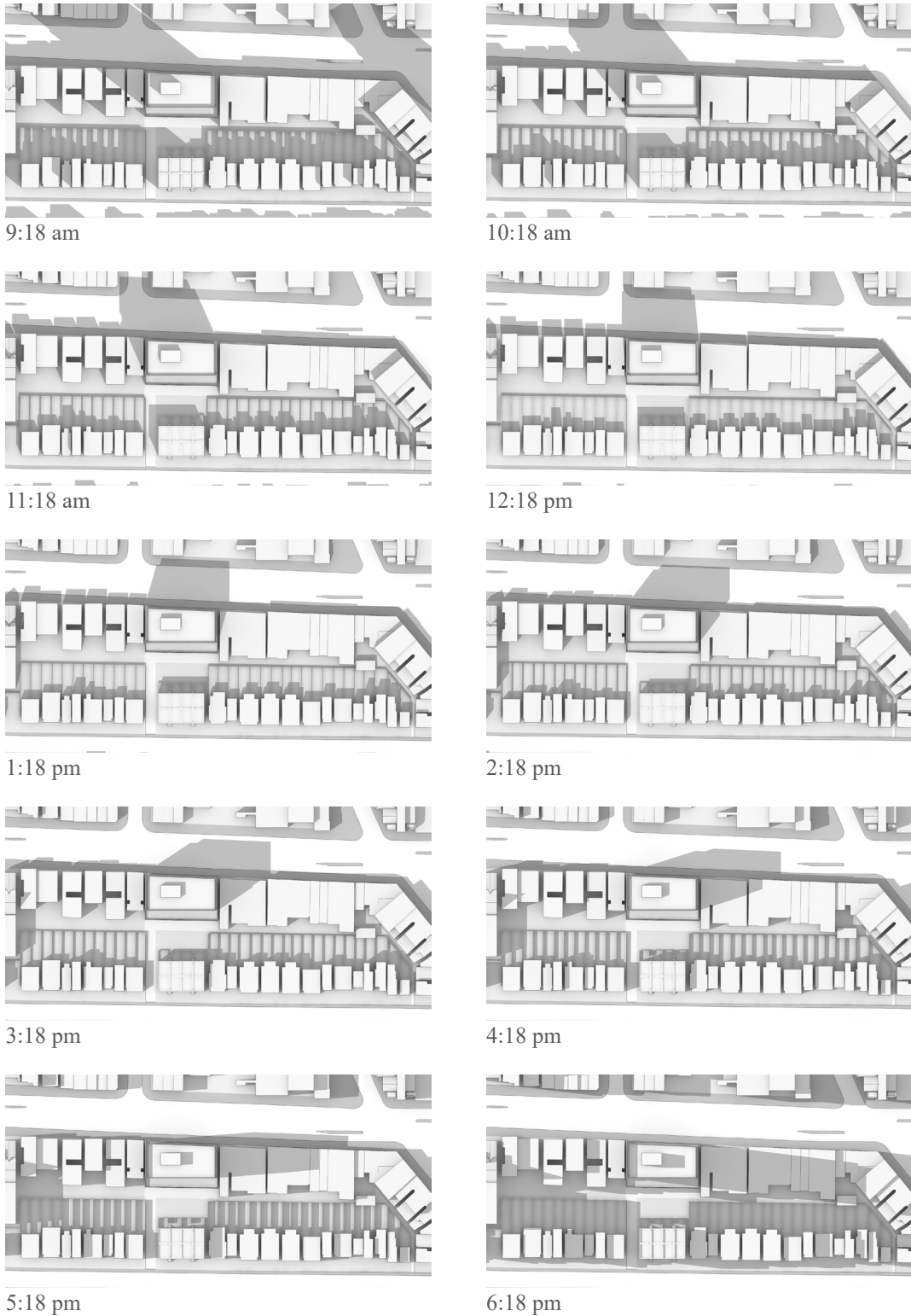
The consolidated parking garage only extends to the end of new laneway to not interfere with the root structure of the trees.



**Fig. 4.87** Site 5, Development 1, Axonometric

The size of the rear building does not overbear on its neighbours, and it is setback significantly from the avenue building to create added privacy. The space between could be divided between private outdoor space for the townhouses and outdoor amenity space for the entire project.





**Fig. 4.88** Site 5, Development 1, Shadow Study, Mar. 21

While the avenue building will shadow the north sidewalk till 2:18pm, the rear building does not substantially increase the shadowing of the backyards of the residential properties.

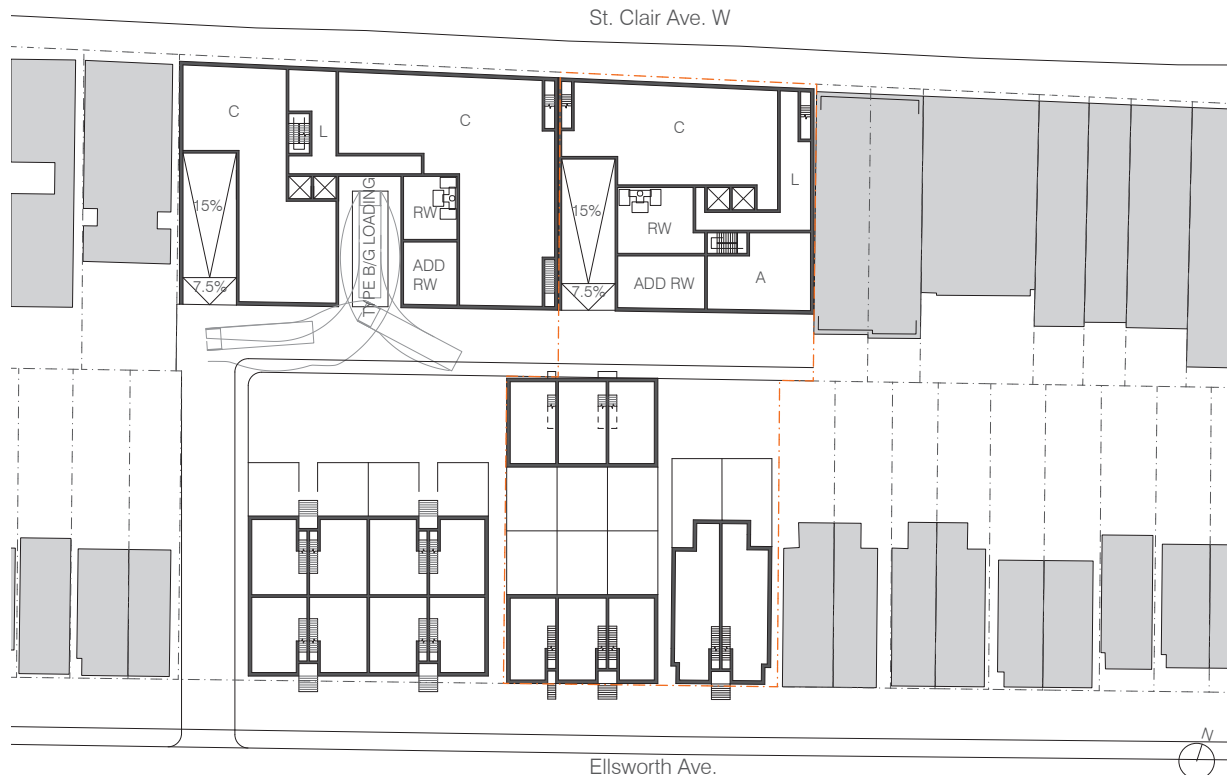
#### 4.5.2 SITE 5, DEVELOPMENT 2

The second development would occur directly to the east to use the new laneway accesses from the local side street. One portion of the residential assembly could accommodate two layers of back-to-back townhouses which allows for a larger consolidated parking garage. The existing house on the east edge of the property is substantial in size and could be converted into a multiplex. This would help to maintain the significant tree canopy in the rear yards as much as possible. The avenue building would be required to provide the parking ramp and with no height restrictions on the avenue building, the desired 11 storeys could easily be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	13	13
	Total Units	64	13	77
FSI	As-of-Right	5.5	0.6	
	Modeled	7	1.4	
Storeys	As-of-Right	9	12m	
	Modeled	11	10m	
Number of Lots Assembled		4	5	9
Loading Space		N	N	
Parking Ramp		Y	N	

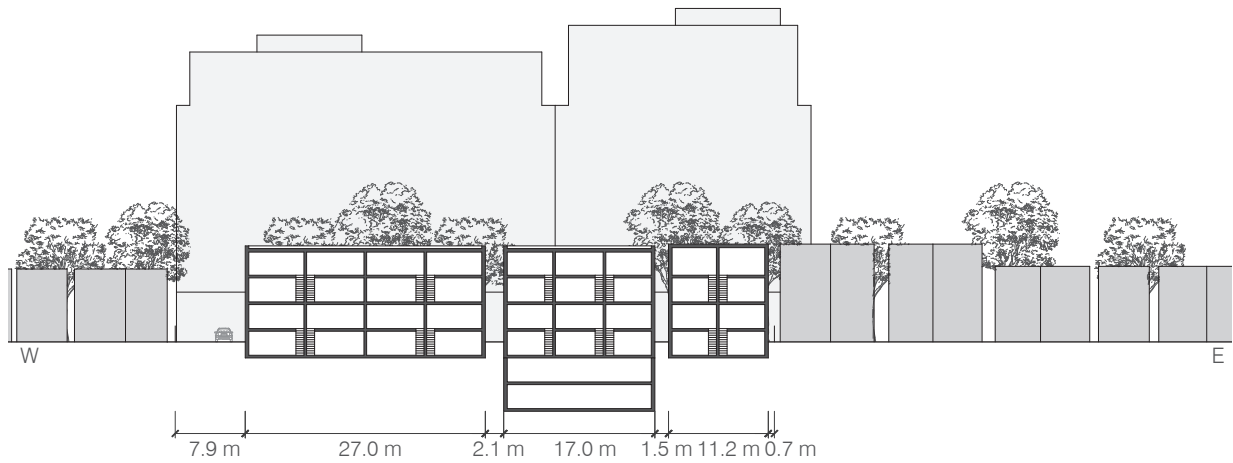
**Fig. 4.89** Site 5, Development 2, Project Data

This development requires a fair bit of assembly, but should be feasible given the increase in density across the entire assembly.



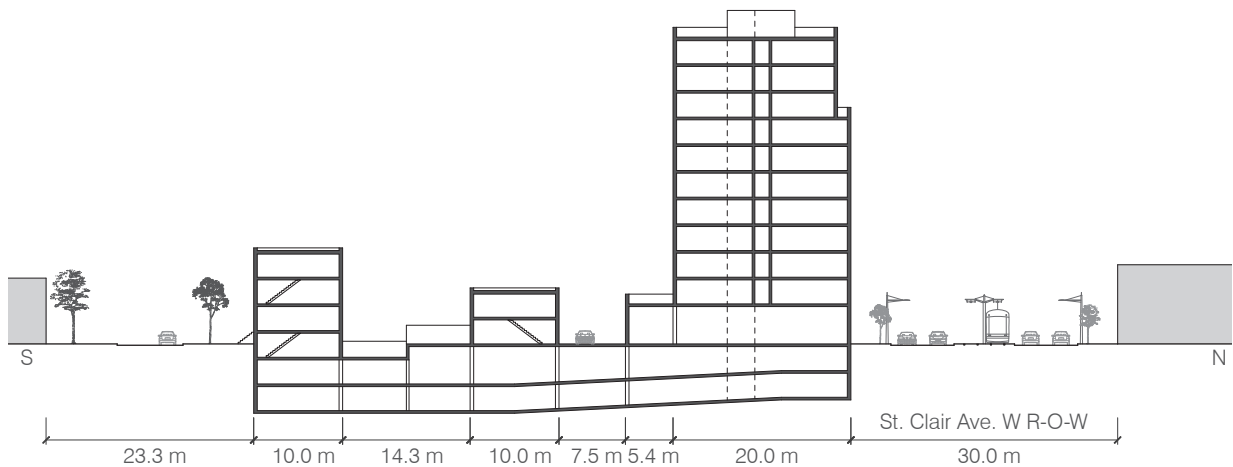
**Fig. 4.90** Site 5, Development 2, Ground Floor Plan

A combination of re-using and re-building different portions of the rear assembly allows for flexibility in building around existing trees. This configuration separates the laneway building from the backyard of the adjacent residential property offering greater privacy.



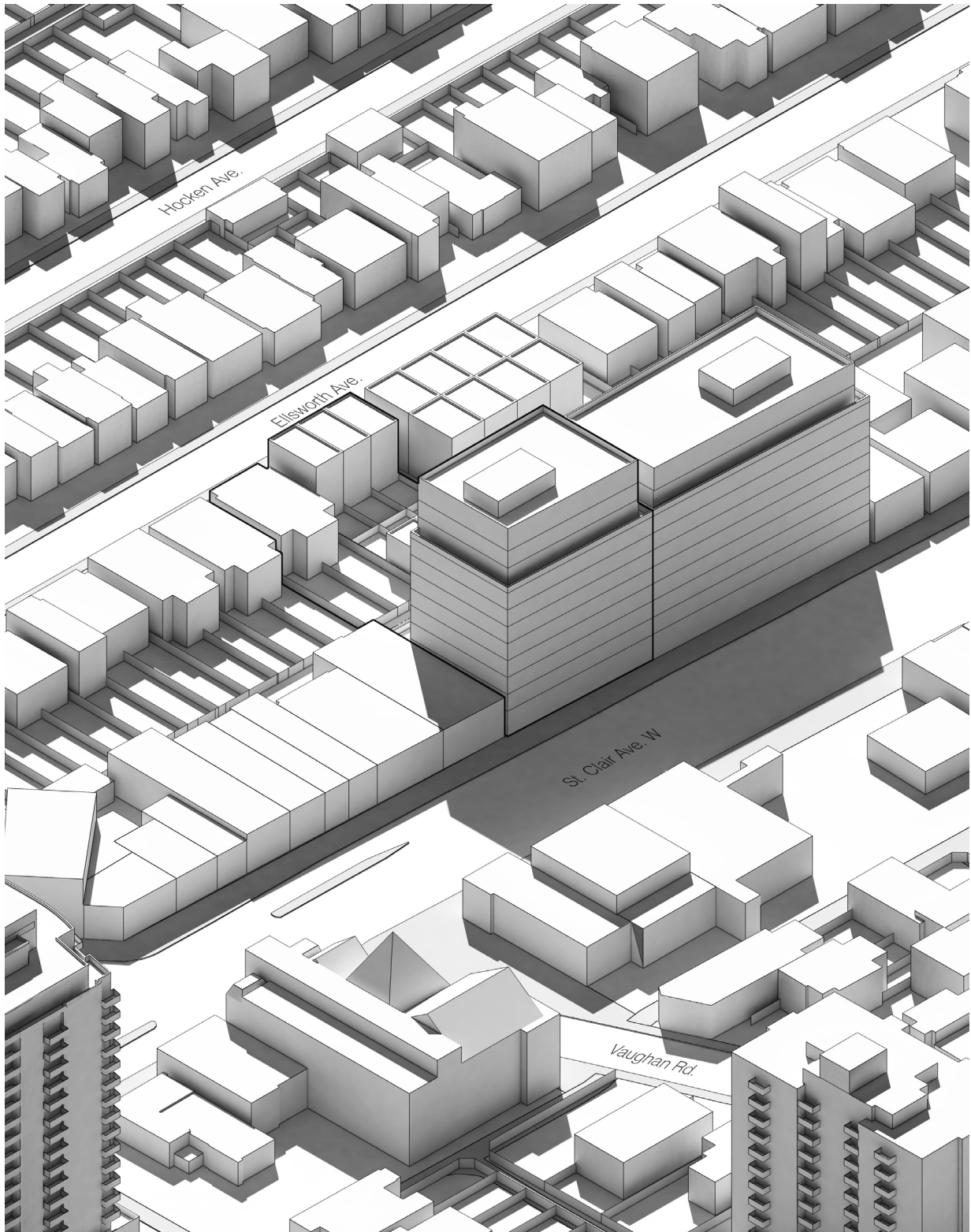
**Fig. 4.91** Site 5, Development 2, E-W Section

The parking garage extends only under the strip of the rear assembly that was redeveloped to protect the root structure of existing trees.



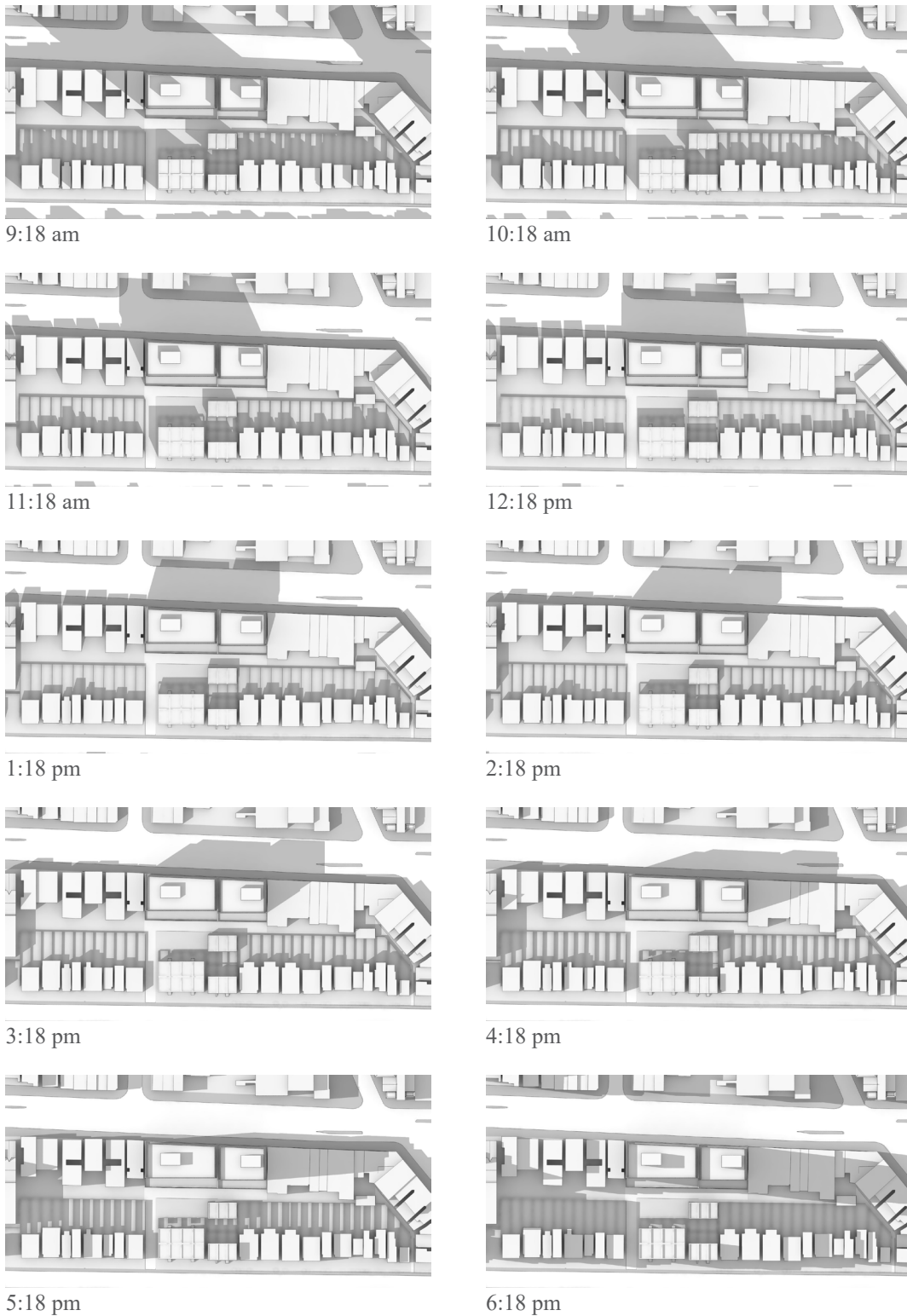
**Fig. 4.92** Site 5, Development 2, N-S Section

The layering of two sets of through townhouses produces high quality at grade units. The lower laneway townhouse set is appropriately sized to the height of the ground floor of the avenue building which allows for improved views from the second floor outdoor space above the ground floor.



**Fig. 4.93** Site 5, Development 2 Axonometric

The strategy for the redevelopment of the rear portion of the assembly, maintains adequate separation from the adjacent residential property to the east.



**Fig. 4.94** Site 5, Development 2, Shadow Study, Mar. 21

While the avenue building will shadow the north sidewalk till 2:18pm, the two layers of through townhouses do not significantly increase the shadowing of the backyards of the residential properties.

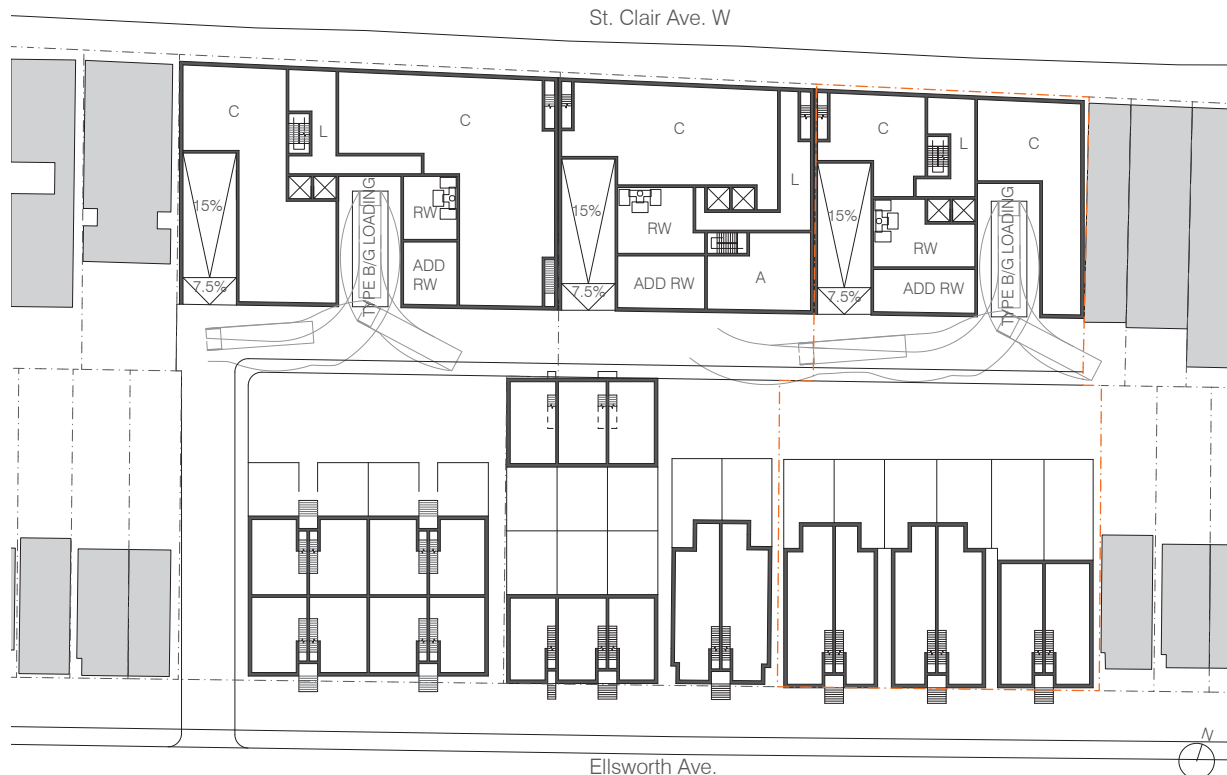
### 4.5.3 SITE 5, DEVELOPMENT 3

The third development would follow the previous two developments to the east and build off the new laneway. The existing residential properties contain plenty of existing vegetation to the rear and are large enough that they could be re-used. The semi-detached houses could be split vertically to produce stacked through units. This rear building type requires the avenue building to contain the parking ramp. Another loading space would likely need to be provided because it is far enough from the first loading space on the block, and could be used to serve any future development to the east. No height restrictions on the avenue building allows the desired 14 storeys to be accommodated.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	10	10
	Total Units	88	10	98
FSI	As-of-Right	6.5	0.6	
	Modeled	9	0.6	
Storeys	As-of-Right	12	12m	
	Modeled	14	10m	
Number of Lots Assembled		4	6	10
Loading Space		Y	N	
Parking Ramp		Y	N	

**Fig. 4.95** Site 5, Development 3, Project Data

This rear development does not add a significant net amount of at grade units, but the avenue building contains a substantial amount.



**Fig. 4.96** Site 5, Development 3, Ground Floor Plan

All the existing residential houses would be converted into stacked through townhouses. Reducing the backyards of these units allows for at grade outdoor space to be used by the entire building. However, this is all achieved in exchange for requiring a loading space and parking ramp to be located in the avenue building which produces a less flexible commercial space.



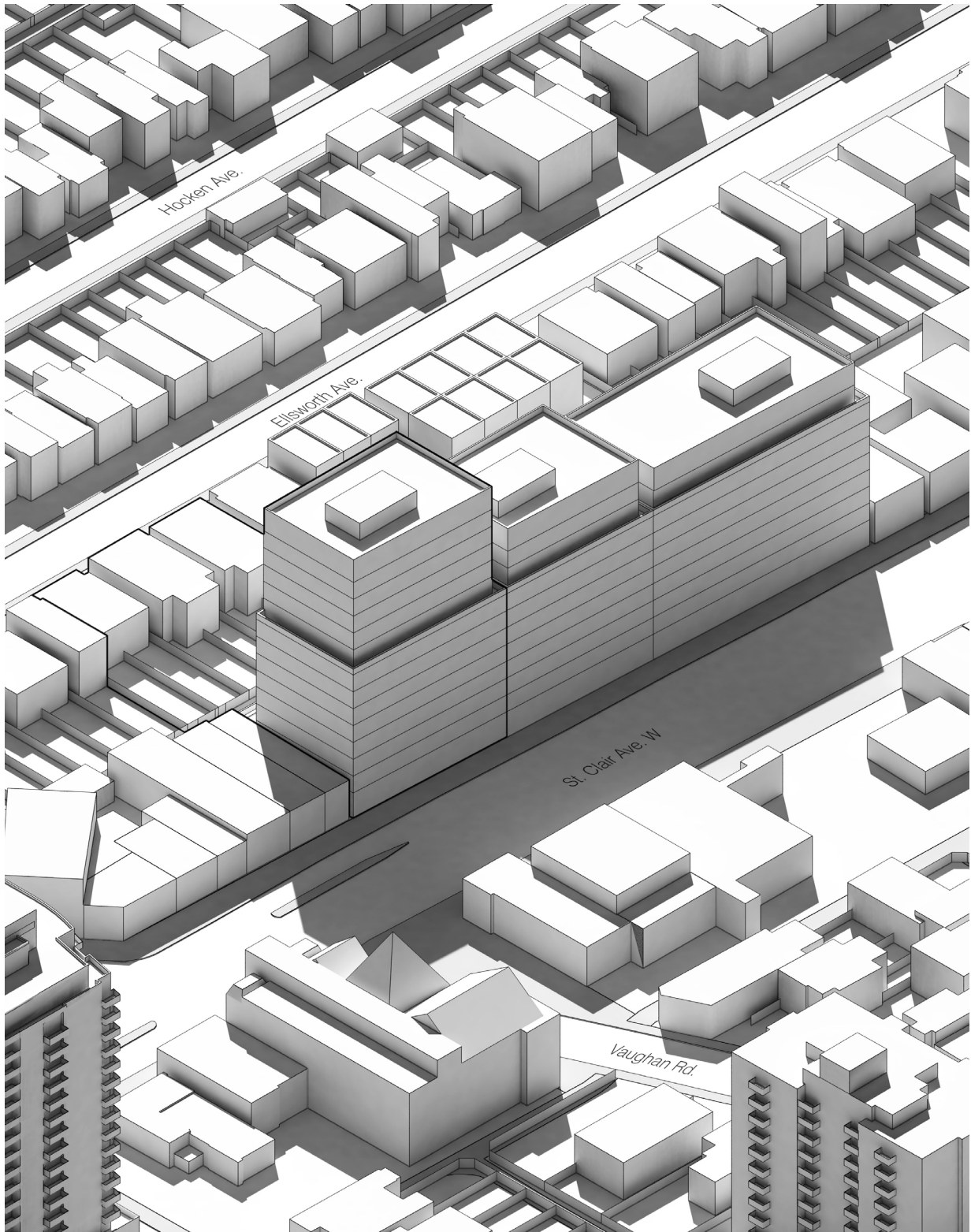
**Fig. 4.97** Site 5, Development 3, E-W Section

The former three storey semi-detached properties would be split vertically to allow for the creation of two units in each building.



**Fig. 4.98** Site 5, Development 3, N-S Section

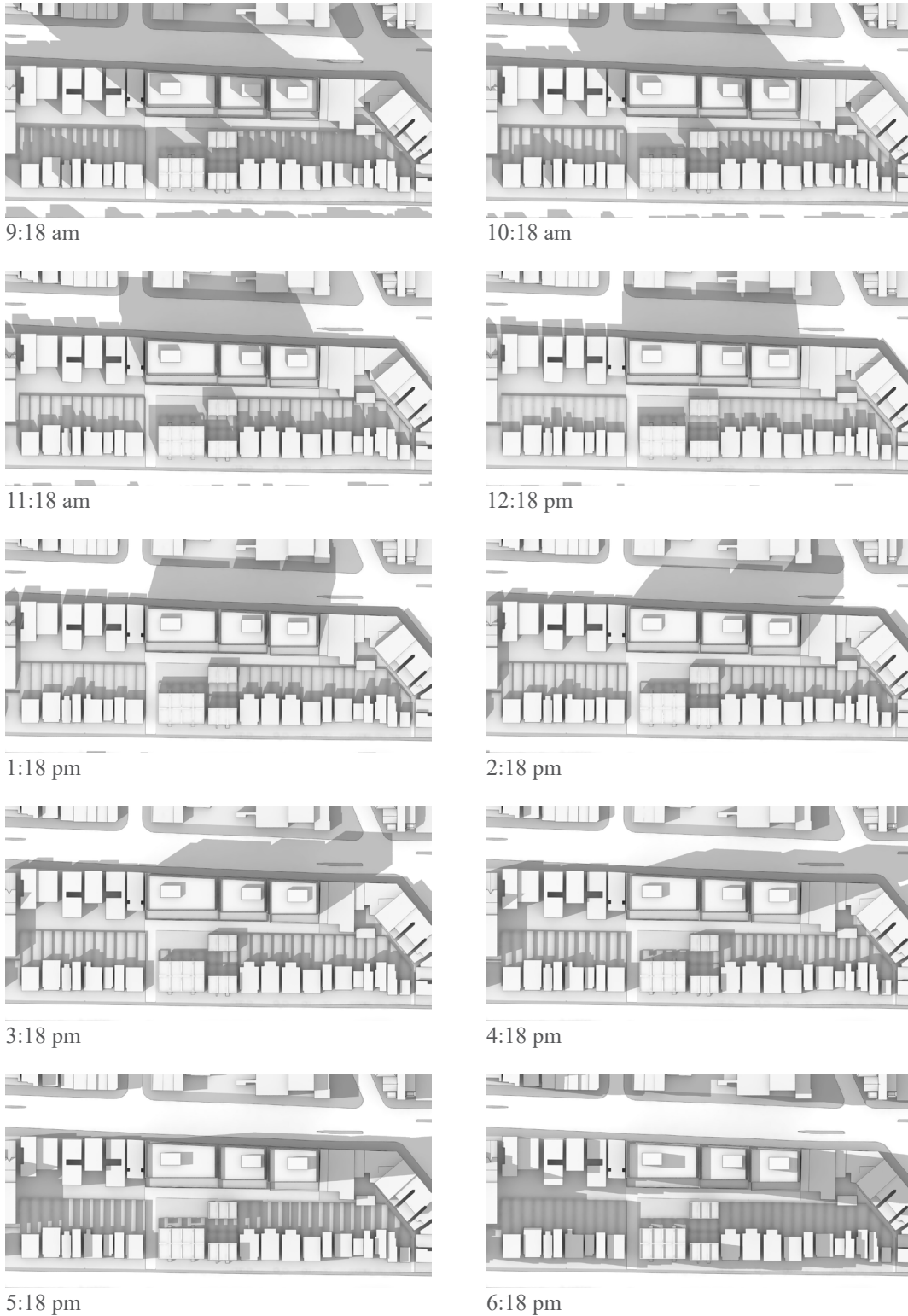
The new lower unit would have access to a smaller rear yard, with a common outdoor space for the entire building. The parking garage only extends to the depth of the widened laneway to not interfere with the root structure of the trees.



**Fig. 4.99** Site 5, Development 3, Axonometric

The avenue building would continue the streetwall of buildings on the south side of the street, and despite its greater height, wouldn't appear too large given the previous two avenue developments.



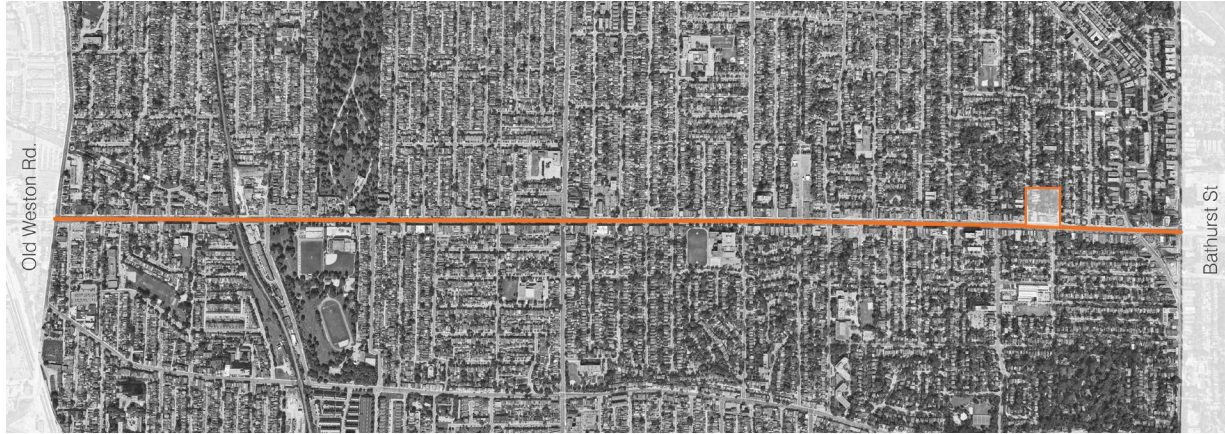


**Fig. 4.100** Site 5, Development 3, Shadow Study, Mar. 21

While there would be a significant amount of shadowing of the north sidewalk, the shadow does move across the block between 9:18am to 2:18pm.

## 4.6 SITE 6

### ST. CLAIR AVE. W BETWEEN PINEWOOD AVE. & WYCHWOOD AVE. (SOUTH SIDE)



**Fig. 4.101** Site 6, Location Key

This site is located a few block west of Bathurst St. and contains a character building at 646 St. Clair Ave. W and St. Clair Avenue Baptist Church, one property in from the south-east corner of the block.

#### **SITE DESCRIPTION:**

This site is a N-S oriented block with an abnormal property structure and a number of character buildings on the site. The avenue property depth for the west portion of the block deeper than typical, while the east portion is notably shallower. There is surface parking on two properties, with a small set of typical narrow avenue building in between. The residential properties to the rear contain extensive vegetation.

#### **SITE RATIONALE:**

This site is the most atypical of the examples presented and highlights the need for flexibility in developing a uniform plan for redevelopment across an entire street. The existence of historic buildings introduces the possibility of using the transfer of development rights to maintain and save heritage structures on the street, while also facilitating greatly need for intensification.

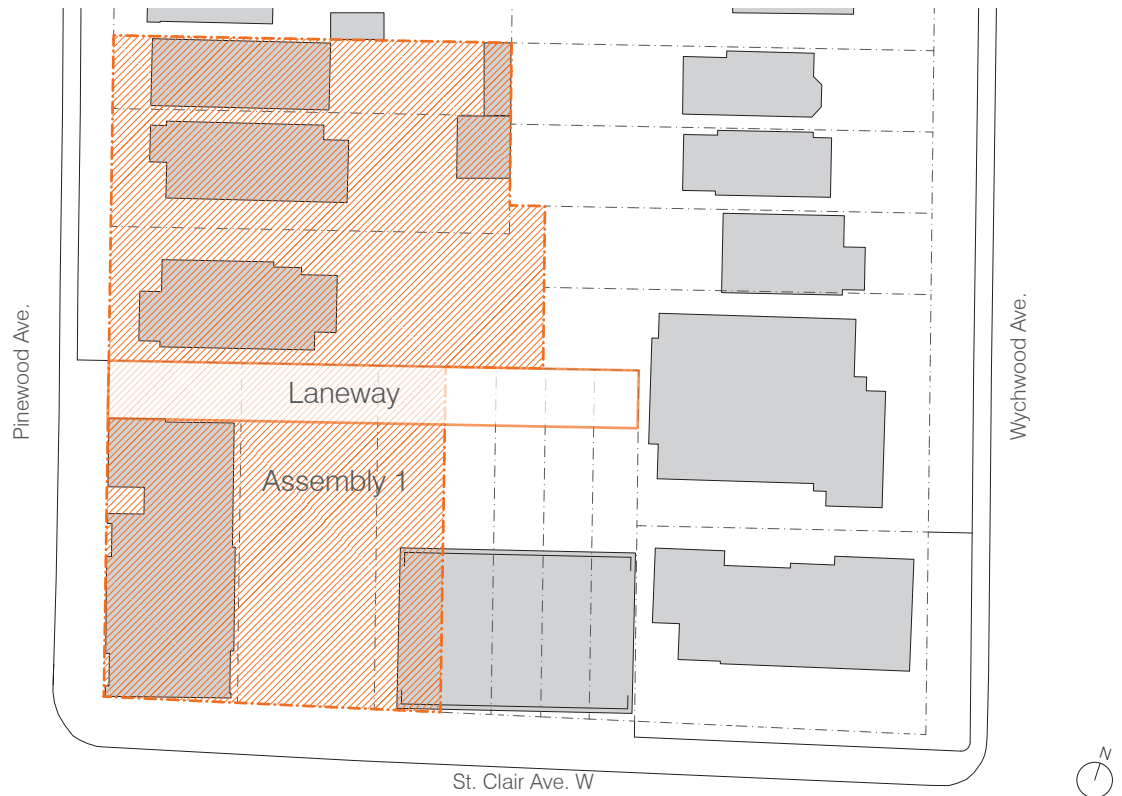
#### **DEVELOPMENT RATIONALE:**

The south west corner is significantly shallower than the rest of the properties on the block and a church is located directly adjacent to the north, making assembly difficult and unlikely on this corner. The south-east corner is home to a building worth preserving, so this building could be included in a redevelopment of the adjacent deep property with surface parking, which would be ideal for development. Although the narrow avenue buildings mid-block are connected, this project is already negotiating existing structures and could redevelop that property as well to produce a sufficient assembly width suitable for an underground parking garage. The greater depth of the avenue properties and setback of 646 St. Clair Ave. W allows for the added width to the laneway to come from the avenue building.



**Fig. 4.102 Site 6, Aerial Image**

The middle of site contains the typical narrow avenue buildings, although, a significant portion of the block's frontage consists of surface parking. The site has two character buildings, 646 St. Clair Ave. W on the west corner and St. Clair Avenue Baptist Church on the east side of the block. There is a substantial amount of vegetation on the residential properties.



**Fig. 4.103 Site 6, Development Order**

A single development could utilize the development rights of 646 St. Clair Ave. W, with a laneway on the avenue property as the property depth is deeper than typical for St. Clair Ave. W. The eastern portion of the block is unlikely to be redeveloped due to a significantly shallower property depth and a church directly to the rear.

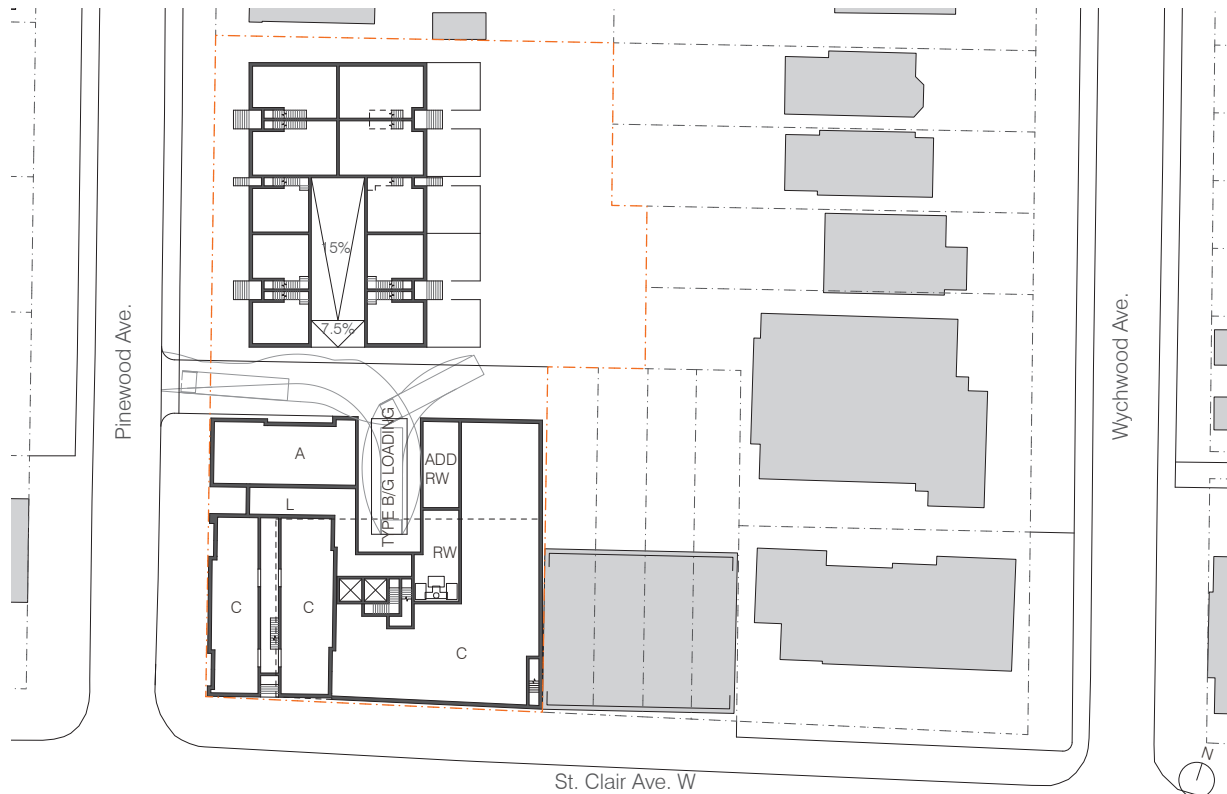
#### 4.6.1 SITE 6, DEVELOPMENT 1

The existing building could be connected to the new building at the ground floor, while the floorplates of the avenue building above would only slightly cantilever over. It is assumed the City would negotiate for the provision of an extra level of public parking in exchange for an additional 1 FSI. An assembly of three relatively wide residential properties would allow for back-to-back townhouses parallel to Pinewood Ave., incorporating a parking ramp. This orientation would protect the existing trees to the rear. Although the desired 15 storeys would exceed the height restriction, the extensive vegetation on the site would negate any shadowing impact.

		Avenue Building	Rear Building	Total
Unit Count	Townhouses	0	20	20
	Total Units	93	20	113
FSI	As-of-Right	5	0.6	
	Modeled	6.5	1.5	
Storeys	As-of-Right	9	11m	
	Modeled	15	10m	
Number of Lots Assembled		2	3	5
Loading Space		Y	N	
Parking Ramp		Y	N	

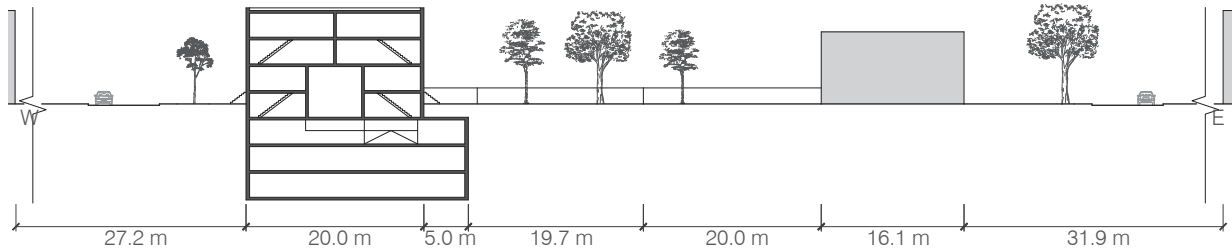
**Fig. 4.104** Fig. 1 Project Data

The building creates many new units, both plenty at grade in the rear building and in the avenue building.



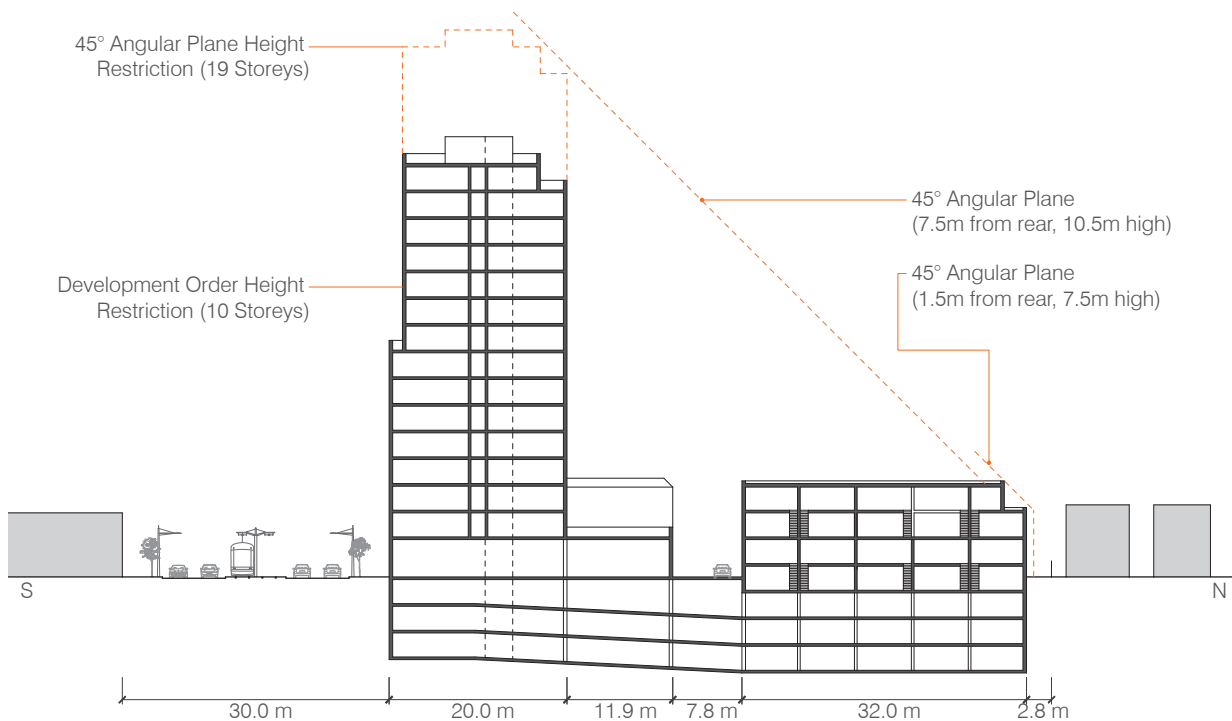
**Fig. 4.105** Site 6, Development 1, Ground Floor Plan

The character building would be incorporated into the ground floor of the plan, adding commercial space at grade, and allowing for a lobby entrance off the side street.



**Fig. 4.106** Site 6, Development 1, E-W Section

The parking ramp and consolidated parking garage beneath the rear building would only extend slightly beyond the width of the building instead of the entire property depth to protect the existing vegetation to the rear.



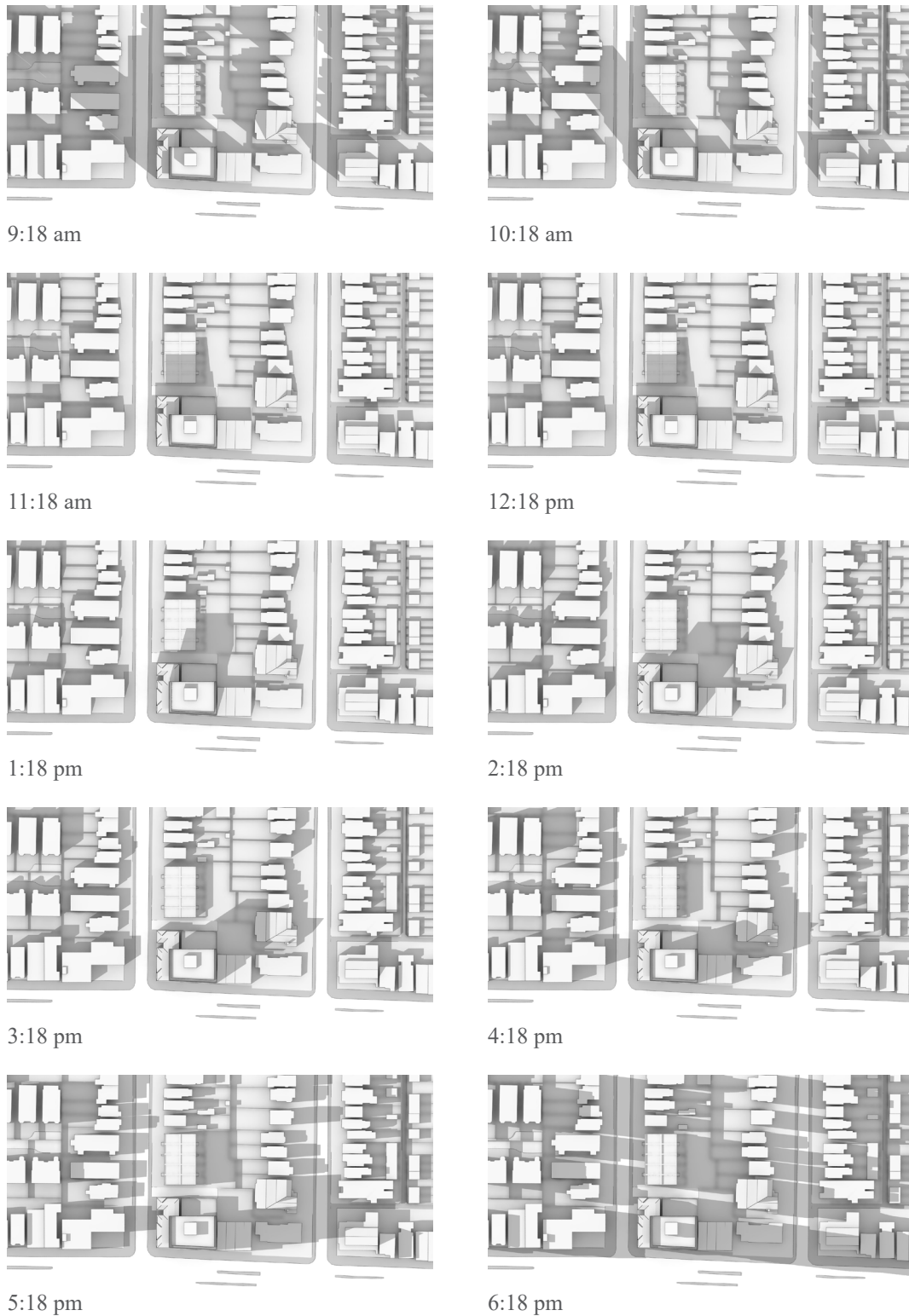
**Fig. 4.107** Site 6, Development 1, N-S Section

The avenue building could exceed the building height restriction because there is significant vegetation on the adjacent residential properties, so the new building would not produce any new shadowing. The rear building conforms to the angular plane restriction to limit overshadowing directly to the north.



**Fig. 4.108** Site 1, Development 1, Axonometric

The character building is connected to the new building at grade, but is not substantially renovated to structurally support the upper floors of the avenue building. These floors cantilever slightly over 646 St. Clair Ave. W to accommodate the additional bulk granted by this assembly.



**Fig. 4.109** Site 6, Development 1, Shadow Study, Mar. 21

The development would overshadow the backyard of a single detached property directly to the north of the church, in addition to the very small rear yard on the church property. There are significantly large trees in both these yards, and this development would not actually add any new shadowing.

## **4.7 PERSPECTIVES**

This section includes a series of perspectives that illustrate what St. Clair Ave. W and the adjacent side streets could look like under the proposed urban design guidelines in this thesis. Although there is some overlap in the selection of views for the perspectives and the sites chosen for the six prototypical case studies, the perspectives are not intended to be visualizations of the redevelopments illustrated previously.

The perspectives realistically depict how development is likely to unfold on St. Clair Ave. W under the proposed guidelines. The first perspective is presented as a series of perspectives of the same view, illustrating how the incremental re-urbanization of St Clair Ave. W would look and change over time. The following perspectives simply illustrate a before and after series of how the proposed guidelines could transform the avenue from along both St. Clair Ave. W and the local side streets.







**Fig. 4.110** St. Clair Ave. W, Looking West, Existing

The street is currently lined with narrow avenue buildings, with little new development.





**Fig. 4.111** St. Clair Ave. W, Looking West, Development Phase 1

A mid-block development could be built on the south side of the street and across from a new corner development on the north side.





**Fig. 4.112** St. Clair Ave. W, Looking West, Development Phase 2

An additional mid-block development could fill in on the south side of the street. A new corner development further back allows for views out of three building faces.





**Fig. 4.113** St. Clair Ave. W, Looking West, Development Phase 3

When the current proposed building typology out grown by increased demands for more density, larger redevelopments with high-rise towers as pictured could be required to continue re-urbanizing the street.







**Fig. 4.114** St. Clair Ave. W Projection, Looking South-West, Existing

A typical N-S oriented block on the south side of the street is lined with two to three storey buildings with commercial at grade. Left, a high quality older apartment building adds character to the existing street.





**Fig. 4.115** St. Clair Ave. W Projection, Looking West, Redeveloped

The redevelopment of the corners of N-S oriented blocks would be the most desired sites for redevelopment and would be most common along the street, especially on the south side of the street where overshadowing is not as much a concern.





**Fig. 4.116** Side Street Perspective Looking South to St. Clair Ave. W, Existing  
Most local side streets consist of small and narrow single and semi-detached houses with limited vegetation.





**Fig. 4.117** Side Street Perspective Looking South to St. Clair Ave. W, Redeveloped

A row of stacked through townhouses replace the existing narrow houses on the street and provide a buffer to a significantly taller avenue building. Across the street, a mid-block development replaces existing avenue buildings.







**Fig. 4.118** E-W Side Street Perspective, Existing

More established local side streets consist of larger two to three storey single and sem-detached houses with plenty of vegetation.





**Fig. 4.119** E-W Side Street Perspective, Existing

Redevelopment of houses in even more established neighbourhoods would be possible without taking away from the character of the neighbourhood.





5

## **CONCLUSION**

Rather than imagining a uniformly built out streetscape, this thesis proposal for the redevelopment of St. Clair Ave. W is intentionally incremental and fragmented. The design guidelines offer the opportunity for pockets of intensification along the street, without completely losing the narrow avenue buildings that are key to the existing character of the street. (Refer to Fig. 5.1.) The developments proposed by this thesis are not expected to be realized along the entire street, but facilitate fragmented city building in an already unevenly developed city. The current guidelines for redevelopment of Toronto's avenues in the *Avenues and Mid-Rise Buildings Study* desire incremental development and illustrate the redevelopment of a typical avenue in stages. The final stage and long-term vision for the avenues presented is a continuous urban form comprised of European style six to eight storey buildings as seen in Fig. 5.2.

There are only two buildings, with a few more proposed, built on St. Clair Ave. W since the rezoning of the street in 2009. This is likely because the building typology proposed in the current city guidelines is economically outdated and cannot support the density needed for redevelopment. The problem is complex and has many factors. The main ones are: rising land costs, demand for central city housing, in particular, on the avenues, the resistance to significant intensification on the side streets, and the comfort level of the private development with a long-standing range of buildings types that do not fit the existing guidelines. This thesis develops a strategy to accommodate increased density with a vision for the street that allows larger developments to coexist with existing buildings adjacent to one another. (Refer to Fig. 5.3.) The incomplete plan allows for redevelopment without completely losing the existing street fabric, producing heterogeneous urban forms that bolster the existing character of the street and neighbourhood.

The guiding vision for the avenues in the *Avenues and Mid-Rise Buildings Study* is based on a typology that is too prescriptive to accommodate the incremental pushes for increased density that accompany incremental development, rendering the typology outdated. This proposal presents a strategy to manage additional density to allow for the intensification of St. Clair Ave. W to continue. By proposing a much more flexible set of building design guidelines, the proposed building typology has lastingness not present in the current guidelines. However, there is a maximum capacity for density in the proposed strategy and typology, therefore, at some point in the future the density requirements for redevelopment may outgrow the typology and require a rethinking of the typology again. This continues to





**Fig. 5.1** Proposed Realistic Vision for St. Clair Ave. W

This image presents a more realistic vision of how the incremental re-urbanization of St. Clair Ave. W is likely to unfold under the proposed design guidelines in this thesis. The street consists of layers of density including new developments following the proposed guidelines, potential future high-rise towers, alongside the existing fabric of the street.



**Fig. 5.2** The Ideal *Avenues and Mid-Rise Buildings Study* Vision

The incremental plan for the re-urbanization along the avenues in the *Avenues and Mid-Rise Buildings Study* present a long-term vision of a completely built out street of continuous six to eight storey buildings.

add different layers of development to the street over time, which is still consistent with the long-term vision for the street in this thesis.

The existing typology and the proposed developments on St. Clair Ave. W highlight a relationship that exists between built form guidelines and the layout of residential buildings. While zoning by-laws are not allowed to place requirements on the interior of a building, prescribing buildings with no flexibility in the distribution of bulk is problematic because it forces awkward configurations. The conventional and typical layout of buildings as built and marketed by the private development industry need to be a starting point for urban design guidelines, which will likely create a nicer place to live.

St. Clair Ave. W is only one of many avenues in Toronto that are planned for intensification in the *Toronto Official Plan*. Others include Eglinton Ave. and Sheppard Ave. Eglinton Ave., in particular, has a similar property structure to St. Clair Ave. W with narrow avenue properties and established residential neighbourhoods to the rear, and has similarly received significant investments in transit infrastructure to support intensification. All of Toronto's avenues share similar qualities including transit lines (some of higher priority) and with bits of existing avenue frontage, although they are also different and unique.

This proposed guidelines for fragmented intensification put forward in this thesis can therefore be extended to the other avenues, informing the new development on these avenues through the consideration of typical property structures, and by offering a more flexible framework that can develop layers of density. Greater flexibility offered by the proposed guidelines in this thesis also offers greater applicability to the other avenues. Given that the thesis is only able to propose realistic low mid-rise buildings because of the greater size of the avenue building, any fears of the redevelopment of the rear portion of the assembly setting precedents for more redevelopment of the neighbourhood is nullified. Redevelopment of Toronto's avenues needs to consider the redevelopment of a neighbourhood from the onset, instead of simply redeveloping a street and then trying to mitigate any impact on the neighbourhoods. While intensification is needed to support municipal and provincial planning goals to accommodate future population growth, intensification offers urban amenities including higher quality retail, priority transit access, all of which makes the entire neighbourhood as better place to live.



**Fig. 5.3** A Proposed Avenue Building Adjacent to Single Detached Properties

The addition of a rear building on an extended enhancement zone allows for a physical and visual buffer zone, preventing the entire redevelopment from overbearing on the neighbourhood.



**Fig. 5.4** A Current Avenue Building Adjacent to Single Detached Properties

Despite this avenue building's conformance to a rear yard setback and angular plane restriction to transition the height of the nine storey building to the two storey house, there is no substantial buffer zone between the new development and the local side street.

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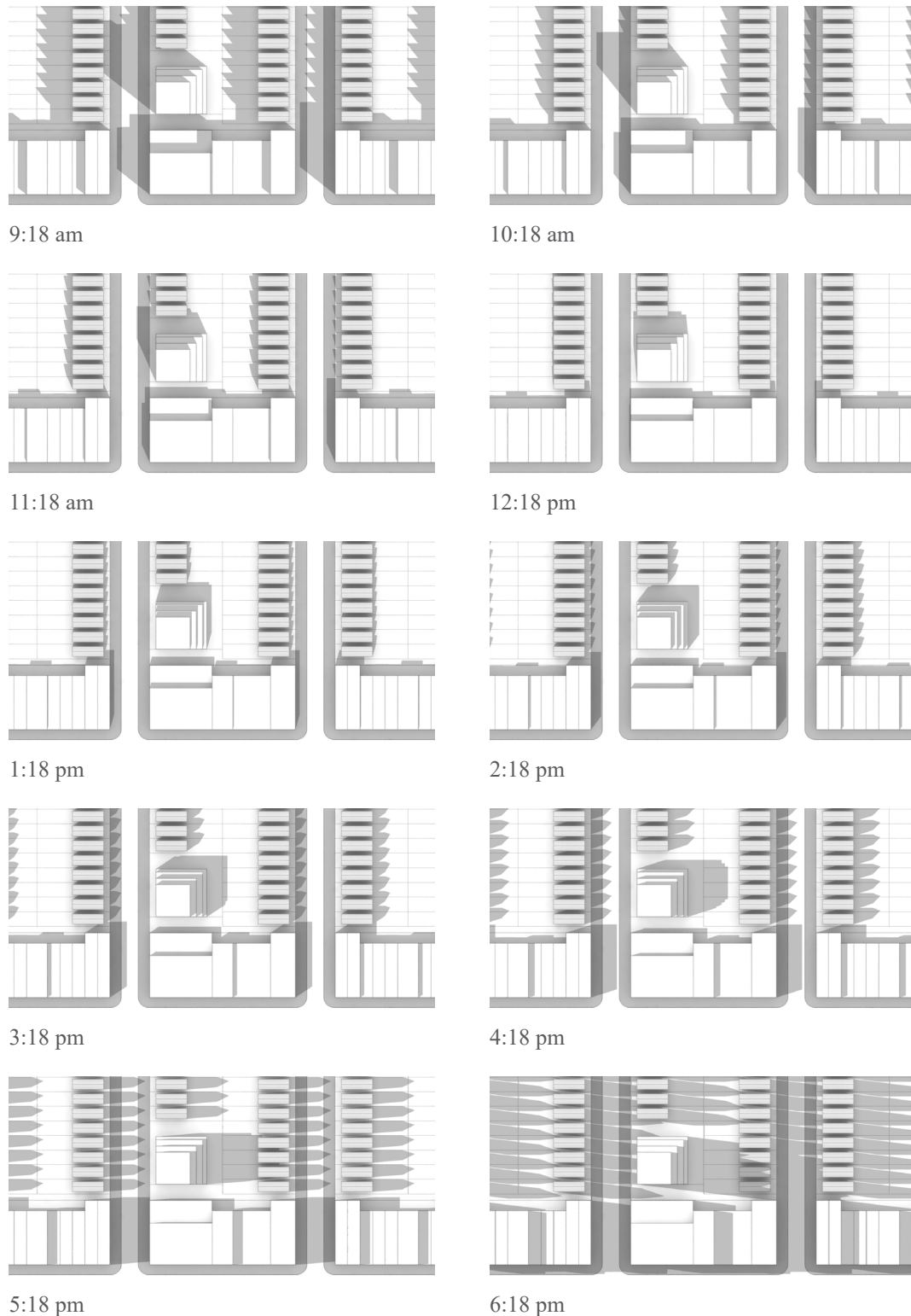
6

**APPENDIX**

## **6.1 SHADOW STUDIES**

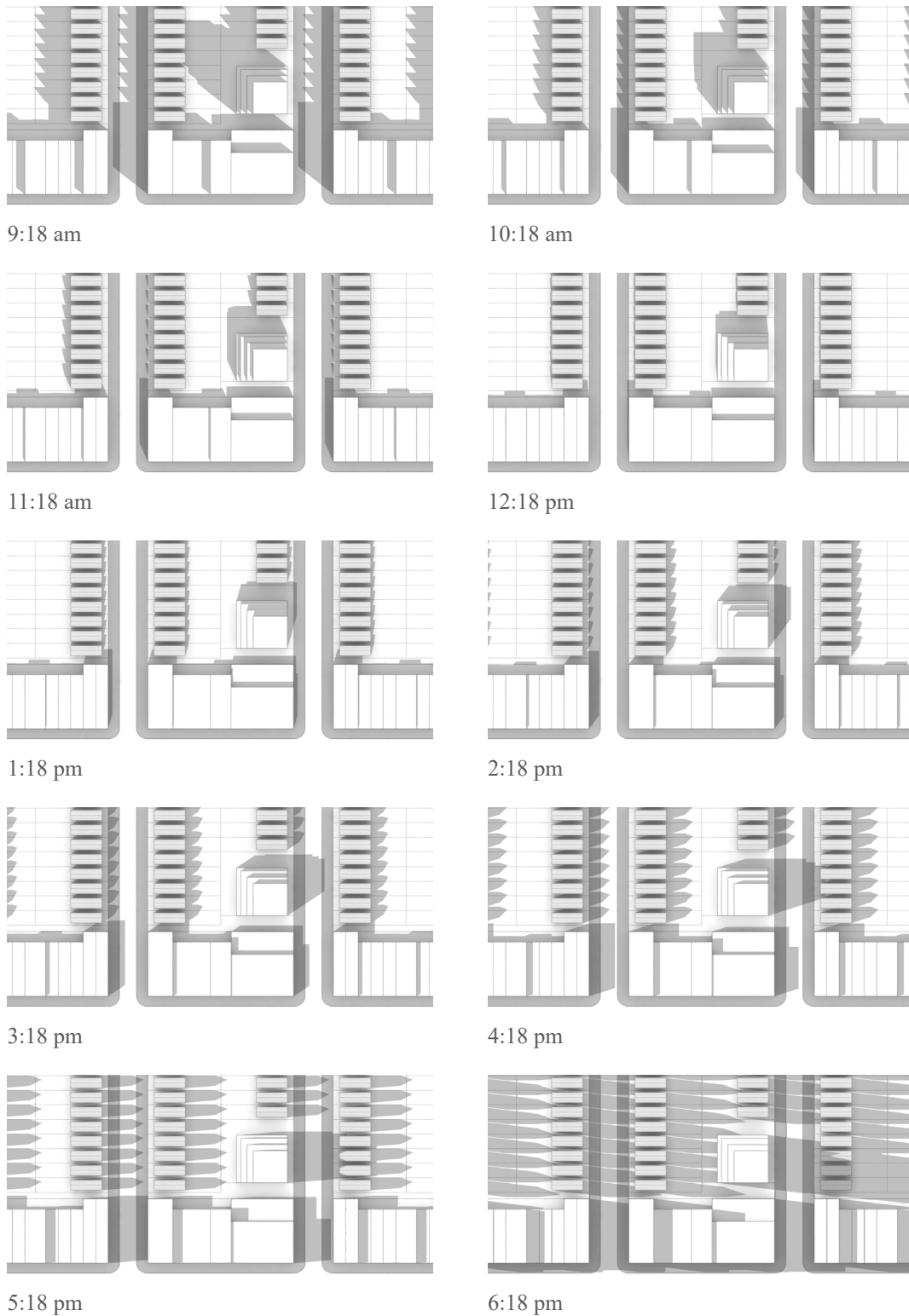
### **6.1.1 ACCEPTABLE SHADOWING**

This shadow study consists of modeling the impact of a 6 storey building in the residential neighbourhood, with the same setbacks and angular planes that are prescribed by the current *By-Law No. 1103-2009*. This setback includes a 7.5m setback from the property line and then an angular plane restriction applied at a height of 10.5m, 7.5m from the residential property line. A building with these envelope restrictions applied was modeled on both the west and east side of a N-S oriented block. The avenue building is modeled as just the first two floors of the development to isolate the impact of the as-of-right building. This study was used to understand what is considered acceptable shadowing by the City of Toronto. This and all subsequent shadow studies are in accordance with standard dates and times set out by the City of Toronto.



**Fig. 6.1** As-of-Right Shadowing, West Side, Shadow Study, Mar. 21

On the west side of a block, the as-of-right development would produce negligible shadowing impact on the property directly to the north. Despite the setbacks on the east side of the building, it would still overshadow properties to the east, although only in the late afternoon, from 4:18pm onward.

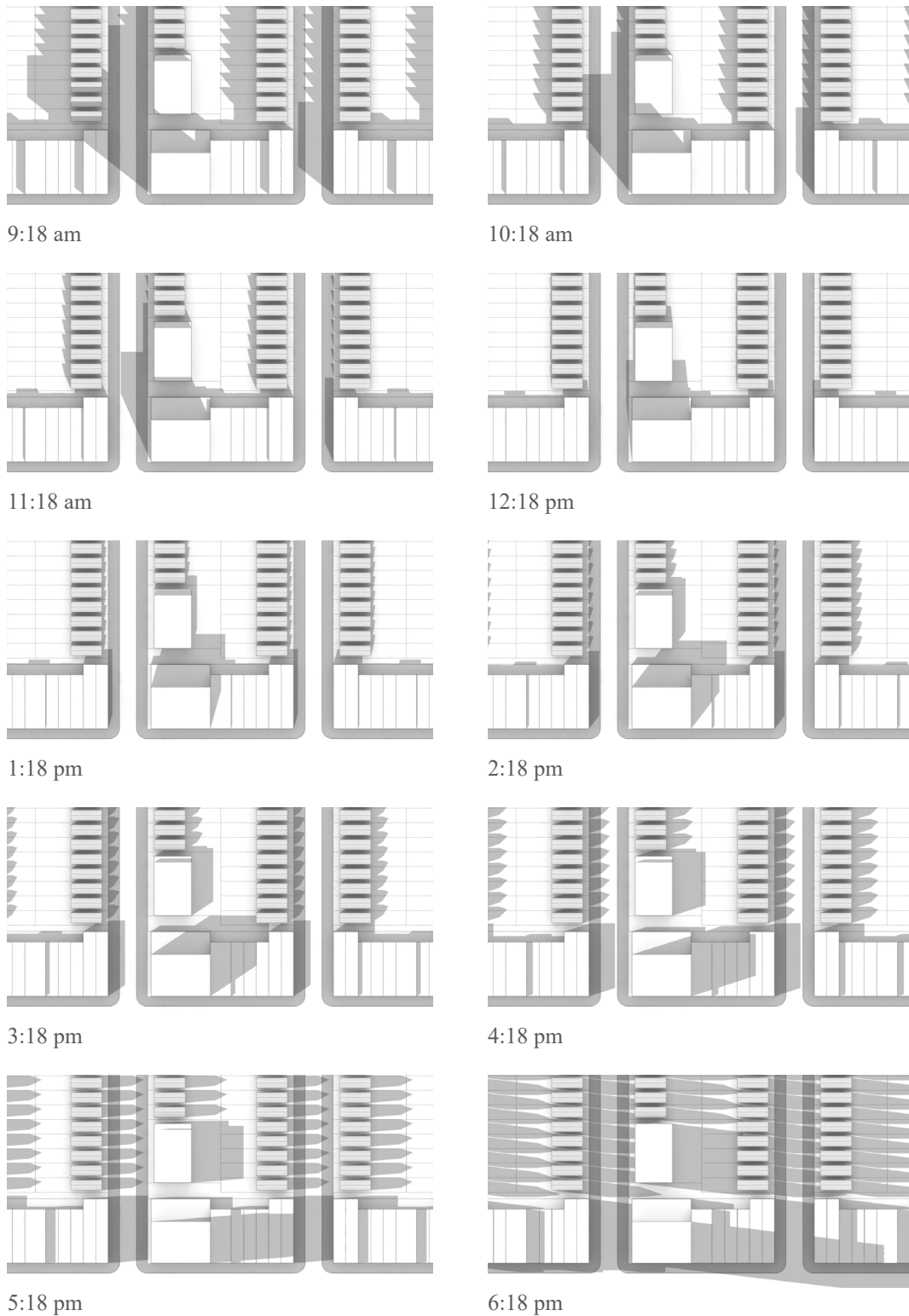


**Fig. 6.2** As-of-Right, East Side, Shadow Study, Mar. 21

On the east side of the block, the as-of-right development would shadow properties adjacent to the west and north from 9:18am - 10:18am. While properties to the east would no longer be in shadow, properties to the north would still be in shadow at 11:18am. From 12:18pm onward, the shadowing impact of the development is negligible.

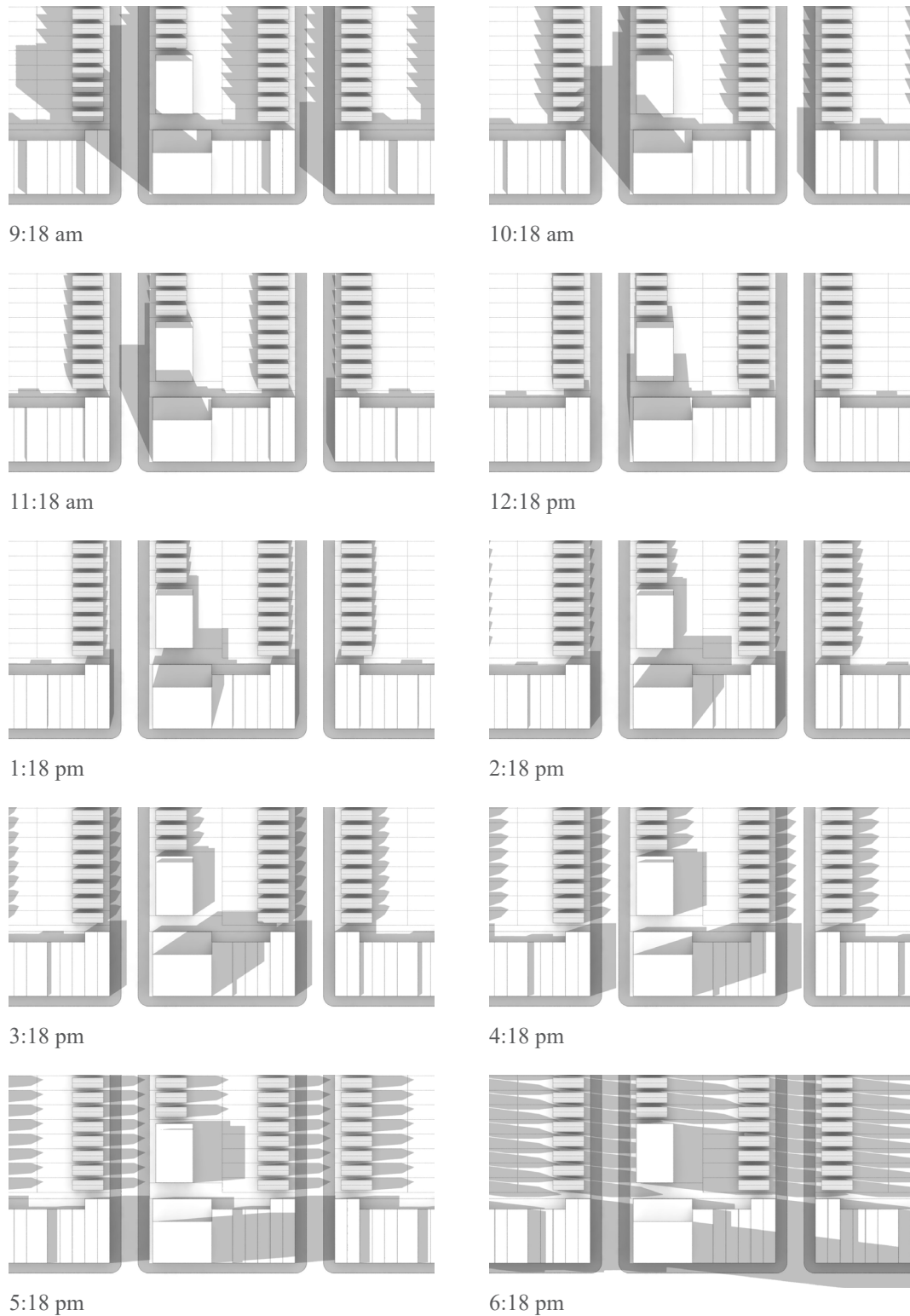
## **6.1.2 AVENUE BUILDING HEIGHT, WEST SIDE**

This shadow study modeled a 20m deep avenue building on the west corner of a N-S oriented block. The entire study looked at the height of the building from 9 storeys which is the maximum height based on St. Clair Ave. W's right-of-way width, to 18 storeys which would be the maximum based on a 45 degree angular plane restriction based on a 35m residential property assembly. This appendix only presents the 9 and 18 storey shadow study along with the critical height for overshadowing. This shadow study was used to determine height limits on the avenue building based on shadowing across the entire block.



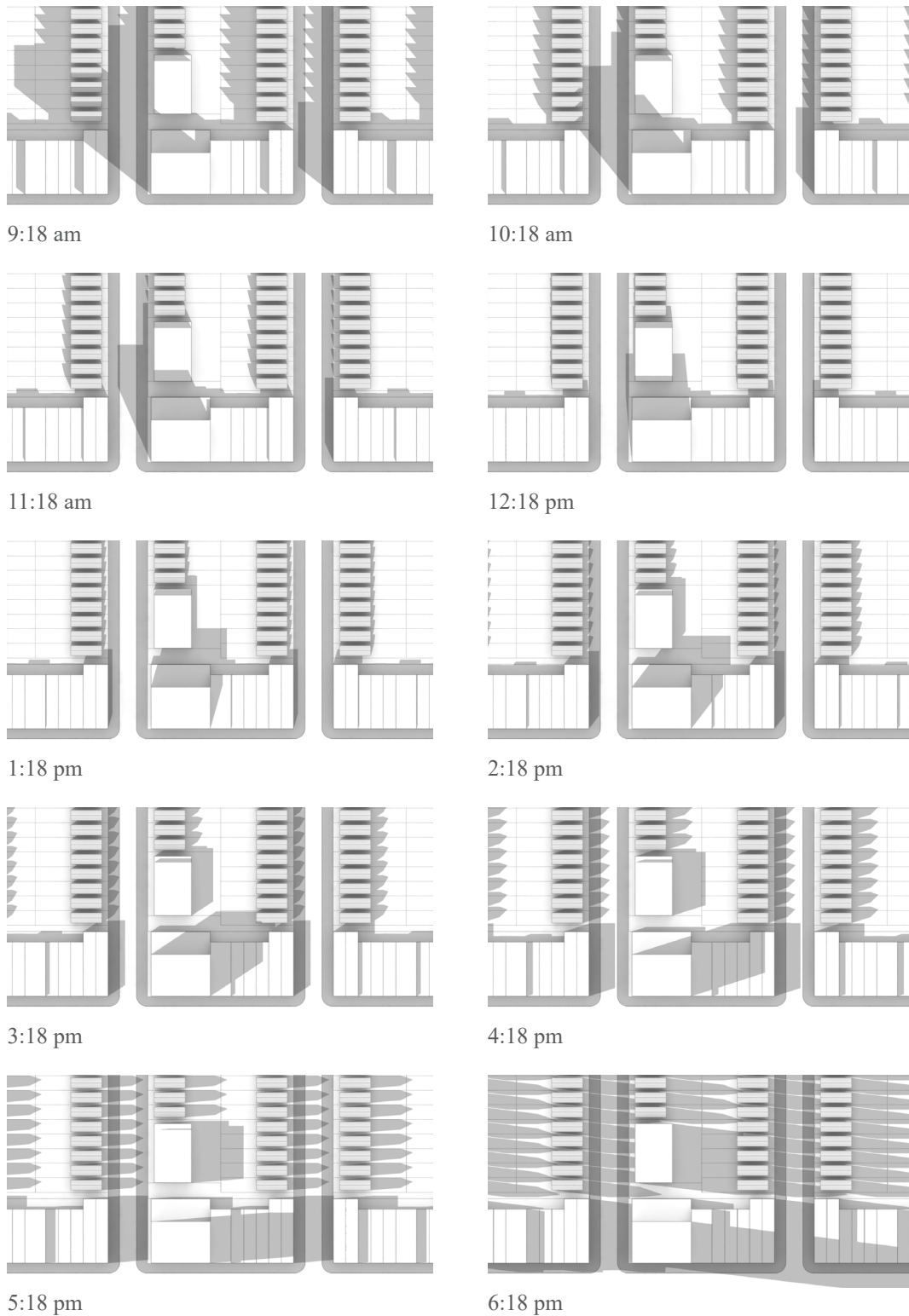
**Fig. 6.3** 9 Storey Avenue Building, West Side, Shadow Study, Mar. 21

At 9 storeys, the avenue building only partially shadows a single backyard of a residential property from 2:18pm - 3:18pm.



**Fig. 6.4** 10 Storey Avenue Building, West Side, Shadow Study, Mar. 21

At 10 storeys, a single residential property is significantly overshadowed for more than 1 hour as seen by the avenue building's shadowing of the first adjacent residential property on the east side of the block at 2:18pm to 3:18pm.



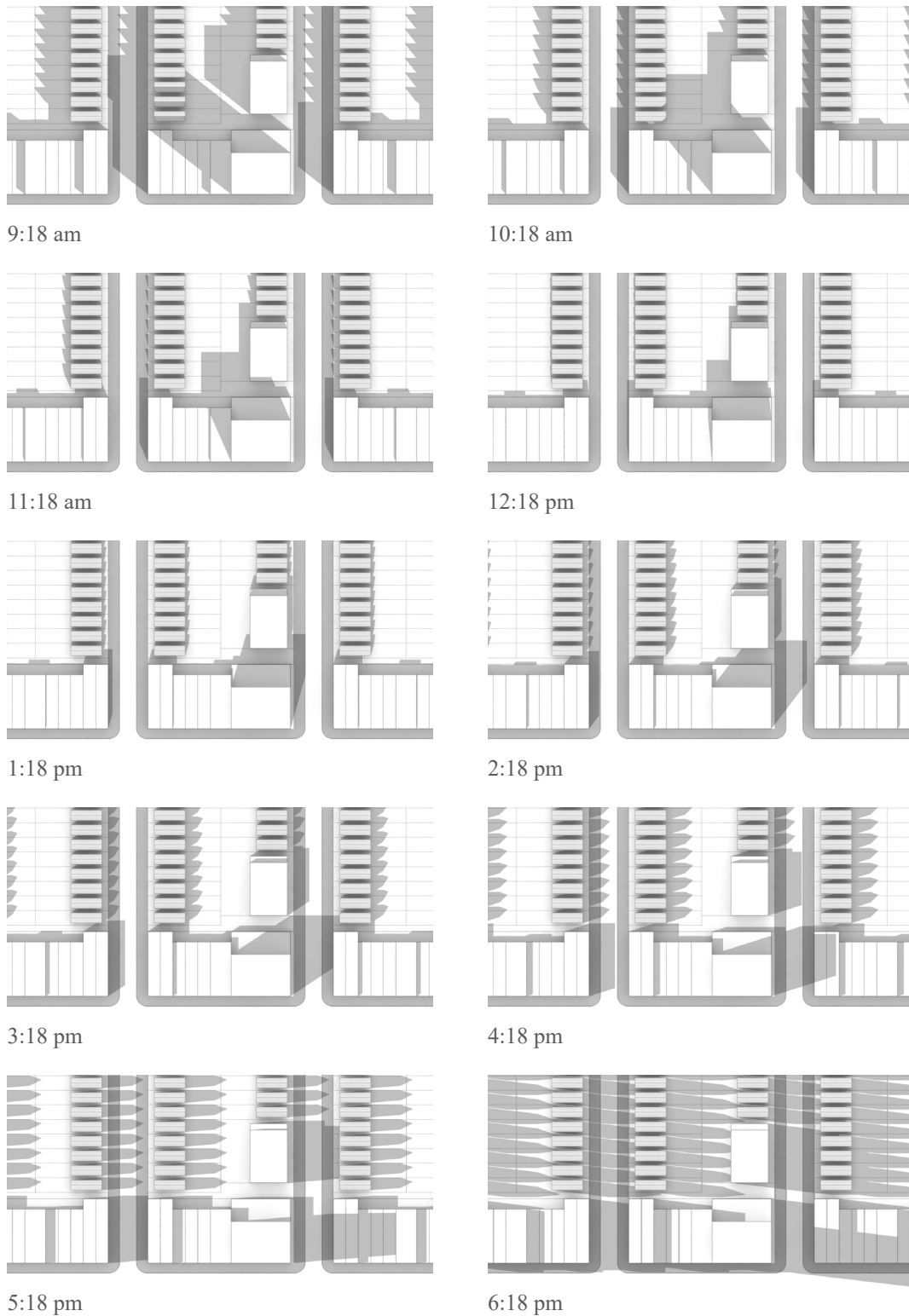
**Fig. 6.5** 18 Storey Avenue Building, West Side, Shadow Study, Mar. 21

At 18 stories, an avenue building on the N-E corner of a block is not going to substantially overshadow the rear yard of properties on the block to the East, as seen from 4:18pm to 5:18pm.



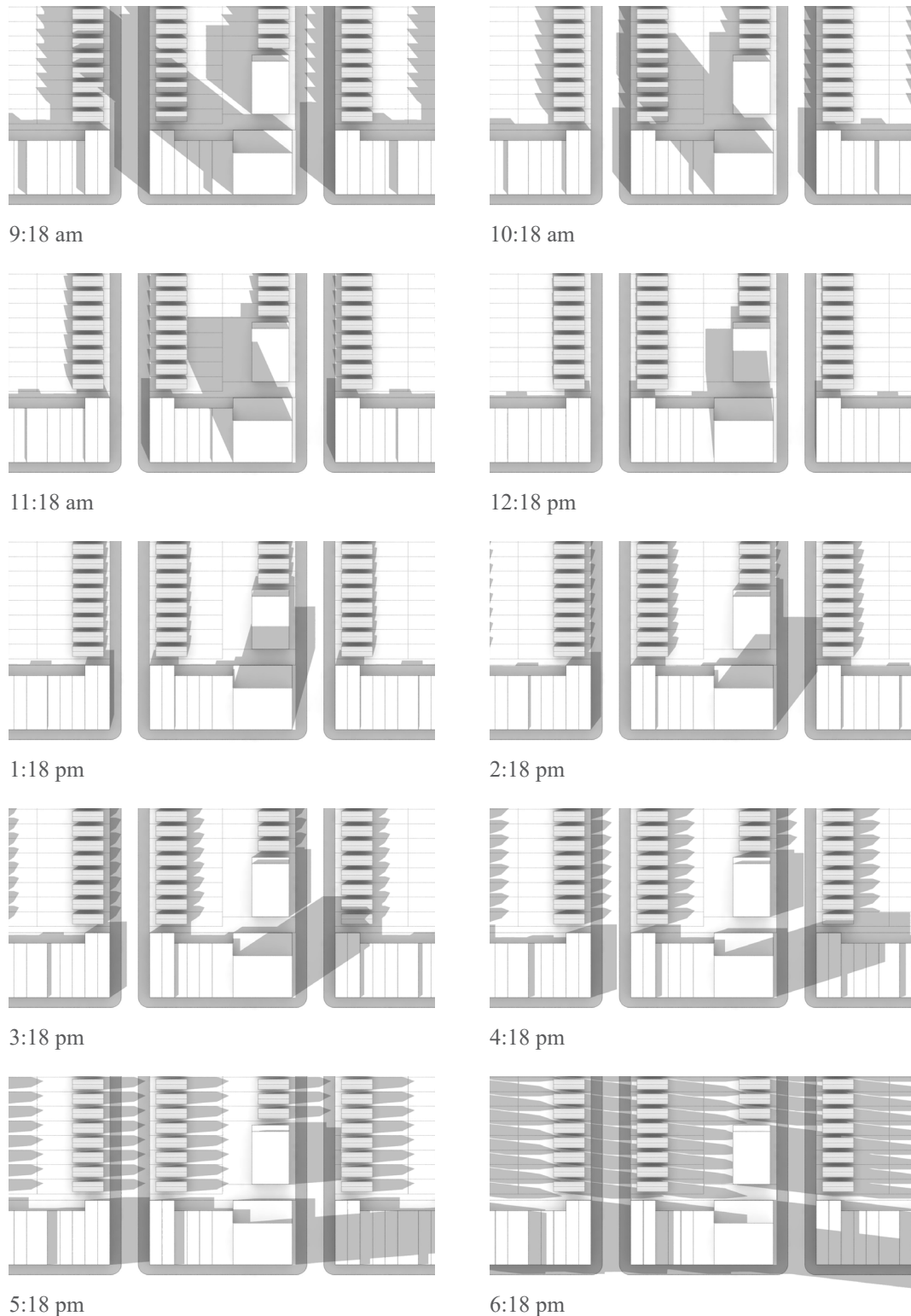
### **6.1.3 AVENUE BUILDING HEIGHT, EAST SIDE**

This shadow study modeled a 20m deep avenue building on the east corner of a N-S oriented block. The entire study looked at the height of the building from 9 storeys which is the maximum height based on St. Clair Ave. W's right-of-way width, to 18 storeys which would be the maximum based on a 45 degree angular plane restriction based on a 35m residential property assembly. This appendix only presents the 9 and 18 storey shadow study along with the critical height for overshadowing. This shadow study was used to determine height limits on the avenue building based on shadowing across the entire block and even the adjacent block.



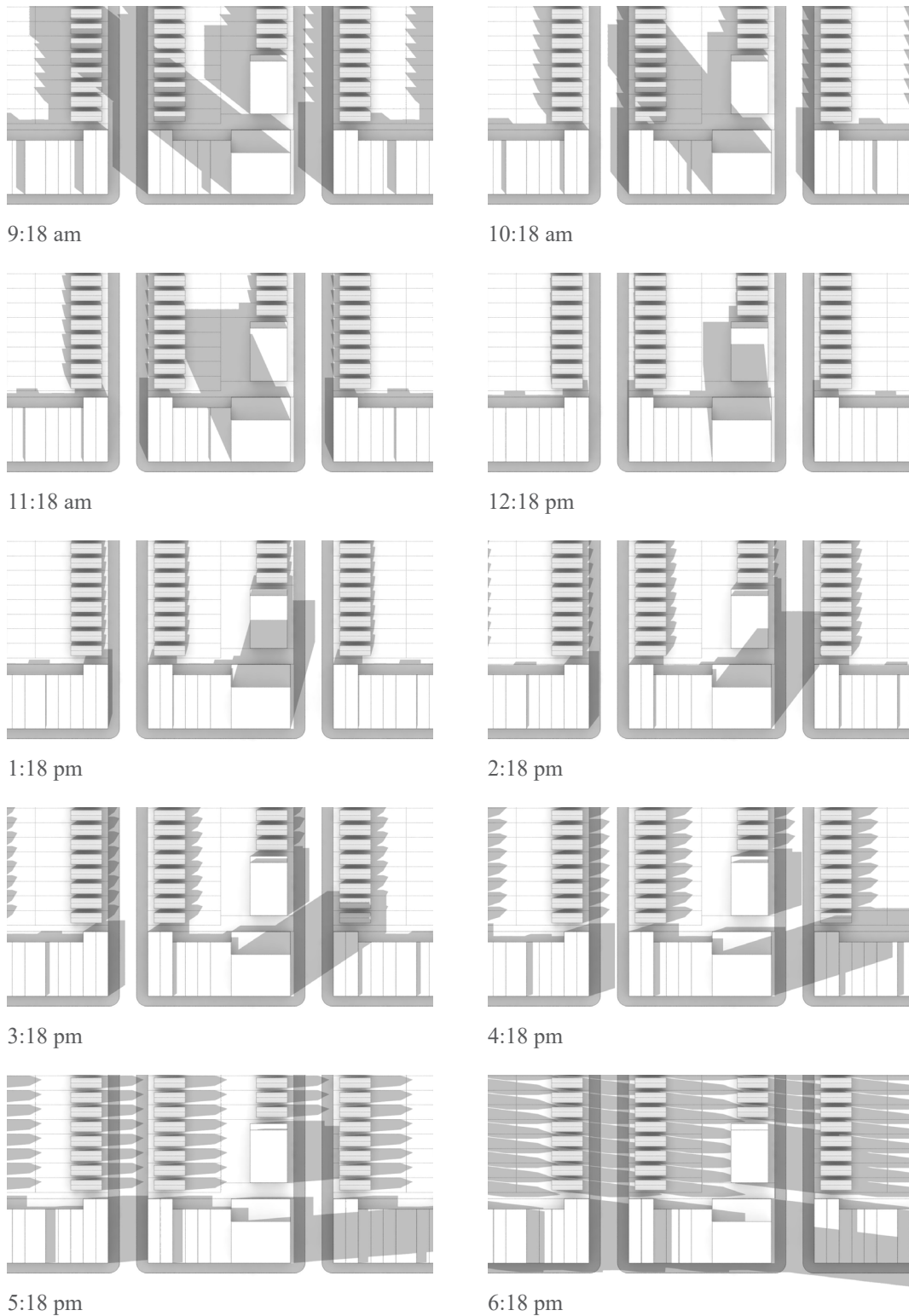
**Fig. 6.6** 9 Storey Avenue Building, East Side, Shadow Study, Mar. 21

The 9 storey avenue building will overshadow residential properties to the north-west in the morning, similar to the acceptable overshadowing in the first shadow study. There is no notable shadowing impact from 12:18pm onward.



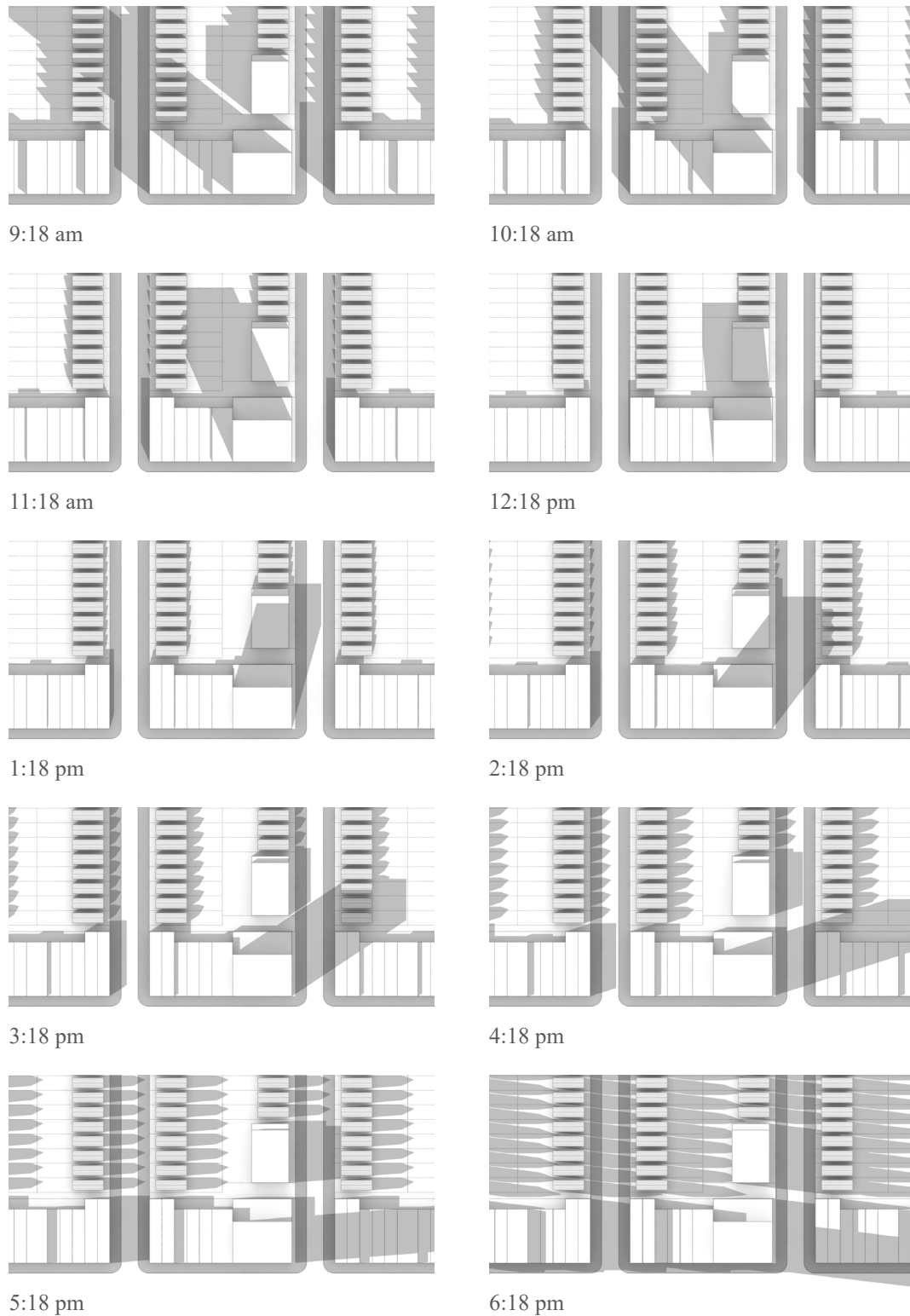
**Fig. 6.7** 14 Storey Avenue Building, East Side, Shadow Study, Mar. 21

At 14 storeys, the morning overshadowing is increased in the number of residential properties impacted, but the length of time remains unchanged as the shadow passes by 12:18pm. There is negligible shadowing impact in the afternoon.



**Fig. 6.8** 14 Storey Avenue Building, East Side, Shadow Study, Mar. 21

At 15 storeys, the avenue building will shade the backyard of a property on the opposite side of the street (east side of the most westerly block) at 3:18pm with greater overshadowing than average. In addition it will also overshadow this backyard at 4:18pm, shadowing the rear yard for more than 1 hour total in the afternoon.

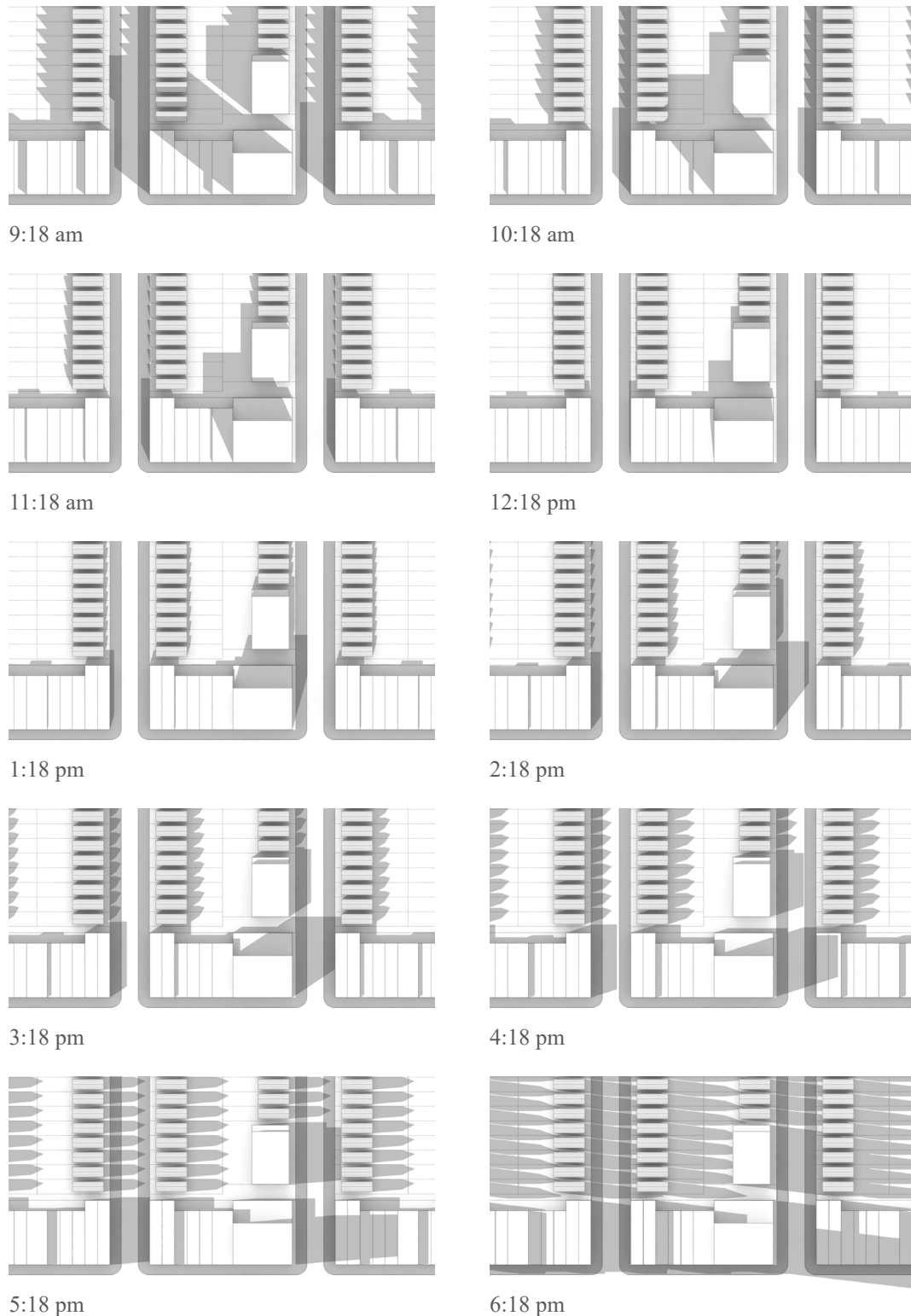


**Fig. 6.9** Fig. A.1 18 Storey Tower on N-E Corner Shadow Study, Mar. 21

At 18 storeys, the avenue building would significantly shadow multiple properties on the adjacent block to the east in the mid-afternoon, placing the two residential properties closest to St. Clair Ave. W in shadow for more than 1 hour.

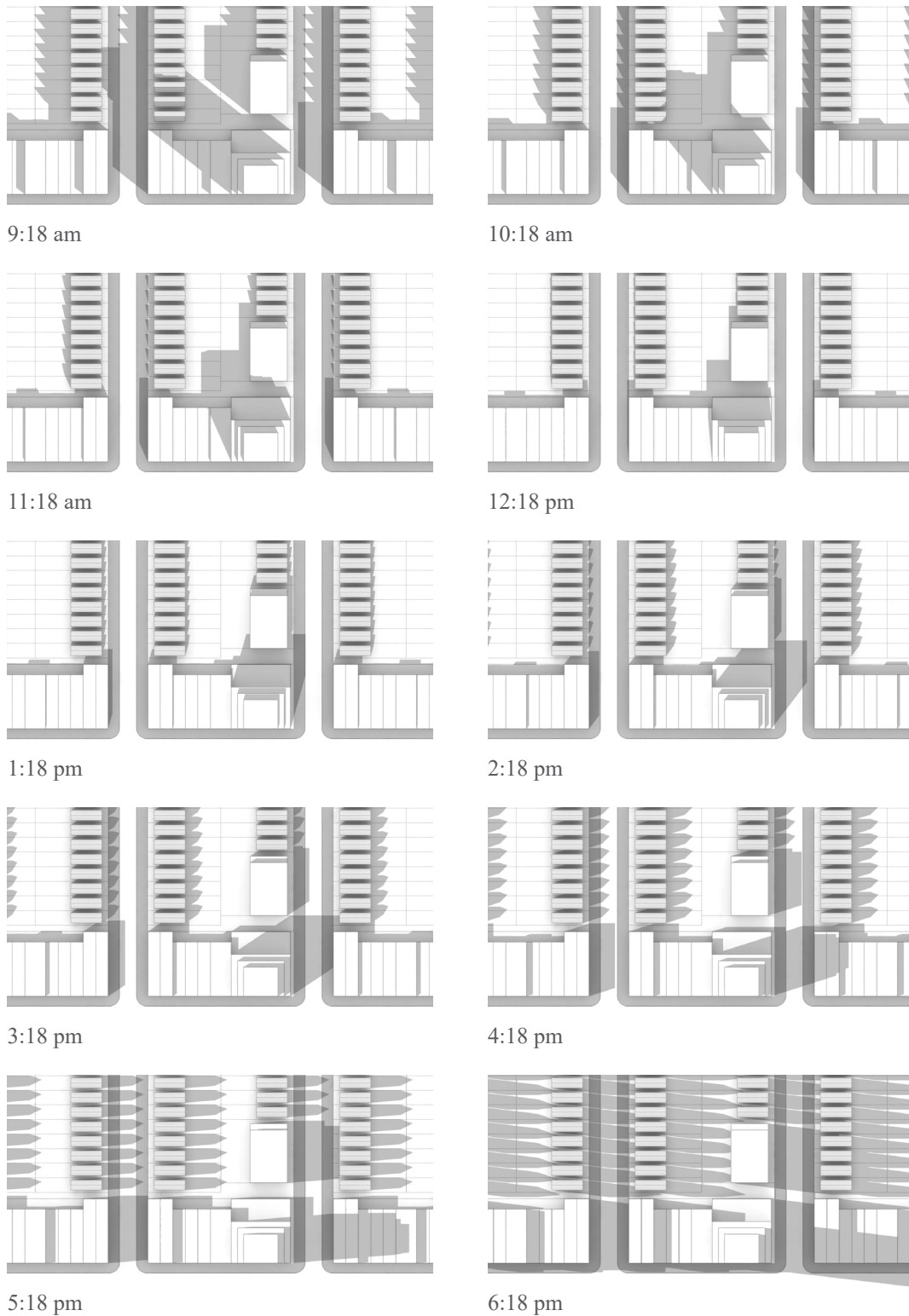
#### **6.1.4 AVENUE BUILDING ADDITIONAL HEIGHT**

This shadow study modeled the same 20m deep avenue building on the east corner of a N-S oriented block, with an additional two floors on top of a 9 storey building setback 3m and 6m from the sides and back of the building. The shadow study of a 9 storey building from previous shadow study is presented first for reference.



**Fig. 6.10** 9 Storey Avenue Building, East Side, Shadow Study, Mar. 21

The 9 storey avenue building will overshadow residential properties to the north-west in the morning, similar to the acceptable overshadowing in the first shadow study. There is no notable shadowing impact from 12:18pm onward.



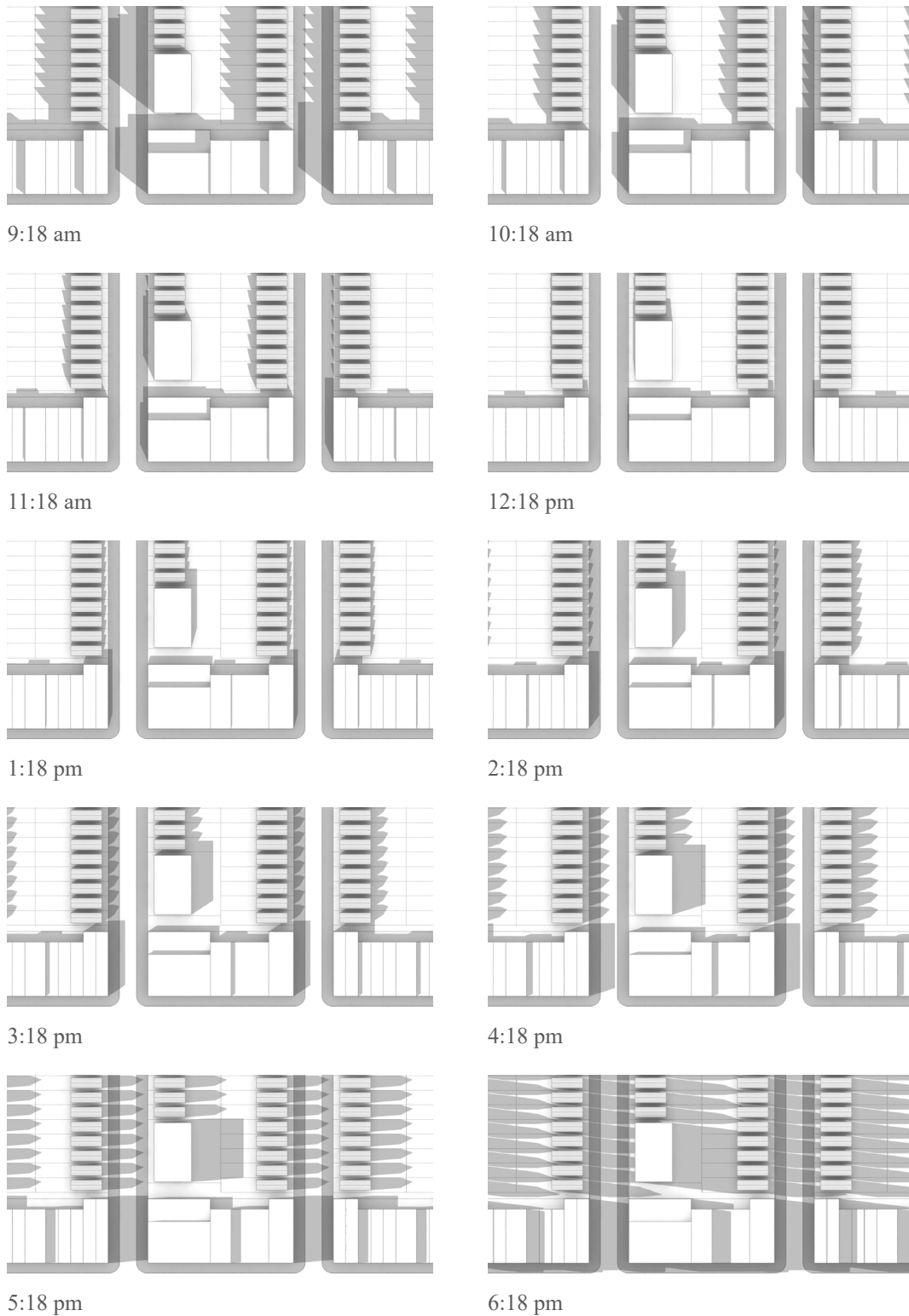
**Fig. 6.11** 9 Storey + 2 Setback Storeys Avenue Building, East Side, Shadow Study, Mar. 21

The additional setback storeys do not add any noticeable shadowing impact for the majority of the day. The additional shadowing impact can be observed at 9:18am, and from 5:18pm - 6:18pm although it is still not significant and shadowing at these times is often unavoidable.



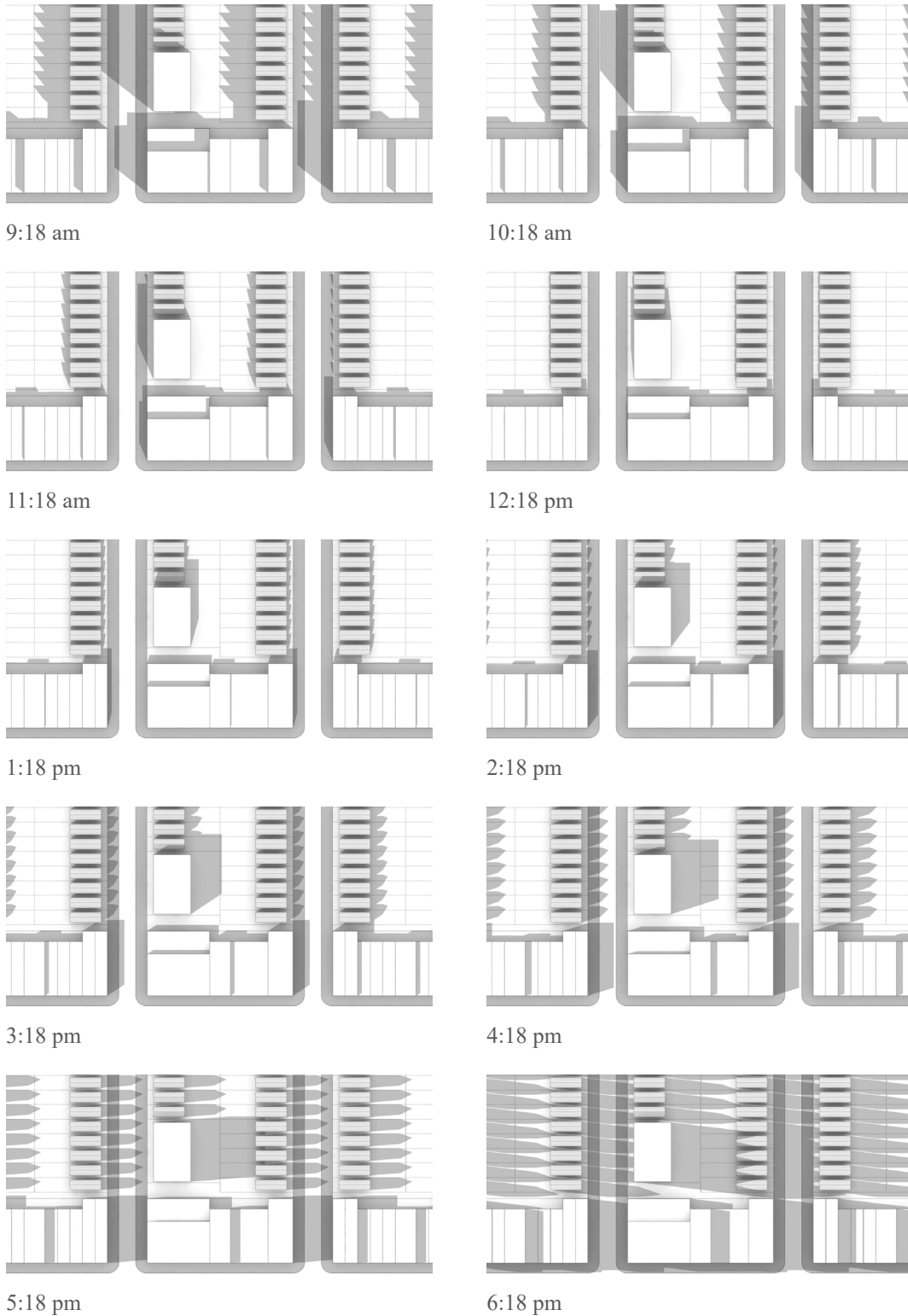
### **6.1.5 REAR BUILDING, N-S BLOCK, N-S ORIENTATION, WEST SIDE**

This shadow study modeled a 20m deep rear building oriented N-S on the residential portion of the whole assembly on the west side of a block. The rear building was modeled at between four to five storeys (10.5m - 15m) with varying angular plane restrictions applied from the rear residential property line. The avenue building is only modeled at just the first two storeys to isolate the shadowing impact of the rear building.



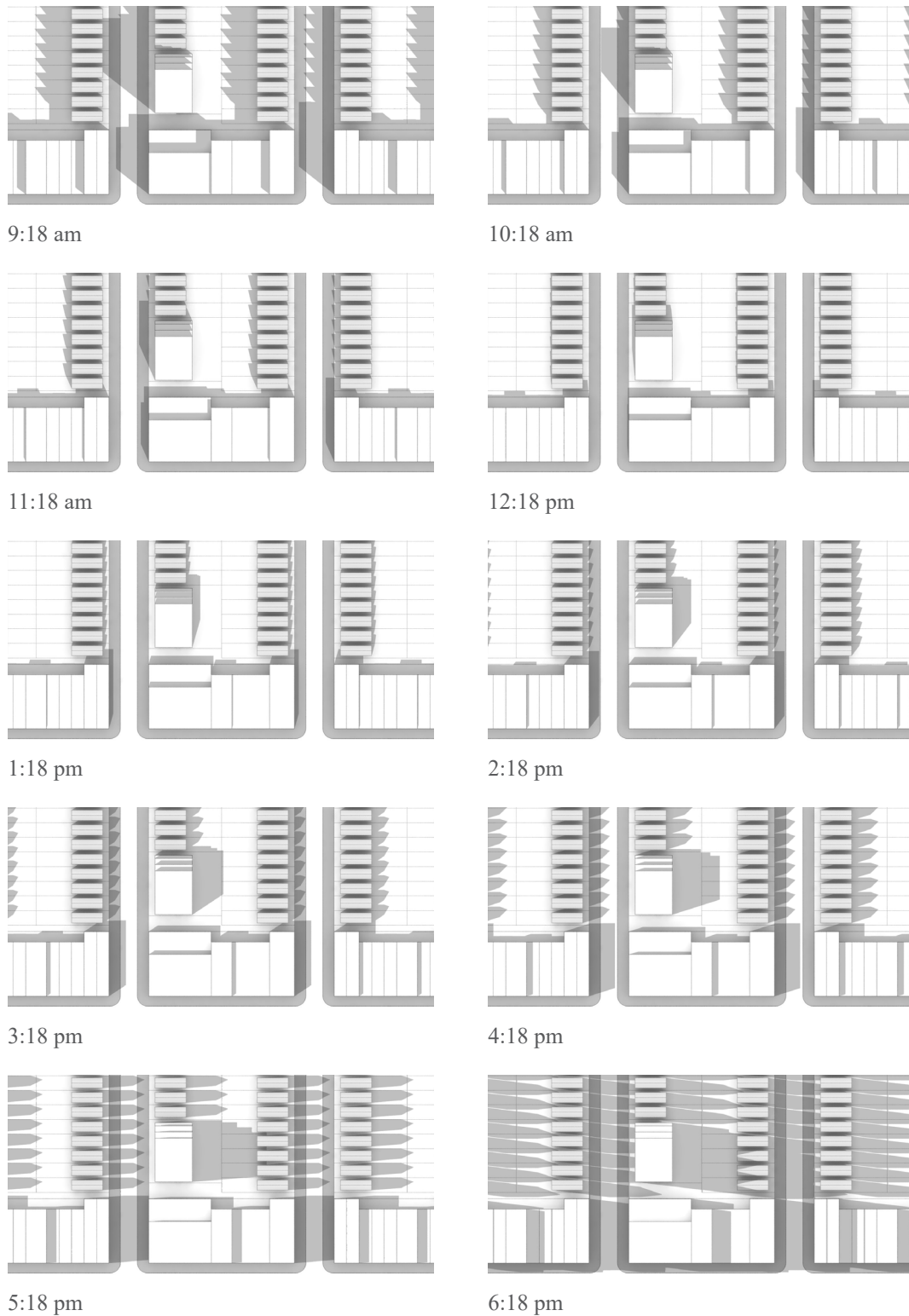
**Fig. 6.12** 4 Storey Rear Building, Shadow Study, Mar. 21

This building will overshadow the property directly to the north at peak hours between 1:18pm - 3:18pm. The building will overshadow residential backyards to the east from 5:18pm - 6:18pm; however, overshadowing during these hours can be unavoidable.



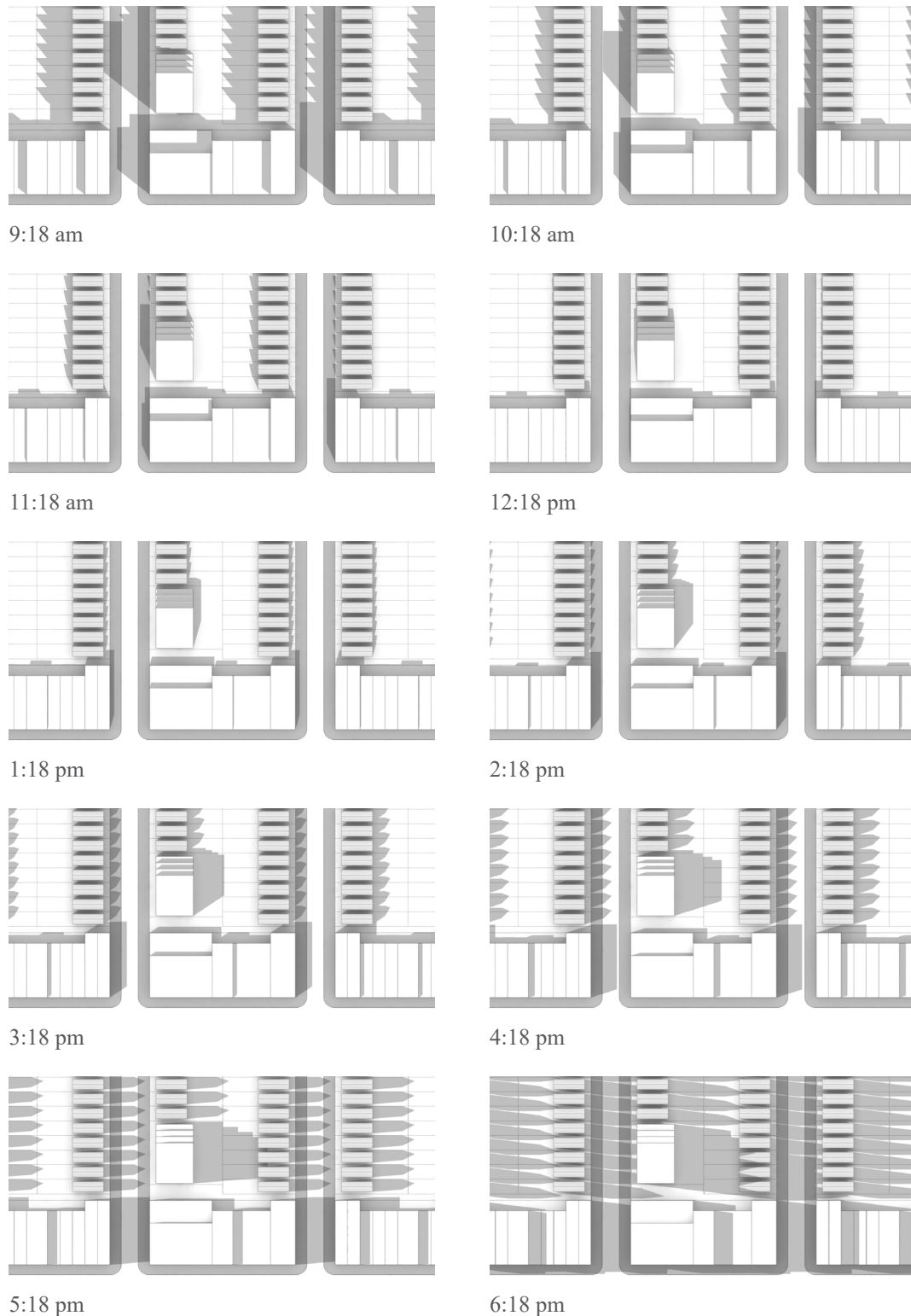
**Fig. 6.13** 5 Storey Rear Building, Shadow Study, Mar. 21

This building will significantly overshadow the property directly to the north at peak hours between 1:18pm - 4:18pm. The building will also overshadow residential backyards to the east from 4:18pm - 6:18pm.



**Fig. 6.14** 5 Storey Rear Building, Angular Plane 1, Shadow Study, Mar. 21

This building is setback by an angular plane located 7.5m high, 1.5m from the rear residential property line. The property directly to the north is partially overshadowed from 1:18pm - 3:18pm. The shadowing impact to the east is the same as the previous shadow study, overshadowing from 4:18pm - 6:18pm.

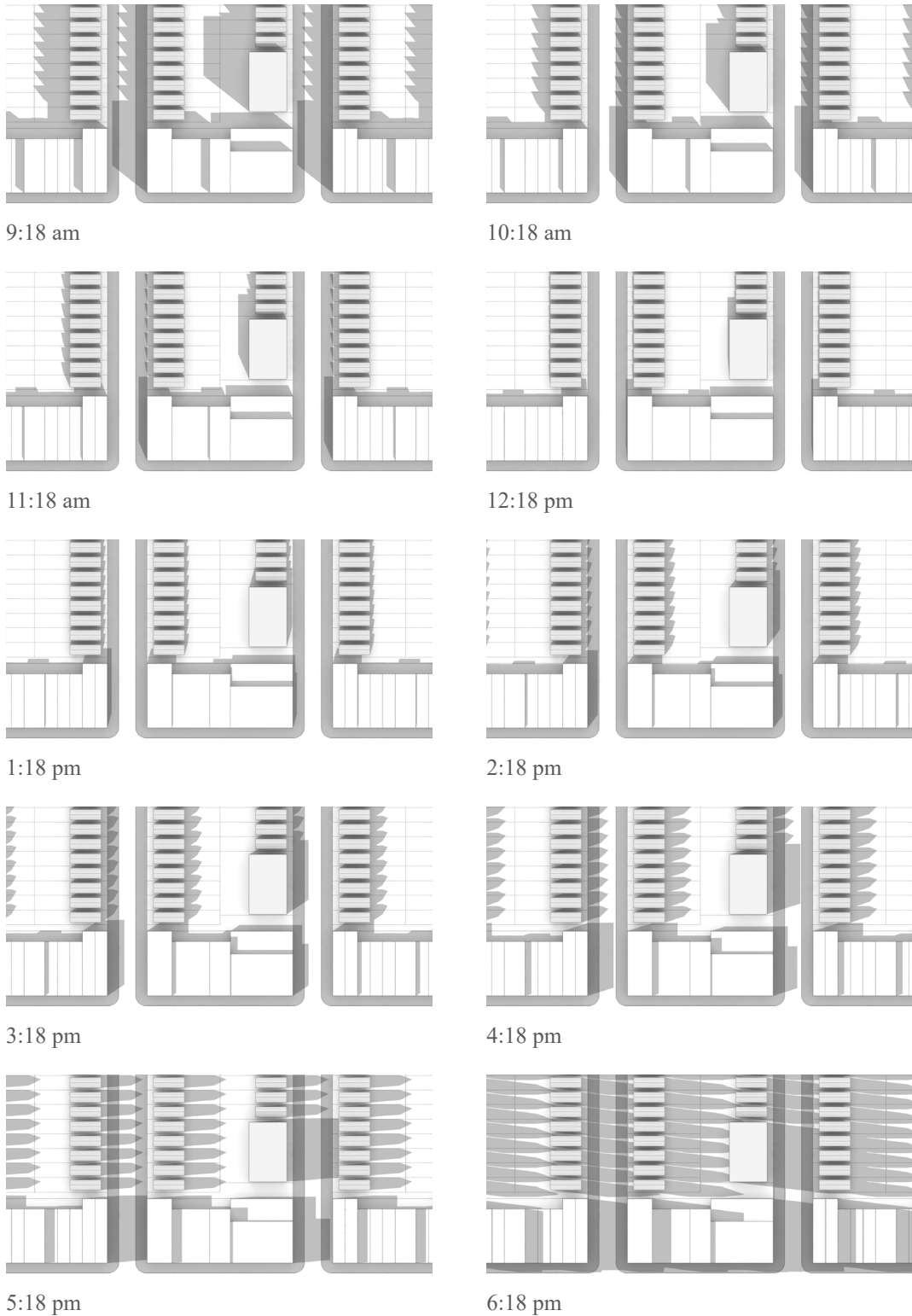


**Fig. 6.15** 5 Storey Rear Building, Angular Plane 2, Shadow Study, Mar. 21

This building is setback by an angular plane located 6m high, 1.5m from the rear residential property line. There is a reduced overshadowing of the property directly to the north from 1:18pm - 3:18pm. The shadowing impact to the east is the same as the previous shadow study, overshadowing from 4:18pm - 6:18pm.

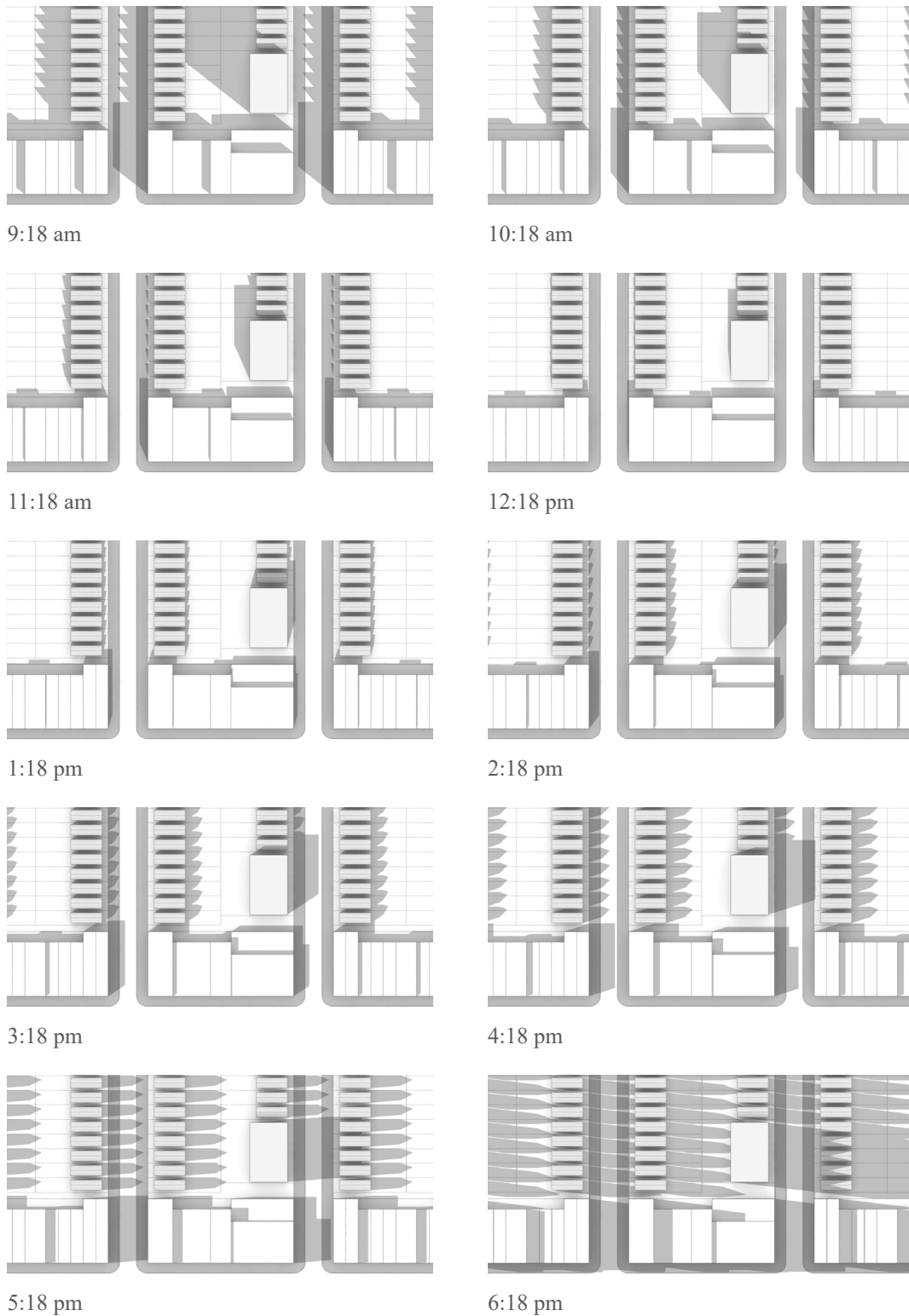
### **6.1.6 REAR BUILDING, N-S BLOCK, N-S ORIENTATION, EAST SIDE**

This shadow study modeled a 20m deep rear building oriented N-S on the residential portion of the whole assembly on the east side of a block. The rear building was modeled at between four to five storeys (10.5m - 15m), one with an angular plane restriction applied from the rear residential property line. The avenue building is only modeled at just the first two storeys to isolate the shadowing impact of the rear building.



**Fig. 6.16** 4 Storey Rear Building, Shadow Study, Mar. 21

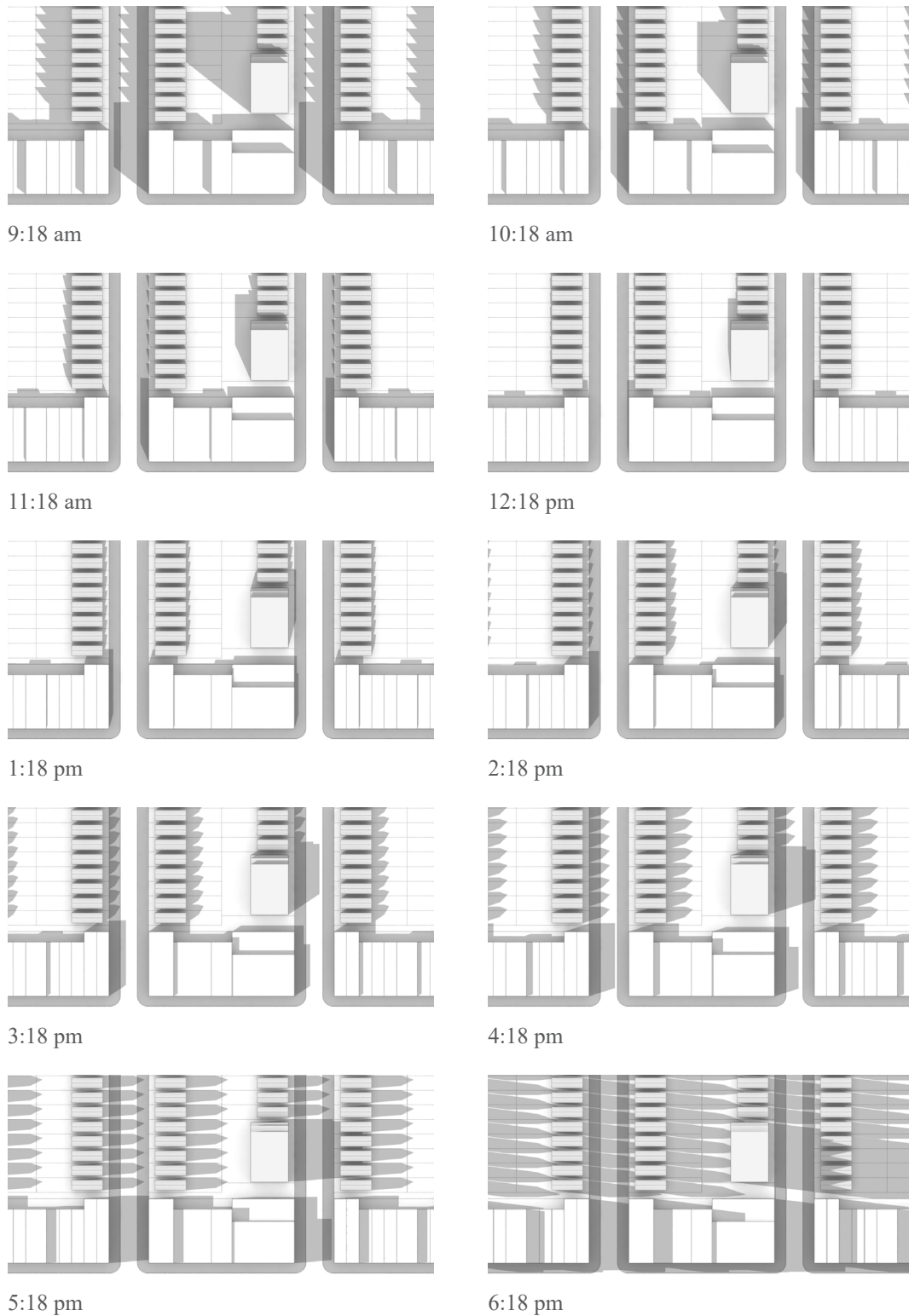
At four storeys, this building will not significantly overshadow any backyard of a residential property.



**Fig. 6.17** 5 Storey Rear Building, Shadow Study, Mar. 21

At five storeys, this building will overshadow the roof of the property directly to the north from 10:18am - 3:18pm, significantly overshadowing during peak sunlight hours from 11:18am - 2:18pm.



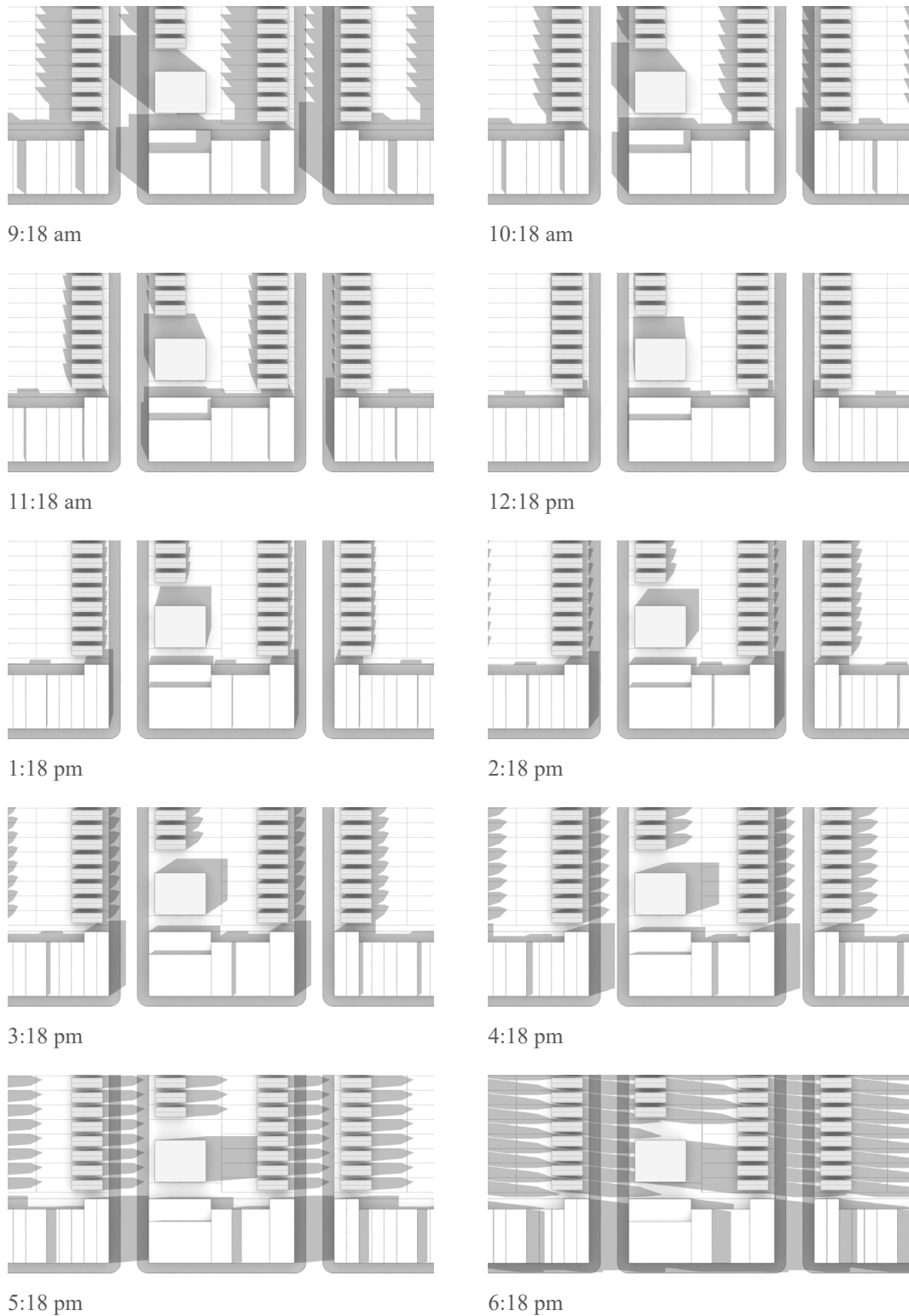


**Fig. 6.18** 5 Storey Rear Building, Angular Plane, Shadow Study, Mar. 21

This building is setback by an angular plane located 10.5m high, 1.5m from the rear residential property line. With the angular plane applied, the five storey building will only slightly overshadow the roof of the property directly to the north from 10:18am - 11:18am.

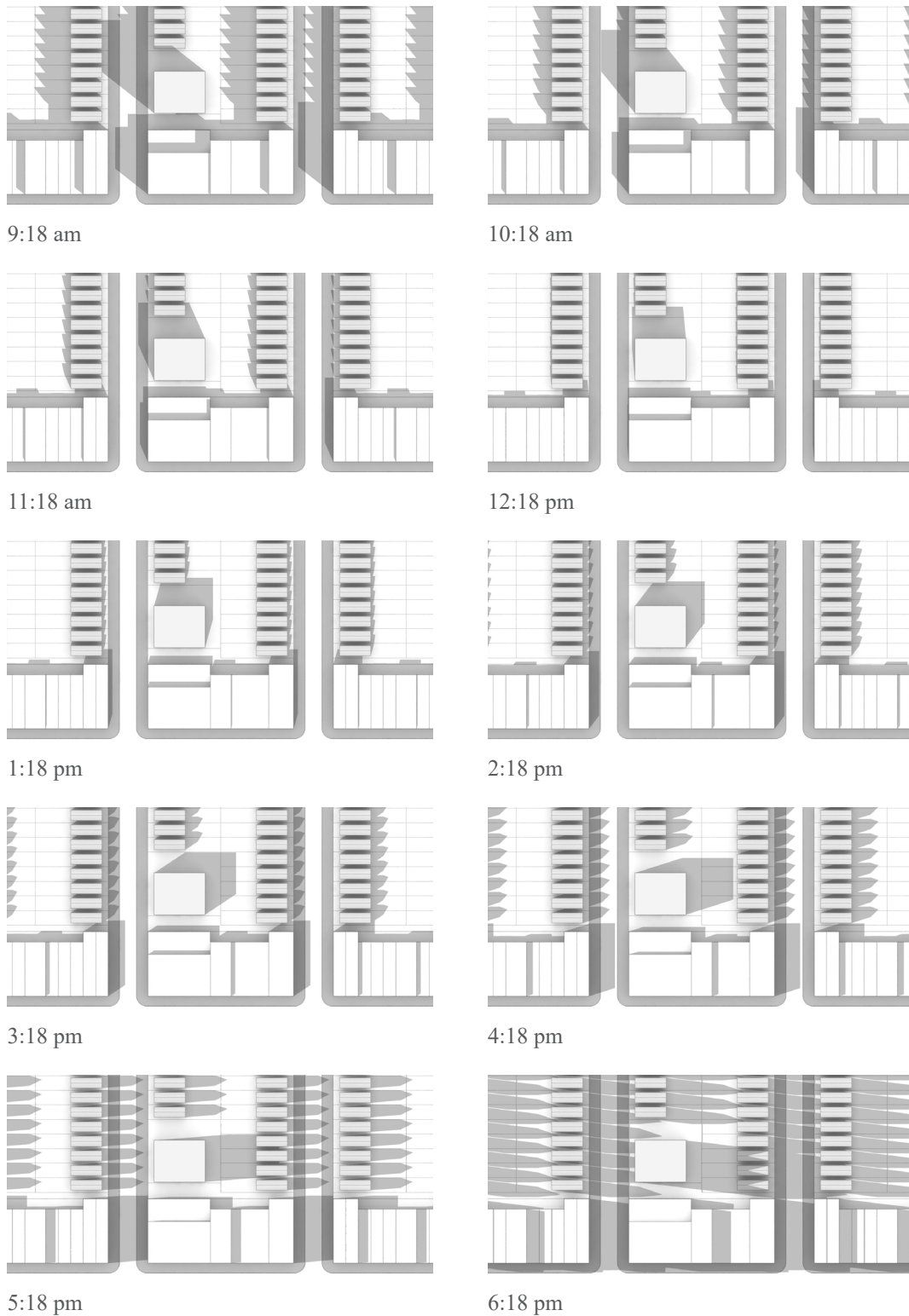
### **6.1.7 REAR BUILDING, N-S BLOCK, E-W ORIENTATION, WEST SIDE**

This shadow study modeled a 20m deep rear building oriented E-W on the residential portion of the whole assembly on the west side of a block. The rear building was modeled at between four to five storeys (10.5m - 15m), each complying with an angular plane restriction applied 10.5m high, 7.5m from the rear residential property line. The avenue building is only modeled at just the first two storeys to isolate the shadowing impact of the rear building.



**Fig. 6.19** 4 Storey Rear Building, Shadow Study, Mar. 21

At four storeys, the building will slightly overshadow the residential properties' backyards to the east at 3:18pm and partially overshadow them at 4:18pm. The building will entirely overshadow the backyards from 5:18pm - 6:18pm, but all rear yards are in shadow at 6:18pm.



**Fig. 6.20** 5 Storey Rear Building, Shadow Study, Mar. 21

At five storeys, the building will partially shadow the residential properties' backyards to the east at 3:18pm and entirely shadow them from 4:18pm onwards.

## 6.2 COMMITTEE OF ADJUSTMENT NOTICES



City Planning Division

Susanne Pringle  
Manager & Deputy Secretary Treasurer

[www.toronto.ca/planning/comm\\_adj.htm](http://www.toronto.ca/planning/comm_adj.htm)

Committee of Adjustment  
Etobicoke York Panel  
2 Civic Centre Crt, 4<sup>th</sup>  
Toronto ON M9C 5A3  
Tel: 416-394-8060  
Fax: 416-394-6042

### 15. A0304/17EYK

File Number:	A0304/17EYK	Zoning	MCR (Waiver)
Owner(s):		Ward:	Davenport (17)
Agent:		Heritage:	Not Applicable
Property Address:	898 - 900 ST CLAIR AVE W	Community:	
Legal Description:	CON 3 FB PT LOT 29 PLAN M427 PT LOT 38 TO 40 W/ROW		

#### PURPOSE OF THE APPLICATION:

To construct a mixed-use building with retail at grade.

#### REQUESTED VARIANCE(S) TO THE ZONING BY-LAW:

- Section 8(3) Part I 3(A), By-law 438-86**  
The maximum permitted residential gross floor area is 5 times the lot area (8996.3 m<sup>2</sup>).  
The proposed building will have a residential gross floor area of 6.04 times the lot area (10 867.09 m<sup>2</sup>).
- Section 8(3) Part I 1, By-law 438-86**  
The maximum permitted combined non-residential and residential gross floor area is 6 times the lot area (10 795.56 m<sup>2</sup>).  
The proposed building will have a combined non-residential and residential gross floor area of 6.59 times the lot area (11 862.39 m<sup>2</sup>).
- Section 1(8)(ii), By-law 1103-2009**  
Where the height of the building is greater than 3 storeys, the main external building wall of the first 5 storeys or 16.5 m, whichever is the lesser, shall be built at the build-to-line; 4.5 m from the curb line; and occupy at least 80% of the length of the portion of the lot abutting St. Clair Avenue; 26 m.  
The proposed building will be located 6 m from curb line at the 16.5 m level. It occupies 69% of the length of the lot abutting St. Clair Avenue; 22.53 m.
- Section 1(4)(i)(b), By-law 1103-2009**  
The aggregate horizontal area of permitted roof elements including the area contained within an enclosure, measured at a point above the 39 m level, does not exceed 30% of the area of the roof of the building 238 m<sup>2</sup>.  
The proposed area of the roof elements is 34%; 258 m<sup>2</sup>.
- Section 4(16), By-law 438-86**

**Fig. 6.21** Notice of Decision for 898 St. Clair Ave. W

This Notice of Decision by the Committee of Adjustment for 898 St. Clair Ave. W notes significant increases in allowable density in items 1 and 2. The continuation of the document is found on the following page.

An apartment building having a residential gross floor area in excess of 2800 m<sup>2</sup> is required to have a driveway that serves an entrance to the building and which allows vehicles to travel in one continuous motion.

A driveway that serves an entrance to the building which allows vehicles to travel in one continuous motion will not be provided.

6. **Section 1(11), By-law 1103-2009**

The minimum required parking spaces with 2 car share spaces is 70 spaces, including 7 visitor spaces. The proposed number of parking spaces with 2 car share spaces is 64 spaces, including 7 visitor spaces.

7. **Section 1(7)(a)(ii), By-law 1103-2009**

Where the height of the building exceeds 30 m, measured above the average elevation of the ground abutting St. Clair Avenue West, all parts of such building shall be contained within a 45 degree angular plane projected over the lot from the setback required by paragraph (6)(a); 3.62 m; at an elevation 30 m above the average elevation of the ground abutting St. Clair Avenue West.

The proposed building penetrates the angular plane at the tenth floor at 31.95 m to 32.8 m (a penetration of 850 mm) and the proposed building penetrates the angular plane at the twelfth floor at 35.24 m to 39 m (a penetration of 3.76 m).



City Planning Division  
Michael Mizzi, MCIP, RPP  
Director, Zoning and Secretary-Treasurer,  
Committee of Adjustment

Committee of Adjustment  
Toronto and East York District

100 Queen Street West, 1<sup>st</sup> Floor  
Toronto, Ontario M5H 2N2  
Tel: 416-392-7565  
Fax: 416-392-0580

**NOTICE OF DECISION  
MINOR VARIANCE/PERMISSION  
(Section 45 of the Planning Act)**

**File Number:** A1369/17TEY  
**Property Address:** 834-840 ST CLAIR AVE W  
**Legal Description:** PL M427 LT33 TO 35 PT LT32 PT LT36  
**Agent:** CRAIG HUNTER  
**Owner(s):** 840 ST.CLAIR AVE WEST GP LTD.  
**Zoning:** MCR T5.0 C2.0 R4.0 (WAIVER)  
**Ward:** St. Paul's (21)  
**Community:** Toronto  
**Heritage:** Not Applicable

Notice was given and a Public Hearing was held on **Wednesday, June 13, 2018**, as required by the Planning Act.

**PURPOSE OF THE APPLICATION:**

To construct a new eight-storey mixed-use building containing 116 residential units, a mechanical penthouse, and ground floor retail. Variances approved under Decision A0359/15TEY do not apply to this application.

**REQUESTED VARIANCE(S) TO THE ZONING BY-LAW:**

- 1. Section 12(1)479.(4)(a)(i), By-law 438-86**  
The maximum permitted height of the building is seven storeys.  
The building will have a height of nine storeys, including the mechanical penthouse.
- 2. Section 8(3)Part I 3(A), By-law 438-86**  
The maximum permitted residential gross floor area is 4.0 times the area of the lot (7,861.2 m<sup>2</sup>).  
The building will have a residential gross floor area equal to 4.83 times the area of the lot (9,488 m<sup>2</sup>).
- 3. Section 4(12), By-law 438-86**  
A minimum of 232 m<sup>2</sup> of indoor residential amenity space and 232 m<sup>2</sup> of outdoor residential amenity space is required to be provided.  
The building will contain 180 m<sup>2</sup> of indoor residential amenity space and 115 m<sup>2</sup> of outdoor residential amenity space.

**Fig. 6.22** Notice of Decision for 840 St. Clair Ave. W

This Notice of Decision by the Committee of Adjustment for 840 St. Clair Ave. W notes significant increases in allowable density in item 1 along with variances in conformance to the envelope restrictions. The conditions of the approval of the variances are found on the fourth and fifth page. The continuation of the document is found on the following four pages.

- 4. Section 2(1), By-law 438-86**  
The by-law requires a horizontal 'bicycle parking space - occupant' to have minimum dimensions of 0.60 m width by 1.8 m length and a vertical clearance of 1.9 m.  
The stacked bicycle parking spaces will have dimensions of 0.45 m in width, 1.8 m in length, and a vertical clearance of 1.45 m.
- 5. Section 8(3) Part I 1, By-law 438-86**  
The maximum combined non-residential gross floor area and residential gross floor area is 5.0 times the area of the lot (9,819 m<sup>2</sup>).  
The building will have a combined non-residential gross floor area and residential gross floor area equal to 5.01 times the area of the lot (9,843 m<sup>2</sup>).
- 6. Section 12(1)479.(f)(ii), By-law 438-86**  
No building or structure shall be erected which does not have a minimum 4.5 m first storey, floor-to floor height.  
The floor to floor height at the first storey will be 2.1 m.
- 7. Section 12(1)479.(5)(i), By-law 438-86**  
No person shall erect or use a building or structure on a lot in a MCR district having any part of the building or structure closer to the curb line of the travelled portion of St. Clair Avenue West than 4.5 m.  
The distance to St Clair Ave West will be 3.82 m at the southwest corner of the lot.
- 8. Section 12(1)479.(5)(b)(i), By-law 438-86**  
The minimum required building setback from any lot in a residential district is 7.5 m.  
The building will be located 0.0 m from the north rear lot line.
- 9. Section 12(1)479.(9)(a), By-law 438-86**  
A minimum of 1.5 m of landscaped open space, to be used for soft landscaping, is required to be provided along a lot line abutting an R District.  
No soft landscaping will be provided along the north rear lot line abutting an R district.
- 10. Section 12(1)479.(7)(a)(i), By-law 438-86**  
The building shall be contained within a 45 degree angular plane projected over the lot line from a 7.5 m setback at an elevation of 10.5 m.  
In this case, the building will project beyond the angular plane.
- 11. Section 4(17)(a), By-law 438-86**  
The By-Law requires parking spaces accessed by a drive aisle with a width of more than 6.0 m (measured at the entrance of the space) to have a depth of 5.6 m.  
The By-Law requires parking spaces accessed by a drive aisle with a width of more than 6.0 m (measured at the entrance of the space) to have a width of 2.9 m when obstructed on one side.  
Five parking spaces will have a depth of 5.4 m and will be accessed by a drive aisle with a width of at least 6.0 m.



Three parking spaces will have a width of 2.6 m and will be accessed by a drive aisle with a width of at least 6.0 m while being obstructed on one side.

12. **Section 12(1)479 4(a)(i), By-law 438-86**  
The maximum permitted building height is 24.0 m.  
The new eight-storey mixed-use building will have a building height of 28.89 m.
13. **Section 12(1)479(6)(a)(i), By-law 438-86**  
A minimum 1.5 m step-back at the street lot line is required above a height of 16.5 m or the fifth storey. An additional 1.5 m step-back (3 m setback from the street lot line) is required above a height of 22.5 m or the seventh storey.  
The new eight-storey mixed-use building will not be stepped back from the street lot line above a height of 16.5 m and the new eight-storey mixed-use building will not be stepped back from the street lot line above a height of 22.5 m.
14. **Section 12(1)479(6)(a)(ii), By-law 438-86**  
A minimum of 50% of the area of the portion of the main external building wall located above 16.5 m or the fifth storey shall have a minimum 1.2 m step-back.  
The new eight-storey mixed-use building will not be stepped back above the height of 16.5 m at the side lot lines.
15. **Section 12(1)479(6)(a)(iii), By-law 438-86**  
The main external building wall may encroach into the minimum step-back area required by Section 12(1)(479)(6)(a)(i) up to a maximum continuous width of 5 m or 16% of the building face.  
The main external building wall on the sixth and seventh floor will encroach into the step-back area on the eastern portion of the south building face with a continuous width of more than 5 m (easterly encroachment is 5.42 m) and in total the sixth and seventh floor encroachments represent 19% of the building face abutting the lot line.

**The Committee of Adjustment considered any written and oral submissions in making its decision. For a list of submissions, please refer to the minutes.**

**IT WAS THE DECISION OF THE COMMITTEE OF ADJUSTMENT THAT:**

**The Minor Variance Application is Approved on Condition**

It is the decision of the Committee of Adjustment to approve this variance application for the following reasons:

- The general intent and purpose of the Official Plan is maintained.
- The general intent and purpose of the Zoning By-law is maintained.
- The variance(s) is considered desirable for the appropriate development of the land.
- In the opinion of the Committee, the variance(s) is minor.

This decision is subject to the following conditions:

- (1) Prior to the issuance of a building permit, the owner shall submit the following to the satisfaction of the Chief Engineer and Executive Director, Engineering and Construction Services:
  - (i) a revised Functional Servicing Report prepared by a licensed Professional Engineer to demonstrate that there is sufficient capacity to accommodate the servicing demand for the development and demonstrate compliance with all applicable design standards, specifications, by-law and guidelines,
  - (ii) plans showing a waste storage room for the residential component of the development with a minimum area of 45.8 m<sup>2</sup>;
  - (iii) plans showing a Type G loading space that is 13.0 m in length, 4.0 m in width, has an unencumbered vertical clearance of 6.1 m and that is constructed with a minimum of 200 mm reinforced concrete;
  - (iv) plans showing a staging pad abutting the Type G loading space that has an unencumbered vertical clearance of 6.1 m, that is constructed of 200 mm reinforced concrete, and has a grade of no more than 2%;
  - (v) a collection vehicle movement diagram that demonstrates that a vehicle with a length of 12.0 m and a width of 2.4 m has a minimum inside/outside turning radii of 9.5 m and 14.0 m respectively, when entering, exiting, travelling throughout the site and entering/exiting the Type G loading space. The diagram must also indicate the ability of the collection vehicle to enter and exit the site in a forward motion with no more than a three-point turn;
  - (vi) parking level plans which identify all parking spaces that are accessed by drive aisles less than 6.0 m and documentation to demonstrate that these parking spaces can operate in an acceptable manner with taking multiple turns; and,
  - (vii) parking level plans illustrating the dimensions of the columns and the distance from the substandard parking spaces to the wall and that these substandard spaces are included in the site statistics for each parking level.
- (2) Prior to the issuance of a building permit, the owner is required to apply for revised municipal numbers to the satisfaction of the Manager of Land and Property Surveys, Engineering Services, Engineering and Construction Services.
- (3) The owner shall provide appropriate shielding and fencing on the north side of the property to the satisfaction of the Director, Community Planning , Toronto and East York District, and the Ward Councillor.

- (4) Prior to issuance of an above grade building permit the owner shall make an indexed cash contribution to the City in the amount of \$215,000 to be allocated at the discretion of the Chief Planner and Executive Director, City Planning Division in consultation with the Ward Councillor, toward any one or more of the following:
- a) Local park improvements;
  - b) Local streetscape improvements; and
  - c) Improvements to local community facilities.

Such amount to be indexed upwardly as of June 10, 2015 in accordance with the Statistics Canada Construction Price Index for Toronto, calculated from the final and binding date of the Committee of Adjustment Decision to the date the payment is made.

In the event the cash contribution has not been used for the intended purpose within three (3) years of final and binding date of the Committee of Adjustment Decision, the cash contribution may be redirected for another purpose, at the discretion of the Chief Planner and Executive Director of City Planning, in consultation with the local Councillor, provided that the purpose is identified in the Toronto Official Plan and will benefit the community in the vicinity of the lands.

- (5) Prior to the issuance of an above grade building permit, the owner shall provide funding (in addition to that noted in the above Conditions 3 and 4) for one (1) Bike Share Toronto station, to the satisfaction of the City Solicitor and the Chief Planner and Executive Director of City Planning and in consultation with the local Ward Councillor.

## 6.3 CALCULATIONS

	Site 1		Site 1 Combined		Site 2		
	D1	D2	Proposed	By-Law	D1	D2	D3
<b>Avenue Building</b>							
# of properties assembled	5	5	10	14	5	4	5
Site Area (m <sup>2</sup> )	1114	793	1907	2192	1004	975	881
Ground Floor Area (m <sup>2</sup> )	1065	739	1804	1819	1001	897	876
Typical Floor Area (m <sup>2</sup> )	679	471	1150		696	624	609
FSI Allowable	5.5	5.5	5.5	5.5	5	5	5
FSI Modeled	6	7	6,7	5.0	5.5	6.5	7.5
Total GFA (m <sup>2</sup> )	6684	5551	12235	10982	5522	6337.5	6607.5
# of Floors Allowable	9	9	9	9	7	7	7
# of Res Floors Calculated	8.3	10.2			6.5	8.7	9.4
# of Total Floors Calculated	10	12	10,12		8	10	11
<b>Avenue Unit Count</b>	<b>60</b>	<b>51</b>	<b>111</b>	<b>97</b>	<b>48</b>	<b>58</b>	<b>61</b>
<b>Rear Building</b>							
# of properties assembled	4	6	10		7	4	5
Site Area (m <sup>2</sup> )	853	1282	2135		1277	1146	927
Actual Total GFA (m <sup>2</sup> )	907	3279	4186		2227	3418	1879
Apartment GFA (m <sup>2</sup> )	0	1927	1927		0	2279	0
FSI	1.1	2.6	1.1, 2.6		1.7	3.0	2.0
Allowable FSI	0.6	0.6	N/A		0.6	0.6	0.6
Modeled Storeys / Height	10.5m,6m		10.5m,6m		10.5m	18m	10.5m
Allowable Storeys / Height	10m, 6m		10m, 6m		10m	10m	10m
<b>Rear Unit Count</b>							
Townhouses	8	10	18		16	10	14
Units	0	20	20		0	24	0
<b>Total</b>	<b>8</b>	<b>30</b>	<b>38</b>		<b>16</b>	<b>34</b>	<b>14</b>
<b>Total Unit Count</b>							
Townhouses	8	10	18	0	16	10	14
Total Units	68	81	149	97	64	92	75
<b>Total # of Properties Assembled</b>	<b>9</b>	<b>11</b>	<b>20</b>	<b>14</b>	<b>12</b>	<b>8</b>	<b>10</b>

Fig. 6.23 Height, Density and Unit Calculations for Prototypical Case Study Sites

This spreadsheet was used to calculate the modeled height of the avenue buildings in the prototypical case studies. It was also used to calculate FSI and estimated unit counts, included in the project data in the prototypical case studies. (Continuation on the opposite page.)

Site 2 Combined		Site 3		Site 4		Site 5			Site 6
Proposed	By-Law	D1	D2	D1	D2	D1	D2	D3	D1
14	9	5	4	2	5	2	4	4	2
2860	2383	1116	926	1625	1085	1498	973	1003	1451
2774	1735	1107	925	1416	761	1138	741	757	722
1929		730	610	1065	596	891	593	628	620
5	5	5.5	5.5	5.5	5	5.5	5.5	6.5	5
5.5, 6.5, 7.5	5.6	6	7	7	6.5	6	7	9	6.5
18467	13308	6696	6482	11375	7052.5	8988	6811	9027	9431.5
7	7	9	9	9	7	9	9	12	9
		7.7	9.1	9.4	10.6	8.8	10.2	13.2	14.0
8,10,11		9	11	11	12	10	11	14	15
167	123	59	59	106	67	83	64	88	93

16		3	4	2	3	5	5	6	3
3350		923	1231		1443	1261	1083	1242	1711
7524		1245	3000		2989	1944	1473		2560
2279		0	2000		0	0	0	0	0
1,9, 2.0, 2.7		1.3	2.4	0.6	2.1	1.5	1.4	0.6	1.5
N/A	N/A	0.6	0.6	0.6,0.8	0.6,0.8	0.6	0.6	0.6	0.8
10.5m, 18m		10.5m	18m	N/A	10.5m	10.5m	10.5m	N/A	10.5m
10m	10m	10m	10m	3 storeys (11m, 10m)	3 storeys (11m, 10m)	12m	12m	12m	3 storeys (11m)

40		8	10	8	20	16	13	10	20
24		0	21	0	0	0	0	0	0
64		8	31	8	20	16	13	10	20

40	0	8	10	8	20	16	13	10	20
231	123	67	90	114	87	99	77	98	113

30	9	8	8	4	8	7	9	10	5
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