

Lo-Fi Music as Architecture:  
A Rhythmic Transformation at Bank and Heron, Ottawa

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*"It's really about context, there are no rules for this stuff"*

*- Christian Li*

# Abstract

This thesis explores Lo-Fi music as a primary inspiration for urban planning and architecture, specifically for the re-development of a site situated at the crossing of suburban neighbourhoods in transition, at the corner of Bank Street and Heron Road in Ottawa, Canada. This thesis seeks to translate a specific piece of Lo-Fi music into architectural designs to assist a morphological and atmospheric transformation of this site. “Low Fidelity” or Lo-Fi music works with low-quality imperfections to imbue authenticity to new music. Its compositions cross musical genres, including jazz and hip-hop; the hiss and defects from old recordings create a complex and enveloping atmosphere. By integrating the thematic characteristics of Lo-Fi beats into the design process, a new built environment and novel architectural experience of space are generated, complete with imperfections, and, it is hoped, with cultural relevance, appropriateness, and authenticity.

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*First of all, I would like to thank my parents for their endless love, support, hard work and sacrifice. I would also like to thank my advisor, professor Janine Debanné for her patience and effort in keeping me in the right direction. Her wisdom and knowledge not only helped me develop my ideas to their best potential, but she also helped me tremendously with writing, ensuring that I effectively communicate my vision. I would also like to thank my colleagues and two of my most special friends, Yana Kigel and Petros Kapetanakis for all the advice and emotional support. And also, thank you to my abyssinian cat Mia for always trying to help.*

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## Foreword: My Relationship with Music

When I first learned how to write and create music, I felt that I had found my language. I was able to express myself more effectively through music than words. Playing and composing music provided a way to release stress and were a source of entertainment. I spent a considerable amount of effort studying music theory on my own time by tuning in to several content creators on various social media platforms with dedicated channels for teaching and analyzing music. The complexity of music theory fascinated me. It surprised me to discover the scientific and highly technical ideas behind such an emotional and expressive art form. My experiences and personal connection with music would shape how I approached my architectural studies. As I studied architecture, I soon became interested in lodging musical ideas inside my architectural thoughts. American architect Frank Lloyd Wright described architecture in 1930 as “the triumph of human imagination over materials, methods, and men, to put man into possession of his own Earth. It is at least the geometric pattern of things, of life, of the human and social world. It is at best that magic framework of reality that we

sometimes touch upon when we use the word order.”<sup>1</sup> Renowned pianist and conductor Daniel Barenboim described Beethoven’s piano sonatas as music that “really deals with the completeness and the innermost nature of the human condition.”<sup>2</sup> It sounds to me that Wright and Barenboim describe architecture and music similarly: as interlinked with the nature of consciousness, emotions, and the universe itself. This thesis begins with the belief that structure and beauty come as a pair in music and architecture.

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1 Parker, Simon. “Visions of Utopia.” Essay. In *Urban Theory and the Urban Experience: Encountering the City*, 64. London: Routledge, Taylor & Francis Group, 2015.

2 Quote by Daniel Barenboim in “Barenboim on Beethoven” (BBC, 2005).

# Architecture: Frozen Music

Nineteenth-century German philosopher Friedrich W. J. von Schelling described architecture as frozen music in *Philosophie der Kunst* published in 1859.<sup>3</sup> He wrote, “Architecture, as the music of the plastic arts, thus necessarily follows arithmetical relationships.... It is music in space... in a sense solidified music.”<sup>4</sup> Von Schelling’s idea of solidifying music suggests correspondences between rhythms and columns and vaults between the spatial feelings produced by a piece of music and those produced by a built space. His insistence on mathematical relationships refers to proportions and ratios, and to a long tradition that links architecture to music dating back to Antiquity. We think of such works as *De Musica*, the first-century treatise by Greek mathematician and music theorist Ptolemy, or Vitruvius’s *Ten Books on Architecture*, which both treat musical harmonies in architecture. In the Renaissance, Leon Battista Alberti discusses

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3 Daniel F. MacGilvray, “The Proper Education of Musicians and Architects,” *Journal of Architectural Education* (1984-) 46, no. 2 (1992): pp. 87-94, 87 <https://doi.org/10.2307/1425202>.

4 F.W.J. Schelling, *The Philosophy of Art*, trans. and ed. Douglas W. Stott (Minneapolis: University of Minnesota Press, 1989), pp. 165. Schelling defines or posits other possible architecture/music relationships, including “architecture = music” (p. 164), “[architecture is] the music within the plastic arts” (p. 163), and “if architecture is music, then it is concrete music” (p. 166).

harmonic proportions in architecture in *De re aedificatoria*.<sup>5</sup> The classical tradition values the mathematical order of all things, and music makes these harmonies audible and recognizable. Closer to the present, German Philosopher Max Dessoir (1867 – 1947) argued that architecture had a stronger relationship with music than with any other art form.<sup>6</sup> In his important work on aesthetics, *Asthetik und Allgemeine Kunstwissenschaft* of 1906, Dessoir outlines the different interrelationships between sculpture, poetry, architecture and music.<sup>7</sup> In Dessoir’s matrix, music and architecture both fall under “free arts,” “abstract arts,” and “arts with indeterminate associations.” Therein, these two art forms share more relationships than do sculpture, painting, poetry, and dance.

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5 See Rudolf Wittkower, *Architectural Principles in the Age of Humanism* (London, 1949) on proportion and ratios in the Renaissance. On the importance of ratios in the Baroque era, see Janine Debanné’s “Surface and Appearance in Guarino Guarini’s SS. Sindone Chapel,” in *Chora - Intervals in the Philosophy of Architecture*, Vol. 3 (Montreal: McGill Queen’s University Press, 1997).

6 Quoted in Lewis Rowell, *Thinking about Music: An Introduction to the Philosophy of Music* (Amherst: University of Massachusetts Press, 1983), p. 22.

7 Max Dessoir, *Ästhetik und allgemeine Kunstwissenschaft* (Stuttgart, 1906), reproduced in Tatarkiewicz, “Classification of the Arts,” p.461.

	spacial arts motionless arts arts dealing with images	temporal arts arts of motion arts dealing with gestures and sounds
reproductive arts figurative arts arts with determinate associations	SCULPTURE PAINTING	POETRY DANCE
free arts abstract arts arts with indeterminate associations	ARCHITECTURE	MUSIC

Figure 01

Max Dessoir, *Ästhetik und allgemeine Kunstwissenschaft* (Stuttgart, 1906), reproduced in Tatarikiewicz, "Classification of the Arts," p.461

	arts of space	arts of time	arts of becoming
arts that enclose a created dimension	ARCHITECTURE	MUSIC COMPOSITION	MUSIC PERFORMANCE
arts that occupy a created dimension	SCULPTURE	STORY	THEATER
arts that are the dimension they create	PAINTING	POETRY	DANCE

Figure 02

Lewis Rowell, *Thinking about Music: An Introduction to the Philosophy of Music* (image, Amherst: University of Massachusetts Press, 1983), p.22.

In *Nine Basic Arts*, American philosopher Paul Weiss (1901 – 2002) expanded Dessoir’s table to include the “arts of becoming,” allowing him to distinguish between musical composition and performance.<sup>8</sup> Even in Weiss’s expanded table, we find that music and architecture fall under the same categories.

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8 Quoted in Lewis Rowell, *Thinking about Music: An Introduction to the Philosophy of Music* (Amherst: University of Massachusetts Press, 1983), pp. 22.

In his study on the interactions between music and architecture in the work of modern architect Iannis Xenakis (1922-2001), architectural historian Sven Sterken explains that the relationship between both fields occurs on two levels: intellectual and phenomenological.<sup>9</sup> Sterken advances that the focus on 'harmonic proportion' reflects the intellectual relationship between music and architecture dating back to ancient Greece. As we saw above, Greek philosophers devoted whole books to music; Vitruvius in turn integrated music with architecture. Vitruvius believed that understanding music theory provided the architect with canonical and mathematical tools and knowledge. Further attempts to correlate the mathematics of music with architecture included combining conventional proportions, rhythm, balance, regularity, and harmonic relationships. Moving ahead in time to the 18th century one finds a new connection between music and architecture, one that emphasizes their respective aesthetic and expressive qualities. Complex and intricate structure no longer is the source of beauty in a piece of art, but rather, according to Sterken, it brings about its "aesthetic effect" and "immersive power." Where mathematical proportions had been the bridge that connected music and architecture through harmonic proportion, we can speak of their immersive qualities and of their shared spatial qualities as of the 18th century.<sup>10</sup>

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9 Mikesch W. Muecke and Sven Sterken, "Essays on the Intersection of Music and Architecture," in *Music as an Art of Space. Intersections between Music and Architecture in the Work of Iannis Xenakis* (Ames, IA: Culicidae Architectural Press, 2007), pp. 31-60, 32.

10 Ibid.

# Architecture from Music: Case Studies

The following case studies demonstrate the viability of a relationship between music and architecture.

## Case Study 1:

Le Corbusier and Iannis Xenakis, and the Façade of the Monastery of La Tourette, France, 1957

Iannis Xenakis' approach to music and architecture is rooted in his engineering background. He explored the numerical patterns and ratios between mathematics, music, and architecture. His experience working with Le Corbusier made him aware of the Modulor, which aimed to solve the issues surrounding forms in architecture and art. Working with Le Corbusier led him to be interested in exploring how numerical proportions would affect musical compositions. Likewise, his approach to architectural design was driven by mathematics and music.<sup>11</sup> Le Corbusier wanted to take

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<sup>11</sup> Mikesch W. Muecke and Sven Sterken, "Essays on the Intersection of Music and Architecture," in *Music as an Art of Space. Intersections between Music and Architecture in the Work of Iannis Xenakis* (Ames, IA: Culicidae Architectural Press, 2007), pp. 31-60, 33.

advantage of a view in the western façade of the monastery building but felt that a long series of repeating glass panes would not bring a strong effect.<sup>12</sup> He suggested that Xenakis build an asymmetrical façade by varying the spacing between the glass panes. Xenakis' approach was based on an experiment he had conducted, exploring rhythmic patterns subject to numerical proportions. His initial approach was to organize different combinations of window panes with varying widths to create a rhythmic pattern. He was eventually met with a problem where having too few elements would result in a predictable composition, and having too many elements would be difficult to control. His solution was to think in terms of "density."<sup>13</sup> By dividing the façade into zones based on the number of casings per length unit, he created a pattern that transitioned from high to low density of casings per length unit. Xenakis created a "vertical polyphony in a triple-layered arrangement, resulting in a detailed polyrhythmic study of light and shade."<sup>14</sup> A polyrhythm is a "simultaneous use of strikingly contrasted rhythms in different parts of the music fabric."<sup>15</sup> In architectural terms, Xenakis utilizes polyrhythm in the façade of the monastery at La Tourette, through a simultaneous display of glass panes arranged via "density."

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12 Ibid. 35.

13 Ibid. 36.

14 Ibid. 37.

15 Willi Apel, "Polyrhythm," in *Harvard Dictionary of Music* (Cambridge, MA, MA: The Belknap Press of Harvard University Press, 1973), pp. 687-688.

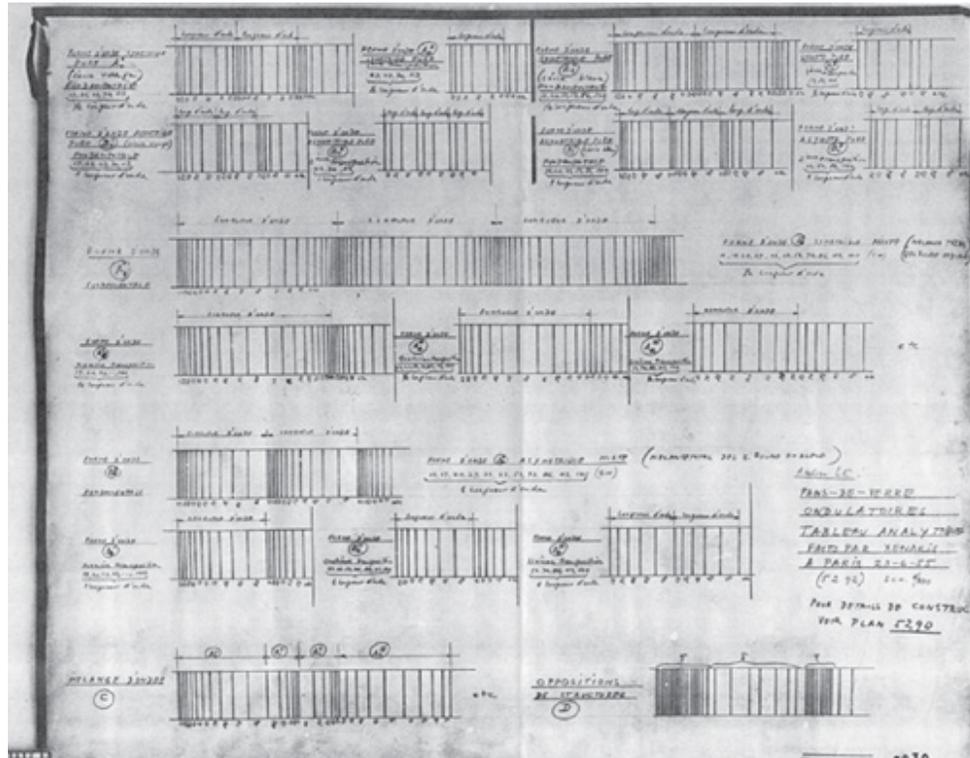


Figure 03

Sketches created by Iannis Xenakis of his design for the monastery façade from La Tourette France, 1967.

Taken from: Mikesch W. Muecke and Sven Sterken, "Music as an Art of Space. Intersections between Music and Architecture in the Work of Iannis Xenakis, Figure 2 (Ames, IA: Culicidae Architectural Press, 2007), pp. 36.



Figure 04

Photograph of La Tourette showing the façade of the monastery designed by Iannis Xenakis  
Taken From: Mikesch W. Muecke and Sven Sterken, "Music as an Art of Space. Intersections between Music and Architecture in the Work of Iannis Xenakis, Figure 3 (Ames, IA: Culicidae Architectural Press, 2007), pp. 36.

## Case Study 2:

Steven Holl, Stretto House, Texas, 1992.

$$\frac{\text{material} \times \text{sound}}{\text{time}} = \frac{\text{material} \times \text{light}}{\text{space}}$$

Figure 05

Steven Holl's formula for comparing the foundations of music to the foundations of architecture.

Holl, Steven. "The Architectonics of Music." 2017, image.

Over the course of his career, architect Steven Holl has searched for linkages with music. The architect's website reserves a section on a studio he recently taught at Columbia University on the theme of music and architecture, titled *The Architectonics of Music*.<sup>16</sup> In a portfolio assembled in 2017, also titled *The Architectonics of Music*, Holl reflects on four of his works including his Stretto House. Therein Holl writes, "Looking at music composition, the Stretto House, built in Texas in 1992, was created as a direct analogy to Bella Bartók's distinct division between heavy and light in his

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16 A description of the studio which Holl taught with architect Dimitra Tsachrelia and composer Raphael Mostel appears on <https://www.stevenholl.com/architectonics-of-music/> accessed March 2022.

work Music for Strings, Percussion and Celeste” (1986). Holl even went so far as to create an equation “to explain the condition where sound is to time as light is to space.”<sup>17</sup>

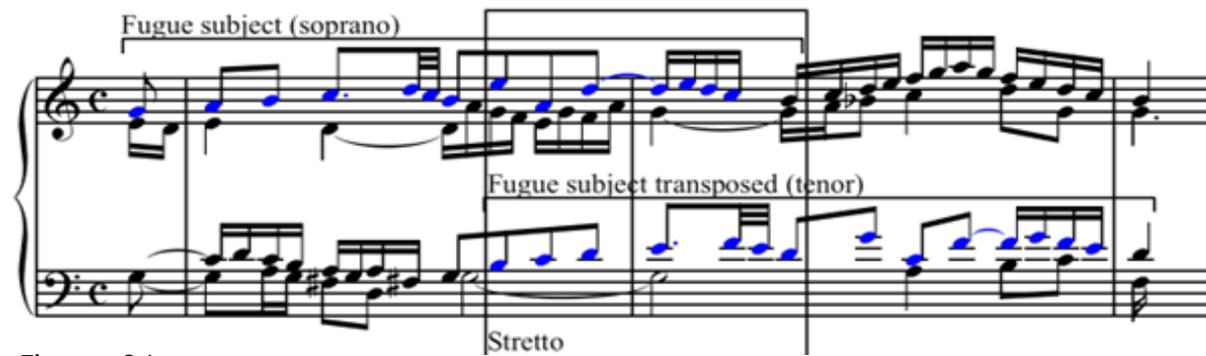


Figure 06

J.S. Bach's The Well-Tempered Clavier, Book I, BWV 846, 2003

Through the four projects described in the portfolio, Holl describes a new process for space-making that extracted ideas from musical concepts and twisted and reformed them to comply with architectural concerns. For the design of the Stretto House, a house which attracted attention at the time of its construction and in subsequent years, Holl was inspired by the concept of the “stretto”. A stretto is the “imitation of the subject in close succession so that the answer enters before the subject is completed.”<sup>18</sup> A stretto visually appears like a series of overlapping patterns on a music

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17 Steven Holl. “The Architectonics of Music.” PAJ: A Journal of Performance and Art 39, no. 2 (2017): 50-64. [muse.jhu.edu/article/659426](http://muse.jhu.edu/article/659426), 50.

18 Willi Apel, “Stretto.” In *Harvard Dictionary of Music* (Cambridge, MA: Belknap Press of Harvard Univ. Press, 1974), pp. 809-810.



sheet.<sup>19</sup> Holl took advantage of the stretto by translating its meaning into the language of architecture.

Within the house, Holl created moments of overlap between the concrete blocks which he called “spatial dams.” He also devised a metal-framed “aqueous space” in which “floor planes pull the level of one space through to the next, roof planes pull space over walls and an arched wall pulls light down from a skylight.”<sup>20</sup> The reflection of the landscape creates the illusion of water flowing over the “spatial dams.”<sup>21</sup>

Figure 07

STEVEN HOLL ARCHITECTS, “Stretto House.” December 7, 2021. Photograph, <https://www.stevenholl.com/project/stretto-house/>.

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19 Bach, Johann Sebastian. *The Well-Tempered Clavier, Book I, BWV 846*, mm. 20-23. Boston, MA: Benward, Bruce, and Marilyn Nade Saker. Essay. In *Music in Theory and Practice*: McGraw-Hill, 2003.

20 Steven Holl, “Stretto House,” *ARCHITECT* (The Journal of the American Institute of Architects, 2012), <https://www.architectmagazine.com/project-gallery/stretto-house-506>.

21 Steven Holl, “The Architectonic of Music,” *PAJ: A Journal of Performance and Art* 39, no. 2 (2017): pp. 49-64, [https://doi.org/10.1162/pajj\\_a\\_00363](https://doi.org/10.1162/pajj_a_00363), 56.

The same effect is conveyed inside the space as well. Since Bartók's "Music for Strings, Percussion and Celeste" is structured into four movements, the building is formed in four sections. Each section consists of heavy elements and light elements. Holl translated the instruments from Bartók's "Music for Strings, Percussion and Celeste" by representing the heaviness of the percussions into orthogonal masonry and turning the lightness of the strings into light curvilinear metal.<sup>22</sup>

The following description illustrates the musical experience of arriving and moving through the house:

"Arriving at the space via a driveway bridging over the stream, a visitor passes through overlapping spaces of the house, glimpsing the flanking gardens, and finally an empty room flooded by the existing pond. The room, doubling its space in reflection, opening both to the site and the house, becomes the asymmetrical center of two sequences of aqueous space."<sup>23</sup>

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22 Steven Holl, "The Architectonic of Music," *PAJ: A Journal of Performance and Art* 39, no. 2 (2017): pp. 49-64, [https://doi.org/10.1162/pajj\\_a\\_00363](https://doi.org/10.1162/pajj_a_00363), 56.

23 Ibid.



Figure 08

STEVEN HOLL ARCHITECTS, "Stretto House." September 10, 2012. Photograph, <https://www.architectmagazine.com/project-gallery/stretto-house-506.graph>, <https://www.stevenholl.com/project/stretto-house/>.

### Case Study 3:

Steven Holl, Daeyang Gallery and House Project, Seoul, 2012.

Steven Holl's project for a private house and gallery, "The Daeyang Gallery and House project" located in Seoul, South Korea (2012) is based on Istvan Anhalt's 1967 sketch for a music score in "Symphony of Modules."<sup>24</sup> The project is made up of three pavilions, one for "entry," one for "living," and the third is used for "events."<sup>25</sup> The sketch provided the floor plan of the pavilions and the concept for the fifty-five skylight strips cut across the roofs of the three pavilions.<sup>26</sup> The Daeyang Gallery and House project was conceived under what Steven Holl described as the "foundations of the art" inferring from the amalgamation of music, sculpture, and painting, which the pavilions take inspiration.<sup>27</sup> The concept of the project as something tied so closely to art, benefits by taking advantage of Istvan Anhalt's sketch of a music score, to create a unique spatial experience based on a musical composition. The polyphony between the music diagram and the elements of light and the sheet of water shapes the body's experience of moving through space.

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24 Steven Holl, "Daeyang Gallery and House," STEVEN HOLL ARCHITECTS, 2012, <https://www.stevenholl.com/project/daeyang-gallery-and-house/>.

25 Ibid.

26 Victoria King, "Daeyang Gallery and House / Steven Holl Architects," ArchDaily (ArchDaily, May 2012), [https://www.archdaily.com/234478/daeyang-gallery-and-house-steven-holl-architects?ad\\_medium=gallery](https://www.archdaily.com/234478/daeyang-gallery-and-house-steven-holl-architects?ad_medium=gallery).

27 Holl, Steven, Samantha Thomas, Adam Goss, "RedMike", and Ryan "Pinnangles" Clark. A Conversation with Steven Holl. Spirit of Space. Spirit of Space, 2021. <https://www.spiritofspace.com/daeyang>.

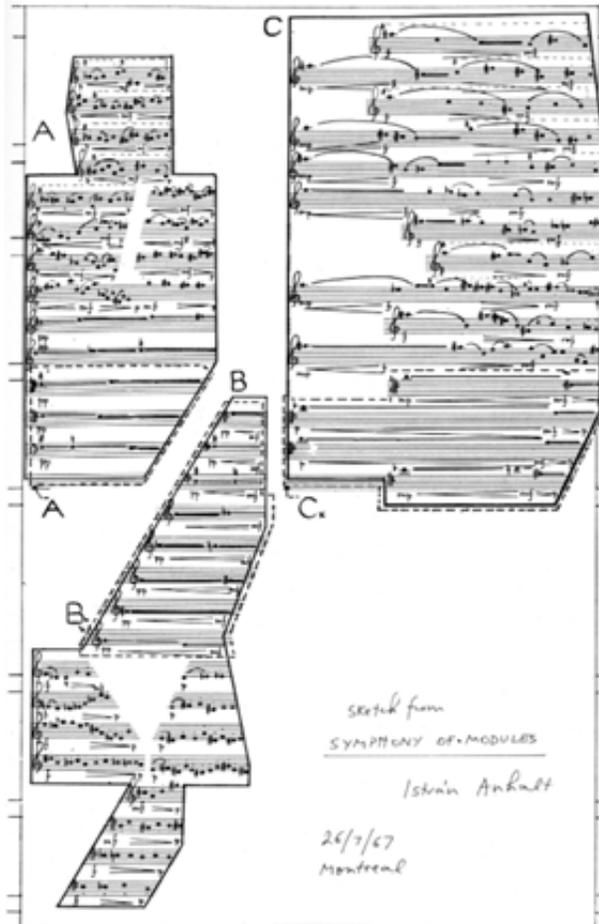


Figure 09

Istvan Anhalt, Symphony of Modules, sketch for a music diagram, 1967

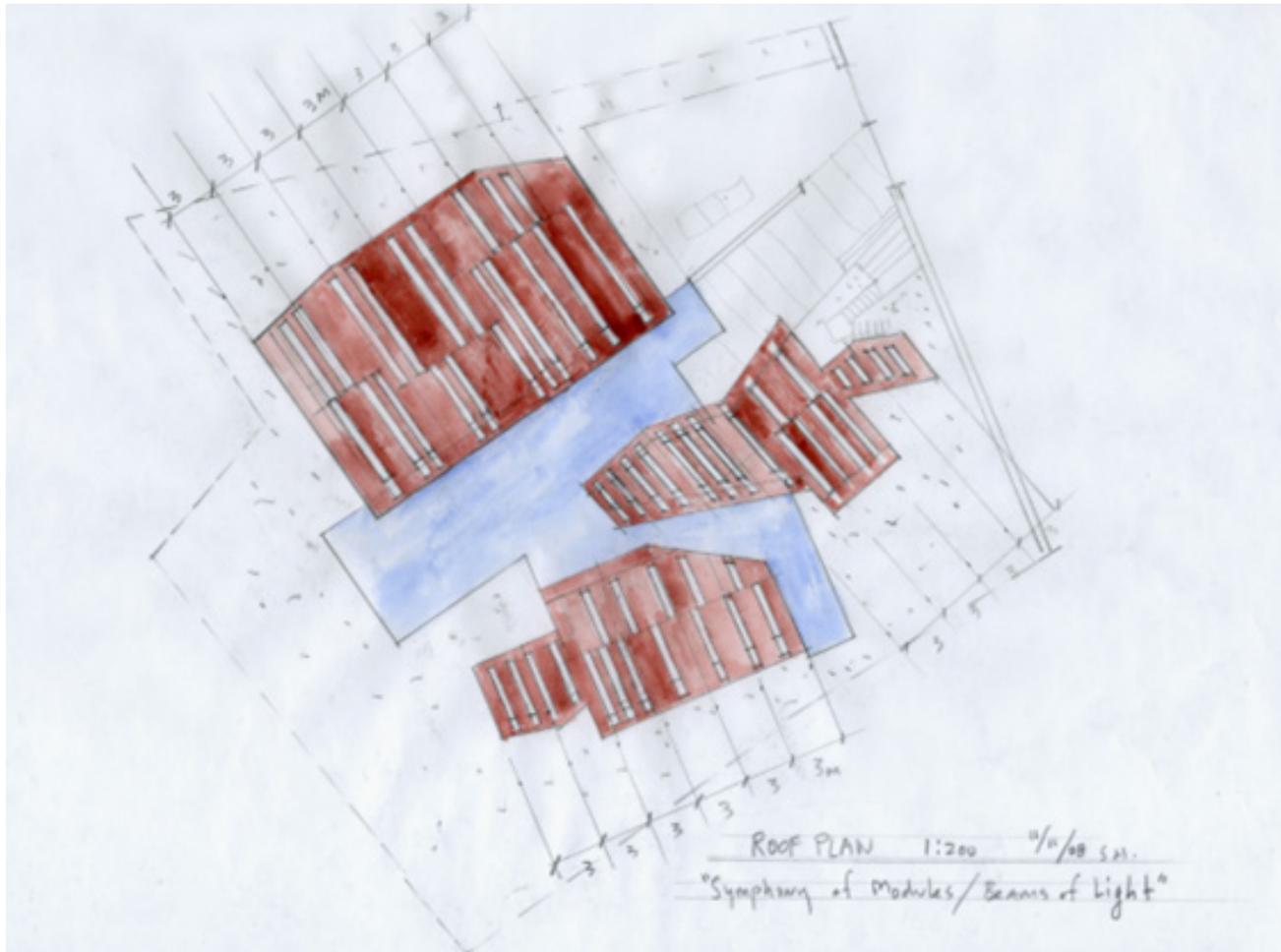


Figure 10

Holl, Steven. "Daeyang Gallery and House", November 11, 2008, Sketch of roof plan



Figure 11

STEVEN HOLL ARCHITECTS, "Daeyang Gallery and House", Photograph, <https://www.stevenholl.com/project/daeyang-gallery-and-house/>.

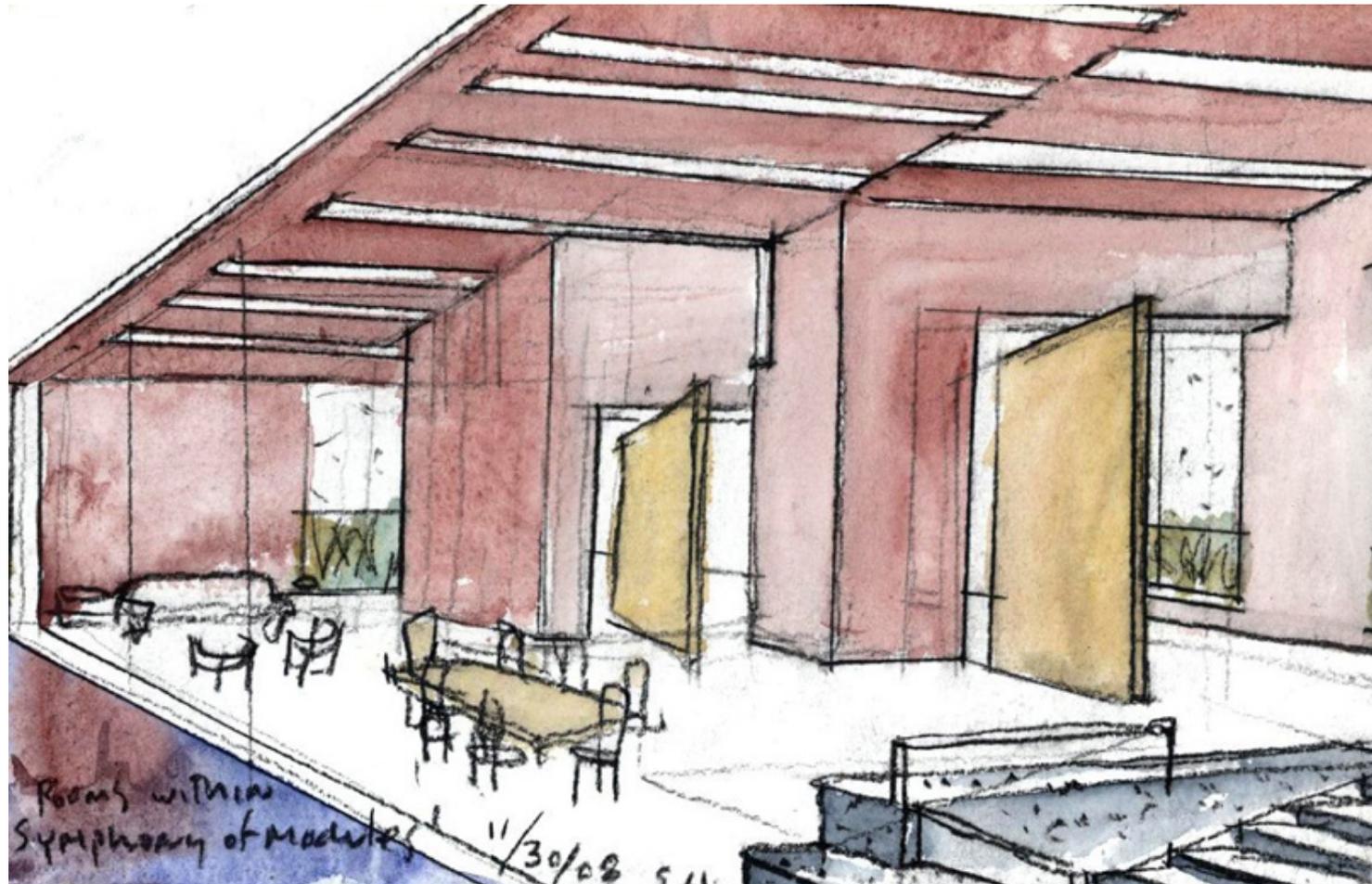


Figure 12

Holl, Steven. "Rooms Within Daeyang Gallery and House", November 30, 2008, Sketch of interior



Figure 13

STEVEN HOLL ARCHITECTS, "Daeyang Gallery and House", Photograph, <https://www.stevenholl.com/project/daeyang-gallery-and-house/>

#### Case Study 4:

Elizabeth Martin, “y-Condition”, New York: Princeton Architectural Press, 1997.

Kennesaw State University professor Elizabeth Martin published a thesis on architecture as a translation of music. Martin begins with a study of what she terms “minimal music theory.”<sup>28</sup> The latter “discards the traditional harmonic schemes of tension and relaxation and the musical narrative that goes with them.”<sup>29</sup> For Martin to test the idea behind architecture as a translation of music, she focused on minimal music as the main subject of the exercise. Martin describes traditional music as “linear, having a beginning and an end similar to those of a classical novel, where the denouement resolves the conflict of the plot.”<sup>30</sup> She contrasts the latter with minimal music which denies “hierarchic structure and patterning resulting in a succession of events rather than a progression of events.”<sup>31</sup> The fact that minimal music is a non-narrative form, Martin was able to turn it into “graphic music” and expand on it architecturally, as is seen in the images of “y-Condition” (1994).<sup>32</sup>

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28 Martin, Elizabeth. “y-Condition.” Essay. In *Architecture as a Translation of Music* PA 16, PA 16:16–25. Pamphlet Architecture. New York, NY: Princeton Architectural Press, 1994, 17.

29 Ibid. 18.

30 Ibid.

31 Ibid. 19.

32 Ibid. 21.

Martin thus created a “graphic music drawing” by assigning squares to equal note values (whole, half, eighth, sixteenth, etc.), specifically one square to equal one-eighth note within a range of forty-five notes.<sup>33</sup> She continued to create rhythmic patterns of varying durations, eventually coming up with various “modes of articulation” to which she assigned symbols.<sup>34</sup> Martin eventually had a collection of “rhythmic cells” which were “connected by lines of chord members and successive notes.”<sup>35</sup> The translation began when Martin designed a building using the same process. One square equalled the smallest unit, which Martin decided was a beam, wall, or floor plane. Stretched over forty-five units, Martin had different sets of “spatial units.” After applying numerous methods of transformation, Martin eventually formed a final building based on the process of graphic music.<sup>36</sup> This thesis will be interested in her work as one that transforms musical structures into architectural design very methodically.

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33 Martin, Elizabeth. “y-Condition.” Essay. In *Architecture as a Translation of Music* PA 16, PA 16:16–25. Pamphlet Architecture. New York, NY: Princeton Architectural Press, 1994, 21.

34 Ibid.

35 Ibid.

36 Ibid. 24.

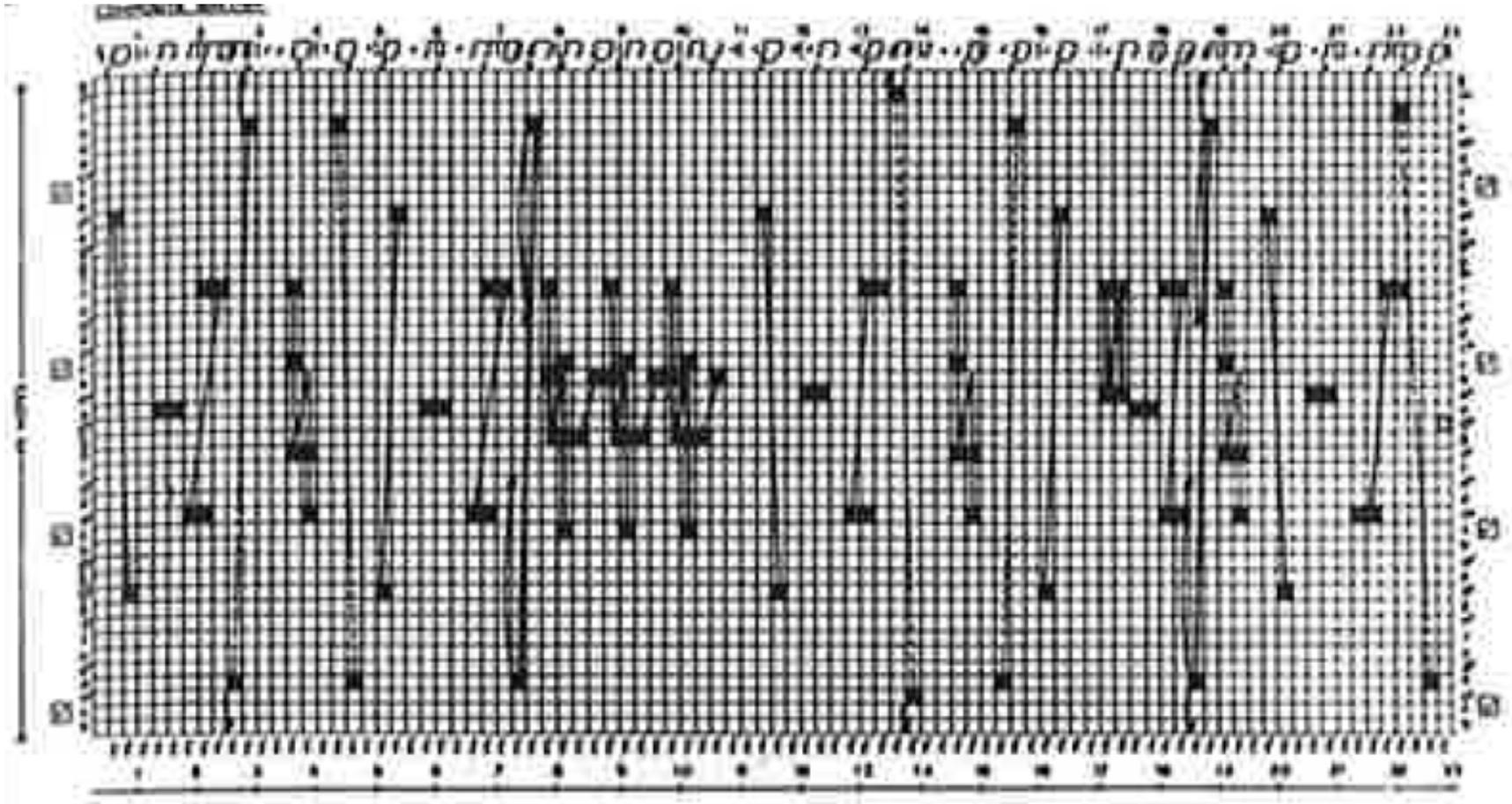


Figure 14  
 Martin, Elizabeth. "y-Condition", 1994, digital, image showing a graphic score

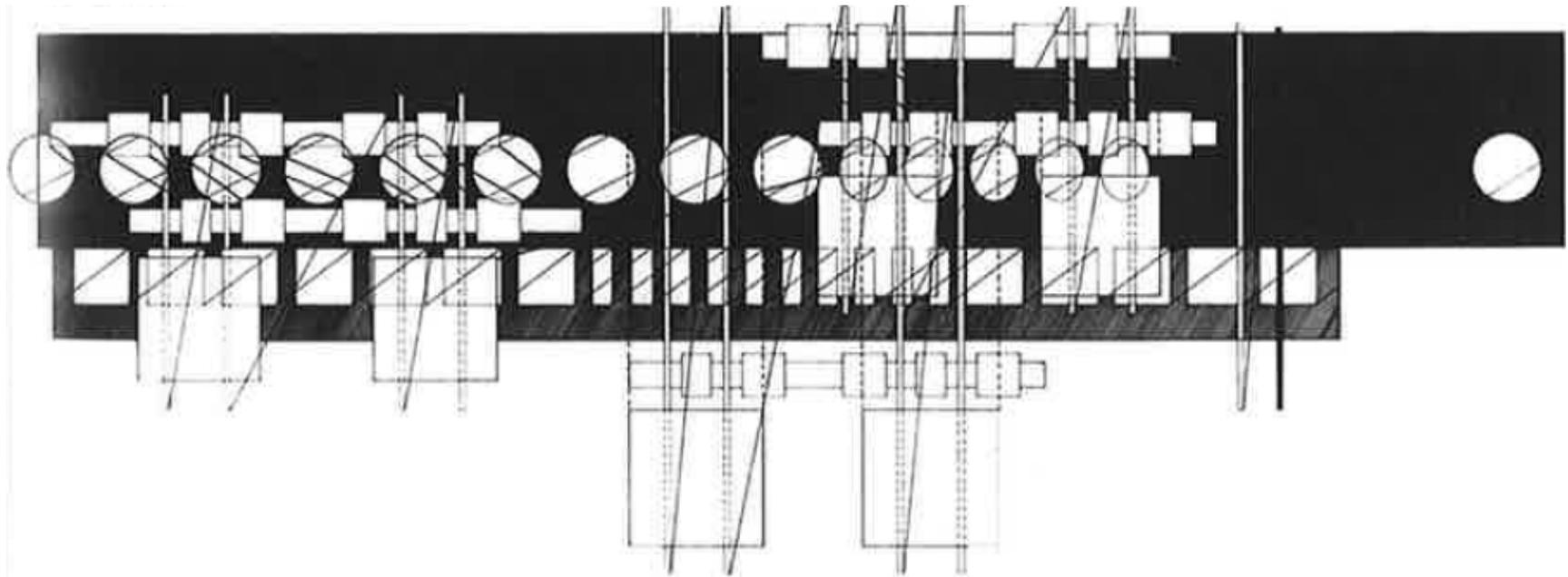


Figure 15

Martin, Elizabeth. "y-Condition", 1994, digital, creating architectural forms using different modes of articulation

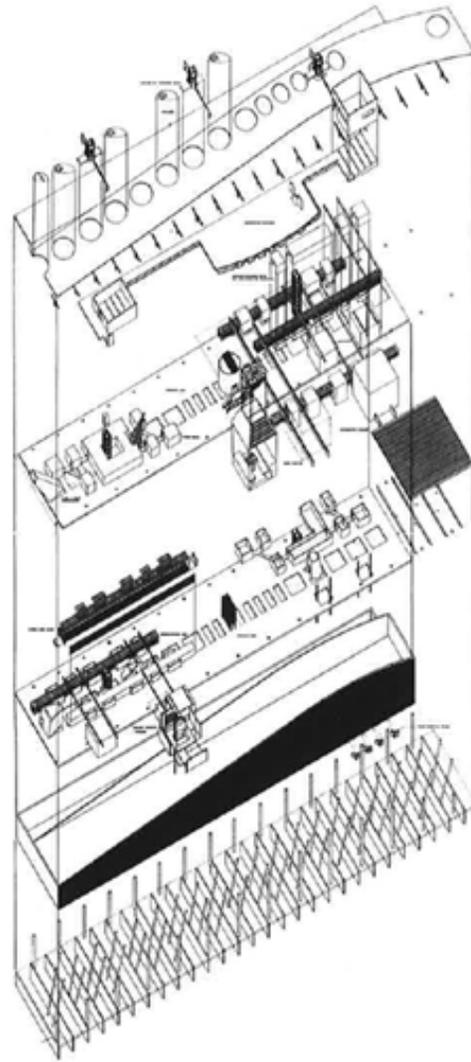


Figure 16  
Martin, Elizabeth. "y-Condition", 1994, digital, exploded axonometric drawing of the final building

The case studies above provide direction and guidance for the architectural proposition in this thesis. Iannis Xenakis' knowledge and usage of polyrhythm to affect the pattern and form of solids and void; Steven Holl's Stretto House as an architecturally translated musical idea by reinterpreting the instruments and the "stretto" within Bartok's "Strings, Percussion and Celeste" using the overlap of light curvilinear roof lines over the heavy orthogonal mass of the bodies; Steven Holl's Daeyang Gallery and House project using a music score to shape the roof plan of its pavilions; Elizabeth Martin's "graphic music" showing an example of how to dissect and experiment with music to translate it into architecture. These studies altogether create the foundation for utilizing musical ideas for the design and development of the corner at Bank Street and Heron Road. These devices shall serve as tools for implementing a much-needed musically inspired development, as we shall see in the following chapters focusing on the site's neighbourhood and adjacent communities.

# A Site for Music

Canada's capital is undergoing a profound period of change and growth. As urban real estate has soared in value, developers now turn to sites of lesser value along commercial strips in suburban areas. Car-oriented arterial roads like Saint Laurent Boulevard, Merivale Road, and Bank Street, which for long decades developed in the most expedient, matter-of-fact ways, are now becoming valuable. Developers are suddenly interested in their lots and in the development opportunities they offer. This is an opportunity to think about architecture. The local context in these areas is not historically significant. Density is low there. There is nothing to "fit in with," in any real sense, in contrast with the historic neighbourhoods of Ottawa's core. In this sense, these locations are replete with potential and seem open to novel and even unconventional development approaches. The following section examines the neighbourhood's demographic trends using data from "Statistics Canada" and from an Ottawa neighbourhood study to gather essential information about general demographics and income. The aim is to become familiarized with the neighbourhood and its adjacent communities to identify the proper methodology for a musically inspired project.

# The Corner of Bank Street and Heron Road: A Suburban Leftover

Bank Street is Ottawa's North-South axis and it connects distant southern suburbs to downtown Ottawa. The development of Bank Street in Ottawa's first postwar suburban ring, Alta Vista, has been slow in the past decades. Single-story commercial buildings and houses (that in many cases have been reoriented to commercial uses) line both sides of this arterial road. The section of Bank Street in Alta Vista, it should be said, is a high-traffic road. Recent developments in the vicinity of the intersection of Bank Street and Heron Road, however, hint toward a more urban future. Notably, the recent Lunen Haus – a rental tower housing complex built by Momentum Planning and Communications at 1161 Heron Road - has transformed this corner, and it is now more “urban” than previously.<sup>37</sup> A transition is imminent, and more growth will occur within the area. The Bank Street Community Design Plan (CDP) recognizes that Bank Street offers opportunities for growth and outlines its qualities and features.<sup>38</sup> Bank Street acts as a spine that joins multiple

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37 Dennis Jacobs, “City of Ottawa’s Urban Design Guidelines,” in Design Brief for 1161 Heron Road: Site Plan Control (Ottawa, ON: MOMENTUM Planning and Communications, 2016), pp. 18-23, 18.

38 MMM GROUP, McCORMICK RANKIN, Greenberg Consultants Inc., and Jp2g Consultants Inc., “Bank Street Today,” in Bank Street Community Design Plan: Rideau River to Ledbury Park, (Ottawa, ON: City of Ottawa, 2012), pp. 7-23, 21.

communities. The corner of Bank Street and Heron Road holds the potential to be an accessible and dynamic part of Ottawa, connecting to other areas of the city. It is diverse, and today supports a wide range of services including stores, small restaurants, a very large Canadian Tire, a Petro Canada service station, a medical supply store, and vehicle repair shops, among others. These businesses and related employment opportunities (possibly for the nearby residential neighbourhood including the recent high-rise development) herald a new kind of suburb. We may, at last, be seeing the early beginnings of a “walking suburb”! However, devoid of trees, fronted by parking lots and aging single-story strip malls and single-family houses that now seem out of context, long suburban stretches of Bank Street still need improvements. Creative design, changes in zoning, and landscape and urban planning that is much more inventive and welcoming to the pedestrian, all are badly needed. Innovative urban planning and buildings could help transform this area and reclaim it from cars and parking lots. The dull arterial road has potential and is deserving of a second look and new strategies of design, uses, and built forms.

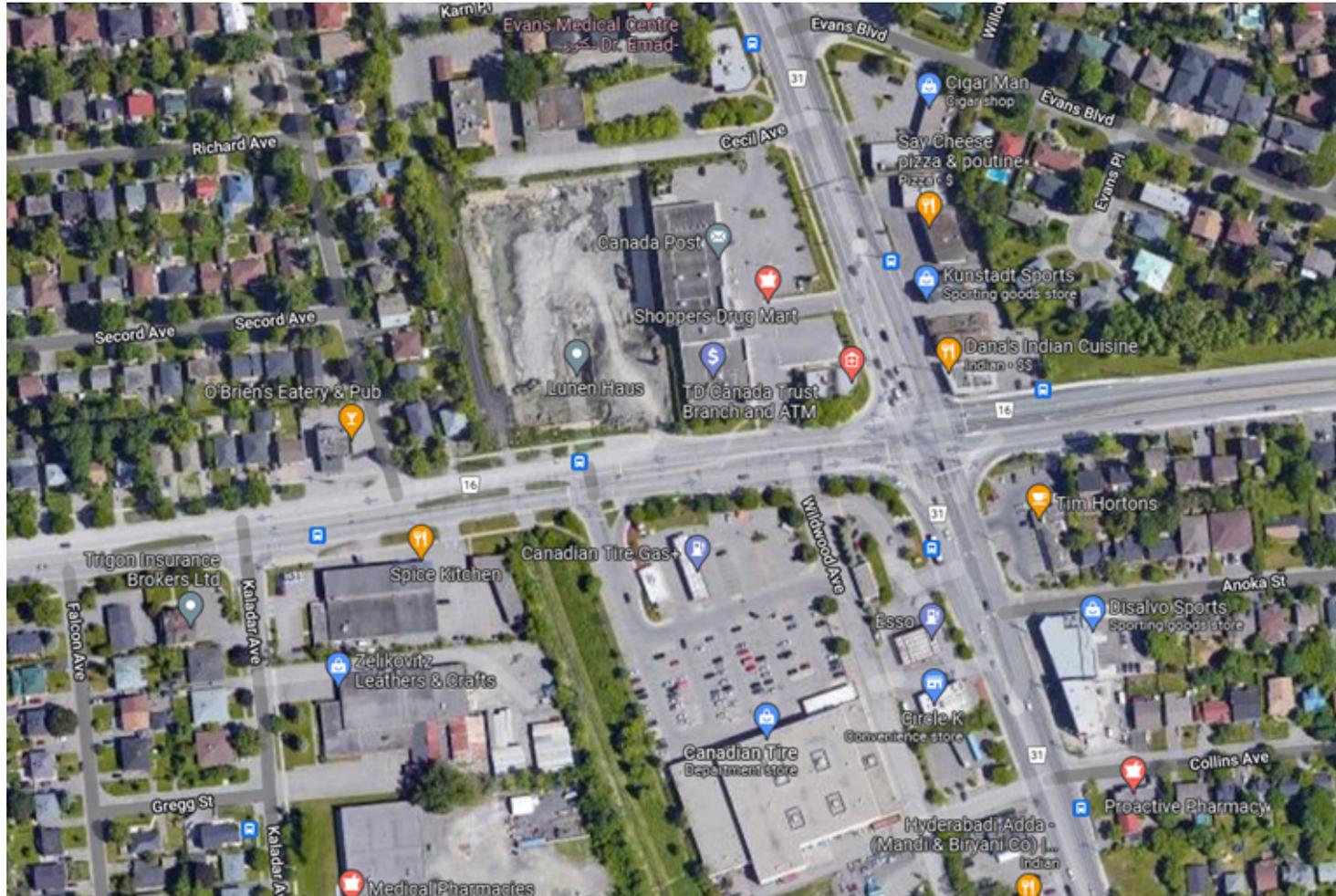


Figure 17

A screenshot capture of the intersection of Bank Street and Heron Road from Google Maps: <https://www.google.ca/maps/@45.3788376,-75.6687638,555m/data=!3m1!1e3>

# Site Analysis - Macro Scale

The following section draws from tables and maps published by the opensource, University of Ottawa-based thinktank, "The Ottawa Neighbourhood Study (ONS)" which studies the social makeups of Ottawa's neighbourhoods.<sup>39</sup>

## Income Levels

The Bank Street and Heron Road corner site is located in the neighbourhood of Alta Vista, lodged between contrasting neighbourhoods. It is useful here to get a sense of adjacencies and context. Immediately to the south is the neighbourhood of Ledbury – Heron Gate – Ridgemont, which is the poorest neighbourhood in Ottawa, registering a low-income prevalence of 41.2%. In contrast, duly north of the site is the neighbourhood of Old Ottawa South, which counts a

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<sup>39</sup> The Ottawa Neighbourhood Study (ONS) is based at the Centre for Research on Educational and Community Services (CRECS) at the University of Ottawa. This multidisciplinary study has received support from a range of partners including the Canadian Institutes of Health Research (CIHR), the United Way East Ontario among others. "Welcome to Ottawa Neighbourhood Study." Ottawa Neighbourhood Study. Accessed March 2022. <https://www.neighbourhoodstudy.ca/>.

low-income prevalence of only 7.7%. The neighbourhood of Alta Vista itself counts a low-income prevalence of 17.6%, a number that is between the two adjacent neighbourhoods that flank it, on the wealthier end. Up north is the neighbourhood of Riverview and it sits on the poorer side of the spectrum as well, counting up to a low-income prevalence of 34.4%. On the east side of Alta Vista is the neighbourhood of Playfair Park - Lynda Park - Guildwood Estates with a low-income prevalence of 9.1%, and southwest of Alta Vista is the neighbourhood of Riverside Park, with a low-income prevalence of 16.8%. Going further south between the neighbourhoods of Riverside Park and the neighbourhood of Ledbury - Heron Gate - Ridgemont is the neighbourhood of Hunt Club Woods - Quintarra - Revelstoke with a low-income prevalence of 6.2% lower than Old Ottawa South. Because of the low-income prevalence of Riverview and Ledbury - Heron Gate - Ridgemont, as well as a combined 26.6% unemployment rate between these two neighbourhoods, residents of these areas would greatly benefit from new opportunities within Alta Vista.

The location of the corner at Bank Street and Heron Road is accessible and holds the potential to be a central node that brings people from surrounding neighbourhoods together. As told by these numbers, Alta Vista is surrounded by neighbourhoods of varying degrees of wealth. This socio-economic diversity is very promising from a development point of view and points to the possibility and viability of a variety of commercial and cultural enterprises. The site offers a generous space to imagine an optimistic development for the future. This thesis is interested in imagining a vibrant multi-use building designed in a very different way from previous architectures of the area.

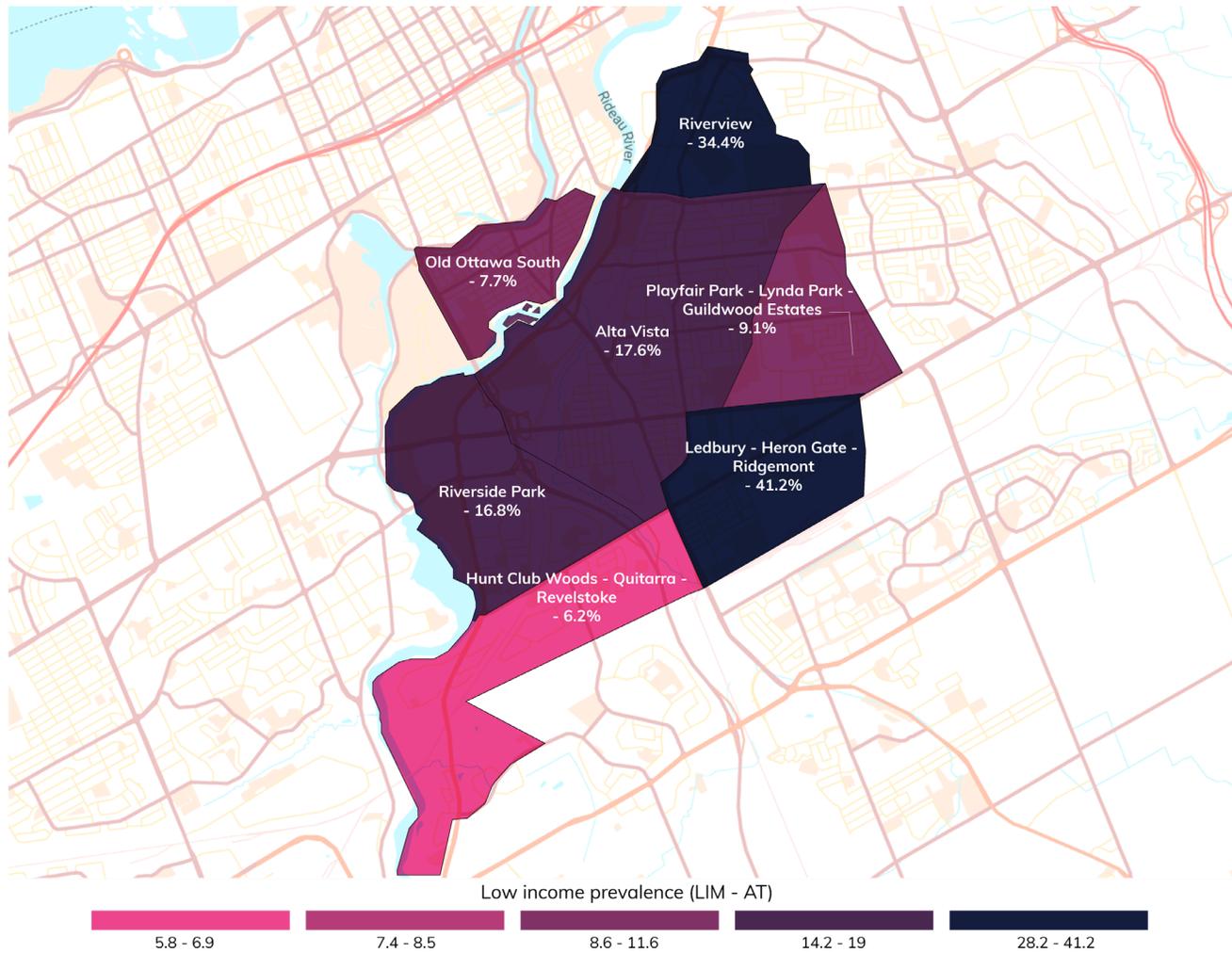


Figure 18  
 Percentage of low-income prevalence for Alta Vista and its adjacent neighbourhoods

## Age

Age distribution is essential to understanding the site's character and what type of lifestyle is expected there. Relying still on the ONS maps and tables, the number of people aged 15-24 in Alta Vista is 1,990, and the number of people aged 25-64 is 6,455. Statistics Canada defines the age median as the age that divides two halves of a population of equal size, one with older individuals, the other younger than that age. The age median is 41.3 in Alta Vista, and while this age of 41.3 isn't young, it isn't old either. It falls within Ottawa's general age median of 40. Alta Vista is also adjacent to a few relatively more youthful and older neighbourhoods. South of the site, Ledbury - Heron Gate - Ridgemont has a median age of 30.8 and directly up north across Rideau River is the neighbourhood of Old Ottawa East with a median age of 33.6. Just above Alta Vista, Riverview has a median age of only 29. Playfair Park - Lynda Park - Guildwood Estates, directly adjacent to it, with an age median of 49.1. The oldest age median in the area (except for East Industrial, quite a bit further east, with an age median of 65.9) is found south of Alta Vista in Hunt Club Woods – Quintarra – Revelstoke, with an age median of 51.1. The trans-generational demographic character of the site in question is conducive to a multi-use development. This thesis seeks to take advantage of the demographic range architecturally and pursue a design form that welcomes all age ranges.

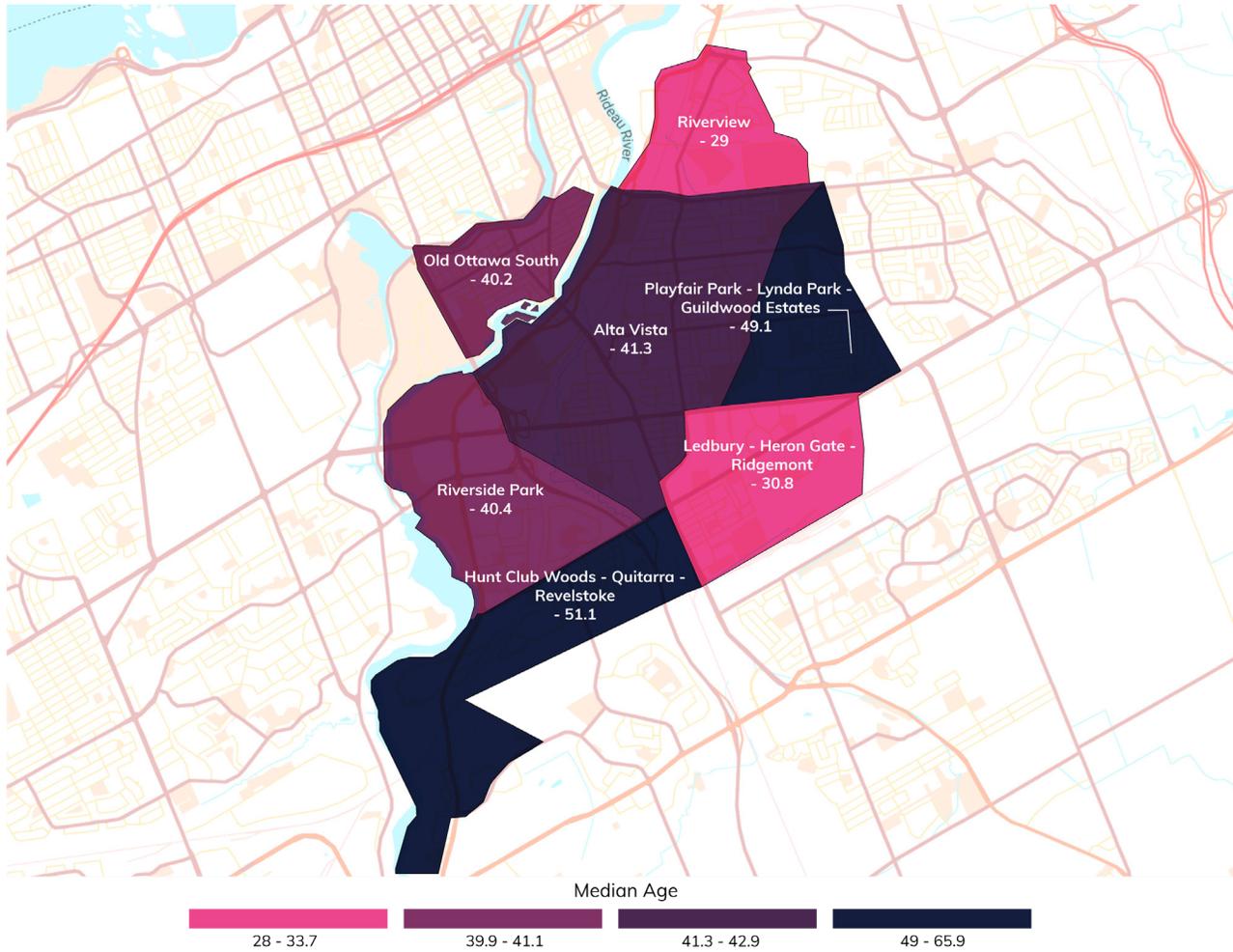


Figure 19  
Age distribution for Alta Vista and its adjacent neighbourhoods

## Immigration

The site pulls in participants from all walks of life: the new Canadian and the established ones, the high-income earner and the modest income earner, the owner and the renter, the hybrid car driver and the public transportation user. All these members of the community come together to form a unique neighbourhood. The site as it sits today has not yet risen to the occasion. As attested by the census statistics, the neighbourhood of Alta Vista and its vicinity are richly diverse and multicultural. A breakdown of the immigration percentages in the area shows that Alta Vista is a diverse neighbourhood, with 29.7% of the total population being first-generation immigrants and 23% being second-generation immigrants. Adjacent neighbourhoods are even further diversified. Ledbury - Heron Gate - Ridgemont has 52% of its total population as first-generation immigrants, and Riverview, with 44.8% of its total population as first-generation immigrants. The neighbourhood of Riverside Park, just southwest of Alta Vista, has 35.6% first-generation immigrants. The least diverse area adjacent to Alta Vista is the neighbourhood of Old Ottawa South, and it still has 21.3% of first-generation immigrants.<sup>40</sup>

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40 "Welcome to Ottawa Neighbourhood Study." Ottawa Neighbourhood Study. Accessed March 2022. <https://www.neighbourhood-study.ca/>.

Statistics Canada divides Alta Vista into three sections, southern, central and northern.<sup>41</sup>

#### Alta Vista – Southern portion

In the southern portions of Alta Vista, the immigrant population in private households mostly come from countries in Asia and from the Americas, Europe and Africa. The southern section of the map has an Asian population of 420 people mostly coming from Lebanon and China, 120 people come from Africa in countries like Ethiopia and Somalia, 400 people come from Europe with most people coming from Italy, and 105 people come from the Americas with an even distribution of 10 people each from the countries of El Salvador, Jamaica, Trinidad and Tobago, and 35 people living in the United States.

#### Alta Vista - Central portion

Moving to the central region of Alta Vista, there is a noticeable difference in size from the selected places of birth distribution. 825 people came from Asia mostly from China and Lebanon, but there are also a good number of people who came from Sri Lanka, the Philippines, Pakistan, Lebanon, South Korea and India. 345 people from Africa mostly from Egypt and Ethiopia, and 365 people from Europe with a fairly even distribution of people between the countries of Bosnia and Herzegovina, Croatia, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Roma-

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41 The census tract has several codes for different geographic areas: 5050006.00 for north of Alta Vista, 5050005.00 for the centre of Alta Vista, and 5050004.00 for the southern part of Alta Vista. All information gathered from Statistics Canada, Government of Canada, "Census Profile, 2016 Census," Government of Canada, Statistics Canada, August 12, 2021, <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>.

nia, and the United Kingdom, and 250 people from the Americas also had a fairly even distribution of people between the countries of Brazil, Colombia, El Salvador, Guyana, Haiti, Jamaica, Mexico, Peru, Trinidad and Tobago and the USA

#### Alta Vista - Northern Portion

The northern region of Alta Vista is mostly comprised of people from Europe and Asia. 385 people came from Europe mostly from Poland and France. 335 people came from Asia mostly from Lebanon. Only 40 people came from Africa, mainly from Egypt and the Republic of South Africa. 105 people came from the Americas, 100 of which are evenly distributed between Guyana, Jamaica, Mexico, Peru, Trinidad and Tobago, and the remaining 45 came from the United States.

It is clear that the neighbourhood is profoundly diverse from a social standpoint. This thesis appreciates the opportunity posed by this social makeup of diversity and rich culture.

# Site Analysis - Soundscapes of Bank at Heron

Alta Vista is a multicultural neighbourhood in the first ring of suburbs south of the core of the National Capital. One of the first suburbs built outside the city core after World War II, Alta Vista encompasses large groupings of single-family houses set behind the commercial arterial road which is Bank Street. The site is bounded to the east by Bank Street, to the south by Heron Road, to the north by Cecil Avenue, and to the west by a service drive that separates the site from a new rental housing complex named Lunen Haus, the recently completed condo-style apartments that opened in 2021 referred to above.<sup>42</sup> Alta Vista combines high, medium, and low-income families, and corresponding built fabrics. Notably, humble, small wartime houses fill the streets immediately to the west of the site, while further east in the heart of old Alta Vista, large mid-century modern ranch-style houses extend gracefully on half-acre lots under the canopy of mature trees.

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42 This real-estate advertisement for an apartment at Lunen House disseminated on "Padmapper.com" reads: "Lunen Haus is Ottawa's newest, slickest, modern rental community. With over 350 spectacular suites for modern living, be the first to live in your very own 2 bedroom condo-style dream suite. You'll enjoy all the added comforts of condo life minus the condo commitment. One bedroom starts at \$1600 and two bedroom starts at \$1850."



Figure 20  
Site plan of the corner of Bank and Heron highlighting minor streets



Figure 21  
Typical wartime home - 01



Figure 22  
Typical wartime home - 02



Figure 23  
Low-income residencies



Figure 24  
Mid to high-income residencies.

## Site and Neighbourhood: An Experiential Description

As a typical North American commercial vernacular streetscape, there is nothing remarkable, out of the ordinary, striking, or impressive about this part of suburban Ottawa. With a few exceptions, the built fabric is one or two stories high. Bank and Heron offer humble streetscapes that serve their function. Before examining the site proper, on the North-West corner of Bank Street and Heron Road, it is useful to examine the surrounding areas first. Across the site on Bank street are restaurants and a few small businesses. Across Heron Road sits a large and popular Canadian Tire store alongside a gas station surrounded by a vast parking lot. Parking lots happen to also be the site's central theme. The site is a car-dominated world. A meaningful connection to the other side of Bank Street remains a challenge because Bank Street is six lanes, in this area. A walking connection across Heron Road and the Canadian Tire is somewhat less hostile.

Ottawa maps identify the site at the corner of Bank Street and Heron Road as "Bank Street Plaza." Two buildings (one large and one small) and an expansive parking lot now occupy the site. The linear single-story building mass which is

set back from Bank Street contains a large Shoppers Drug Mart (that houses a Canada Post counter and a pharmacy, and is open till midnight), a TD Bank, an Appletree Medical Centre, and a chiropractor. The smaller building is set close to the corner and houses a dental clinic. These facilities are arranged to make it impossible to build a connection between the Lunen Haus apartment towers with Bank Street. The parking lot opens up to Heron Road and Cecil Avenue, but there is nothing much that is worth walking into. The movement of cars on the lot forces pedestrians to only walk on the sidewalk attached to the buildings. The parking lot is frankly an uncomfortable space to be in because of the number of vehicles constantly moving, entering and exiting. As it stands right now, Bank Street Plaza is an uninviting place that does not serve the neighbourhood and the community within it. It is grey, uninspired, generic, and does not assist the area in making a transition toward a more urban and pedestrian-friendly identity.

## Preliminary Analysis for the Site's Development: Identifying Concerns

The following images attempt to capture the nature of the site. The photos capture the challenges this area poses to pedestrian life. The photographs, adjusted with Photoshop, isolate key content. Coloured layers highlight some of the content of the photographs to clarify the situation and hint at possible design aims.



Figure 25  
View of Bank Street looking north



Figure 26  
View of Bank Street east of the site



Figure 27  
View of Canadian Tire from Heron Road south of the site



Figure 28  
Parking lot of Bank Street Plaza facing north



Figure 29  
Parking lot of Bank Street Plaza facing south

It would be hard to imagine that passersby in this area would have their attention fully grabbed or their emotions moved. Yet, there is beauty in these uninteresting streetscapes and appeal in the simplicity and authenticity of their makeup. This site undoubtedly offers an opportunity for improvement and a chance to create exciting public spaces for the people who live nearby. The site, nearby businesses along Bank Street including the Canadian Tire, and of course, the Lunen apartment buildings and residential streets all must be harmonized. The community's existing properties and qualities hold potential. It is time to give them a new level of appreciation. But how to achieve this through architecture?

The famous book *Learning from Las Vegas* (1972) by Denise Scott Brown, Robert Venturi, and Steven Izenour aimed to understand urban sprawl by looking into the commercial strips and architectural symbolism of Las Vegas. The book ultimately disproves the notion that there is a distinct separation between high architecture and the architecture of the commercial strip. Bank Street is such a commercial strip, devoid of “high value,” but replete with architectural potential just the same. This thesis aims to respond to Bank Street's humble and authentic character, embodying the same values brought forward in *Learning from Las Vegas* (1972).<sup>43</sup>

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43 Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (Cambridge, MA: MIT Press, 1977).

Building on the above site analysis, and inspired by the ideas in Learning from Las Vegas, we ask: What should be the design's direction to yield a rich and welcoming atmosphere that highlights the streetscapes? What is a way to unify the fragmentary parts of the site together? Is there a design language that brings ignored and overlooked elements of the street to the foreground? The thesis is here brought to ask questions about form and sources of inspiration, as well. Might music, perhaps even a specific kind of music (open-ended, contemporary, and complex in structure), offer a source of inspiration for the architecture of such "imperfect" sites? The following chapter ventures into this question.

## Next Step: Seizing an Opportunity, Reimagining Bank Street Plaza

Before embarking on a design for this site, it is important to reiterate the design aims from the above analyses and descriptions. These revealed that the Lunen apartment dwellers (and other residents of this area) do not have enjoyable public spaces in which to gather outside the home. This is a concern. Another is to do with the current buildings' placement on the site in relation to Bank Street and to the Lunen housing grouping. As previously stated, the row of buildings from Shoppers to TD Bank forms a long mass that prohibits civilian flow. The entrance to the apartment buildings is not visible from the site, and conversely, a tall wall behind Shoppers Drug Mart is all that is offered to the residents of the Lunen apartment buildings. Again, despite its name -- "Bank Street Plaza" -- is an unwelcoming parking lot, and walking through it does not feel safe.

The study of age distribution, income, and immigration conducted earlier in this thesis painted a clear picture of the area's richly diverse cultures and here provides the basis for formulating a design strategy for the area. The Lunen Haus

pulls in new members of the community, creating a more populated corner. This is a tremendous opportunity to revitalize and improve the quality of this neighbourhood while celebrating Bank Street as a connector between different communities.<sup>44</sup> This corner could serve as a focal point and hub for various activities.

The design solution proposed in this thesis is multifaceted but involves replacing the existing buildings with a new multi-use building and moving the parking lot below grade. Unlike the existing large “barricade style” building that runs along the entire length of the site, the new building will open up neighbourhood connections, including a ground-level walkway to the Lunen Haus rental tower development (the largest residential complex near the site). The plaza has the opportunity to guide the movement of people across the site and to be a central hub to host dynamic and active spaces of participation.

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44 MMM GROUP, McCORMICK RANKIN, Greenberg Consultants Inc., and Jp2g Consultants Inc., “Bank Street Today,” in Bank Street Community Design Plan: Rideau River to Ledbury Park, (Ottawa, ON: City of Ottawa, 2012), pp. 7-23, 21.



Figure 30  
View of the site from Bank Street facing west, showing the Lunen Haus apartment towers



Figure 31

The positioning of Shoppers Drugmart prevents a convenient connection between the apartment buildings and the businesses along Bank Street.



Figure 32  
Position of TD Bank prohibits opportunities for open space near the apartments



Figure 33  
Back wall of the Shoppers Drug Mart prohibiting access to Bank Street from the apartment



Figure 34

Hostile environment of Bank Street Plaza's parking lot, forcing people to the sidewalks attached to the buildings



Figure 35

Aerial view of the site, highlighting Shoppers Drug mart in red, TD Bank in Green, and Appletree medical centre in pink, forming a linear solid form that blocks the connections between Lunen Haus and its adjacent streets.

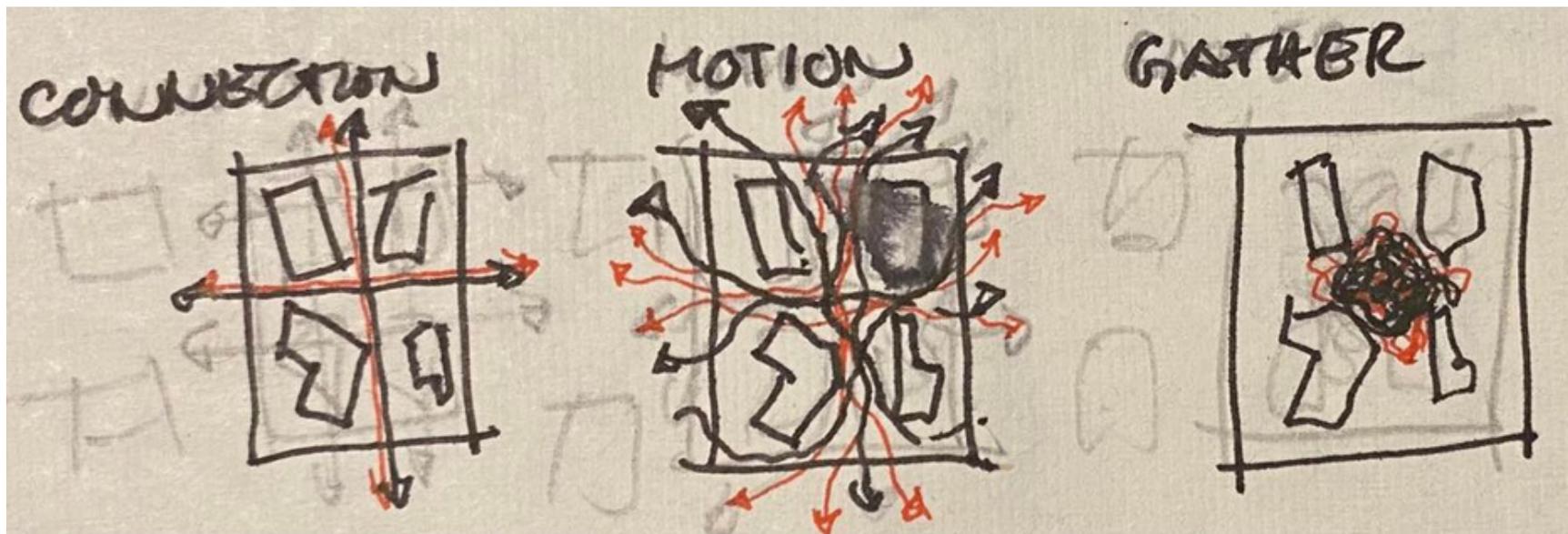


Figure 36

Preliminary sketch showing the intention, vision, and focus for the plaza's redevelopment. It focuses on Connection, Motion, and Gathering. The buildings on the site will be rearranged to meet these criteria in order to create a dynamic and welcoming space for the community

# How to Approach Redesigning an Ordinary Commercial Strip Site?

Simply moving the existing buildings around would solve some of the problems, but such a vibrant setting deserves more than just a re-iteration of the existing space. Bank Street Plaza deserves careful planning and inspiration. This thesis imagines a new corner development that could act as a crossroad between programs and cultural expressions, catering to multiple generations and social groups. This thesis wishes to get away from the generic “inert” box architecture that dominates suburban Bank Street and to expand the design palette to move suburban Bank Street into a much more creative realm. What is more, the thesis pursues a new kind of development and architecture that has the power to trigger emotion. It must be possible to redevelop this corner to provide a space that showcases these streetscapes and “samples” them in a new way. How interesting it would be to highlight their “uninteresting” nature and to derive a stimulating built environment out of the site’s “uninteresting” elements. Could these even provide the core of the project’s development? Earlier, we asked about where to turn for inspiration. We now ask a more precise question. What design approach and language is most likely to yield a rich and welcoming building and sound-filled plaza, and to create diverse spaces for sharing and connecting? We turn to Lo-Fi music.



Figure 37  
Bank Street facing north-west highlighting the ordinary look of residential and commercial buildings



Figure 38  
Past the intersection between Bank and Heron facing south-east, highlighting its ordinary buildings



Figure 39

Mixing several facades running along Bank Street, showcasing its unexciting character

# Lo-Fi Music as Architectural Method

Jazz's nostalgia, the familiarity of hip-hop, and the immersion of low fidelity; the imperfections of recording put into the spotlight, fully aware of the hiss and the static in the background. These are Lo-Fi's defining aesthetics.<sup>45</sup> Lo-Fi music is accessible and familiar, and although it's not everyone's cup of tea, no one can deny that it has a unique effect on people's moods.<sup>46</sup> Lo-Fi music was a comforting genre during the pandemic, even identified as a music to listen to during social distancing.<sup>47</sup> The project of finding architecture in Lo-Fi music will lead into the realms of "nostalgia" and "coziness," attributes frequently associated with Lo-Fi music, but also to multiculturalism and collagistic creative thinking. Ideas surrounding the intersection of music with architecture seen in the first part of this thesis set the stage for a study of Lo-Fi music as an inspiration for architectural design. Looking into how Lo-Fi music could connect and be imple-

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45 MasterClass Staff. "Lo-Fi Music Guide: History and Characteristics of Lo-Fi Music," MasterClass, 2022, <https://www.masterclass.com/articles/what-is-lofi-explained#what-is-lofi>.

46 REVERBLXND. "What Is Lo-Fi... Why Is It so Popular?" REVERBLAND, 2021, <https://www.reverbland.com/what-is-lo-fi/#:~:text=The%20idea%20that%20Lo%2DFi,while%20listening%20to%20Lo%2DFi>.

47 Quinn, Cassidy. "Top 10 Non-News Live Channels to Watch on YouTube While Social Distancing." KGW, 2020, <https://www.kgw.com/article/entertainment/top-live-channels-to-watch-on-youtube/283-e0ea8e0b-c561-4740-a77e-0a371d659d72>.

mented into the site, my first thoughts are that the inhabitants (their movements, noises, presence) are the background noise that needs to be amplified to bring the neighbourhood's groove back. We here recall how the concept of "stretto" guided Steven Holl's design for a house.

Similarly, we will analyze and look for elements within Lo-Fi music we can translate into architecture. Lo-Fi music seems fitting for this type of development. Lo-Fi has a unique deliberate stripped-down quality as part of its aesthetic. Like the site in relation to Ottawa, Lo-Fi music overlaps imperfect audio quality on top of a well produced hip-hop drum beat. Music composition that highlights imperfections and works with sounds that are considered mistakes or "uninteresting" seems to offer a promising and appropriate methodology for design in this neighbourhood. The following section, therefore, explores the properties of Lo-Fi music in more depth, to prepare a translation into architectural design.

### Properties of Lo-Fi Music

A polished recording does not always represent the best sound. It is easy to miss components of the recording process that actually possess unique beauty. Such is the case for Lo-Fi music. The stripped-down quality of Lo-Fi is its most distinguishable and unique aesthetic trait. But how does Lo-Fi differ from other genres of electronic music sound?

Since the late 20th century, electronic music has branched off into various categories combining elements of two or

more genres resulting in multiple subgenres of Electronic Dance Music (EDM).<sup>48</sup> These subgenres each have their own way of immersing their audiences, but they are connected by a common trope known as a “drop.”<sup>49</sup> Imagine a melodic phrase ascending in pitch accompanied by a drumbeat dividing in measure, coming to a high peak of sonic tension. Suddenly, a deep bass thrashes out of the speakers, booming, vibrating and reverberating, resolving the sonic tension; this is a moment of pleasure in the music and even dopamine release. What has just been described is called a “drop” or beat drop, or bass drop, and it has been an important element of EDM) since the 1970s.<sup>50</sup> Unlike EDM, Lo-Fi music does not have an emphatic drop as a form of crescendo. Instead, Lo-Fi relies on a steady beat and harmonious chords to create a calming effect. Lo-Fi’s affinity to jazz music -- a genre that is conceptually tied to relaxation and tranquillity -- lies in this.<sup>51</sup> Arranging a jazz-inspired track on a slow hip-hop drumbeat creates an interesting intersection. Is it a clash between two musical eras? Perhaps, but it can also be described as a dance between two partners. The combination of jazz music with hip-hop drum beat while recording in low fidelity is central to Lo-Fi music. As Lo-Fi music grew, it popularized words such as chill, vibes, bop, and other terms evoking nostalgia and coziness. Lo-

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48 Kembrew McLeod, “Genres, Subgenres, Sub-Subgenres and More: Musical and Social Differentiation within Electronic/Dance Music Communities,” *Journal of Popular Music Studies* 13, no. 1 (2001): pp. 59–75, <https://doi.org/https://doi-org.proxy.library.carleton.ca/10.1080/152422201317071651>, 61.

49 Charlie Harding, “How the Pop-Drop Became the Sound of 2016,” *Billboard*, 2016, <https://www.billboard.com/music/music-news/pop-drop-sound-of-2016-chainsmokers-justin-bieber-switched-on-pop-7625628/>.

50 Ibid.

51 Kendall Deflin, “Why Jazz Is the Most Stimulating Genre of Music, According to Science,” *Live For Live Music*, 2016, <https://liveforlive-music.com/features/why-jazz-is-the-most-stimulating-genre-of-music-according-to-science/>.

Fi music is loved by many. Psychologist and director of “Today’s Future Sound,” Elliot Gann suggests that Lo-Fi’s appeal may come from its transparency. Gann described Lo-Fi as “like [you’re] hearing music come through the walls.”<sup>52</sup> This condition separates Lo-Fi music from the rest of other electronic music. The ability to bring an audience deep into the sounds present in the recording is analogous to welcoming the audience into the artist’s dimension.

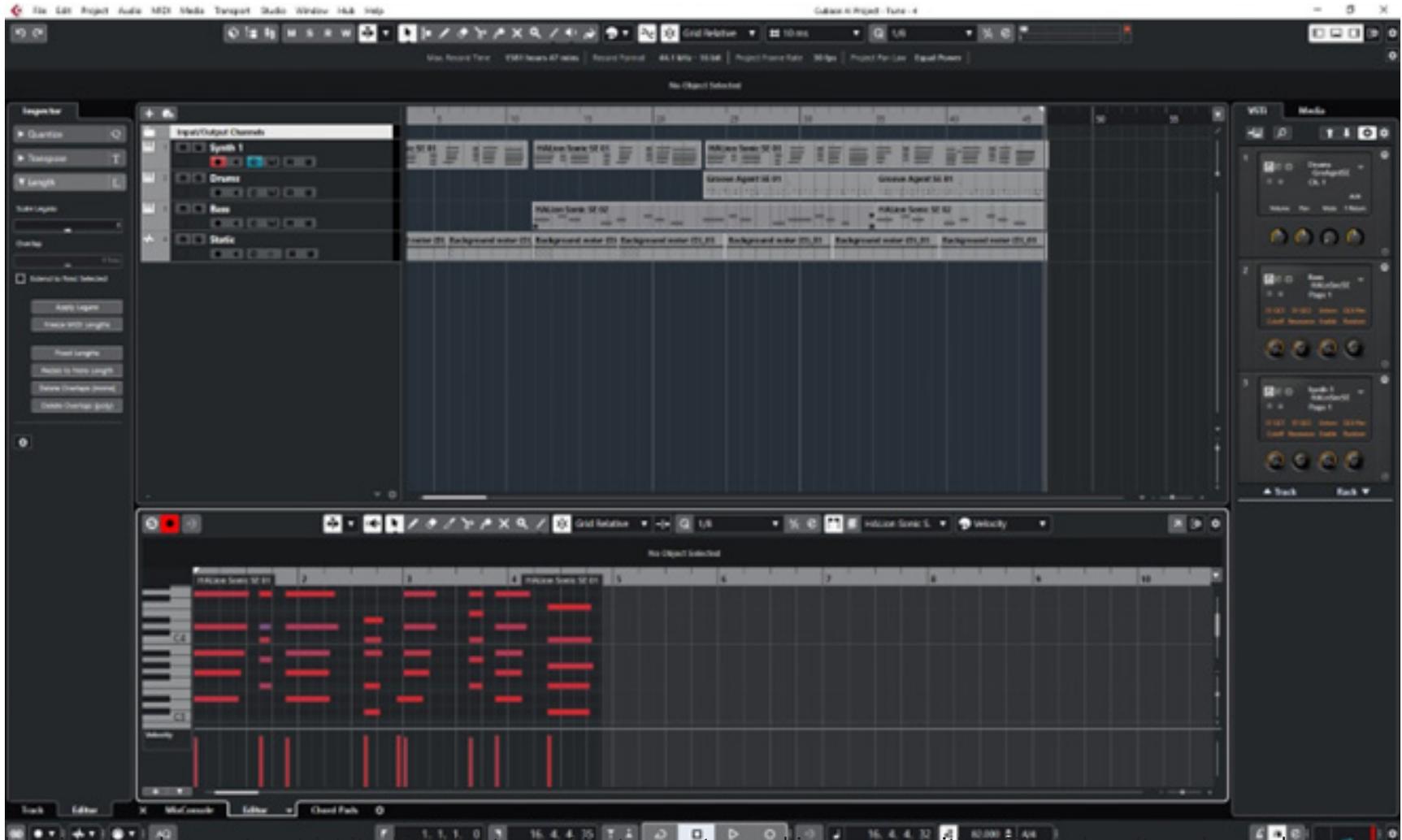
### How Lo-Fi Music is Recorded

Lo-Fi music is layered in structure, bringing together recognizable harmonic devices from modern jazz with hip-hop grooves from the 1980s. Lo-Fi music is generally composed using a Digital Audio Workstation (DAW).<sup>53</sup> A musician plugs into an audio interface any musical instrument, typically a synthesizer, to access a comprehensive catalogue of different sounds. Lo-Fi musical pieces are inherently simple in construction. They are often played in a slower tempo using chords typically found in jazz music while accompanied by a hip-hop drumbeat. Recordings typically include the natural hiss in the background.

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52 Leslie Nemo. “Why Lo-Fi Music Draws Listeners In,” Discover Magazine, 2020, <https://www.discovermagazine.com/mind/why-lo-fi-music-draws-listeners-in>.

53 Tyler Connaghan. “How to Make Lofi Music: The Ultimate Guide,” eMastered Blog, 2021, <https://emastered.com/blog/lofi-recording-and-chord-progression>.



Lo-Fi music does not restrict itself to the type of instruments used in a composition. Though guitars, bass, drums and

Figure 40  
A screenshot of Cubase, a type of Digital Audio Workstation (DAW).

piano are popular, other instruments like brass, strings and wind instruments are sometimes heard in a Lo-Fi song.<sup>54</sup> However, occasionally a song does use non-traditional instruments. Sometimes musicians sample from another piece of music. Sampling is the practice of repurposing a segment of one audio recording for use in another.<sup>55</sup> To put it simply, it is “copying” a section from an existing recording, and “pasting” it into a new recording. This process is not as frivolous as simply copying another artist’s work. Sampling is a creative act of integrating an “altered and [derivative] work” into a piece of new music. In an interview conducted with Philadelphia-based electronic musician Ramble Jon Krohn a.k.a “RJD2”, the musician explained the creativity behind sampling music. He says, “thinking of sound not as a performance but as a piece of recorded audio is so radically different than the experience of playing music in a traditional sense both in its experience and its outcome.”<sup>56</sup> In this interview, RJD2 discussed the creative process and complexities of moulding and re-shaping sampled sound to create new music. The notions of copying and pasting, and of deviating old uses toward new ones, evoke architectural and urban possibilities. The concept of sampling, when translated architecturally, offers a powerful solution to the site’s needs. The task is to transpose Lo-Fi principles to the design of a multi-use and culturally diverse plaza.

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54 Ibid..

55 Kevin Cornell. “Music Sampling: Breaking Down the Basics” Tunecore, 2016. <https://www.tunecore.com/blog/2016/08/music-sampling-breaking-down-the-basics.html>.

56 Quote from Ramble Jon Krohn “RJD2” during an interview with Soundfly, “The History and Art of Sampling — RJD2: From Samples to Songs.” (Youtube, 2021). [https://www.youtube.com/watch?v=hjSElxzP52o&t=7s&ab\\_channel=Soundfly](https://www.youtube.com/watch?v=hjSElxzP52o&t=7s&ab_channel=Soundfly)



Figure 41

A photograph of Steinberg UR22mkII, a type of audio interface used to record musical instruments including but not limited to electric guitars and synthesizers.

A Lo-Fi song that uses samples is “Coffee and Cigarettes” by Jazzinuf (2016), a multi-instrumentalist musician from Manhattan who blends “swinging beats” with “harmonious soul/jazz/funk-inspired arrangements” in his work.<sup>57</sup> This piece -- which employs two versions of “Penthouse Serenade,” Errol Garner’s of 1987 and Nat King Coles’ of 1951-1952 -- samples jazz piano in a contemporary setting by speeding up the tracks and adding a hip-hop drumbeat.

### “Coffee and Cigarettes”

The song begins with an excerpt from the soundtrack of the film *Pulp Fiction* (1994), directed by Quentin Tarantino, layered upon the intro section of Errol Garner’s “Penthouse Serenade,” which plays softly in the background. In the soundtrack, the character of Jules Winnfield expresses his opinion on coffee made by another character named Jimmie Dimmick. After the line “what flavour is this?,” “Penthouse Serenade,” is brought to the foreground, joined now by a hip-hop drumbeat. “Coffee and Cigarettes” plays the main chord progression of the serenade four times, alternating a full eight-measure excerpt with a truncated six-measure one. Jazzinuf then filters out the recording’s high-end EQ, creating an “underwater” feel, stripping down the drumbeat to only include the snare drum.

After the underwater section, the song “emerges” and is met with Nat King Cole’s “Penthouse Serenade (When We’re Alone).” Cole’s version has a half-time feel. It is softer, more melodic and has an opposite effect to Errol Garner’s rendi

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57 Description of Jazzinuf under his artist profile on Spotify: “About Jazzinuf.” Spotify. <https://open.spotify.com/artist/6rJ1GwtHin2BJb-KLuNn9pi>.



Figure 42  
Album cover for "Coffee and Cigarettes"  
(2016) by Jazzinuf



Figure 43  
Photograph of Jazzinuf.  
image taken from Jazzinuf's artist page on Spotify:  
<https://open.spotify.com/artist/6rJ1GwtHin2BJbKLuNn9pi>

tion, and carries the rest of the piece. Jazzinuf ends the song by layering in another line from Pulp Fiction's soundtrack, the line in the movie in which Jimmie Dimmick comments on how good the coffee is. The idea of bringing background to the foreground and inviting background elements to emerge more fully is a powerful idea with clear architectural translations.

Implementing Lo-Fi music into the design proposal in this thesis poses challenges. The genre is complex, and generalizing risks missing out on essential details. The thesis, therefore, chooses one Lo-Fi song, “Coffee and Cigarettes,” to both represent Lo-Fi, and to serve as an architectural template and site plan. The following quote from the online journal ArtJournalRadar summarizes sampling’s power:

“[Nevertheless], sampling is still one of the most promising areas for future music development. As a result, it is a way to pay homage to other artists, to build communities, and to acknowledge the contributions of other artists. Borrow riffs to make their own songs and “quote” one another.”<sup>58</sup>

As a Lo-Fi song that utilizes sampling, “Coffee and Cigarettes” offers interesting architectural ideas. For the re-design of Bank Street Plaza -- located in a neighbourhood in transition that calls for an inclusive design -- the idea of “sampling” as a design methodology is appealing. Turning “Coffee and Cigarettes” into the project’s primary source will lead to a blend of compositional elements between jazz and hip-hop. This combination, guided by Lo-Fi aesthetic principles, promises to render a polyphony of architectural experiences. The thesis asks, “which properties of Lo-Fi music can architecture restate”? We will search for methodologies to translate Lo-Fi into architecture on a physical and graphical level on the one hand, and on an experiential and symbolic level on the other.

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58 Brittney (no surname). “Reasons Why Music Sampling Is Artistic Expression ...” ArtRadarJournal, October 1, 2021. <https://artradar-journal.com/art-education/reasons-why-music-sampling-is-artistic-expression/>

# Precedent Studies of Drawings that Bridge Music and Architecture

The previous chapter went over Lo-Fi music's properties and aesthetics and the variances in the recording process. It discussed the practice of sampling as artistic expression, and described the structure and progression in the piece "Coffee and Cigarettes." This chapter examines drawings that bridge architecture and music and that attempt architectural translation of a piece of music.

Let us begin with the graphic score. The score is kind a of "marking" and will inspire the preliminary drawings of this thesis. The scores of the eminent late Canadian composer, music educator, and acoustic ecologist, R. Murray Schafer (1933 - 2021), are especially architectural. Creating a graphic score of "Coffee and Cigarettes" will form the foundation for creating solids and voids on the site. Graphical music notations, commonly known as "graphic scores," portray music using images and symbols instead of dots on a line and invite graphic invention.<sup>59</sup> This is because music is not easily written. Modern composers, in particular, invent new score graphics to capture and describe qualities of sounds

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59 School of Noise, "What Are Graphic Scores?" Last edited December 12, 2021. <https://www.schoolofnoise.com/global-graphic-score-project/what-are-graphic-scores/>

or the character of an instrument, volume (how loud a section is to be played), or mood.<sup>60</sup> Scores use many kinds of drawing techniques to convey an idea. Some graphic scores, such as those of R. Murray Schafer, even use shapes and colours, while others enlarge symbols and arrange them non-linearly. Schafer's scores are very different from classical musical scores as a result. A musician may not be able to read precisely what is being represented, but they will understand the feeling intended by the composer, not unlike how one interprets an abstract painting. There is no wrong answer, but the way shapes and colours are arranged and accentuated helps guide the musician to a particular idea. Graphic scores aim to introduce another dimension to musical experience.

All images taken from Classic FM's "Art and music collide in these 20 stunning graphic scores" at <https://www.classicfm.com/discover-music/latest/graphic-scores-art-music-pictures/ligeti-artikulation/>

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60 Mel Spencer. "Crumb - Twelve Fantasy-Pieces after the Zodiac for Amplified Piano." Classic FM, August 20, 2015. <https://www.classicfm.com/discover-music/latest/graphic-scores-art-music-pictures/crumb-twelve-fantasy-pieces-after-zodiac-ampl/>.

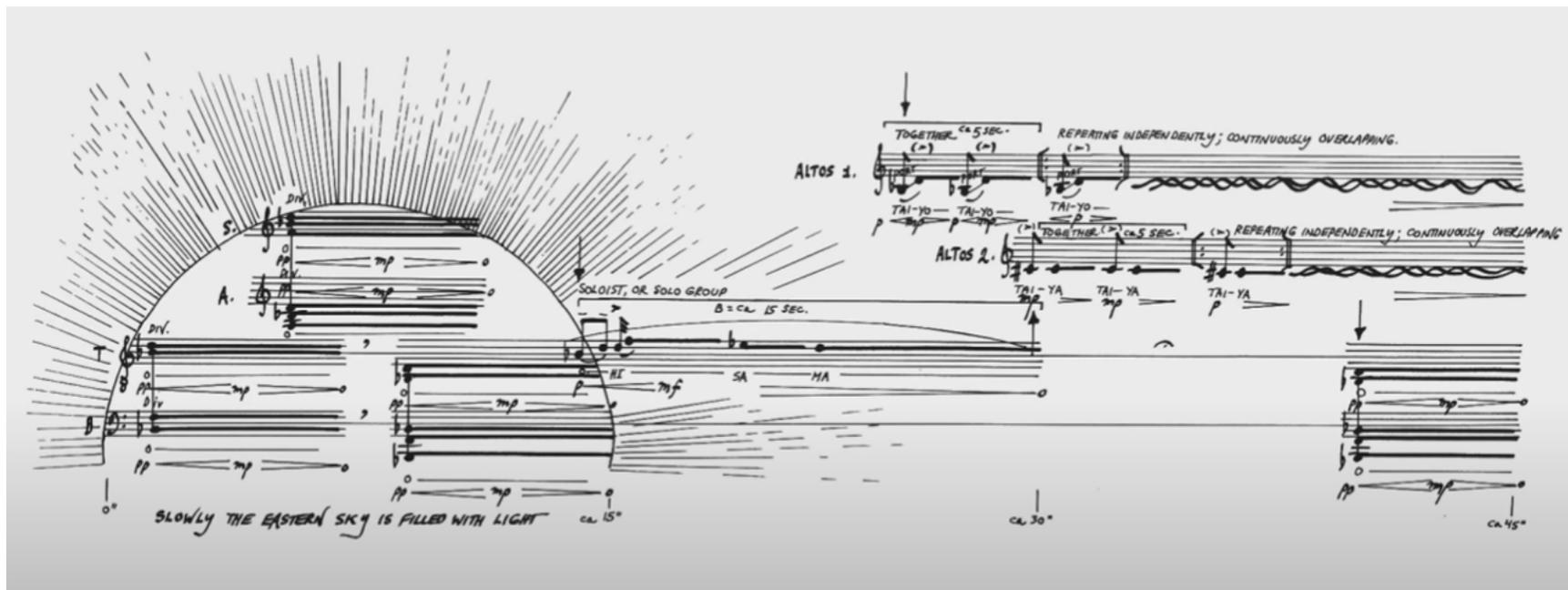


Figure 44

Sun – R. Murray Schafer

Image is taken from Vancouver Chamber Choir's performance of Sun by R. Murray Schafer at <https://video.vancouverchamberchoir.com/en/c/sun.47>



Figure 45  
McQueen - Picnic

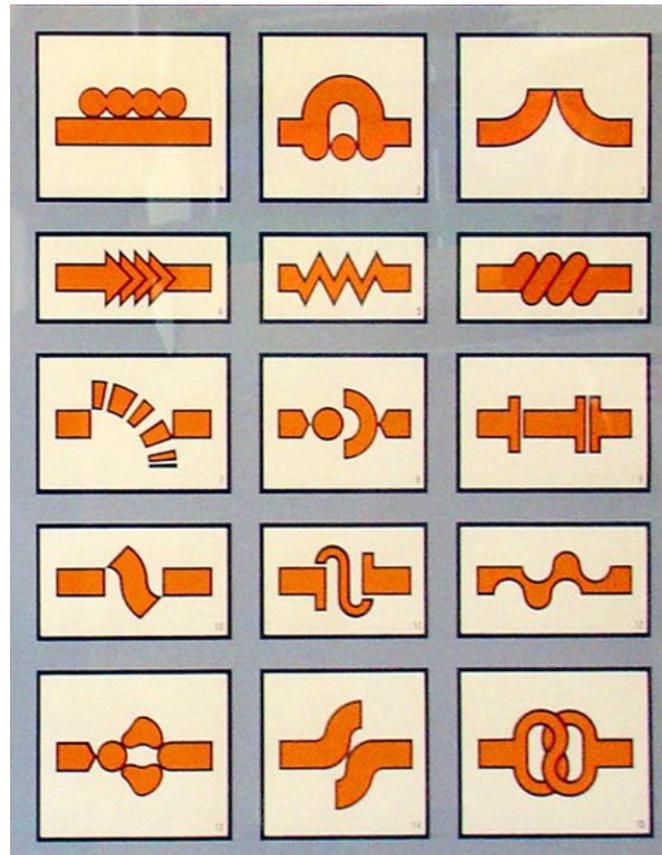


Figure 46  
Philips - Ornamentik

György Ligeti | **Artikulation** | Elektronische Musik  
 Hörpartitur von Rainer Wehinger | Electronic Music

The score consists of five rows of musical notation. Each row contains several measures, with some measures containing multiple lines of notation. The notation includes rhythmic patterns, pitch contours, and specific notes. A legend in the top right corner explains the symbols used. The score is organized into five rows of measures, with a 'SCHOTT' logo in the bottom right corner.

Figure 47  
 Ligeti - Artikulation

Like musical scores, Architecture passes through graphic markings. Music and architecture are distinct disciplines and establishing a reliable method that links them is not simple. The best way to approach the problem is by looking at what their common denominator. Graphic scores imply notes, rhythm, dynamics, and other elements of music, and do so in a visually artistic manner, using colours, lines and forms and help carry musical ideas into architectural language. In the musical score, like in the architectural plan and section, there is a strong contrast between open space and solid form. The pairings between solid and nonsolid translate as enclosed versus open space, producing dynamic experiences of habitation, participation, social space, and urban life. In this design proposition, the quality of the architecture will comply with the aesthetics and themes of Lo-Fi music to produce an experience of surprise and delight.

Polish-American architect Composer and architect Libeskind produced conceptual drawings that informed the building's relationship to light, the ground, to surrounding masses, and that suggested dramatic moments and experiences in the building. As stated by Daniel Libeskind,

"[I thought about the fact that] drawing is really a score. It's just like a piece of music. It has to be interpreted by a community and [of course,] proportions, light, materiality are all implicated in the drawing, which when it comes to a building, [of course,] has to also present the space present the atmosphere of the building. A drawing has to illuminate the practice."

The following images are works of Daniel Libeskind:

All images are taken from Daniel Libeskind's TEDxDUBLIN presentation at [https://www.youtube.com/watch?v=yEkDosanxGk&t=416s&ab\\_channel=TEDxTalks](https://www.youtube.com/watch?v=yEkDosanxGk&t=416s&ab_channel=TEDxTalks)



Figure 48  
Daniel Libeskind sketch of MGM Mirage CityCenter, Las Vegas



Figure 49  
Daniel Libeskind sketch of Denver Art Museum



Figure 50  
Daniel Libeskind sketch of Victoria Albert Museum



Figure 51  
Daniel Libeskind sketch of Jewish Museum Berlin Sketch

As will be seen further, Daniel Libeskind's drawings play an important part in inspiring the drawings that led to the architectural proposition in this thesis.

Finally, it is useful there to note the creative and dynamic urban and collagistic drawings and design work of Nigel Coates. Coates' work captures exciting urban experiences that correspond to the contemporary multicultural reality of the post-colonial metropolis. In his drawing "Caffé Bongo" (Tokyo 1988) Coates writes: "Executed after it opened, this drawing captures the intended vibrancy of one of my first built projects, a café tacked onto the front of a department store in downtown Shibuya. The architectural bricolage of the built space translated well into the mixed media technique of splurged acrylic paint, caked-on oil pastel and heavy pencil."<sup>61</sup> This thesis sees in Coates' drawings a resonance with Lo-Fi's spirit. Their vibrancy and colour are also very inspiring.

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61 Thank you to Kenneth Hayes for informing me about Nigel Coates' works: "Narrative Architecture." Drawing Matter Narrative Architecture Comments. Accessed April 2022. <https://drawingmatter.org/nigel-coates/>.

# Translating “Coffee and Cigarette” into Pre-Architectural Drawings

Early in the thesis, the interpretive drawings of “Coffee and Cigarettes” presented in the following pages, were created. Created intuitively with hand gestures and colour choices that reacted to melodies, harmonies, and rhythms in the song “Coffee and Cigarettes,” these were immediate reactions and were made without overthinking the intricate music theory. They focus on the song’s structure and try to visually represent the song’s movement, colour, and form. The drawing serves as an embryonic inspiration for the new development at Bank Street and Heron Road.

Similarities with the drawings of the German expressionist visionary architect Hermann Finsterlin (1887-1973) were noted afterwards. Interestingly, the architect and artist Finsterlin was also a composer and his graphic visions depict a fluid, musical, embodied architectural experience in which the inhabitant “wanders from organ to organ.”<sup>62</sup>

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62 I thank Manuel Baez for pointing me to this very interesting work: Wandering from organ to organ with Hermann Finsterlin - 50 Watts, 2009. <http://50watts.com/Wandering-from-Organ-to-Organ-with-Hermann-Finsterlin>.

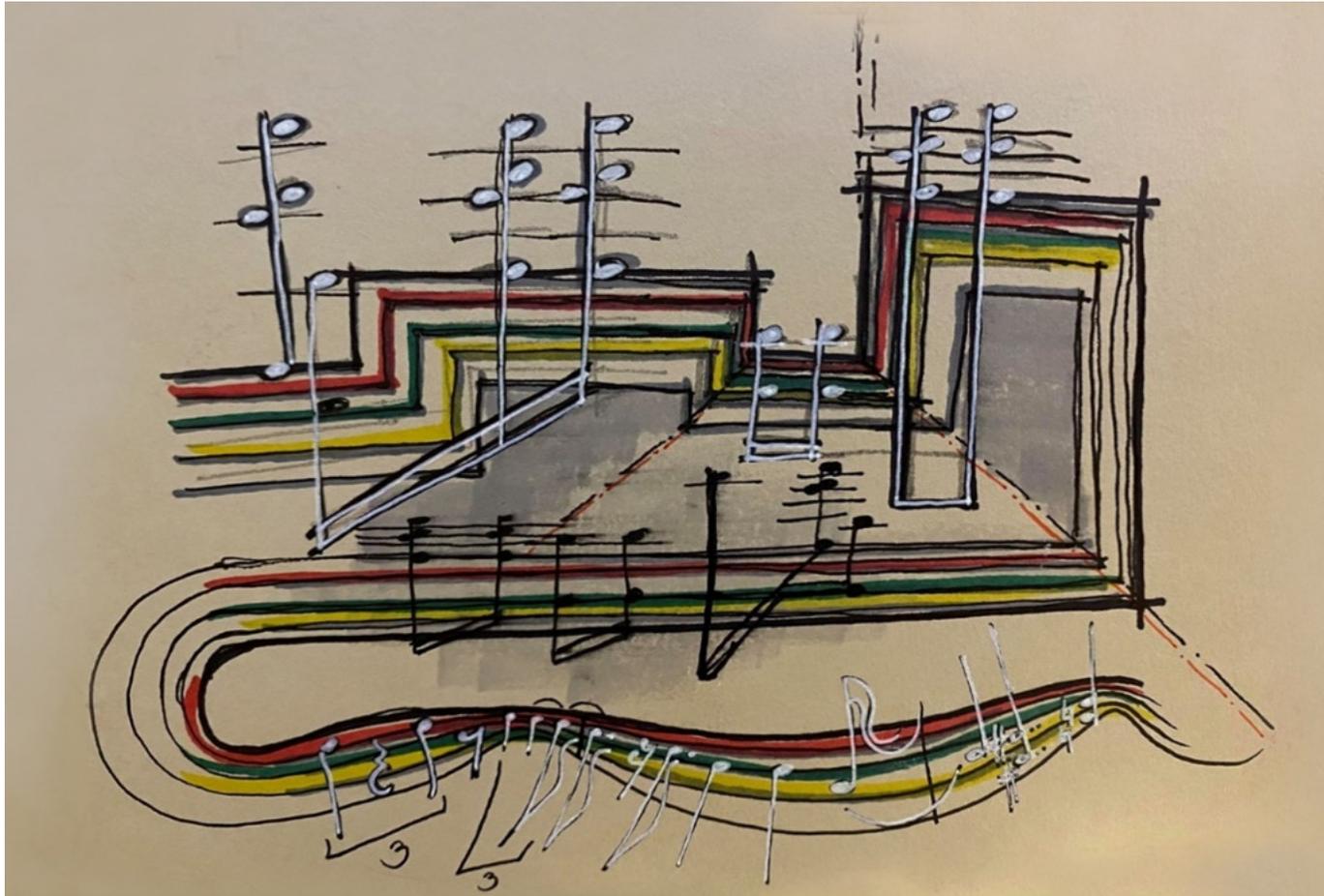


Figure 52  
Interpretive drawing 01

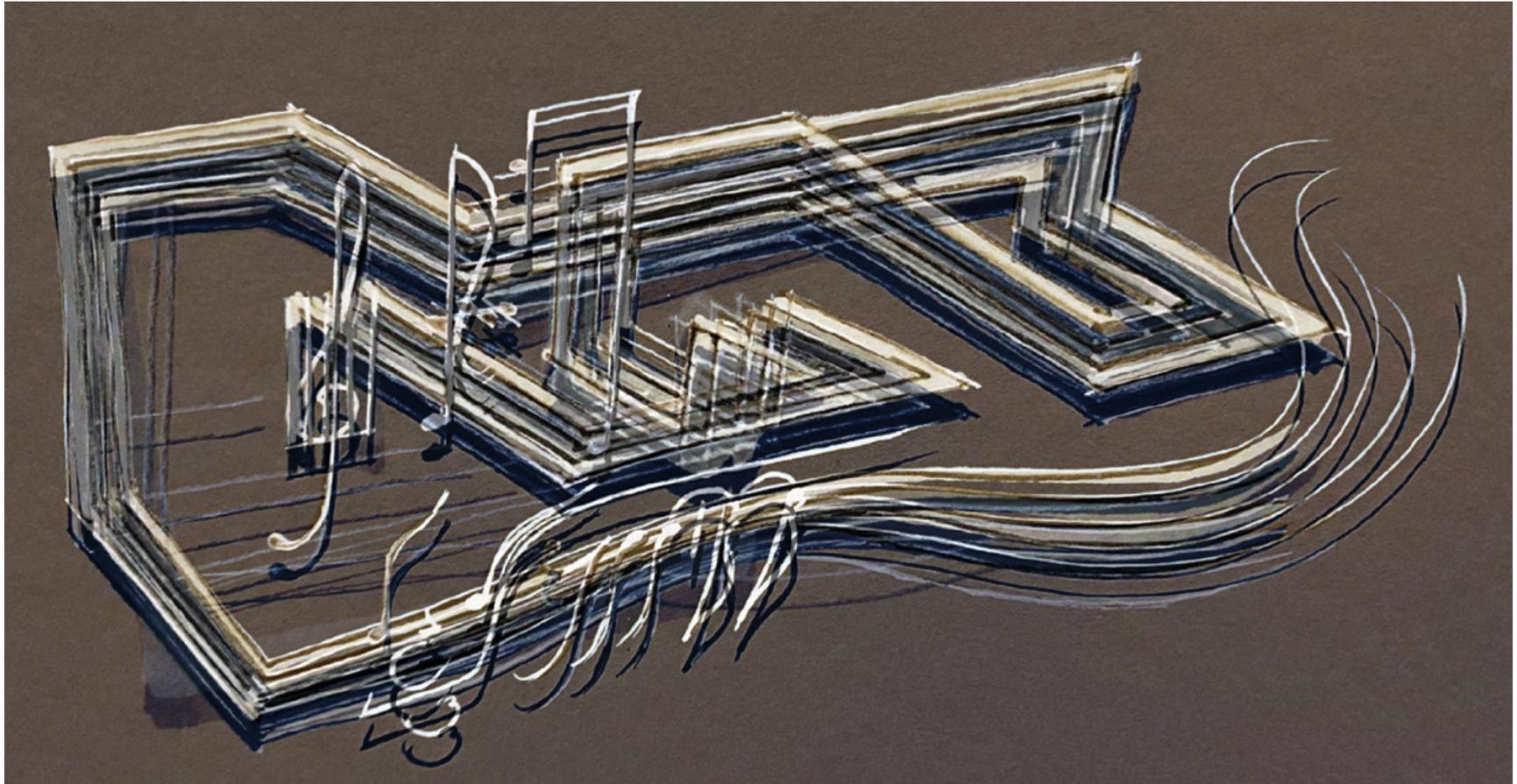


Figure 53  
Interpretive drawing 02



Figure 54  
Interpretive drawing 03



Figure 55  
Interpretive drawing 04

## Extracting Architecture from Interpretive Drawings

Building on the previous set, the following drawings focus on architecturally representing and translating “Coffee and Cigarettes.” They use architectural elements such as planes, mass, and texture.

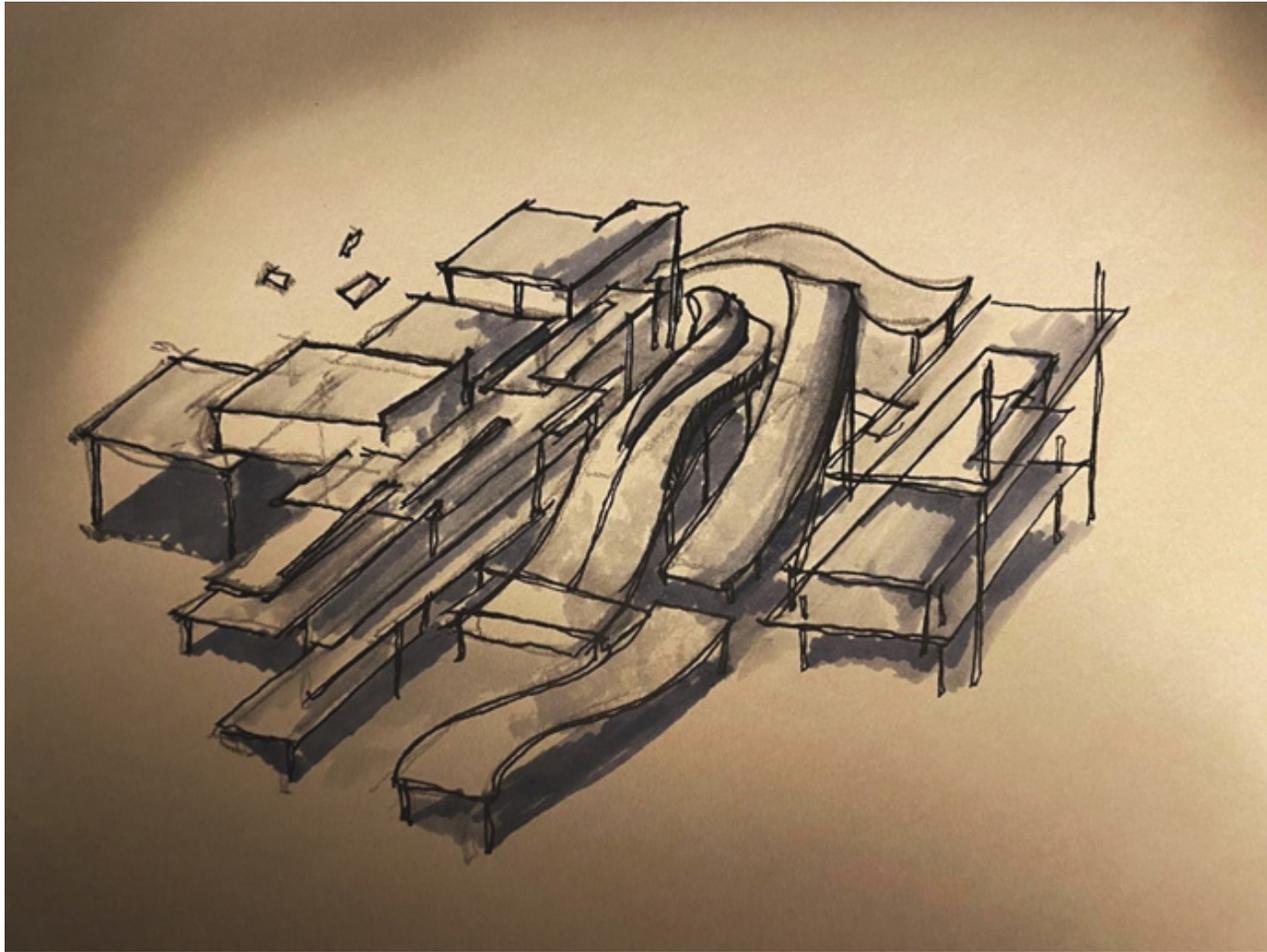


Figure 56  
Interpretive drawing 05

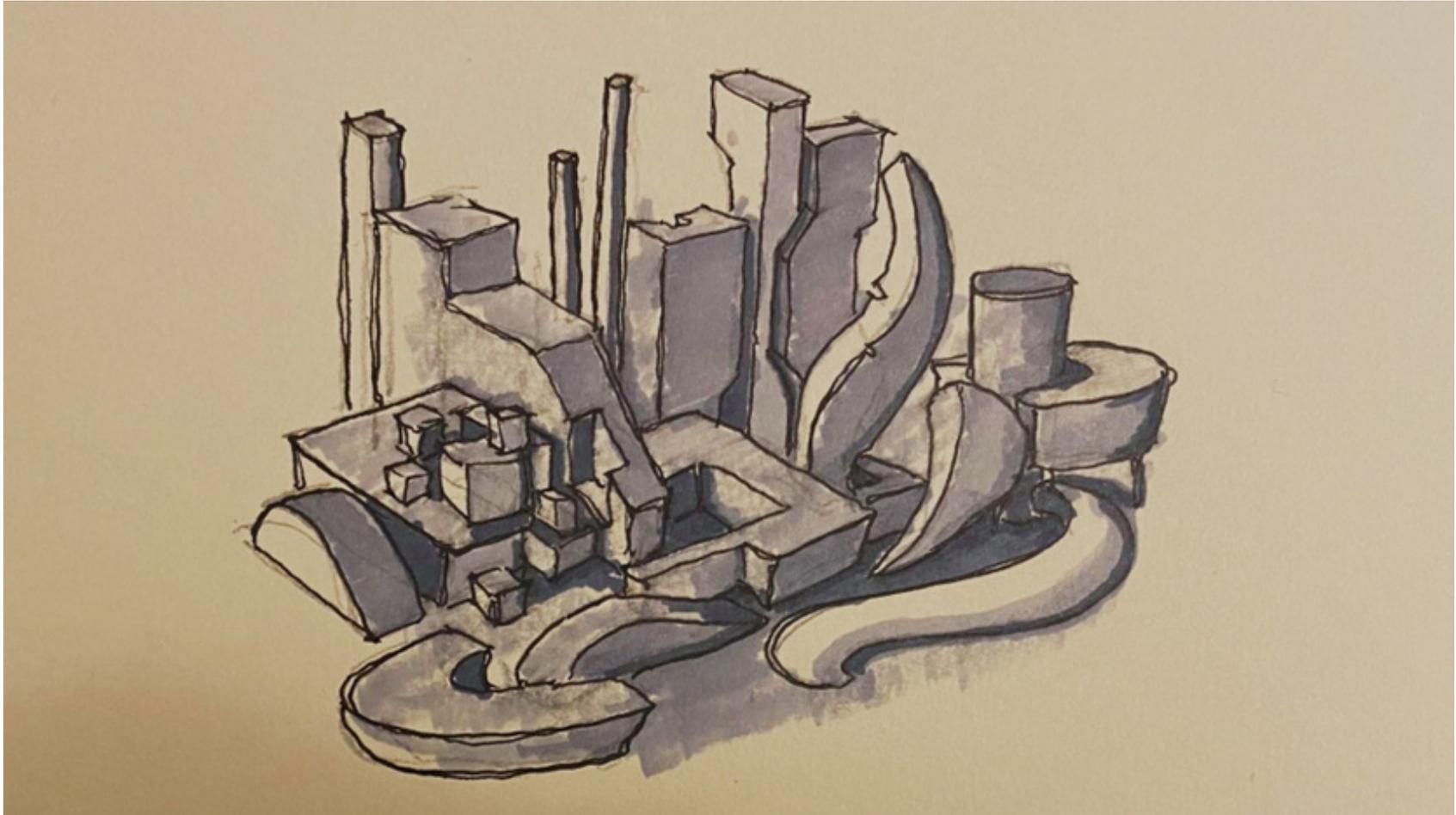


Figure 57  
Interpretive drawing 06



Figure 58  
Interpretive drawing 07



Figure 59  
Interpretive drawing 08

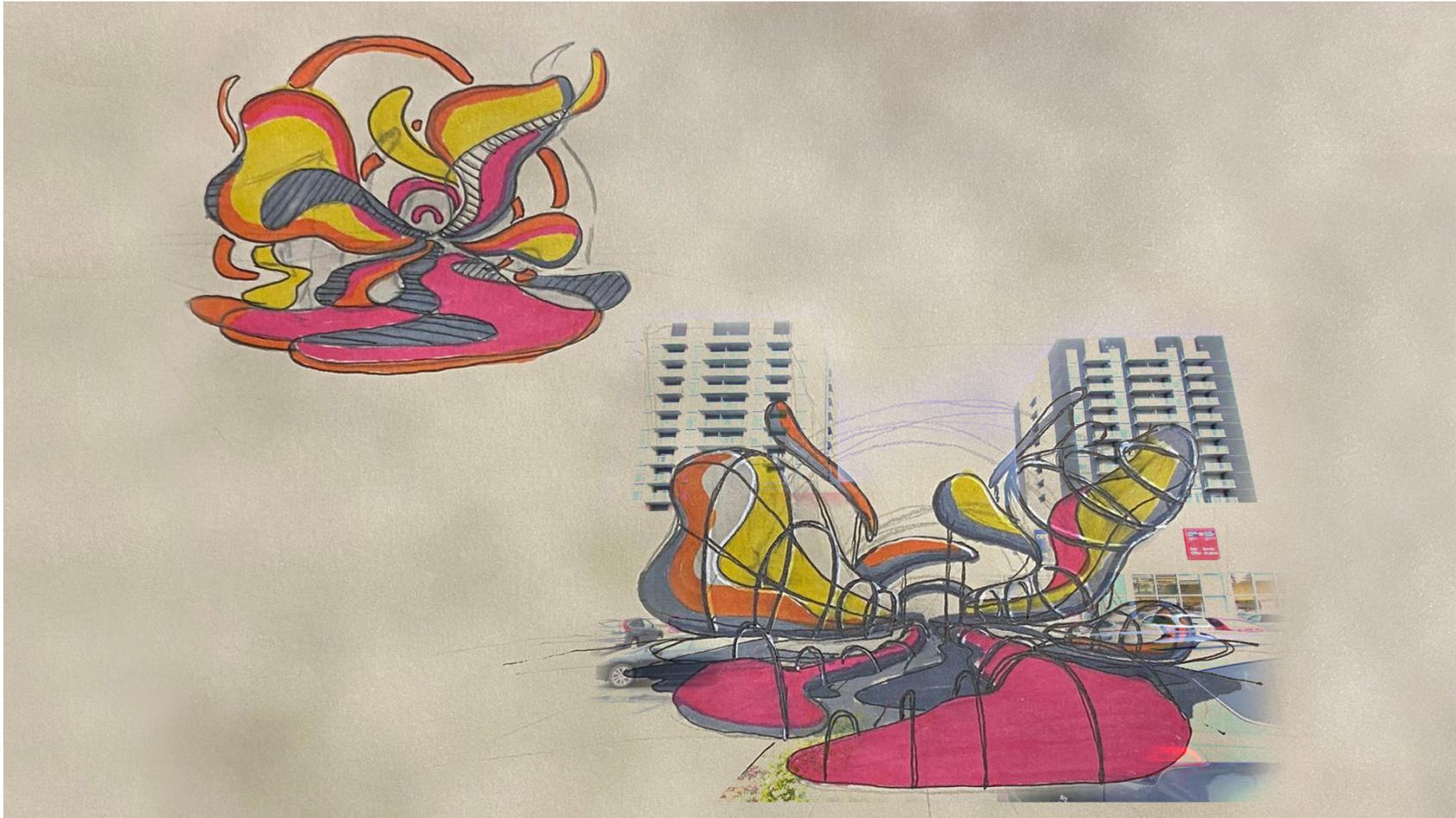


Figure 60  
Interpretive drawing 09



Figure 61  
Interpretive drawing 10

# The Architectural Proposition: Sampling a Multi-Use Building at Bank and Heron

The following section presents the architectural proposition that culminates this thesis. The design draws from the previous section on graphic markings and relies on the discoveries in the case studies, notably Holl's architectural translation of the stretto. Here, I began to give forms for the proposition at Bank Street at Heron Road. I returned to the notion of "Interpretive drawing" as a creative exercise that deals with the creative understanding of a subject, and to Elizabeth Martin's "graphic music" and drawings of "y-Condition" that had successfully translated sounds into architecture.

The following images will show the process of how I began to form a graphic score for "Coffee and Cigarettes."



Figure 62

Sheet music of Penthouse Serenade by Erroll Garner. Transcribed by Arnaud Lafon: [https://www.youtube.com/watch?v=kY80vlgeSd-k&ab\\_channel=Arnaud-LAFON](https://www.youtube.com/watch?v=kY80vlgeSd-k&ab_channel=Arnaud-LAFON)



Figure 63

Focusing on the notes on the treble staff

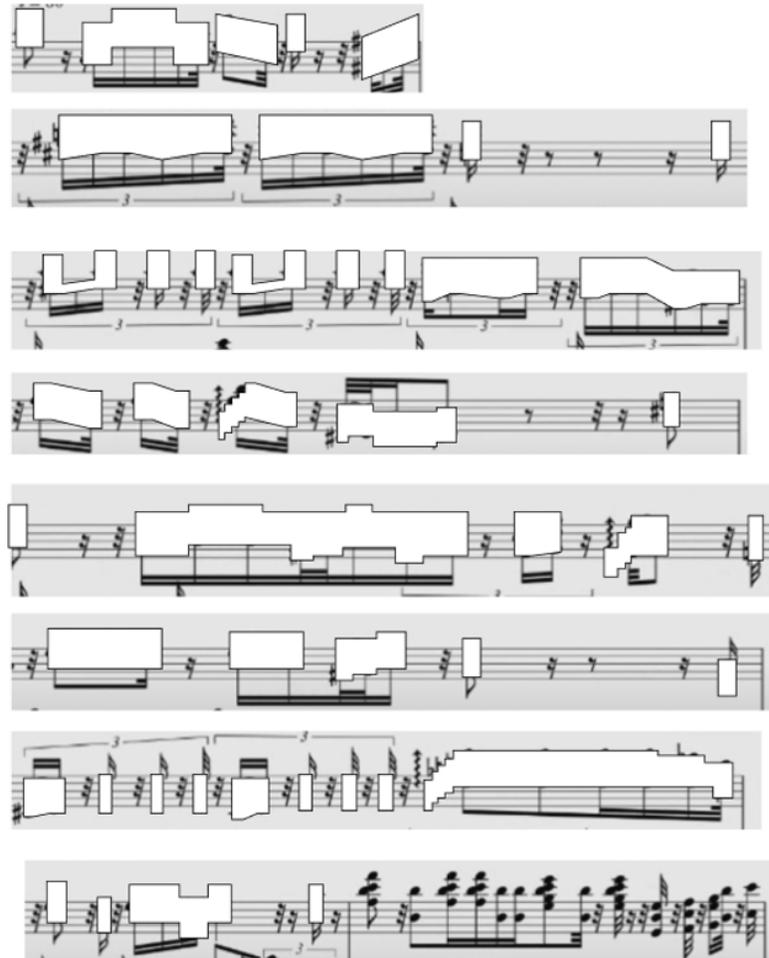
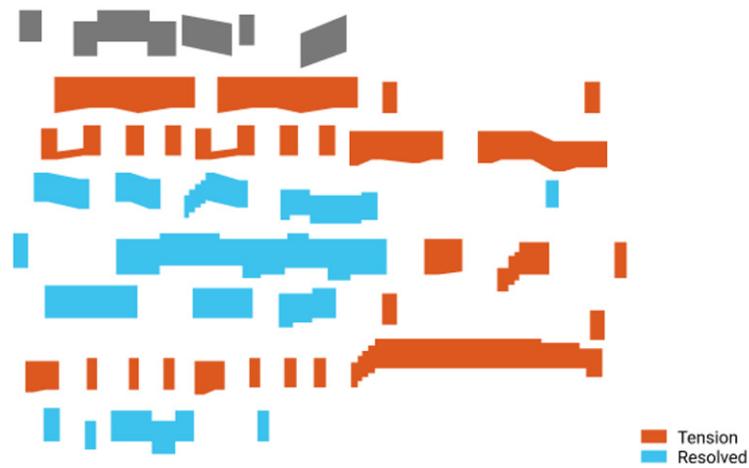


Figure 64

Forming shapes from the construction of the notes. Rectilinear shape inspired by the heaviness of how each chord is played in the recording.



Eb6 F#dim Fm7 Bb7 Fm7 Bb7 Fm7 Bb7 Ebmaj7 Eb7 Fm7 Bb7

Figure 65

Colour coding the shapes according to the chord progression in Errol Garner's "Penthouse Serenade."



Figure 66

Isolating the shapes and putting them in relation to each other.

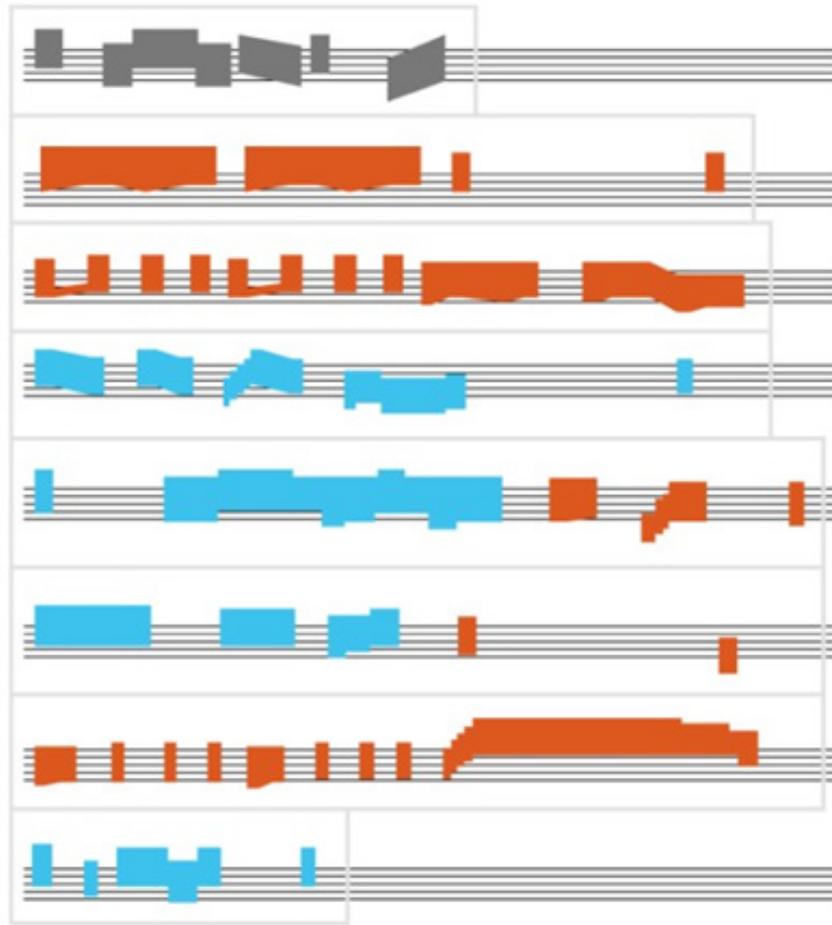


Figure 67  
Putting the shapes in context to musical staves

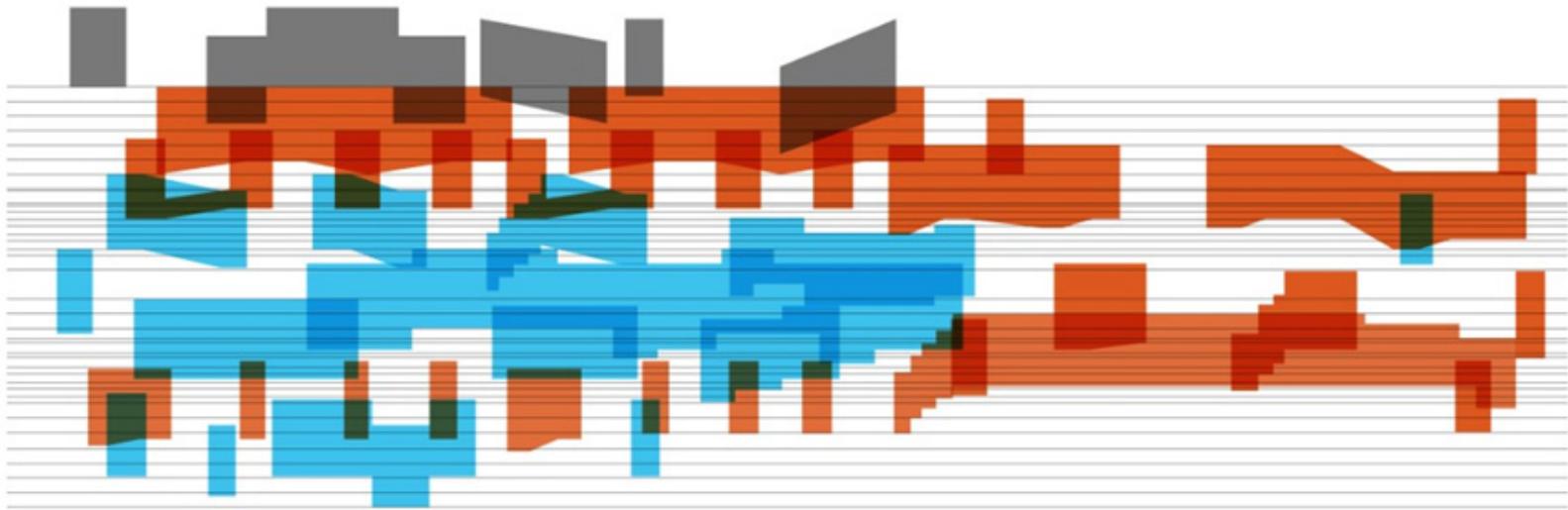


Figure 68  
The shapes and staves are pushed together

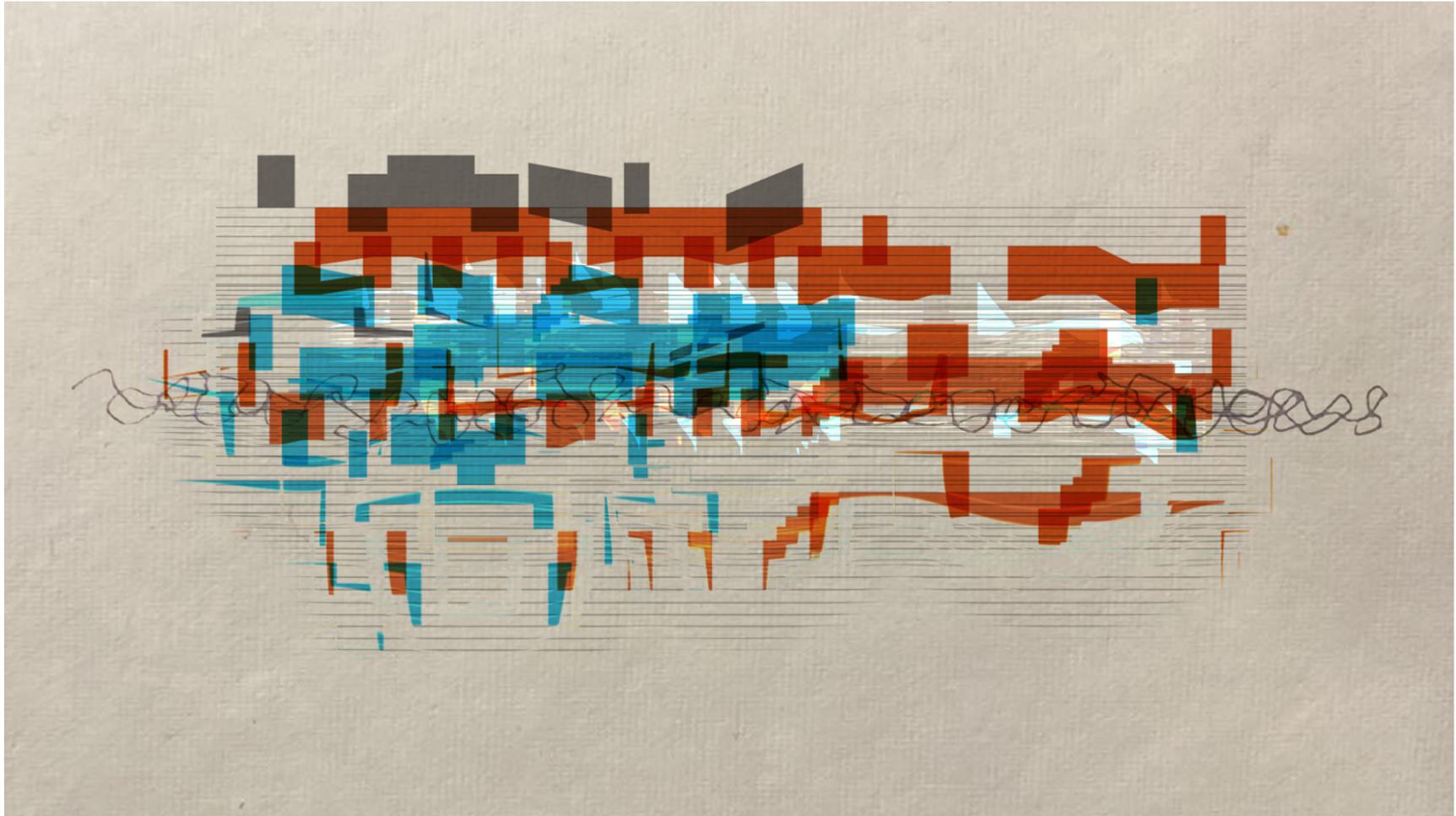


Figure 69  
Final graphic score integrating other aspects of "Coffee and Cigarettes"

## Modes of Articulation - Experimenting with the Graphic Score

The graphic scores and interpretive drawings created, forms a palette for the creation of solids and voids across the site. The idea behind the exercise was to treat the extracted solids as a library of “notes,” and the site as a blank musical staff. I was able to manipulate the drawings’ findings to create outlines of solid forms and arrange these on the site. It was important to identify appropriate site conditions to welcome these outlines and forms.



Figure 70  
Extracting shapes from the graphic score



Figure 71  
Placing shapes over the site - Configuration 01



Figure 72  
Placing shapes over the site - Configuration 02

In a sense, the site design process, or act of composition, takes place by way of dragging and dropping a shape onto the site. A moment of translation occurs; the placement of the “notes” now requires a conscious awareness of its spatial effect on its surroundings.

I combined the extracted shapes from the music score to create various “modes of articulation.” These borrow from Elizabeth Martin’s graphic music, in which she created a collection of rhythmic patterns from her “minimal music.” Each set is made by arranging the forms and figures into eight groups, based on the eight-bar measure of the central motif in “Coffee and Cigarettes.” Stacking all the shapes in their respective group created eight different forms. The outlines could be placed separately next to each other, or stacked to create new forms, like musical chords. These informed the solid elements of the design, expanding on the initial experiment.

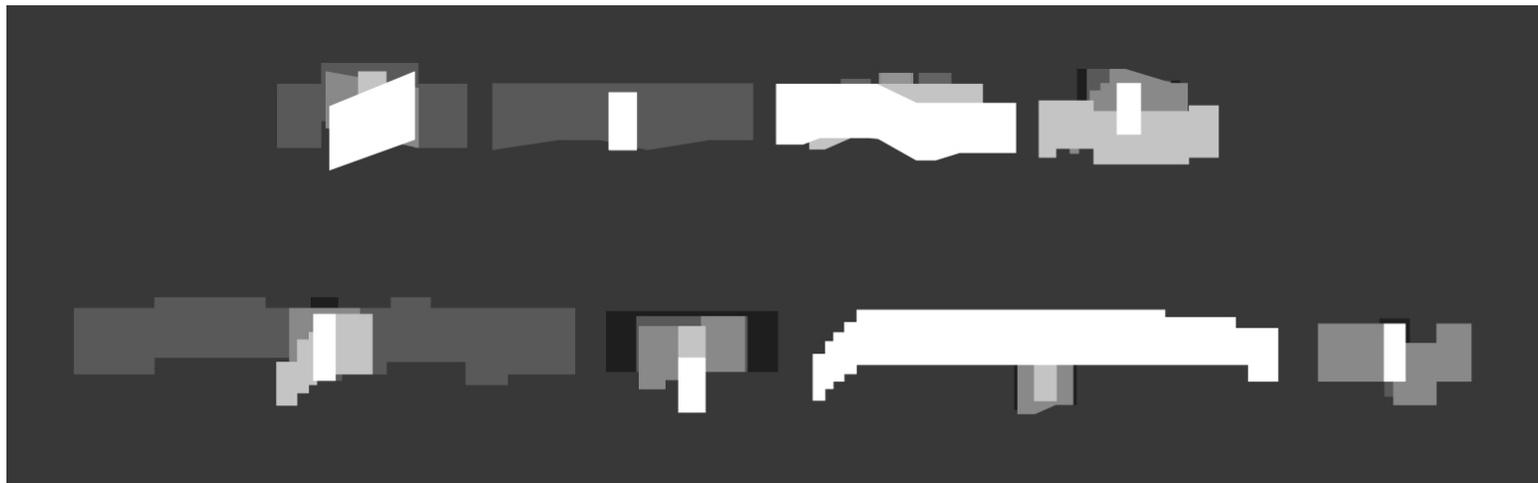


Figure 73  
“Modes of Articulation” created using the shapes from the graphic score

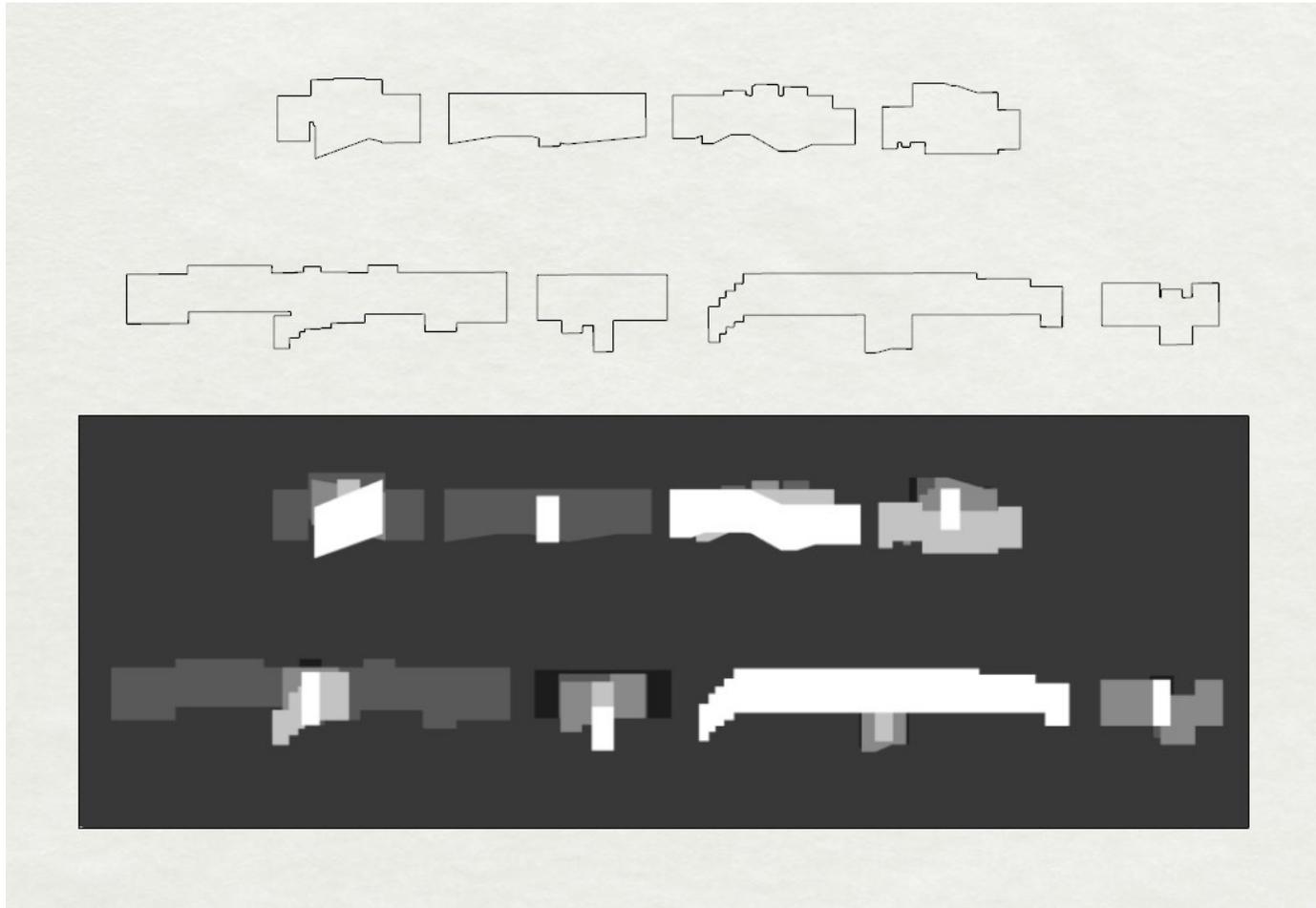


Figure 74  
Outlines or "forms" drawn out of the modes of articulation.

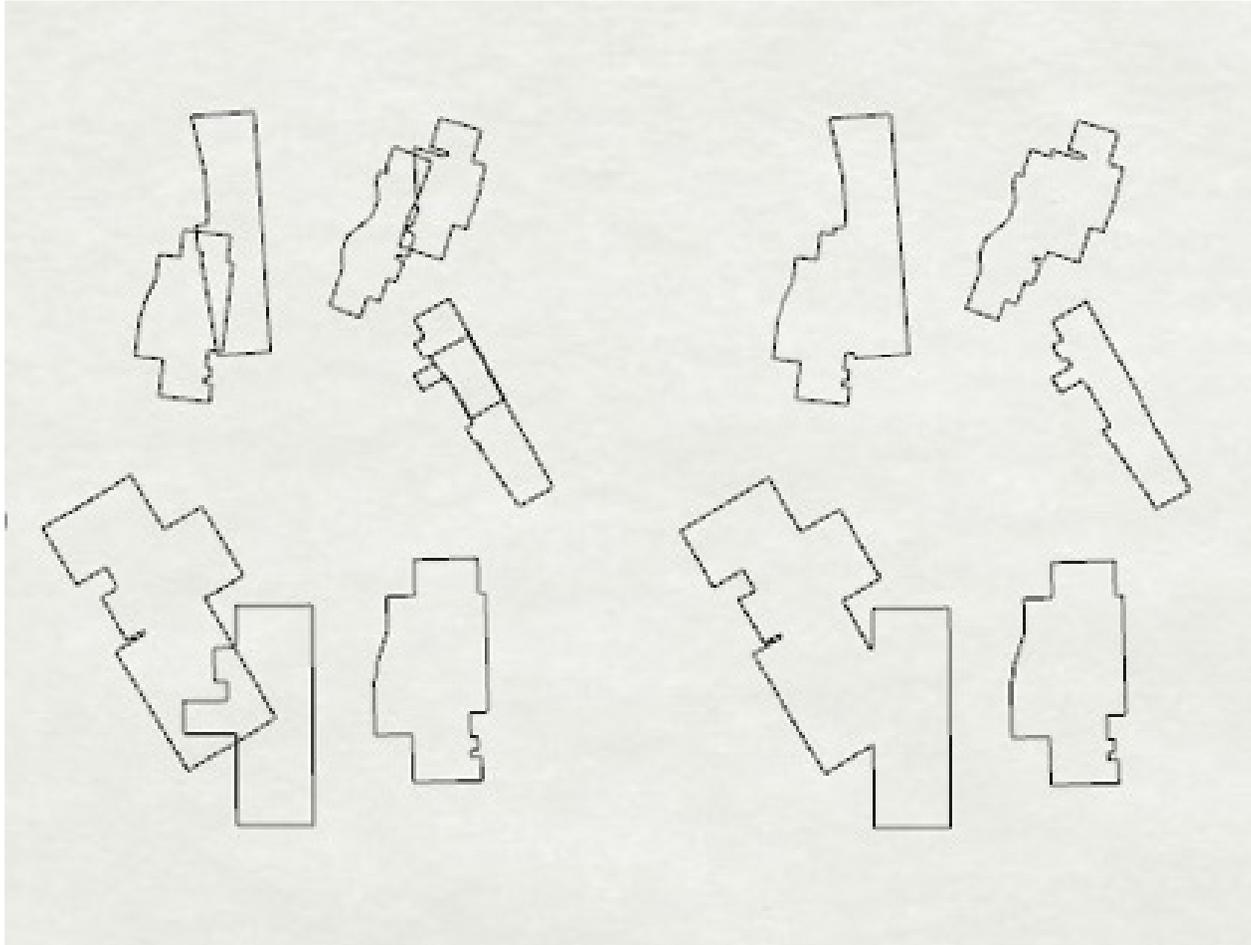


Figure 75  
Transfiguration of forms to be implemented into the site



Figure 76  
Placing new shapes on the site Configuration - 03



Figure 77  
Placing new shapes on the site Configuration - 04

The inspiration for the elevation calls back to the previous exercise of extracting architecture from the interpretive drawings. Using Adobe Illustrator to play with the shapes from the graphic score, I have created the following images that replicate the combination of mass, plane, and void evoked by the interpretive drawings.



Figure 78

Modulation of the graphic score, creating a dynamic collection of solids and voids



Figure 79

Second form of modulation of the graphic score applying colours. The emergence of colours creates texture in addition to the existing pieces of voids.

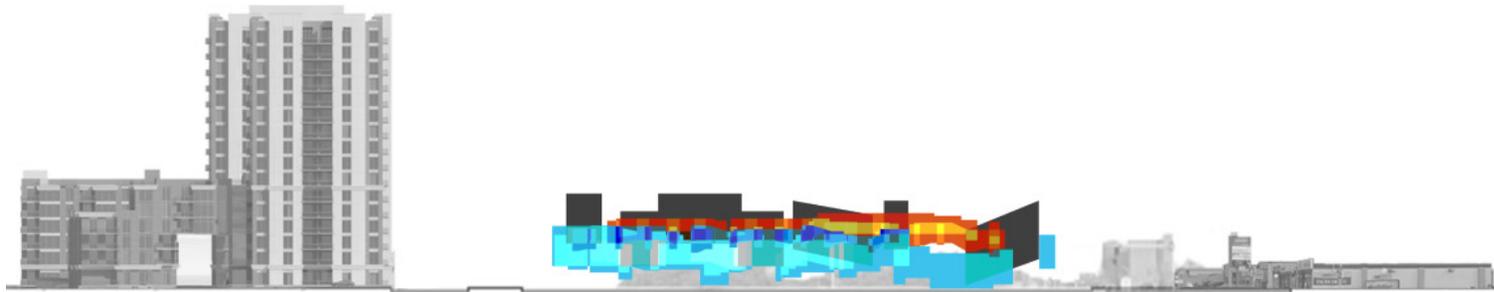
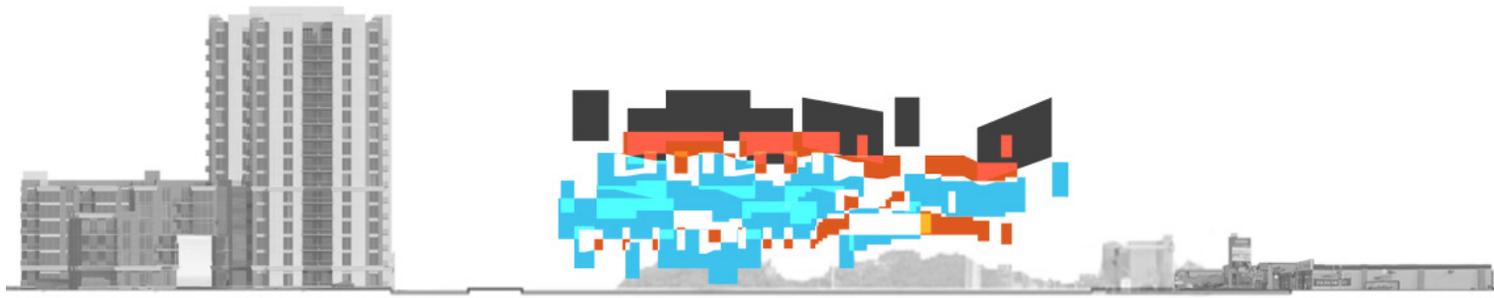


Figure 80

Transformed graphic score in relation to the site, hinting towards a vibrant large-scale building that houses a large space for gathering and celebration.

# Design Execution

The rules guiding these operations are experiential and informed by the program, the site, patterns of use and desired spaces and uses. While aware of these fundamental concerns, the basic form is driven by the experiments produced by a visual representation of “Coffee and Cigarettes,” its transpositions, and finally, Lo-Fi principles.

The initial concern lies in the inaccessibility of the current plaza. The solution was to re-arrange the buildings to promote an open connection from all four sides of the site.

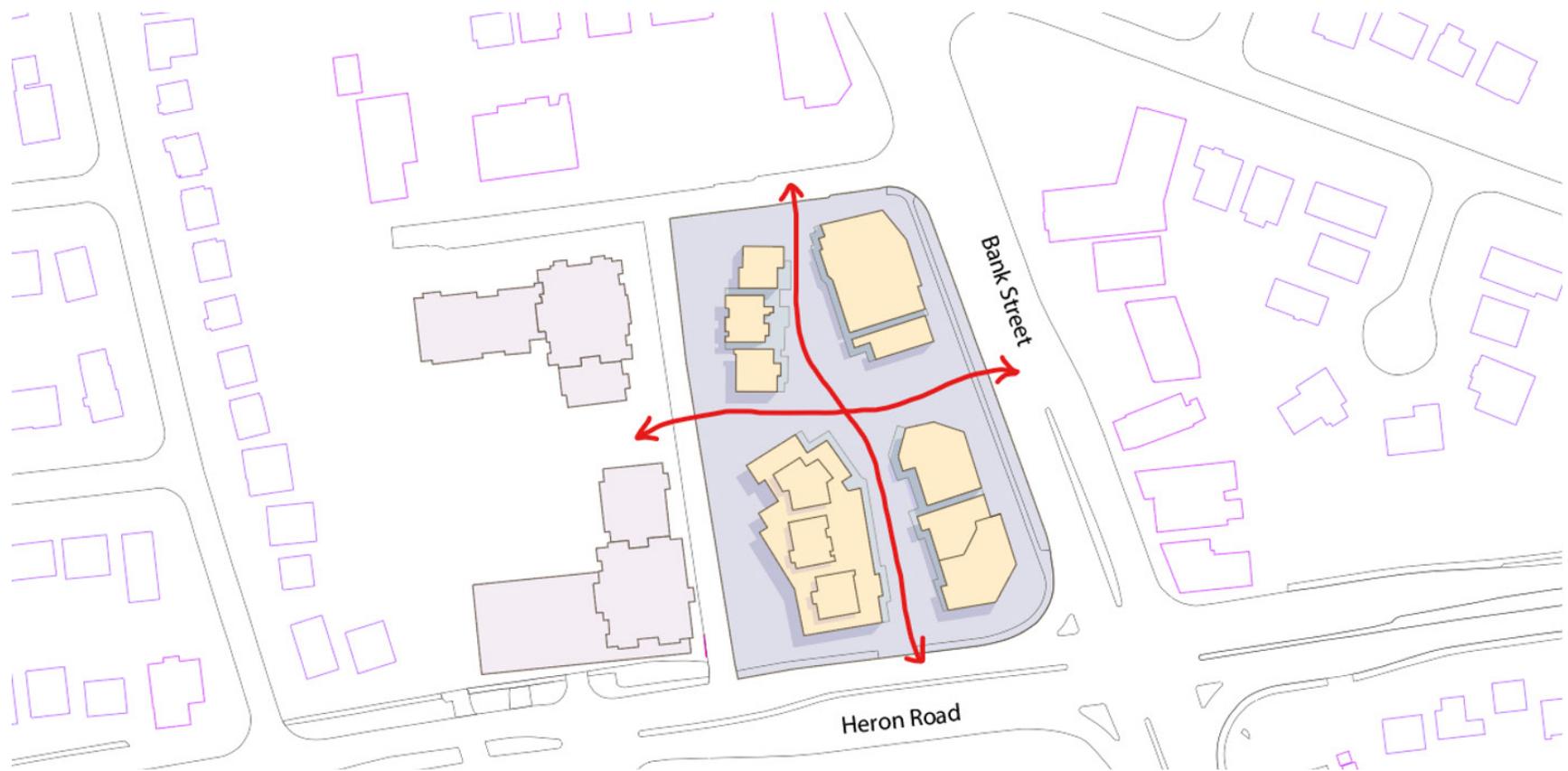


Figure 81

Site plan - Initial idea to build connection from Lunen Haus to Bank Street and Heron Road.

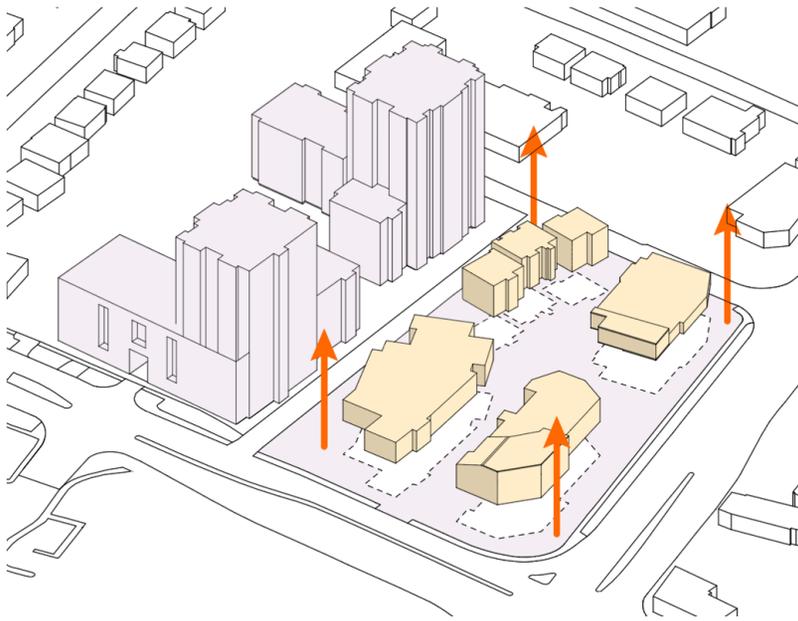


Figure 82  
Isometric Site Plan 01 - Elevating the solids

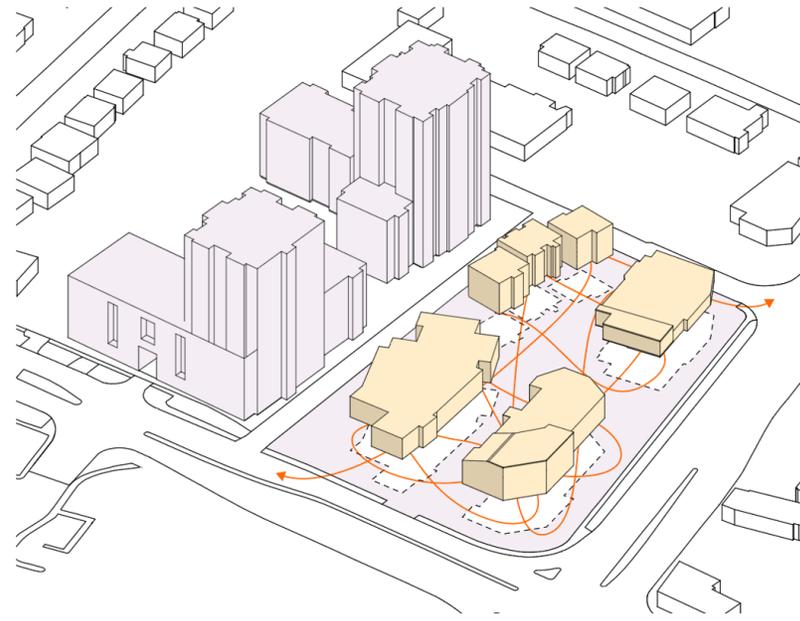


Figure 83  
Isometric Site Plan 02 - Showing the open ground floor

The void on the ground floor operates as a fluid space that can welcome pop-up restaurants and shops in the spirit of a market. Moving the parking underneath the ground plane and elevating the mass upwards opens up the floor to connect the apartment to Bank and Heron.



Figure 84  
Isometric Site Plan 03 - Optimal location for Shoppers Drug Mart

The solid located at the Southeast corner of the site, the most visible, the one closest to a busy intersection of Alta Vista, is assigned a much-in-demand program in the neighbourhood: the Shoppers Drug Mart. An Arts Centre is placed directly above the latter. Following Venturi, Scott Brown and Izenour's Learning from Las Vegas, high and low belong

together. Why not then try and mix together an ordinary facility like a grocery/drug store with a building of class and celebration such as an Arts Centre? The large ramp that animates the ground floor not only connects to shops on the second floor, but also to the Arts Centre and performance space. The latter would be designed most simply, as a black box that can be adapted to a wide variety of uses. This portion of the design also will need to visually “pull itself out” of its banal commercial environment. Here, we think of another suburban art centre in suburban Ottawa, the Shenkman Arts Centre in Orleans, also located on a busy commercial arterial road near residential neighbourhoods, in which the architects employed coloured glass and extended wood-clad eaves to differentiate and distinguish the cultural building from its context.<sup>63</sup> By incorporating a perforated steel cladding façade that mimics the colour of the timber construction in its lower portion and reflects the sky in its upper part, the second-floor cultural space distinguishes itself as an important and special component of the building, while fitting into it.

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63 The result of a public private partnership and designed by Lalande + Doyle Architects, the centre opened in 2009.

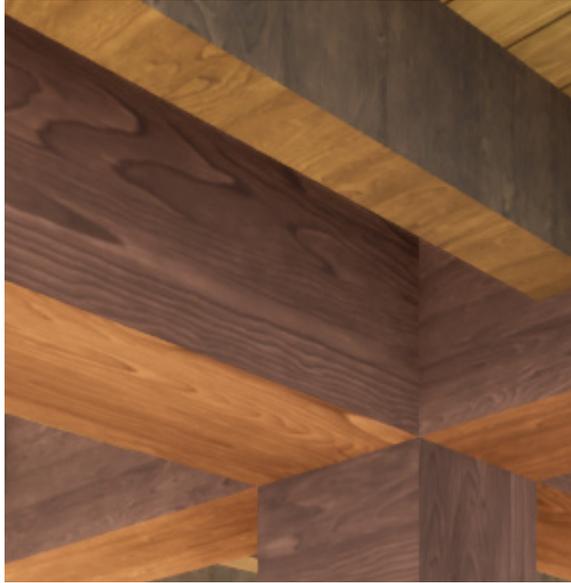


Figure 85  
Heavy Timber Construction is the construction of choice for the project



Figure 86  
The wooden texture of timber type construction is associated with serenity and comfort

The decision to use heavy timber construction for the structure is based on its positive effect on people's mental health.<sup>64</sup>

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64 In a study conducted at a service center for the elderly, University of Tampere psychology professor Dr. Marjut Wallenius revealed that wooden materials positively affected the well-being of the elderly and had a similar stress-reducing effect as nature: Wood Psychology in Architecture: DNG Custom Millwork." DNG, June 8, 2016. <http://www.dgmillwork.com/wood-psychology/>.

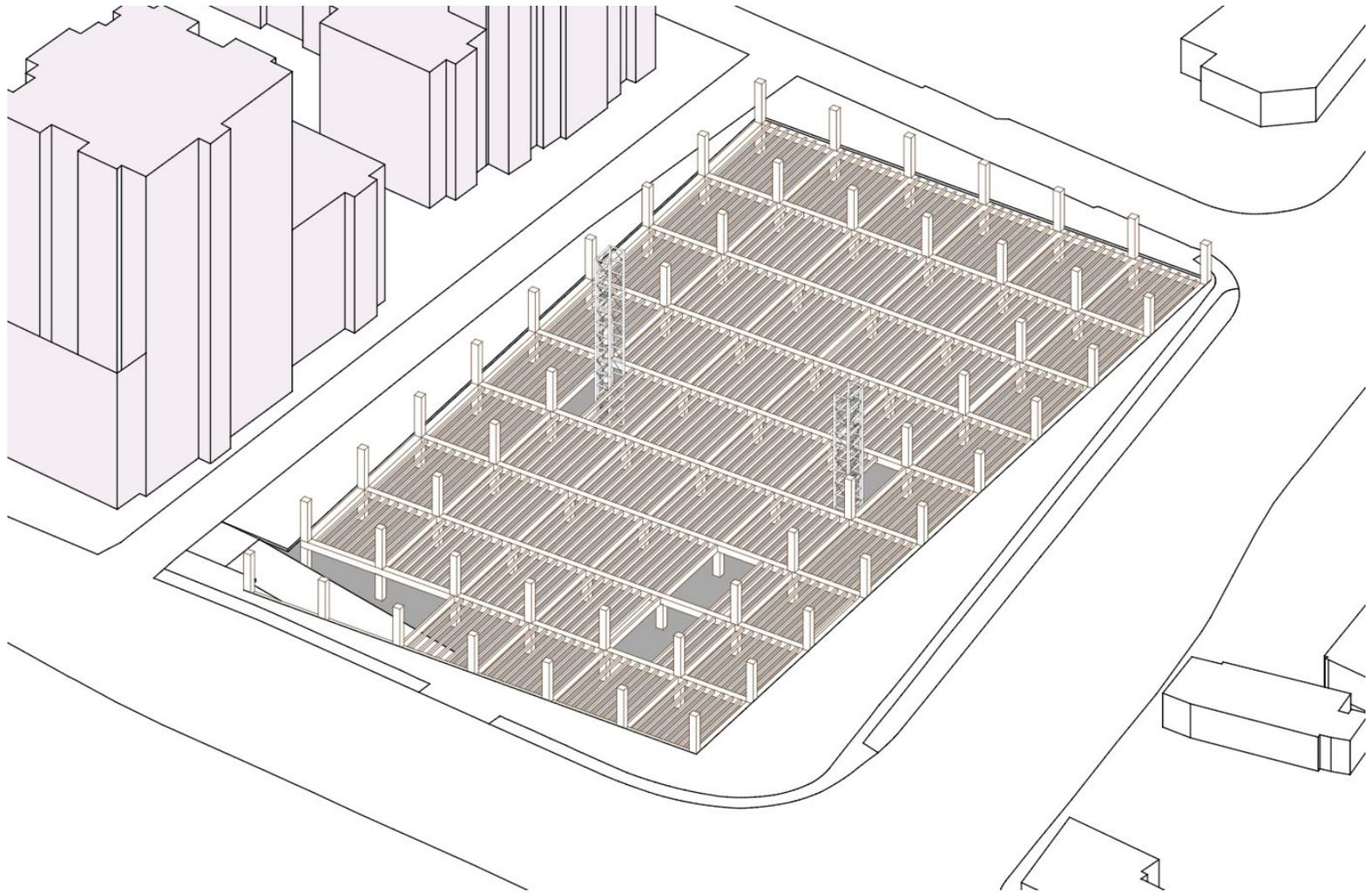


Figure 86  
Isometric Site Plan 04 - Structure beneath the ground level

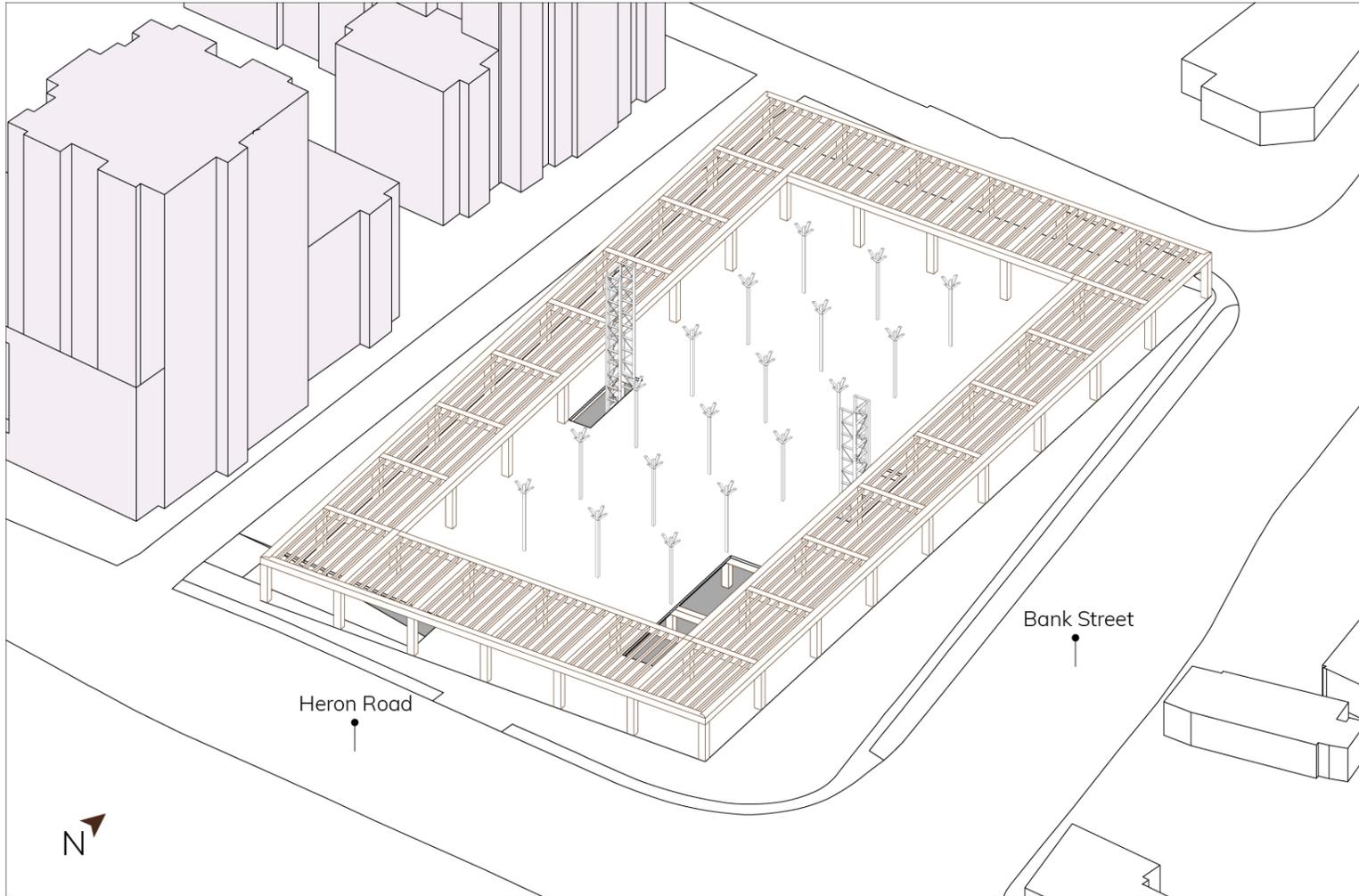


Figure 87  
Isometric Site Plan 05 - Ground level showing timber framing and tall braced steel columns that forms a grid inside.

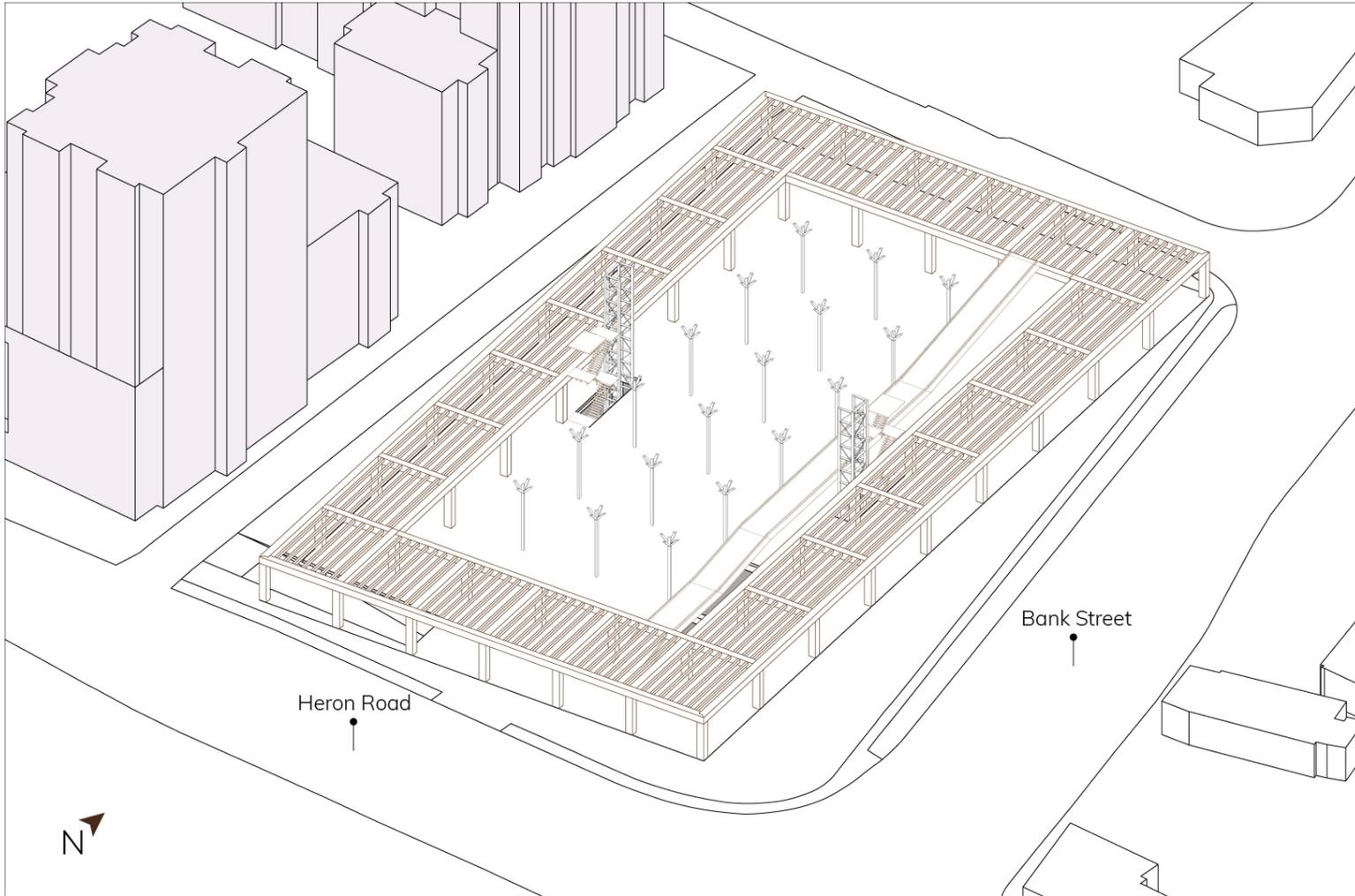


Figure 88  
Isometric Site Plan 06 - Addition of the main ramp that leads to the second level

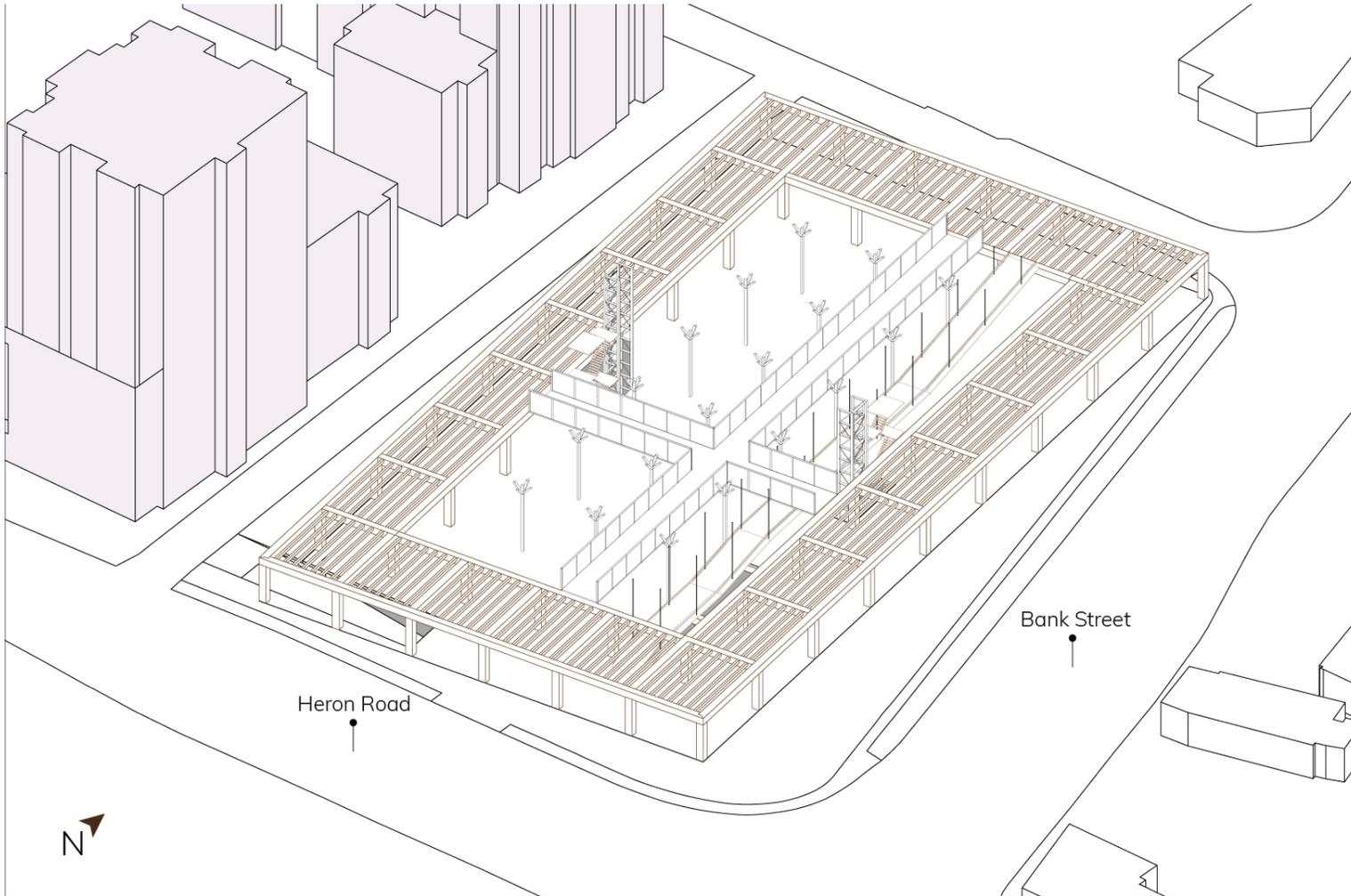


Figure 89

Isometric Site Plan 07 - Introducing a simple tunnel/bridge system on the second level and the structure for the floating ramp



Figure 90  
MIDI tracks inside a Digital Work Station (DAW).



Figure 91  
Grid system emulating the grid-like property of working with DAWs.

This multi-use space and the grid system that is created by the structure emulates the anticipatory nature of digital audio workstations. These spaces organize the future. They welcome as many uses as possible. Recalling how artists sample music in Lo-Fi compositions, this design samples its neighbourhood: businesses located near the site are “sampled” in pop-up versions, on the ground level. This sampling produces an array of stands showcasing foods and services familiar to and already present in the neighbourhood. People can set up pop-up restaurants and shops that do the same form of sampling. The open space also clears up the barricade that was prohibiting circulation to Bank Street.

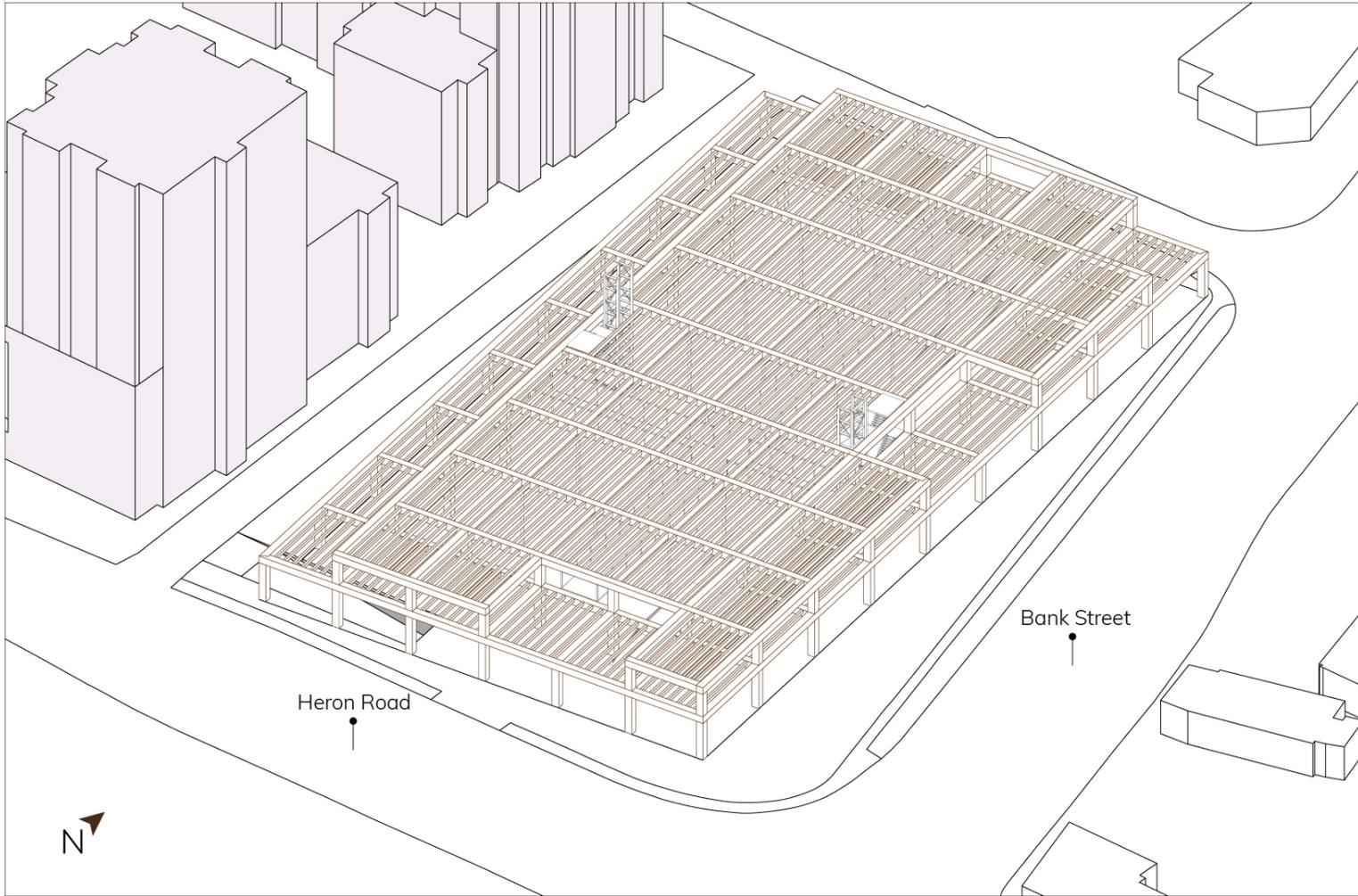


Figure 92  
Isometric Site Plan 08 - Timber framing for the second level

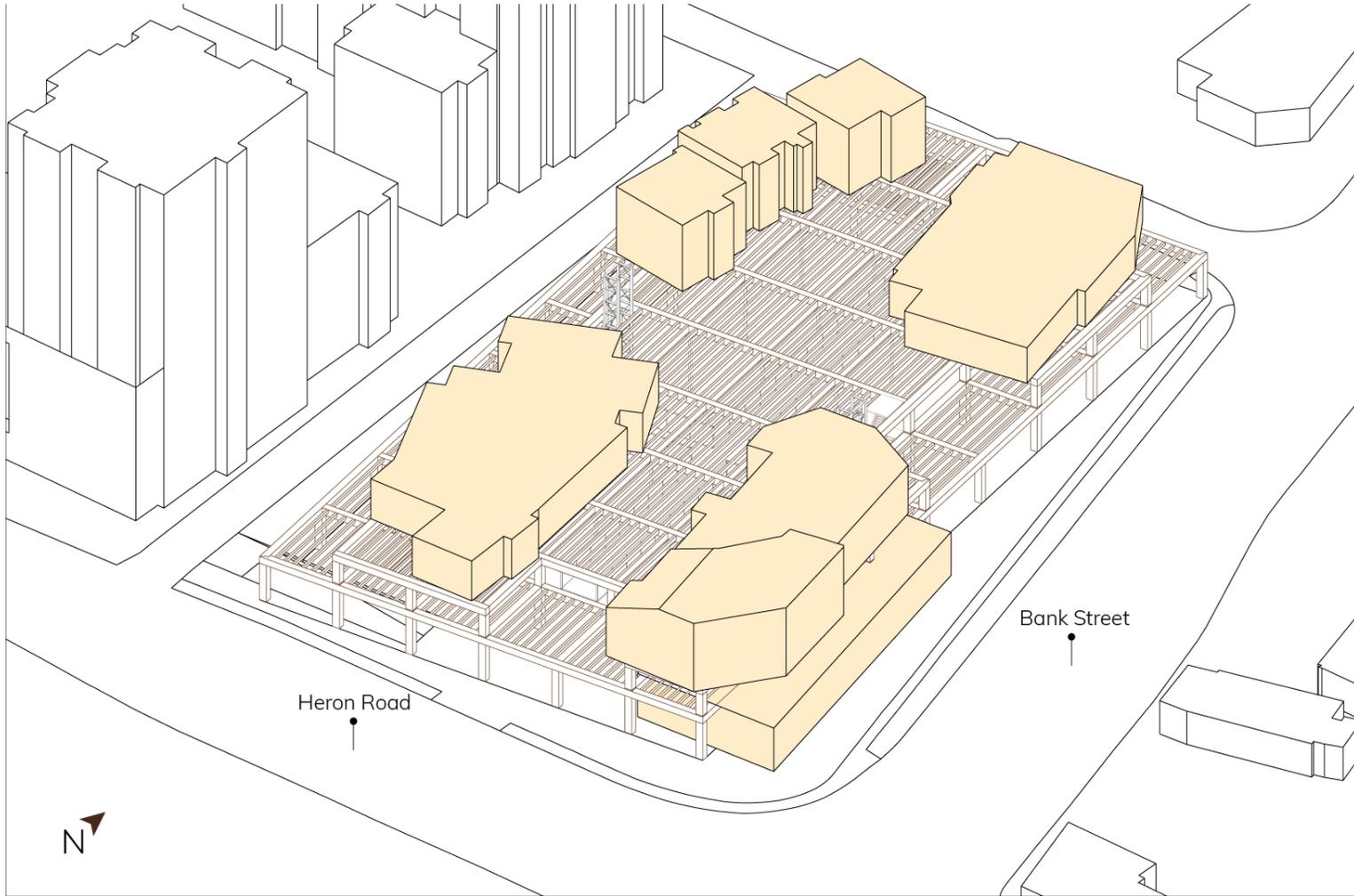


Figure 93  
Isometric Site Plan 09 - Adding the buildings

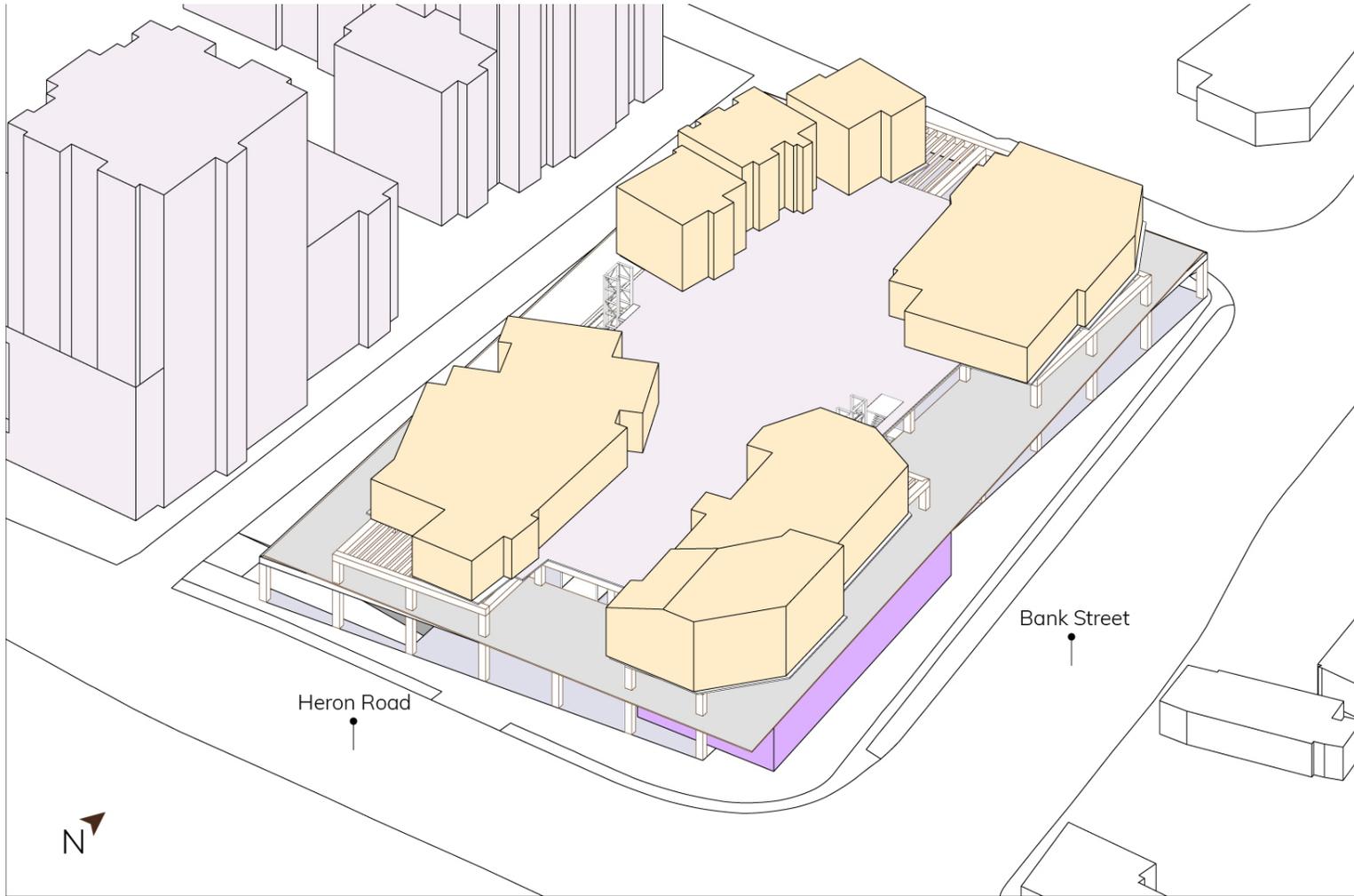


Figure 94  
Isometric Site Plan 10 - Adding decking for the floor.



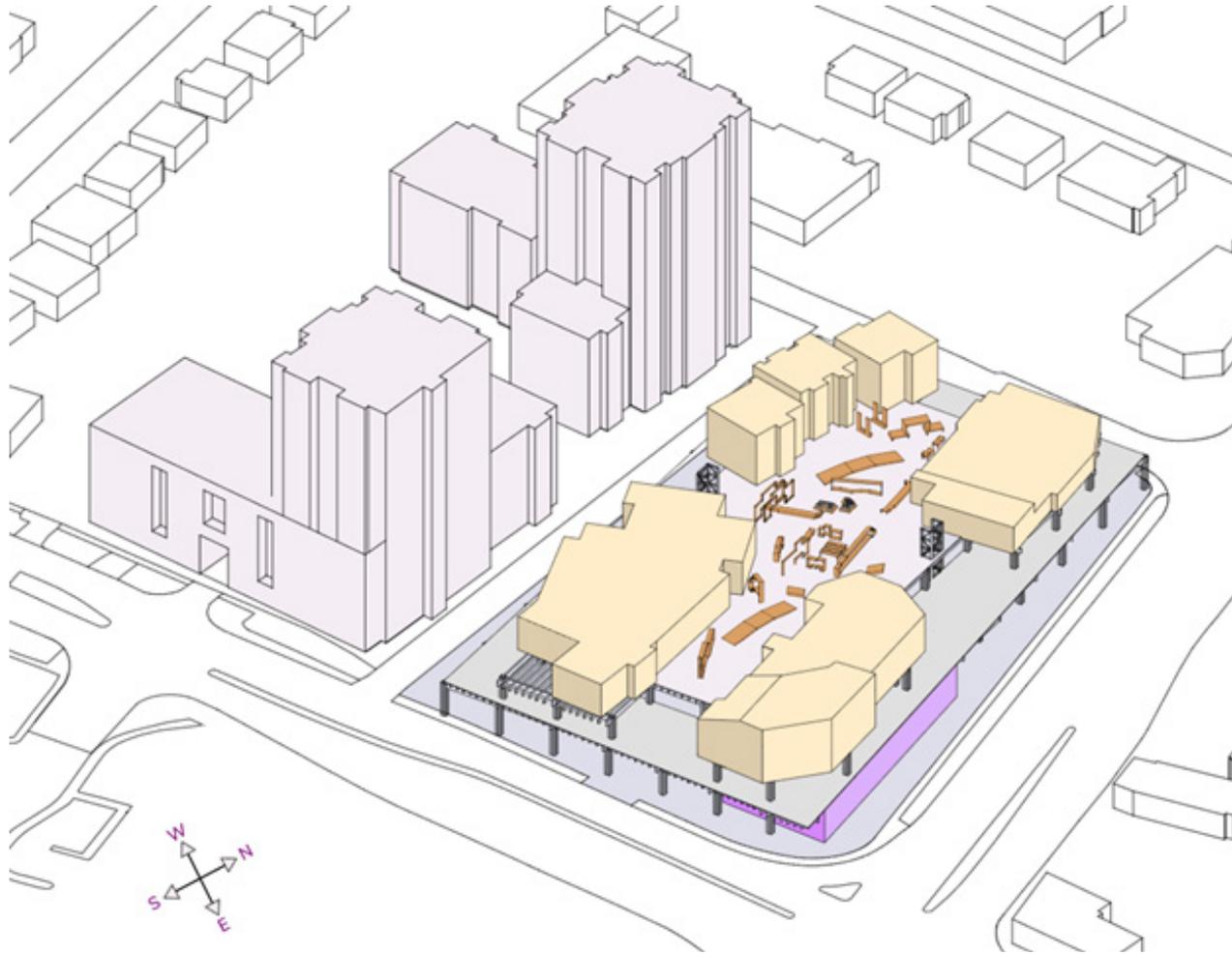


Figure 96  
Isometric View 11 - Showing the ornaments on the rooftop.

## Pop-up Restaurants



Figure 97  
Pop-up restaurant 01 - Image taken from <https://ny.eater.com/2012/3/28/6601387/nyc-chefs-sign-on-for-pop-up-restaurant-art-installation>

Pop-up restaurants/stores evoke many properties of Lo-Fi music: firstly, pop-up restaurants and stores are crafty installations that are easy to set up, providing a wide range of flexibility for different programs on the site. Secondly, they are temporal structures: they change over time, as does music. Pop-up restaurants are also used to showcase and “sample” new types of recipes to the public, reminiscent of the same sampling method utilized in songs such as “Coffee and Cigarettes,” and other forms of Lo-Fi music that employ sampling techniques.



Figure 98

Pop-up restaurant 02 - Image taken from <https://weburbanist.com/2011/12/26/a-moveable-feast-14-mobile-pop-up-restaurants/>



Figure 99

Pop-up restaurant 03 - Image taken from <https://sirvo.com/management/pop-up-restaurants-pros-cons/>

The most essential aspects of pop-up restaurants/stores is the concept of cultural harmony and sharing. It also provides a level of familiarity that aims to accommodate the diversity in the neighbourhood of Alta Vista.

One of the most “Lo-Fi” aspect of a pop-up restaurant/store is its simplicity and authenticity. If we are to look back on Lo-Fi music’s endearing and unique aesthetic, it would be its stripped-down quality reminiscent of old cassette tapes and record players. These pop-up restaurants/stores do not aim to look flashy, and their natural and honest properties allow their integration into the plaza. They architecturally represent Lo-Fi music.



Figure 100

Pop-up Restaurant 04 - <https://www.wasserstrom.com/blog/2018/09/18/what-is-a-pop-up-restaurant/>



Figure 101

Pop-up Restaurant 05 - <https://www.gazettelive.co.uk/whats-on/food-drink-news/pop-up-restaurants-cafes-takeaways-11792200>

## Interior Views

Cars enter below to an underground parking space with vertical circulation shafts (elevators and stairs) that lead to the ground plane above. It would be possible for visitors who look down from the ground plane to see cars below. The spaces sonically interact with the vibrations of the cars' engines, below, just like bass in Lo-Fi music. The main ramp brings visitors to the second level which could host ephemeral programs. The second level contains both interior and exterior spaces. The exterior elements foreshadow the rooftop above.



Figure 102  
Pre-development



Figure 103  
Proposed development

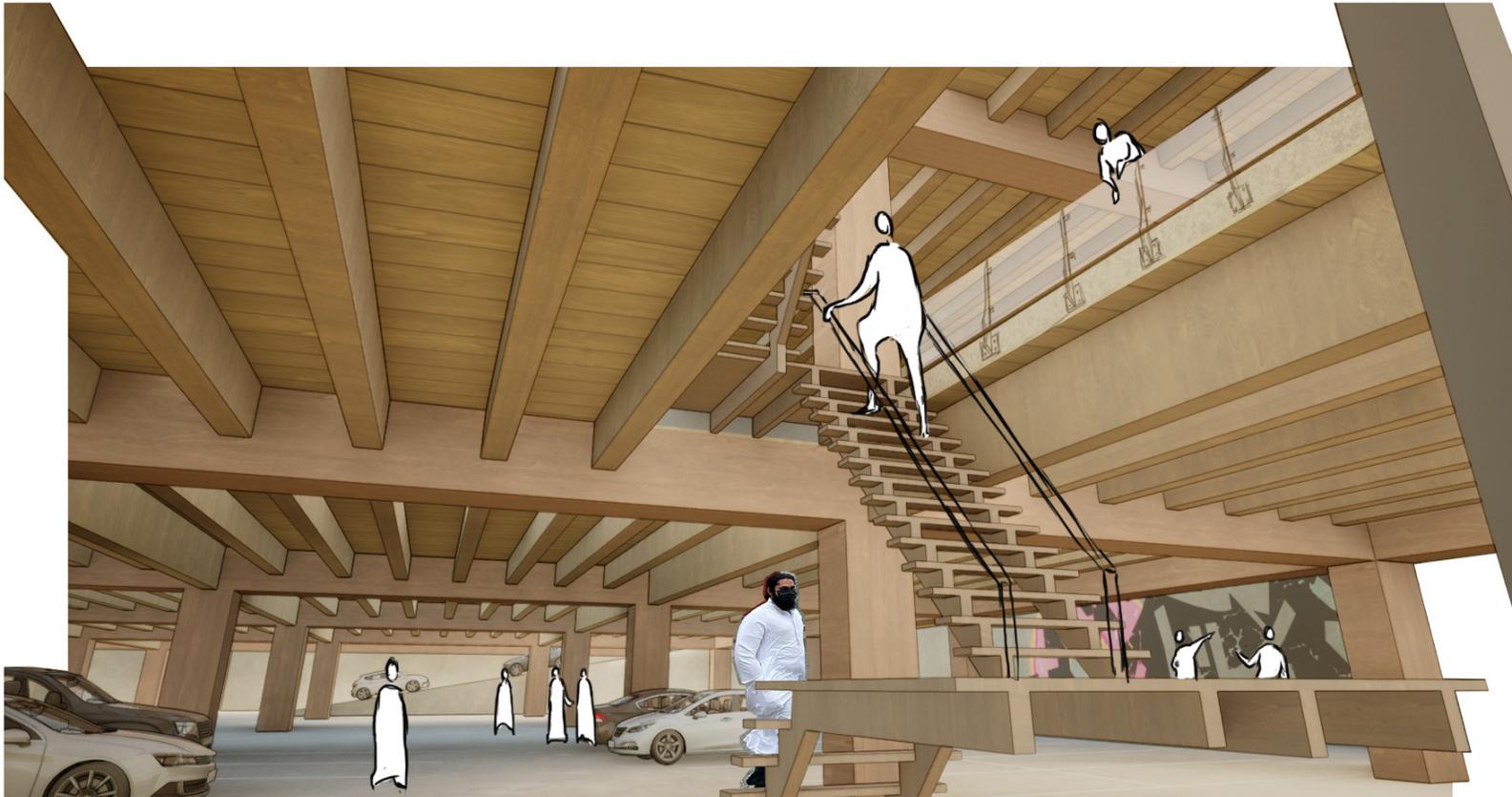


Figure 104  
Interior View 01 - Underground parking showing.



Figure 105  
Interior View 02 - Ground level peeking underground.



Figure 106  
Interior View 03 - Flexibility of use. Mobile stage setting up for a performance.

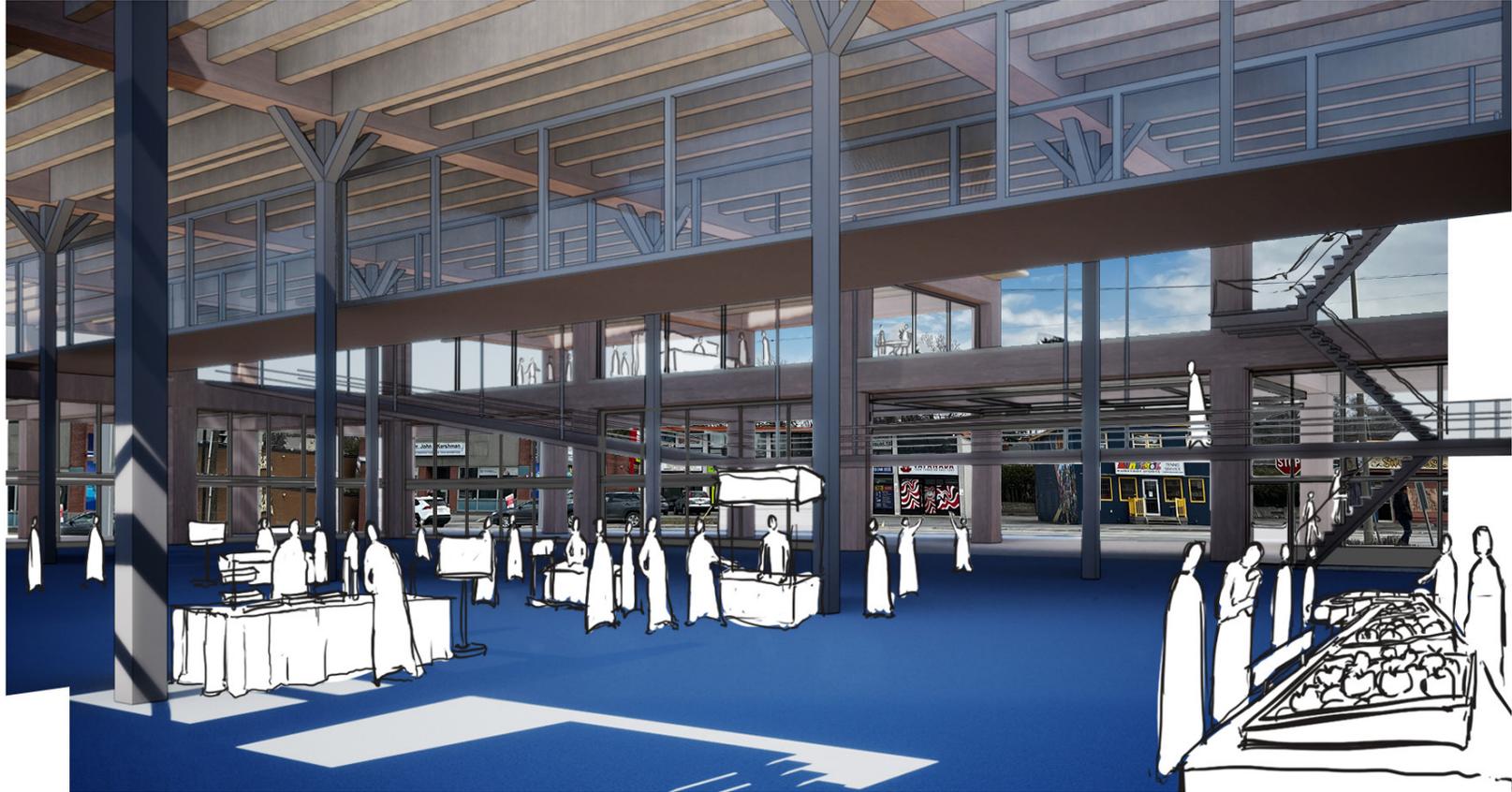


Figure 107  
Interior View 04 - Flexibility of use. Sample shops operating inside, presenting their services to locals.



Figure 108  
Interior View 05 - Drawn in the style of "Ligne Claire," showing the rooftop and how people interact with the ornaments

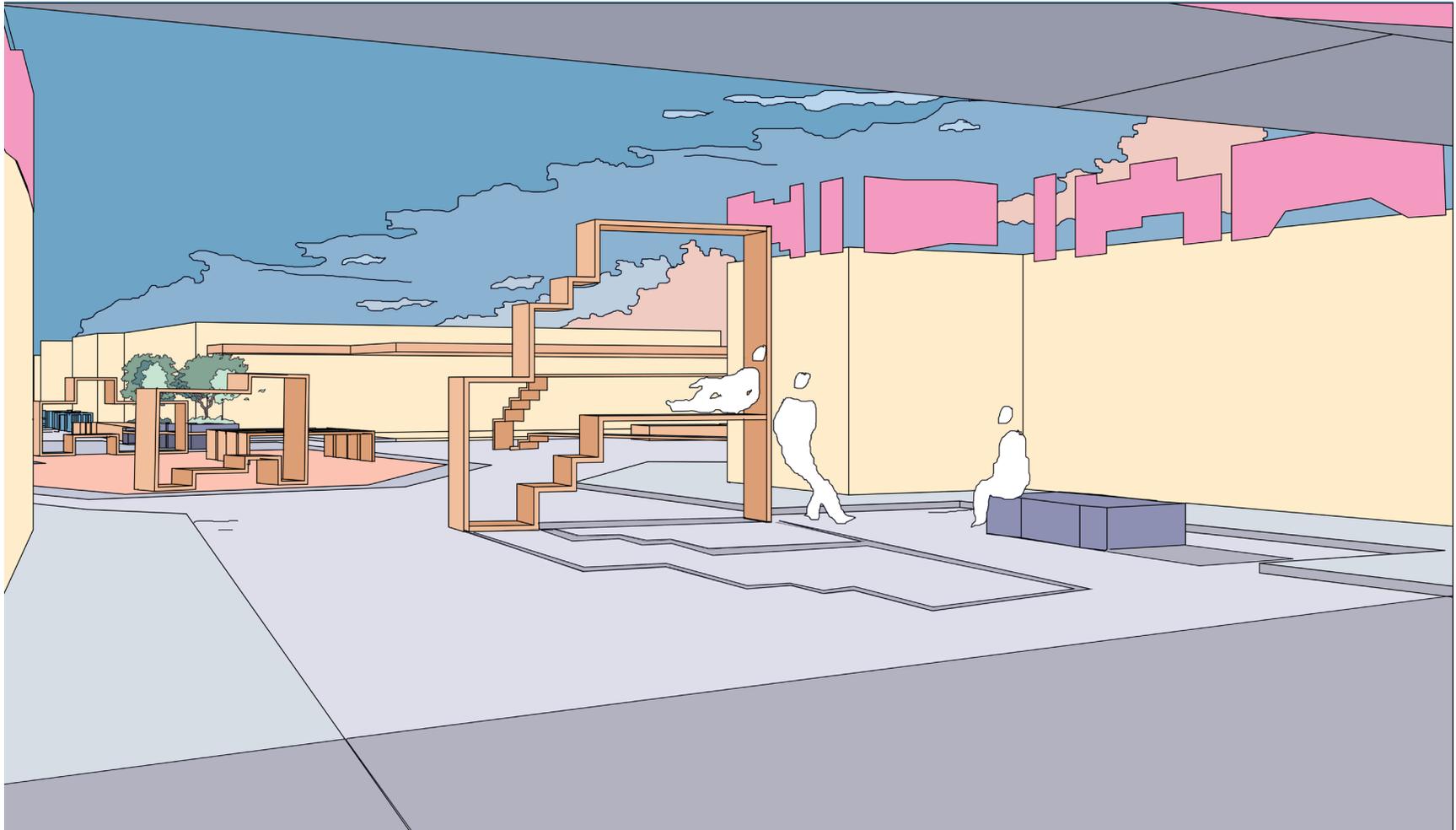


Figure 109

Interior View 06 - Drawn in the style of "Ligne Claire," mimicking the change in theme of "Coffee and Cigarettes" when the song transitioned from Erroll Garner's sample to Nat King Cole's much more soft and calm rendition of Penthouse Serenade.



Figure 110

Across the street of Bank Street looking into the proposed building showing the activities and movement of visitors entering, exiting, and interacting with the space and with other people.

Lo-Fi music's acknowledgements of the uninteresting imperfections of recording as the main core of the musical experience have guided an approach to redesigning Bank Street Plaza. As opposed to an inert box, this multi-use building is open-ended and connected to its environment. People coming inside can experience samples from restaurants and shops from across the street, listening to the cars on the road and the cars beneath the ground floor. Lo-Fi music's all-important background "hiss" is Bank Street itself, physically and symbolically. This thesis proposition looked outwards into the street for inspiration, and created a stage for local businesses to be visually present in the new multi-use building (as "views" that one can see through transparent and porous facades), and literally present as pop-up appearances, or "sampling" of themselves, inside the open ground floor market area. This way, local businesses can share what they do and who they are with the community. The same can be said of dwellers and artists of this area. As one walks across the renovated Bank Street Plaza, one is met with exciting samples -- for example, from a business just across the street that was once something we paid no attention to but that now we may wish to go and visit -- instead of being hassled by incoming vehicles. Fundamentally, the design strives to highlight what is usually left behind in the background, and, in this part of Ottawa, that includes people.

# Conclusion

This thesis began with the belief that music and architecture are connected through their beauty and structure. We find that people across time have written about the relationship between music and architecture, and figures such as Iannis Xenakis, Steven Holl, and Elizabeth Martin have “performed” musical approaches to architecture. The architectural proposition in this thesis illustrates that architecture can be inspired by music in ways that go beyond mathematical ratios. It is not insignificant that music and architecture both open up the spaces in which communities come together. In this thesis, Lo-Fi was an inspiration to inform and shape the design of the plaza at Bank Street and Heron Road from graphical and experiential standpoints. The design proposition -- which aims at creating a rich space for community participation and life – reiterates Lo-Fi’s community structure. The openness of the proposed new plaza opposes the conventional “inert” box and instead promotes social gathering and mixing.

A society's state is reflected in its architecture. As Canada's Capital begins to bring awareness to the impending danger of the climate crisis, it will be all the more important for the things we build to be oriented toward social and environmental health and healing. Architecture is not neutral but rather the catalyst for shaping society and influencing the lives of others in significant ways. It is time for Architecture to aim to have as strong an impact on people's lives as music does. Many people felt the negative impact of isolation due to the pandemic. Many found comfort and solace in Lo-Fi music. The musician's ability to change the lives of others is well known. In contrast, the built environment is all too often an expedient backdrop that does not elevate life. Yet, ordinary sites and programs like Bank Street Plaza could become inspiring places of joyful encounters. At this critical time in Ottawa's history, and at this sensitive moment of global history, new approaches to the built environment are needed. Designing a building or block, be it urban or suburban, is not the same as writing a song. Still, both have similar, if not equal, goals in shaping the experience of living things.

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