Experiential Routine

Enhancing experience
within daily transitional spaces

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Experiential Routine

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Introduction

The Problem - We Need Stimulation

Humans have evolved to operate in certain types of environments, with complex levels and optimal stimuli. Studies of more extreme and moderate forms of environmental deprivation provide compelling evidence that unstimulated environments to which a person is exposed on a daily basis can create stress, pressure, impulsivity and even increased risk-taking (Ellard, 2015). Stimulation is a necessary condition for enjoyment in experience, argues William James, the father of modern psychology (James, 1890). Daniel Berlin adds that most human behavior is driven only by curiosity - the need to quench our constant thirst for innovation (Berlyne, 1960). Our daily built environment must stimulate us. Architecture, therefore, becomes the source for stimulation—or rather, the cause of its absence.

Working Towards a Definition of Experience

Environmental stimulation is reliant upon our experience in space. An experience is an occurrence that stimulates all the senses, one that is created from a complex environment, possibly even a confusing one—it tends to arouse expectation and curiosity. As Johanni Pallasma writes, it encourages dialogue and physical or imagined interaction with space (Pallasma, 2007). An experience in space can trigger emotions such as curiosity, discovery, surprise, or joy. Geke Ludden further adds that the experience tends to create a feeling that time is passing faster, enhancing a person's memory of the moment (Ludden, 2006).

While architecture tends to prioritize vision as the central sense in experience, Pallasma suggests that all the senses should be involved

in a spatial experience, becoming multi-sensorial. In his book, The Eyes of the Skin - Architecture and the Senses, Pallasma argues that the body and its movement are the center of an experiential space, encouraging dialogue and interaction with it, whether in a physical or imagined way (Pallasma, 2007).

Kent Bloomer and Charles Moore present a similar opinion and expand this point of Pallasma- the building is the motivator for action, acting as a stage for movement and interaction, placing the building in dialogue with the body. The authors illustrate this with the help of the simple example that cracks in the sidewalk can encourage a child to jump from one slab to the other. The subtlety of the sidewalk cracks created a physical interaction involving the whole body, echoed by Pallasma (2007). Hence, the interaction involved a multi-sensorial reaction and thus created the experience.

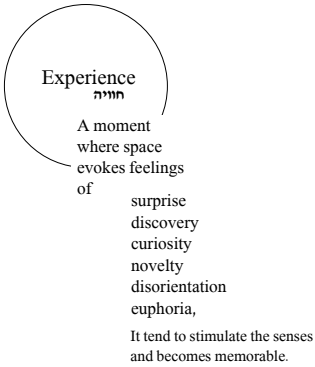
To further explain the idea of an imaginary interaction, Bloomer and Moore compare two types of structures. The first is an office building with a typical screen wall. Its potential to draw us into the realm of play, movement or sound is almost nil. We cannot measure ourselves in front of it or imagine physical participation. The second structure is the Chrysler building. Here, one can notice not only the vertical differentiation of the building, but also the geometric recesses that are reminiscent of magnificent landscapes or stairs. We see the scale and can imagine us leaping and conquering the building's surface. In this case, the interaction of the person with the building is imaginary, yet nonetheless creates an experience (Bloomer & Moore, 1977).

The project ultimately understands experience as a moment in space that evokes feelings of surprise, discovery, curiosity, novelty,

Maxii Musuem, Rome | Zaha Hadid
Yad Vashem, Jerusalem | Moshe Safdie
Vessel, New York City | Thomas Heatherwick

Notre Damn De Paris
Parc de la Villette, Paris | Bernard Tschumi

disorientation, and euphoria, stimulating the senses and becoming memorable. The concepts of multi-sensorial experience, the relationship of experience to movement, and the interaction between person and the built environment will be further utilized in the research and case study.



Transitional Spaces

To identify an architectural site to apply these concepts of experience, Louis Kahn's work becomes useful. Kahn defines two architectural spaces — the servant and the served. The served spaces are where the main purpose of the building occurs, such as a living or dining room, while the servant spaces "connect, frame and enable the served spaces to perform its functions. Servant Spaces could be a circulation space (a stair, a corridor), a storage, a bathroom, a mechanical room, or any auxiliary space" (Kahn, 2003). The servant spaces—stairs, hallways, elevators, parking lots— are transitional spaces of our daily movement, often considered an in-between or a non-site, within our environment. With the understanding that movement is at the heart of architectural experience, the project seeks to enhance experience in space by focusing on daily transitional spaces.

Research

Experiential Patterns

In order to understand what makes a building evoke intense feelings and emotions, the project turns to sites where the choreography of visitor experience is the main purpose— museums, places of worship, and cultural sites, such as Yad Vashem, Maxii Museum, the Church of Light, and Notre Dame de Paris. In other examples, such as the Parc de la Villette in Paris and the Vessel in New York, the sole purpose of the space is reliant on the experience of wandering, observing, moving, and interacting.

Following Christopher Alexander's concept of design patterns, a similar methodology was utilized by identifying patterns of experience found in the varying spatial and sensorial elements of the space. Most patterns could be divided into three situational categories related to people's movement in transitional spaces; the anticipation of the movement along the path, the interruption of the movement, and the interaction along it.

Anticipation - patterns that include elements related to creating a clue and anticipation towards the next destination in space. As Yi-fu suggests that Anticipation is an essential factor in constructing the experience (Fu, 2001).

An example from the anticipation category is the Revealing Gradient pattern. It shows the importance of the curvature of a particular path. It determines the amount of new spatial information that will be revealed to a visitor as they progress in the path, whether by viewing at a glance the entire space or corridor, or being gradually exposed to it, creating a hint for the next event.

Interruption - patterns that create an event, a sudden change, a disturbance, a break of the order in space. The emphasis in this category is on an occurrence that stimulates all the senses and not just the sense of sight. As previously mentioned, a multi-sensory event awakens us and is burned into our memory more significantly (Ludden, 2006).

The Framed View pattern shows the element of framing a landscape or view. This can occur at the end of or during a transition section. The element creates a sudden change in the order of the transitional space.

Interaction - patterns that have the potential of creating a physical or imaginary interaction of an individual with the space or the people within it.

An example for the interaction category is the idea of multiple paths - when an individual has several ways to go from point A to point B, they communicate with the space, they are aware of it, and they are part of the occurrence. The choice itself is what evokes the imagination and the senses to envision what each path holds beyond it.

Patterns of Experiential Design

Clue

Revealing Gradient

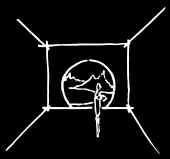
Entrance Transition

Visibility of Destination

Rhythm Light

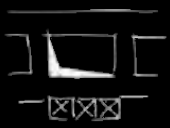
Interruption

Framed View



Proportion Contrast

End of Path

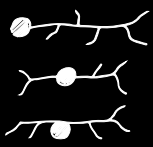


Diffus

Interaction

Path Choices

Social Encounter Placement



Framed Hustling

Exteri

mic

Path Turn

Waiting Segment

Void

Repetitive Element

Soundscapes

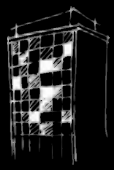
Graphic Element

ed Light

Flood Light

Circulation Show

Kinetic Structure



Nature Within

Multiple Elevation

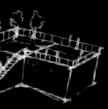
Visibility

Symmetry

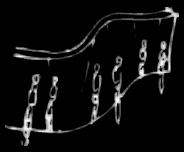
Craftsmanship

Indirect Light

or as Public



Reflective Objects



Motion Sensored Element

Data Sculpture

Pop-up Space

Encounter Passage

Sound Echo

Variable-sized Space

Engaging Textures

Naturescape

Waterscape

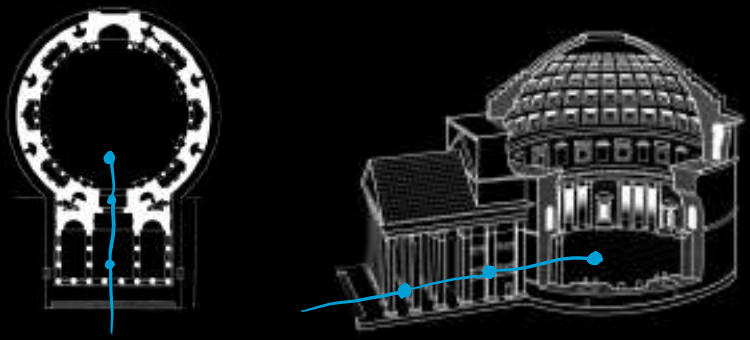
Trajectory Graph

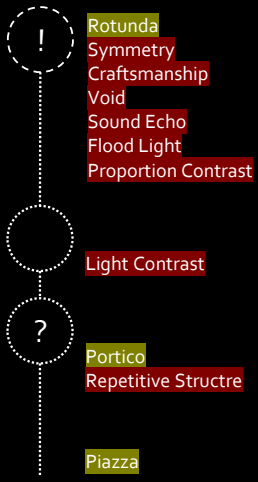
Using the same set of experiential patterns, the research continues by analyzing a visitor's movement throughout the trajectory graph. The graph abstractly describes the various trajectories that a visitor can move through the analyzed space. It contains the programs of the structure alongside the main experiential patterns, revealing the differentiation between the paths and the choices an individual can take while walking through the space.

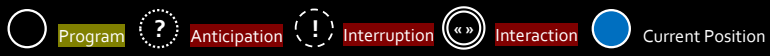
Three examples will be discussed to show the use of the experiential patterns and the trajectory graph.

The Pantheon trajectory example shows the anticipation allowed by the dim light emerging from within the structure. The repetitive columns in the portico invites the visitor to discover the awe that space encompasses within it — the direct light coming from the oculus, the perfect symmetry, the craft - the sculptures and the accuracy of the ornaments, as well as the echo created within the space.

The second example is the Yad Vashem Museum in Jerusalem. While at the beginning of the museum's path the visitor is already exposed to the final destination, the movement that they have to make to get there is different than the proximity that their gaze allows. The design provides a gradual journey and controlled exposure of the space up to the climax moment occurring first in the Hall of Names, and finally in the framed landscape view overlooking Jerusalem. In both The Pantheon and Yad Vashem, the visitor is in the hands of the planner and its exact choreography of the space.



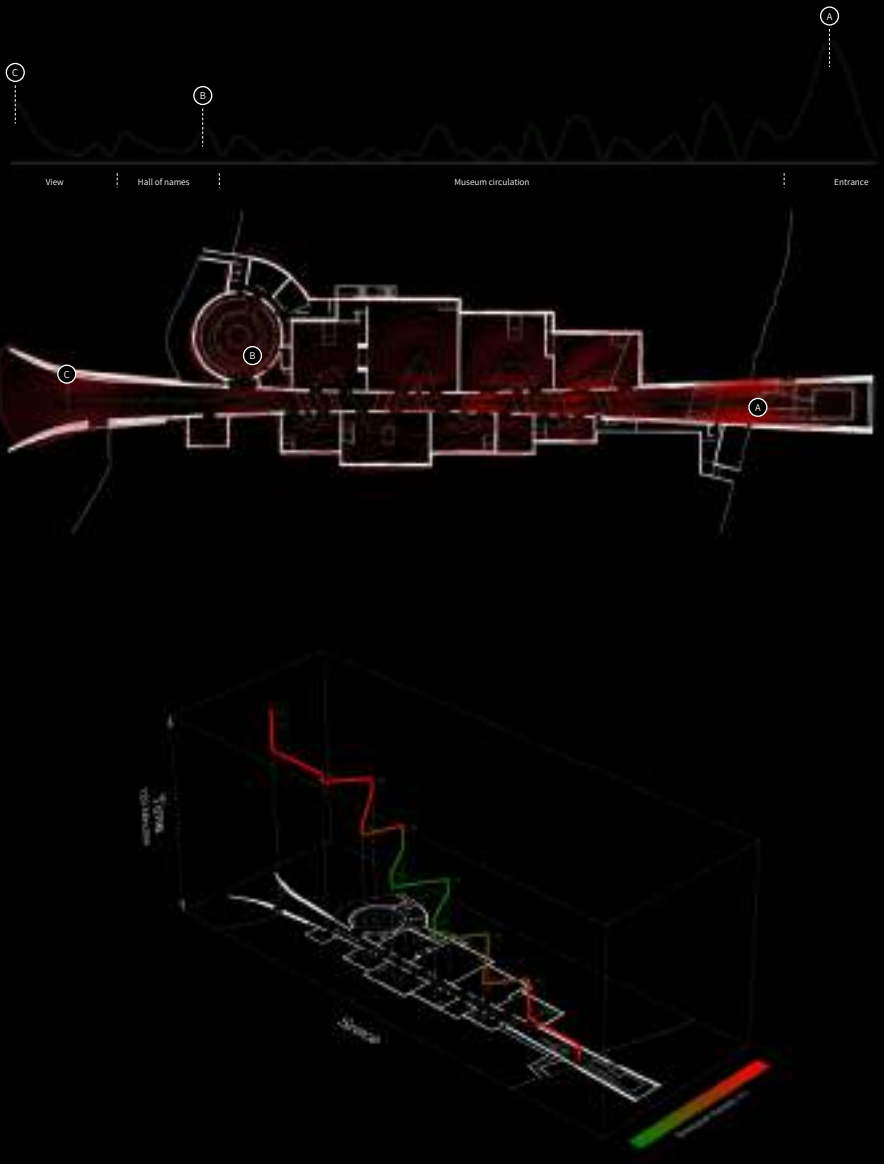




Pantheon, Rome

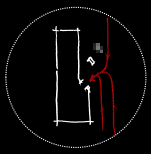
The third example uses a different design strategy. In the Maxxi Museum in Rome, a visitor starts their journey by experiencing a gradual transition between the outside and the inside — the entrance is framed and protrusive from the whole structure. The experience in the entrance hall occurs by the interaction with the space, the choice of which route to take first. The visitor can choose to go up to the next floor towards a hidden destination that is slowly revealed as one of the galleries. The gallery spaces contain a skylight that brings into the space diffused light and leads the visitor from one gallery to another. Another ascent to the top floor exposes the visitor to a framed view of the Roman landscape.

In fact, the visitor has several possible routes to go through, making each visit slightly different than the other. The visitor can choose how to move between the museum spaces, aware of the space and interacting with it. This idea of multiple routes, and the possibility of change with every visit to the space, become key principles for the design of enhanced experience in daily transitional spaces.



Mapping Experiments - Yad Vashem, Jerusalem

Entrance Transition



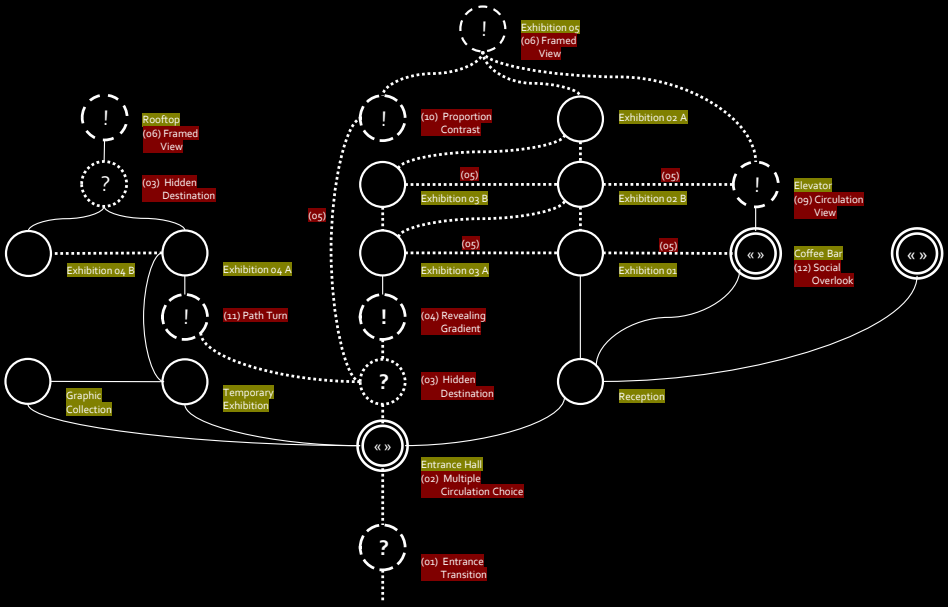
) Multiple Circulation Choice

) Hidden Destination

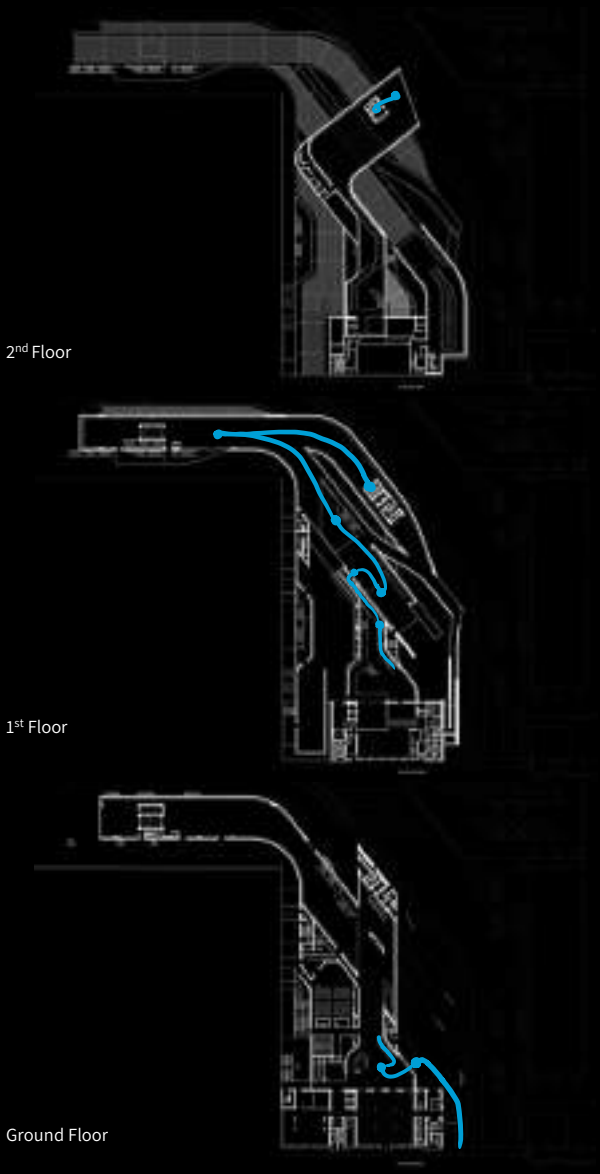
Revealing Gradient

Diffused

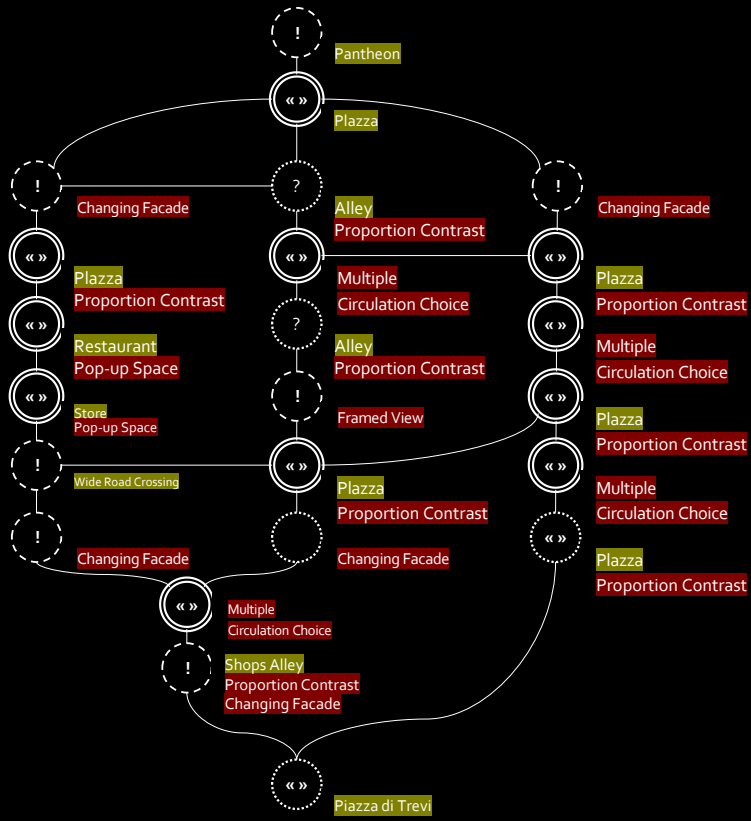
Framed



Program Anticipation Interruption Interaction Current Position



Maxxi Musuem, Rome



Program Anticipation Interruption Interaction Current Position

Piazza di Trevi to Pantheon

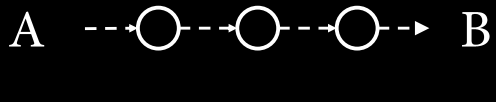
The Daily Commute

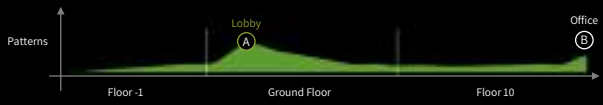
While the analysis concentrated on the less frequently visited spaces, the main objective of the project is to learn from those extreme sites in order to enhance experience in the daily environment. By looking at the analyzed spaces, most of the experiential patterns occur within the movement. In one's daily routine, most of the movement or transition is the commute from home to a place of work and back, whether with the assistance of a private car or public transportation. The project sees the potential in this transition for enhancing daily experience and it will be the main issue the case study will address.

The plans shown provide evidence for two possible daily transitions in an office building.

In one case, a commuter parks their car in the parking lot, navigates in between the cars towards the elevator, walks a short distance to the lobby, switches to another elevator that takes them to their desired floor, further walks in an opaque partitioned hallway that leads to their final destination workspace.

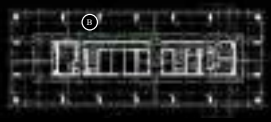
In another case, someone may arrive by public transportation, enter the building, and encounter its main atrium. There, a small cafe provides possible interaction with the people around it. The elevator travels to the desired floor, and circulation provides a choice of whether to go to the office through another view of the atrium or not. The transparent partitioned hallway provides the opportunity for social interaction before arriving at the final destination. On another day, a commuter might decide to skip the interaction of the crowded atrium, and makes their way to the office in the more tranquil path through a different elevator shaft.





Floor -1

Ground Floor

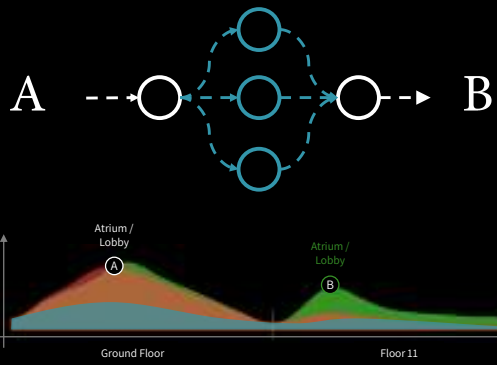


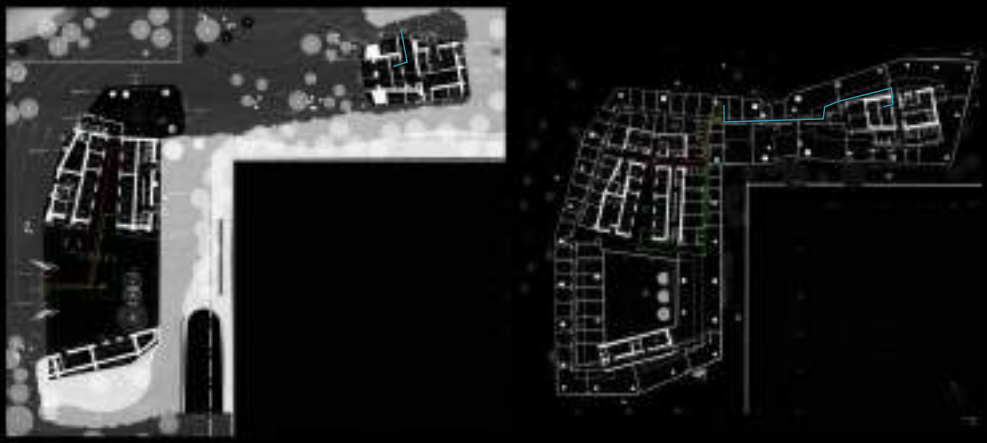
Floor 10

B.S.R 3, Bnei-Brak (Bnei-Brak Municipal Archives)

The change occurs along the way, and not necessarily in the destination itself, making the transition a significant place. The project seeks to intensify the daily experience with the help of the transition. The solution proposed to enhance the experience in the everyday environment is to first, curate the path by implementing the set of patterns, and second, to encourage the visitor to take a slightly different path each day––as such, creating a Constant Change.

Therefore, the project seeks a resolution to the research question–– how can experience be enhanced in daily transitional spaces?





TOHA, Tel Aviv (Tel Aviv Municipal Archives)

Case Study

Gush Dan Planned Light Rail

The Red Line in the aerial view of Gush Dan indicates one of the train's trajectories. Its construction is expected to be completed at the end of 2022, and dominates several cities, including Bnei Brak and Ramat Gan. The line is planned to pass through 10 stations in the underground of Menachem Begin Road in Tel Aviv and further east under Ze'ev Jabotinsky Street (NTA, 2020).

The planning complex known as Dan Center will contain one of the Red Line stations. It is located in Bnei Brak, adjacent to the border with Ramat Gan, which passes through Ben Gurion Boulevard. The station is expected to receive 30,000 commuters a day who will disperse to the immediate surrounding offices, residential, and commercial buildings (NTA, 2020). This point of eruption, from the underground to the above ground, from the darkness to the light, is indeed repetitive for the daily commuters; but, at the same it encompasses a potential for excitement, change, and intensification of the daily experience. The station will provide daily mass movement for thousands of people making it one large transitional space––therefore it has been chosen as the planning site for the case study.

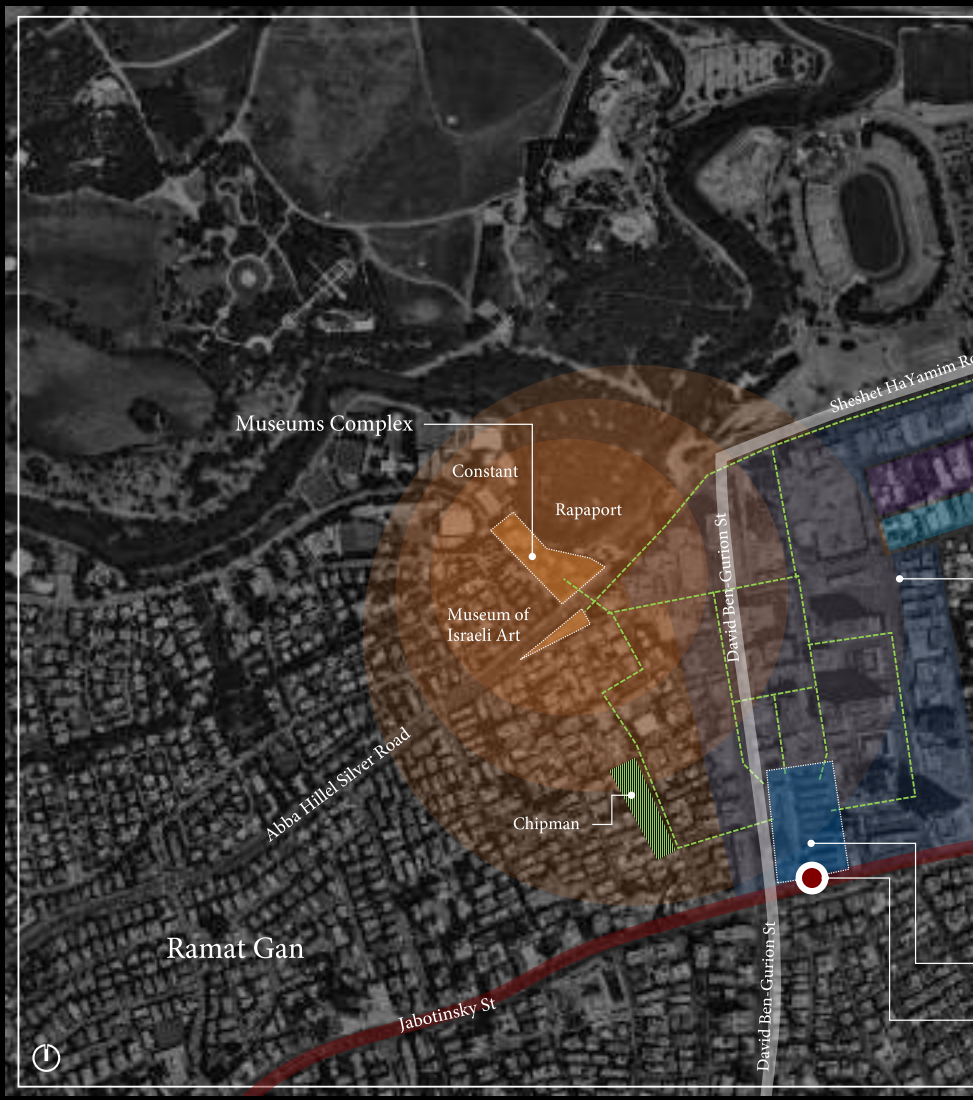
Site Surroundings

The Ben Gurion light rail station is located at the southern part of the site. Additional stations are located about 1.5km towards east and west. Looking at the aerial photo of the site it is possible to see the three main strips surrounding it. The metropolitan employment strip contains mostly office towers, the intermediate strip includes an industrial area and garages, and the threshold strip contains low-rise commercial buildings and forms a buffer with the residential area.

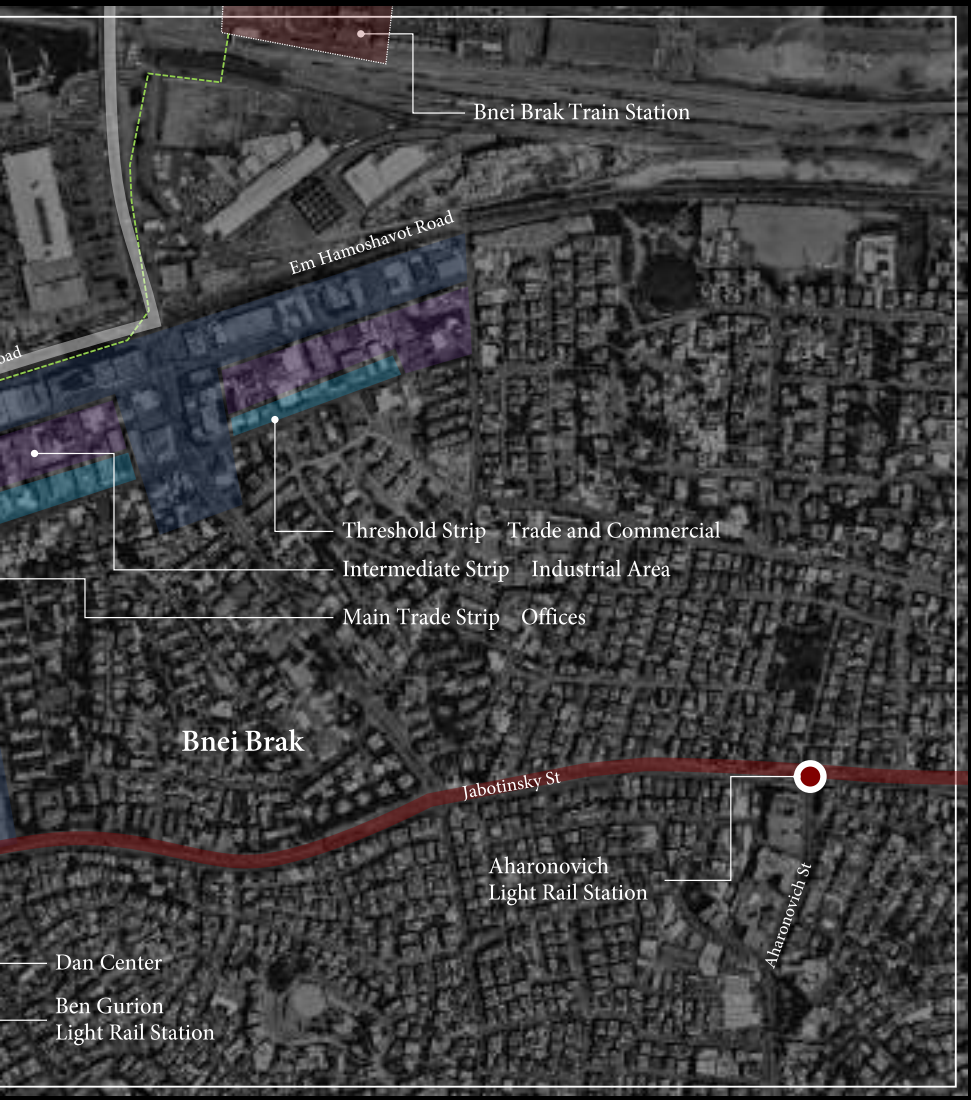
Beyond the seam line of the two cities there are two more points of interest. First, the developing museum complex in Ramat Gan that will contain new museums and galleries includes the Musuem of Israeli Art, Rapaport House, Constant House, and Kahana House (Faraj, 2018). Second, Haya Chipman Garden, which is located at the west of the complex, could act as a connector of the museum area and the station. A possible walkable urban network can benefit both the daily commuters who come to their workplace as well as the visitors who make their way to the museum area.

Gush Dan Planned Light Rail | Govmap - Israel GIS Mapping Tool


Jabotinsky
Ramat Gan
Bnei Brak
Dan Center

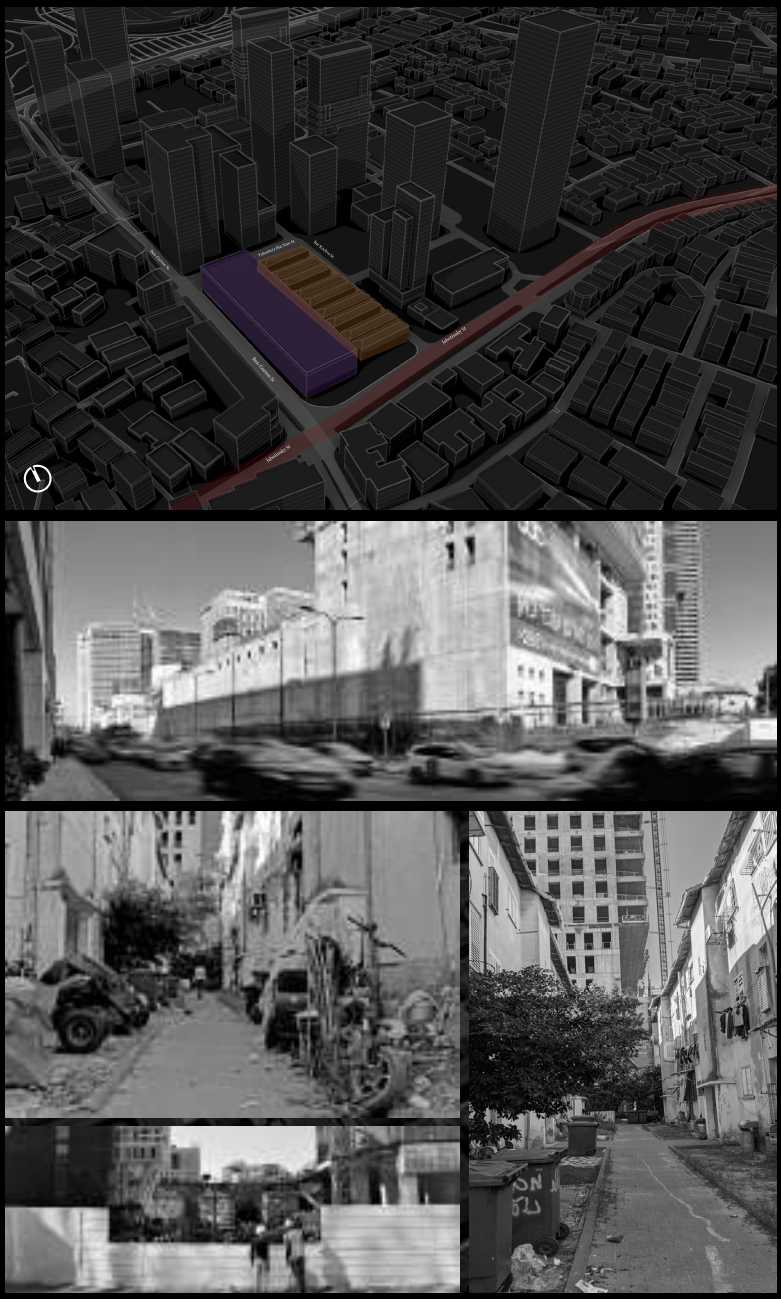


Site Surroundings | Govmap - Israel GIS Mapping Tool


Bnei Brak Train Station
Em Hamoshavot Road
Threshold Strip Trade and Commercial
Intermediate Strip Industrial Area
Main Trade Strip Offices
Bnei Brak
Jabotinsky St
Aharonovich
Light Rail Station
Aharonovich St
Dan Center
Ben Gurion
Light Rail Station

Dan Center - Current Situation

On the east side of the site there are currently nine three-story housing units built in the 1950s. As can be observed in the photos, the semi-public areas in between the units are in a rather neglected condition. West of the units is the location of what is known as the white elephant of Bnei Brak—a case of a dispute between partners caused the construction to stop about twenty years ago, and the building was abandoned until construction resumed in 2018 (Gazit, 2019).



Dan Center | Dec 27,2020

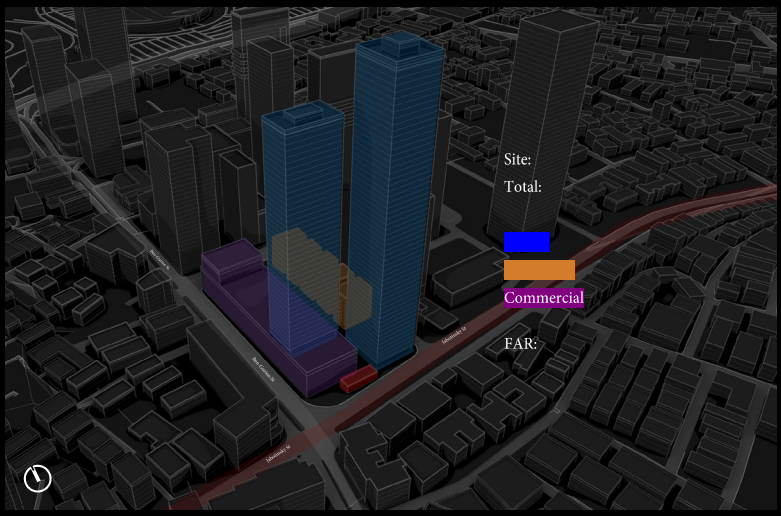
Dan Center - Future Situation

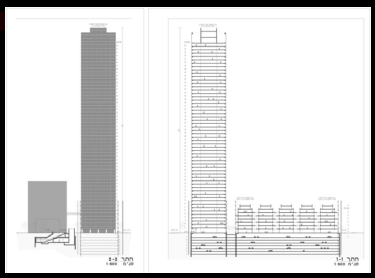
Approximately 130,000 square meters of built-up area will cover a complex of almost 20 dunams. Most of the area will be dedicated to office spaces and will be expressed in two office towers in the southern part of the complex. The nine housing units will be replaced with five mid-rise residential buildings as part of the evacuation and reconstruction project - “Pinui-Binui” (Bnei Brak Municipality, 2021).

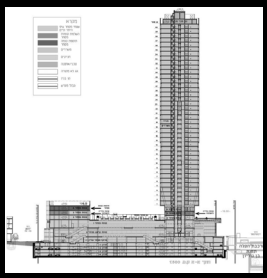
The white elephant will serve as a commercial center while a narrow green space will separate it from the residential area.

The light rail station exit is located at the far southern part of the site. As it can be observed in the scheme, the exit is designed as a singular object, and is detached from the entire complex.

The plans and sections of the future development further reveals this disregard of the rail exit. The section cuts above the 27 meters below ground that the actual train will be located at. The discontinuity between the future programs above ground and the underground train is possibly occurring due to the lack of collaboration between the multiple planners of the different parts of the complex.



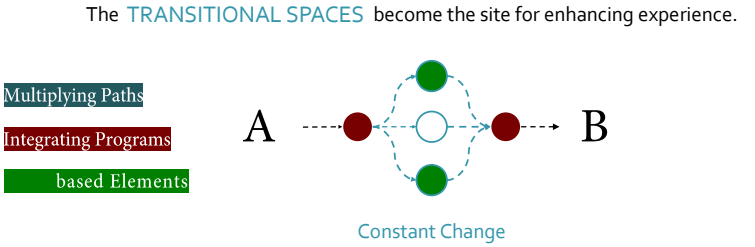




Bnei-Brak (Bnei-Brak Municipal Archives)

Design Principles

The project will reimagine the site as a case study for integrating design principles based on change, in which the circulation - the transition spaces — are used as an anchor to create an experiential routine. The proposal will aim to create a more fluent exit from the train underground to the programs above ground, and the immediate surroundings, while still following the same programmatic requirements previously detailed.



The plan is guided by three main design principles -

Multiplying Paths - Creating choices and a variety of movement from one point of the site to the other.

Integrating Programs - Encouraging interaction between people by integrating programs at horizontal transitional intersections.

Time-based Elements - Including elements throughout vertical transitions that vary over time on their own.

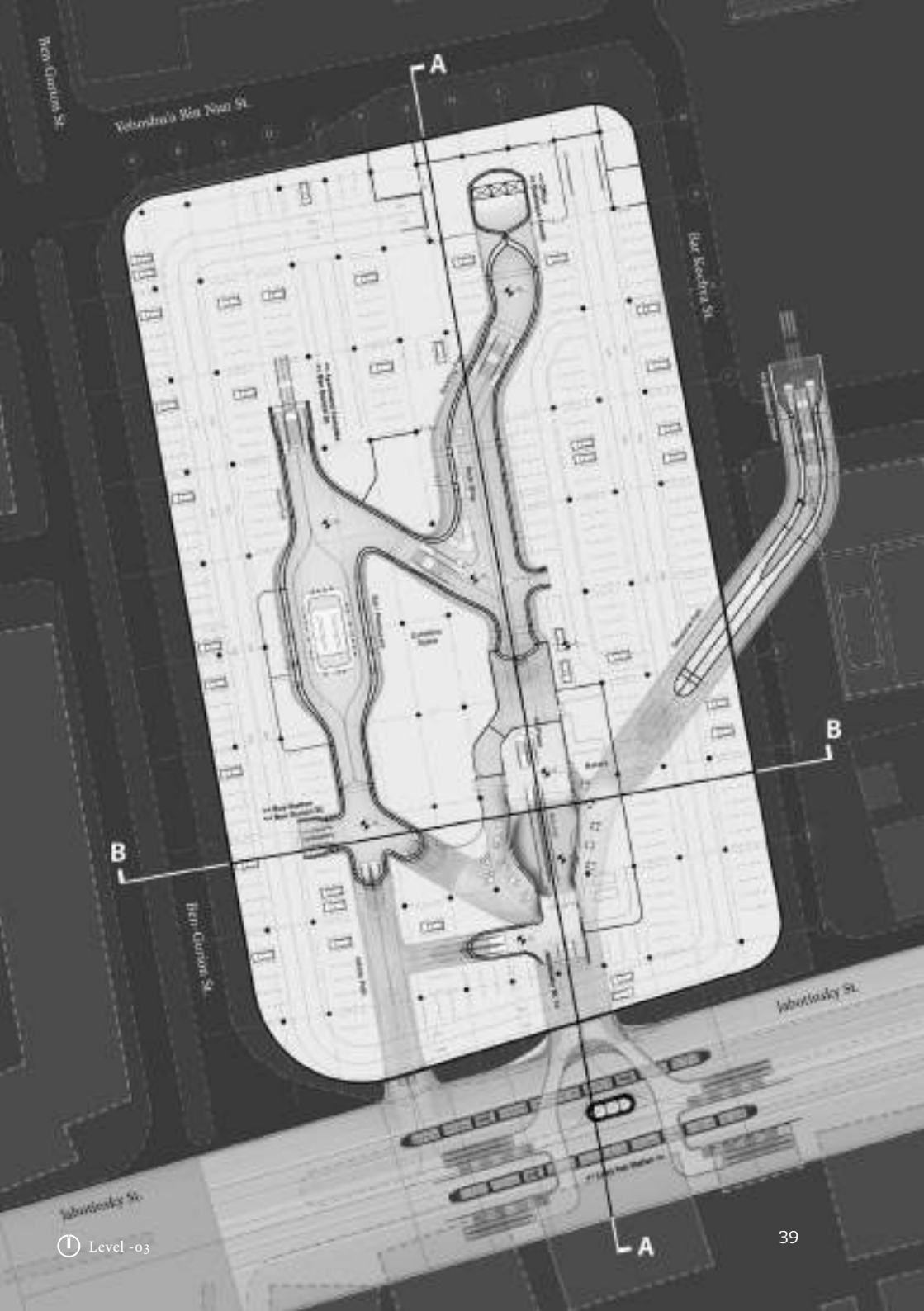
Underground

The multiple paths going out of the underground station will be directed to strategic locations within the site and its surroundings. A few of the routes will pass through the main atrium as shown in the plans. The paths are designed in the form of pipes that penetrate through the underground slabs. These will be used as underground car parking for electric vehicles at the first stage of the constructed complex, and in the future, the parking could be converted into additional programmatic spaces.

The axonometric diagram shows the pipe shaped interior space made of modular surfaces located in between the beams and columns parking slab structure. The parking lot itself also serves as a massive transitional space, which often is purely functional and disorienting. Multiple entrances and openings in the pipes will allow a reciprocal view and penetration of light into the parking area. The commuters arriving by car will be able to join the circulation system on the way to their destination. In order to address the disorientation, observing the direction of the pipes going upward will assist in knowing the relative location of an individual in the compound.

In accordance with the design principles, the various routes will contain programs and time-based elements.

Time-based elements will be placed mainly in the ascent and descent stages while using an escalator or staircase. They will include elements that have the potential to change on their own and stimulate the senses: direct or indirect light that casts varying shadows during daylight; artificial lighting that would create a similar effect during nighttime; vegetation that grows and develops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Yehuda Ha Nasi St.
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Jabotinsky St.
Ben Gurion St.

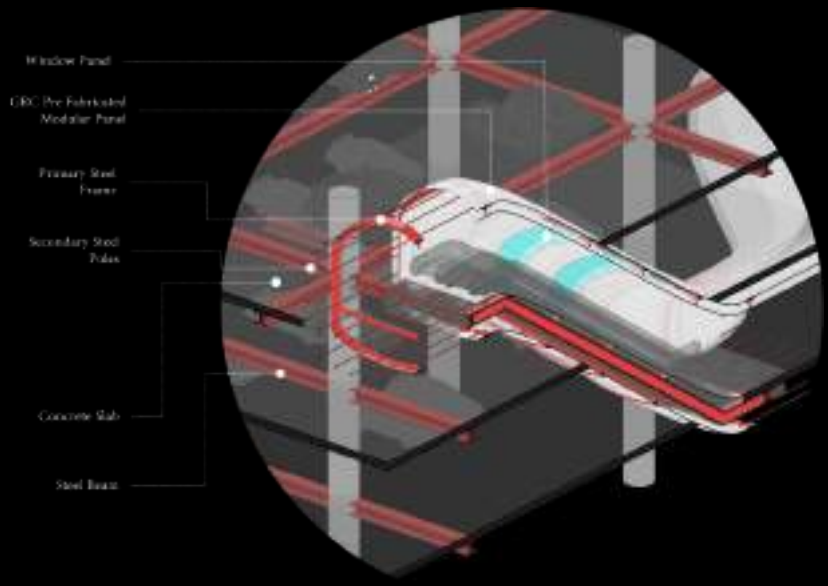
Level -03

over time; a flow of water that will be used to filter out the trains noise; projection areas for changing art exhibits; and interactive installations that respond to the people's movement.

The programs will be located on the horizontal intersections and will encourage interaction between the crowd: an amphitheater overlooking the oncoming trains; cafe; stage area; bakery; and bookstore.

The floors in the plan are slightly transparent in order to see most of the paths and the surrounding parking.

The AA section cuts through the center of the site through the station, the main atrium, and the plaza. The atrium - the moment of choice splits the different routes to their final destination above ground. A direct view of the outside appears immediately from the moment of stepping out of the train. It allows an individual to be quickly oriented and brings indirect light to the underground spaces. A direct light is coming through the southern exit, through another trajectory that does not pass through the atrium but meets with it only by view.


Window Panel
GRC Pre Fabricated
Modular Panel
Primary Steel
Frame
Secondary Steel
Poles
Concrete Slab
Steel Beam

Underground Scheme


Motion Sensored Light
Bakery
Stage / Piano
Direct Light, Framed View
Amphi
Waterscape
Office District
Plaza
Bar Kochva St.
Jabotinsky St.
Bar Gurion Light Rail Station
Potential Route
Programs
Time-based Elements

Underground Junction

Moment of Choice - Underground Main Atrium

Above Ground

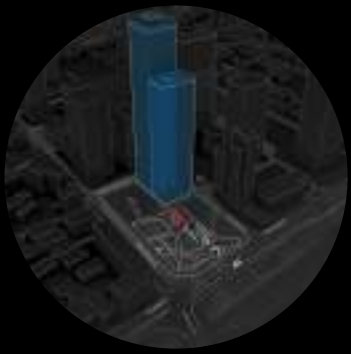
The proposed site division connects the Haya Chipman Park and Ben Gurion Boulevard with the office complex in the eastern part of the site. Also, another link is planned to a pedestrian street, offices and additional commerce located north of the site.

In the site center, a plaza is designed at a height of two floors below street level in order to bring the outside closer to underground commuters. The plaza creates a public space protected from the noise of the busy streets of Jabotinsky and Ben Gurion Boulevards.

The office area will extend to the eastern part of the site, housing in the northwestern part and additional commerce in the southwestern part of the site.

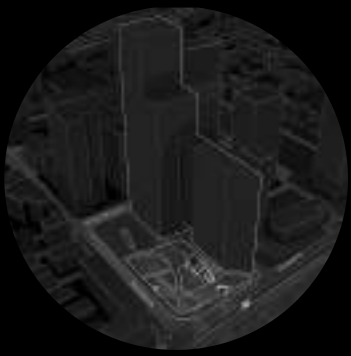
Following the goal to intensify the routine experience, the project chose to further develop the office building above ground as a direct continuation of the underground.

The design aims to provide various routes for the daily commuter on its way to the office. An individual can choose between the multiple paths within the main atriums, the walkable terraces, and the elevators––allowing the individual to experience the space the way they choose that day.



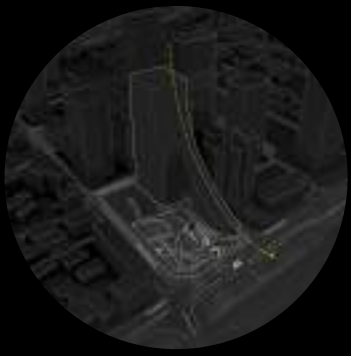
Relocation

Relocation of the two office towers planned to be built in the site, in order to avoid overshadowing the residential buildings.



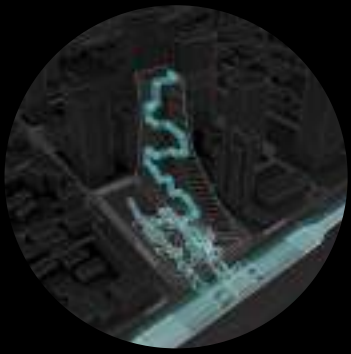
Additive Mass

Combining the masses in order to gain a larger office floor area and to define the central plaza.



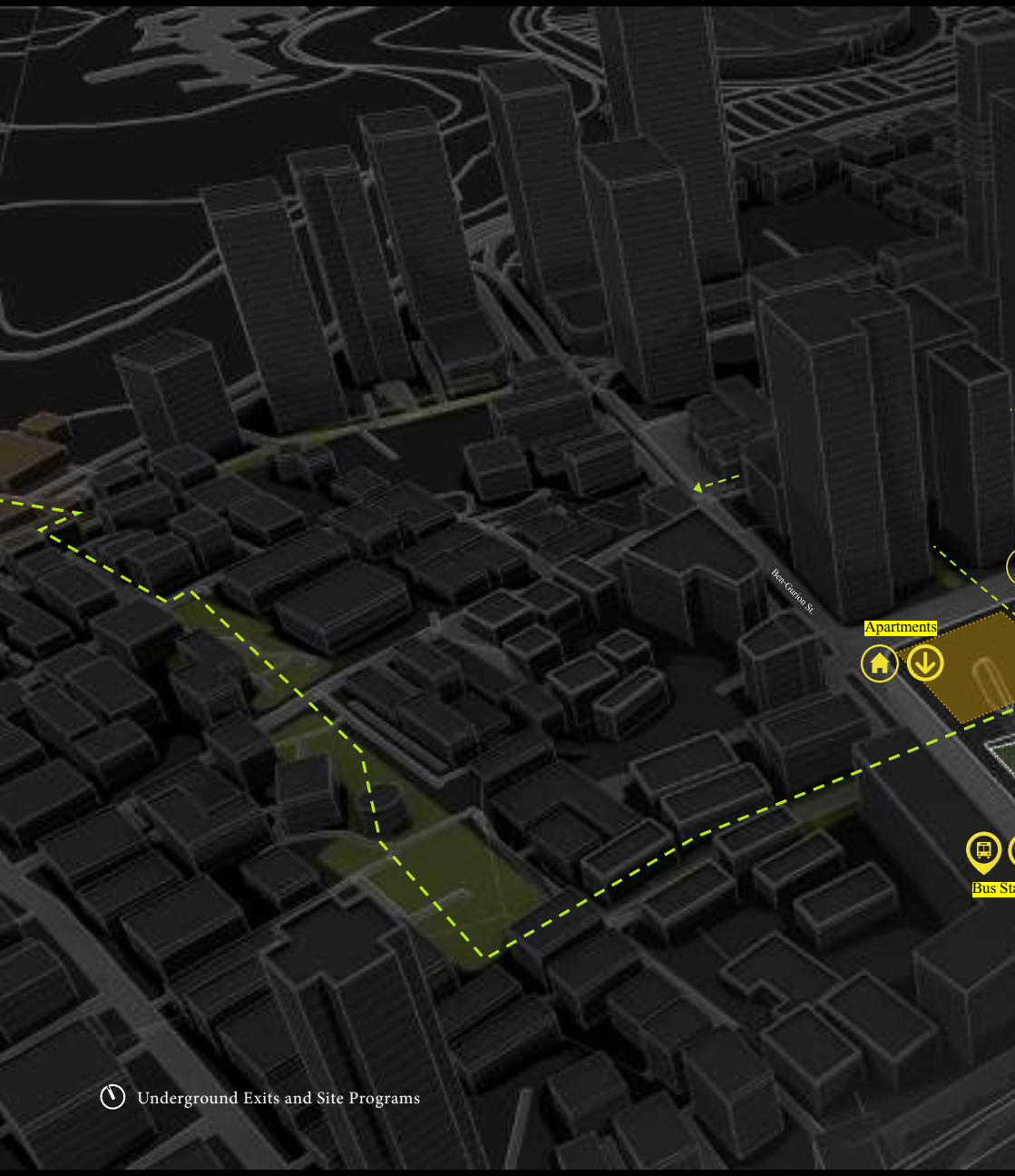
Subtractive Mass

Creating a gradual heightening from the low-rise buildings in the south to the high-rise towers in the north of the site. The terraces act as open workspaces and balconies for the office floors, and commercial public areas at the first floors.

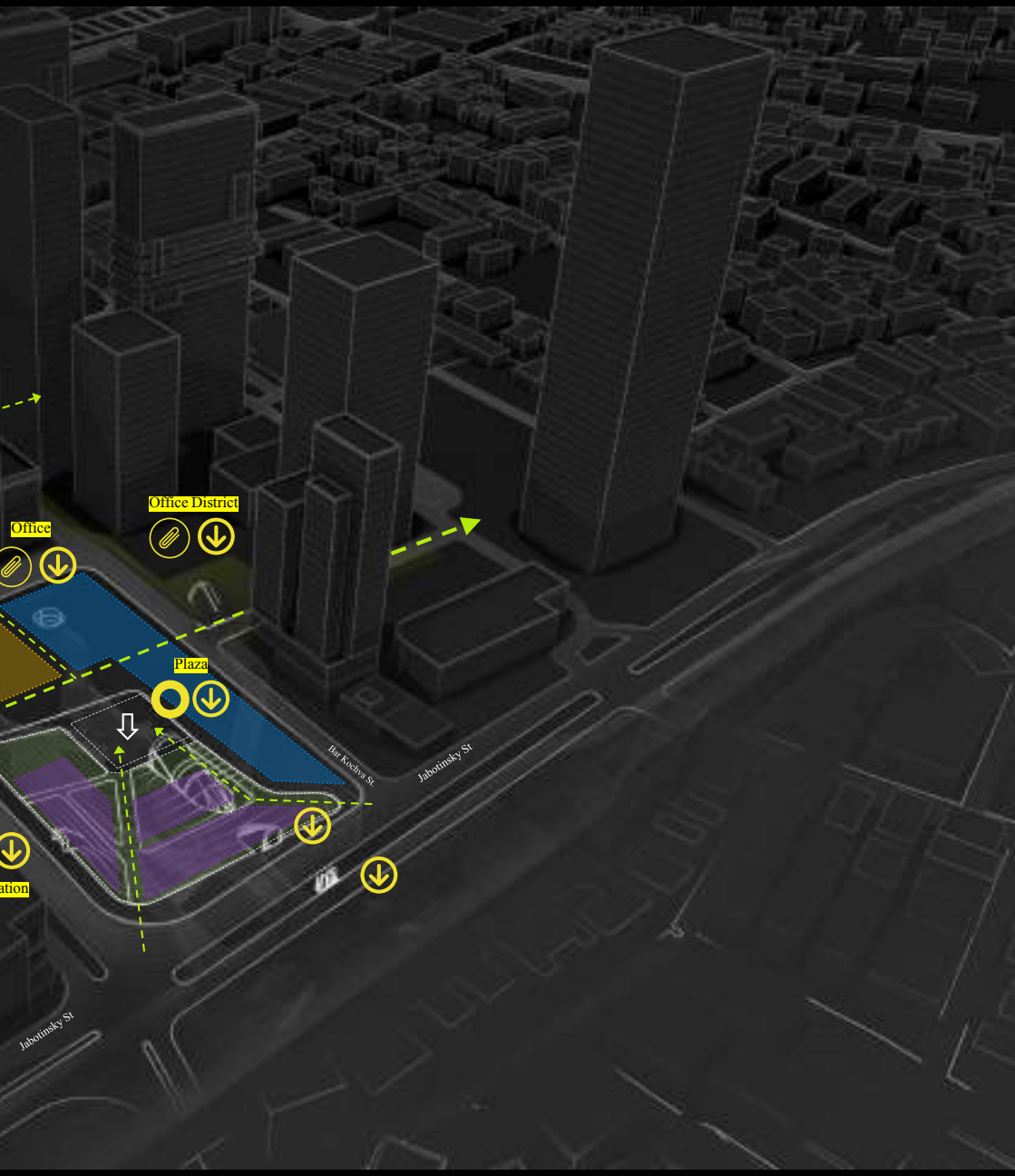


Slab Penetration

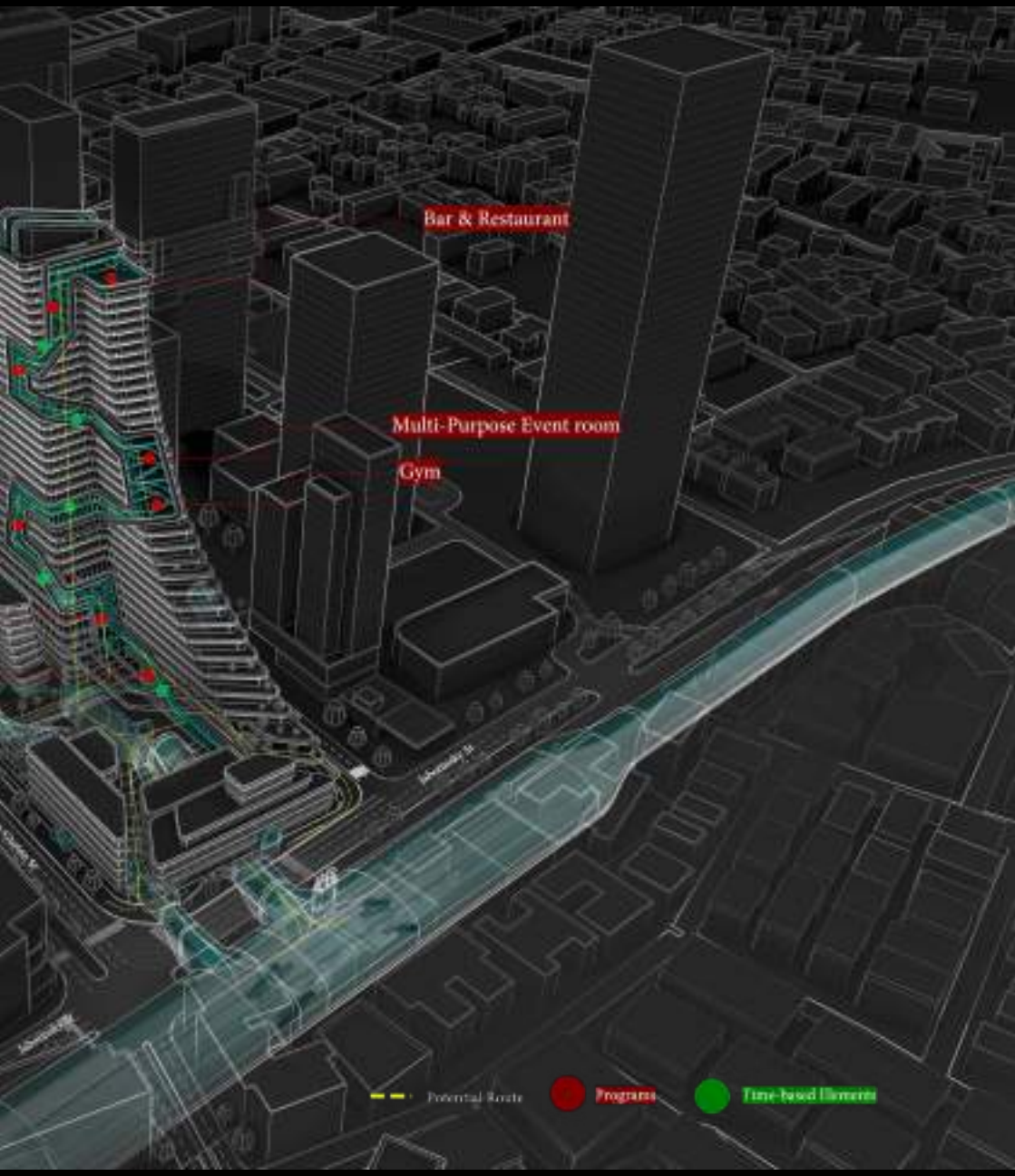
The pipe penetrates both the parking slabs and the office tower floors. This creates a connected path of semi-public atriums containing various programs and work environments.

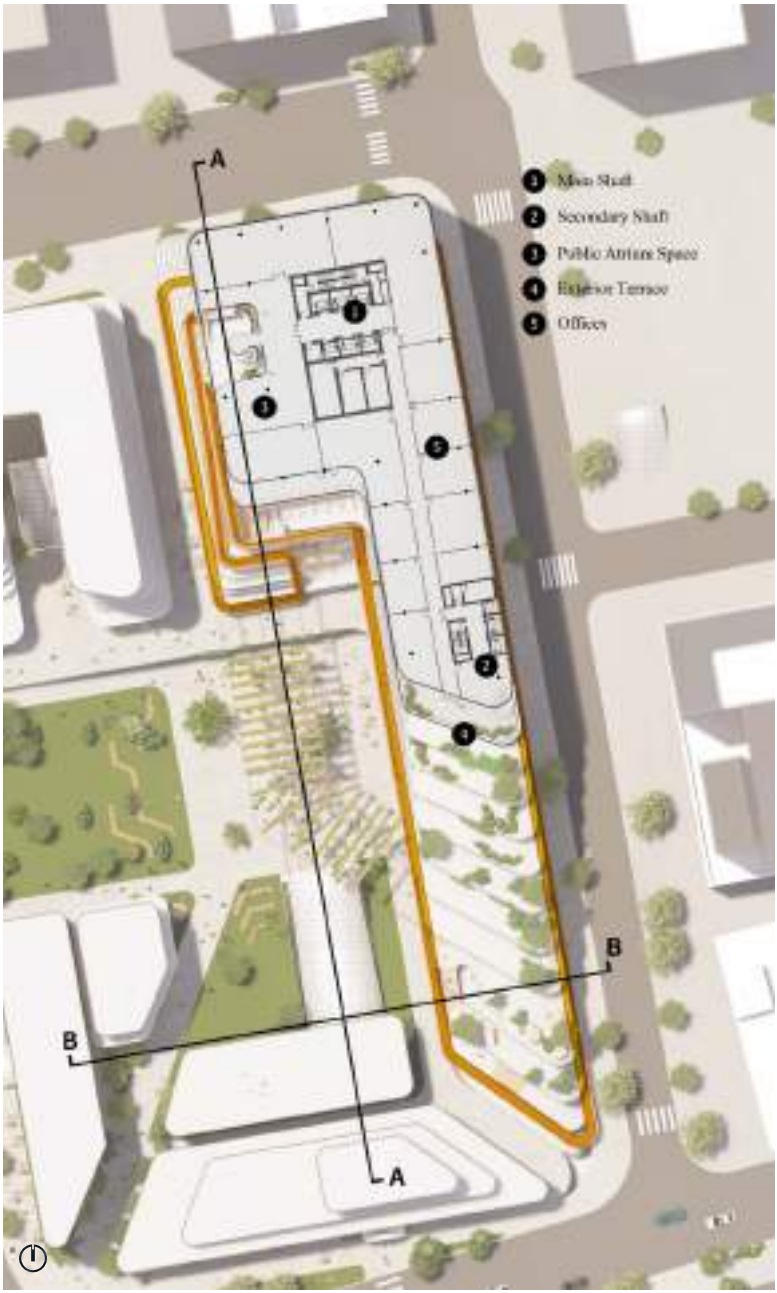


Underground Exits and Site Programs


Office District
Office
Plaza
Bar Kochva St.
Jabotinsky St
Jabotinsky St

Above Ground Scheme


Bar & Restaurant
Multi-Purpose Event room
Gym
Potential Route
Programs
Time-based Elements


A
B
B
A
1 Main Shaft
2 Secondary Shaft
3 Public Atrium Space
4 Exterior Terrace
5 Offices

A view of the southern atrium shows the various workspaces that can occur within it. The first floor of each atrium is open for the use of all employees in the building. The other floors overlooking the atrium can be associated with different companies, while the connecting staircase remains public.

Roof Plan

Section North South - AA depicts a view of the connected circulation of both the underground and the office building.


Jabotinsky St.

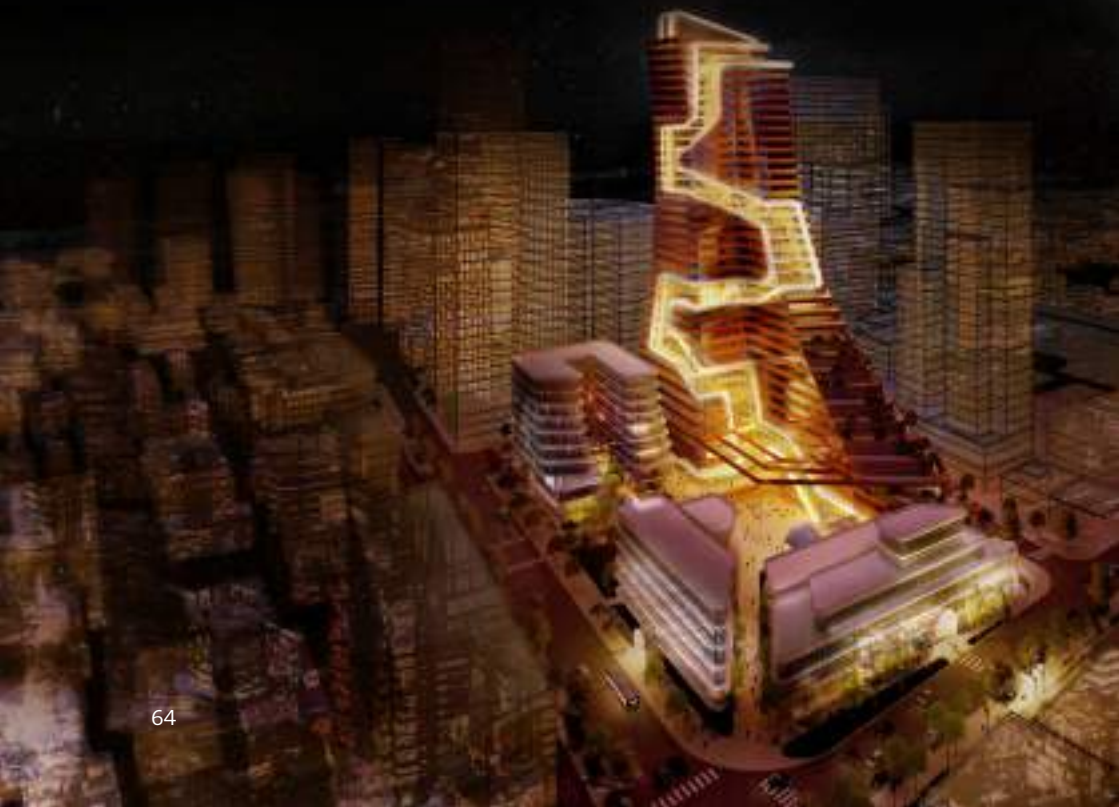
Section East West - BB cuts the underground atrium, Ben Gurion Boulevard and Bar Kochva Street. It allows a view of the sloped sitting area and the main plaza, the terrace area of the office building, and a view on the atriums path facade.

1. Plaza
2. Sloped Sitting Area
3. Public Terraces
4. Light Rail Station Main Hall
5. Parking
6. Cafe
7. Soundscape
8. Green Workspace
9. Tribune Overlook
10. Residential Complex
11. Business District
12. Commercial

Main Plaza - The round elements shown in the rendering acts as a planter and seating area, while others function as skylights directed into the underground parking and circulation system.

Conclusion

In order to address the issue of the lack of stimulation in our everyday environment, which can be measured by an individual's experience in the daily spaces, the project turns to the potential of the movement that occurs within the transitional spaces. Using as a case study the future mass commute that will occur in the Dan Center site, the project applies three design principles that prioritize change — giving the option to choose by multiplying routes, integrating programs that encourage interaction, and implementing time-based elements that evolve throughout the day.



While it is not expected that an individual will walk to the twentieth floor office on foot everyday through the public experiential path, it can be assumed that the choice and variety of routes provided by the design will encourage someone to create their route through a combination of different paths. The possibility to go for a lunch break by descending a few floors by foot and continuing via the elevator, or starting the journey by ascending through the terraces and joining the atriums path, encourages an individual to become aware, interact, and choose their space––ultimately, becoming an enhanced experiential daily routine.

Bibiliography

Books & Articles

Alexander, Christopher. 1977. A Pattern Language: Towns, Buildings, Construction. Oxford University Press.

Alexander, Christopher. 1977. The Timeless Way of Building. Oxford University Press.

Berlyne, Daniel E. 1960. Conflict, Arousal, and Curiosity. McGraw-Hill, New York.

Bloomer, Kent, Moore Charles, Yudell Buzz. 1977. Body, Memory, and Architecture. A Yale Paperbound. Yale University Press.

Ellard, Colin. 2015. Places of the Heart : The Psychogeography of Everyday Life. Bellevue Literary Press.

Fu, Yi Tuan. 2001. Space and Place: The Perspective of Experience. University of Minnesota Press. P.10.

Goldhagen, Sarah Williams. 2017. Welcome to Your World How the Built Environment Shapes Our Lives. Harper.

James, William. 1890. The Principles of Psychology. Vol. 1. Henry Holt, New York. P.626.

Kahn, Louis. 2003. Louis Kahn: Essential Texts
WW Norton & Company.

Ludden, Geke D.S., Paul Hekkert, and Hendrik N.J. Schifferstein. 2006. Surprise & Emotion. Proceedings from the 5th Conference on Design and Emotion 2006 31 (0): 1–12.

McCarter, Robert. 2016. The Space Within: Interior Experience as the Origin of Architecture. Reaktion Books.

Pallasma, Juhani. 2008. "The Eyes of the Skin - Architecture and the Senses." Londres: Wiley.

Websites

Farage Lior, Haaretz (2018)
https://www.haaretz.co.il/gallery/events/ramatgan/1.5871496

Gazi Amitai, Calcalist (2019). Migdal is investing in the white elephant of Bnei Brak
https://www.calcalist.co.il/real_estate/articles/0,7340,L-3766492,00.html

NTA - Metropolitan Mass Transit System, Red Line (2020)
https://www.nta.co.il/line/1

Figures & Plans

Bnei-Brak Municpal Archive (2021)
http://www.bnei-brak.muni.il/Service/engineering/Pages/tik_binyan.aspx

Govmap - Israel GIS Mapping Tool
https://govmap.gov.il/

Maxxi Museum / Zaha Hadid Architects, ArchDaily (2010)
https://www.archdaily.com/43822/maxxi-museum-zaha-hadid-architects

Parc de la Villette / Bernard Tschumi Architects
http://www.tschumi.com/projects/3/

Tel-Aviv Municpal Archive (2021)
https://www.tel-aviv.gov.il/Residents/Construction/Pages/Archive.aspx

Vessel Public Landmark / Heatherwick Studio, ArchDaily (2019)
https://www.archdaily.com/913699/vessel-public-landmark-heatherwick-studio

Yad Vashem / Safdie Architects, Photo by Yonatan Sindel, Flash 90 (2020)
http://www.flash90.com/fotoweb/archives/5001-Flash90-Archive-Photos/Flash90/Images_2019-58/F200419YS56.jpg.info