COMPLEX PROJECTS

SWITCH STATION

Switch Between A Train Station And A Night Live Venue

Jiahui Shi

07/04/2024



INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

CLIMATE

STRUCTURE

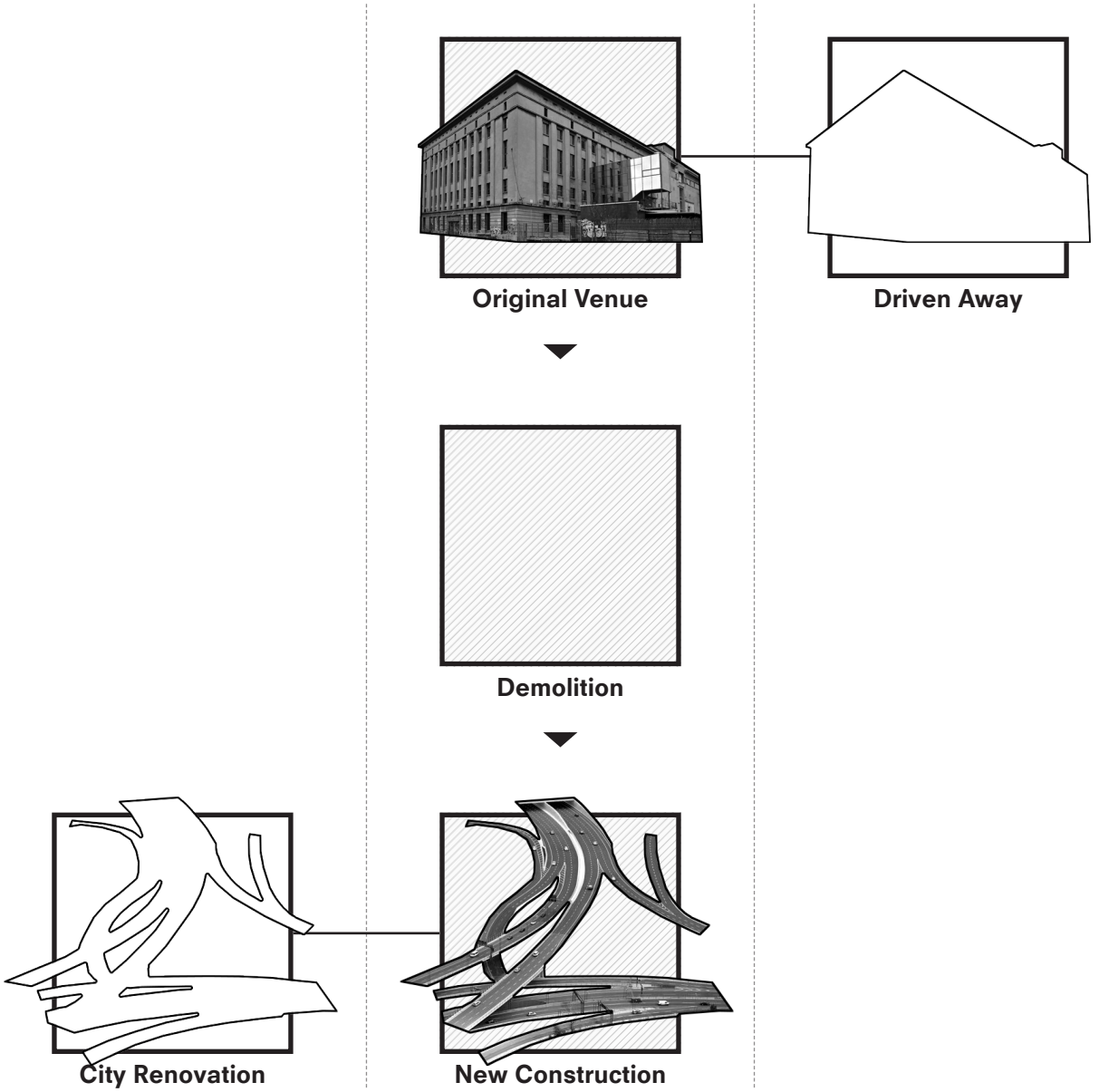
DEVELOPMENT

CONCLUSION

NET ZERO LAND CONSUMPTION



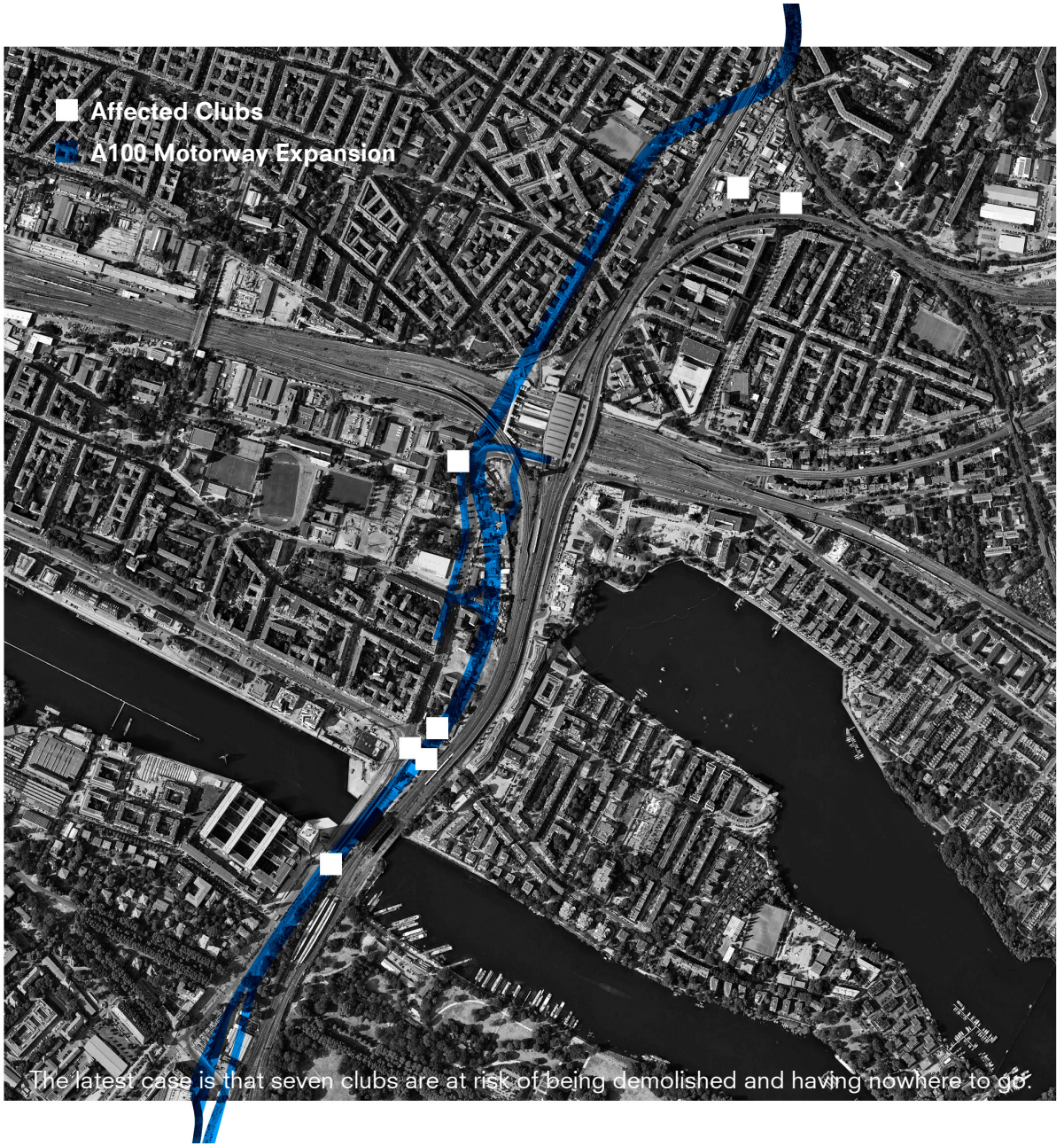
VENUE TAKEOVER



VENUE TAKEOVER



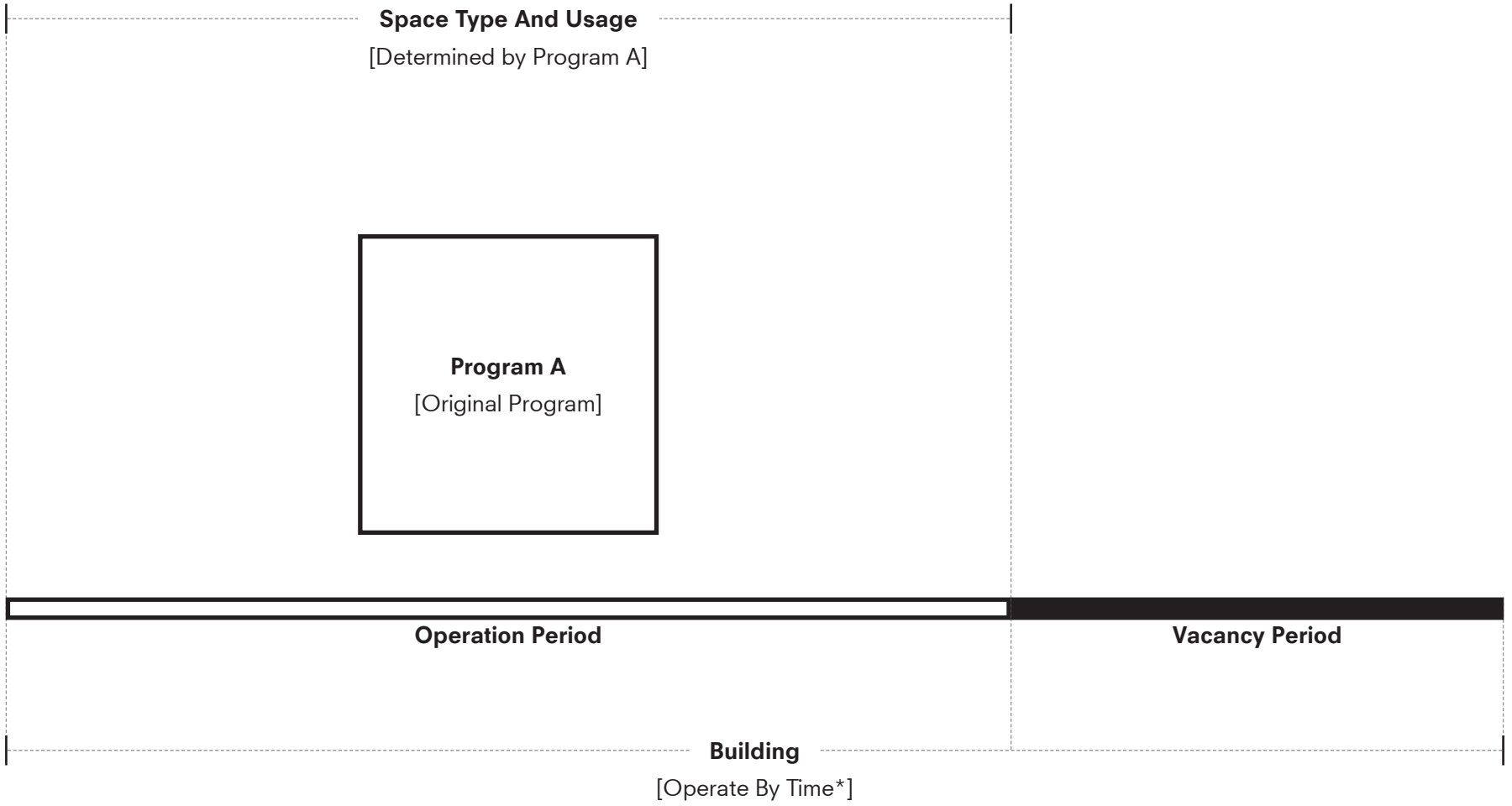
VENUE TAKEOVER



VENUE TAKEOVER

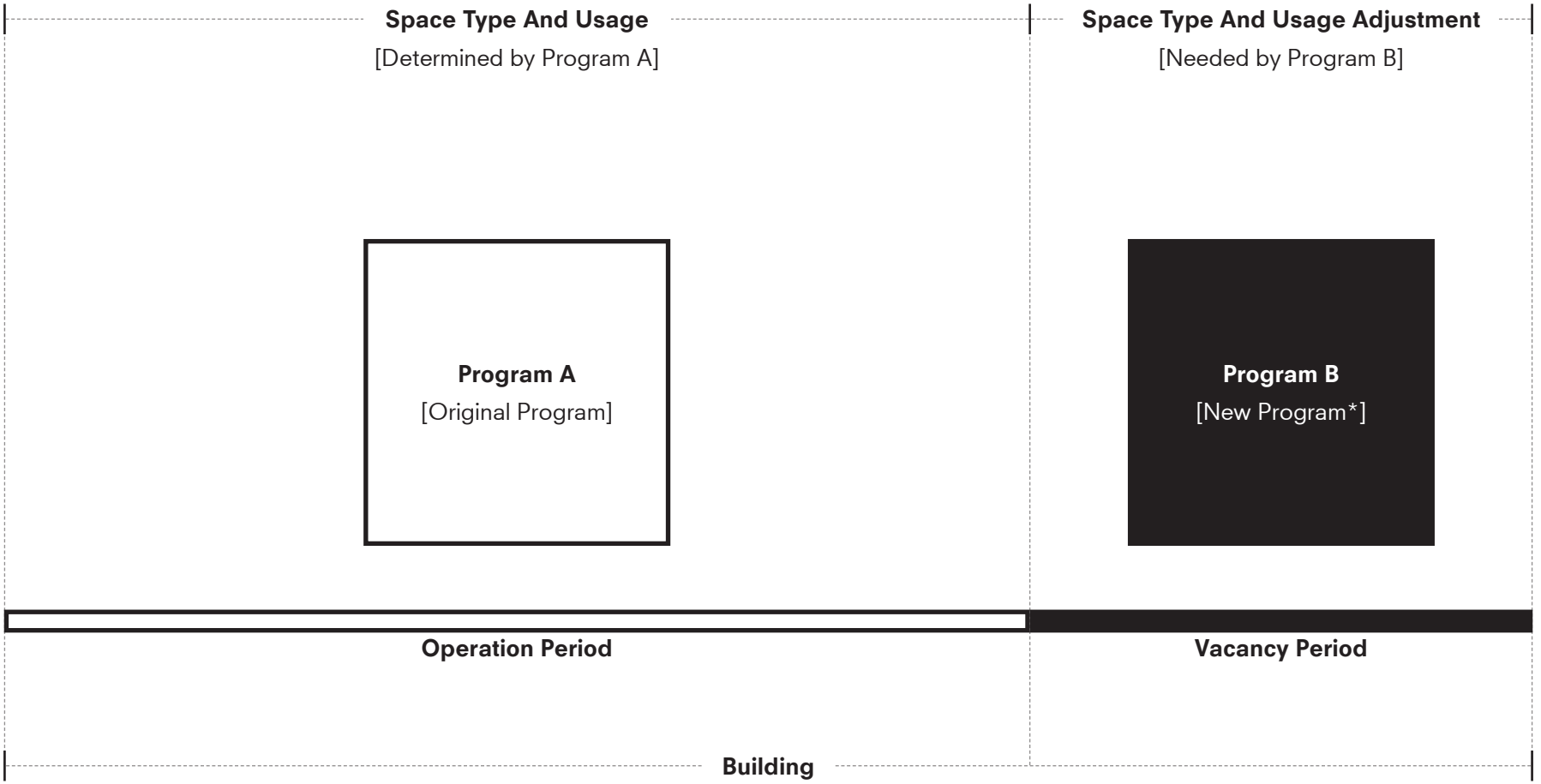
WHAT CAN BE DONE TO THIS SITUATION?

VENUE SHARING



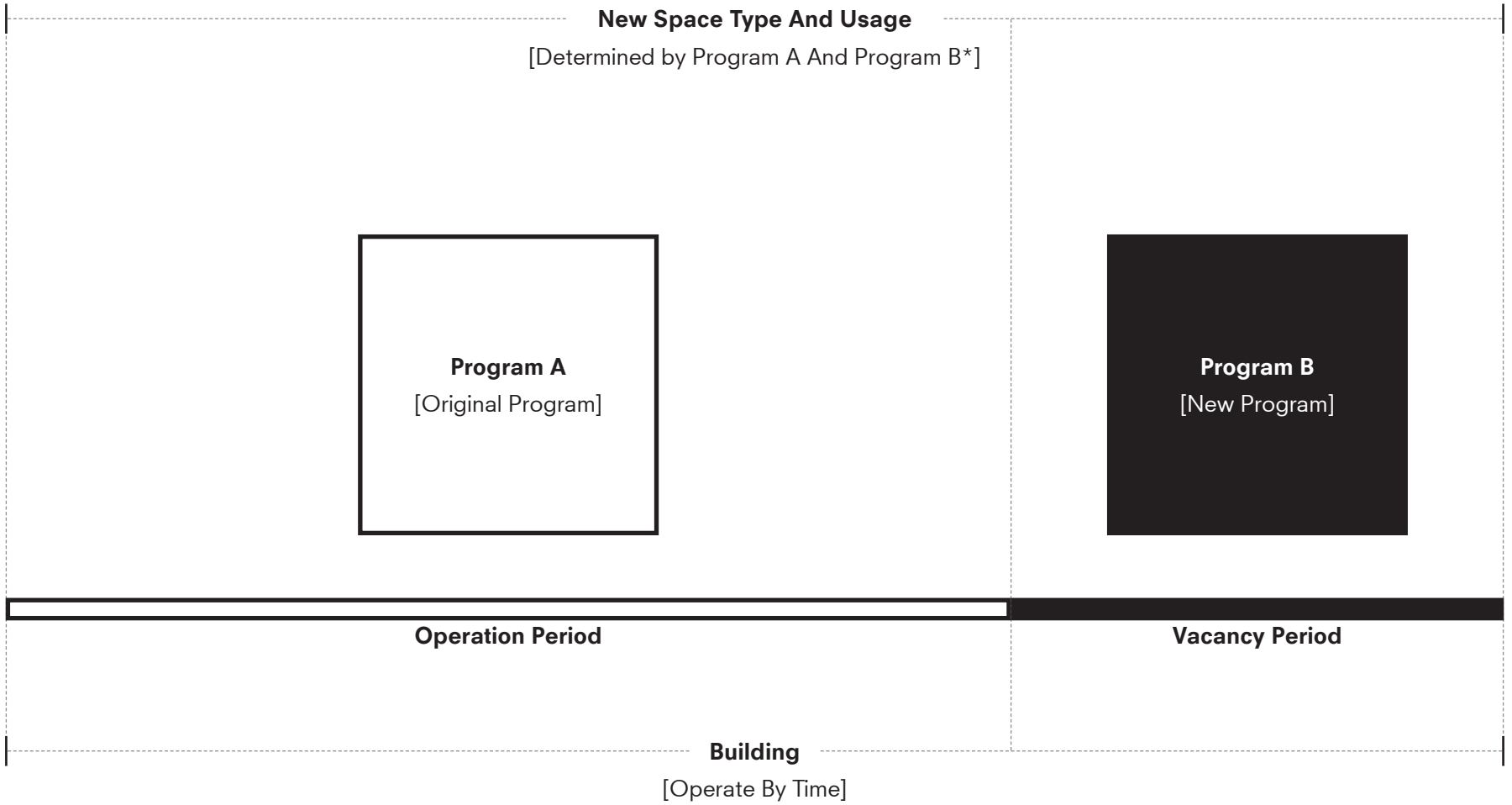
*Time can be hours, days, seasons or even decades.

VENUE SHARING



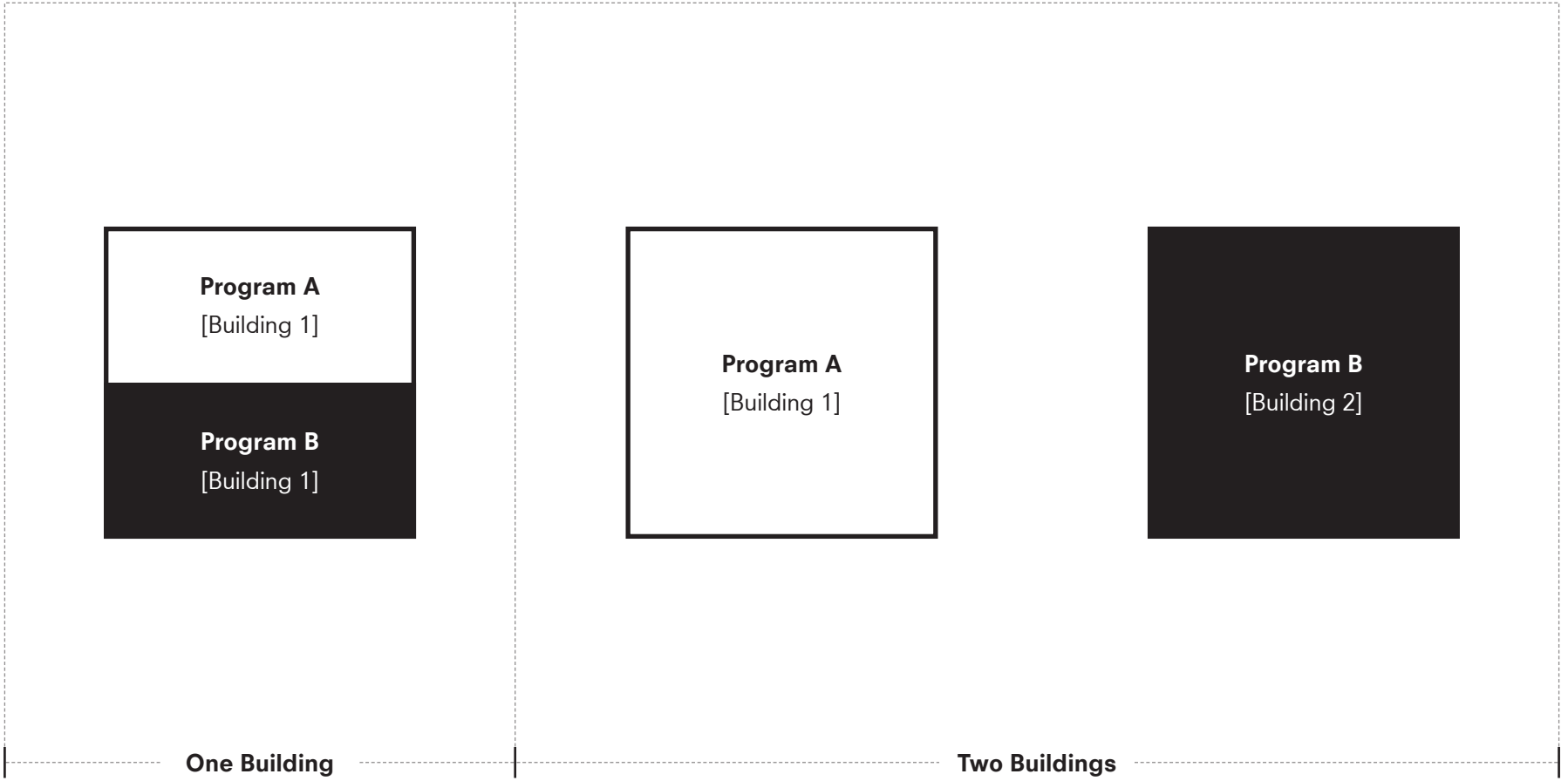
*New program should be suitable to operate during original vacancy period.

VENUE SHARING



*New space type and usage can accommodate both programs and benefit their original user experience.

VENUE SHARING



Venue sharing strategy allows less energy consumption for building construction.

Introduction

TRAIN STATION

Train Station Operation Time

4 am — **1 am** — **4 am**



Vacancy Period

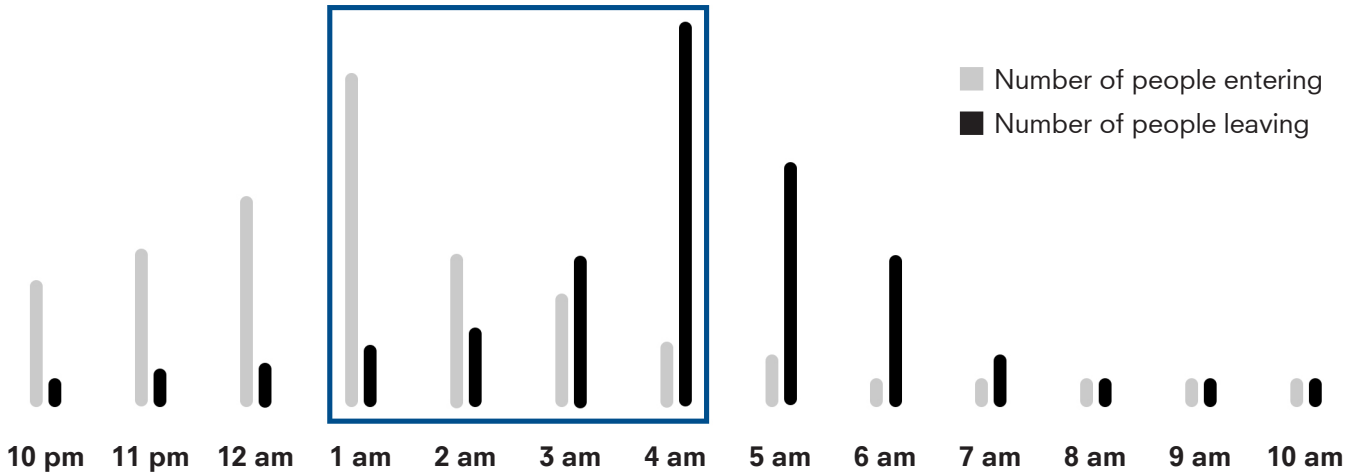
Introduction

NIGHT PARTNER



HIGH PEAK

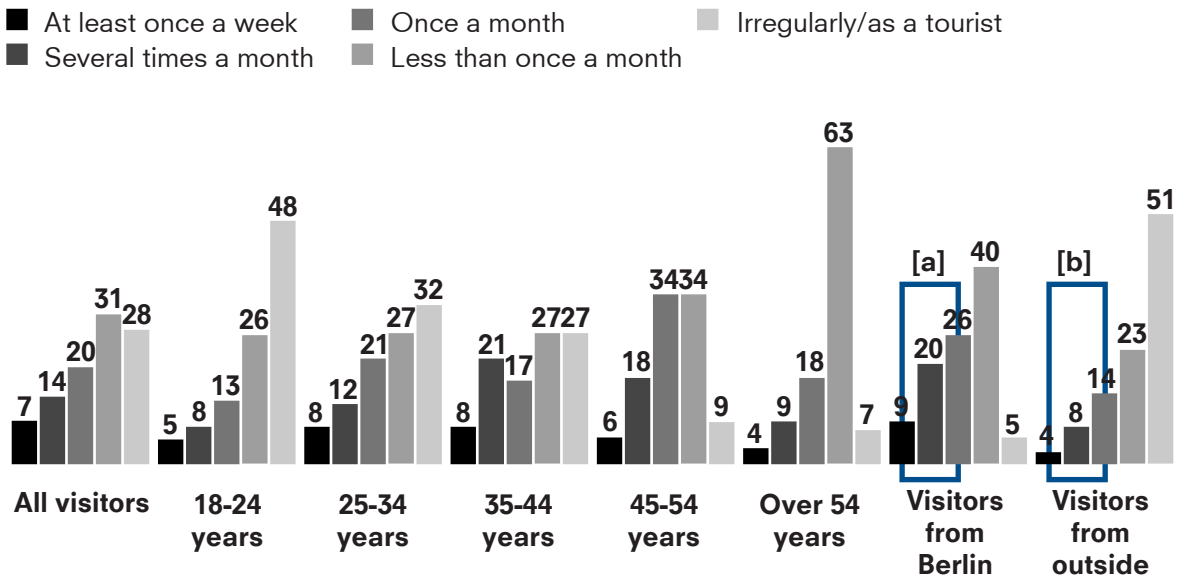
Number Of People Entering And Leaving The Night Live Venue



The high peak of night live is during 1 am to 4 am.

FREQUENCY

Frequency Of Nights Out

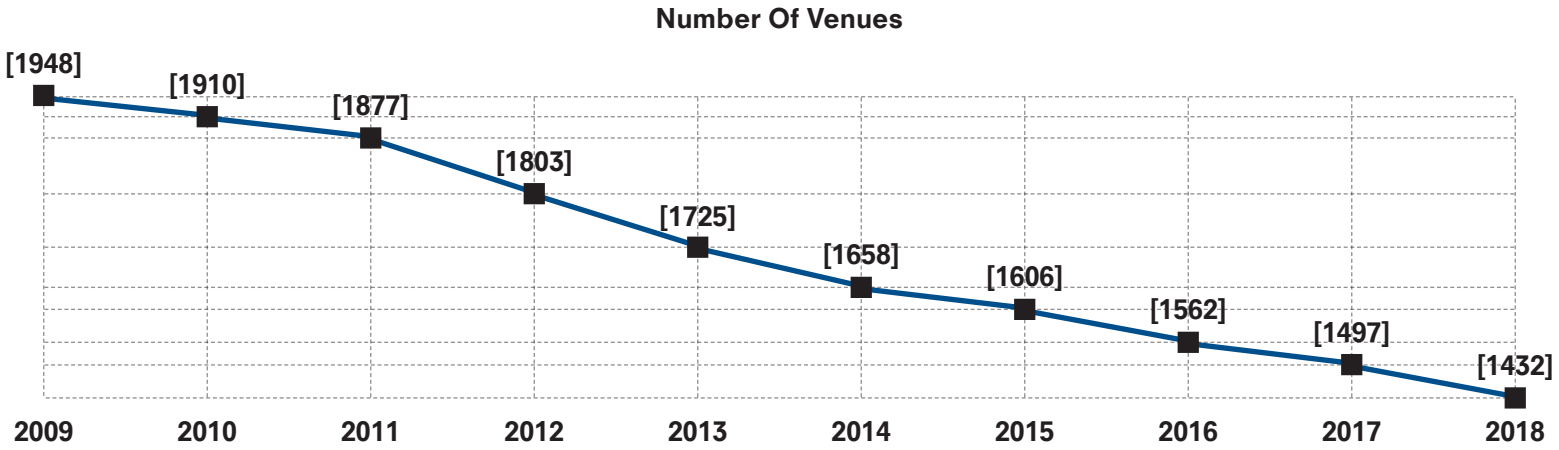


[a] Berliners once a month is 55%

[b] Non-Berliners once a month is 26%

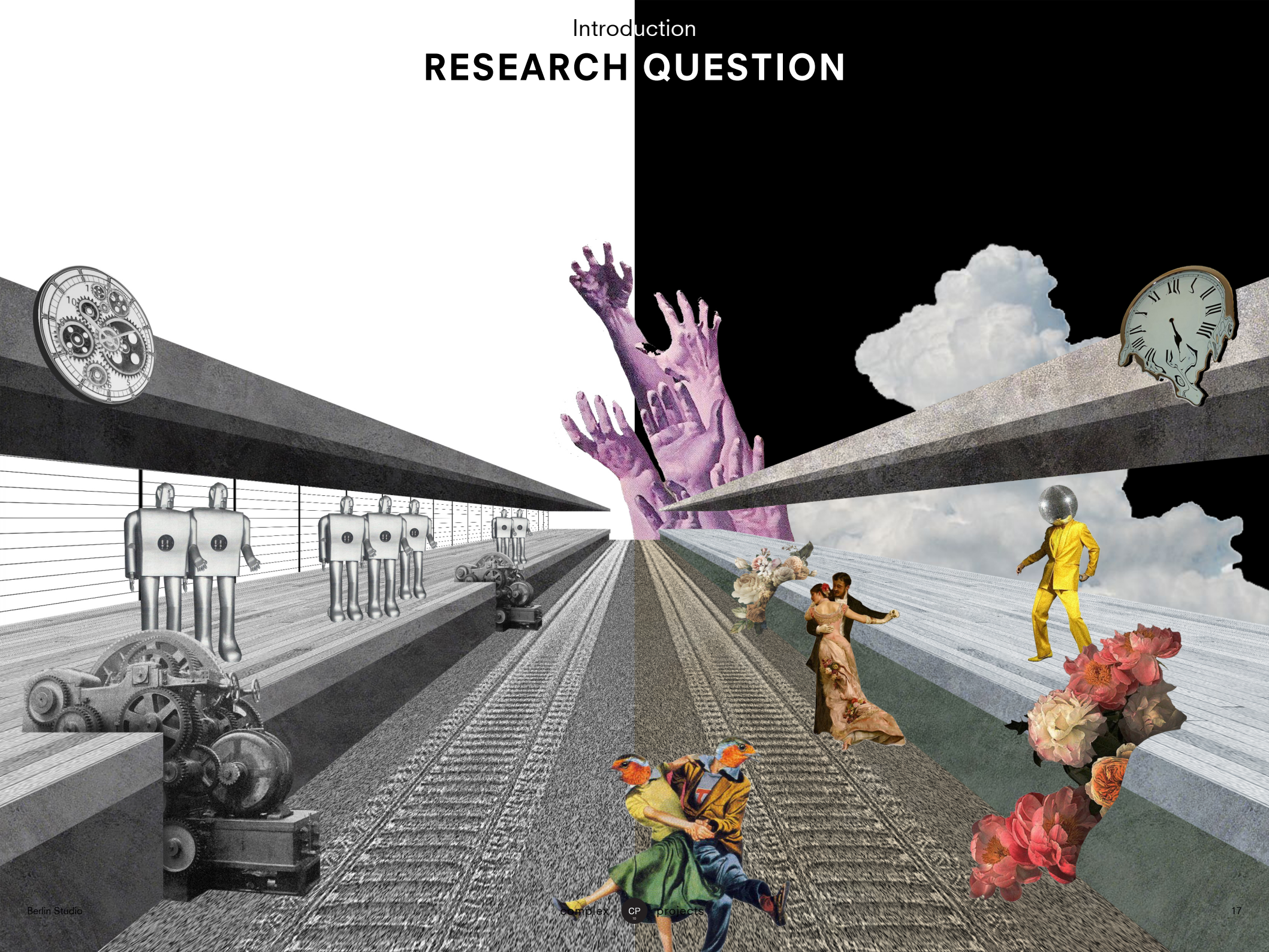
55% of Berlin night-goers go to a night event at least once each month.

CURRENT SITUATION



The number of clubs and venues for other night events has been declining over the past years.

RESEARCH QUESTION



RESEARCH QUESTION

HOW TO SWITCH A TRAIN STATION TO A NIGHT LIVE VENUE DURING ITS VACANCY PERIOD?

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Design Brief

CLIENT

Berliner Verkehrsbetriebe

A public transport company in Berlin, Germany. In Berlin agglomeration, BVG operates the subway, tramway, bus service and ferry service.

Senate Department for Mobility, Transport, Climate Protection and the Environment

Senatsverwaltung
für Mobilität, Verkehr,
Klimaschutz und Umwelt

BERLIN

One of ten departments of the Berlin Senate and the supreme state authority responsible for environmental, transport and climate protection policy in the German capital.

CLIENT

Clubcommission

CLUBCOMMISSION

The mouthpiece for Berlin's clubs and event organizers. Its aim is to provide access to the decision makers and to the general public.

Senate Department For Culture And Social Cohesion

Senatsverwaltung
für Kultur und
Gesellschaftlichen Zusammenhalt

BERLIN

One of ten departments of the Berlin Senate and the supreme state authority responsible for promoting art and culture within the scope of responsibility of the State of Berlin.

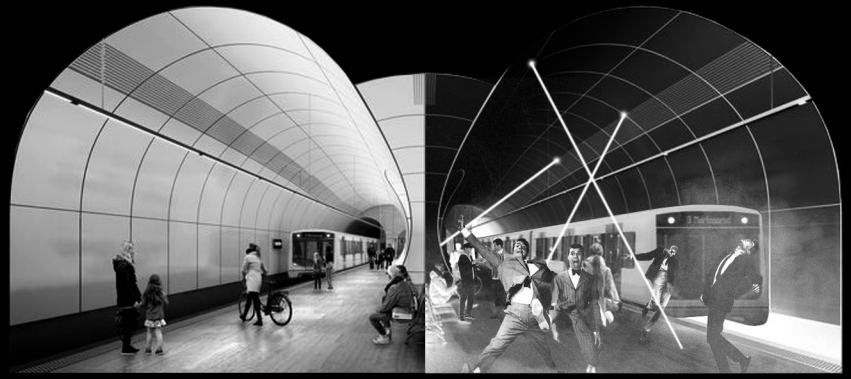
Design Brief

STAKEHOLDER



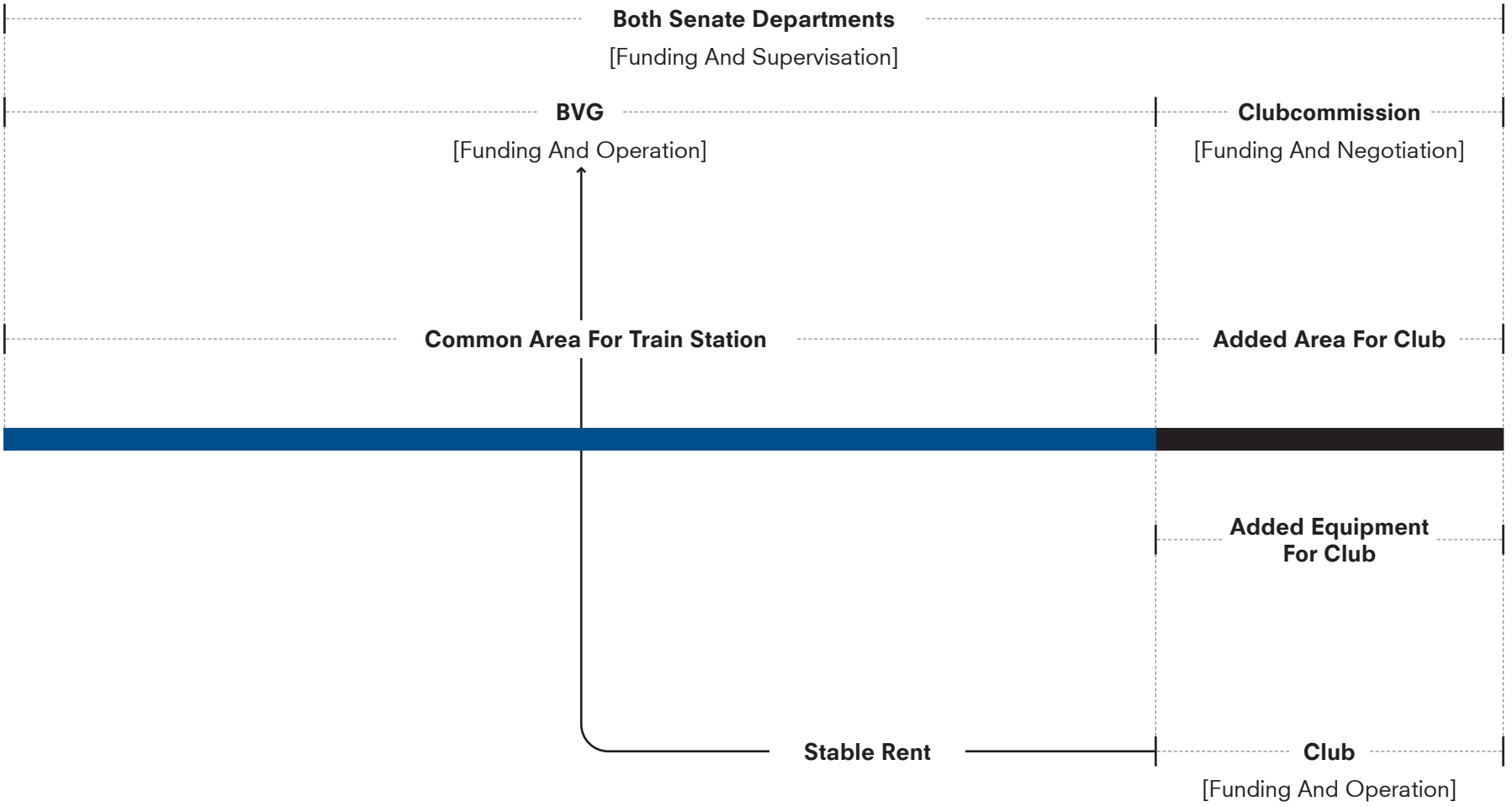


Surrounding Neighborhood



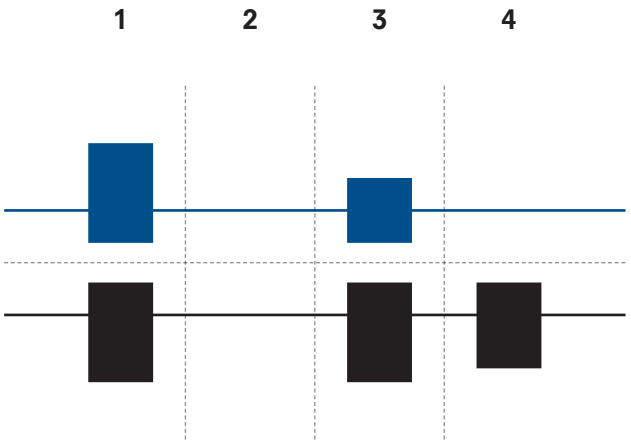
Design Brief

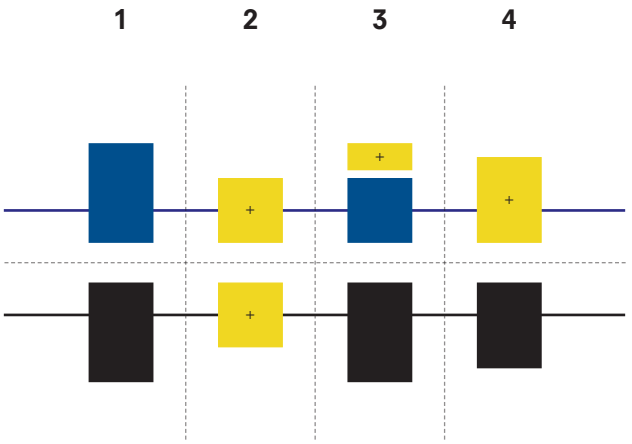
FUNDING AND MANAGEMENT



Design Brief

PROGRAM CORRESPONDENCE





Program Sequence U-Bahn Station

Program Sequence Night Live

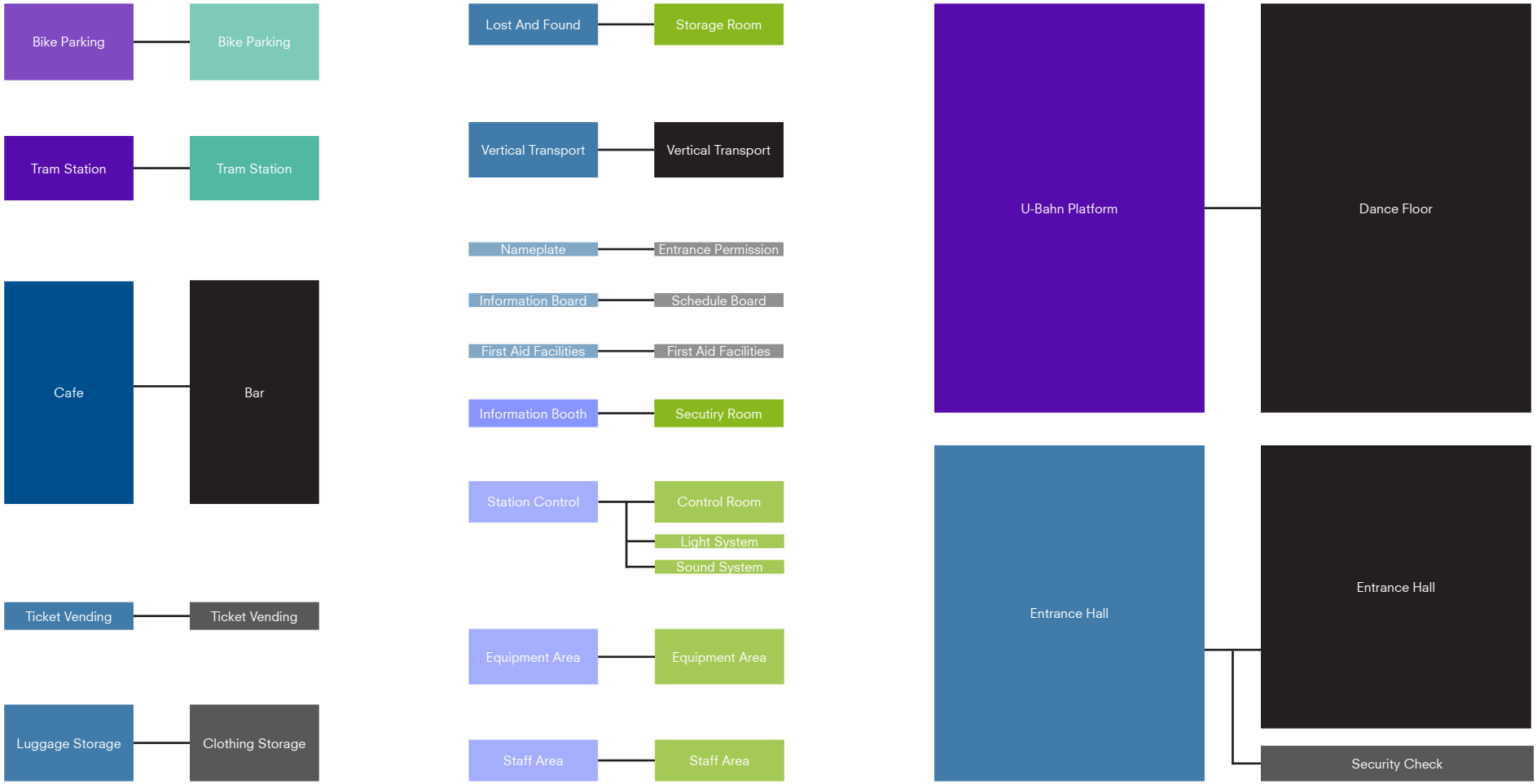
Program Adjustment

1 Two programs are corresponded due to position in sequence, program similarity and program area.

2 New programs are added to both sequences.

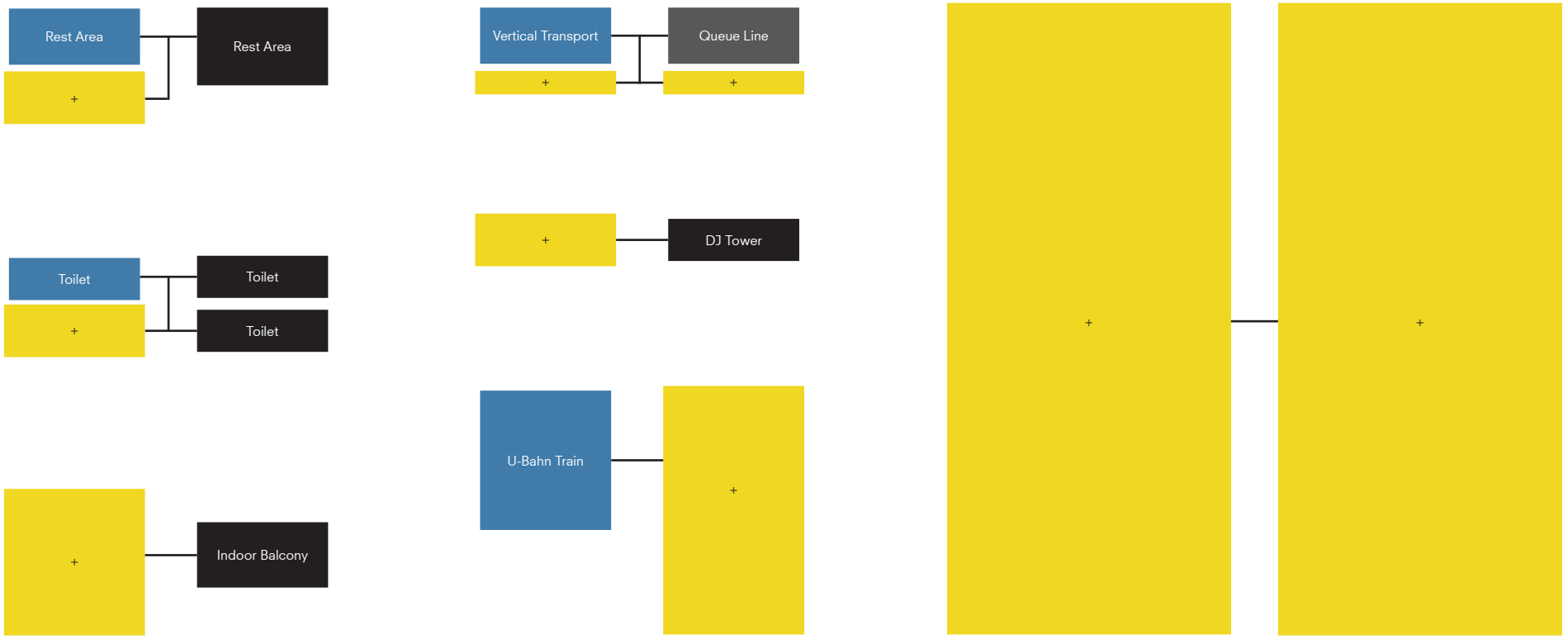
3/4 New program is added to one sequence to achieve correspondence.

CORRESPONDED PROGRAMS



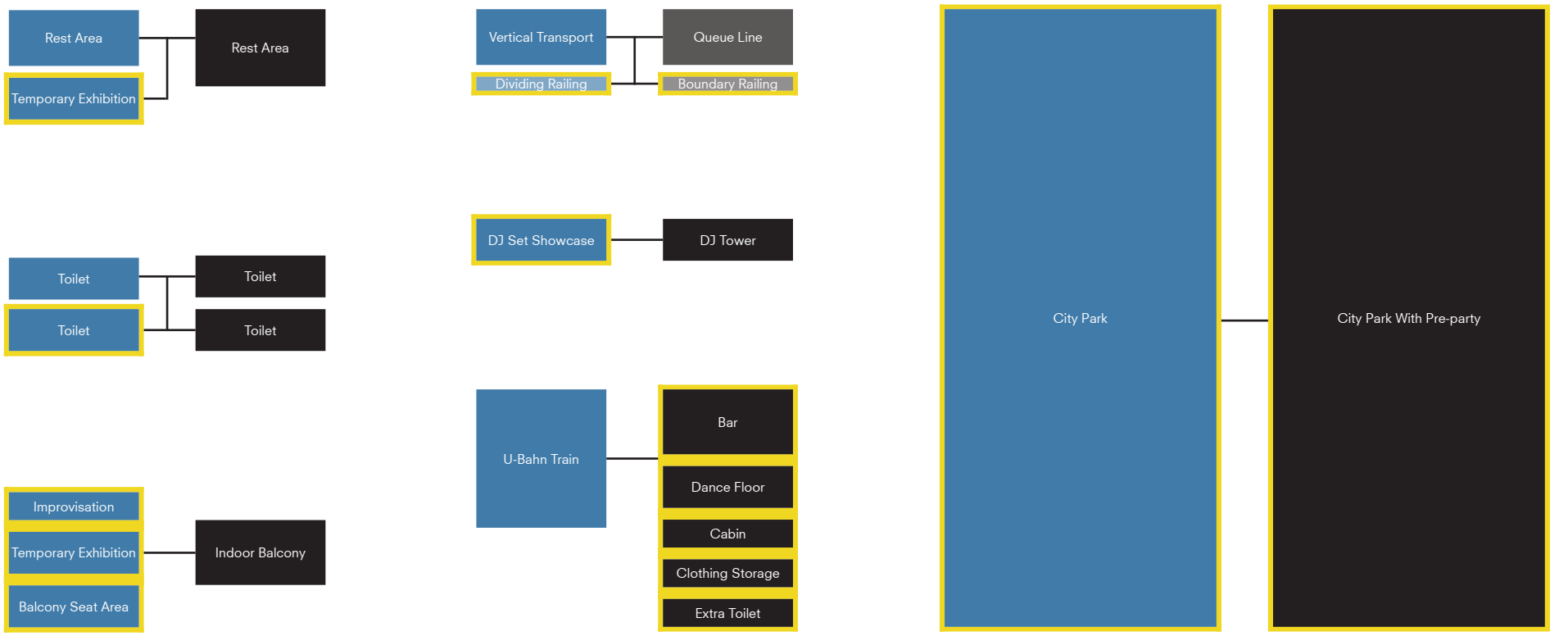
Design Brief

NEW PROGRAMS

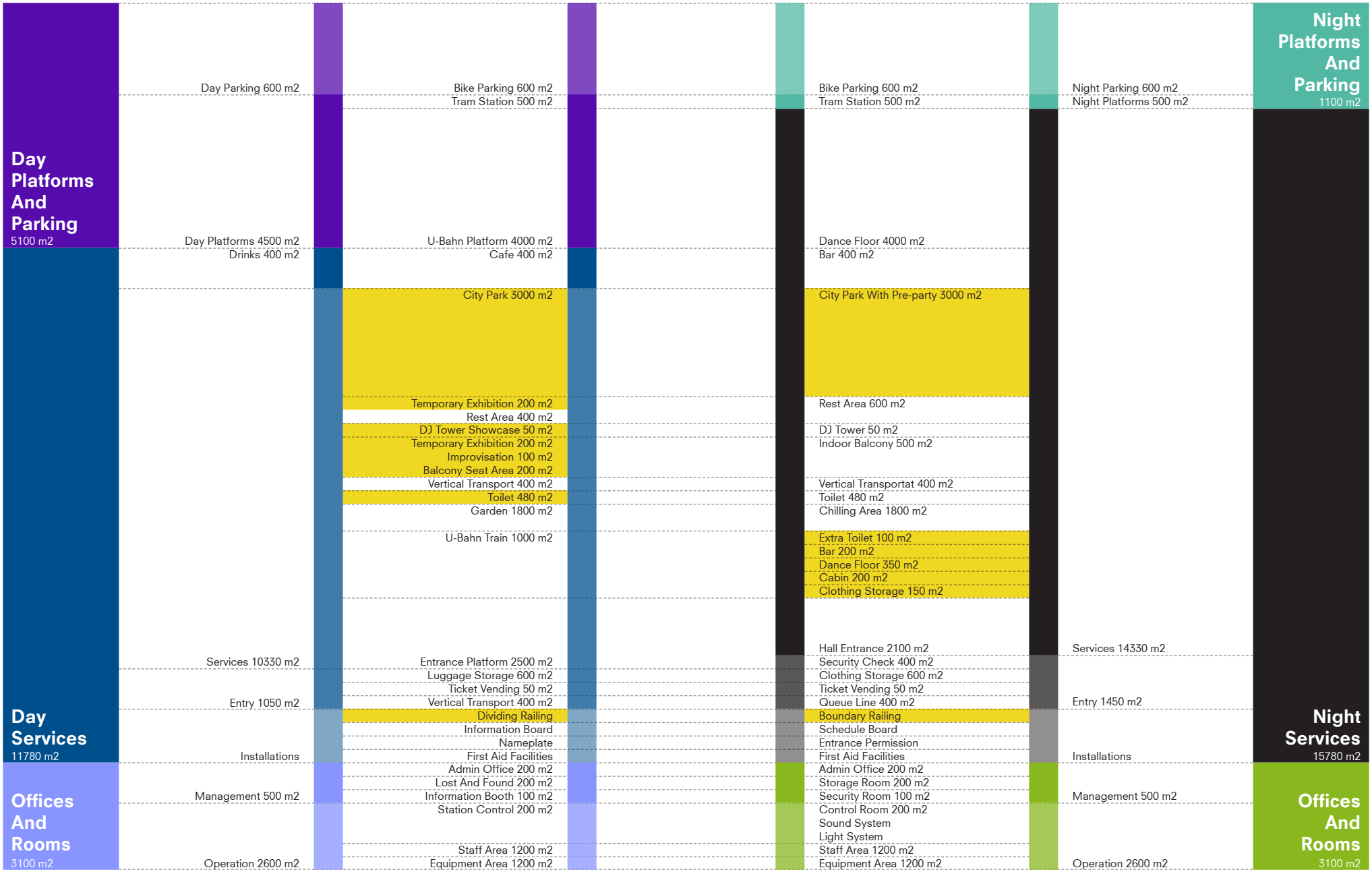


Design Brief

NEW PROGRAMS

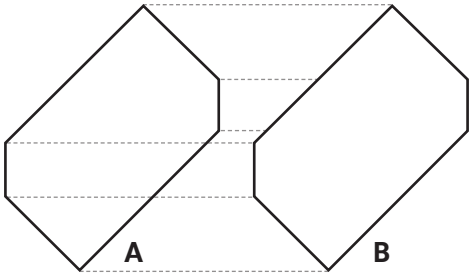


DAYTIME AND NIGHTTIME



Design Brief

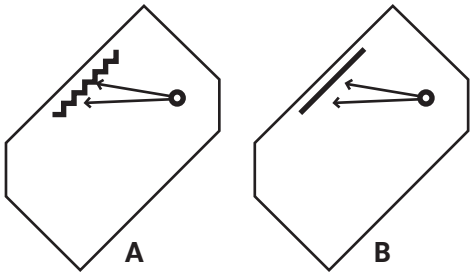
SPATIAL COMPARISON



High Similarity

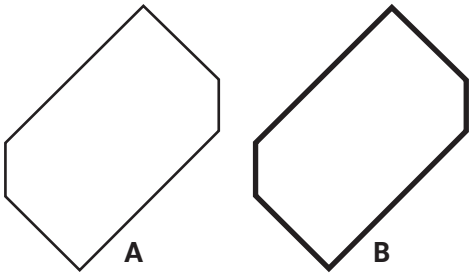
Program A and B can be switched by only changing the equipment.

SPATIAL COMPARISON



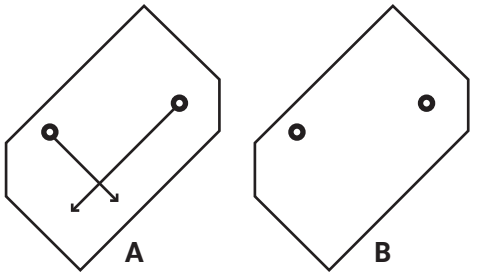
Difference In Acoustic Requirement

Program A and B have different needs for acoustic environment.



Difference In Privacy Level

Program A and B have different degrees of space enclosure.



Difference In Mobility Of Space

Program A and B have different needs for spatial mobility.

LOCATION VISIONS



Sufficient Underground Space

The site can provide sufficient and suitable underground space for station expansion or new construction, and can be connected to the U-Bahn grid with buildable routes.



Night Culture Revival

The site can accommodate the night culture that has been or is about to be driven away from its original venue to help Berlin with its characteristic but declining night culture.

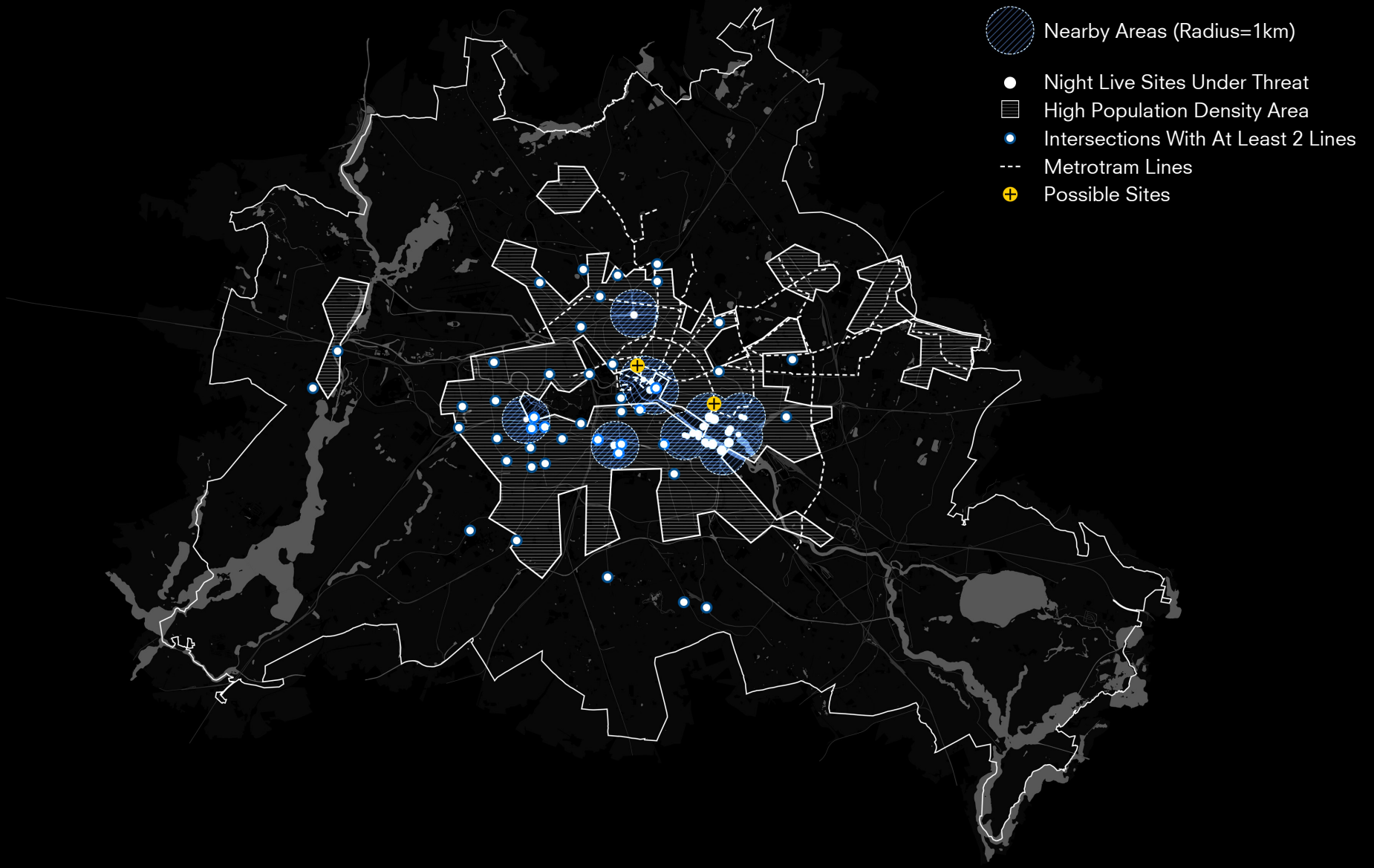


All-day Operation

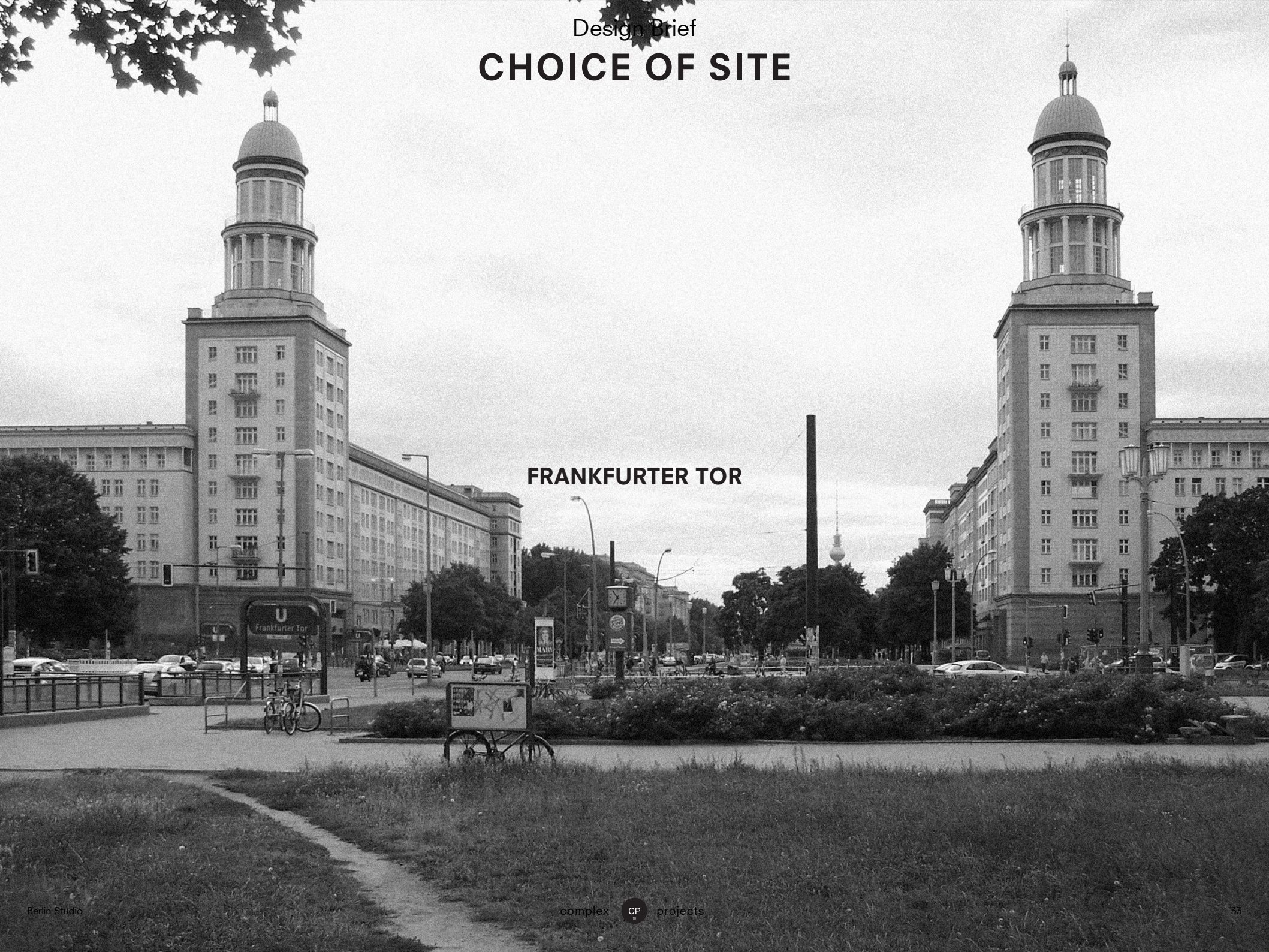
The site can be 24/7 sharing and functioning by different activities, and can realize all-day transportation under different usage scenarios.

Design Brief

POSSIBLE SITES



CHOICE OF SITE



FRANKFURTER TOR

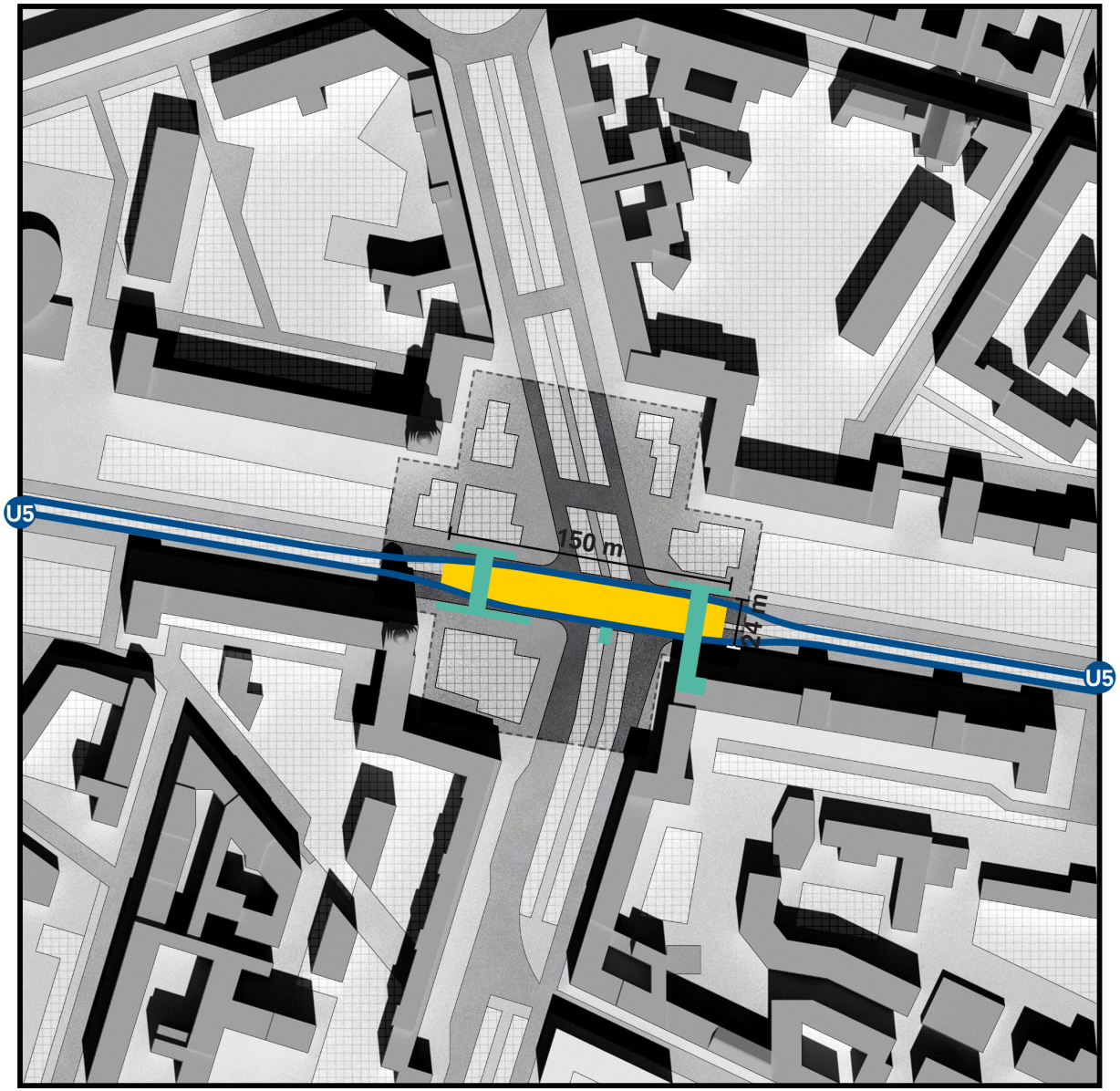
Design Brief

INFRASTRUCTURE



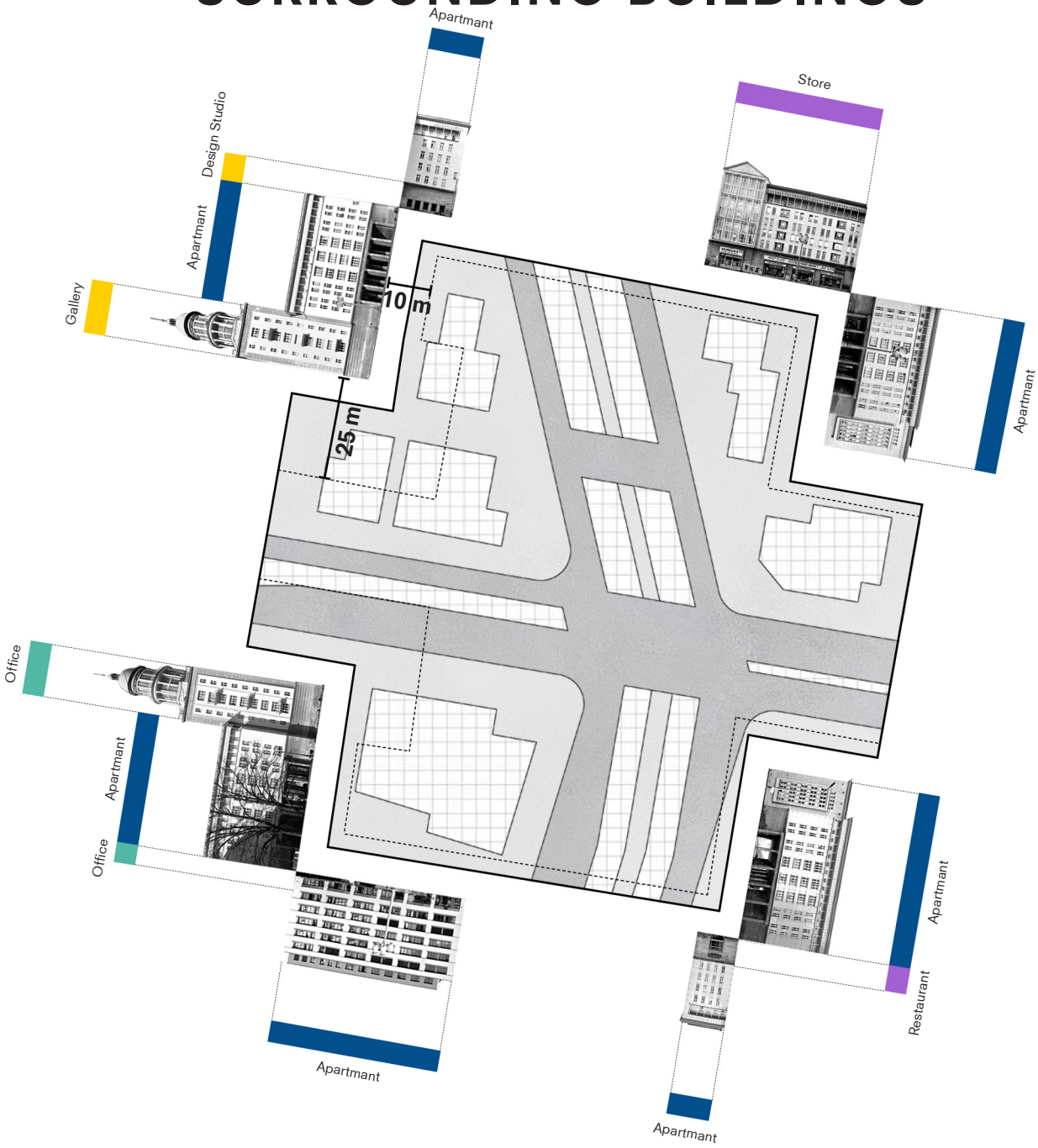
Design Brief

CURRENT STATION



Design Brief

SURROUNDING BUILDINGS



Design Brief

DEFECTS OF THE SQUARE



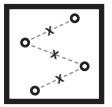
No Activity To Hold

Except for the metro station, which is used for transportation, there are no activities that can attract people to the square, leading to the idle status of huge undeveloped space.



No Place To Stay

The square is divided by large areas of green space and hard paving that cannot be interacted with. It is highly public and mobile, making it difficult for people to stay.



Disrupted Routes

The walking and cycling routes in this area are highly disrupted by motorways and tramways, causing unfriendly conditions for pedestrians and riders.

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CLIMATE

STRUCTURE

DEVELOPMENT

CONCLUSION

Concept

SPATIAL DIFFERENCE

WHAT IS THE MOST FUNDAMENTAL SPATIAL DIFFERENCE BETWEEN A METRO STATION AND A NIGHT LIVE VENUE?

Concept

SPATIAL DIFFERENCE

ACCESS CONTROL

Concept

ACCESS CONTROL



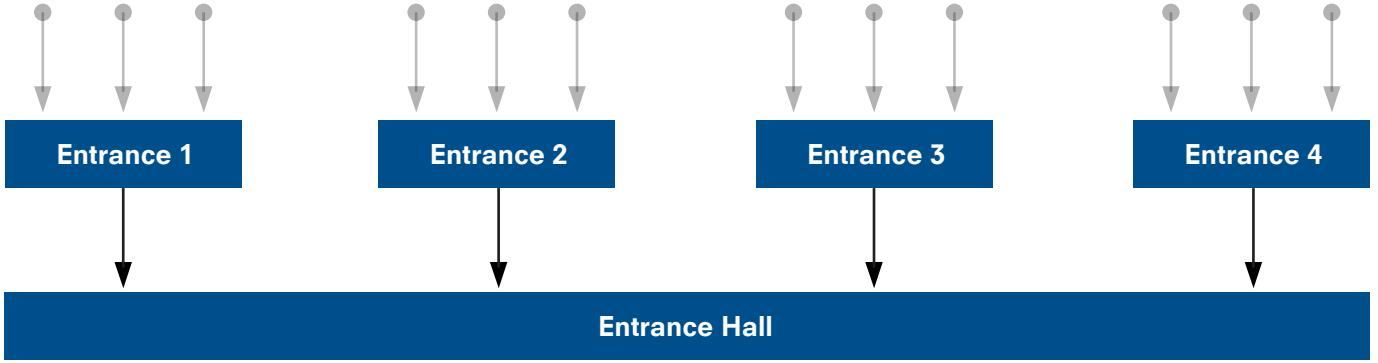
Concept

ACCESS CONTROL



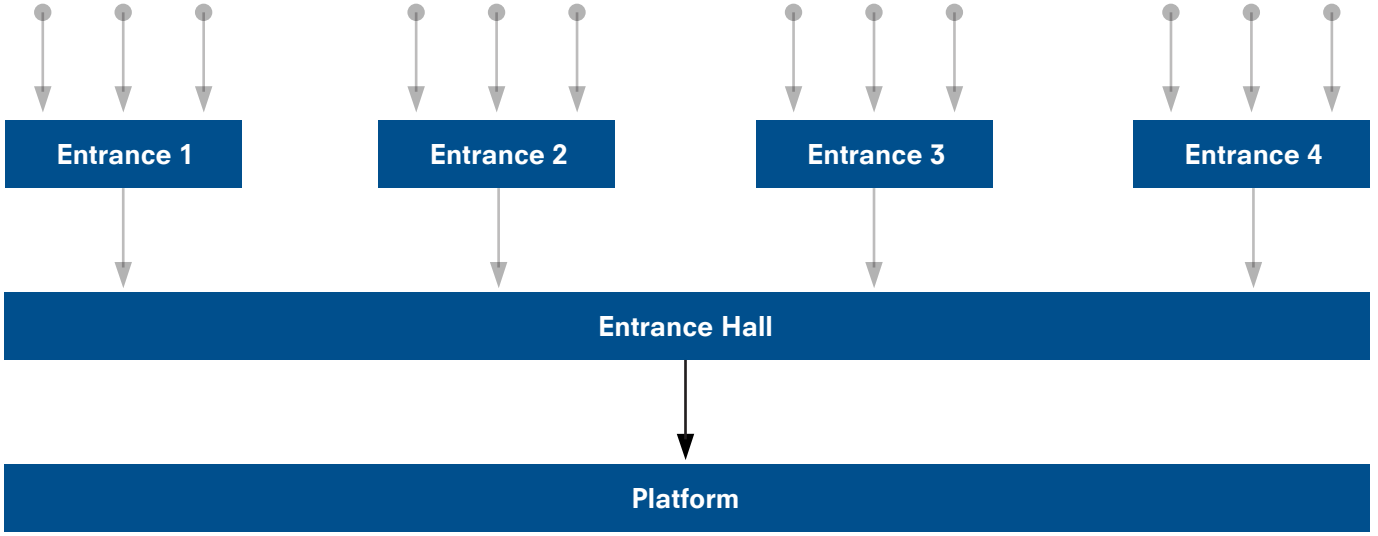
Concept

ACCESS CONTROL



Concept

ACCESS CONTROL



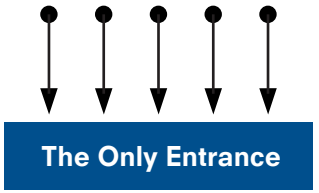
Concept

ACCESS CONTROL



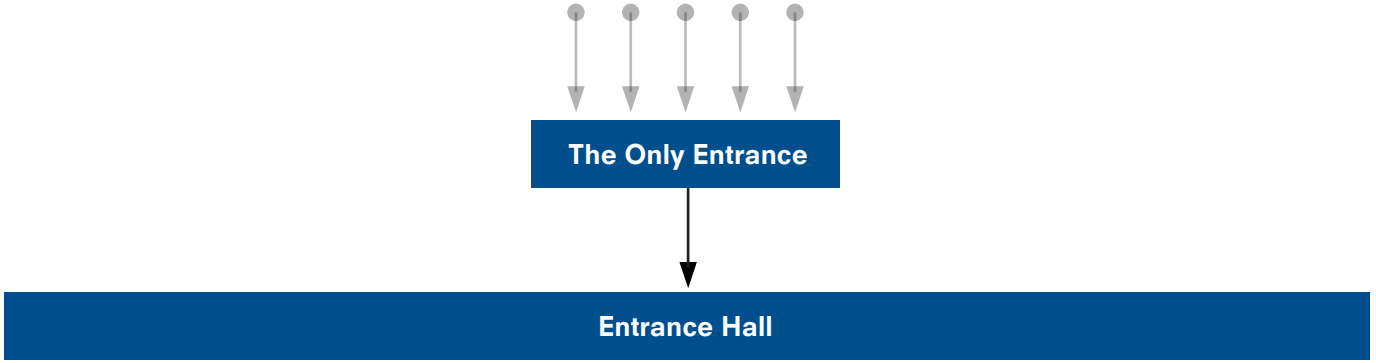
Concept

ACCESS CONTROL



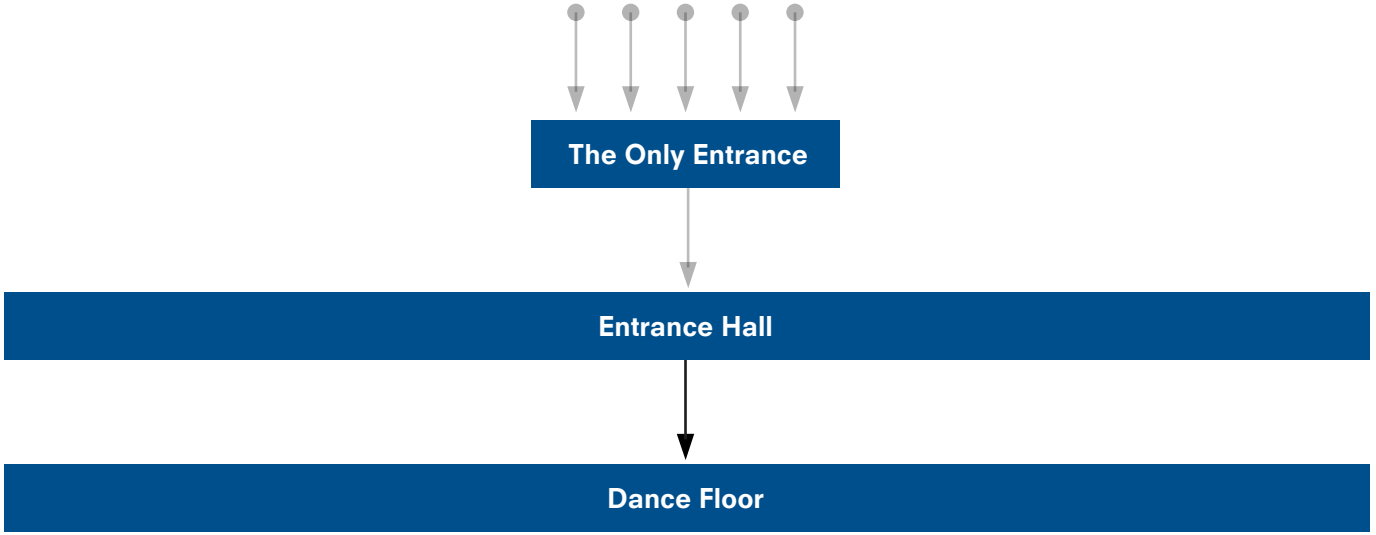
Concept

ACCESS CONTROL



Concept

ACCESS CONTROL



Concept

ACCESS CONTROL

Metro Station



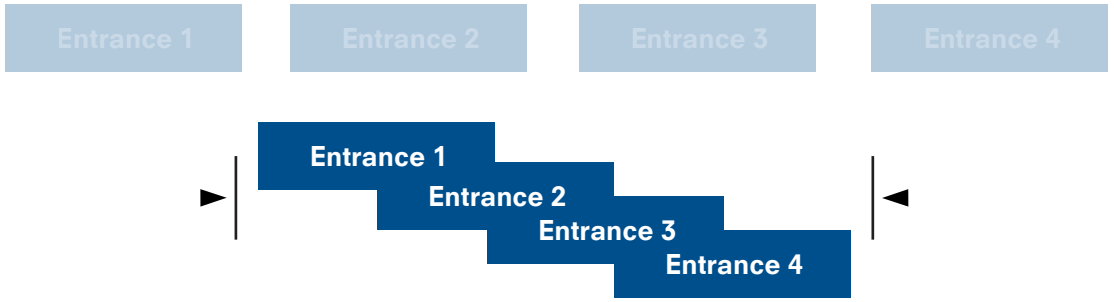
Night Live Venue

The Only Entrance

Concept

ACCESS CONTROL

Metro Station



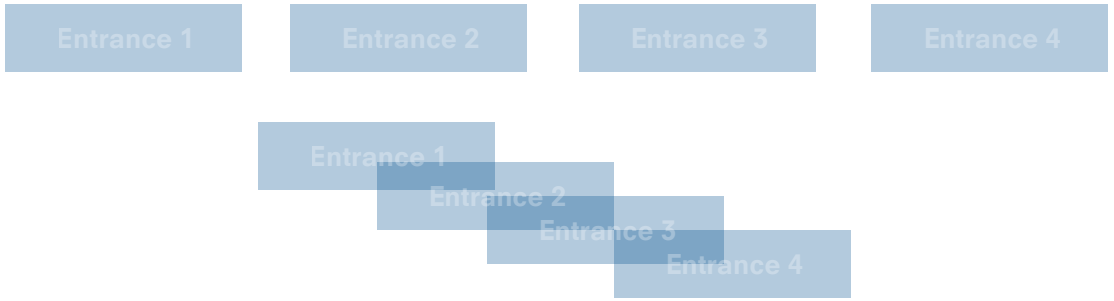
Night Live Venue

The Only Entrance

Concept

ACCESS CONTROL

Metro Station



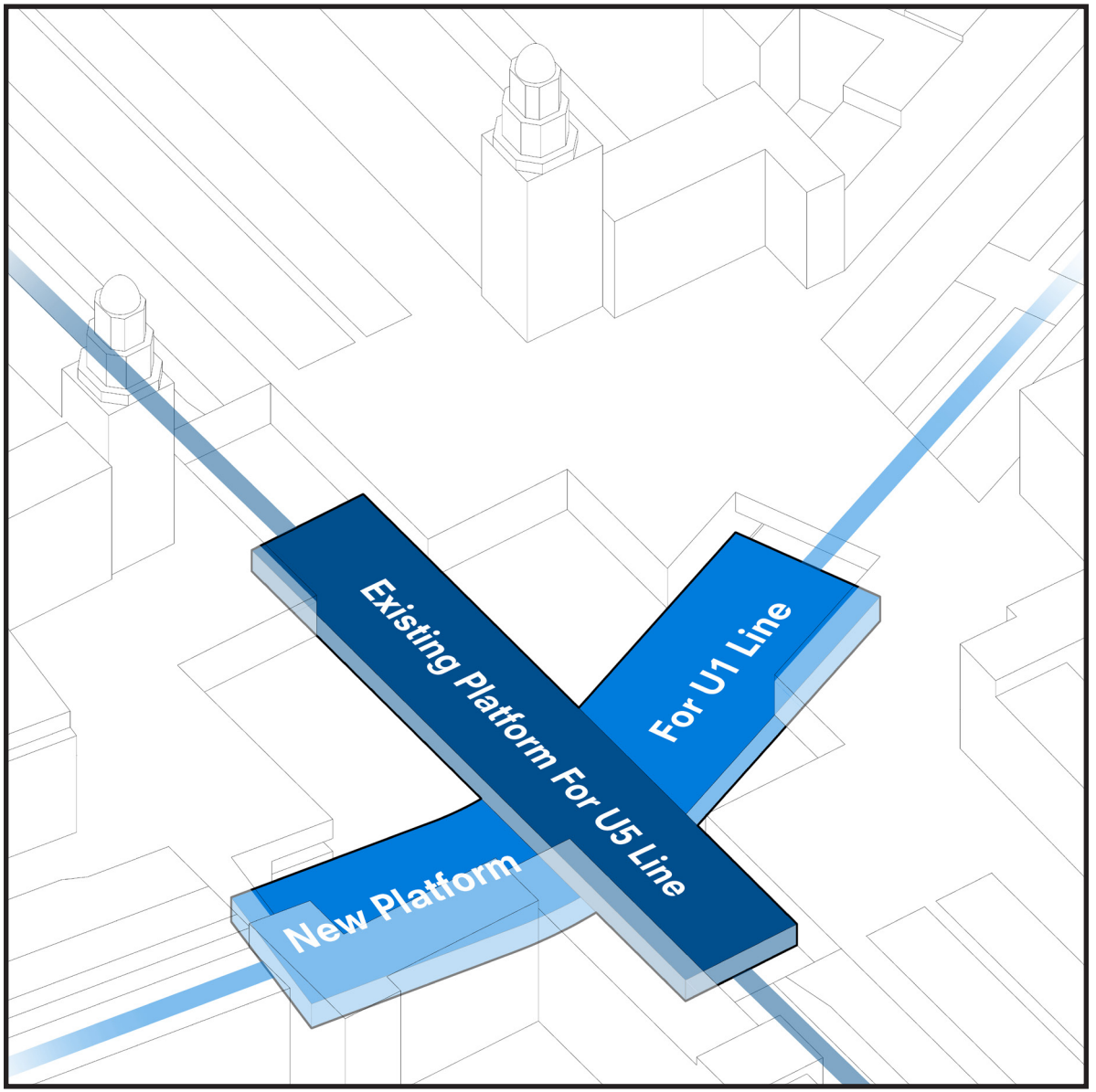
The New Only Entrance

Night Live Venue

The Only Entrance

Concept

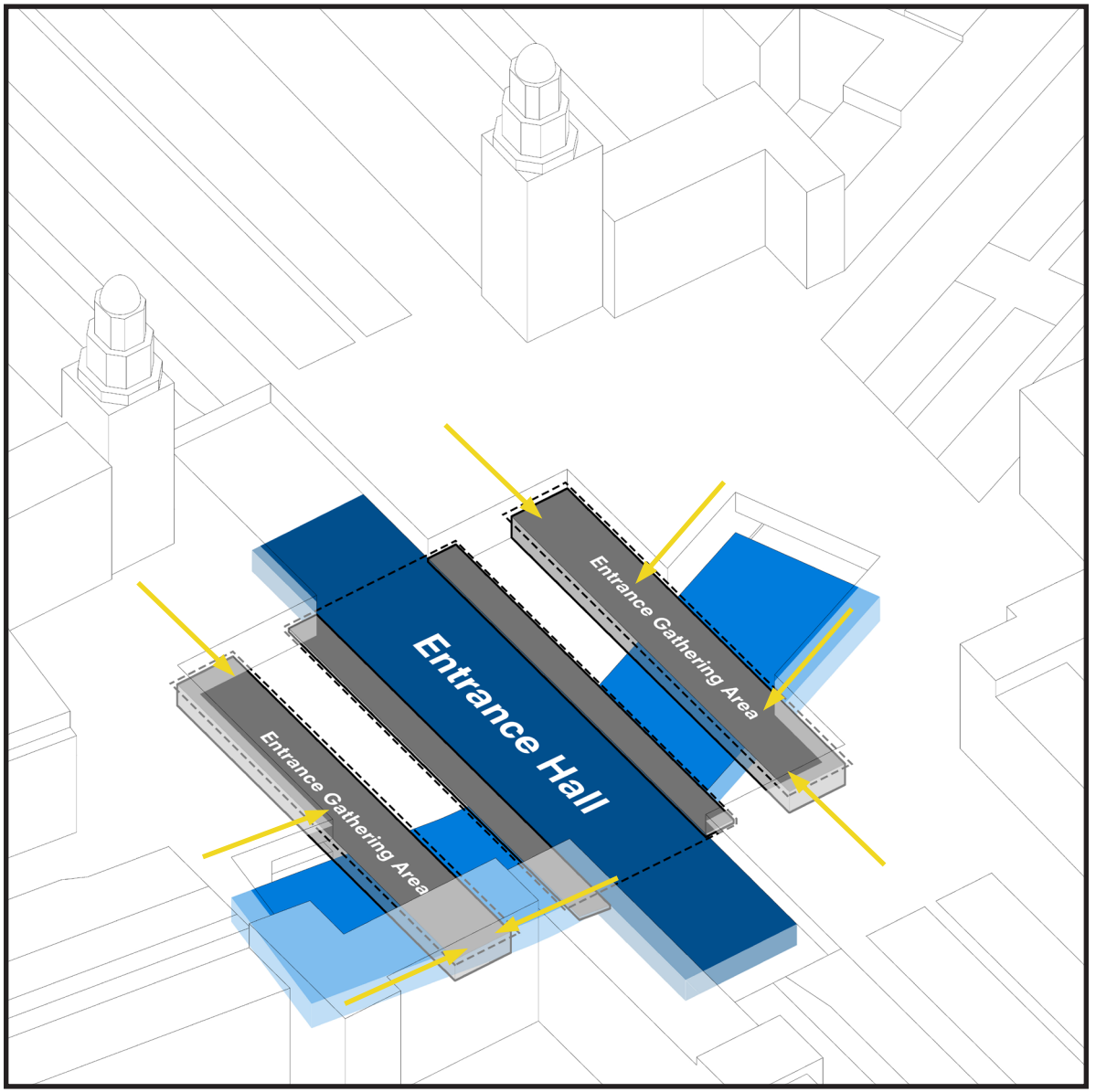
PLATFORMS



The new platform for U1 line is constructed underneath the existing one.

Concept

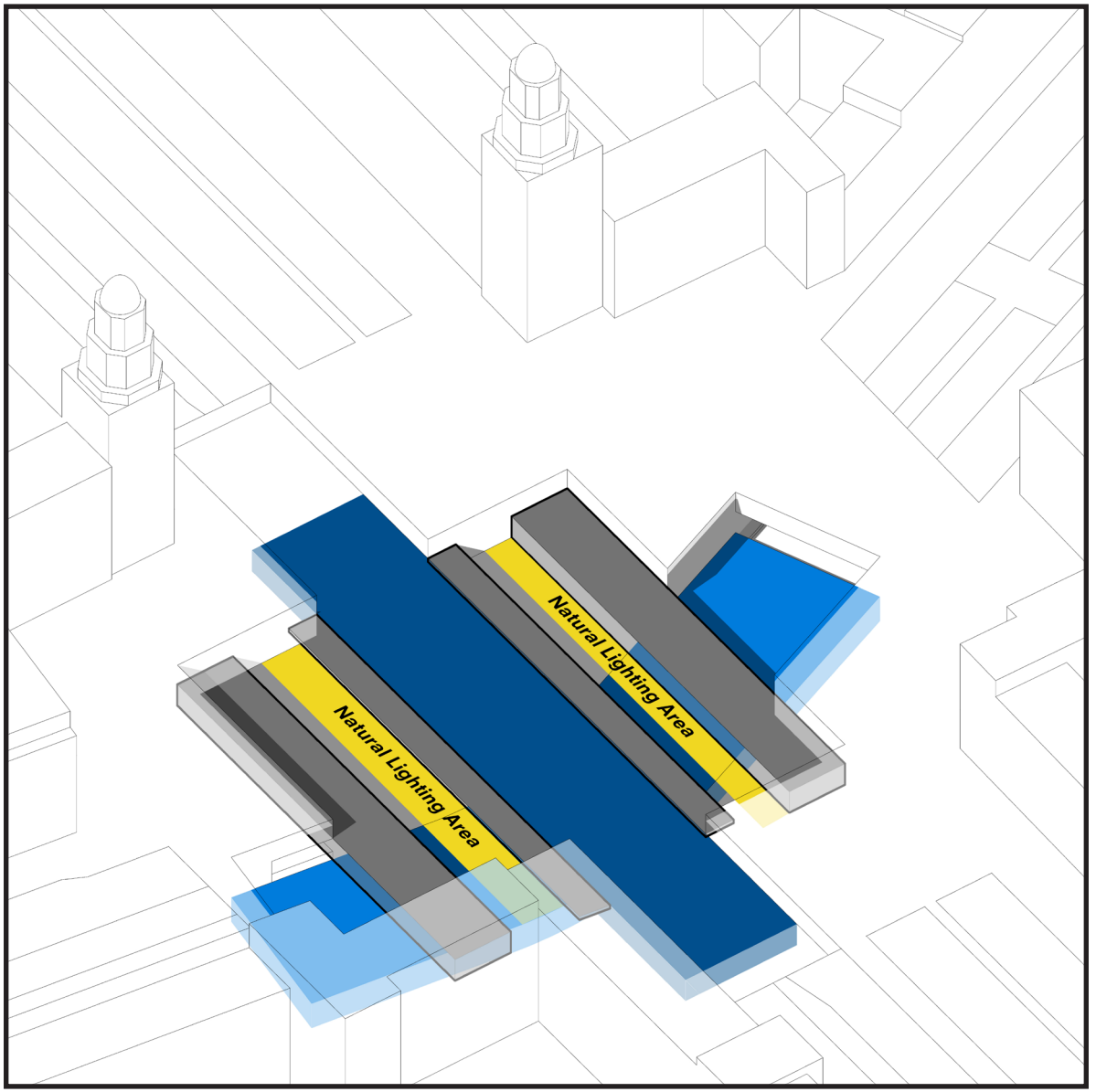
ENTRANCE GATHERING



Two entrance gathering areas are set away from the entrance hall to gather the flows at first place for later distribution.

Concept

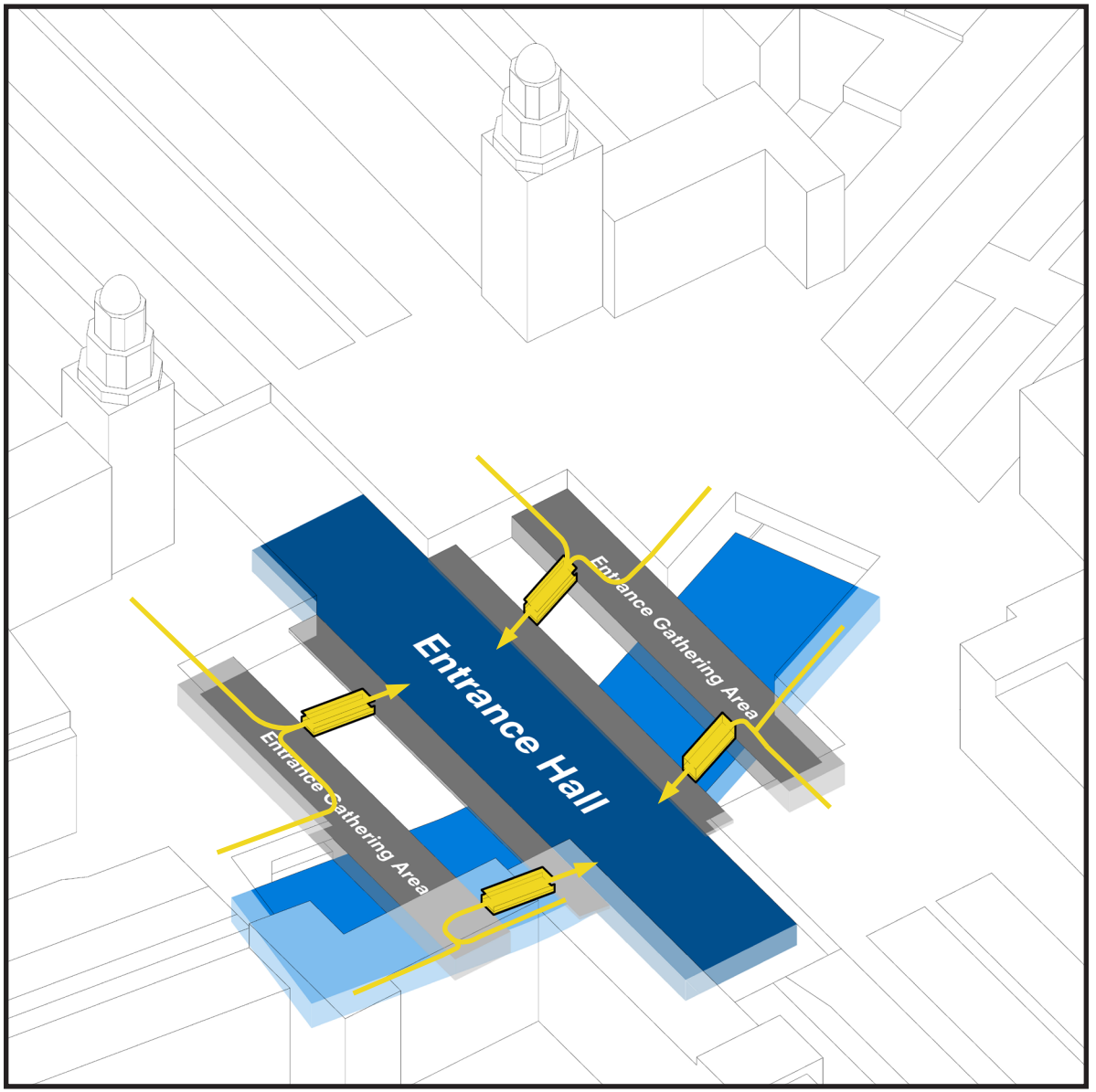
NATURAL LIGHTING



The voids between volumes also allow natural lighting to the underground space.

Concept

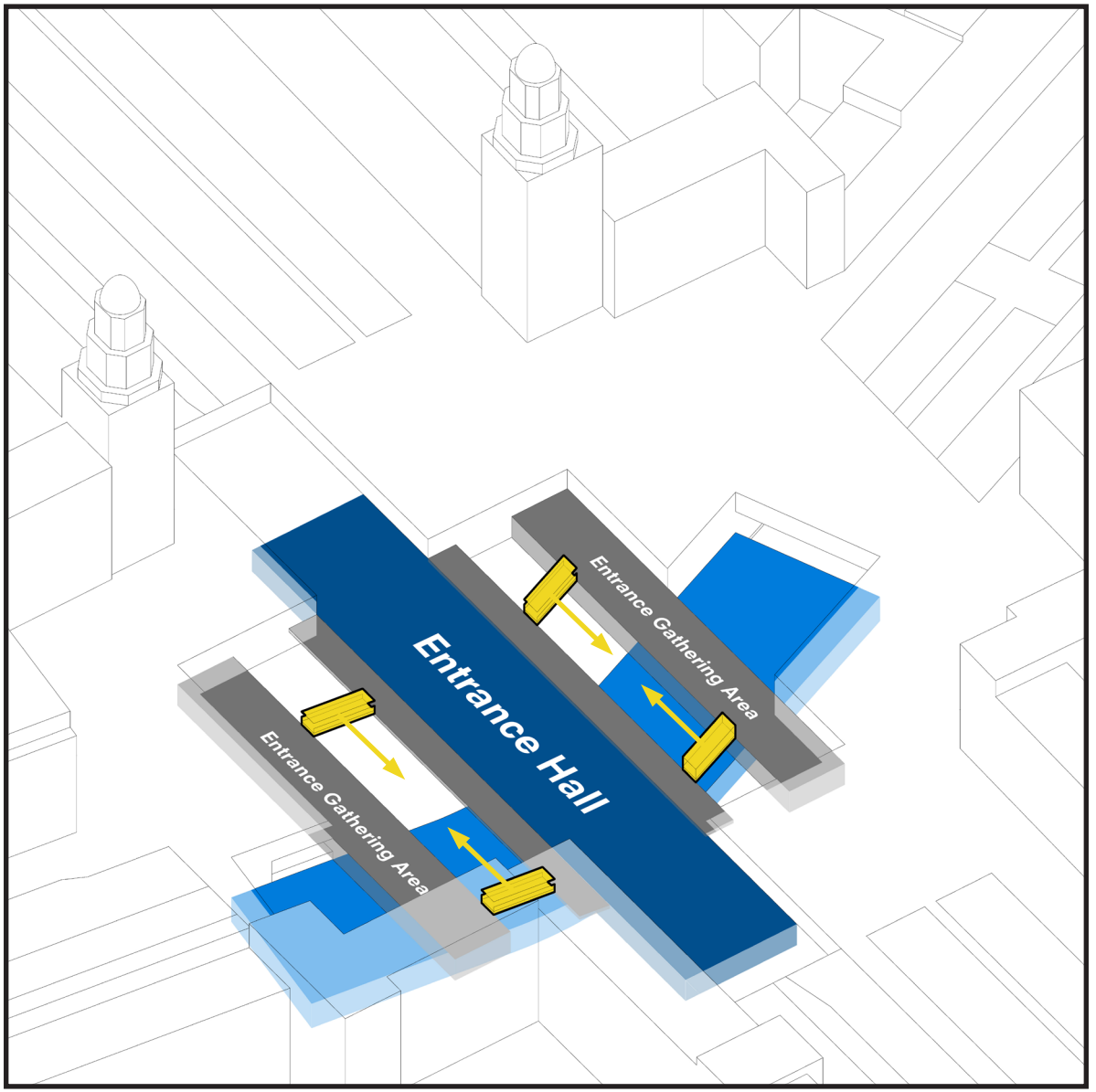
SLIDING BRIDGES



Sliding bridges are added at corners to facilitate people to go to the platforms in the day.

Concept

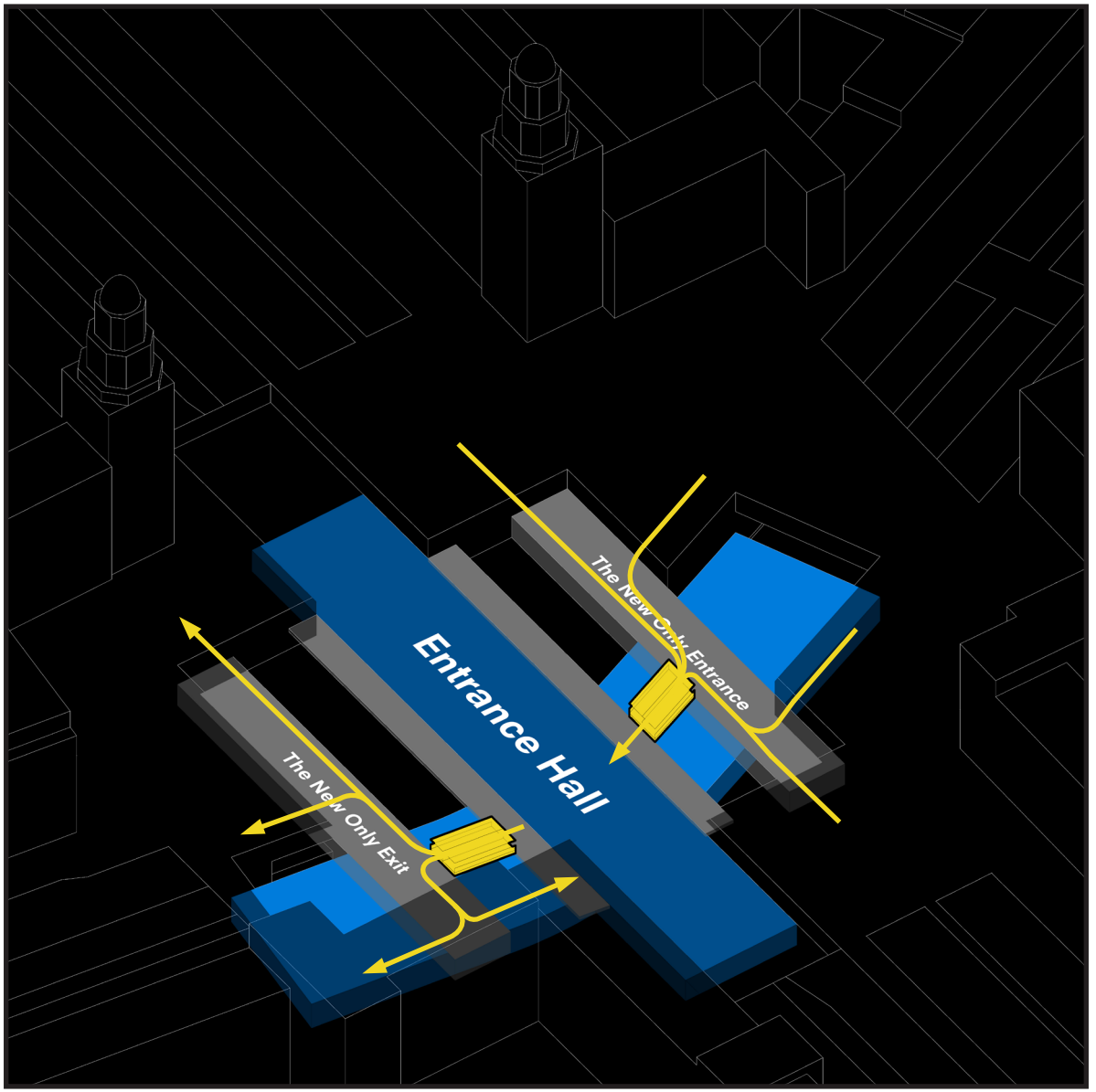
SLIDING BRIDGES



During switching hours, sliding bridges slide towards each other to form the only entrance and only exit.

Concept

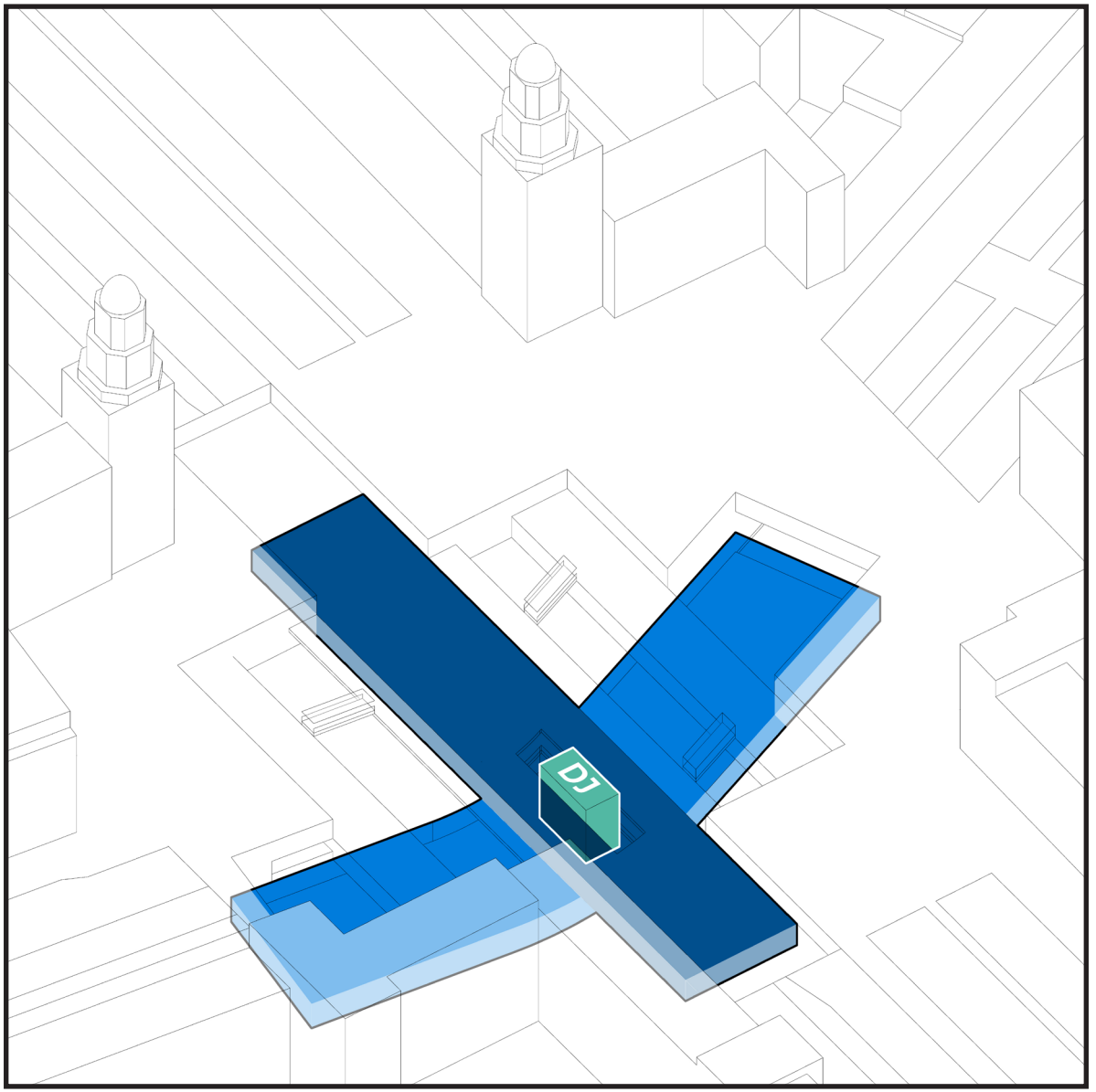
SLIDING BRIDGES



At night, people enter and leave this building through the only entrance and only exit.

Concept

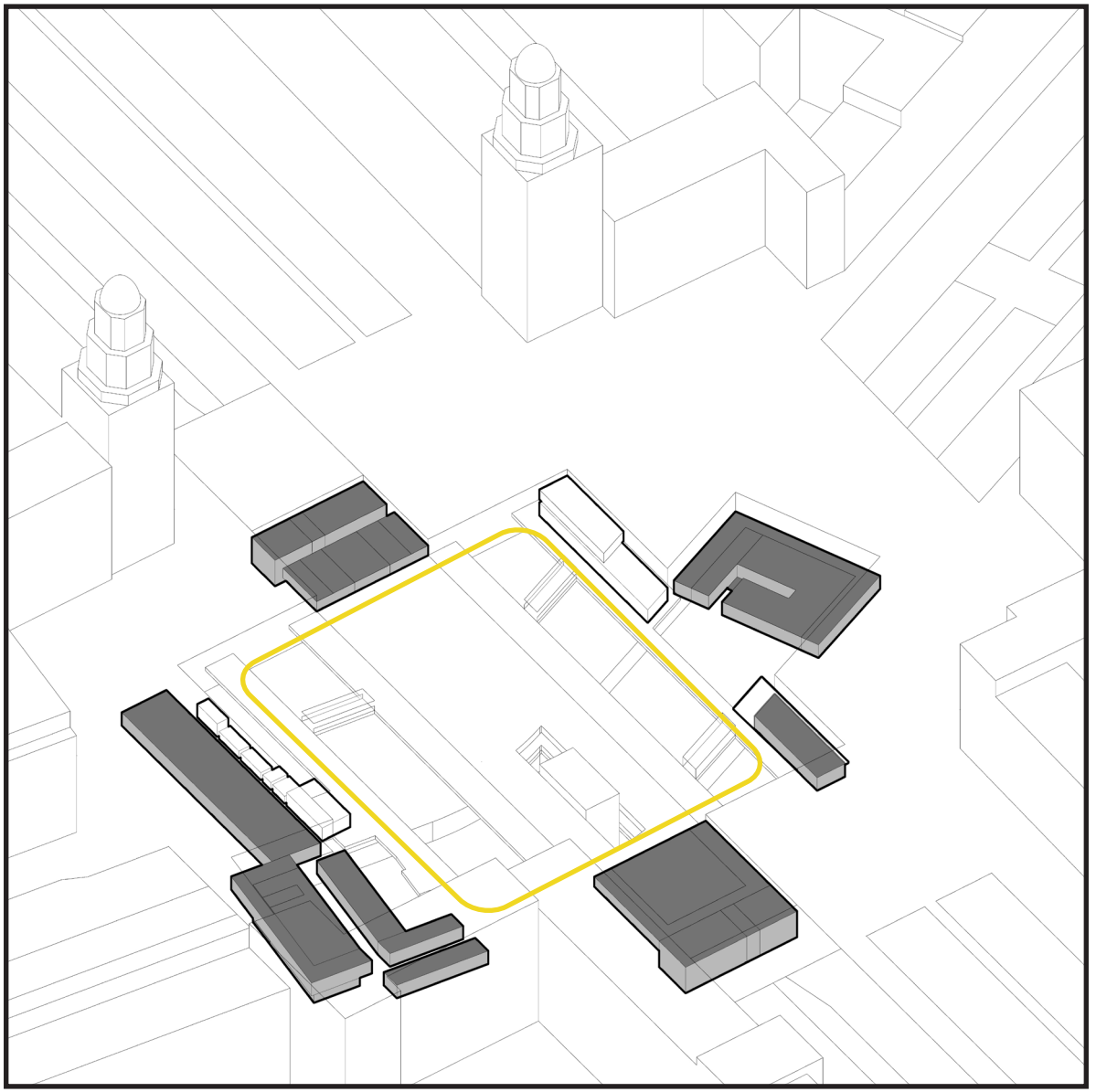
DJ TOWER



A DJ tower is added in the overlapping area to hold and connect two platforms.

Concept

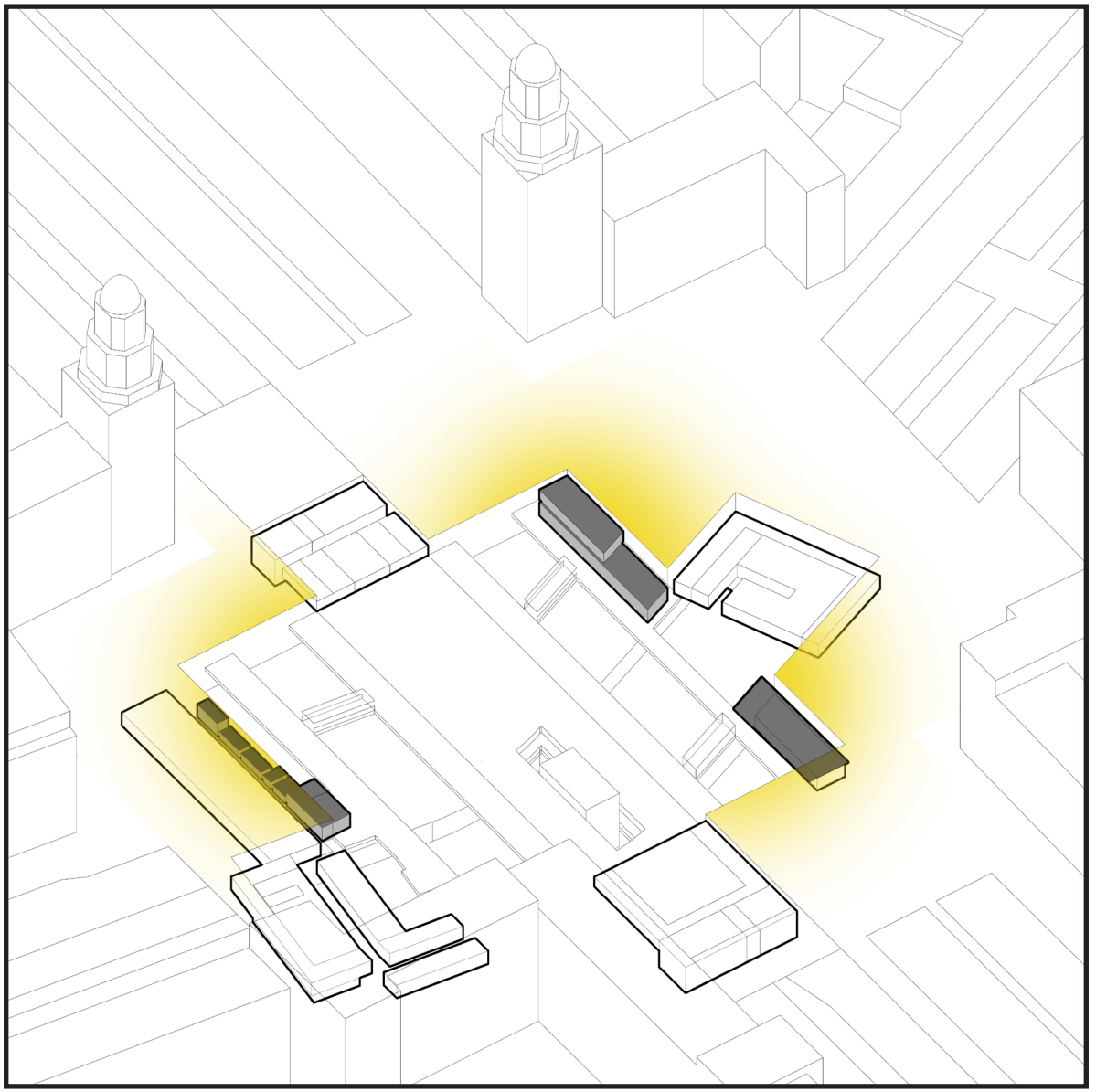
SURROUNDING PROGRAMS



Equipment and staff areas are put to the margin to leave the central space for main activities.

Concept

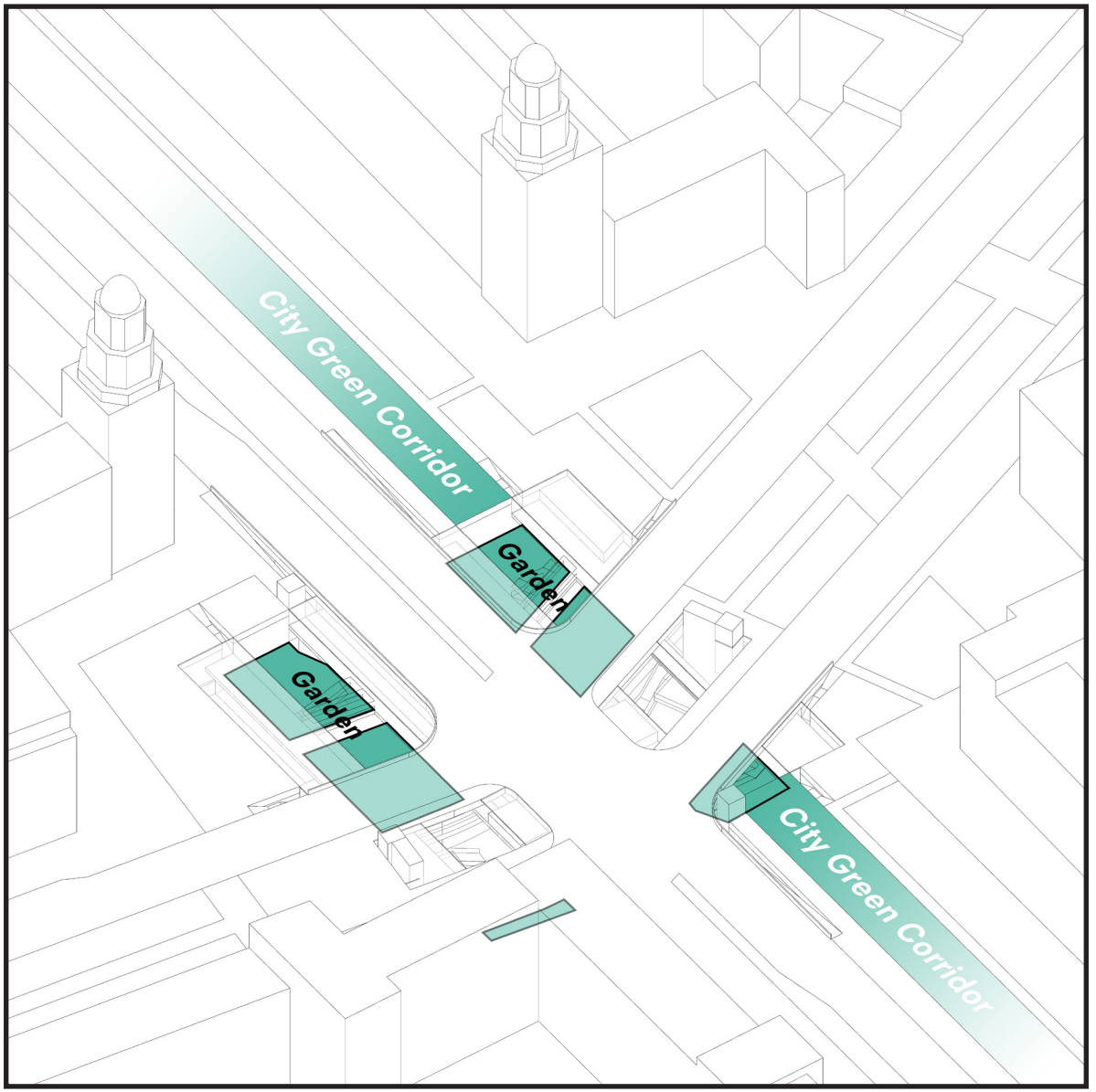
SURROUNDING PROGRAMS



Service and display areas are put to the corners to better serve people from both inside and outside.

Concept

GREEN CORRIDOR



Gardens are put between volumes to improve people's experience while connecting city's green corridor.

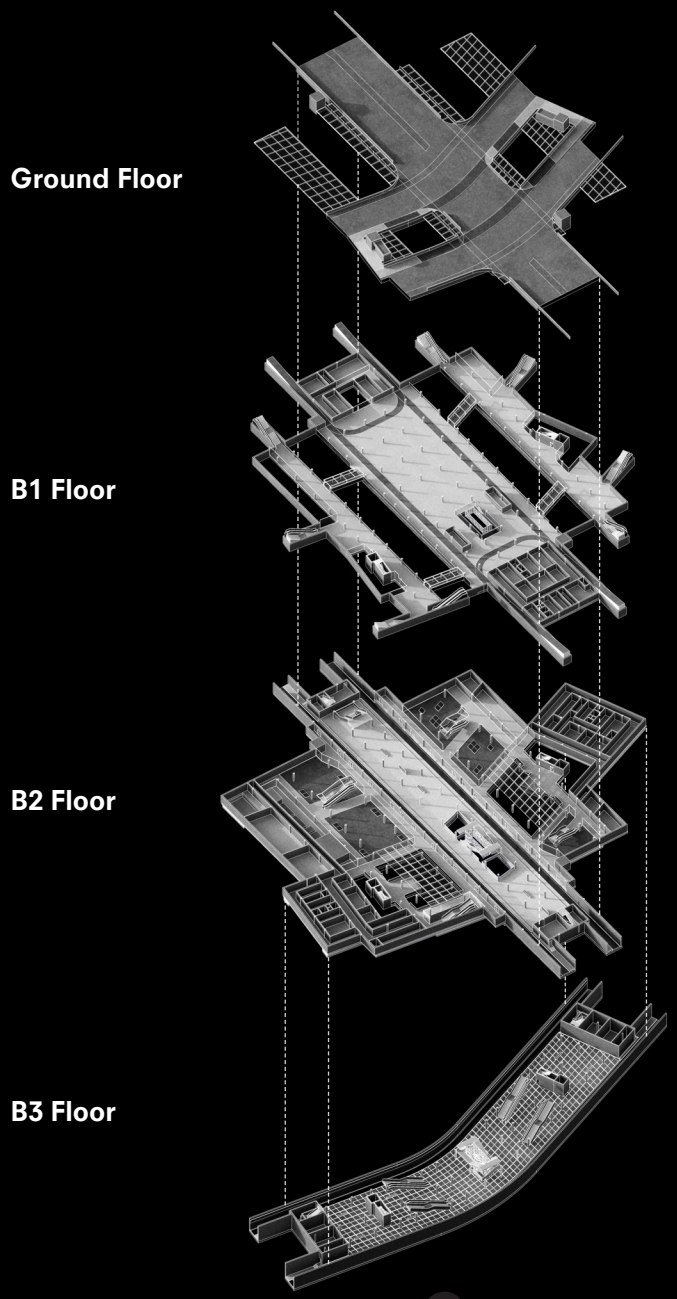
Concept

AERIAL VIEW



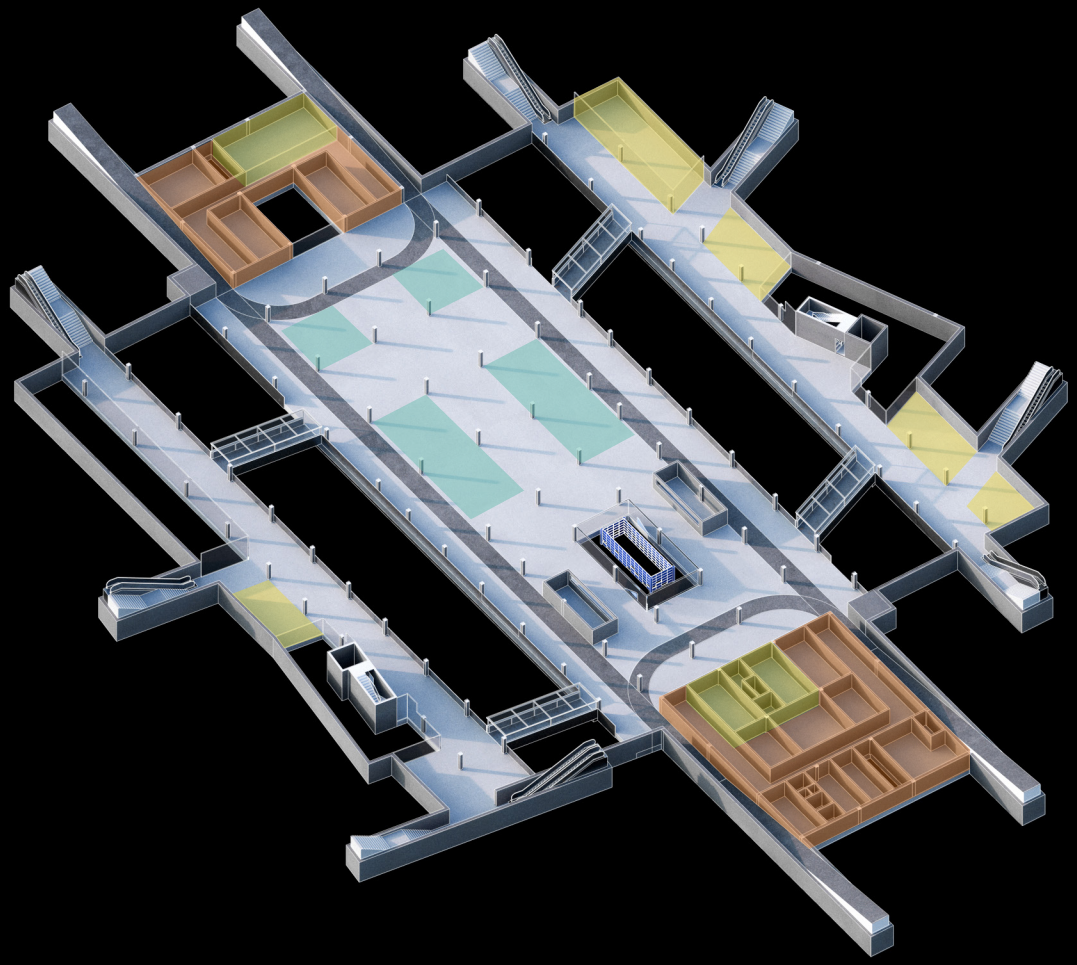
Concept

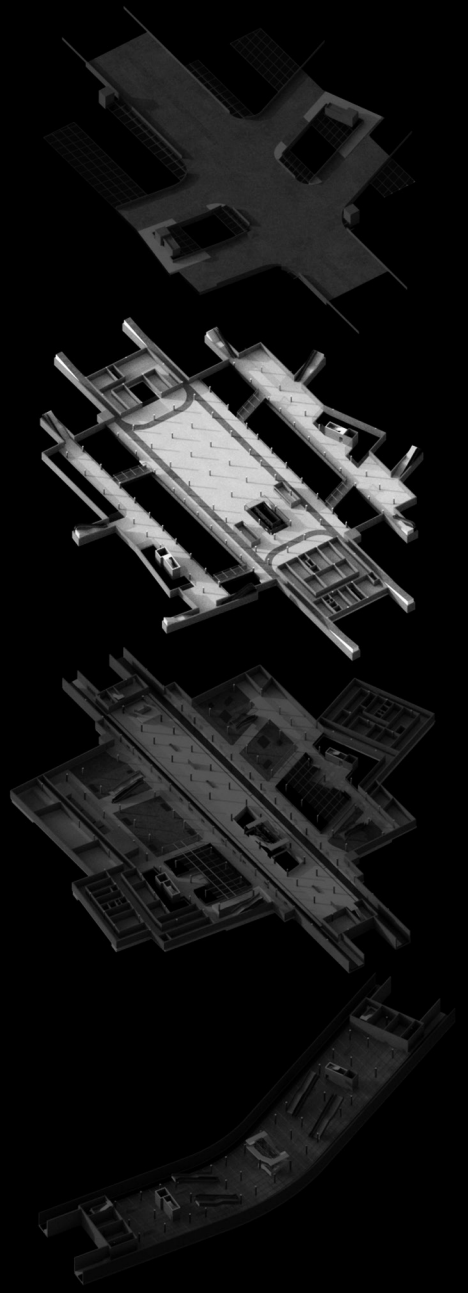
PROGRAM OVERVIEW



Concept

PROGRAM OVERVIEW

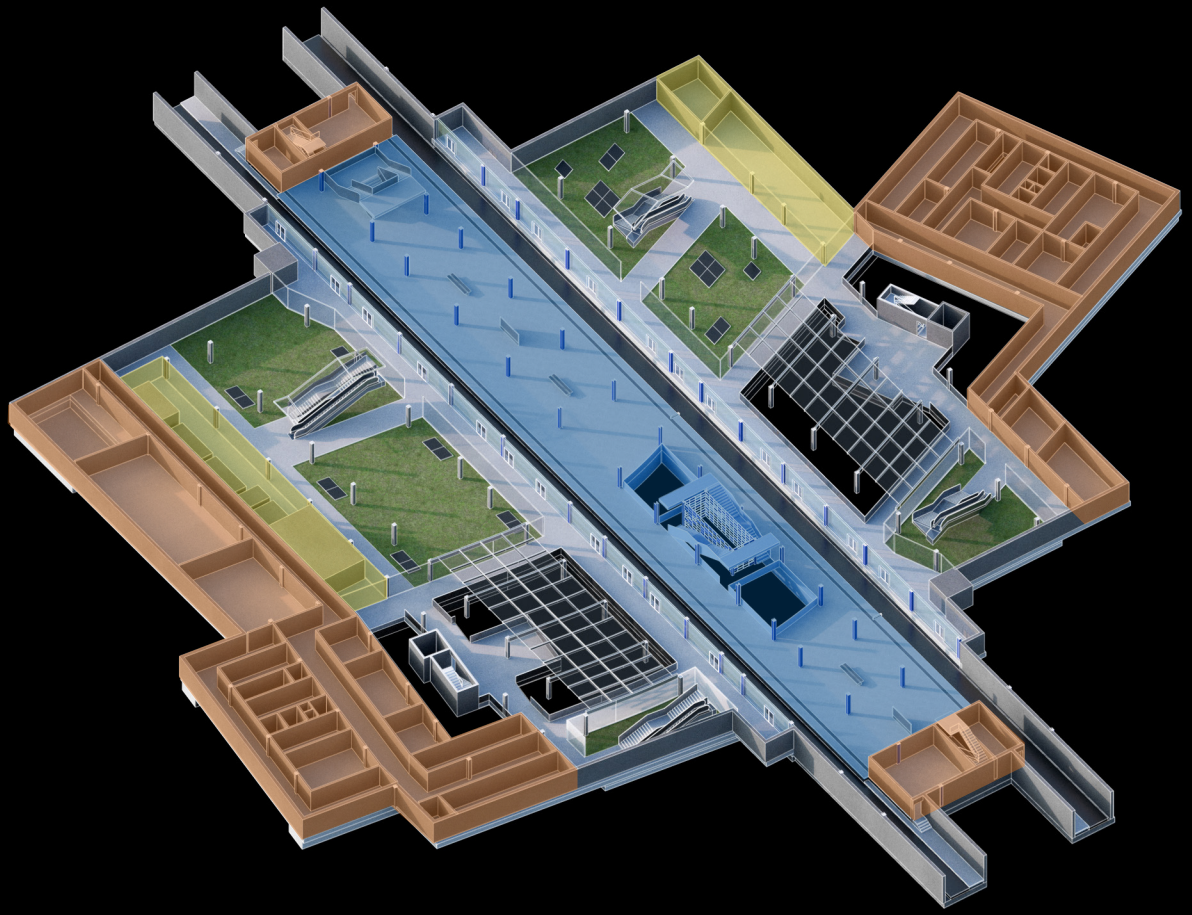


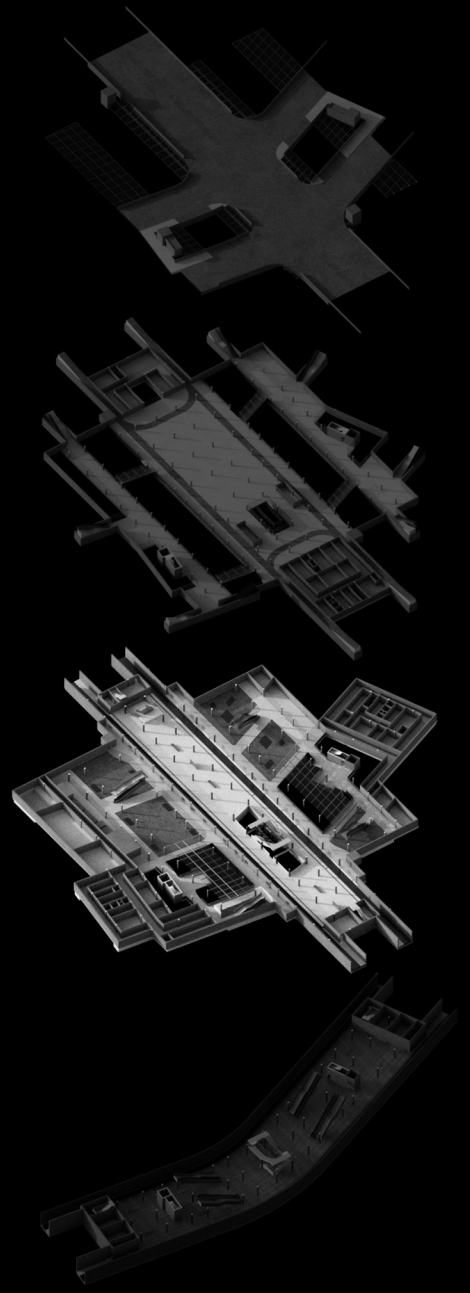


Services And Display Area Equipment And Staff Area Bike Parking

Concept

PROGRAM OVERVIEW

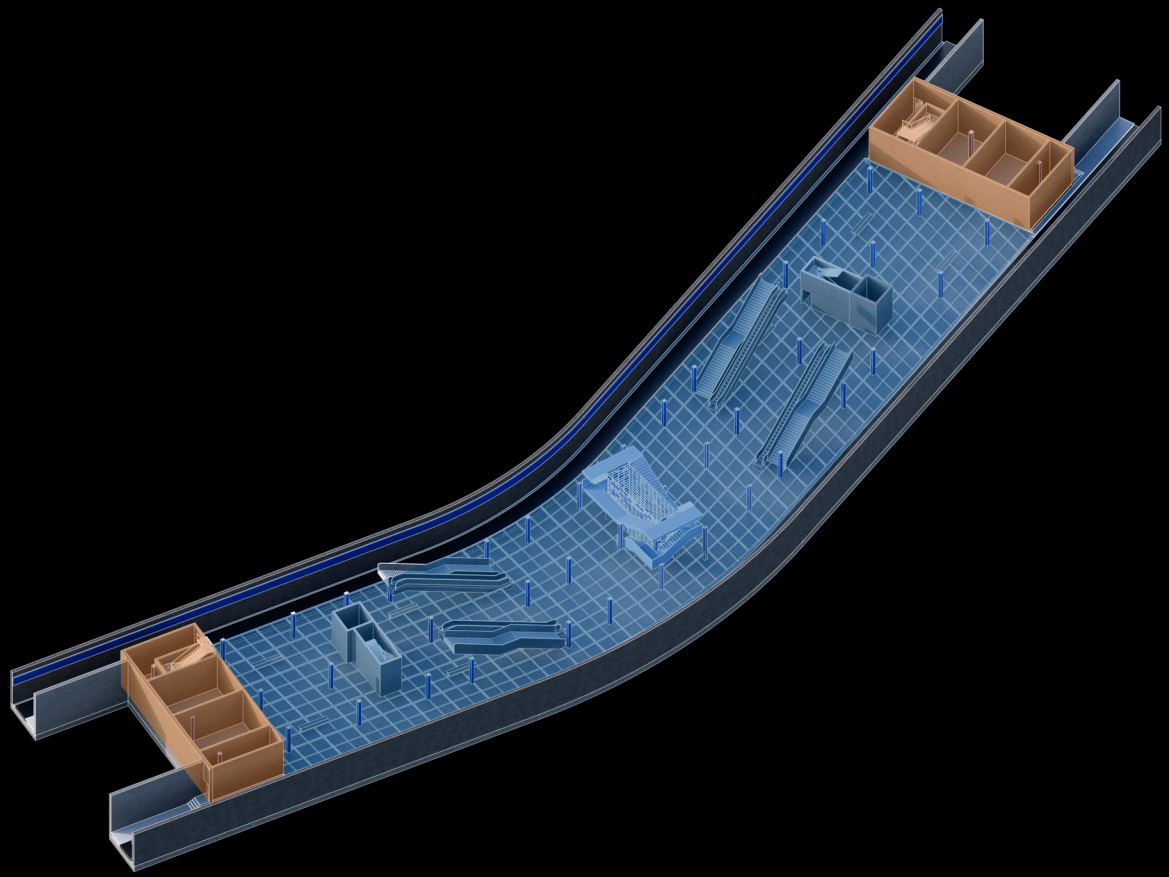


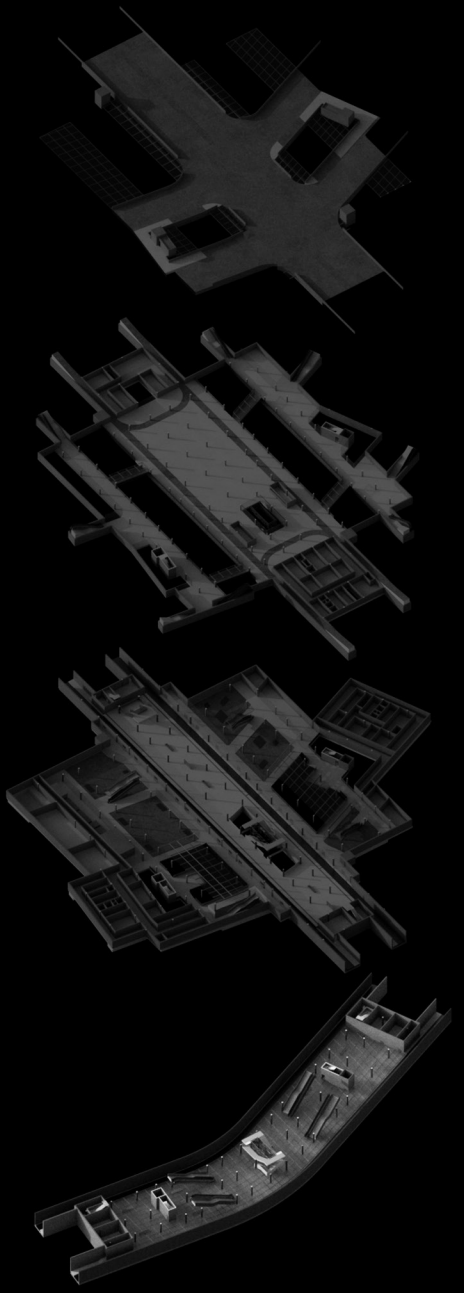


Services And Display Area Equipment And Staff Area Platform

Concept

PROGRAM OVERVIEW

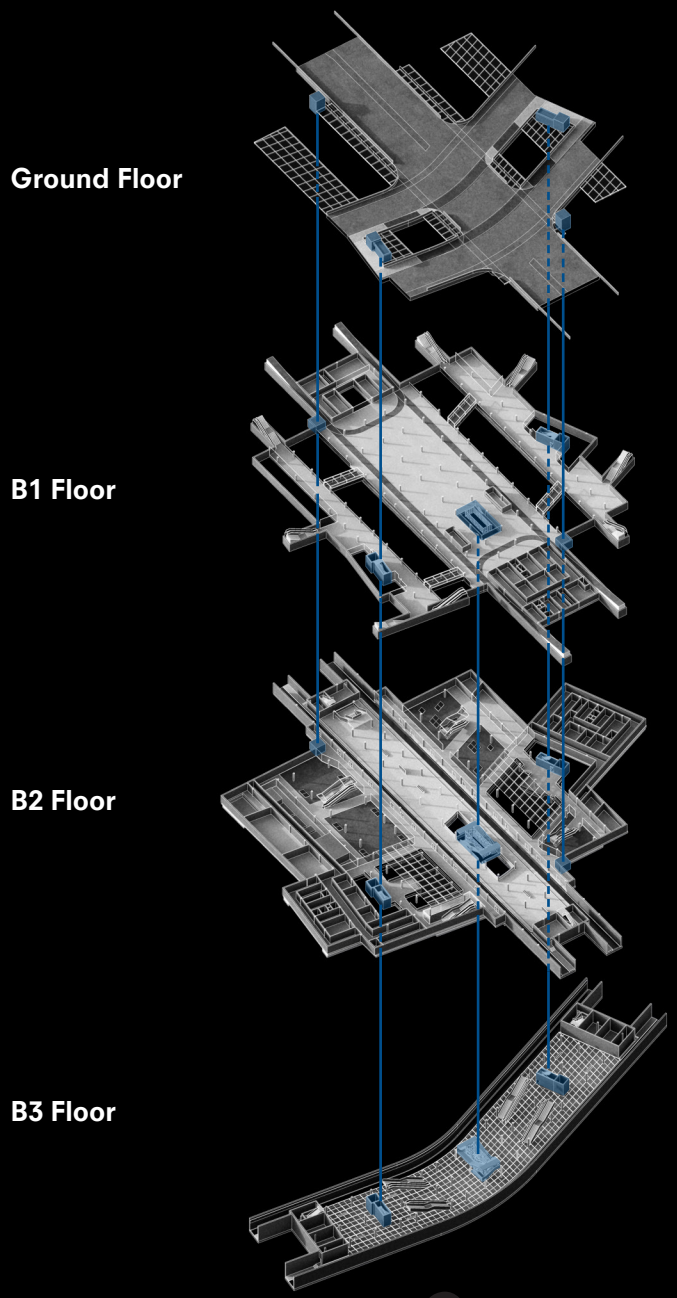




Equipment And Staff Area Platform

Concept

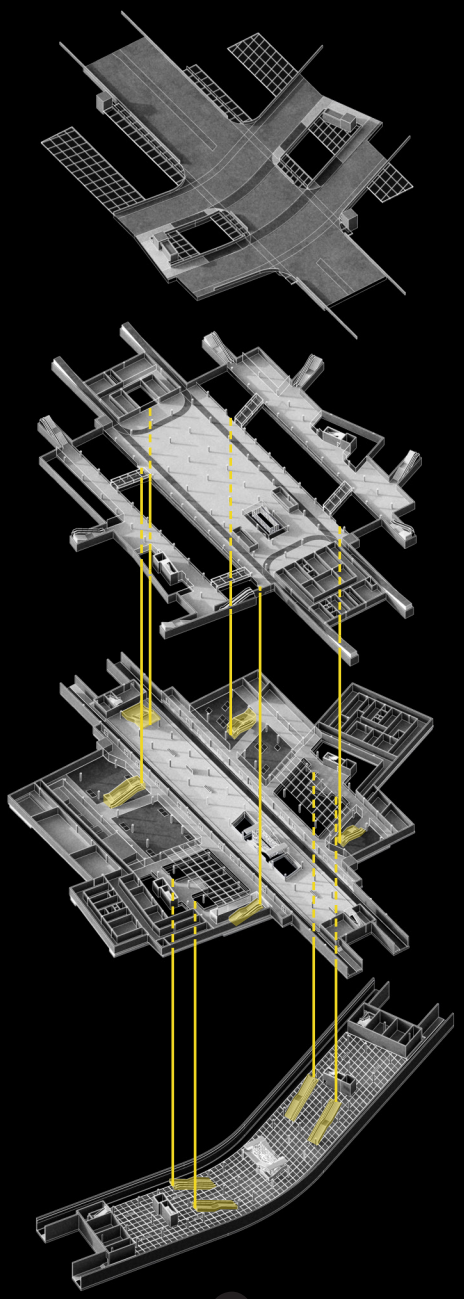
VERTICAL CONNECTION



Multi-floors Connections

Concept

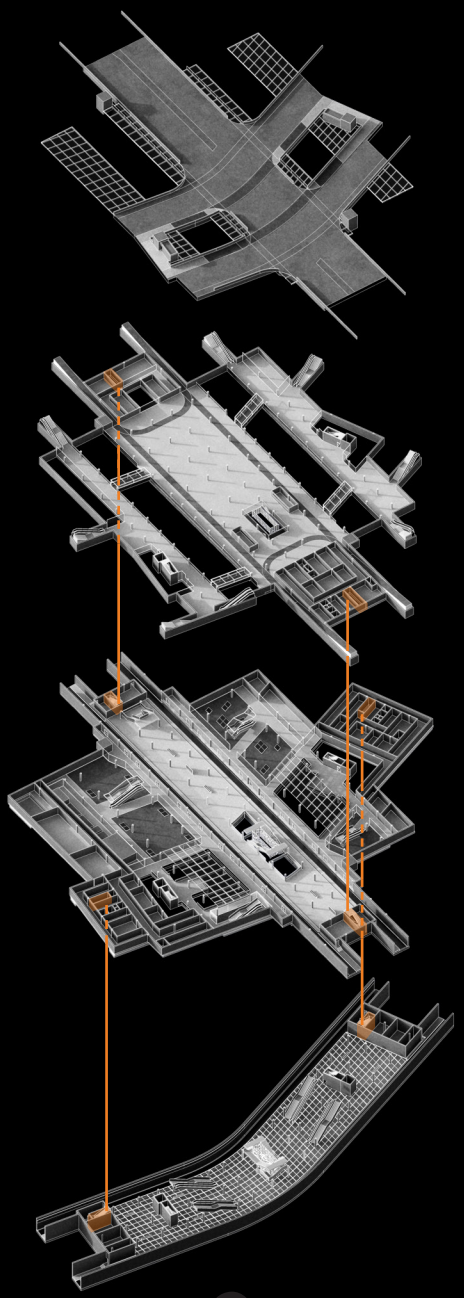
VERTICAL CONNECTION



Connections Between Two Floors

Concept

VERTICAL CONNECTION



Connections Made For Staff

INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

CLIMATE

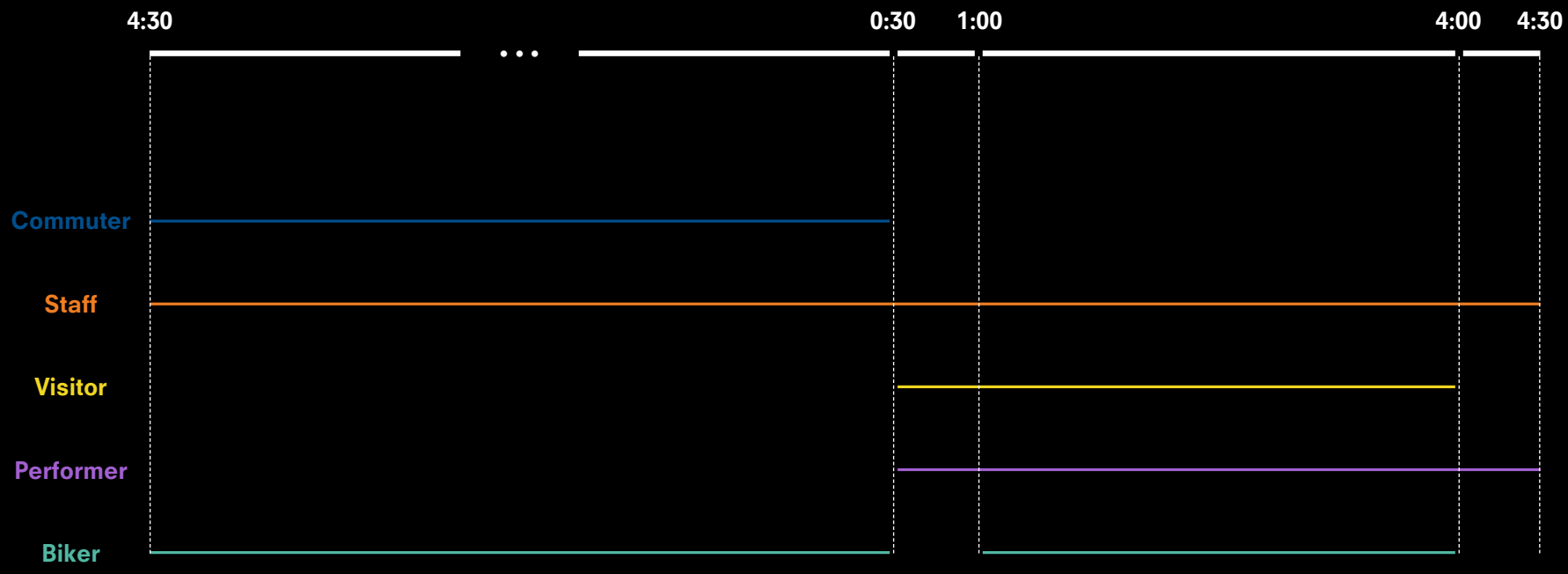
STRUCTURE

DEVELOPMENT

CONCLUSION

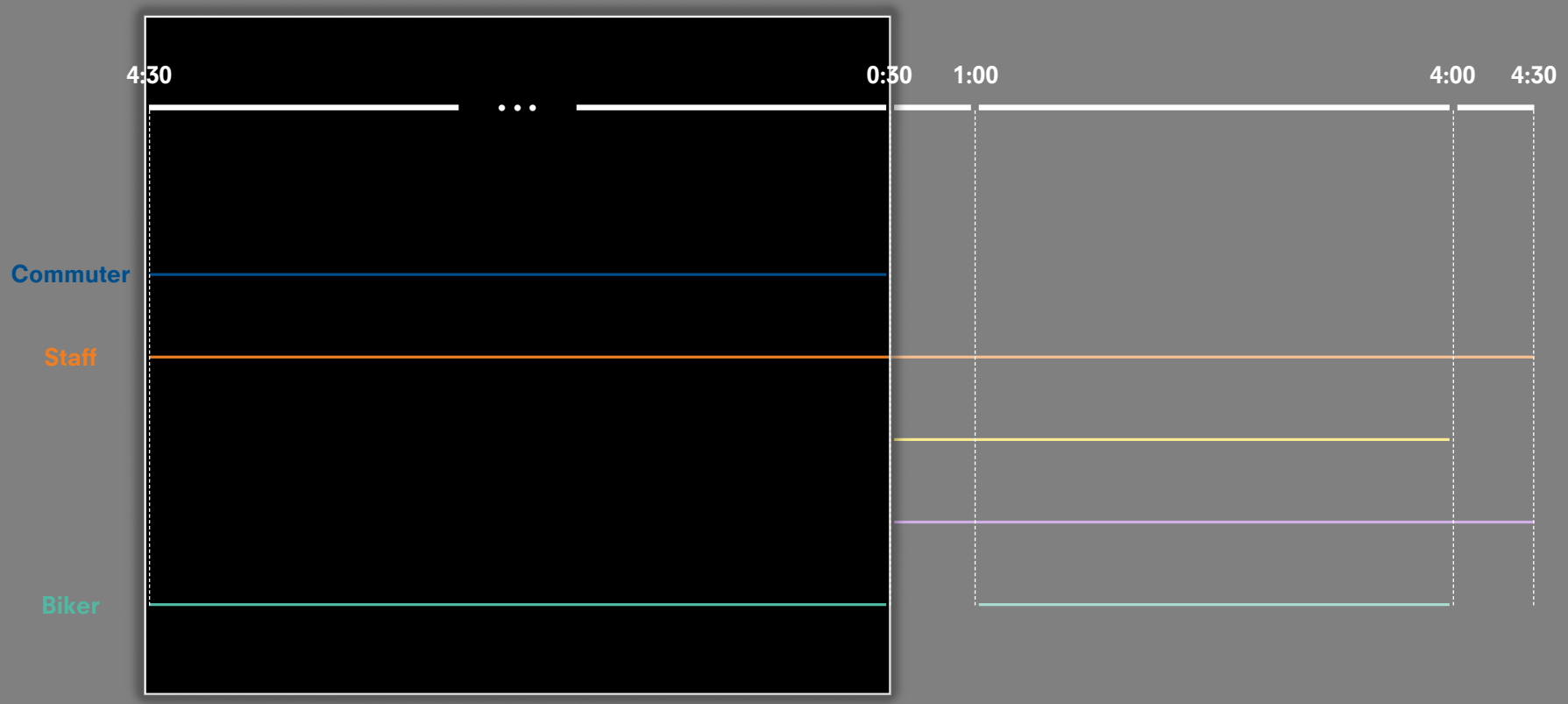
Metro Station To Night Live Venue

TIMELINE



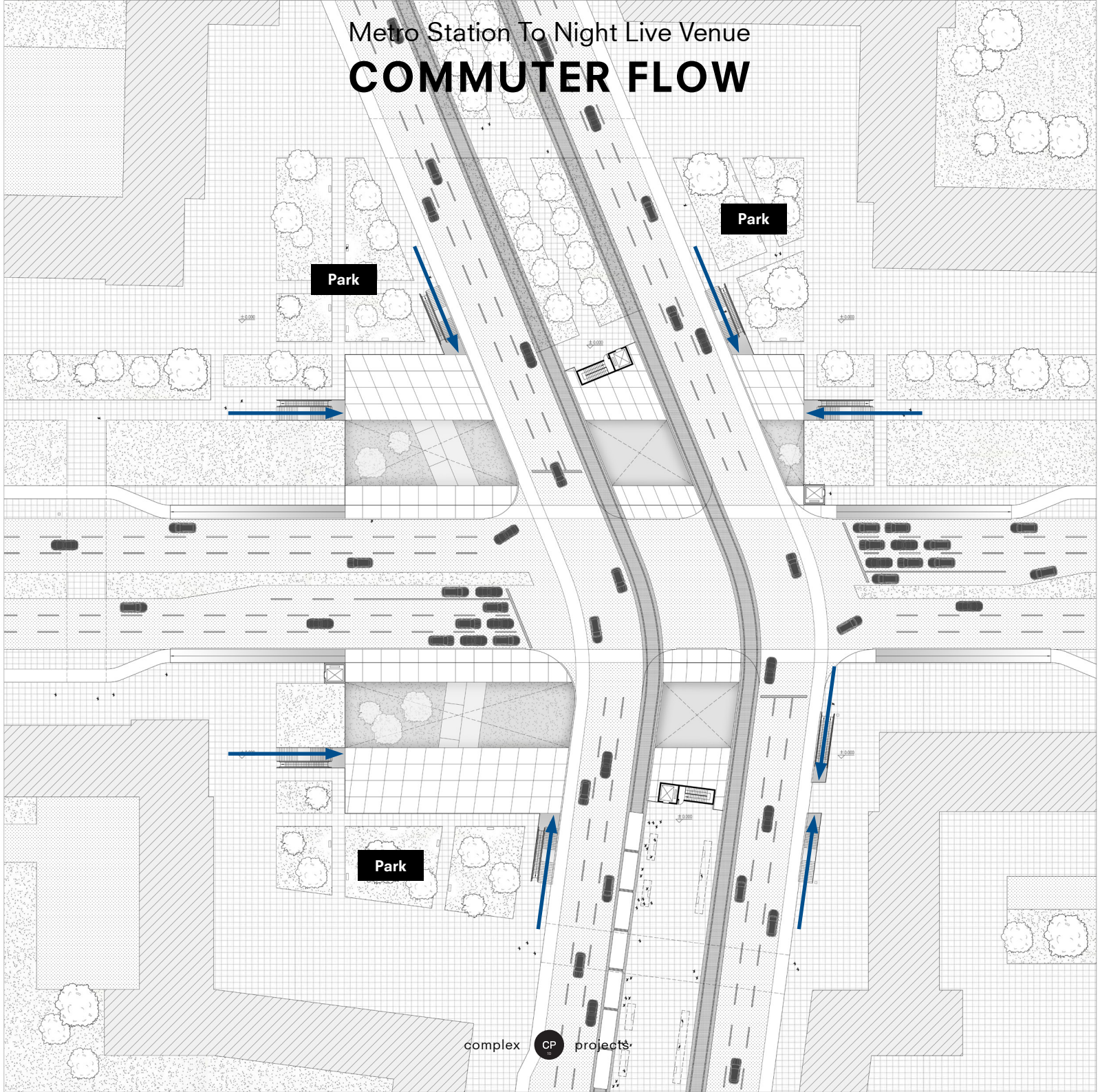
Metro Station To Night Live Venue

METRO STATION



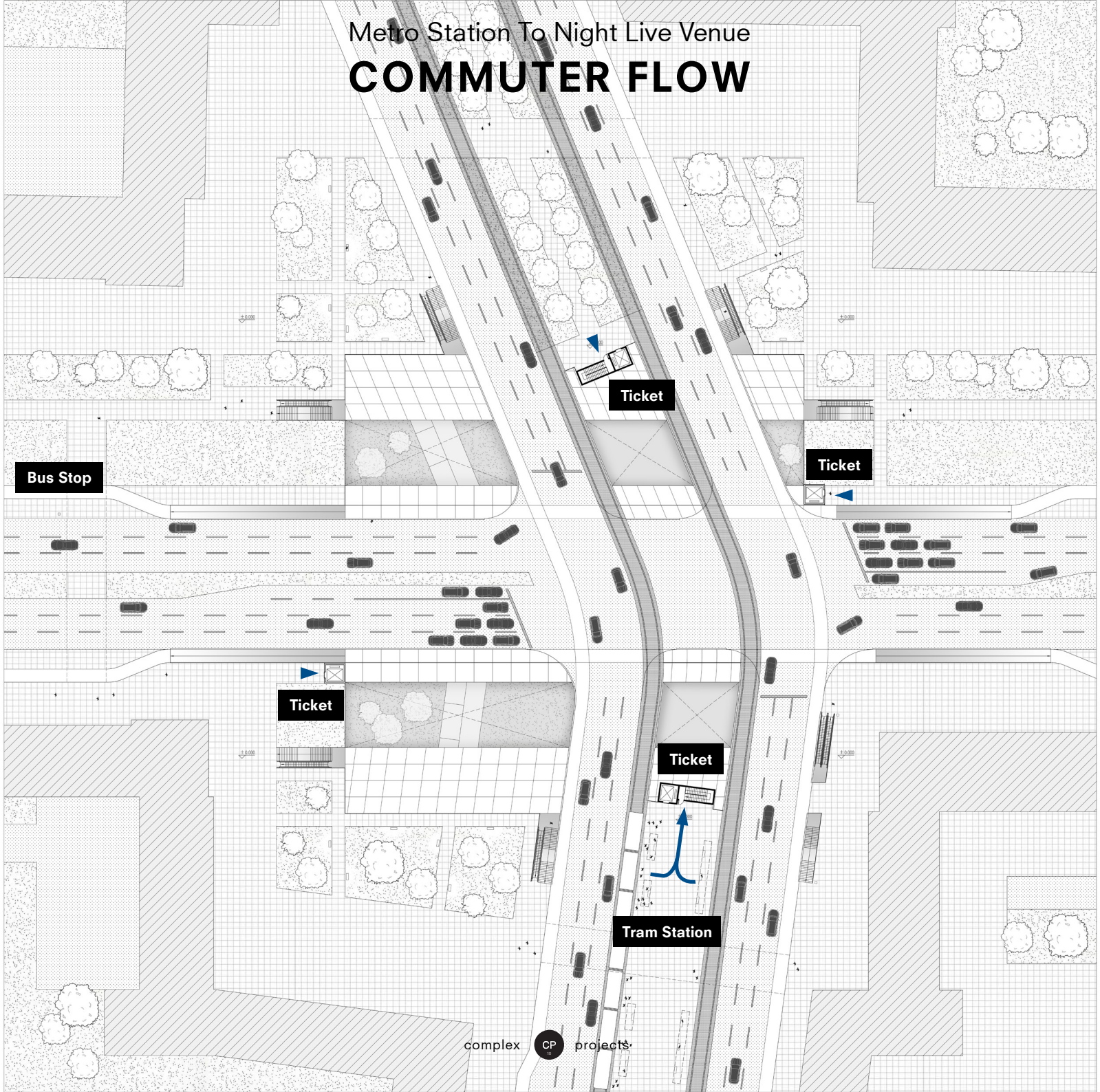
Metro Station To Night Live Venue

COMMUTER FLOW



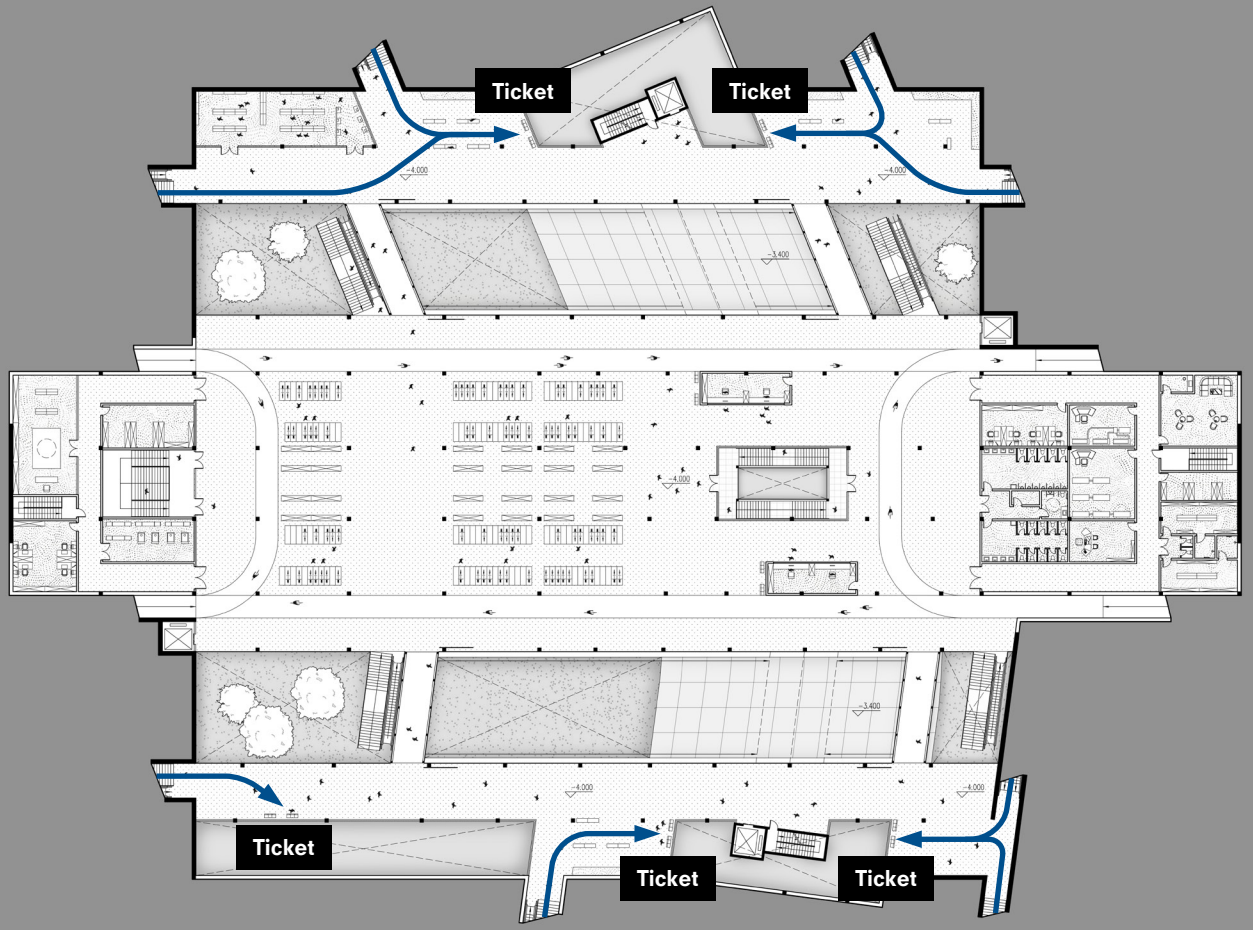
Metro Station To Night Live Venue

COMMUTER FLOW



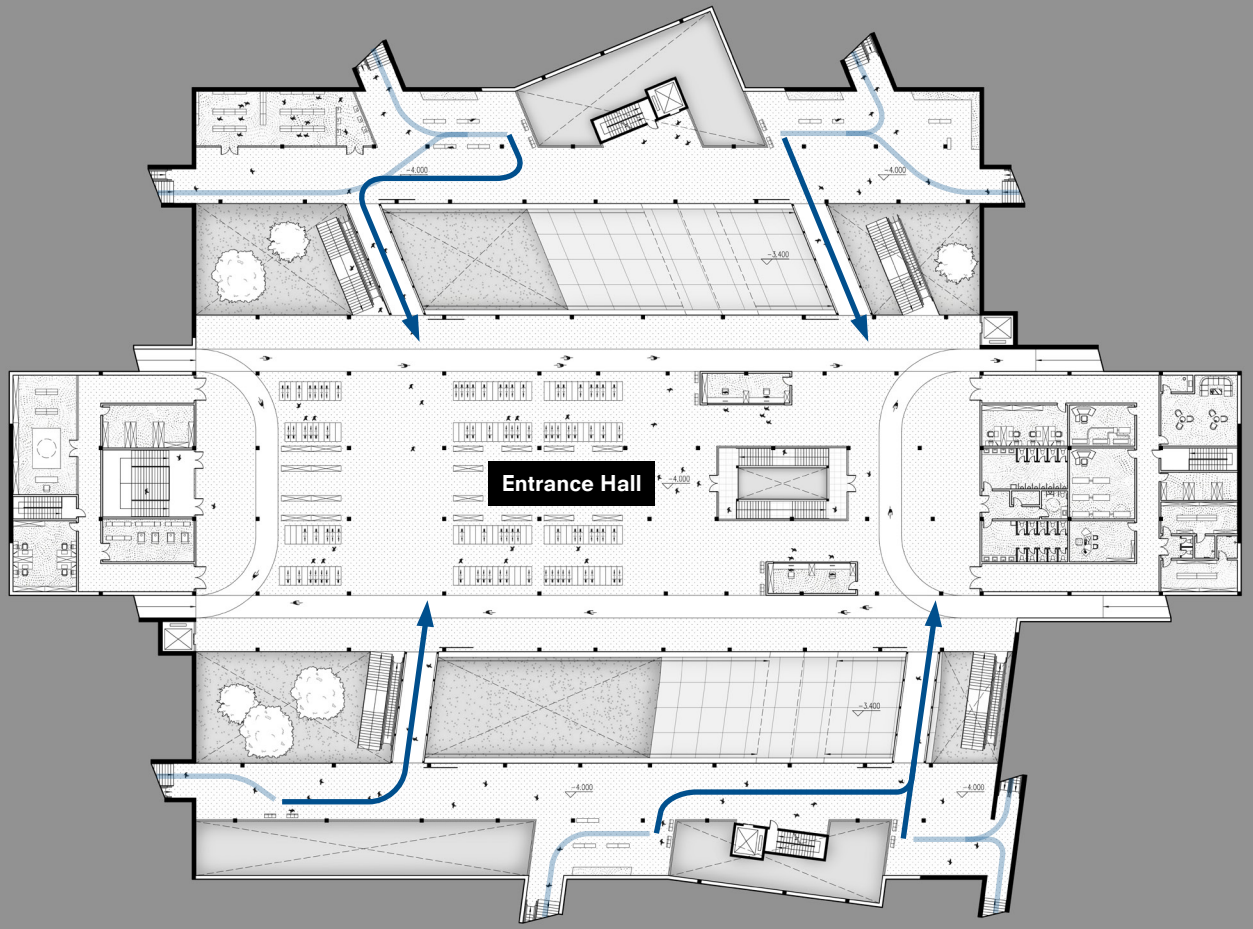
Metro Station To Night Live Venue

COMMUTER FLOW



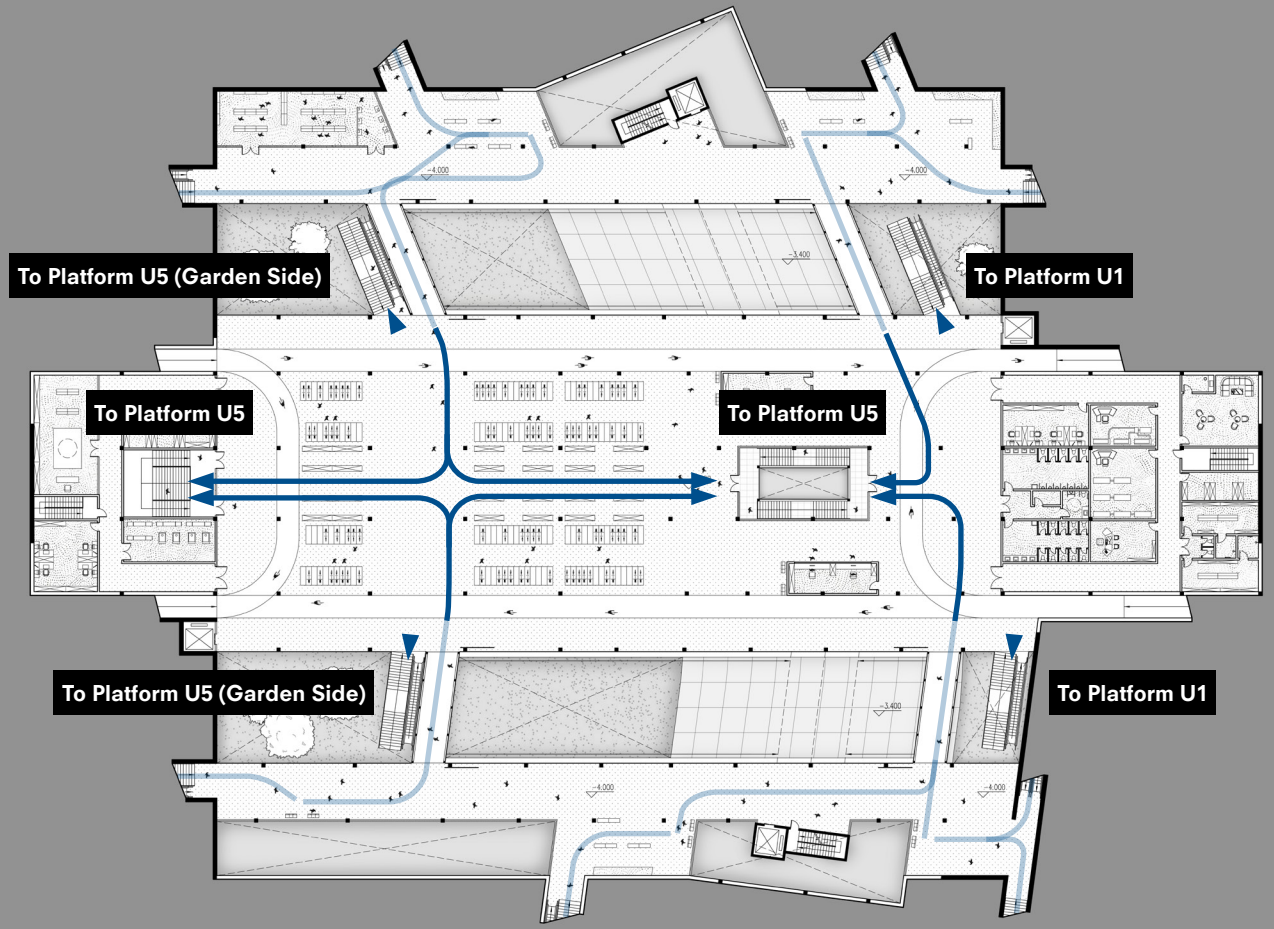
Metro Station To Night Live Venue

COMMUTER FLOW



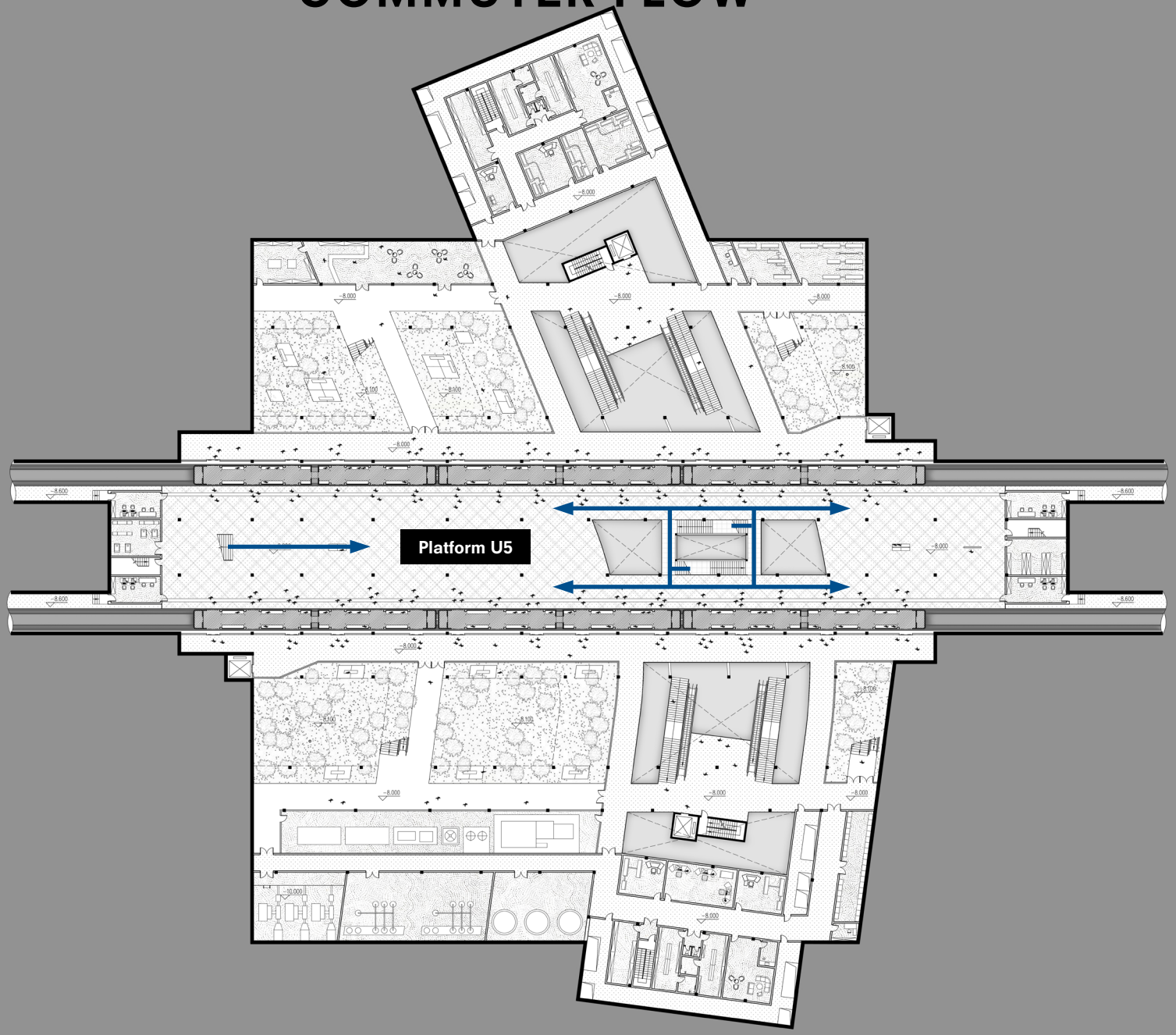
Metro Station To Night Live Venue

COMMUTER FLOW



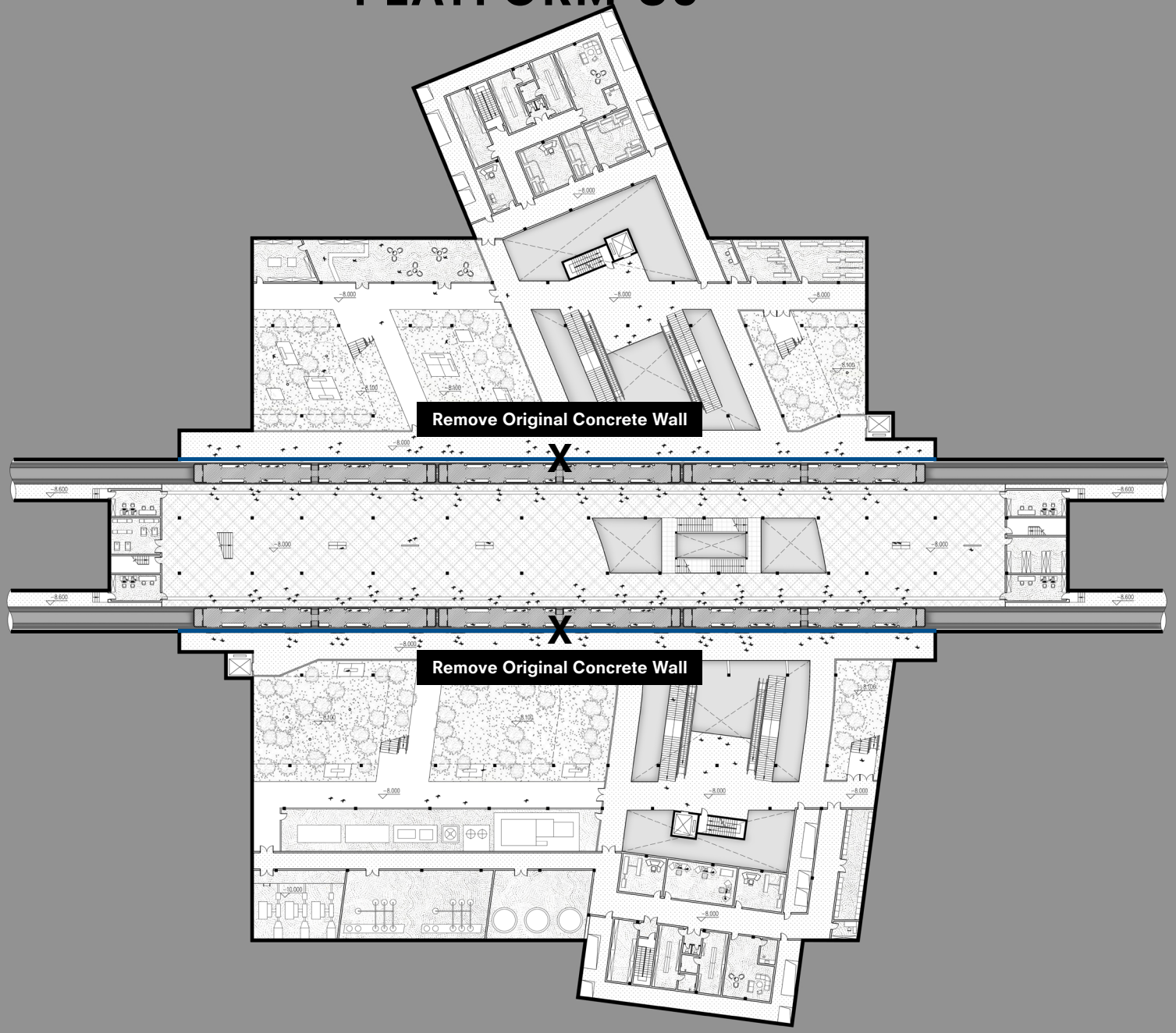
Metro Station To Night Live Venue

COMMUTER FLOW



Metro Station To Night Live Venue

PLATFORM U5



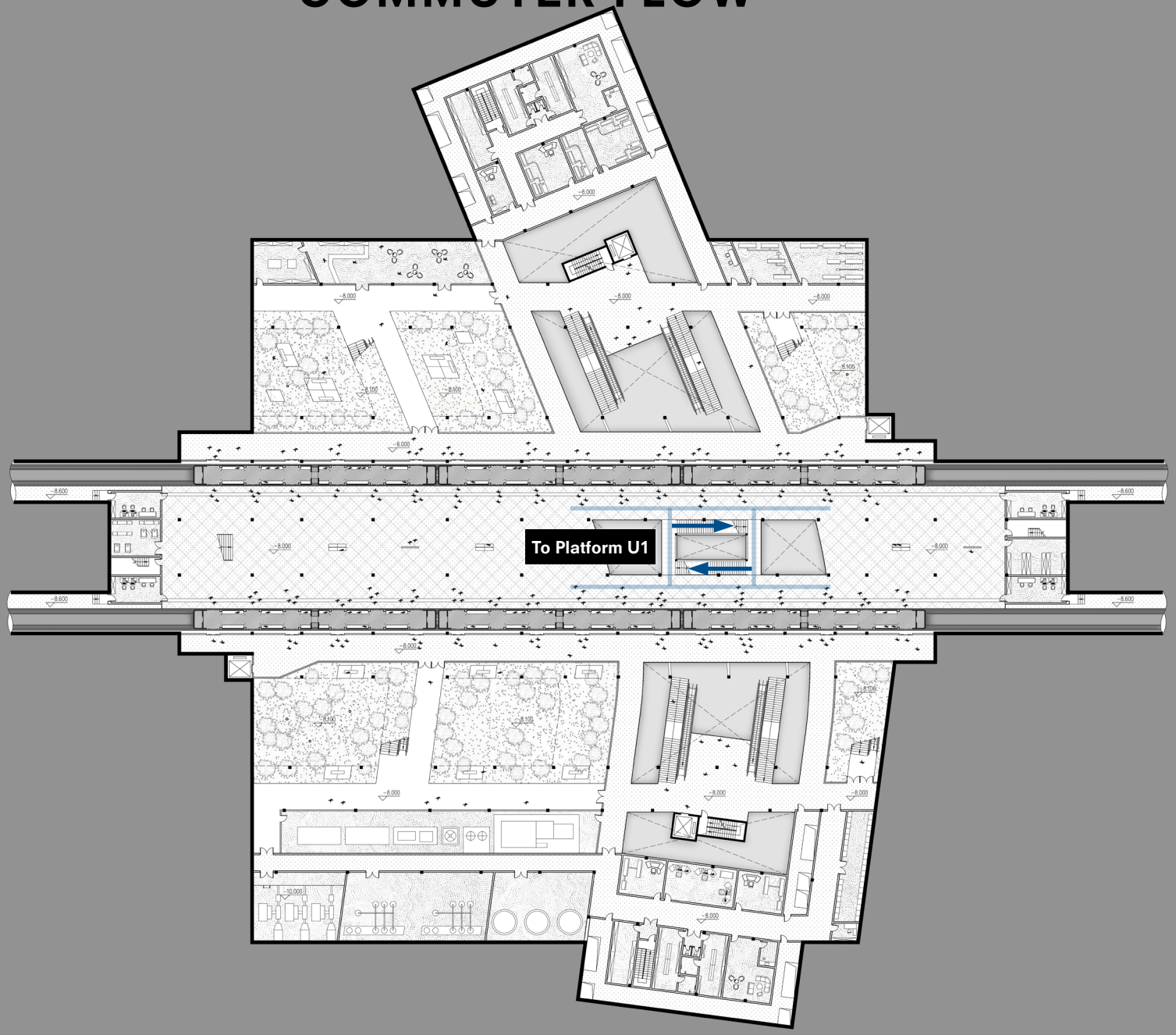
Metro Station To Night Live Venue

PLATFORM U5



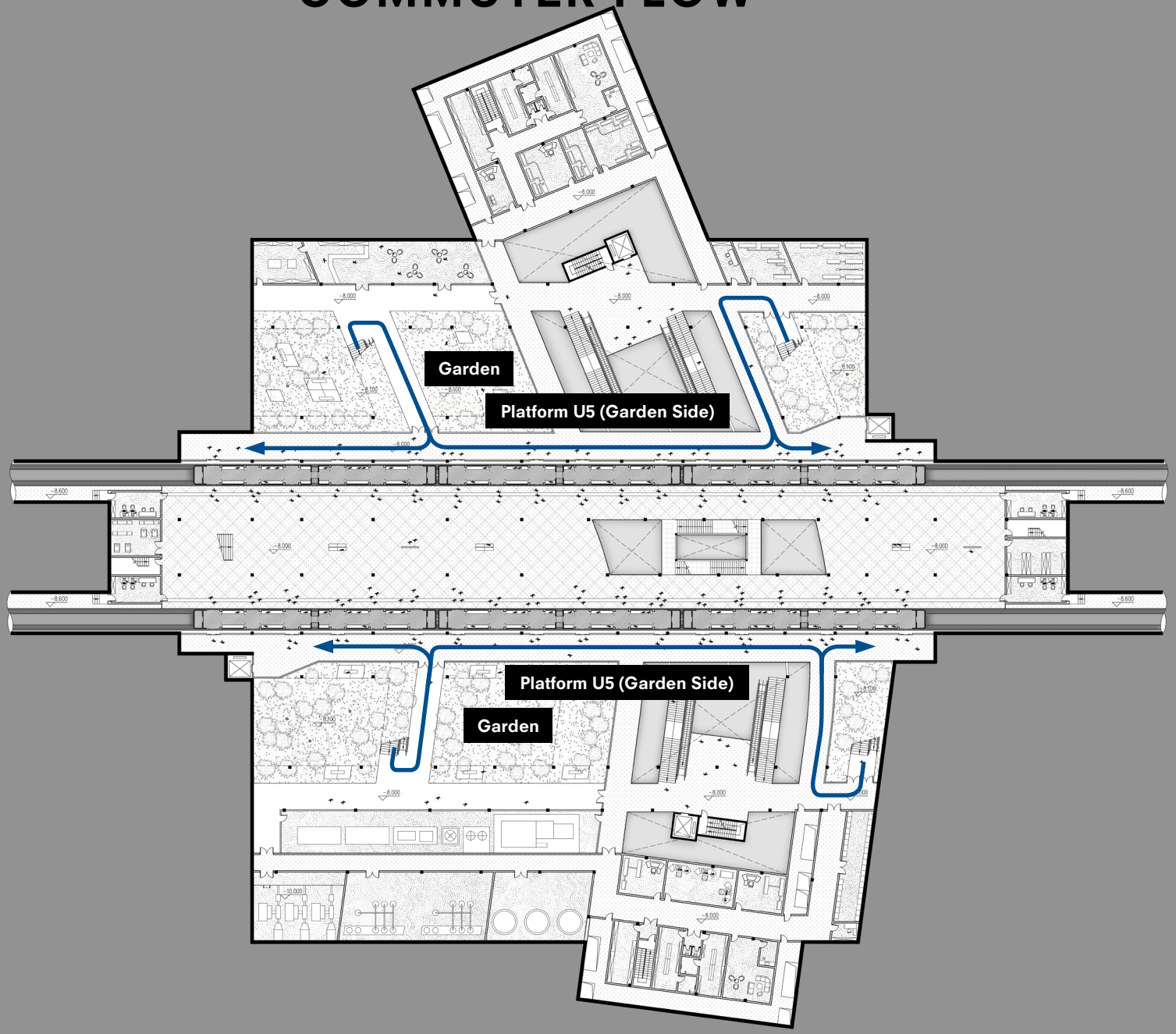
Metro Station To Night Live Venue

COMMUTER FLOW



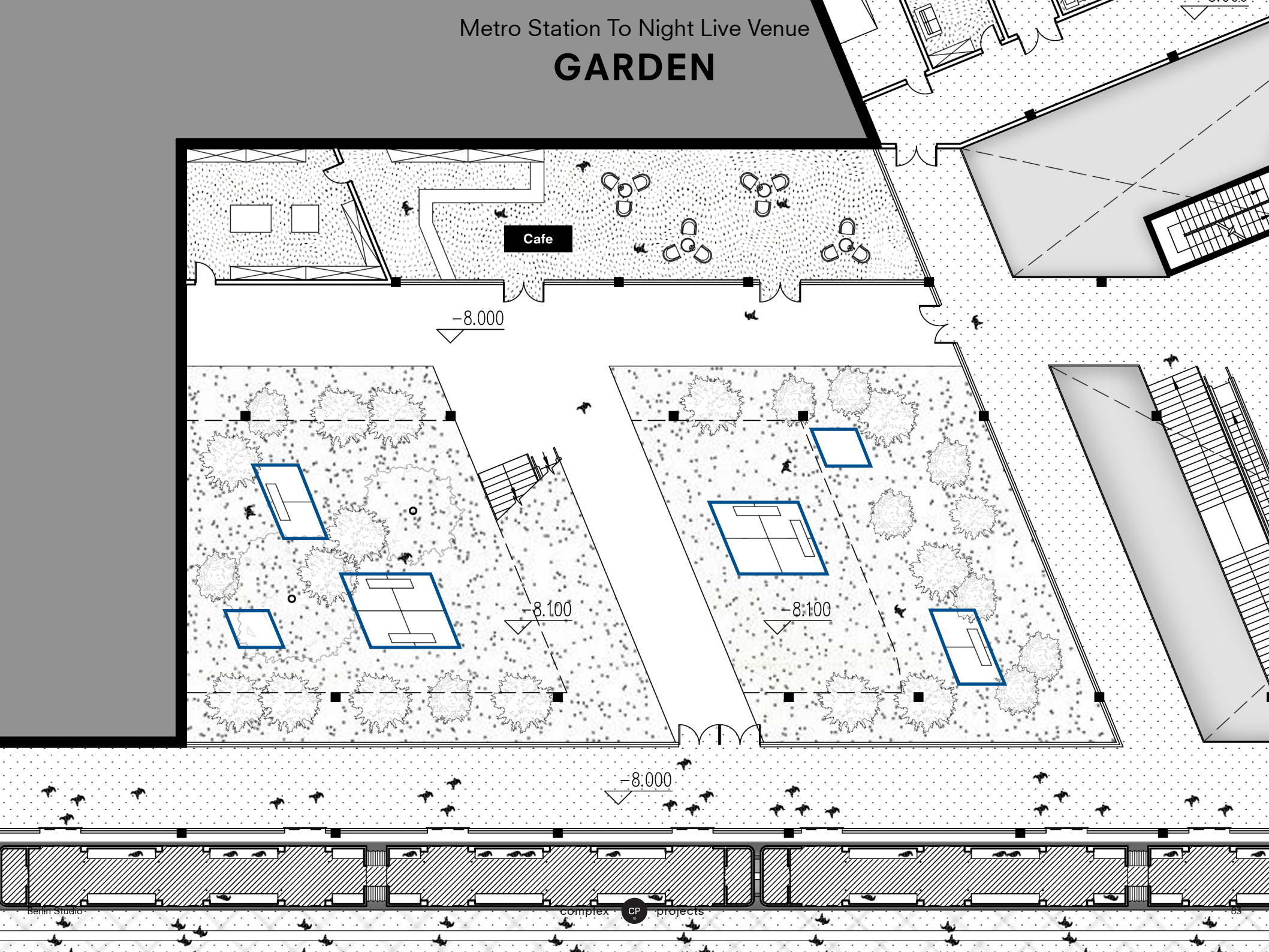
Metro Station To Night Live Venue

COMMUTER FLOW



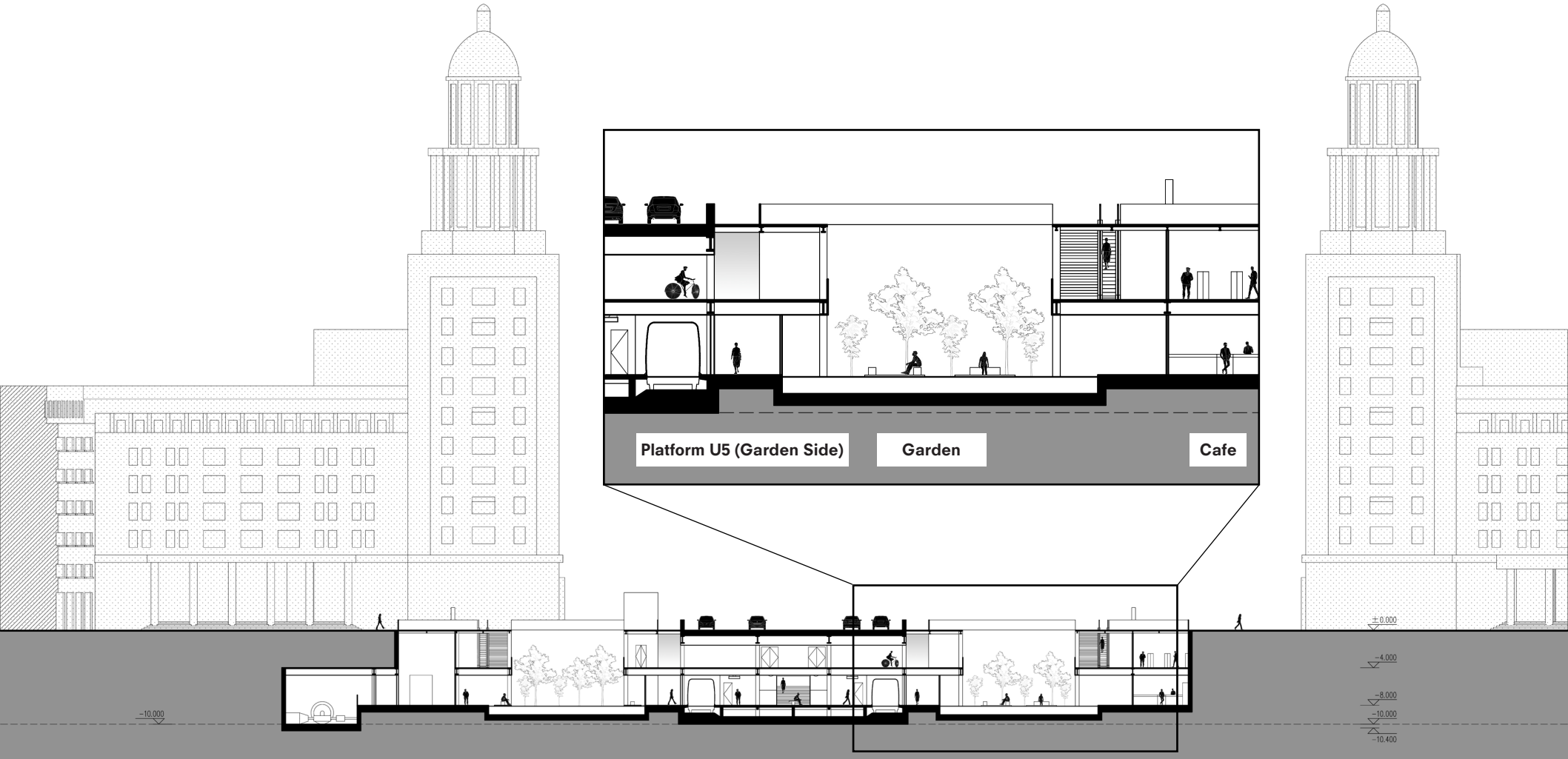
Metro Station To Night Live Venue

GARDEN



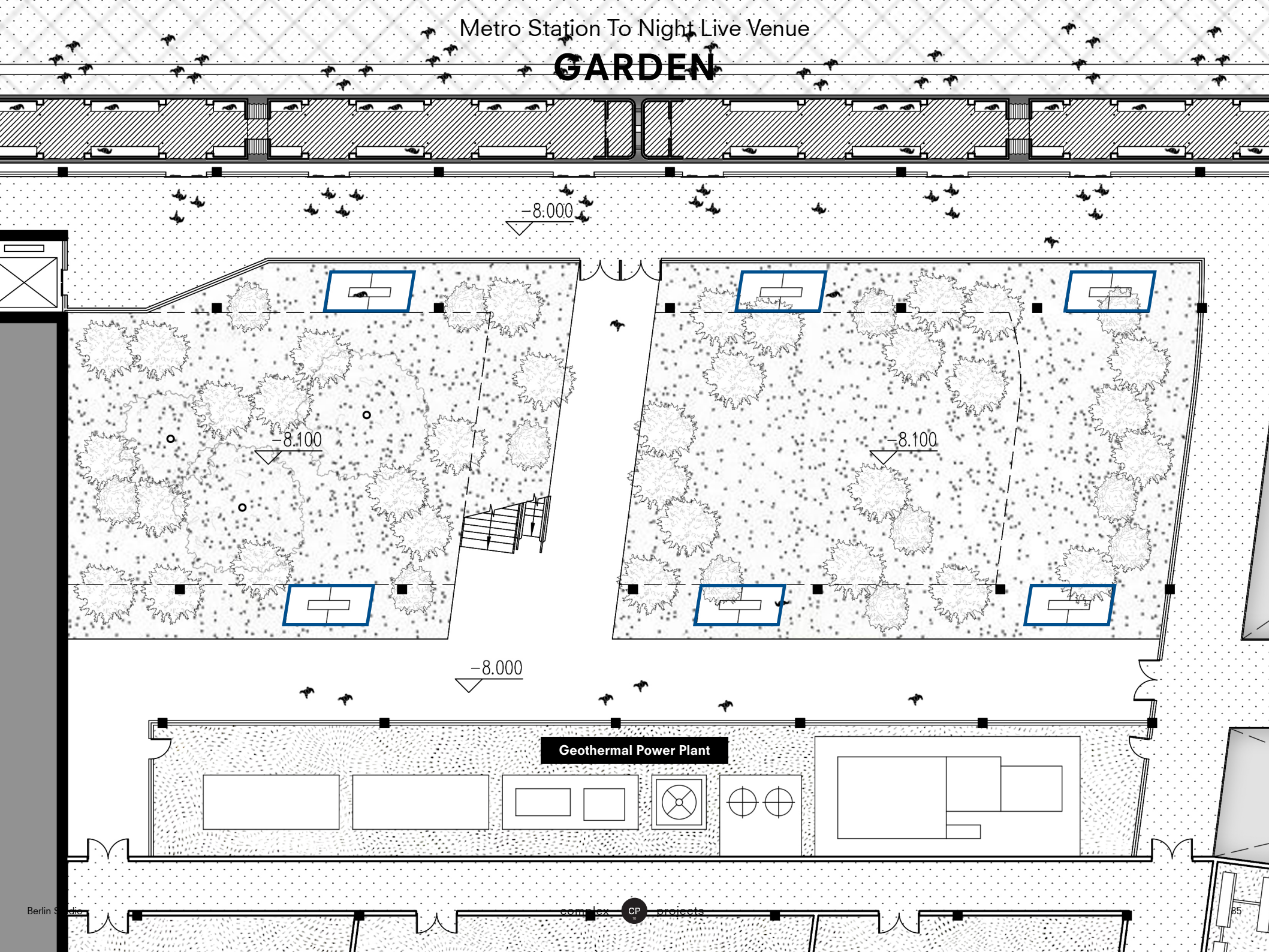
Metro Station To Night Live Venue

GARDEN

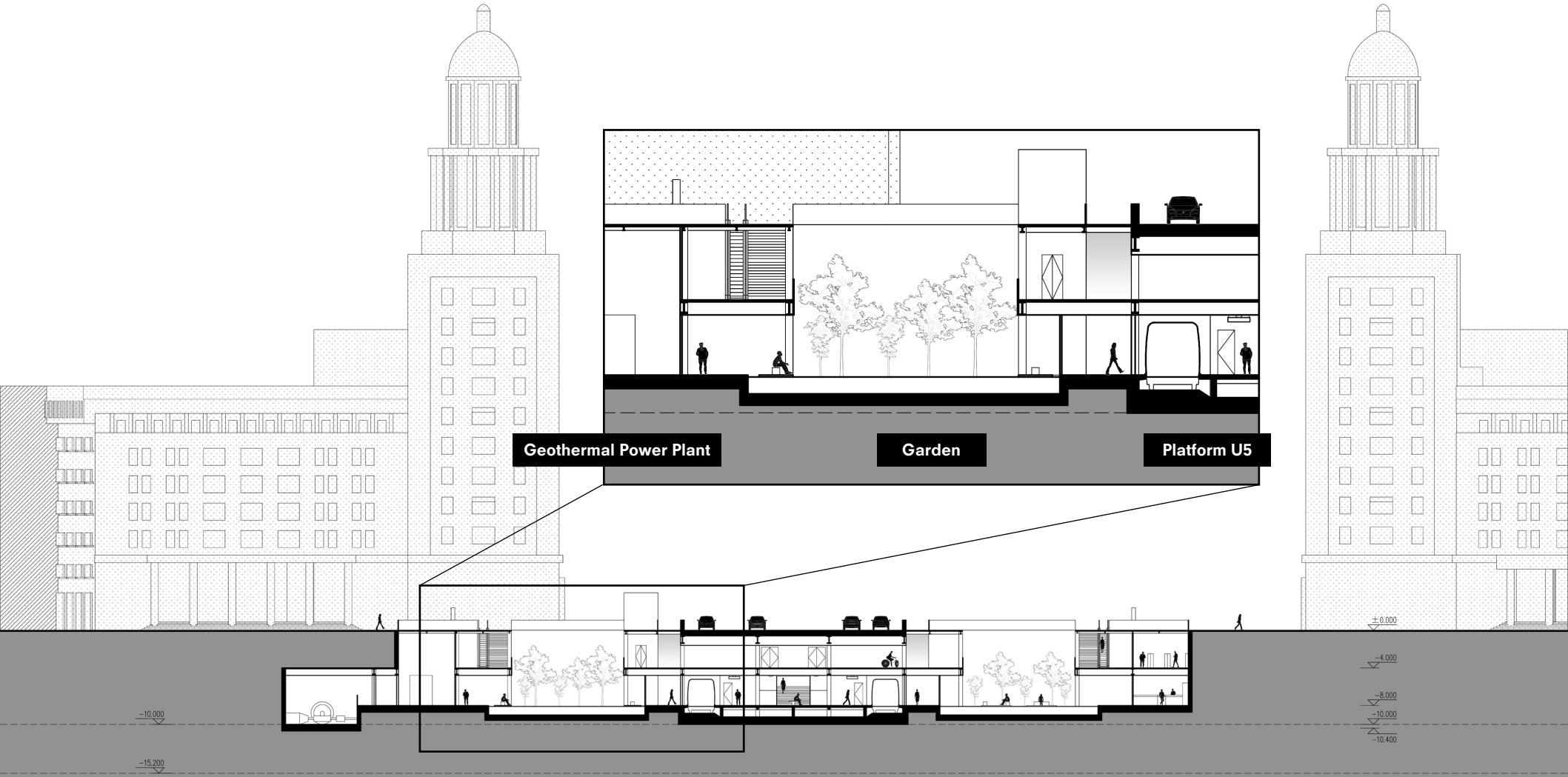


Metro Station To Night Live Venue

GARDEN



GARDEN


Geothermal Power Plant
Garden
Platform U5
±0.000
−4.000
−8.000
−10.000
−10.400
−10.000
−15.200

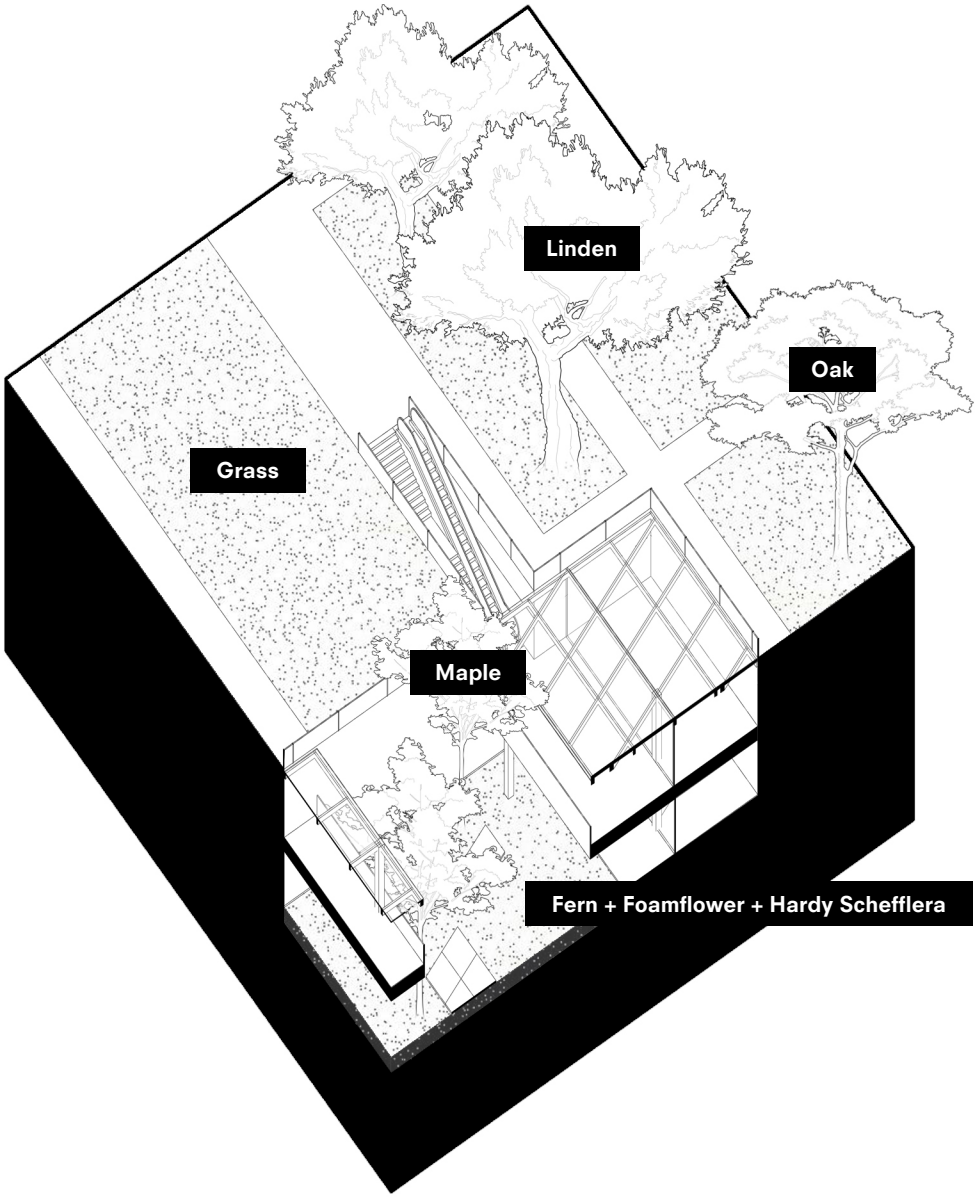
Metro Station To Night Live Venue

GARDEN



Metro Station To Night Live Venue

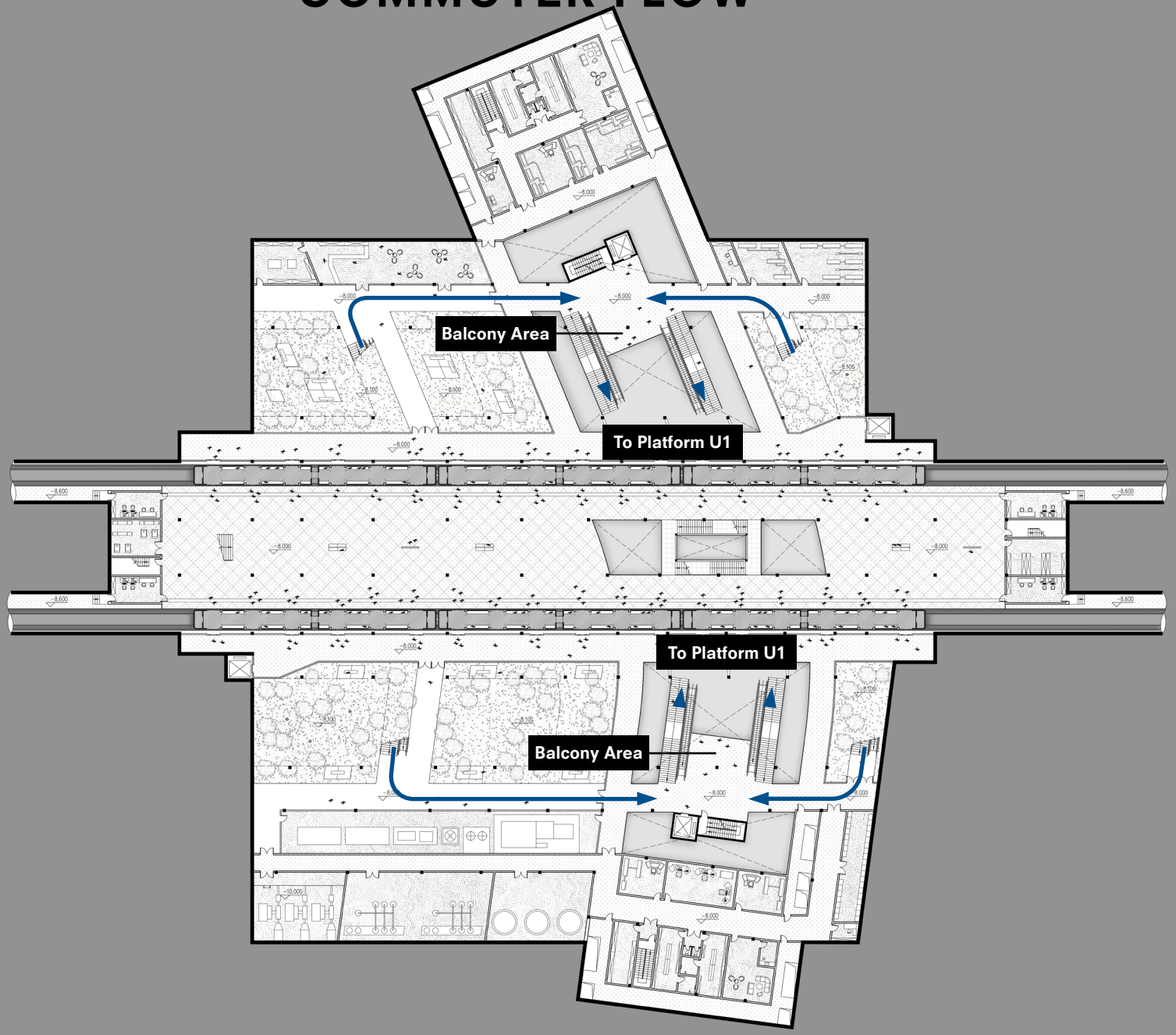
GARDEN



The garden mainly consists of maple, fern, foamflower and hardy schefflera.

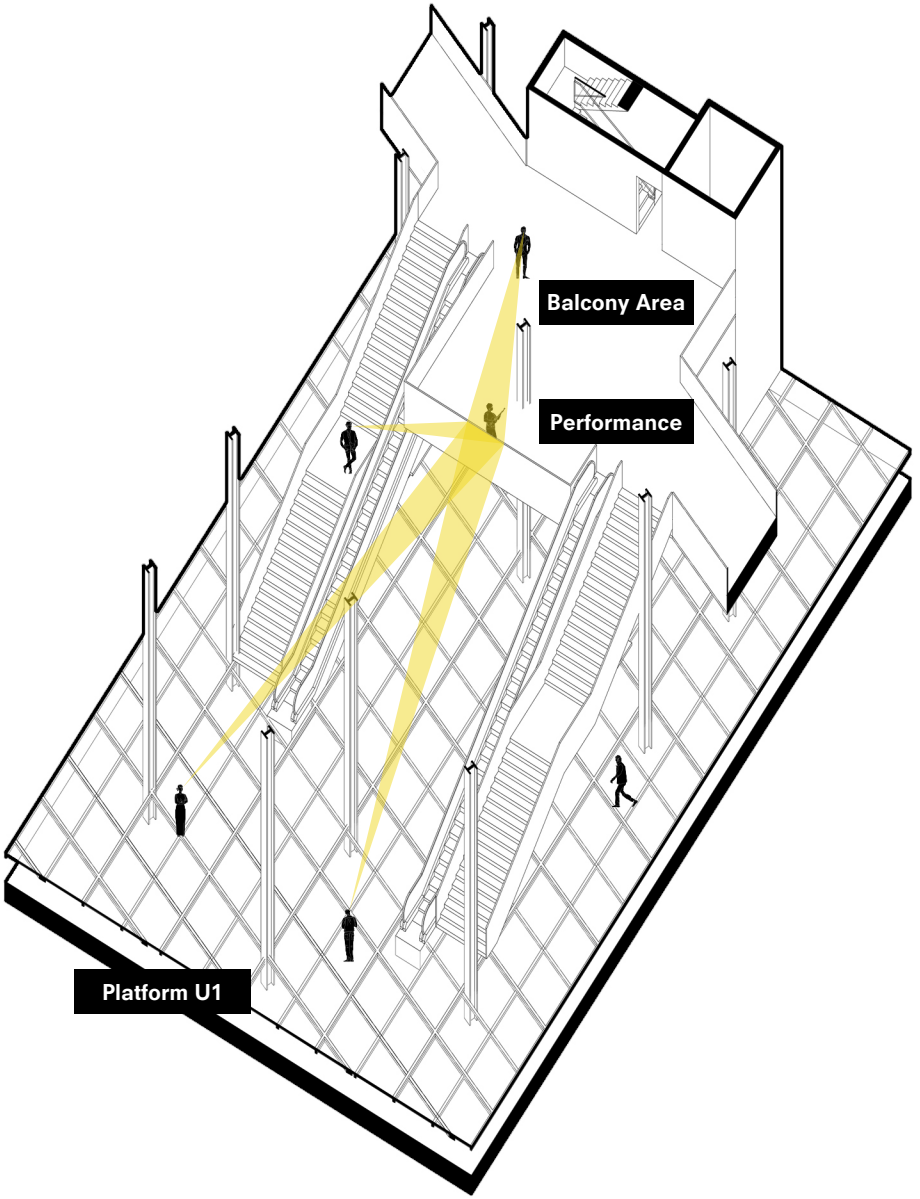
Metro Station To Night Live Venue

COMMUTER FLOW



Metro Station To Night Live Venue

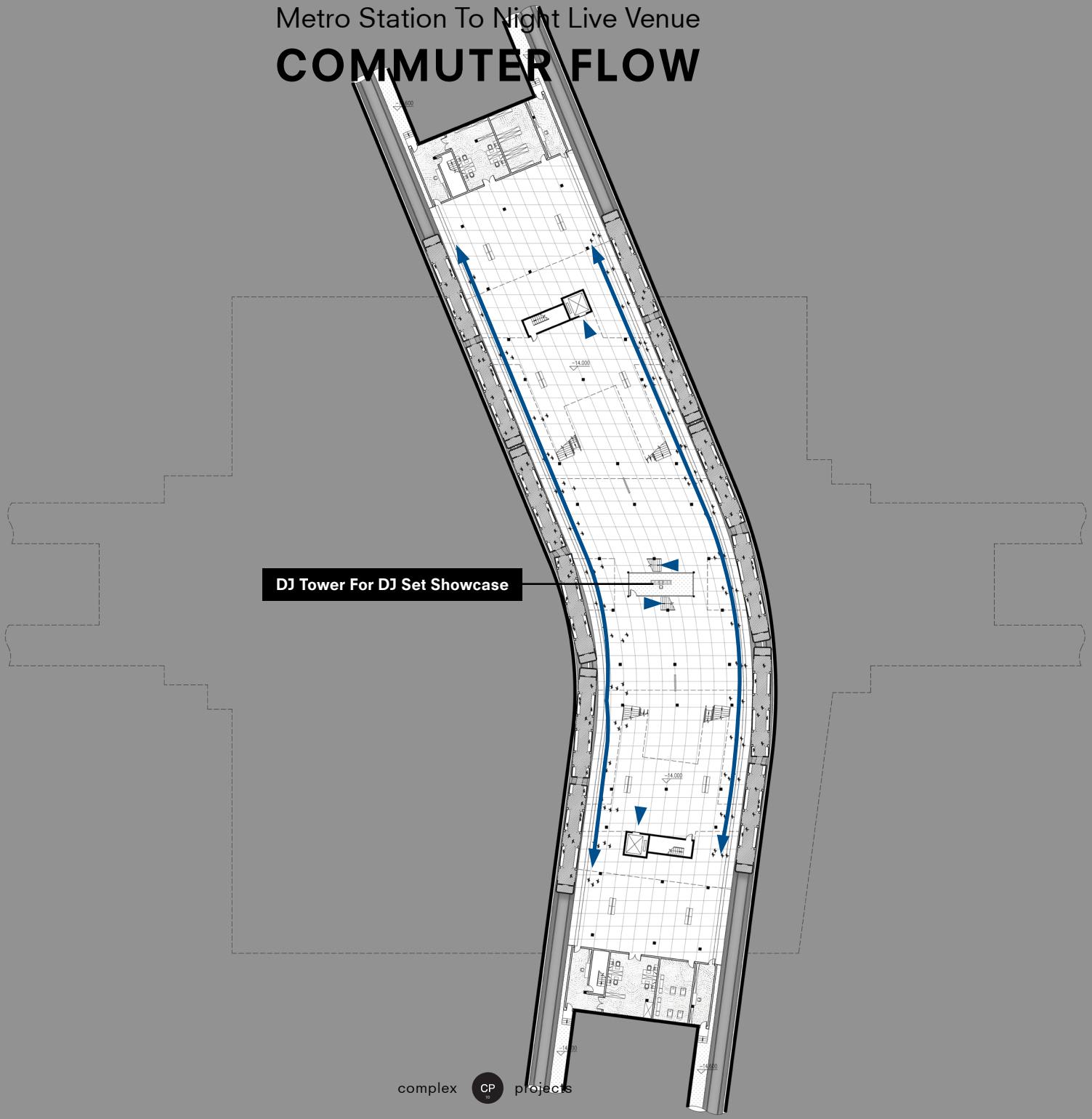
BALCONY AREA



The improvisational performance at balcony area can be seen by people at platform U1.

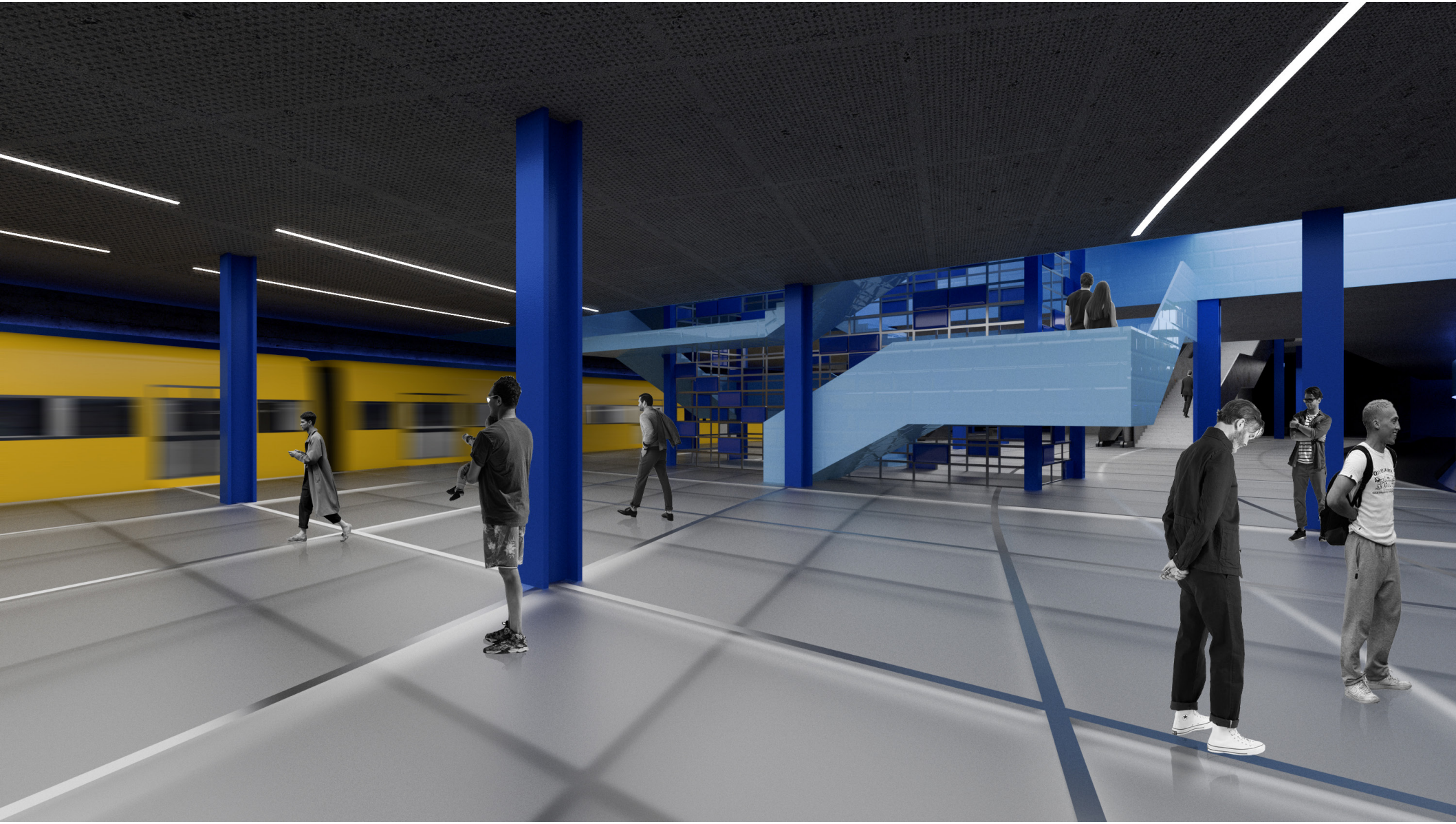
Metro Station To Night Live Venue

COMMUTER FLOW



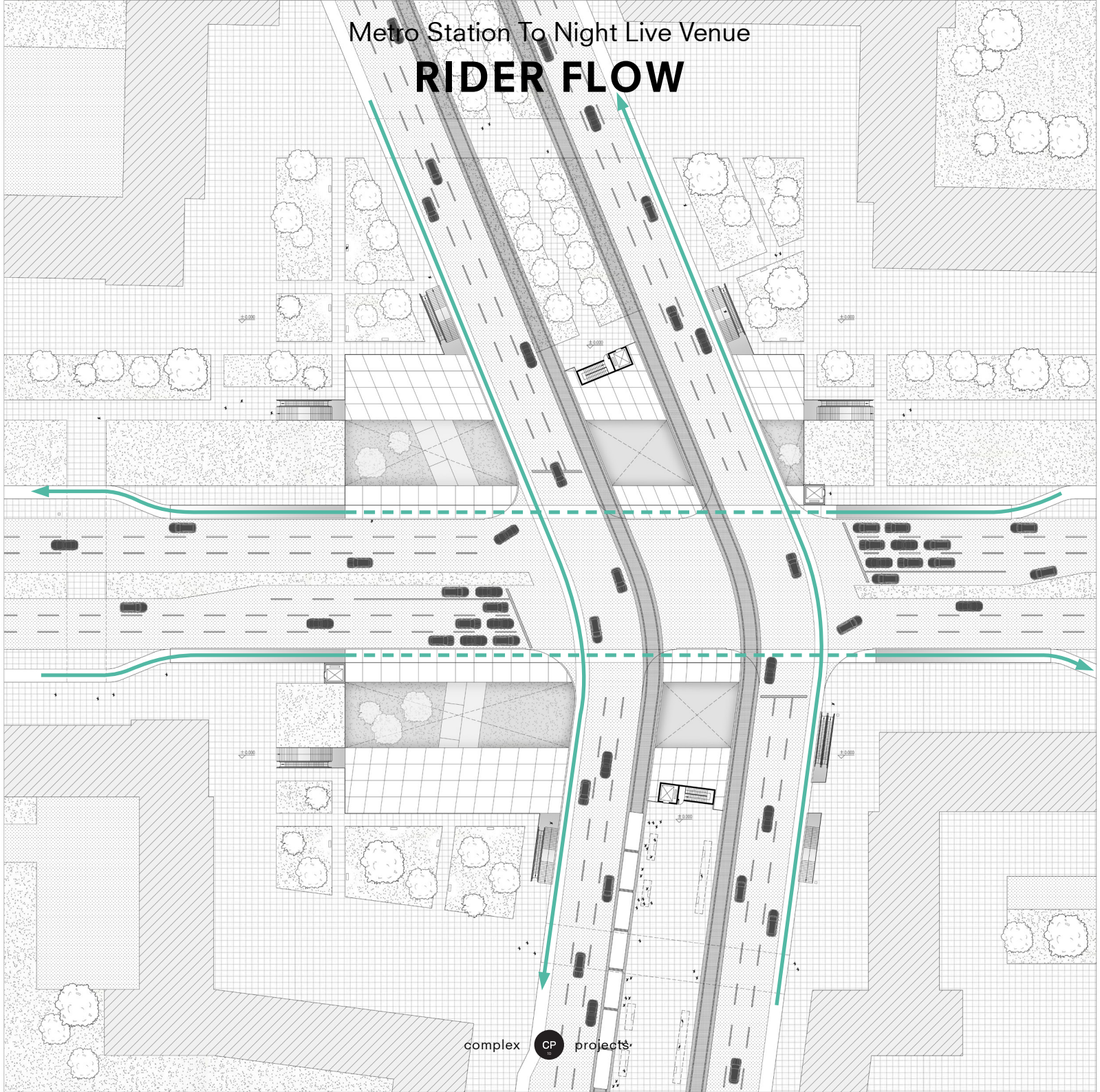
Metro Station To Night Live Venue

PLATFORM U1



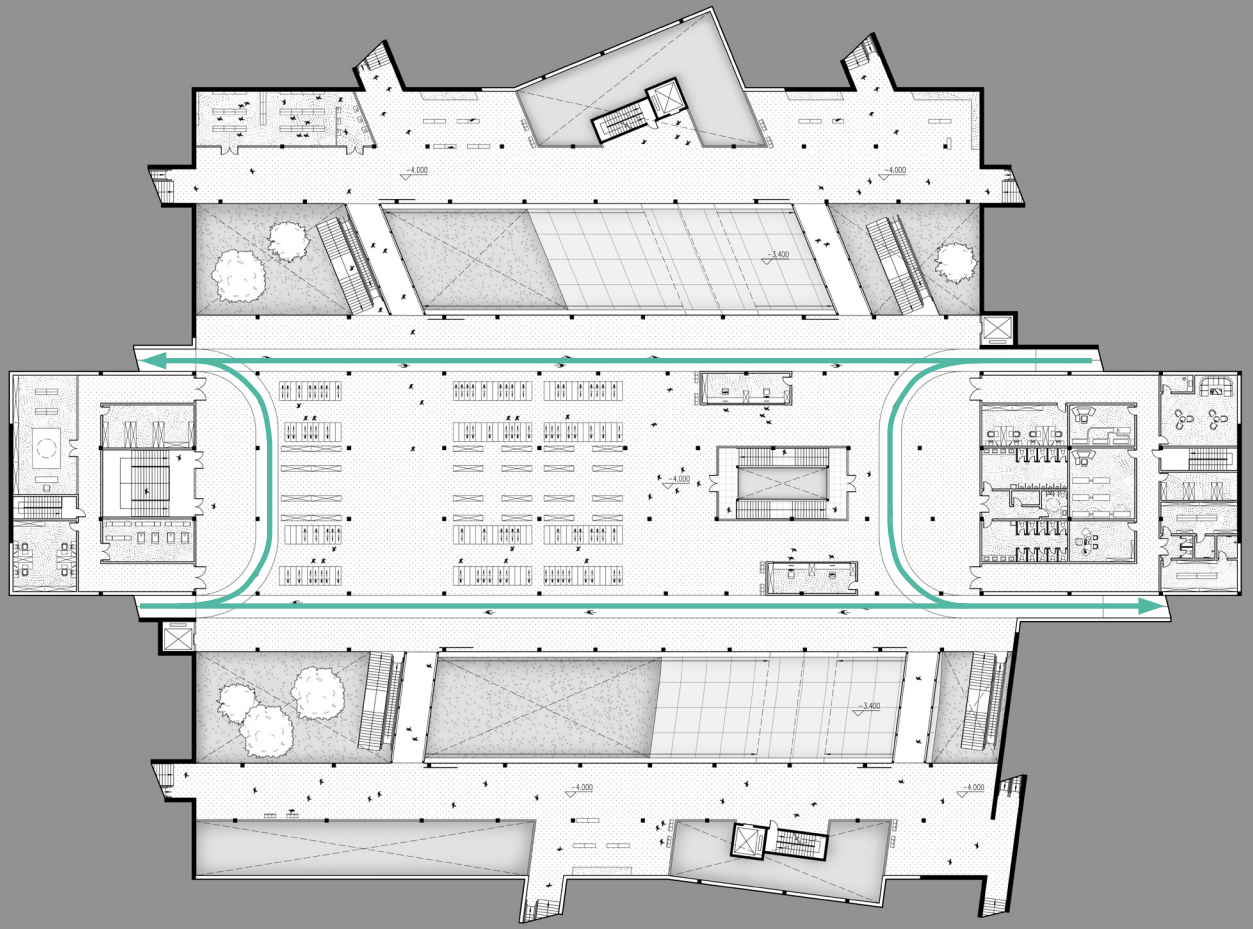
Metro Station To Night Live Venue

RIDER FLOW



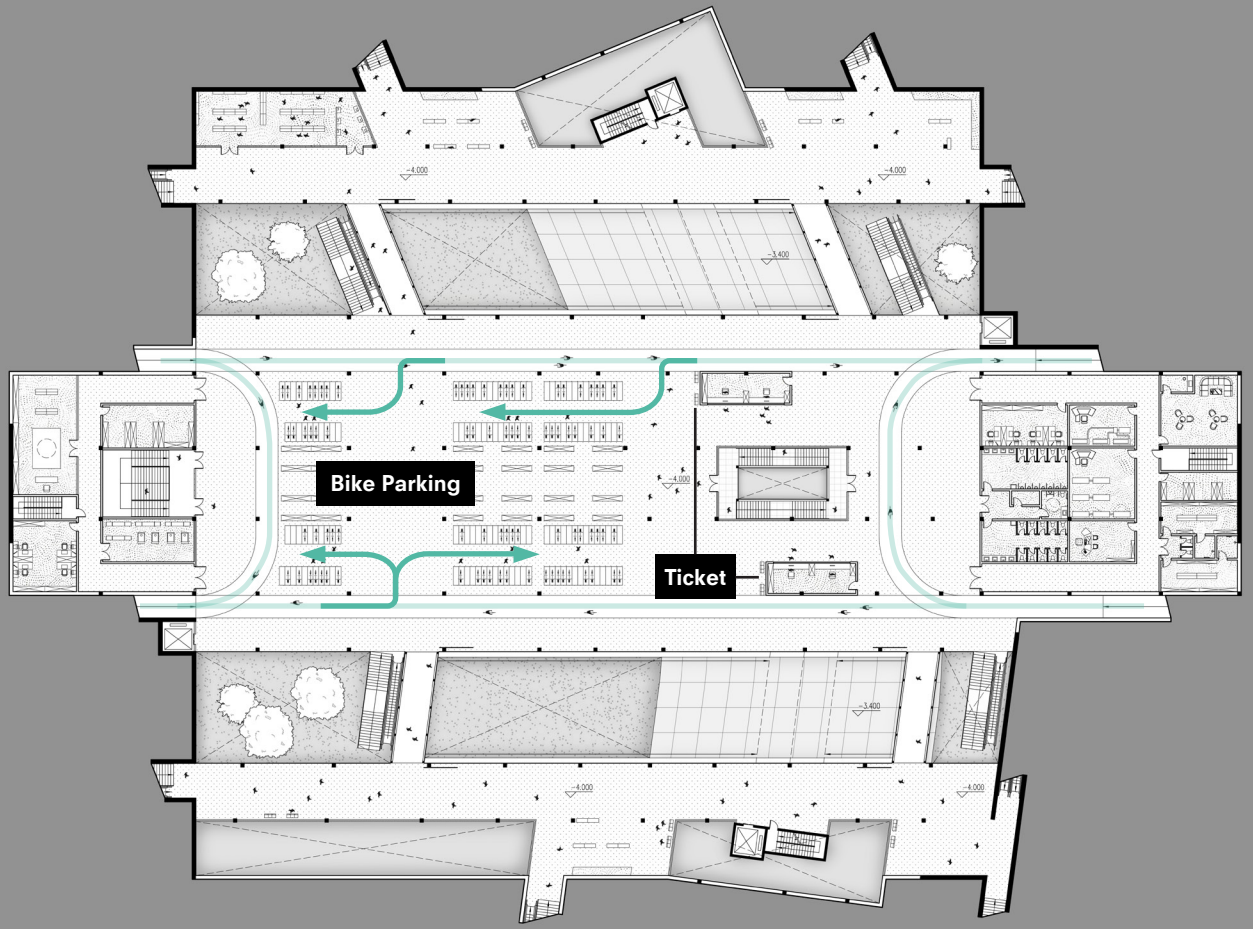
Metro Station To Night Live Venue

RIDER FLOW



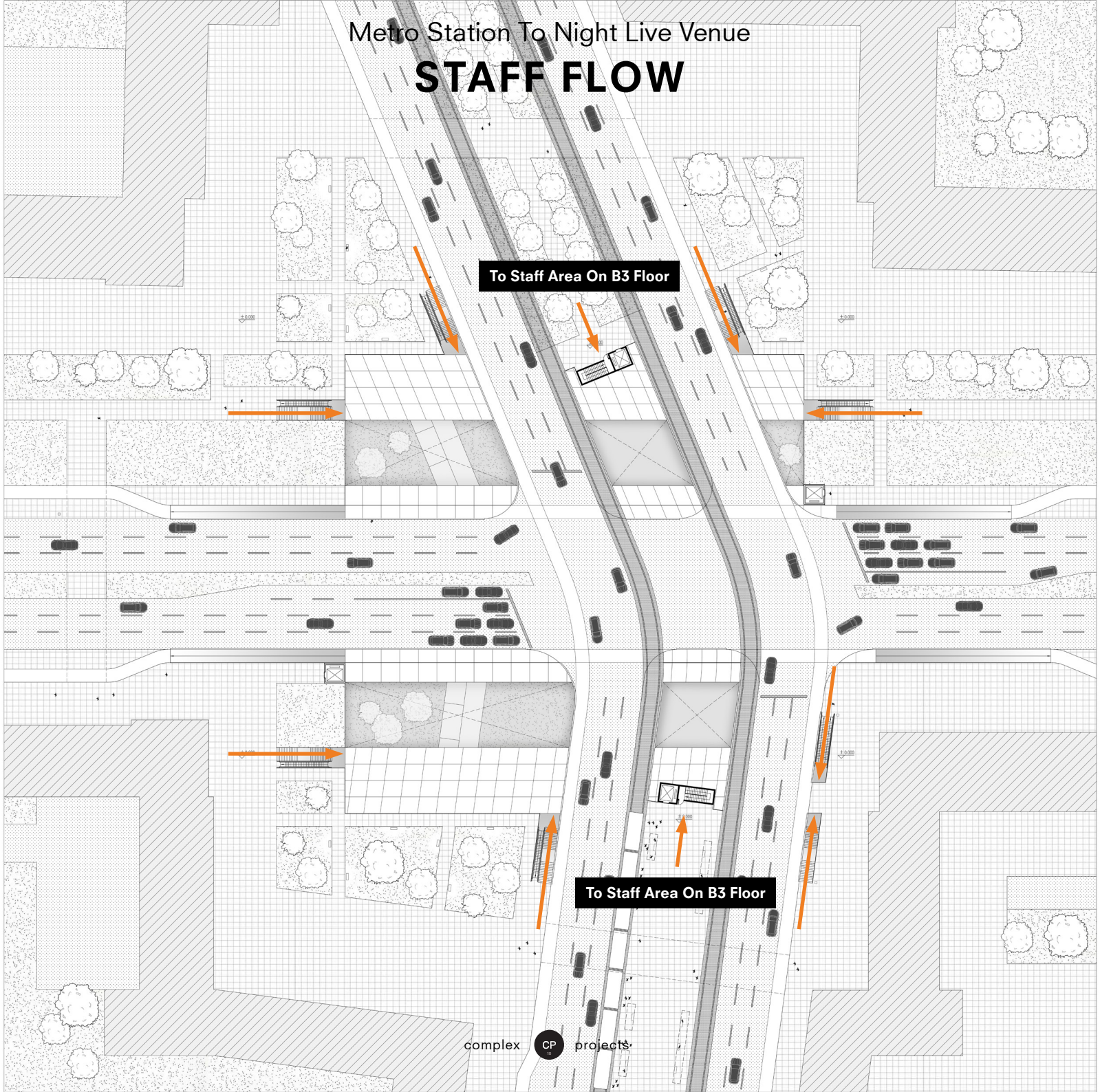
Metro Station To Night Live Venue

RIDER FLOW



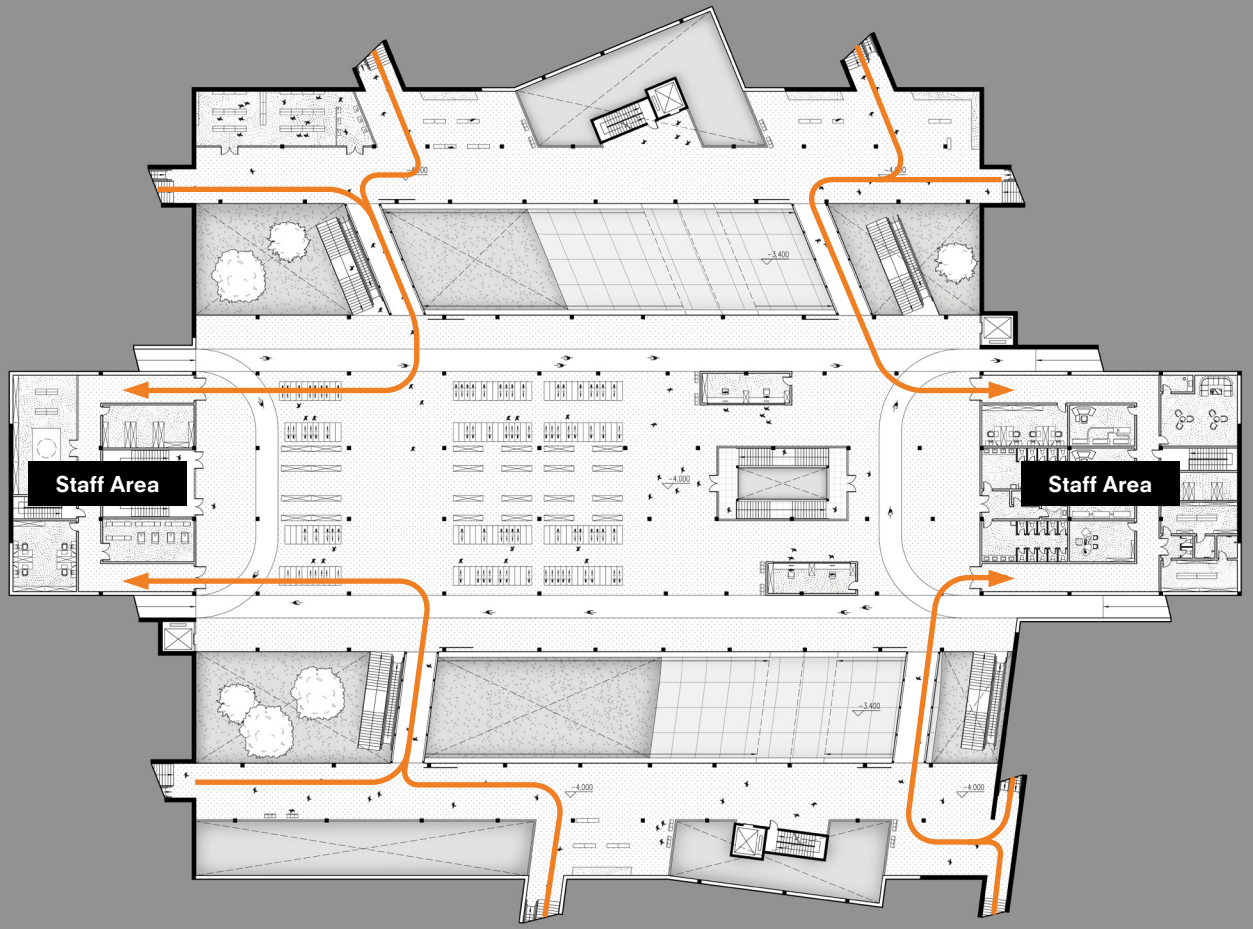
Metro Station To Night Live Venue

STAFF FLOW



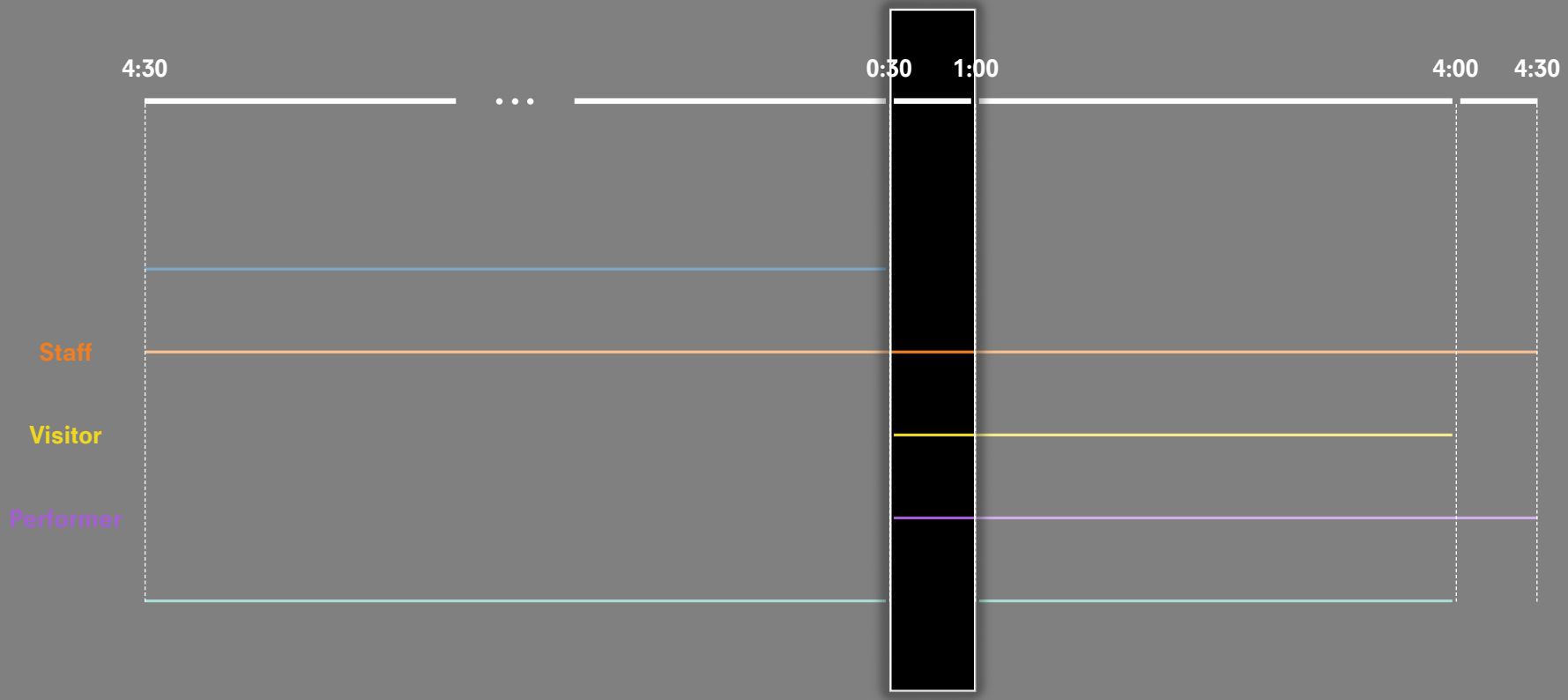
Metro Station To Night Live Venue

STAFF FLOW



Metro Station To Night Live Venue

TIME TO SWITCH



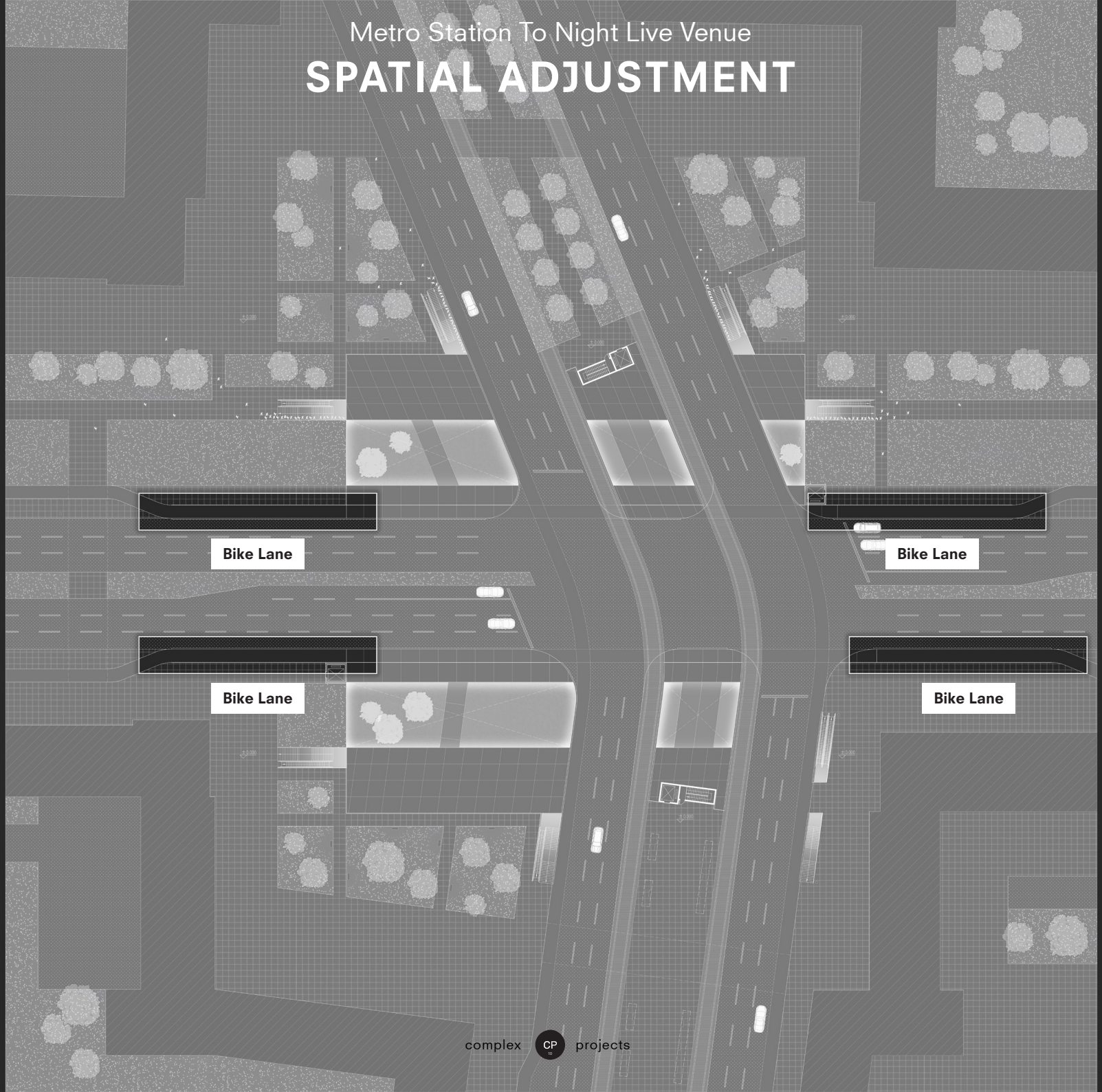
Metro Station To Night Live Venue

GROUND FLOOR PLAN



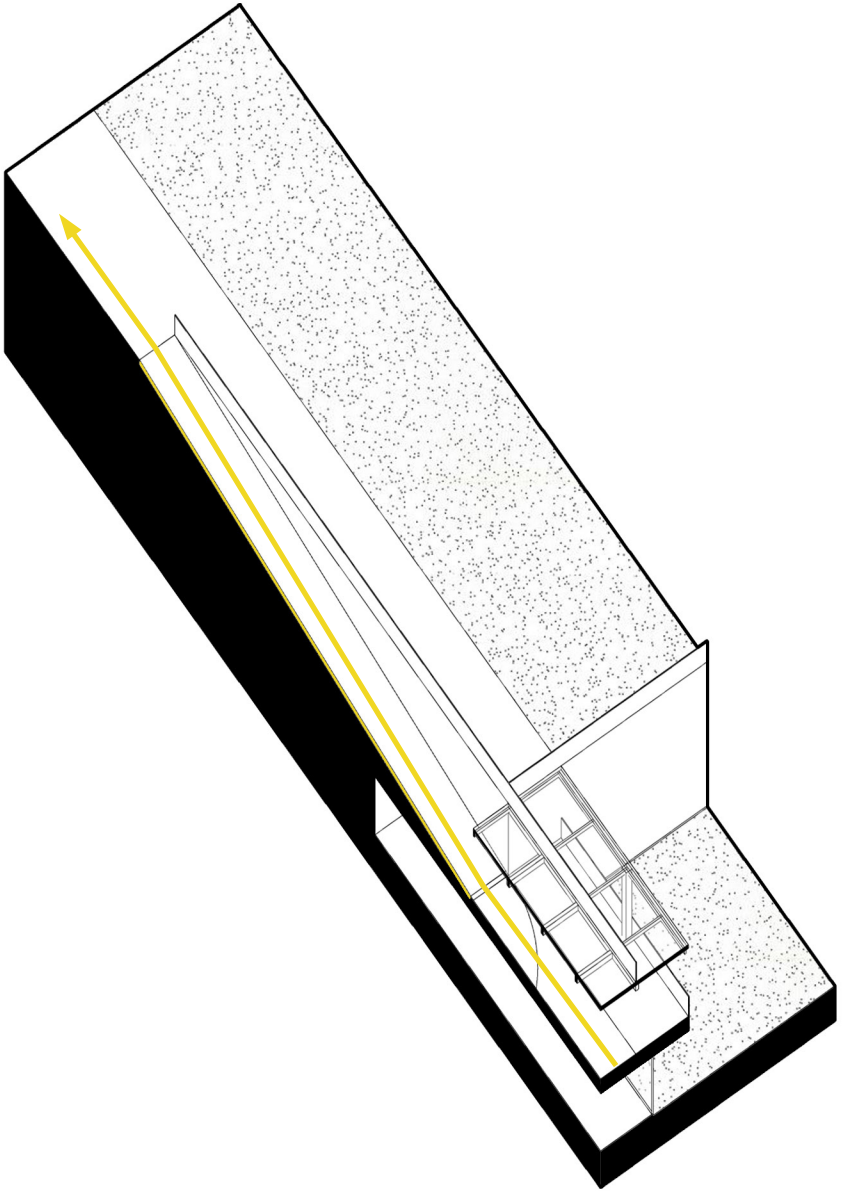
Metro Station To Night Live Venue

SPATIAL ADJUSTMENT



Metro Station To Night Live Venue

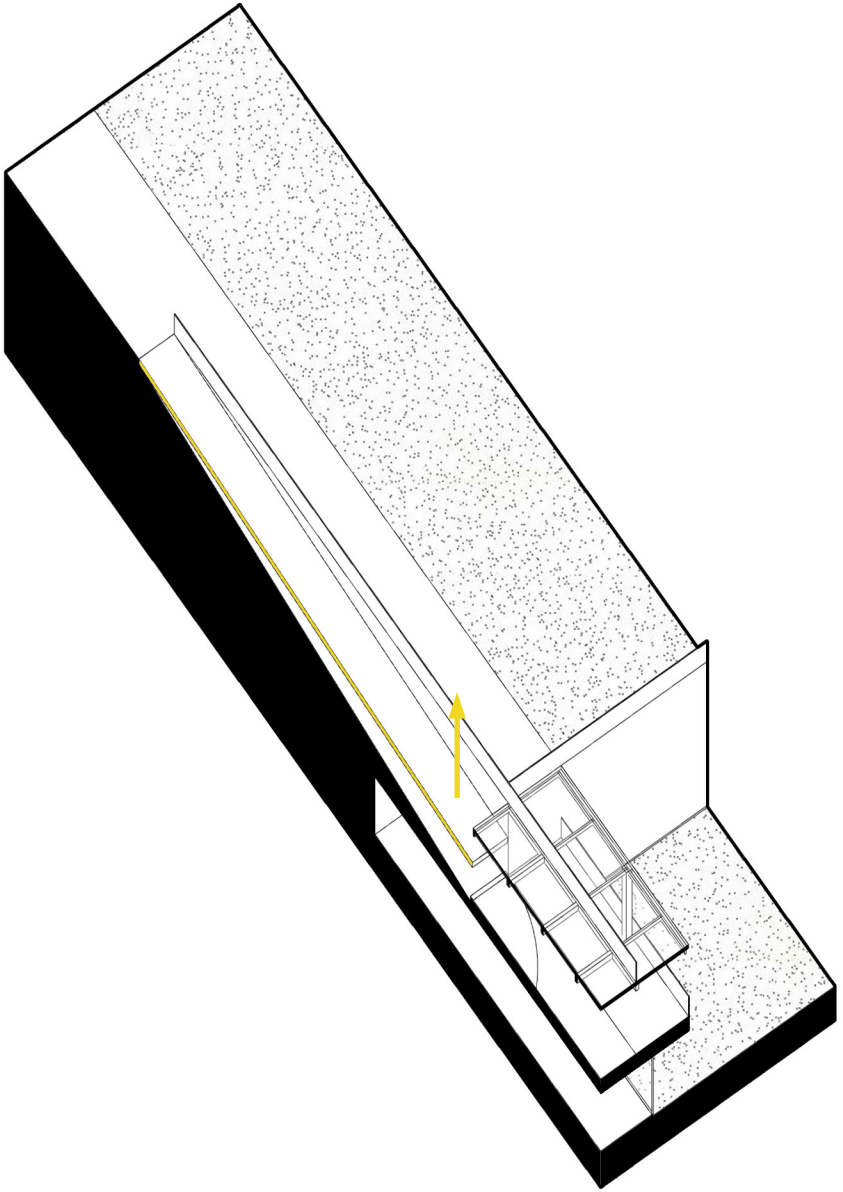
BIKE LANE



Bikers can go down to B1 floor during metro station phase.

Metro Station To Night Live Venue

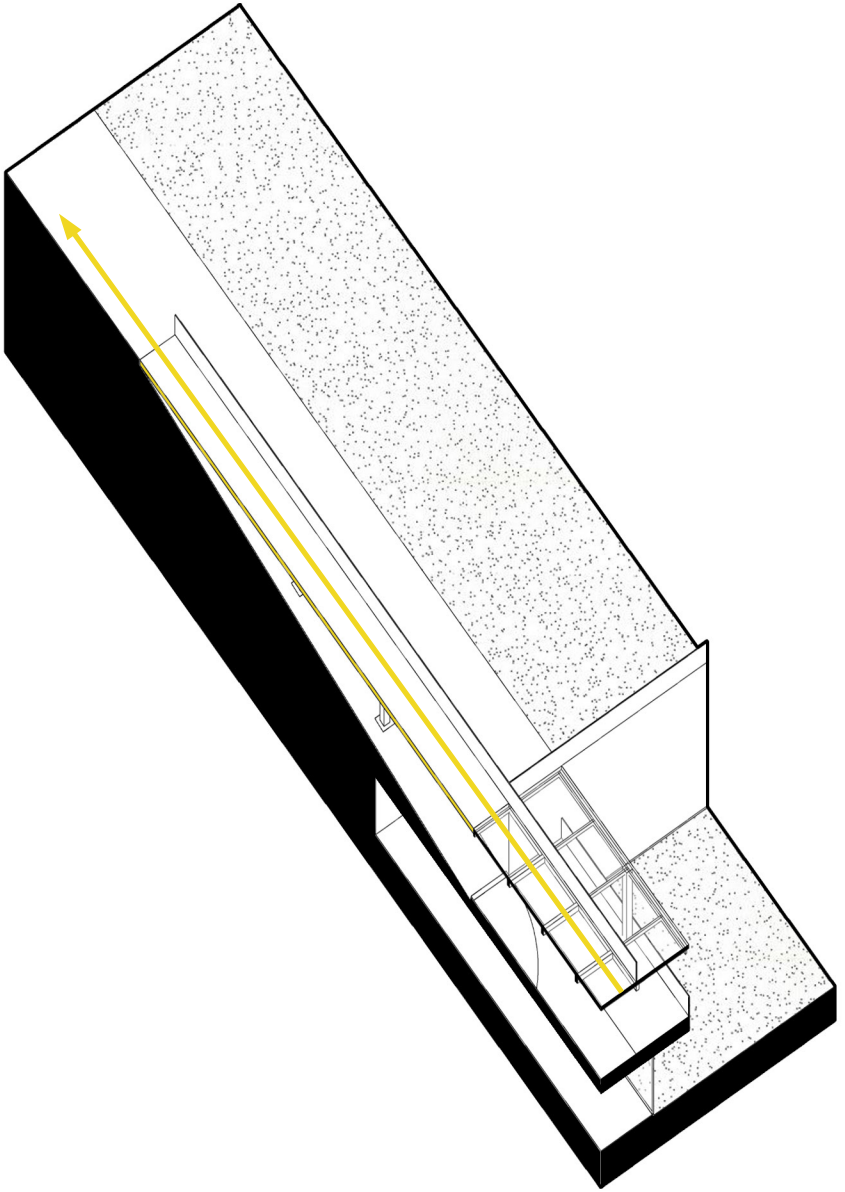
BIKE LANE



The slope will be lifted during switch phase.

Metro Station To Night Live Venue

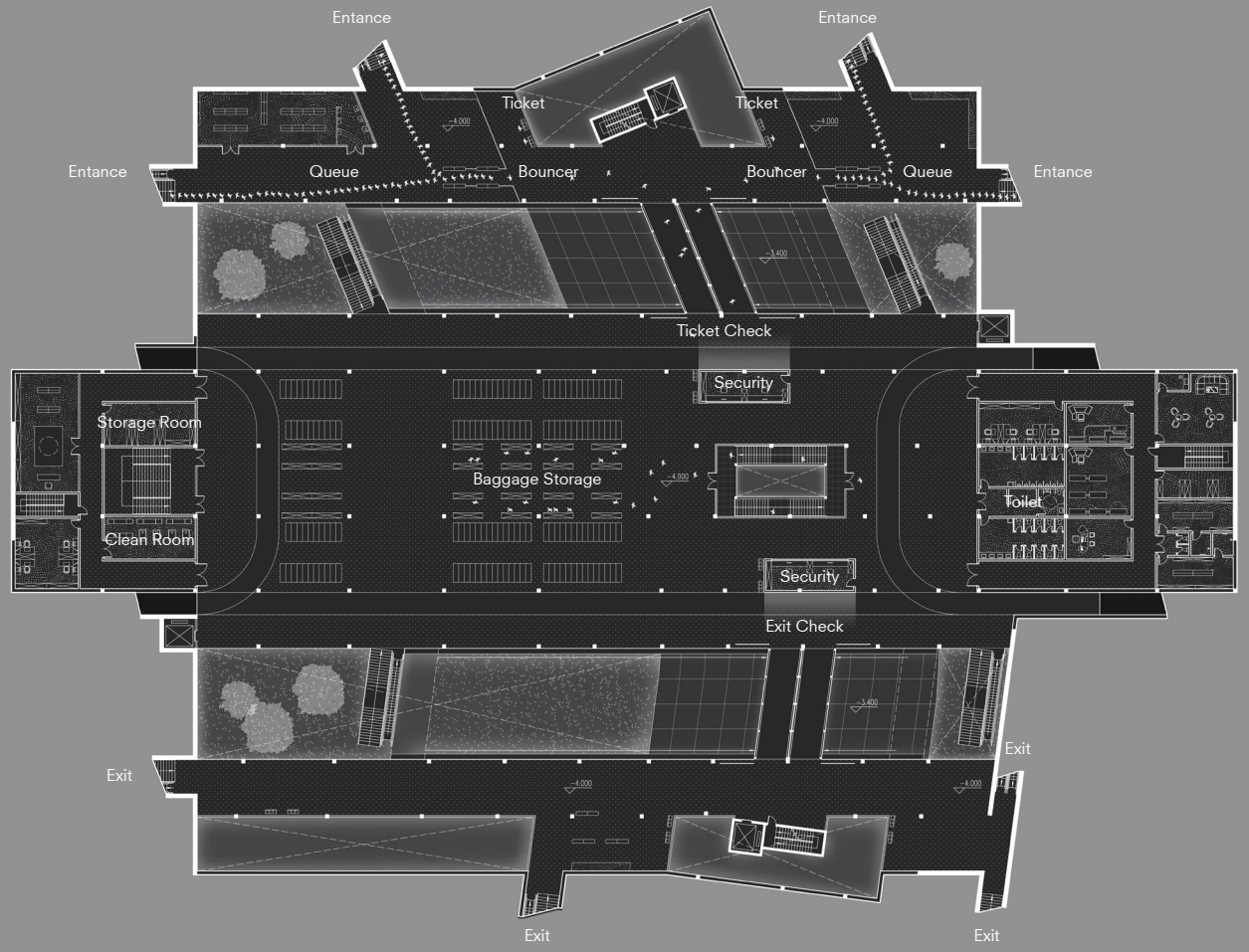
BIKE LANE



Bikers continue to ride on the ground floor during night live venue phase.

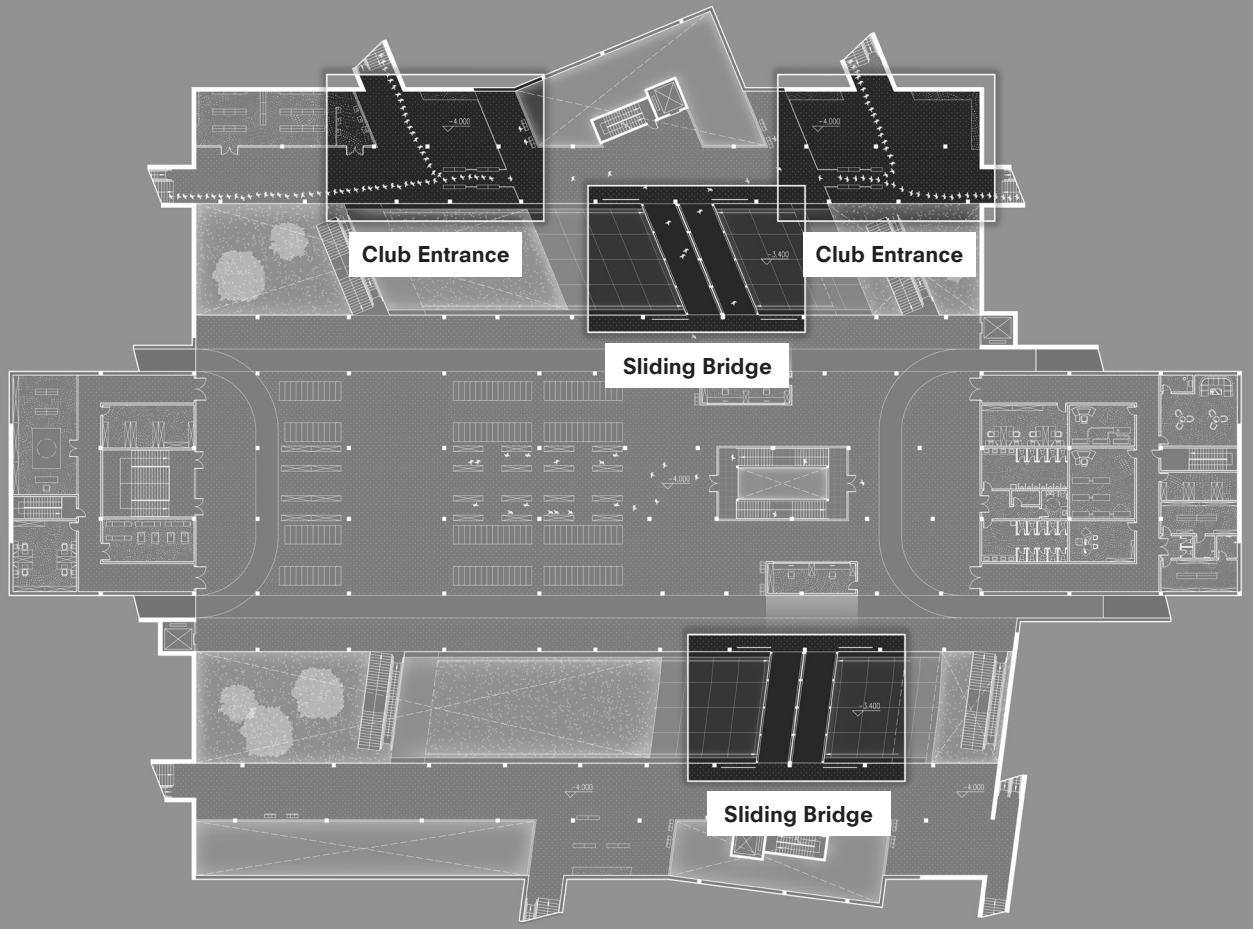
Metro Station To Night Live Venue

B1 FLOOR PLAN



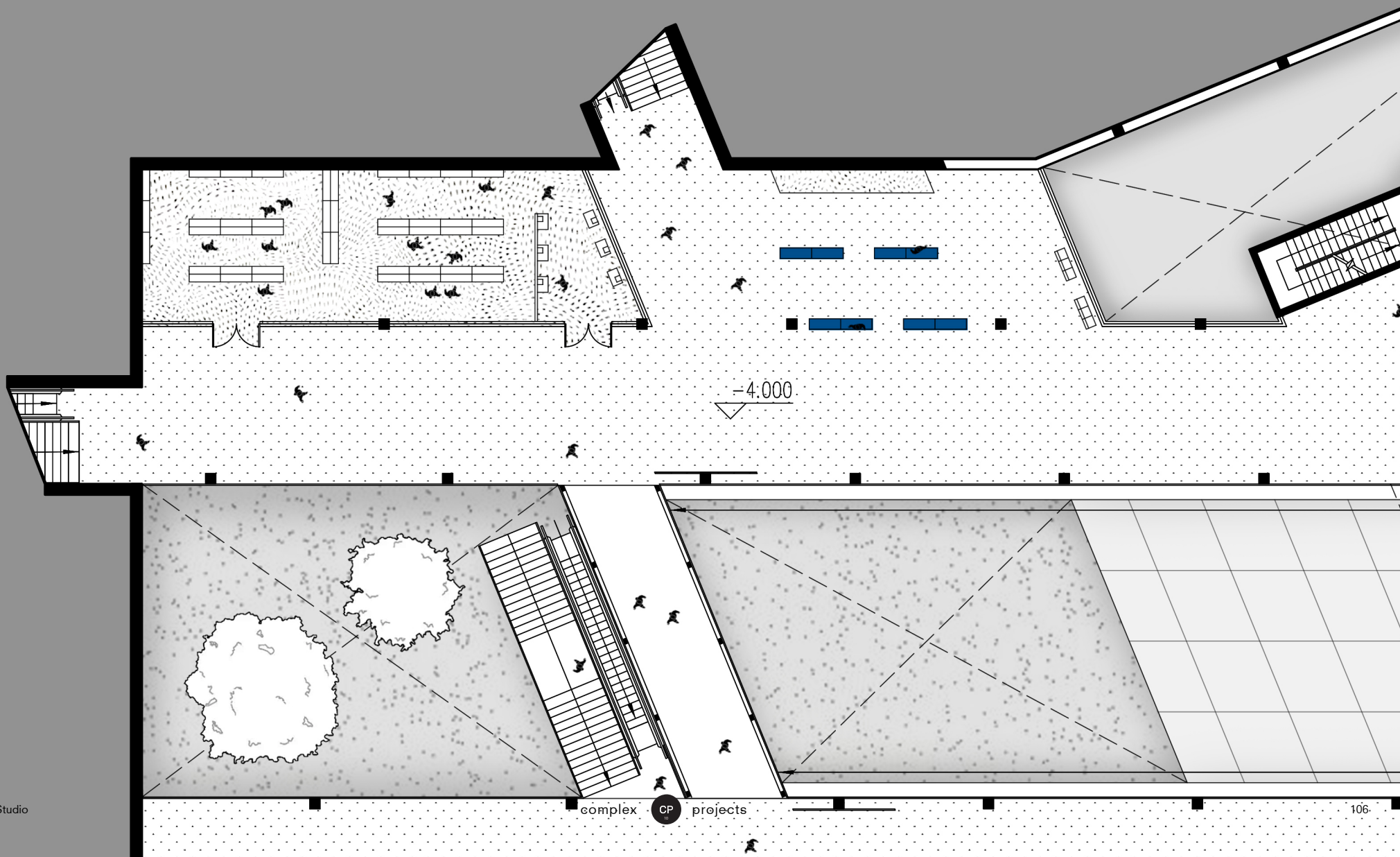
Metro Station To Night Live Venue

SPATIAL ADJUSTMENT



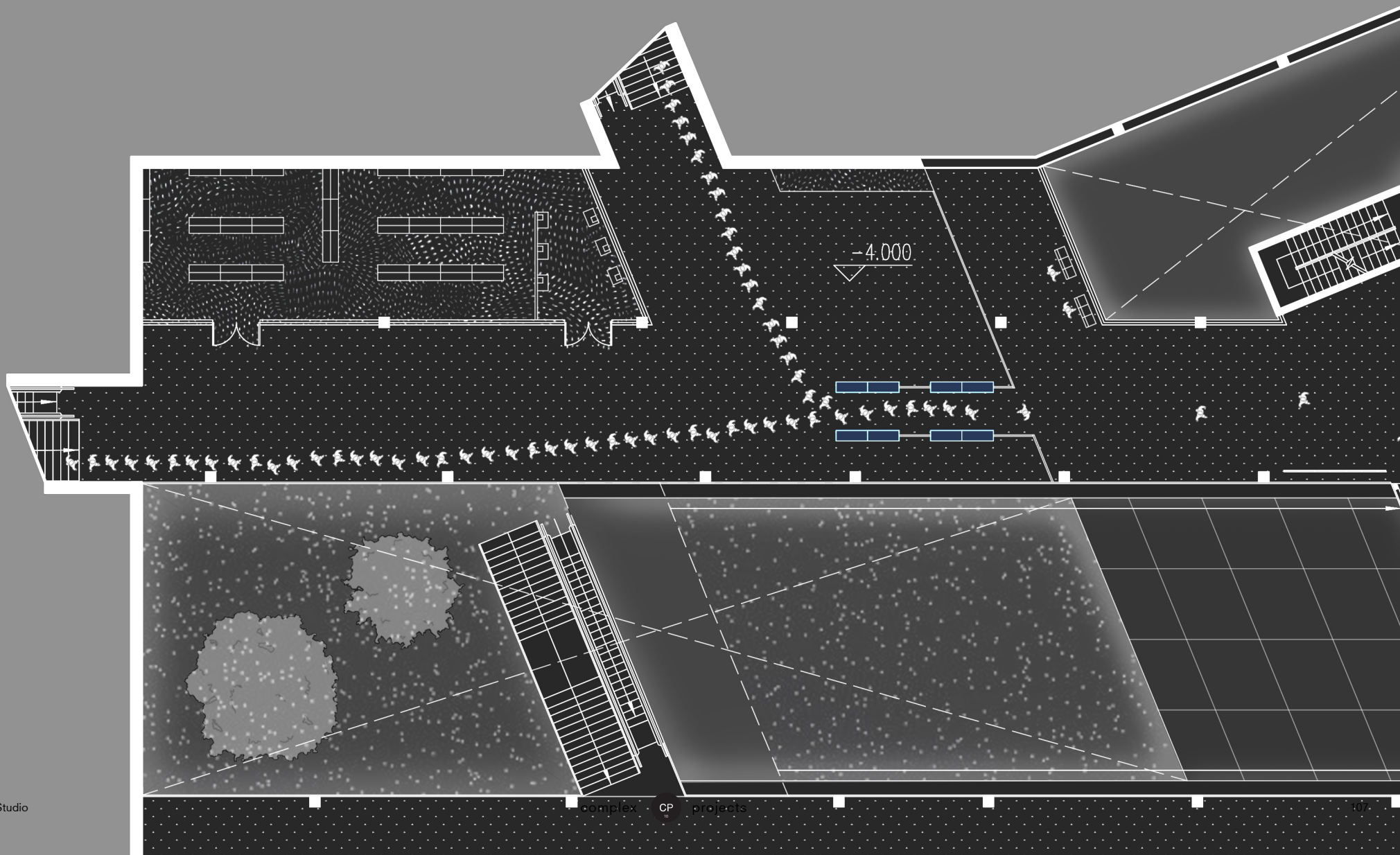
Metro Station To Night Live Venue

CLUB ENTRANCE



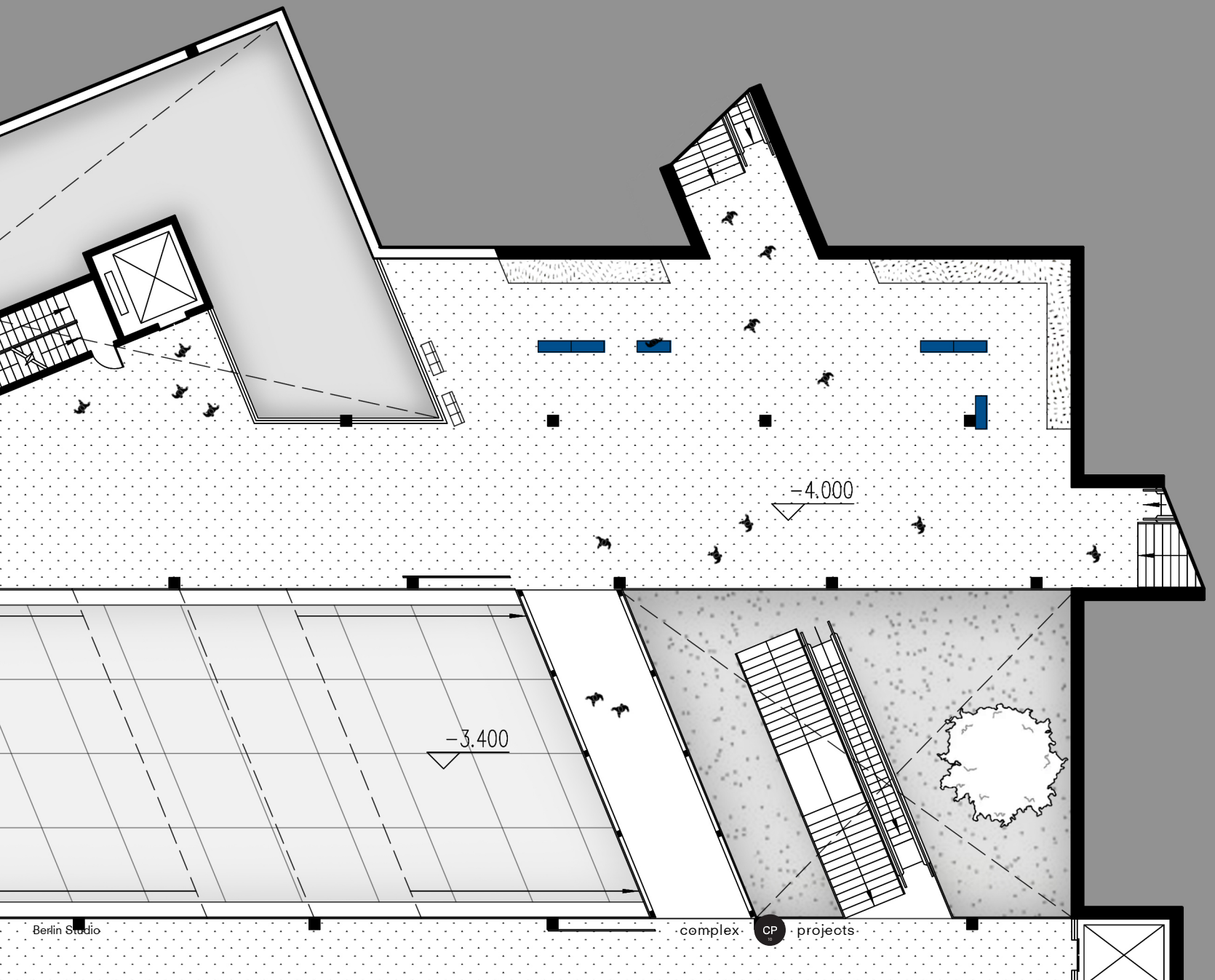
Metro Station To Night Live Venue

CLUB ENTRANCE



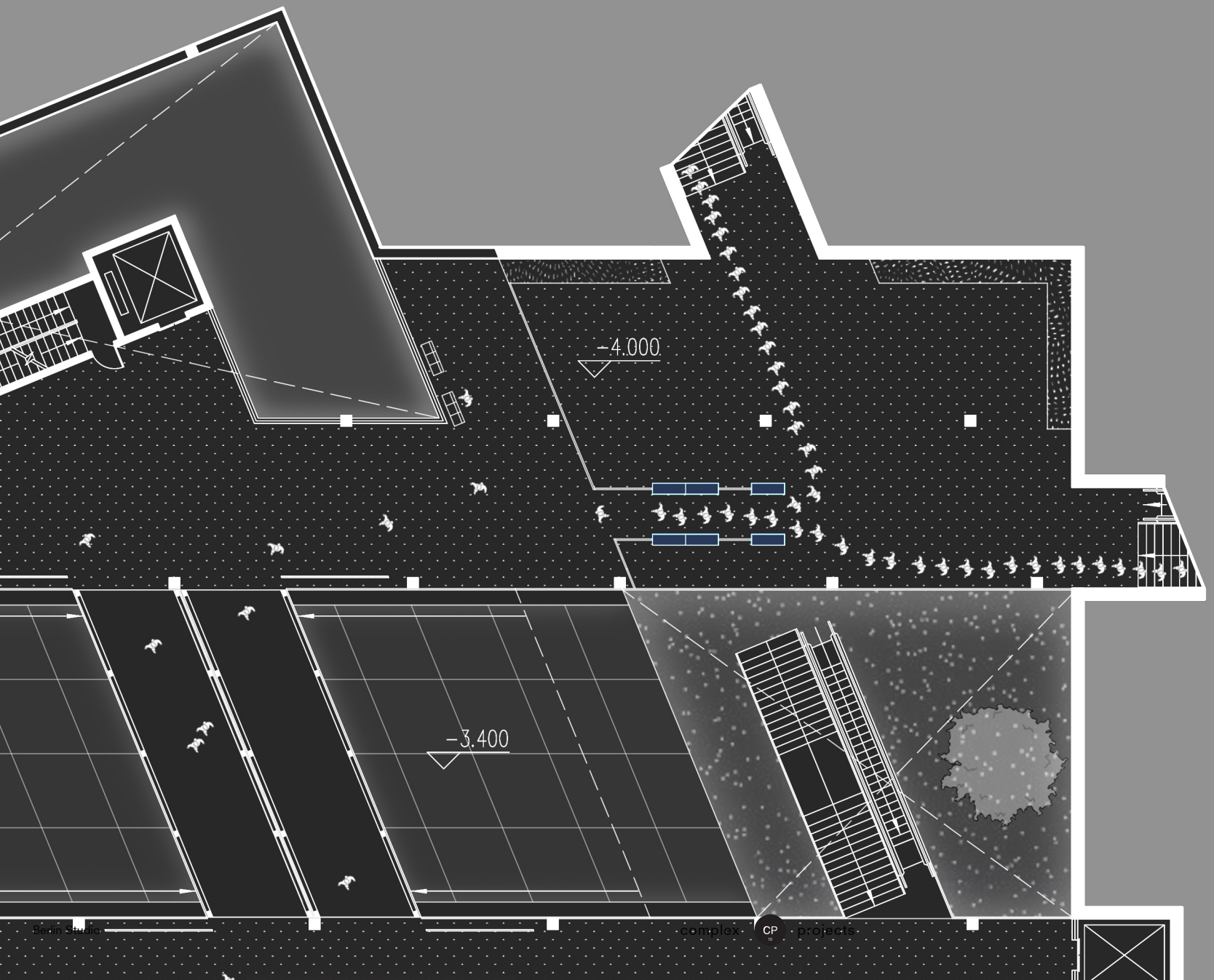
Metro Station To Night Live Venue

CLUB ENTRANCE



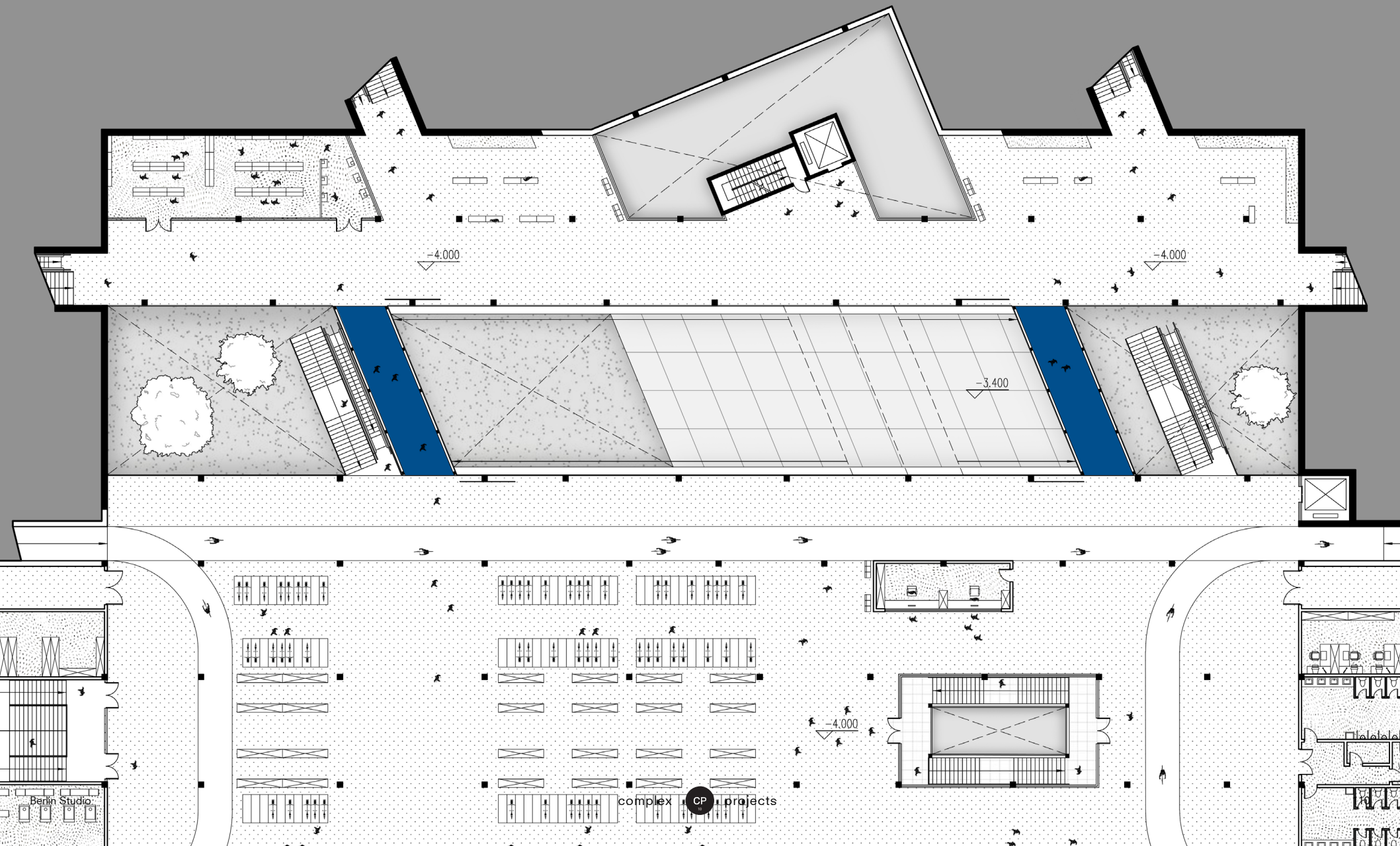
Metro Station To Night Live Venue

CLUB ENTRANCE



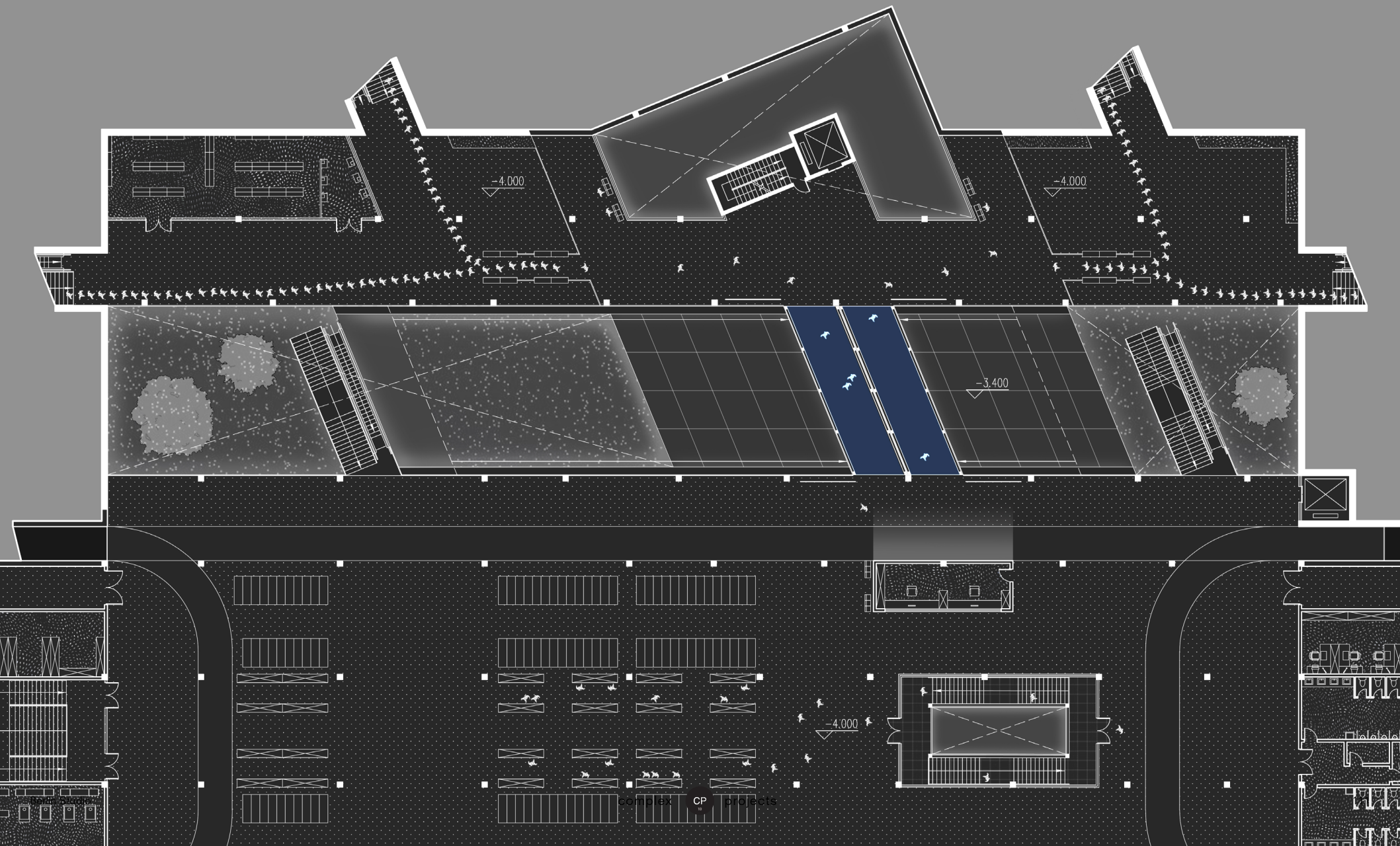
Metro Station To Night Live Venue

SLIDING BRIDGE



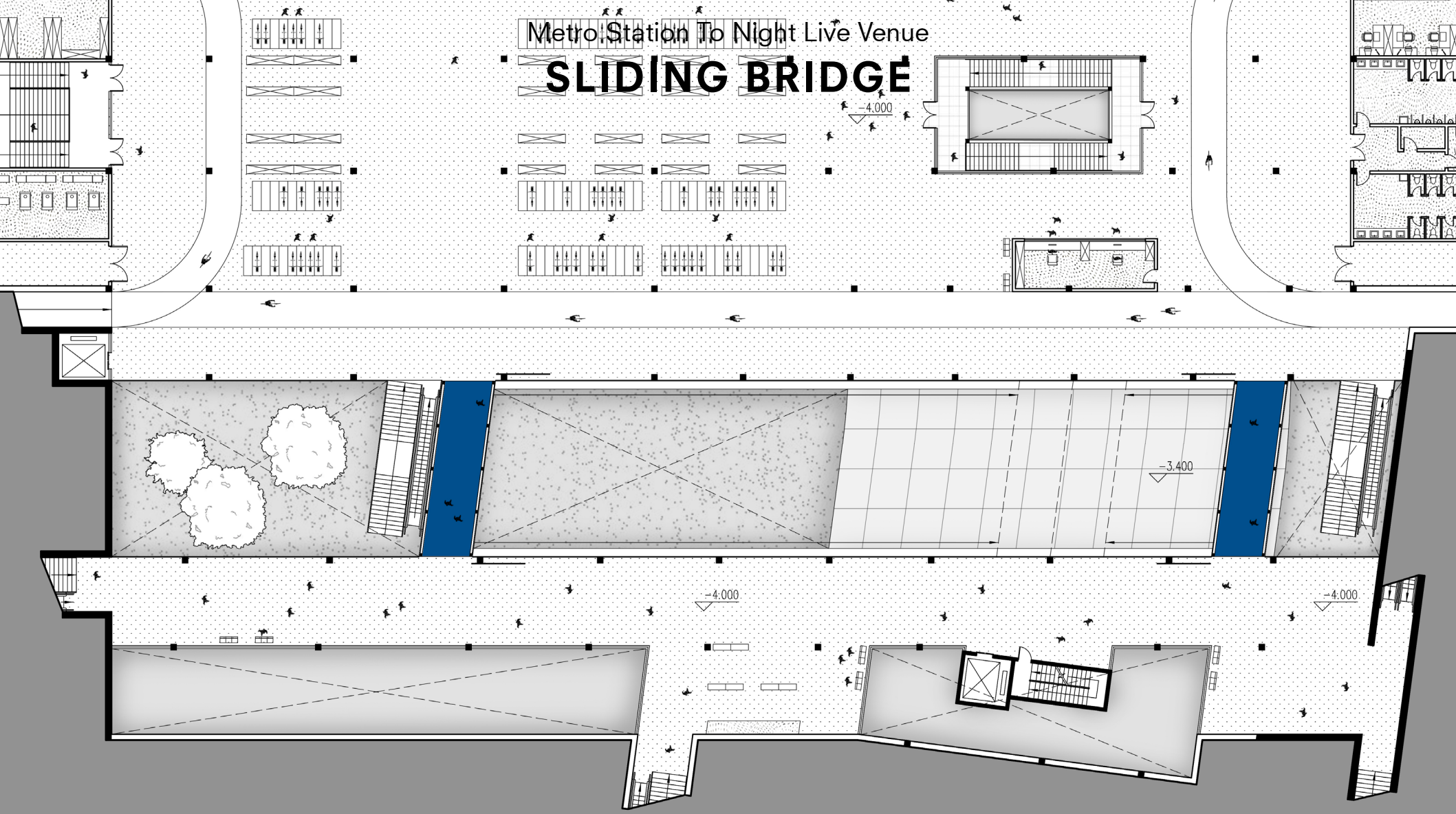
Metro Station To Night Live Venue

SLIDING BRIDGE



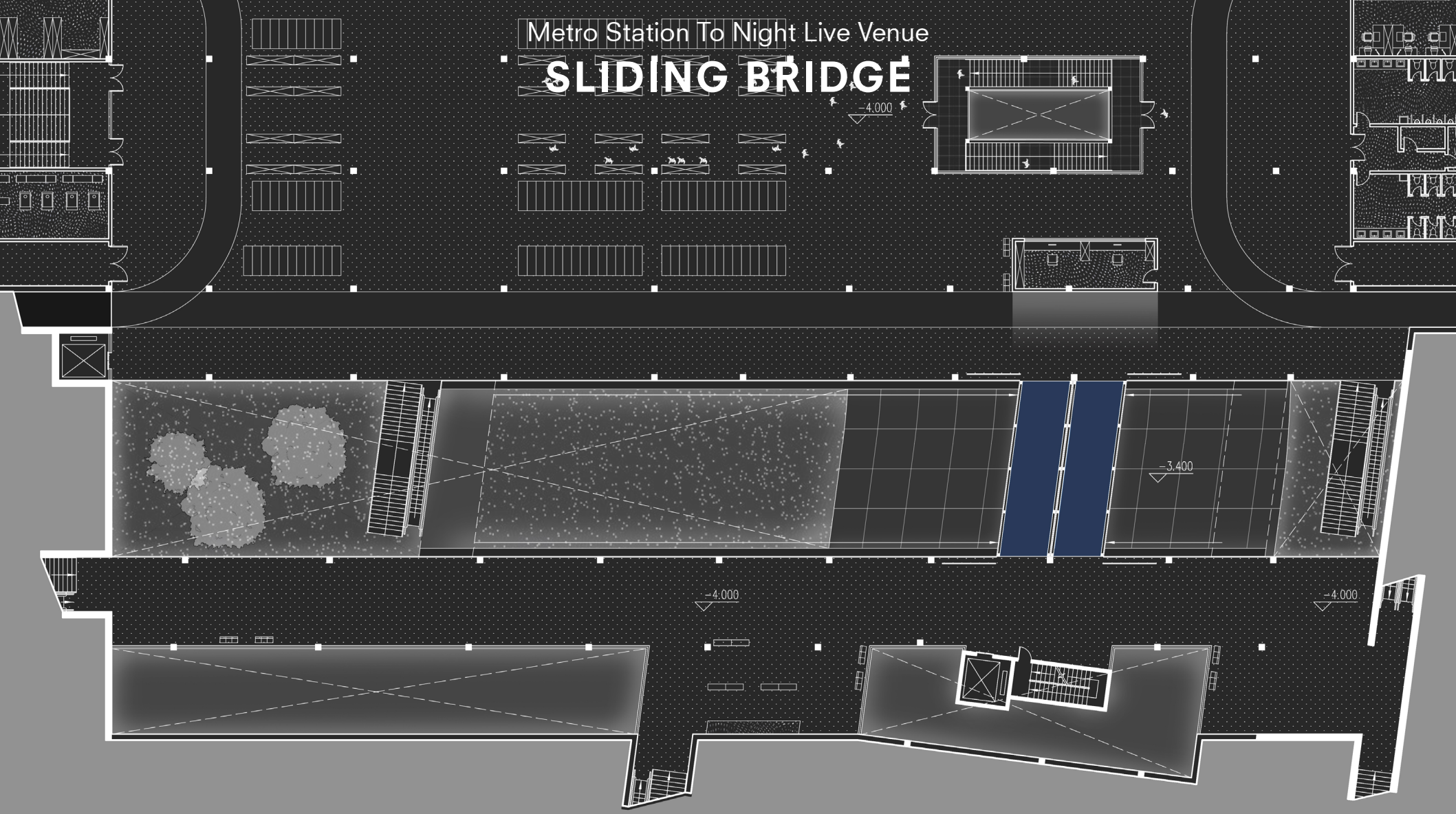
Metro Station To Night Live Venue

SLIDING BRIDGE

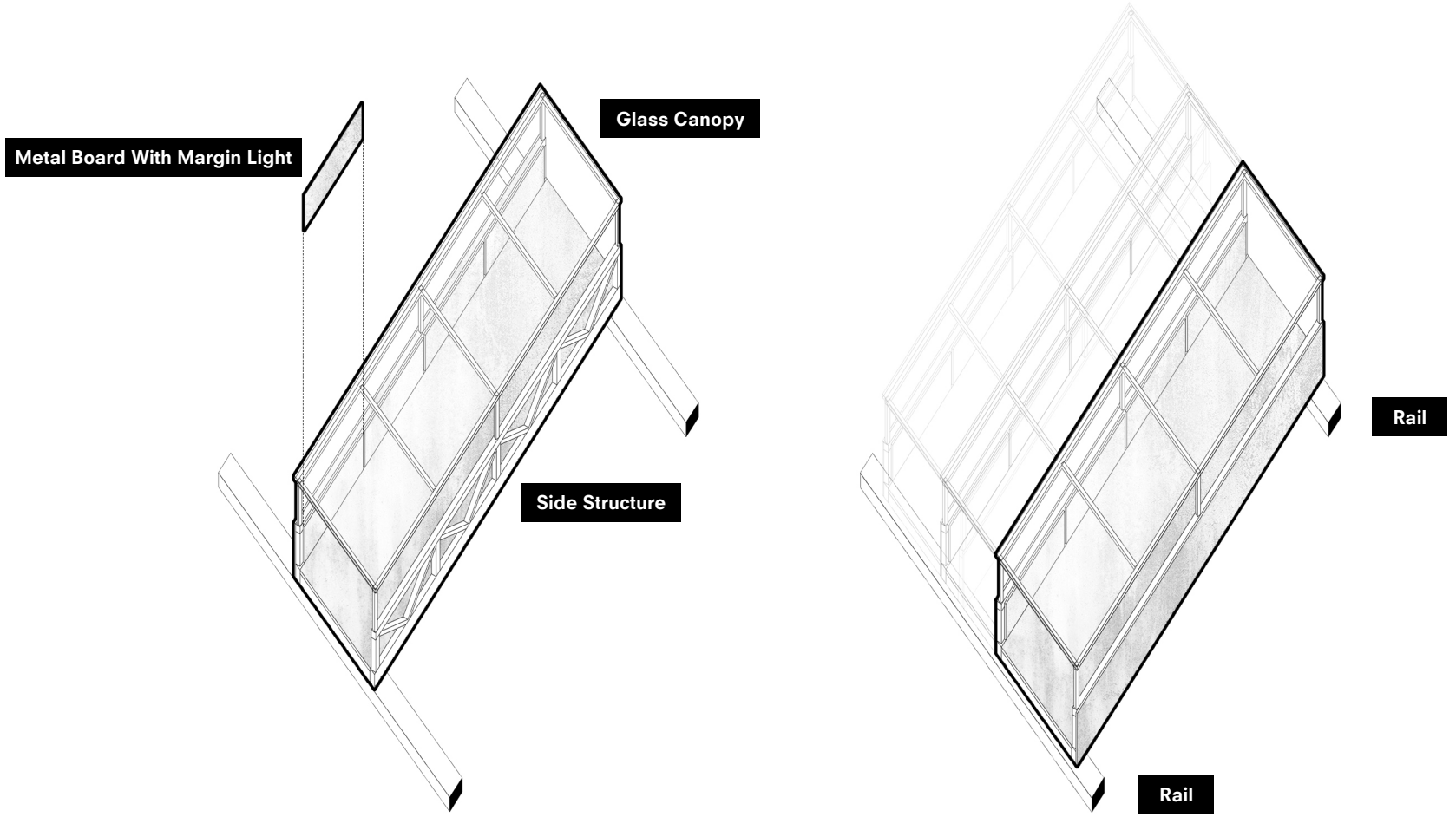


Metro Station To Night Live Venue

SLIDING BRIDGE



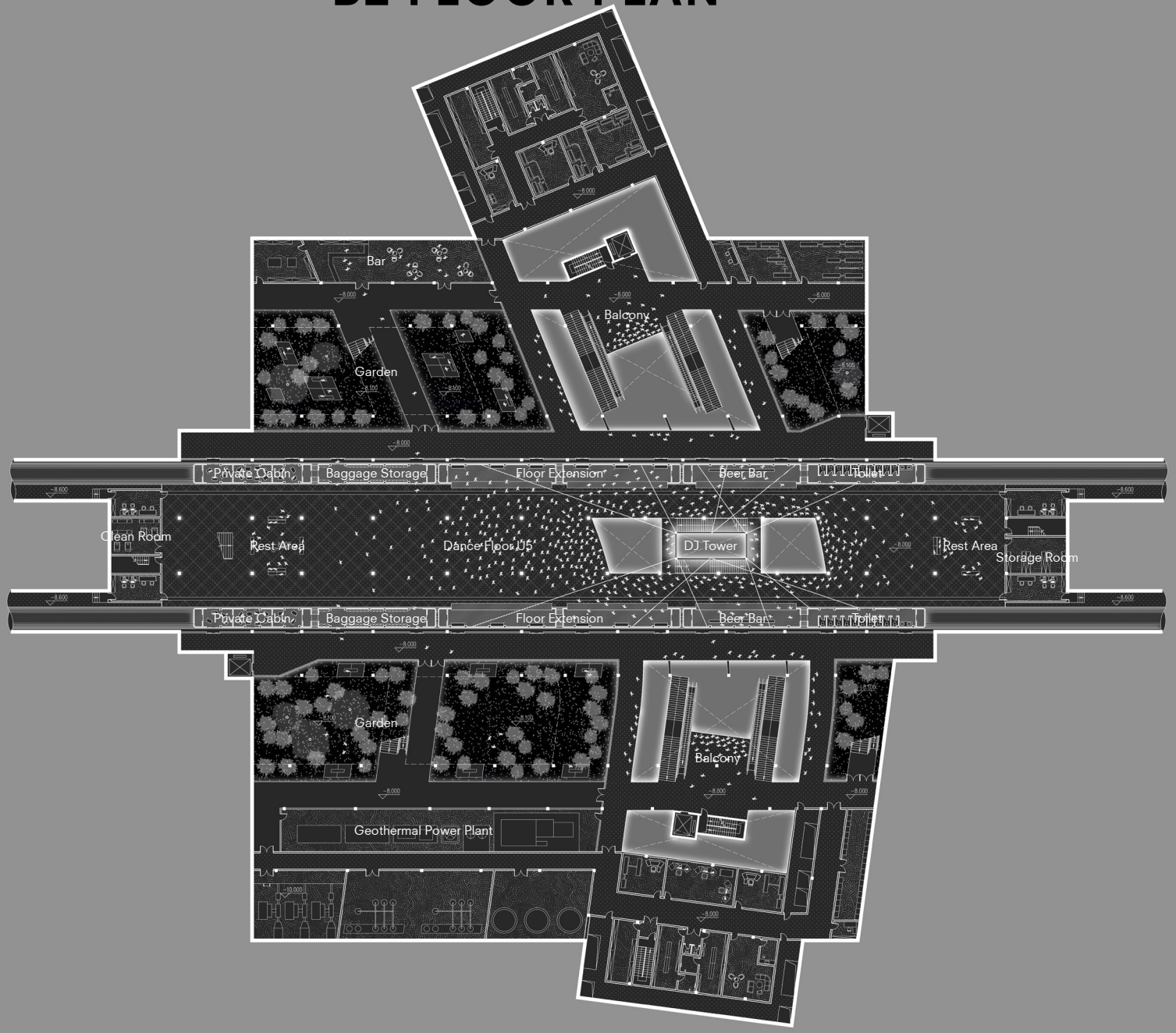
SLIDING BRIDGE



The sliding bridges align with building's low key appearance in the day and will be light up during night activities.

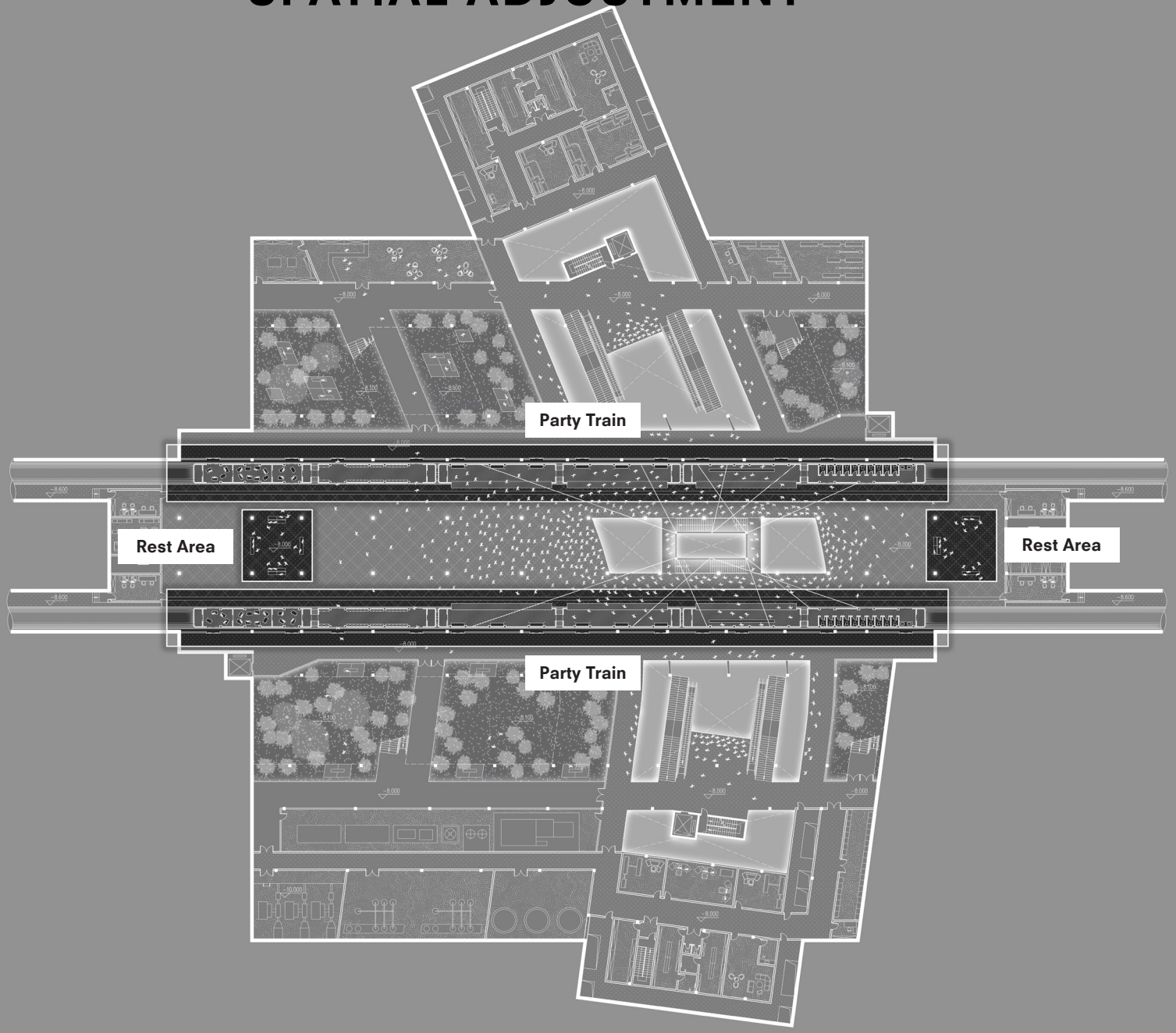
Metro Station To Night Live Venue

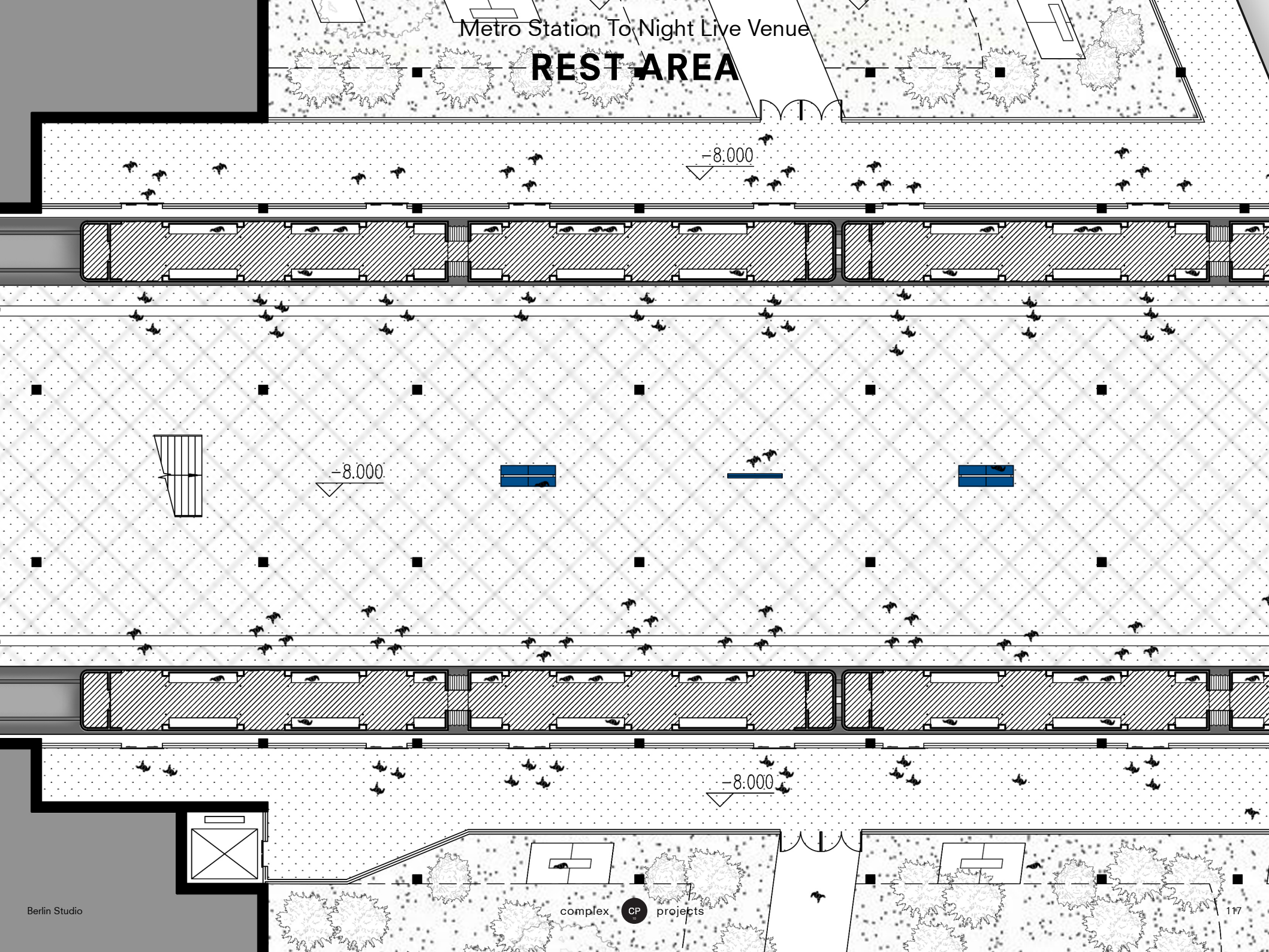
B2 FLOOR PLAN

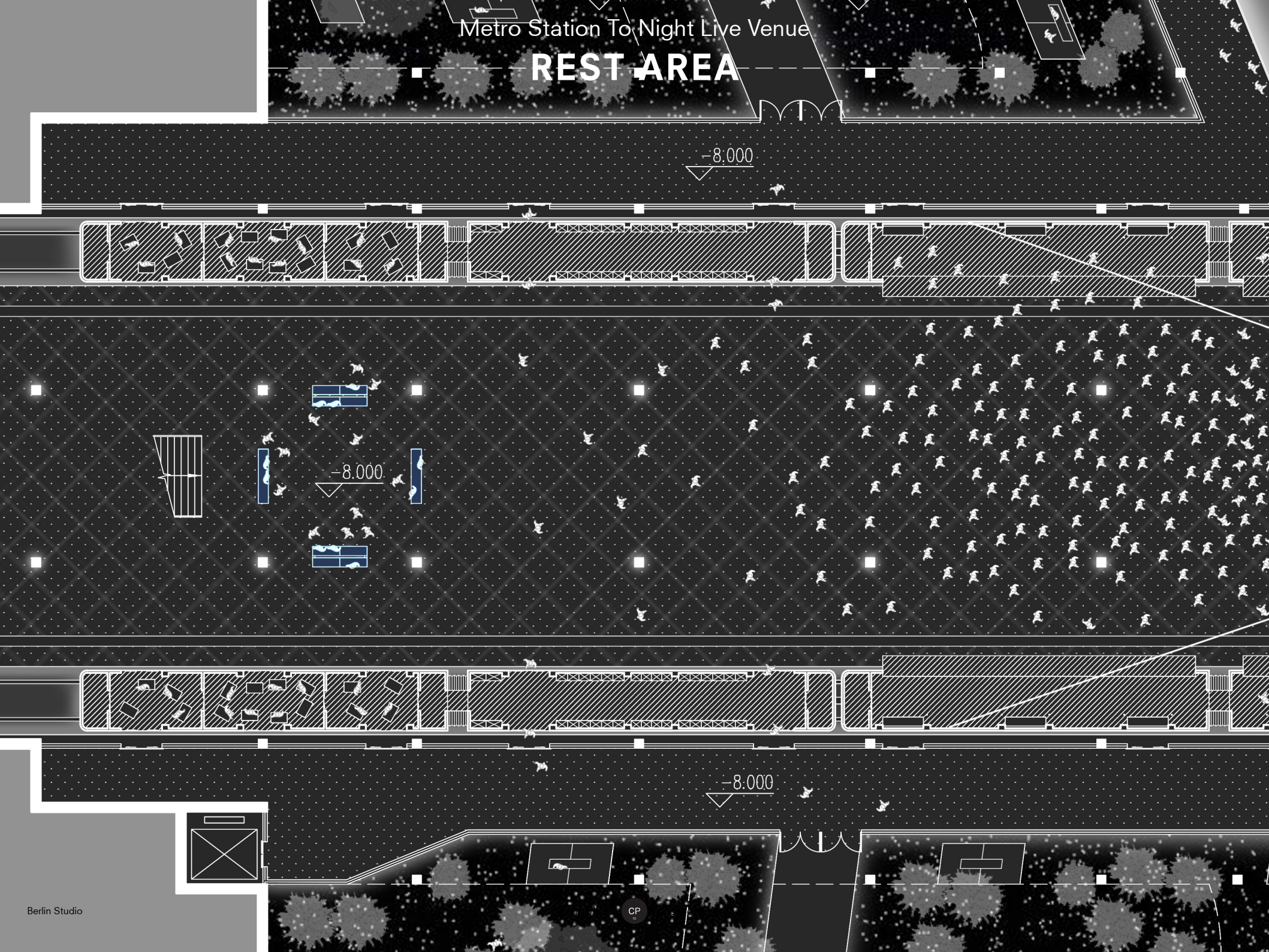


Metro Station To Night Live Venue

SPATIAL ADJUSTMENT



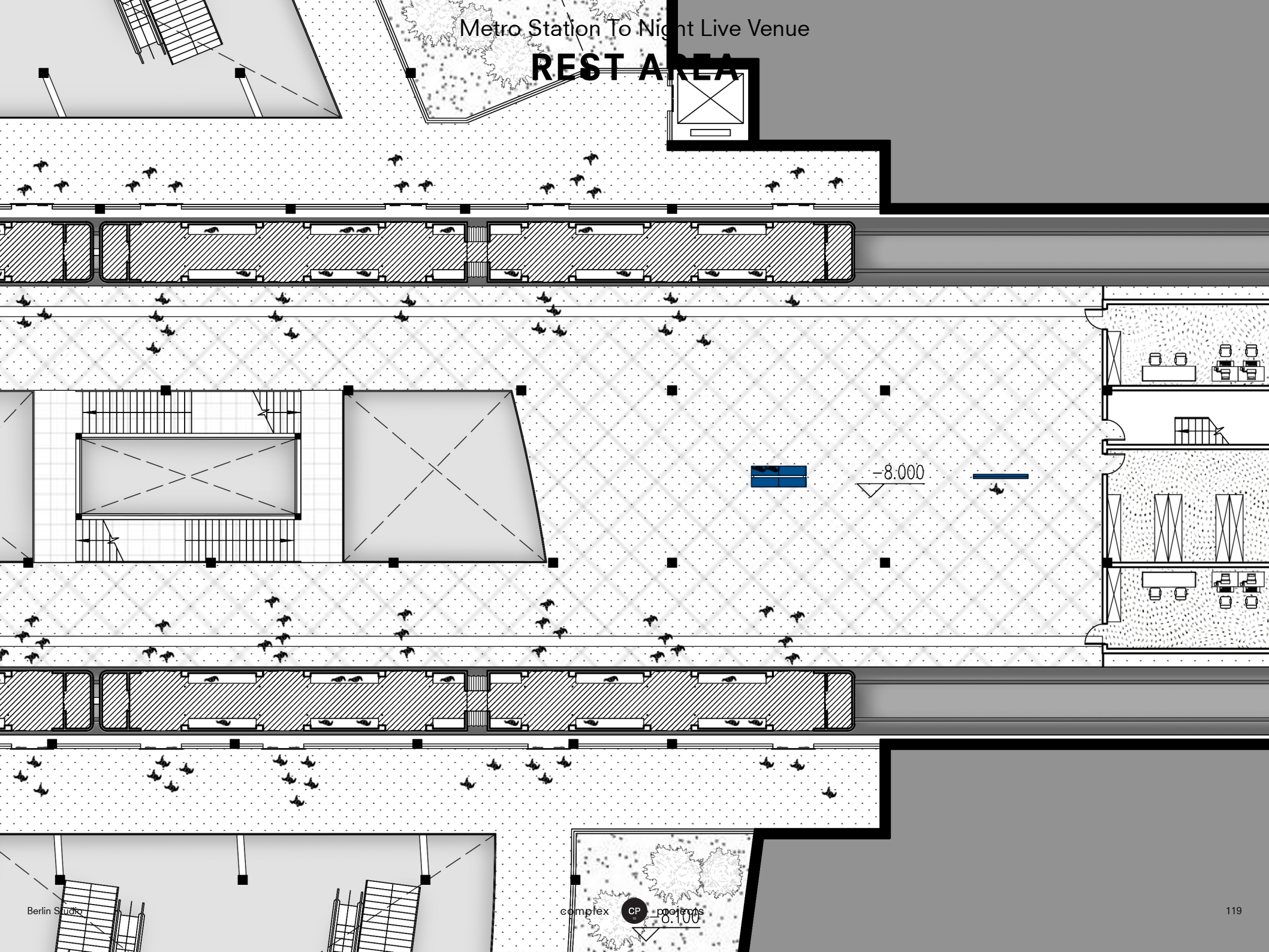

Metro Station To Night Live Venue
REST AREA
-8.000
-8.000
-8.000

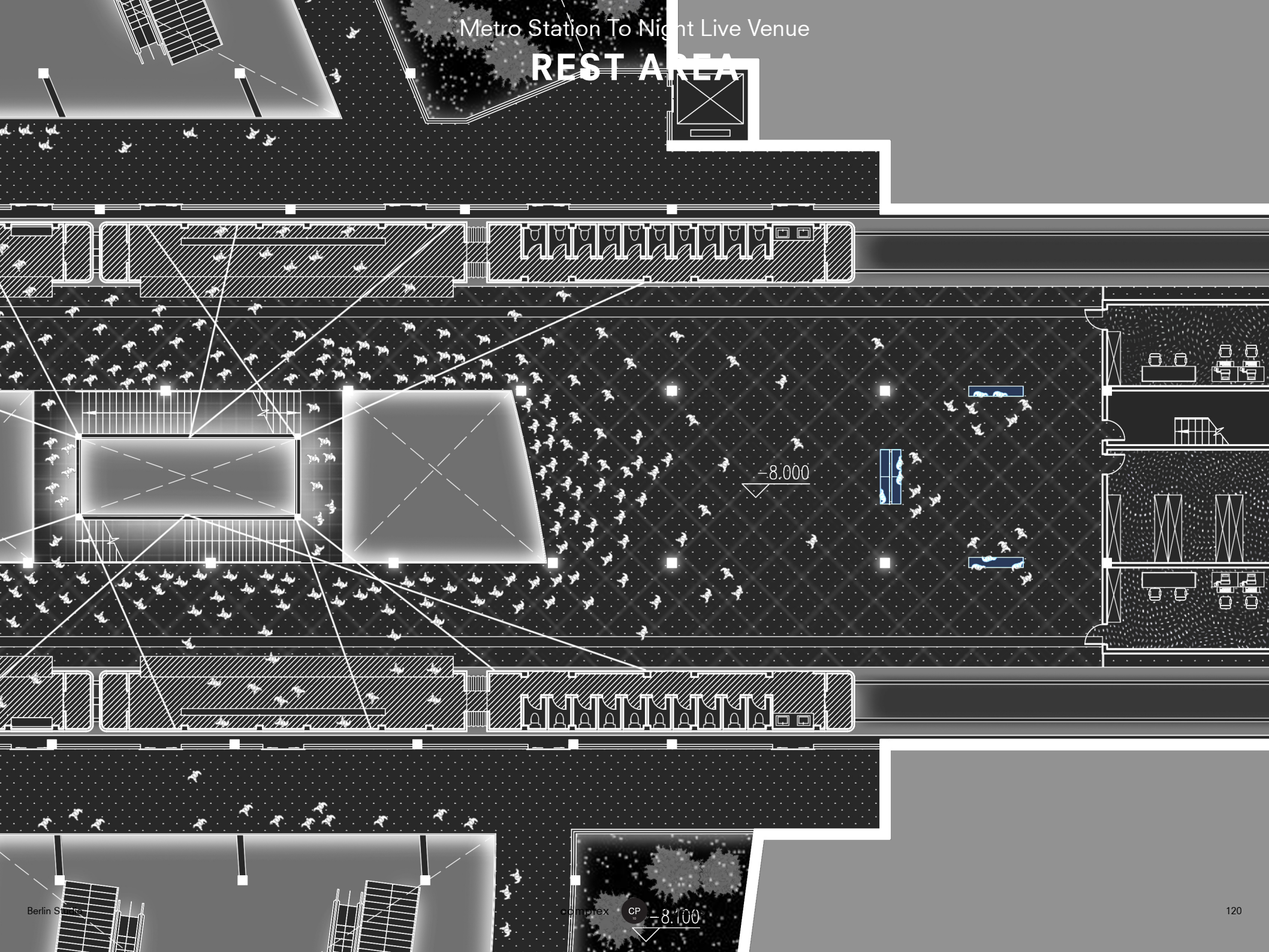


Berlin Studio

Metro Station To Night Live Venue

REST AREA




Metro Station To Night Live Venue
REST AREA
-8.000
CP
-8.100

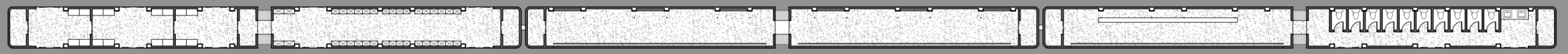
Metro Station To Night Live Venue

PARTY TRAIN

Normal U-Bahn Train



Party Train (In Tunnel)

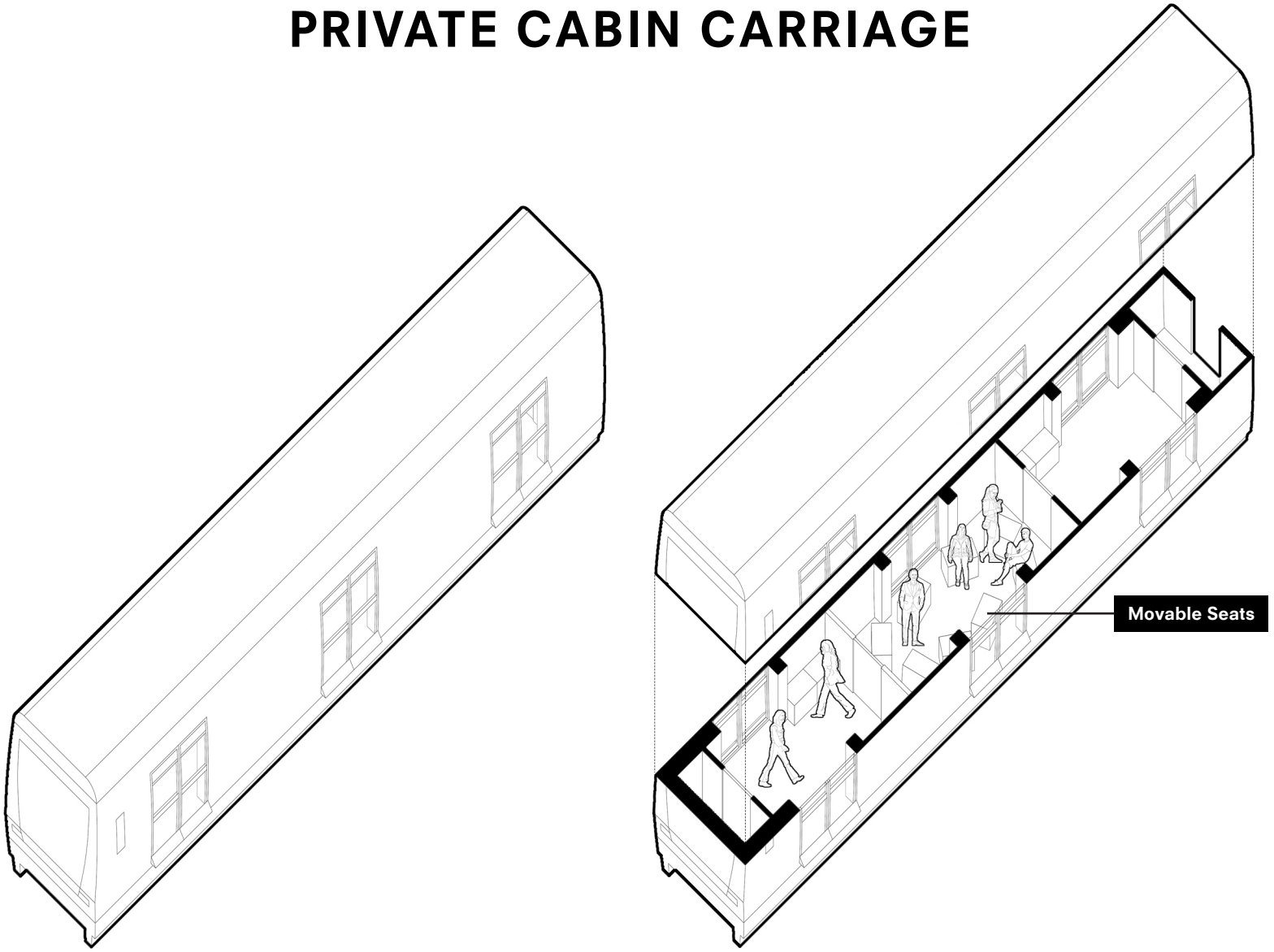


Party Train (At Platform)



Metro Station To Night Live Venue

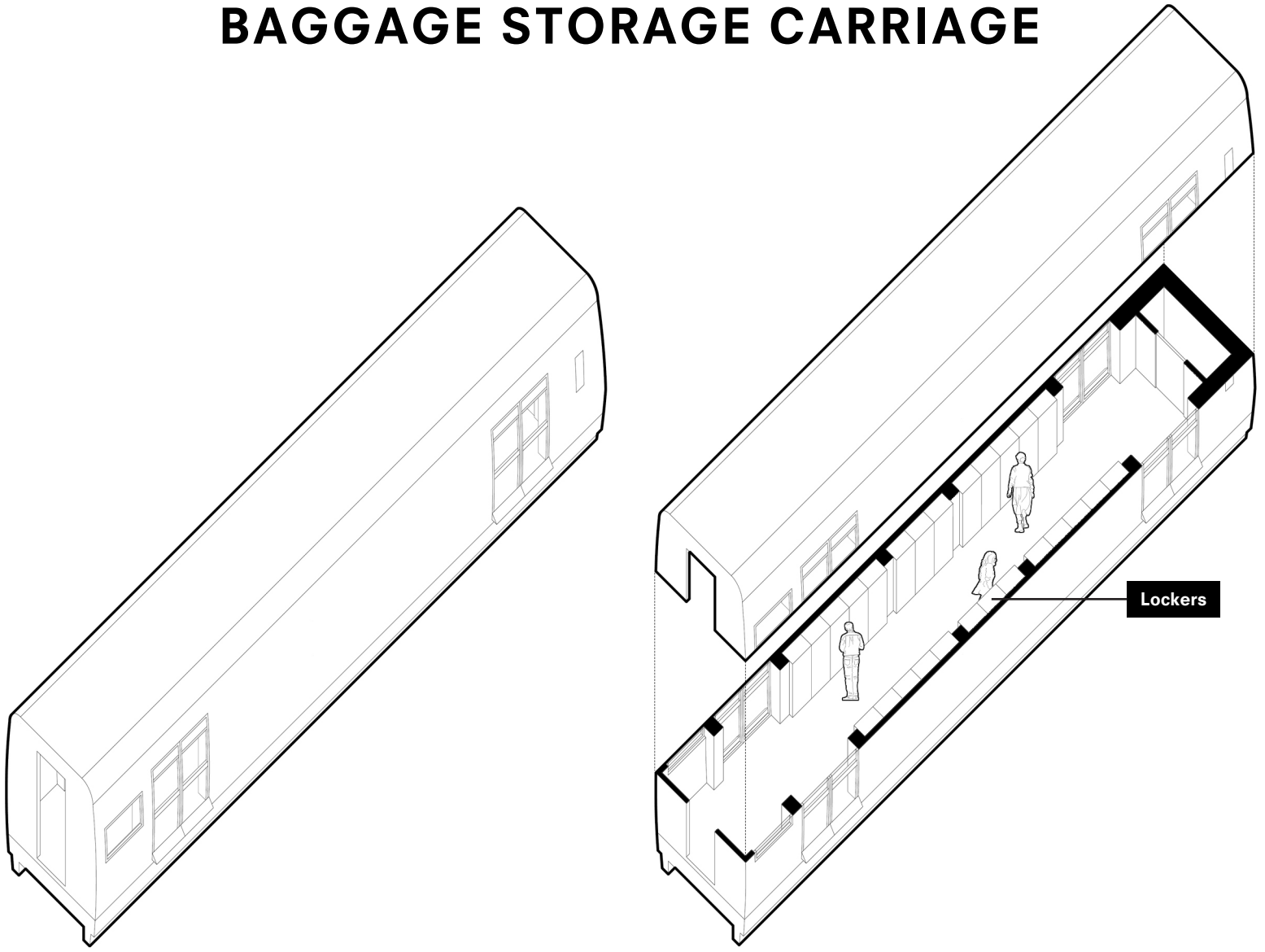
PRIVATE CABIN CARRIAGE



A place for groups of people to have private gatherings.

Metro Station To Night Live Venue

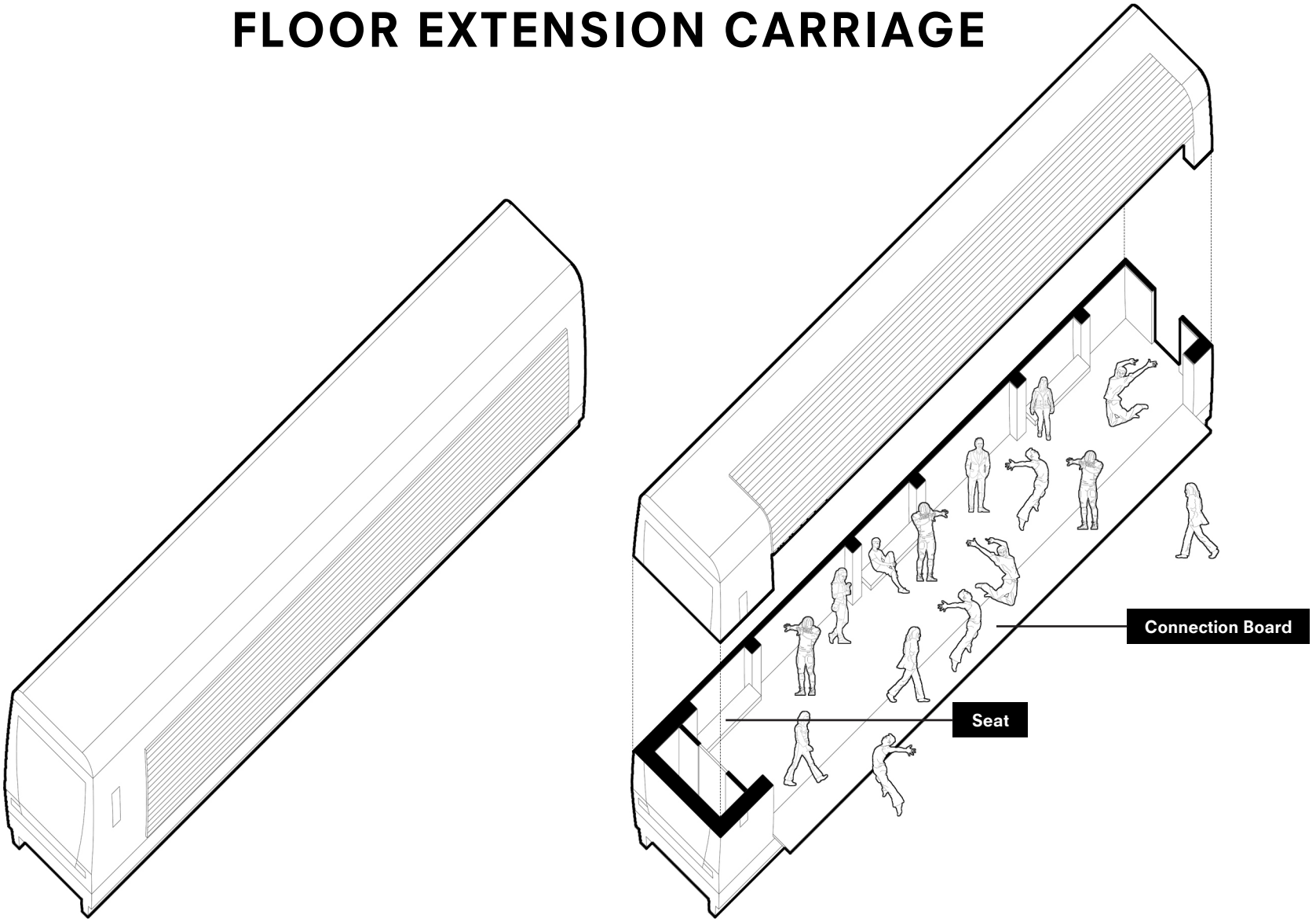
BAGGAGE STORAGE CARRIAGE



Clothing and baggage are stored for the party train passengers.

Metro Station To Night Live Venue

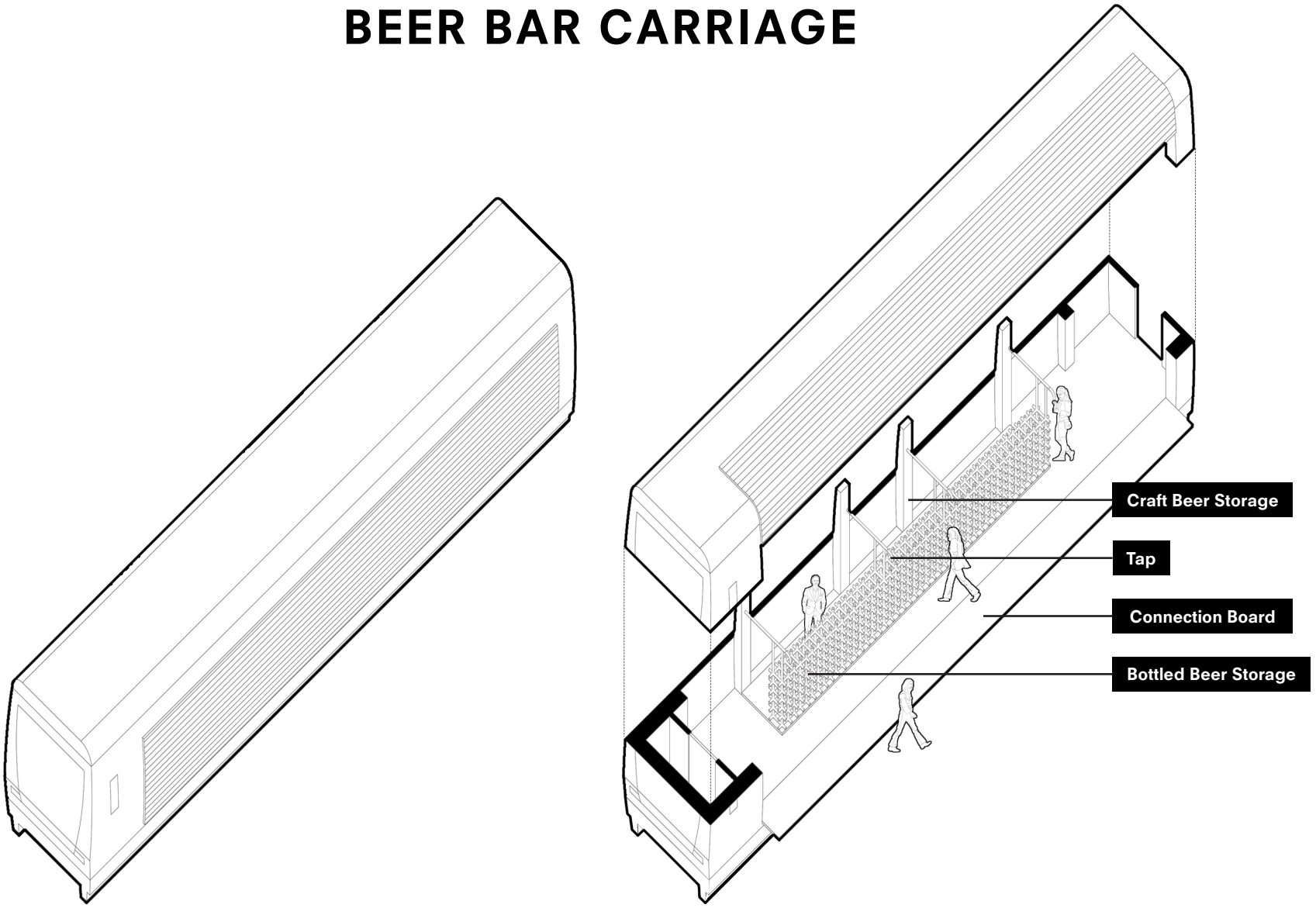
FLOOR EXTENSION CARRIAGE



The additional area is provided to extend the dance floor.

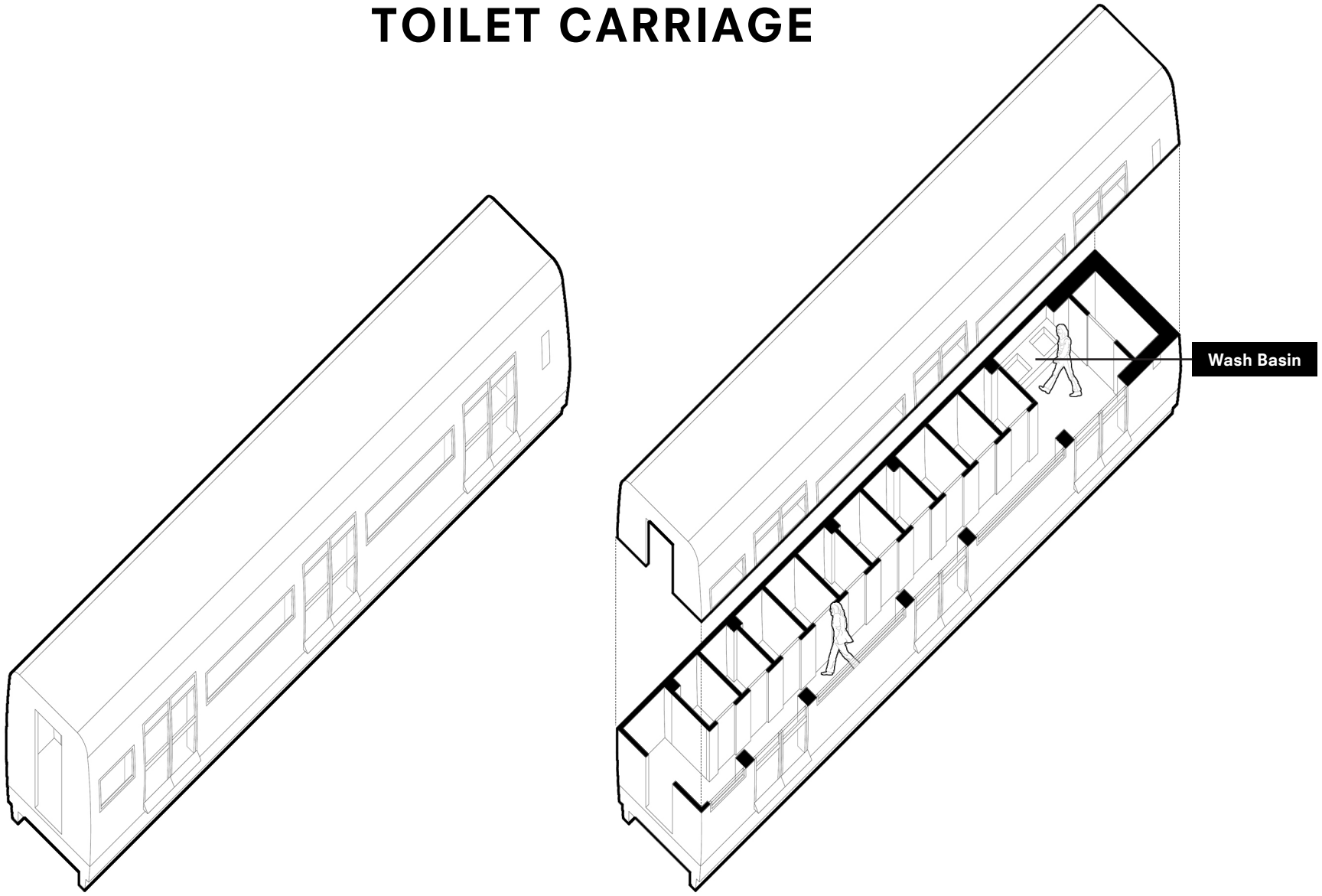
Metro Station To Night Live Venue

BEER BAR CARRIAGE



Different Bottled and craft beers are available.

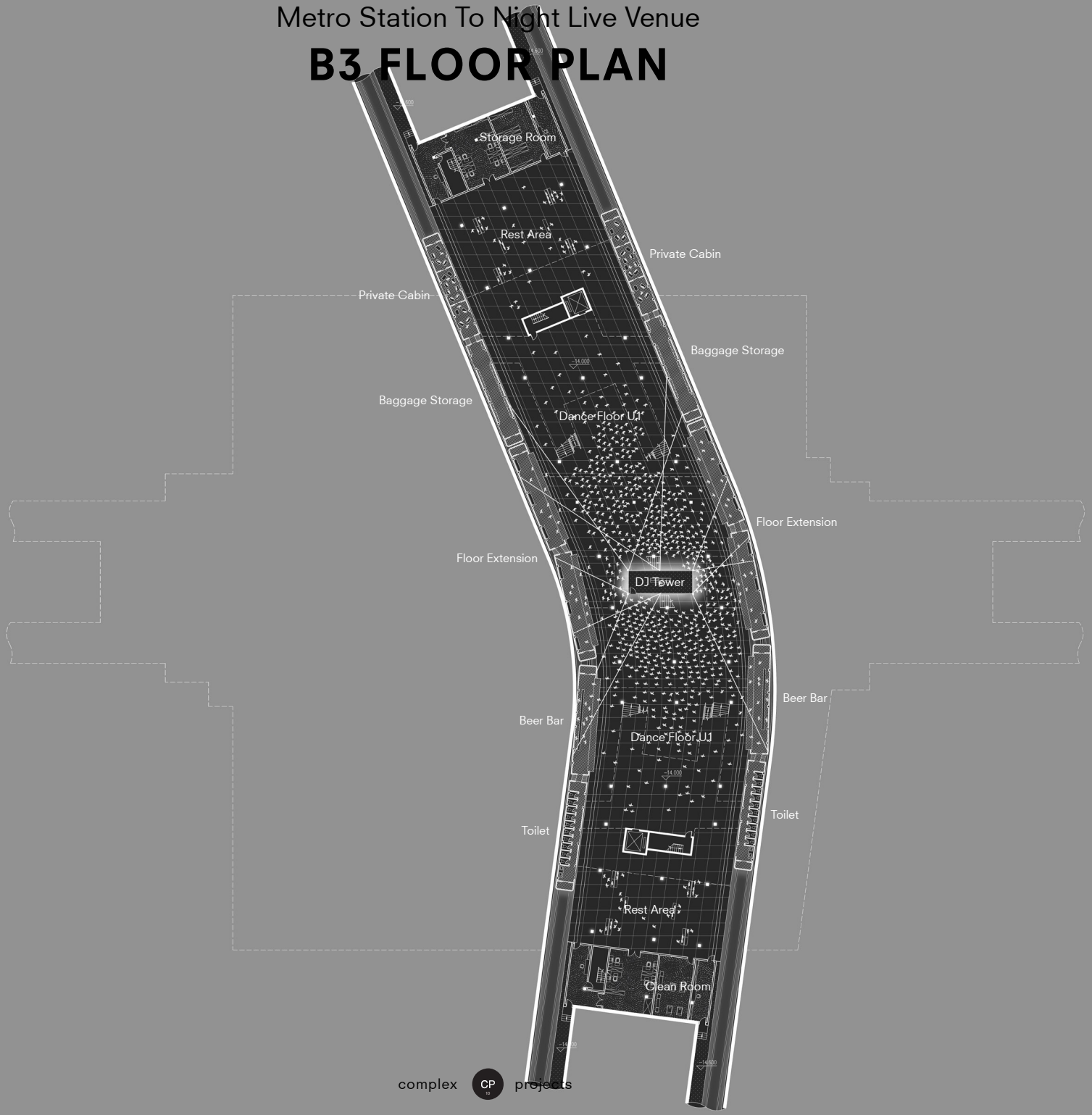
TOILET CARRIAGE



The toilet is capable of serving 100 people for a single 4-hour event per cabin.

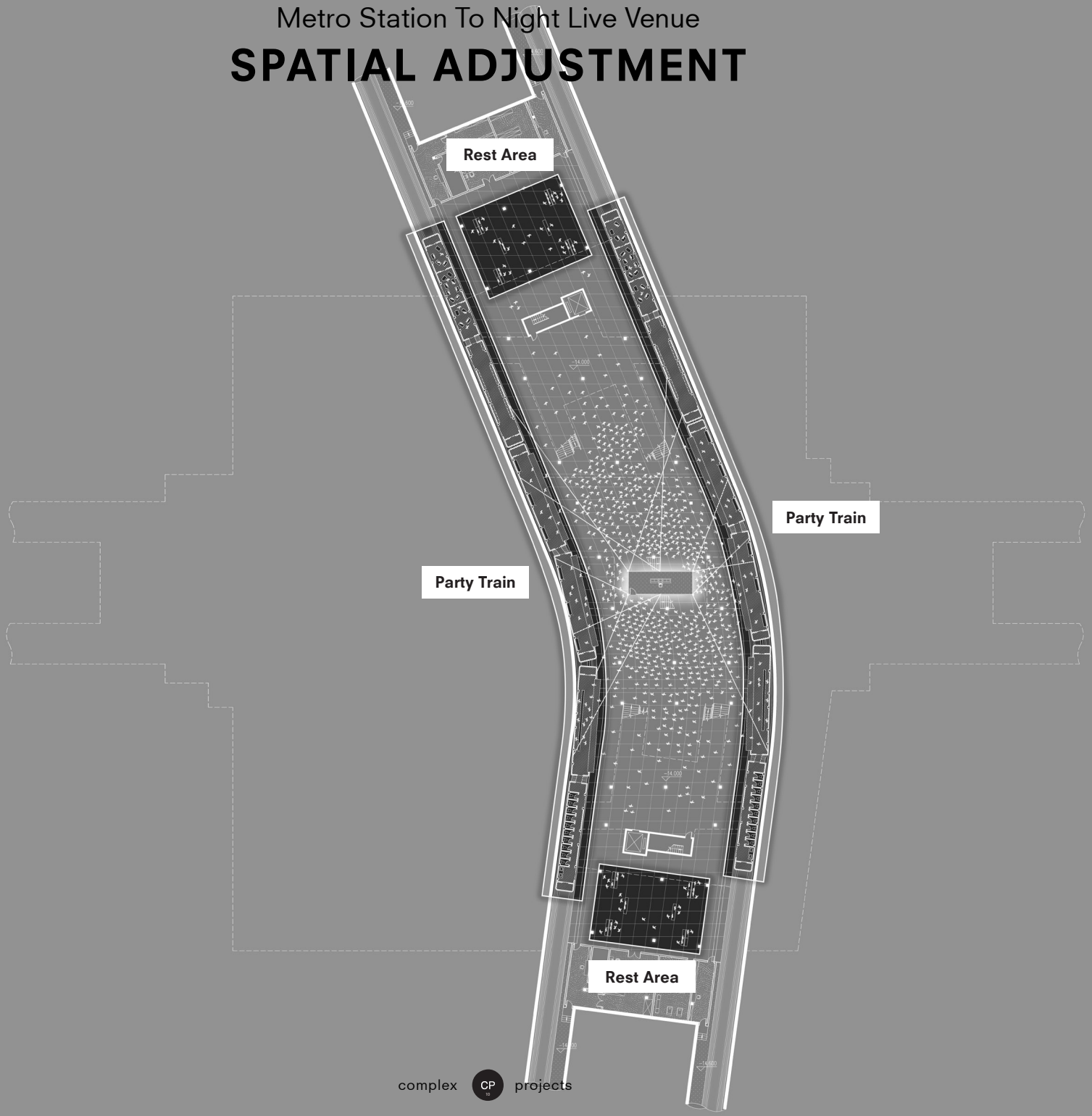
Metro Station To Night Live Venue

B3 FLOOR PLAN



Metro Station To Night Live Venue

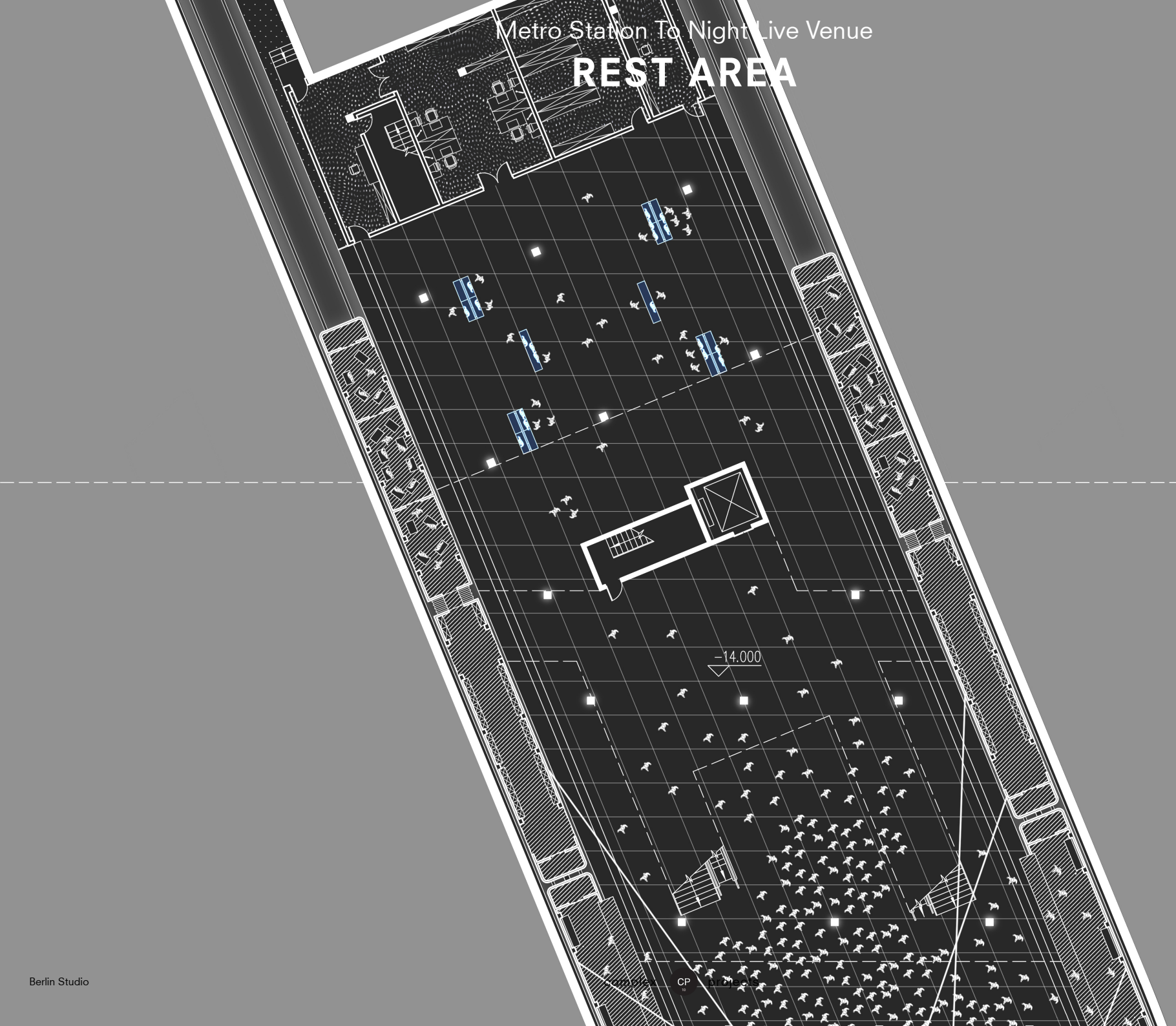
SPATIAL ADJUSTMENT



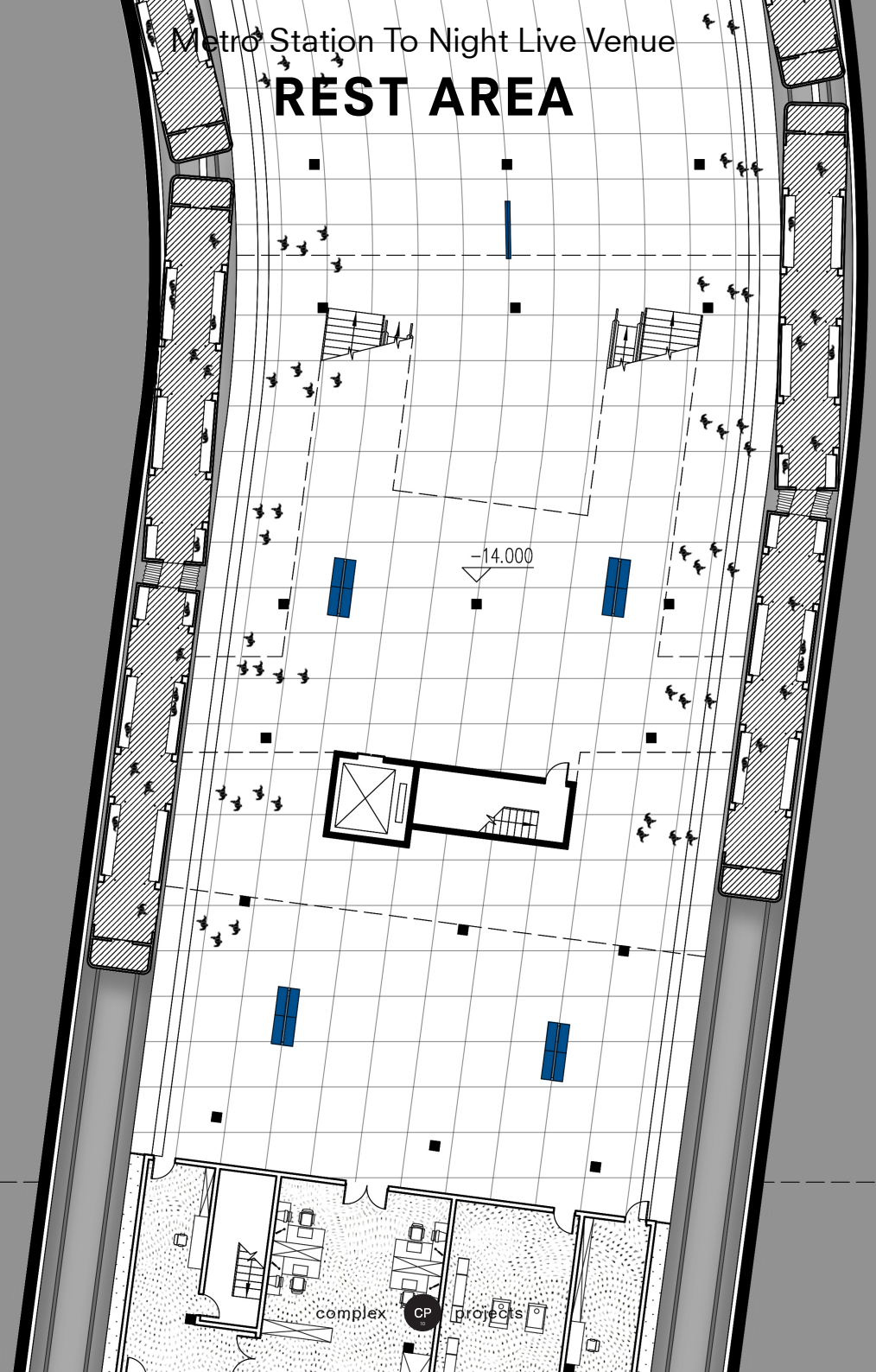
REST AREA



REST AREA

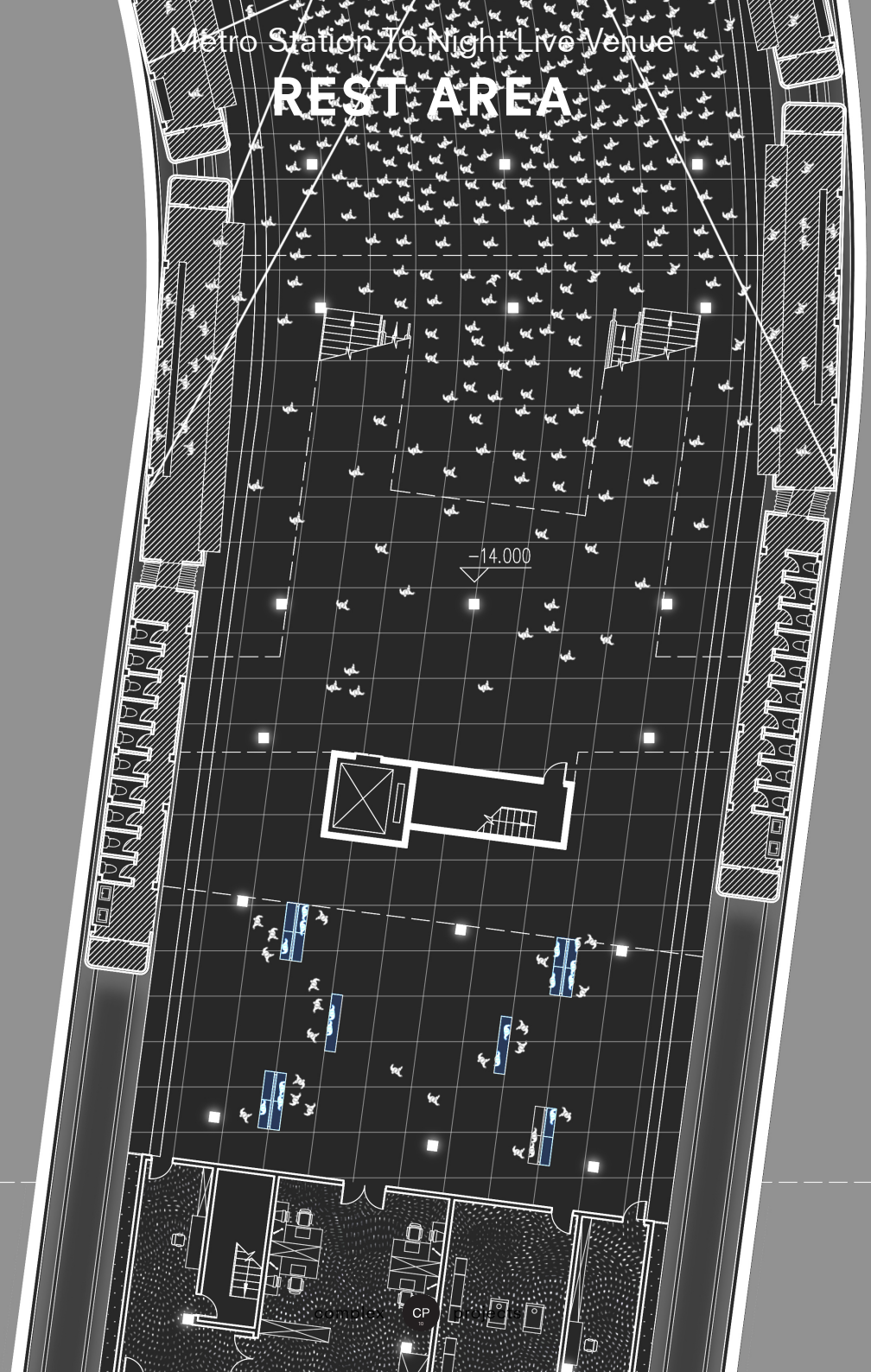


REST AREA



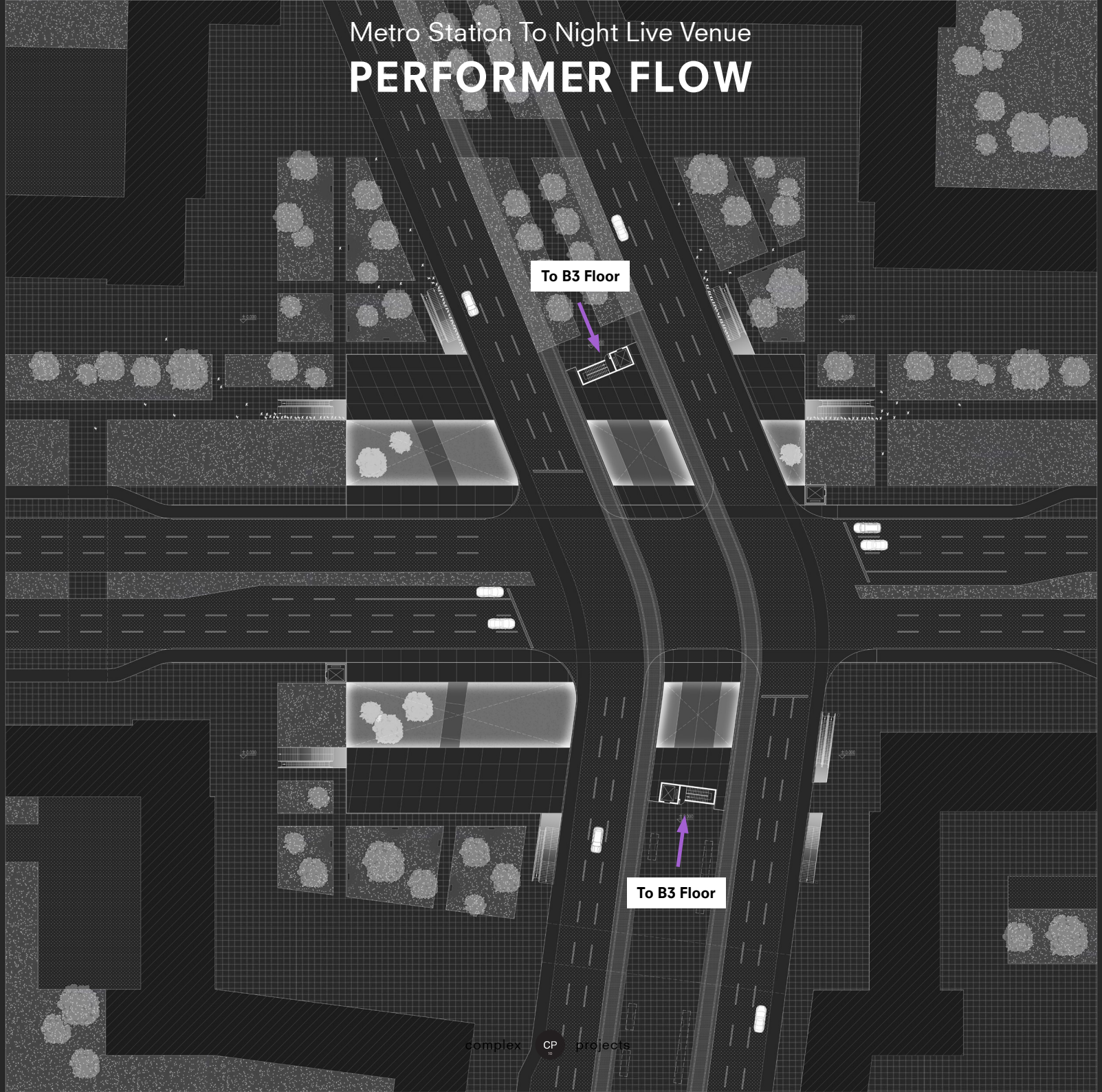
Metro Station To Night Live Venue

REST AREA



Metro Station To Night Live Venue

PERFORMER FLOW



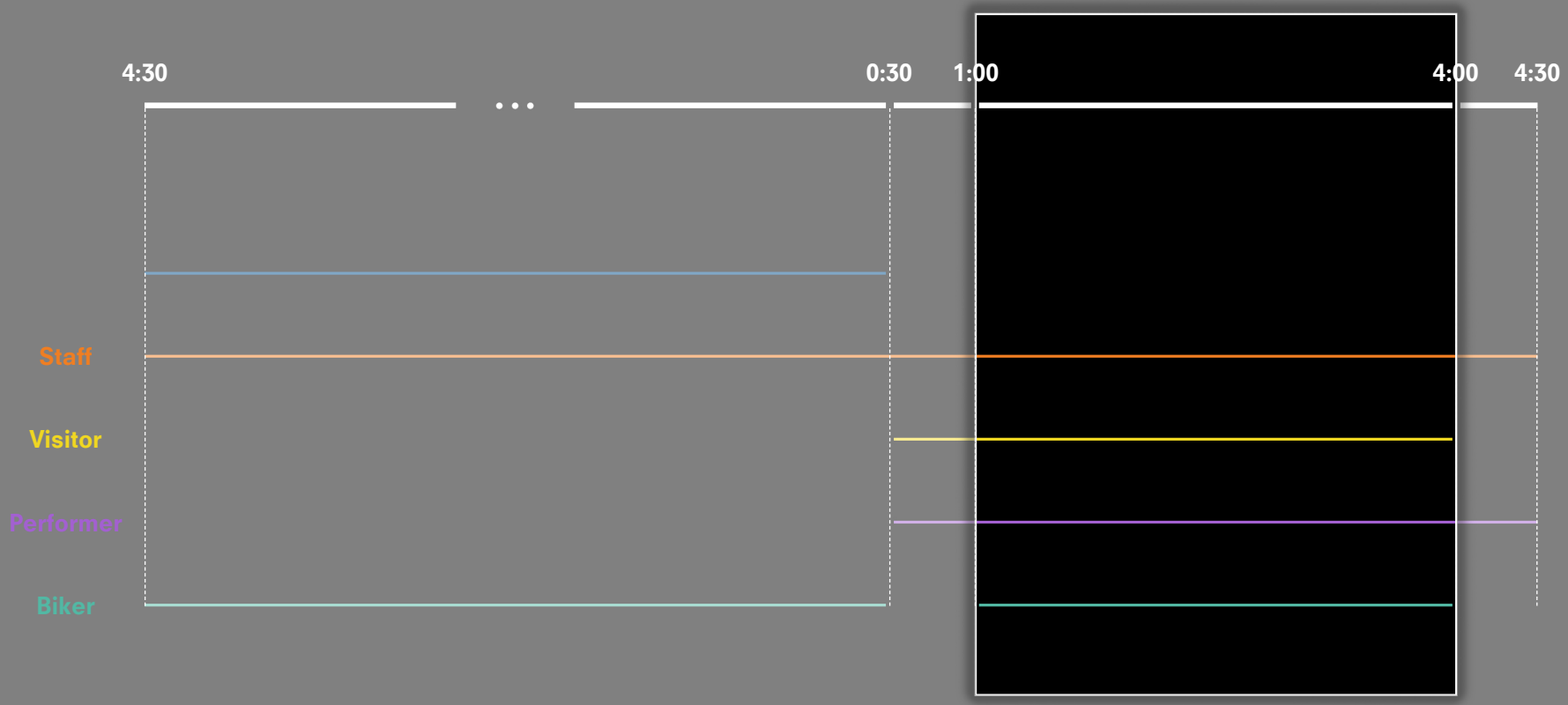
Metro Station To Night Live Venue

PERFORMER FLOW



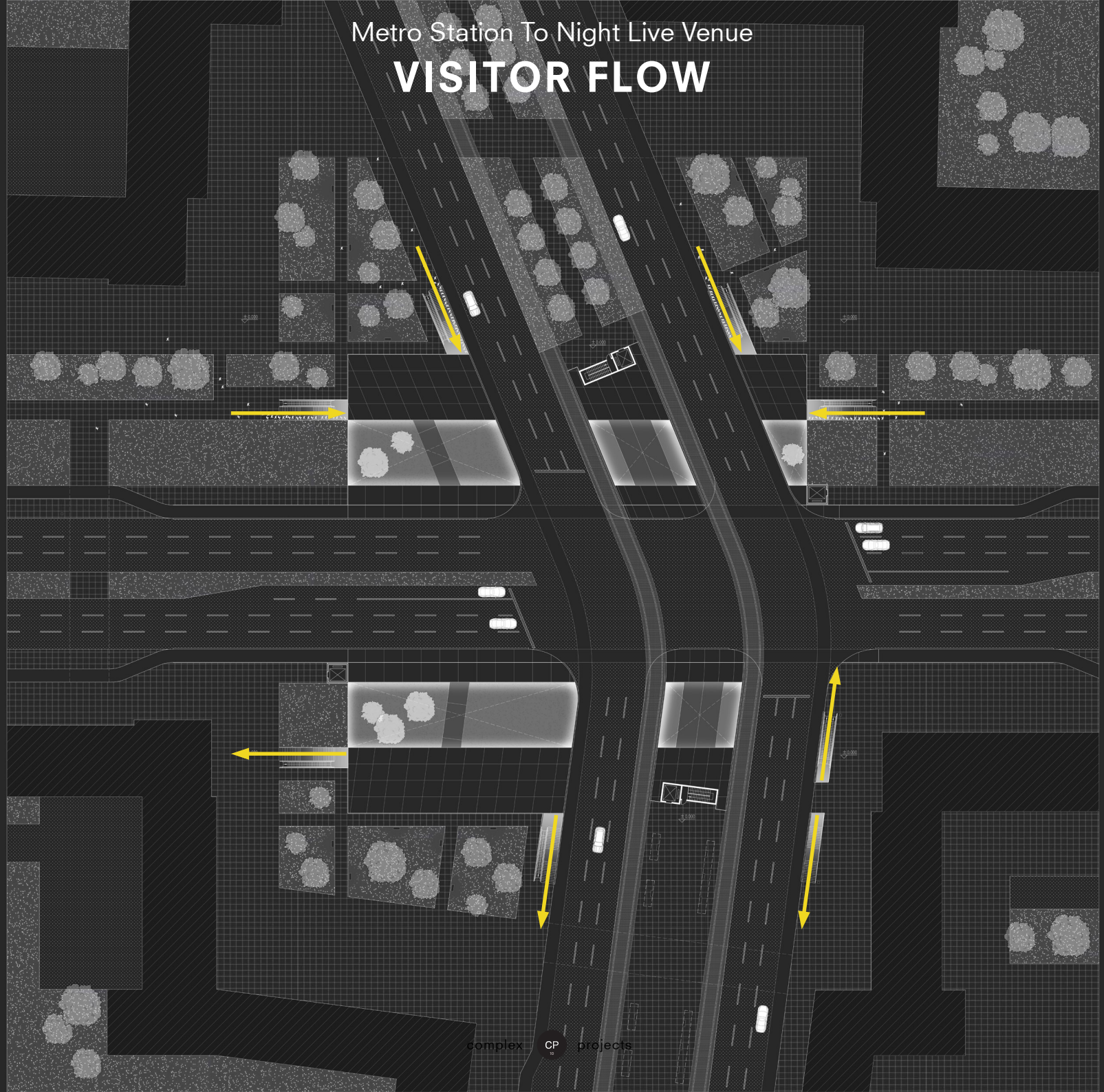
Metro Station To Night Live Venue

NIGHT LIVE VENUE



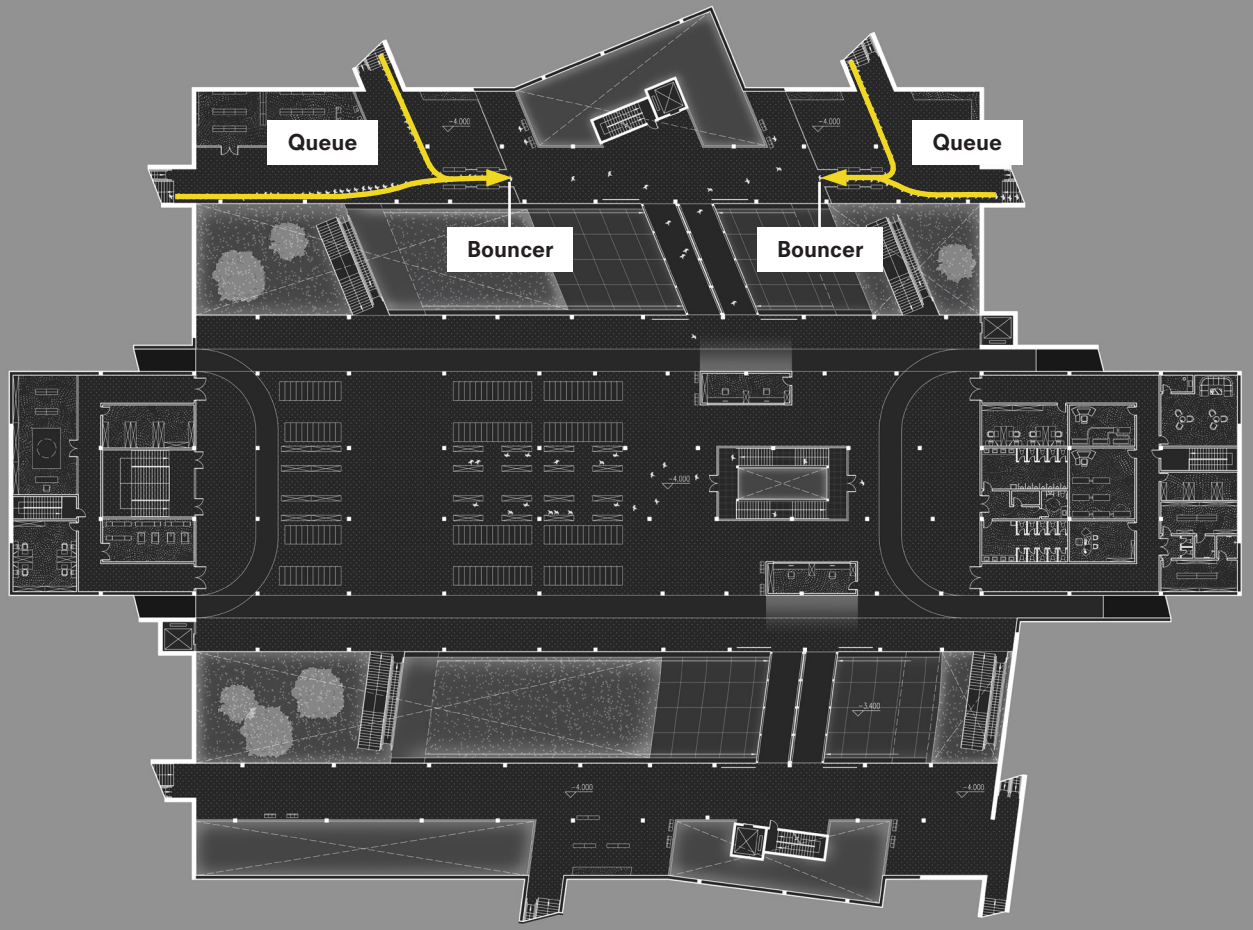
Metro Station To Night Live Venue

VISITOR FLOW



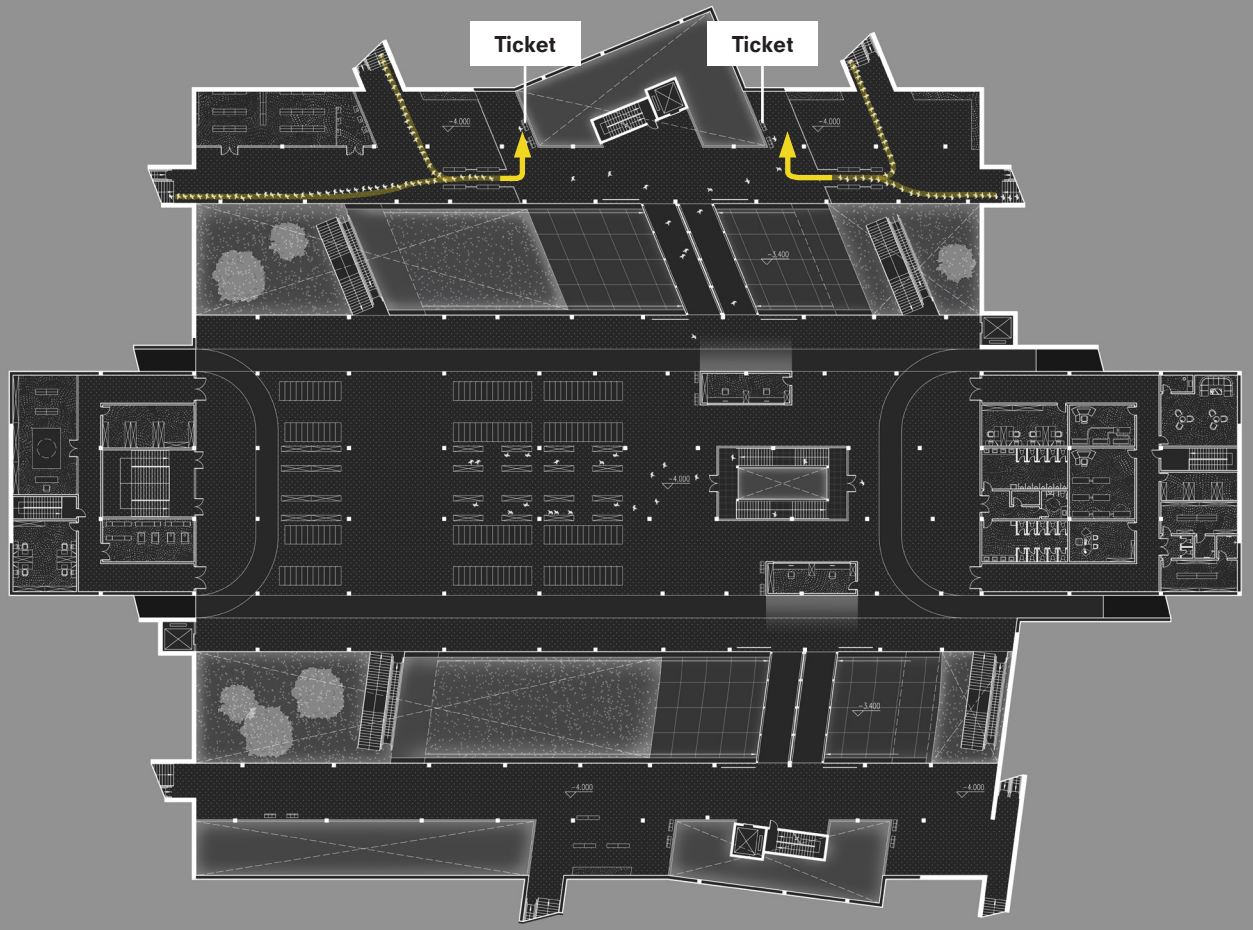
Metro Station To Night Live Venue

VISITOR FLOW



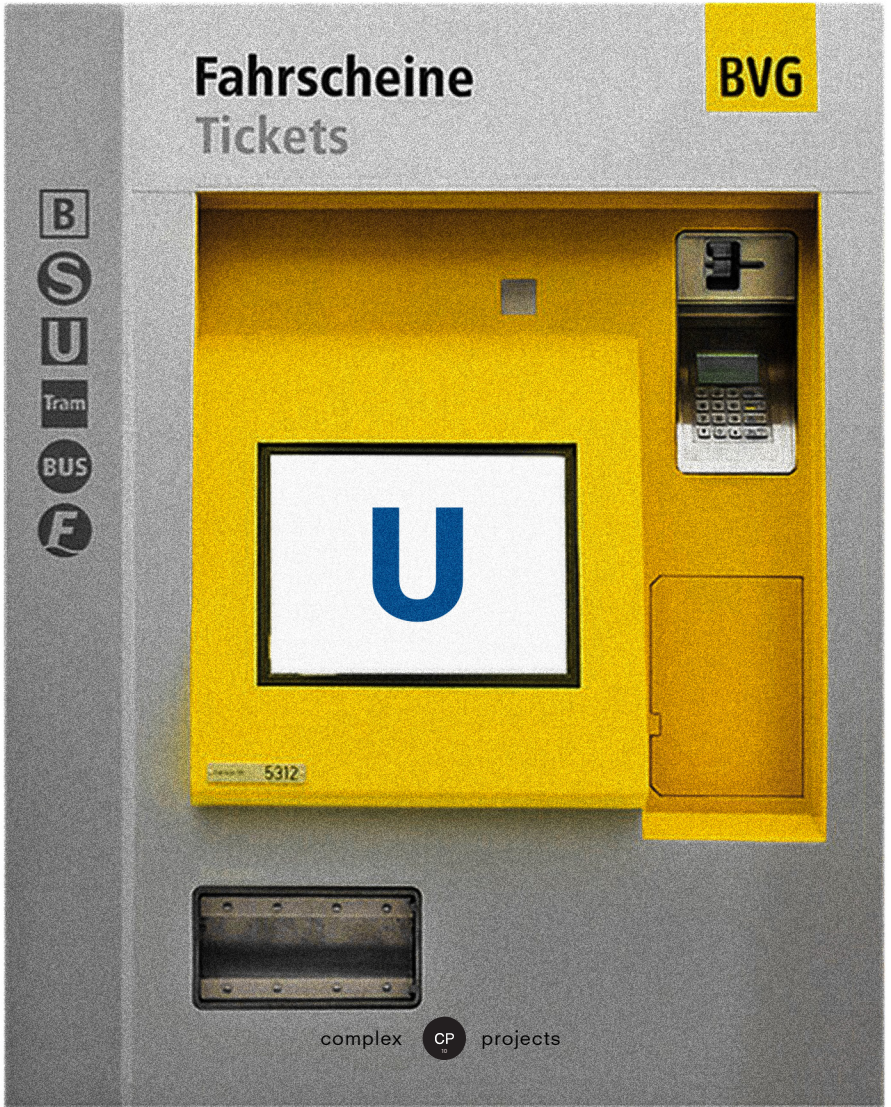
Metro Station To Night Live Venue

VISITOR FLOW



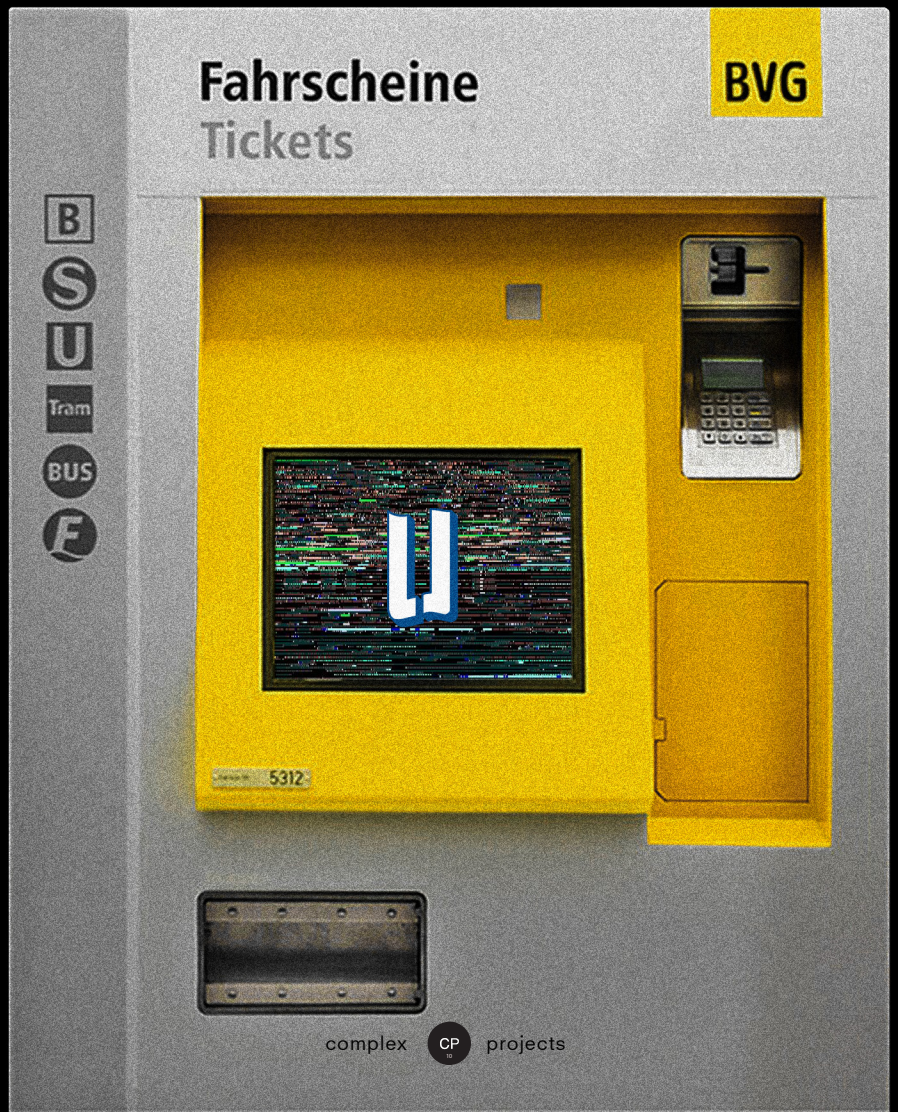
Metro Station To Night Live Venue

TICKET



Metro Station To Night Live Venue

TICKET



Metro Station To Night Live Venue

TICKET



Dance With
Energy Discount

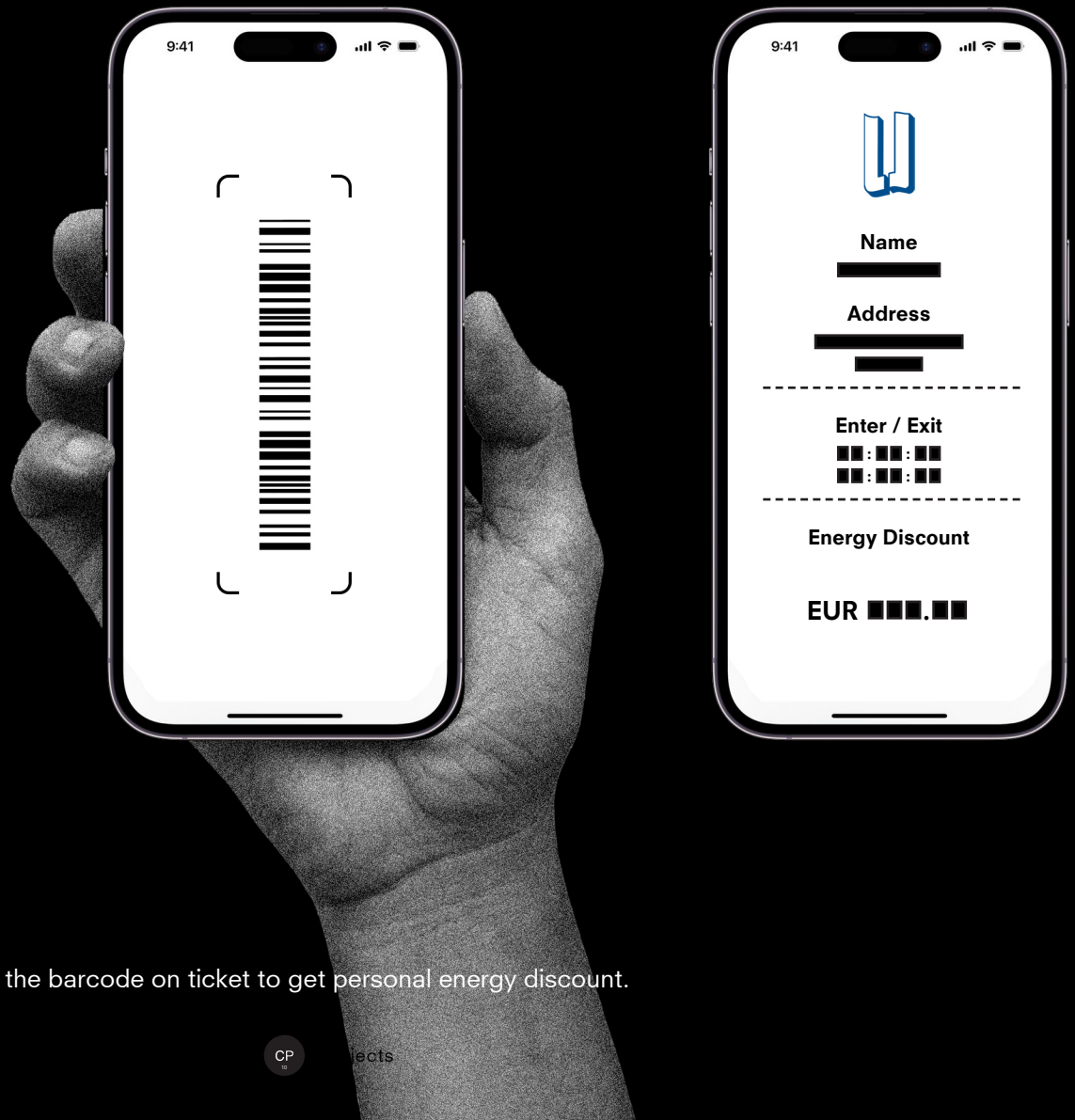




Metro Station To Night Live Venue

TICKET

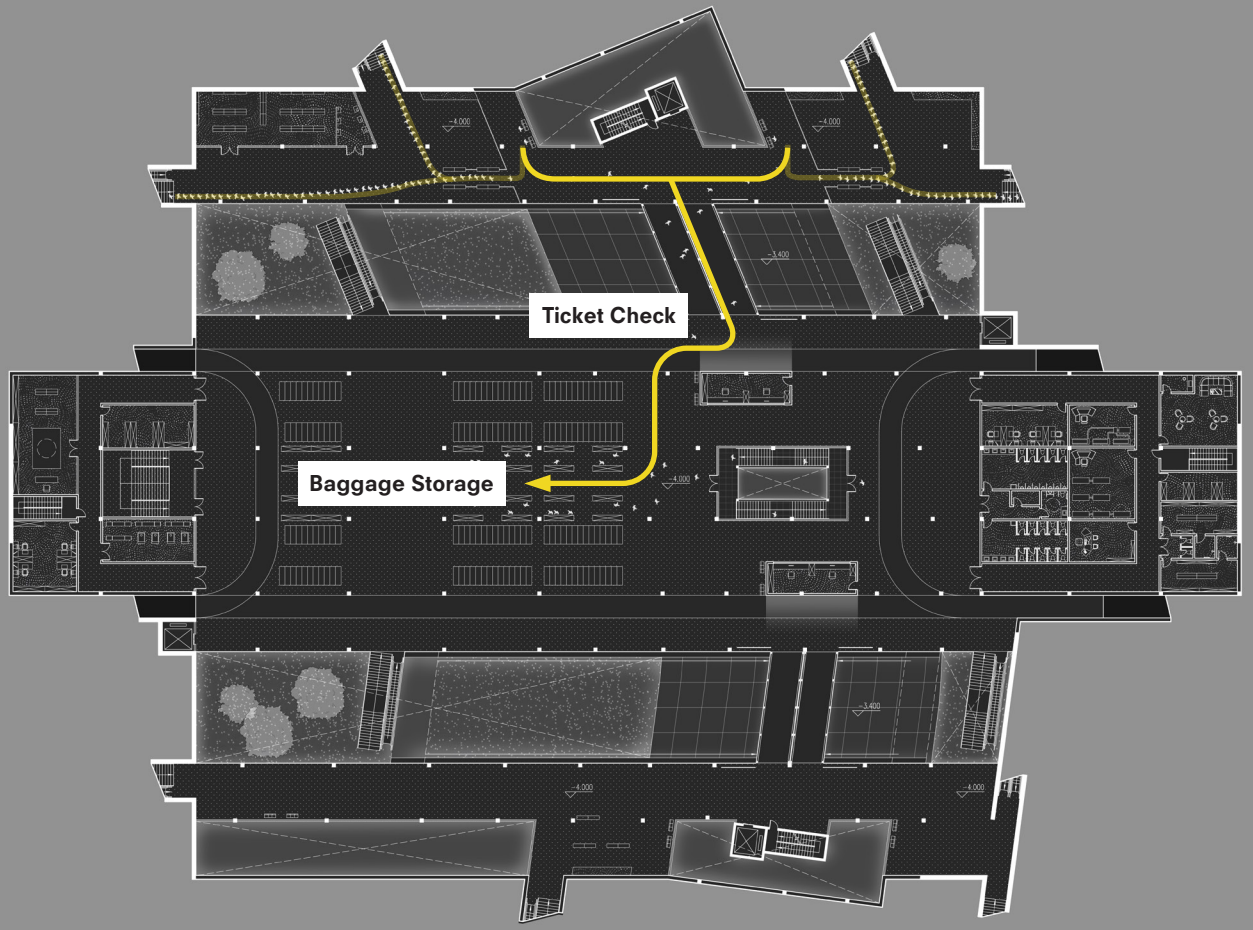




Scan the barcode on ticket to get personal energy discount.

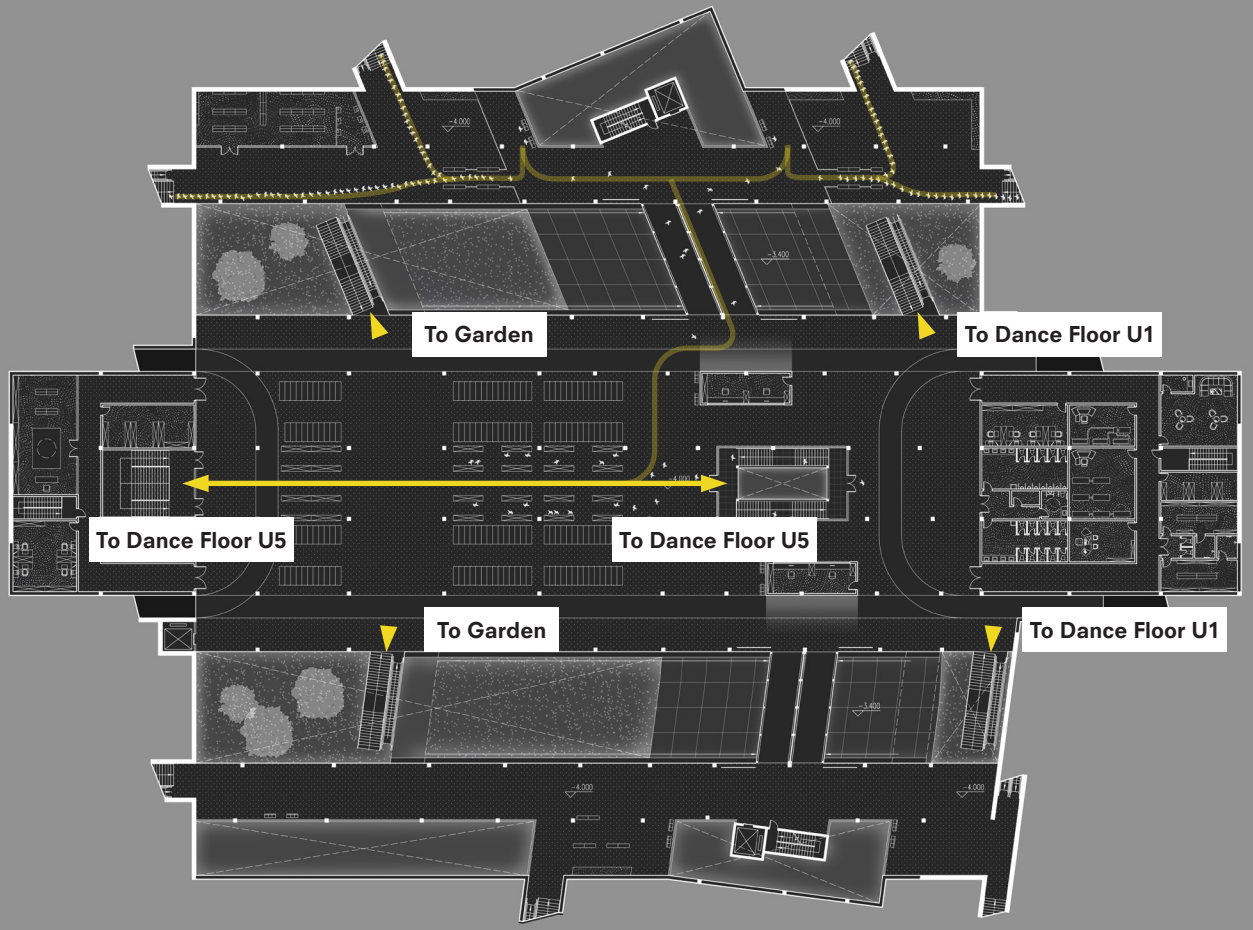
Metro Station To Night Live Venue

VISITOR FLOW



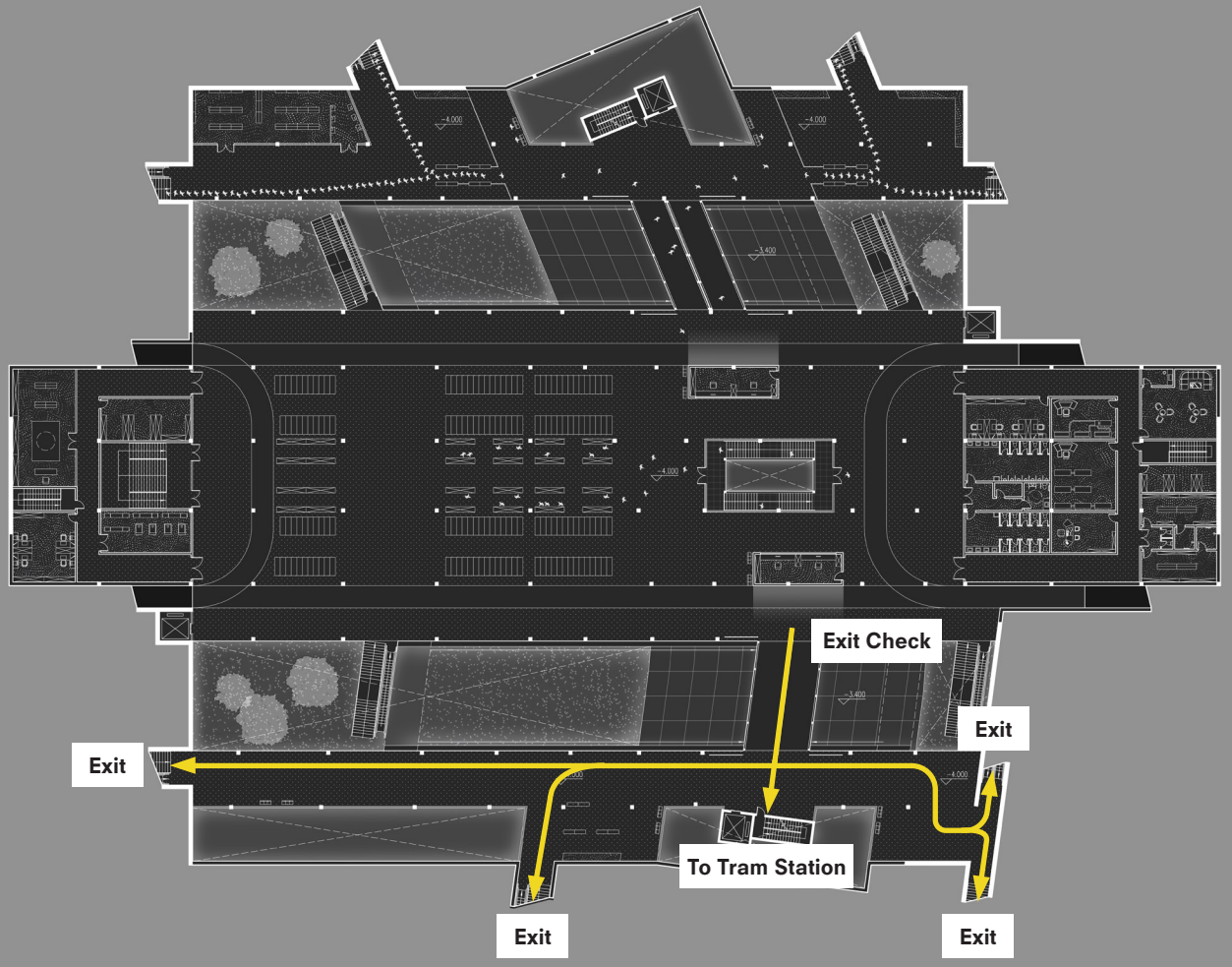
Metro Station To Night Live Venue

VISITOR FLOW



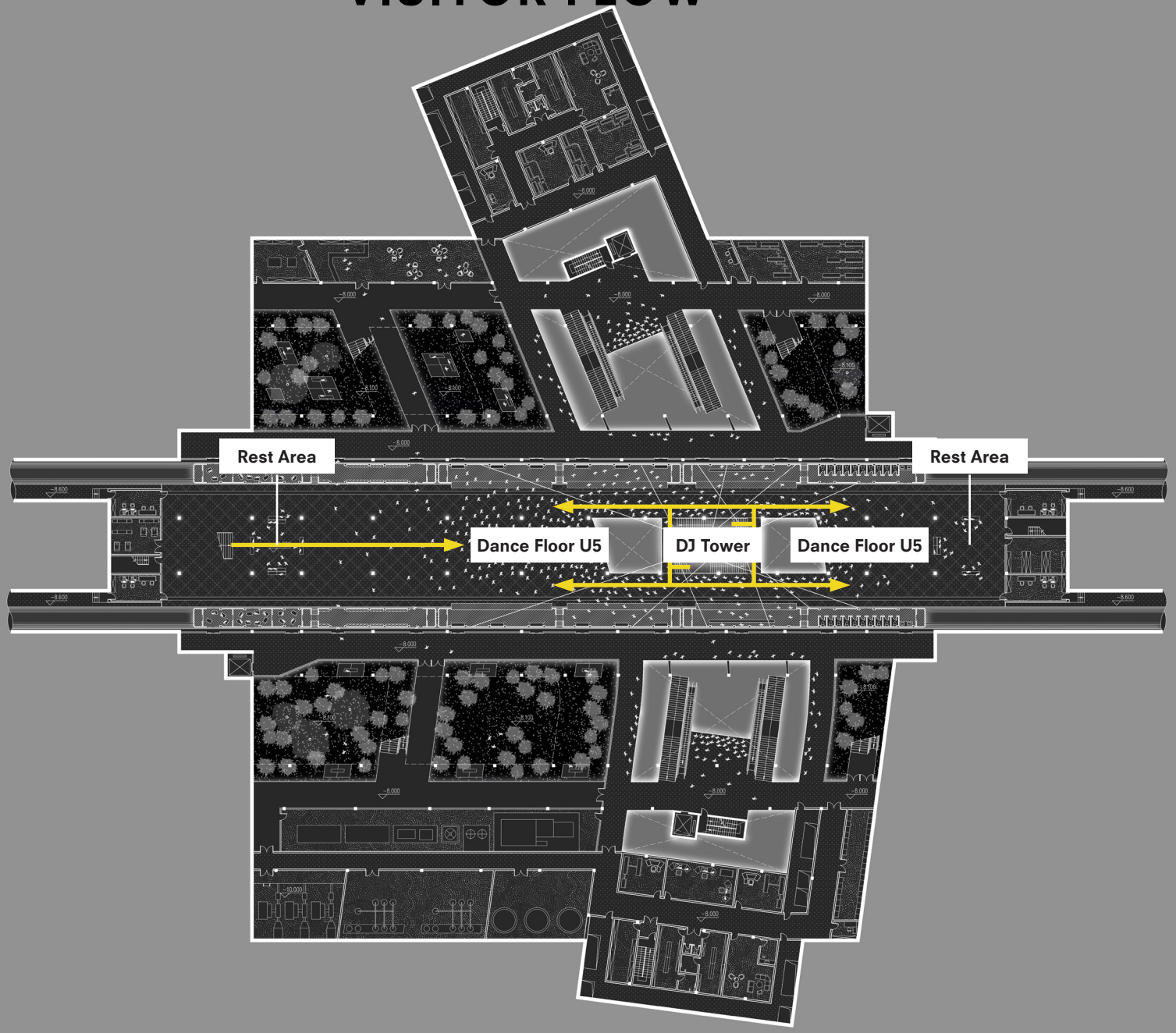
Metro Station To Night Live Venue

VISITOR FLOW



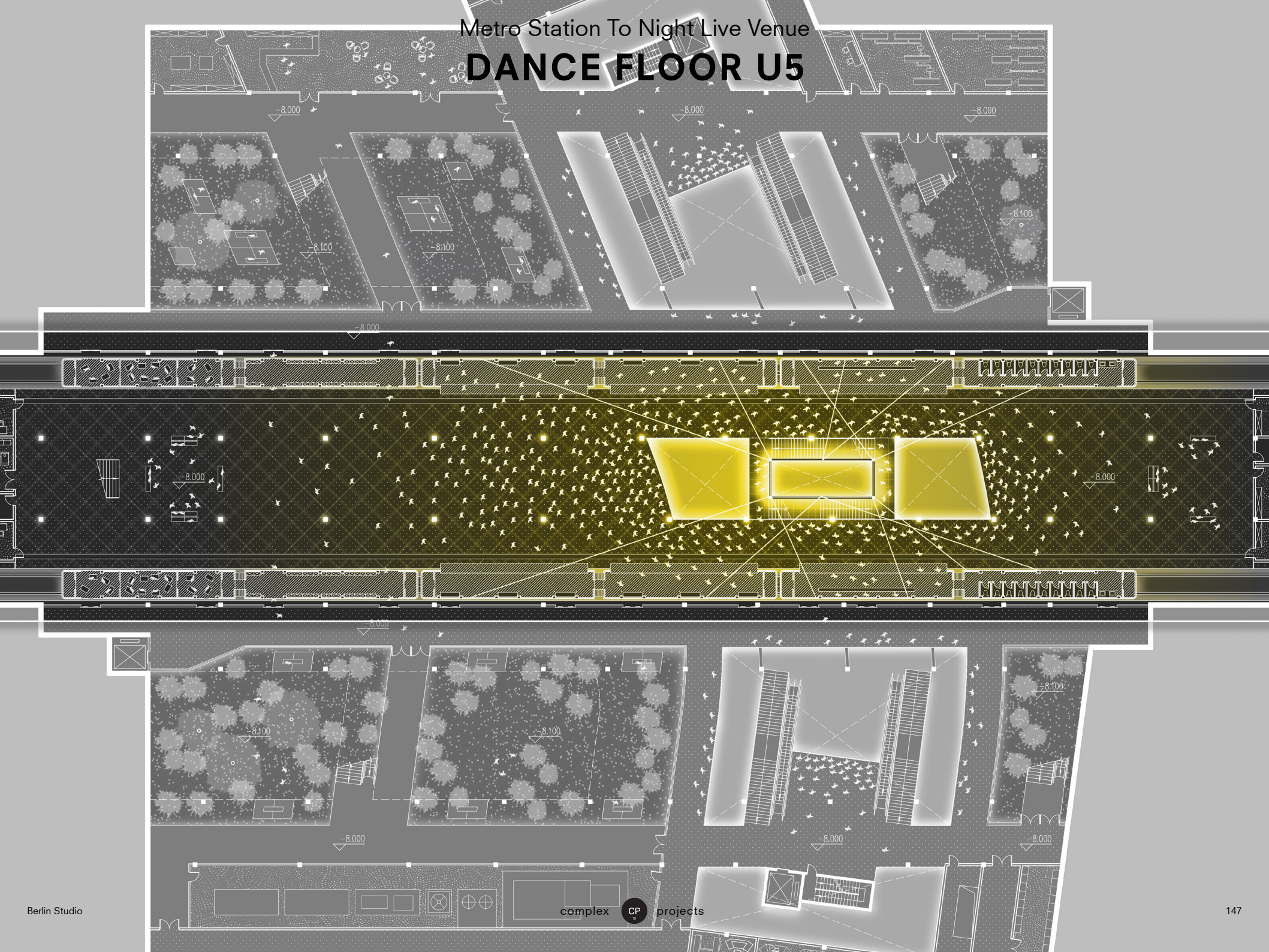
Metro Station To Night Live Venue

VISITOR FLOW



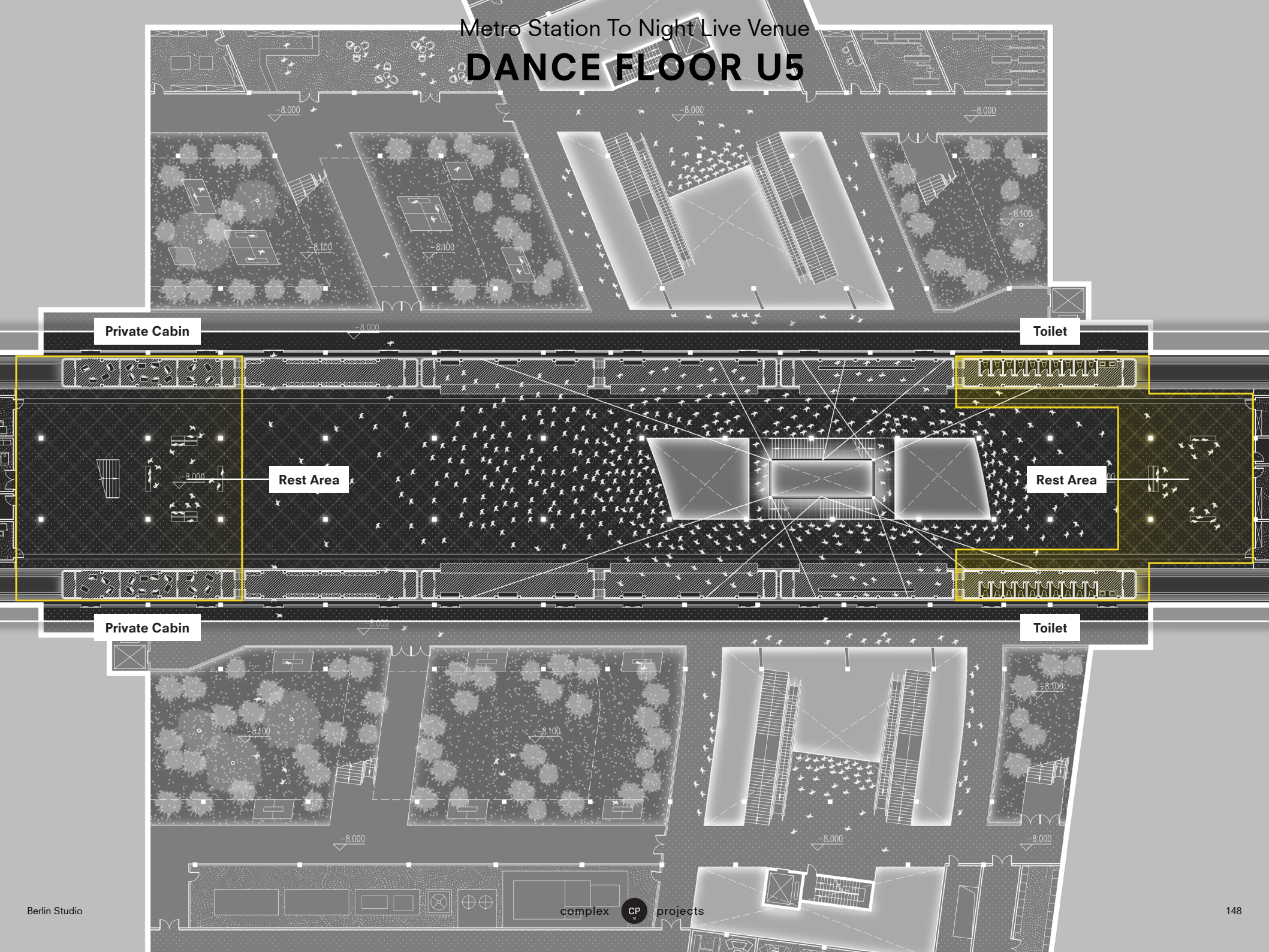
Metro Station To Night Live Venue

DANCE FLOOR U5



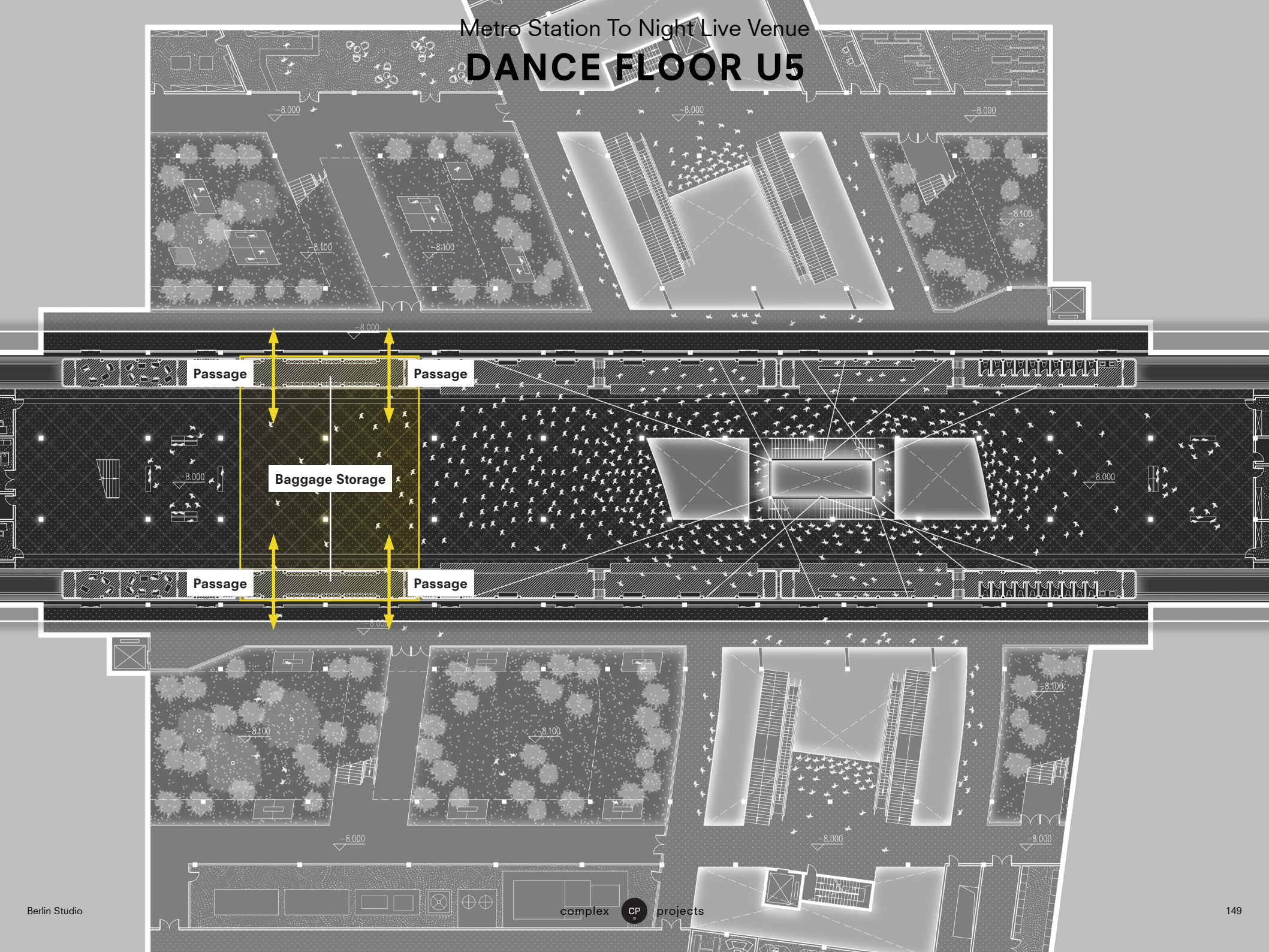
Metro Station To Night Live Venue

DANCE FLOOR U5



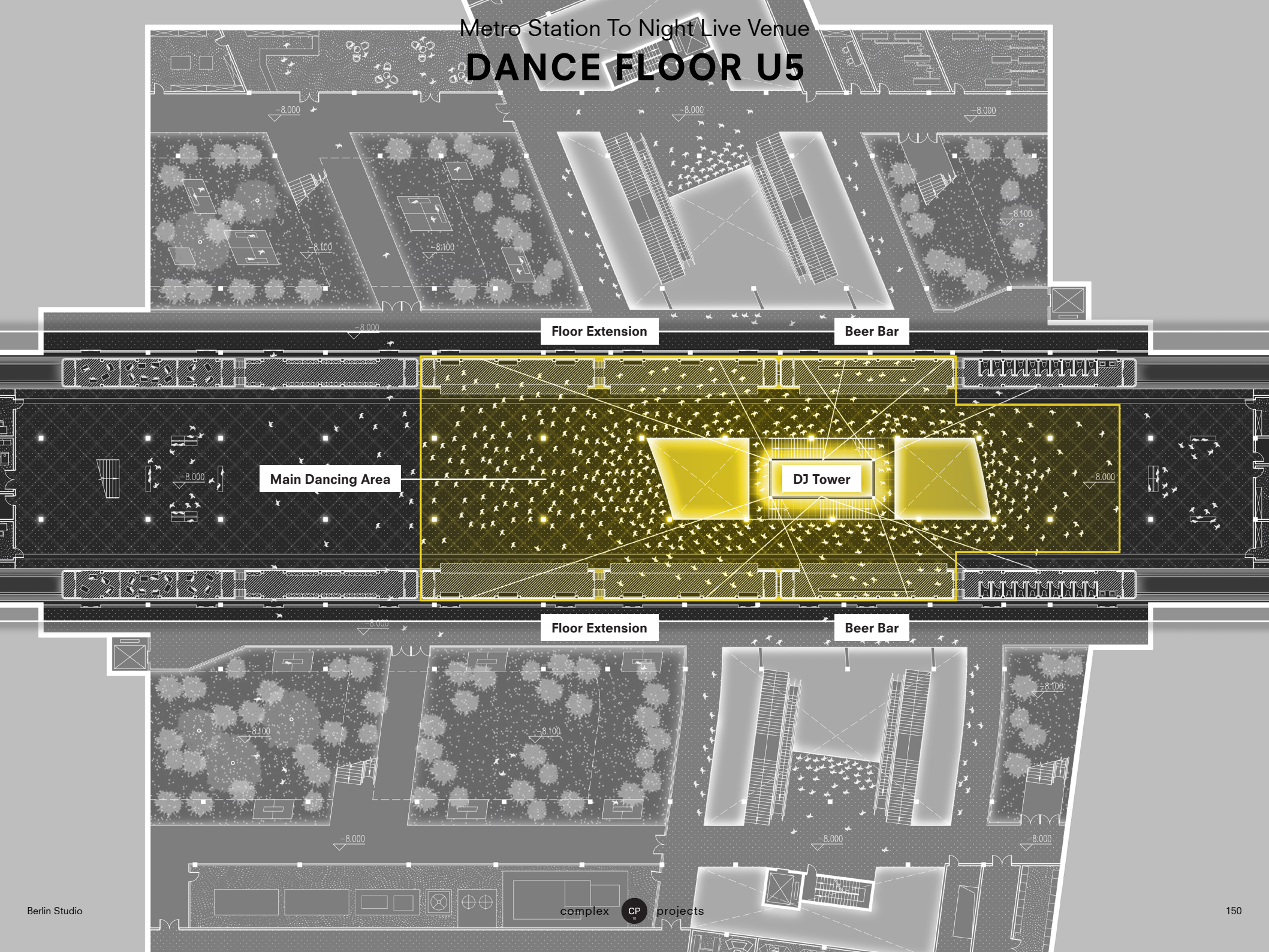
Metro Station To Night Live Venue

DANCE FLOOR U5



Metro Station To Night Live Venue

DANCE FLOOR U5



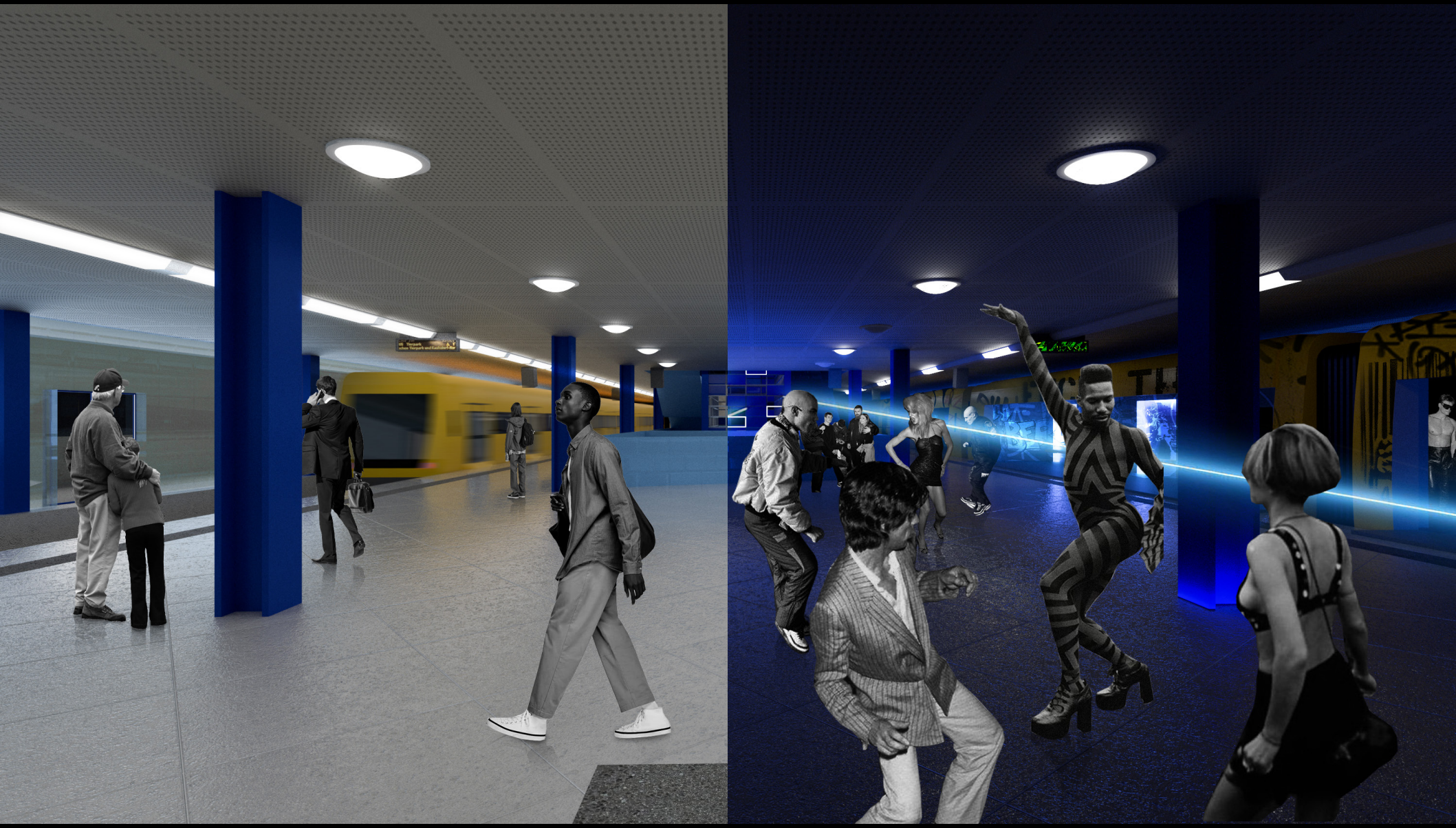
Metro Station To Night Live Venue

DANCE FLOOR U5



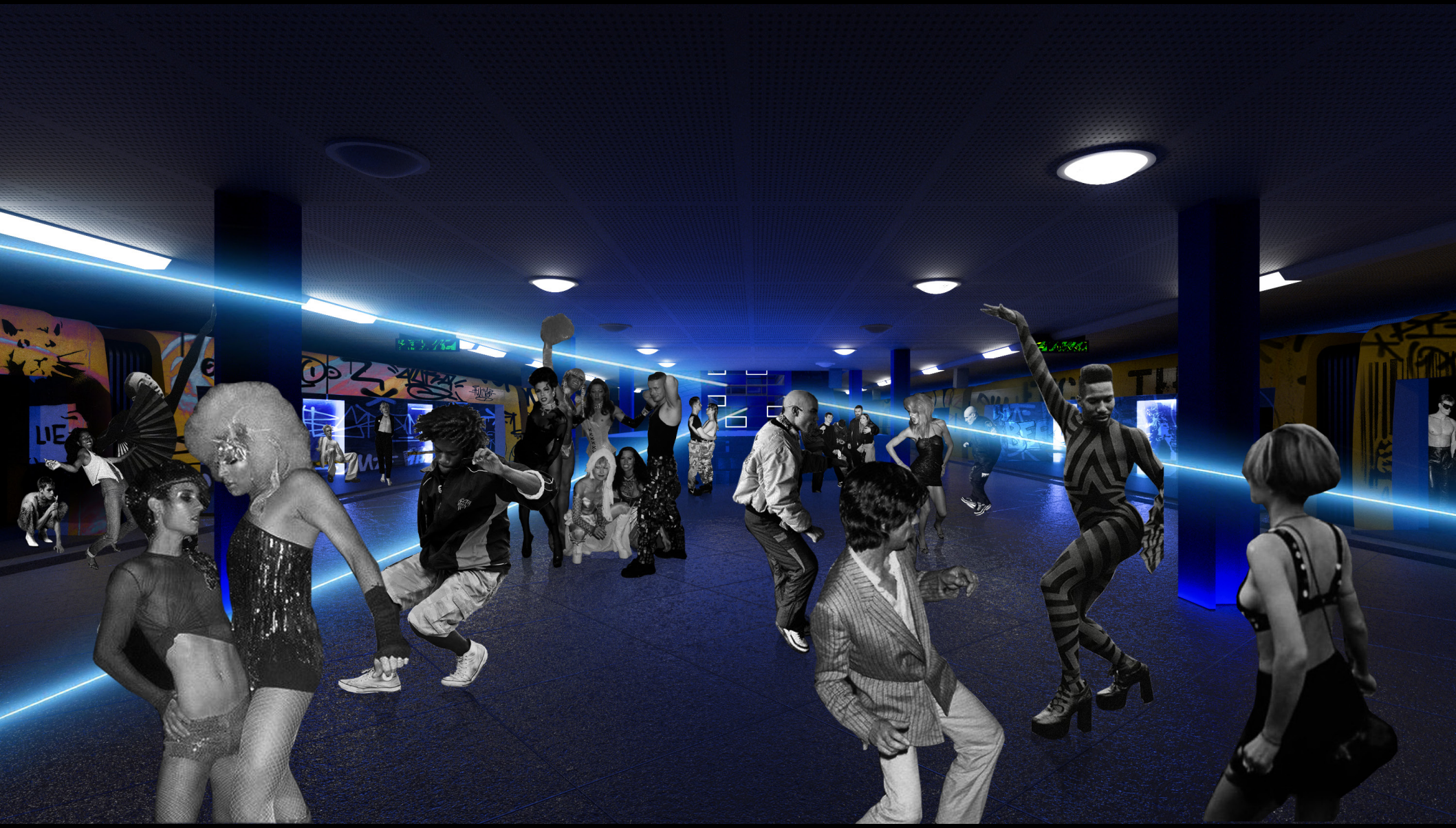
Metro Station To Night Live Venue

DANCE FLOOR U5



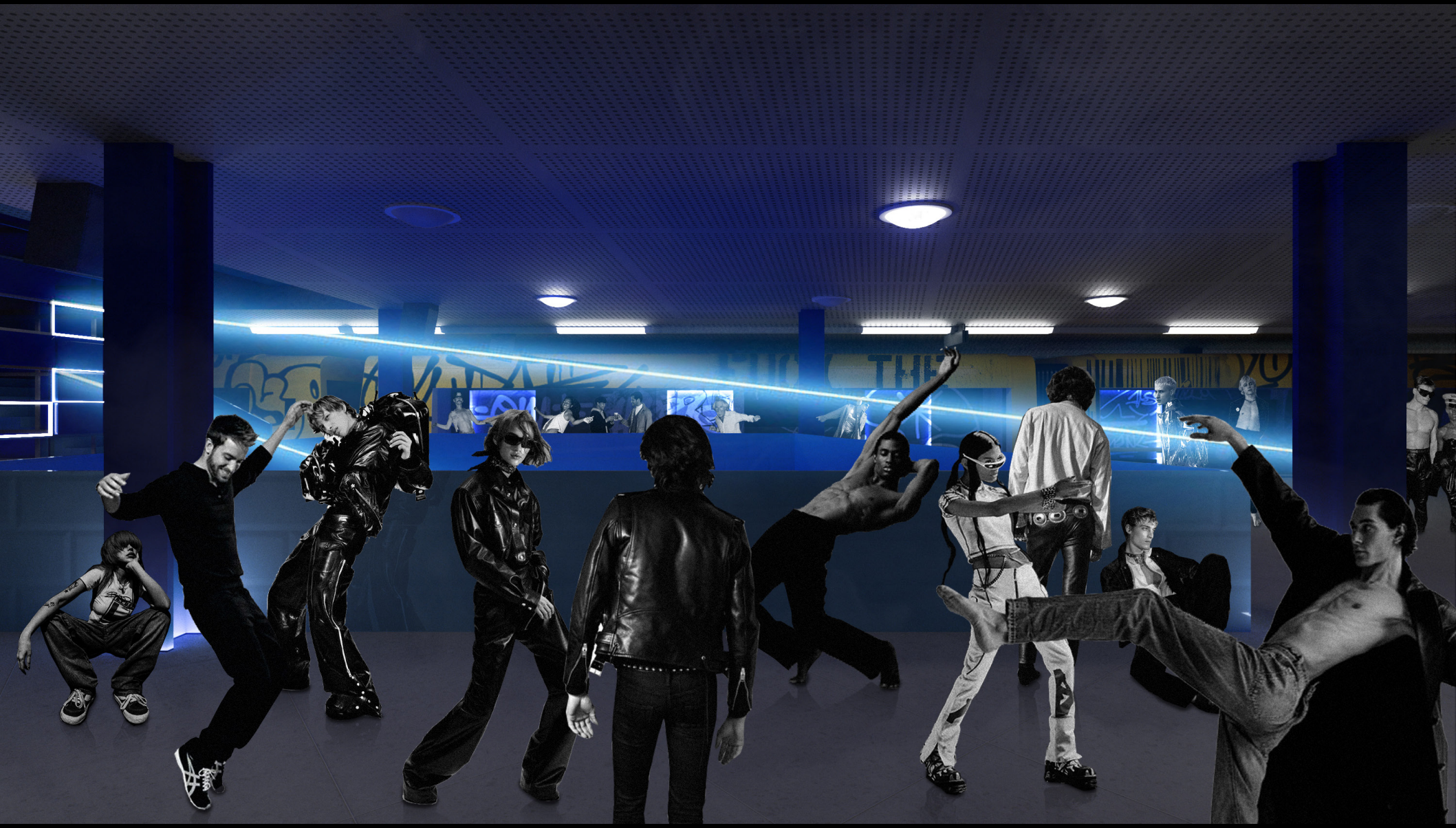
Metro Station To Night Live Venue

DANCE FLOOR U5



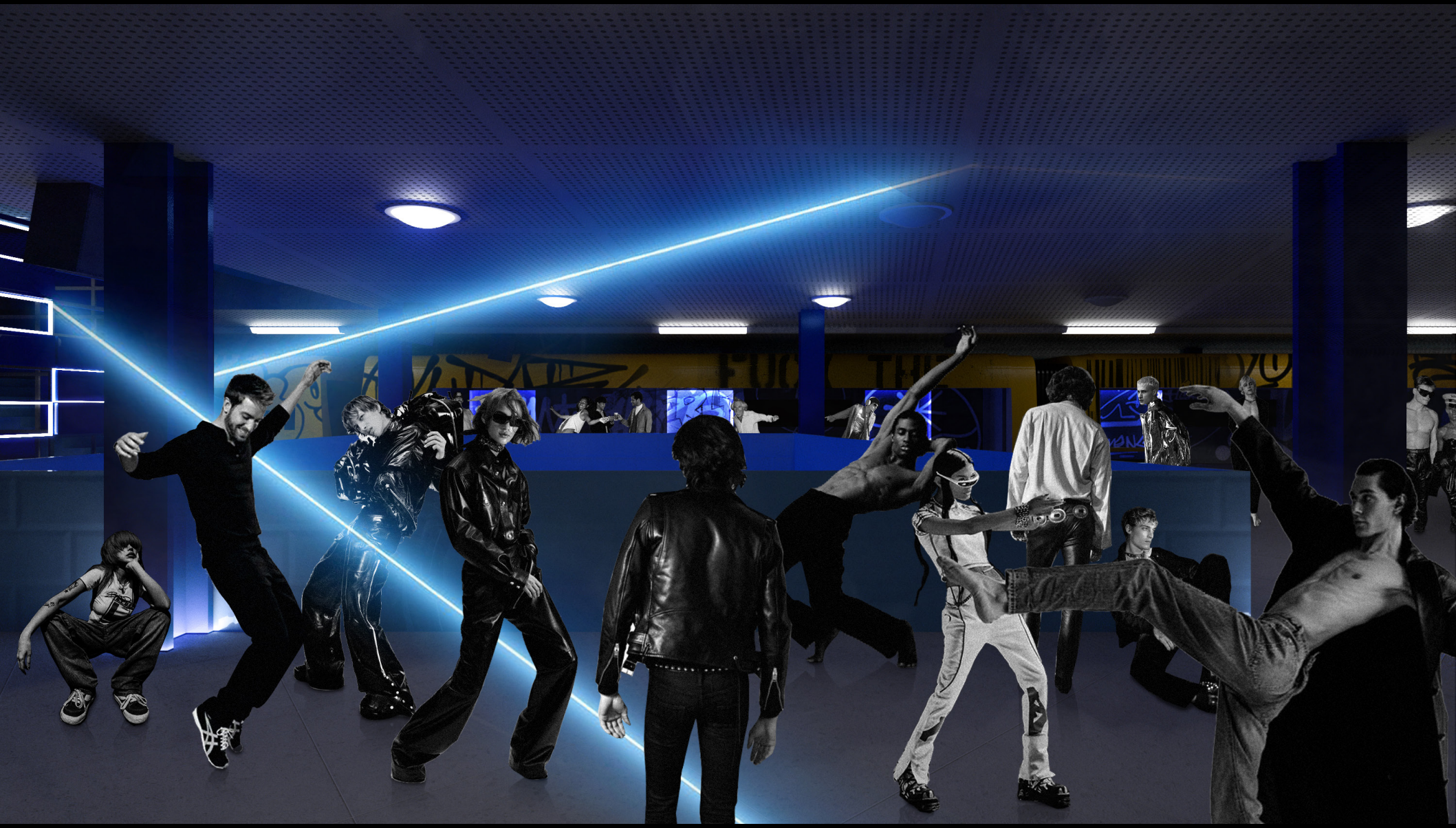
Metro Station To Night Live Venue

DANCE FLOOR U5



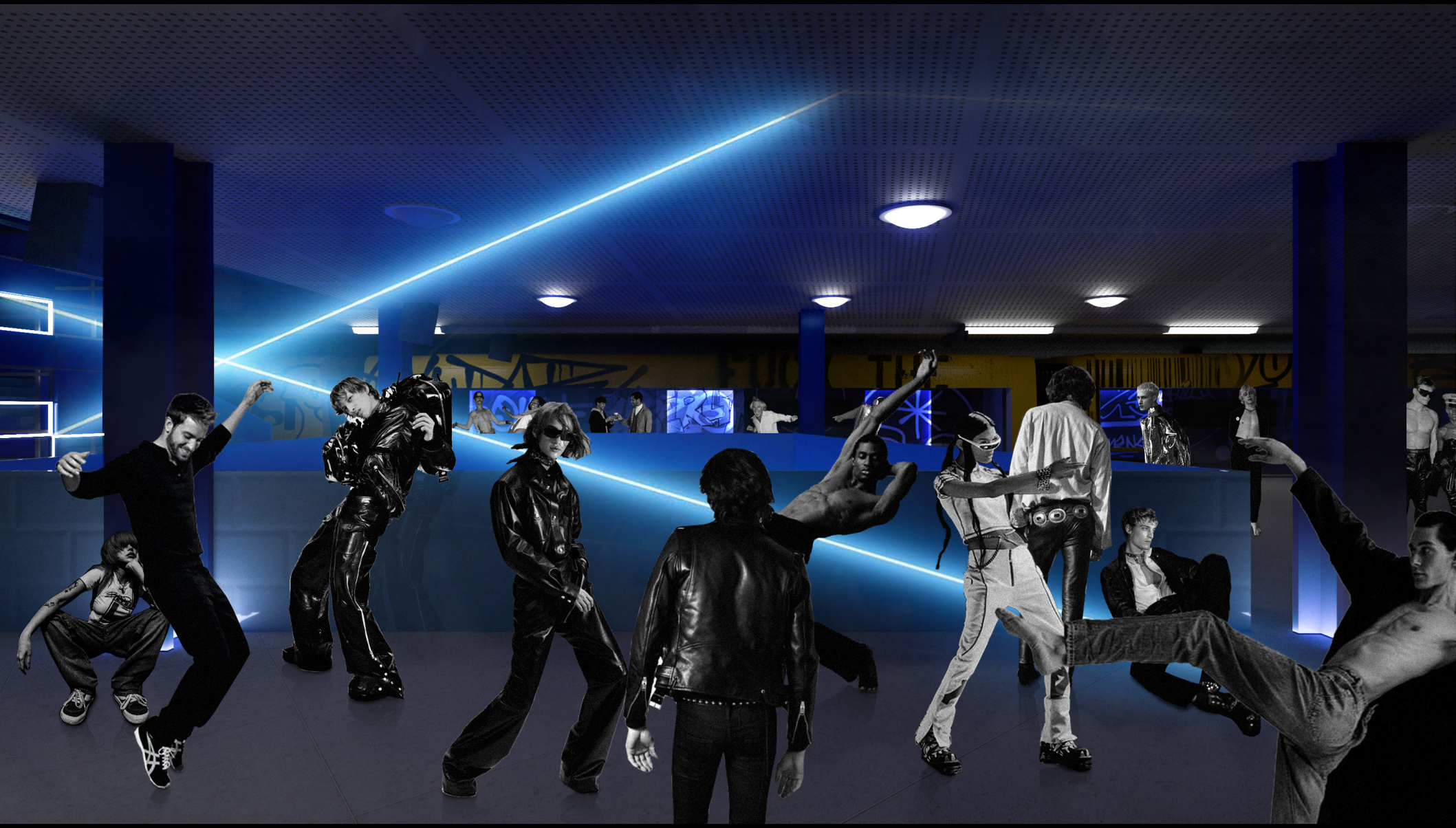
Metro Station To Night Live Venue

DANCE FLOOR U5



Metro Station To Night Live Venue

DANCE FLOOR U5



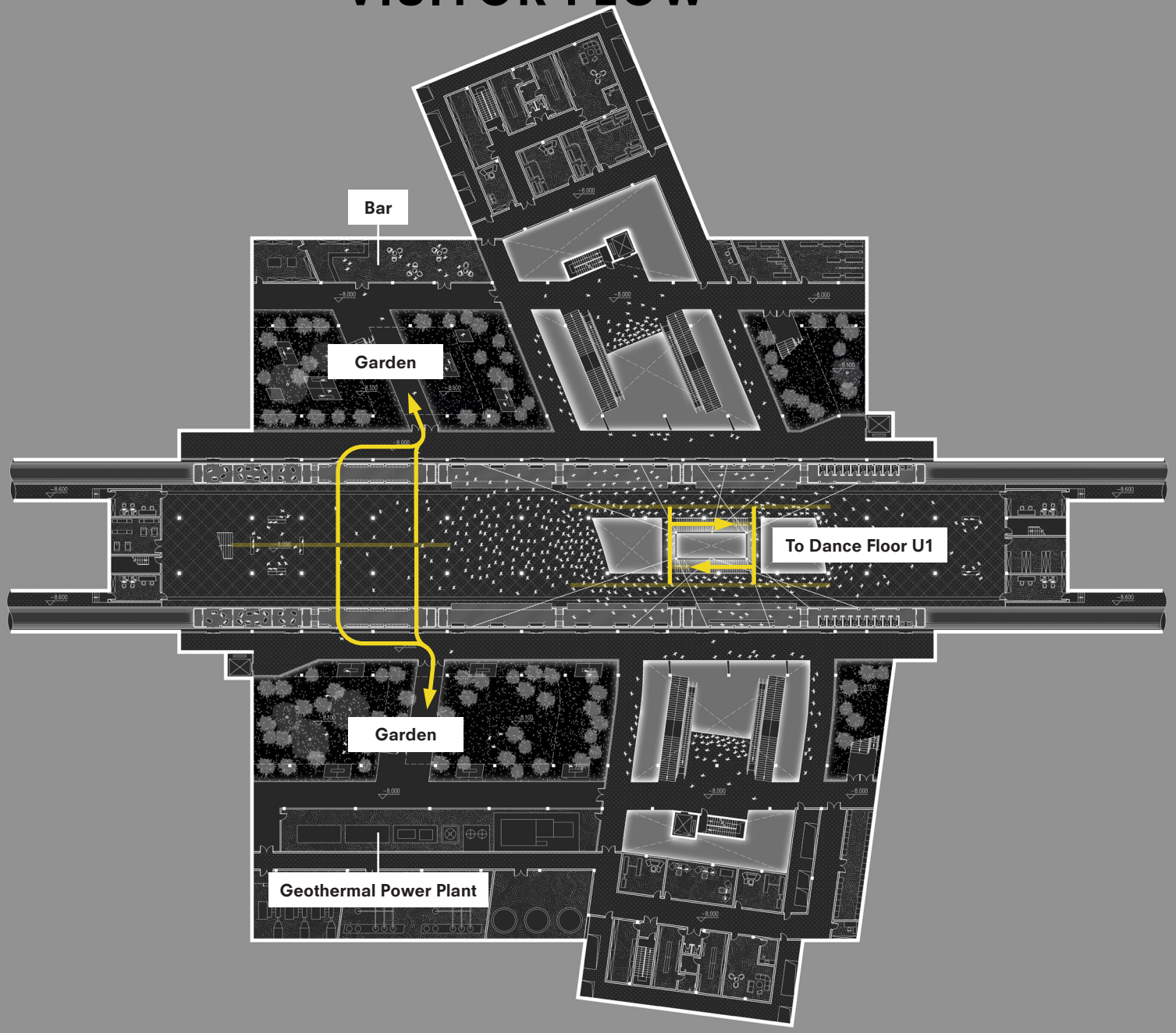
Metro Station To Night Live Venue

DANCE FLOOR U5



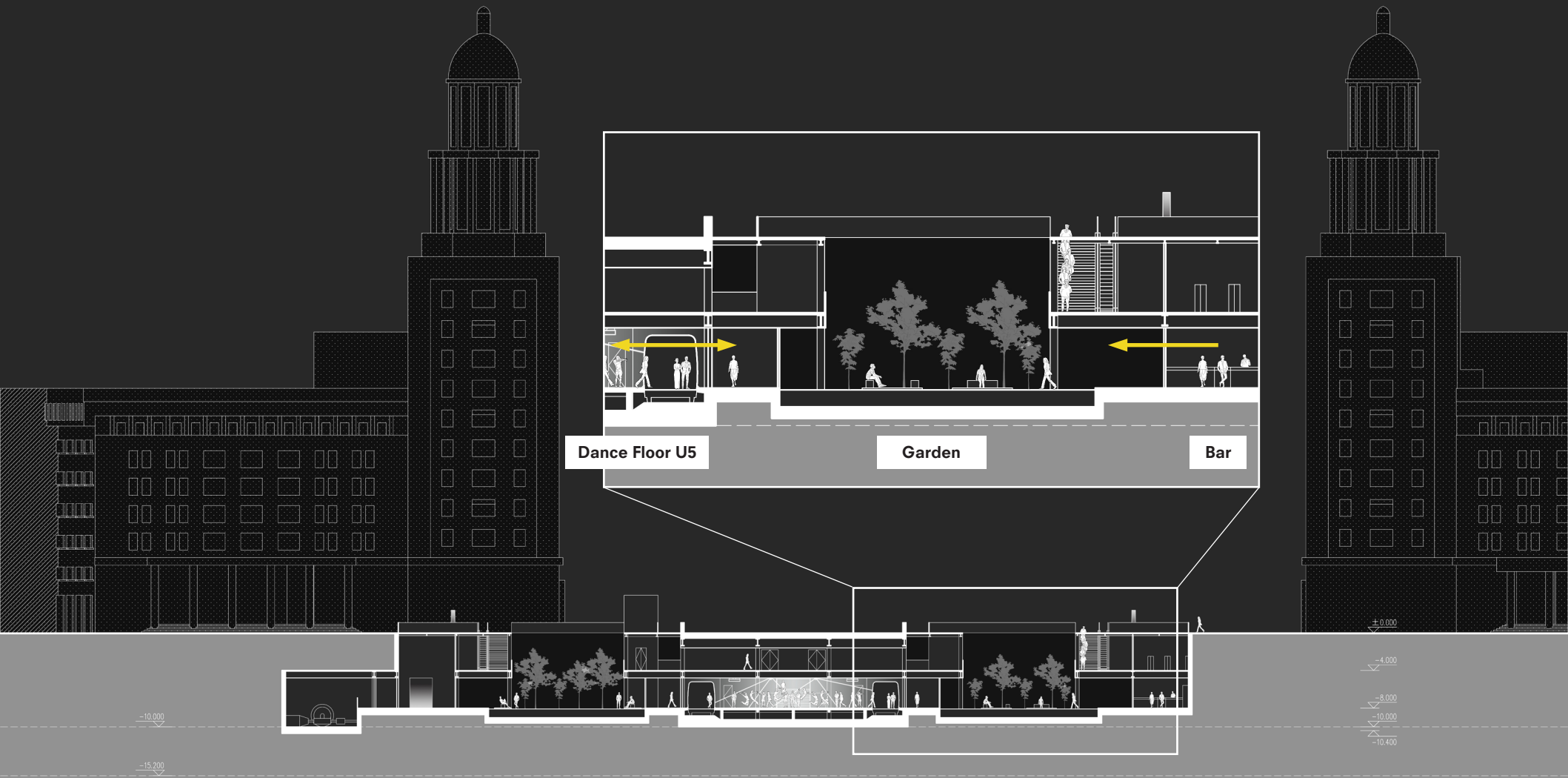
Metro Station To Night Live Venue

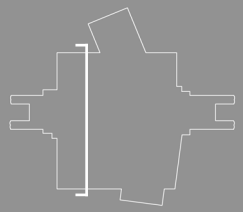
VISITOR FLOW



Metro Station To Night Live Venue

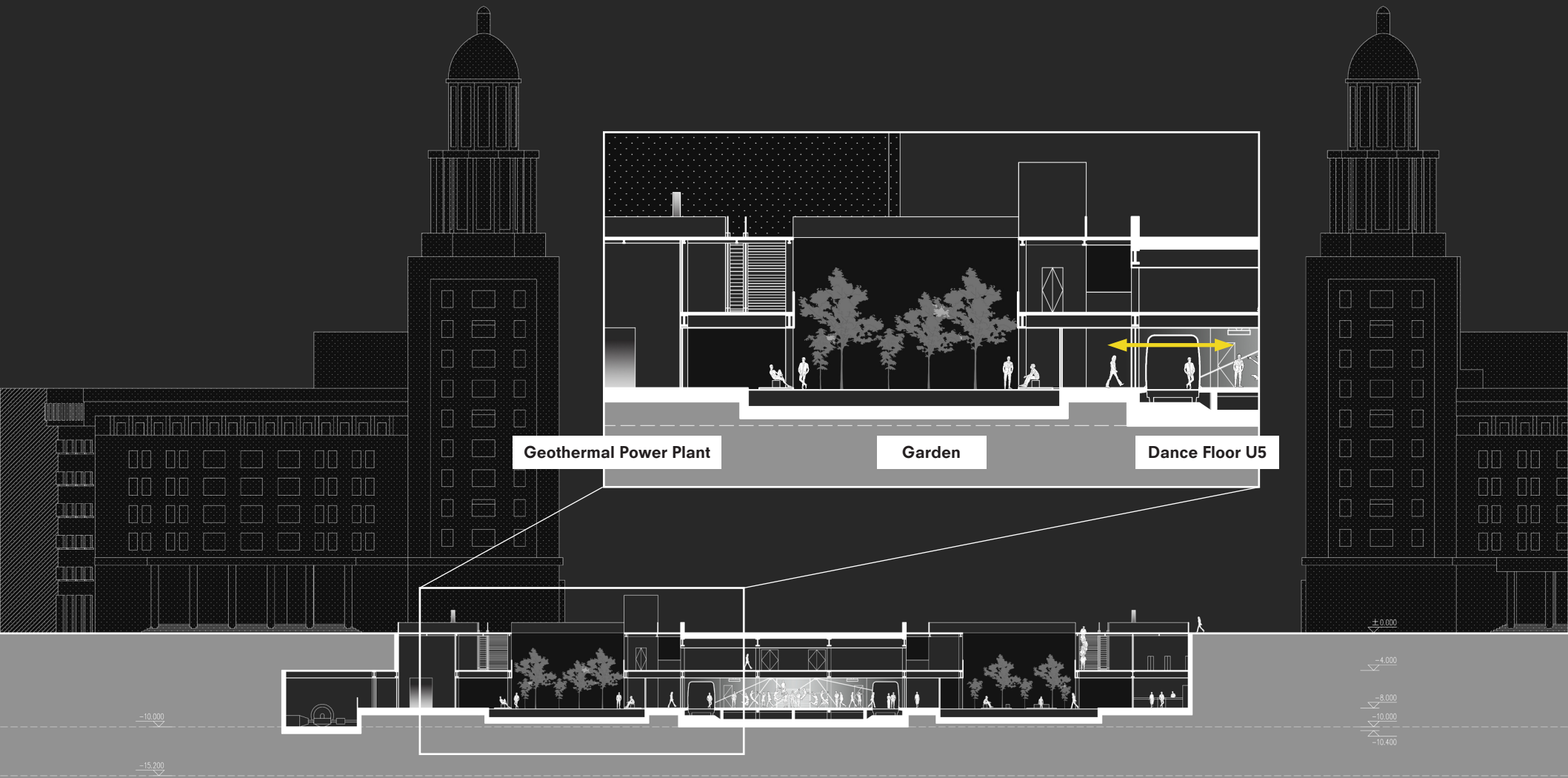
GARDEN





Metro Station To Night Live Venue

GARDEN



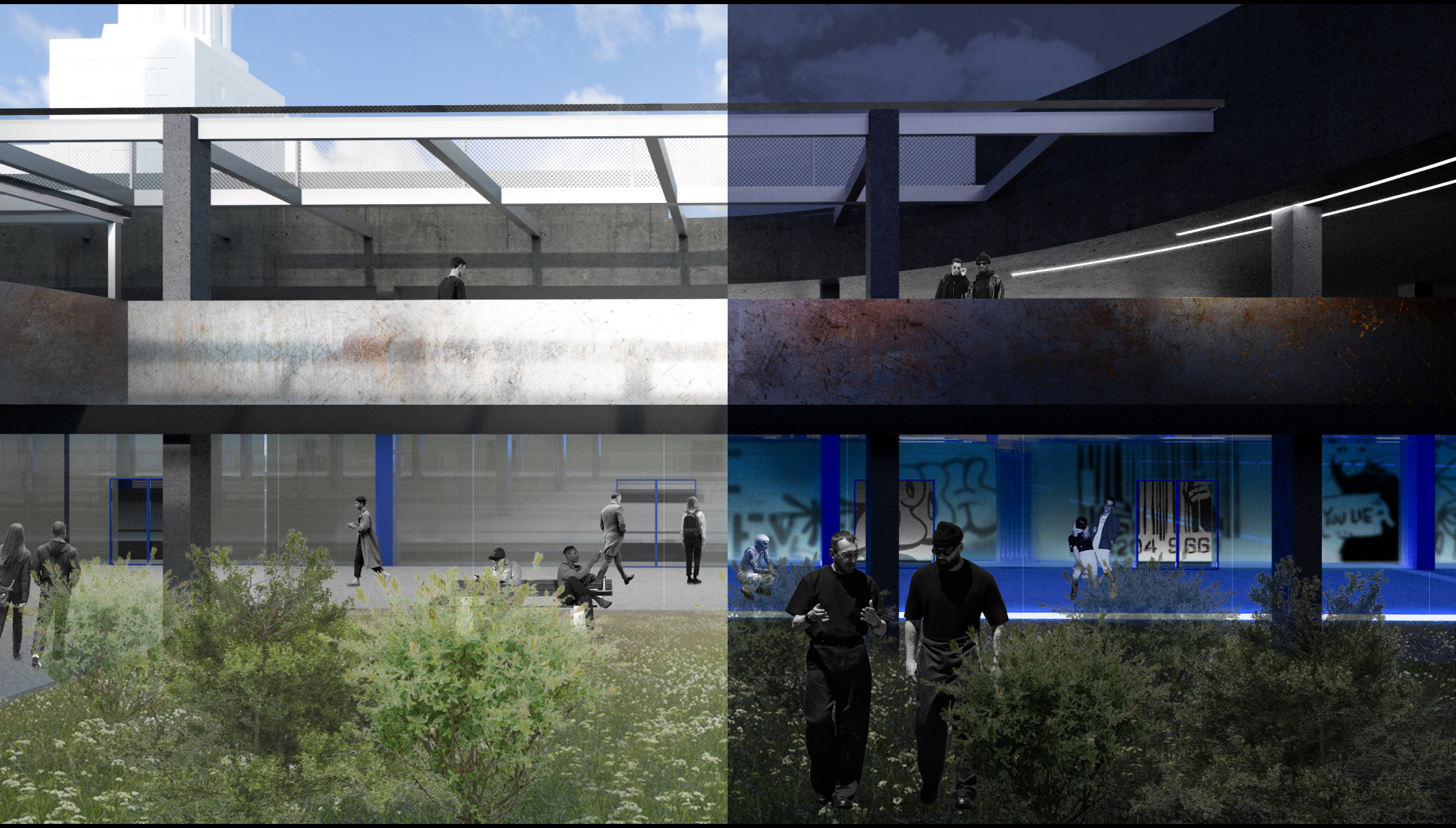
Metro Station To Night Live Venue

GARDEN



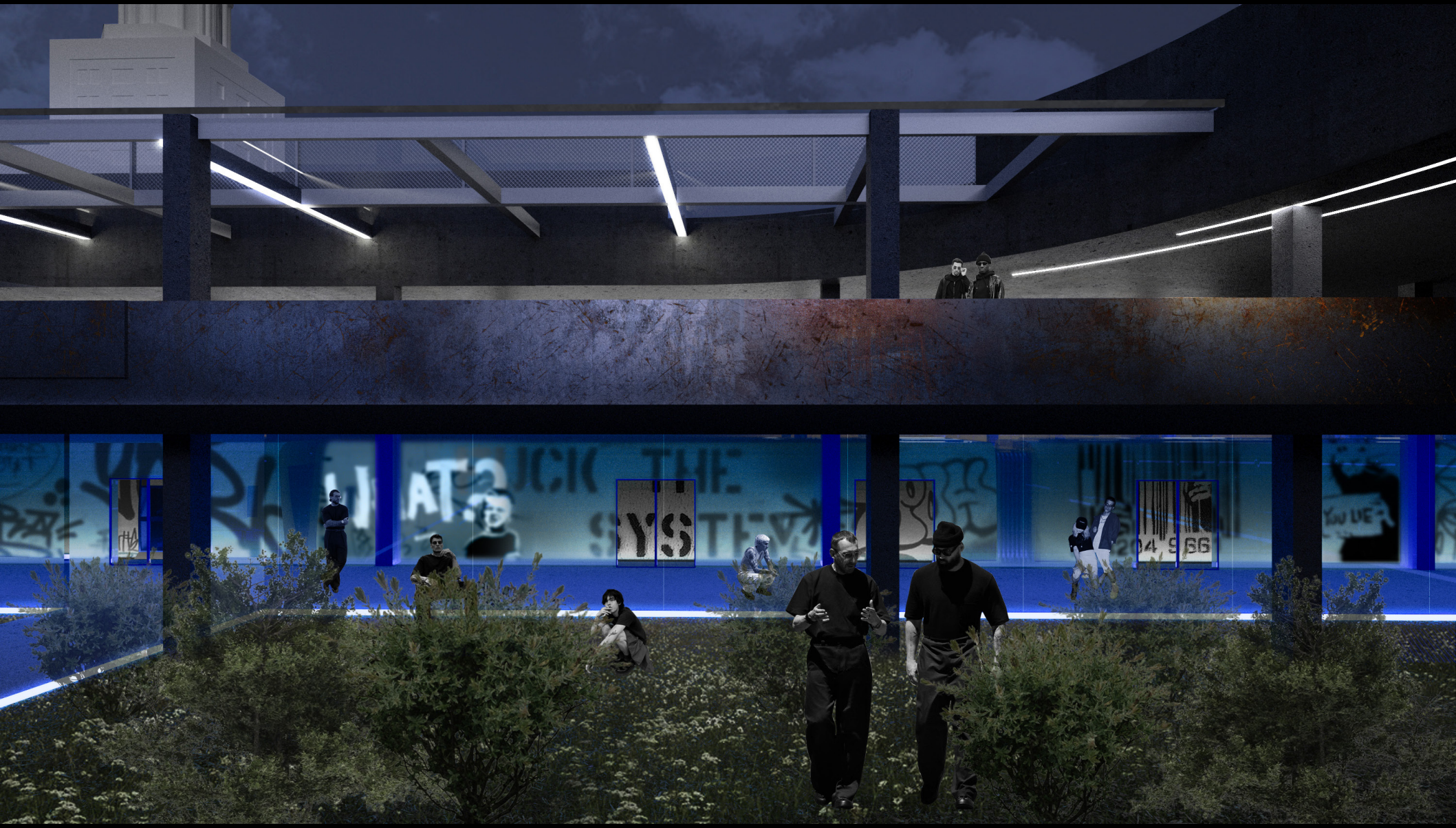
Metro Station To Night Live Venue

GARDEN



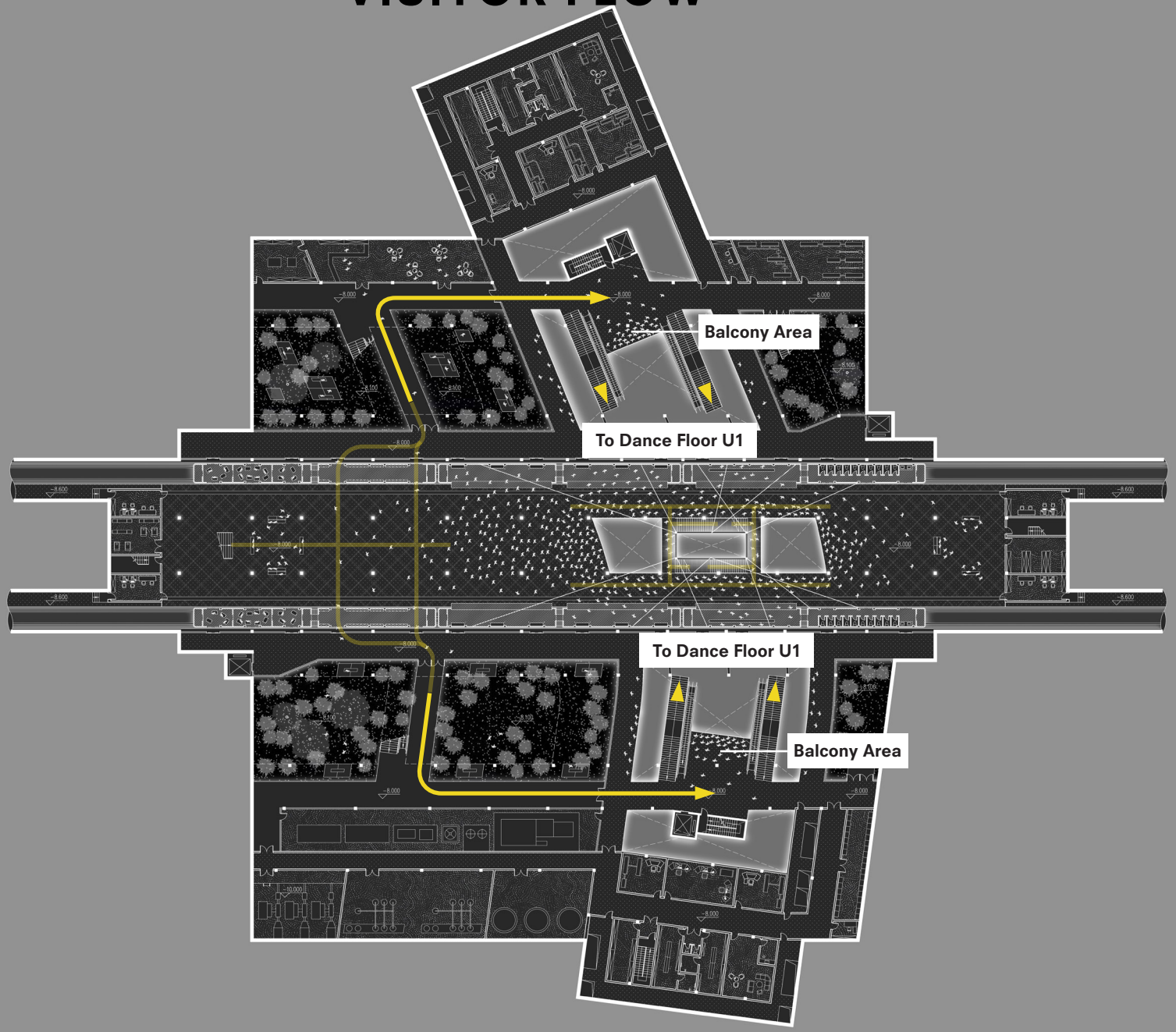
Metro Station To Night Live Venue

GARDEN



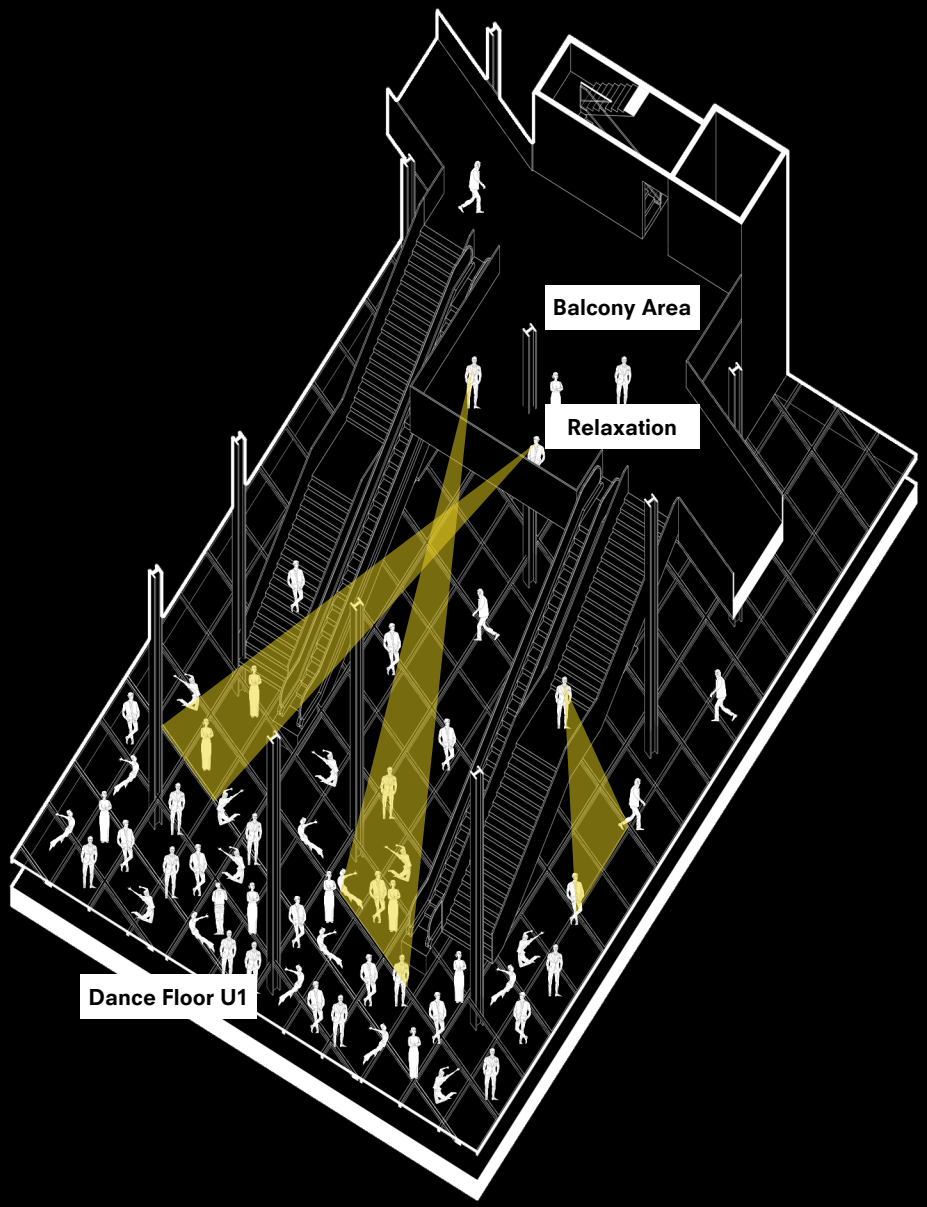
Metro Station To Night Live Venue

VISITOR FLOW



Metro Station To Night Live Venue

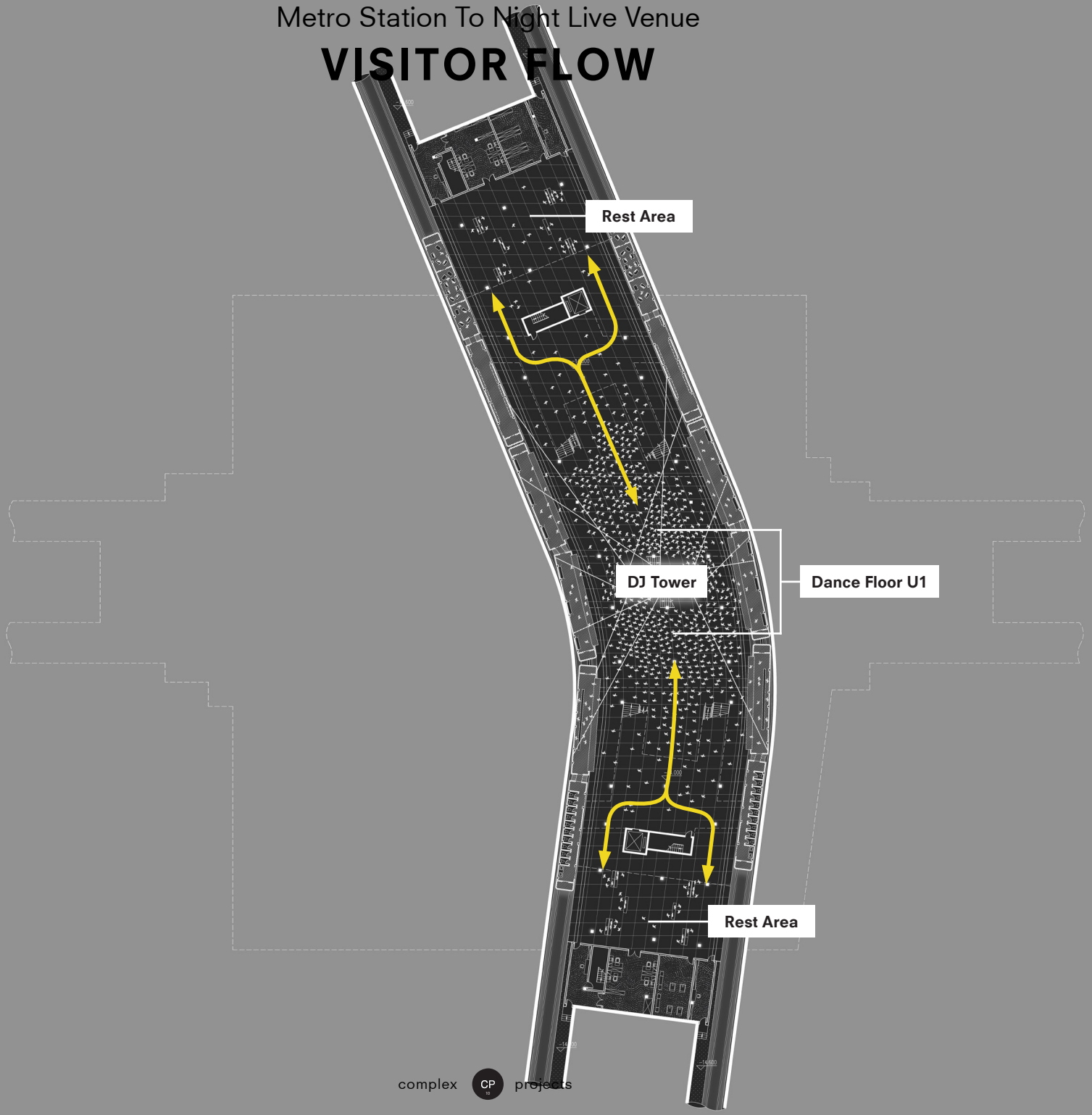
BALCONY AREA



People at balcony area can see the others dancing at dance floor U1.

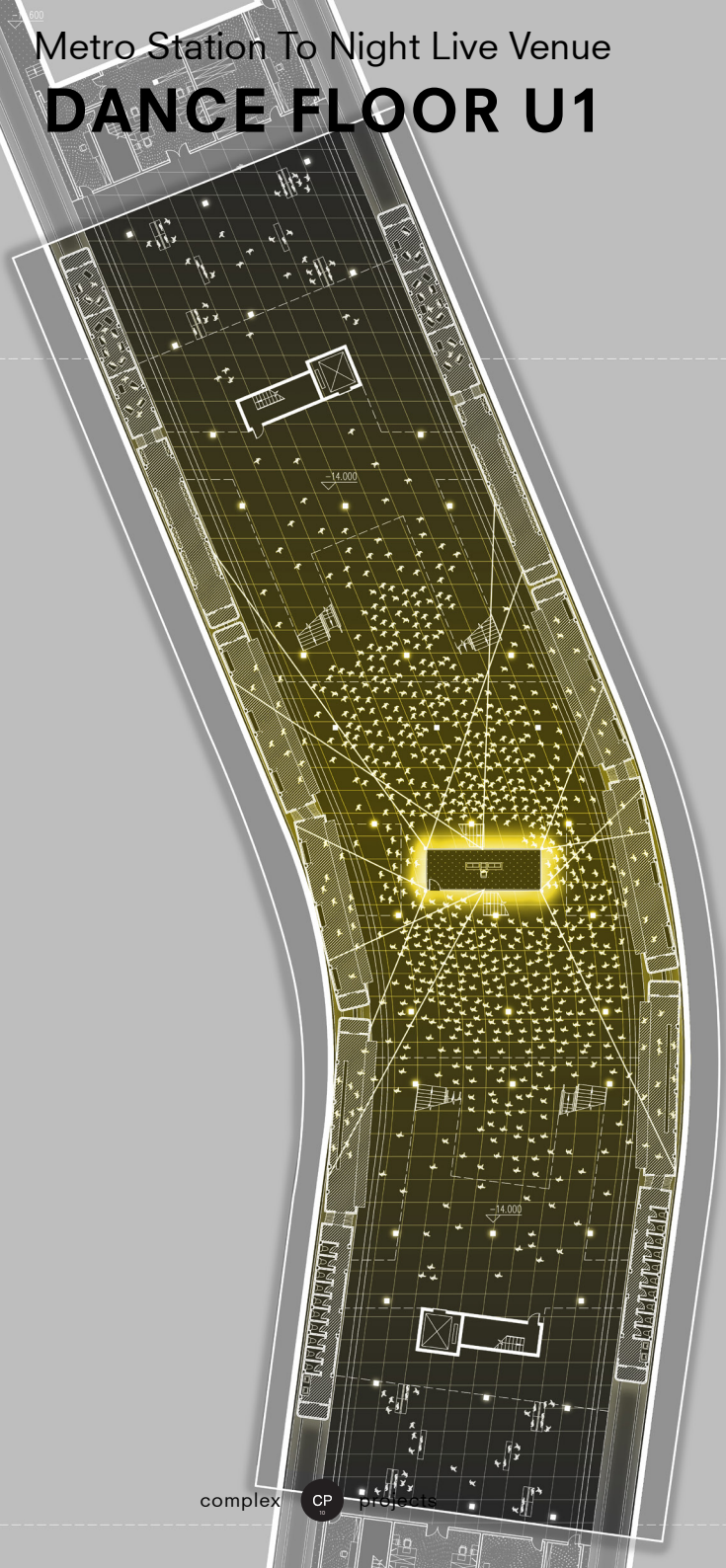
Metro Station To Night Live Venue

VISITOR FLOW



Metro Station To Night Live Venue

DANCE FLOOR U1



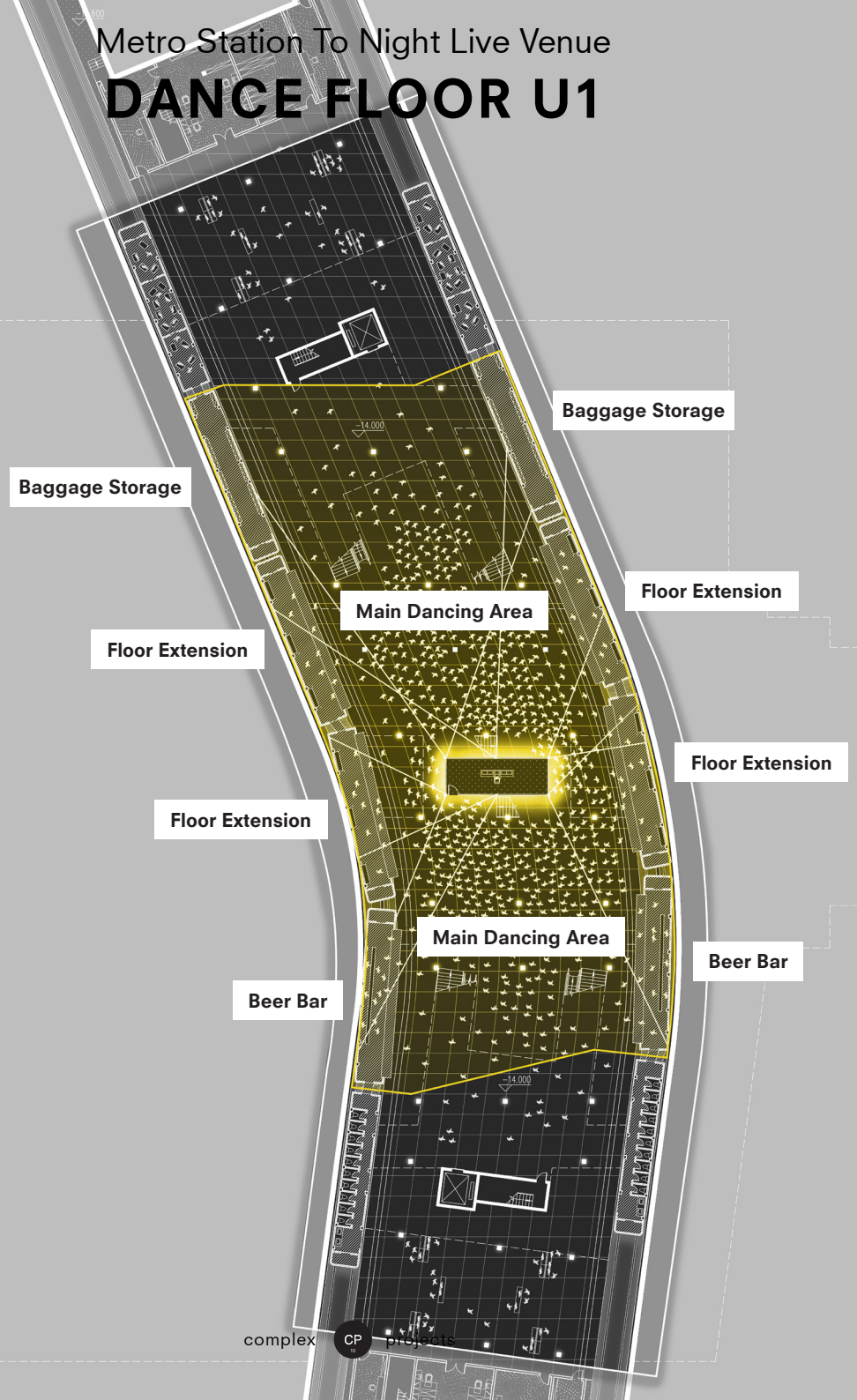
Metro Station To Night Live Venue

DANCE FLOOR U1



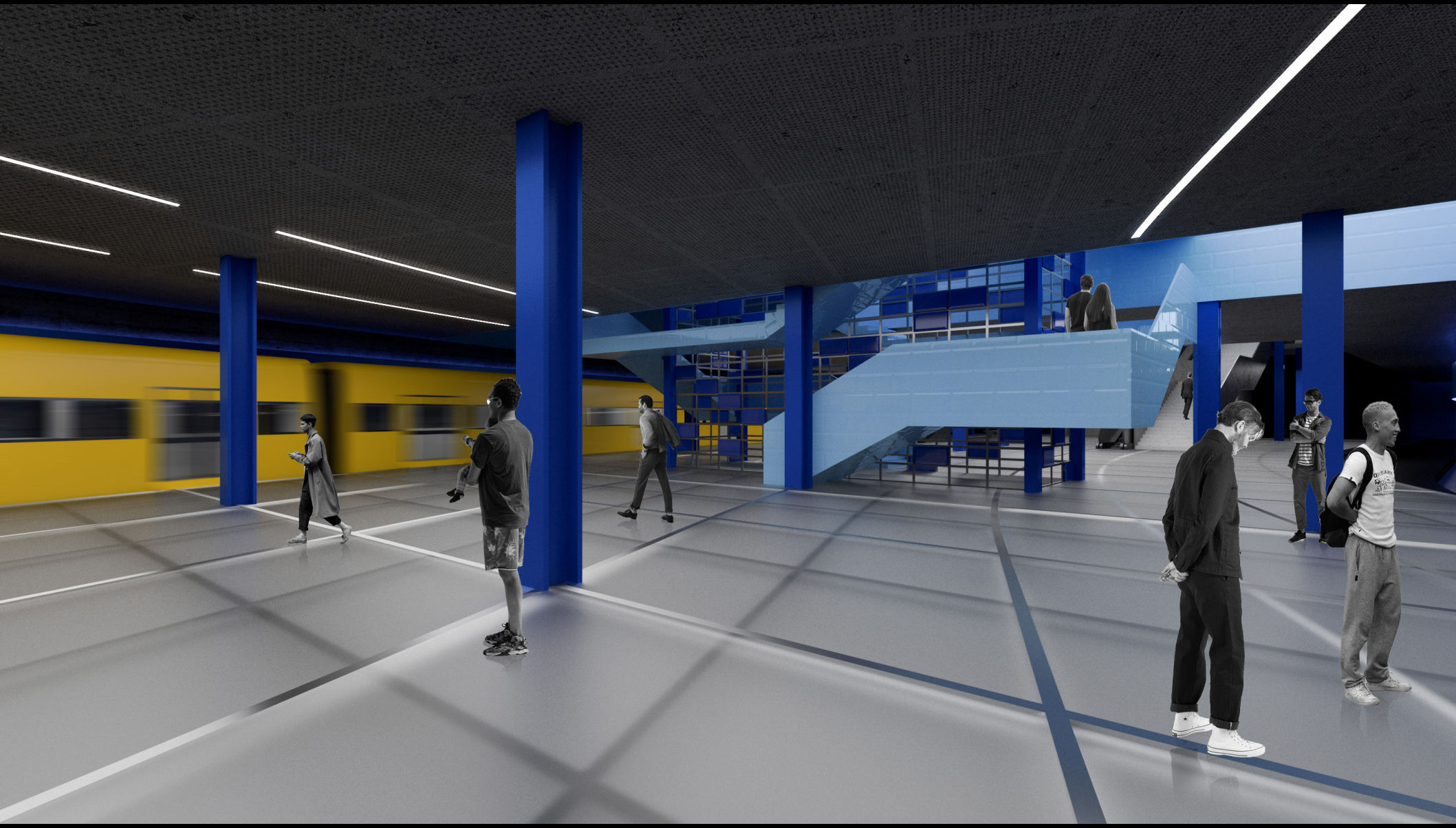
Metro Station To Night Live Venue

DANCE FLOOR U1



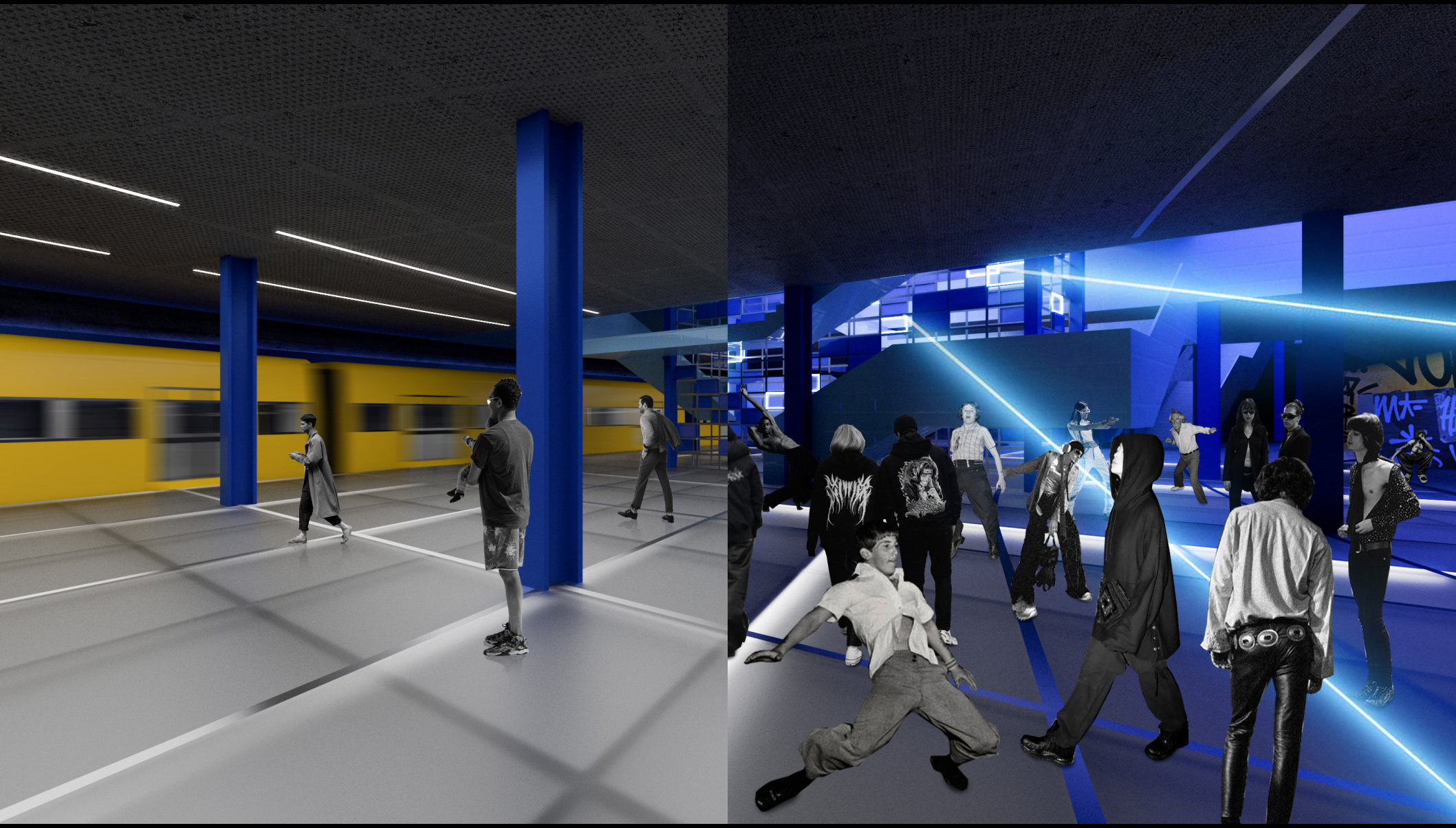
Metro Station To Night Live Venue

DANCE FLOOR U1



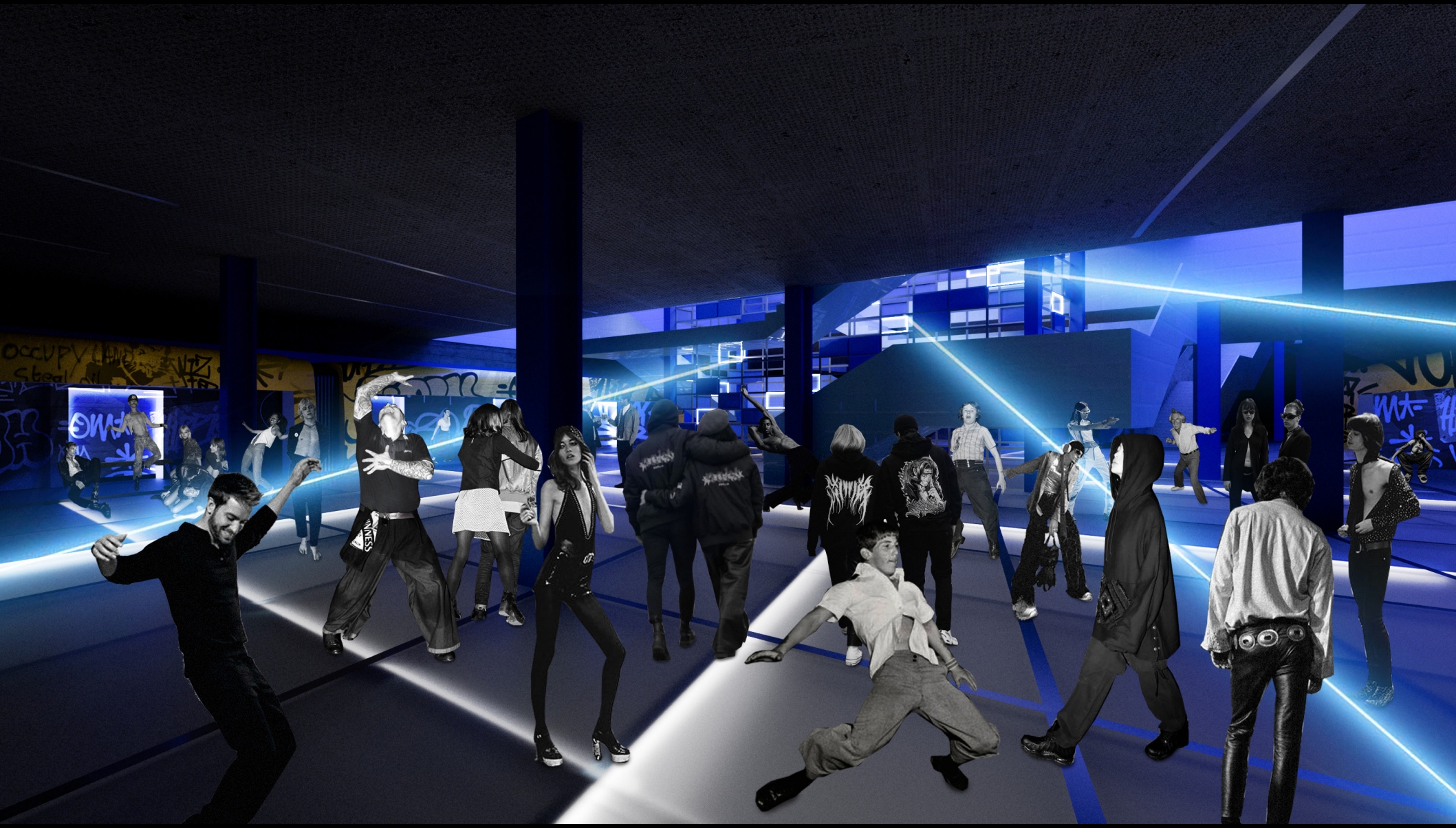
Metro Station To Night Live Venue

DANCE FLOOR U1



Metro Station To Night Live Venue

DANCE FLOOR U1



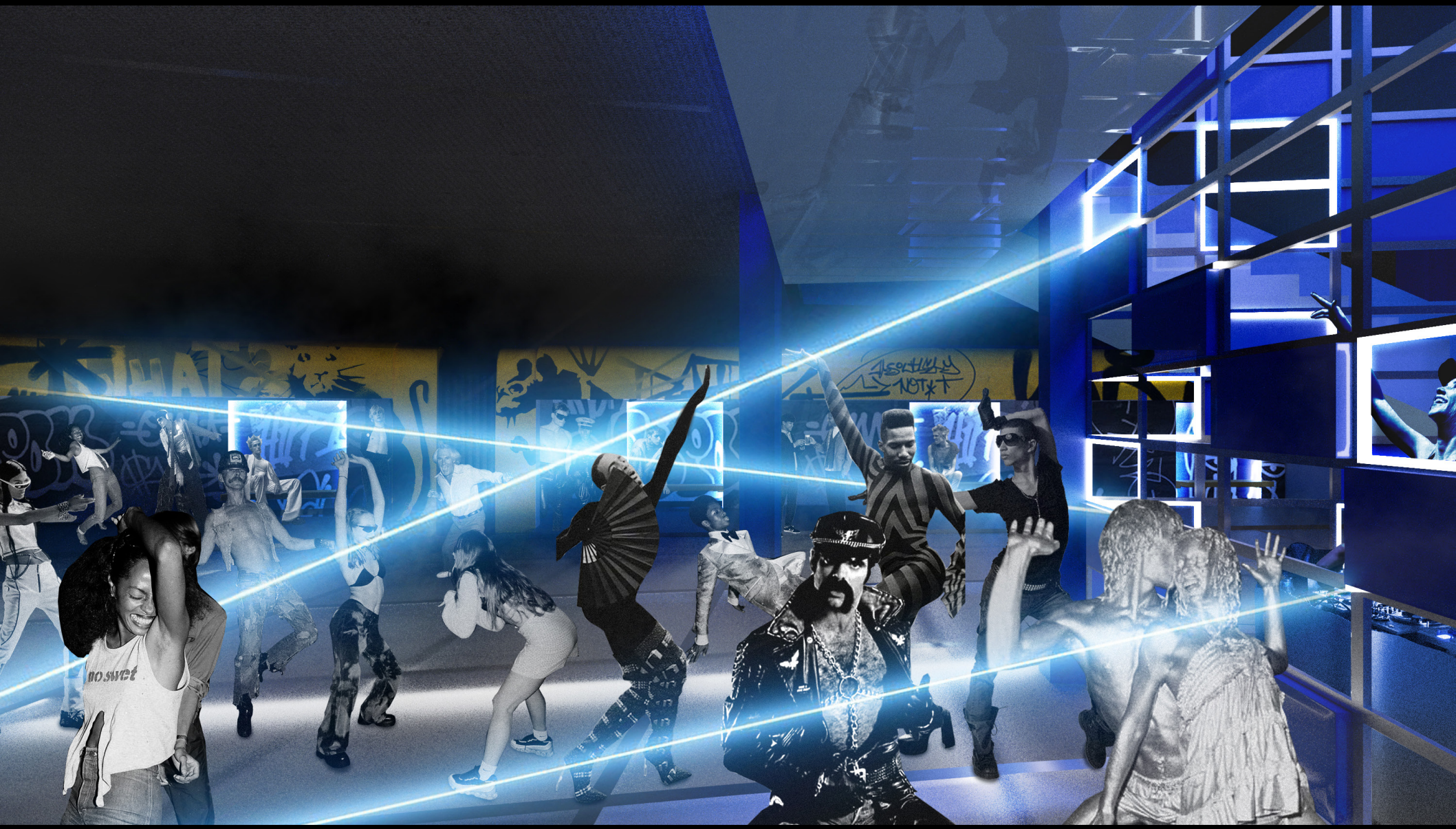
Metro Station To Night Live Venue

DANCE FLOOR U1



Metro Station To Night Live Venue

DANCE FLOOR U1



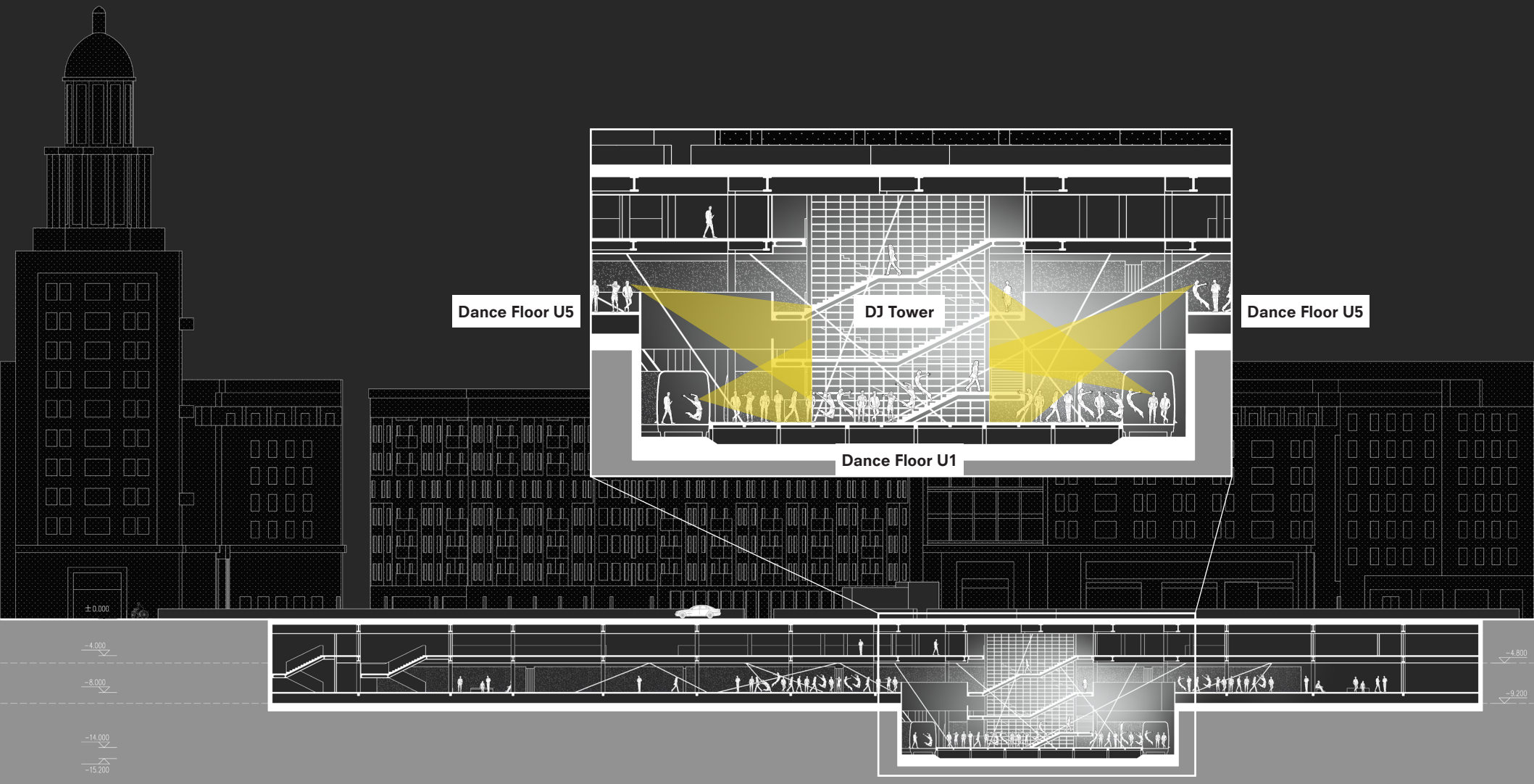
Metro Station To Night Live Venue

DANCE FLOOR U1



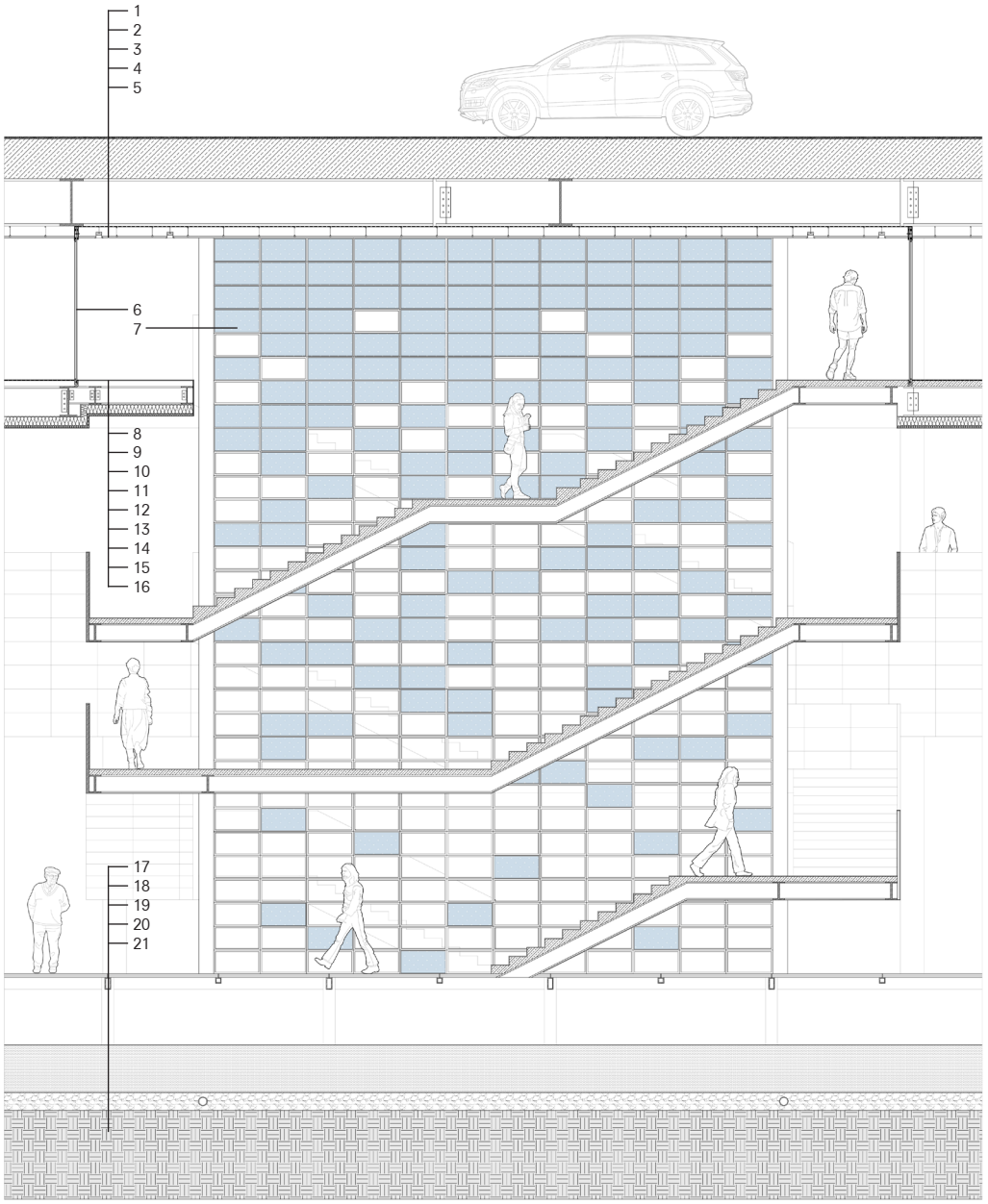
Metro Station To Night Live Venue

DJ TOWER

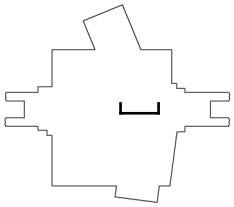


Metro Station To Night Live Venue

DJ TOWER



1 Asphalt Layer
2 Cast-in-situ Concrete Flyover (2% Slope)
3 Steel Beam 800mm
4 Hanging Bar
5 Concrete Ceiling Board 10mm
6 Sound Insulating Laminated Glass Wall (10-10-18-10mm)
7 Tile From The Original Platform Wall
8 Self-leveling Concrete Layer 5mm
9 Insulating Foam Layer
10 Concrete Floor Slab 100mm
11 Steel Beam 500mm
12 Anti-vibration Pad 10mm
13 Polyester (24kg/m3) 150mm
14 Steel 0.6mm
15 Polyester (100kg/m3) 30mm
16 Perforated Steel 1mm
17 3-layer Reinforced Frosted Glass Floor
18 Box Steel Beam
19 Reinforced Concrete Foundation 800mm
20 Gravel Layer 300mm
21 Soil



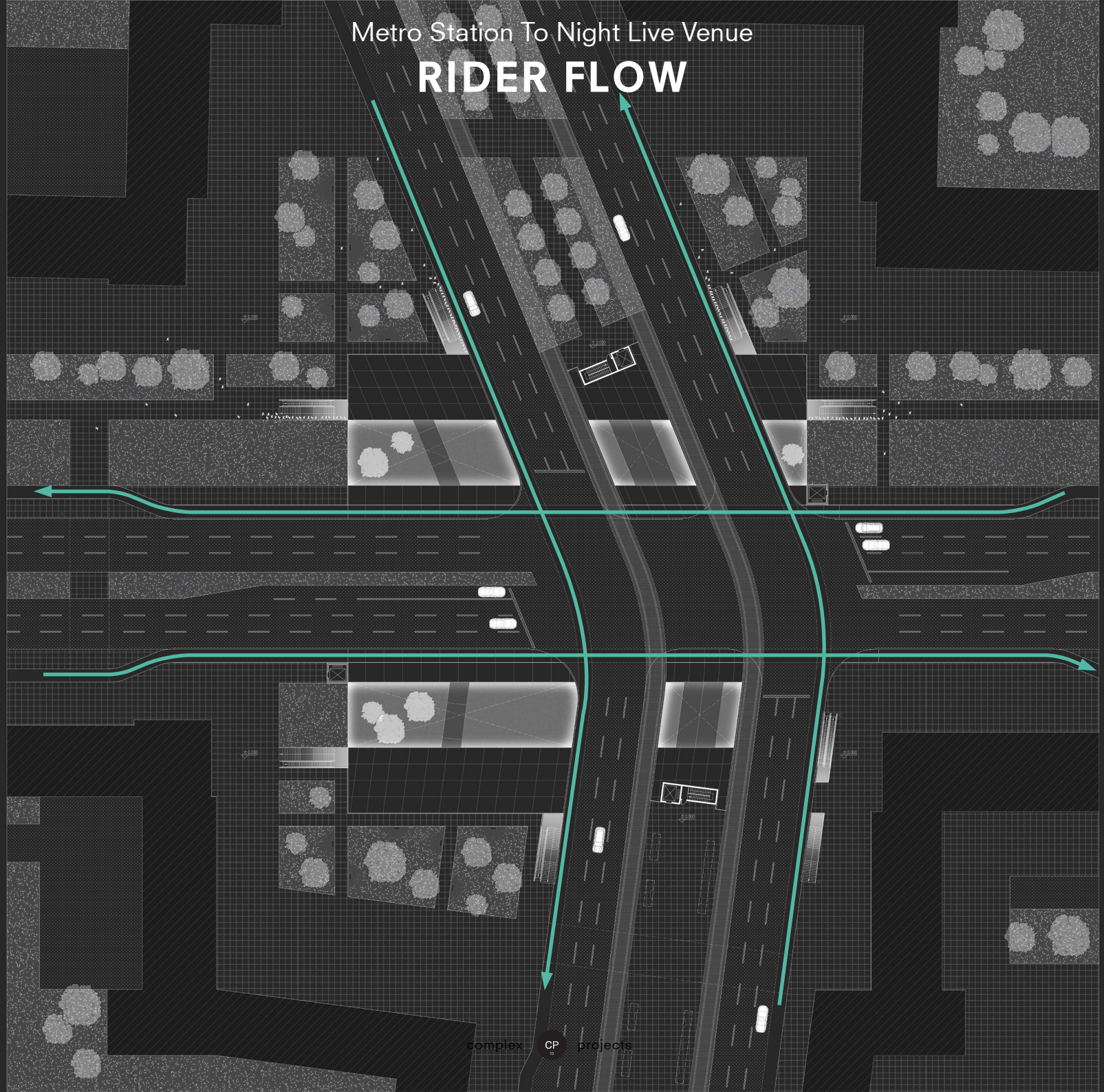
Metro Station To Night Live Venue

TILE RECYCLE



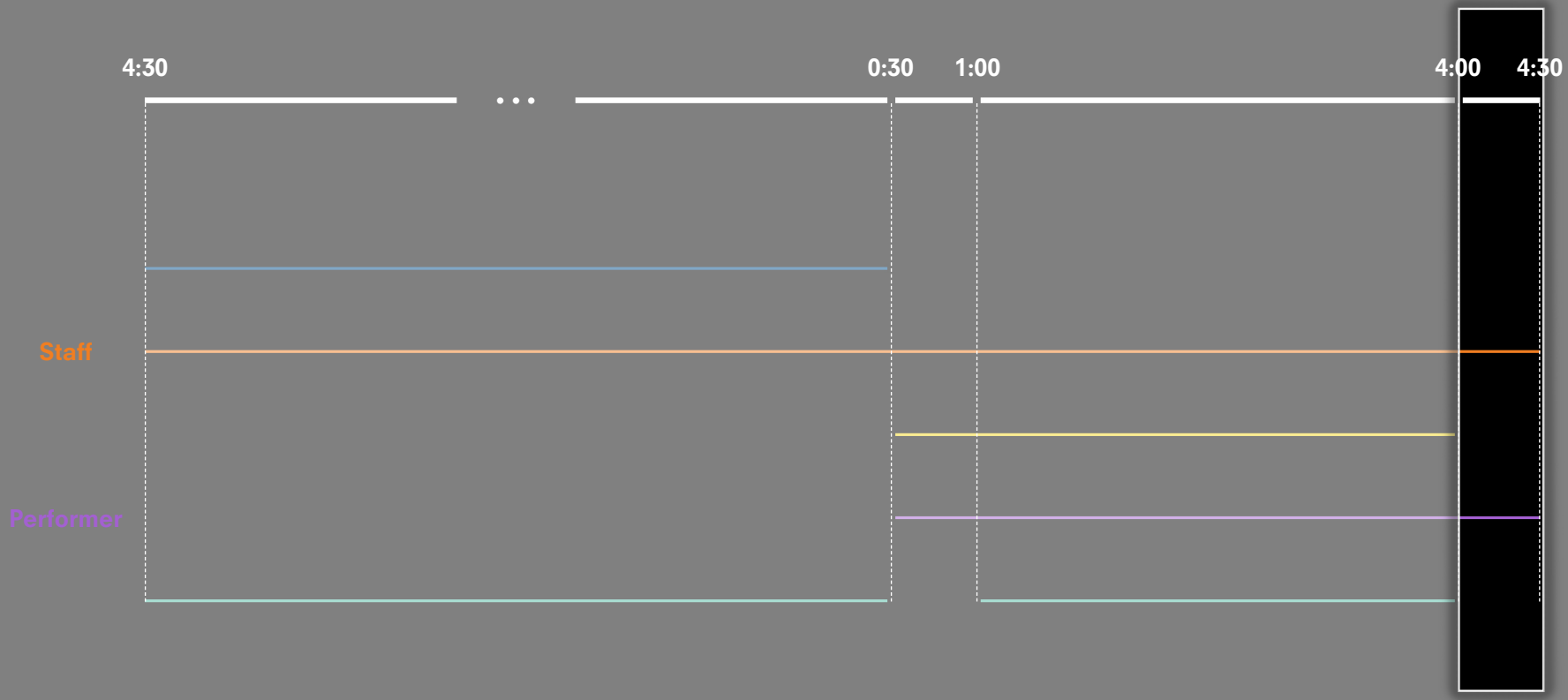
Metro Station To Night Live Venue

RIDER FLOW



Metro Station To Night Live Venue

TIME TO SWITCH BACK



Metro Station To Night Live Venue

CLEANING



INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

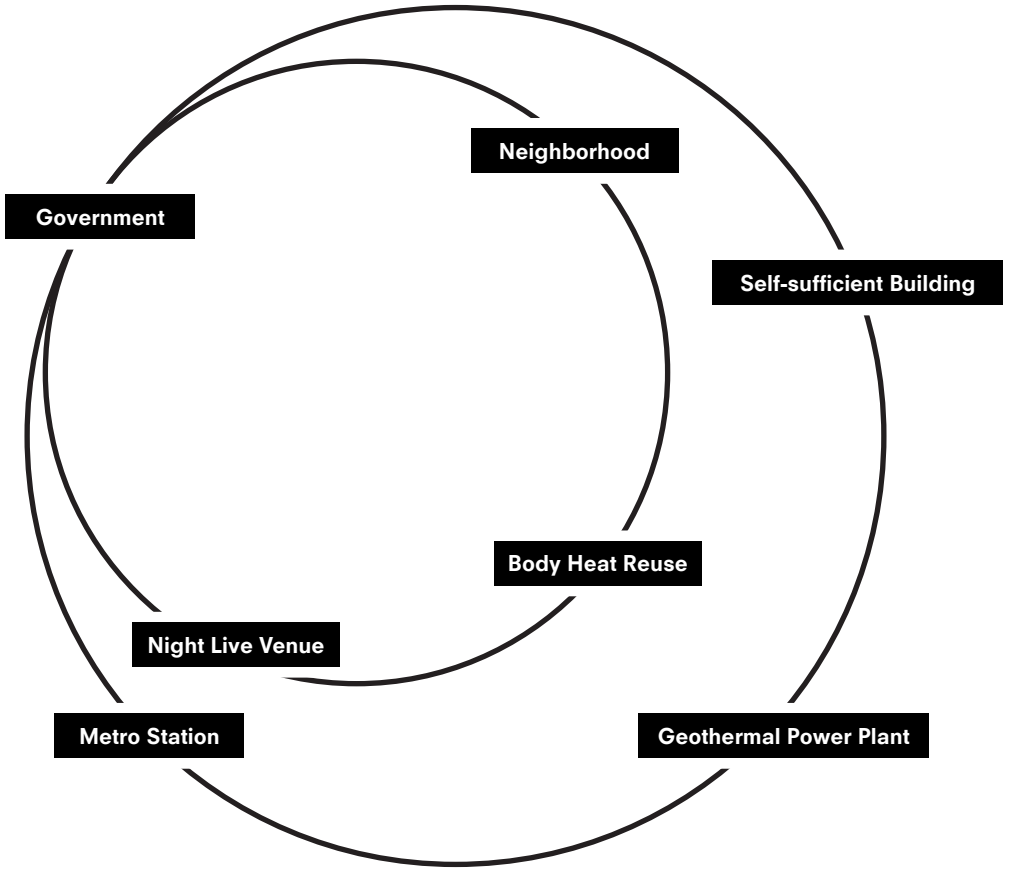
CLIMATE

STRUCTURE

DEVELOPMENT

CONCLUSION

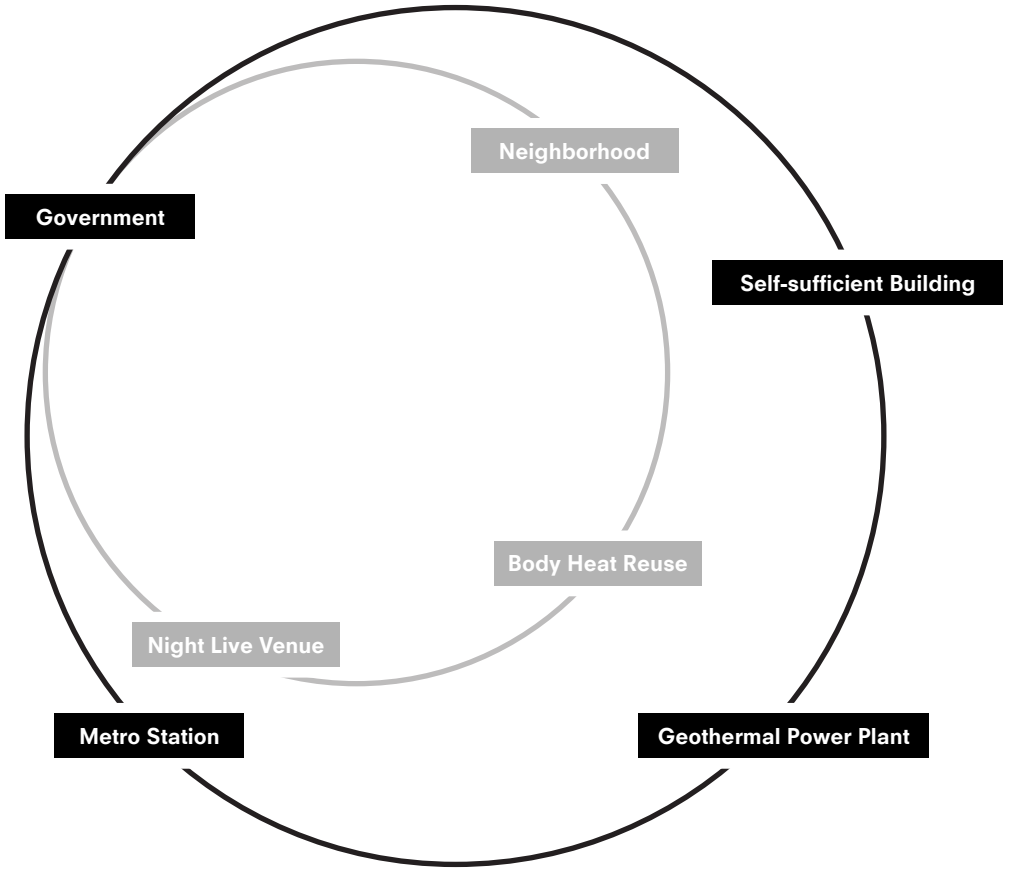
ENERGY CIRCLE



Two energy circles are established by collaboration of different parties.

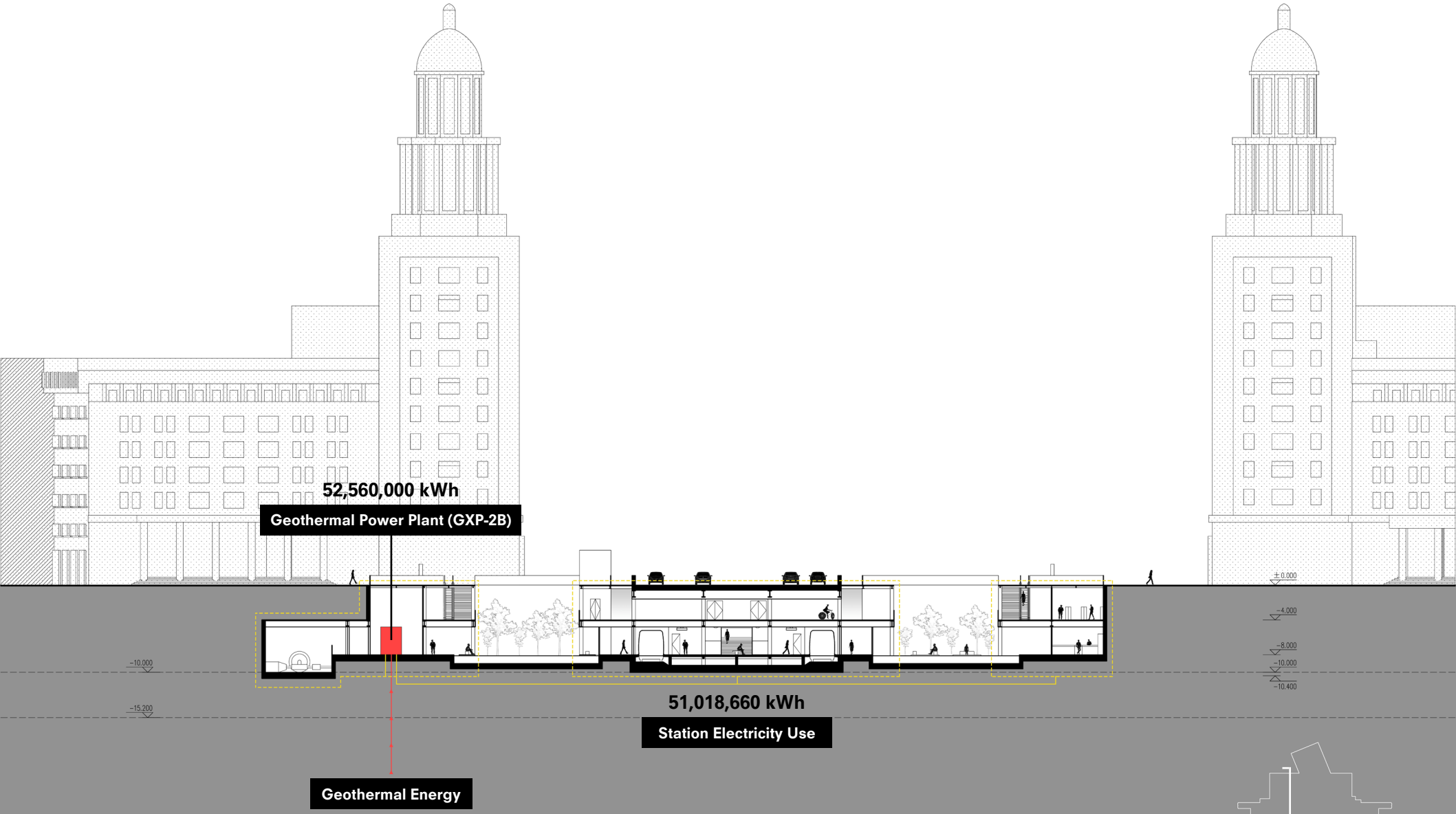
Climate

ENERGY CIRCLE

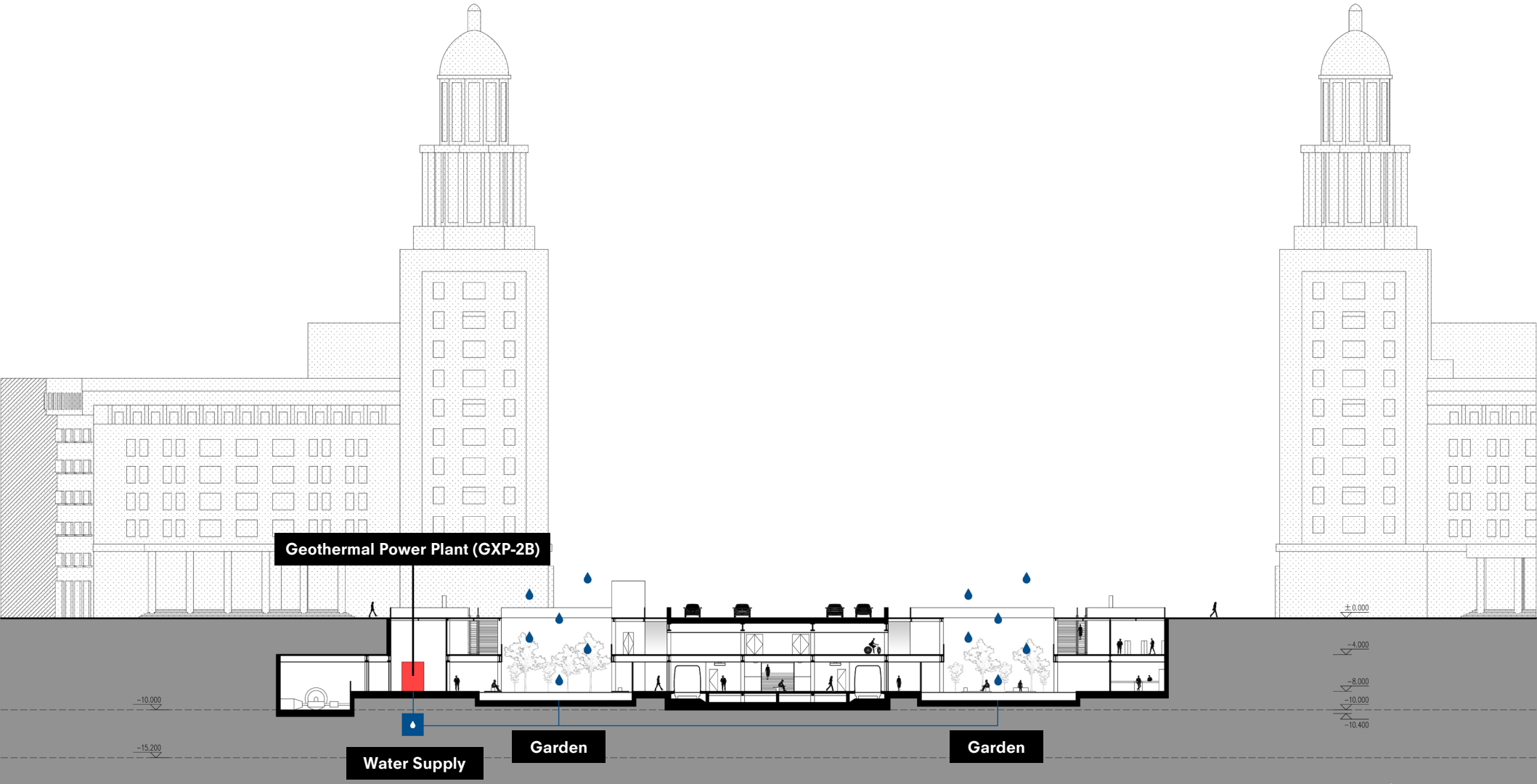


A geothermal power plant is used to facilitate the building to be self-sufficient.

ACTIVE ENERGY GENERATION

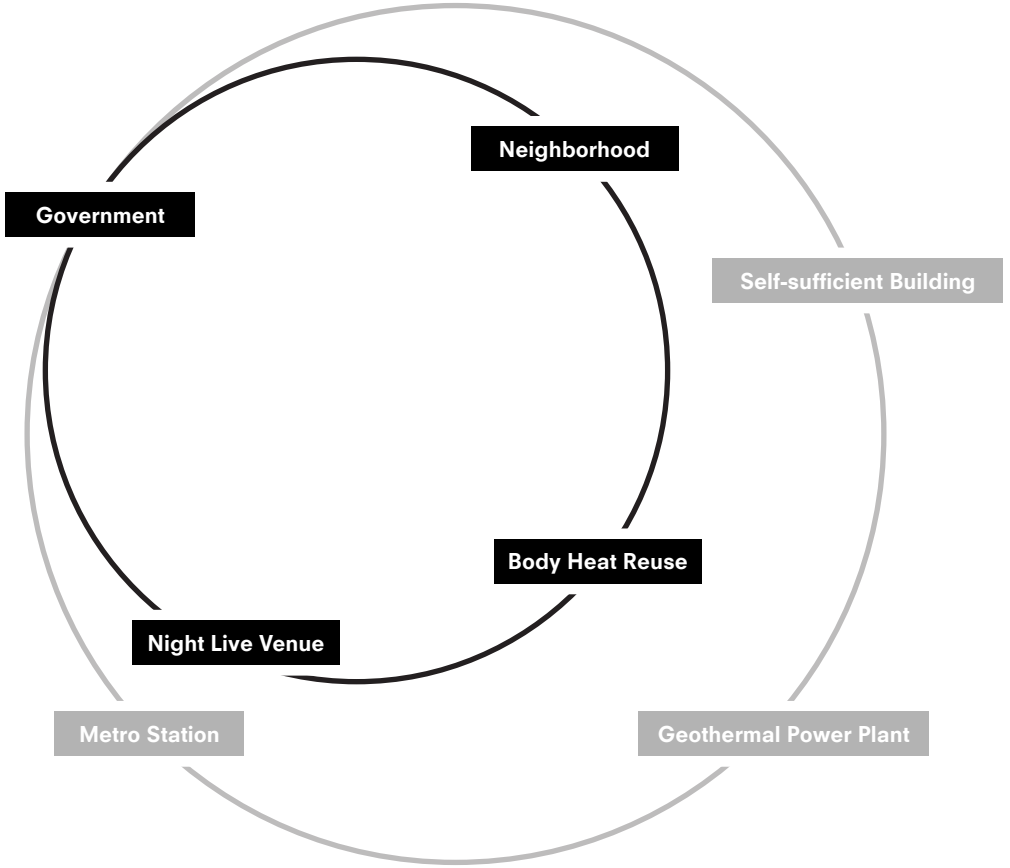


RAINWATER COLLECTING



Climate

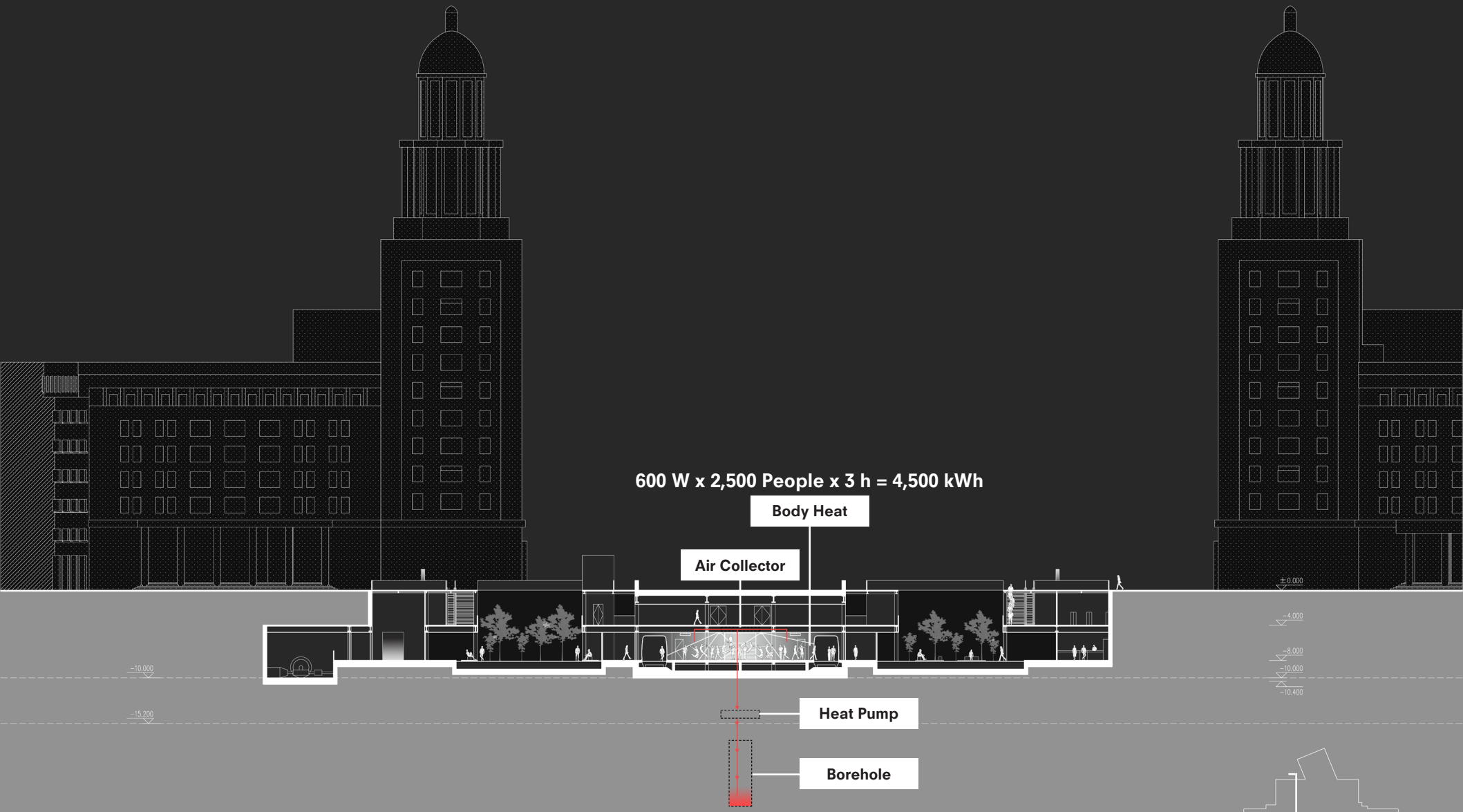
ENERGY CIRCLE



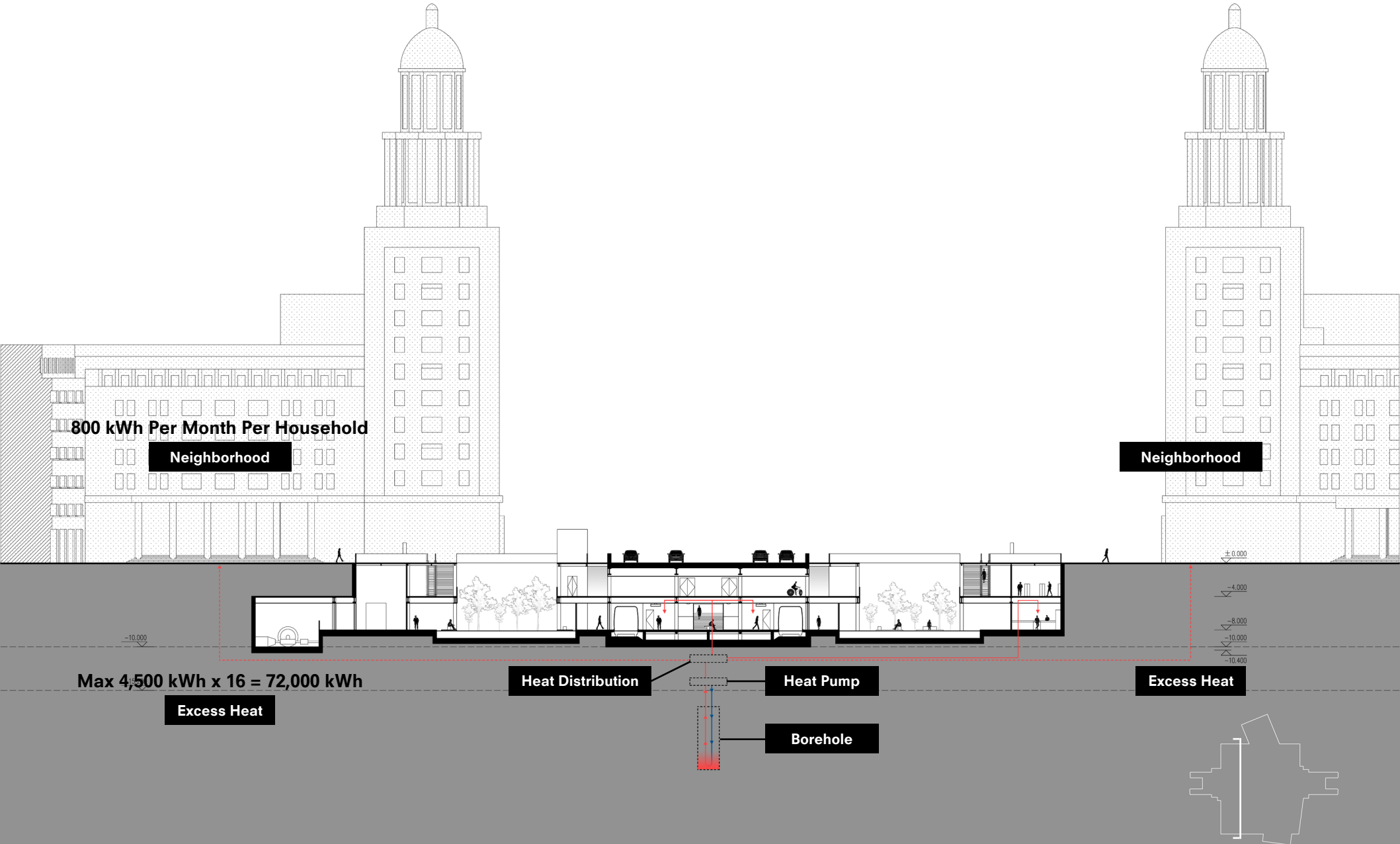
The energy of dancing people is harvested to further support the building and bring benefits to the neighborhood.

Climate

BODY ENERGY RECYCLE

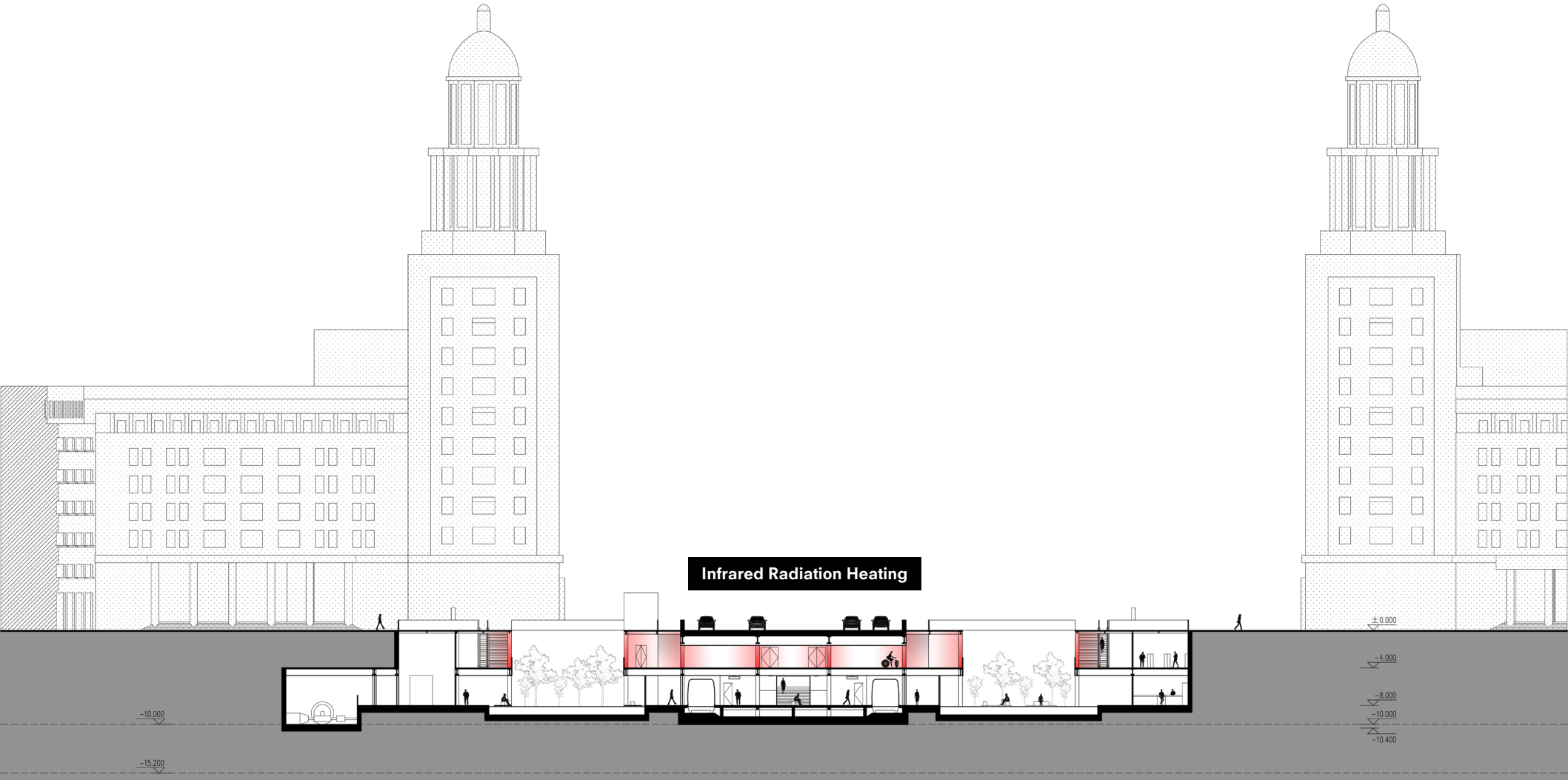


HEATING


800 kWh Per Month Per Household
Neighborhood
Neighborhood
Max 4,500 kWh x 16 = 72,000 kWh
Excess Heat
Heat Distribution
Heat Pump
Borehole
Excess Heat
±0.000
−4.000
−8.000
−10.000
−10.400
−10.000

Climate

HEATING



INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

CLIMATE

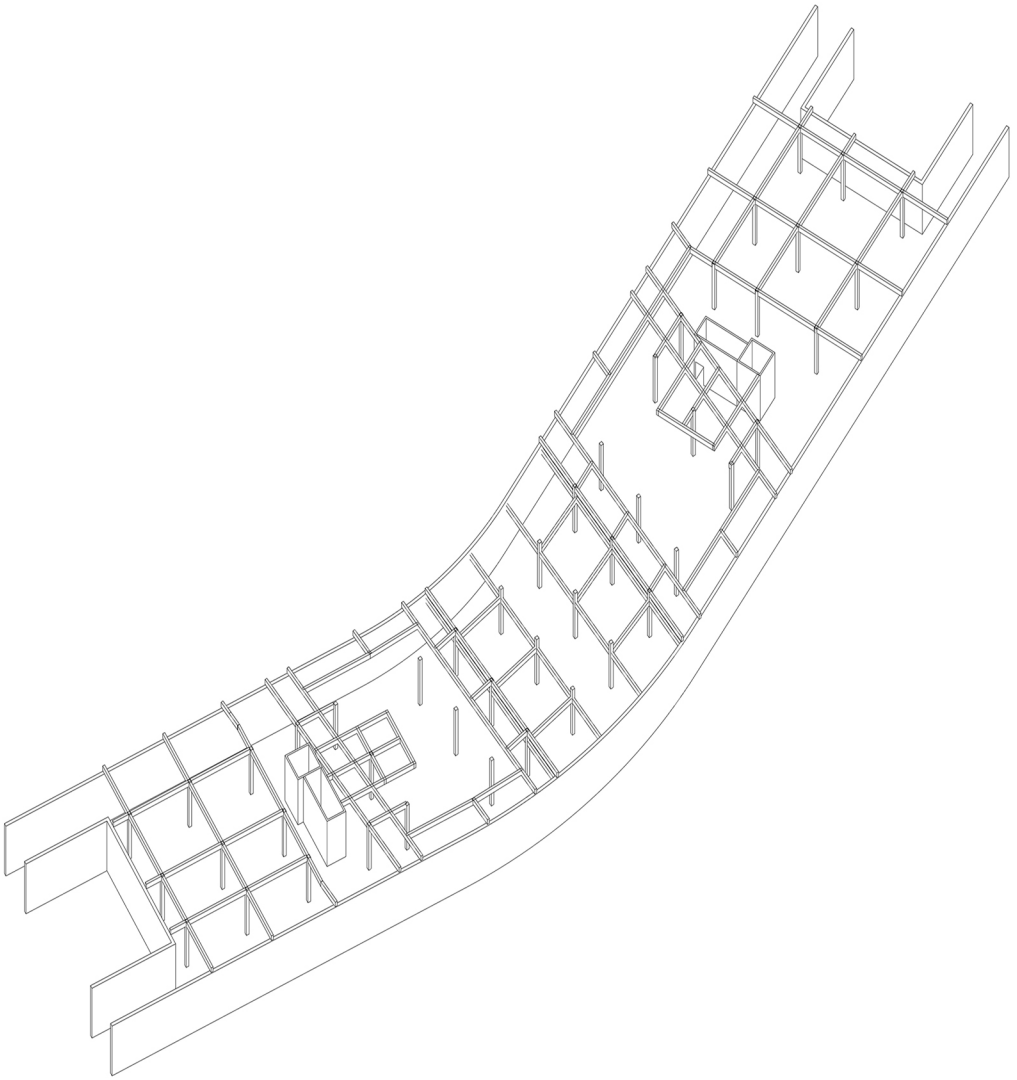
STRUCTURE

DEVELOPMENT

CONCLUSION

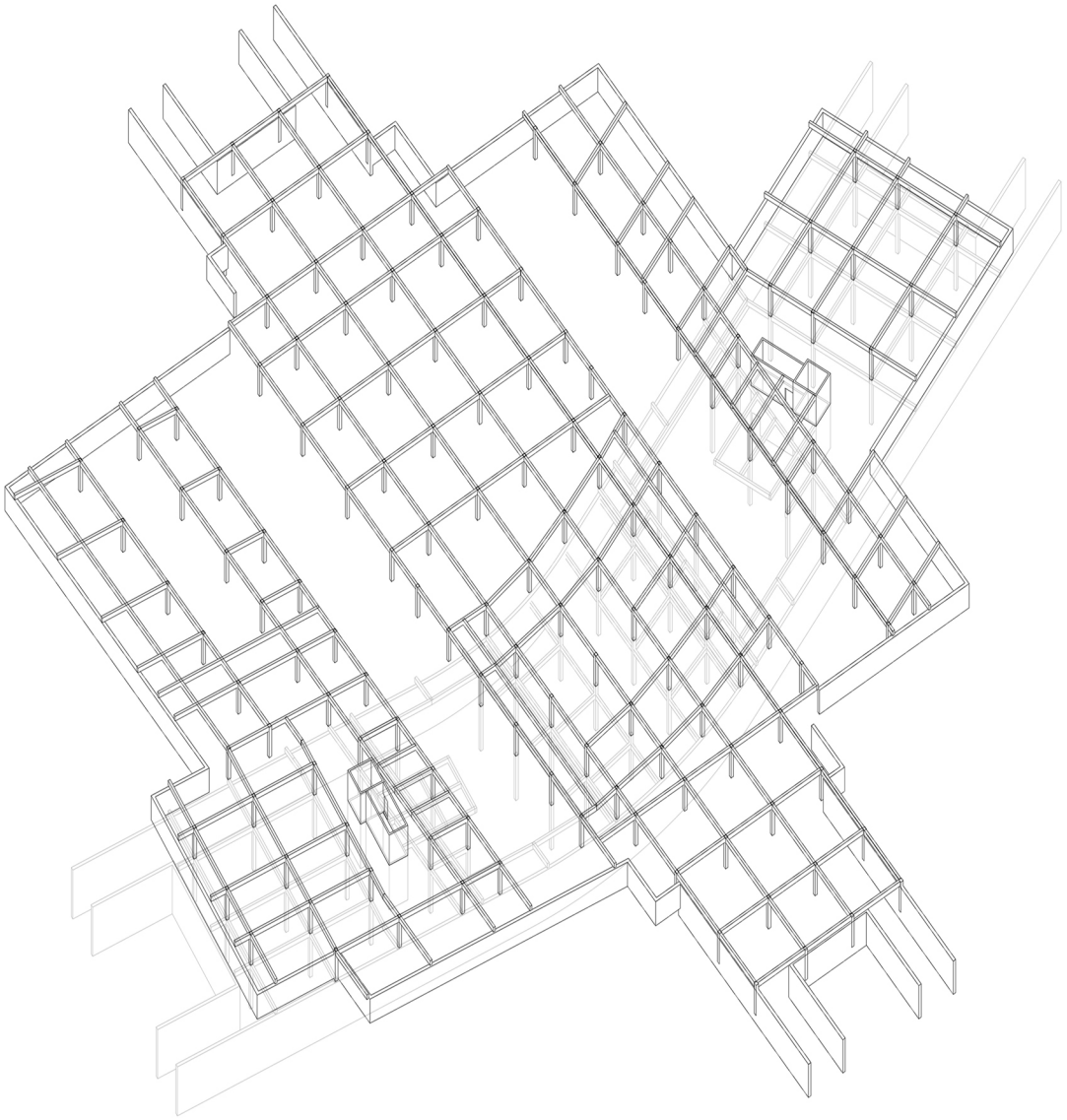
Structure

B3 FLOOR



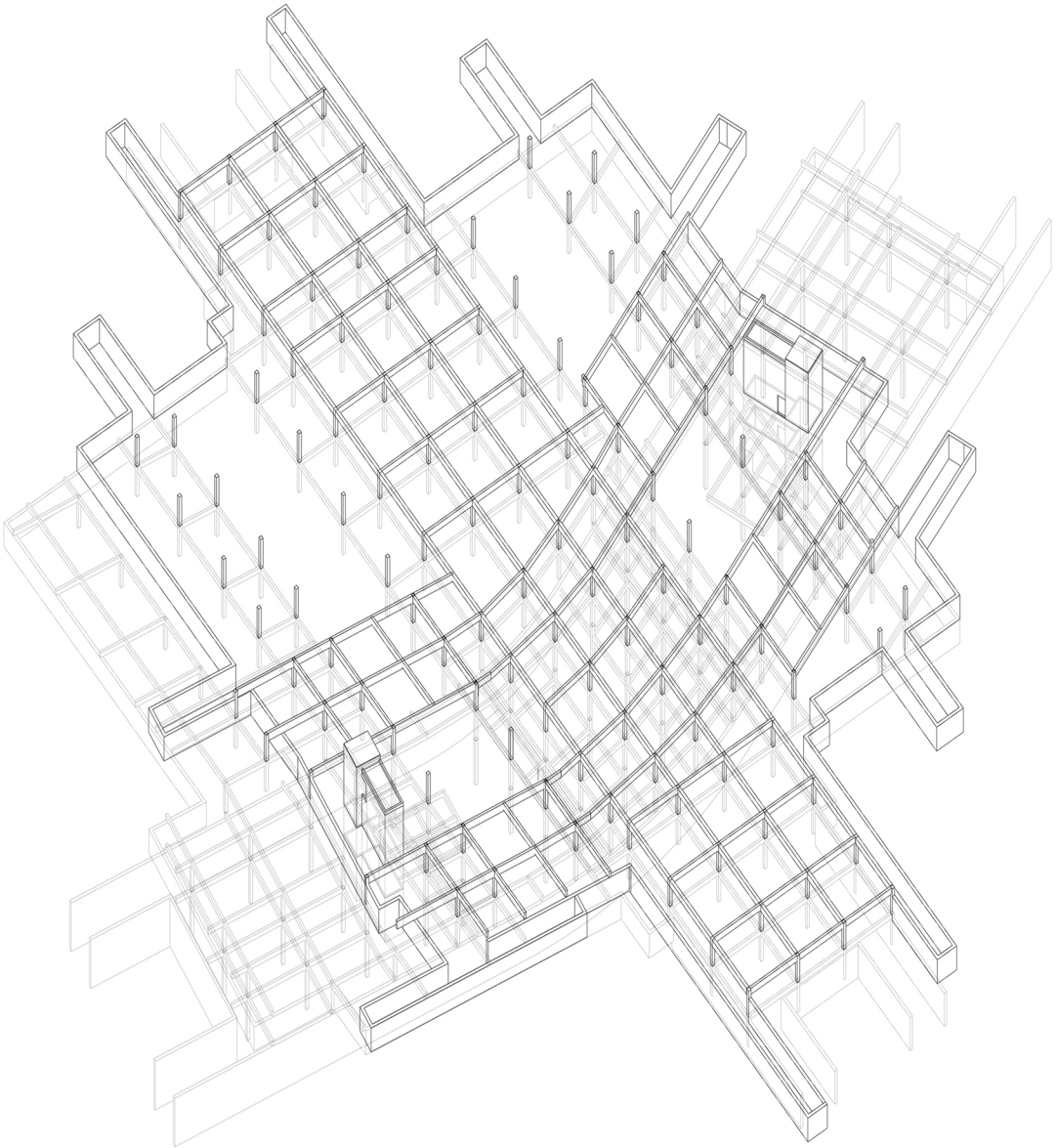
Structure

B2 FLOOR



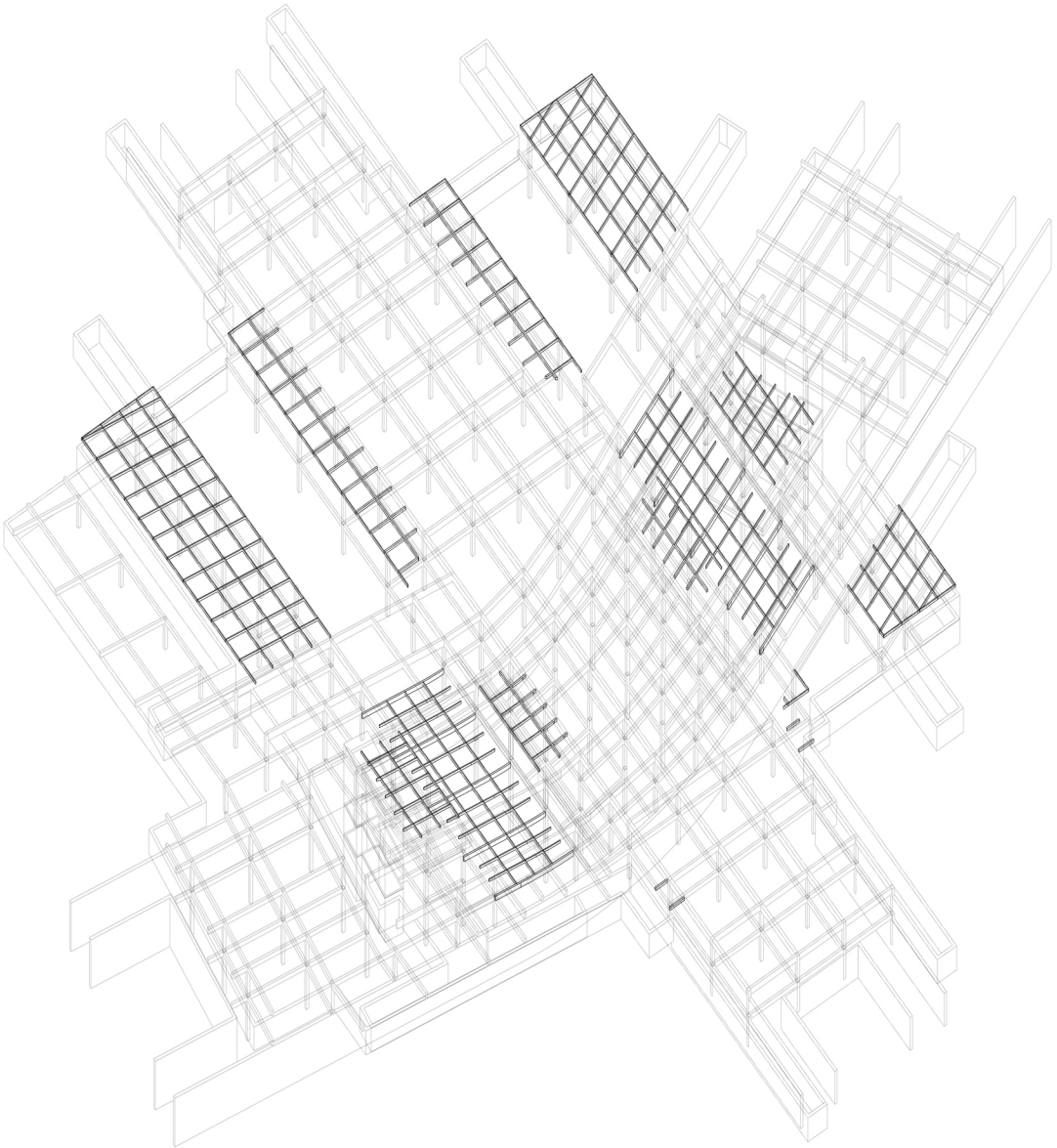
Structure

B1 FLOOR

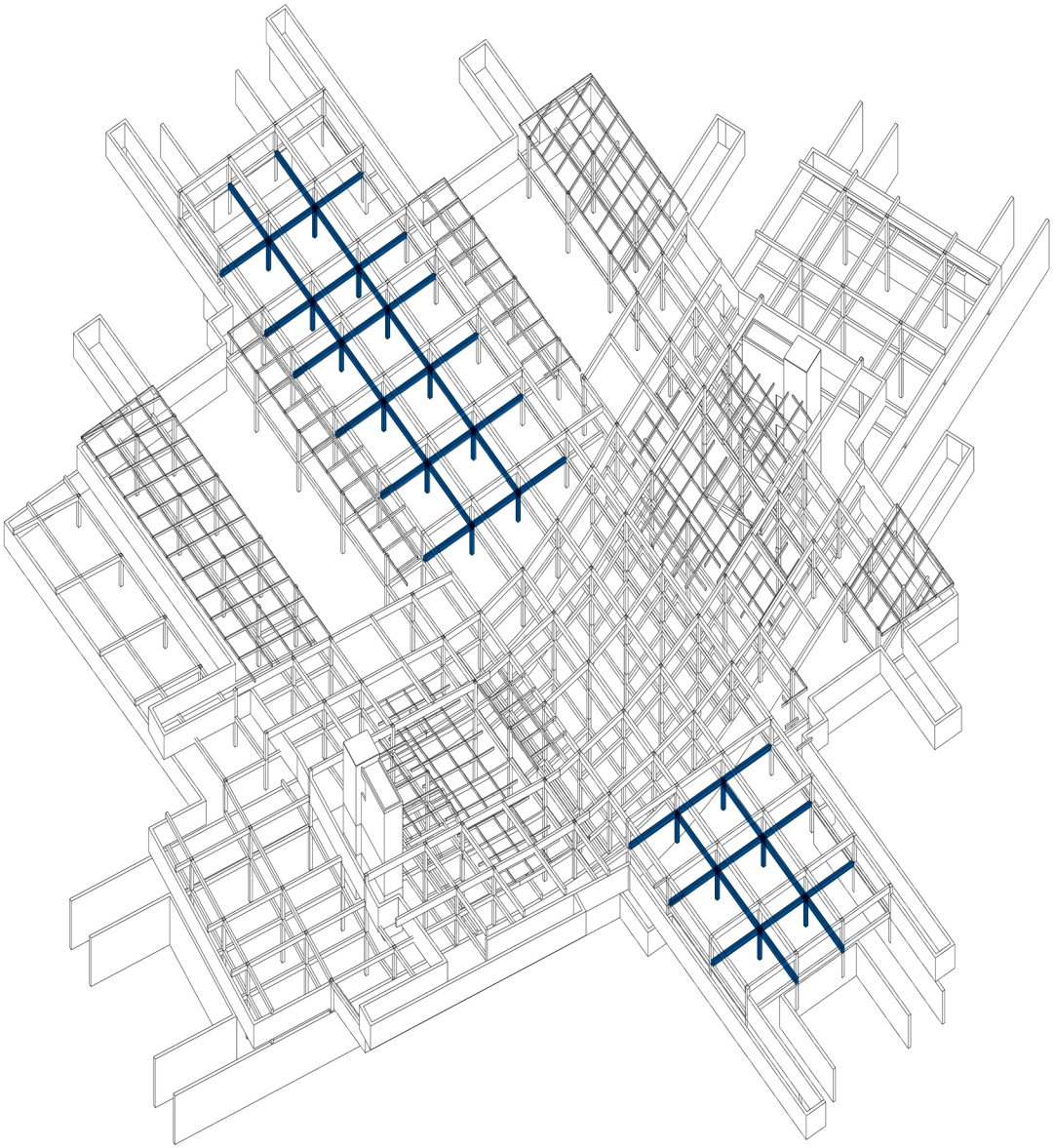


Structure

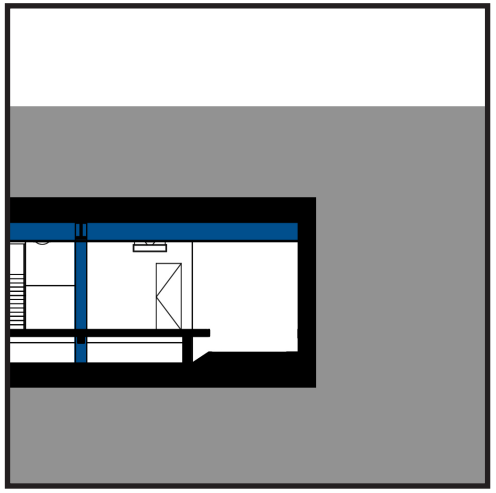
GLASS ROOF



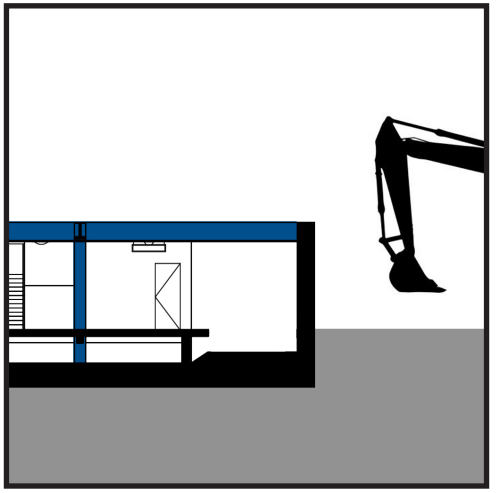
PRESERVED STRUCTURE



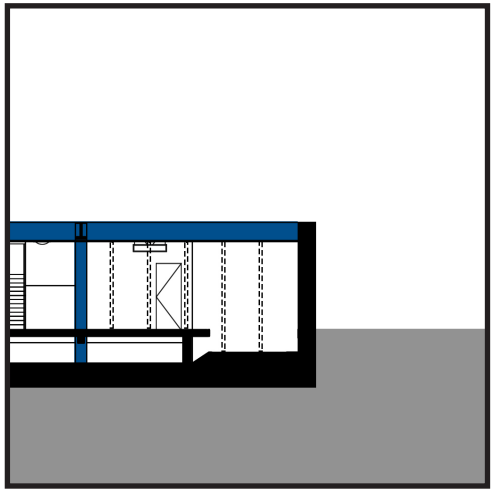
CONSTRUCTION SEQUENCE



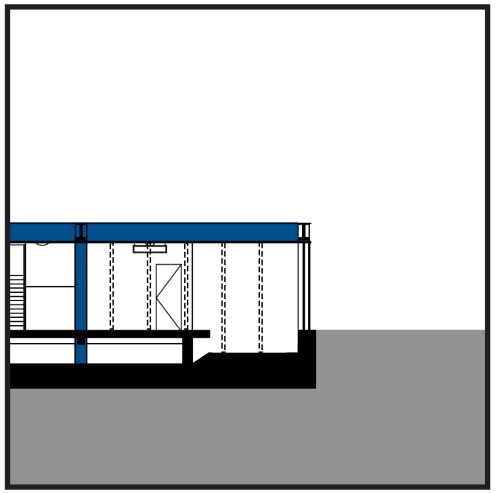
1. Original Status



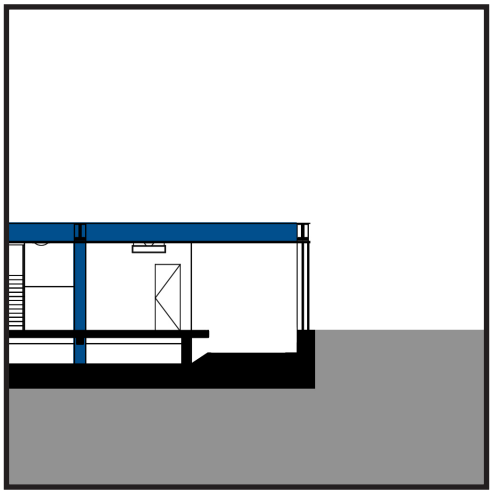
2. Excavation



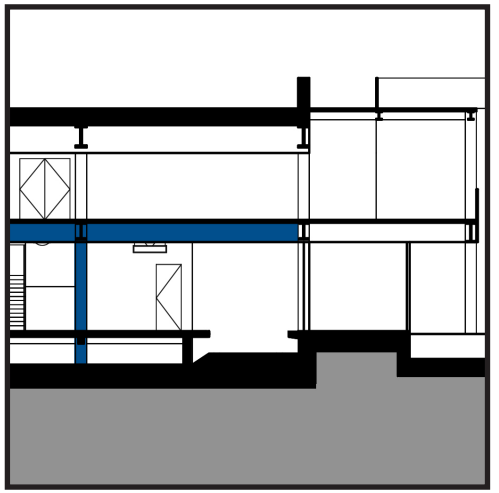
3. Temporary Structure



4. Replace With New Structure



5. Remove Temporary Structure



6. Further Construction

INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

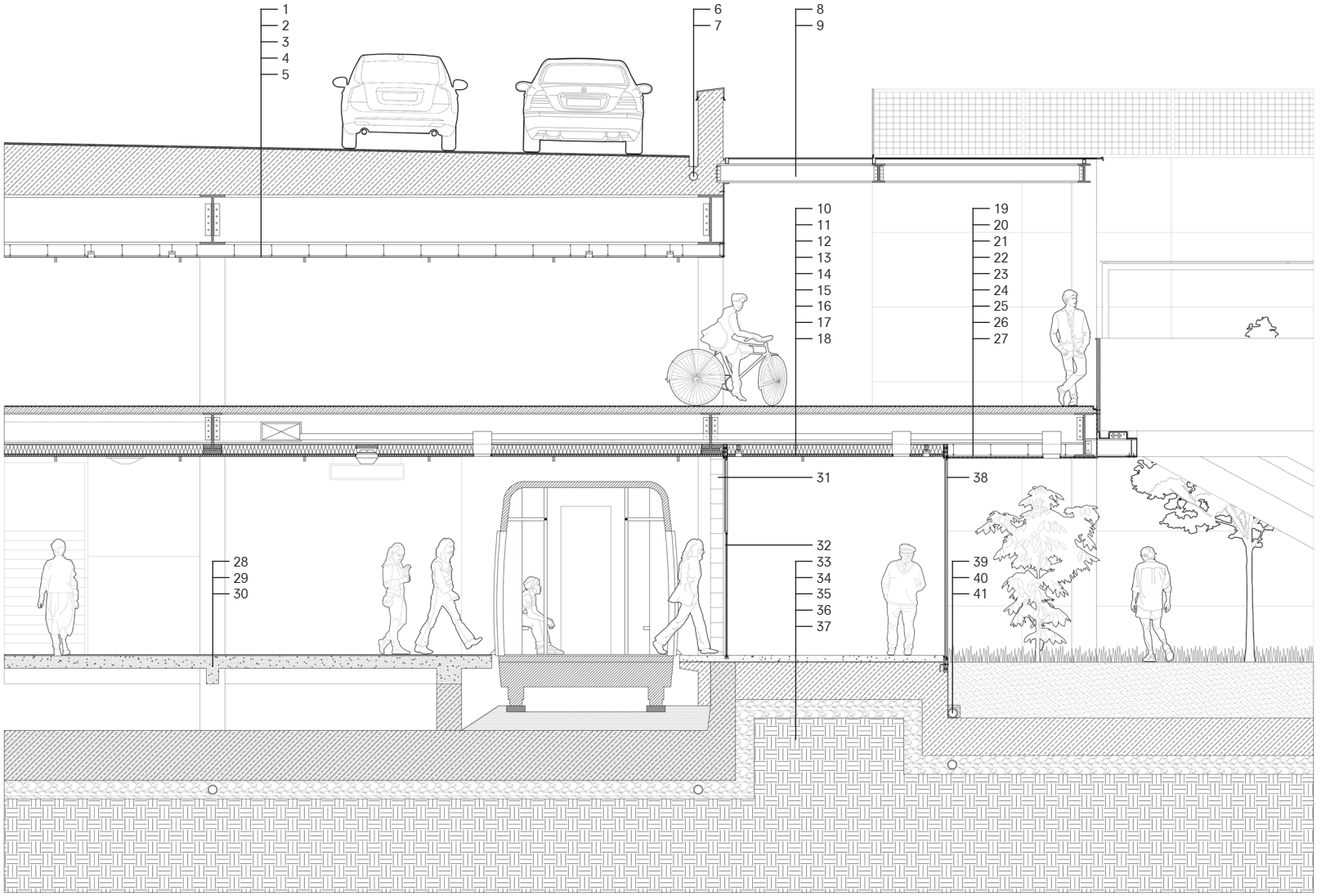
CLIMATE

STRUCTURE

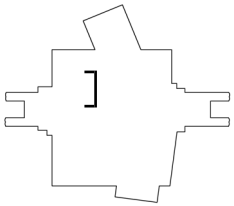
DEVELOPMENT

CONCLUSION

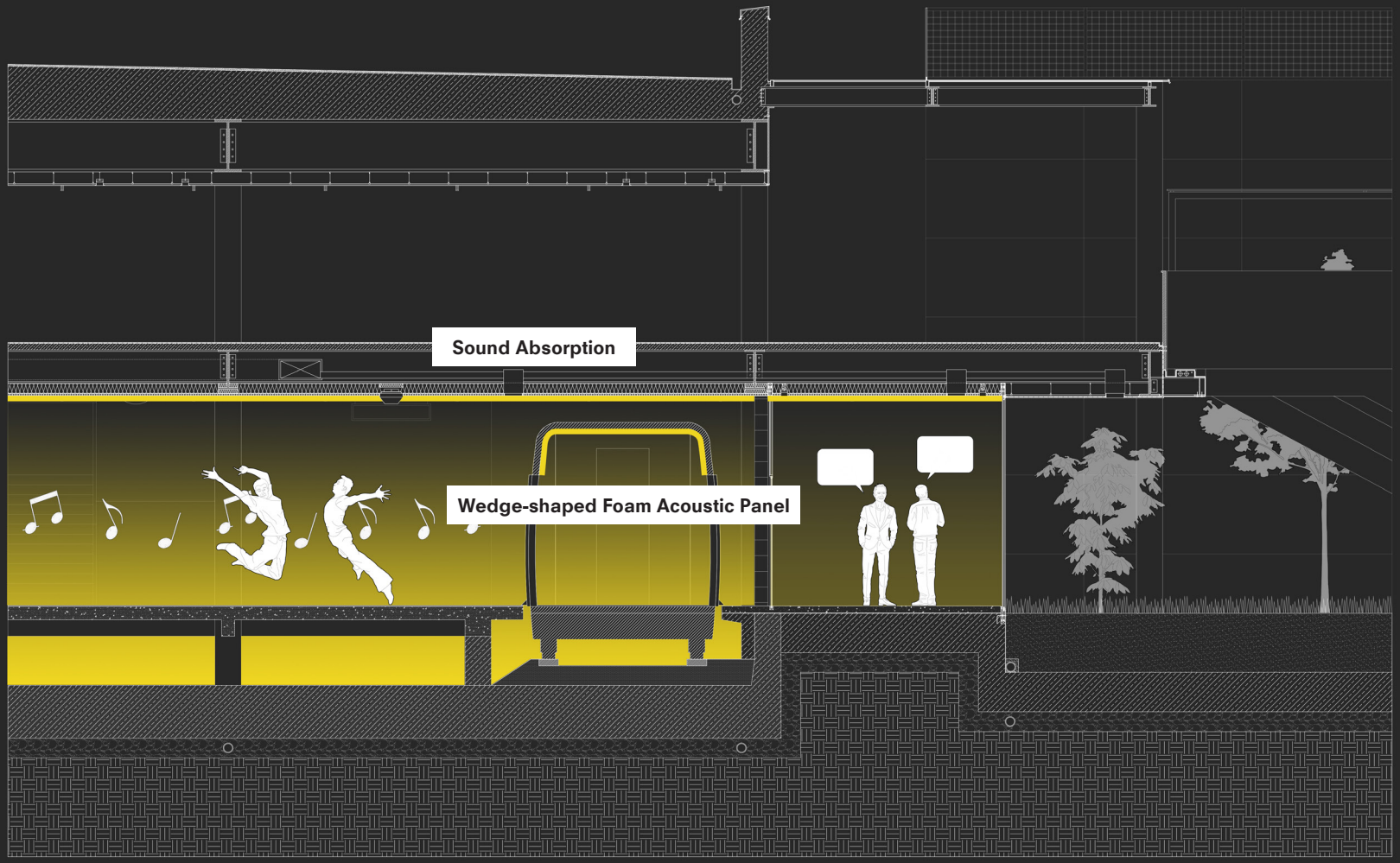
ACOUSTICS

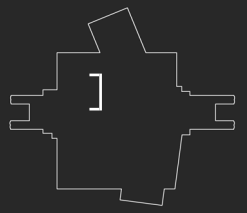


1 Asphalt Layer
2 Cast-in-situ Concrete Flyover (2% Slope)
3 Steel Beam 800mm
4 Hanging Bar
5 Concrete Ceiling Board 10mm
6 Drainage Trench
7 Drainage Pipe
8 Tempered Glass Roof (Bike Lane At Night)
9 Steel Beam 300mm
10 Anti-slip Plastic Layer 5mm
11 Insulating Foam Layer
12 Concrete Floor Slab 100mm
13 Steel Beam 500mm
14 Anti-vibration Pad 10mm
15 Polyester (24kg/m3) 150mm
16 Steel 0.6mm
17 Polyester (100kg/m3) 30mm
18 Perforated Steel 1mm
19 Self-leveling Concrete Layer 5mm
20 Insulating Foam Layer
21 Concrete Floor Slab 100mm
22 Steel Beam 500mm
23 Hanging Bar
24 Light Steel Keel
25 Anti-vibration Pad 10mm
26 Insulating Foam Layer
27 Concrete Ceiling 10mm
28 Terrazzo Texture Tiles 10mm
29 Leveling Layer 5mm
30 Concrete Platform Floor Slab 200mm
31 Light Blue Glass Brick Wall
32 Automatic Door (Double-layered Glass)
33 Polished Concrete Top Floor 100mm
34 Leveling Layer 5mm
35 Reinforced Concrete Foundation 600mm
36 Gravel Layer 300mm
37 Soil
38 Sound Insulating Laminated Glass Wall (10-10-18-10mm)
39 Vegetation Layer
40 Soil
41 Garden Drainage



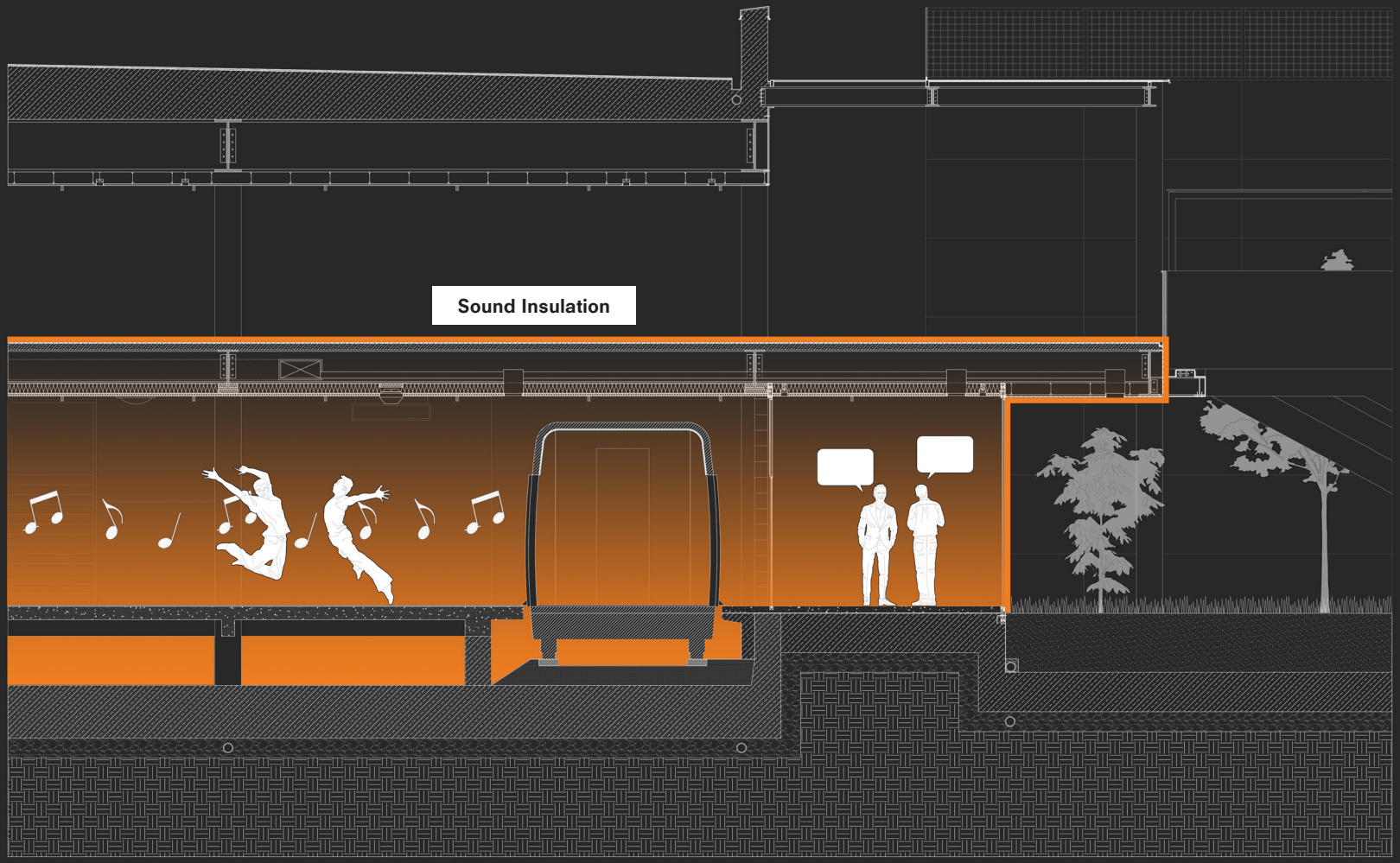
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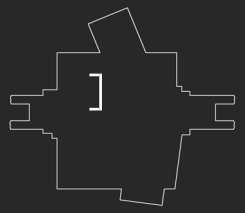




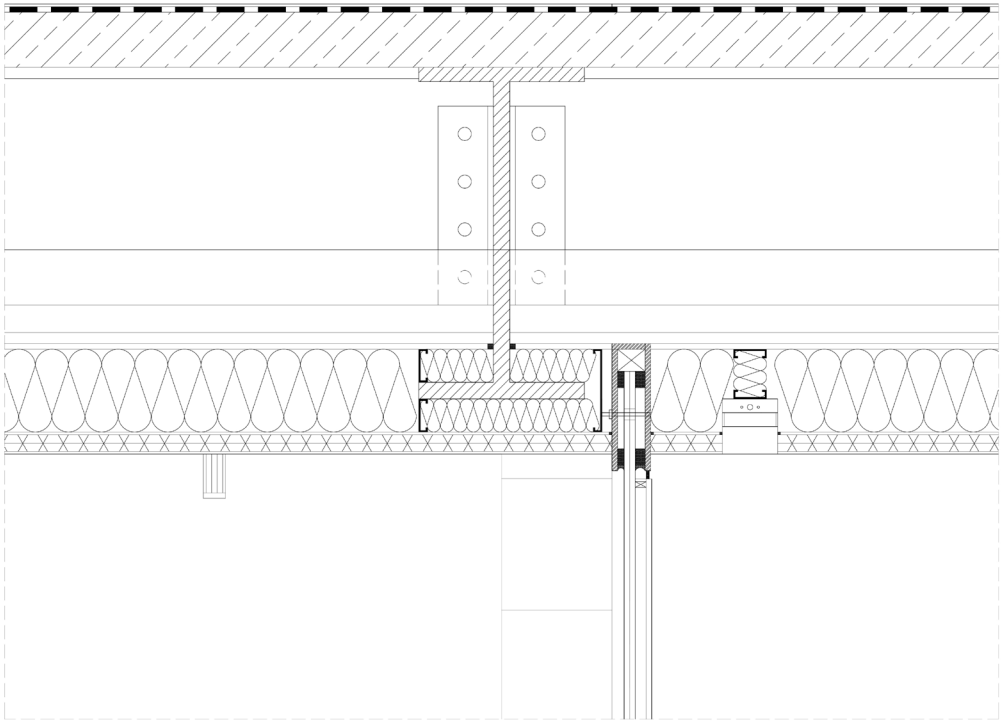
Development

ACOUSTICS





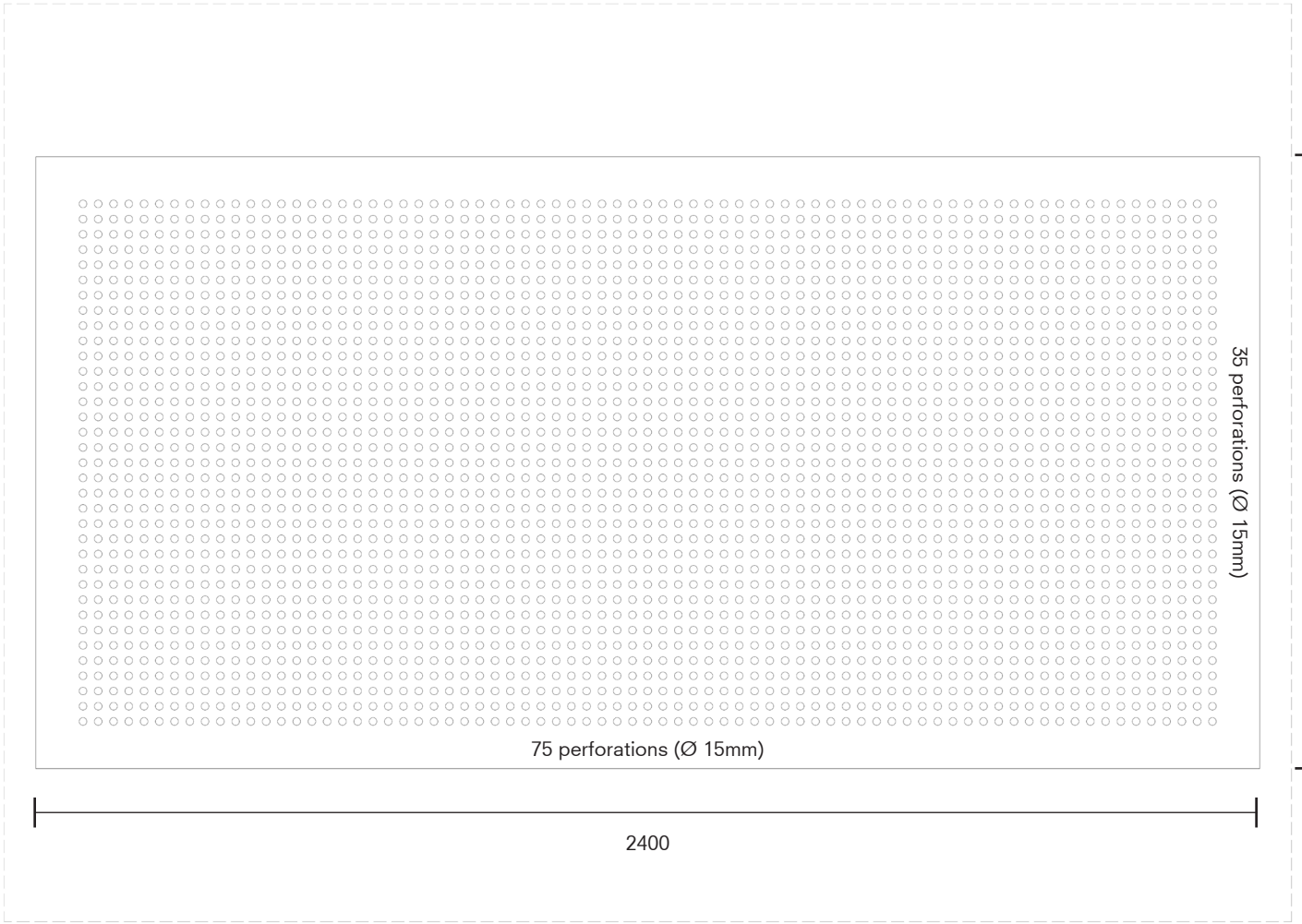
DETAIL



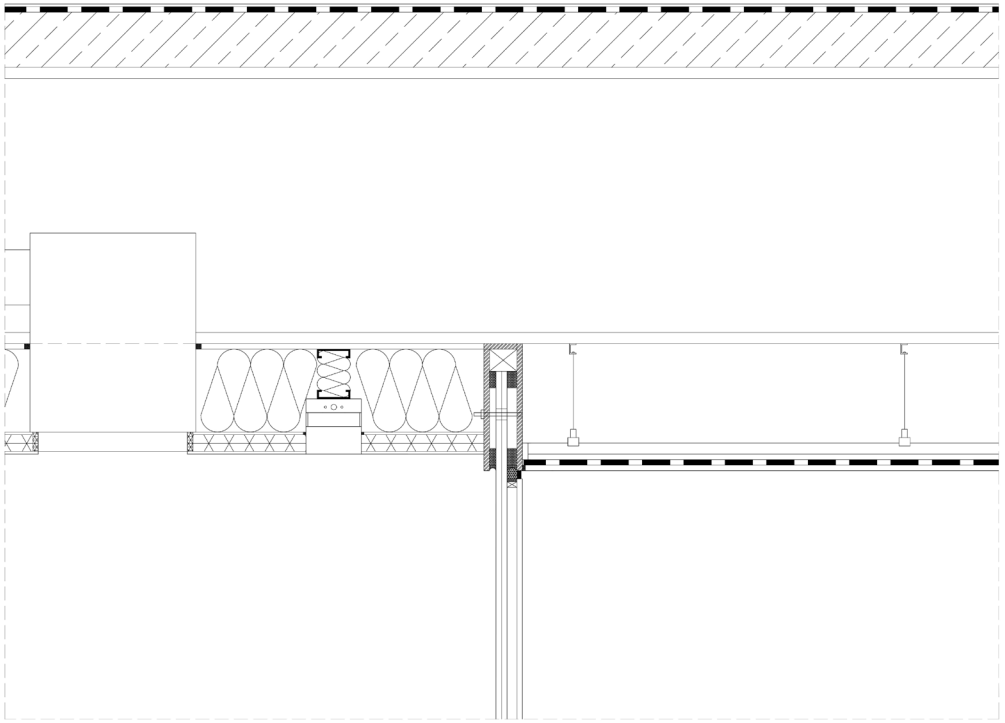
Detail 1
- Anti-slip Plastic Layer 5mm
- Insulating Foam Layer
- Concrete Floor Slab 100mm
- Steel Beam 500mm
- Recessed Strip Light
- Mineral Wool Packing
- Anti-vibration Pad 10mm
- Polyester (24kg/m3) 150mm
- Steel 0.6mm
- Polyester (100kg/m3) 30mm
- Perforated Steel 1mm
- Light Blue Glass Brick Wall
- Sound Insulating Laminated Glass Wall (10-10-18-10mm)

Development

DETAIL

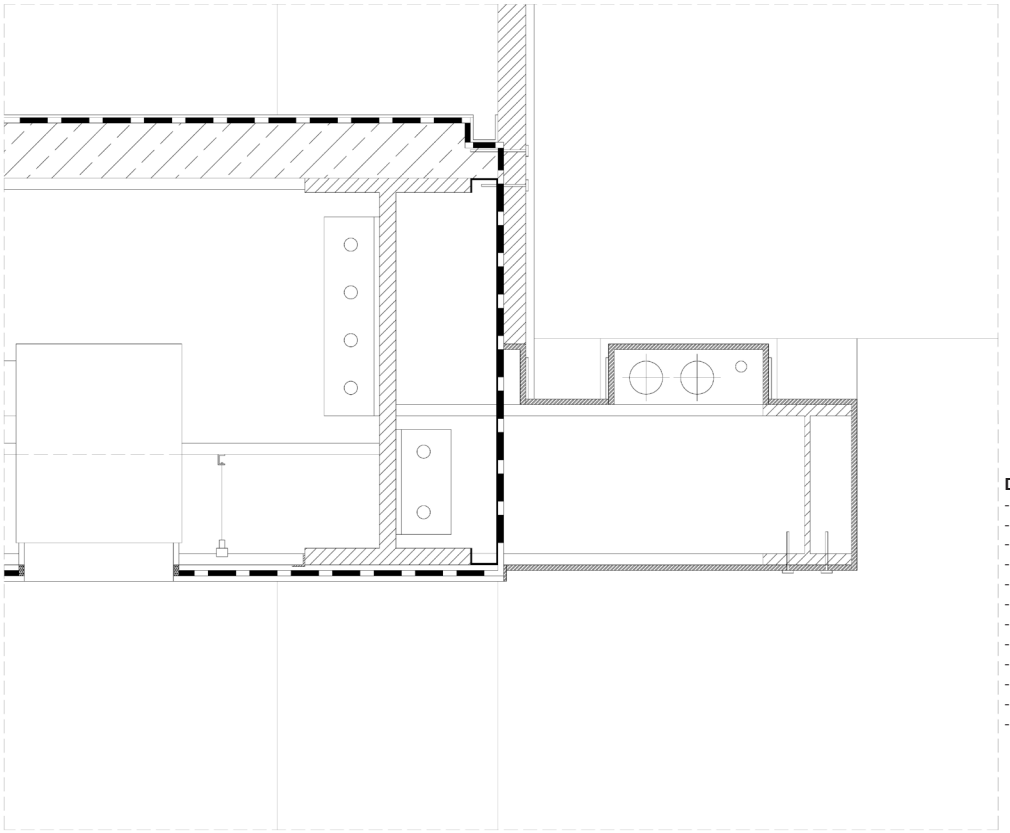


DETAIL



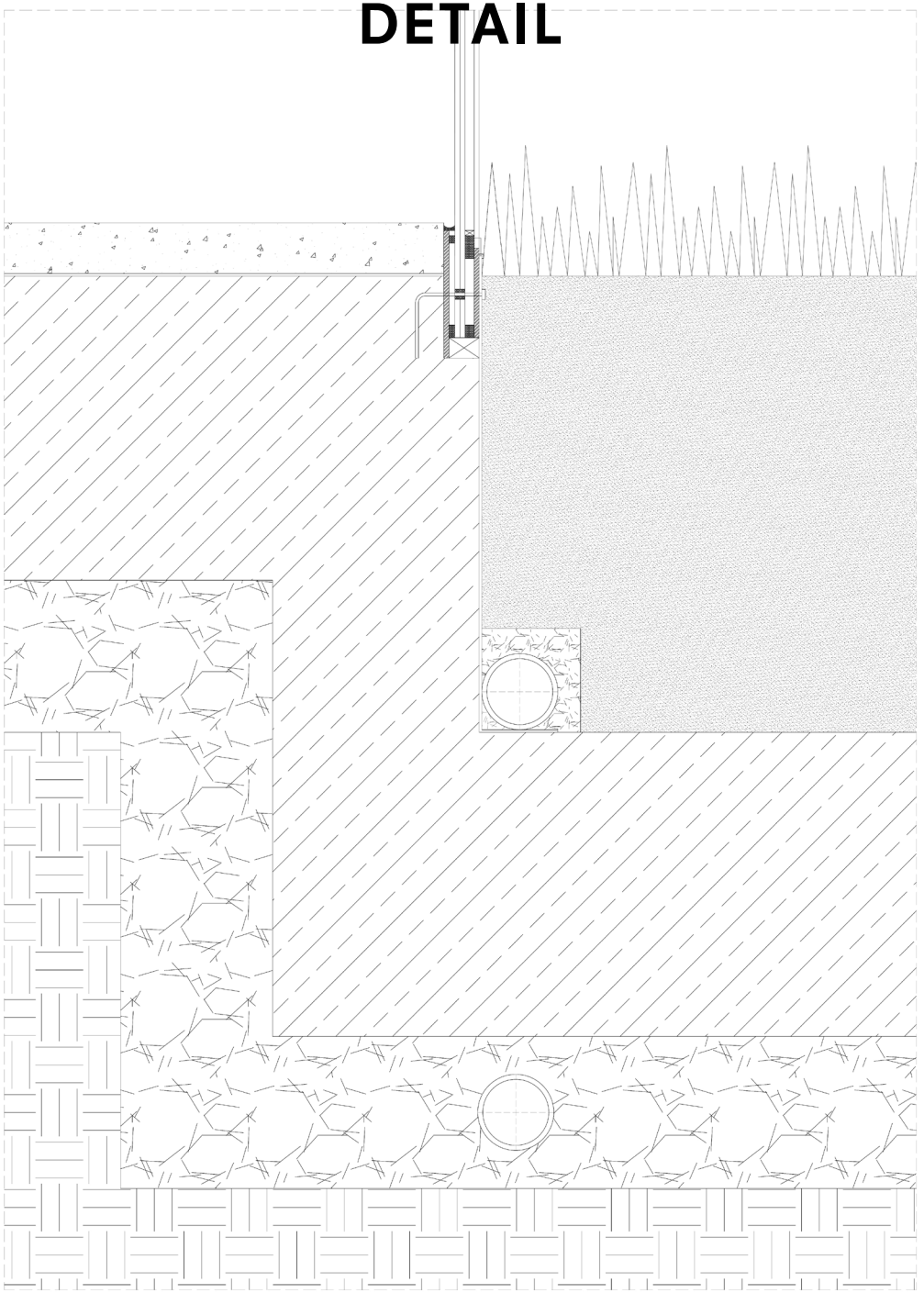
Detail 2
- Self-leveling Concrete Layer 5mm
- Insulating Foam Layer
- Concrete Floor Slab 100mm
- Steel Beam 500mm
- Ventilation Pipe
- Mineral Wool Packing
- Hanging Bar
- Light Steel Keel
- Anti-vibration Pad 10mm
- Insulating Foam Layer
- Concrete Ceiling 10mm
- Sound Insulating Laminated Glass Wall (10-10-18-10mm)

DETAIL



Detail 3
- Weathered Metal Handrail
- Self-leveling Concrete Layer 5mm
- Insulating Foam Layer
- Concrete Floor Slab 100mm
- Steel Beam 500mm
- Steel Beam 600mm
- Motor For Sliding Bridge
- Hanging Bar
- Light Steel Keel
- Anti-vibration Pad 10mm
- Insulating Foam Layer
- Concrete Ceiling 10mm

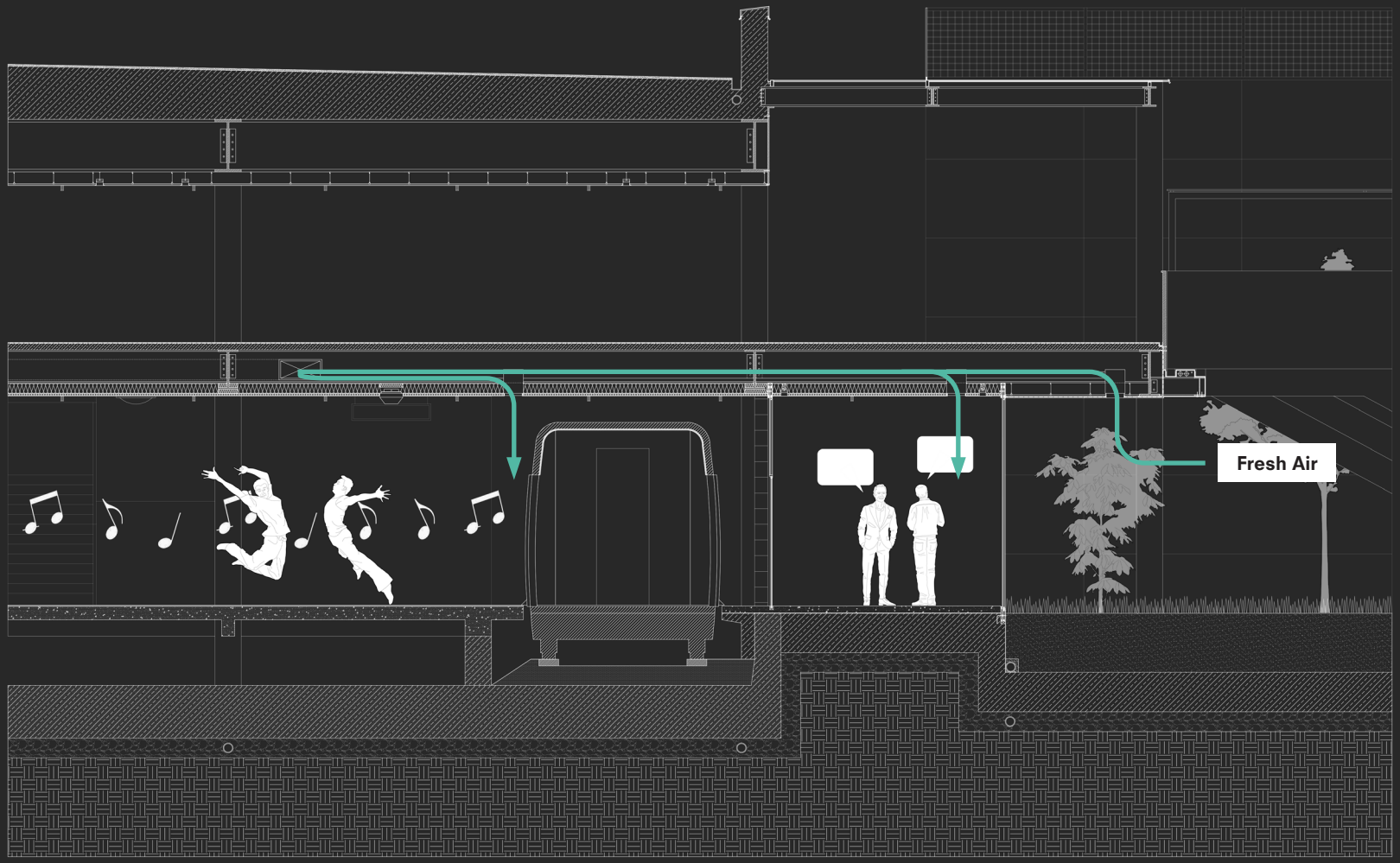
DETAIL

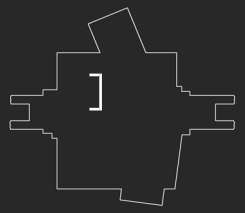


Detail 4
- Vegetation Layer
- Waterproof Membrane
- Soil
- Garden Drainage Pipe (Ø 150mm)
- Sound Insulating Laminated Glass Wall (10-10-18-10mm)
- Acoustic Sealant
- Polished Concrete Top Floor 100mm
- Leveling Layer 5mm
- Reinforced Concrete Foundation 600mm
- Gravel Layer 300mm
- Foundation Drainage Pipe (Ø 150mm)
- Soil

Development

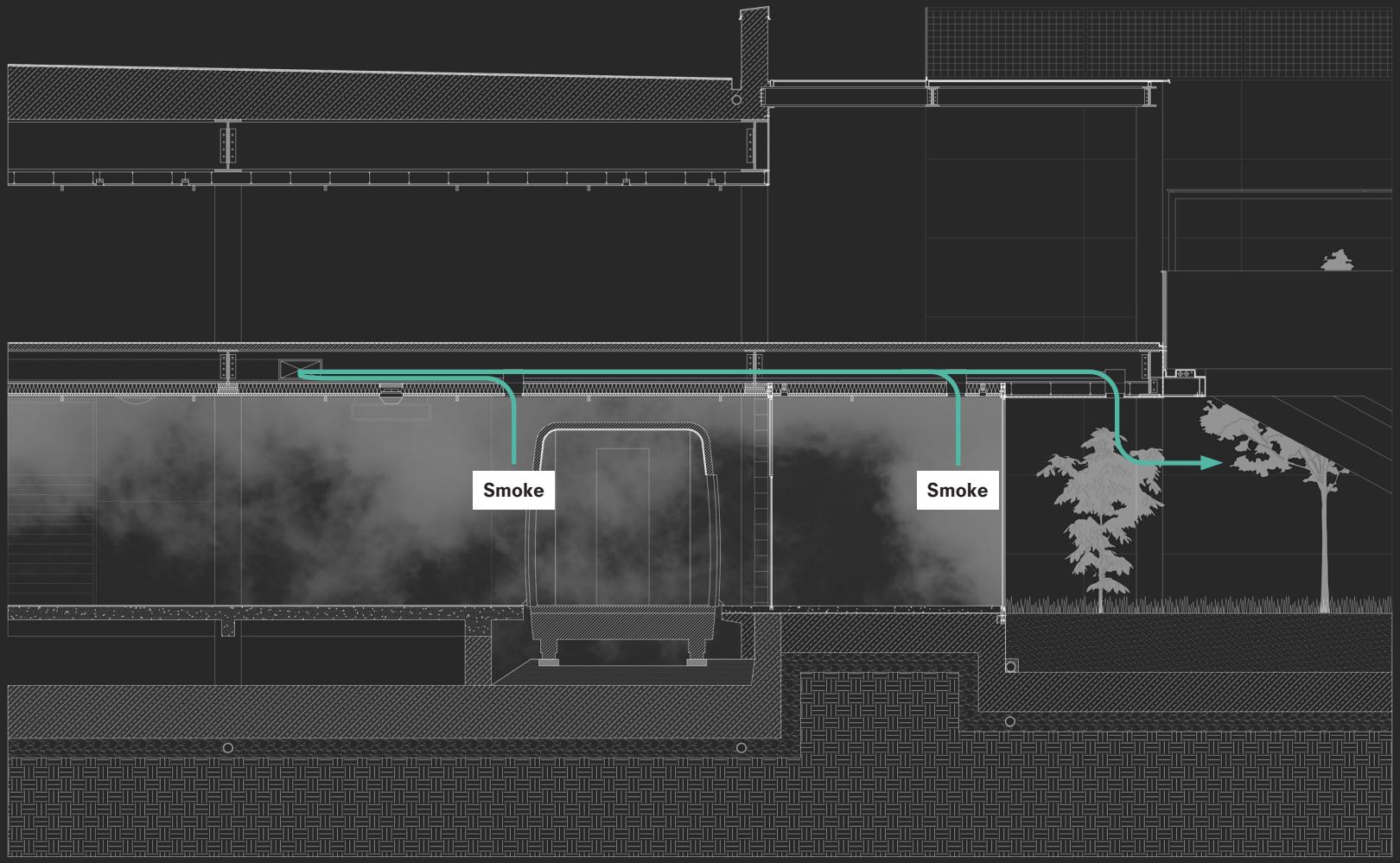
VENTILATION





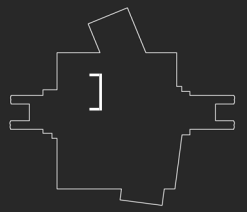
Development

EMERGENCY



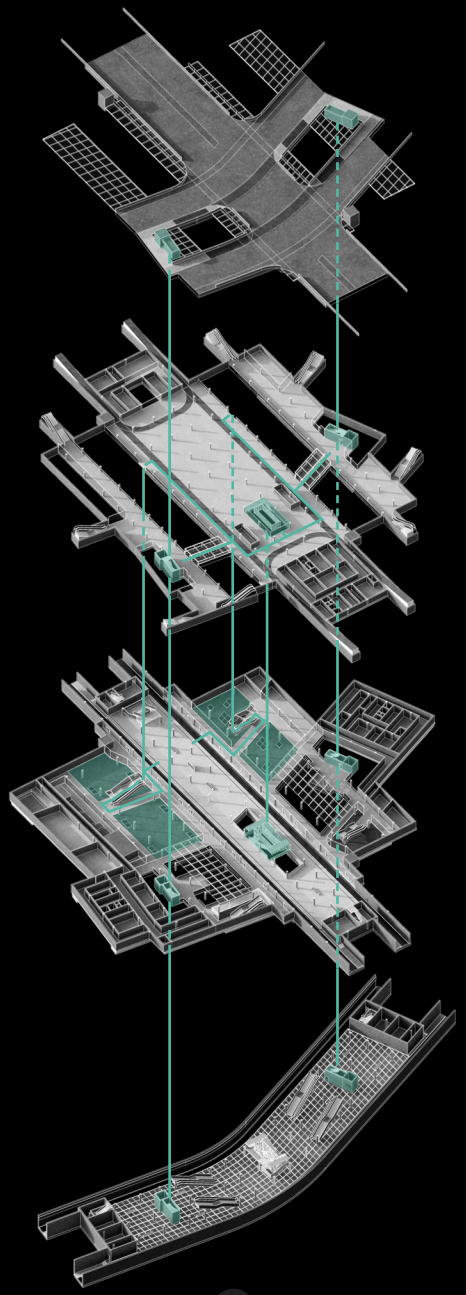
EMERGENCY


Automatic Sprinkler System
Rainwater
Garden
Geothermal Power Plant
Water Supply



Development

EMERGENCY



Escape Route

INTRODUCTION

DESIGN BRIEF

CONCEPT

METRO STATION TO NIGHT LIVE VENUE

CLIMATE

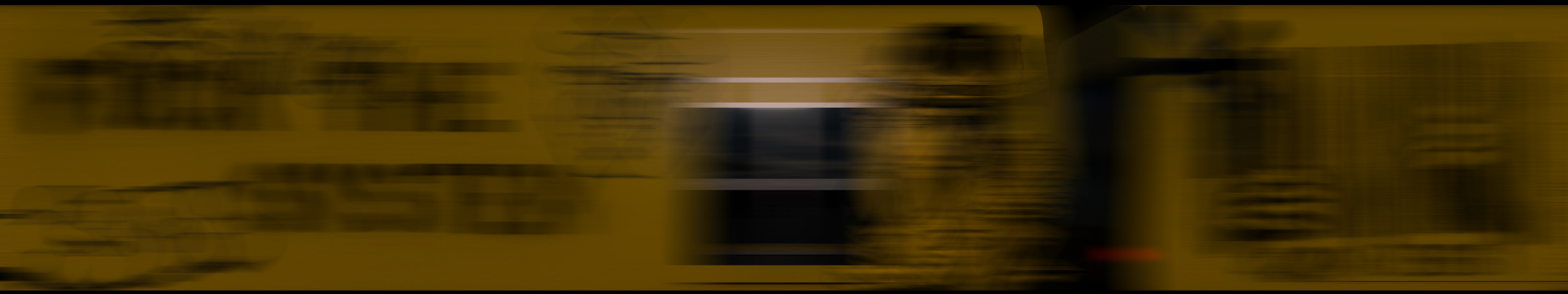
STRUCTURE

DEVELOPMENT

CONCLUSION

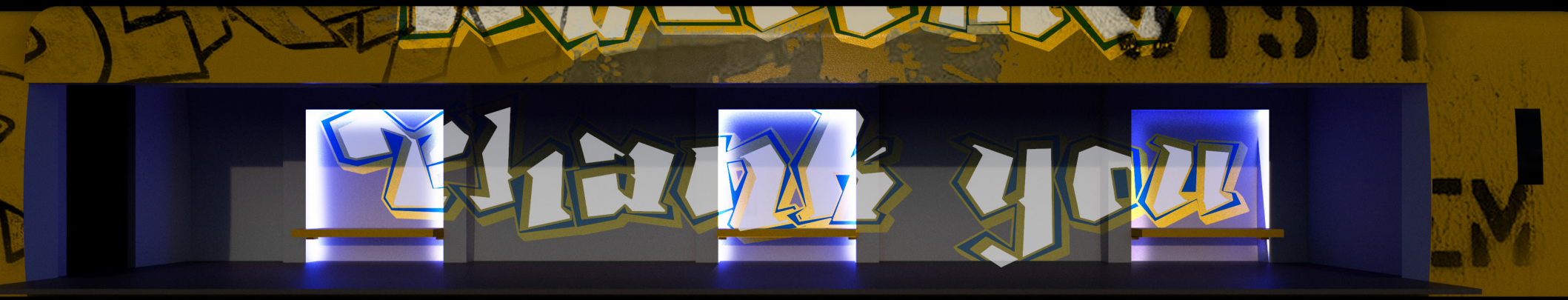
REFLECTION

HOW TO SWITCH A TRAIN STATION TO A NIGHT LIVE VENUE DURING ITS VACANCY PERIOD?






BERLIN
FUCK THE
SYSTEM
WELCOME


Thank you