Future-Proofing Cities through Commercially Sustainable Transit Oriented Development

ATKINS

Our regional businesses

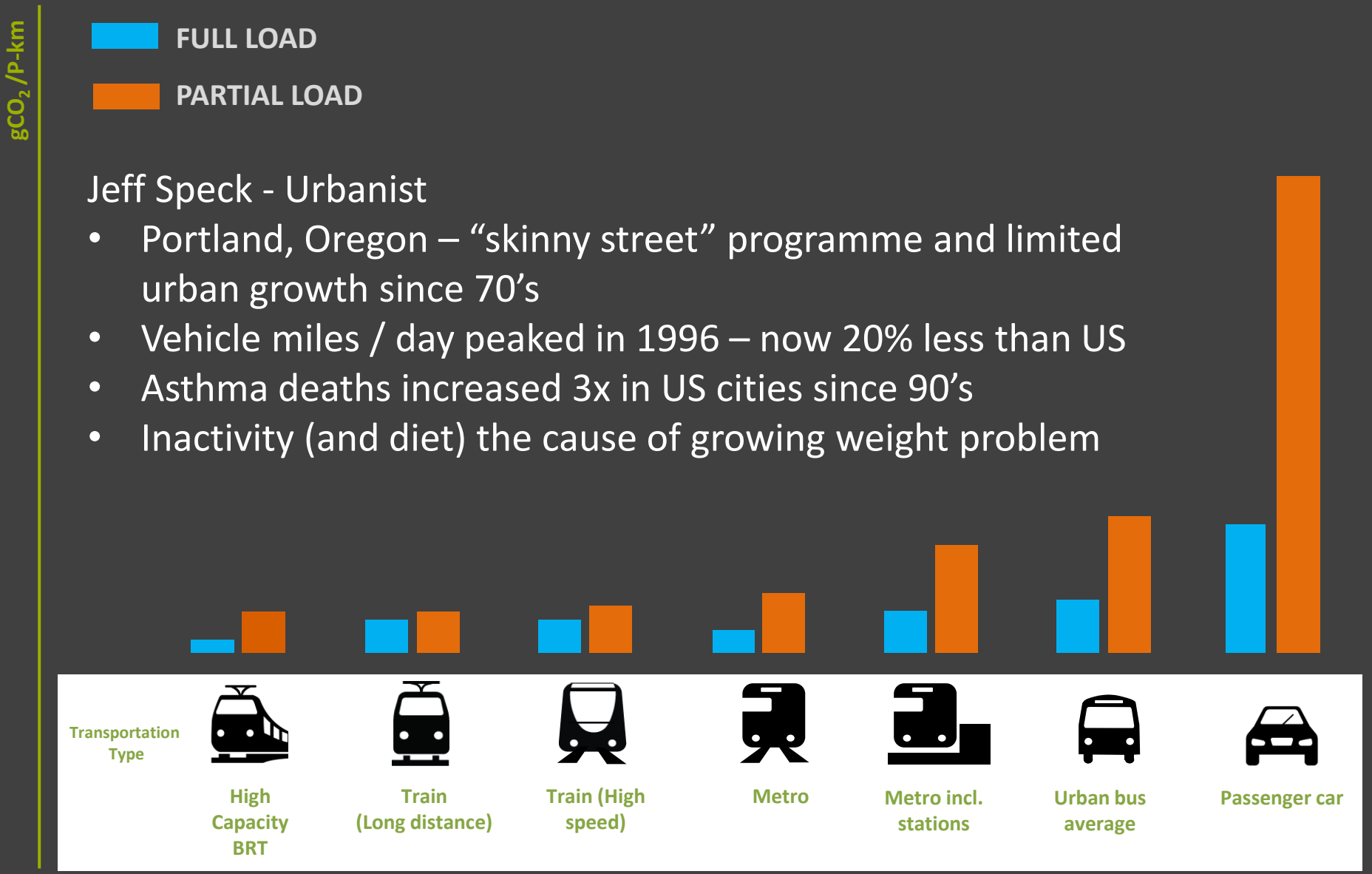
Thank You

07

TOD and Sustainability

Carbon Emissions by Mode

Carbon Dioxide Emissions per Passenger-Kilometer (P-km) for Different Vehicle Types



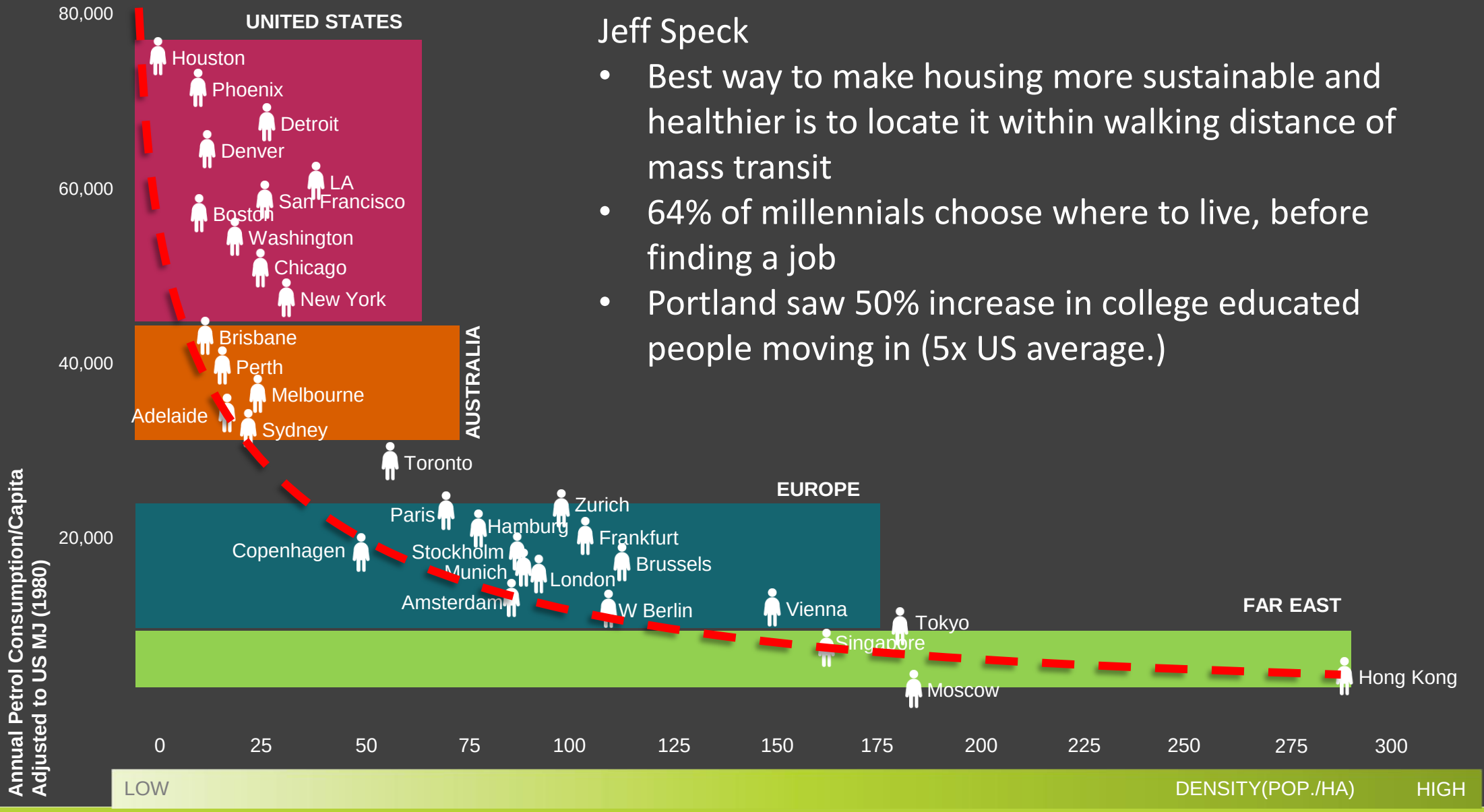
Jeff Speck - Urbanist

- Portland, Oregon – “skinny street” programme and limited urban growth since 70’s
- Vehicle miles / day peaked in 1996 – now 20% less than US
- Asthma deaths increased 3x in US cities since 90’s
- Inactivity (and diet) the cause of growing weight problem

Source: 'Transport in China: Energy Consumption and Emissions - Final Report, May 2008',
ifeu – Institute for Energy and Environmental Research Heidelberg in co-operation with Institute of Comprehensive Transportation of NDRC of China (ICT)

DENSITIES AND ENERGY CONSUMPTION

Global correlation between urban Density and energy consumption



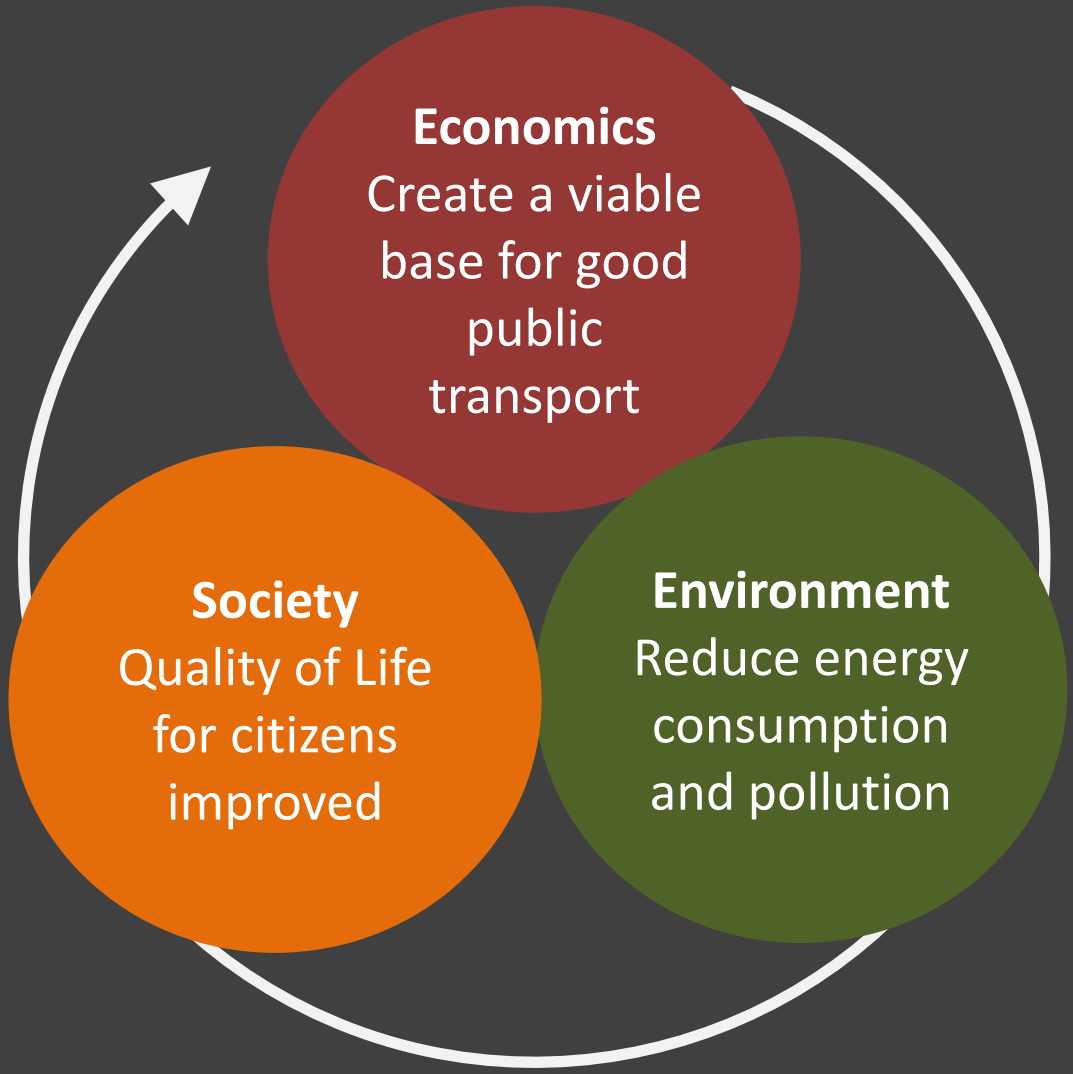
Jeff Speck

- Best way to make housing more sustainable and healthier is to locate it within walking distance of mass transit
- 64% of millennials choose where to live, before finding a job
- Portland saw 50% increase in college educated people moving in (5x US average.)

Source: Newman and Kenworthy 1989

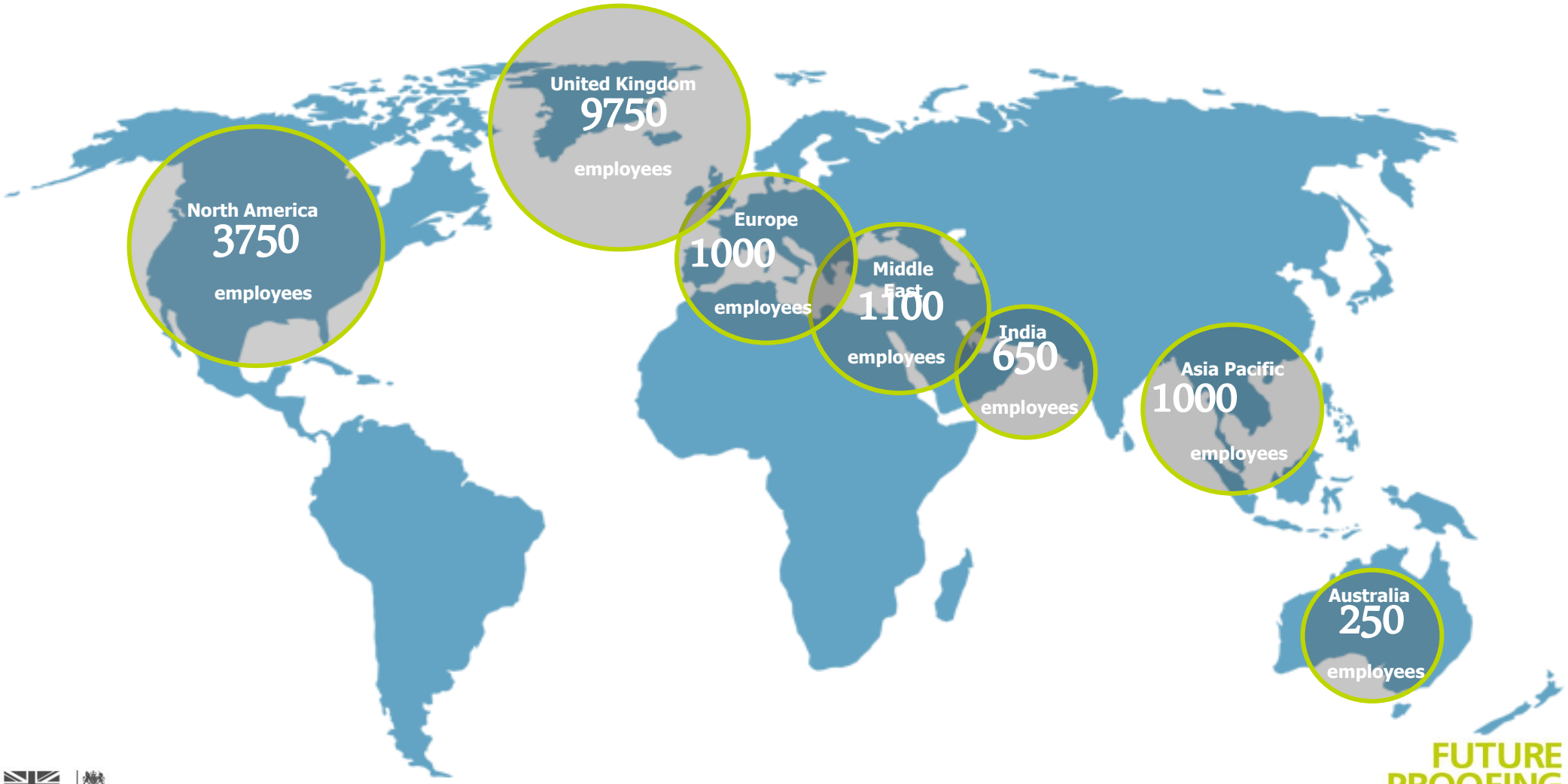
ATKINS

TOD and Sustainability



ABOUT ATKINS

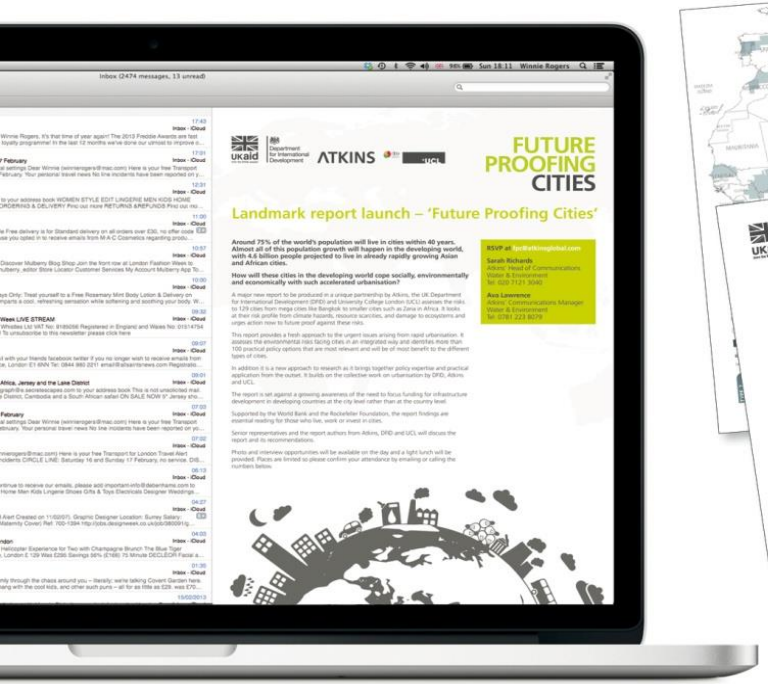
We have the depth and breadth of expertise to respond to the most technically challenging and time-critical urban infrastructure challenges



UKaid from the British people | Department for International Development | ATKINS | dpu | UCL

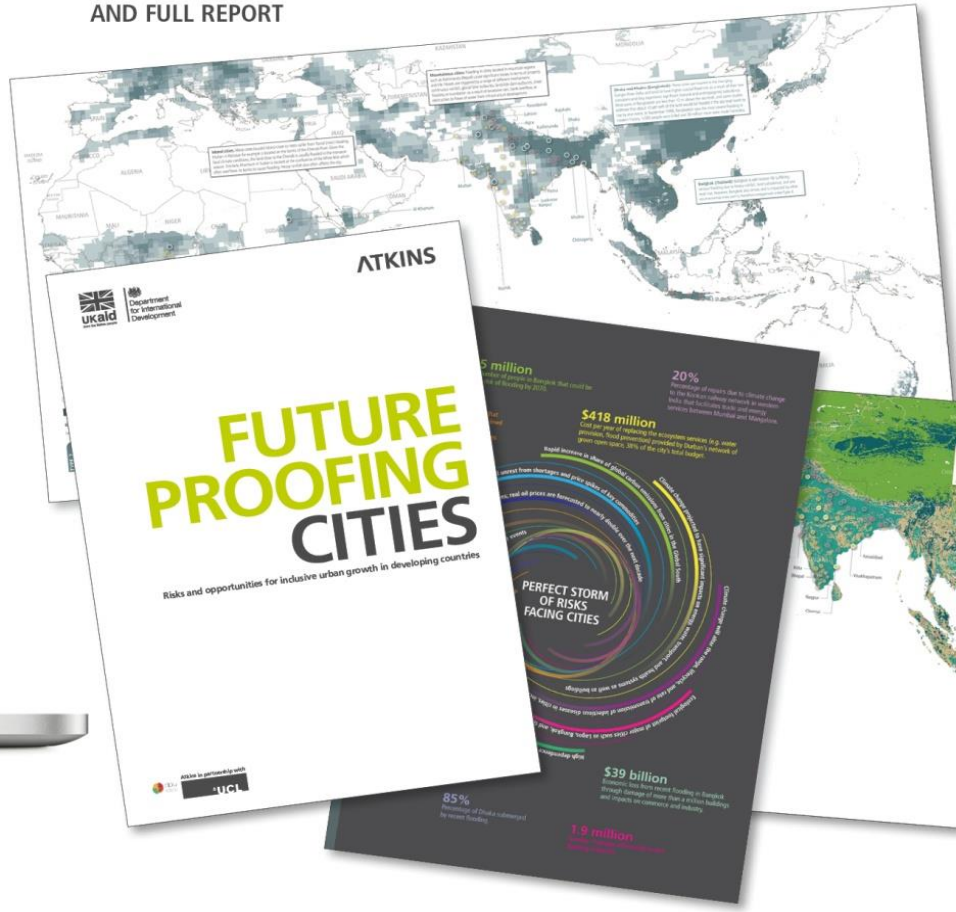
FUTURE PROOFING CITIES

THE FUTURE PROOFING CITIES REPORT



LAUNCH EMAIL

EXECUTIVE SUMMARY AND FULL REPORT



WWW.FUTUREPROOFINGCITIES.COM

UKaid from the British people | Department for International Development | ATKINS | dpu | UCL

FUTURE PROOFING CITIES

THE RISKS FACING CITIES: FIVE URBAN TYPES

Assessment of 129 cities:
Possible to group cities into 5 types based on most significant risks they face

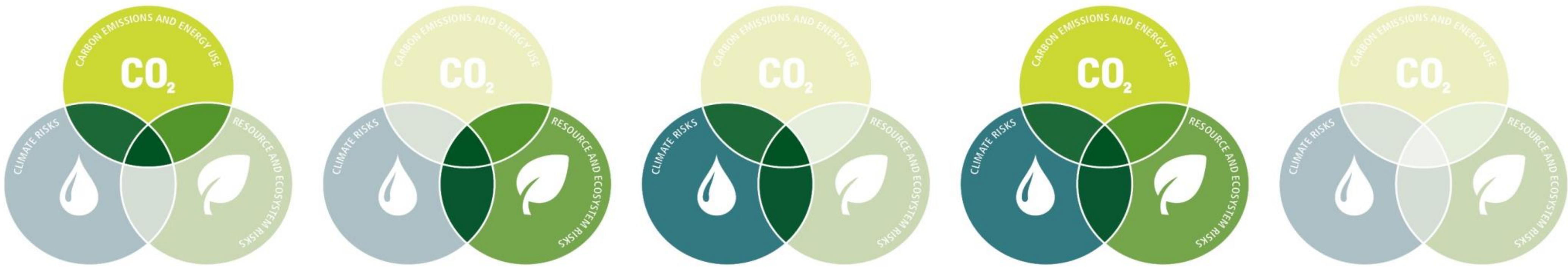
TYPE 1: Energy intensive, sprawled cities with significant carbon footprints

TYPE 2: Cities with major climate hazards

TYPE 3: Cities with regional support system(s) at risk (water, food, biodiversity)

TYPE 4: Cities with multiple risks: energy, carbon, climate hazards, and regional support systems

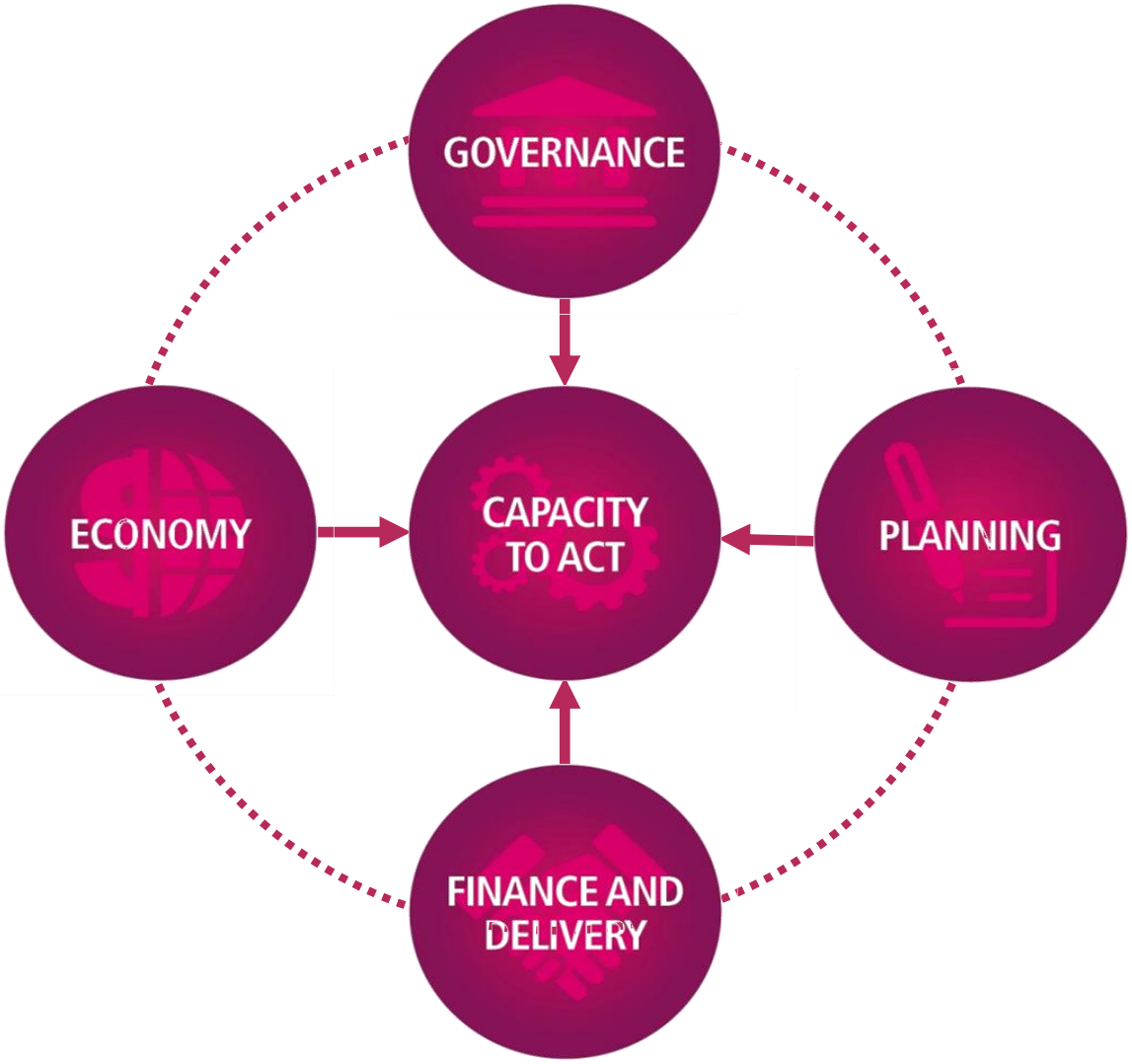
TYPE 5: Cities with a low current risk profile



UKaid from the British people | Department for International Development | ATKINS | dpu | UCL

FUTURE PROOFING CITIES

CAPACITY TO RESPOND TO RISKS



Many cities in the developing world have significant barriers to their ability to raise and mobilise sufficient capital for future proofing investments.

To overcome barriers to financing of investments, cities will need to build stronger mechanisms to raise and channel capital.

Cities will have to explore new delivery models to commission, design, and maintain infrastructure and services that are robust in the face of complex environmental risks

00

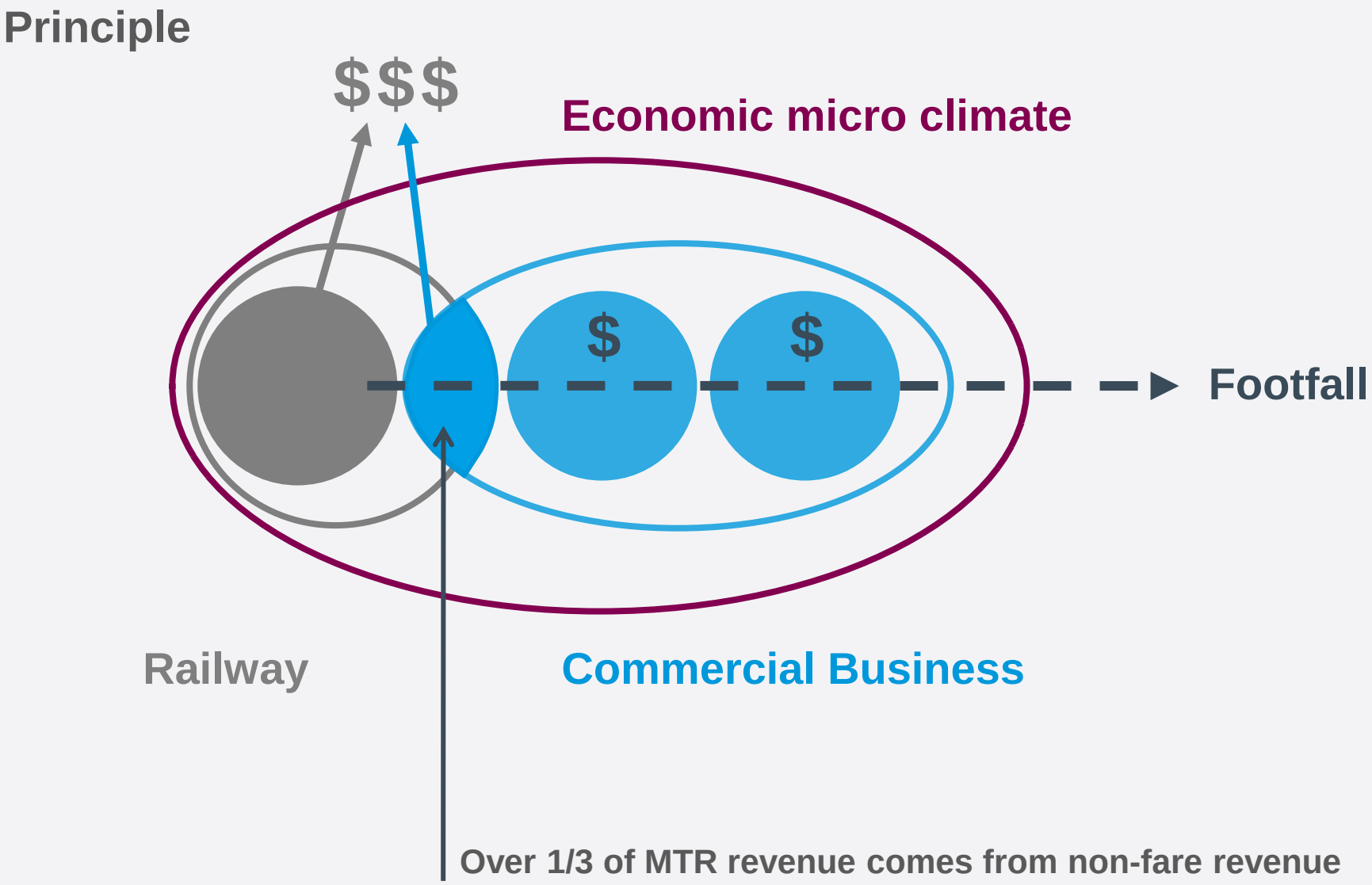
Contents

Overviews of Atkins

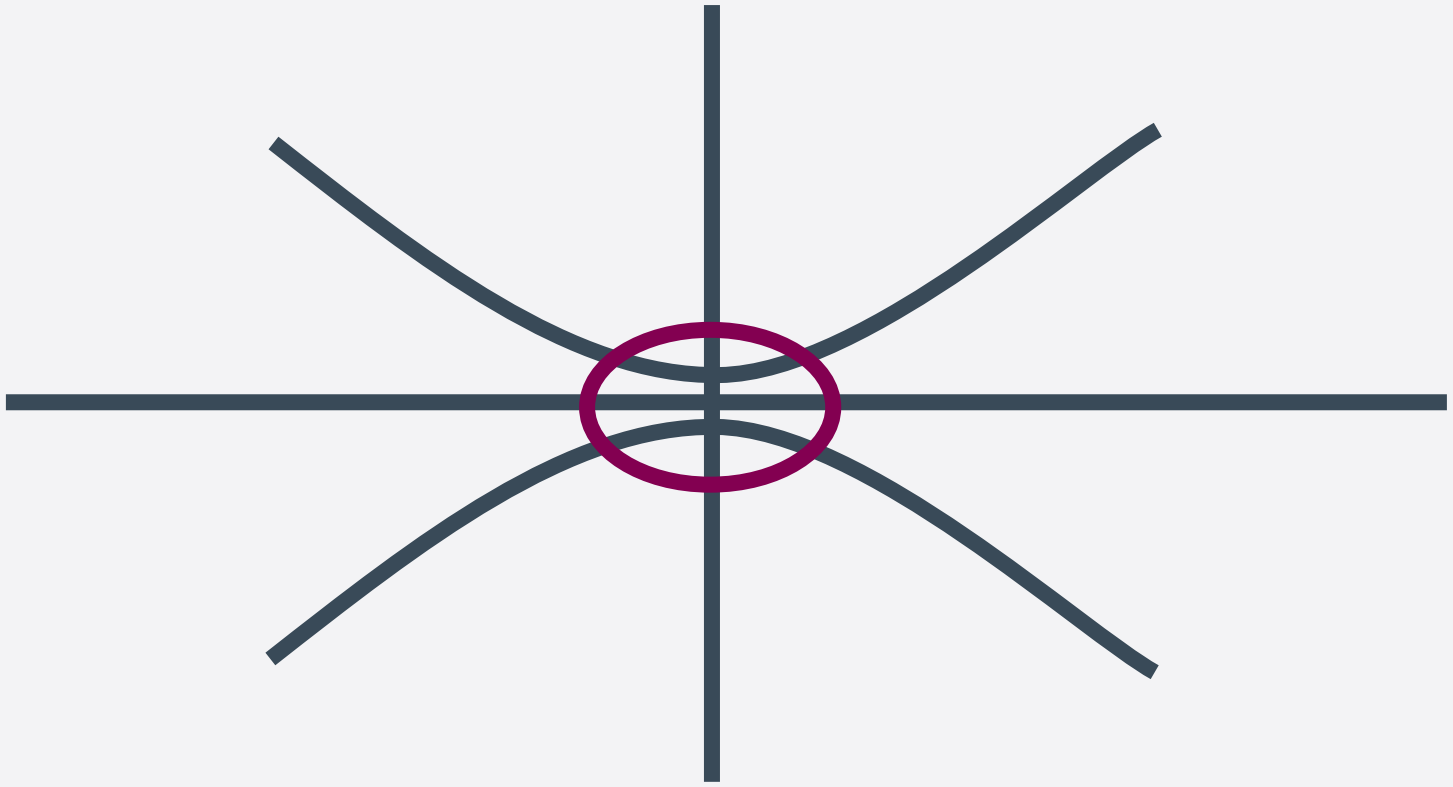
01

Concept

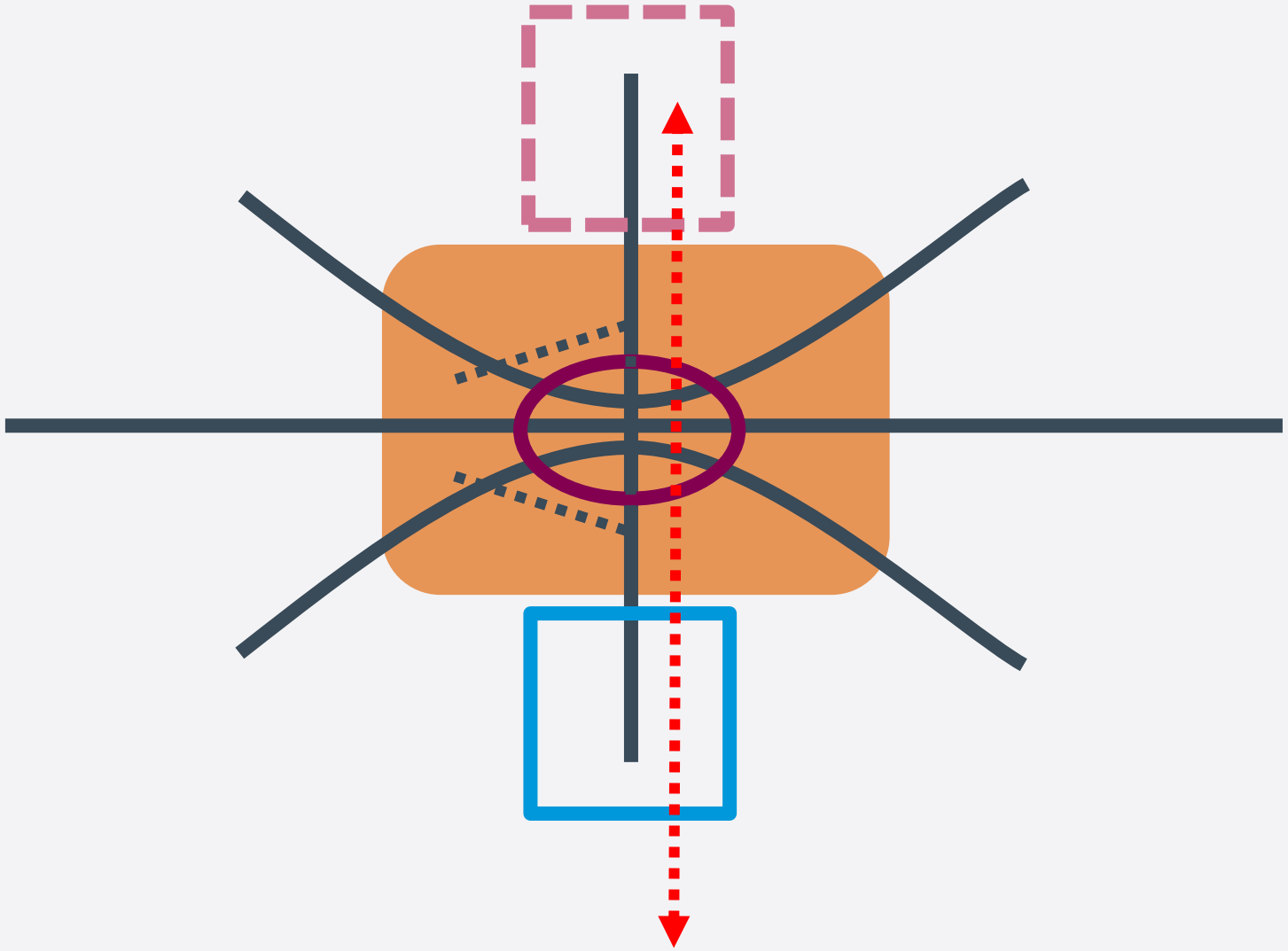
WHAT IS TOD ?


Principle
$$$
Economic micro climate
$
$
Footfall
Railway
Commercial Business
Over 1/3 of MTR revenue comes from non-fare revenue

TOD – v – Transport Operation : Transport Ideal



TOD – v – Transport Operation : TOD Ideal

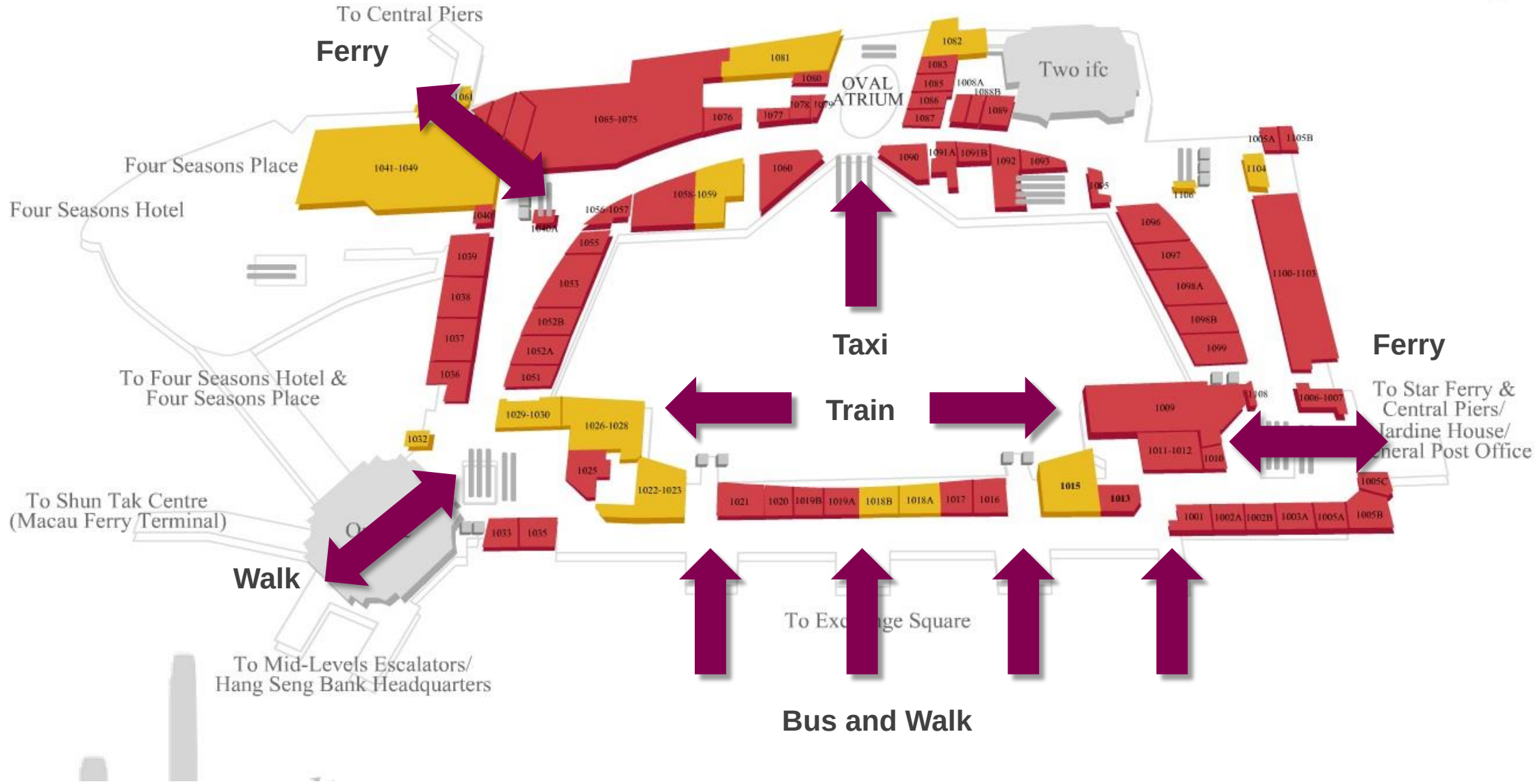


Hong Kong Station (Airport Express)

Source: Arup and Rocco Design Ltd

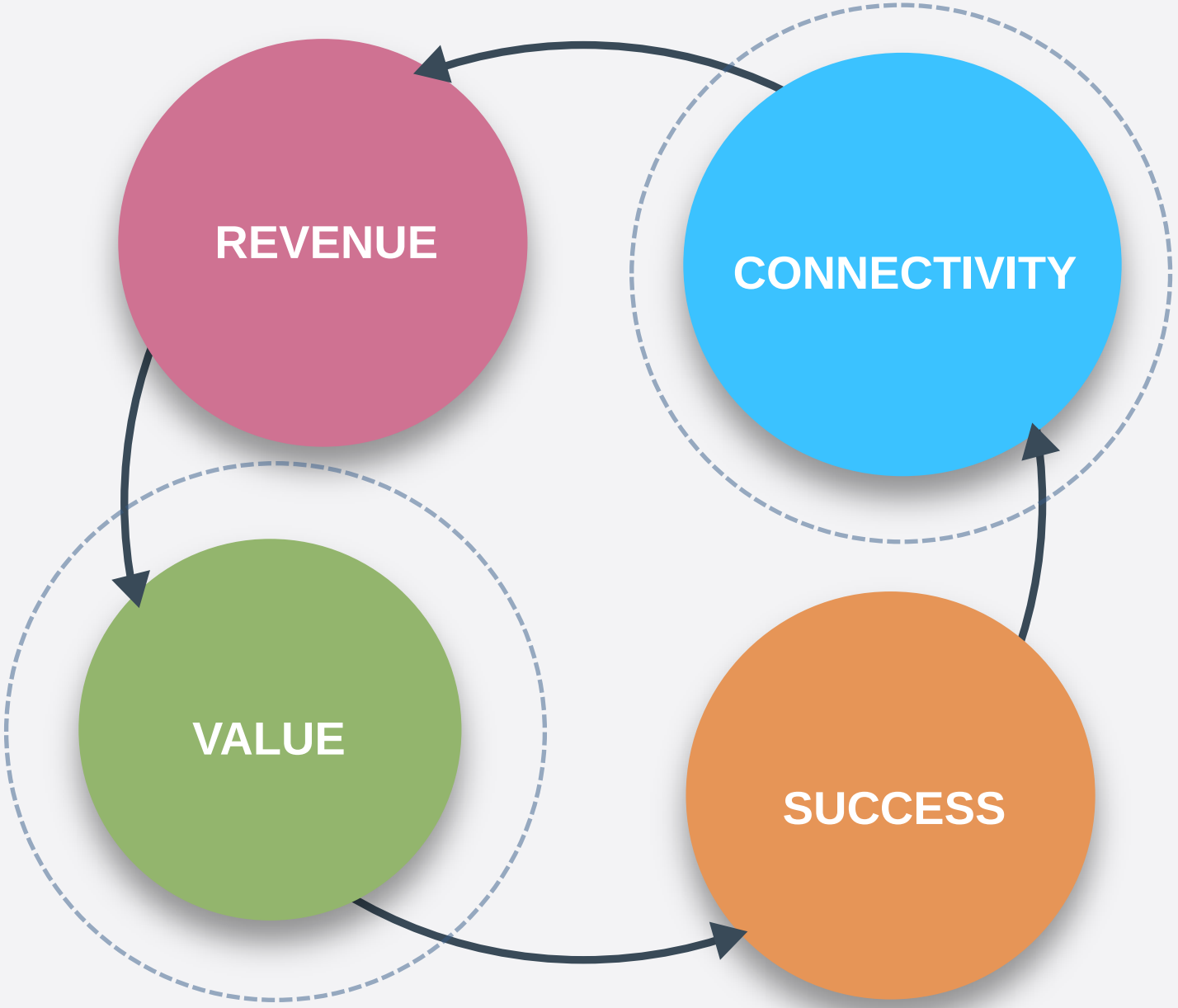
Hong Kong Station (Airport Express)

IFC shopping mall mostly benefits from commuter transport connectivity



Source: MTR Malls

WHAT IS TOD ?

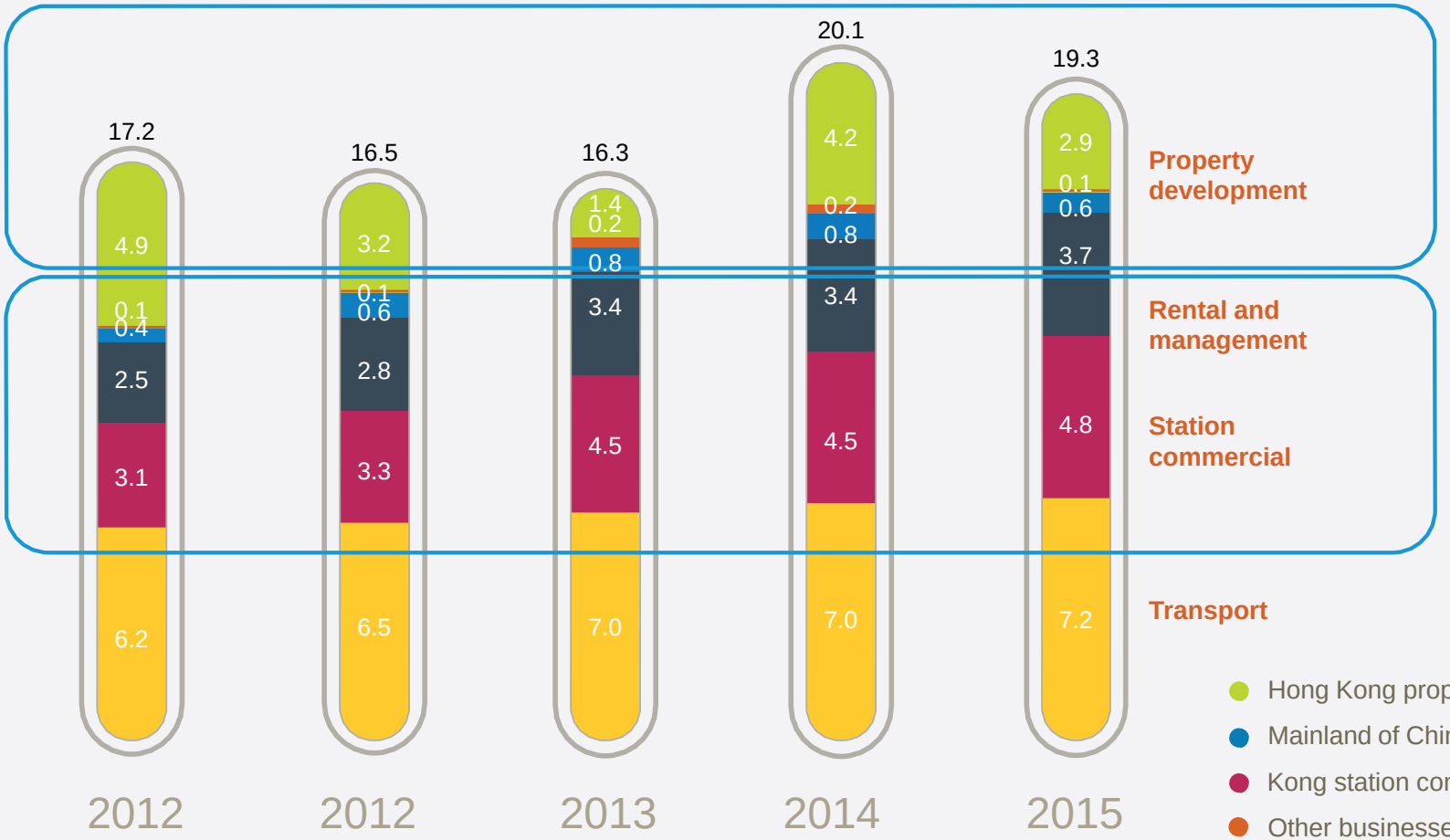


Hong Kong Station (Airport Express)

MTR in Hong Kong

Operating Profit Contributions

In HK$ billion (excluding project studies and business development expenses)



MTR have special arrangement with HK Gov (Rail/Property model) to facilitate commercial property development

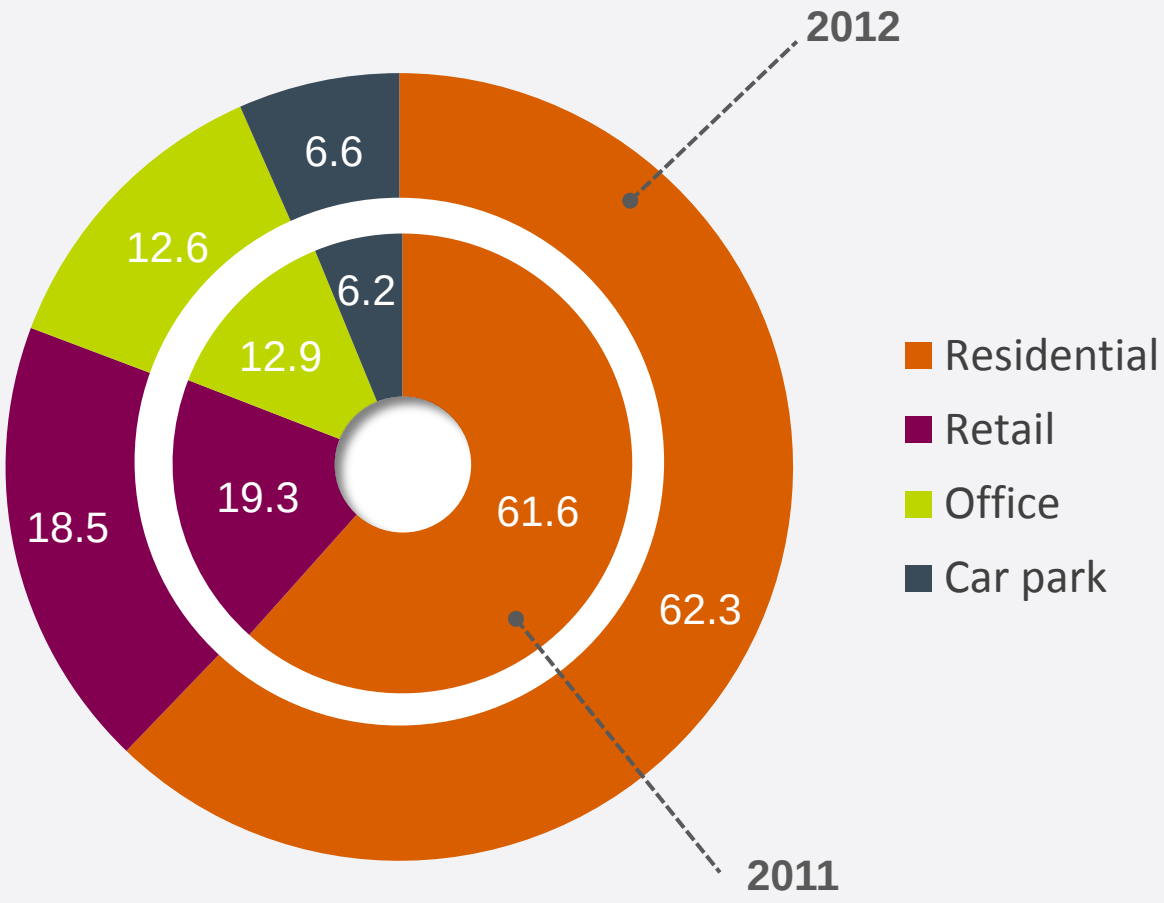
It should be possible in many jurisdictions for transit operators to supplement revenue through station retail and management of ancillary space.

- Hong Kong property development
- Mainland of China and international subsidiaries Hong
- Kong station commercial businesses
- Other businesses
- Hong Kong property rental and management business
- Hong Kong transport operations

Source: www.mtr.com.hk

MTR in Hong Kong

The First mile and the Last mile

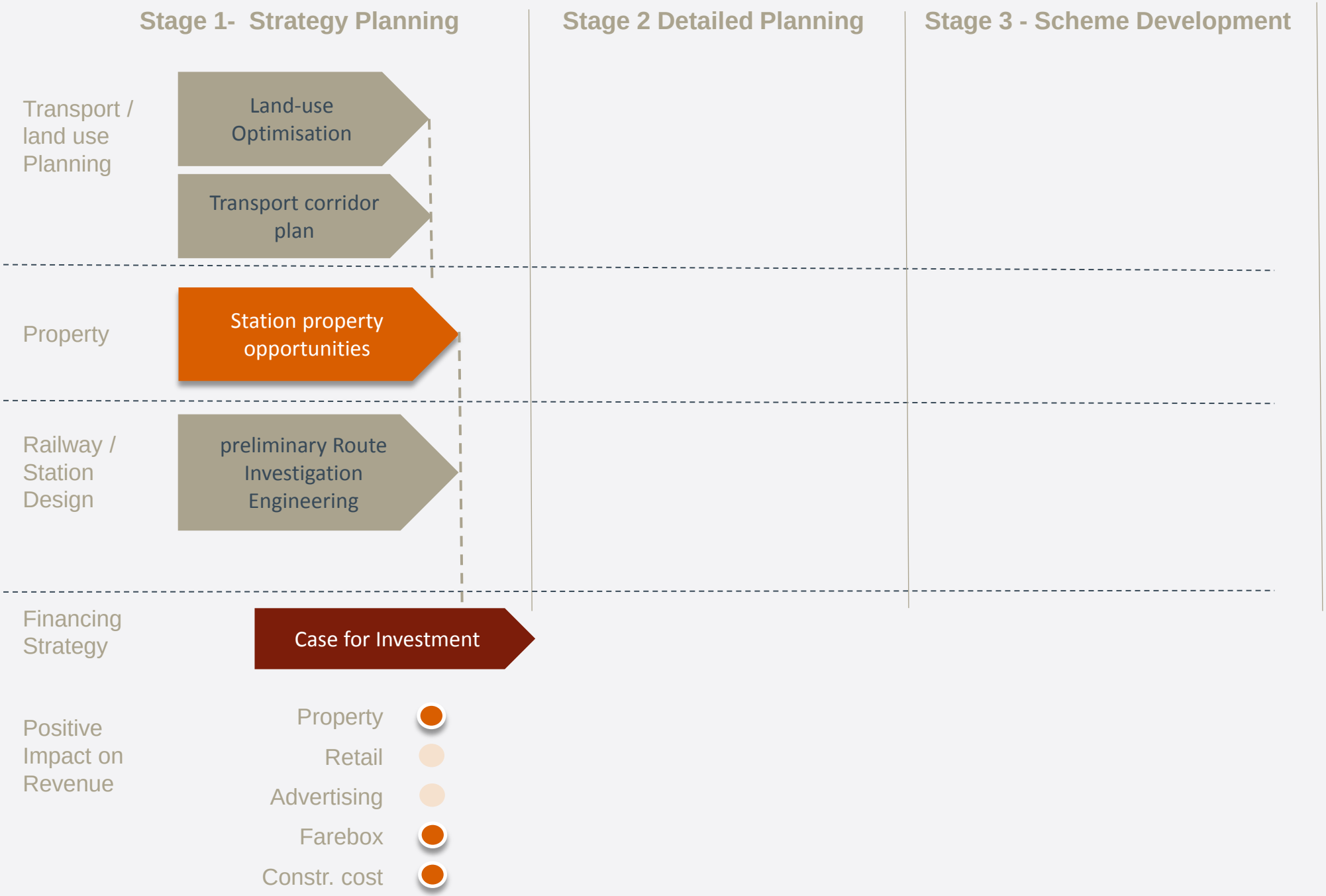


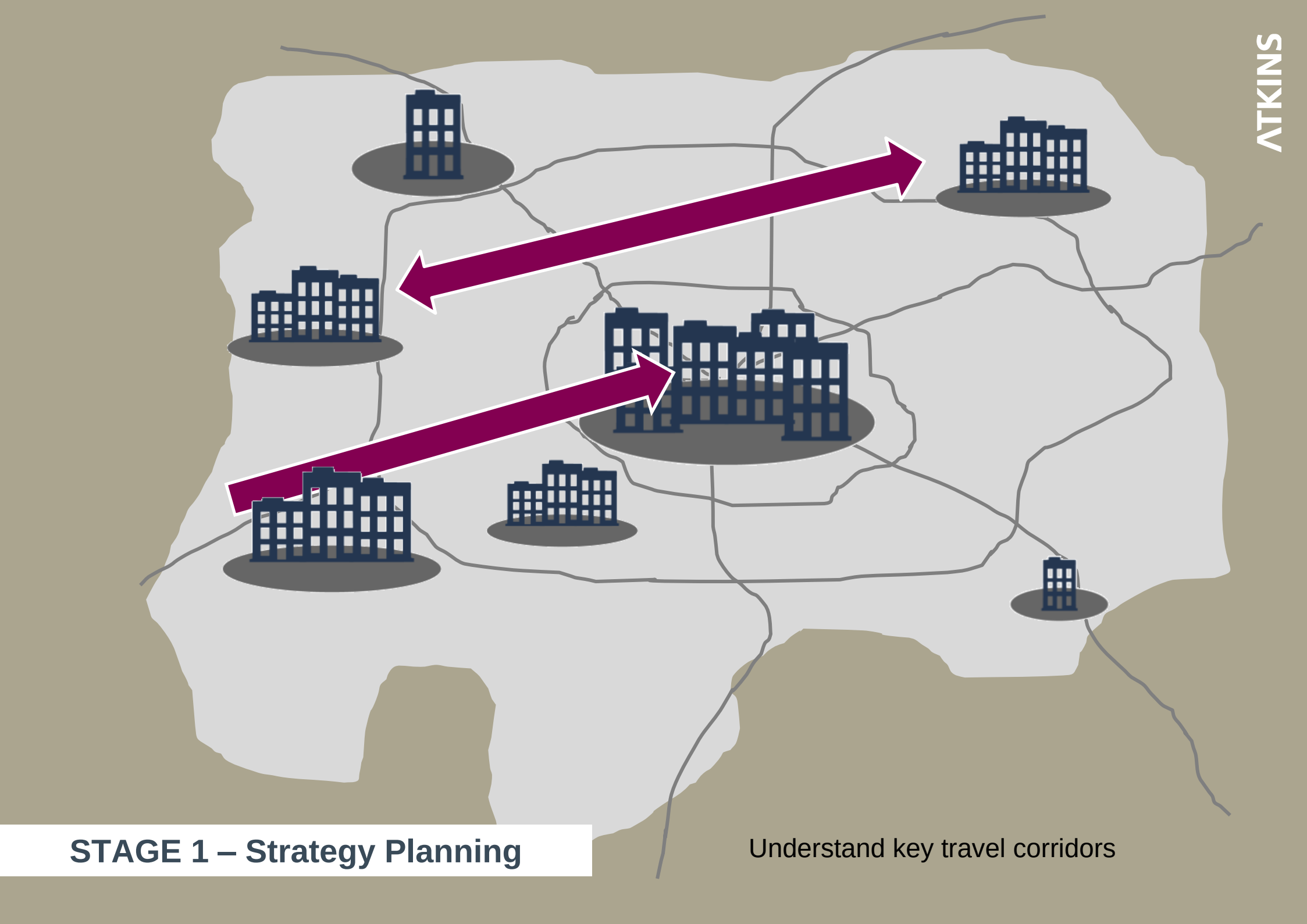
86,266
households enjoy
Quality Living
In our managed properties

13 MTR
Shopping Malls
To enhance customers'
Shopping experience

02

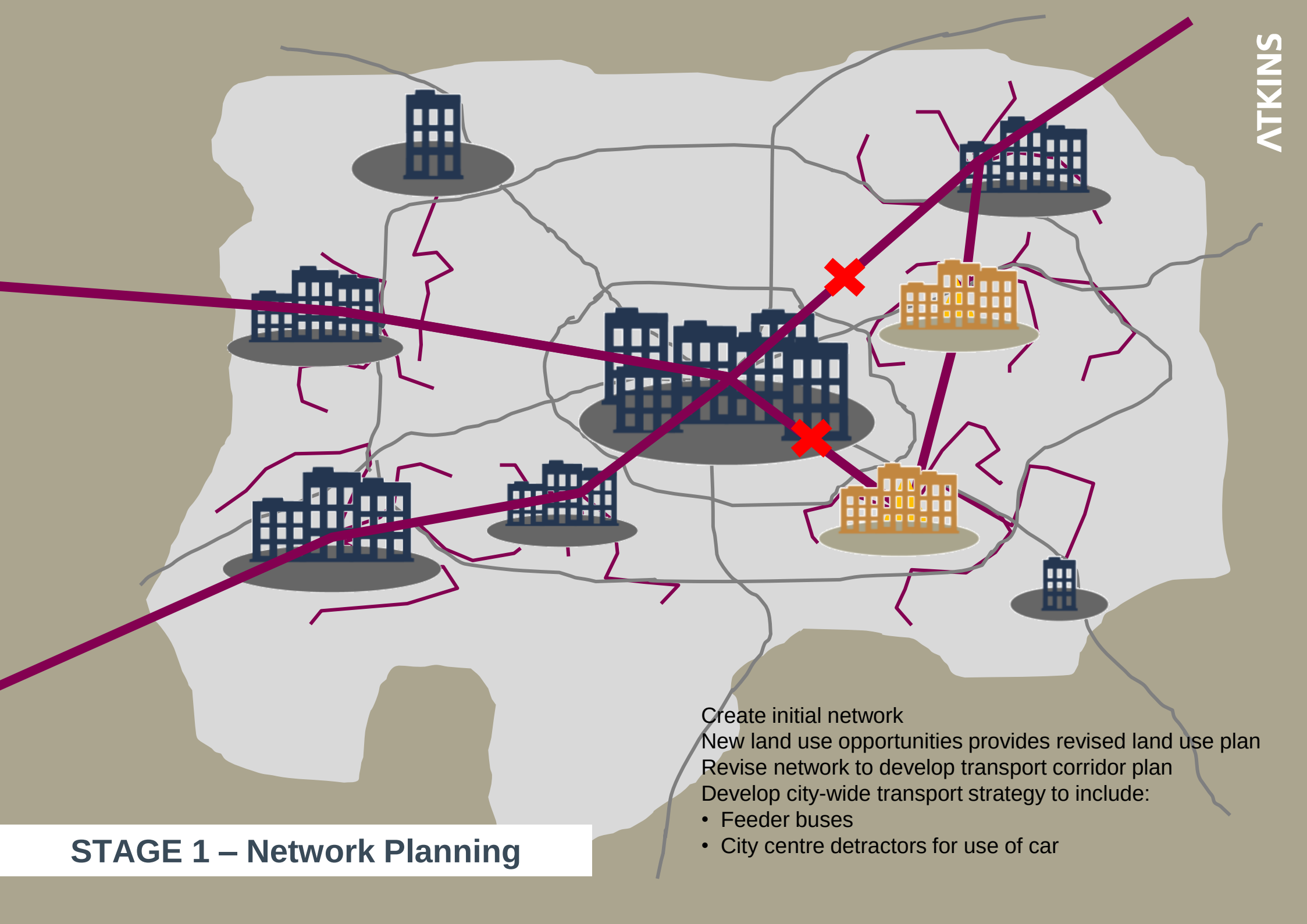
Strategy


Stage 1- Strategy Planning
Stage 2 Detailed Planning
Stage 3 - Scheme Development
Transport / land use Planning
Land-use Optimisation
Transport corridor plan
Property
Station property opportunities
Railway / Station Design
preliminary Route Investigation Engineering
Financing Strategy
Case for Investment
Positive Impact on Revenue
Property
Retail
Advertising
Farebox
Constr. cost



STAGE 1 – Strategy Planning

Understand key travel corridors



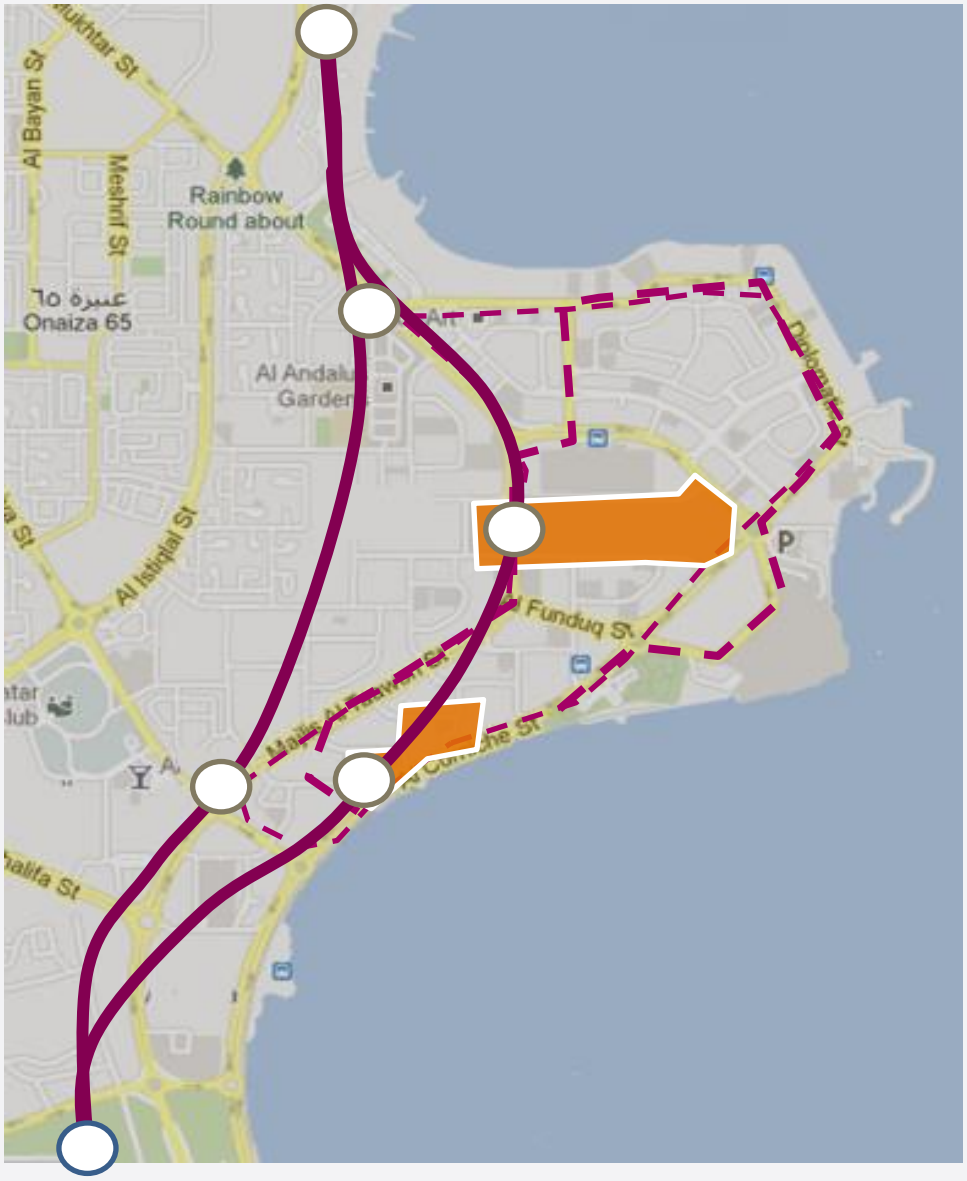
STAGE 1 – Network Planning

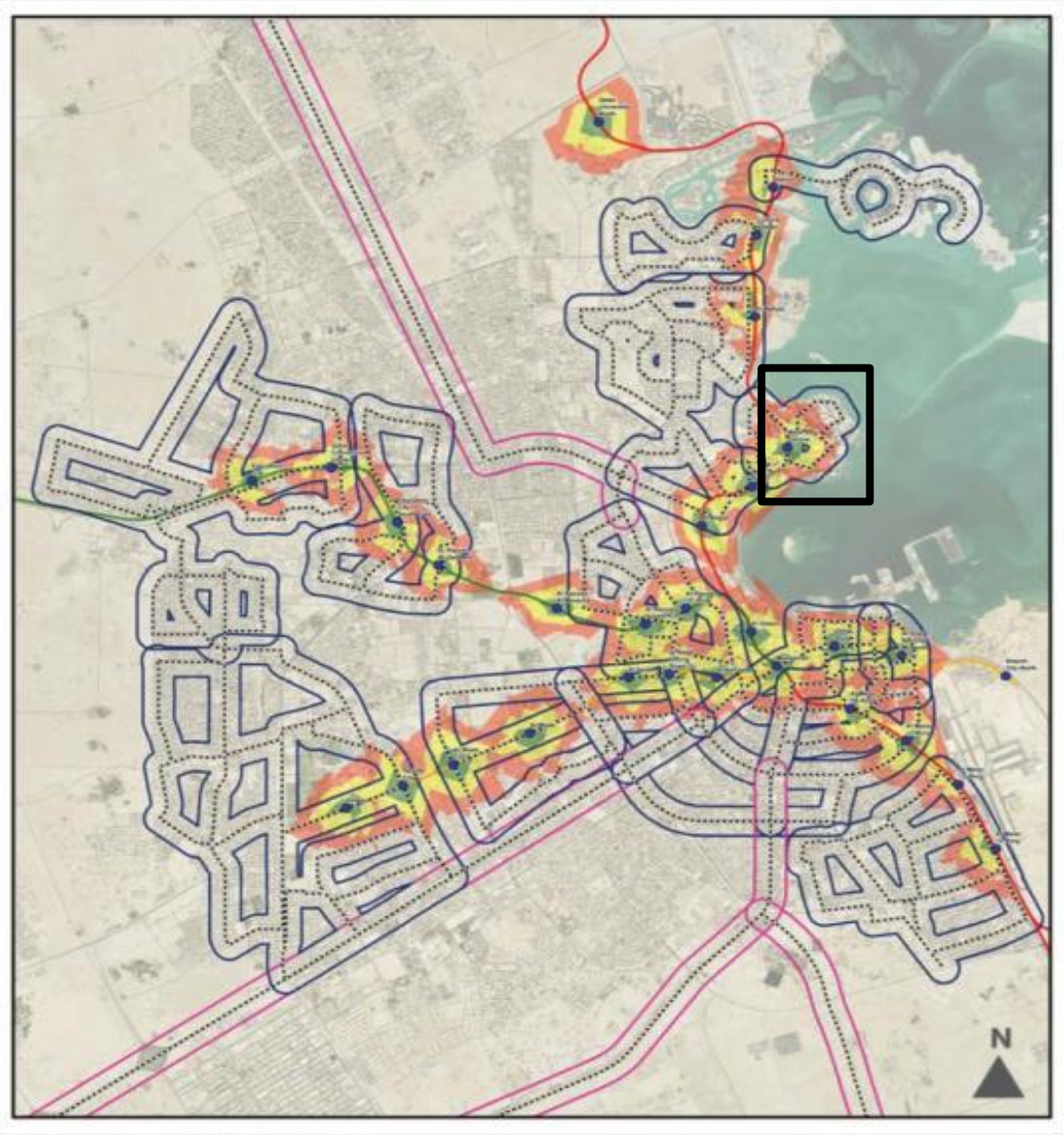
Create initial network
New land use opportunities provides revised land use plan
Revise network to develop transport corridor plan
Develop city-wide transport strategy to include:

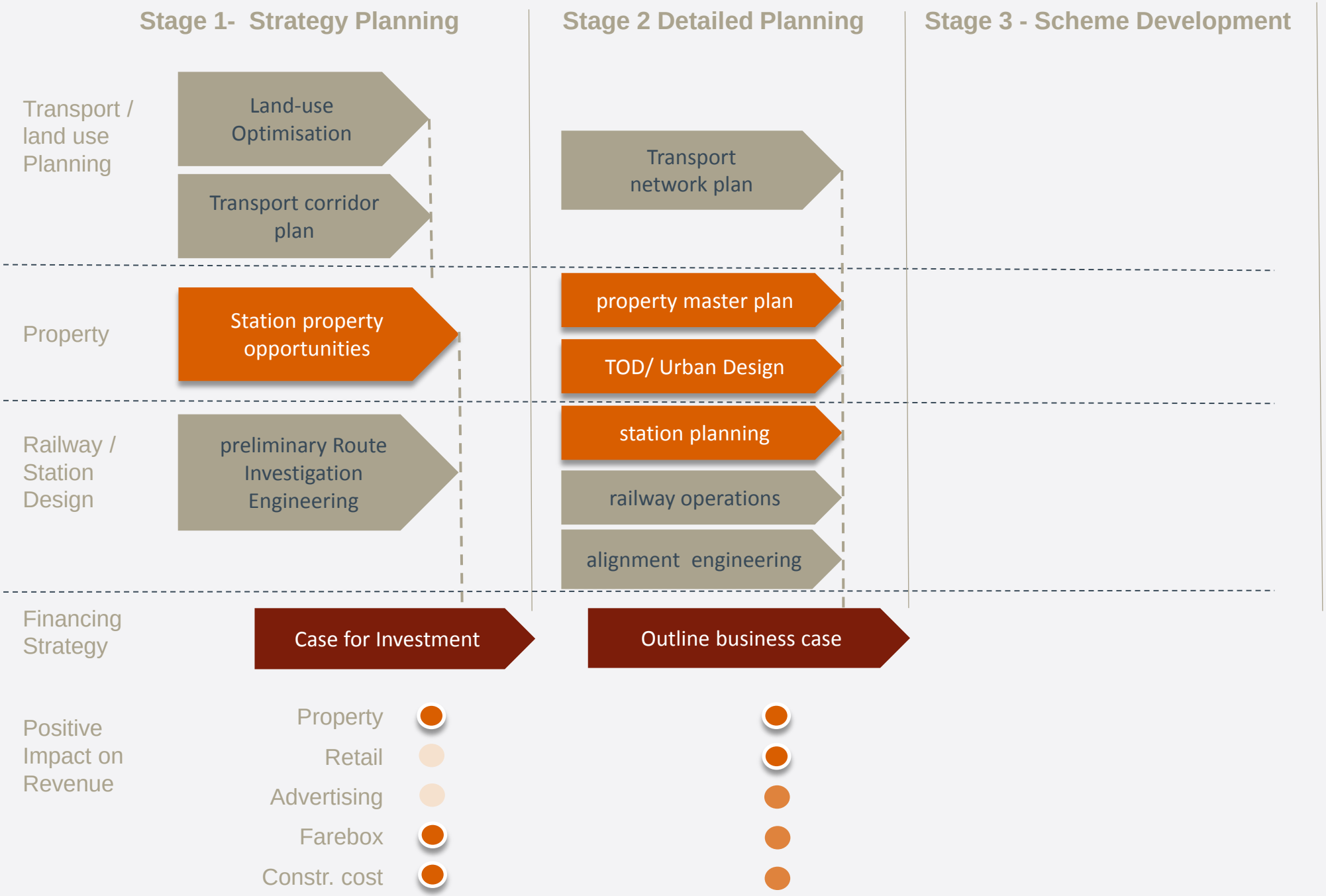
- Feeder buses
- City centre detractors for use of car

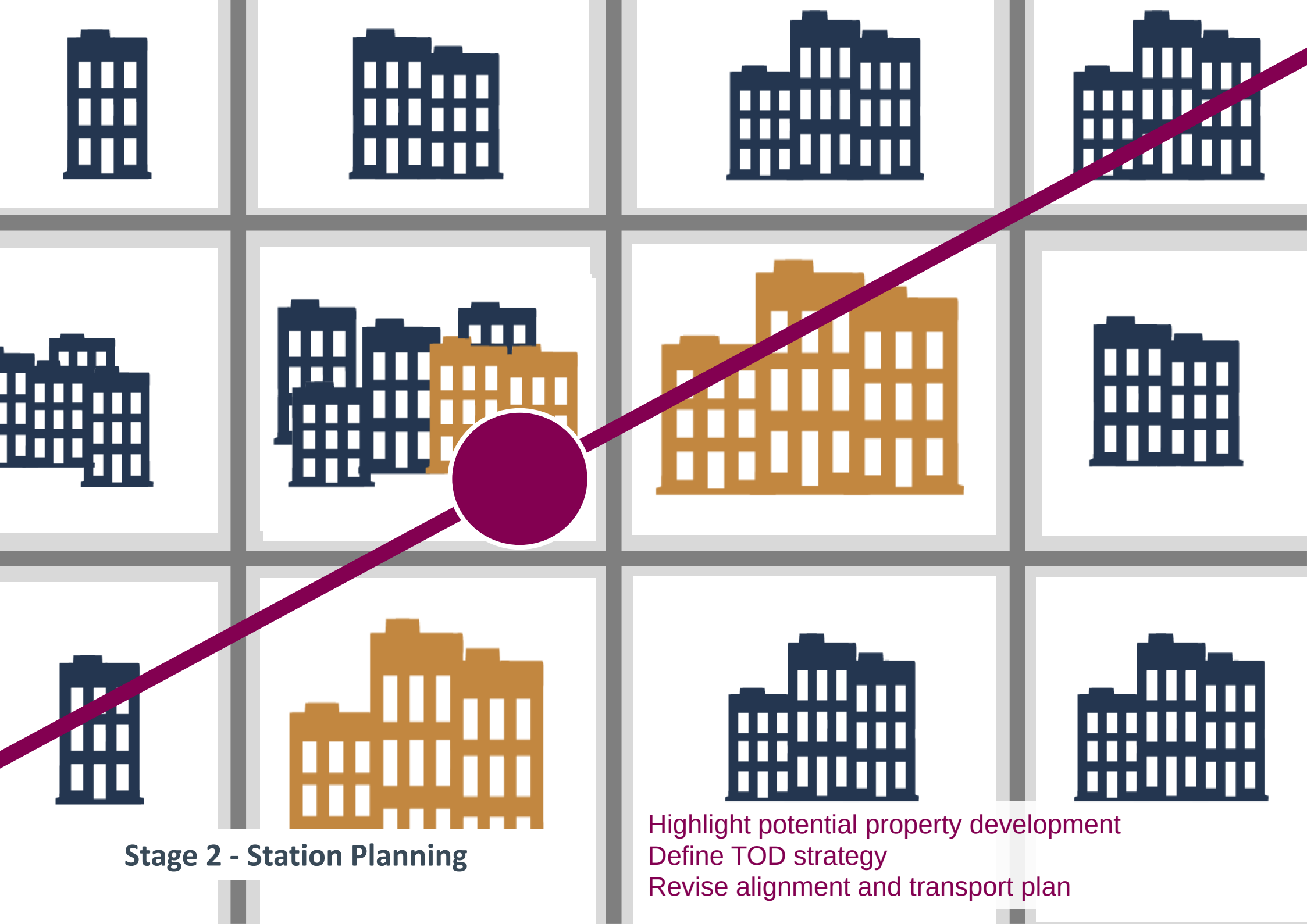
ATKINS

Doha Metro (West Bay)






Stage 1- Strategy Planning
Stage 2 Detailed Planning
Stage 3 - Scheme Development
Transport / land use Planning
Land-use Optimisation
Transport corridor plan
Transport network plan
Property
Station property opportunities
property master plan
TOD/ Urban Design
Railway / Station Design
preliminary Route Investigation Engineering
station planning
railway operations
alignment engineering
Financing Strategy
Case for Investment
Outline business case
Positive Impact on Revenue
Property
Retail
Advertising
Farebox
Constr. cost



Stage 2 - Station Planning

Highlight potential property development
Define TOD strategy
Revise alignment and transport plan

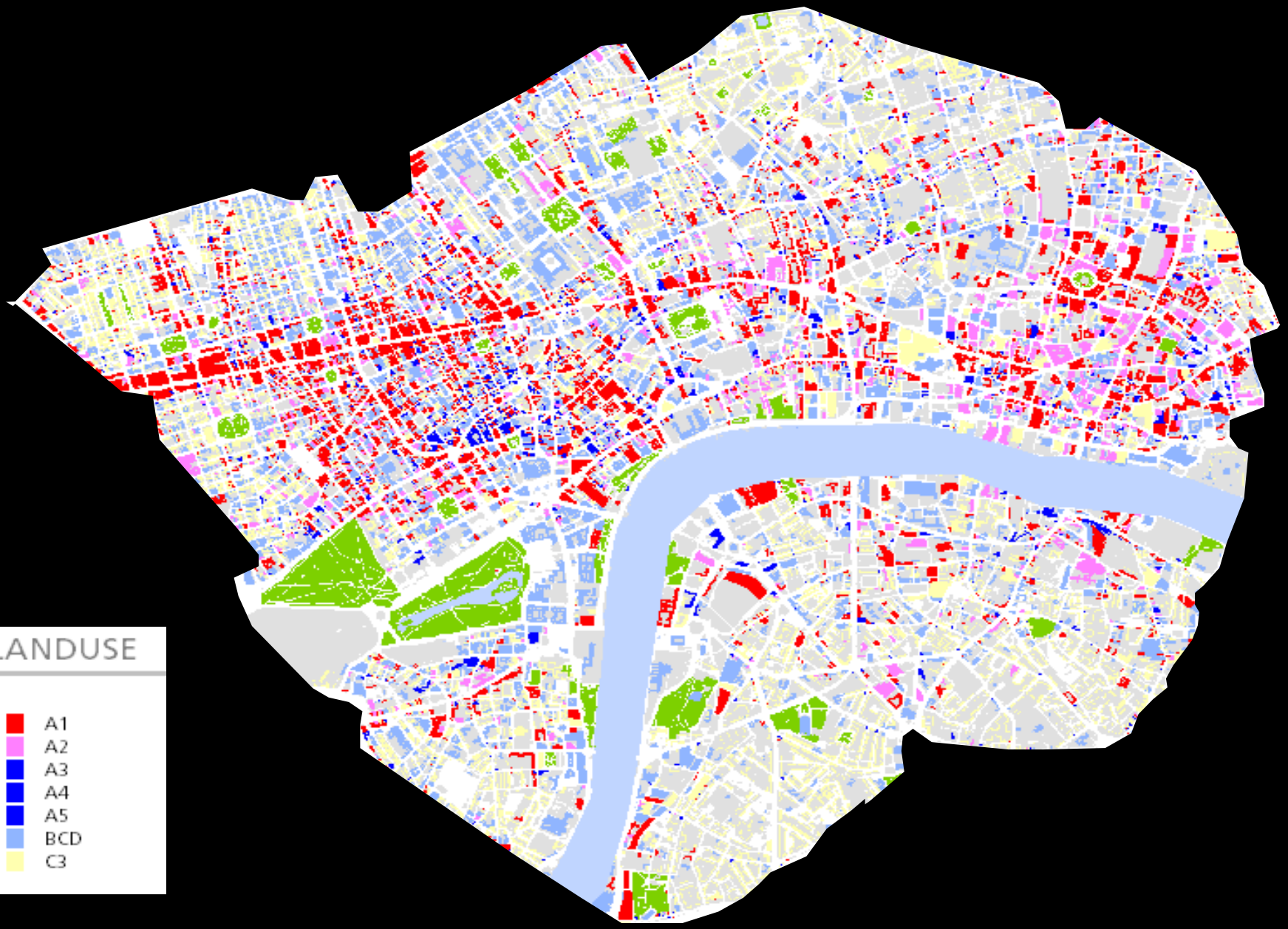
Visual Connectivity

Pedestrian Streetscape, Leeds, UK

ATKINS

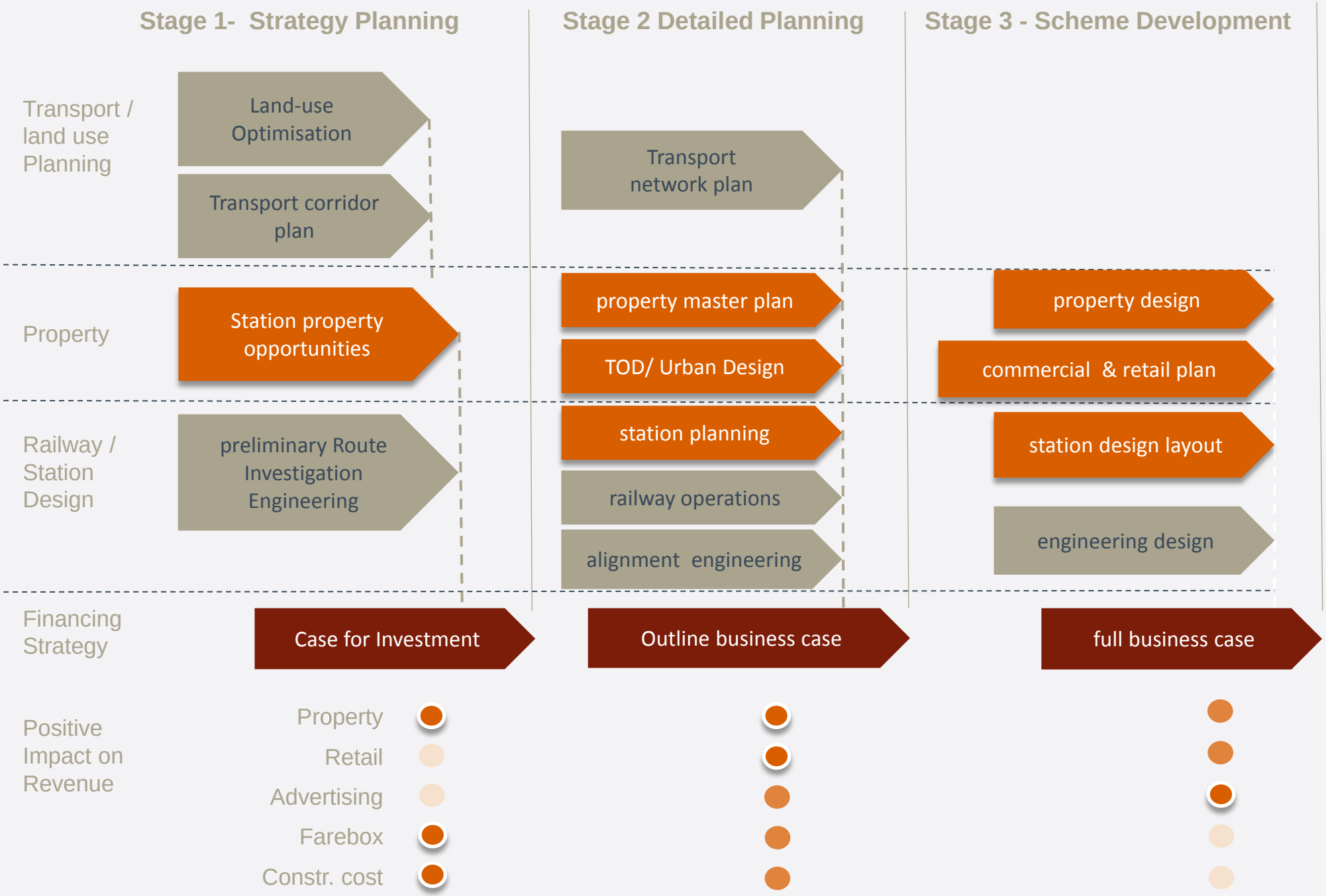
Land Use Planning

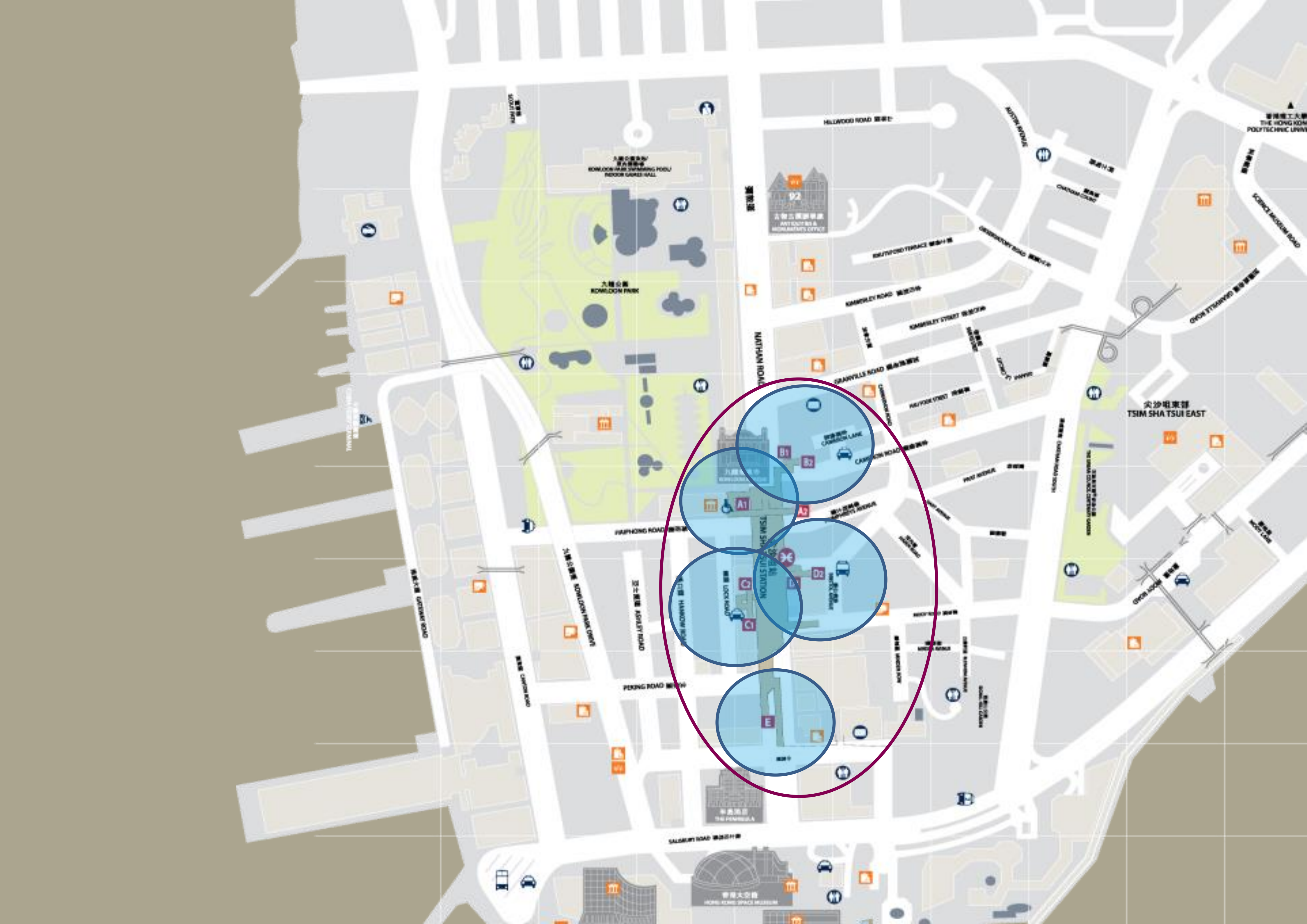
ATKINS



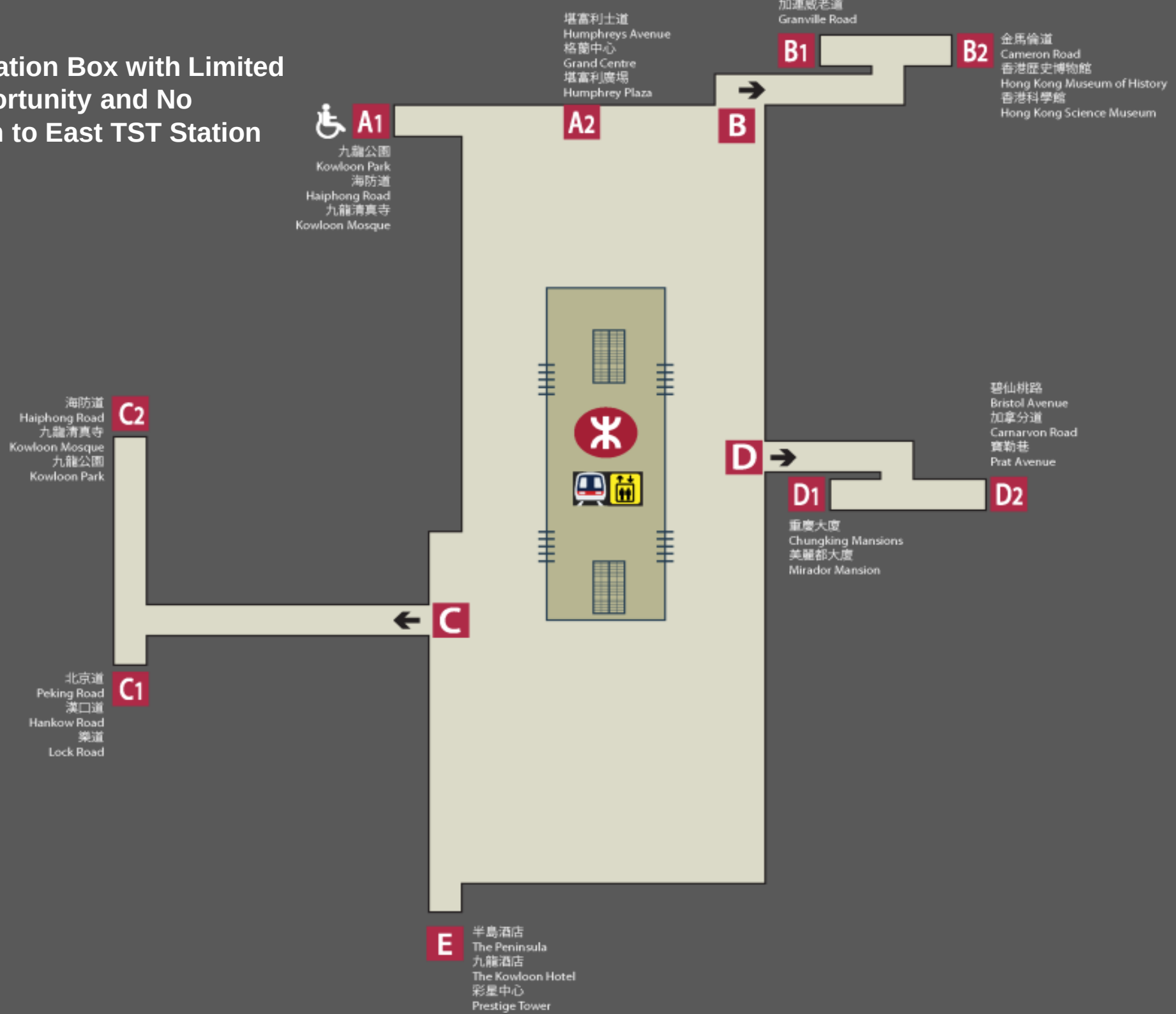
Accessibility Analysis

ATKINS

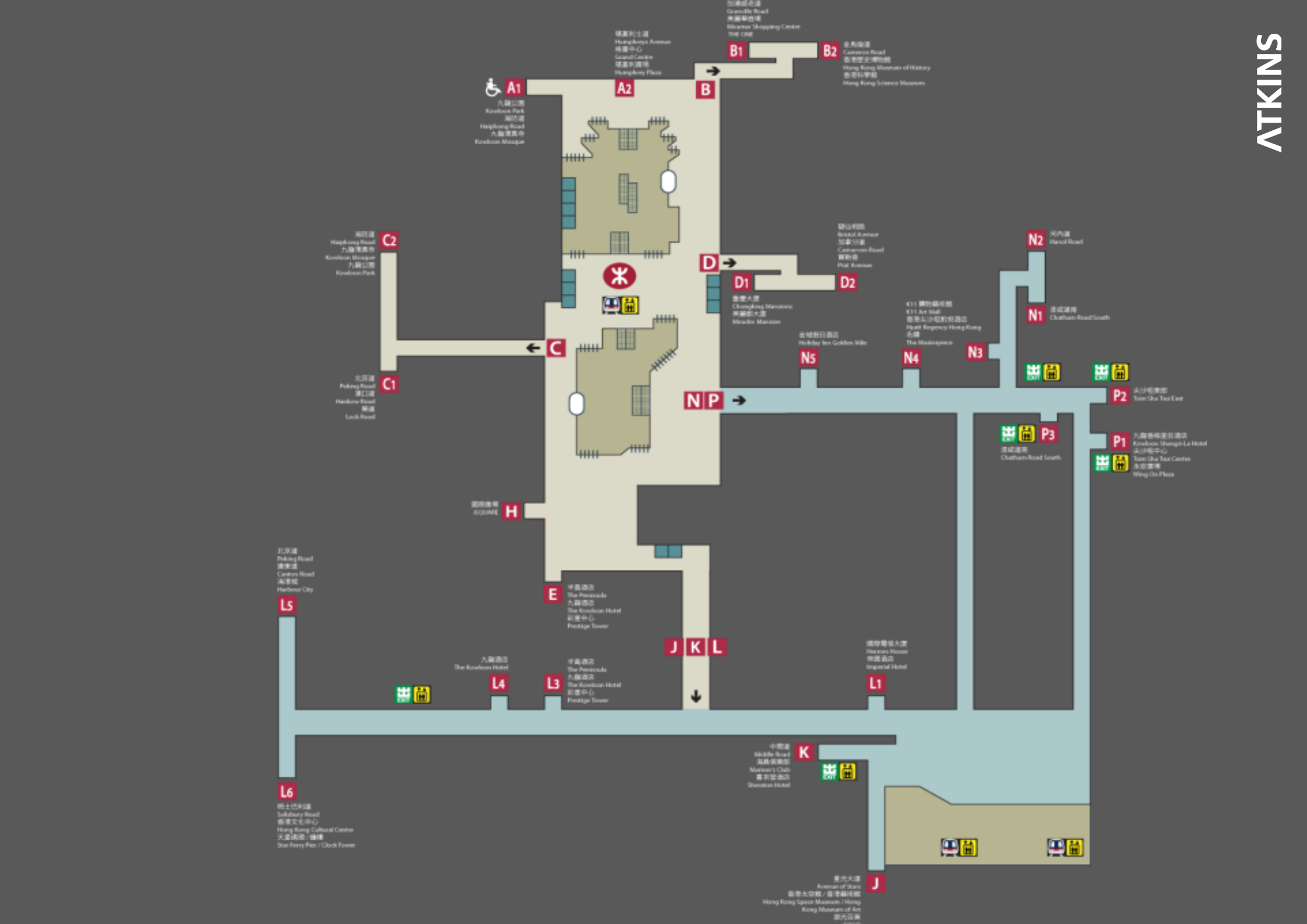

Stage 1- Strategy Planning
Stage 2 Detailed Planning
Stage 3 - Scheme Development
Transport / land use Planning
Land-use Optimisation
Transport corridor plan
Transport network plan
Property
Station property opportunities
property master plan
TOD/ Urban Design
property design
commercial & retail plan
Railway / Station Design
preliminary Route Investigation Engineering
station planning
railway operations
alignment engineering
station design layout
engineering design
Financing Strategy
Case for Investment
Outline business case
full business case
Positive Impact on Revenue
Property
Retail
Advertising
Farebox
Constr. cost

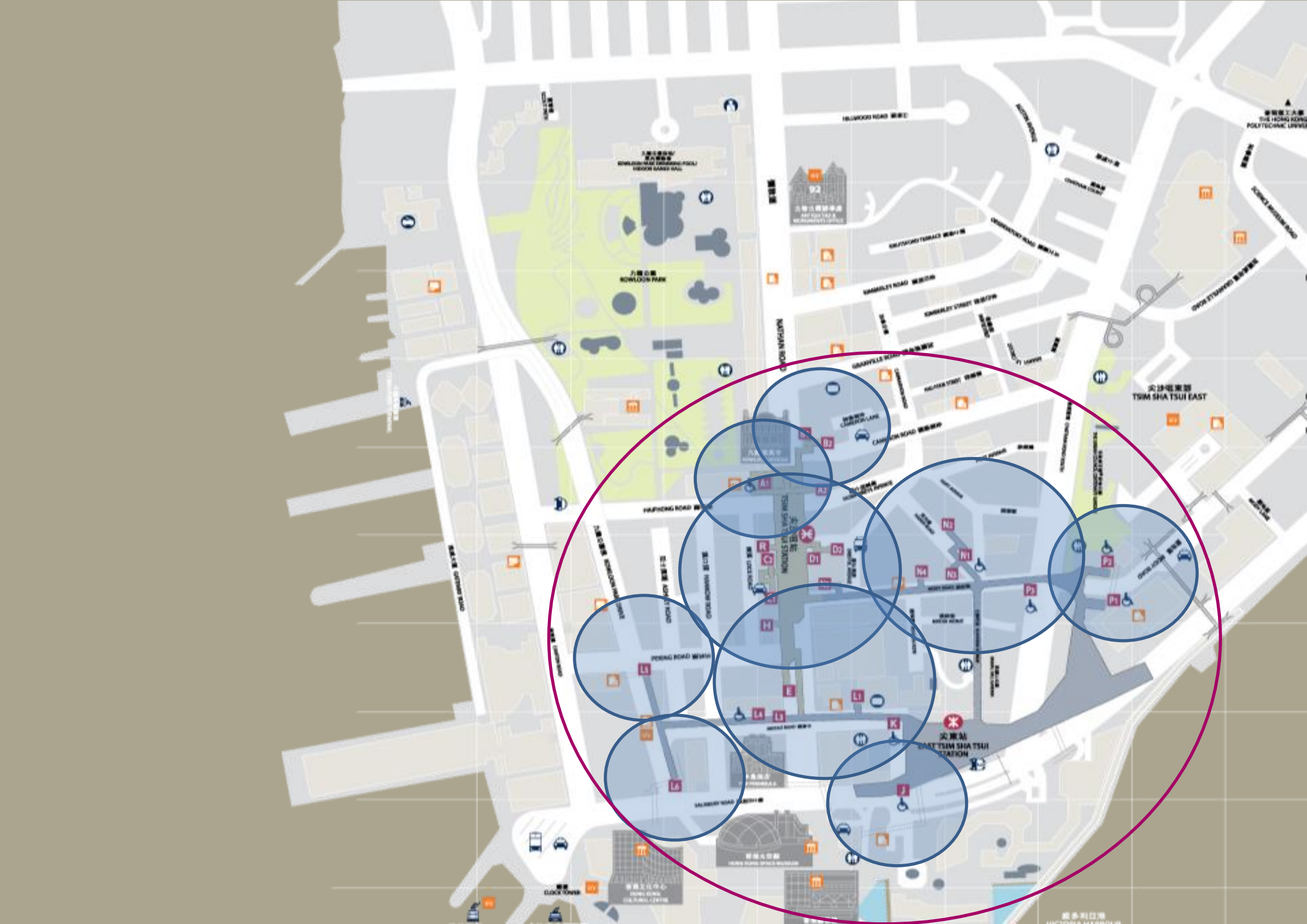

尖沙咀東部
TSIM SHA TSUI EAST
KOWLOON PARK
NATHAN ROAD
HILLWOOD ROAD
GRANVILLE ROAD
HAIPHONG ROAD
PEKING ROAD
SALISBURY ROAD
CAMERON ROAD
ASHLEY ROAD
TSIM SHA TSUI STATION
92

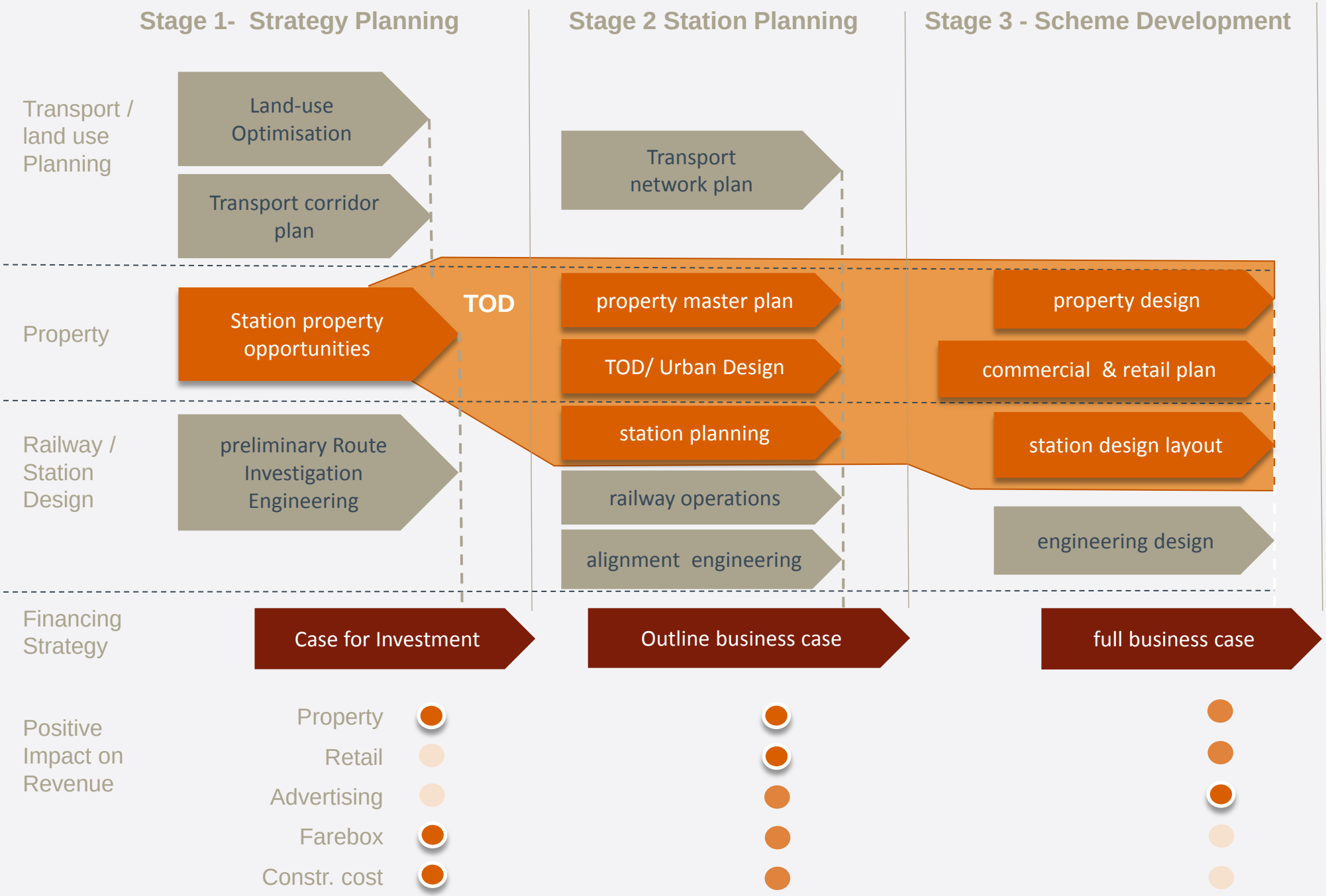
Old TST Station Box with Limited Retail Opportunity and No Connection to East TST Station



ATKINS


ATKINS
Granville Road
Miramar Shopping Centre
THE ONE
Humphreys Avenue
Grand Centre
Humphrey Plaza
B1
B2
Cameron Road
Hong Kong Museum of History
Hong Kong Science Museum
A1
A2
B
Kowloon Park
Haiphong Road
Kowloon Mosque
C2
Haiphong Road
Kowloon Mosque
Kowloon Park
Bristol Avenue
Cameron Road
Peat Avenue
D
D1
D2
Chungking Mansions
Mirador Mansion
N2
Haiphong Road
N1
Chatham Road South
K11 Art Mall
Hyatt Regency Hong Kong
The Masterpiece
N3
Holiday Inn Golden Mile
N5
N4
C
C1
Peking Road
Hankow Road
Lock Road
N P
P2
Tsim Sha Tsui East
P3
Chatham Road South
P1
Kowloon Shangri-La Hotel
Tsim Sha Tsui Centre
Wing On Plaza
H
E
The Peninsula
The Kowloon Hotel
Prestige Tower
J K L
Peking Road
Canton Road
Harbour City
L5
L6
Salisbury Road
Hong Kong Cultural Centre
Star Ferry Pier / Clock Tower
The Kowloon Hotel
L4
L3
L1
Hermes House
Imperial Hotel
Middle Road
Mariner's Club
Sheraton Hotel
K
J
Avenue of Stars
Hong Kong Space Museum / Hong Kong Museum of Art

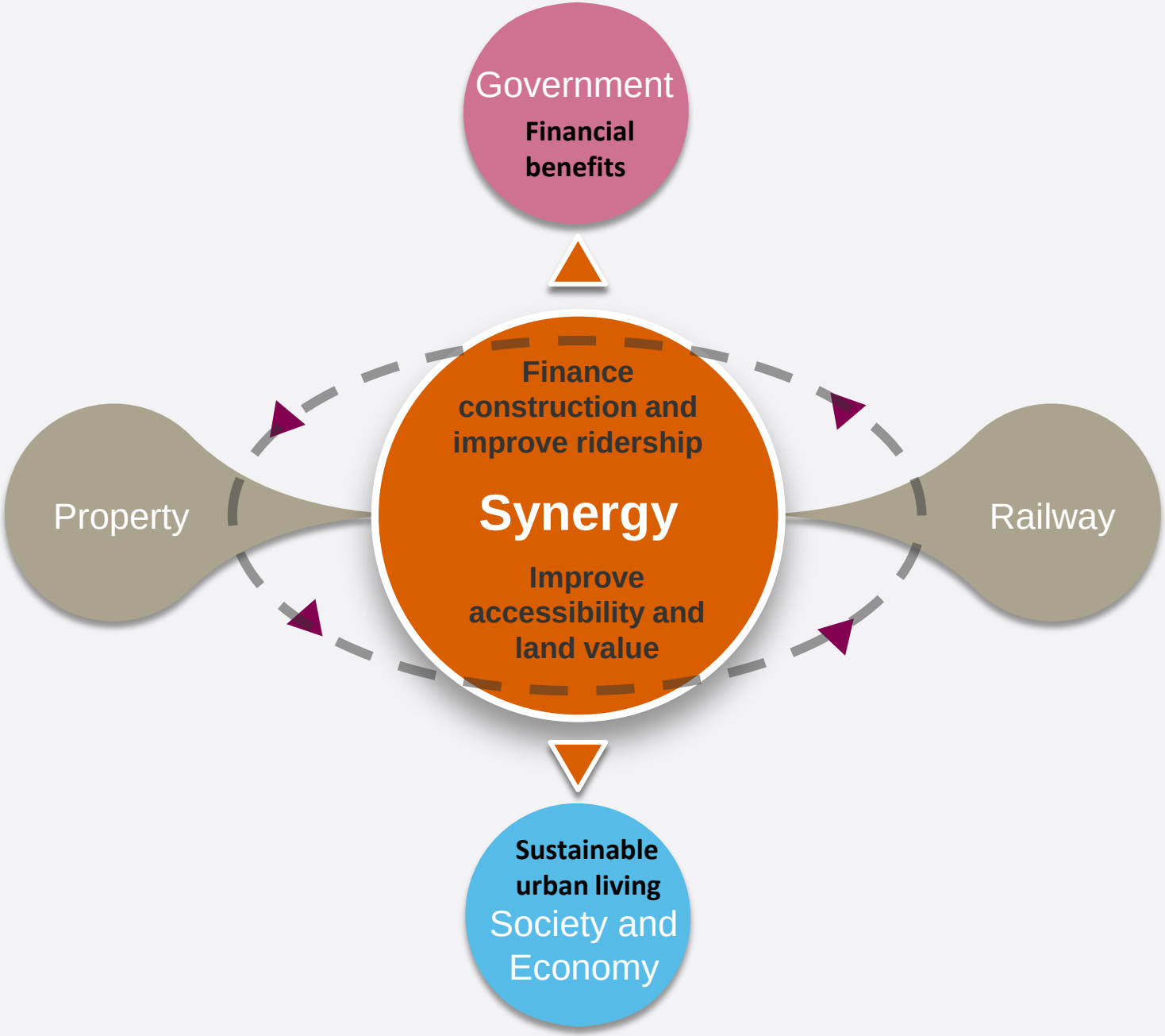

KOWLOON PARK
TSIM SHA TSUI EAST
EAST TSIM SHA TSUI STATION
CLOCK TOWER


Stage 1- Strategy Planning
Stage 2 Station Planning
Stage 3 - Scheme Development
Transport / land use Planning
Land-use Optimisation
Transport corridor plan
Transport network plan
Property
Station property opportunities
TOD
property master plan
TOD/ Urban Design
property design
commercial & retail plan
Railway / Station Design
preliminary Route Investigation Engineering
station planning
station design layout
railway operations
engineering design
alignment engineering
Financing Strategy
Case for Investment
Outline business case
full business case
Positive Impact on Revenue
Property
Retail
Advertising
Farebox
Constr. cost

03

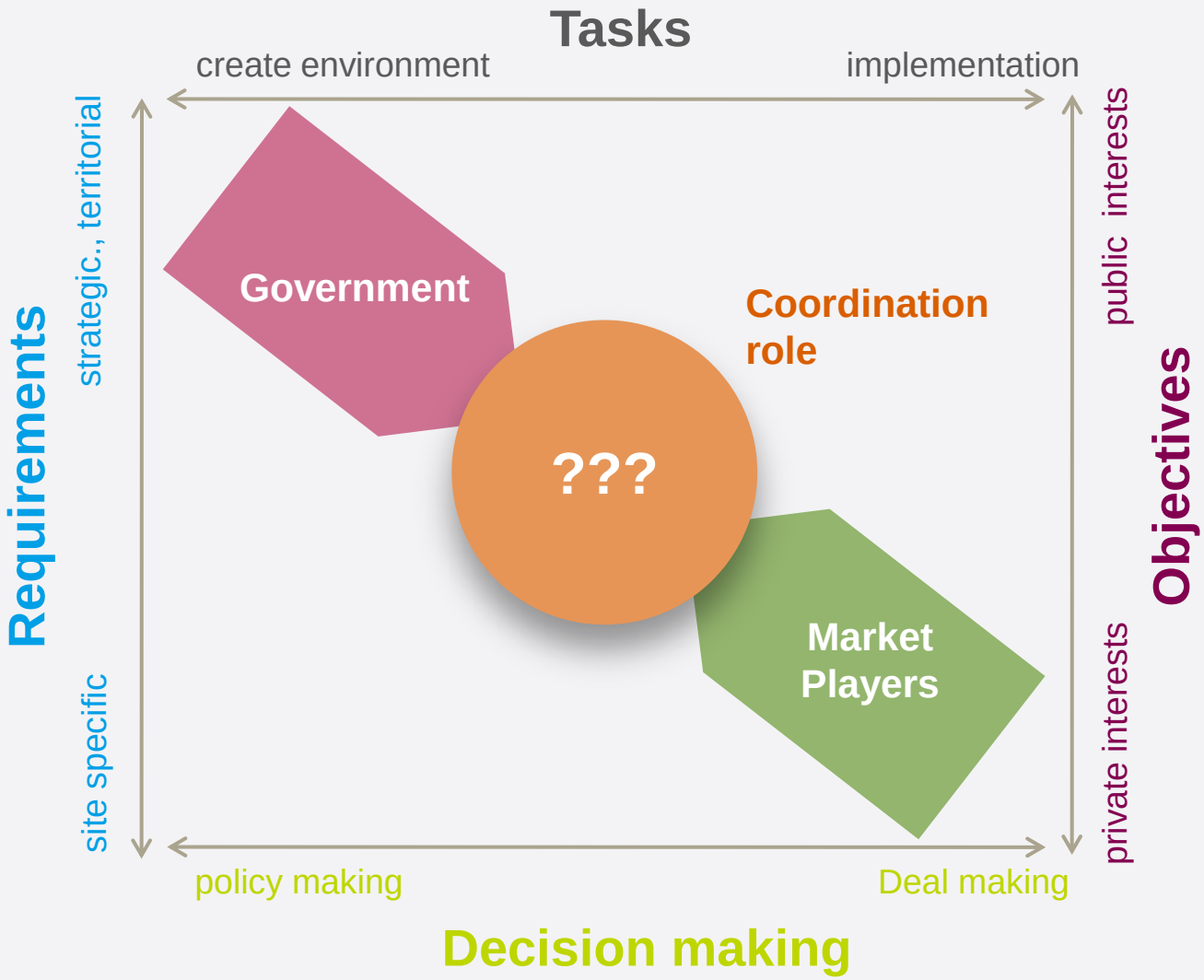
Value

Synergy of Integrating Railway and Property Development



Credit: Research Centre for Real Estate Economics
BS Tang, YH Chiang, An Baldwin and CW Yeung

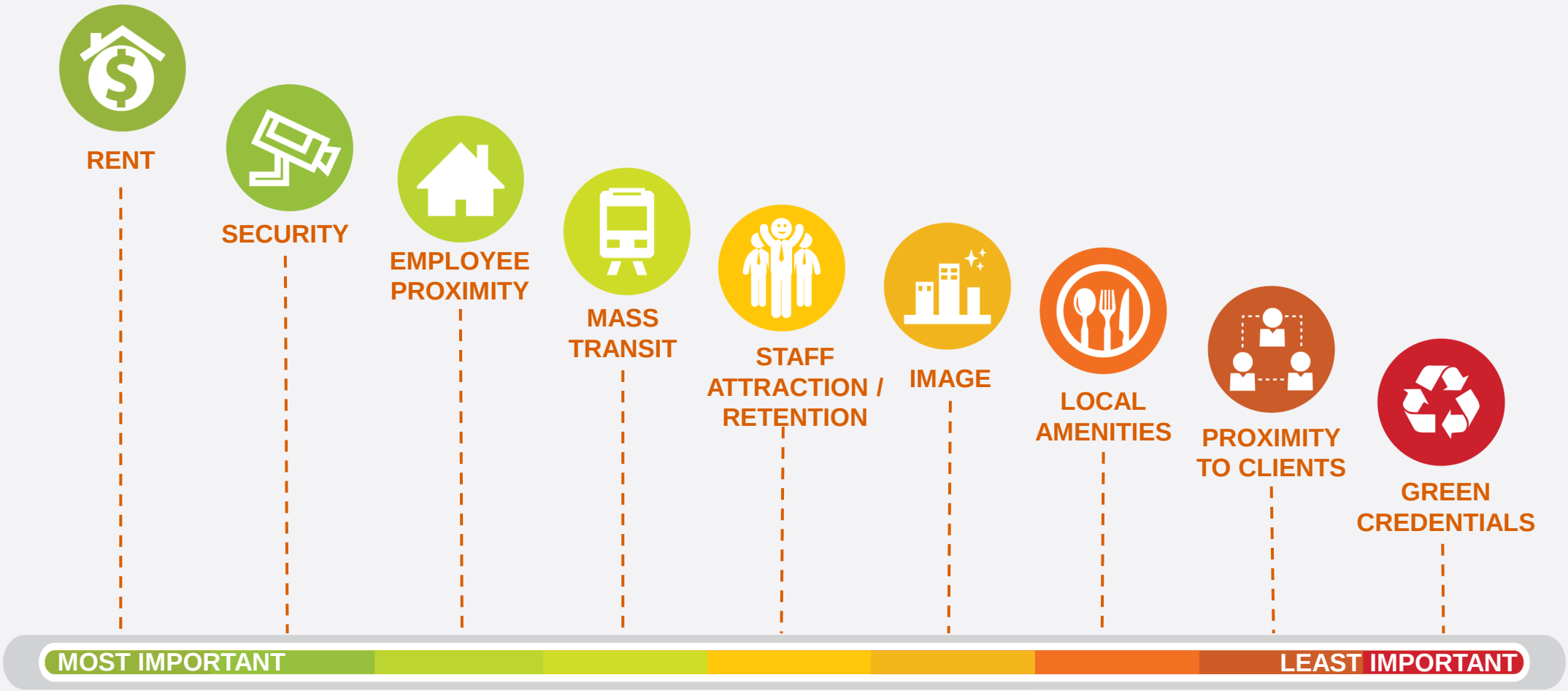
Institutional Functions of Different Organizations: Four Dimensions



Credit: Research Centre for Real Estate Economics
BS Tang, YH Chiang, An Baldwin and CW Yeung

How do we measure (or predict) value?

To Business

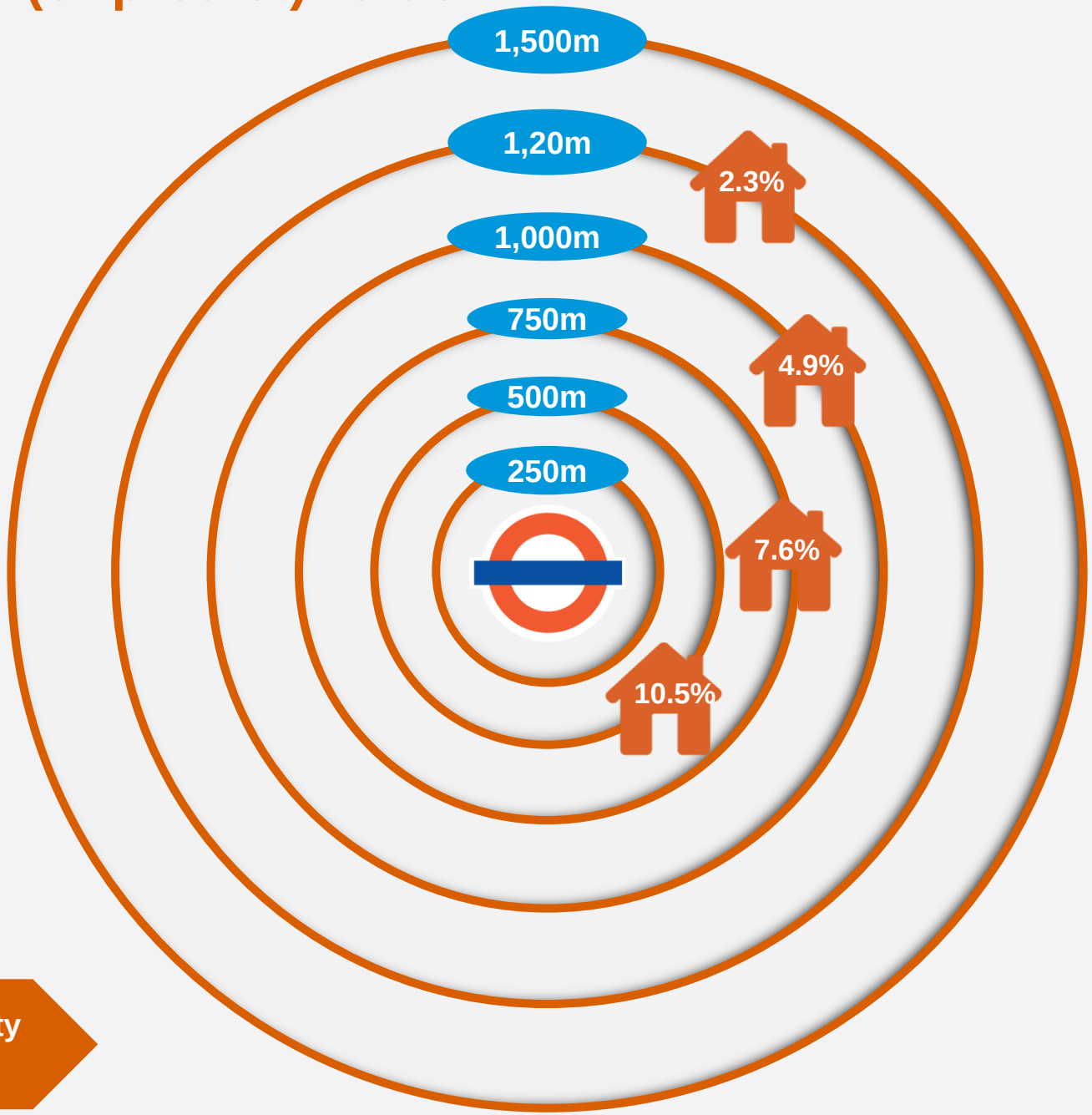


Survey

Credit: Knight Frank HK

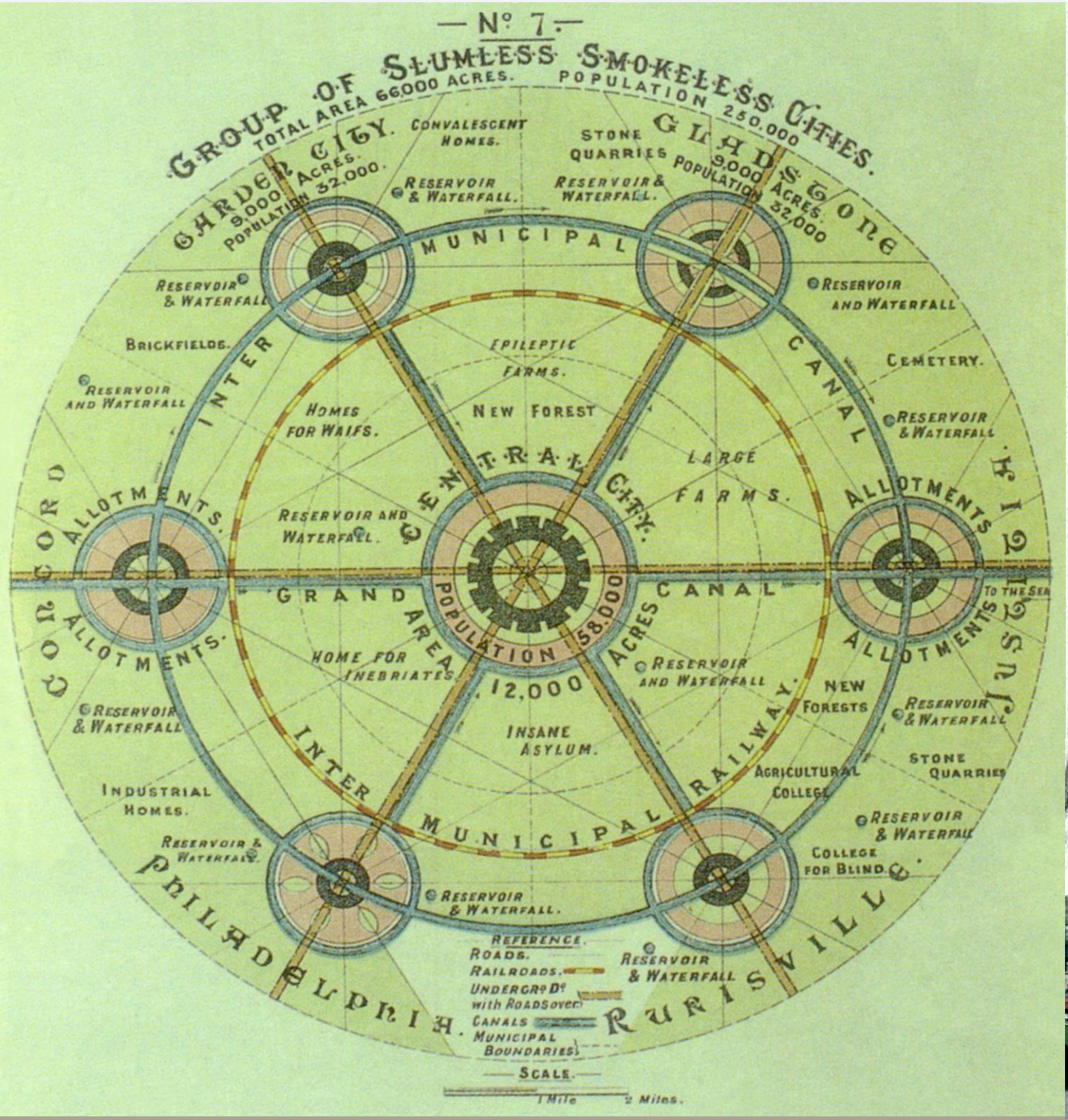
How do we measure (or predict) value?

To Home Owner



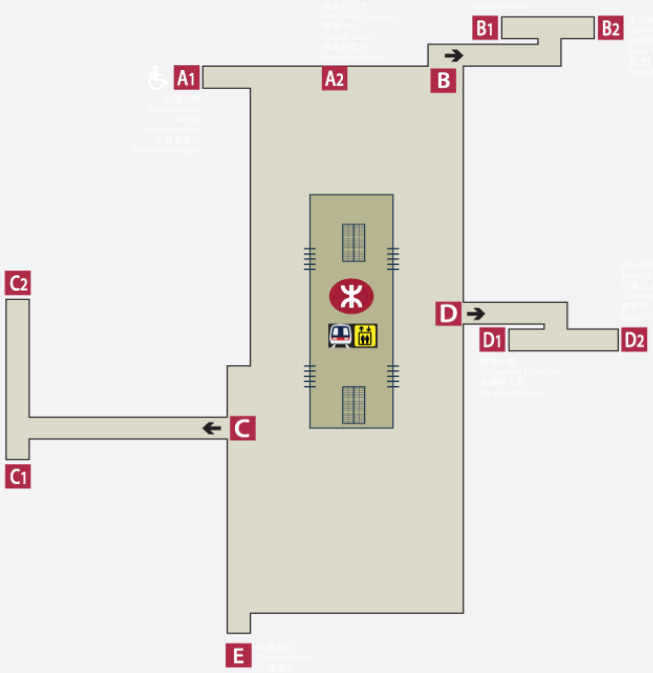
Premium compared to property Located 1,500 from station

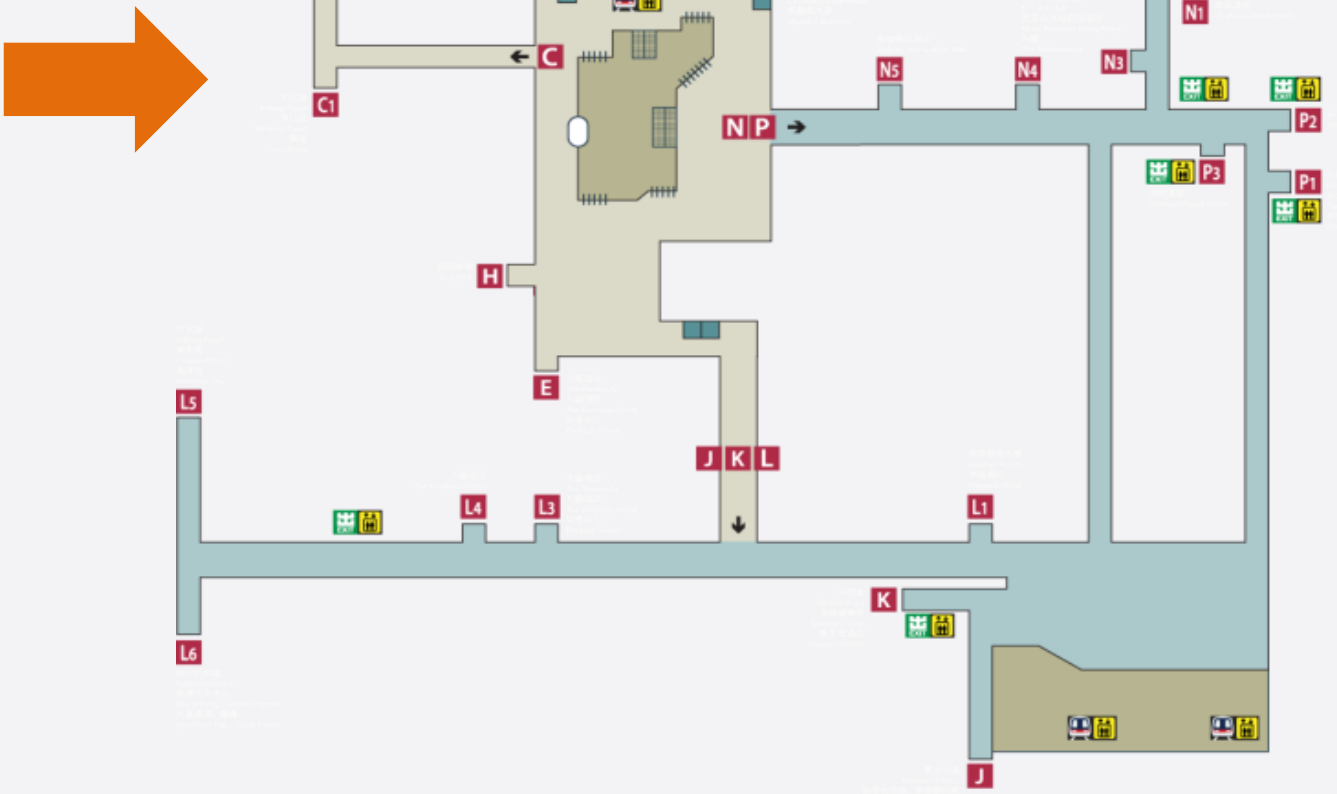
Source: Nationwide Building Society


— Nº 7 —
GROUP OF SLUMLESS SMOKELESS CITIES.
TOTAL AREA 66000 ACRES. POPULATION 250.000
GARDEN CITY.
9.000 ACRES.
POPULATION 32.000.
GLADSTONE
9.000 ACRES.
POPULATION 32.000
CONVALESCENT HOMES.
STONE QUARRIES
RESERVOIR & WATERFALL.
RESERVOIR & WATERFALL.
MUNICIPAL
RESERVOIR & WATERFALL
RESERVOIR AND WATERFALL
BRICKFIELDS.
RESERVOIR AND WATERFALL
EPILEPTIC FARMS.
HOMES FOR WAIFS.
NEW FOREST
CANAL
CEMETERY.
RESERVOIR & WATERFALL
CENTRAL CITY.
LARGE FARMS.
RESERVOIR AND WATERFALL.
ALLOTMENTS.
HIGHGATE
GRAND AREA
POPULATION 58.000
ACRES
12,000
CANAL
TO THE SEA
HOME FOR INEBRIATES
RESERVOIR AND WATERFALL
NEW FORESTS
RESERVOIR & WATERFALL
INSANE ASYLUM.
INTER MUNICIPAL RAILWAY.
STONE QUARRIES
AGRICULTURAL COLLEGE
INDUSTRIAL HOMES.
RESERVOIR & WATERFALL
RESERVOIR & WATERFALL.
COLLEGE FOR BLIND.
RESERVOIR & WATERFALL.
PHILADELPHIA.
RURISVILLE
REFERENCE.
ROADS.
RAILROADS.
UNDERGRº Dº with ROADS over
CANALS
MUNICIPAL BOUNDARIES
RESERVOIR & WATERFALL
SCALE.
1 Mile
2 Miles.


ROAD & RAIL COMMUNICATIONS
SHOPS PUBLIC BUILDINGS OPEN SPACES ETC
AGRICULTURAL ZONES
WELWYN GARDEN CITY

Value Engineering…



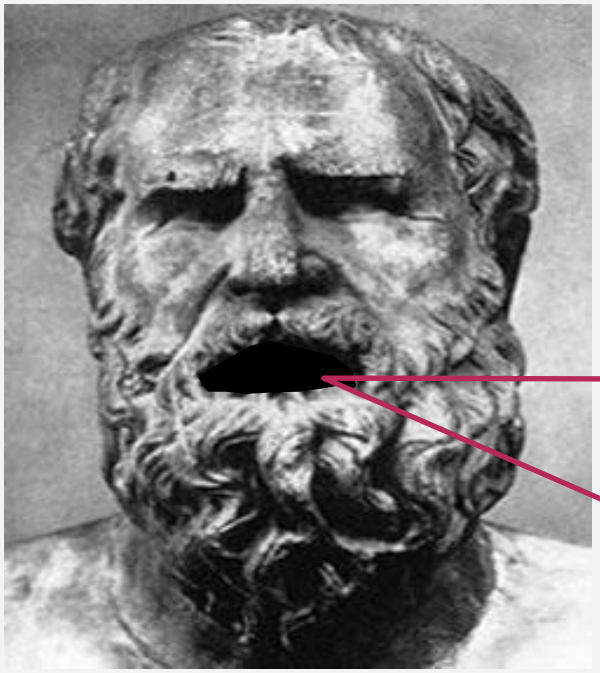


Future-proofing:

- Anticipate
- Allow
- Plan
- Budget

04

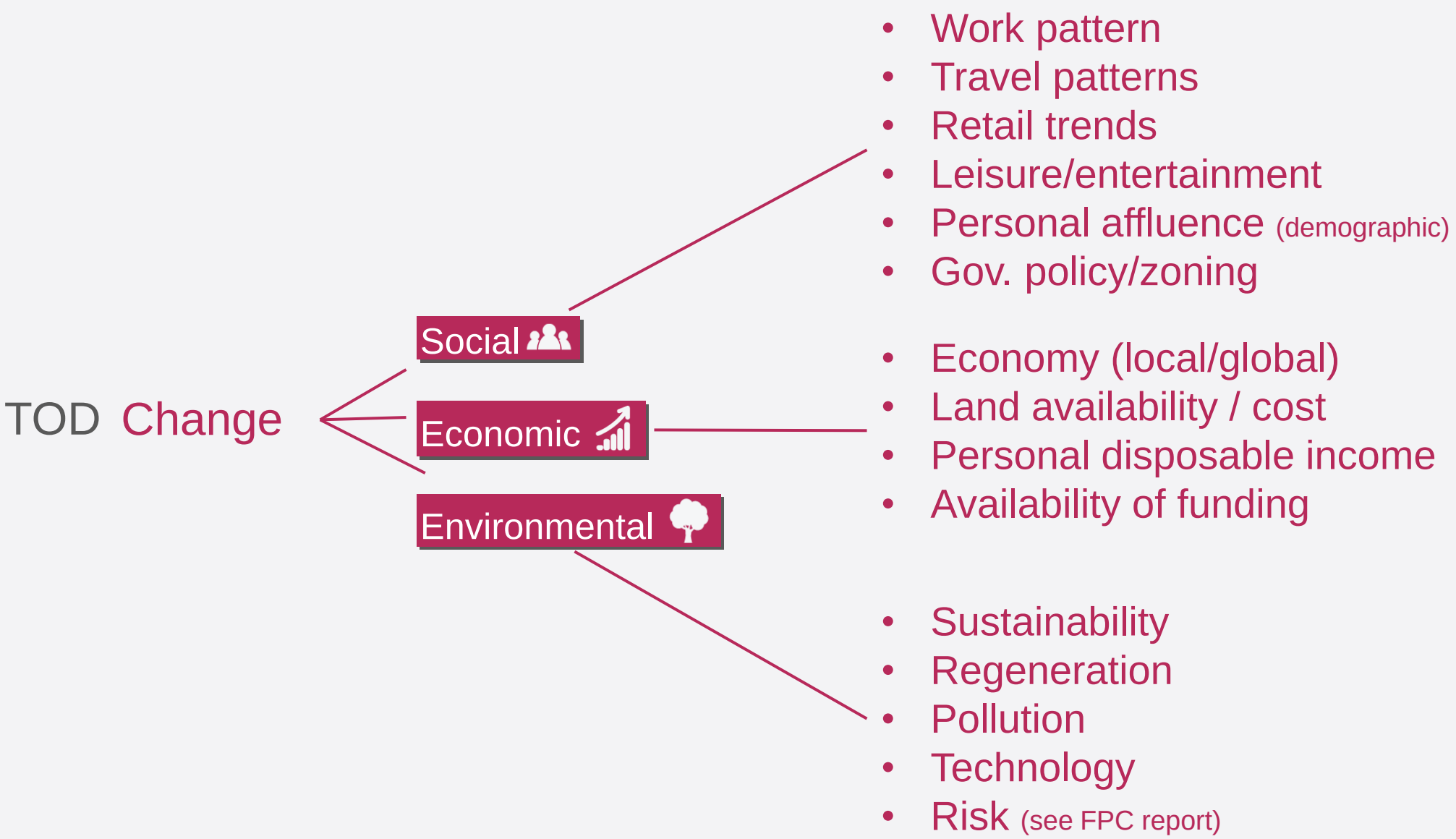
Change



"There is nothing permanent in life except change"

Heraclitus (~500BC)

What will cause future change?



What is the likely **cause** and potential **effect** of change ?

During Design and Construction Stages	
Cause	Effect
Market changes Politics (affecting transport plan) Economics Commercial / VE Planning	Design change Programme prolongation Increased cost Increased publicity Personnel change

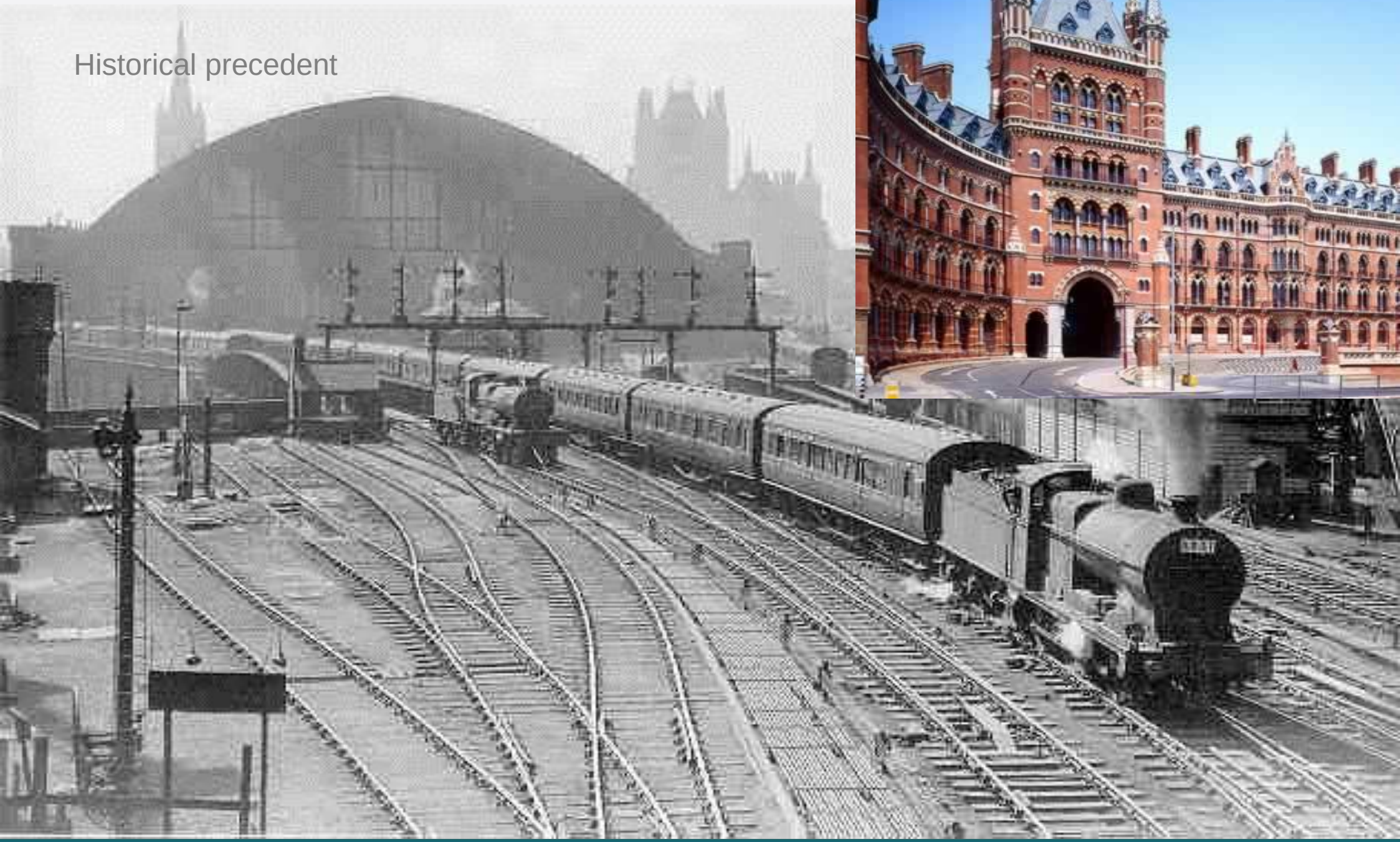
Post completion / During Operation	
Cause	Effect
Changes in land value Tennant requirements Transport / passenger number Environmental Social patterns	Change in development mix Operational changes Building A&A Demolition and re-build Revenue stream

05

Future Proof TOD

Is integrated TOD a good thing?

Historical precedent



Is integrated TOD a good thing?

Is integrated TOD a good thing?

Is integrated TOD a good thing?

Holistic, does not necessarily mean connected

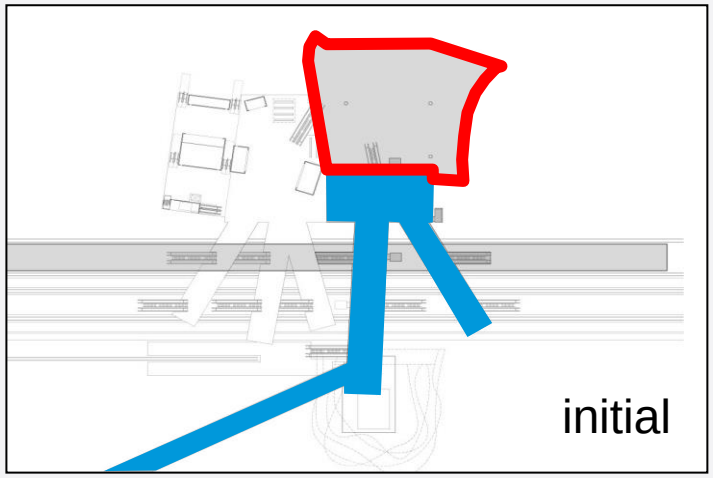
Integrated

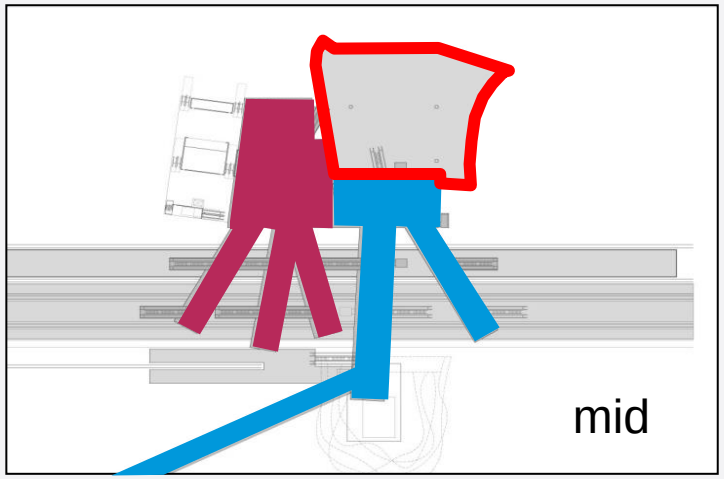
Planning and Design approach

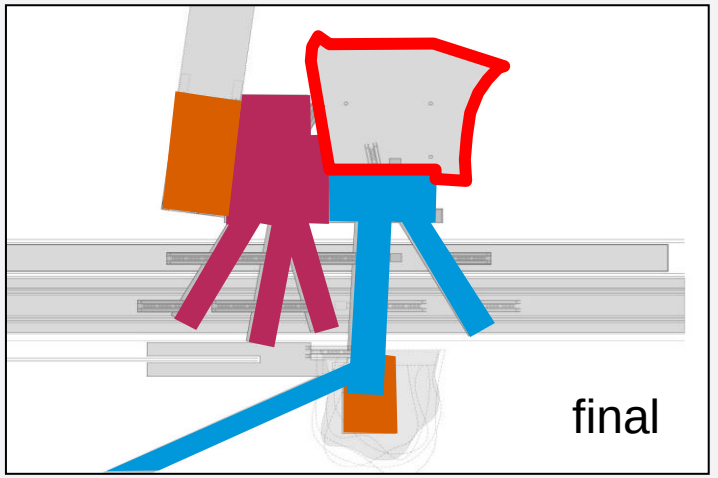
Segregated

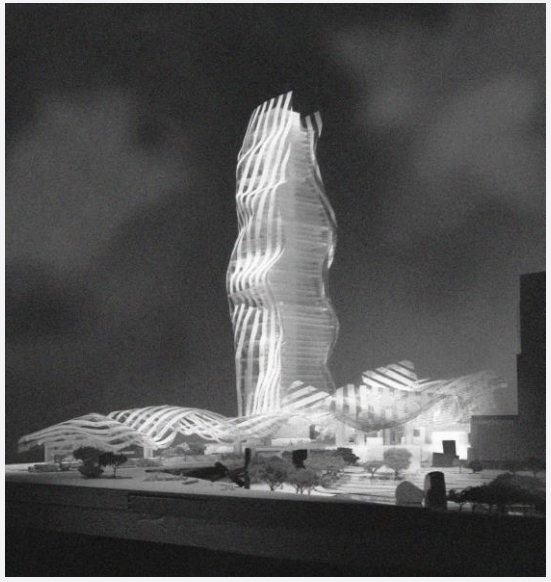
How do we future proof the transport component?

Understand that local/regional transport plan, and engage with Government





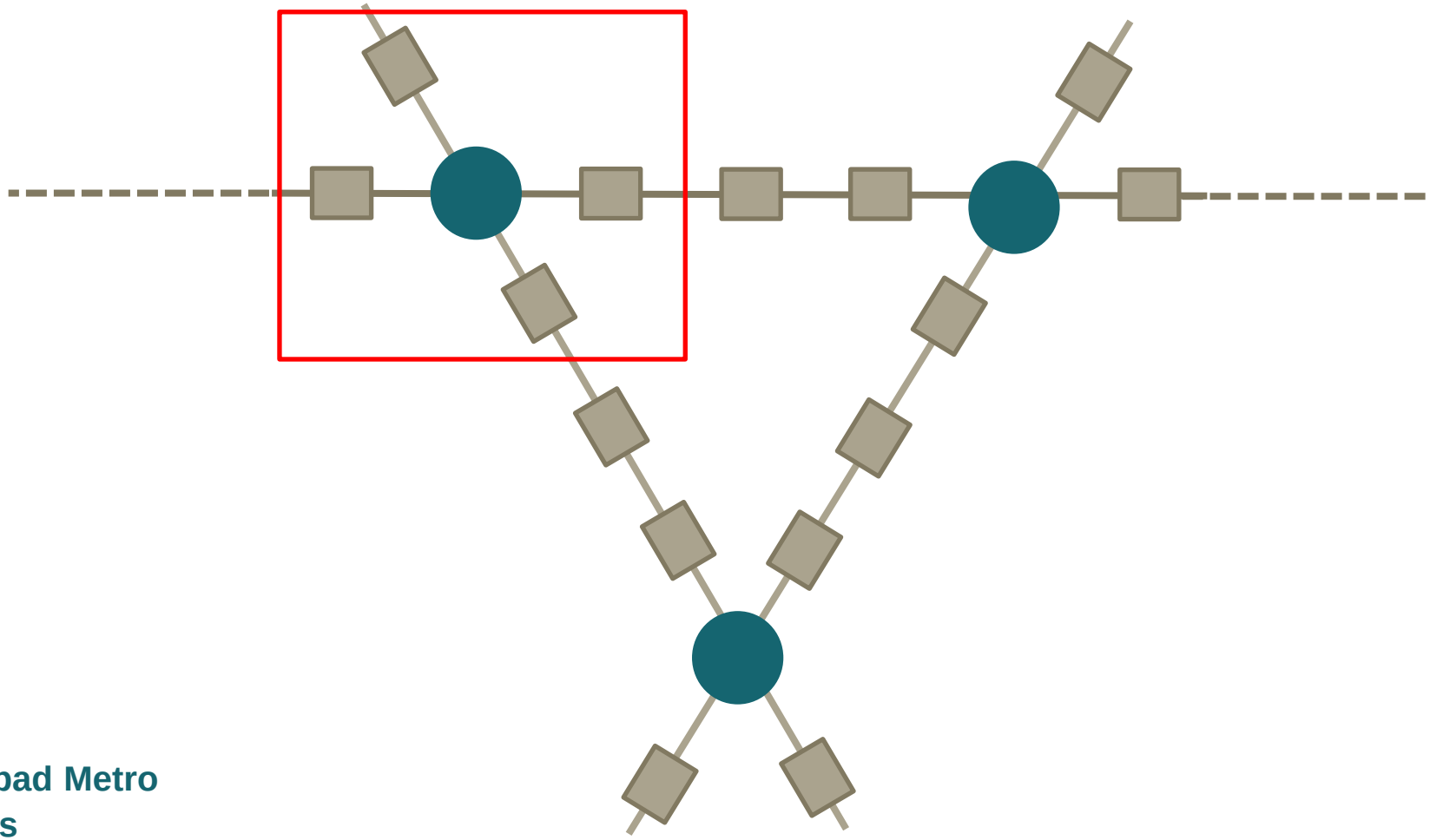




ARTIC
Anaheim Regional Transport Integrated Center

Source: RMJM (HK) Ltd in collaboration with Gehry Partners

How do we future proof the transport component? – example Hyderabad Metro

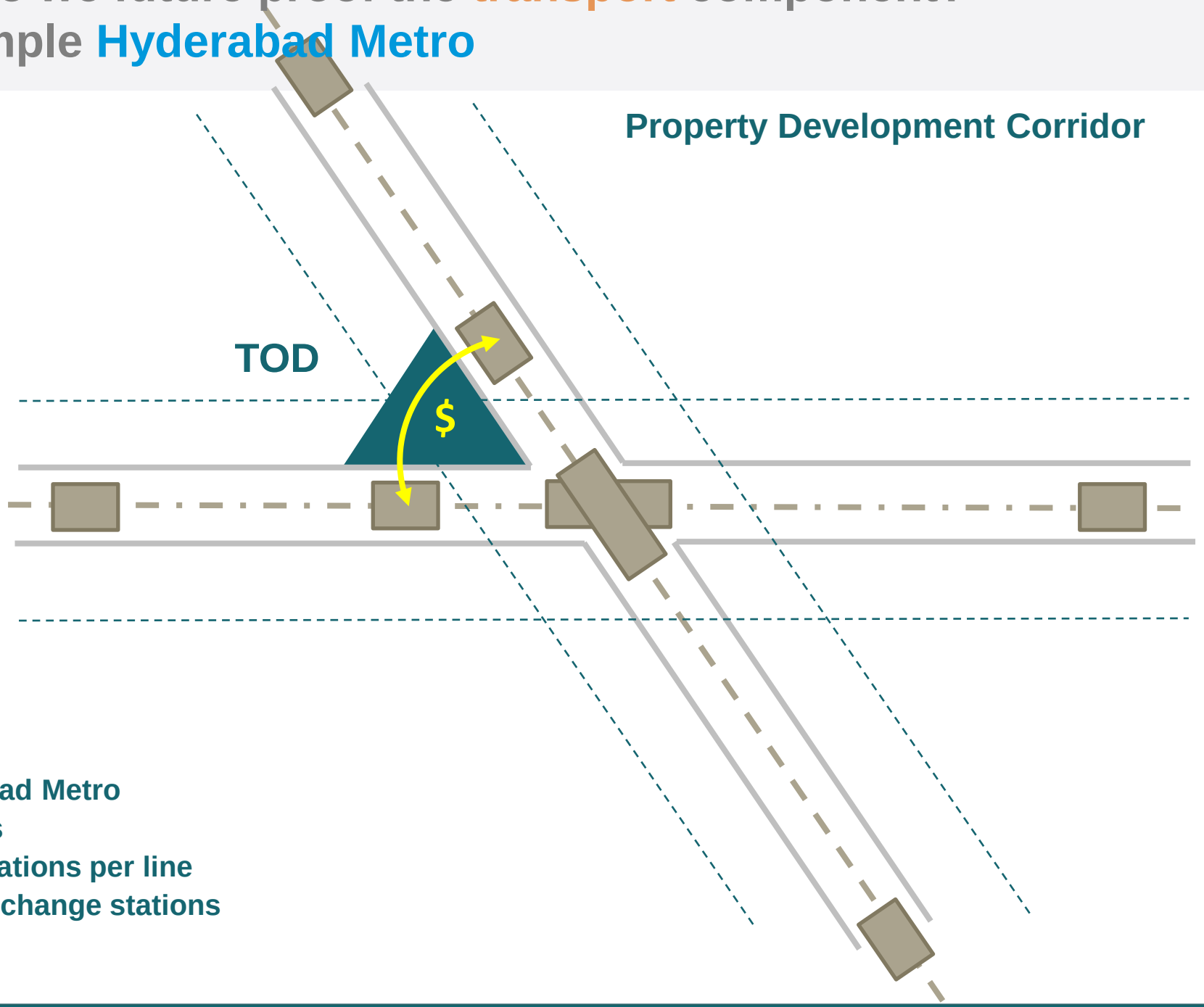


Hyderabad Metro

- 3 lines
- 20+ stations per line
- 3 Interchange stations

Source: RMJM (HK) Ltd

How do we future proof the transport component? – example Hyderabad Metro



Hyderabad Metro

- 3 lines
- 20+ stations per line
- 3 Interchange stations

Source: RMJM (HK) Ltd

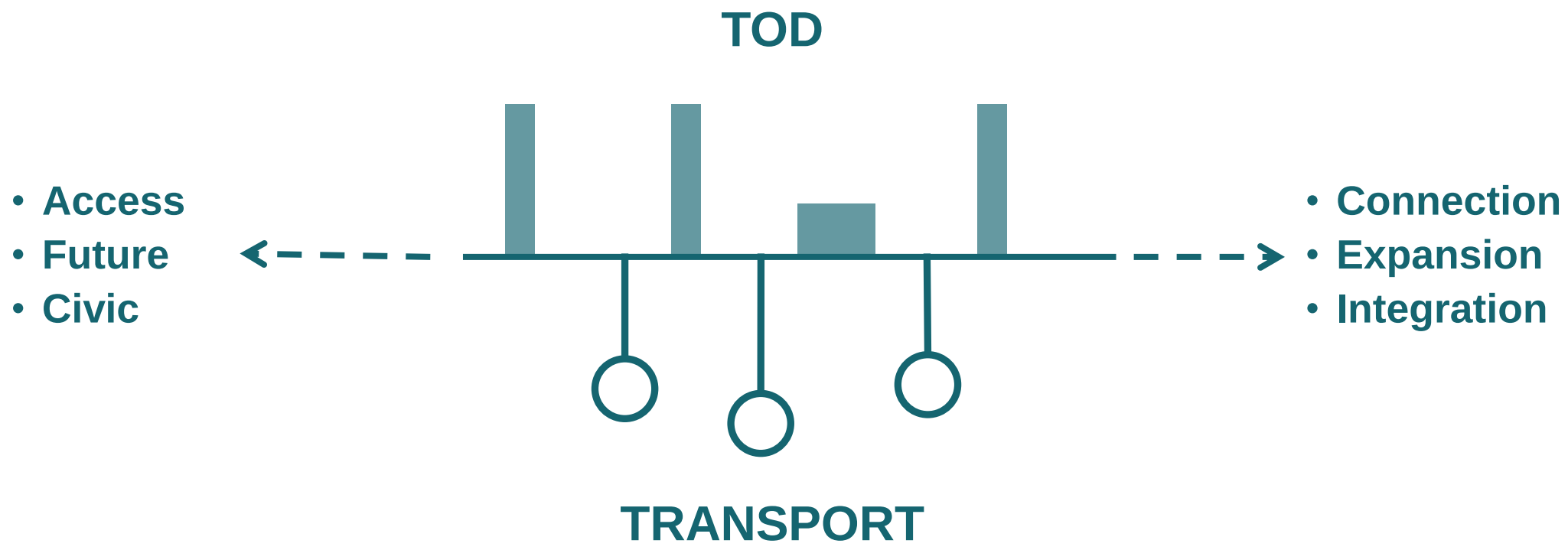
How do we future proof the commercial component?

Engage with planning and property development stakeholders

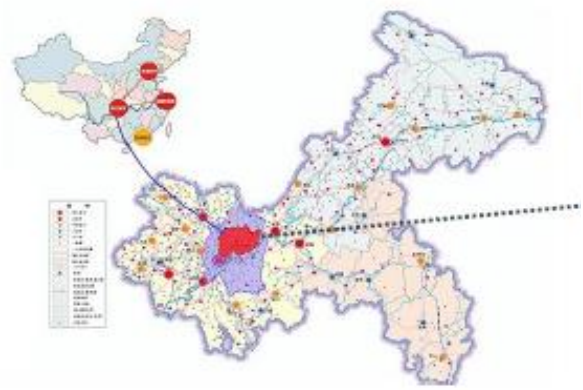
How do we future proof the commercial component?

Engage with planning and property development stakeholders

How do we future proof the Connectivity with the city ?



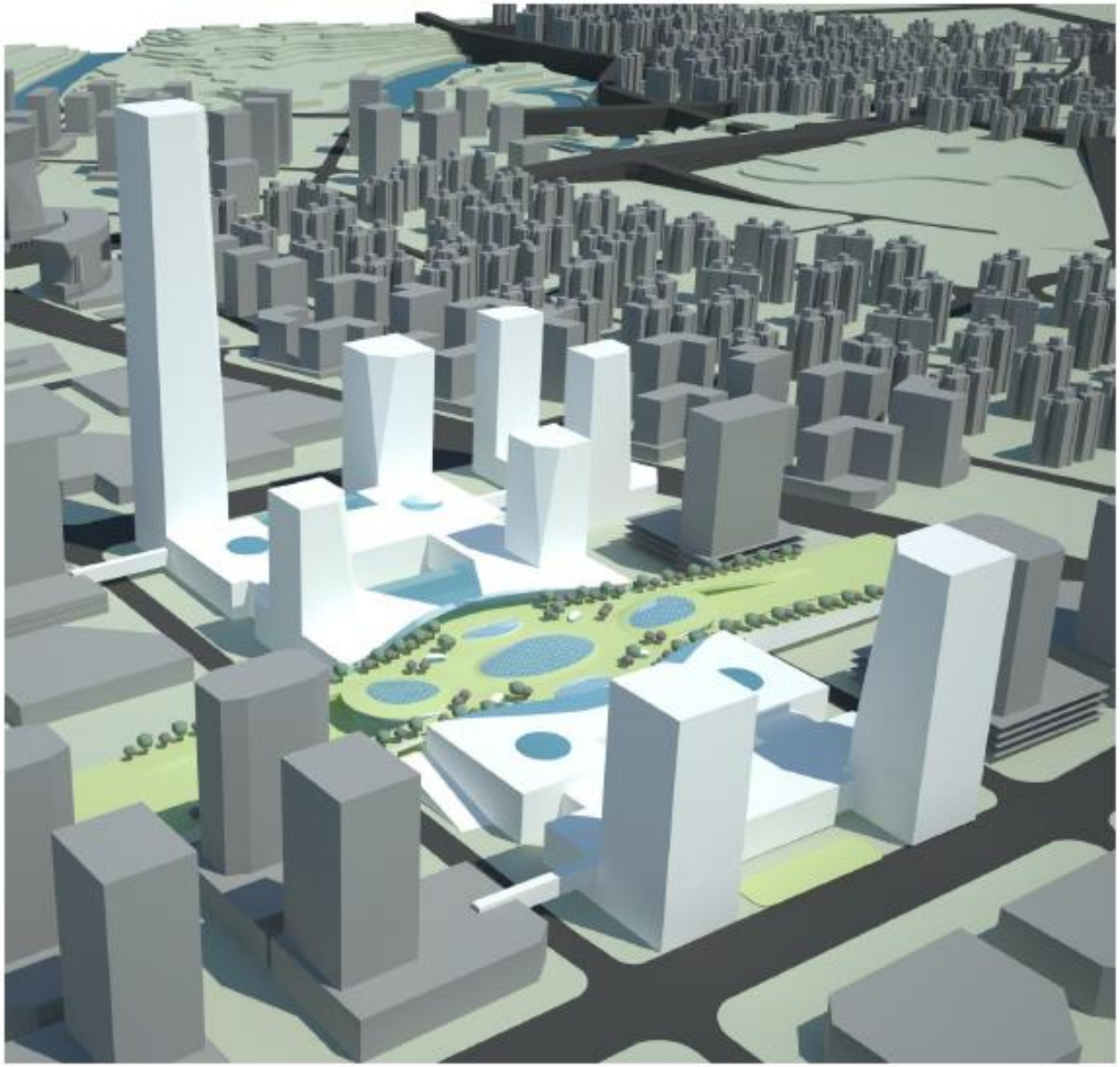
How do we future proof the Connectivity with the city ?



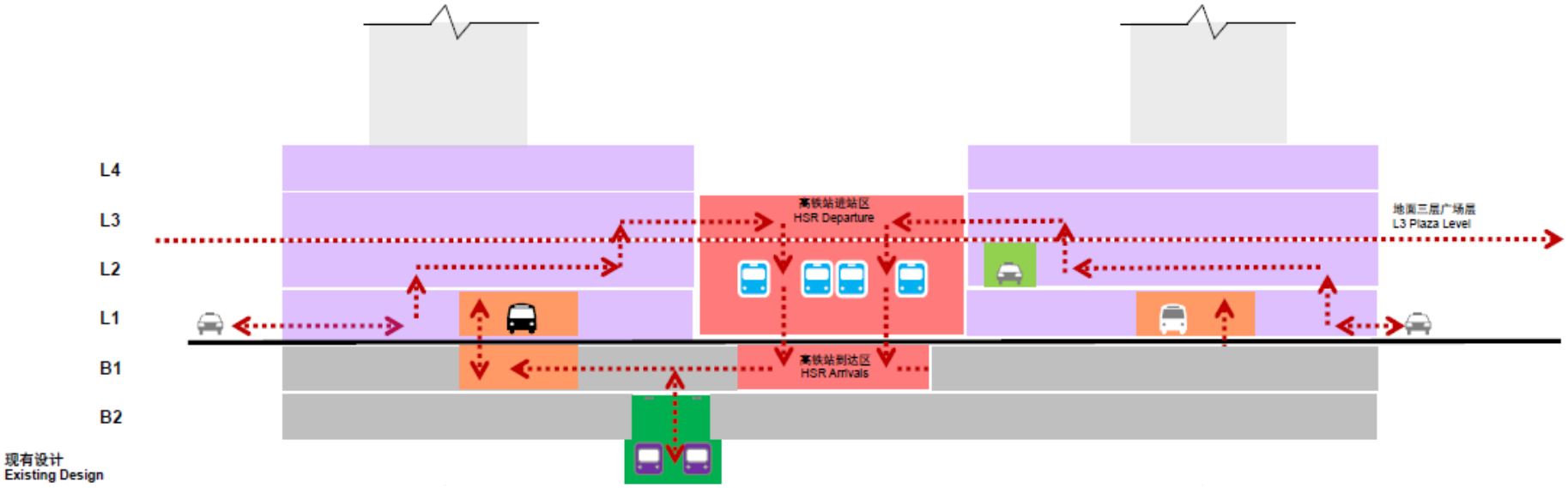
重庆市
CHONGQING CITY

两江新区
TRNZ

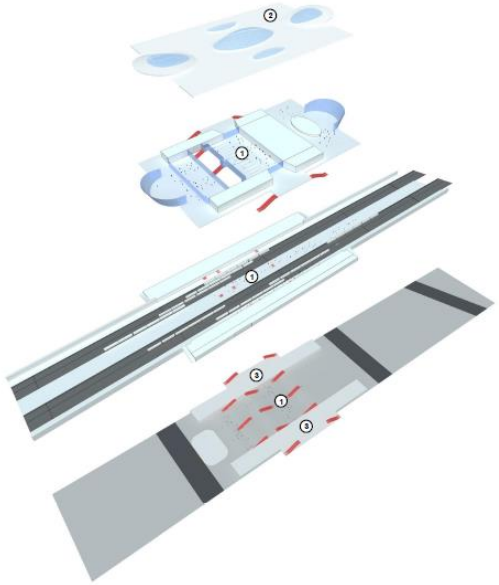
龙盛片区
LONGSHENG DISTRICT

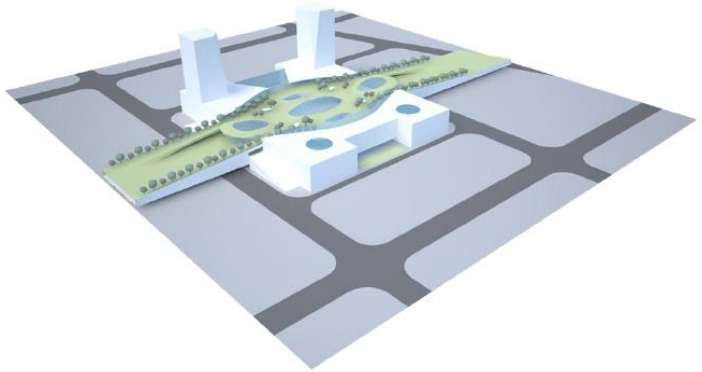


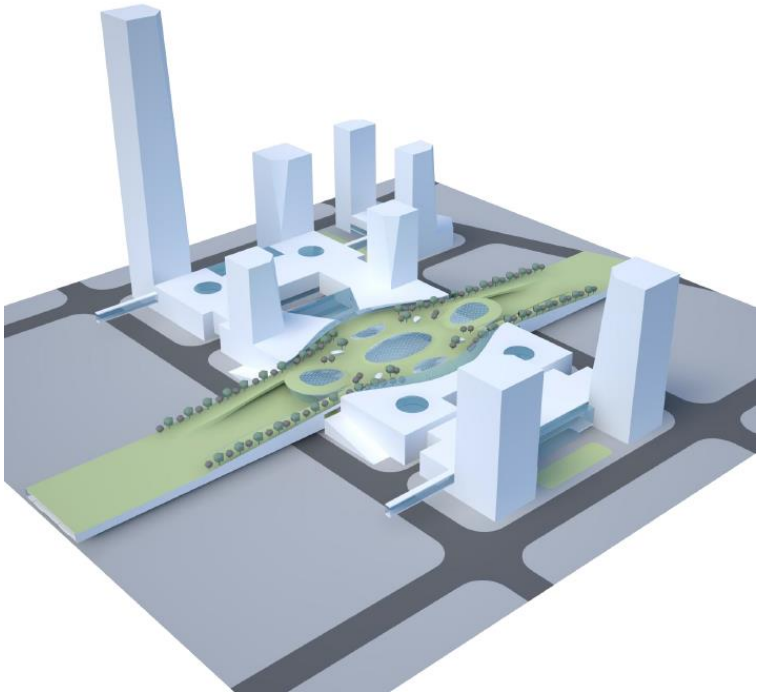
How do we future proof the Connectivity with the city ? – example TRNZ

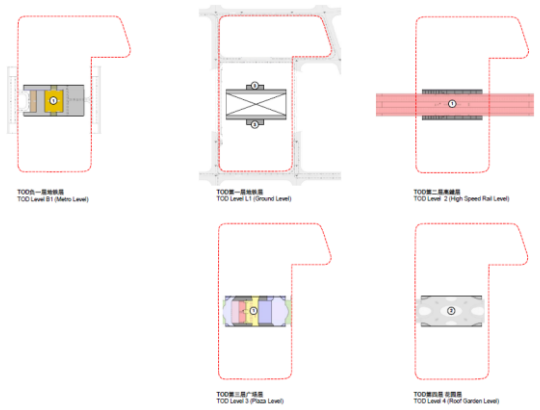


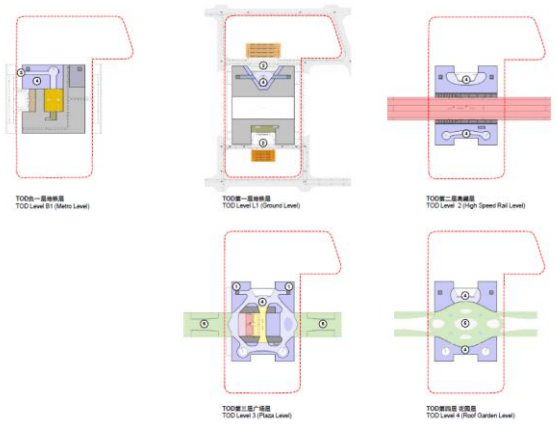
How do we future proof the Connectivity with the city ? – example TRNZ

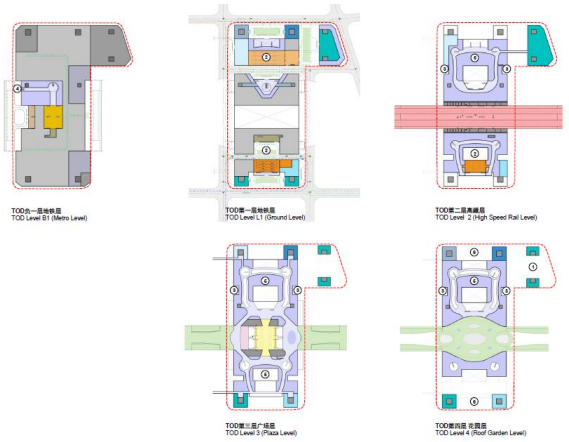












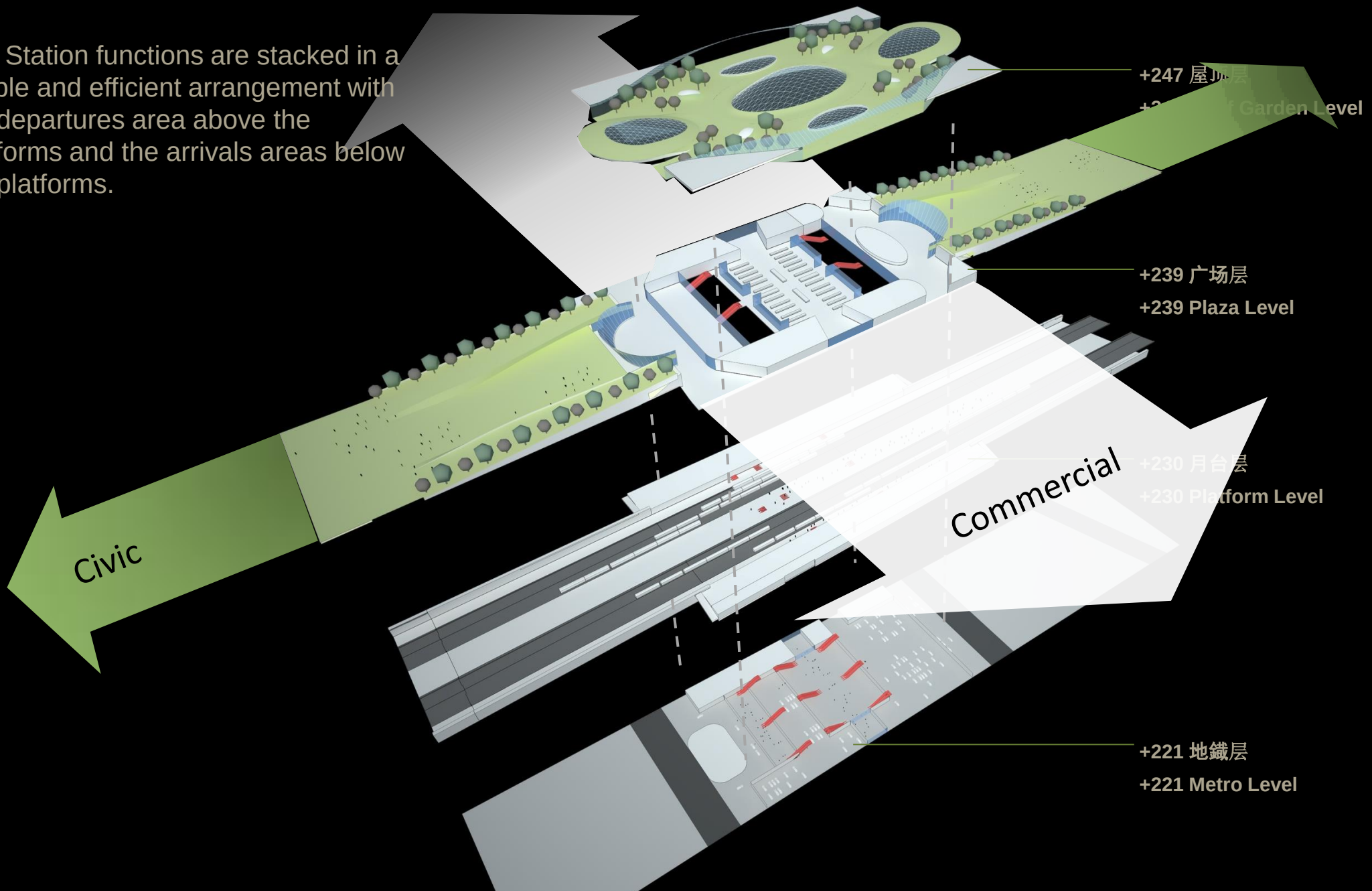
Station only

Initial TOD phase

Final TOD phase

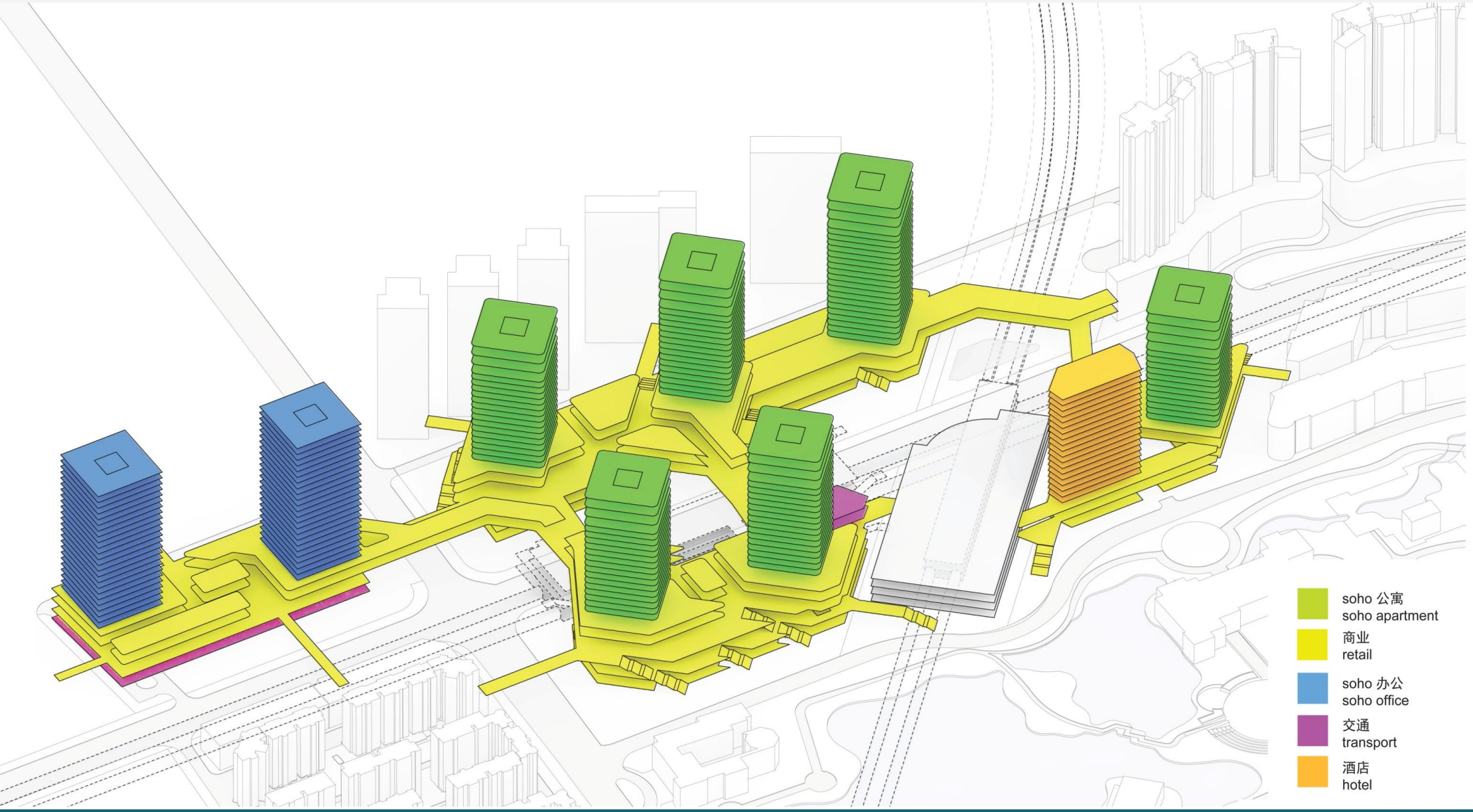
How do we future proof the Connectivity with the city ? – example TRNZ

The Station functions are stacked in a simple and efficient arrangement with the departures area above the platforms and the arrivals areas below the platforms.

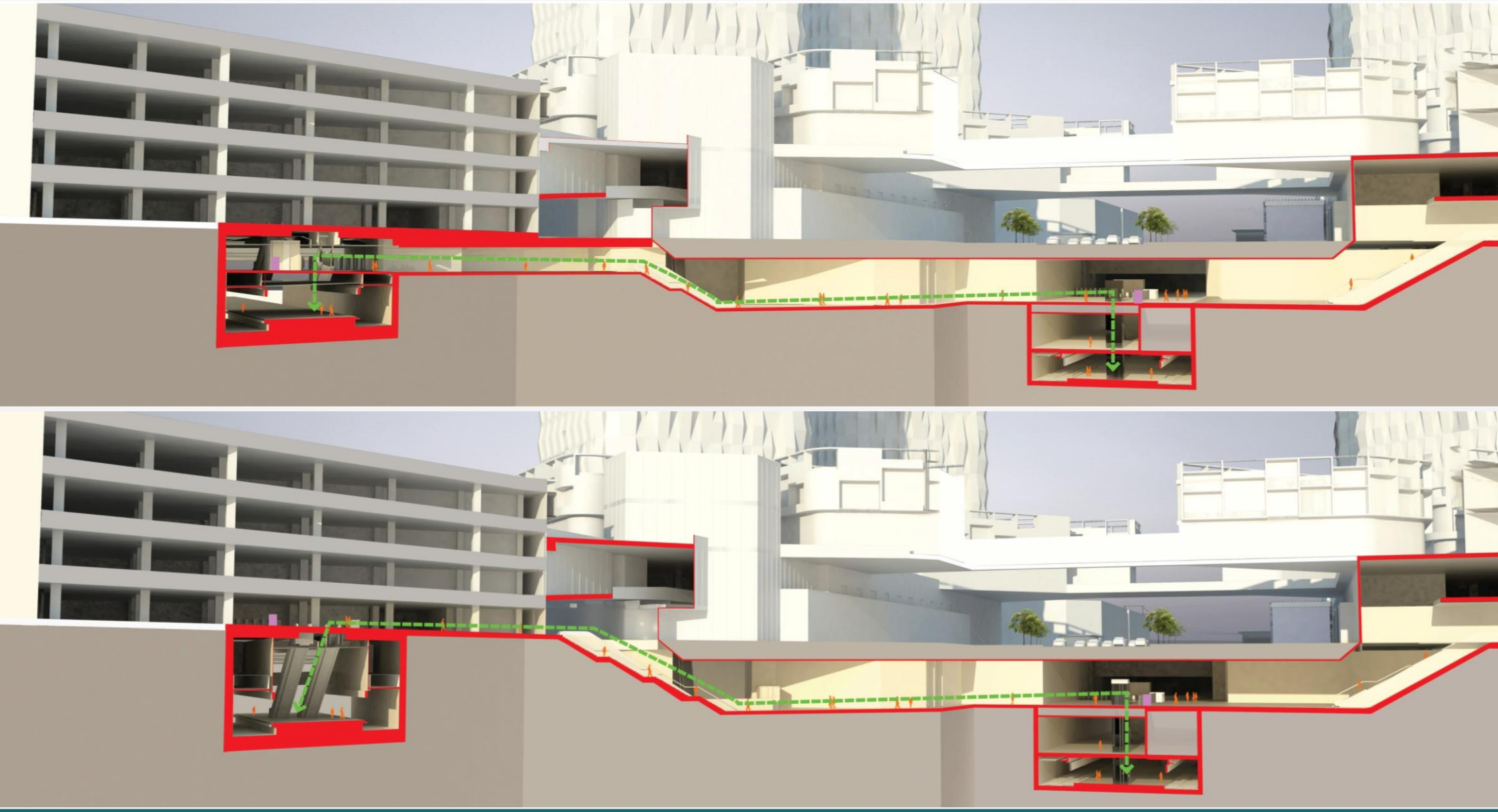


Provide operational flexibility, understanding how technology can help.

Provide operational flexibility, understanding how technology can help.



Provide operational flexibility, understanding how technology can help.

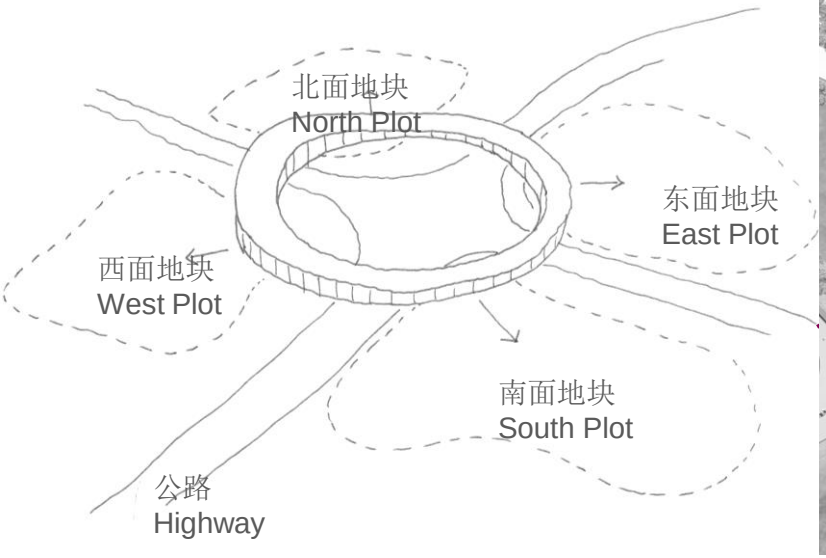


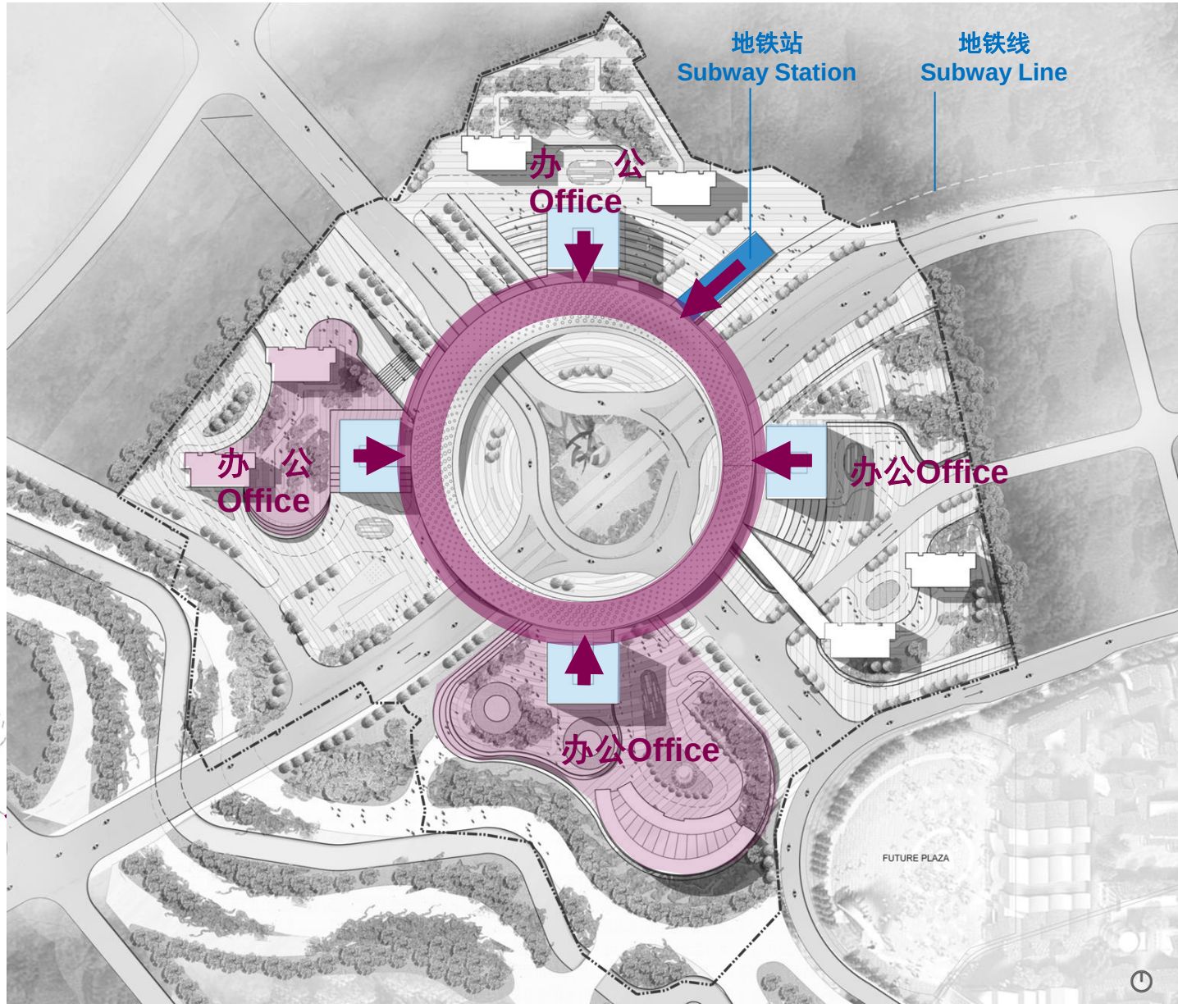
Providing a framework in which other developers and designers can work

Providing a framework to which future development can be joined (or removed)

A future station of the subway will be located on the North Plot.

To connects the Office Towers On N, E, S, W plots to the subway system , a Retail Ring Bridge elevated from the road, separates people and car flow, provide safe and pedestrian flow.





Providing a central structure to which future development can be joined (or removed)

Understand the Key Components of TOD

TRANSPORT

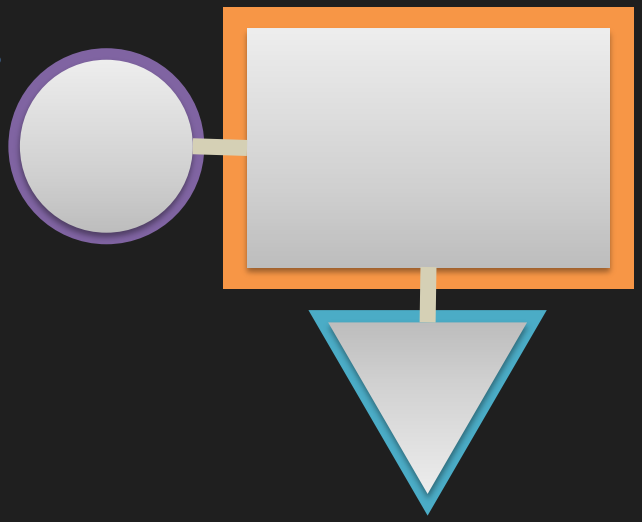
CIVIC AMENITY

COMMERCIAL

…and how they will relate to each other

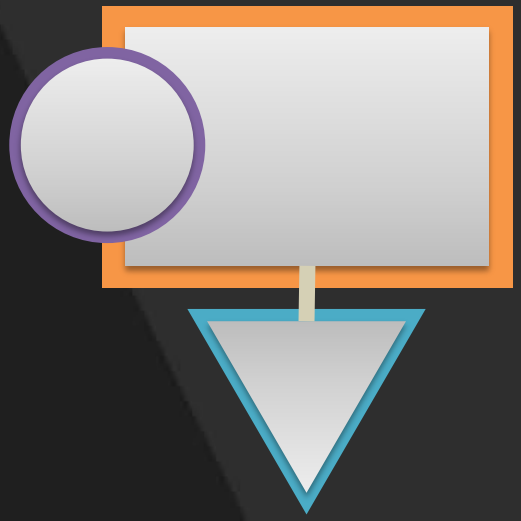
Guizhou

1.



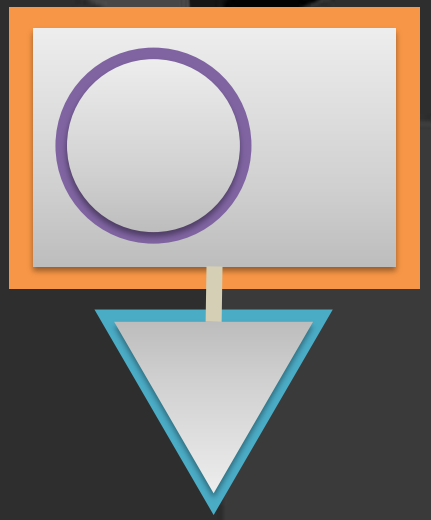
Hong Kong Station

2.



Kowloon Station

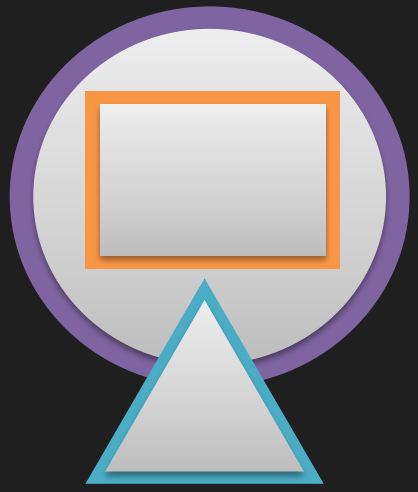
3.



…and how they will relate to each other

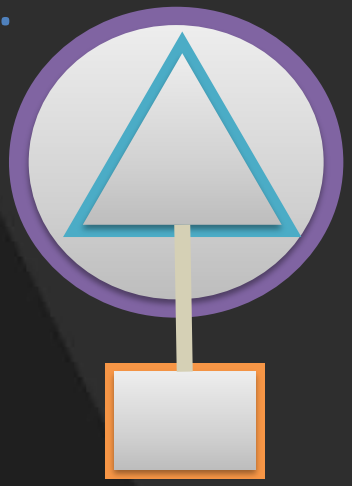
Birmingham

4.



St Pancras

5.



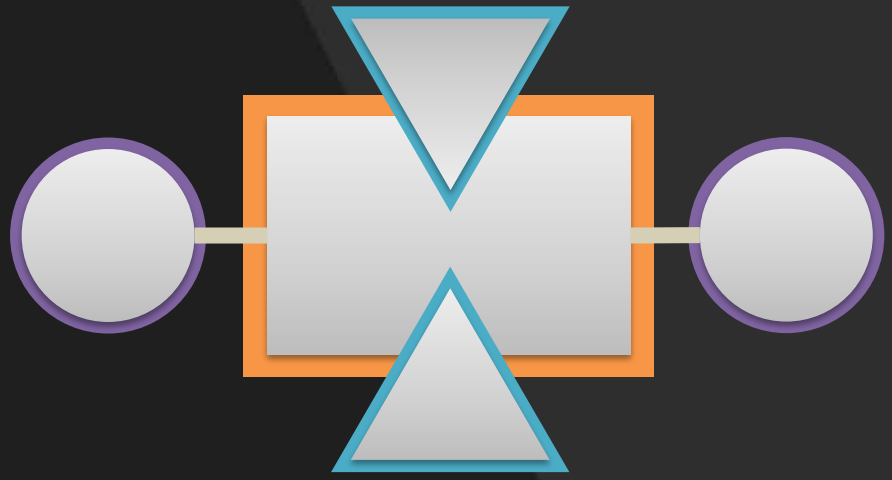
Cadre Guangzhou

6.

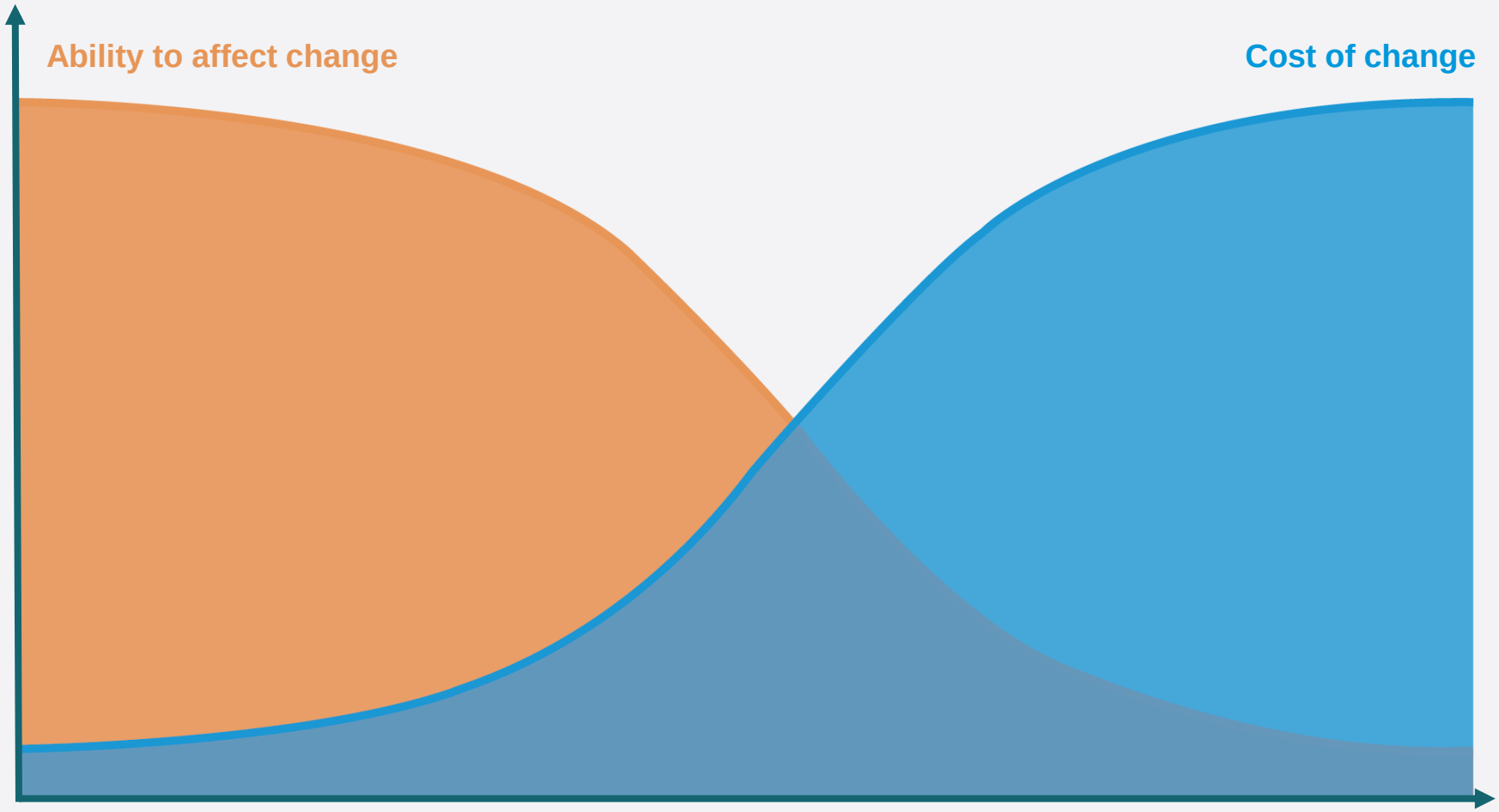
…and how they will relate to each other

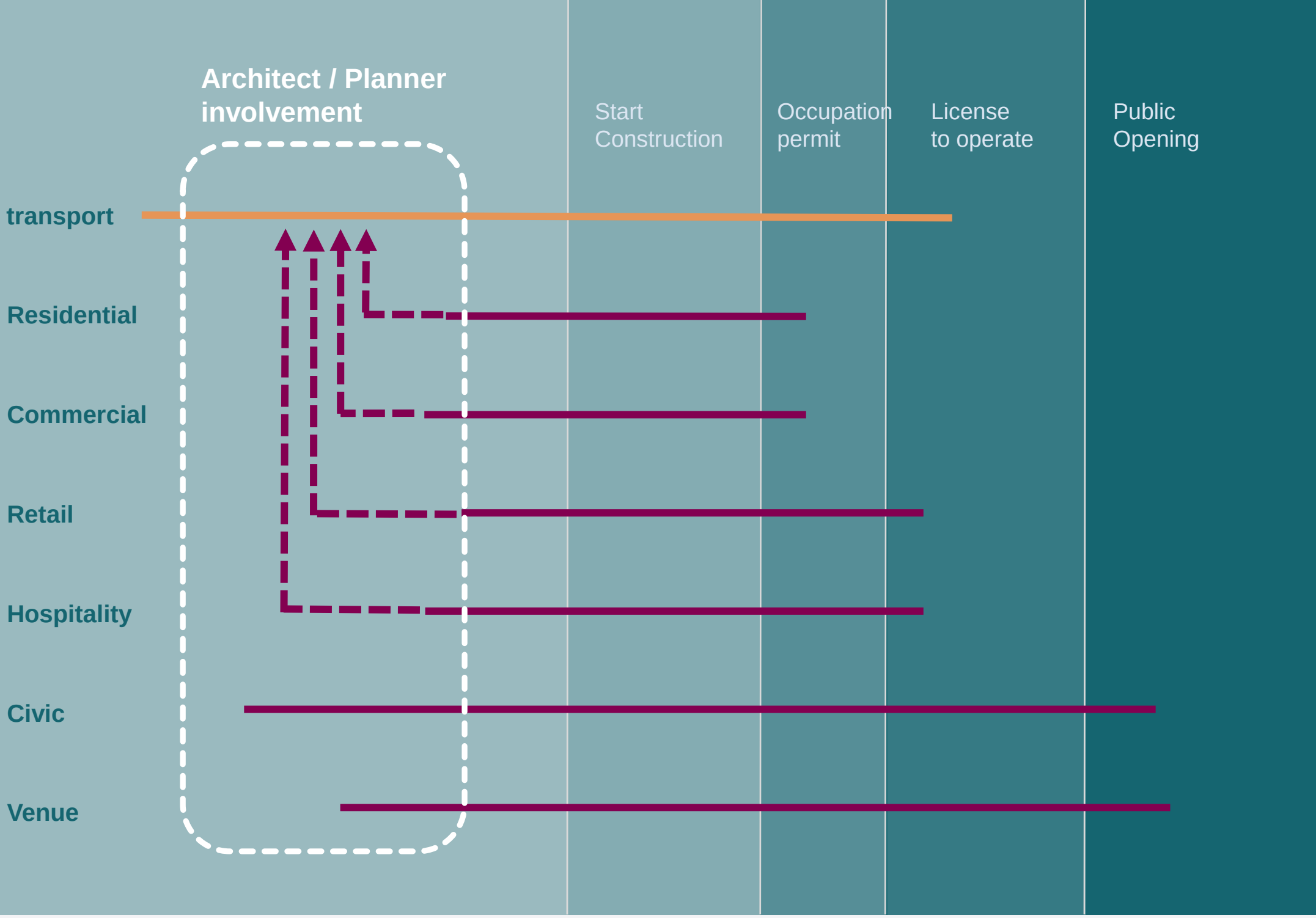
Ideal (Harbour City)

8.



Ease of change –v- implication of change

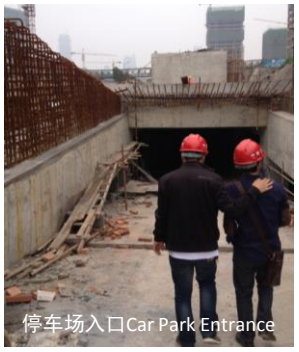



Architect / Planner involvement
Start Construction
Occupation permit
License to operate
Public Opening
transport
Residential
Commercial
Retail
Hospitality
Civic
Venue

06

Case Study 1

Jiangbei City Station, Chongqing



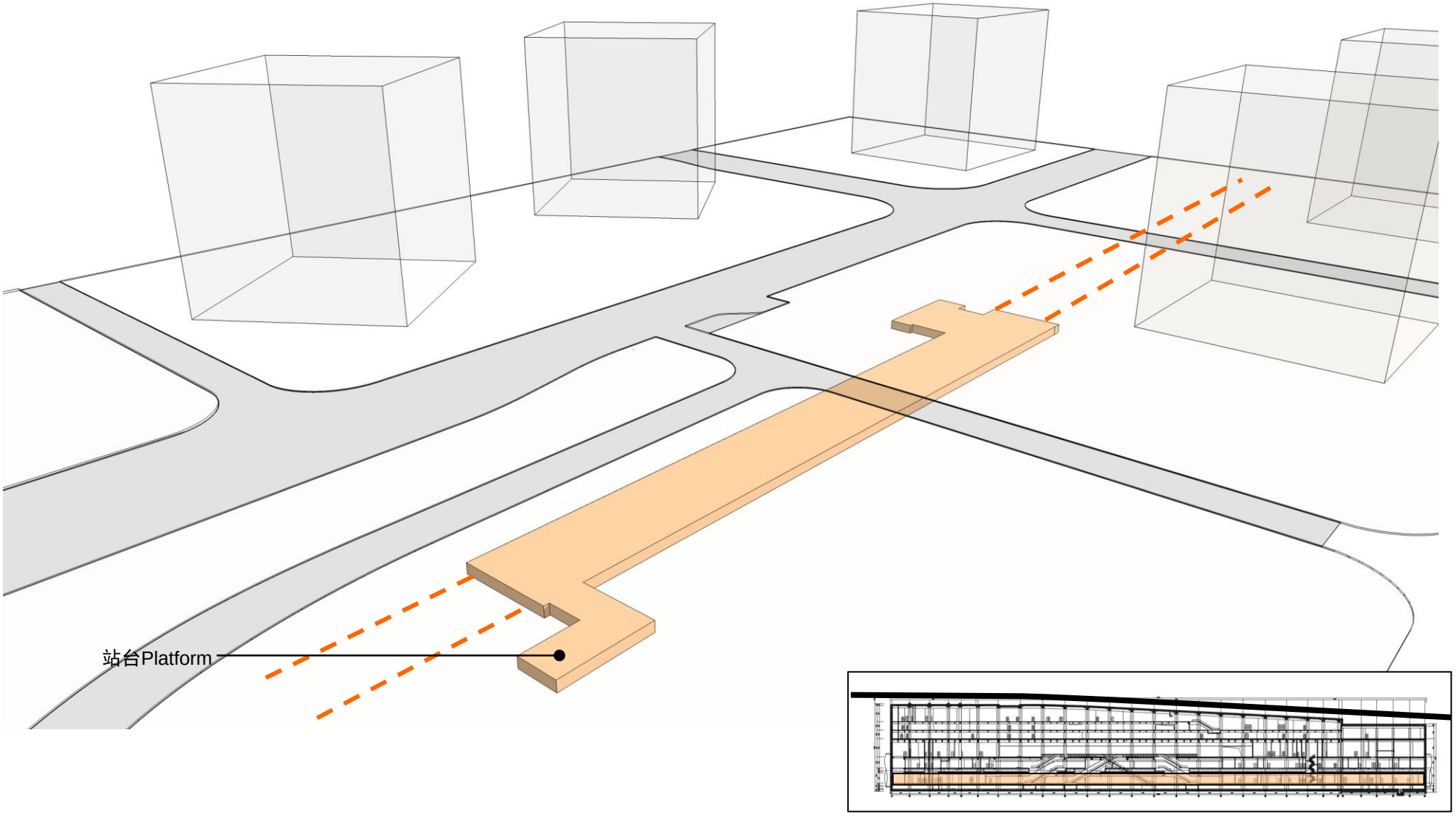
基地位置
Site Location

一般而言，地铁站的规划需按500米的步行距离而进行。
此数据决定客流分布图以及站点所有出入口乘客量百分比。

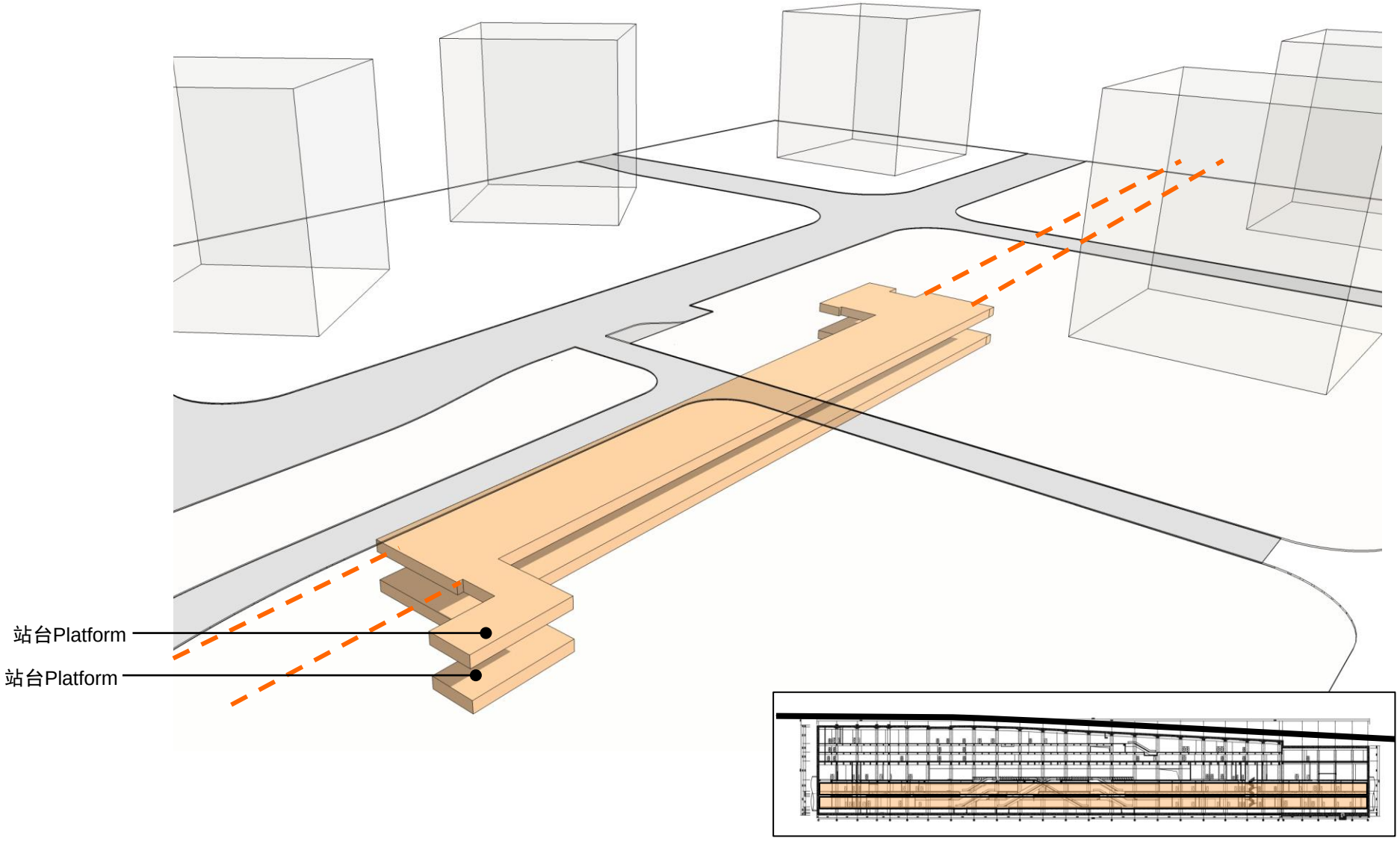
Typically, metro stations can be planned on the assumption of walk-in patronage from approximately 500m.

This determines the demographics of the passengers, and also the likely percentage split entering each of the station entrances.

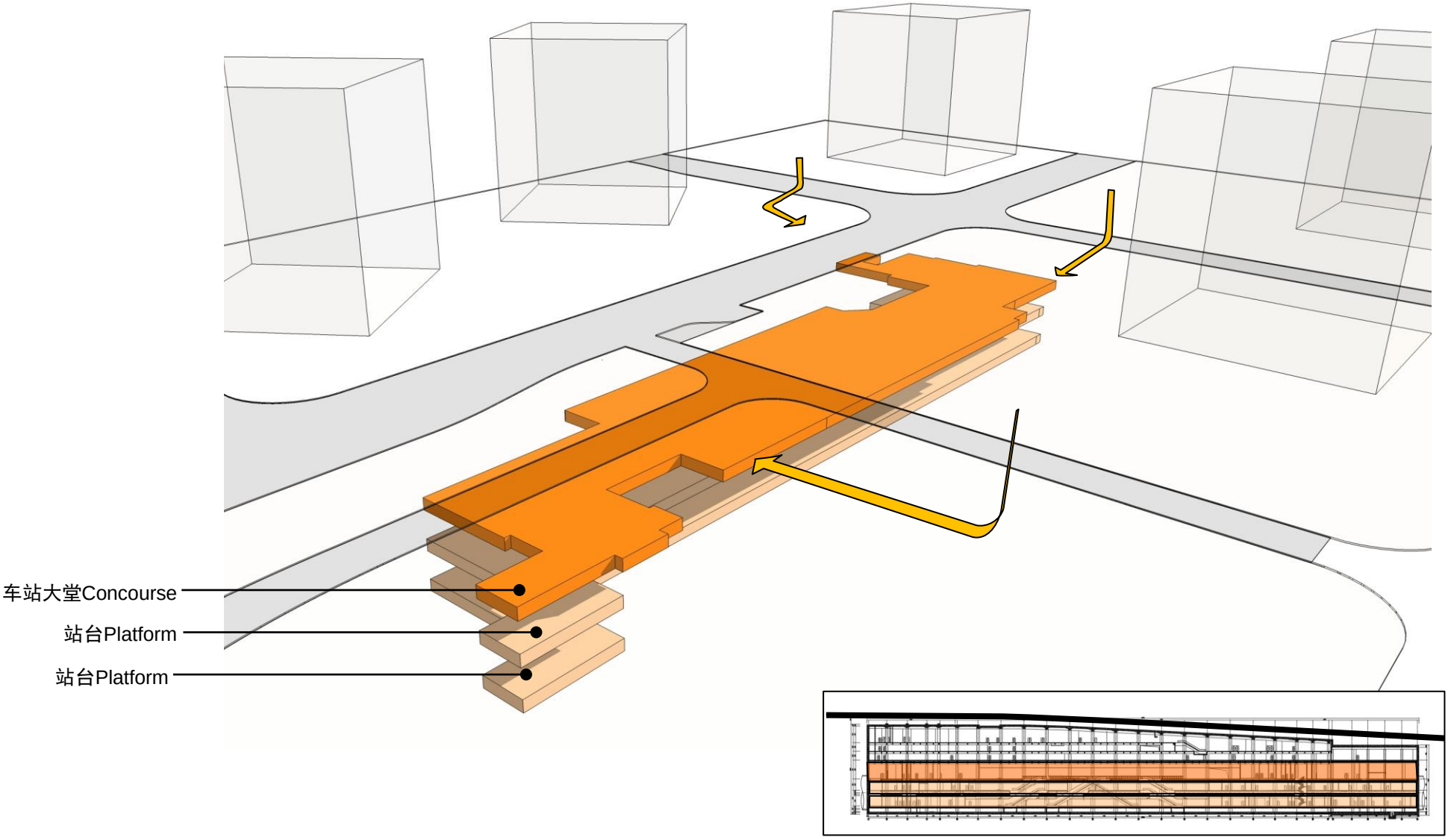
车站
Station



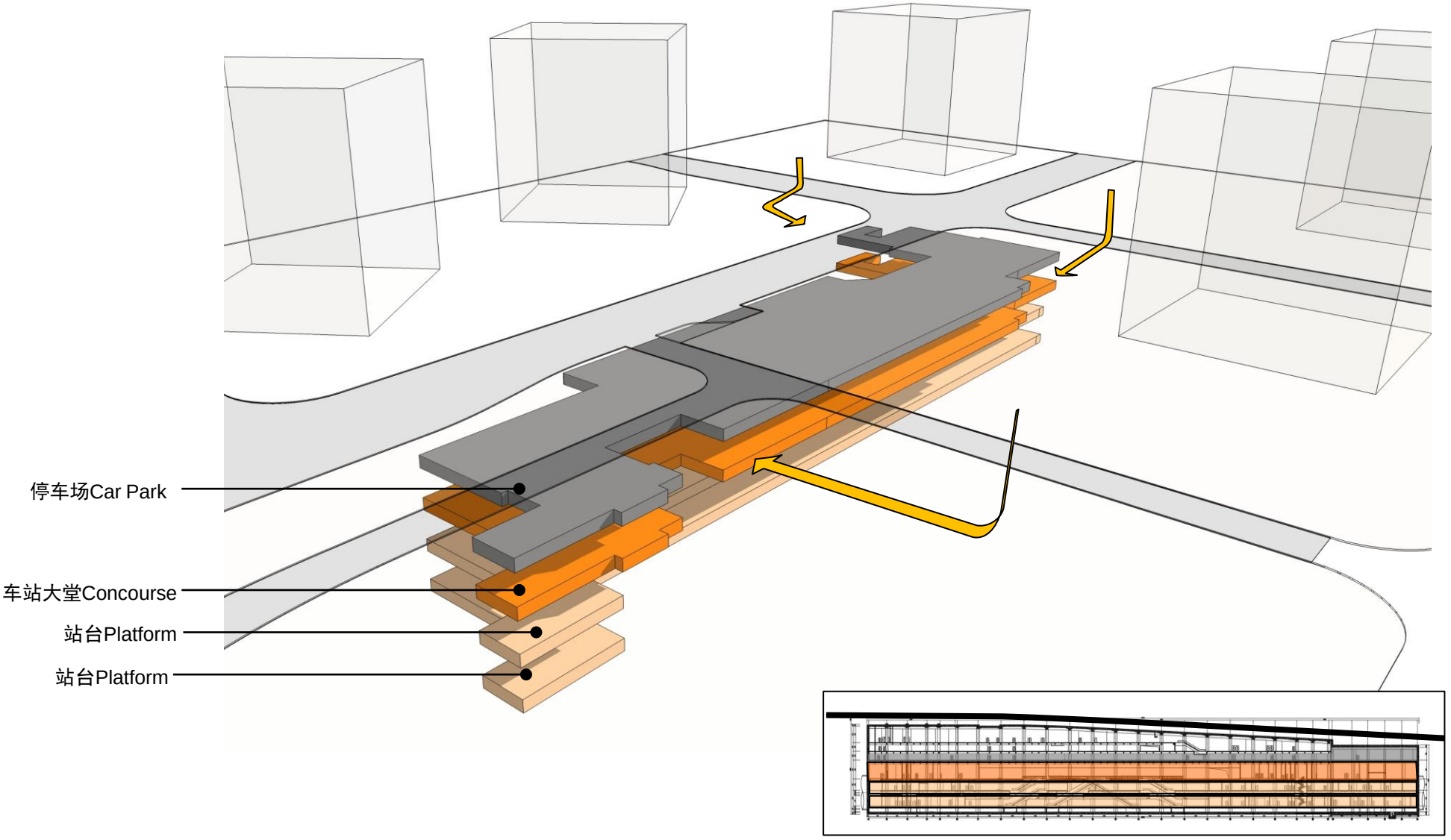
车站
Station



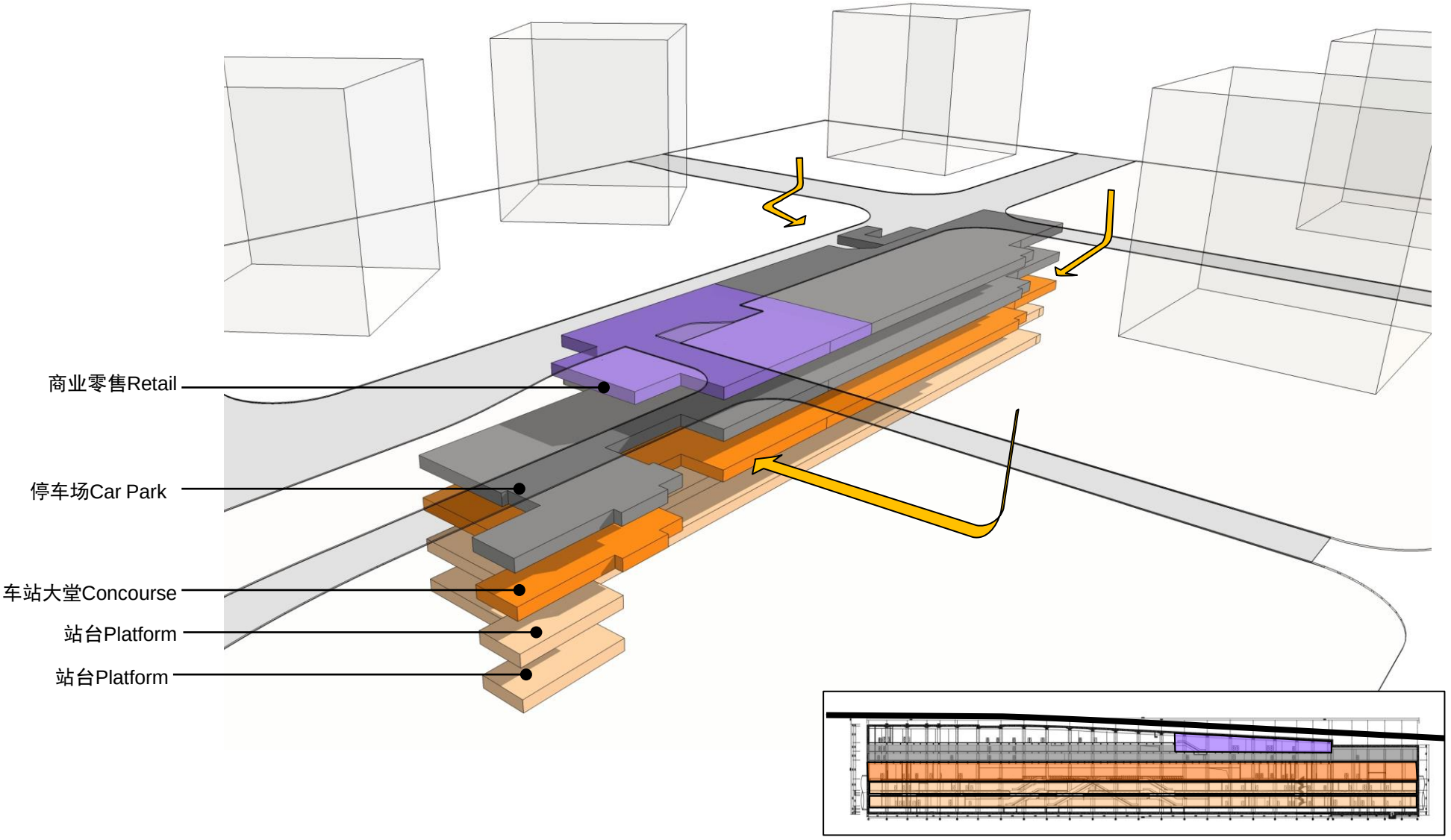
车站
Station



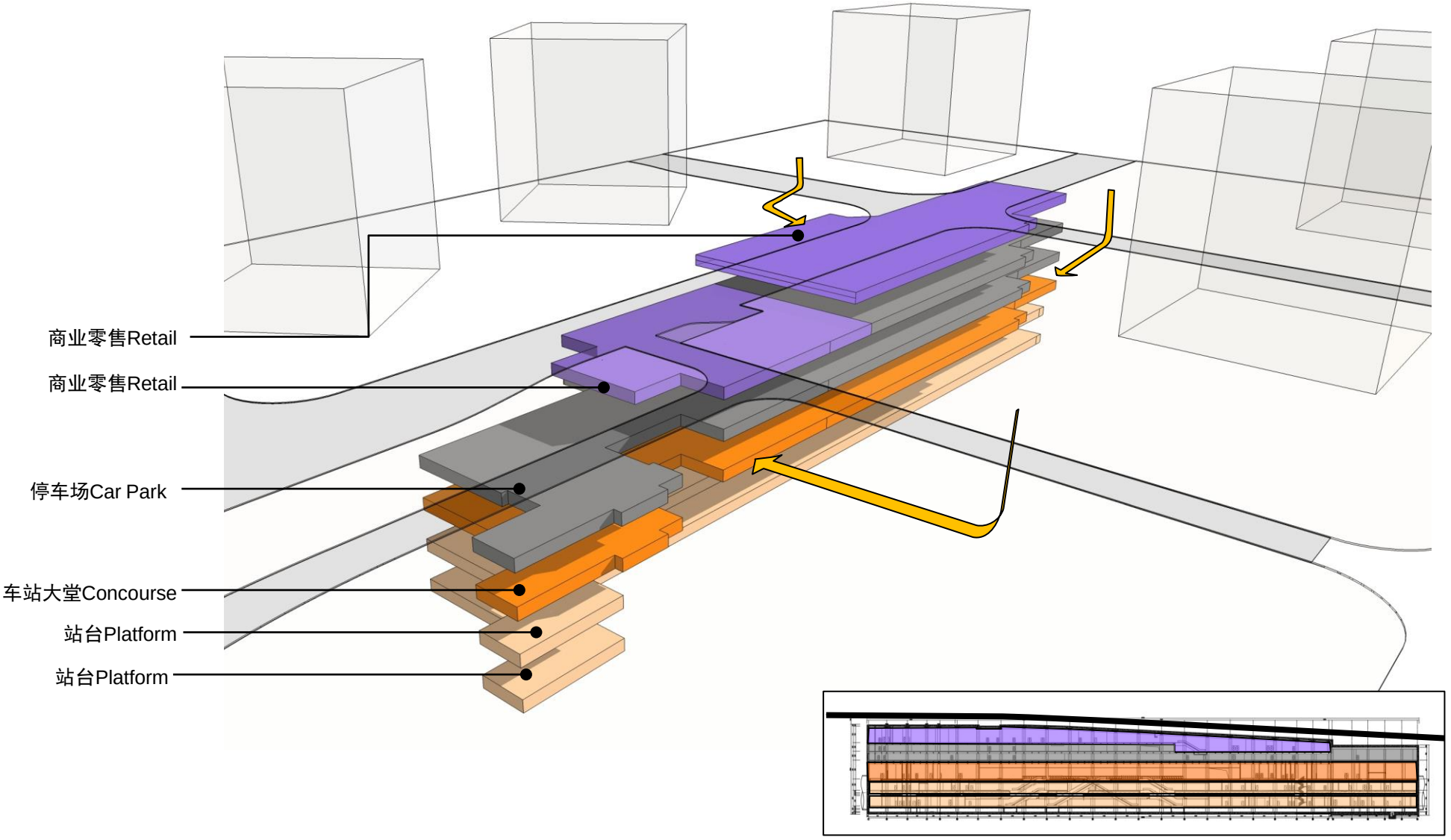
车站
Station



车站
Station


商业零售Retail
停车场Car Park
车站大堂Concourse
站台Platform
站台Platform

车站
Station


商业零售Retail
商业零售Retail
停车场Car Park
车站大堂Concourse
站台Platform
站台Platform

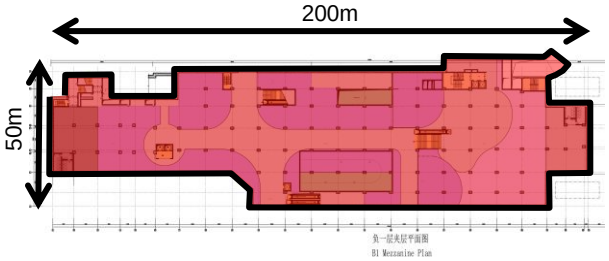
机会
Opportunities

乘客量
由于江北城站的位置所在，预期车站的乘客量很大。同时，停车及转乘设施及未知的大型商业将在此区发展，若有合适的商场导入站点，车站将拥有较大潜力吸引更多的乘客（从而增加收入）。

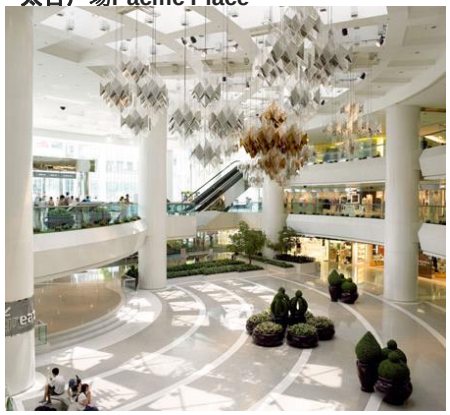
规模
根据江北城站的规模与其他商场相比较，得出有趣的结论；虽然典型的商场（如先前案例）提供数层商业，江北城站的空间体量更适合容纳大型的店铺及多重空间。

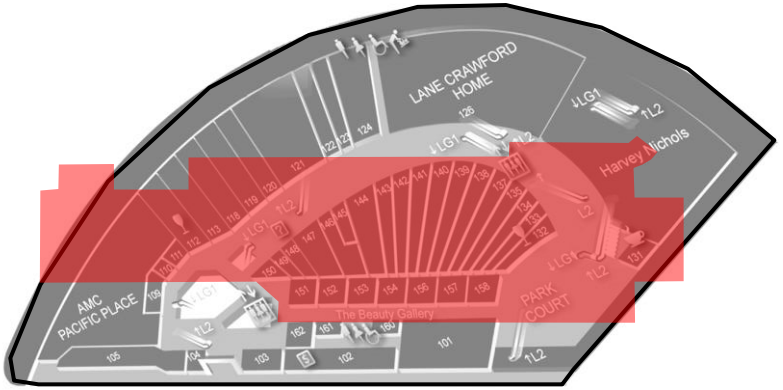
Journeys
Due to the location of Jiangbei City Station, there is a large projected ridership through the station. Furthermore, with park and ride facilities and no known major mall developments within the area, the station has the potential to generate further trips (and therefore revenue) once appropriate retail has been included.

Scale
It is interesting to compare the scale of the space available at Jiangbei City Station with other malls.
Although typical shopping malls (such as the precedent examples) offer retail of several floors, the Jiangbei City Station volume is of an appropriate size to allow large outlets and a range of spaces



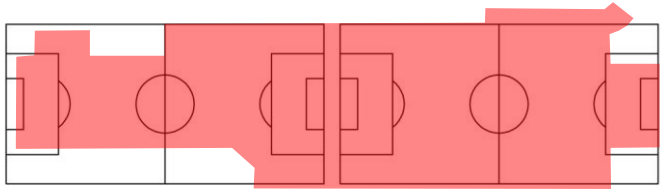
太古广场Pacific Place





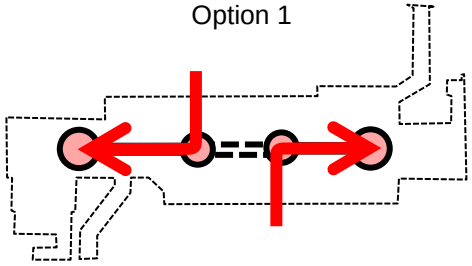
又一城Festival Walk

足球场 Football Pitch

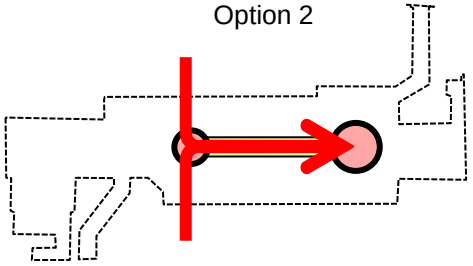


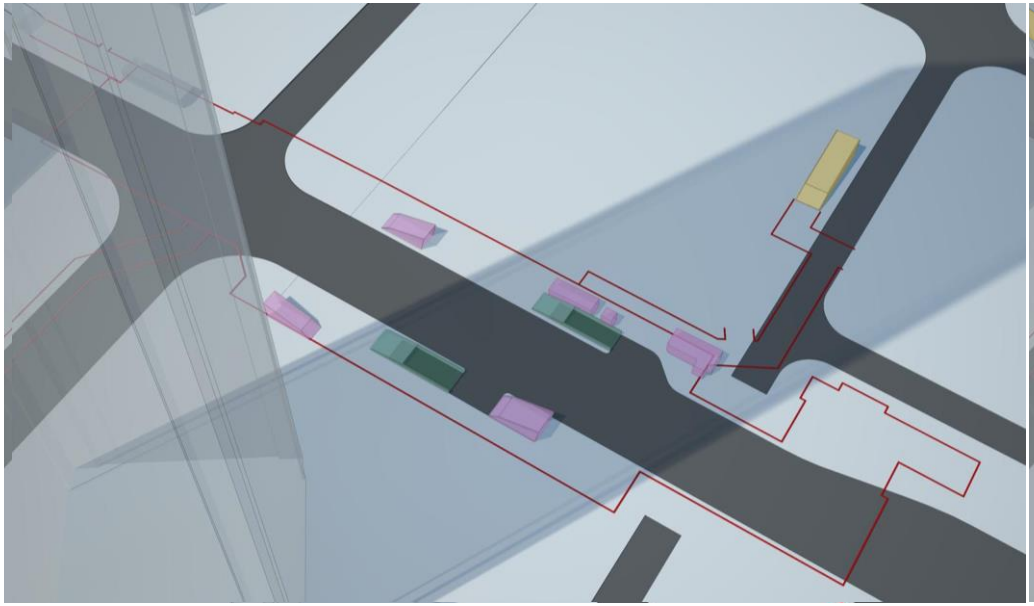
方案比较
Option Comparison

方案一
Option 1

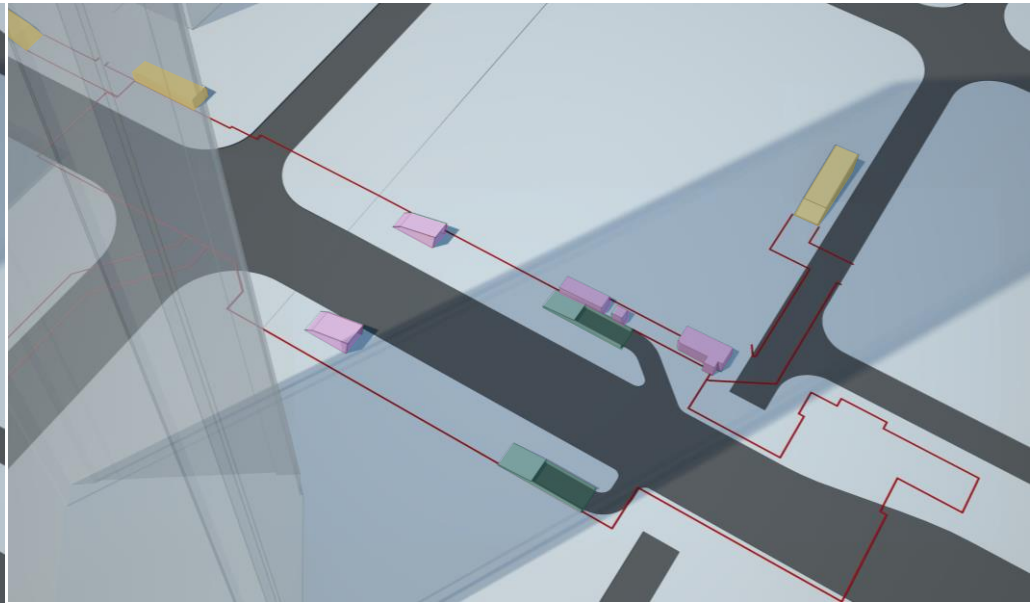


方案二
Option 2





保持原始入口位置
Keep original access location



车道入口及人行入口退向两侧结构边界
调整南侧车道位置
Move access to structural boundary
Relocate the vehicular ramp

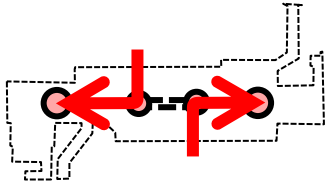
方案一 流线分析图
Option 1 - Circulation Analysis Diagrams

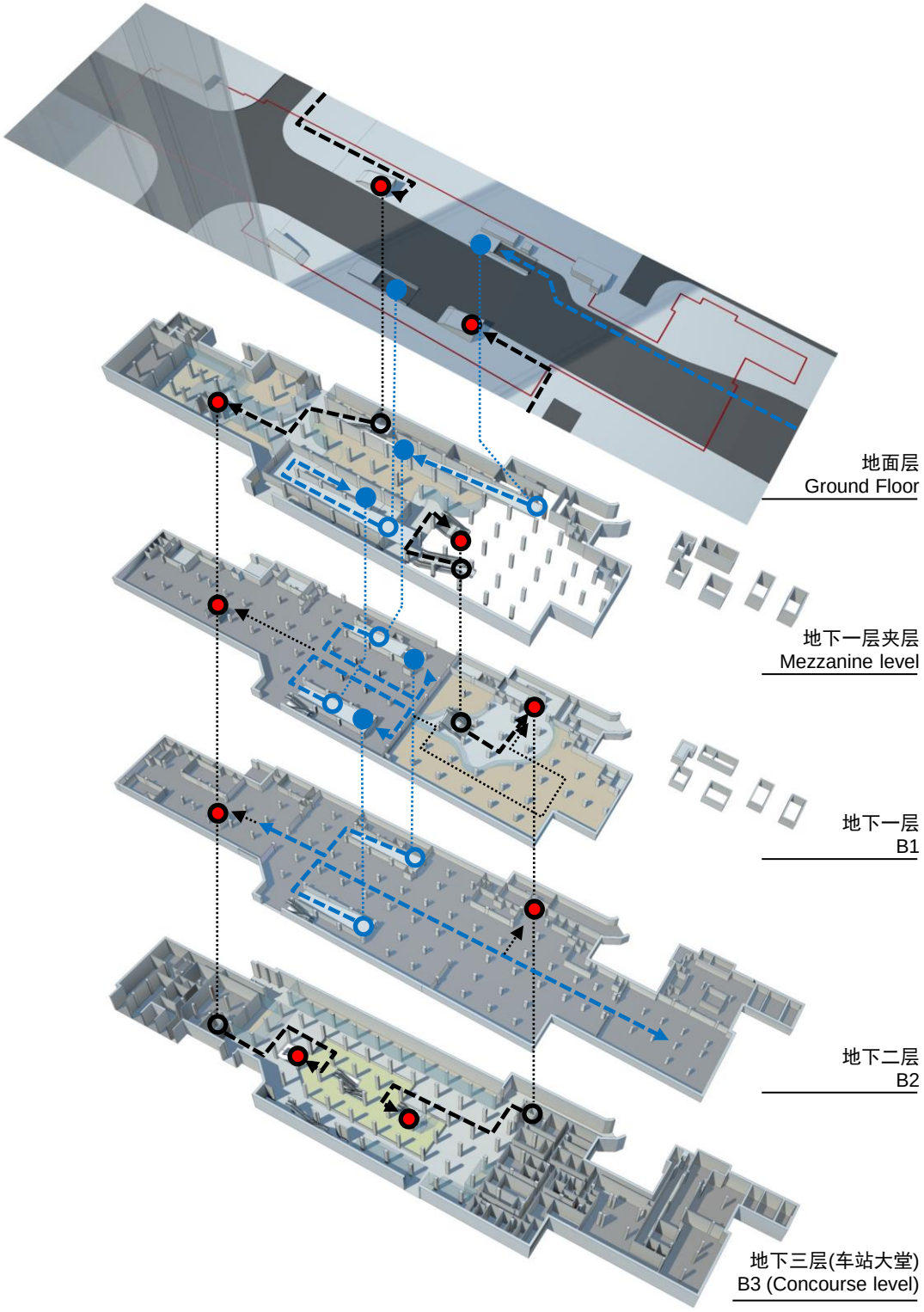
详细分析了连接点和路线之间的交通枢纽和商业设施（如右图）。这些图表表明该地区零售将有高效利用转车的乘客群，因此将是最高的价值单位。

Detailed analysis of the connections and routes between the transportation hub and the commercial facilities has been analysed as shown in the following diagrams. These diagrams indicate which areas of retail will have the highest of footfall from taking advantage of interchanging passengers and therefore will be the highest value units.

图例 Key:

- 人行流线起点Pedestrian Starting Point
- 人行流线终点PedestrianDestination
- 人行流线方向Direction ofPedestrianTravel
- 车行流线起点Vehicle Starting Point
- 车行流线终点VehicleDestination
- 车行流线方向Direction ofVehicleTravel

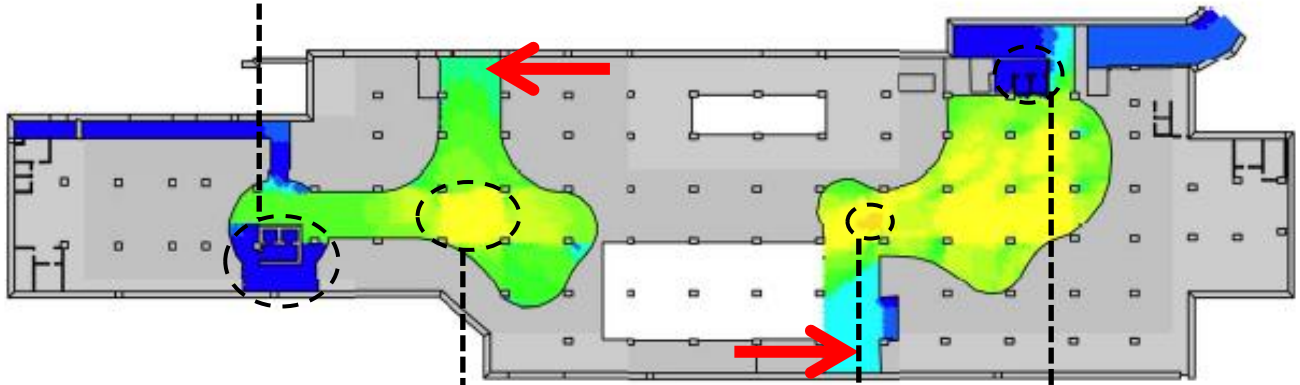


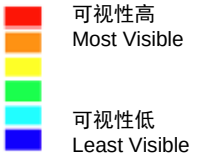


方案一视觉连接
Option 1 – Visual connections

通过我们的可视性建模分析，我们可以计算出零售业单位是否在人流循环空间中的视线范围内。
Through our pedestrian visibility analysis, we can calculate how visually connected the circulation space is outside of retail units

电梯间后方可视，但是电梯出入口需要指示牌
Rear oflift lobby visible, but lift entrance requires signage





大面积中心导向区域，良好的可视性为此范围中所有的零售业提供了更直观的连接
Large central orientation zone, good visibility of all retail units directly accessible from this space

由东侧出入口进入、通过楼梯连接负一层前的小面积导向区域，
基于周边更大面积的人流循环区域，为这视觉焦点的位置创造一个方向感更顺畅及空间感受更强的空间。
Smaller orientation zone from East entrance just before stairs down to B1 level, yethas a greater area of circulation space visible from this point, making for a stronger orientation zone and sense of place

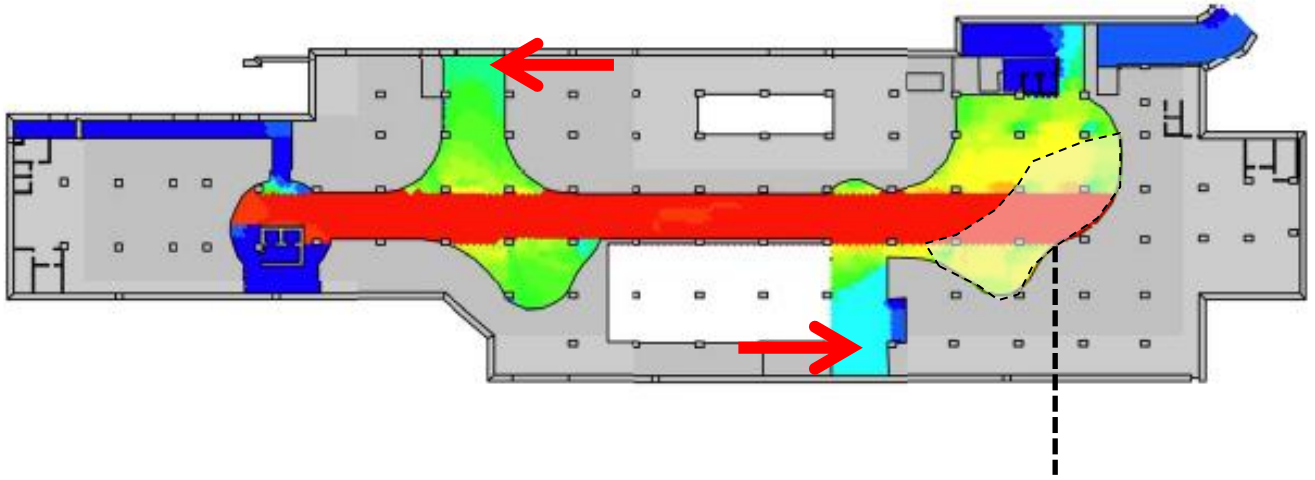
与南侧出入口类似，电梯出入口隐藏在电梯间后方
Similar to Sorth entrance, lift entrances hidden from view within lift lobby.

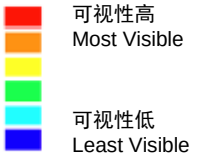
柱的位置和数量进一步限制的从人流循环和饮食零售区域对电梯间的可视性
Location and number of columns also inhibit visibility of rear of lift lobby from circulation zone as well as F&B area

方案二视觉连接
Option 2 – Visual connections

通过提供从零售业中心贯穿的南北向连接，把两部分人流循环区域相连，
创造一条强有力的线性商业带。

By providing a direct link from South and North entrance through the central retail, both spaces connect better and open a strong linear desire line centrally through the mall





通过在此位置布置饮食零售业可以进一步提高商业区域中南北向的人流循环
人流循环中心轴的建立也减少了出入口的视觉隔离，从而打造了一个更容易探索的开阔空间并加强游客的空间感受。

Locating F&B at this location would further enhance the South – North circulation through the mall.
The central circulation spine also reduces visual severance of entrances / exits, and therefore opens the space for further exploration and improved experience to promote repeat visits

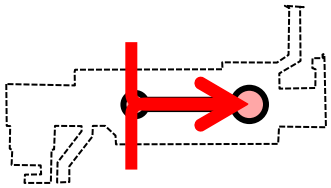
方案二 流线分析图
Option 2 - Circulation Analysis Diagrams

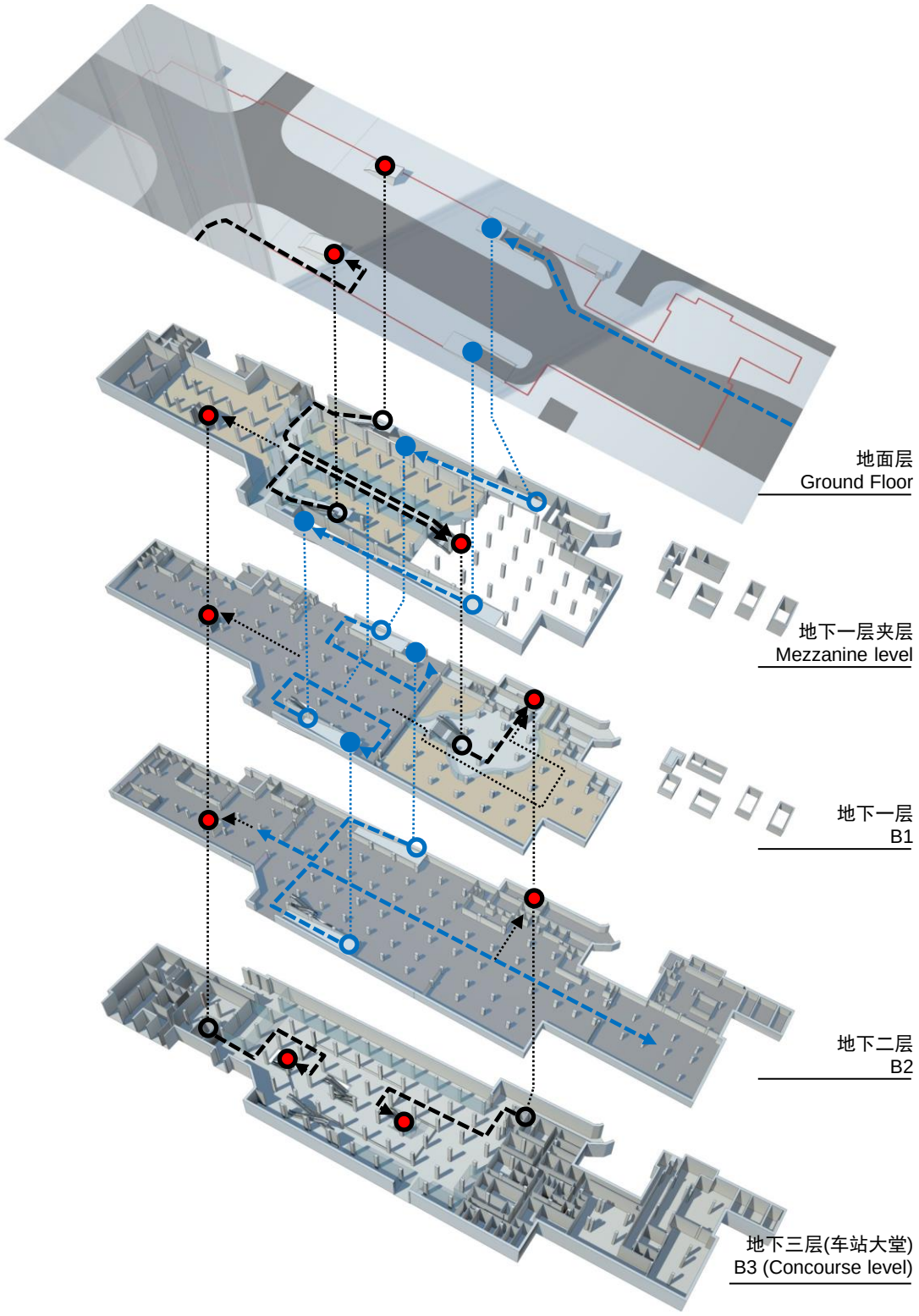
详细分析了连接点和路线之间的交通枢纽和商业设施（如右图）。这些图表表明该地区零售将有最高利用转车的乘客群，因此将是最高的价值单位。

Detailed analysis of the connections and routes between the transportation hub and the commercial facilities has been analysed as shown in the following diagrams. These diagrams indicate which areas of retail will have the highest of footfall from taking advantage of interchanging passengers and therefore will be the highest value units.

图例 Key:

- 人行流线起点Pedestrian Starting Point
- 人行流线终点PedestrianDestination
- 人行流线方向Direction ofPedestrianTravel
- 车行流线起点Vehicle Starting Point
- 车行流线终点VehicleDestination
- 车行流线方向Direction ofVehicleTravel

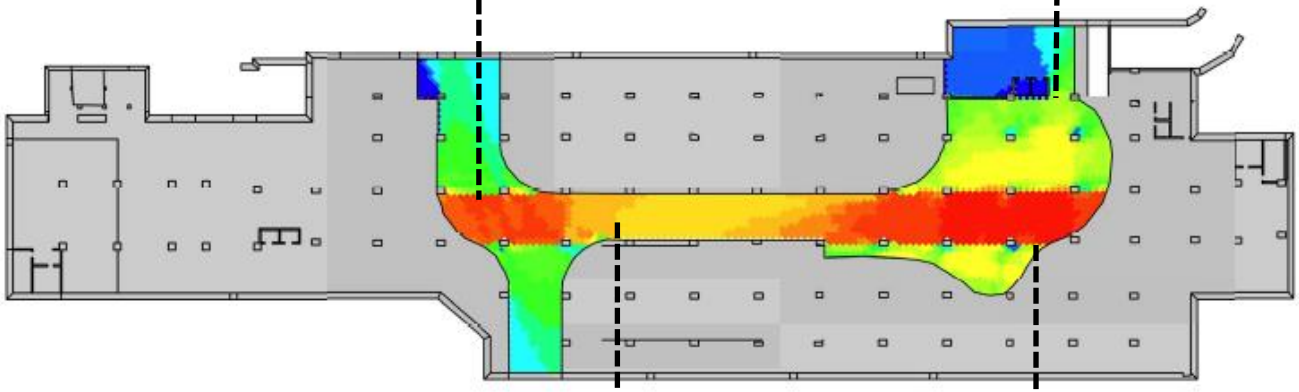




方案二　视觉连
Option 2 – Visual connections

人流循环区域设置在靠近一个流畅、有方向感位置的车站出入口
Circulation zone close to entrances in a naturally accessible and legible location

电梯出入口被柱网布局以及电梯间隔墙挡住同方案1所提出问题相似）
Similar issue with Option 1, where elevators are obstructed from view by column arrangement and need for lift lobby



可视性高
Most Visible

可视性低
Least Visible

客流由地面层出入口进入穿越南北轴向的商业区域
Strong South-North connection through mall from street level entrances

利用具有冲击力的视觉效果建立扶梯通道，从而连接两层商业模式
Strong visual gateway down escalators into lower floor area, linking two levels together

行人流线
Passenger Circulation

根据重庆轨道交通提供的现有乘客量数字来预测经过车站的行人流线。微观仿真研究使用LEGION软件，分析车站大堂层于高峰期的人流及潜在拥堵点。

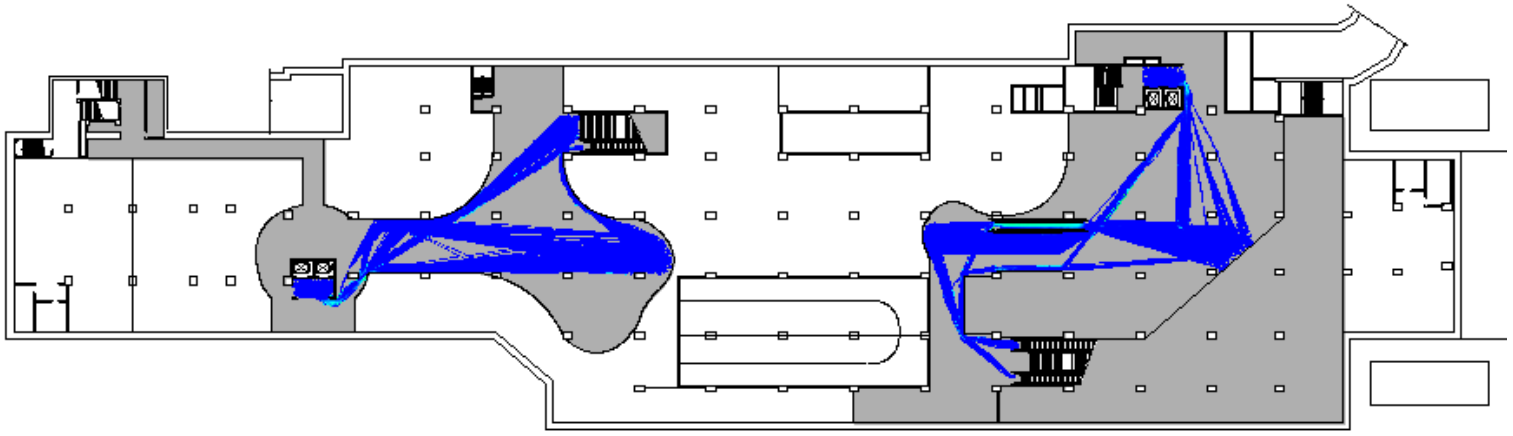
对地下一层的方案二进行仿真分析，理解乘客流线能否进入地下商业层。假设将一部分的流线导到新商业层，再加上停车场层的流量所进入商业层的数量，得出地下商业层访客数目的合理假设，再予以分布在入口及商业店铺。

平面图所示为楼层的空间使用的人流。

Pedestrian movement through the station was forecast using existing patronage figures provided by CRT. The microsimulation model, based in LEGION, provides an insight into flows and potential pinch points for a peak hour at concourse level.

Option 2 for level B1 has also been modelled to understand whether any pedestrian movements would occur in the retail level. Assuming a proportion of this demand reroutes to the new retail level, as well as footfall from the parking level, presents a reasonable assumption for the number of visitors to B1. These have been distributed between entrances and retail units.

The plan shows the space utilization of footfall using this floor, where:



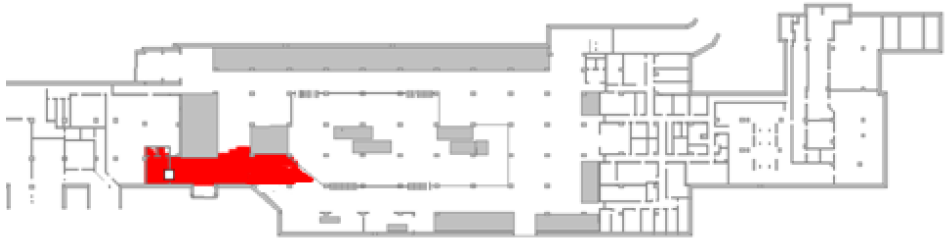
高度拥挤/拥堵
High levels of crowding / congestion

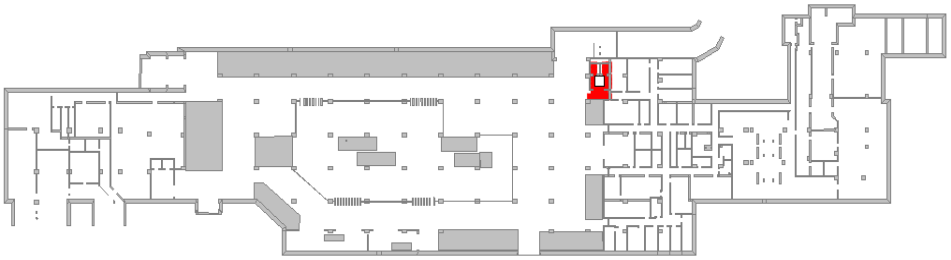
善加利用并无拥挤/拥堵
Well used but no crowding / congestion

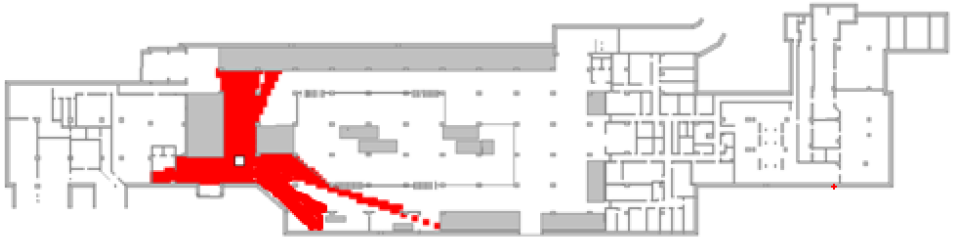
虽然在商业层能看出小的客流量，在这个规模的平面空间中所显示地下一层人流交通移动的密度少有拥堵的情形，零售楼面的运作看到良好的运动和舒适的空间循环。

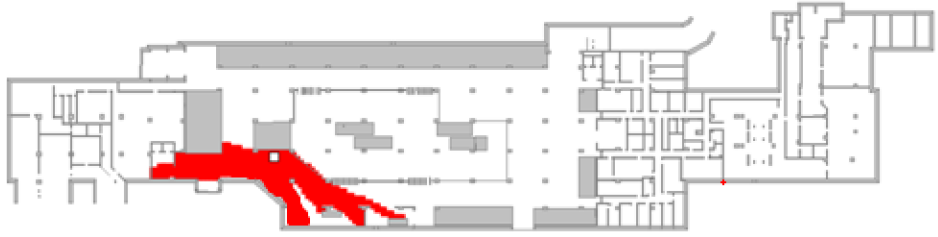
Although the retail level appears to see little footfall, this plan shows the density of movement across B1. As there is little congestion due to the sizing and layout, the operation of the retail floor sees good movement and a comfortable space to circulate within.

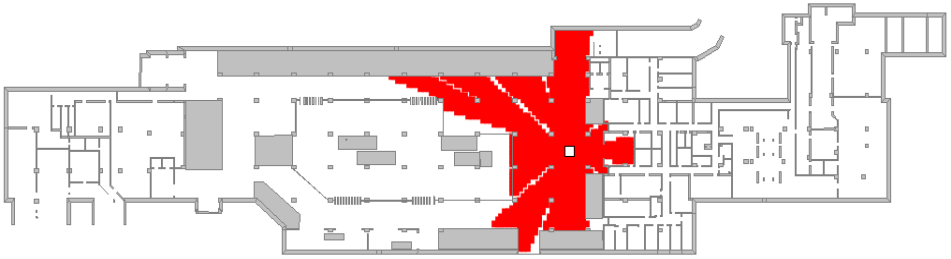
站厅层 – 从西侧电梯的视觉连接
Concourse – Visual connections



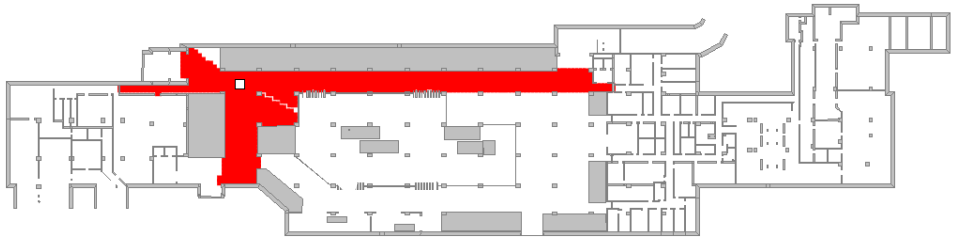


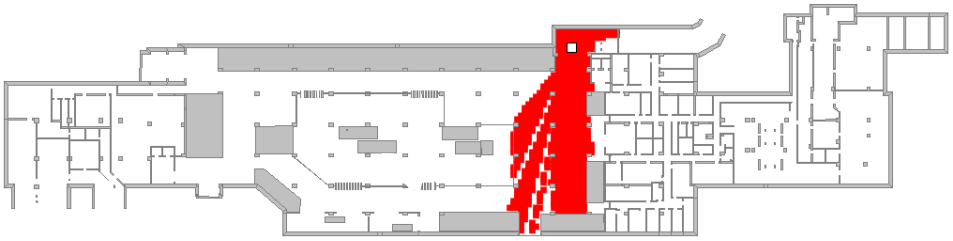






站厅层 – 从其他出入口的视觉连接
Concourse – Visual connections from other entrances

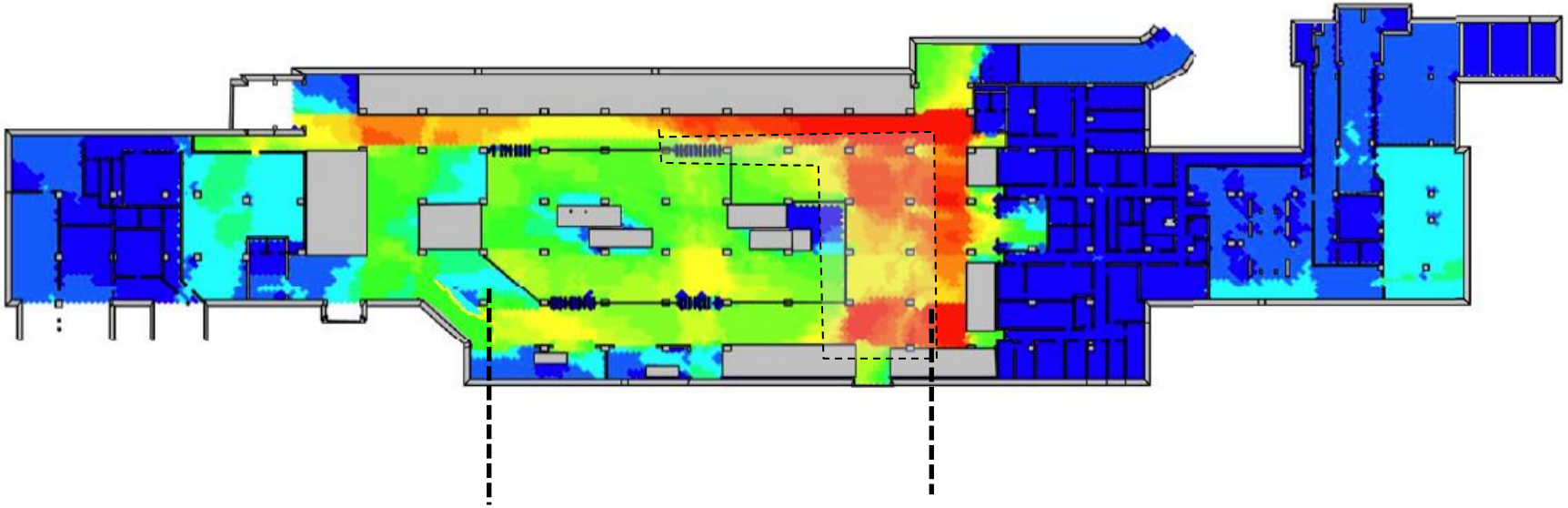




与电梯的布局形式相似，此视觉模式下的商业也被布置在可以直接从出入口看到的位置。
每个出入口同时也保持了可以直接/间接看到进入付费区域的标识，从而导向人流进入站台层。

As with the two lift lobby locations, retail has been positioned so that it is in direct view of pedestrians arriving from each of the station entrances.
Each entrance also retains direct lines of sight to either gatelines or sufficient paid area to retain a legible route onwards to the main Metro system.

站厅层 – 视觉连接
Concourse – Visual connections



尽管此斜向未付费区域的设计方式降低了进入站厅层的视觉导向效果，但是仍旧保持了直向付费区的直观视线，从而带动人流从电梯进入站厅区域

Although concession reduces visual link into concourse area, still retain direct view into paid area to draw pedestrians from elevator into station area

主要视觉导向区域，用于服务从北侧电梯和北侧各出入口进入的人群
沿此侧以及西侧墙面所建立零售业可以吸纳最大的客流量。具有转换为其他销售模式的潜力。

Main visual orientation area for those accessing concourse from North lift lobby, as well as other eastern entrances
Retail along this wall, as well as wall running along West of site, is expected to see greatest footfall and potential for conversion to sales

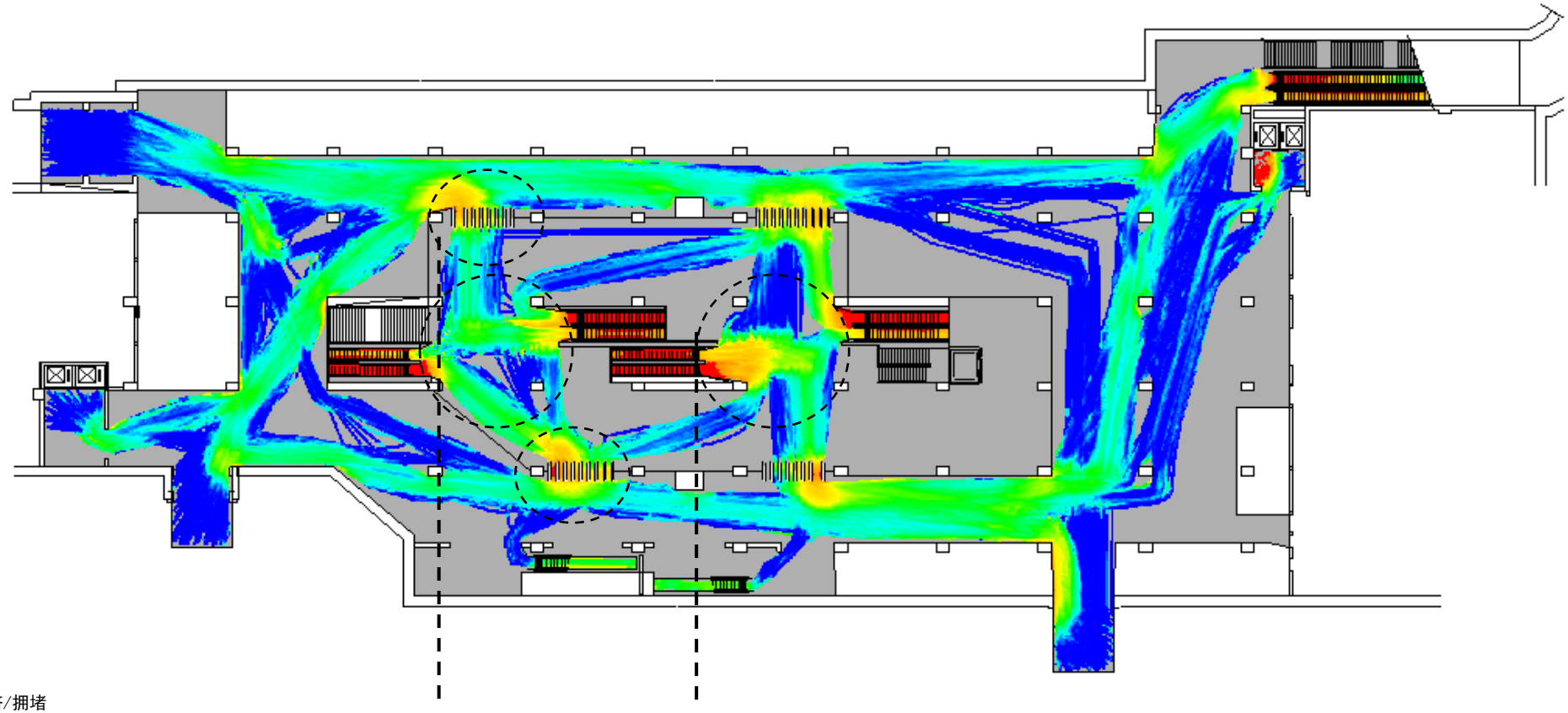
可视性高
Most Visible

可视性低
Least Visible

站厅—乘客流线
Concourse– Passenger Circulation

在站厅层图示中已经将业主团队所提供的人流高峰期长期预测值分布在站厅层的入口处及到站台层之间。再加入设置零售商铺后，可以从以下平面图中看到车站的空间使用，新增的商店未引致明显的拥堵增加。

For the concourse level, peak hour long term forecasts provided by the client team have been distributed to station entrances and onwards to platforms. By including the proposed retail units, the following plan shows the space utilisation for the station, whereby no notable increase in congestion is caused by the presence of the new retail.



高度拥挤/拥堵
High levels of crowding / congestion

善加利用并无拥挤/拥堵
Well used but no crowding / congestion

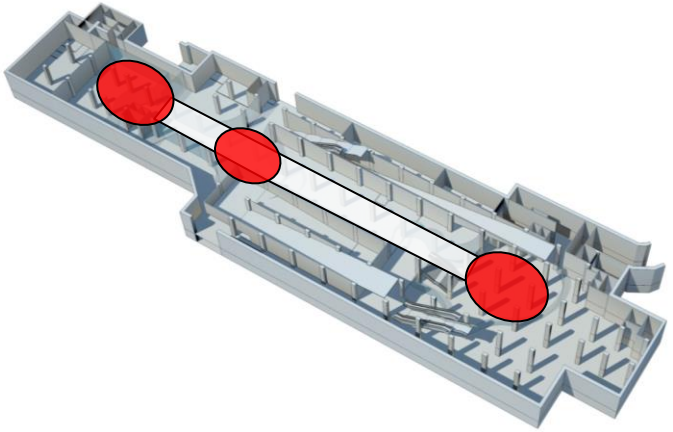
虽然主流线空间（包括新设商店）预测不会有很多拥堵，但于闸门及接近到站台层的手扶梯则明显有拥堵。建议尽快对车站营运进行更详细的审核。

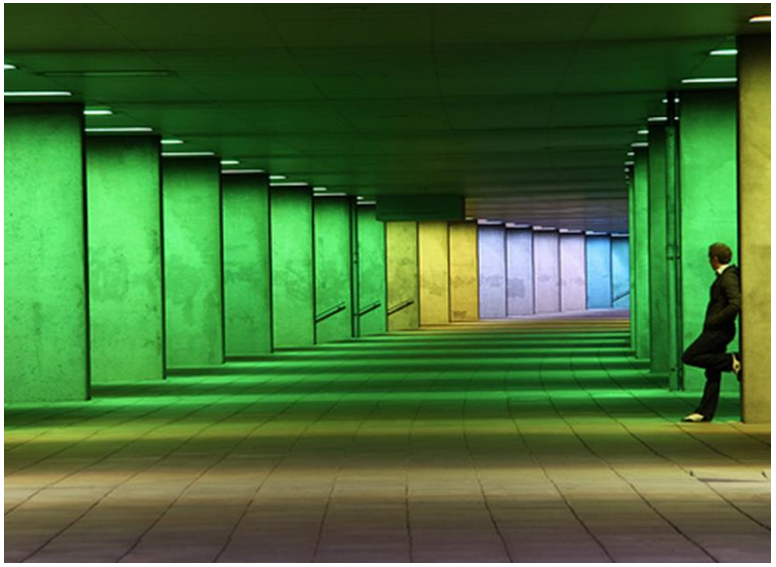
Although no significant congestion is forecast for the main circulation space (including with new retail), there is notable congestion built up at gate lines and accessing the escalators down to platform levels. It is suggested that a more detailed review of station operations is undertaken in due course.

环境意象-节点
Environmental Graphic-Node

现有的结构柱网是车站的限制之一（比一个典型的商业空间配置更加稠密）。
柱网或许可以被用来定义空间，并提供商场的空间个性。

One of the constraints of the existing structure is the imposing column grid (more dense than a typical retail design).
Perhaps this column grid can be used to define the space, and to offer character to the mall.

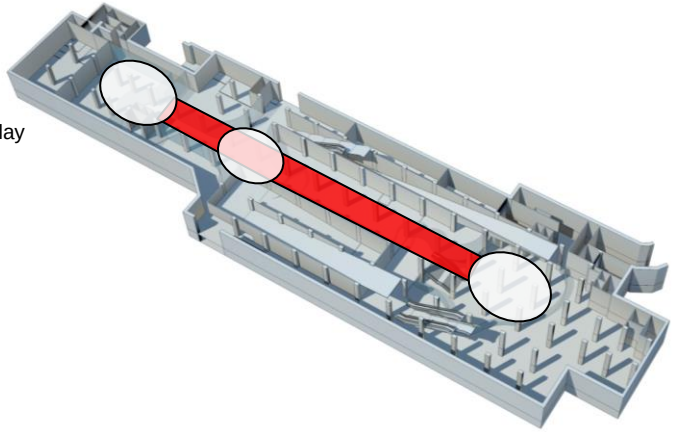




环境意象-天花
Environmental Graphic-Ceiling

中央柱列和特别的天花板高度可为设计壮观的空间提供了一个很好的机会。
这可以提升商业空间的品质，并可能为空间提供一个独特的吸引力（如通过在天花板上使用的显示面板）

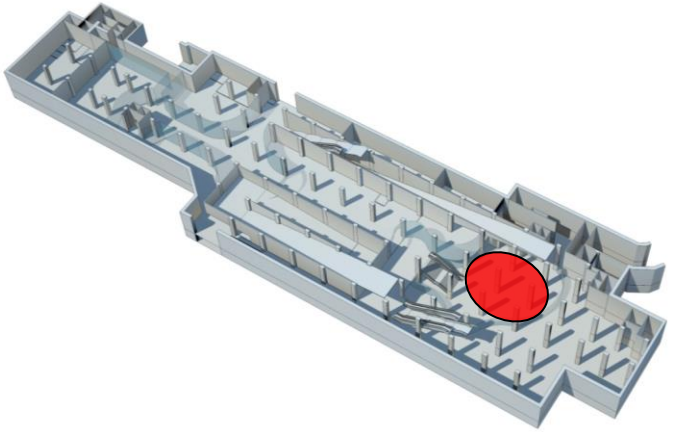
The central spine, and the unusual ceiling height provides an opportunity for a spectacular space.
This can enhance the quality of the retail mall and may also offer a unique attraction (such as through the use of display panels on the ceiling)



环境意象-垂直视觉元素
Environmental Graphic-Visible Vertical Circulation

位于商业楼层及车站大厅之间的乘客升降机的外观、功能和吸引力，都需要慎重考虑。
这些都必须是高效，安全，清洁，以鼓励民众使用它们来穿梭商场空间到电梯厅。

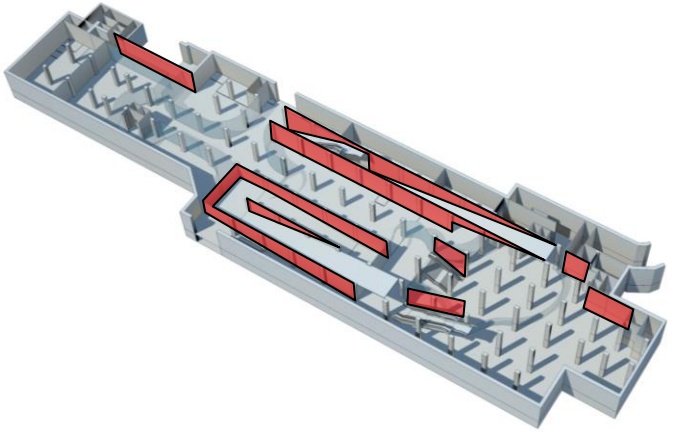
The appearance, function and attraction of passenger lifts between the retail floor and concourse needs to be carefully considered. These must be efficient, safe and clean to encourage the public to use them, and therefore move through the mall to the lift cores.

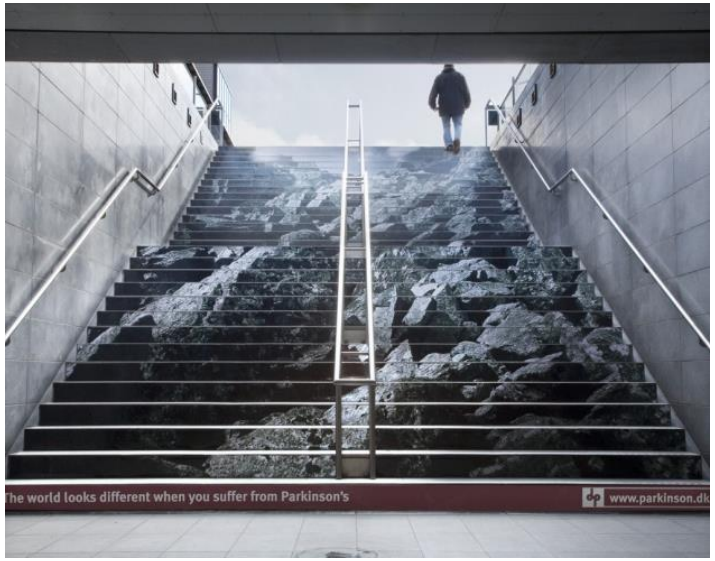


广告设置
Advertising

除了商业设置的机会外，高品质及适当区位的广告设置将可提高相对应的收入。
利用先前所展示的人行模式分析，商业的机会是可被理解运用并扩大效益。

In addition to retail opportunities, a reasonable income can be achieved through high quality and well located advertising. Through pedestrian modeling and analysis as demonstrated previously, such opportunities can be understood and maximised.

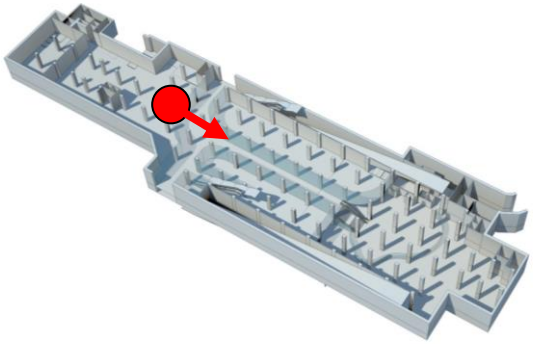




空间意象-走道
Spatial Experience- Corridor

商业街流线必须要清楚简单、明亮及宽敞。务必让购物者忘却身在地下空间。

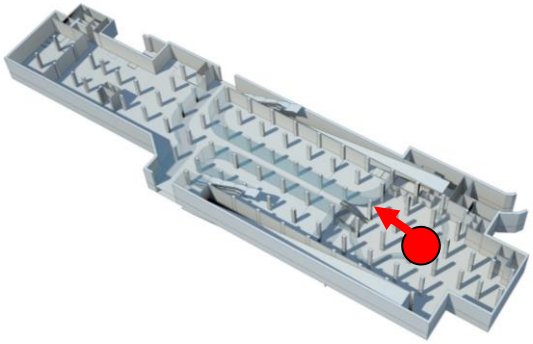
The circulation areas need to be clean, bright and spacious.
Shoppers must forget that they are underground.



空间意象-挑空
Spatial Experience- Void

少了楼层的优势，在中央的柱列必须能引导人流的移动，而且让视线能够落在两旁的商业空间。
除此之外，设置在两端的雕塑或是空间特色能够做为端点的视觉焦点，引领购物者前往。灯光设计亦是必要的重点，包括导入主要空间的自然光设计。

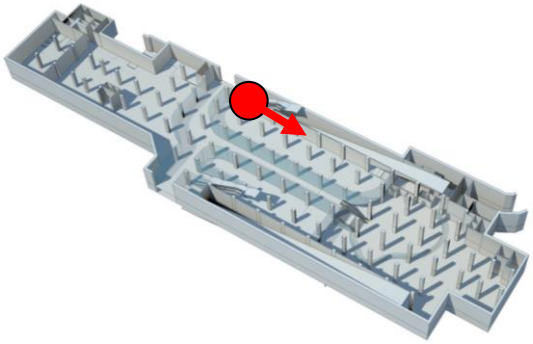
Without the benefit of multiple levels, the central spine must encourage the public to move through the space, but also to look at the retail units to each side.
As above, sculptures or features at each end act as wayfinding markers, and careful lighting design is also necessary, including the use of natural daylight in the major spaces.

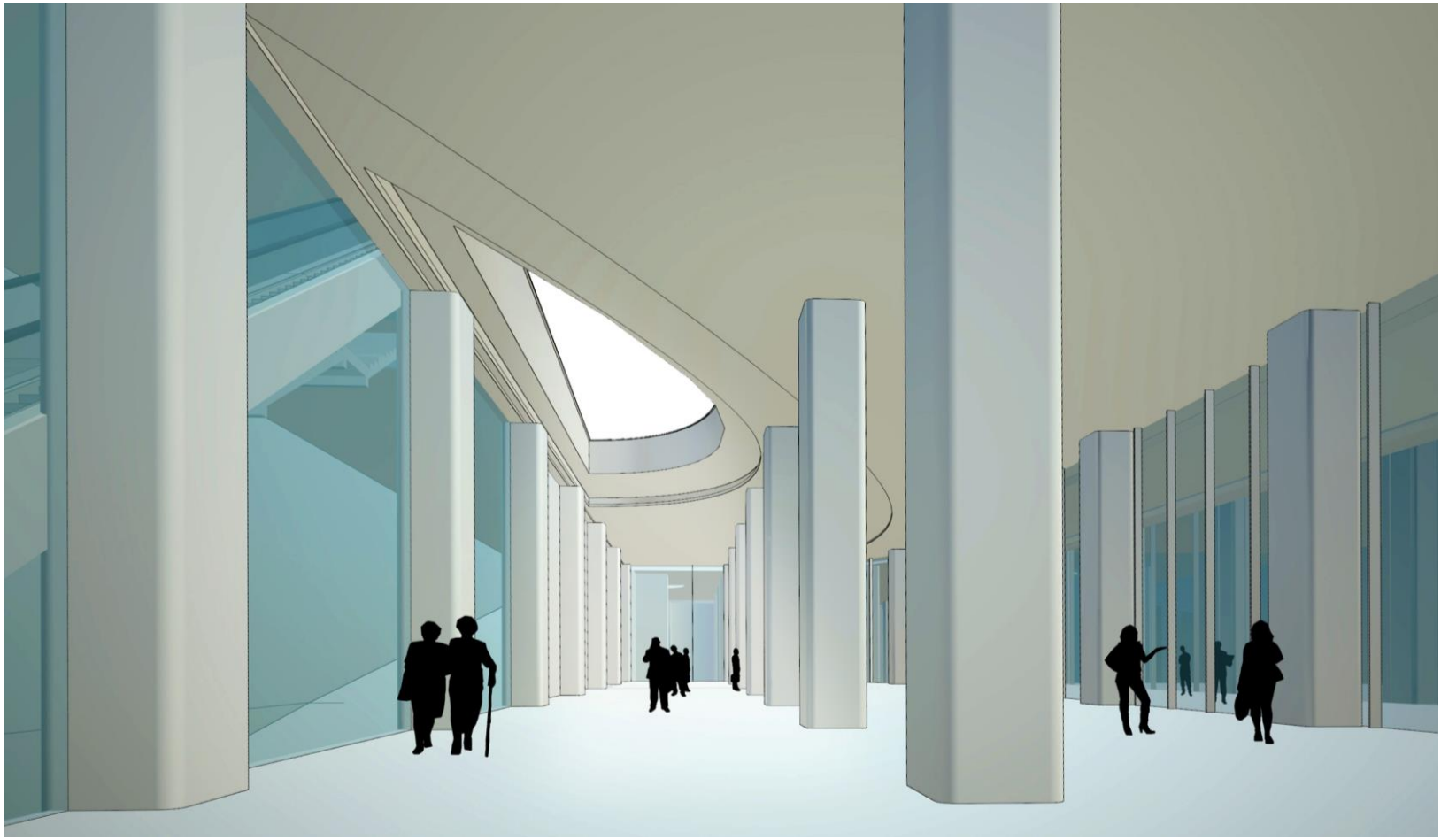


空间意象-天光
Spatial Experience- Day Lighting

创造性的空间感觉将有利于设置餐厅及酒吧。
满足购物者及旅客的舒适性及轻松感，需要相对应的挑高及环境回条件还有适切的空间个性。

The creation of a sense of place is beneficial to the restaurant and bars.
Shoppers and passengers should feel relaxed and comfortable, and this requires good headroom, environmental conditions and ‘character’ of the space.

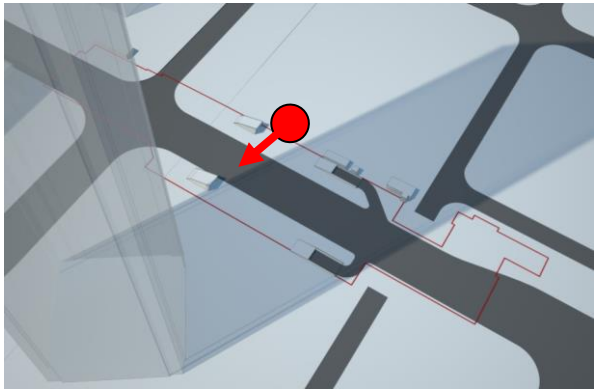


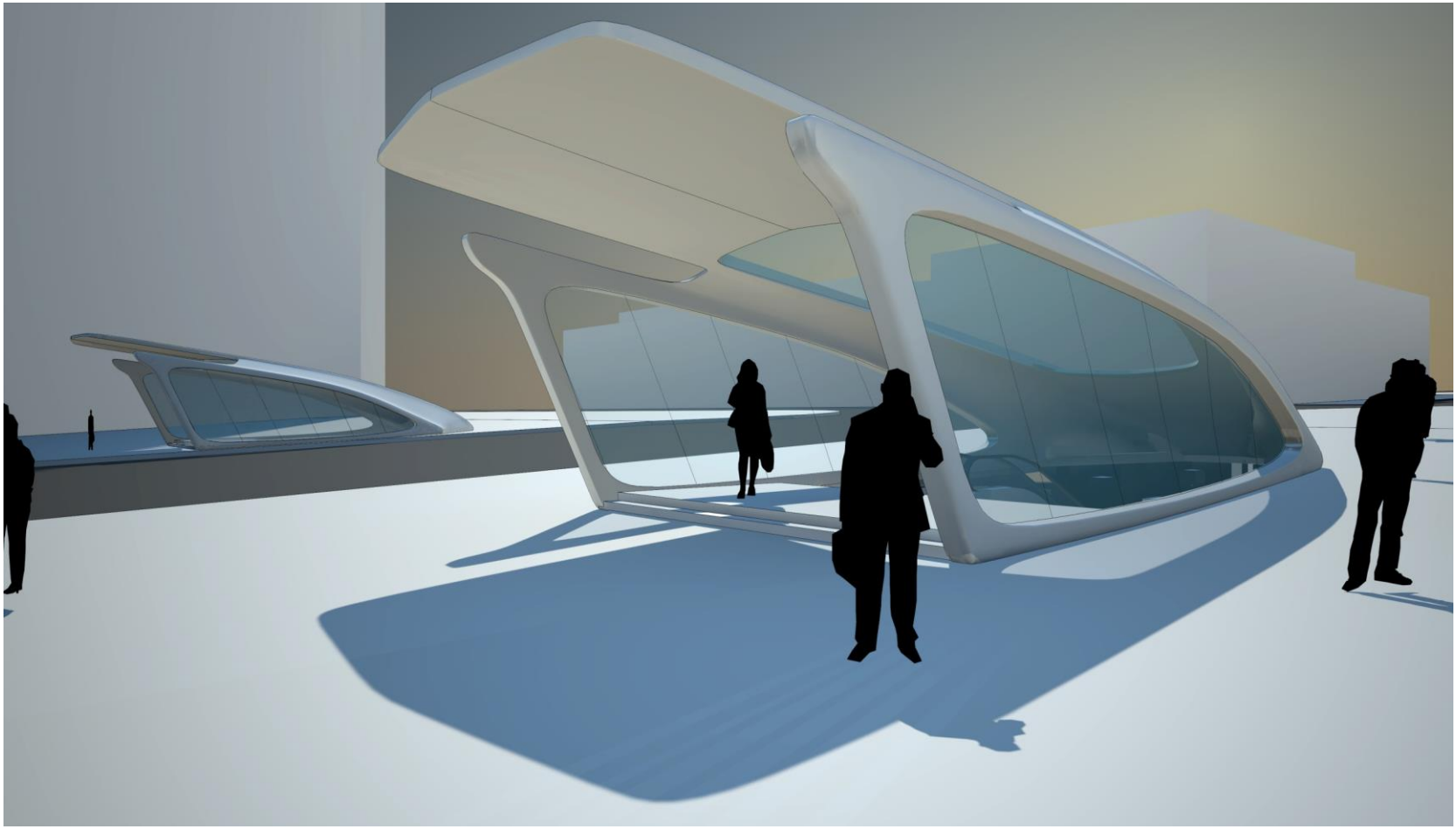


建筑意象-地面层入口
Architectural Experience- Entrance

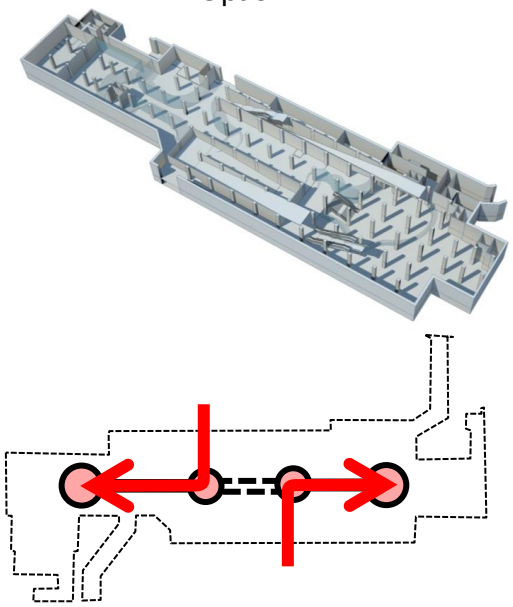
为配合创造公共空间的聚集点，前往地下一层的零售商场的入口予以公共和雕塑形象。
因此为区域创造特色，更重要的是，创造独特的地标性，突显街道下层的商场，为车站提供重要的门户，因此增加前往下层商业空间的人流量。

In creating a civic ‘place’, the entrances to the B1 retail mall can become civic and sculptural.
These offer character to the precinct, and (importantly) identity and presence to the retail mall below the street. More prominent station entrances via retail can provide a stronger gateway to the station, thereby increasing footfall to the retail spaces below



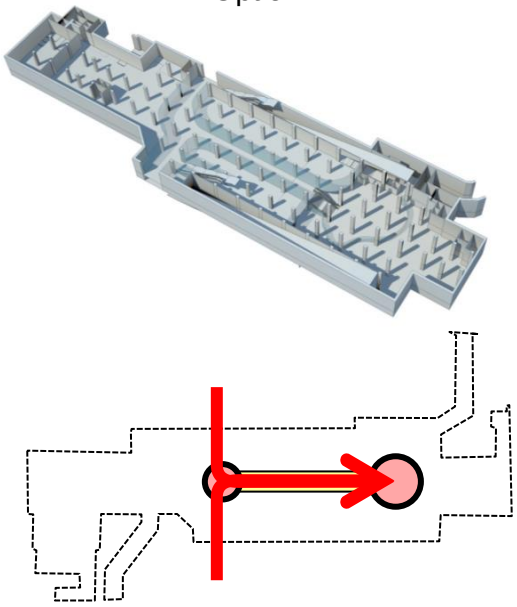


方案一
Option 1



- 维持现有结构
  Existing Structure
- 增加商业面积5000平米
  Increase Retail area 5000sqm.
- 顺畅人行流线
  Smooth Circulation
- 提高地面层及地下商业的联系
  Connect Actives Between Ground Floor and Basement

方案二
Option 2



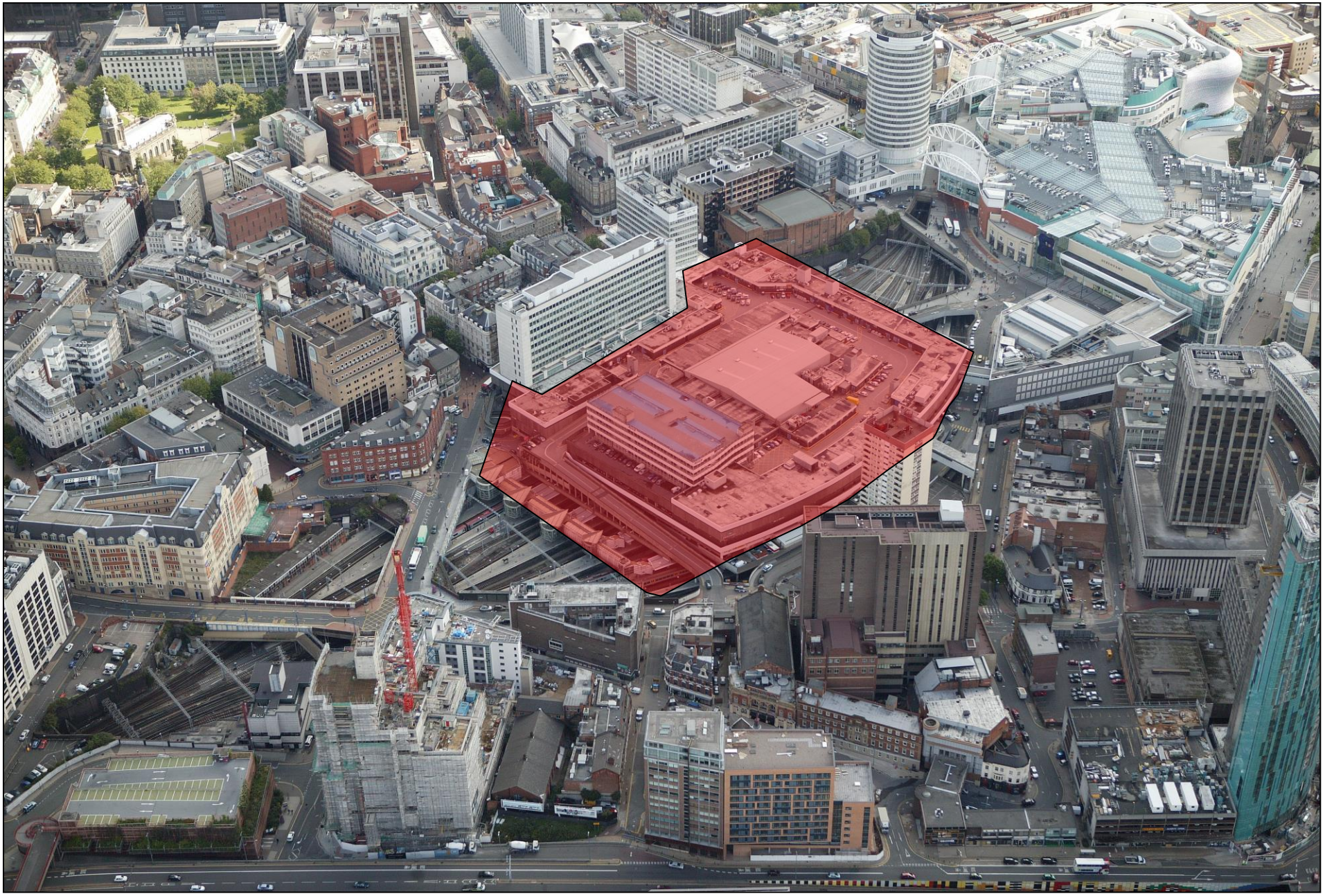
- 维持现有结构
  Existing Structure
- 增加商业面积6000平米
  Increase Retail area 6000sqm.
- 顺畅人行流线
  Smooth Circulation
- 提高地面层及地下商业的联系
  Connect Actives Between Ground Floor and Basement

06

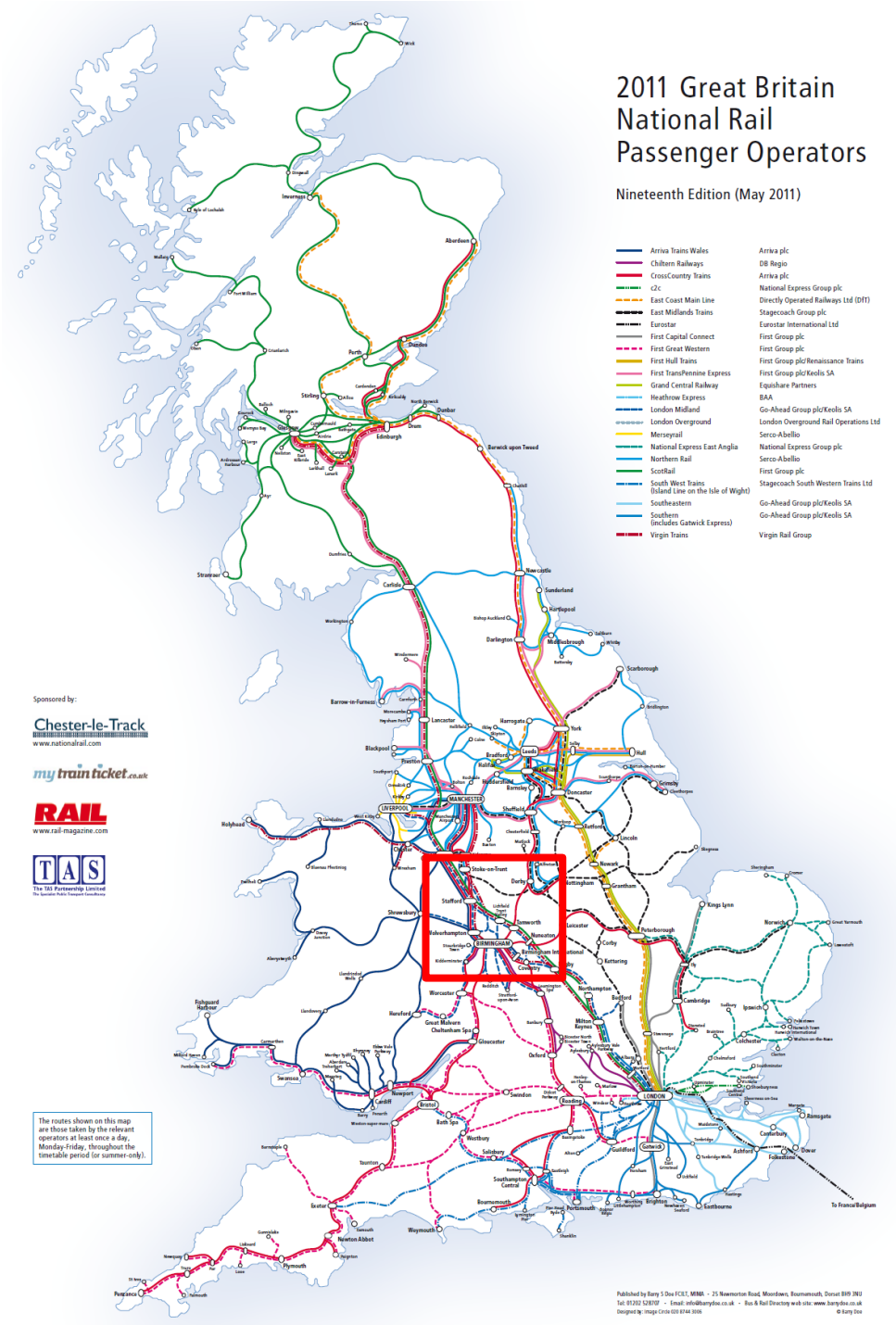
Case Study 2

Birmingham New Street Station

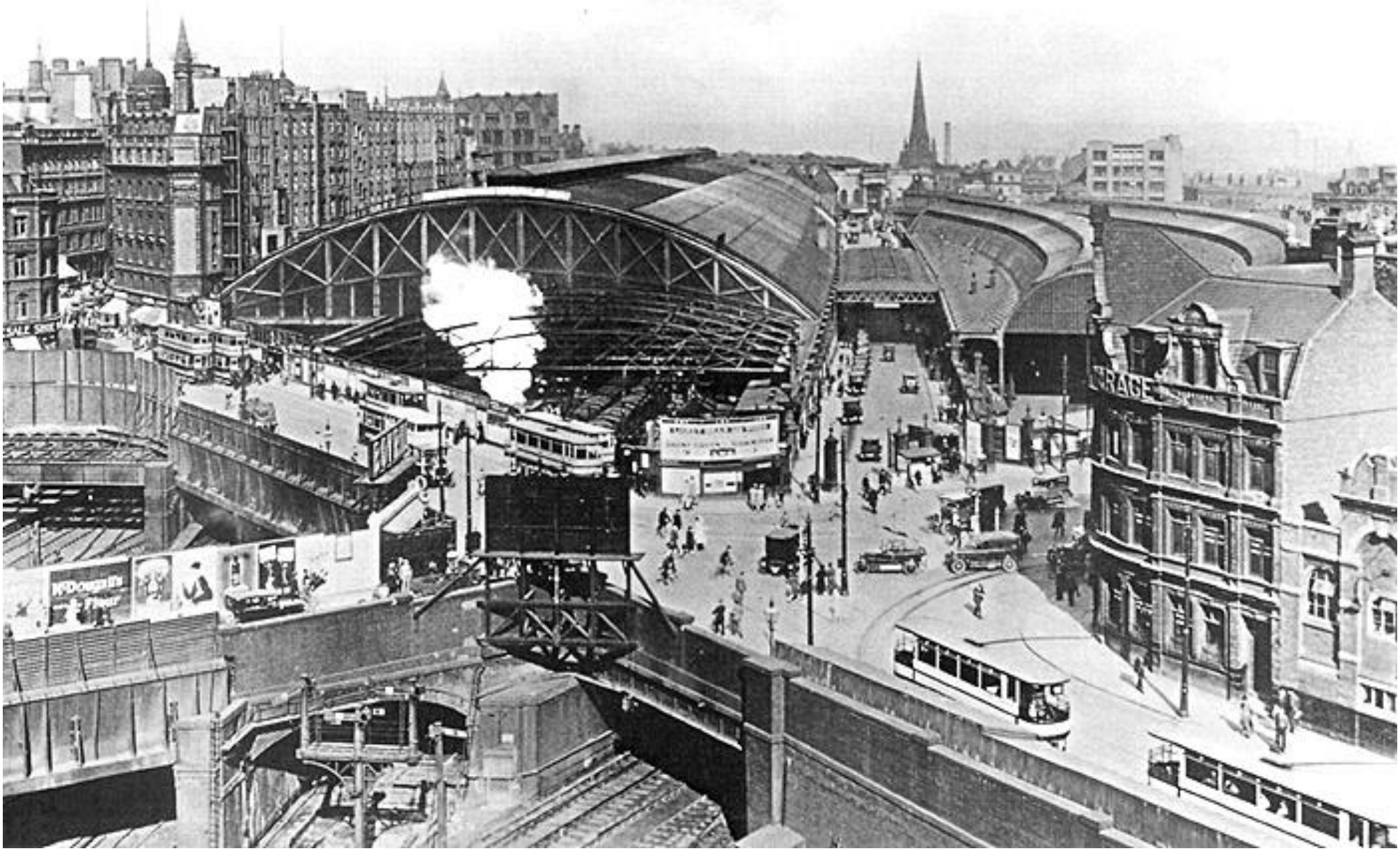
At the heart of the city



Birmingham New Street: heart of the network



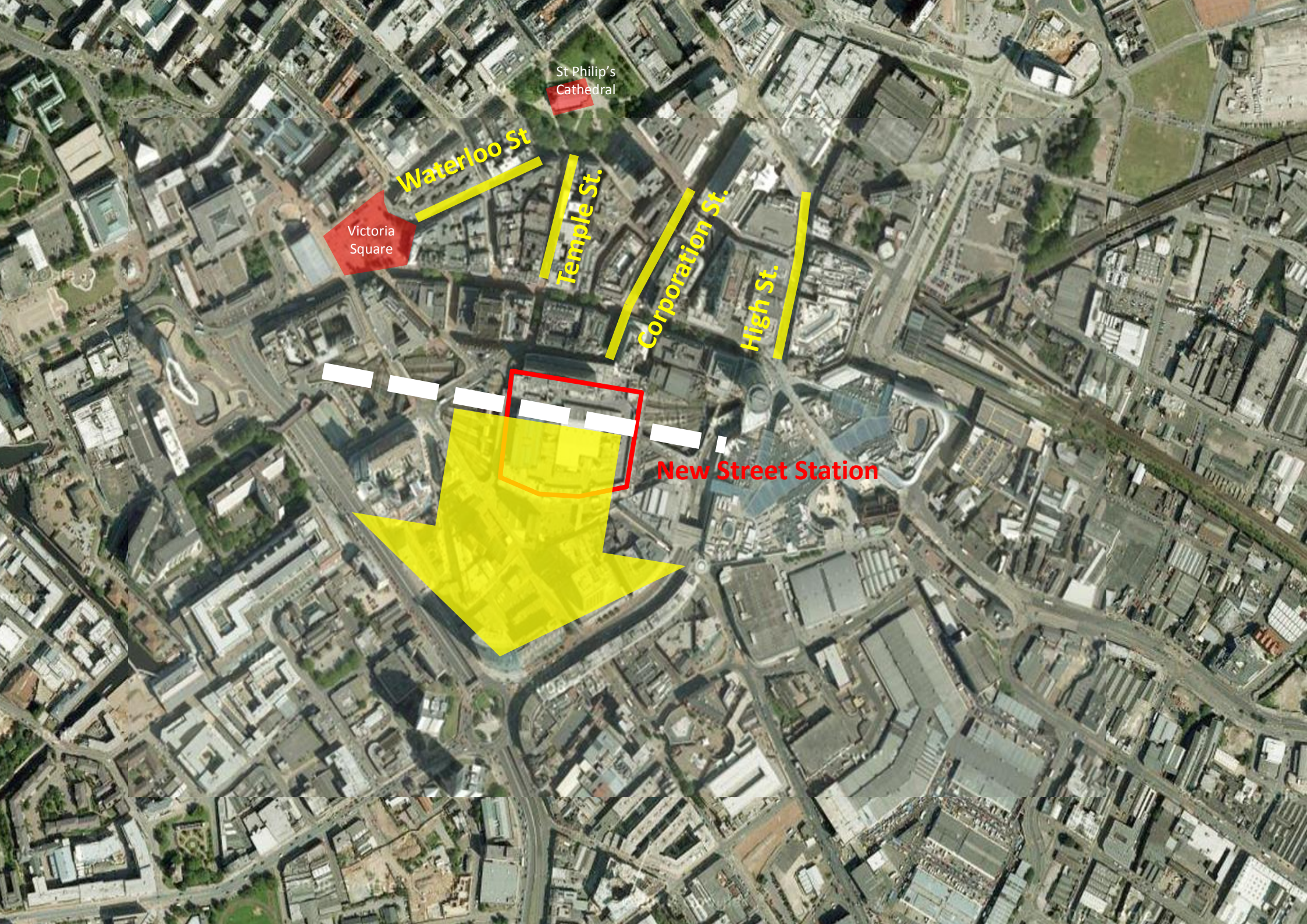
Original New Station 1905



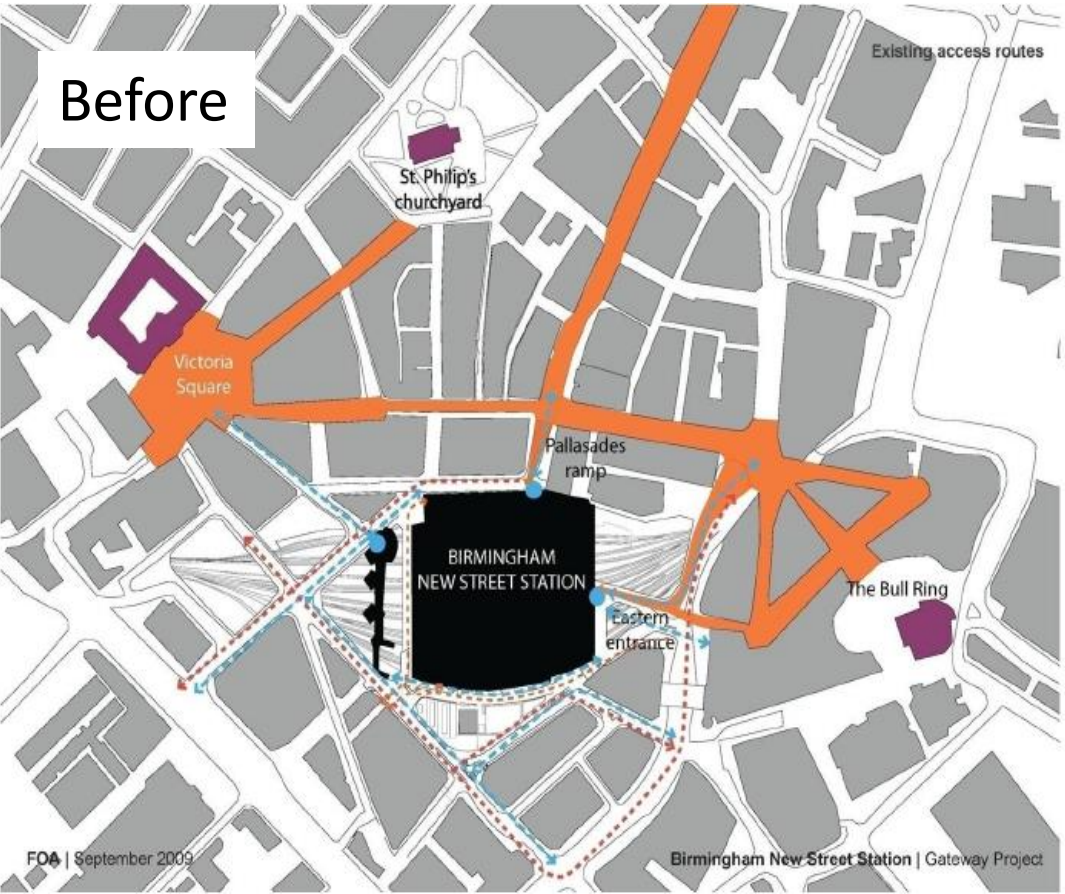
Replacement New Station 1967

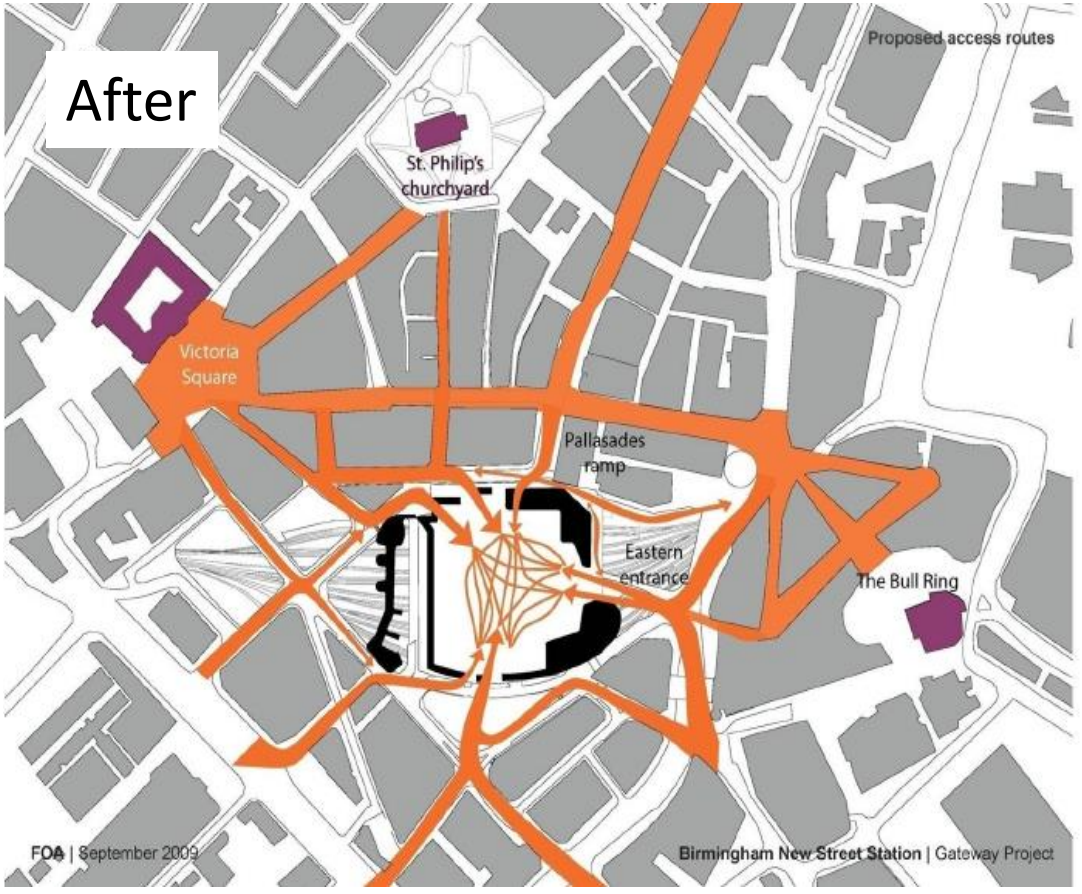
"Visitors need only to have one experience like that to decide never to come back to Birmingham again“…"Getting rid of the underpasses is not desirable - it's essential."

The late Peter Rice, one of Britain's great civil engineers


St Philip's Cathedral
Waterloo St
Victoria Square
Temple St.
Corporation St.
High St.
New Street Station


STARBUCKS COFFEE
STARBUCKS COFEE
Kensington freak
BIRMINGHAM Mail
BULLDOG BASH
BALANCE
©2008 Google


Before
Existing access routes
St. Philip's churchyard
Victoria Square
Pallasades ramp
BIRMINGHAM NEW STREET STATION
Eastern entrance
The Bull Ring
FOA | September 2009
Birmingham New Street Station | Gateway Project

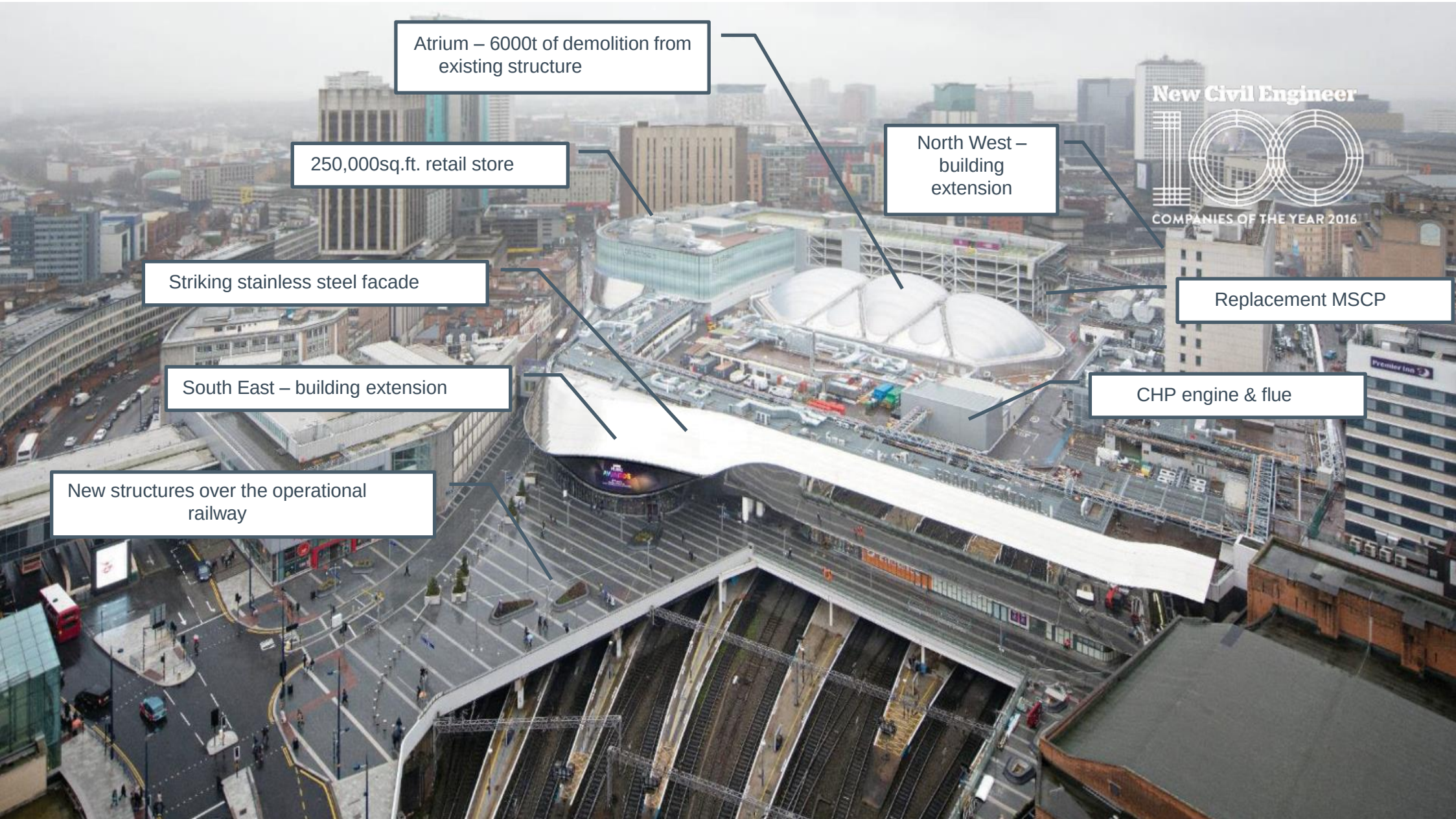

After
Proposed access routes
St. Philip's churchyard
Victoria Square
Pallasades ramp
Eastern entrance
The Bull Ring
FOA | September 2009
Birmingham New Street Station | Gateway Project

Strategic Objectives

- Increase **passenger capacity** at the station
- **Reconnect** parts of the Birmingham City Centre where the old station was a barrier
- An improved passenger experience, particularly an iconic '**first-impression**' for people arriving in Birmingham
- Be a catalyst for **economic development** in the City

"This would have been a world-class project as a new build on a green field site, it would have been stunning in that context. To do this on an existing station is absolutely amazing."

Professor David Balmforth
President of the Institution of Civil Engineers (2014-15)


Atrium – 6000t of demolition from existing structure
250,000sq.ft. retail store
Striking stainless steel facade
South East – building extension
New structures over the operational railway
North West – building extension
Replacement MSCP
CHP engine & flue
New Civil Engineer
COMPANIES OF THE YEAR 2016


Birmingham New Street Station

PPP: Funding partners

Birmingham City Council

Department for Transport

NetworkRail

Advantage West Midlands

www.advantagewm.co.uk

centro

transforming public transport

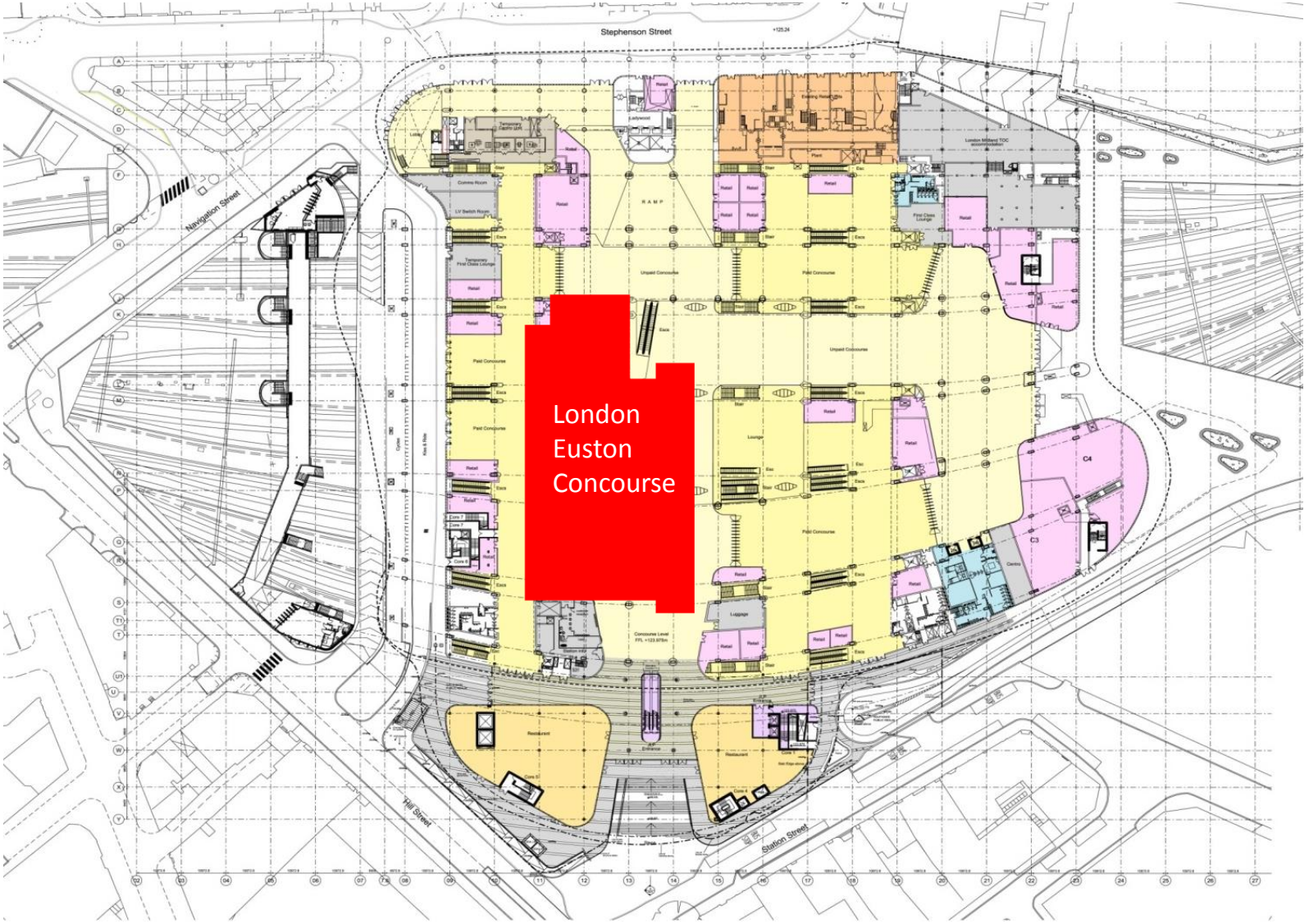
investing in your future

European Regional Development Fund

European Union

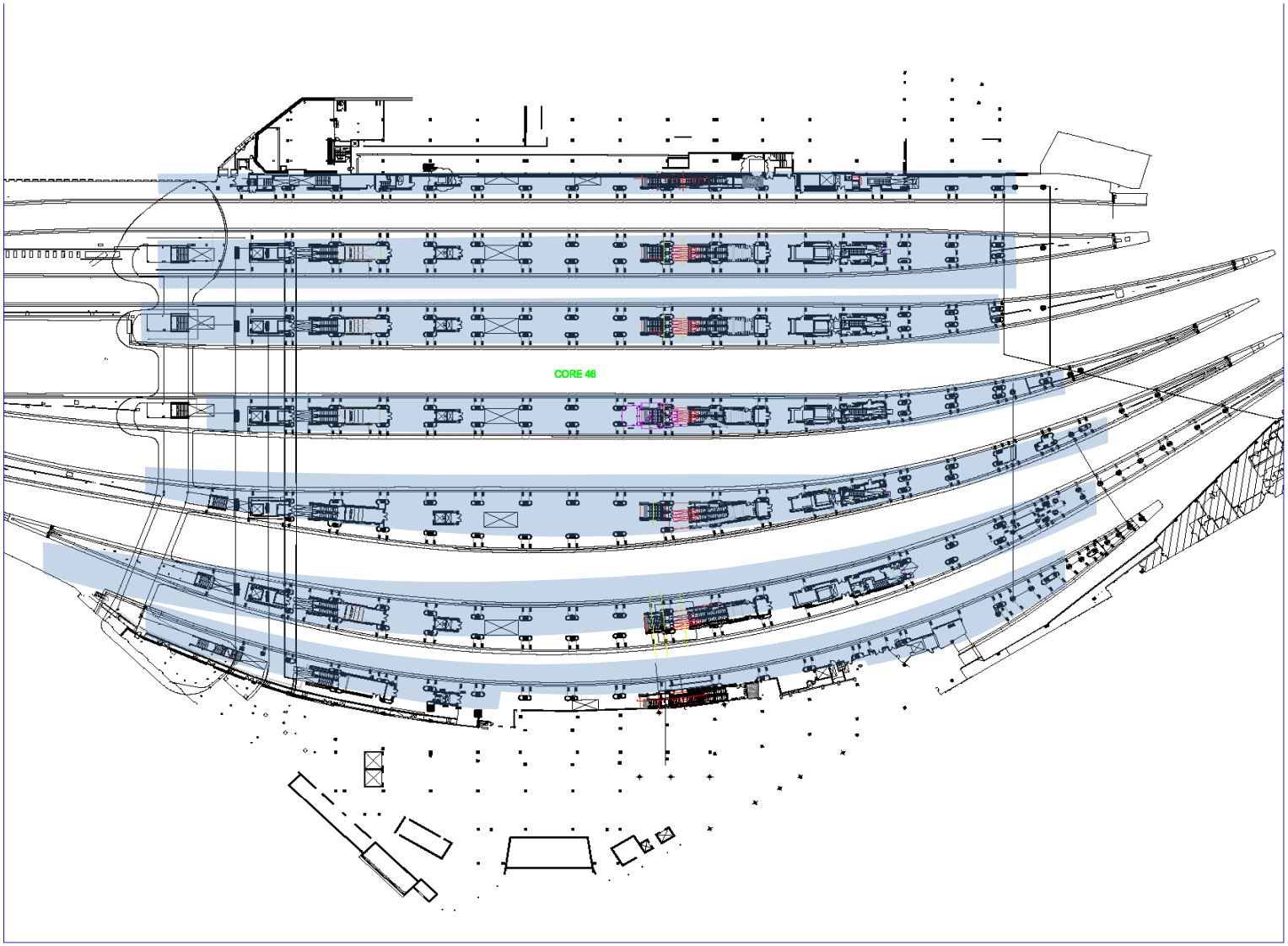
Complex Stakeholder Relationships

2015: New concourse makes full use of structure

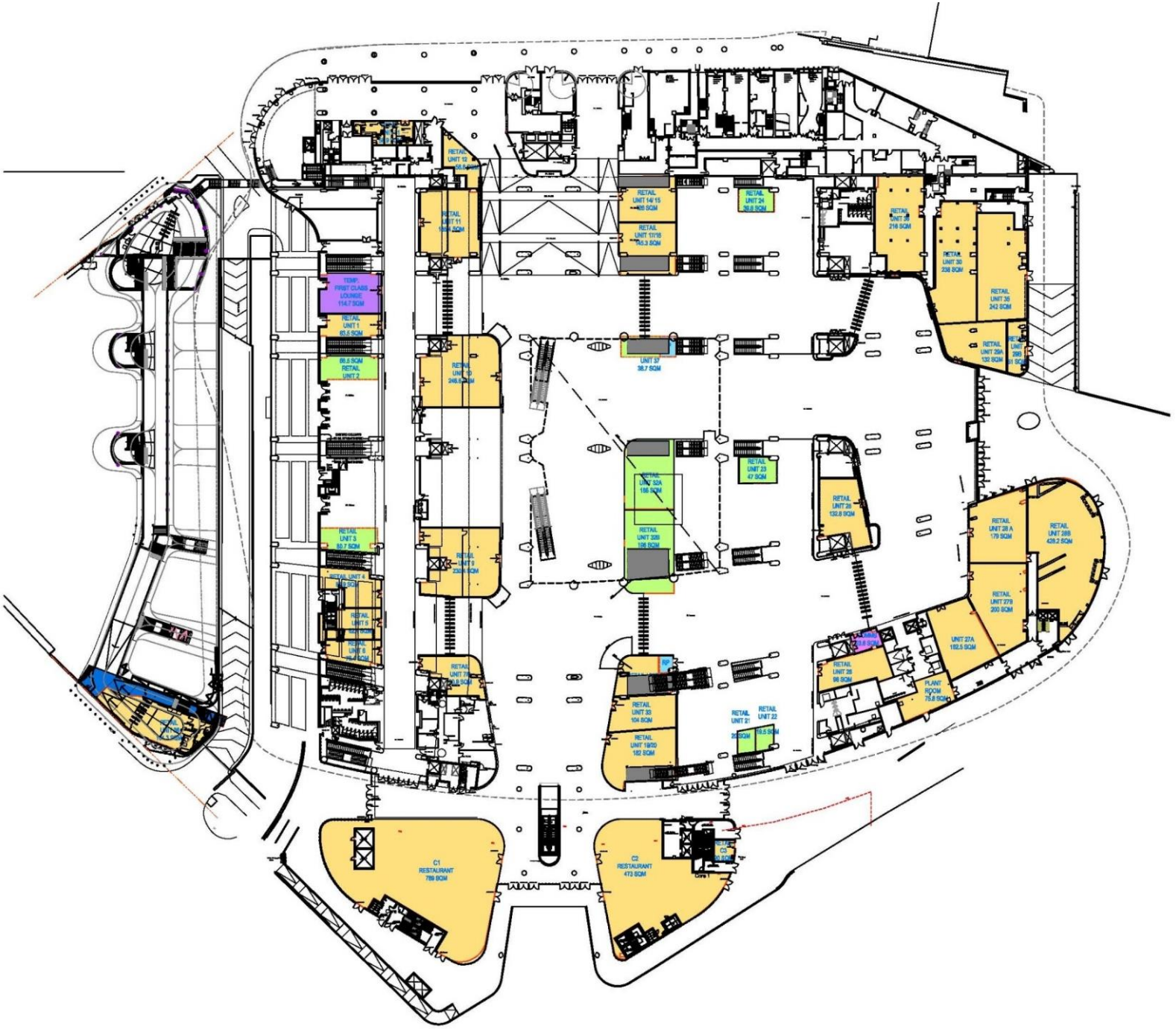


5 times bigger then London Euston

Platform Level



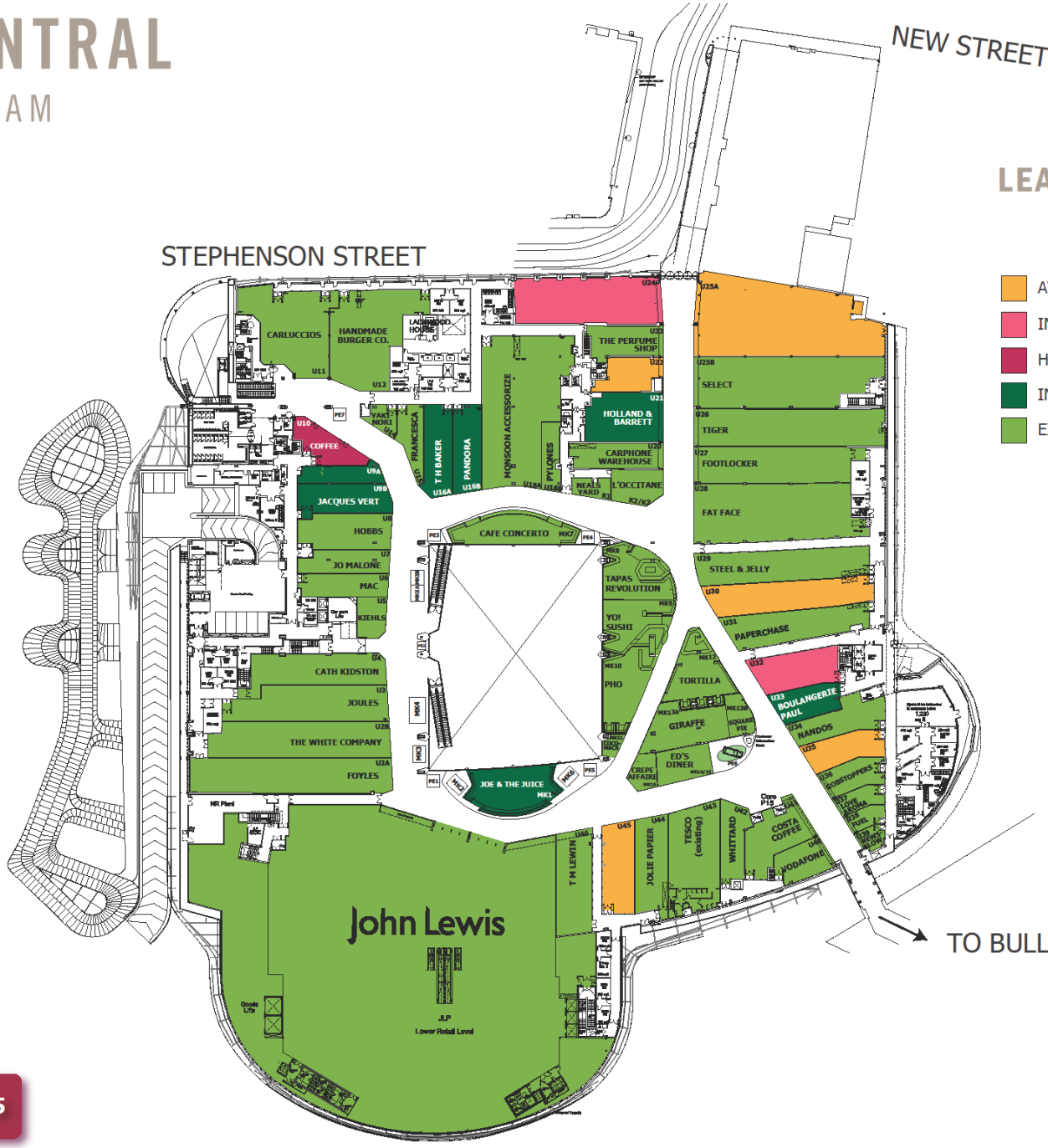
Concourse Level



GRAND CENTRAL

BIRMINGHAM

LEASING UPDATE PLAN



KEYStone Retail Property Limited

DTZ

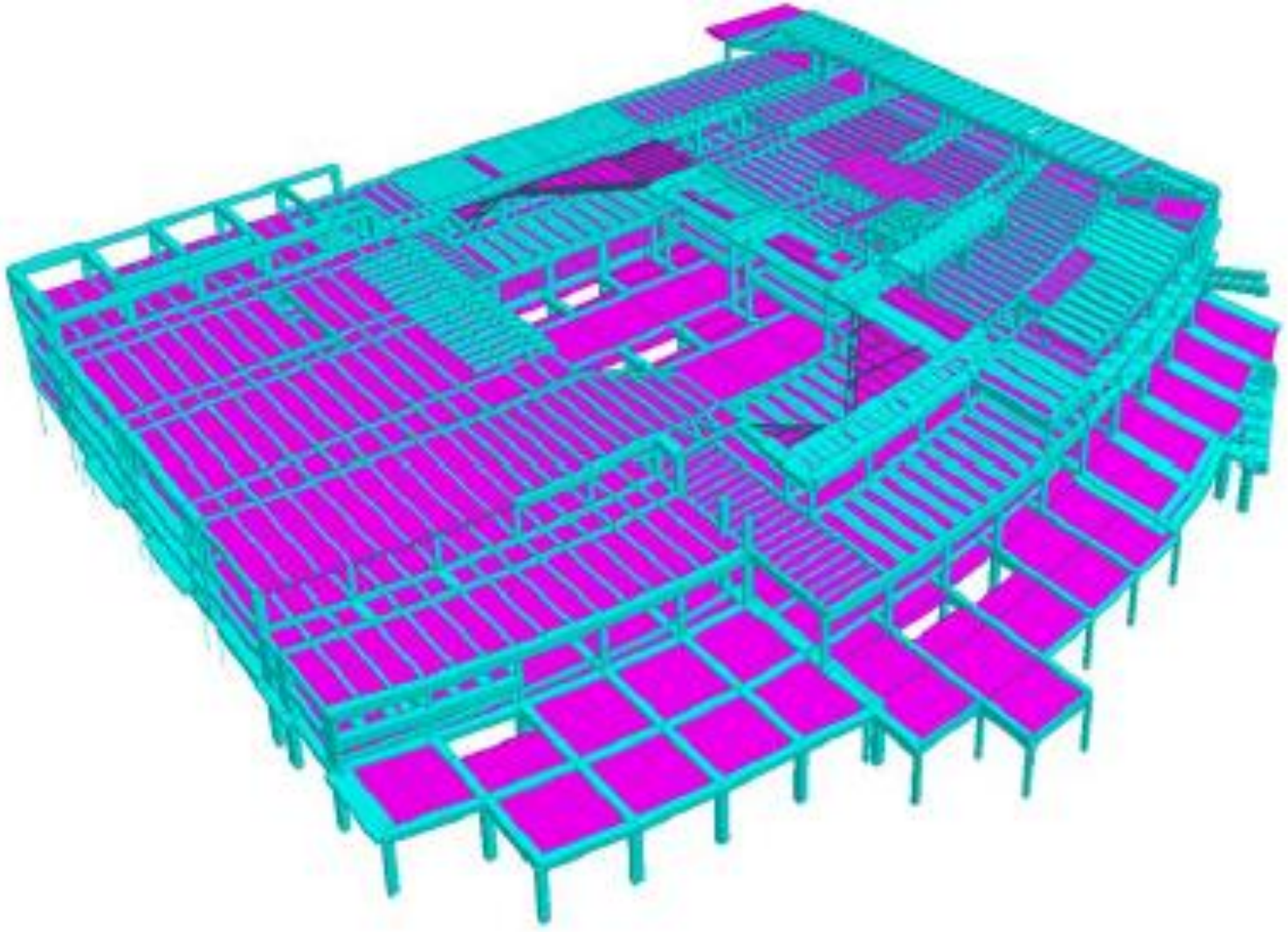
OPENING SEPTEMBER 2015

May 2015

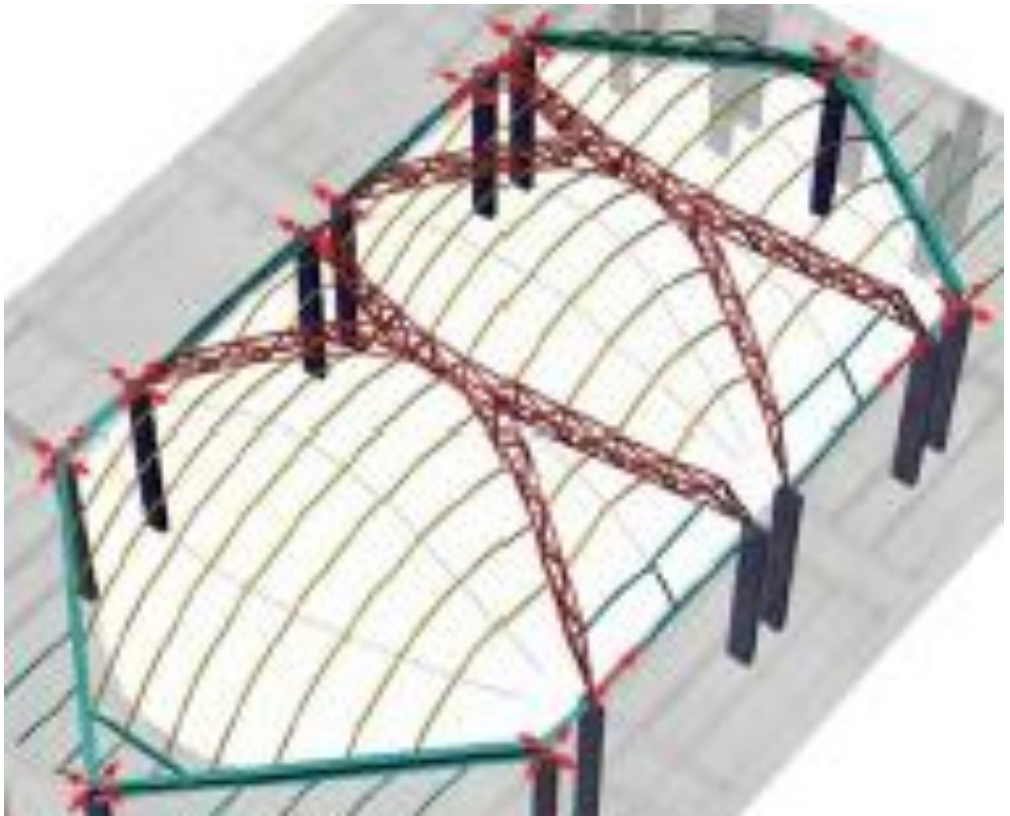
Global Stability Analysis (GSA)

How do you assess a 45 year old concrete structure for the effects of major changes to the structure, the loading, new cladding structures and demolitions?

Global Stability Analysis



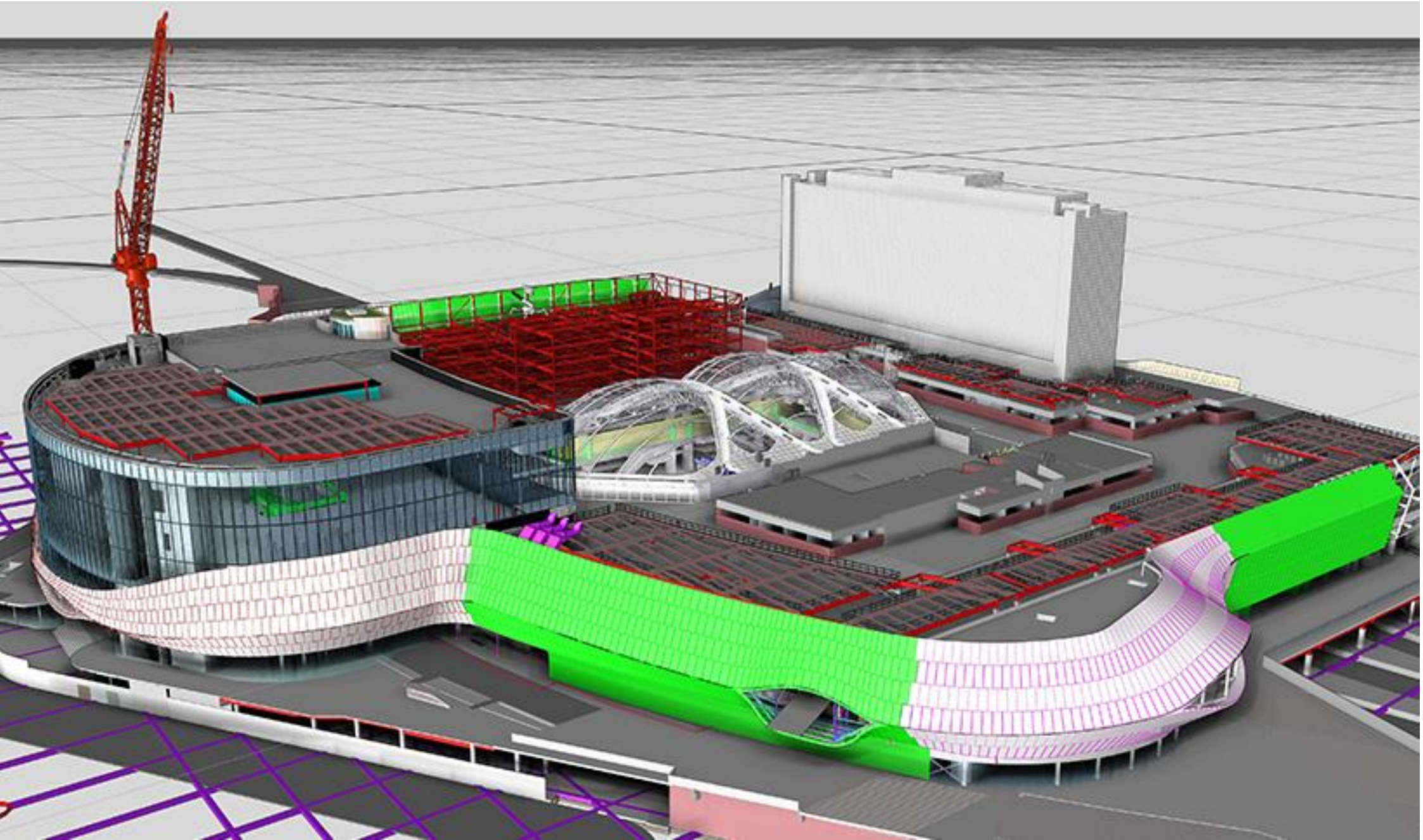
- Understand the structure
- Develop an assessment strategy
- Develop a strengthening strategy
- Give the client a high level of confidence in the overall robustness of the structure




John Lewis
JOE & THE JUICE
PRET
GRAND CENTRAL

Building Information and 4D Modelling

(including global stability analysis)




John Lewis


GRAND CENTRAL


GRAND CENTRAL


John Lewis
MODERN MUSE
New Street


John Lewis


GRAND CENTRAL

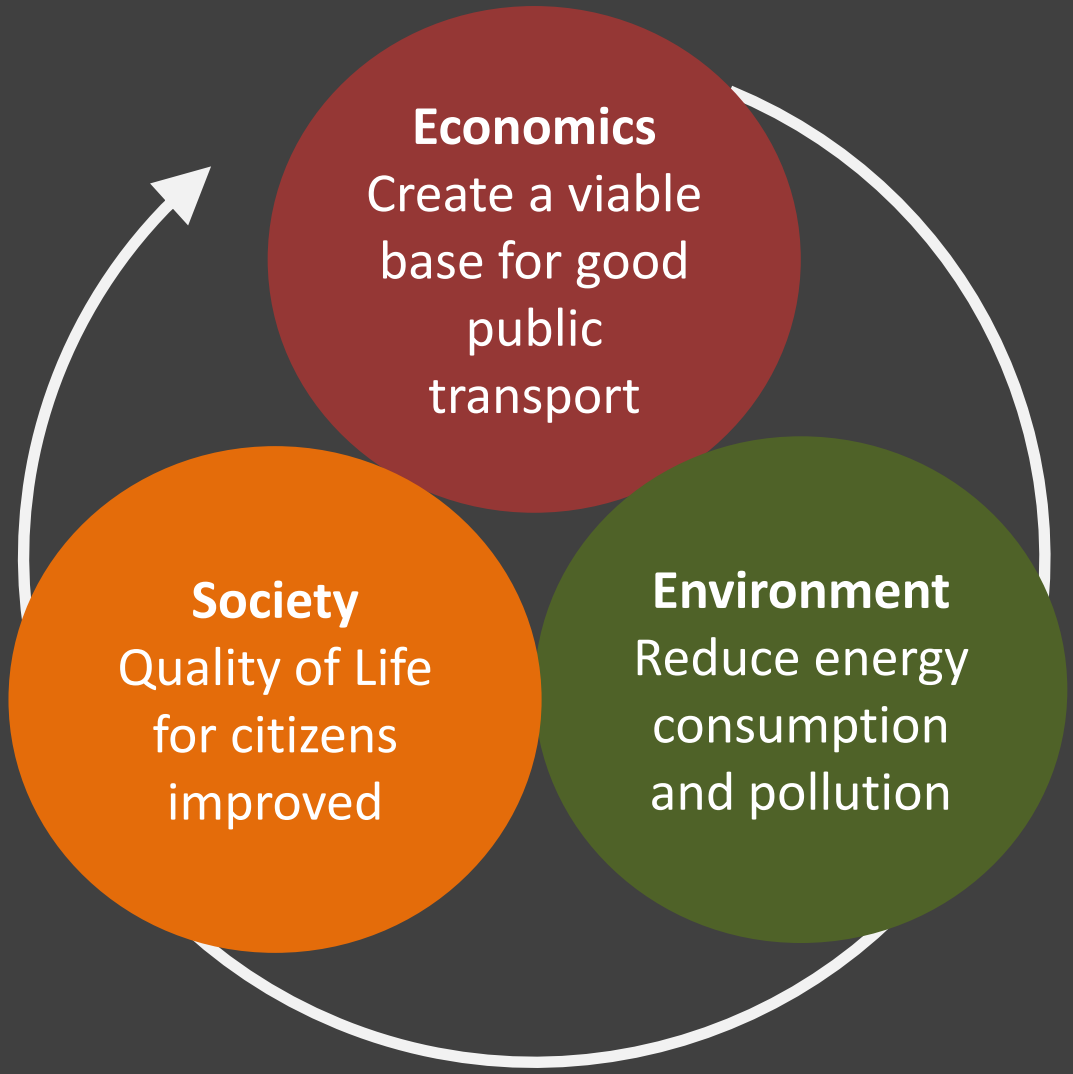

GRAND CENTRAL
Birmingh

"Wembley stadium cost £700m and was closed for seven years. Our project costs the same and has to be done in five years and is open for matches every day."

Chris Montgomery
Project Director, Network Rail

Birmingham New Street Station
£750m over a 5 year construction period

TOD and Sustainability



A comprehensive linked TOD services is required

Unique offering

DIRECTORS' PROFILE

Jason Hutchings
Director

Jason has spent 20 years in Asia planning and constructing major railway stations, particularly in Hong Kong. He also has design and delivery experience across a range commercial, retail and hospitality projects.
For the past 5 years, Jason has been educating and championing TOD throughout the Asia Pacific Region.

Bertil de Kleynen
Director

Bertil has been instrumental in bringing commercial property developers and rail operators together in the Middle East and Asia. His experience with the design and management of major transportation buildings , as well large scale planning, provides a strong strategic background and understanding of such complex issues.

Andrew Hodgson
Director

Andrew Hodgson is the director of transport for Atkins Acuity. Andrew has over 15 years of leading the delivery of strategy projects in the fields of transport and urban planning. He specialises in the assessment of growth and external factors facing the transport sector, and the impact this has on financial and technical viability of delivering new strategies and infrastructure. Andrew is a graduate of the University of Leeds, in environmental chemistry and for research into the built environment.

Burj Al Arab Hotel, Dubai, UAE

Shimao Hotel, Songjiang Shanghai, China

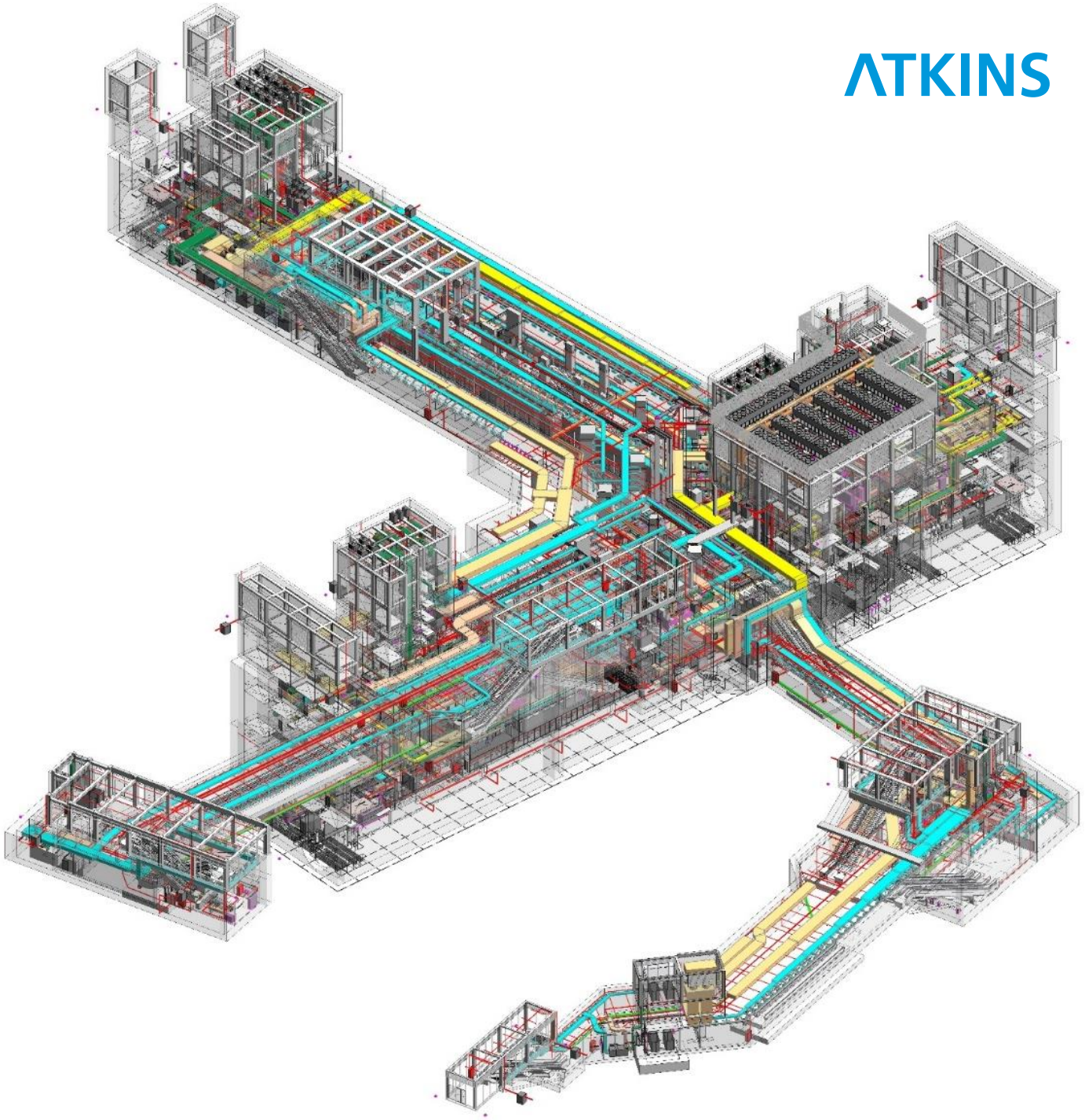
ATKINS

Vincom Landmark 81, Ho Chi Minh City, Vietnam

ATKINS

Atkins Rail Projects in the last 10 years:

250	Stations
270	KM Viaducts
100	KM Tunnels
9	Depots
15	Park & Ride



Doha Gold Line, Qatar

Mei Xi Lake, Changsha, China

Mei Xi Lake, Changsha, China

Our regional businesses

Thank You