



TOD Thoughts and Processes

transport oriented development
technology, occupancy and design

KTMB
LRT KJ
LRT Ampang
Monorail
ERL
LRT Extension

MRT 2
MRT 3
LRT 3
MYHSR
ECRL
KTMB Subang Spur

KL Railway Station
Ipoh Railway Station
Pudu Raya
KL Sentral
Putrajaya Sentral
Penang Sentral
What Next?

Penang Transit
Johor Transit
Kuching Transit

2030
30+ million population
300+ stations
30% penetration
?30 TOD?



Plate 77 Panoramic View of Kuala Lumpur, ca. 1884



1886 - the first Railway line in Malaysia (Taiping to Port Weld)

1886 - Kuala Lumpur is at its infancy

1910 - Kuala Lumpur Railway Station was completed

1918 - Ipoh Railway Station was completed

TOD (Transport Oriented Development) can be traced back to the Bus and Train terminal of the yesteryears





Malaya gain Independence in 1967 and Malaysia formed 1963

1957- population 7 million, 1963- 9 million, 1976- 13 million
There was little movement in the transport hardware from 1920s to 1970s

Kuala Lumpur use to have its own railway line with stop at Ampang and close to Pudu (where the above picture is)

But as the golden age of rail pass and road vehicles come into prominence the Pudu Raya Bus Terminal was built (1976) and it was a TOD (Transport Oriented Development) with F&B, retail, hotel all under one roof

It was almost immediately congested and after 30 years the tired space was rejuvenated as it evolve but as it was not future proof and the reutilisation is limited

The TOD Talk

Thoughts and Process



The 1990s was the push to create world class infrastructure for Malaysia. While KLIA take the headline, this was the decade of the LRT, the first completed in 1998 and subsequent in 1999, along with KTM Komuter beginning operation in 1995 and Monorail 2003 this was the main thrust into public transportation

This was the first transit system after the longest time and was timely in a bustling greater KL with well over 5 million population

The LRT stations were located at selected areas to maximise the existing crowd and does not in itself have much in term of TOD such as the like of Central Market where the station are located close to existing development

And there is KL Sentral built over the Rail Yard the development have the station located at the centre of the developments. This was the TOD of this era but it was hindered by connectivity, traffic congestion and cost especially on the earlier year.



Sanctity of the Way

TOD Thoughts and Processes

When we start our TOD Journey there was an optimism

increase the overall benefit

Potential of land - increase in Land Value/ Development opportunity

Benefit of Segregation of Pedestrian walkway

Benefit of additional frontages at higher level

Destination station and transit station

Though we know there are constraints

Timing - The timing of infrastructure and Development

Protection of corridor

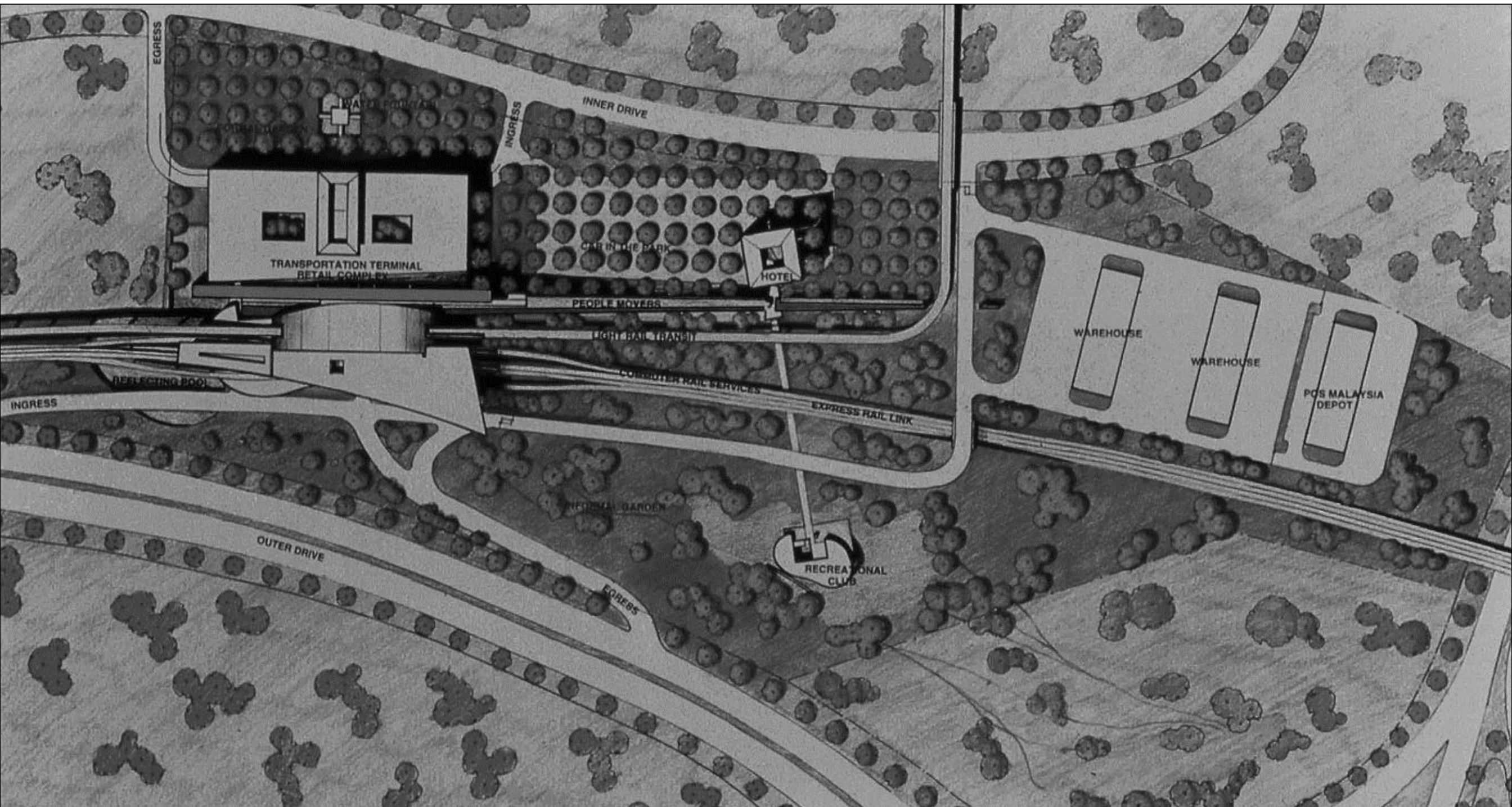
Minimise impact on transport area (due to electrification, technical, maintenance considerations)

We did not anticipate some of the issues

Land Ownership - Private Land ownership

Short-sightedness “me only” mentality - could not see beyond that an increase in connectivity will

Capex, Opex, Viability



The transport theme was carried through with Putrajaya Sentral starting in 1997

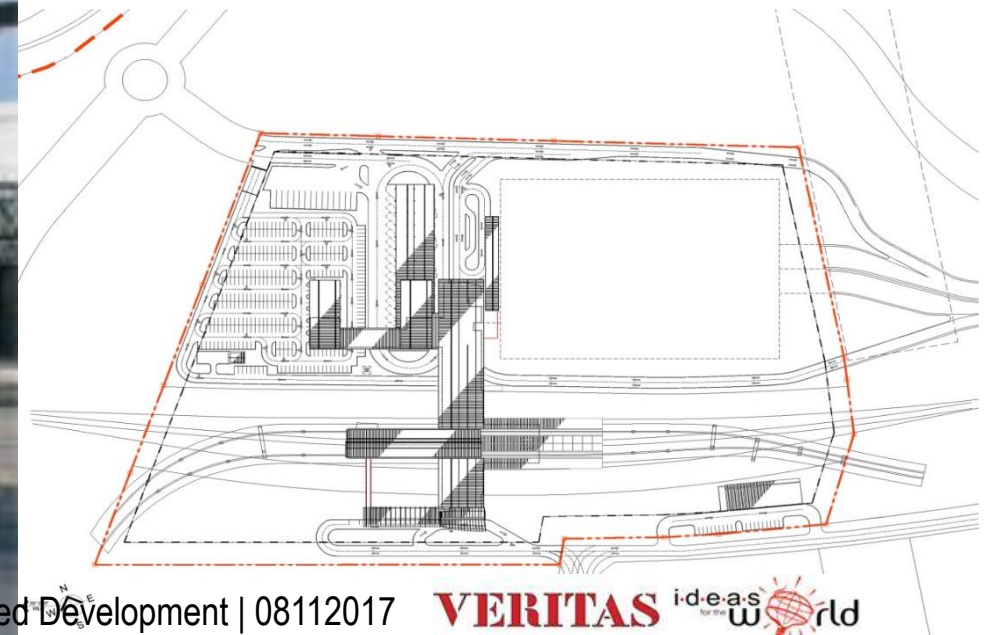
The TOD Talk

Thoughts and Process



Putrajaya Sentral was envisaged as a 70,000 passenger per hour transportation hub in 1997 with a mixed development configuration of retail on the concourse and over the park and ride, offices, hotel and of course transportation. However, due to viability, the project was scaled down to 20% of its original value and left with the transport hub only.

Sadly a potential TOD was not realised and till this day 20 plus years it is a missed opportunity that will hopefully change with the new wave of TOD initiatives.



CONCEPTUAL SCHEMATIC SECTIONS

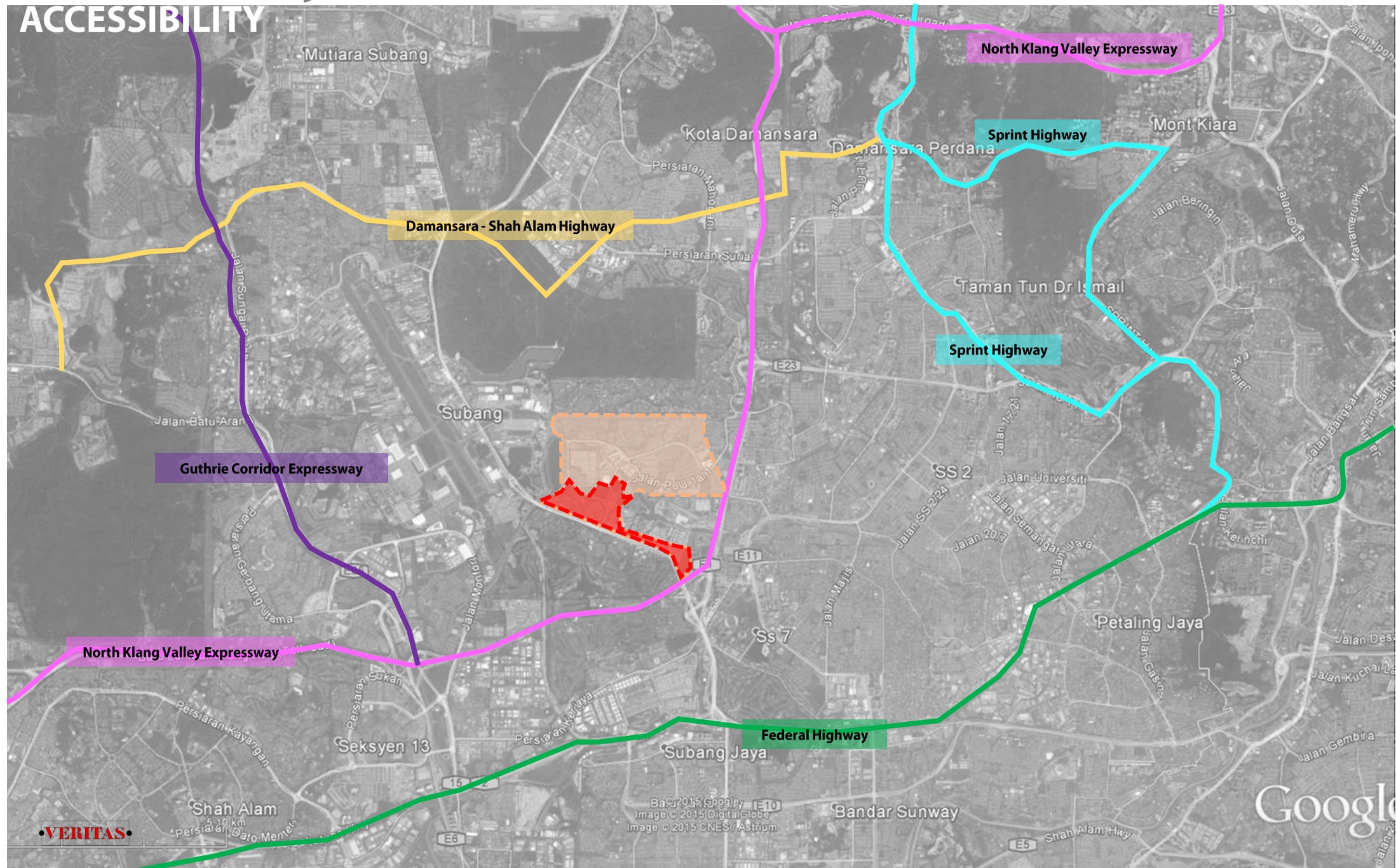
The TOD Talk
Thoughts and Process



While there have been thoughts place for TOD, the actual application and implementation time have been problematic and often the stations are designed with linkage potential focusing on protecting the transport corridor
SO ...

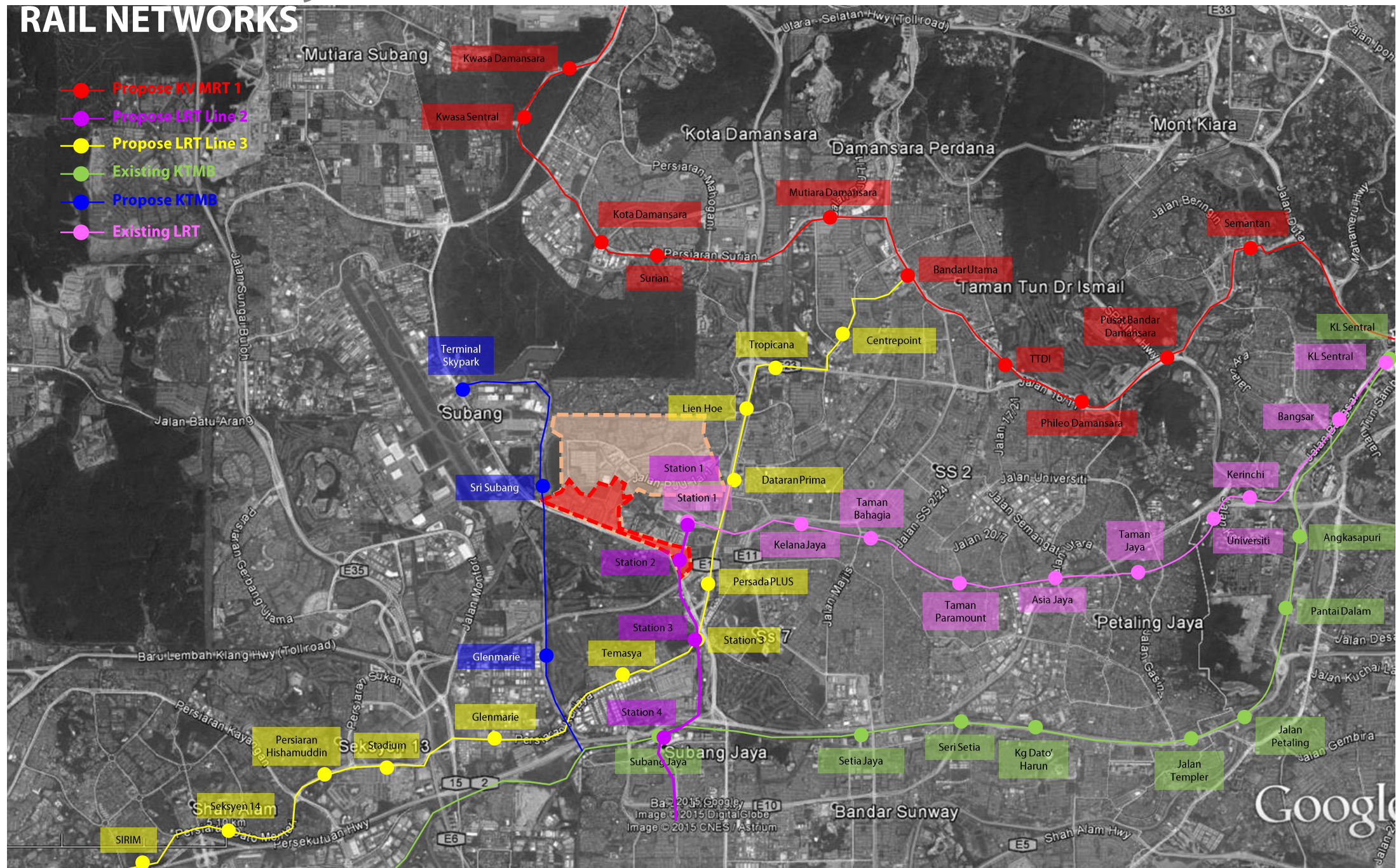
We have been working on most of these connectivity

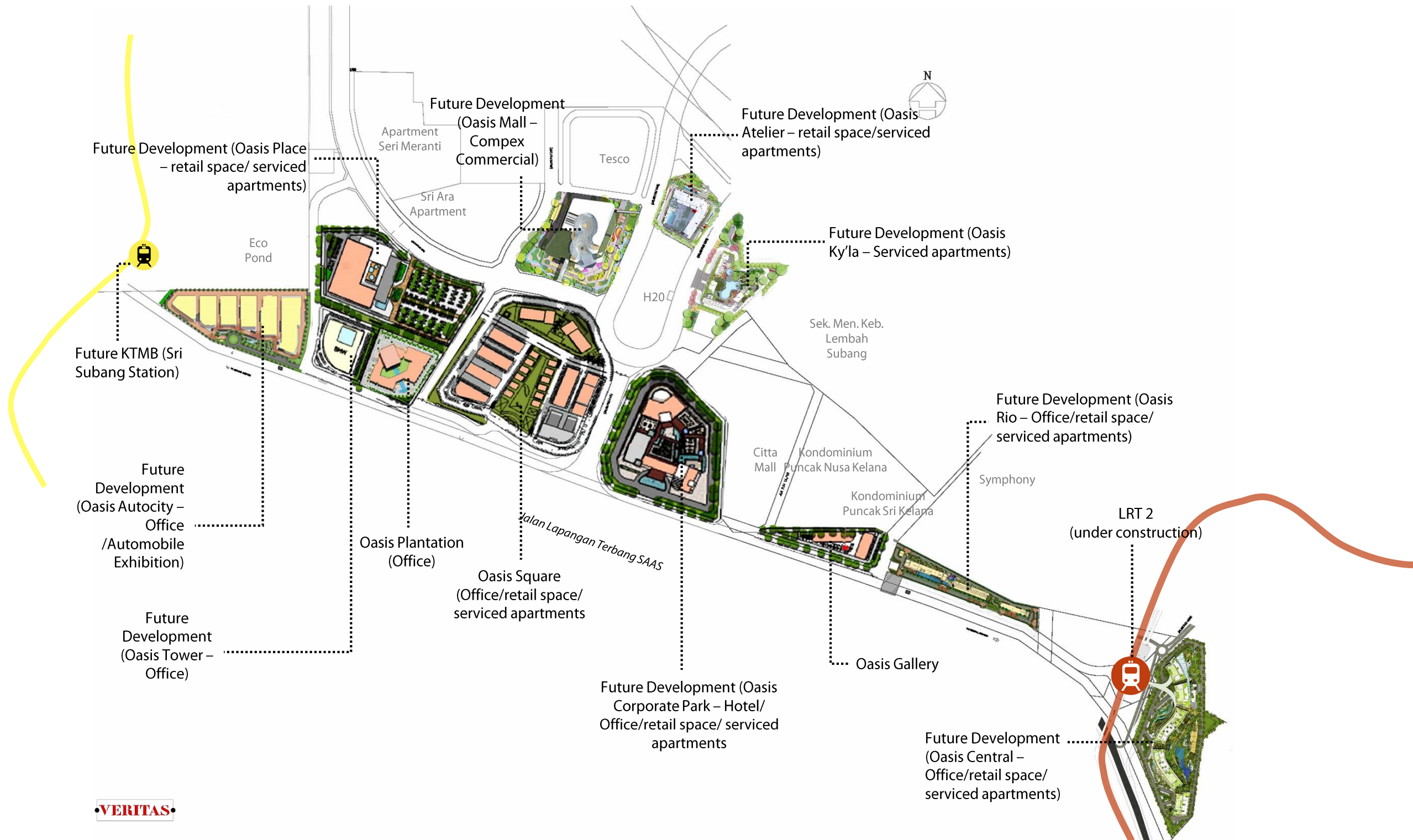
Oasis Skylines



Oasis Skylines

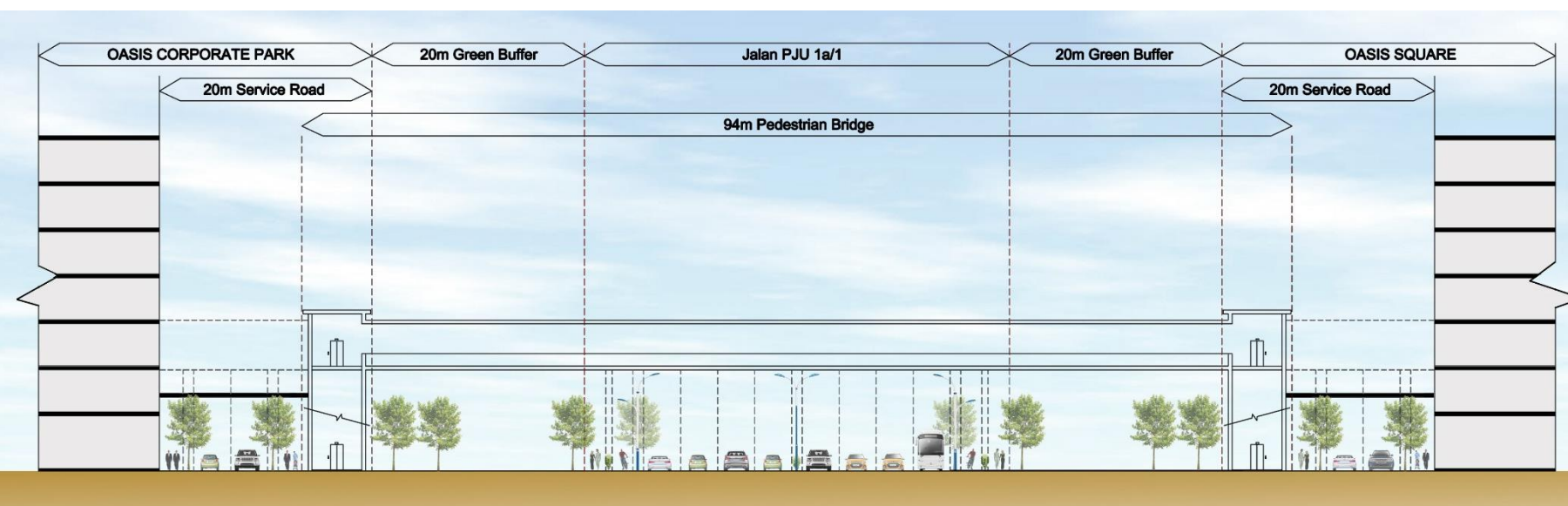
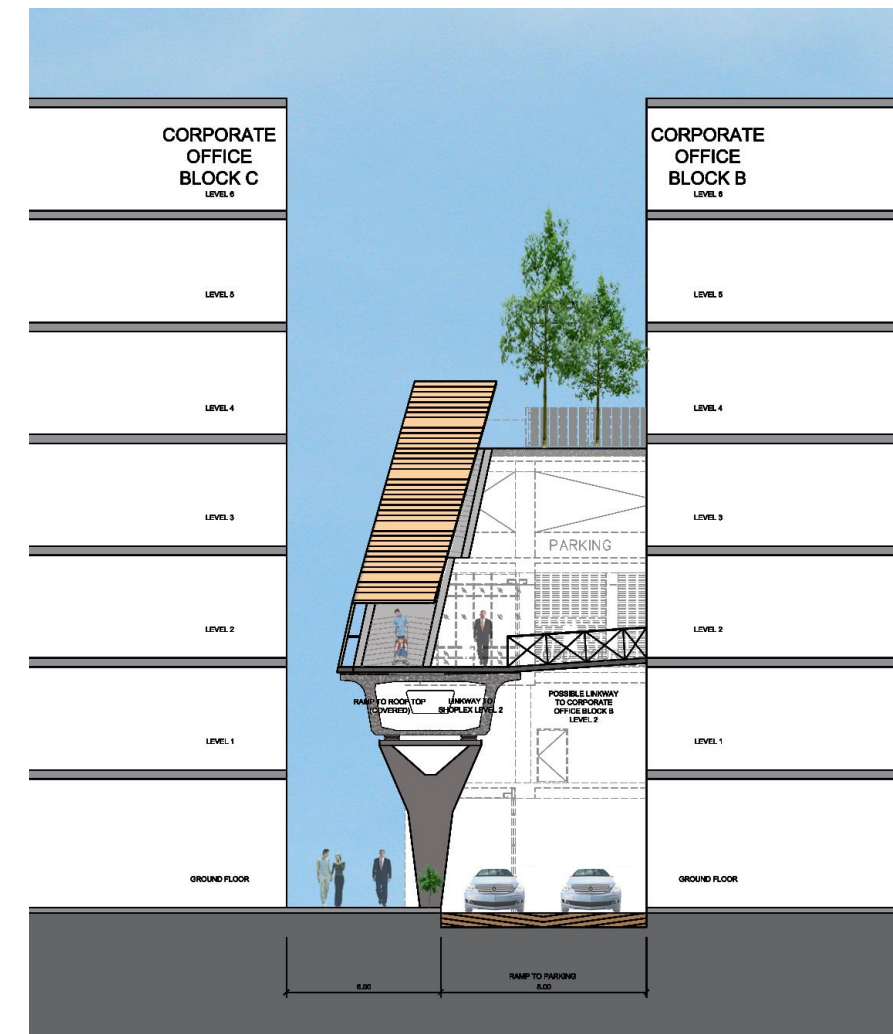
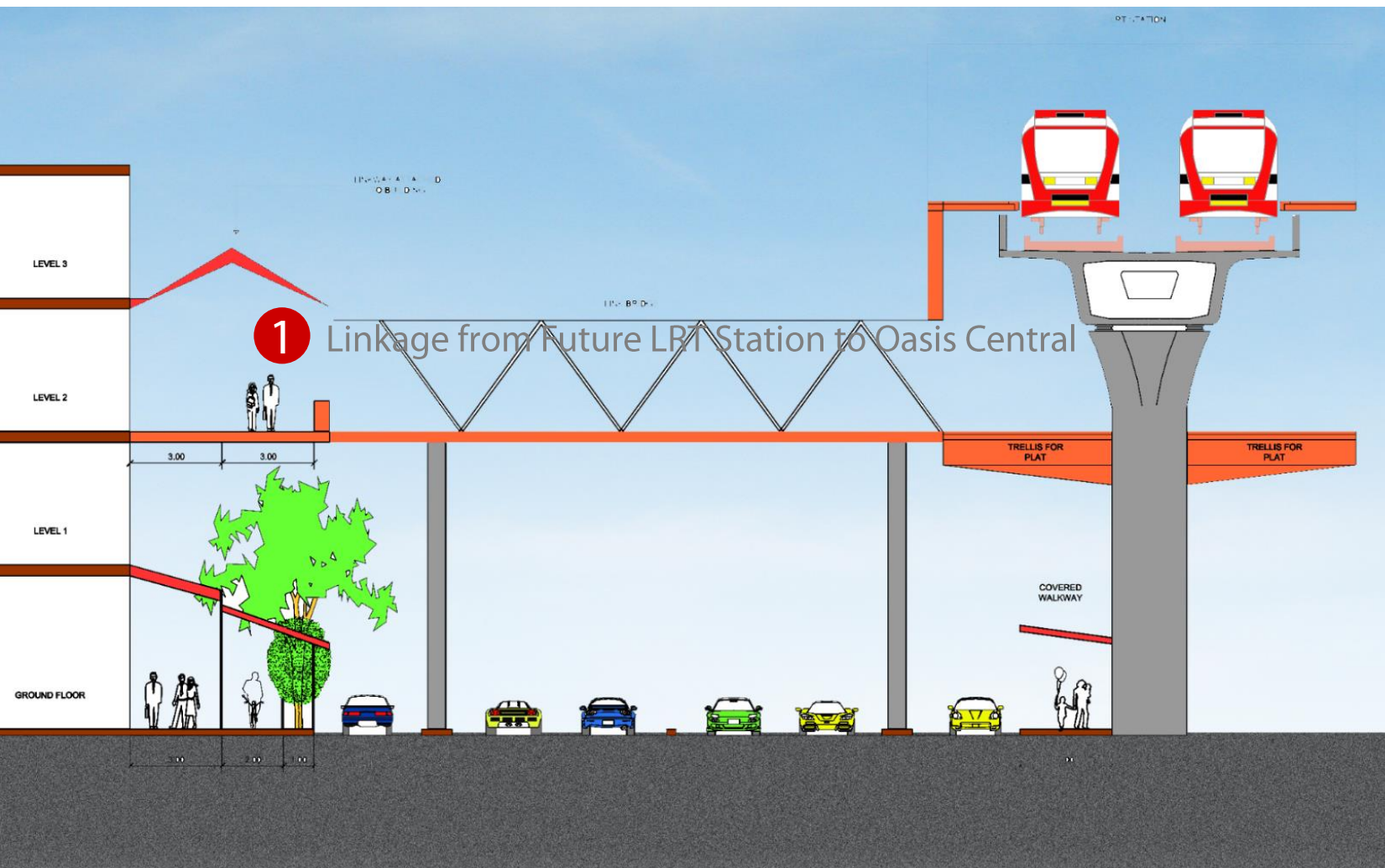
RAIL NETWORKS





The TOD Talk

Thoughts and Process



Oasis Skylines

PUBLIC FACILITIES INITIATIVES - Skybridge





Oasis Skylines

IMPRESSION - View Towards Oasis Corporate Park



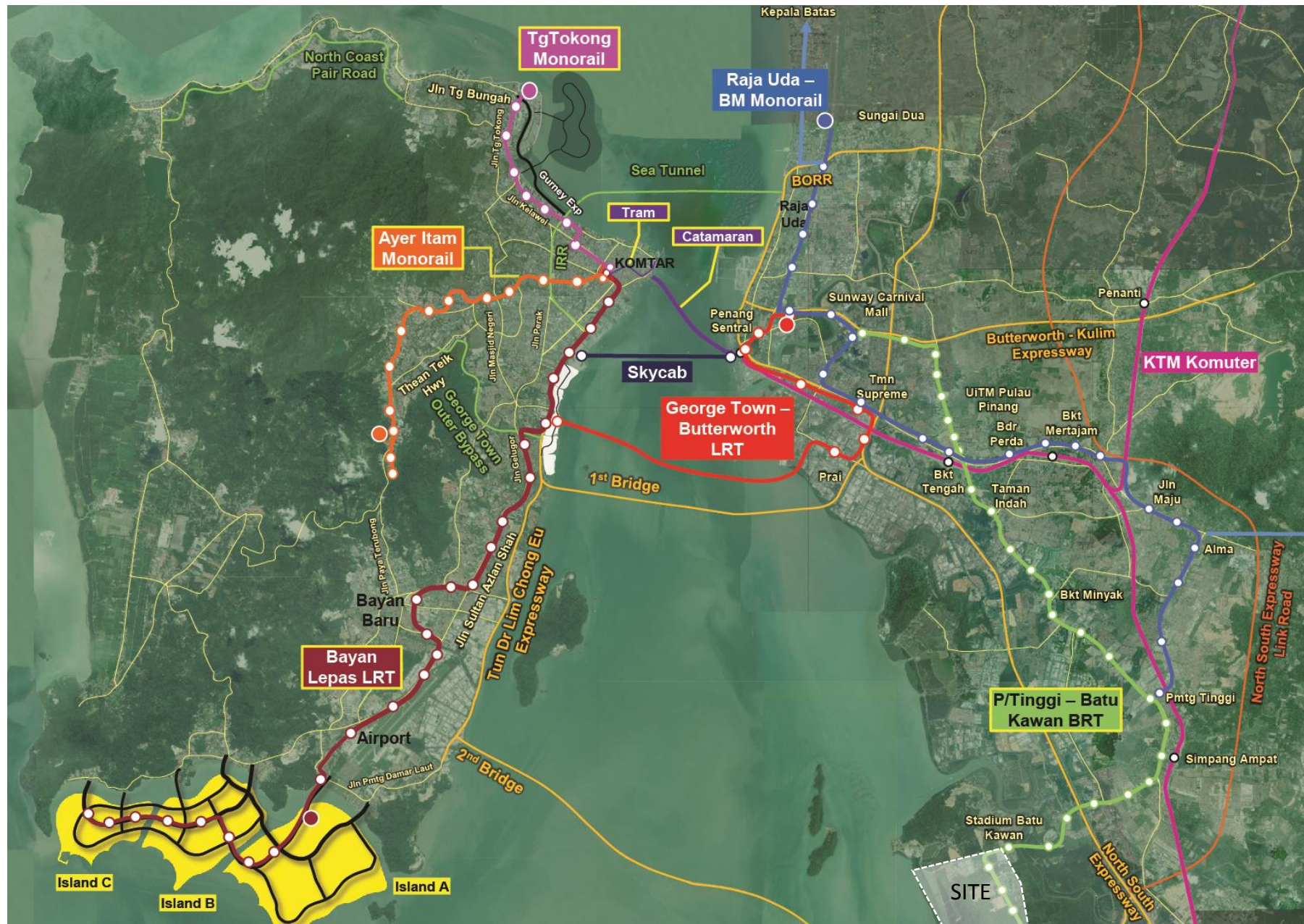
Oasis Skylines

IMPRESSION - View Towards Oasis Mall



There are stations mainly from multi modal transport such as Putrajaya Sentral, Penang Sentral and of course Bandar Malaysia that are being realised, these however will depend on the overall cost vs integration viability

EXISTING PENANG TRANSPORT MASTERPLAN Provided by Penang State Government



Note: Transit alignment & system subject to review prior to implementation

Penang Sentral

After linking KL to Ipoh and while concurrent work is happening from Ipoh to Butterworth and Padang Besar

Penang Sentral was the next TOD with Rail, Bus, Ferry and future Transit system linking Penang with a coordinated Transit system. After its launch in 2007 it would take another 2 years before any physical work started in 2009 as part of the advance work and the temporary bus terminal was completed in 2011.

Work on the Penang Sentral since 2015 is expected to be completed in 2018 with the TOD



The Way Forward

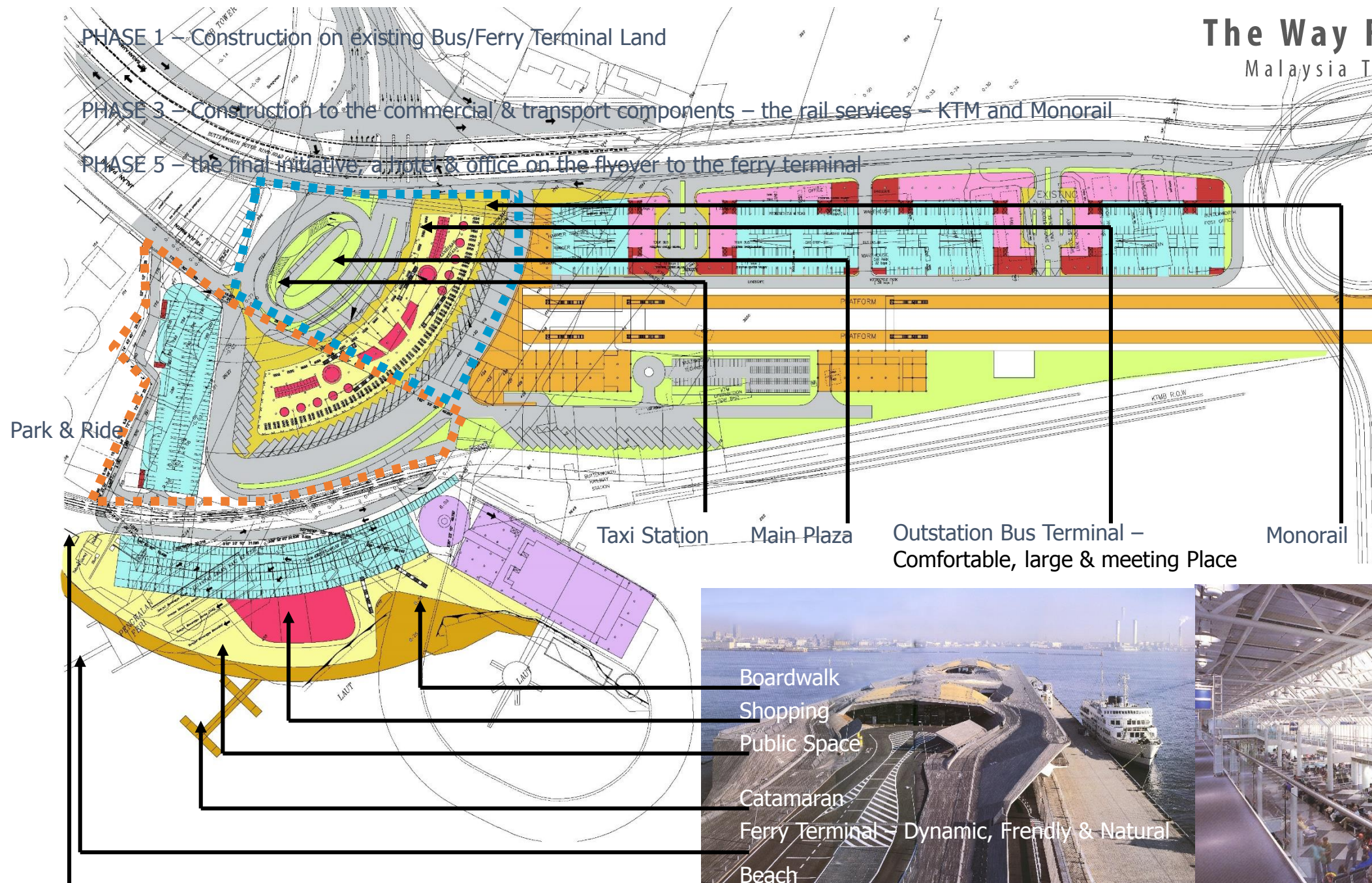
Malaysia TOD Journey

PHASE 2 – Work to progress to land adjacent to BORR and Car Link to Ferry removed for better traffic flow

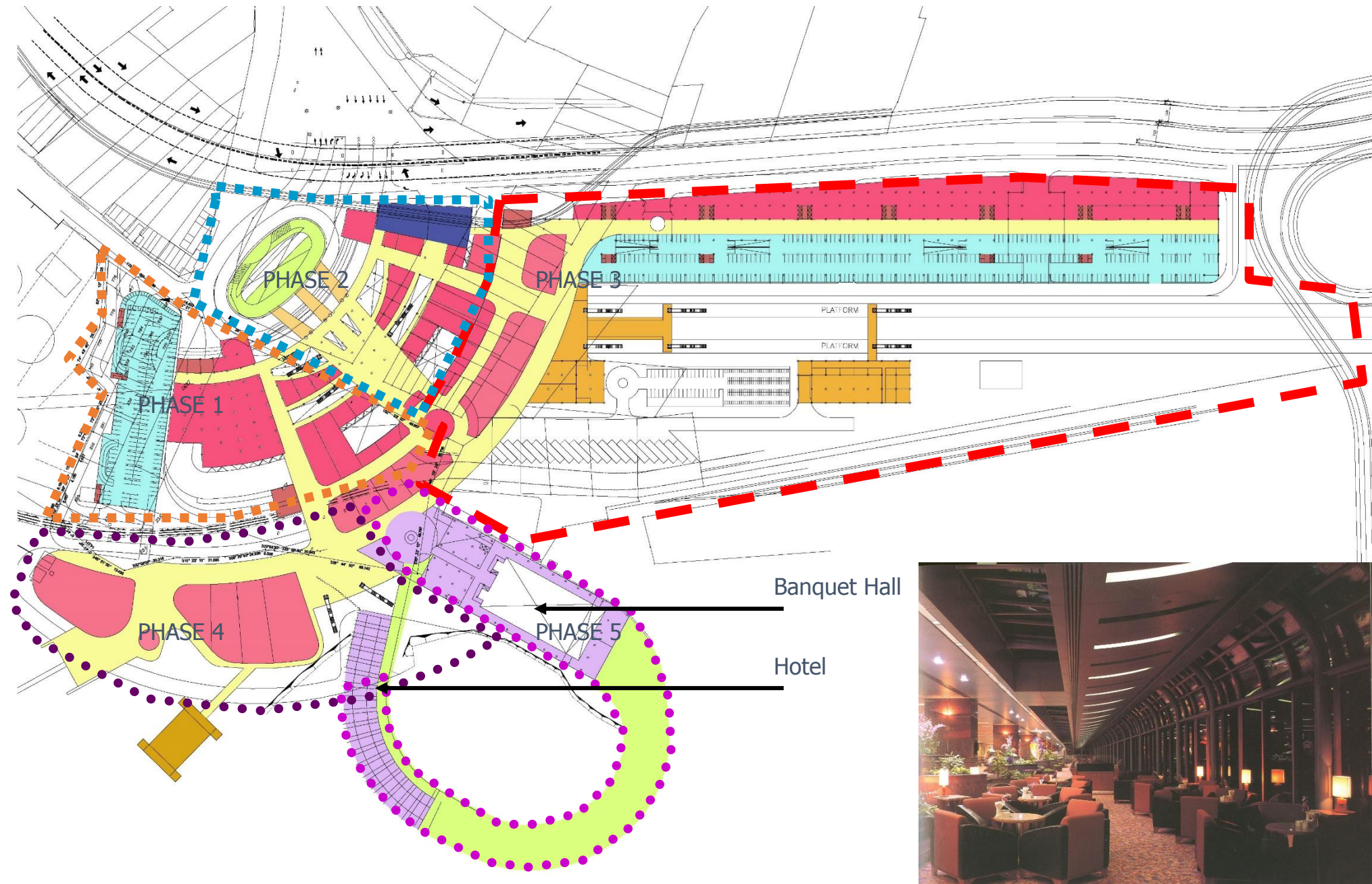
PHASE 1 – Construction on existing Bus/Ferry Terminal Land

PHASE 3 – Construction to the commercial & transport components – the rail services – KTM and Monorail

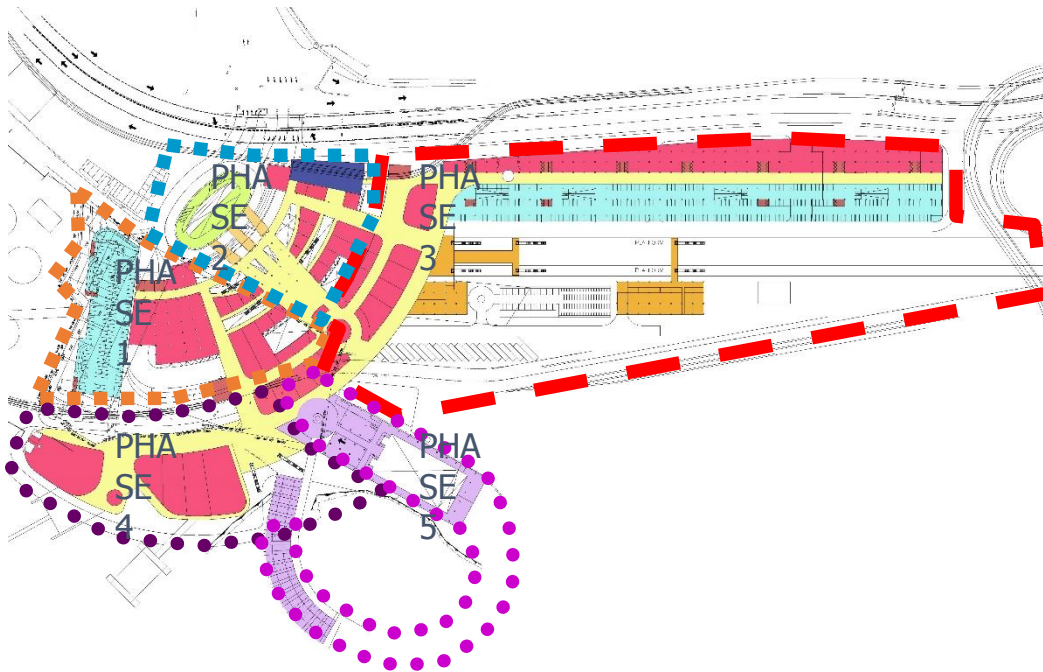
PHASE 5 – the final initiative, a hotel & office on the flyover to the ferry terminal



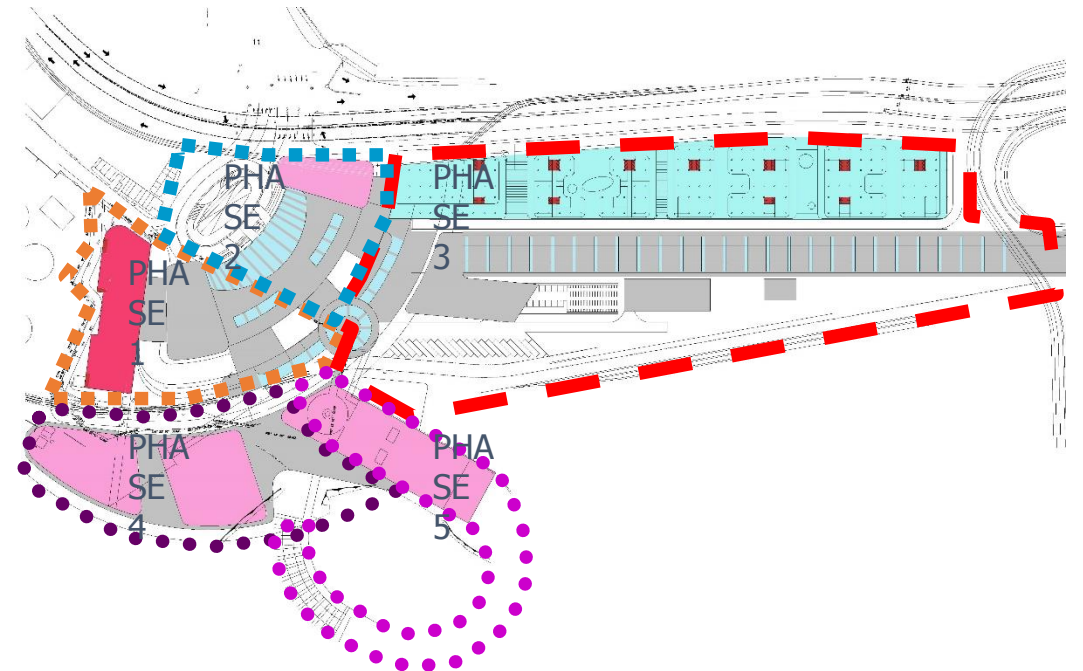
Level 2 - Concourse



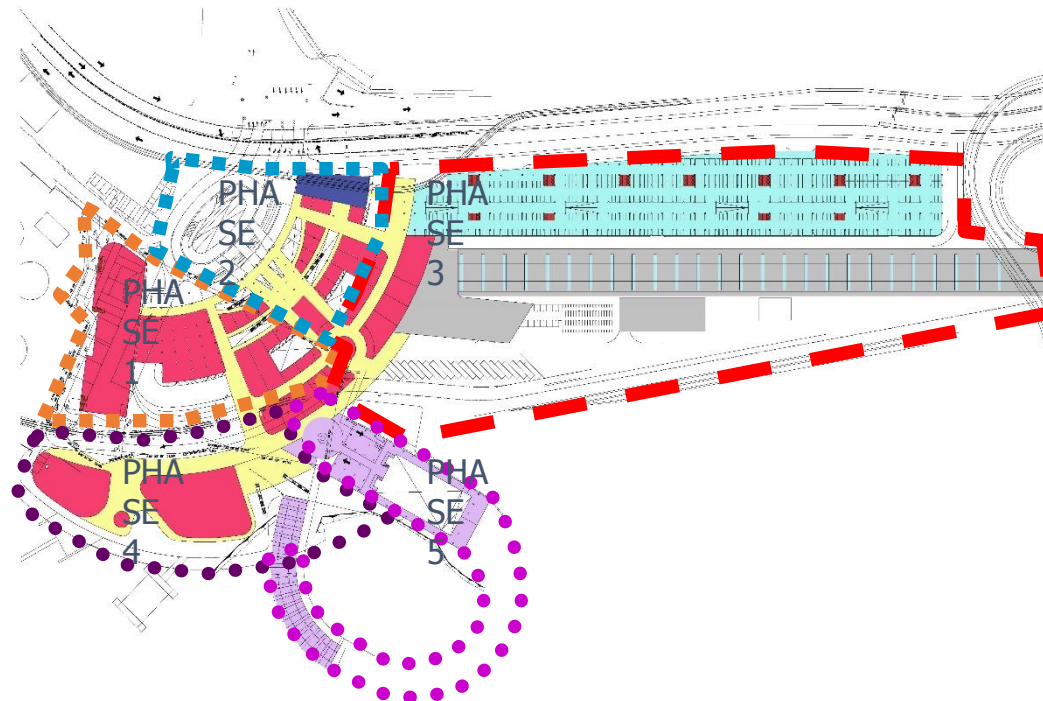
LEVEL 3 & 4 - Shopping



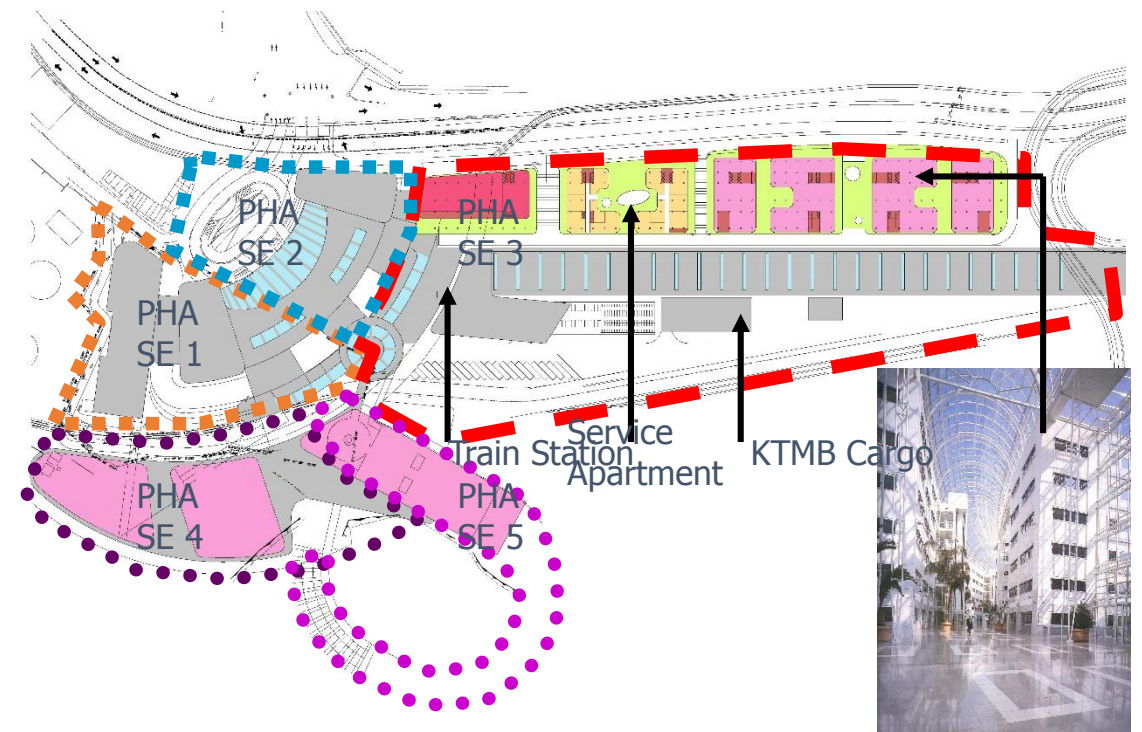
Level 8-12 – Operation Offices

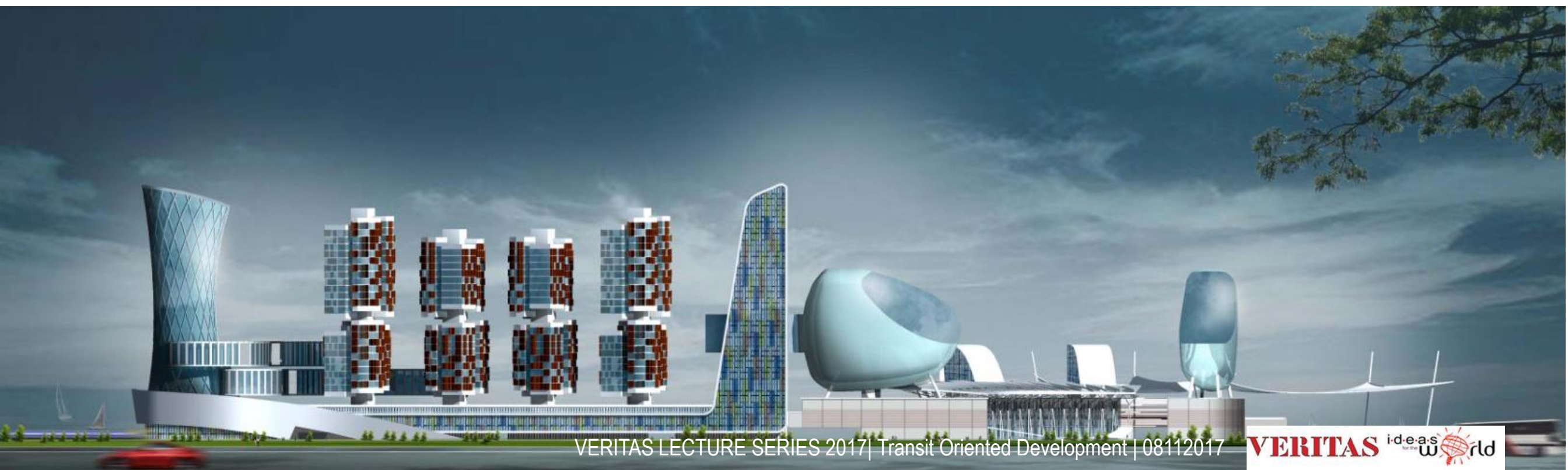
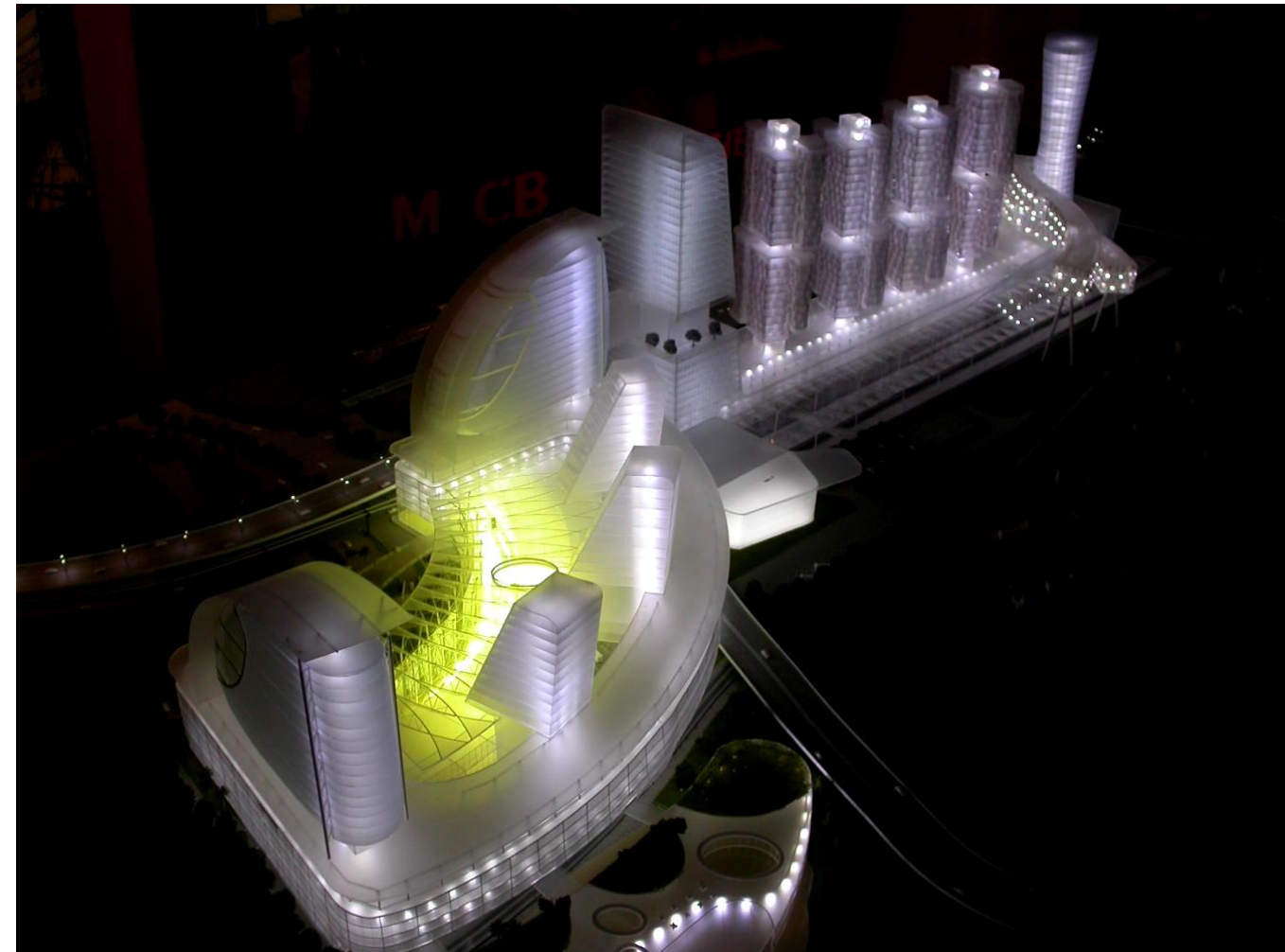


Level 5 & 7 - Commercial



Level 13 – 30 - Offices













So we learn there is a lot more to consider for TOD

Congestion - concern with additional traffic

Demographics - who are the buyers, speculators, renters,

Land Use - to whom the land owns

Coordination and collaboration - aligning all thoughts and process from different parties

Capex - is it just a linkway or a top side development

Sanctity of the Station box and the transit corridor, escape and entrance route

Viability - Cost vs Return

Understanding TOD and Transport - Security, Containment, etc

Other concerns

Encumbrances - congestions during and after construction

Attitude - Great Idea just not at my doorstep

Benefit - Is there really an increase in value?

Uncertainty - Is there enough catchment for so many TOD

Cost vs Value - Cost of Infrastructure

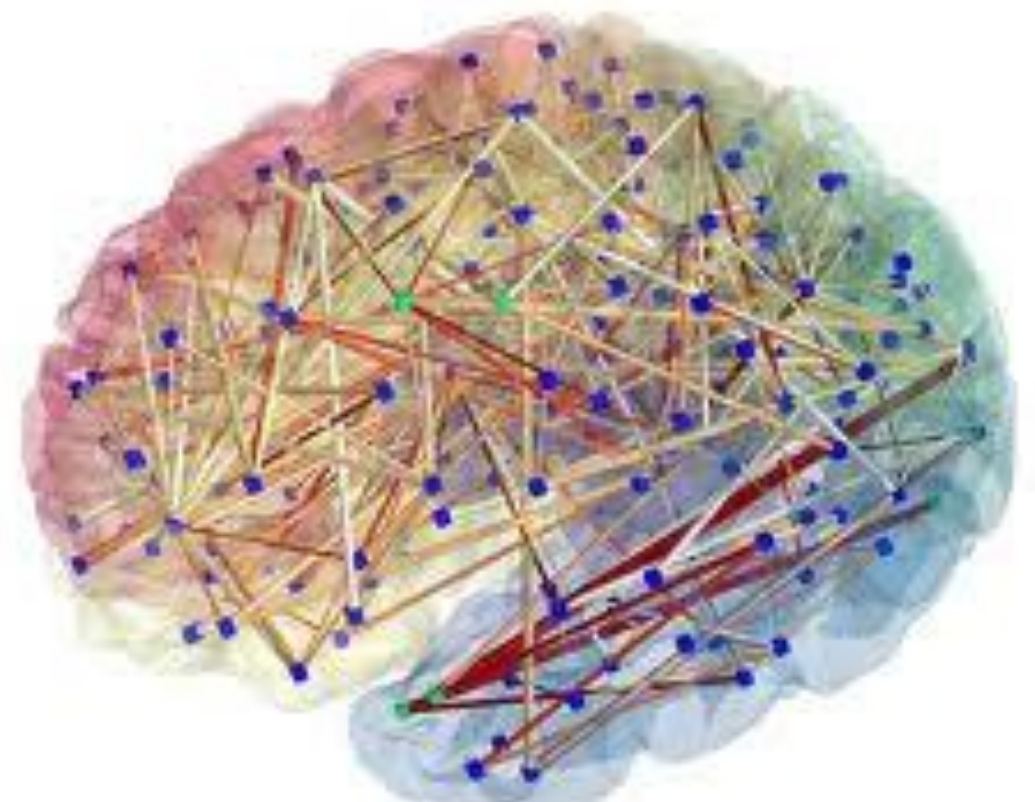
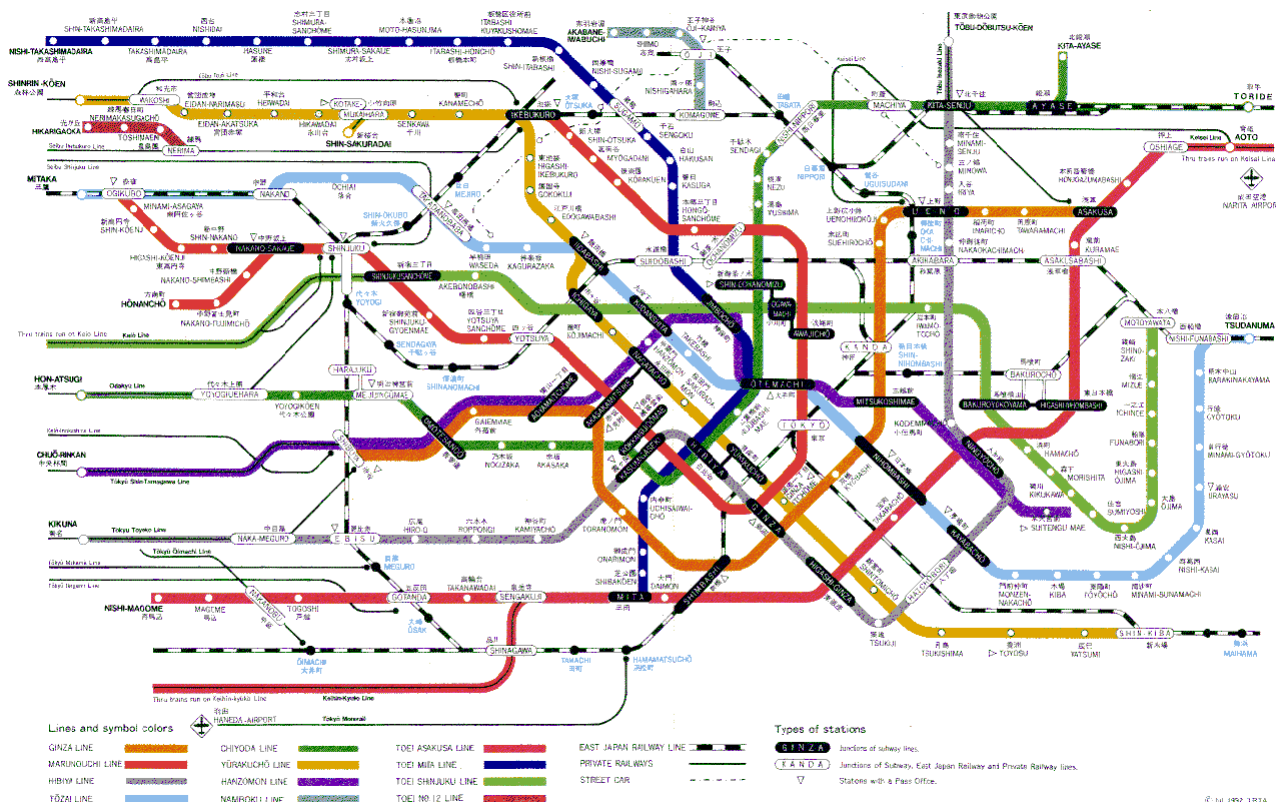
Is it future proof

Connectome – A new branch of neuroscience study to create a comprehensive map of the neural connection of the brain

or how do people connect the dots

which may well determine his/her personality

TED Talk, Sebastian Seung - Connectome



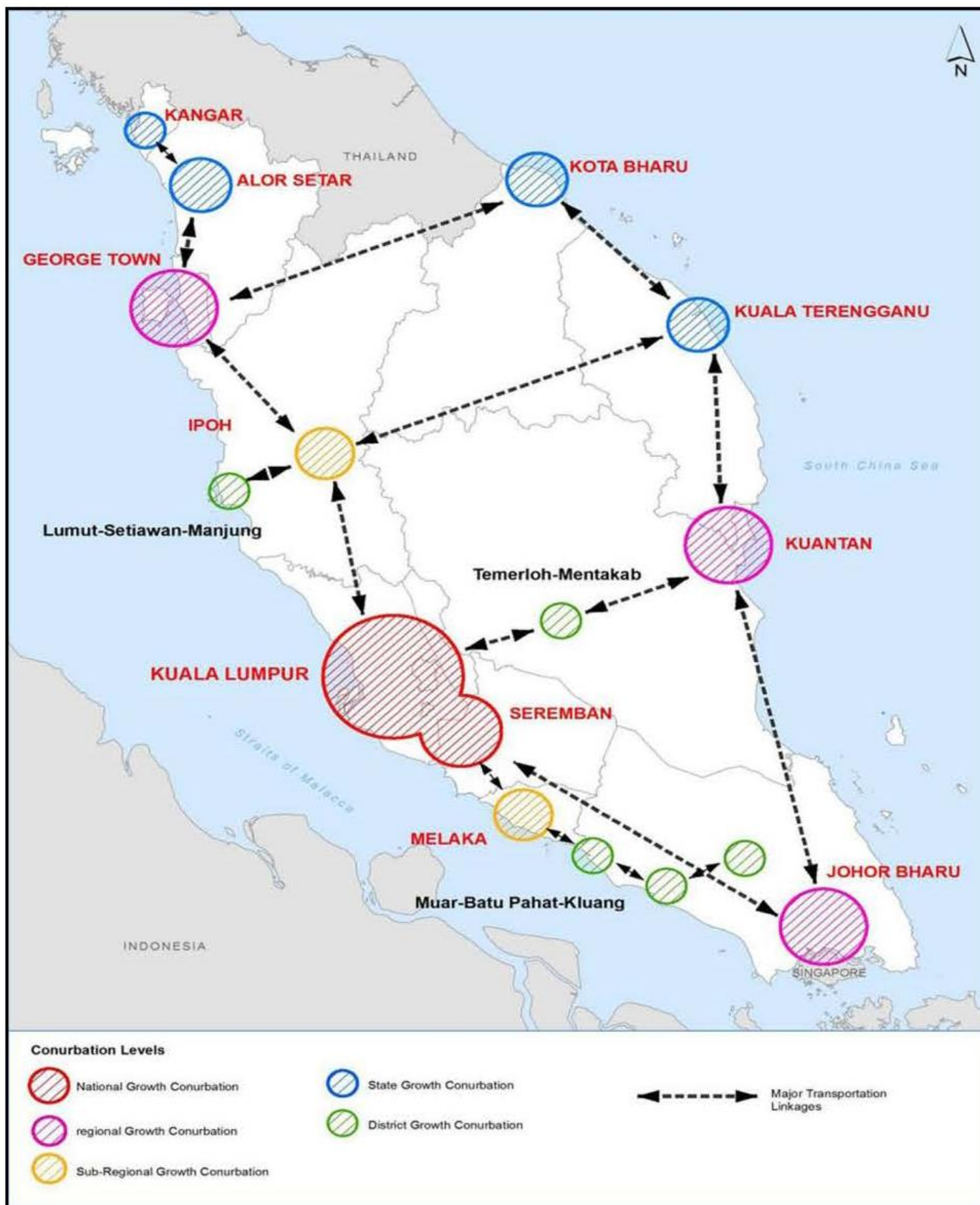
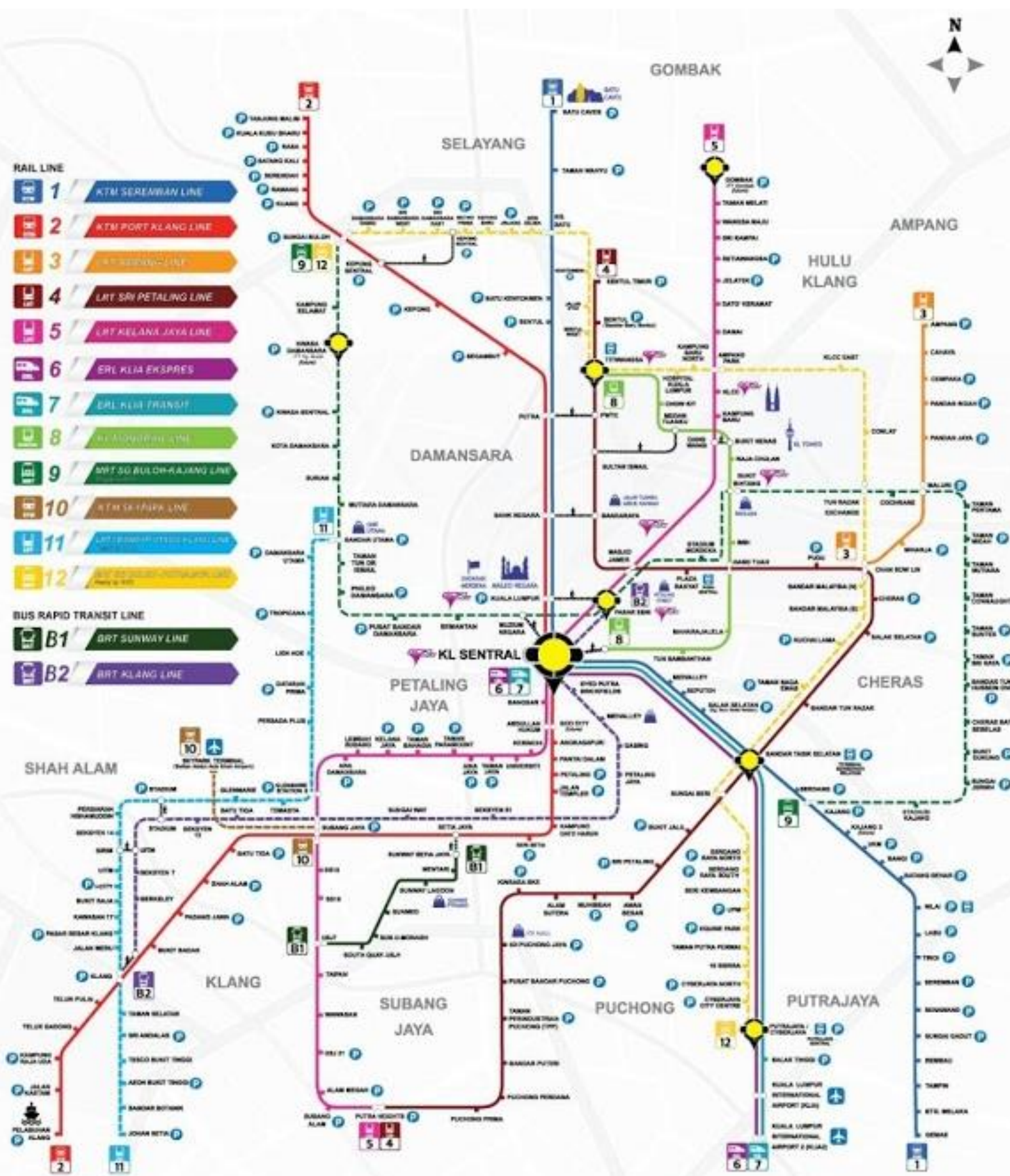
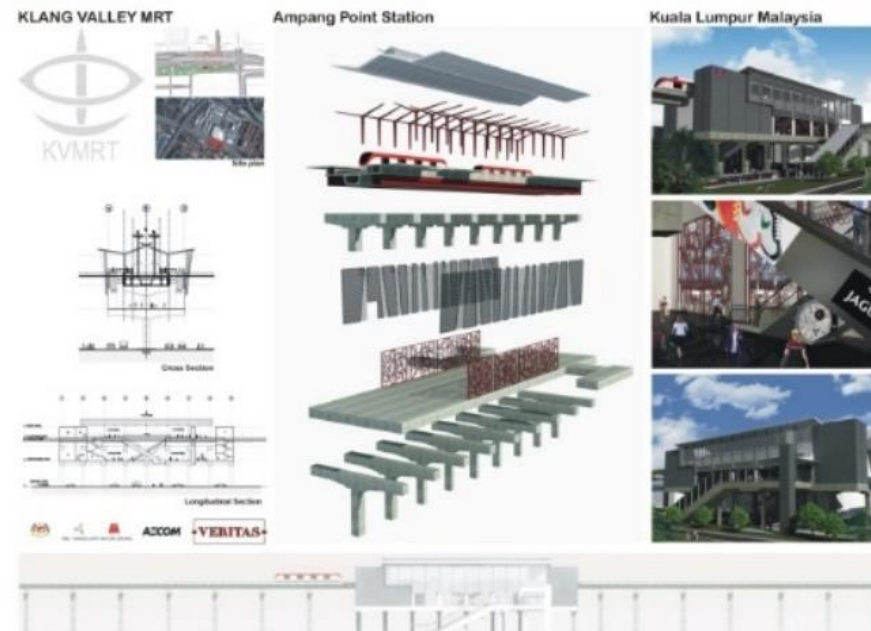
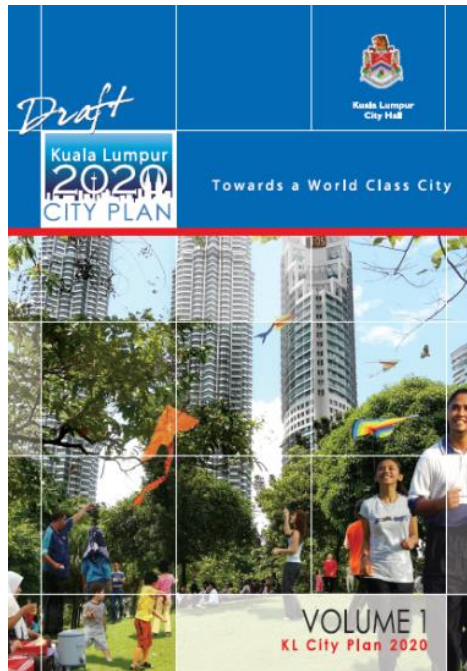


Figure 5. 1: Urban hierarchy linkages²⁸



MyMRT *Through the Looking Glass*

Architectural and Topside Development
Looking Forward



Architectural Planning

Issues that need to be considered earlier:-

- Line Wide Design Concept
- Identify Special Stations
- Top Side Development
- Integration to the surrounding
- Systems/Line Wide Consultants
Coordination and early Information
- Robust review of the M&E requirements
- Defining Line Wide details and Materials
- Risk factor on impact to other development
incl. visual
- Engagement with Authorities



Architectural and Topside Development

IDENTIFICATION

POTENTIAL STATION SITE	KLCC STATION
DEVELOPMENT NAME	Star Residence, Jalan Mayang
SITE AREA	4.3 acres
LAND USE TYPE	Residential and commercial with facilities
LAND USE CONFIGURATION	- Residential 57 storeys - One of the tallest high-end Residences in KLCC - Grand 10m high lobby 100,000 sq.ft of Lifestyle Facilities - Commercial - Grand Boulevard Walkway with wide footage - Grand lobby with high ceiling up to 7.5m - Exclusive individual stratified floor plate - Rooftop Entertainment Deck
DEVELOPER	A joint venture between Symphony Life Berhad and United Malayan Land Berhad (UM Land)
NOTE	Currently under development.



Pre Alignment Study

As part of an independent urban study to identify best locations of stations based on urban context

Identify Development along Alignment

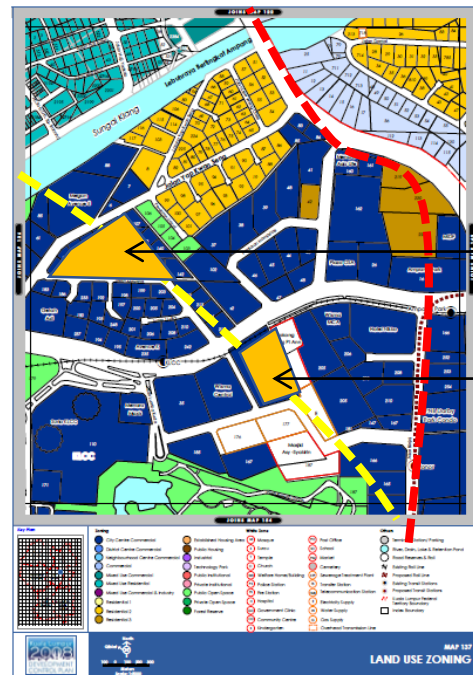
Alignments are studied along with developable land and considerations are made for final alignment preference



Impact on the surrounding the area

General study of possible development and a preliminary cost study of the alignments as part of the study to identify preferred alignment

Architectural and Toppide Development Possibility



TENDER

DO

Developable land on ROW and near stations

Once preferred alignment is confirmed to study developable land on ROW and stations. Look at the authorities requirements and identify the potential GDC/GDV estimate based on a general considerations

Integration with Other Discipline

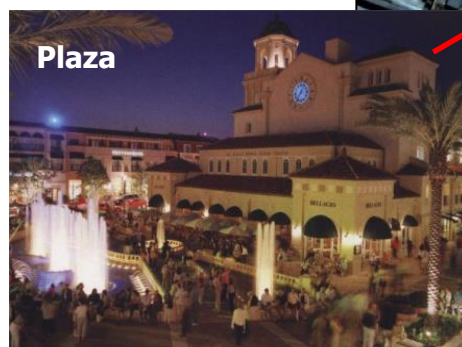
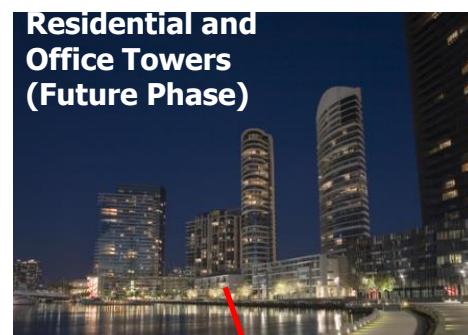
Concept plan is developed to include all functional entity to the stations and quick valuation based on Local Structural Plan and existing value



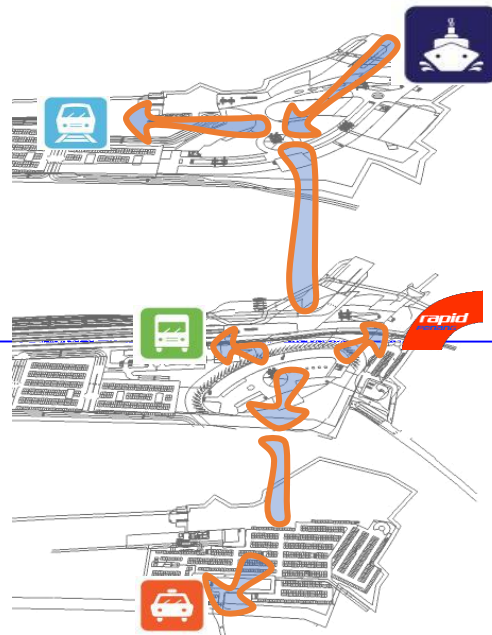
Architectural and Topsiside Development
Possibility in the Urban Context

Within the Urban Fabric

Look at the urban context prepared a preliminary urban context concept for topside development and transit oriented development and its macro impact to the surrounding urban context



Architectural and Topsiside Development
Study



Strategy

Development strategy, financial considerations and product mix

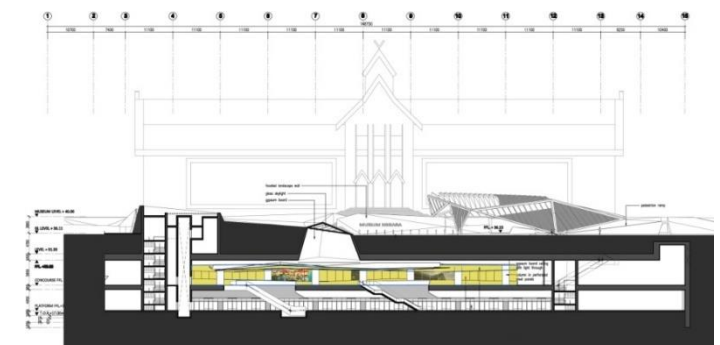
Costing and Returns

Look at the potential GDC and GDV of site as a variance and identifying the best model for development and also if it provide added value or viability of the development



Consolidations

Consolidate all information and prepare a preference matrix base on understanding of the site as well as technical details and also Top side development

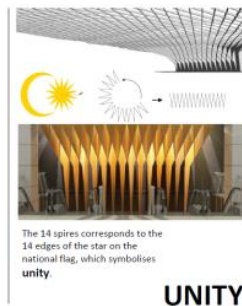
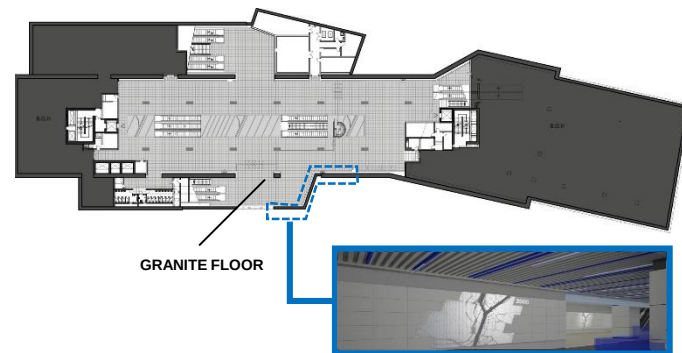


Architectural and Topside Development

Station Planning

Station Planning

Stations planning will be studied first but simultaneously we will look at stations design concept as well as constructability

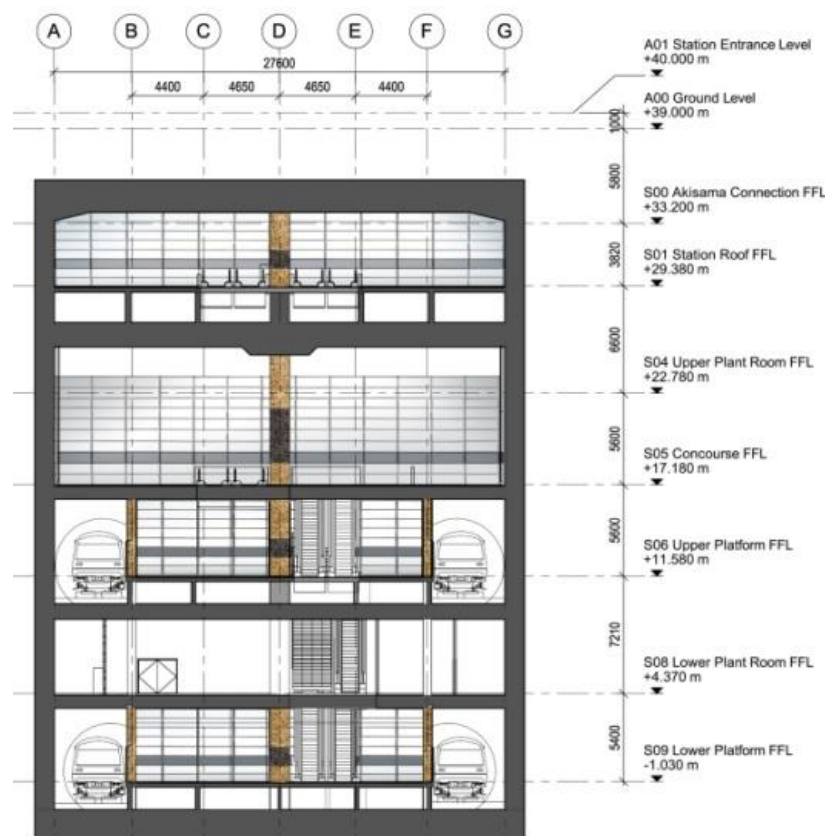


UNITY



Stations Identity

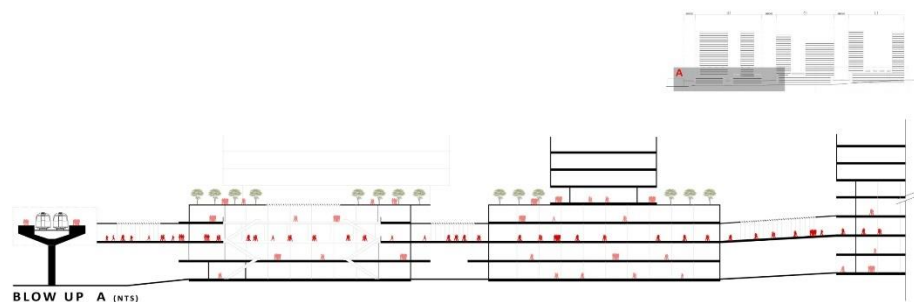
Separate design team shall work on the station identity as well as define the design for the stations



Interchange

The Interchange stations can be a design for connectivity to other transit system or a review of the station planning and ridership

Architectural and Topside Development
Station Design



Connectivity

Connectivity to topside development, urban fabric and potential future development to create catalyst for growth



Coordination

Coordination with all other discipline, as well as MEP and Structural and Top Side development



Design

Defining My RT in a line wide concept as well as a Malaysian Identity and creating an international quality building

Detail and Documentation

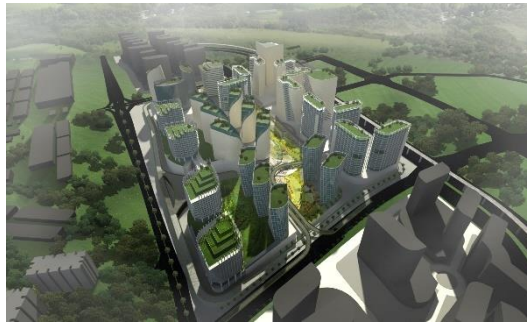
To prepare documentation for D&B tender inclusive of identification of line wide identity and elements that need details as well as standards to ensure the performance specifications are clearly defined

Architectural and Topside Development

Topside Development Design

Concept

Concept for the urban planning and the top side development



Perspectives

Provide Schematic Perspective as a visualization of topside development to the urban context



Final concept design

Input from development to include all potential requirements and preparation of a typical development plan, sections and rough elevation to provide a set of drawings sufficient for development costing



Architectural and Topside Development Feasibility

Development data

Look at the potential GDC and GDV of site as a variance and identifying the best model for development and also if it provide added value or viability of the development

The table displays various financial metrics for a development project, including land acquisition, construction costs, and potential revenue. It includes a 'TOTAL' row at the bottom summarizing the overall financial position.

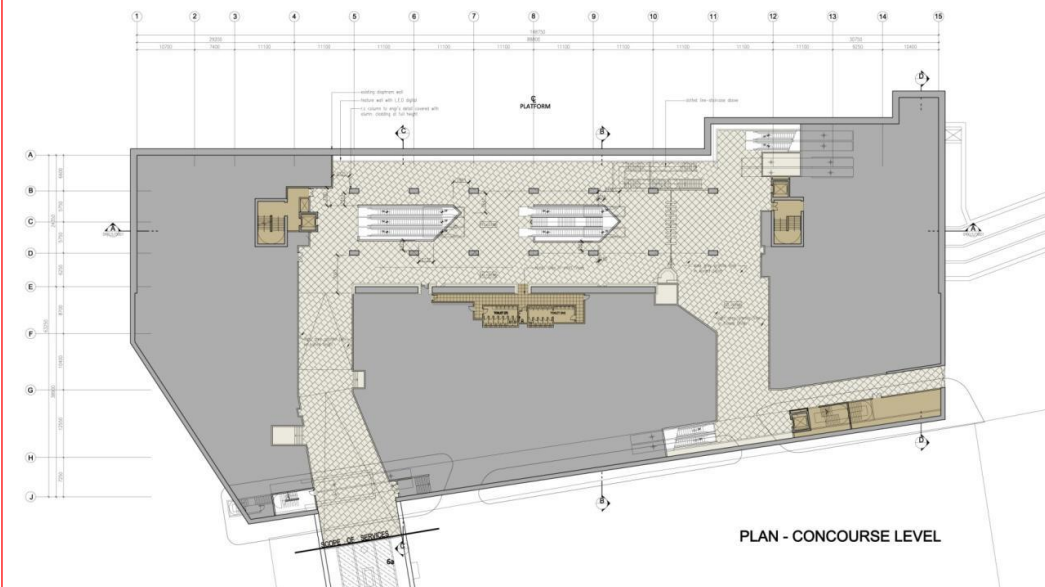
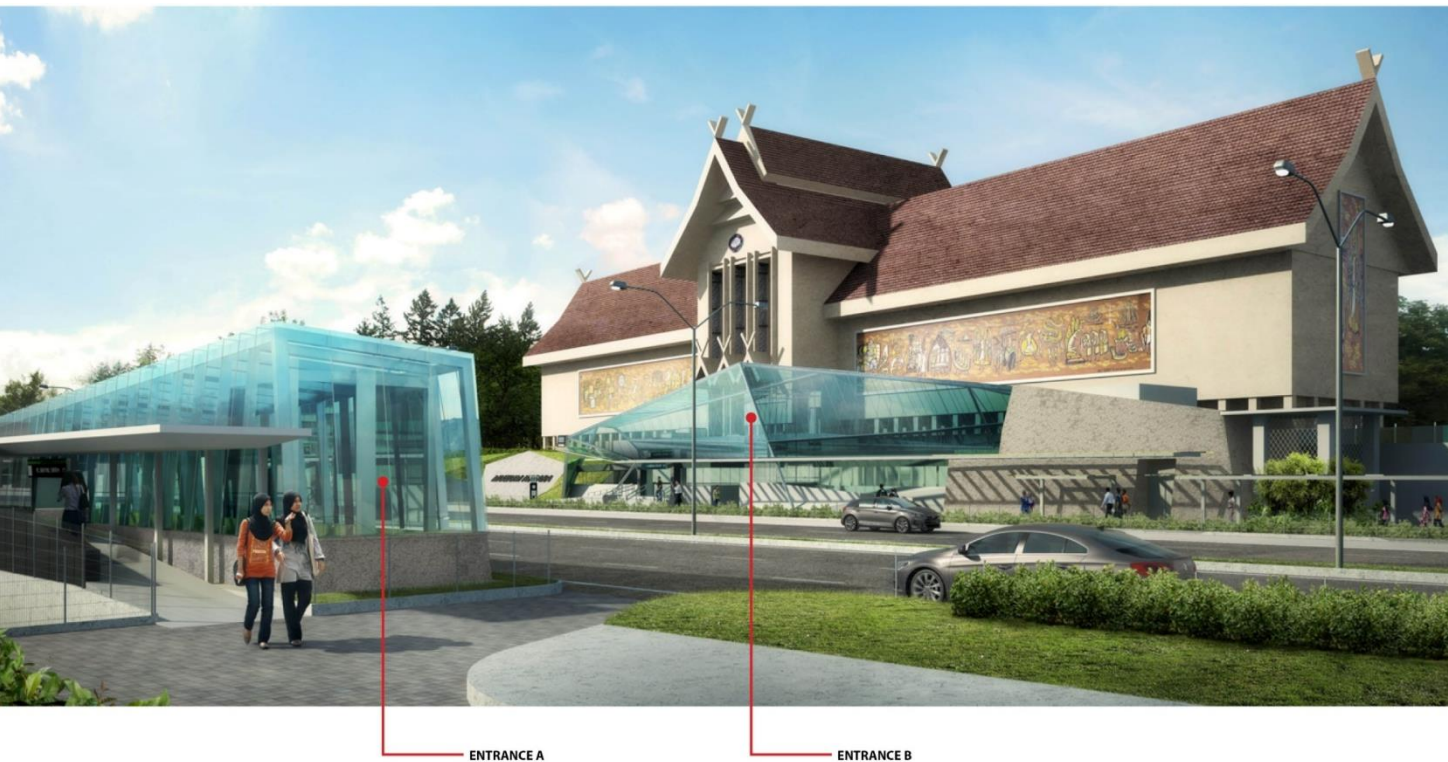
Final Report

Look at the potential GDC and GDV of site as a variance and identifying the best model for development and also if it provide added value or viability of the development

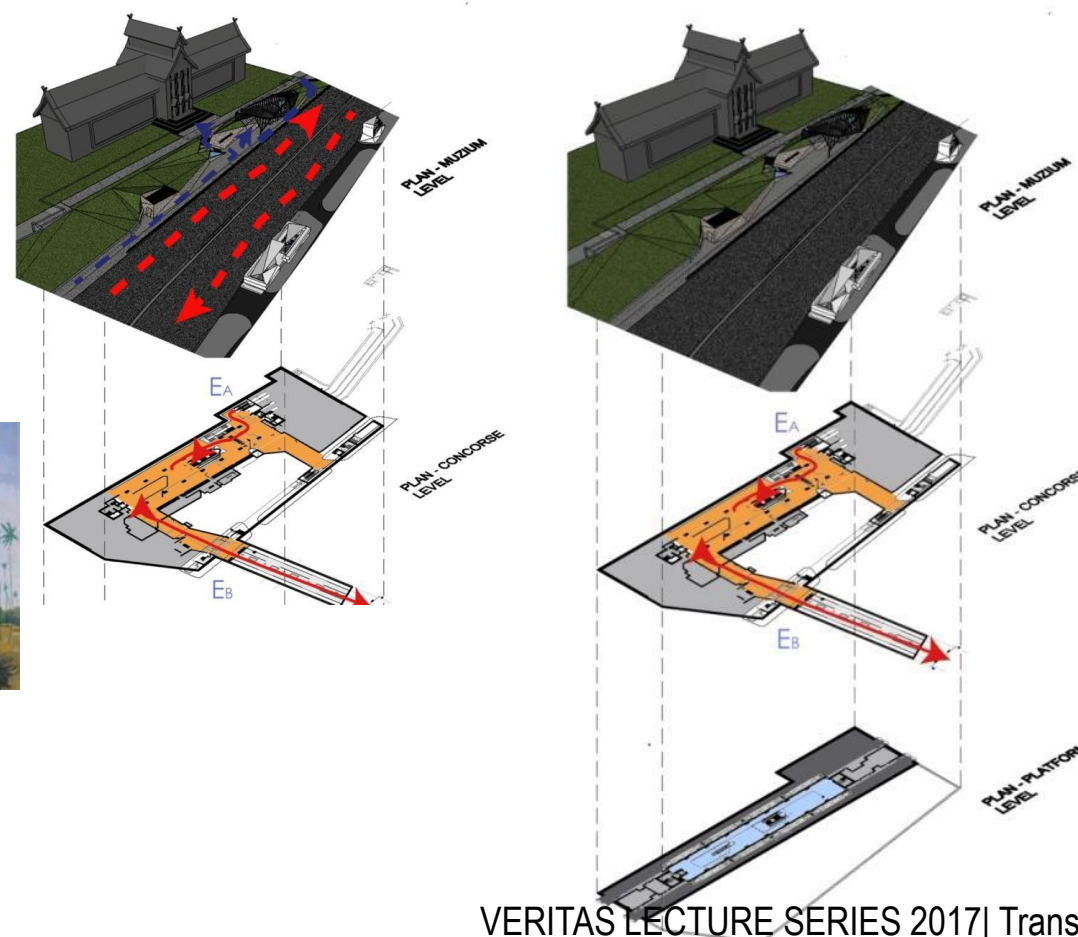


The TOD Talk

Thoughts and Process



- Private area
- Concourse area
- Platform area
- Tube area
- E Entrances
- Transit
- Pedestrian Transit
- Car Transit



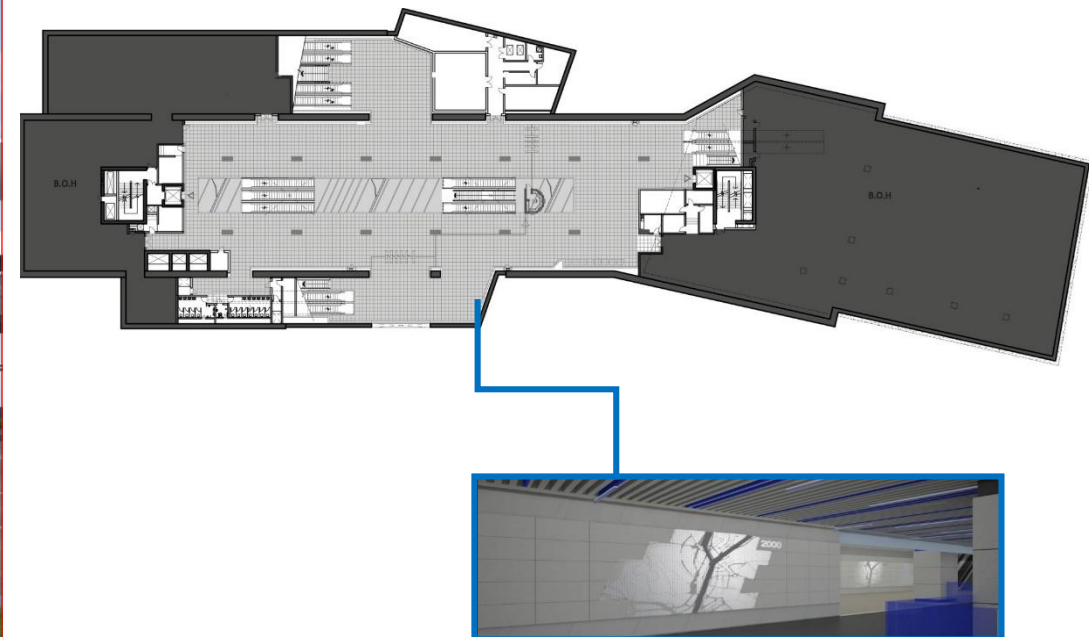
And then come MyMRT about 2 decade later, emphasizing on connectivity of the whole transit system this is hopefully the start of the next level TOD.

Museum Station and its link to KL Sentral offer the opportunity to link to the Multi Modal Integrated Transport Hub and TOD as well as the connection to the social and historical side KL

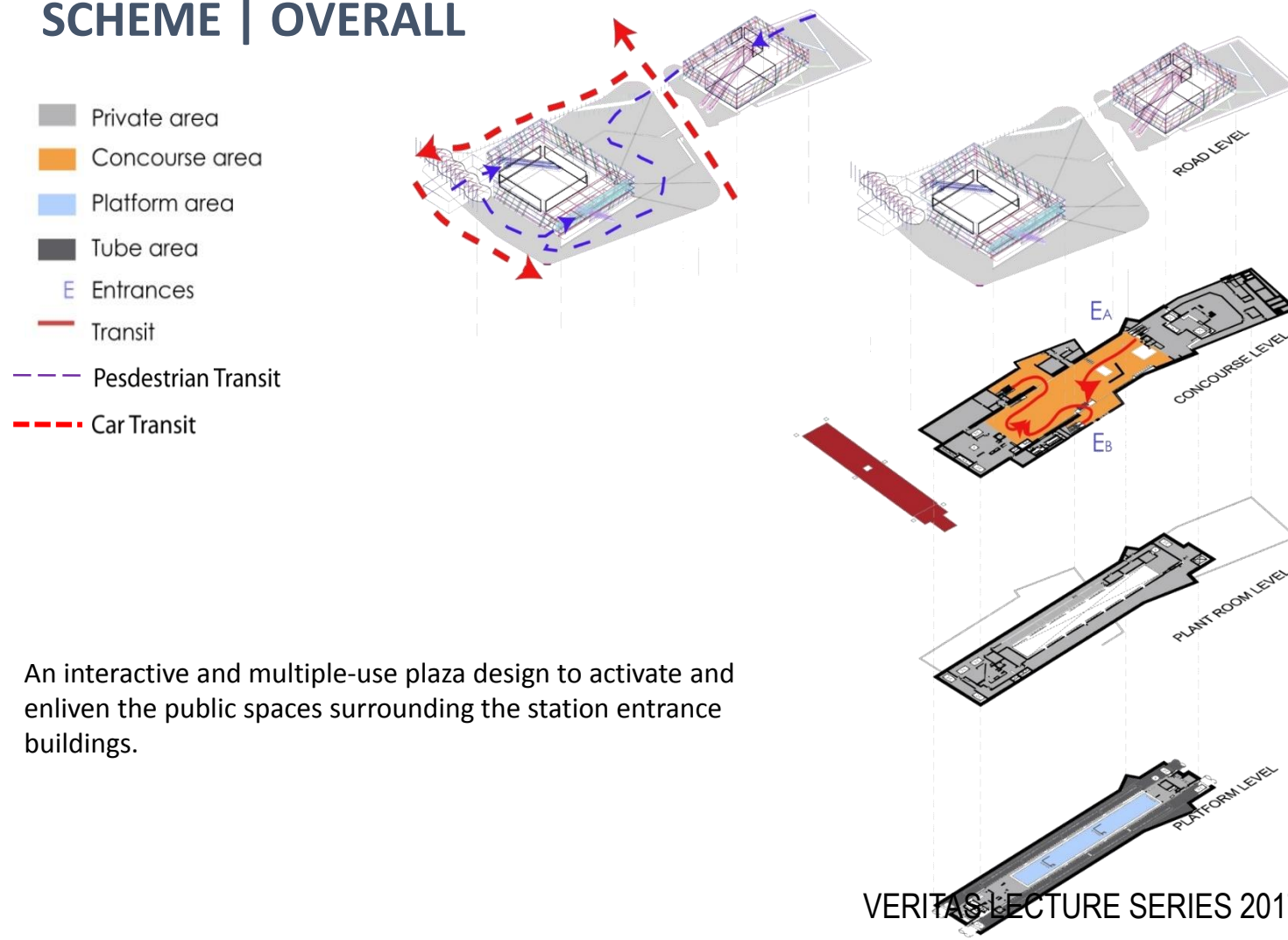
Folding landscape form extends the museum 'laman' and connects it with the new station plaza

The TOD Talk

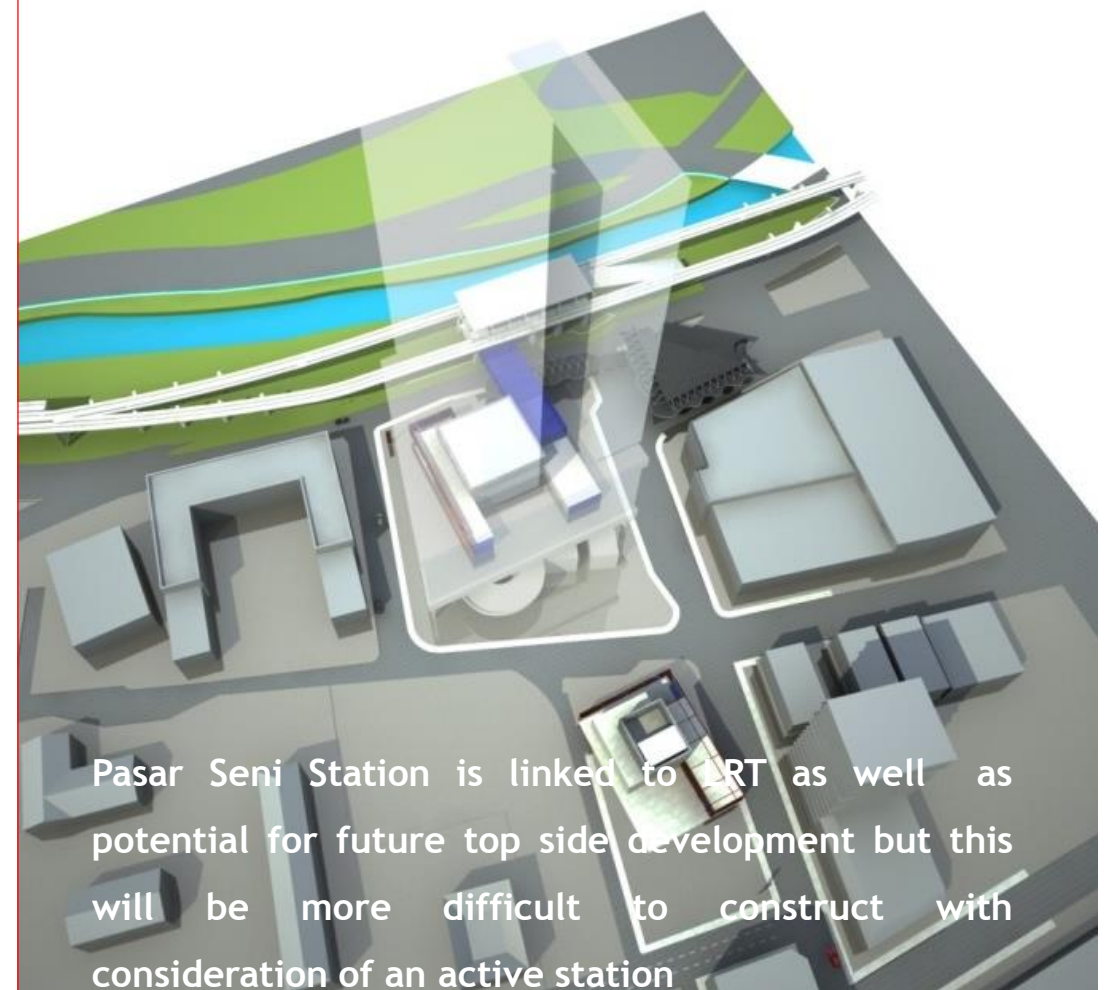
Thoughts and Process



SCHEME | OVERALL



An interactive and multiple-use plaza design to activate and enliven the public spaces surrounding the station entrance buildings.

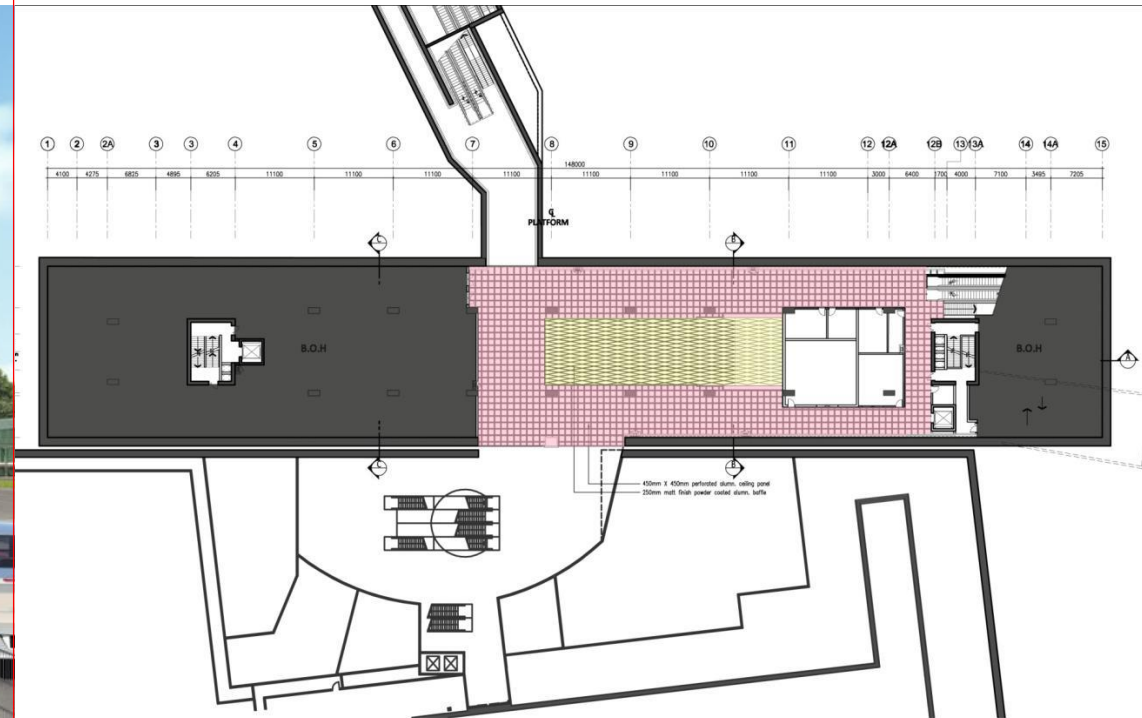


Pasar Seni Station is linked to MRT as well as potential for future top side development but this will be more difficult to construct with consideration of an active station

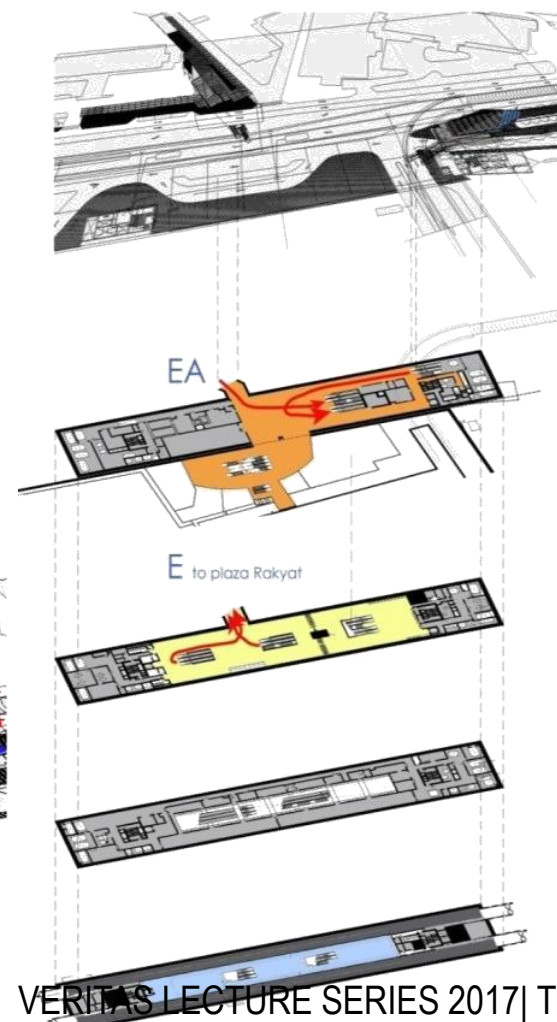
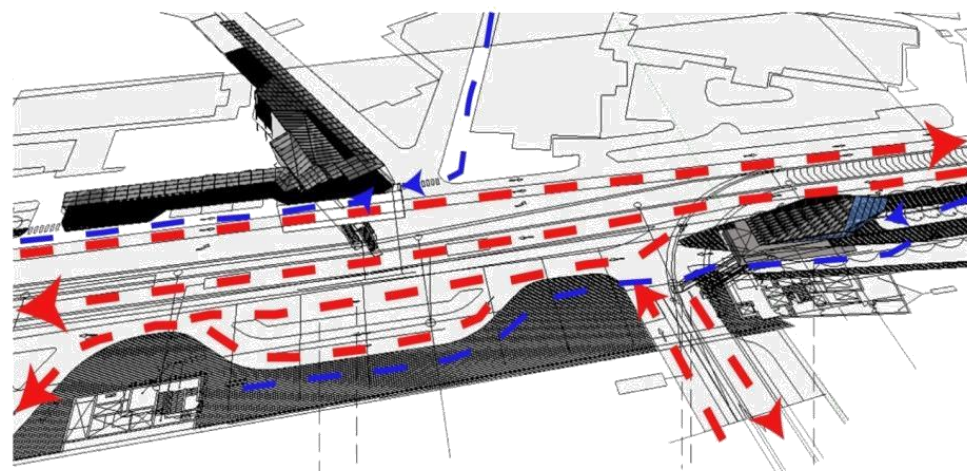


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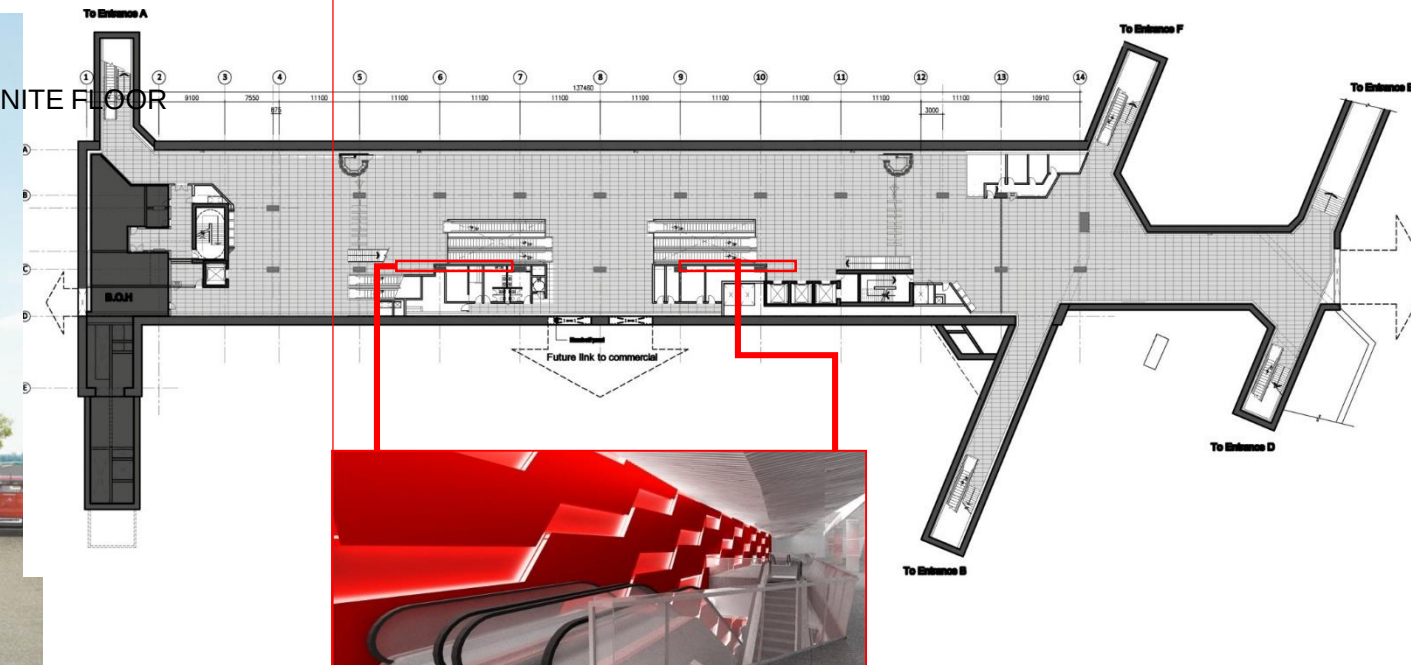
Merdeka Station offer a Link to the surrounding Schools as well as the future Wawasan Merdeka Development and LRT as well as another planned mega Development at Plaza Rakyat

The TOD Talk

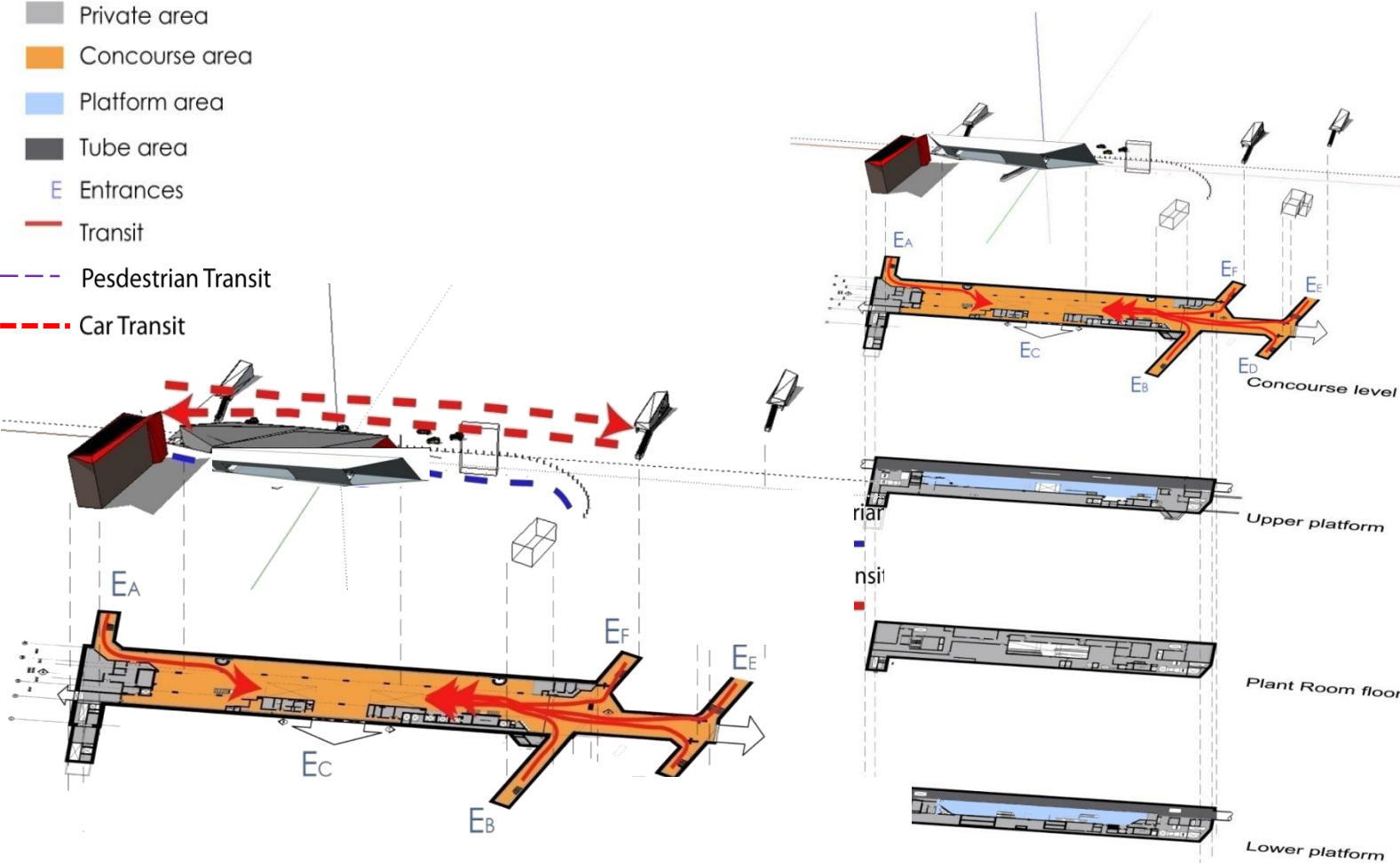
Thoughts and Process



GRANITE FLOOR

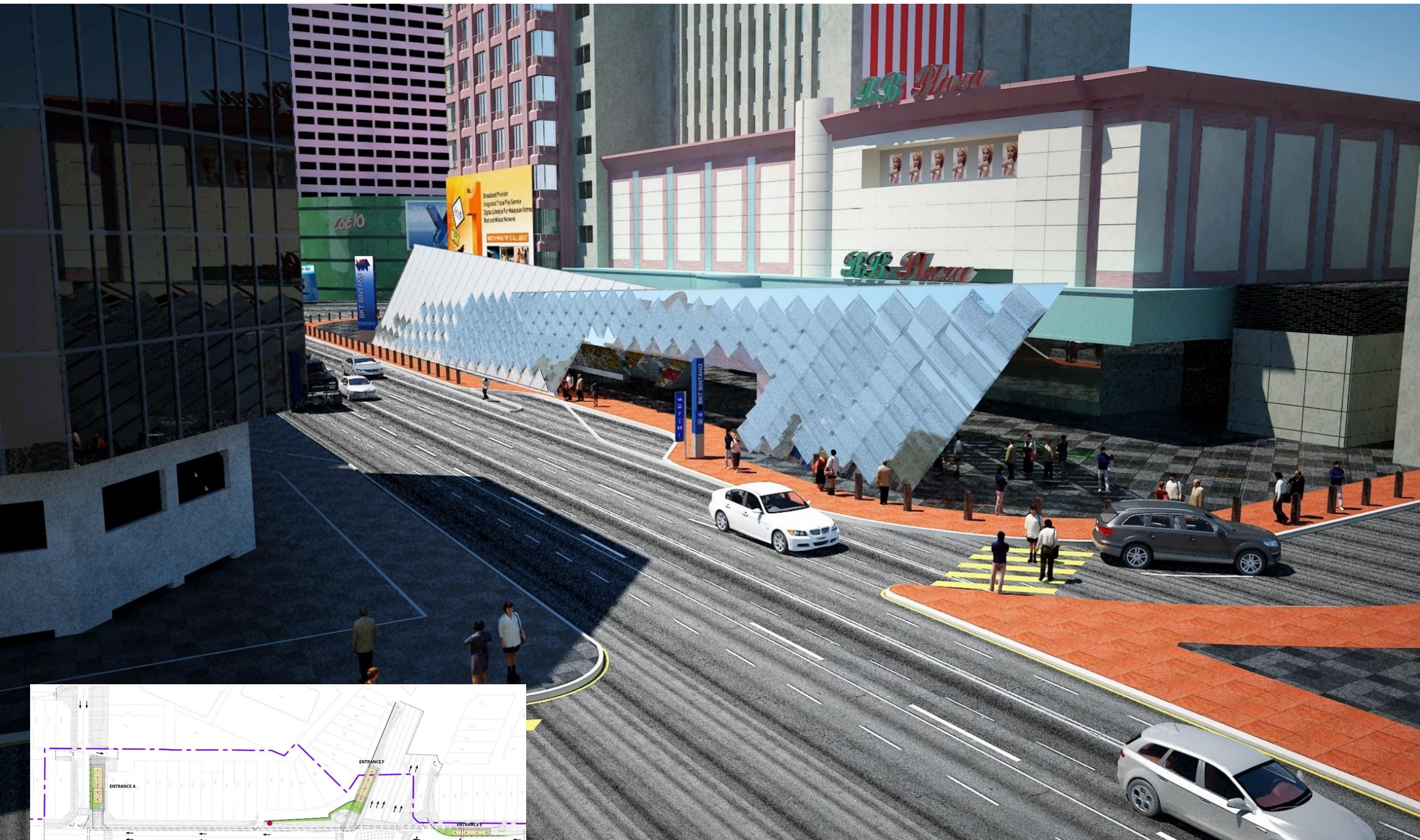


- Private area
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Bukit Bintang Station offers the perfect opportunity to create direct link to surrounding development as well as an integration to the greater KL walkability proposal.

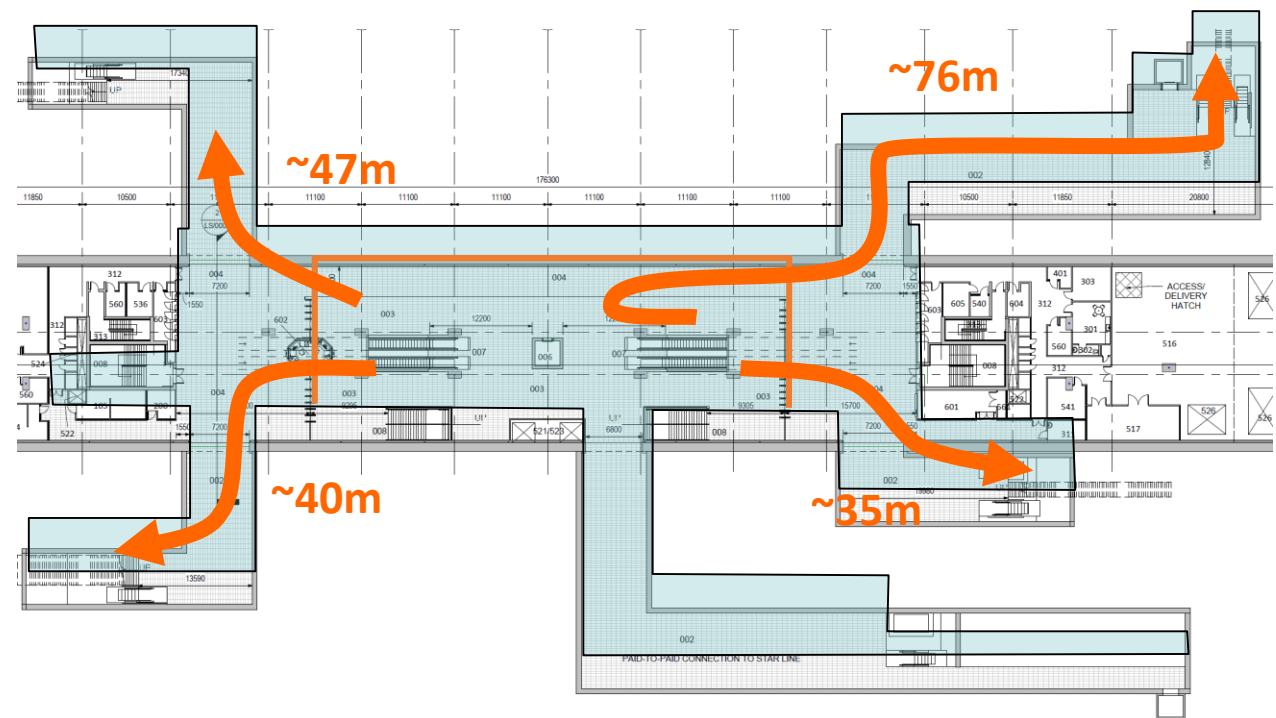
The Station offers 5 entrances/exits and 3 knock off panels to different development such as BB, Low Yat and Pavilion



VENT BUILDINGS AND
ENTRANCE AS MEAN OF ESCAPE

VENT BUILDINGS AND
ENTRANCE AS MEAN OF ESCAPE

Future Development



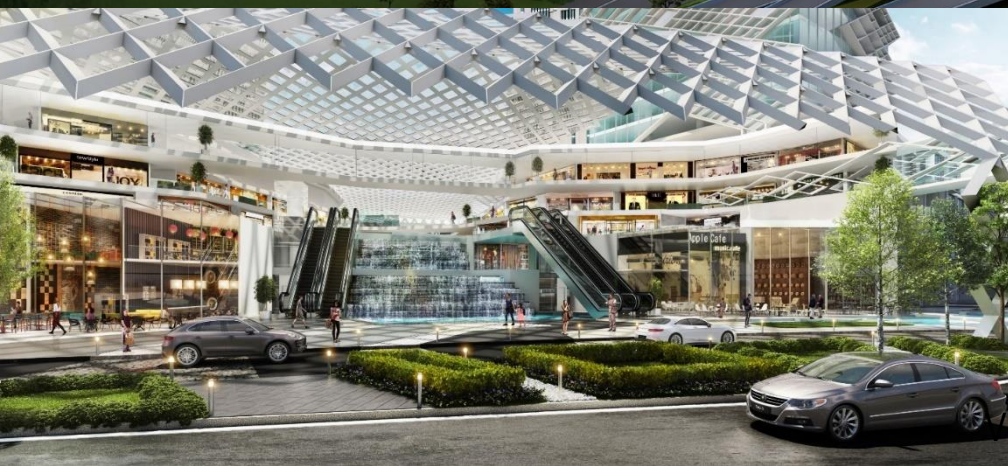
The TOD Talk

Thoughts and Process

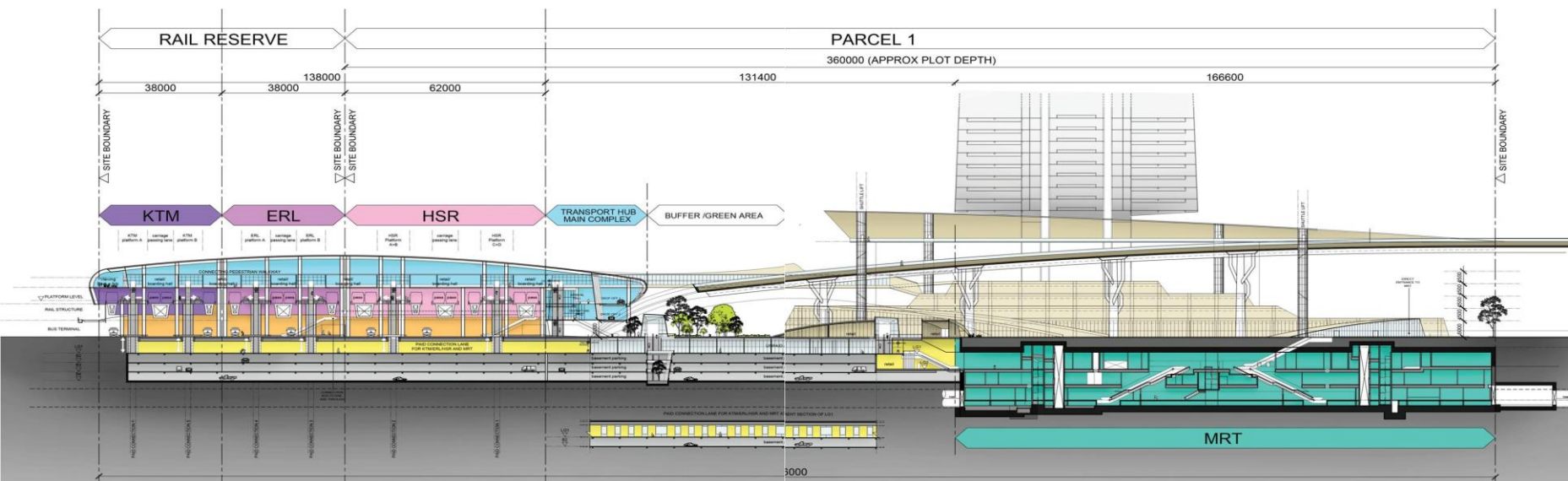
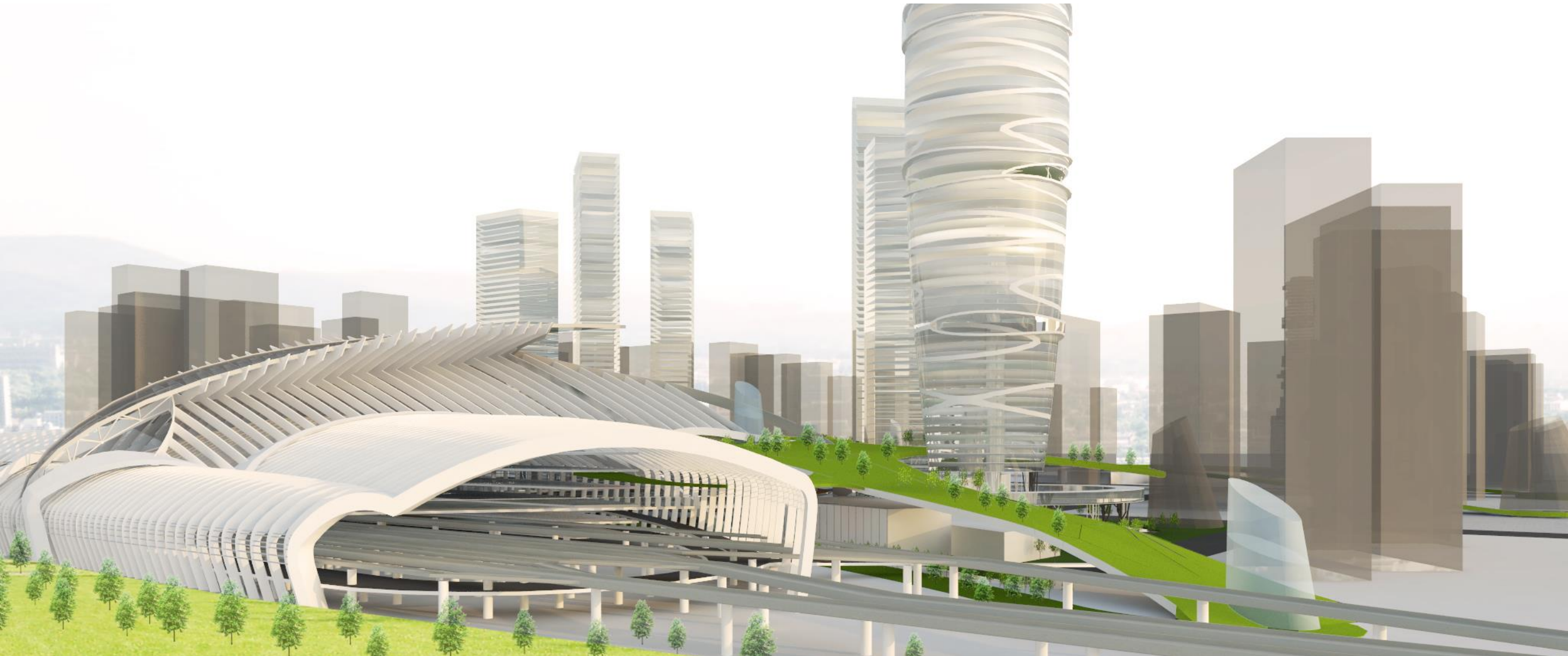


In the study for MRT 2 & 3 Feasibility with CH2M the location of development was identified throughout the line. The purpose is less to determine the TOD but rather to identify how to ensure development along the corridor can best utilise the corridor

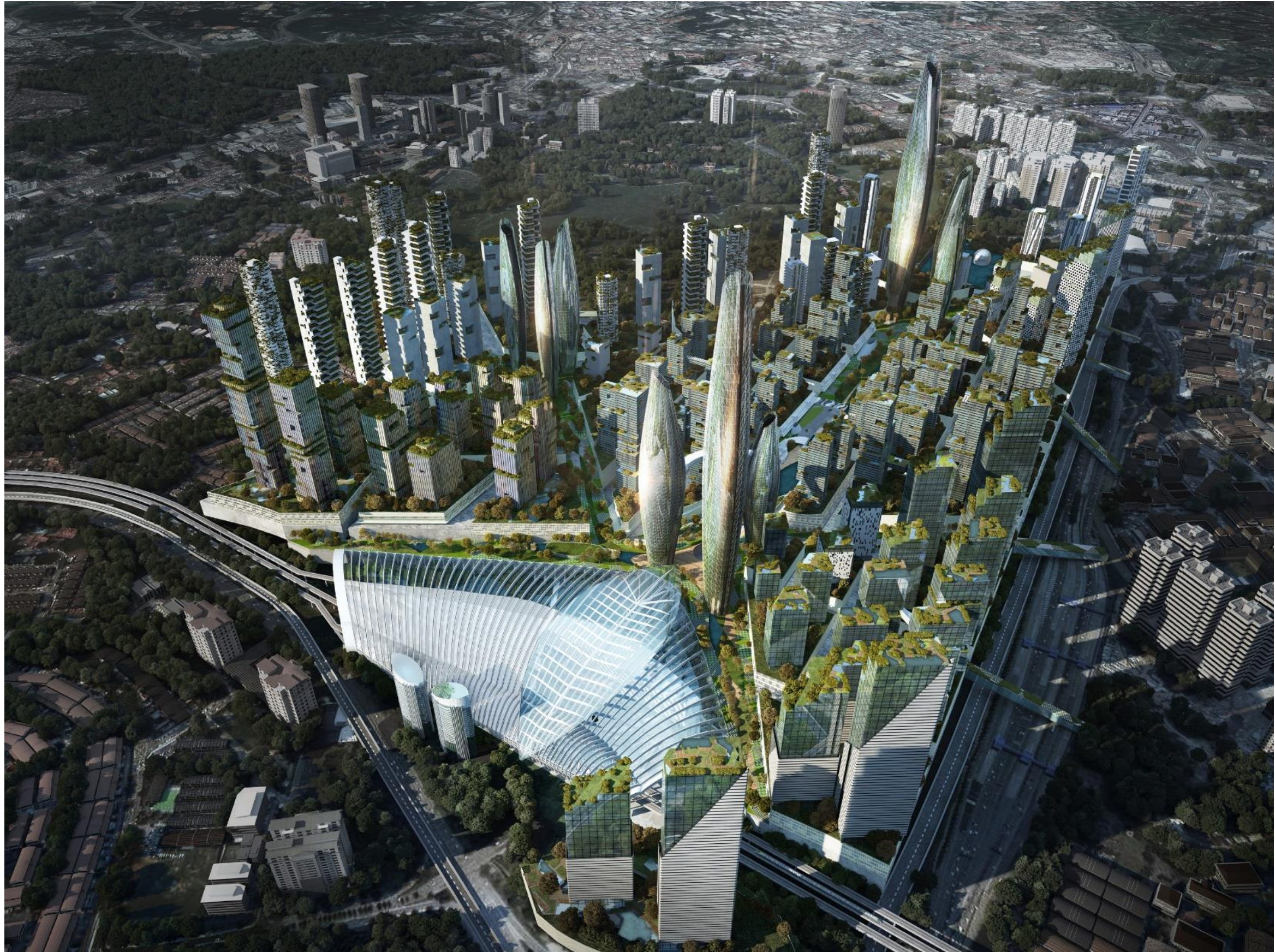
Finally we are also looking at private sector development that is next to the station as well as Destination Stations

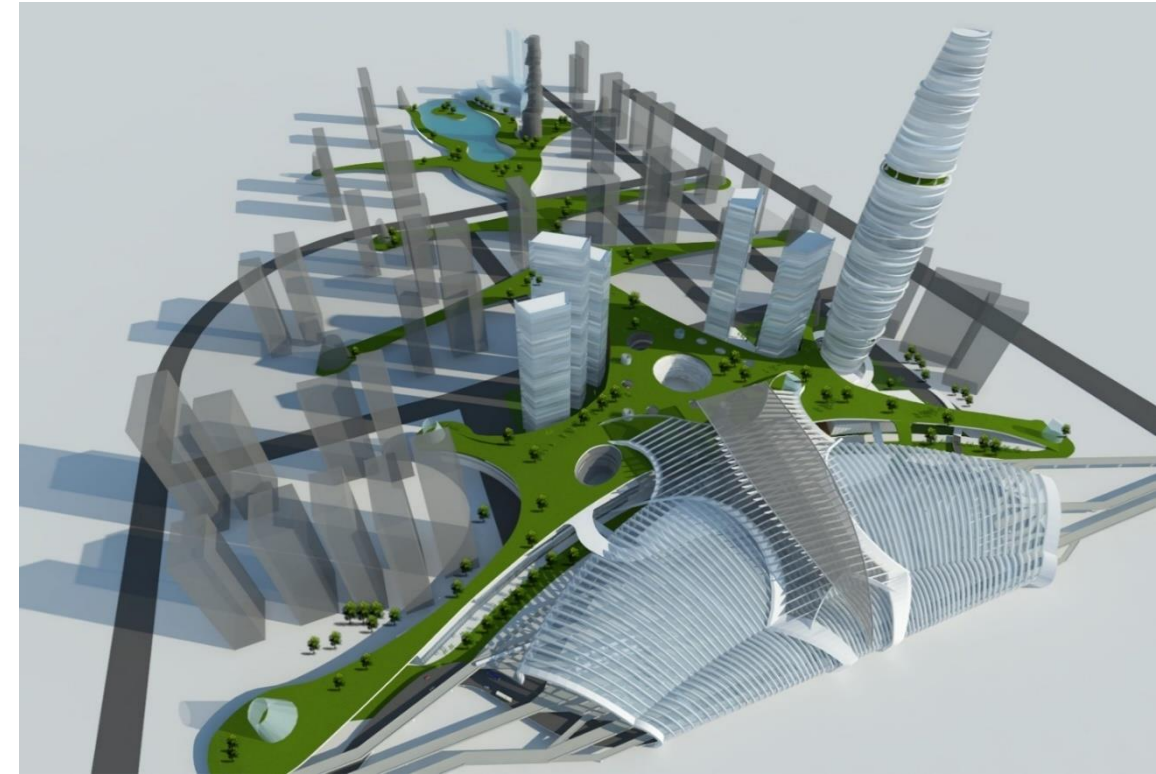


ATIVO Damansara next to Damansara East Stations- visual connection and activity happening every 200m



Bandar Malaysia Integrated from BM South Station





The Way forward

Technology enable

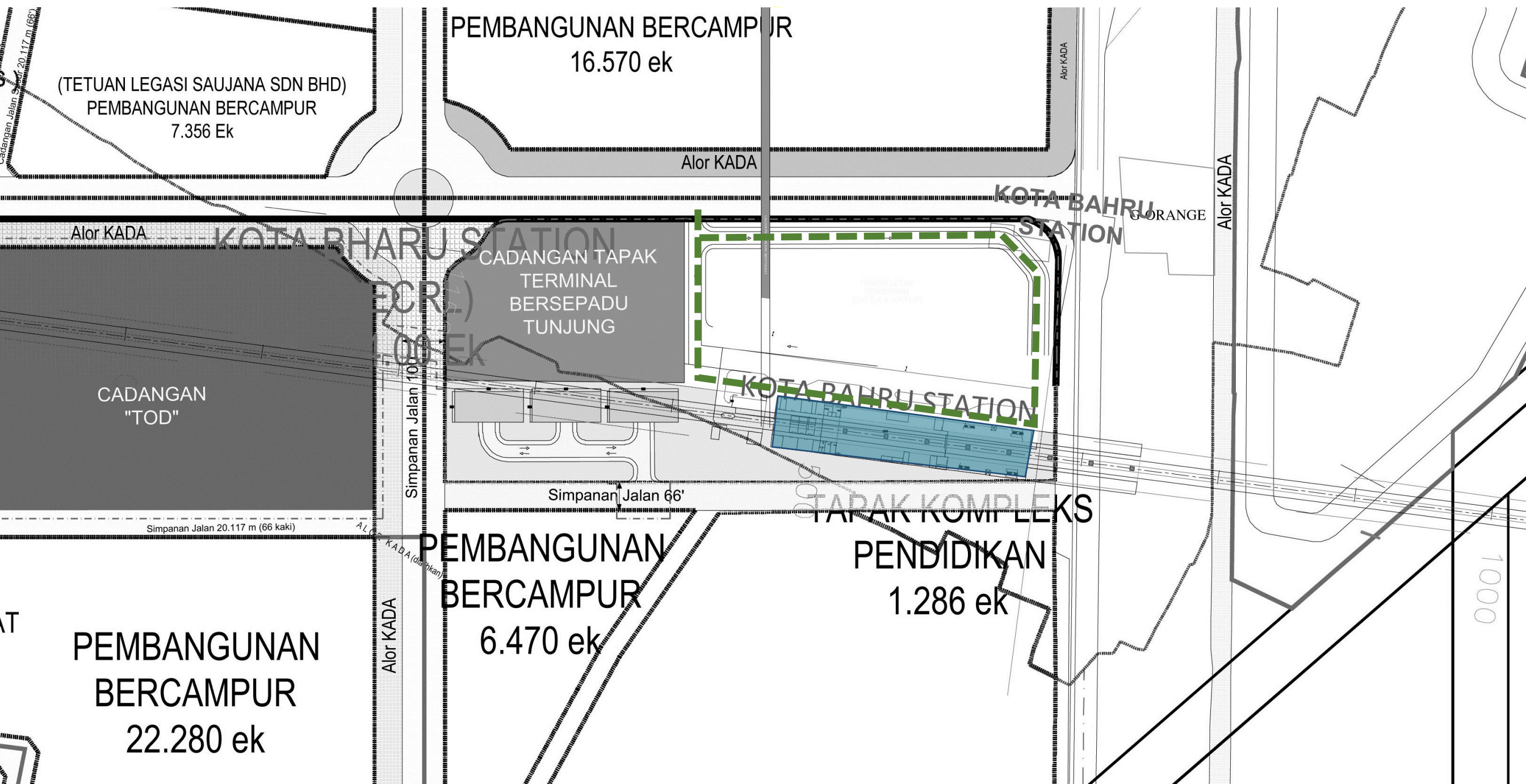
Lifestyle

Flexibility and adjustment

A total Change in Car ownership

...self driving cars





Finally we are looking forth to connectivity of greater KL Urban Fabric and the concept that everyone can win...





The TOD Way

TOD Thoughts and Processes