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MSCP

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5.1 Multi Storey Car Park Brief

The Willmott Dixon design team was initially commissioned by Darlington Borough Council to design a new MSCP and associated transport hub including short stay parking and drop off. The brief later expanded to include the shell and core for the new station concourse.

The brief for the original MSCP was:

- Provide a high-quality parking environment with easy vehicular access and sufficient manoeuvring space.
- Locate access and egress from the car park to the highway to minimise impact of traffic on surrounding properties.
- Provide an efficient circulation plan to help keep the scale, mass and height of the building to a minimum.
- Consider the visual impact on the local urban character, its scale, form and mass particularly the existing heritage assets, the grade II*-listed station and the grade II-listed St. John's Church.
- Consider proximity of the adjacent residential properties to reduce impact on outlook from properties, to address overlooking concerns and to minimise any sense of overbearing.
- Explore 'enhanced' elevational treatments to the public square to provide a contemporary feel.
- Provide safe and direct pedestrian routes into/out of all levels of the car park including to the adjacent station concourse and public square.
- Ensure the building is accessible to all users.
- Address potential noise, nuisance and security issues.
- Consult with Park Mark during the design to achieve accreditation on completion.



View showing MSCP approach from Garbutt Square

5.2 MSCP Use / Amount

Use

The proposed MSCP provides a total 672 spaces accommodated over five floors (including ground floor) or ten split levels. The proportion of spaces for standard, accessible, wheelchair accessible (WAV) and electric (EV) vehicles is as required by the client – refer to parking schedule.

The building is designed to appropriate standards and representatives from Park Mark have been consulted (and will continue to be consulted) in the process to ensure the design incorporates a high level of safety and security for all customers.

Amount

Darlington Borough Council (DBC) have commissioned SYSTRA to carry out a demand study to examine the number of parking spaces which are likely to be required at a new MSCP. The MSCP will be replacing the majority of existing surface level car parks around the station.

The Systra report used a demand calculation based upon the standard demand forecasting approach set out in the Passenger Demand Forecasting Handbook (PDFH) and covered the period from 2020 to 2050. Systra identifies that by 2040 it is expected that there will be a capacity demand for 631 parking spaces. That demand is expected to increase to 700 spaces by 2045 and 778 spaces by 2050. It is expected that the MSCP along with the retained surface level parking will meet demand capacity until 2047.

The current design for the MSCP has a capacity of 672 spaces, inline with Darlington Borough Councils forecast numbers for 2040. The scheme will also create new cycle storage facilities, parking for Motorcycles and charging points for electric vehicles.

Parking Schedule

LEVEL 00	
Disabled Space	18
Standard Space	45
WAV EV Space	2
WAV Space	3
68	
LEVEL 01	
Accessible EV Space	4
Disabled Space	14
18	
LEVEL 02	
Standard Space	87
87	
LEVEL 03	
Electric Vehicle Space	8
Standard Space	32
40	
LEVEL 04	
Standard Space	90
90	
LEVEL 05	
Electric Vehicle Space	8
Standard Space	34
42	
LEVEL 06	
Standard Space	92
92	
LEVEL 07	
Electric Vehicle Space	8
Standard Space	64
72	
LEVEL 08	
Standard Space	92
92	
LEVEL 09	
Electric Vehicle Space	8
Standard Space	63
71	
Total Number of Bays	672

Park Mark and Safety

The building will be designed to Park Mark standards and representatives have been consulted (and will continue to be consulted) in the design process to ensure the design incorporates a high level of safety and security for all customers.

The building envelope cladding options provided will be developed to ensure the use of robust materials and finishes in vulnerable areas to provide greater security performance and resistance to vandalism and graffiti.

Discussions with The British Parking Association, British Transport Police and Counter Terrorism Security Advisor are ongoing and have helped to get a greater understanding of the site specific risks and allowances have been made to cover likely requirements for CCTV, lighting and surveillance.

MSCP Area Schedule

The proposed MSCP has a Gross Internal Floor Area of 19,656m².

Car Park Area	
Name	Area
Level 00	2,310 m²
Level 01	1,231 m²
Level 02	2,206 m²
Level 03	1,474 m²
Level 04	2,206 m²
Level 05	1,474 m²
Level 06	2,211 m²
Level 07	2,154 m²
Level 08	2,210 m²
Level 09	2,179 m²
19,656 m²	

5.3 MSCP Layout

Layout

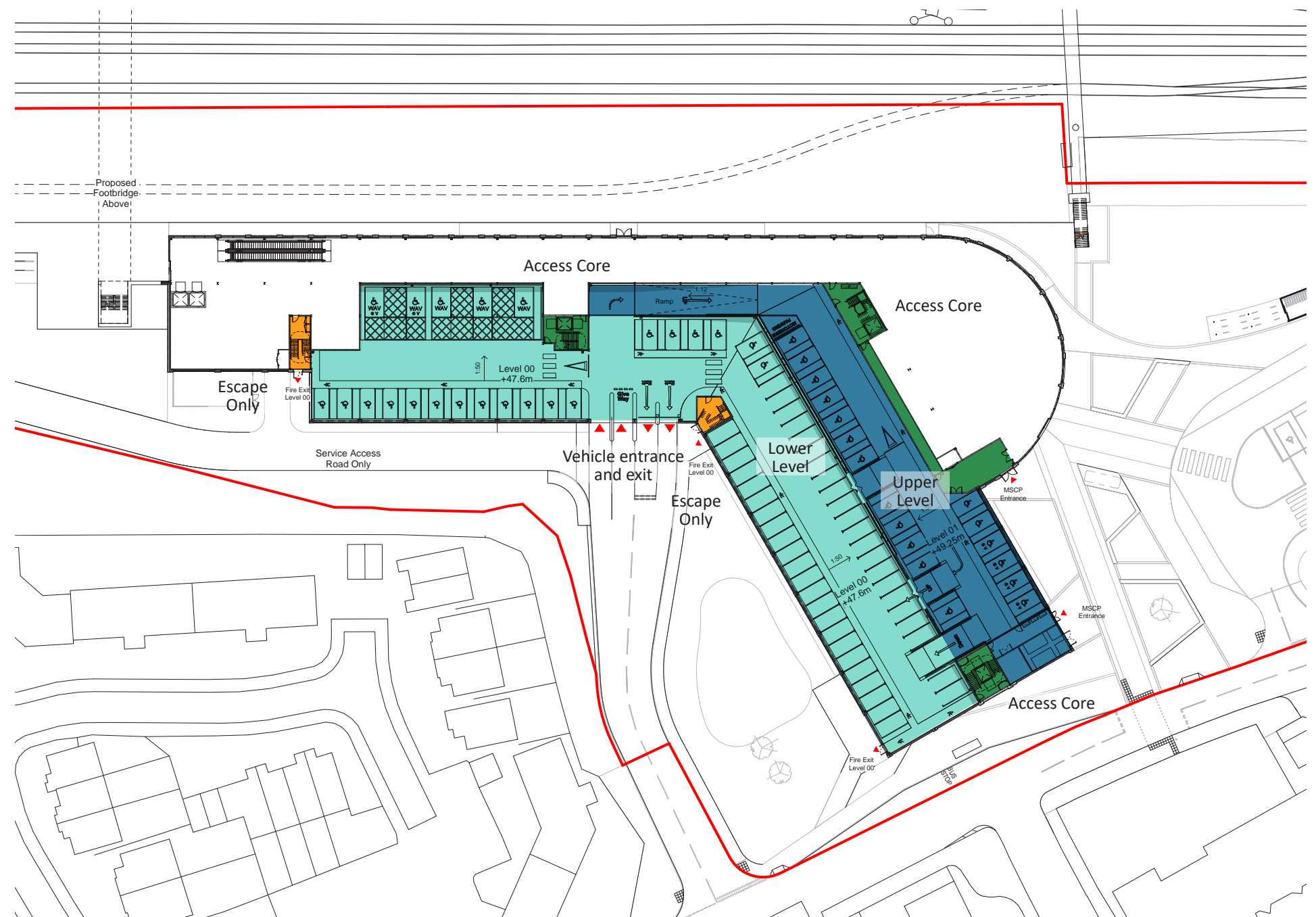
The floor plans have been developed to maximise the number of parking bays within the footprint. The split-level design has one 6m lane of circulation on each level with 4.8m deep parking provided on either side.

The levels are connected by a series of ramps which are designed to maximise the travel distance of the vehicles travelling up the building so that the vehicle will pass as many potential spaces in a good search pattern. The down ramps are situated closer together in the centre of the car park to minimise the travel distance of vehicles exiting the car park in a safe manner.

The vehicle entrance/exit is located in the east elevation accessed off a realigned Garbutt Square. The car park entrance is located at Level 00 (47.7m AOD) to take advantage of the natural slope across the site. Upon entry directly to the left there is accessible parking including 5 Wheelchair Accessible Vehicles WAV accessible parking bays.

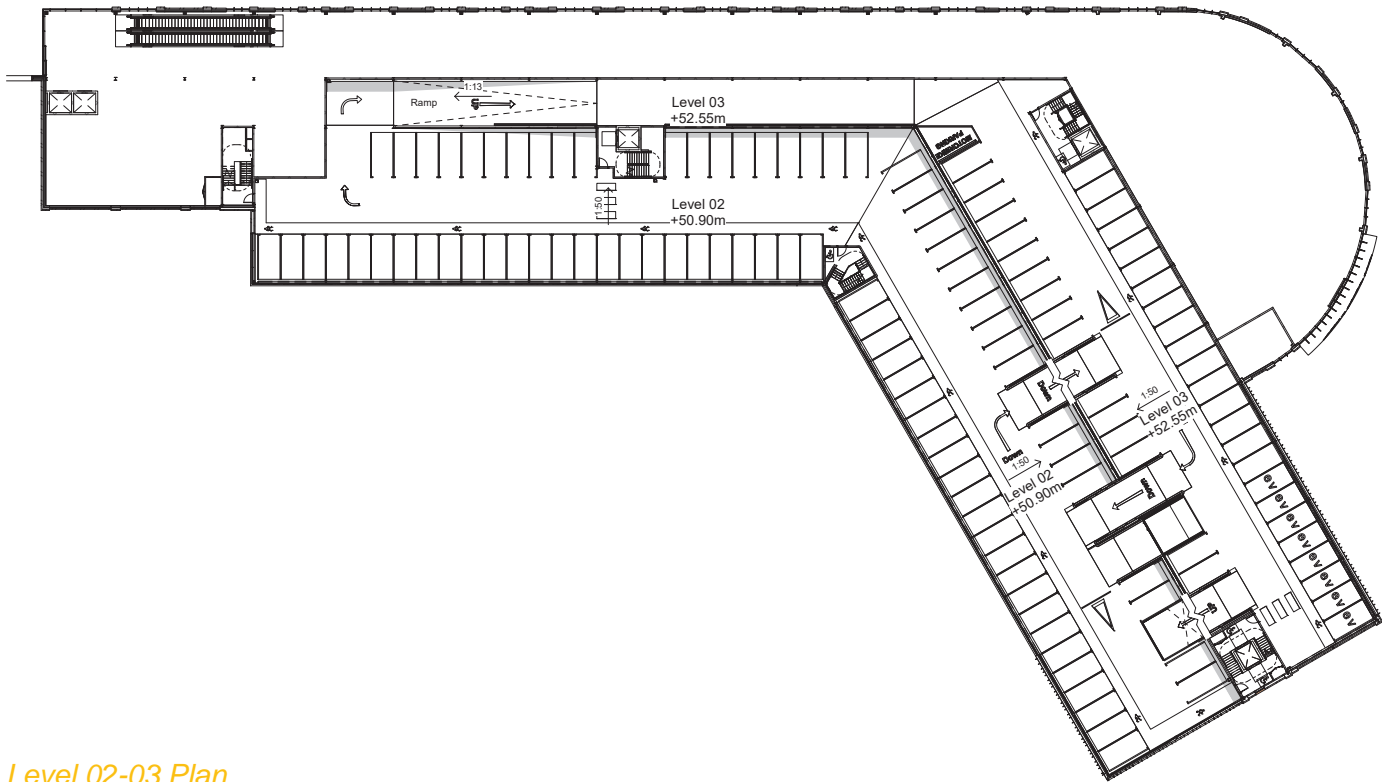
Vehicular and pedestrian access is kept separate for the safety of the customers entering and exiting the car park by foot. There are three stair/lift cores which allow pedestrian access. The north-east core has a pedestrian entrance at Level 1 to the main public square. The two central cores provide direct access to the station concourse. The south core and the central inner cores are for fire escape only.

Along the west side of the building a two and a half storey height space is left over for incorporation of the new station concourse which can accommodate circulation to the new platforms, waiting areas, ticketing facilities and retail units.

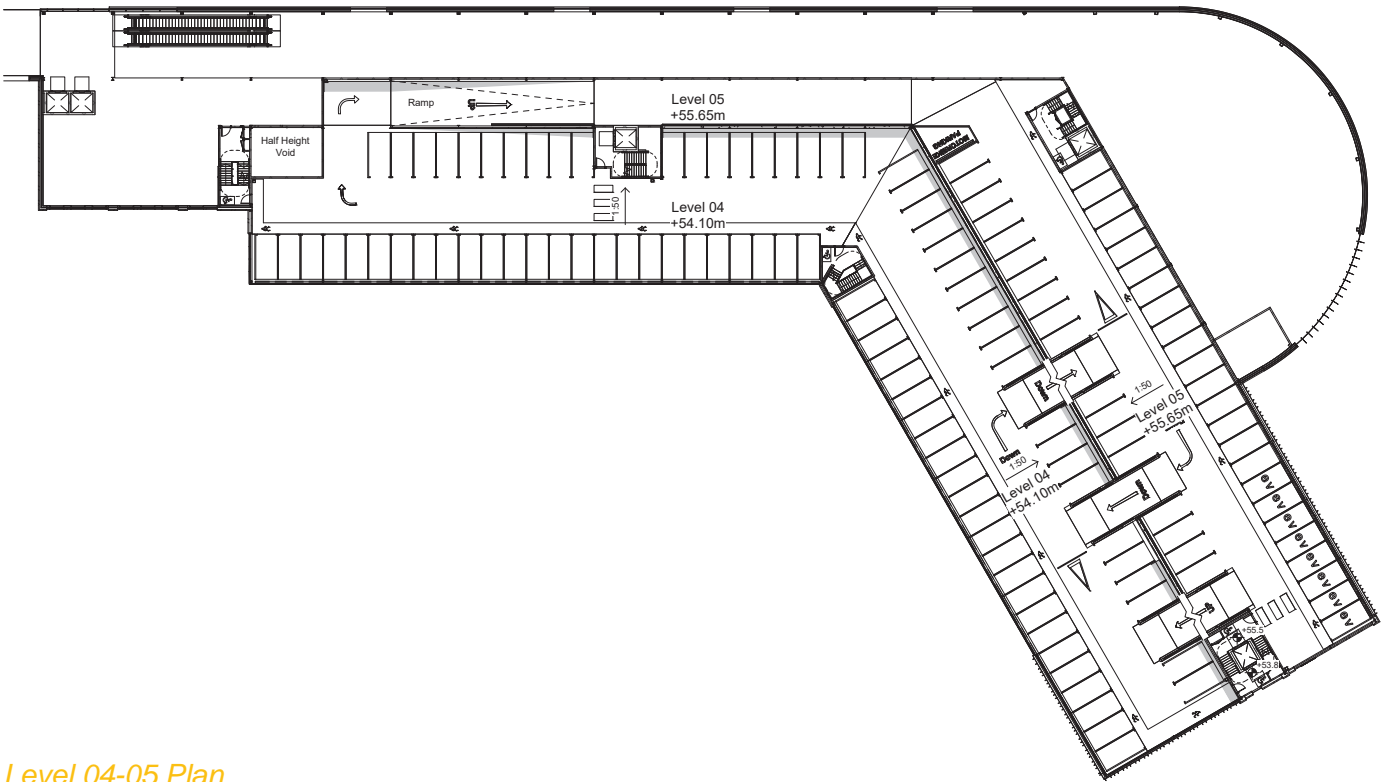


Level 00-01 Plan

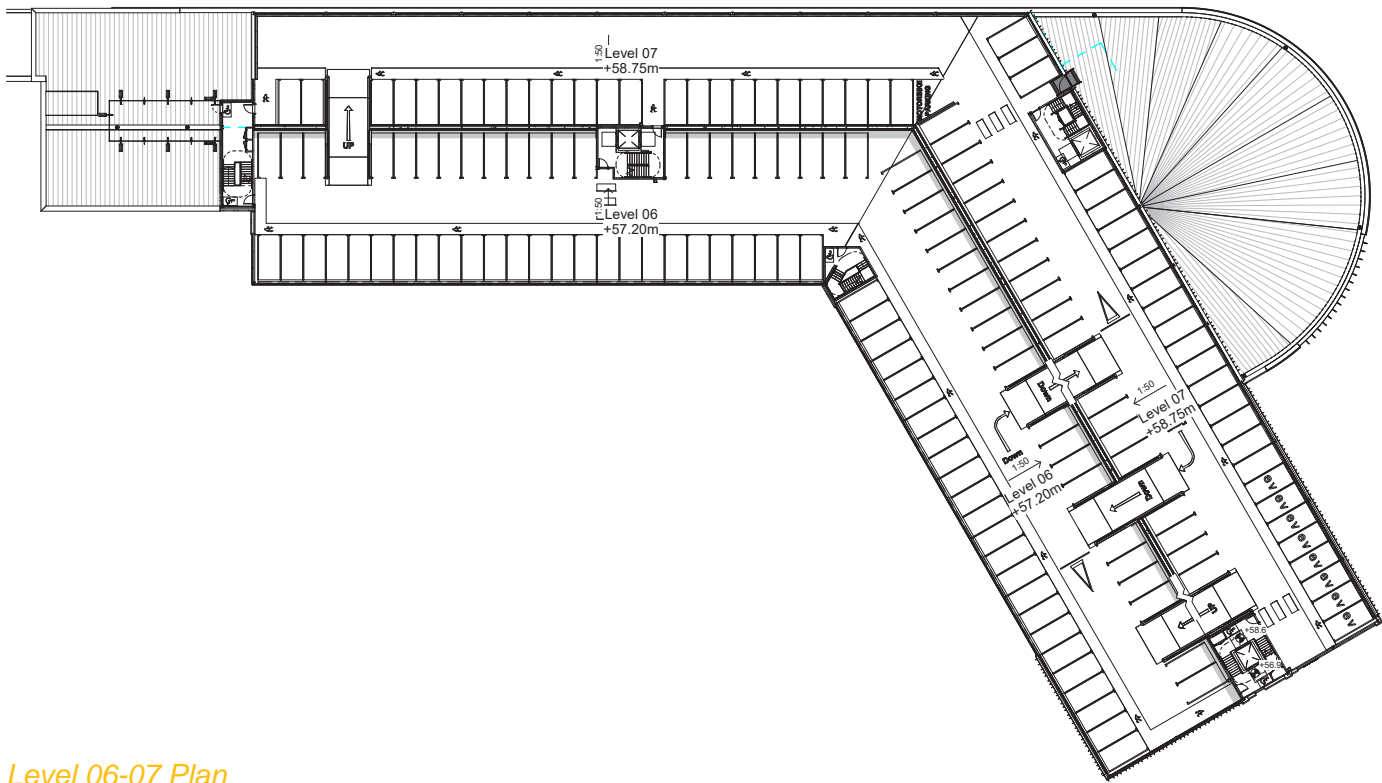
5.3 MSCP Layout



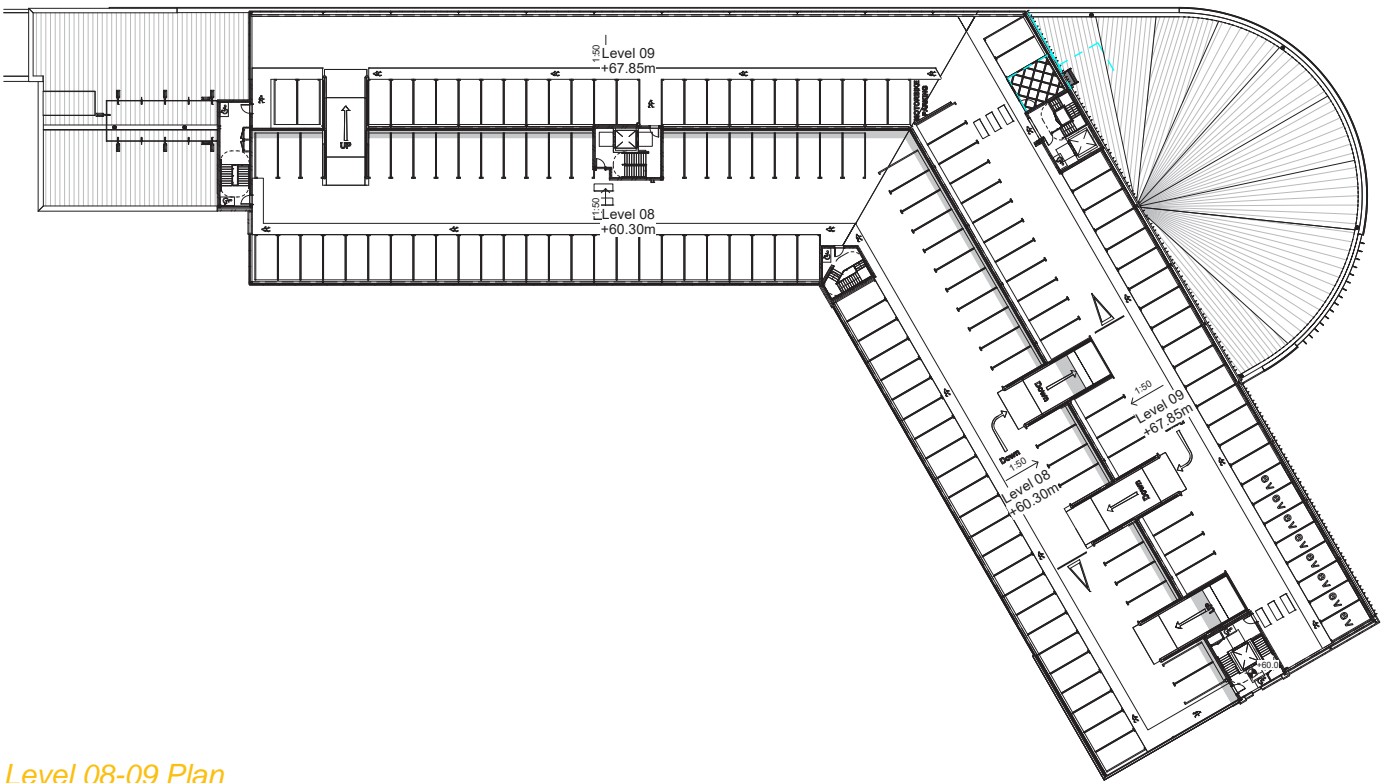
Level 02-03 Plan



Level 04-05 Plan



Level 06-07 Plan



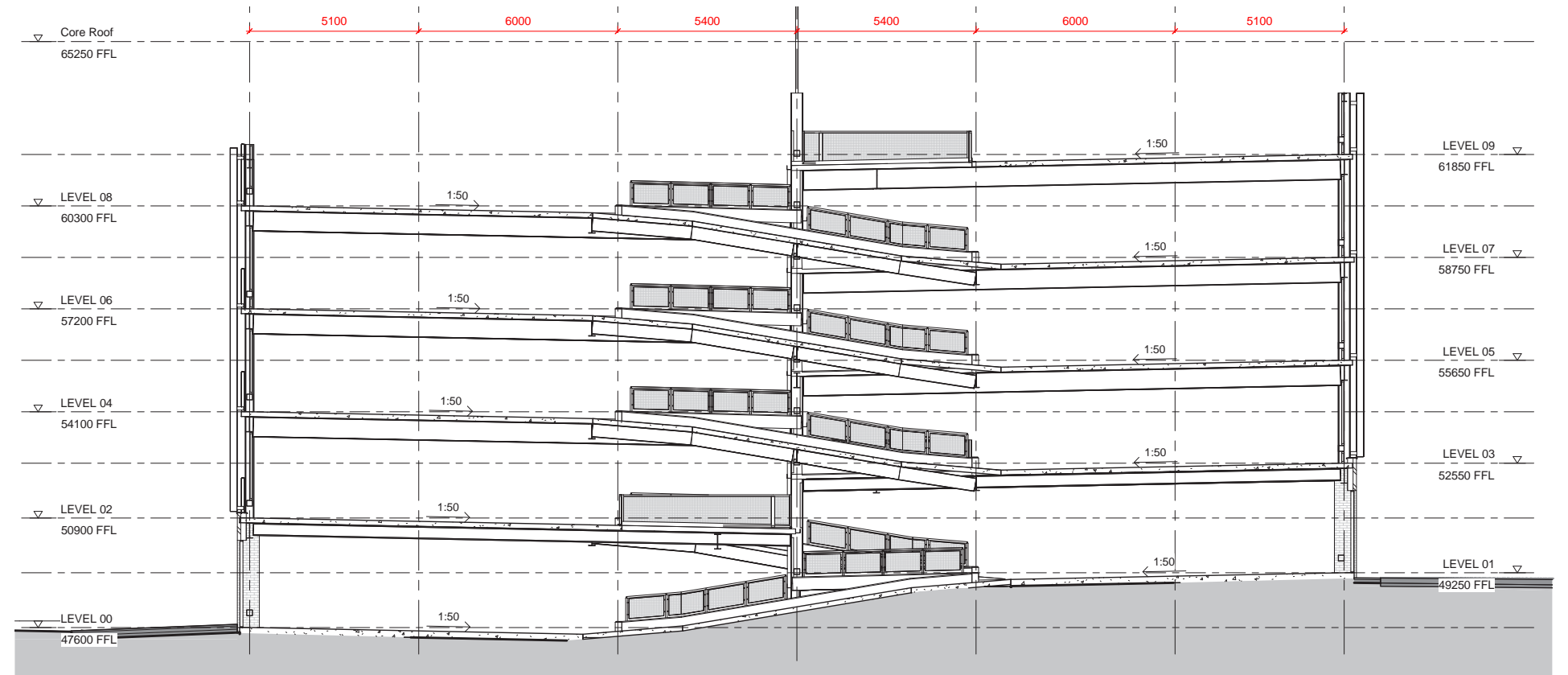
Level 08-09 Plan

5.4 MSCP Sections

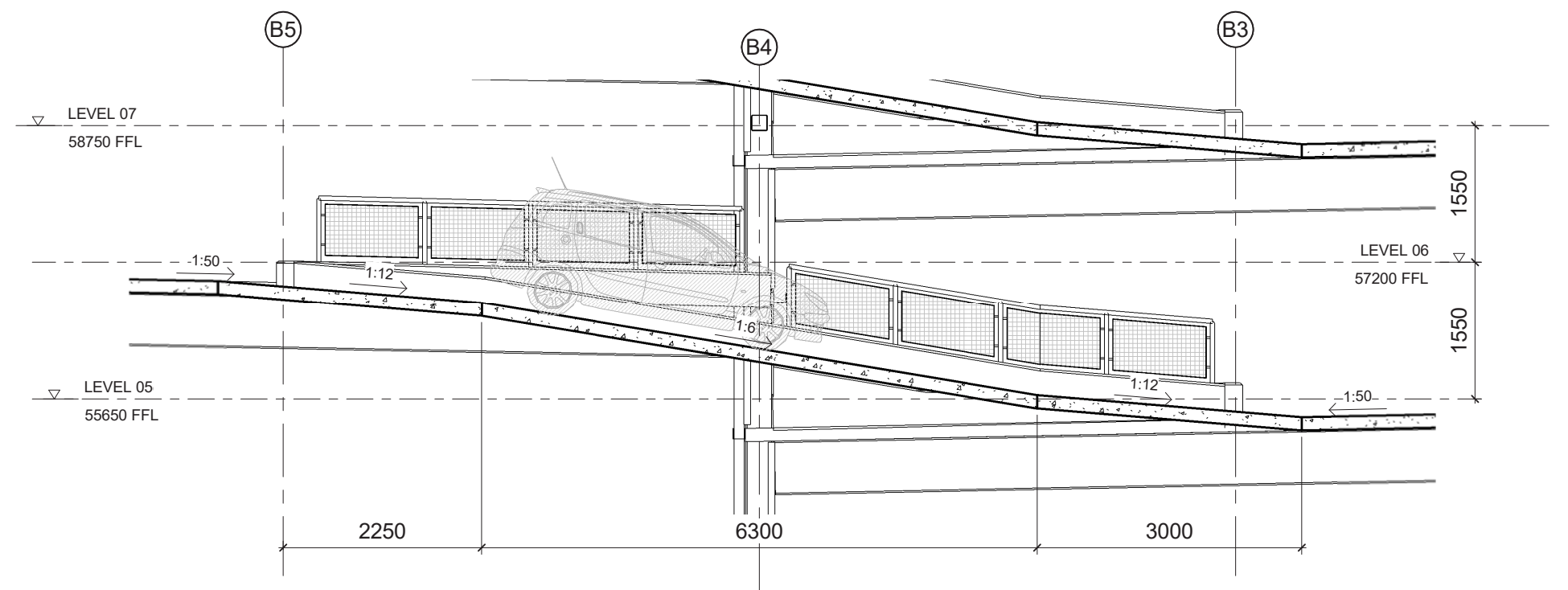
Layout Sections

The split-level layout is designed to minimise the height of ramps from one floor to another whilst always maintaining a floor to floor height of 3.3m at ground floor and 3.1m at the upper floors. Each level rises by half height increments. A minimum 2.6m clear height will be maintained from the deck level to the underside of the structure at ground floor and a clear height of 2.3m is maintain across the upper floors. The structure has been designed to without any intermediate columns within the parking zone to improve manoeuvrability.

The floor slabs have been designed to a 1:50 gradient sloping towards the centre of the structure to allow for drainage of surface water. The ramps between levels have been designed to a 1:6 gradient at the centre. To avoid any potential damage to vehicles the ramps have 1:12 transition strips at the top and bottom to reduce the risk of vehicle grounding.



Building Section Block B



Ramp Detail Section

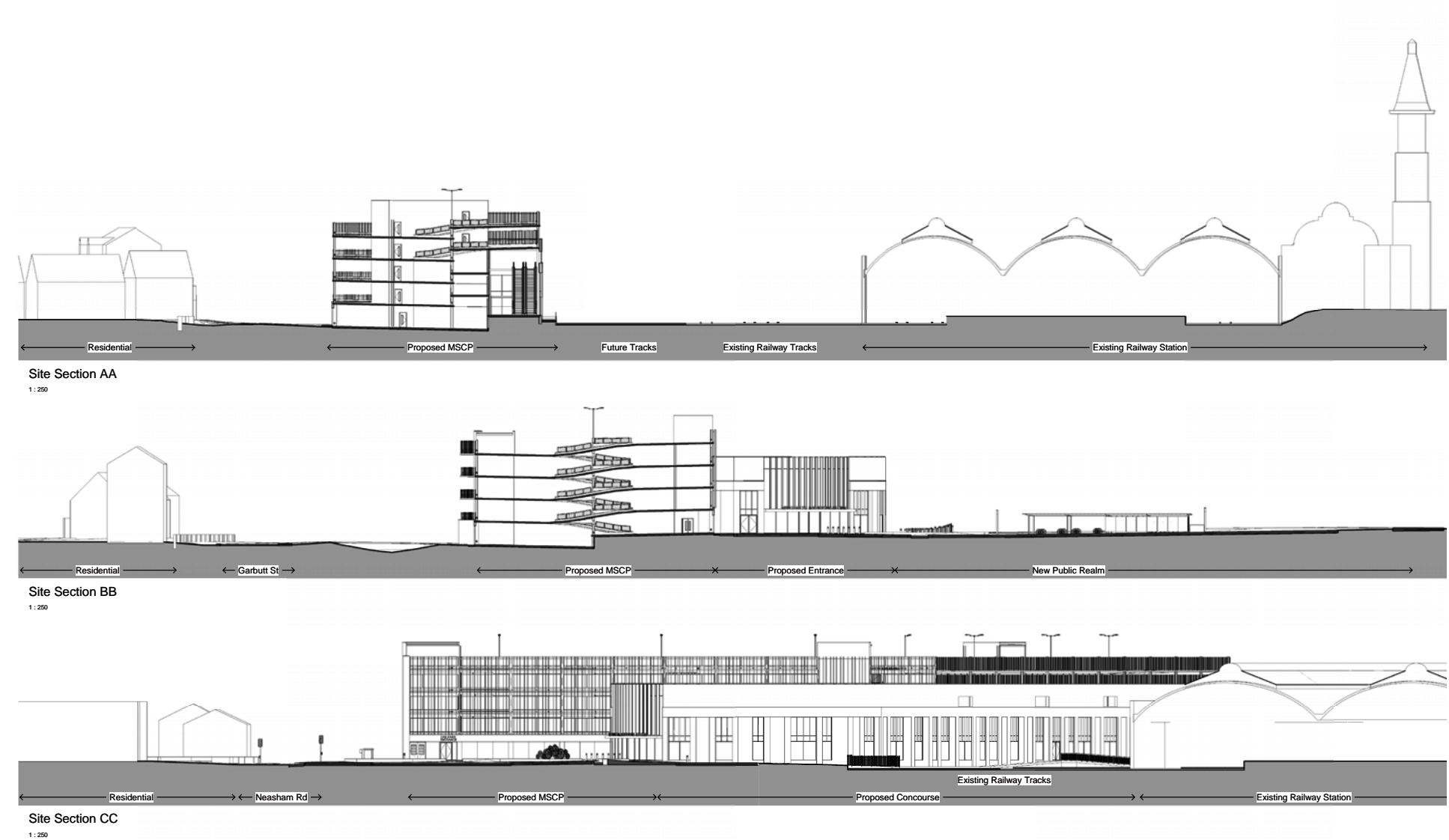
5.5 MSCP Scale

Massing

The building is located to create views to St. John’s Church from the new public square. This gives the listed church more prominence in the existing townscape to enhance its heritage status. The scale of the proposed building at four storeys high minimises any impact on the nearby heritage assets and does not negatively impact on the existing station.

The building is located adjacent to the railway tracks to allow for direct access to the new platforms. Site massing and site sections show the relationship between the new building and the existing station; the height of the top-level barrier is a similar height to the apex of the station roof.

The building is located to minimise impact on the surrounding residential properties; a minimum separation distance of 33 metres has been established between the new building and any adjacent properties. At four storeys high the level of the top deck of the building is at the approximate level of the ridge of the nearby four storey apartments.



Massing Sections

5.6 MSCP Access & Circulation

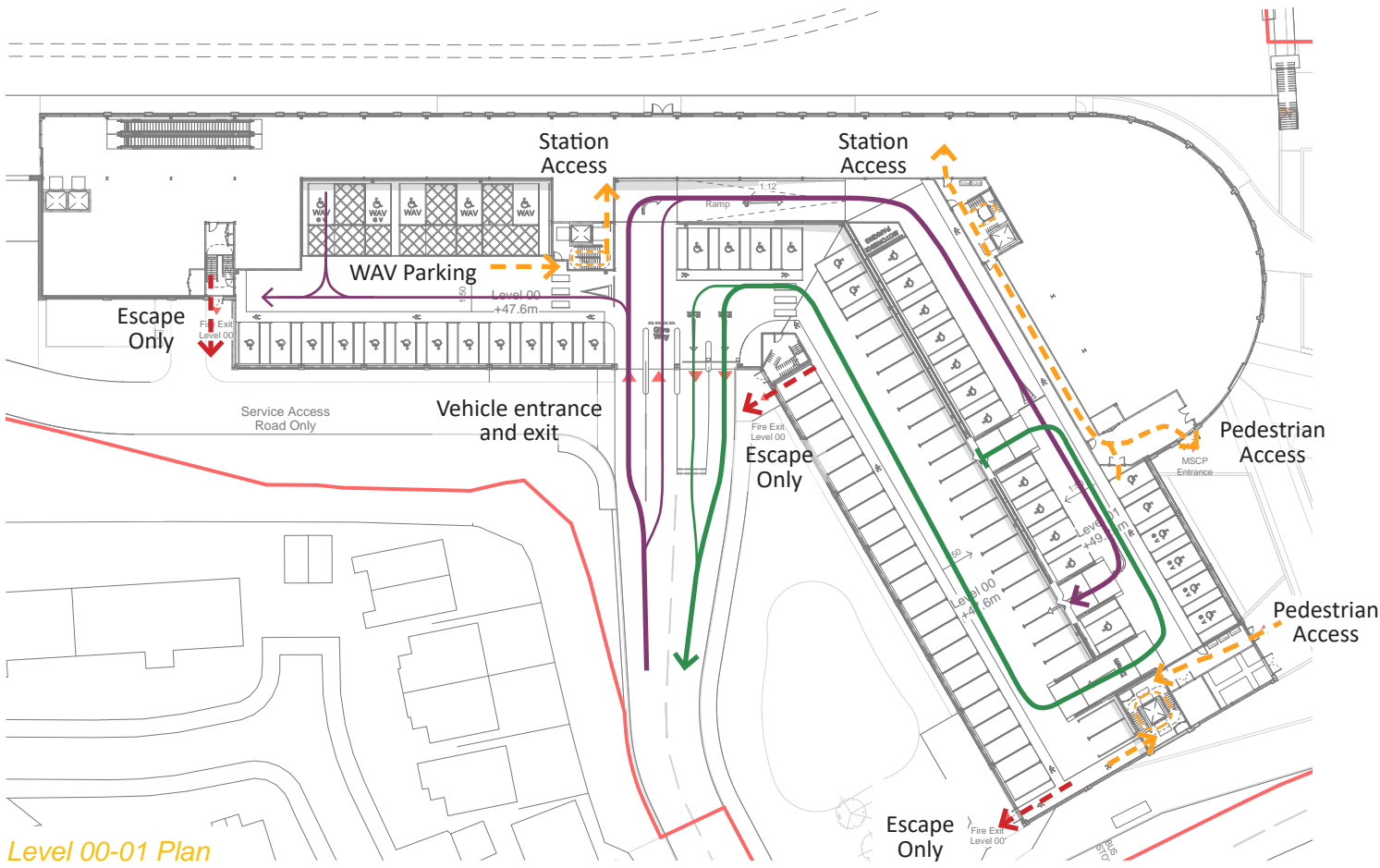
Circulation

The split level arrangement of the ramps has been designed to maximise the travel distance of vehicles going up the structure. The down ramps have been designed to minimise the travel distances of the exiting cars in a safe manner.

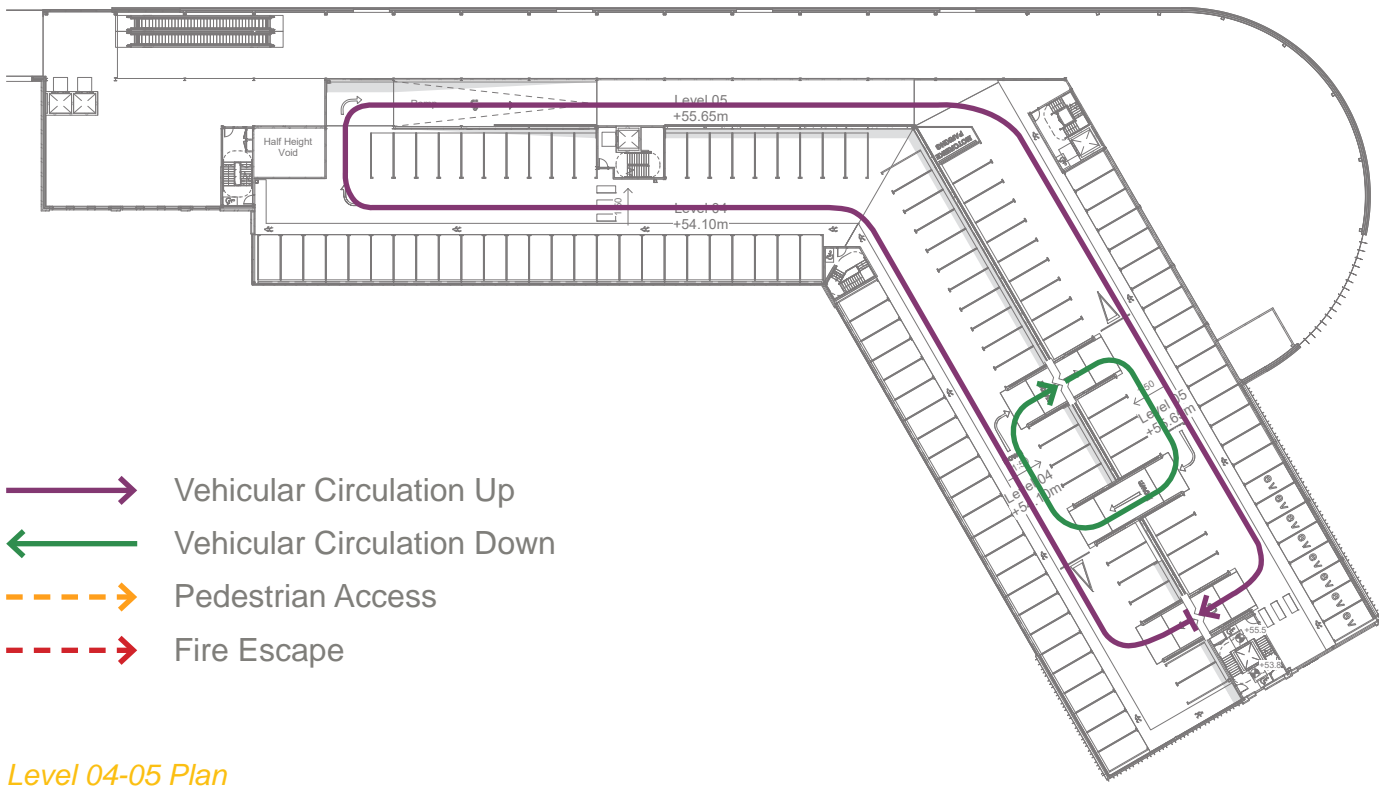
A single access and egress point for vehicles is located off a re aligned Garbutt Square which has been moved away from the residential properties. Dual entry and exit lanes are incorporated to aid traffic flow.

All parking spaces will be designed to meet UK parking standard sizes of 2.4 x 4.8m for standard spaces with an additional 1.2m access strip for accessible bays. 6% of the total spaces are accessible/ WAV spaces as per the client requirement located predominantly at level 00. Lift access is provided to all levels.

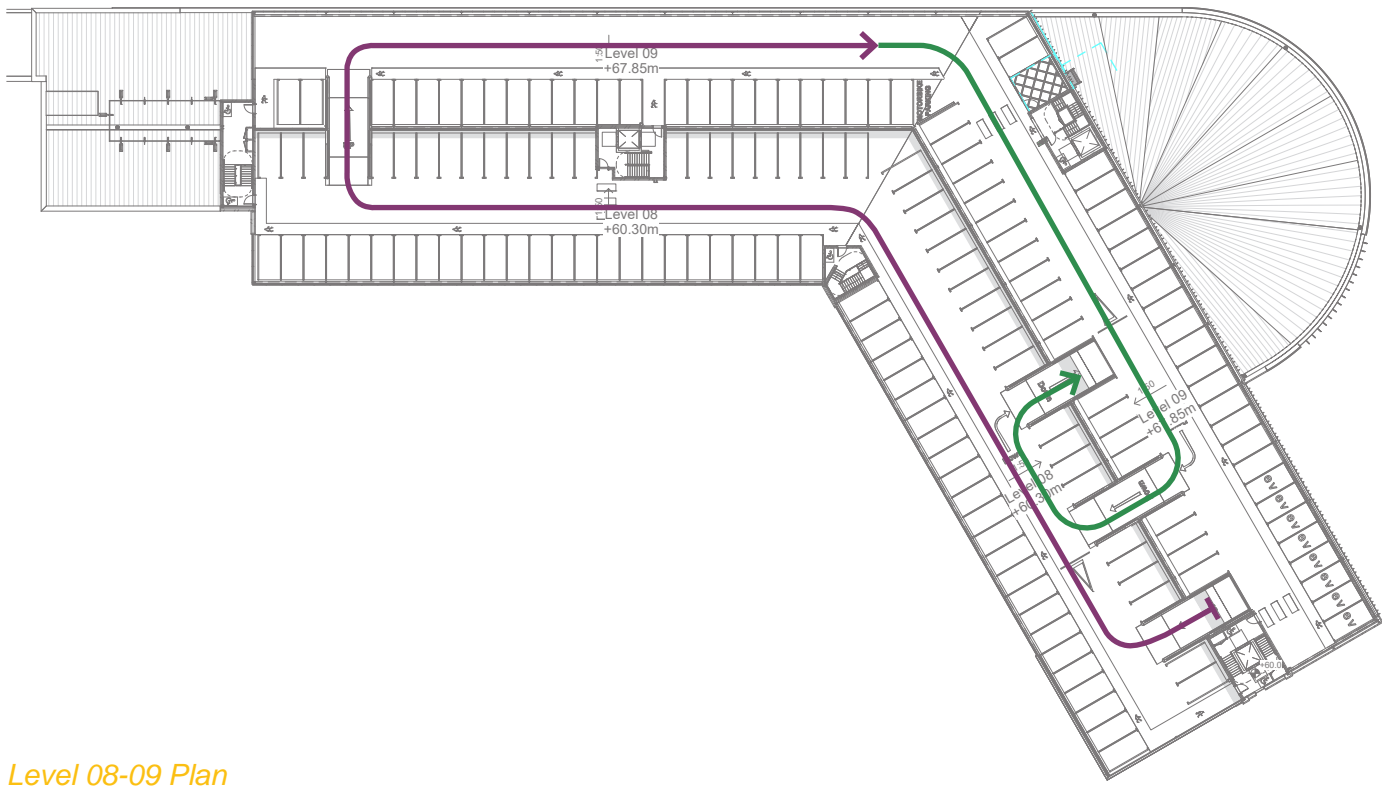
Pedestrian access is separate from the vehicular entrance and through a lobby containing the ticket machines. The south and central stair cores have access to the new concourse; the central and east stair cores have access to the public square.



Level 00-01 Plan



Level 04-05 Plan



Level 08-09 Plan

5.7 MSCP Appearance

MSCP Cladding Design

The façade treatments to MSCP have been designed flexibly and largely independent of the internal layout to allow for different cladding options to be considered.

The environmental strategy for the car park is for the building to be naturally ventilated to negate the need for large mechanical ventilation. The design of the façades therefore requires suitable free areas are required to maximise natural ventilation.

The design of the MSCP cladding features masonry to the ground floor. The brick wraps around the columns at ground floor with a runner course at first floor level. The masonry cladding creating a plinth around the base of the car park. At ground floor there are architectural mesh infill panels between the columns for security. The masonry plinth is designed to invoke the same language of masonry piers with a brick header course as per the western elevation of the existing station.

At the upper levels powder coated aluminium vertical fins wrap around the car park structure. Variation and rhythm are created by fluctuating the vertical spacing of the fins. The fin design allows for plenty of natural variation, whilst the design reflects the contemporary aesthetic required of the brief.

The elevation to Neasham Road has been highlighted by the planners as being a critical as it is prominent to the street scape. As such we have raised the masonry cladding full height at the corner to create a feature elevation.



Please note that building cladding and landscaping materials are in draft format only and are only shown for illustrative purposes

5.8 MSCP Cladding

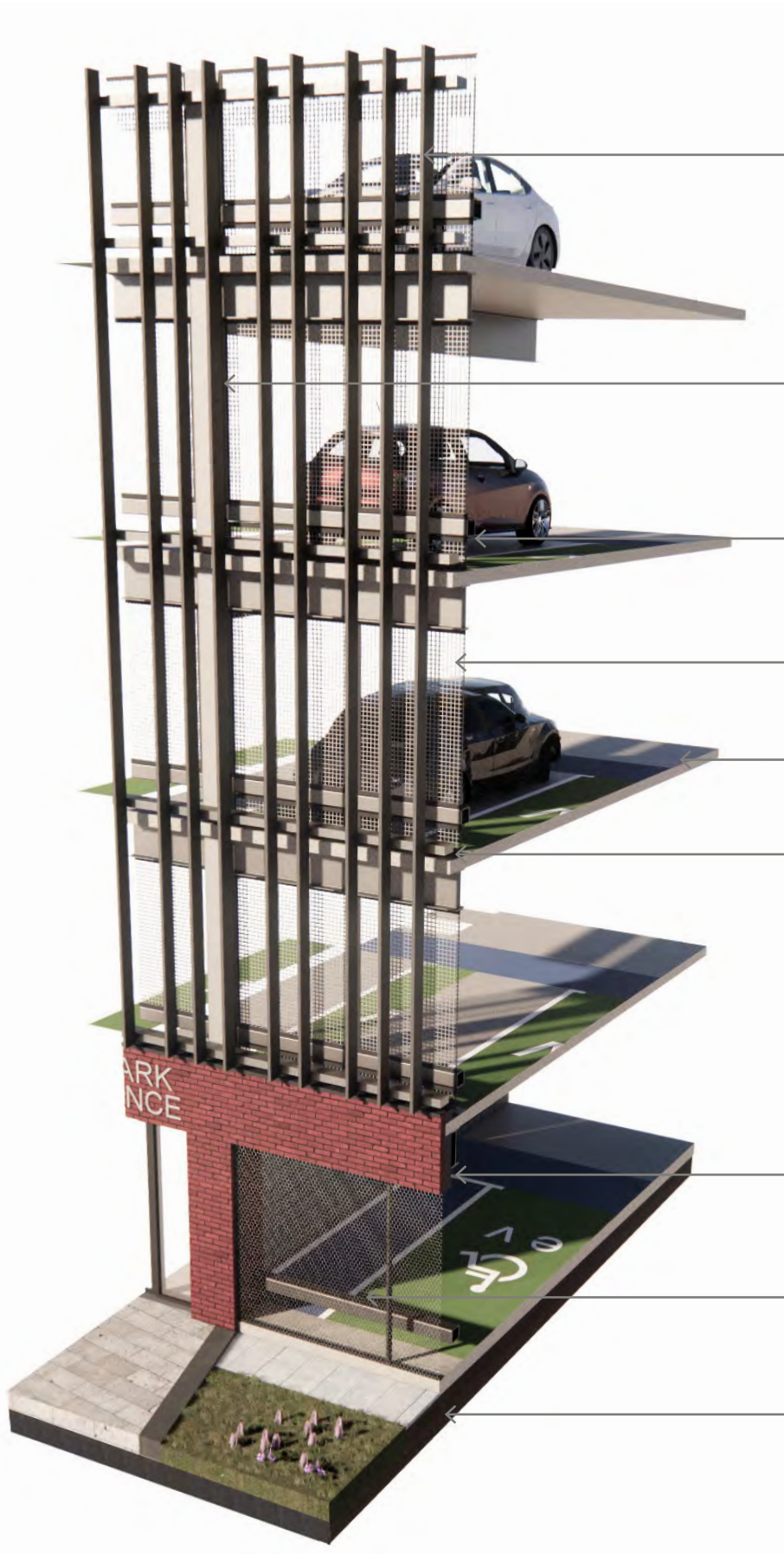
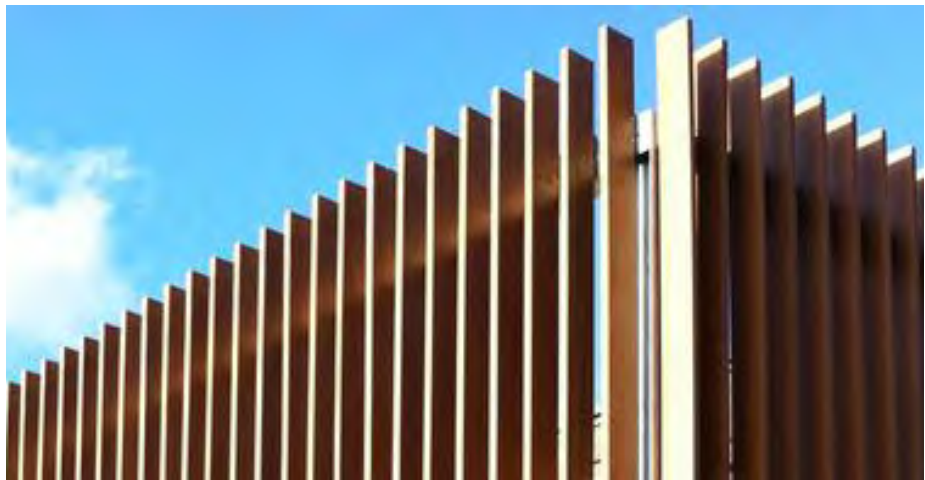
The primary cladding feature to the MSCP is the ‘Veil Wrap’ which comprises of vertical aluminium fins which wrap around the elevations above ground floor. To the rear of the fins is a galvanised steel mesh for security and safety to stop people falling through between the fins.

The spacings of the vertical fins are varied to create a sense of movement across the elevation. The fins have a semi open feel to the MSCP which changes from different angles, giving the elevations a different appearance from different angles.

The treatment of the ground floor draws from the railway heritage of the site. Masonry clad columns and a projecting runner course at ground floor draw inspiration from the western elevation of the existing station.

Between the runner course and the masonry columns are either inset brick panels or architectural mesh infill panels. The architectural mesh provides a safe and secure environment within the MSCP as well as a graffiti proof exterior finish.

The elevations facing onto Garbutt Square maintain the same masonry base and fill panels, however the vertical fins are replaced by flat bar steel handrails, coloured to match the vertical fins. The guardrails provide a functional open enclosure to the MSCP.



Vertical aluminium louvre 200mm deep,
@ 600-400mm centres

Structural column

Structural edge protection

Security mesh to rear of fins

Parking Decks

Continuous linear bracket to support louvres

Masonry plinth and projecting runner course to ground floor

Infill architectural mesh panel

Hard / Soft landscaping

5.9 Neasham Road Elevation

The Neasham Road gable elevation is one of the most visible parts of the building to the commuters and residents of Neasham Road. The design of the elevation has therefore been treated differently to the rest of the MSCP.

In keeping with our design language of overlapping forms which wrap over, under and around one another with varying levels of transparency and openness. We have expressed the three different volumes which terminate at Neasham Road. Separating the different volumes creates a dynamic form generating a sense of movement across the building mass.

The elevational treatment of the three volumes makes reference to the existing station which has a projecting runner course and brick piers with inset masonry infill. Each of the three volumes are a variation on the same motif.

- **Volume 1** follows the language as the rest of the MSCP with the vertical fin veil above ground floor with the masonry base.
- **Volume 2** articulates the circulation, the brickwork piers project out further then the rest of the elevation with a punched vertical window to the stair core
- **Volume 3** has full height masonry cladding with an inset panel to the centre which creates a canvas for signage for the scheme

