Traffix Group

Our Reference: G36505L-01A

28 July 2025

MERBO PROJECT MANAGEMENT PTY LTD
P.O. BOX 3349
DONCASTER EAST VIC 3109

Attention: Richard Merlino

Dear Richard,

1 Brighton Road, St Kilda – Proposed Mixed Use Development Traffic Engineering Assessment

Introduction

Further to your instructions, please find following our review of the amended development plans associated with the proposed mixed-use development at 1 Brighton Road, St Kilda.

The following report provides a traffic engineering assessment of traffic and parking issues associated with the development.

Proposal

The amended development scheme includes 40 apartments and two retail/shop tenancies at ground level. Development plans prepared by Bruce Henderson Architects which identify the car parking and vehicle access arrangements are attached at Appendix A.

Land Use

The 17 apartments across Levels 1 and 2 are for Specialist Disability Accommodation (SDA) and On-site Overnight Assistance (OOA). Details regarding SDA housing is provided as follows[1]:

> *Specialist disability accommodation (SDA) is a range of housing designed for people with extreme functional impairment or very high support needs.*
>
> *SDA dwellings have accessible features to help residents live more independently and allow other supports to be delivered better or more safely.*
>
> *Participants eligible for SDA:*
>
> - *have an extreme functional impairment or very high support needs*
> - *meet the specialist disability accommodation needs requirement and the NDIS funding criteria*

[1] https://www.ndis.gov.au/providers/housing-and-living-supports-and-services/specialist-disability-accommodation

Level 28, 459 Collins St
Melbourne Victoria 3000
T: 03 9822 2888
admin@traffixgroup.com.au
Traffix Group Pty Ltd
ABN: 32 100 481 570
traffixgroup.com.au

A development summary including allocation of car parking is provided in the table below.

Table 1: Development Summary and Car Parking Allocation

Use	Size/No.	Car Parking Allocation	Resultant Car Parking Rate
SDA Apartments (includes OOA)			
One-bedroom apt.	10	0	Nil.
Two-bedroom apt.	7	0	Nil.
Standard Residential Component			
Two-bedroom apt.	14	14	1 space / apartment
Three-bedroom apt.	9	18	2 space / apartment
Overall Residential Component			
Residential Visitors	40 (apt.)	0	Nil.
Commercial Component			
Shop/Retail	315m^2 (2 tenancies)	3 (inc. 1 x DDA space)	1.5 spaces per tenancy (0.952 spaces per 100m^2)
Total Car Parking		**35 spaces**	-

Car Parking and Vehicle Access

A total of 34 car spaces are provided on-site within the basement car park, including 32 resident spaces and 2 spaces for the shop staff. The basement car parking will include 11 car spaces within mechanical car stackers allocated to residents.

A single DDA compliant car parking space is provided at ground level with direct access from the rear ROW and is allocated to the retail uses.

Vehicle access to the basement is provided via a new 6.165m wide vehicle access ramp to the rear laneway near the site's southern boundary. The ramp narrows to a single lane and includes convex mirrors to control conflicts. Two-way passing opportunities are available at the top and bottom of the ramp.

Post-development, three on-street car space will be available along the site's frontage to Blessington Street (no change to existing conditions).

Pedestrian access to the apartments is via a shared lobby from Brighton Road at the site's eastern boundary. Separate access to each of the retail tenancies will be provided.

Bicycle Parking

The amended development scheme identifies the provision of 36 bicycle spaces including 32 spaces within Basement Level 1 and 4 spaces at Ground Level (via two rails).

The secure bicycle parking within the basement is for use by residents and staff. This bicycle parking includes 6 spaces via horizontal rails.

Bicycle parking at Ground Level is for customers or visitors and includes 2 horizontal rails (4 spaces).

A series of five existing horizontal rails (10 spaces) are also provided within the nature strip areas along the site's frontage to Brighton Road. Accordingly, a total 14 spaces will be available for any visitors/customers.

Loading

The development plans identify a 2.8m wide drop off zone located adjacent to the DDA car space provided at ground level and accessed via the adjacent ROW.

Waste Collection

A consolidated waste storage room is provided at ground level.

Waste collection is to occur at ground level via a private contractor using a 6.4m waste collection truck that would prop within the drop off zone adjacent to the DDA car space.

Planning Permit

The development scheme endorsed under Planning Permit No. 665/2016/B included a multi storey mixed use development, comprising 30 apartments and three retail/shop tenancies at ground level.

Planning Permit 665/2016/B allows for:

In accordance with the endorsed plans:

- *Construct a building or construct or carry out works under the C1Z;*
- *To use the land for a dwelling under the C1Z;*
- *Construct a building or construct or carry out works in the SBO2;*

A development summary of the endorsed plans (Plans Endorsed 04/01/2023) including allocation of car parking is provided in the table below.

Table 2: Development Summary and Car Parking Allocation - Endorsed Scheme (04/01/2023)

Use	Size/No.	Car Parking Allocation	Resultant Car Parking Rate
One-bedroom apt.	5	5	1 space / apartment
Two-bedroom apt.	10	10	1 space / apartment
Three-bedroom apt.	15	30	2 spaces / apartment
Surplus Resident Parking		7 spaces	Allocation to be determined
Residential Visitors	30 (apt.)	0	Nil.
Shop/Retail	336.6m^2 (3 tenancies)	3 (inc. 2 tandem & 1 x DDA space)	1 space per tenancy (0.89 spaces per 100m^2)
Total Car Parking		55 spaces	-

Vehicle access arrangements were generally consistent with the current development scheme and included:

- Access to the basement car parking via the rear laneway,
- Use of single lane ramp to access basement car parking areas, and
- Loading/Waste Collection within setback adjacent to the rear laneway.

Conditions within Planning Permit No. 665/2016/B that relate to traffic engineering matters are summarised as follows:

Car parking allocation

15. *Without the further written consent of the Responsible Authority, car parking for the approved development must be allocated on any Plan of Subdivision as follows:*
    - *Not less than 1 space for each one and two bedroom dwelling.*

- *At least 3 spaces for the retail tenancies (combined).*

The amended application will require modifications to Condition 15 noting that SDA apartments include a zero provision of car parking.

Existing Conditions

Subject Site

The subject site is located on the west side of Brighton Road in between Blessington Street and Moroney Street in St Kilda. A locality plan, aerial photograph and photograph of the site's frontage are provided at Figure 1 to Figure 3, respectively.

The site is rectangular in shape and has a total site area of approximately 910m². The site has direct frontages to Blessington Street and Brighton Road of approximately 30.5m and 29.6m, respectively. A ROW extends along the western boundary of the site.

The site is currently vacant and was historically occupied by the 'Greyhound Hotel'. Vehicle access to the site was via a 3.55-3.70m wide ROW with no provision of on-site car parking.

A total of 3 on-street car spaces are located along the site's frontage to Blessington Street, including:

- 1 x 'Loading Zone 30 minute 9am-5pm Mon-Sat' space, and
- 2 x '1/4P 9am-5pm Mon-Sat' spaces.

No on-street car spaces are available along the site's frontage to Brighton Road due to 'No Stopping' restrictions.

The site is located within a Commercial 1 Zone (C1Z) under the Planning Scheme as presented in Figure 4. The site is also located within the Principal Public Transport Network (PPTN) area. Land-use in the immediate vicinity of the site is a mixture of residential to the west and commercial uses to the east.

Carlisle Street Activity Centre is also located on the east side of Brighton Road/St Kilda Road and has access to a wide variety of everyday services, public transport links and recreational uses. Significant nearby land uses and Activity Centres are detailed below:

- St Kilda Town Hall, located approximately 220m east of the site,
- St Kilda Botanical Gardens, located approximately 250m west of the site,
- Acland Street Activity Centre, located approximately 600m west of the site, and
- Balaclava Railway Station, located approximately 750m east of the site.

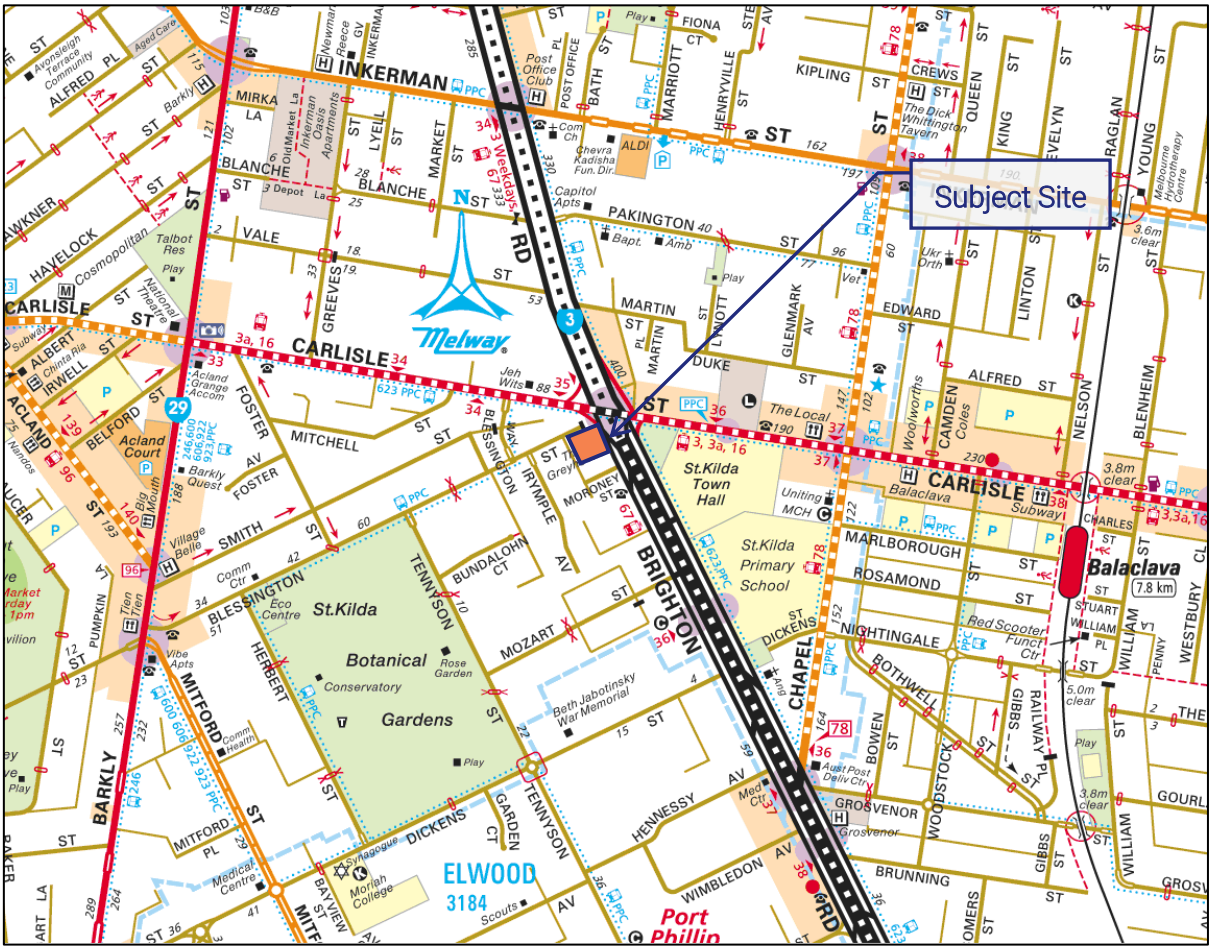


Figure 1: Locality Plan (Source: Melways)

Figure 2: Aerial Photograph (Source: NearMap)

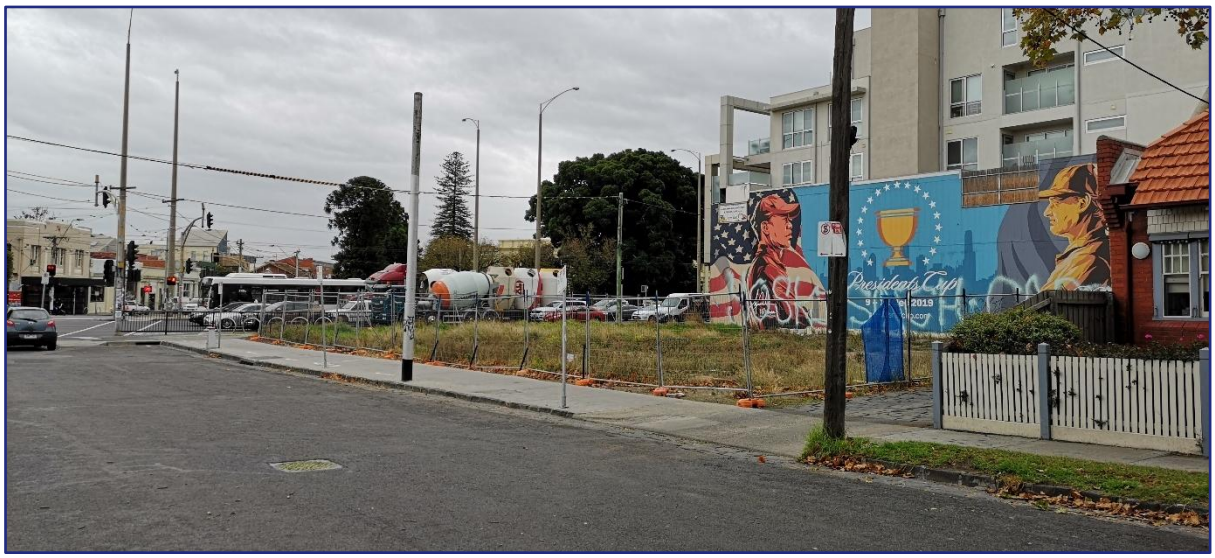


Figure 3: Subject Site

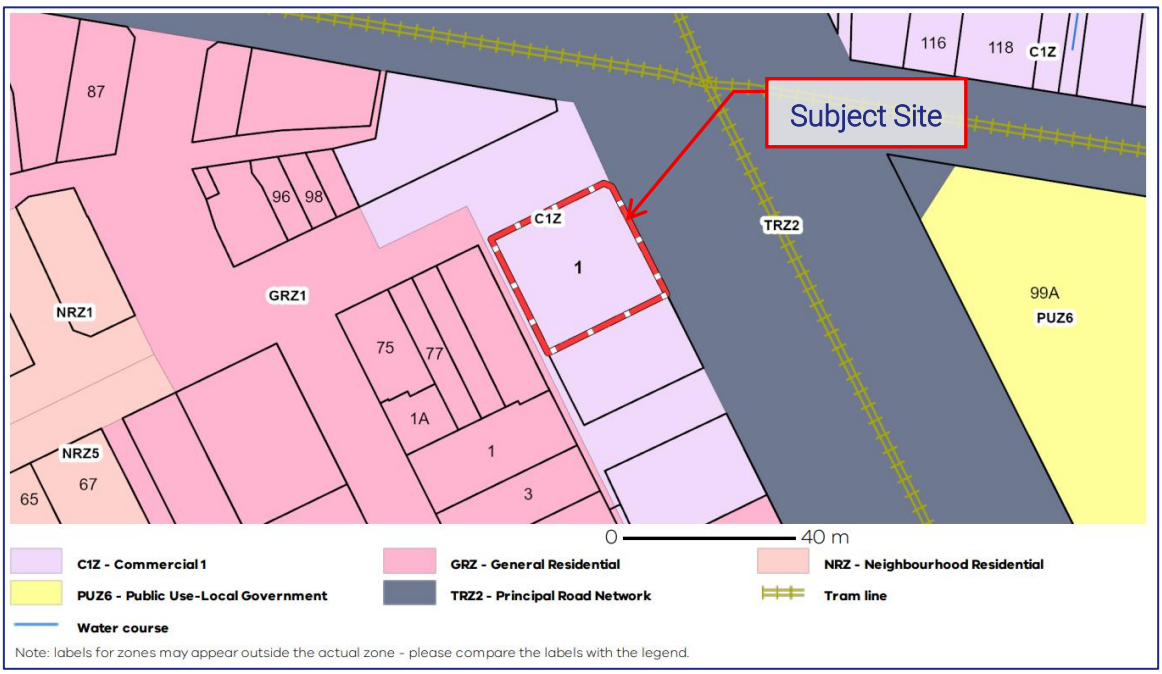


Figure 4: Land Use Zoning Map (Source: VicPlan)

Road Network

Blessington Street is classified as a local road and is generally aligned in an east-west direction between Marine Parade in the west and Brighton Road in the east.

Blessington Street has a carriageway width of approximately 9.8m, which accommodates kerbside parking on both sides (indented angled parking on the north) and a traffic lane in each direction.

On-street parking within Blessington Street is a mixture of unrestricted, short-term '2P or less' and 'Zone' restrictions.

The default urban speed limit of 50km/h applies to Blessington Street.

A Right-of-Way (ROW) extends in a north-south direction between Blessington Street in the north and Moroney Street in the south.

The ROW has a carriageway width of between 3.55-3.7m which accommodates a single traffic lane for two-way movements. Parking along the ROW is not permitted due to the insufficient carriageway width.

The ROW currently provides direct access to the site, a number of dwellings fronting Irymple Avenue and the multi-storey building fronting Brighton Road (No. 7 Brighton Road).

Moroney Street is classified as a local road and is generally aligned in an east-west direction between Brighton Road in the east and a ROW in the west.

Moroney Street has a carriageway width of approximately 6.2m which accommodates kerbside parking on the south side only and a traffic lane for two-way movements.

On-street parking within Moroney Street is short-term (2P) and 'Permit Zone' restrictions.

The default urban speed limit of 50km/h applies to Moroney Street.

Brighton Road is a VicRoads declared Arterial Road and a Road Zone Category 1 under the Planning Scheme. Brighton Road generally extends in a north-south direction between Carlisle Street in the north (where it continues as St Kilda Road) and Hotham Street in the south (where it continues as Nepean Highway).

Brighton Road provides for a central carriageway with service roads on either side. The central carriageway accommodates two traffic lanes in each direction with a central dedicated tramway.

The service roads accommodate two traffic lanes, a bicycle lane and a kerbside parking lane.

On-street parking within the service road is a mixture of unrestricted, short-term '2P or less', ticket long-term '10P' and 'Zone' restrictions.

A sign-posted speed limit of 60km/h applies to Brighton Road, in the vicinity of the site.

Photos of the surrounding road network to the site are presented in Figure 5 to Figure 10.

Figure 5: Blessington Street (view west from ROW)

Figure 6: Blessington Street (view east from ROW)

Figure 7: ROW (view north)

Figure 8: ROW (view south)

Figure 9: Moroney Street (view west)

Figure 10: Moroney Street (view east)

Public Transport

The site is served by several public transport services, including bus, tram and train services located within walking distance of the site.

A total of three tram services operate along the site's frontage with Balaclava Railway Station located 450m east of the site.

The public transport network surrounding the site is shown in Figure 11.

Figure 11: Public Transport Network

Car Parking Assessment

Statutory Car Parking Assessment

The proposed development falls under the land-use category of 'dwelling' and 'shop' under Clause 73.03 of the Planning Scheme. The Planning Scheme sets out the parking requirements for new developments under Clause 52.06.

The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

The car parking requirements for the proposed use are set out under Clause 52.06 and the car parking table at Clause 52.06-5 of the Planning Scheme.

The site is located within the Principal Public Transport Network area and as per Clause 52.06-5, the Column B parking requirements apply. The statutory car parking assessment of the development is set out in the table below.

Table 3: Statutory Car Parking Assessment - Clause 52.06-5

Use	No.	Statutory Parking Rate (Column B)	Parking Requirement (Note 1)	Parking Provision	Shortfall/ Surplus
SDA Component:					
One-bedroom apt. inc. OOA	10	1 car space per dwelling	10	0	-10
Two-bedroom apt.	7		7	0	-7
Standard Residential Component:					
Two-bedroom apt.	14	1 car space per dwelling	14	14	0
Three-bedroom apt.	9	2 car spaces per dwelling	18	18	0
Overall Residential Component					
Residential Visitors	40	None	0	0	0
Commercial Component:					
Shop	315m^2	3.5 car spaces to each 100m^2 LFA	11	3	-8
TOTAL			**60**	**35**	**-25**

Note 1: Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number.

Under Clause 52.06-5, the statutory parking requirement for the development is 60 car spaces, including 49 resident spaces and 11 shop spaces.

The provision and allocation of 35 car spaces, including 32 resident spaces and 3 shop spaces results in a reduction of 17 car spaces associated with the dwellings (specifically the SDA component) and 8 car spaces associated with the shop tenancies. Significantly, under the current planning controls there is no requirement to provide any visitor car parking for the development.

Accordingly, a reduction of the standard car parking requirements is sought by this application.

As the reduction in car parking for the shop/retail component was approved under the existing permit we have considered the reduction associated with the SDA dwellings only. There is no reduction sought in association with the standard dwellings and as such no further car parking demand assessment is required.

Reducing the Requirement for Car Parking

Clause 52.06-7 allows for the statutory car parking requirement to be reduced (including to zero). An application to reduce (including reduce to zero) the number of car spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay must be accompanied by a Car Parking Demand Assessment.

Clause 52.06-7 sets out that a Car Parking Demand Assessment must have regard to the following key factors:

- *The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.*
- *The variation of car parking demand likely to be generated by the proposed use over time.*
- *The short-stay and long-stay car parking demand likely to be generated by the proposed use.*
- *The availability of public transport in the locality of the land.*
- *The convenience of pedestrian and cyclist access to the land.*
- *The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.*
- *The anticipated car ownership rates of likely or proposed visitors to or proposed occupants (residents or employees) of the land.*
- *Any empirical assessment or case study.*

Planning Practice Note 22 (August, 2023) specifies that the provisions for reducing the car parking requirement draw a distinction between the assessment of likely demand for car parking spaces (the Car Parking Demand Assessment), and whether it is appropriate to allow the supply of fewer spaces than assessed by the Car Parking Demand Assessment. These are two separate considerations, one technical while the other is more strategic. Different factors are taken into account in each consideration.

Accordingly, the applicant must satisfy the responsible authority that the provision of car parking is appropriate on the basis of a two-step process, which has regard to:

- *Likely demand for car parking spaces.*
- *Whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the site.*

An assessment of the appropriateness of reducing the car parking provision below the statutory requirement is set out below.

Car Parking Demand Assessment

SDA Component

The proposal is to form part of the SDA housing scheme and will be operated by a licenced NDIS provider. The occupants of the dwellings will be aware of the non-provision of car parking noting that the intended occupants are those that would not own or drive a vehicle because of their specific disability.

Visitors are anticipated to attend the site infrequently and at times will generate a demand for car parking.

We expect that car parking demands generated by the site will generally not exceed 3 spaces and any overflow can be accommodated on-street or within nearby suitable car parking as required.

Any visitors and support workers can also easily access the site via alternative transport modes as required noting the site's proximate location to public transport services.

Based on the above, we are satisfied that a full car parking reduction for the SDA component is an acceptable outcome.

Appropriateness of Providing Fewer Spaces than the Number Likely to be Generated

The second step is to consider whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the site as assessed by the Car Parking Demand Assessment.

Clause 52.06-7 sets out a series of car parking provision factors that should be considered when assessing the appropriateness of providing fewer car spaces on the site than are likely to be generated by the use. The most relevant car parking provision factors are provided as follows:

- *The Car Parking Demand Assessment.*
- *On street parking in residential zones in the locality of the land that is intended to be for residential use.*
- *Access to or provision of alternative transport modes to and from the land.*

Car Parking Demand Assessment

As detailed above, we are satisfied that a full waiver in car parking for the SDA apartments is acceptable. Any visitors or support staff can park within suitable car parking in the nearby area or access the site via public transport.

Availability of Car Parking

We are satisfied that suitable on-street car parking is available in the nearby area to accommodate the visitor and support staff car parking demands associated with the development.

Impacts on Activity Centres

The site is located on Brighton Road and within close proximity to a number of designated activity centres.

The immediate area includes a mixture of commercial, residential and community uses within close proximity to the subject site. A significant proportion of these uses rely on on-street car parking for short-term demands, consistent with a centre based approach to car parking.

Practice Note 22 (Using the Car Parking Provisions, August 2023) states that:

> *Where a change of use or a small extension is consistent with the strategic plan for a centre and car parking cannot easily be provided, a reduced car parking provision is often appropriate. Some activity centres will have excellent public transport access, ample car parking or mainly serve local customers who arrive on foot. In such circumstances, an increase in business and activity would increase the overall viability of the centre and the reduced number of car trips would provide positive impacts.*
>
> *Car parking should be considered on a centre-wide basis rather than on a site-by-site basis, to support a centre's long-term viability.*

In this instance, the parking impacts of the development are relatively small in practice, particularly given the existing demands that are experienced in this area. In this context, a centre-based approach to parking is appropriate and the reliance on off-site car parking for mainly short-term demands (i.e. visitors and support staff) is appropriate.

Alternative Transport Modes

The subject site has a high level of access to alternative transport modes including:

- public transport services, including tram, train and bus services,
- provision of bicycle parking, and
- the site's location is walkable.

Overall, we are satisfied that the access to alternate transport supports the non-provision of car parking for the SDA apartments.

Overall, we are satisfied that the parking reduction sought by the proposed development is acceptable and supported under the relevant decision guidelines of Clause 52.06 of the Planning Scheme.

Bicycle Parking Assessment

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments and changes in use. The table below details the statutory bicycle requirement of the development. Based on the size of the shop tenancies there is no specific bicycle parking requirement for this use.

Table 4: Statutory Bicycle Parking Assessment – Clause 52.34

Proposed Use	Size/No.	Bicycle Parking Rate		No. of Bicycle Spaces Req.
		Resident/Staff	Visitor	
Dwellings	40	1 per 5 dwellings	1 per 10 dwellings	8 resident 4 visitor
Retail	315m^2	1 per 300m^2 of LFA	1 per 500m^2 of LFA	1 staff 1 visitor
Total				**14 spaces**

The proposal has a statutory bicycle requirement of 14 bicycle spaces.

The development plans detail 36 onsite bicycle spaces for use by residents and staff. Accordingly, the provision of bicycle parking exceeds the minimum bicycle parking requirements of Clause 52.34.

The secure bicycle parking spaces will be provided via wall-mounted 'Ned Kelly' racks and 'Flat Top' horizontal rails. The space allowed for on the plans satisfies the specifications of AS2890.3-2015 and is satisfactory. The provision of horizontal bicycle spaces satisfies the minimum 20% requirement of bicycle spaces being in the form of horizontal rails under Clause 2.1 (e) of AS2890.3-2015.

Bicycle parking for any customers or visitors is identified within a series of rails provided within nature strip areas along the site's frontage to Brighton Road (10 spaces via 5 existing rails) and via two rails near the building entry (4 spaces).

Based on the above, we are satisfied with the provision of bicycle parking in this development.

Review of Car Parking Layout and Access Arrangements

Traffix Group has provided design advice to the project architect to achieve a satisfactory carpark layout. The proposed parking layout has been assessed under the following guidelines:

- Clause 52.06-9 of the Planning Scheme (Design Standards for car parking),
- AS2890.1-2004 – Part 1: Off-Street Car Parking (where relevant), and
- AS2890.6-2009 – Part 6: Off-Street Car Parking for People with Disabilities.

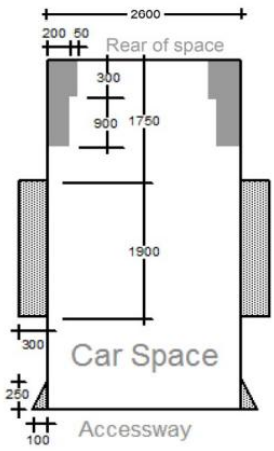
An assessment against the relevant design standards of the Planning Scheme and Australian Standards (where relevant) is provided in the table below.

Table 5: Carpark Layout and Access Assessment

Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 1 – Accessways		
Must be at least 3m wide	✓	Accessways are greater than 3m in width
Have an internal radius of at least 4m at changes of direction or intersection or be at least 4.2m wide.	o	B99 design car can navigate all bends. Objective achieved.
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forwards direction with one maneuver.	N/A	Not a public carpark.
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	✓	Complies.
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	✓	Complies.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Transport Zone 2 or Transport Zone 3.	✓	Passing area provided.

<table>
<tr><th>Requirement</th><th>Assessment</th><th>Design Response</th></tr>
<tr><td>Have a corner splay or area at least 50% clear of visual obstructions extending at least 2m along the frontage road from the edge of an exit lane and 2.5m along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.</td><td>✓</td><td>A pedestrian sight triangle is not available on the south side of the accessway. Instead a convex mirror is included to improve visibility for vehicles departing the site and we are satisfied that it is acceptable noting the low pedestrian and traffic movements expected along the rear laneway.</td></tr>
<tr><td>If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6m from the road carriageway.</td><td>N/A</td><td>Not applicable</td></tr>
<tr><td>If entry to the car space is from a road, the width of the accessway may include the road.</td><td>N/A</td><td>Not applicable</td></tr>
<tr><td colspan="3">Clause 52.06-9 Design Standard 2 – Car Parking Spaces</td></tr>
<tr><td>Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 under Clause 52.06-9.
<table>
<tr><th>Angle of car spaces to accessway</th><th>Accessway width</th><th>Car park width</th><th>Car park length</th></tr>
<tr><td>Parallel</td><td>3.6 m</td><td>2.3 m</td><td>6.7 m</td></tr>
<tr><td>45°</td><td>3.5 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td>60°</td><td>4.9 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td>90°</td><td>6.4 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td></td><td>5.8 m</td><td>2.8 m</td><td>4.9 m</td></tr>
<tr><td></td><td>5.2 m</td><td>3.0 m</td><td>4.9 m</td></tr>
<tr><td></td><td>4.8 m</td><td>3.2 m</td><td>4.9 m</td></tr>
</table>
Note to Table 2: Some dimensions in Table 2 vary from those shown in the Australian Standard AS2890.1-2004 (off street). The dimensions shown in Table 2 allocate more space to aisle widths and less to marked spaces to provide improved operation and access. The dimensions in Table 2 are to be used in preference to the Australian Standard AS2890.1-2004 (off street) except for disabled spaces which must achieve Australian Standard AS2890.6-2009 (disabled).</td><td>✓</td><td>All car spaces are 2.6m wide x 4.9m with a 6.4m min. wide access aisle with the exception of Car Spaces 17 and 18 which comply with the dimensional requirements of AS2890.1-2004.

Access to and from the critical car spaces within the basement carpark have been checked for access by the B85 design car (specified at Appendix B of AS2890.1-2004).</td></tr>
</table>

Requirement	Assessment	Design Response
A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1, other than: • *A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1.* • *A structure, which may project into the space if it is at least 2.1 metres above the space.* **Diagram 1 Clearance to car parking spaces**  	✓	Complies.
Car spaces in garages/carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage/carport.	✓	Complies.
Where parking spaces are provided in tandem, an additional 0.5m in length must be provided between each space.	N/A	No tandem car spaces.
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	✓	All resident spaces are under cover.
Disabled car parking spaces must be designed in accordance with AS2890.6-2009 and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 0.5m. *A minimum headroom of 2.5m is to be provided above the disabled car space in accordance with AS2890.6-2009.*	✓	Complies.

<table>
<tr><th>Requirement</th><th>Assessment</th><th>Design Response</th></tr>
<tr><td colspan="3">Clause 52.06-9 Design Standard 3 - Gradients</td></tr>
<tr><td>Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage.

This does not apply to accessways serving three dwellings or less.</td><td>O</td><td>Access is limited to 0.885m @ -1:11, 2m @ flat then 2.115m @ 1:8.

Whilst not strictly limited to 1:10, the overall level drop is the same less than 5m @ 1:10.

Objective achieved.</td></tr>
<tr><td>Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction.
<table>
<tr><th>Type of car park</th><th>Length of ramp</th><th>Maximum grade</th></tr>
<tr><td rowspan="2">Public car parks</td><td>20 metres or less</td><td>1:5 (20%)</td></tr>
<tr><td>longer than 20 metres</td><td>1:6 (16.7%)</td></tr>
<tr><td rowspan="2">Private or residential car parks</td><td>20 metres or less</td><td>1:4 (25%)</td></tr>
<tr><td>longer than 20 metres</td><td>1:5 (20%)</td></tr>
</table></td><td>✓</td><td>Complies.</td></tr>
<tr><td>Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.</td><td>✓</td><td>Complies.</td></tr>
<tr><td>Plans must include an assessment of grade changes of greater than 1:5.6 (18 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority</td><td>✓</td><td>Complies.</td></tr>
<tr><td colspan="3">Clause 52.06-9 Design Standard 4 – Mechanical Parking</td></tr>
<tr><td>At least 25 per cent of the mechanical car parking spaces can accommodate a vehicle height of at least 1.8 metres.</td><td>✓</td><td>100% of stacker spaces provide 1.8m height.</td></tr>
<tr><td>Car parking spaces that require the operation of the system are not allocated to visitors unless used in a valet parking situation.</td><td>✓</td><td>All parking allocated to permanent residents.</td></tr>
</table>

Requirement	Assessment	Design Response
The design and operation is to the satisfaction of the responsible authority.	✓	Details of the stacker operation are provided below.
Clause 52.06-9 Design Standard 5 – Urban Design		
Ground level car parking, garage doors and accessways must not visually dominate public space.	N/A*	These matters are more related to urban design, rather than specifically traffic engineering.
Car parking within buildings (including visible portions of partly submerged basements) must be screened or obscured where possible, including through the use of occupied tenancies, landscaping, architectural treatments and artworks.		
Design of car parks must take into account their use as entry points to the site.		
Design of new internal streets in developments must maximise on street parking opportunities.	N/A	No internal streets proposed
Clause 52.06-9 Design Standard 6 – Safety		
Car parking must be well lit and clearly signed.	N/A	Car parking is all private for use by residents and staff, and we are satisfied that signage is not strictly required. The basement will be adequately lit.
The design of car parks must maximise natural surveillance and pedestrian visibility from adjacent buildings.	✓	We are satisfied that the common accessway naturally provides good sightlines.
Pedestrian access to car parking areas from the street must be convenient.	✓	Access to the on-site car parking areas will occur through the lobby and lift which is acceptable.
Pedestrian routes through car parking areas and building entries and other destination points must be clearly marked and separated from traffic in high activity parking areas.	✓	We are satisfied that separated pedestrian lanes are not required for the anticipated low level of traffic.

Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 7 - Landscaping		
The layout of car parking areas must provide for water sensitive urban design treatment and landscaping.	N/A*	These requirements are not strictly related to traffic engineering matters.
Landscaping and trees must be planted to provide shade and shelter, soften the appearance of ground level car parking and aid in the clear identification of pedestrian paths.		
Ground level car parking spaces must include trees planted with flush grilles. Spacing of trees must be determined having regard to the expected size of the selected species at maturity.		

Further Design Commentary – Mechanical Parking

The proposed car parking arrangement accommodates 11 car spaces within mechanical car stacker systems. Suitable systems include the Klaus Trendvario 6200 or equivalent systems, which provide car spaces over two levels (at-grade and above – no pit) to allow independent access. Stacker spaces will be allocated for use by residents only.

For the purpose of our assessment the use of the Klaus Trendvario 6200 system has been adopted. Specification are available at https://www.multiparking.com.au/trendvario-6200/.

It is noted that the use of an independent car stacker system in this development is an acceptable design solution as the spaces will be generally used for long-term parking by residents and staff who will become familiar with the use of the systems.

These systems are simple to use, with suppliers providing appropriate written, wall mounted instructions. The supply of these systems typically includes on-site training to users under maintenance contracts, which is typical of other mechanical plant included in buildings (lifts, air-conditioning, etc.).

A summary of the car stacker system proposed in this development is provided in the following table.

Table 6: Assessment of Car Stacker Design

Specifications		Klaus Trendvario 6200
Type of system		2 level independent stack parker without pit
Number of spaces		Total 11 spaces 6 units wide x 2 units tall
Grid Width		2.9m standard (Grid width accords with Clause 52.06-9)
Usable Platform Width		GF: 2.6m UF: 2.7m (Accords with AS2890.1-2004)
Minimum Access Aisle Width Behind Stacker		5.850m (Accords with AS2890.1-2004)
Pit Length		5.5m (accommodates 5.1m long vehicle)
Headroom Clearance		Min. 4.3m
Car Height	**Upper Level**	2.0m
	Entry Level	2.0m
% of mechanical spaces accommodating 1.8m car heights		100% (11/11 spaces) Accords with Clause 52.06-9

In addition to the information provided above, access to typical car stacker spaces has been checked based on the B85 design car presented in AS2890.1-2004 and we are satisfied that vehicles will be able to safely manoeuvre to and from each space and exit the development in a forwards direction.

Overall, we are satisfied that the parking layout and vehicle access arrangements are acceptable and accord with the objectives of the Planning Scheme and AS2890.1-2004.

Loading and Waste Collection

Loading

Clause 65.01 of the Planning Scheme specifies that:

> *Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:*
>
> - *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

The development plans identify the provision of a 2.8m wide drop off zone located adjacent to the DDA car space provided at ground level and accessed via the adjacent ROW. In this case, short term obstructions to access from the DDA space is deemed acceptable.

This drop off zone is adequate to accommodate loading demands associated with the waste collection vehicles and other small commercial vehicles associated with any resident (i.e. furniture delivery via van or ute) and retail loading demands. Noting that based on the size of the retail tenancies the associated loading demands are expected to be minimal.

We are also satisfied loading activities may occur on-street along Blessington Street where some car parking spaces are controlled by 'Loading Zone' restrictions.

Accordingly, we are satisfied that the on-site provisions for loading are acceptable and will not result in amenity, traffic flow or road safety impacts.

Waste Collection

The development provides a consolidated bin area at ground level. Waste collection is to occur at ground level within the drop off zone via a private contractor using a 6.4m waste collection truck.

Swept path assessments have been undertaken to demonstrate that the specified waste collection vehicle can safely use the drop off zone. The swept paths are attached at Appendix B.

Traffic Impacts

We have adopted the following traffic generation rates for the car parking provided on-site:

- Dwellings
  - Each dwelling with allocated car parking will generate an average of 3 vehicle trips per day.
  - 10% of the daily traffic generation occurs during the road network peak hours.
- Staff Car Spaces (commercial uses)
  - Each car space will generate 2.4 vehicle trips per day
  - Each car space will generate 0.5 vehicle trips per hour during the peak hours

The table below summarises the traffic generation of the proposal.

Table 7: Expected Traffic Generation

Use	Size/No.	Daily Traffic Generation Rate	Daily	Peak Traffic Generation Rate	Peak hour
Apartments (those allocated car parking)	23	3 vehicle trips per day	69	0.3 vehicle trips per day	7
Commercial Uses (car parking)	3	2.4 vehicle trips per day	8	0.5 vehicle trips per day	2
Total			77		9

We are satisfied that the level of traffic generated by the proposed development will be minimal and can be readily accommodated by the nearby road network as required.

Conclusions

Based on our various investigations, we are satisfied that:

a) the development generates a statutory car parking requirement of 60 car spaces (including 49 resident car spaces and 11 shop spaces) under Clause 52.06-5 of the Planning Scheme,

b) the provision and allocation of 35 car spaces (including 32 resident spaces and 3 shop spaces) results in a shortfall of 25 car spaces (including 17 resident spaces – specifically the SDA component and 8 shop spaces). Accordingly, a car parking reduction is sought by this application,

c) the required reduction in parking for the development under Clause 52.06-7 is supported on the following grounds:

   a. the site's location in close proximity to Activity Centres, employment areas, and centre-based approach to the provision of car parking,

   b. the availability of alternative public car parking in the nearby area, and

   c. proximity to alternative transport modes.

d) the bicycle parking provision exceeds the minimum requirements set out at Clause 52.34 of the Planning Scheme with the layout according with the relevant standards,

e) the proposed parking layout and vehicle access arrangements generally accord with the requirements of the Planning Scheme and AS2890.1:2004 (where relevant),

f) loading demands can occur within setback areas to the rear laneway and suitable on-street parking in the nearby area and will not result in any associated amenity, traffic flow and road safety impacts,

g) waste collection will occur via private contractor within rear setback to laneway which is acceptable from a traffic engineering perspective,

h) the level of traffic generated by the proposal will be modest and can be accommodated without any adverse impacts to the operation of the local road network, and

i) there are no traffic engineering reasons why the mixed use development at 1 Brighton Road, St Kilda should not be approved, subject to appropriate conditions.

Please contact myself at Traffix Group if you require any further information.

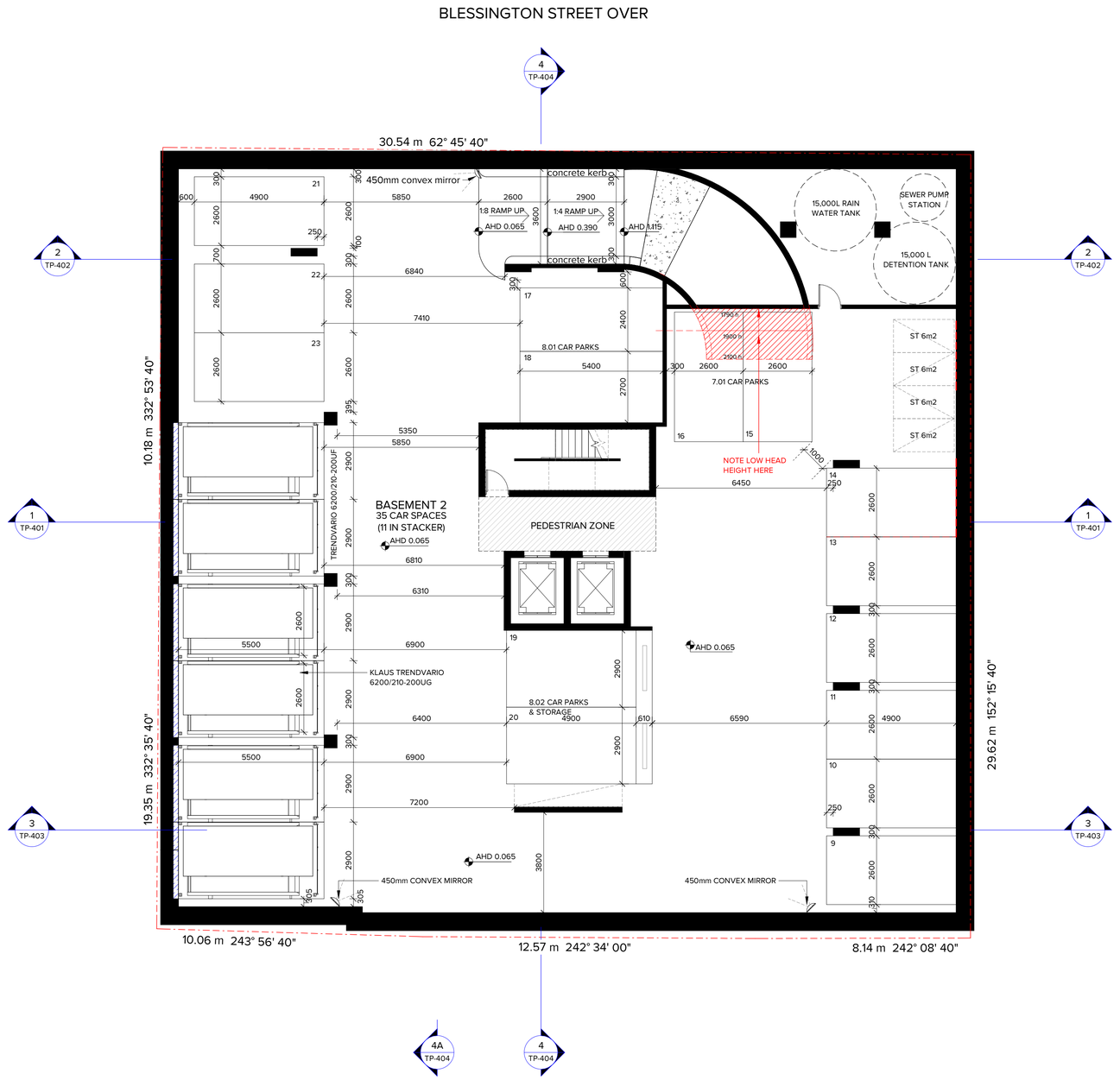
Yours faithfully,

TRAFFIX GROUP PTY LTD

MARTIN O'SHEA
Senior Associate

Appendix A

Development Plans



NOTES
- ALL BALCONIES TO HAVE TAPS AND FLOOR WASTES – **CONDITION 6**
- WATER TANKS CONNECTED TO ALL TOILETS FOR FLUSHING – **CONDITION 1(e)**

BRUCE HENDERSON ARCHITECTS

MELBOURNE
LONDON
HANOI

162 TOORAK ROAD
SOUTH YARRA VICTORIA 3141

T: +61 3 9860 4000
ARBV REG. NO. 50072
www.bh-architects.com

NOTES:
Do not scale. All drawings, layouts and area calculations are indicative only and are subject to approval by the relevant Authorities and alterations due to Design Development. Drawings are not to be used for construction. All apartment and balcony areas are calculated as Gross Floor Area in accordance with the Method of Measurement for Residential Property as published by the Property Council of Australia.

CHECKED BHA

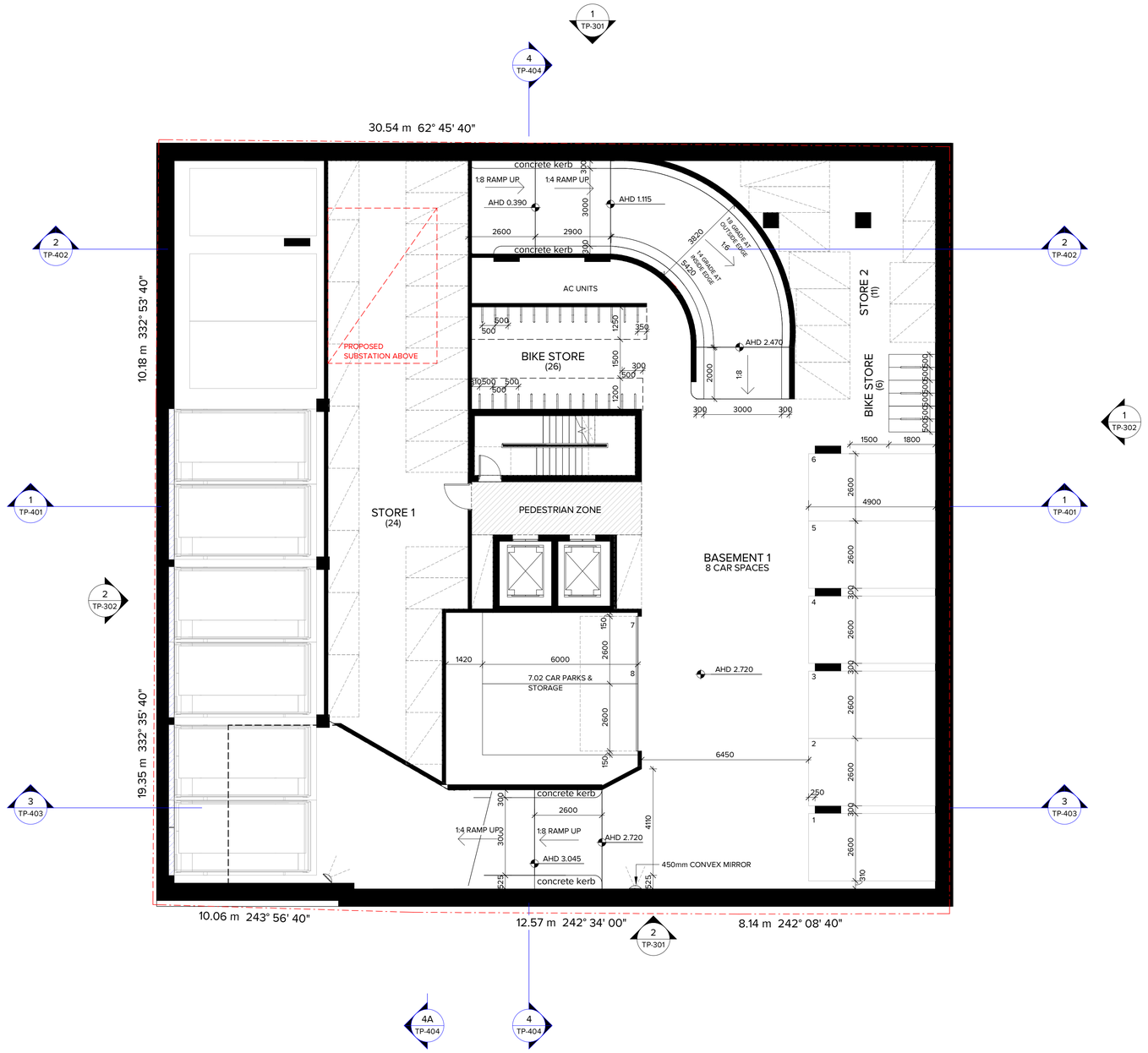
REV	DATE	DESCRIPTION
A	24.06.20	ISSUED FOR INFORMATION
B	31.07.20	ISSUED FOR REVIEW
C	03.08.20	ISSUED FOR REVIEW
D	27.08.21	ISSUED FOR ENDORSEMENT
E	24.02.22	ISSUED FOR SECONDARY CONSENT
F	10.11.22	ISSUED FOR SECONDARY CONSENT
G	23.05.25	ISSUED FOR REVIEW

0 0.5 1.0 2.0 5.0m

PROJECT:
1 BRIGHTON ROAD, ST KILDA

DRAWING TITLE:
PROPOSED BASEMENT 02

JOB No: 40020
SCALE: 1:100@A1
REVISION No: G
DRAWN: BHA
DRAWING STATUS: TOWN PLANNING
DRAWING No: TP-203



BRUCE HENDERSON ARCHITECTS

MELBOURNE
LONDON
HANOI

162 TOORAK ROAD
SOUTH YARRA VICTORIA 3141

T: +61 3 9860 4000
ARBV REG. NO. 50072
www.bh-architects.com

NOTES:
Do not scale. All drawings, layouts and area calculations are indicative only and are subject to approval by the relevant Authorities and alterations due to Design Development. Drawings are not to be used for construction. All apartment and balcony areas are calculated as Gross Floor Area in accordance with the Method of Measurement for Residential Property as published by the Property Council of Australia.

CHECKED BHA

REV	DATE	DESCRIPTION
A	24.02.22	ISSUED FOR SECONDARY CONSENT
B	10.11.22	ISSUED FOR SECONDARY CONSENT

0 0.5 1.0 2.0 5.0m

PROJECT:
1 BRIGHTON ROAD, ST KILDA

DRAWING TITLE:
PROPOSED BASEMENT 01

JOB No: 40020

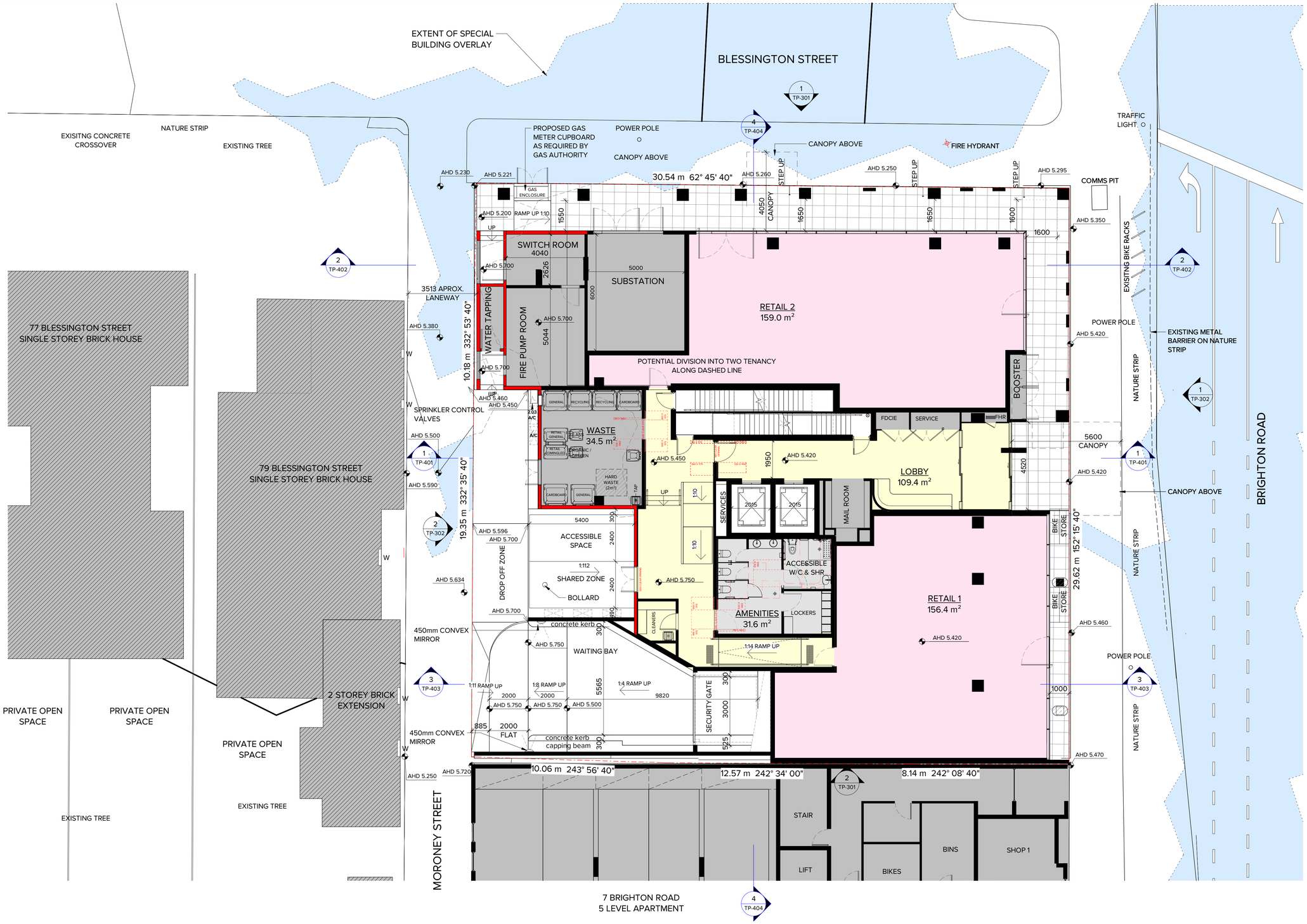
SCALE: 1:100@A1

REVISION No: B

DRAWN: BHA

DRAWING STATUS:
TOWN PLANNING

DRAWING No:
TP-204



NOTES
- ALL BALCONIES TO HAVE TAPS AND FLOOR WASTES - **CONDITION 6**
- WATER TANKS CONNECTED TO ALL TOILETS FOR FLUSHING - **CONDITION 1(e)**
- ALL PLANT, EQUIPMENT AND DOMESTIC SERVICES ARE LOCATED EXTERNALLY - **CONDITION 1(f)**

BRUCE HENDERSON ARCHITECTS

MELBOURNE
LONDON
HANOI

162 TOORAK ROAD
SOUTH YARRA VICTORIA 3141

T: +61 3 9860 4000
ARBV REG. NO. 50072
www.bh-architects.com

NOTES:
Do not scale. All drawings, layouts and area calculations are indicative only and are subject to approval by the relevant Authorities and alterations due to Design Development. Drawings are not to be used for construction. All apartment and balcony areas are calculated as Gross Floor Area in accordance with the Method of Measurement for Residential Property as published by the Property Council of Australia.

CHECKED BHA

REV	DATE	DESCRIPTION
A	24.06.20	ISSUED FOR INFORMATION
B	26.06.20	ISSUED FOR REVIEW
C	31.07.20	ISSUED FOR REVIEW
D	03.08.20	ISSUED FOR REVIEW
E	25.09.20	REVISED DRAWINGS
F	24.11.20	URBAN DESIGN REVIEW
G	27.08.21	ISSUED FOR ENDORSEMENT
H	10.11.22	ISSUED FOR SECONDARY CONSENT
I	23.05.25	ISSUED FOR REVIEW

0 0.5 1.0 2.0 5.0m

PROJECT:
1 BRIGHTON ROAD, ST KILDA

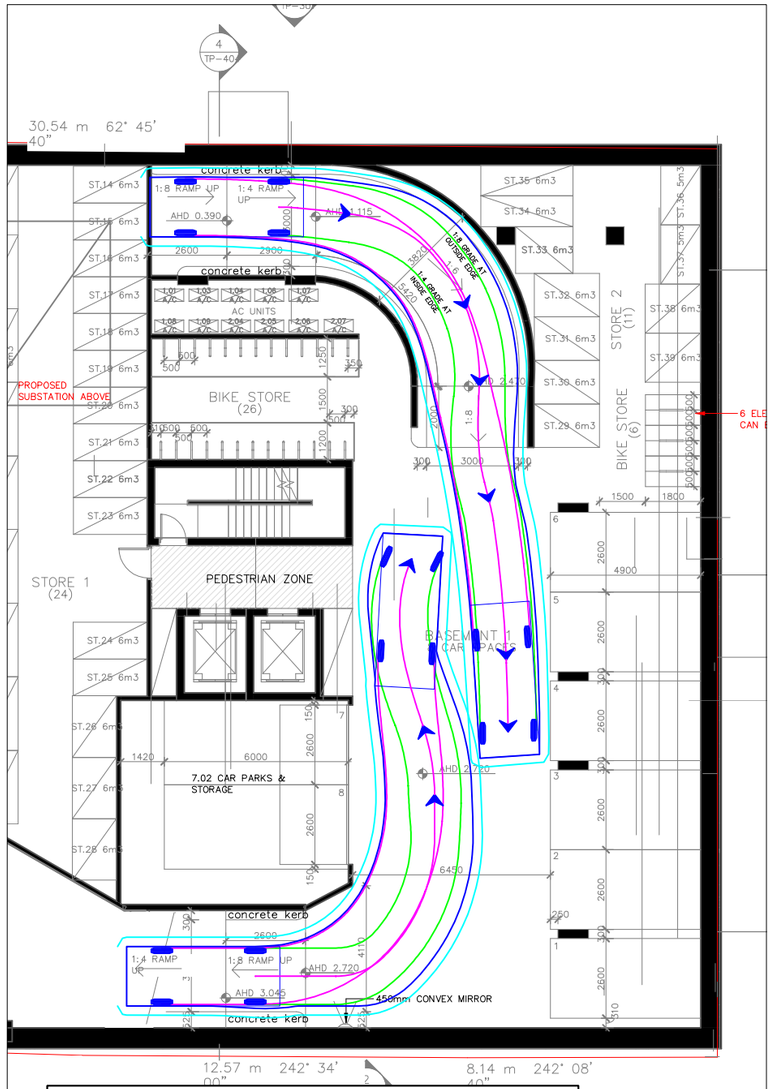
DRAWING TITLE:
PROPOSED GROUND FLOOR

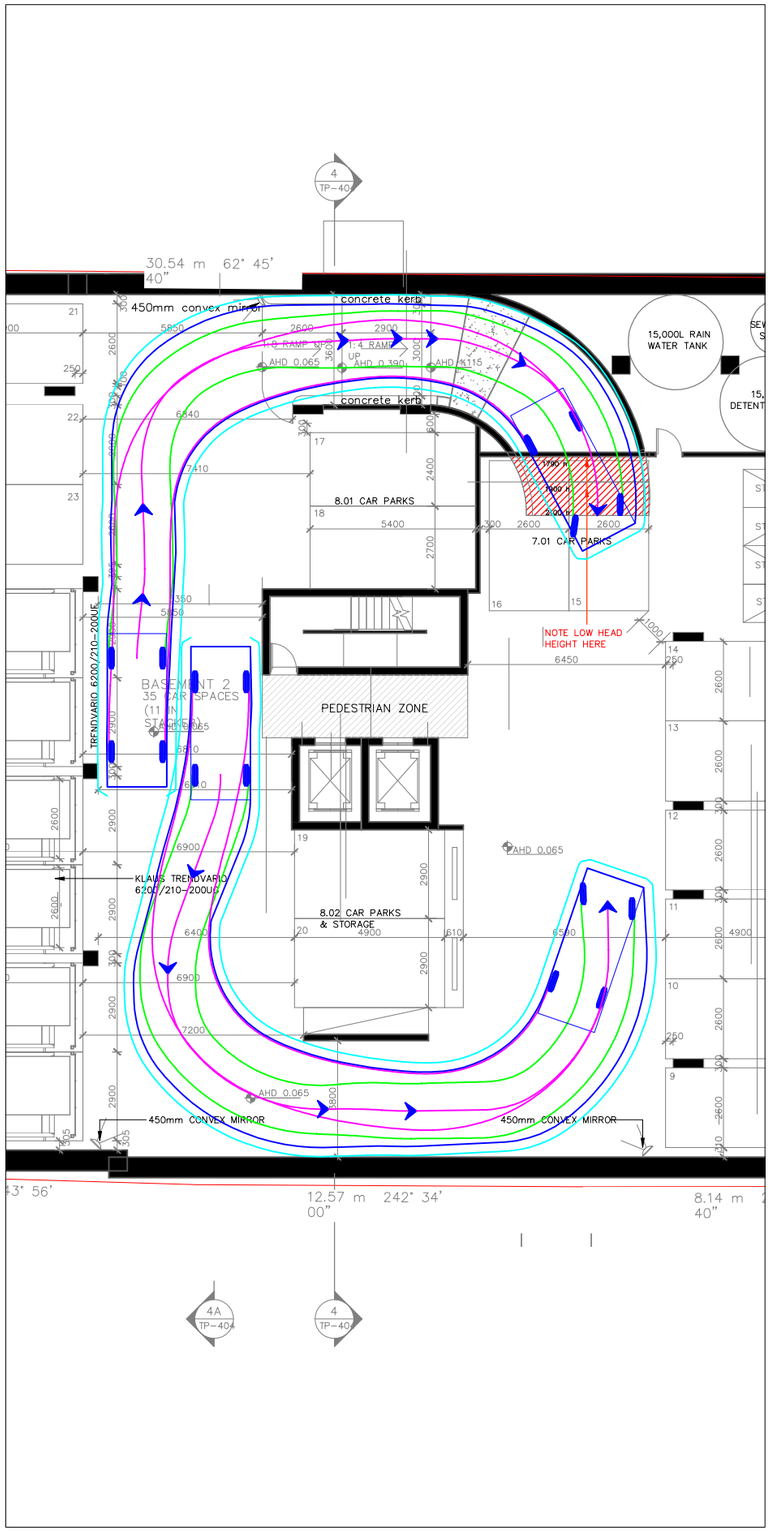
JOB No: 40020
SCALE: 1:100@A1
REVISION No: I
DRAWN: BHA
DRAWING STATUS: TOWN PLANNING
DRAWING No: TP-205

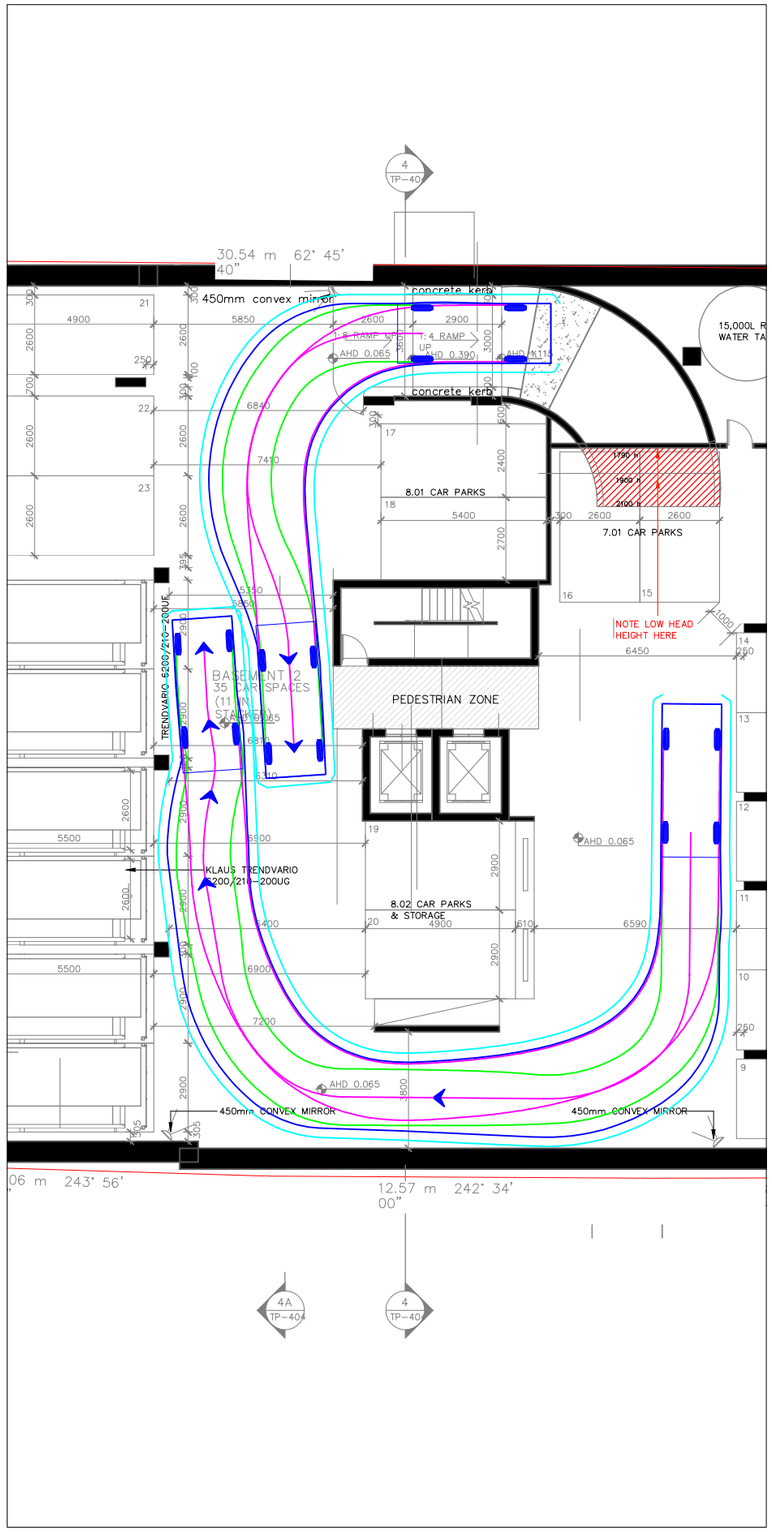
Appendix B

Swept Paths

B99 DESIGN VEHICLE CIRCULATION REVIEW







REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	28/07/2025	TP Submission	M. O'SHEA	J. MITROPOULOS

1 BRIGHTON ROAD, ST KILDA
PROPOSED MIXED USE DEVELOPMENT

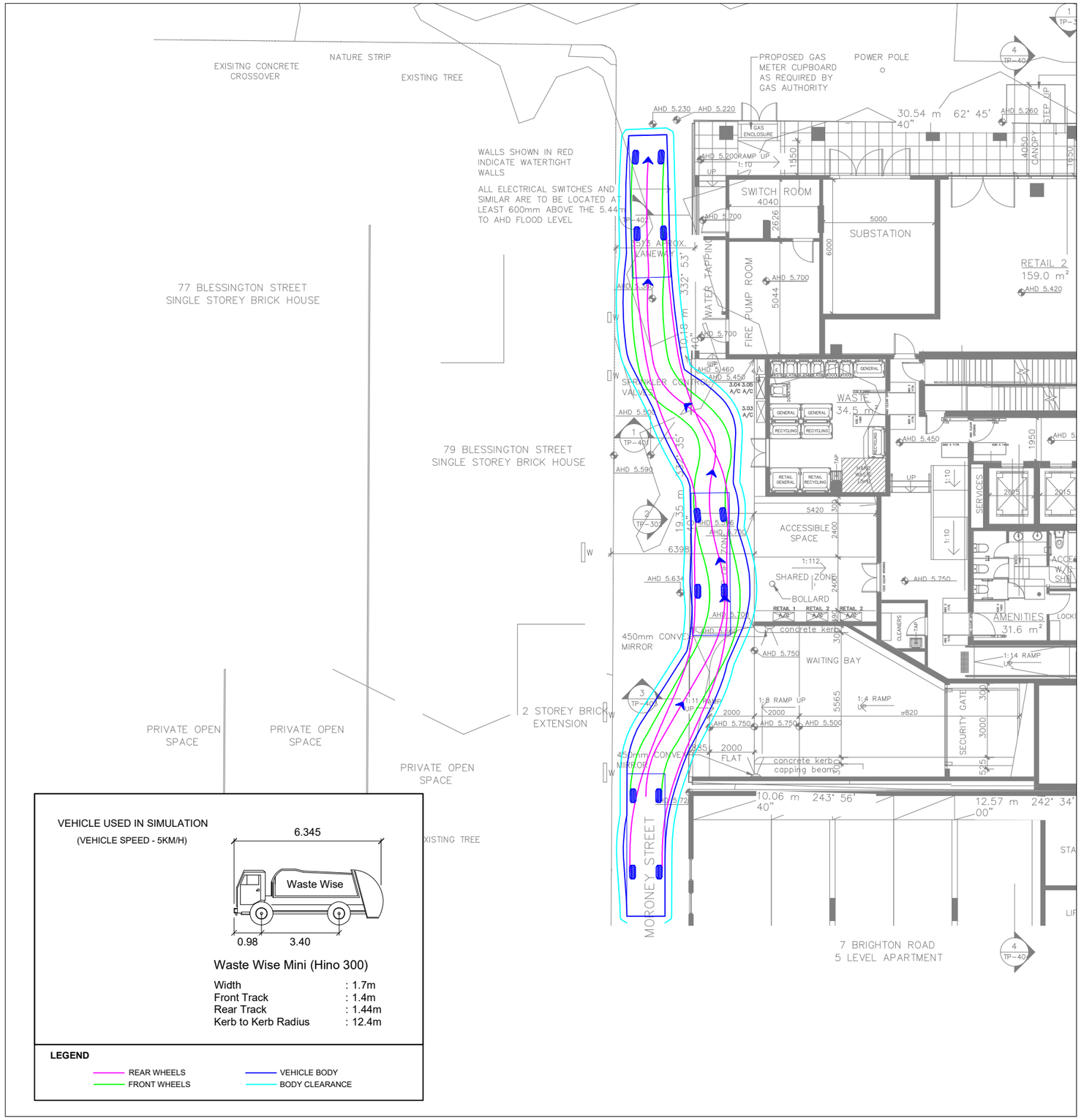
GENERAL NOTES:

FILE NAME: G36505-01-01
SHEET NO.: 01

SCALE: 1:200 (A3)
0 2 4

Traffix Group
Level 28, 459 Collins St, MELBOURNE VIC 3000
T: (03) 9822 2888
www.traffixgroup.com.au

REAR LANEWAY WASTE COLLECTION REVIEW (6.4m WASTE VEHICLE)



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

Waste Wise Mini (Hino 300)

Width	: 1.7m
Front Track	: 1.4m
Rear Track	: 1.44m
Kerb to Kerb Radius	: 12.4m

LEGEND

REAR WHEELS
FRONT WHEELS
VEHICLE BODY
BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	28/07/2025	TP Submission	M. O'SHEA	J. MITROPOULOS

1 BRIGHTON ROAD, ST KILDA
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

FILE NAME: G36505-01-01
SHEET NO.: 02

SCALE: 1:200 (A3)

Traffix Group
Level 28, 459 Collins St, MELBOURNE VIC 3000
T: (03) 9822 2888
www.traffixgroup.com.au

Appendix C

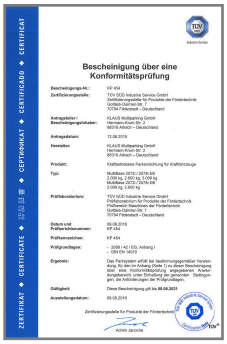
Mechanical Parking Specification Sheet

KLAUS
MULTIPARKING

PRODUCT DATA

DIMENSIONS, TECHNICAL INFORMATION AND PERFORMANCE SPECIFICATION

trendvario 6200+



CE 2000 2600 3000

Document Set ID: 9344899
Version: 1, Version Date: 18/08/2025

Table of contents

Explanation of symbols

Platforms accessible horizontally.

max. load per parking space in kg.
Upweighting over 2000 kg possible with surcharge (see "Vehicle data", page 3).

Parking space load can be subsequently upweighted (see "Vehicle data", page 3).

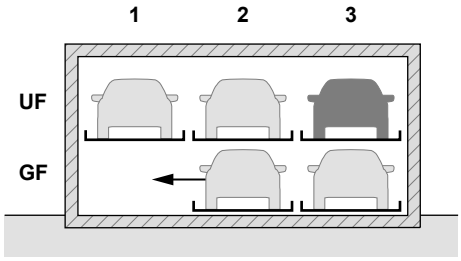
Traversable and can be combined with other TrendVario systems as a KombiSystem.

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC.

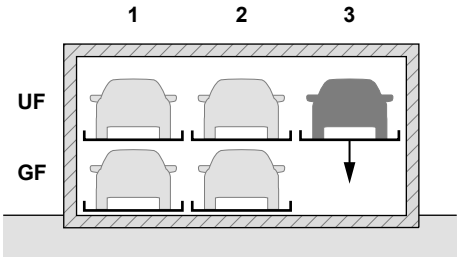
This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

Function diagram with standard designation

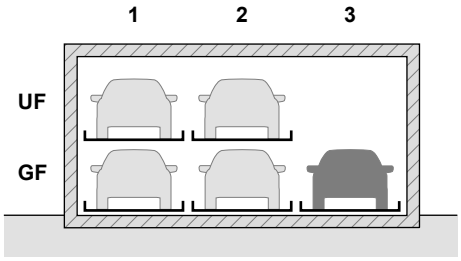
Example for vehicle on upper floor (UF) of grid 3:
Selection via the control panel; all doors must be closed.
Representation of parking spaces in a row.



To remove the vehicle from the space in **grid 3/UF**, the GF platforms are moved to the left.



The empty space is now located under the vehicle being removed. The parking space in **grid 3/UF** is lowered.



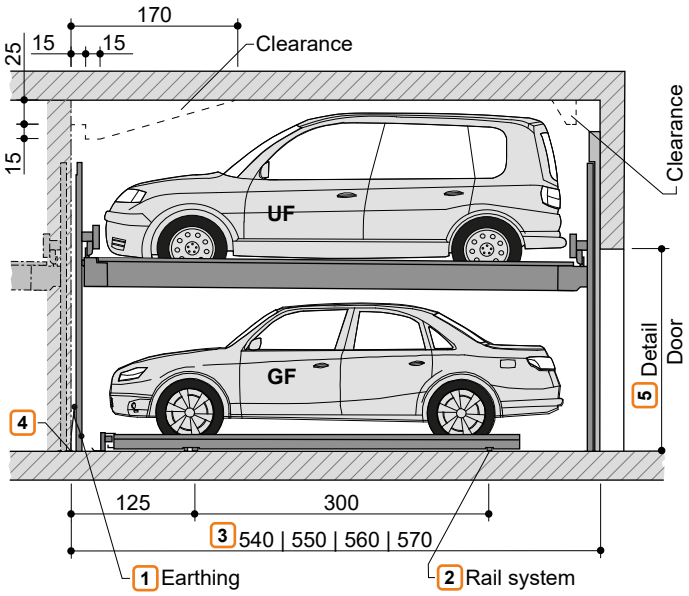
The vehicle in the space in **grid 3/UF** can now be removed.

Dimensions and tolerances

All dimensions and minimum final dimensions.
Tolerance for dimensions +3/-0. Dimensions in cm.
In order to adhere to the minimum final dimensions, the tolerances in accordance with the German Construction Tendering and Contract Regulations [VOB], Part C (DIN 18330 and 18331) and DIN 18202 must also be taken into account.

Overview of building configuration

Building configuration with vertical door 5

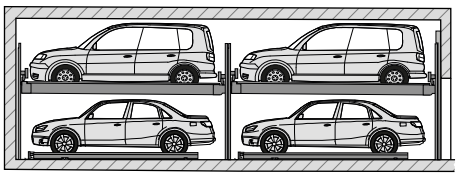


1. Equipotential bonding from foundation earth connection to system (to be provided by the customer).
2. The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3.(see "Detail of building configuration - rail system", page 7).
3. ■ 540 cm for vehicles up to 5.0 m long
   ■ 550 cm for vehicles up to 5.1 m long
   ■ 560 cm for vehicles up to 5.2 m long
   ■ 570 cm for vehicles up to 5.3 m long
   Shorter versions are possible on request - observe local regulations on parking space lengths.
   We recommend a minimum length of 560 cm for comfortable use of your parking space and increasingly longer vehicles.
4. No fillets/haunches are permitted at the transition from the pit floor to the walls. If fillets/haunches are required, the systems must be narrower or the pits wider.
5. Door detail and other door variants (see "Configuration with vertical door", page 5 and see "Configuration with sliding door", page 6).

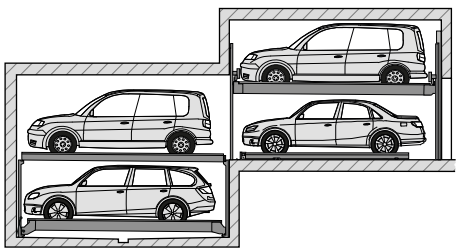
If fire-extinguishing systems are required, the customer must ensure that sufficient clearance is provided.

KombiSystem examples

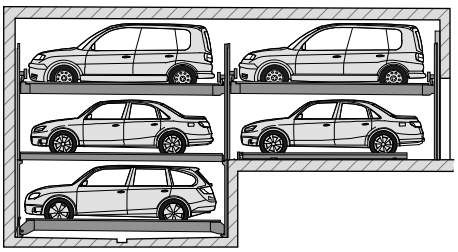
Combination 6200+ with 6200+



Combination 6100 with 6200+



Combination 6300 with 6200+



Vehicle data

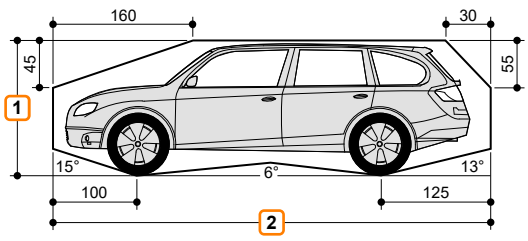
Parking options

Series vehicles:
saloon, estate, SUV, van in accordance with clearance gauge and maximum parking space load.

	UF | GF 3		
Weight 4	2000 kg	2600 kg	3000 kg
Wheel load	500 kg	650 kg	750 kg

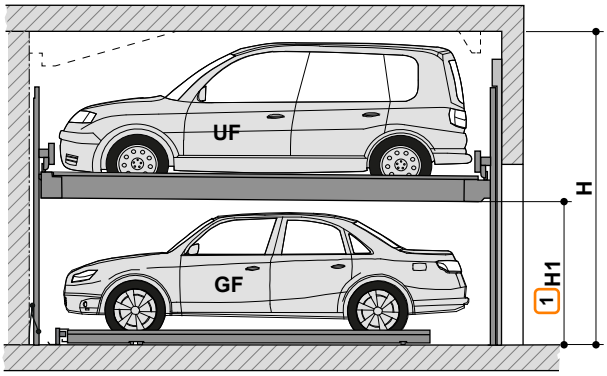
1. Vehicle height (see "Overview of system types and ceiling heights", page 4)
2. Vehicle length (see "Overview of building configuration", page 3)
3. UF = upper floor| GF = ground floor
4. Individual space loads can also be subsequently upweighted to 3000 kg.

Clearance gauge



Vehicle width 190 cm with platform width 230 cm. Correspondingly wider vehicles can be parked with wider platforms.

Overview of system types and ceiling heights



H: Ceiling height
H1: Headroom

Type	H1	Vehicle height GF	Vehicle height UF															
			150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	
6200+/160	160	**150**	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	H - Ceiling height
6200+/165	165	**155**	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	
6200+/170	170	**160**	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	
6200+/175	175	**165**	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	
6200+/180	180	**170**	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	
6200+/185	185	**175**	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	
6200+/190	190	**180**	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	
6200+/195	195	**185**	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	
6200+/200	200	**190**	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	
6200+/205	205	**195**	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	
6200+/210	210	**200**	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	
6200+/215	215	**205**	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	
6200+/220	220	**210**	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	

1 Maximum vehicle height for the passage = H1 - 5 cm

Example configuration

Example: Vehicle height, GF 165 cm and vehicle height, UF 180 cm.
Type: 6200+/175
Ceiling height: 375 cm

Type	H1	Vehicle height GF	Vehicle height UF															
			150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	
6200+/160	160	**150**	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	H
6200+/165	165	**155**	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	
6200+/170	170	**160**	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	
6200+/175	~~175~~	**165**	~~345~~	~~350~~	~~355~~	~~360~~	~~365~~	~~370~~	375	380	385	390	395	400	405	410	415	
6200+/180	180	**170**	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	

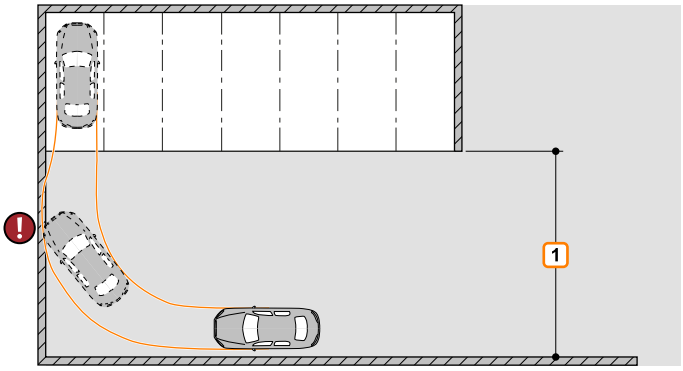
Width dimension and door height

We recommend platform widths of minimum 250 cm and driving lane widths of 650 cm in order that vehicles can comfortably access the Multiparking system and enter and leave without difficulty.

Narrower platforms may impede parking according to the following criteria.

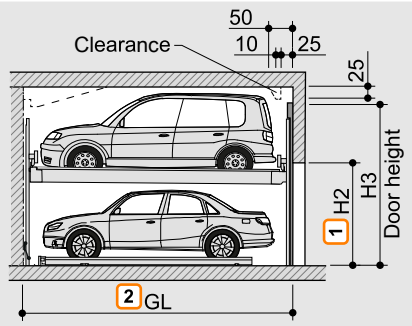
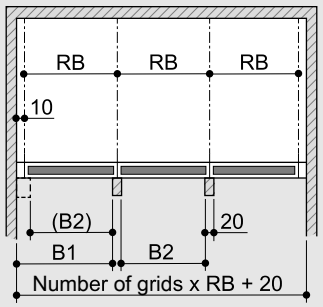
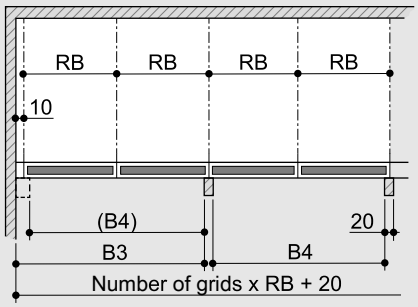
- Driving lane width
- Entrance conditions
- Vehicle dimensions

[1] Observe minimum driving lane width in accordance with local regulations.



For commercial use of doors with electrical drive systems, an inspection log is required in accordance with ASR A1.7 'Technical rules for workplaces' in Germany. The door must be inspected by an expert before commissioning and annually thereafter and the result entered in the inspection log. The inspection must be carried out independently of maintenance. Observe local regulations on operation of electrical doors.

Configuration with vertical door

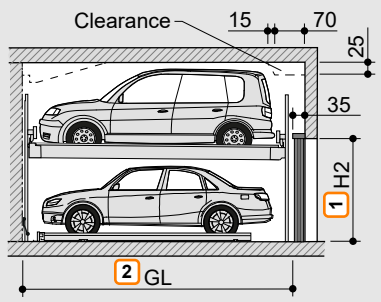
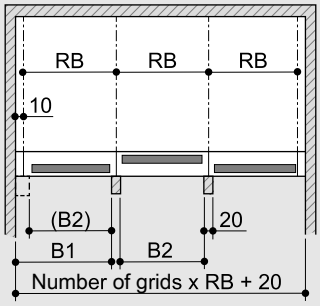
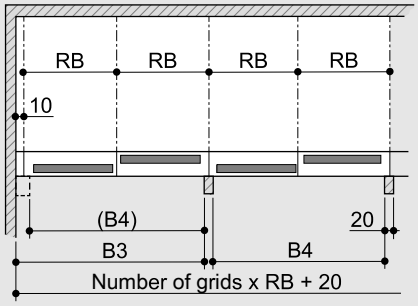
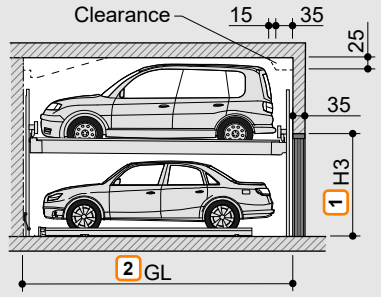
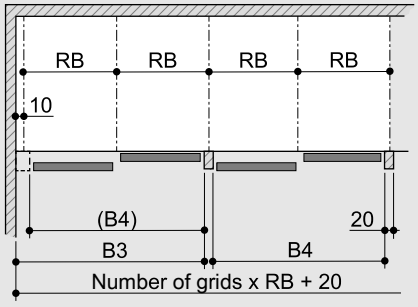
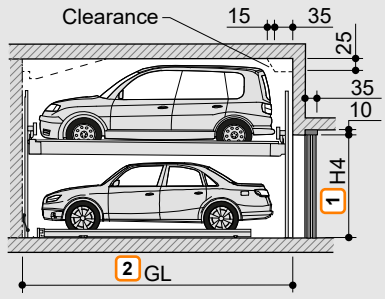
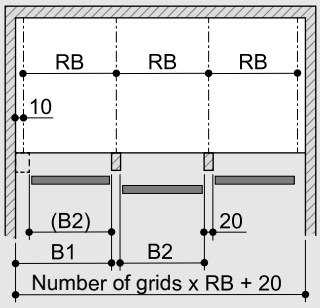
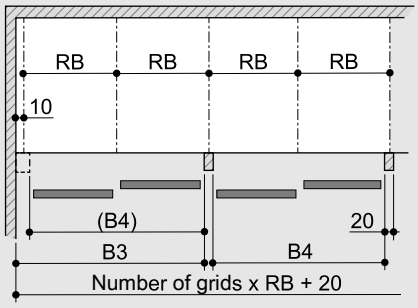
	Door versions	Supports per grid	Supports per second grid
Vertical door			

	Clear platform width		RB [3]	Supports per grid		Supports per second grid	
	UF	GF		B1	B2	B3	B4
Width dimensions	230	220	250	250	230	500	480
	240	230	260	260	240	520	500
	250	240	270	270	250	540	520
	260	250	280	280	260	560	540
	270	260	290	290	270	580	560

	max. vehicle height UF | GF														
	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
H2	210	210	210	210	210	210	210	210	210	210	215	220	225	230	235
H3	325	335	335	335	335	335	360	360	360	360	360	380	380	380	380

[1] Observe minimum clear height H2 in accordance with local regulations.
[2] GL = building length (see "Overview of building configuration", page 3).
[3] RB = grid width. These dimensions **must** be adhered to.

Configuration with sliding door

	Door versions	Supports per grid	Supports per second grid
Sliding door behind the supports			
Sliding door inside the supports		Not possible!	
Sliding door in front of the supports			

	Clear platform width		RB [3]	Supports per grid		Supports per second grid	
	UF	GF		B1	B2	B3	B4
Width dimensions	230	220	250	250	230	500	480
	240	230	260	260	240	520	500
	250	240	270	270	250	540	520
	260	250	280	280	260	560	540
	270	260	290	290	270	580	560

	max. vehicle height UF | GF														
	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
H2	210	210	210	210	210	210	210	210	210	210	215	220	225	230	235
H3	220	220	220	220	220	220	220	220	220	220	225	230	235	240	245
H4	210	210	210	210	210	210	210	210	210	210	215	220	225	230	235

[1] Observe minimum clear height H2/H3/H4 in accordance with local regulations.
[2] GL = building length (see "Overview of building configuration", page 3).
[3] RB = grid width. These dimensions **must** be adhered to.

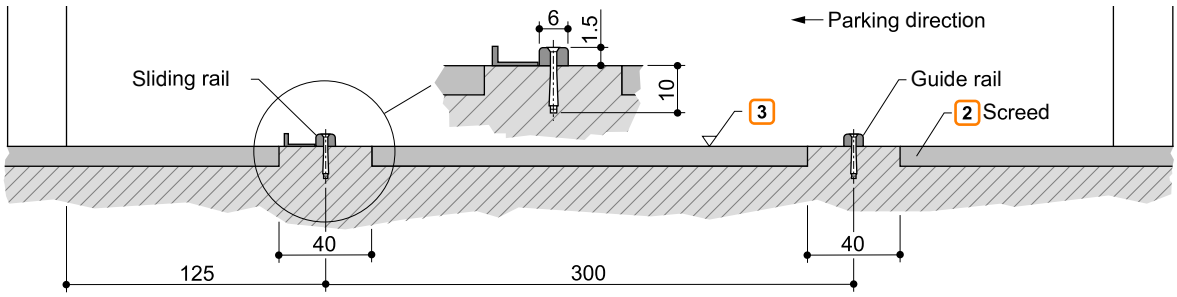
Detail of building configuration - rail system

Various options are available for rail installation depending on the structural conditions.

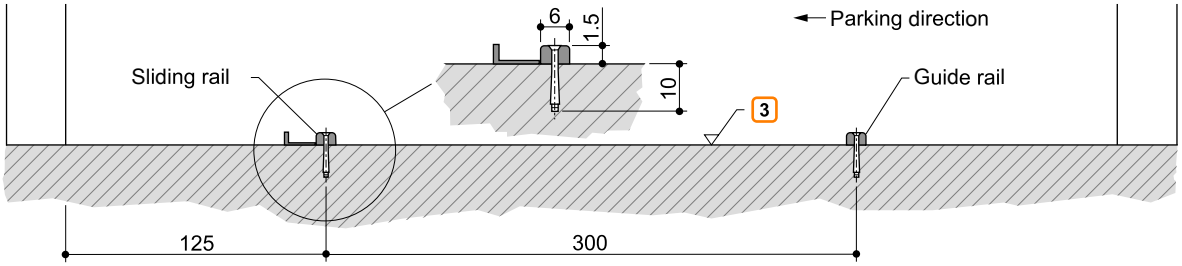
Rail load due to a moving traffic load:

- With parking space load 2000 kg: 6.5 kN per wheel
- With parking space load 2600 kg: 8.0 kN per wheel
- With parking space load 3000 kg: 9.0 kN per wheel

Laying on strip foundation [1]



Laying on finished floor [1]



[1] The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3. There must be no building joints or expansion joints in the area around the rail system.

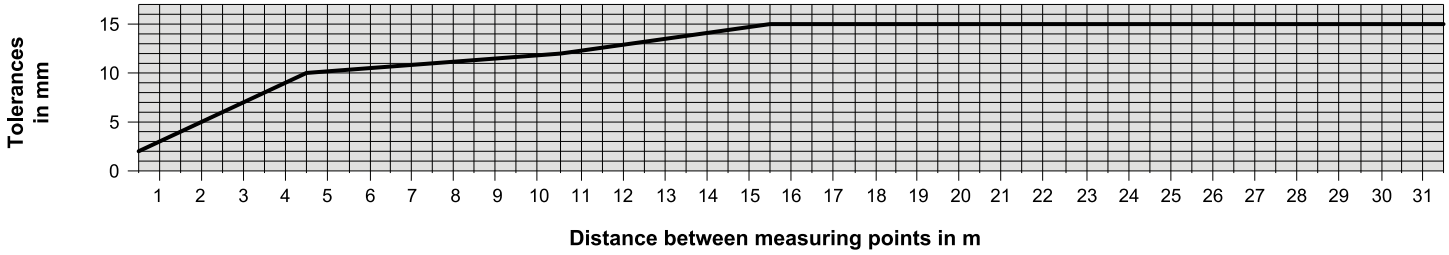
[2] We do not recommend using poured asphalt.

[3] Upper edge finished floor

Evenness tolerance – extract from DIN 18202, Table 3

The safety clearance between the outer lower edges of the ParkBoard and the floor must not exceed 2 cm. To comply with the requirement in DIN EN 14010 and to reach the requisite floor evenness, the evenness of the finished floor in accordance with DIN 18202, Table 3, row 3 must not be exceeded. The customer does not, therefore, need to level the floor.

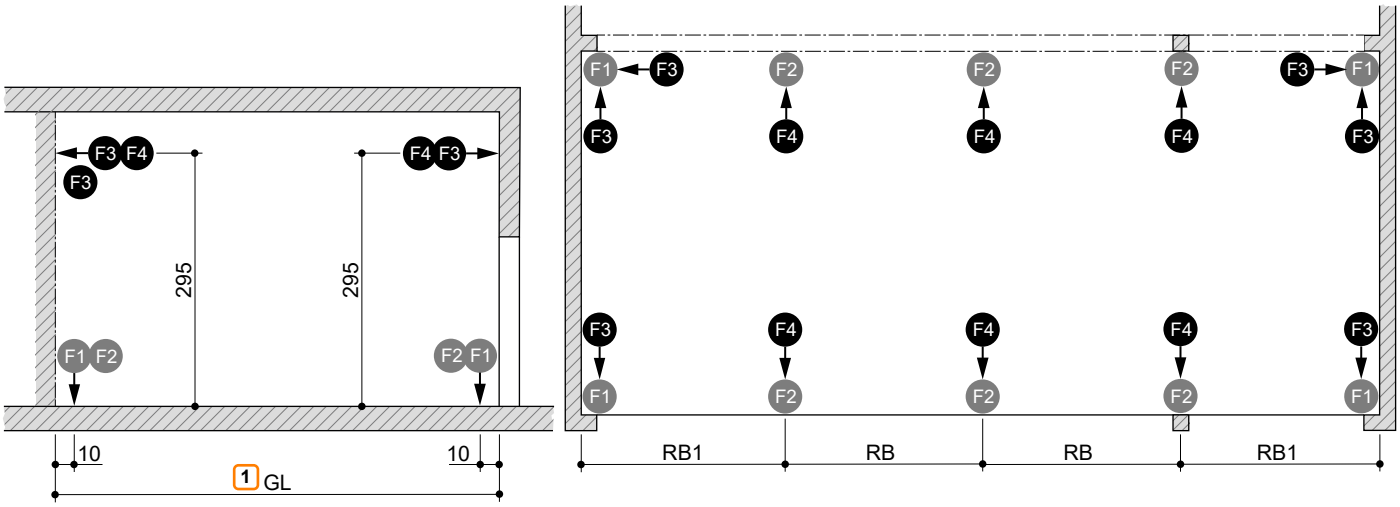
Row	Reference	Inside micrometer as limit values in mm with measuring point distances in m to [1]				
		0.1	1	4	10	15
3	Finished floors, e.g. screeds as floor screeds, screeds for floor coverings, floor coverings, tile coverings, levelled and glued coverings	2	4	10	12	15



[1] Intermediate values can be found in the diagram and should be rounded up.

Loading schedule

The systems are dowelled into the ground. The drill hole depth in the floor plate is approx. 15 cm, in the walls approx. 12 cm.
The floor plate and walls must be from concrete (quality min. C20/25).
The dimensions for the bearing points have been rounded. If the precise figures are required, please consult KLAUS Multiparking.

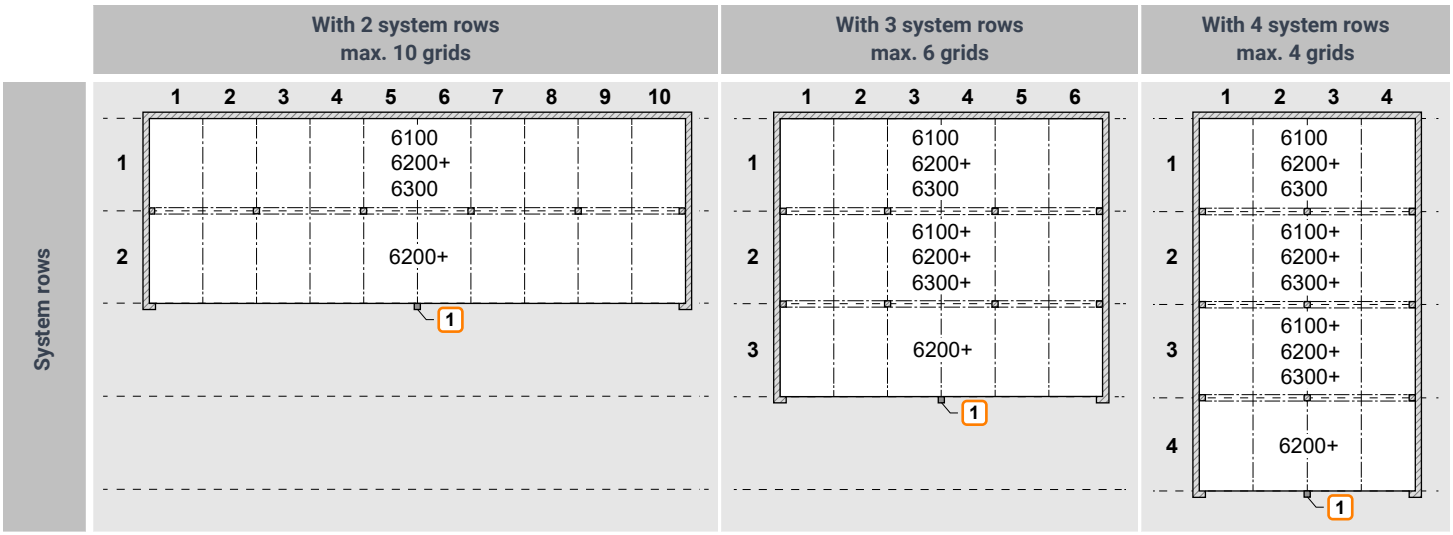


Parking space load	F1	F2	F3	F4
2000 kg	+ 9.0 kN - 0.1 kN	+ 18.0 kN - 0.2 kN	± 0.5 kN	± 1.0 kN
2600 kg	+ 12.0 kN - 0.3 kN	+ 24.0 kN - 0.6 kN	± 0.8 kN	± 1.6 kN
3000 kg	+ 13.0 kN - 0.4 kN	+ 26.0 kN - 0.8 kN	± 1.0 kN	± 2.0 kN

Clear platform width UF	RB 2	RB1
230	250	260
240	260	270
250	270	280
260	280	290
270	290	300

1 GL = building length
2 RB = grid width. These dimensions **must** be adhered to.

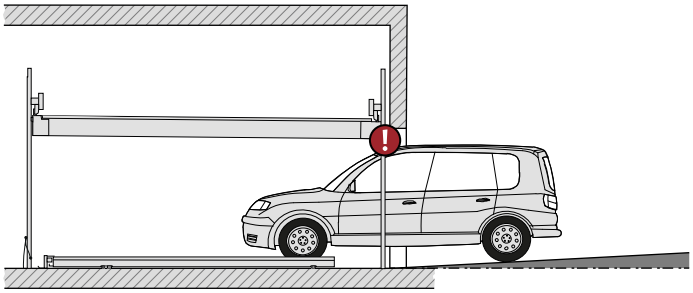
Arrangement of grids – KombiSystem



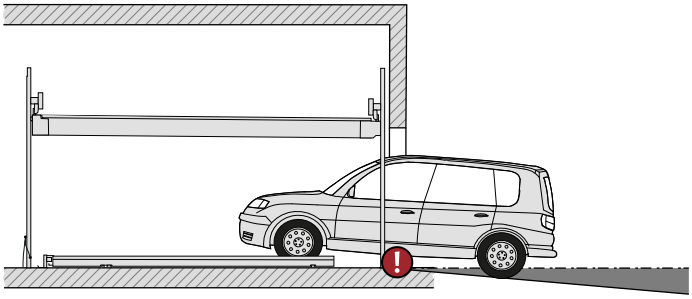
1 Control panel

Access incline

The maximum access inclines specified in the symbol sketch must not be exceeded.
Improper configuration can lead to extreme difficulty accessing the system, for which KLAUS Multiparking cannot be held liable.
Where above-ground garages are on a slope, provision of a drainage gutter in the access is recommended.

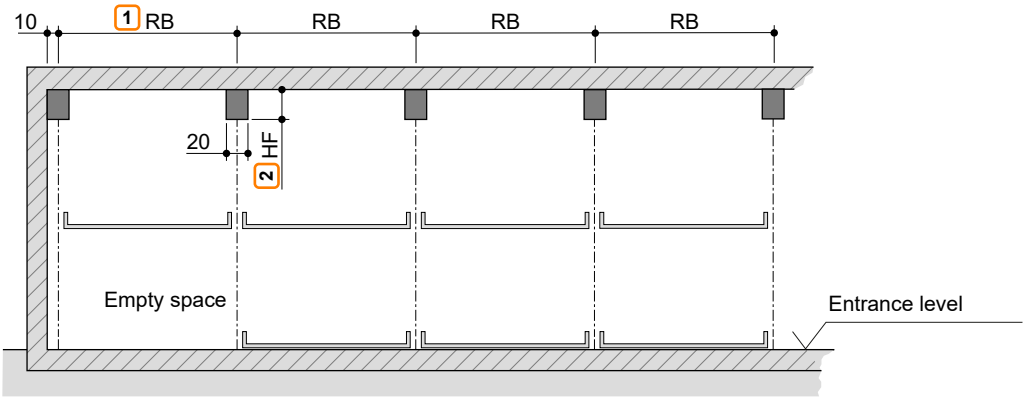


max. 3% slope



max. 5% gradient

Clearance for installations



1 RB = grid width. These dimensions **must** be adhered to.

2 HF: Clearance height = building height (H) - 305 cm | where CH max. = 45 cm (see "Overview of system types and ceiling heights", page 4).

Clearance for lengthways cable routing

CE conformity

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Industrie Service

Certificate concerning the examination of conformity

Certificate no:	CA 695
Certification body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München – Germany
Applicant / Certification holder:	KLAUS Multiparking GmbH Hermann-Krum-Str. 2 88319 Aitrach – Germany
Manufacturer:	KLAUS Multiparking GmbH Hermann-Krum-Str. 2 88319 Aitrach – Germany
Product:	Equipment for power driven parking of motor vehicles
Type:	TrendVario 6200+ 2.000 kg, 2.600 kg, 3.000 kg
Directive:	2006 / 42 / EC, Annex I
Test specifications:	DIN EN 14010:2003+A1:2009
Date and number of the test report / mark of conformity:	No. CA 695 from 2023-03-17
Result:	The equipment fulfills the requirements of the test specifications for the respective scope of application stated in the annex (page 1) of this certificate, keeping the mentioned conditions.
Date of issue:	2023-03-31
Validity:	2028-03-30

TÜV SÜD Industrie Service GmbH Certification Body

Bernd Gründling
Zertifizierstelle der Fördertechnik

TÜV®

Electrical installation

Switch cabinet and master switch

Access to the switch cabinet (about 60 x 60 x 25 cm) must be possible without danger. The lockable master switch must be positioned so that the entire entry area of the facility can be surveyed.
With wall opening from switch cabinet to system (consultation with KLAUS Multiparking required).

Hydraulic unit

- 3.0 kW, three-phase current 230/400 V / 50 Hz

Alternative versions for a surcharge:
- 5.2 kW, three-phase current 230/400 V / 50 Hz for shorter access times.
- One hydraulic unit per row (3 kW or 5.2 kW) for shorter access times.

Supply cable to master switch

With one hydraulic unit:
Customer-provided supply cable min. 5 x 2.5 mm² (3 PH+N+PE) to master switch with pre-fuse 3 x 16 A (slow) or circuit breaker 3 x 16 A (trip characteristic K or C).
With multiply hydraulic units:
Customer supply cable at least 5 x 2.5 mm² to master switch with pre-fuse 3 x 32 A (slow) or circuit breaker 3 x 32 A (trip characteristic K or C).
DIN/VDE and local regulations of energy-supply companies must be observed (see "Supply cable to master switch - foundation earth", page 14).

Control panel with emergency-stop

- Attachment at a clear point (e.g. pillar).
- Secured against external operation.

Technical information

Usage area

The system is suitable for a fixed group of users as standard.
Where users change (e.g. short-term parking in office buildings or hotels), structural modifications to the Multiparking system are required. Please request a consultation if required.

Units

Low-noise, bearing-mounted hydraulic units are installed on rubber-metal blocks. Consequently, we recommend separating the garage body from the residential building.

Parking space designation

Please consult the function diagram for the standard designation of the parking spaces (see "Function diagram with standard designation", page 2).
Alternative designations are possible with a surcharge.

Please note the following specifications:
- The empty space is situated on the left as standard.
- Any alternative designations must be notified 8 to 10 weeks before delivery.

Ambient conditions

Ambient conditions for the areas around Multiparking systems:
Temperature range –10 to +40° C. Relative humidity 50 % to a maximum external temperature of +40° C.
If ascent/descent times are specified, these relate to an ambient temperature of +10° C and with the system positioned immediately adjacent to the hydraulic unit. These times are increased at lower temperatures or with longer hydraulic lines.

Building application documents

Multiparking systems generally require approval. Please observe local regulations and stipulations.

Care

To prevent corrosion damage, please observe our special cleaning and care instructions and ensure that your garage is well ventilated.

Corrosion protection

In accordance with the 'Corrosion protection' supplement.

Electrically driven doors

For commercial use of doors with electrical drive systems, an annual inspection is required in accordance with ASR A1.7 'Technical rules for workplaces' in Germany. We urgently recommend concluding a maintenance contact as these services are included for the complete system.

CE conformity

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

Noise protection

Standard noise protection:

In accordance with DIN 4109-1 Noise protection in high-rise - Section 9:
Maximum sound pressure level in living and sleeping areas 30 dB (A).
User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:
- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min. R'w = 57 dB (service to be provided by the customer)

Increased sound protection (special agreement):

In accordance with DIN 4109-5 Increased noise protection in high-rise - Section 8:
Maximum sound pressure level in living and sleeping areas 25 dB (A).
User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:
- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min. R'w = 62 dB (service to be provided by the customer)

Note:
User noise is noise that can be influenced individually by the user of our Multiparking systems. This includes, e.g., accessing the platform, the slamming of vehicle doors, engine and brake noise.

Performance specification

Description

Multiparking system for independent parking of vehicles one on top of and next to one another.
The system is traversable and can be combined with the TrendVario 6100, 6100+, 6200+, 6300 and 6300+ (details on these systems can be found on the corresponding product sheets).
Dimensions in accordance with the underlying building, width and height dimensions.
Access to the parking spaces horizontally (installation tolerance ± 1%).
An access must be provided over the entire width of the system (minimum driving lane width in accordance with local regulations).
The parking spaces are arranged on 2 levels one on top of the other. Vehicles park on stable steel platforms.
The platforms on the upper floor (UF) move vertically, the platforms on the ground floor (GF) move horizontally. At entrance level (GF), there is always 1 parking space less. This empty space is used for sideways movement of the GF parking spaces to allow a parking space on the UF above to lower to entrance level. Consequently, 3 parking spaces (1 on GF, 2 on UF) is the smallest unit for this parking system.
Vehicle positioning in any parking space by positioning aid mounted on one side (to be adjusted in accordance with the operating instructions).
For safety reasons, the movement operation of the platforms always takes place behind locked doors.
All requisite safety equipment is integrated into the system. This essentially comprises a chain monitoring system, locking levers for the upper platforms and locked doors. The doors can only be opened when the selected parking space has reached its parking position.

Steel frame (secured to the floor) comprising:

- Supports (arranged in rows)
- Crossbeams and lengthways beams
- Sliding rails for the sideways moving GF platforms

Platform comprising:

- Platform profiles
- Adjustable positioning aid
- Chamfered ramp
- Side beams
- Crossbeams
- Screws, nuts, washers, spacers, etc.

Lifting equipment for platforms on the UF comprising:

- Hydraulic cylinders with solenoid valves
- Chain wheels
- Chains
- Limit switches
- The platforms are each suspended at 4 points and are guided at the supports by means of plastic plain bearings

Drive unit for sideways moving platforms on GF:

- Gear motor with chain wheel
- Chains
- Sliding and guide rollers (low-noise)
- Power supply via energy chain

Hydraulic unit comprising:

- Hydraulic unit (low-noise, fitted to bracket and bearing mounted on rubber-metal block)
- Hydraulic oil tank
- Oil filling
- Internal gear pump
- Pump holder
- Coupling
- Three-phase motor
- Noise protection, motor protection switch and control fuse
- Test pressure gauge
- Pressure relief valve
- Hydraulic hoses (to attenuate noise transmission to the hydraulic pipes)

Control:

- Central control point (control panel with emergency-stop) for selecting the desired parking space
- The electrical wiring from the system cabinet is provided by the supplier

Vertical doors:

Size

Dimensions adjusted to the underlying widths and height dimensions.
The door comprises two door leaves

Frame

- Frame structure with two vertical centre rungs from extruded aluminium profiles (anodised, coating thickness approx. 20 µm)
- There is a rubber lip on the closing edge for a clean seal with the building.

Door filling

Aluminium perforated plate

- Thickness 1.5 mm,, RV 8-14 E6/EV1, anodised, coating thickness approx. 20 µm
- Ventilation cross-section of the filling approx. 30%

Guide rails

- The sliding rails of the doors are attached to the steel frame of the system.
- Galvanised steel guide rails (coating thickness approx. 20 µm).

Door actuation

- Electrical drive system by means of electric motor, above the door frame.

For safety reasons, the movement operation of the platforms always takes place behind locked doors. An electrical signal generator is used to query the positions ‘door open’ and ‘door closed’.

Please note:

Door apertures (at the side, covers over the sliding rails, etc.) and door suspensions are not included with the standard configuration but can be supplied as special equipment with a surcharge.

Sliding doors:

Size

- Sliding doors, size approx. 2500 mm x 2000 mm (width x height).

Frame

- Frame structure with one vertical centre rung from extruded aluminium profile (anodised, coating thickness approx. 20 µm)
- A handle shell is provided in a vertical aluminium profile for opening the doors.
- There is a rubber lip on the closing edge for a clean seal with the building.

Standard door filling

Aluminium perforated plate

- Thickness 2 mm, RV 5-8 E6/EV1, anodised, coating thickness approximately 20 µm
- Ventilation cross-section of the filling approx. 40%

Alternative door filling

Plain aluminium sheet

- Thickness 2 mm E6/EV1, anodised, coating thickness approximately 20 µm

Corrugated steel sheet

- Thickness 1 mm galvanised, coating thickness approximately 20 µm
- Additional powder coating, coating thickness approx. 25 µm on the outside and approx. 12 µm on the inside
- Colour options on the outside (building view):

RAL 1015 (light ivory)	RAL 3003 (ruby red)
RAL 5014 (pigeon blue)	RAL 6005 (moss green)
RAL 7016 (anthracite grey)	RAL 7035 (light grey)
RAL 7040 (window grey)	RAL 8014 (sepia brown)
RAL 9006 (white aluminium)	RAL 9016 (traffic white)

- Door inside in a light grey tone

Wood filling

- Nordic spruce in A sorting
- Vertical tongue and groove boards
- Colourless, pre-coated

Composite safety glass

- Composite safety glass from 8/4 mm

Wire mesh

- Mesh size 12 x 12 mm
- Wire diameter 2 mm, galvanised, coating thickness approx. 20 µm
- Ventilation cross-section of the filling approx. 70%

Sliding rails

- The running gear comprises 2 double-pair roll systems per door, height-adjustable
- The sliding rails of the doors are attached to brackets with cover bushings or directly to the concrete lintel or a building-specific door suspension
- The lower guide comprises 2 plastic rollers on a base plate which is dowelled to the floor
- Sliding rails, cover bushings, guide roller base plate are galvanised

Door actuation

- Electrical drive system by means of electric motor attached to the rail system in the turning point of the sliding doors. The drive pinion engages a chain attached to the door.

For safety reasons, the movement operation of the platforms always takes place behind locked doors. An electrical signal generator is used to query the positions ‘door open’ and ‘door closed’.

Separation (if required)

- On request

Please note:

Door apertures (at the side, cover over the sliding rails, etc.) and door suspensions are not included with the standard configuration but can be supplied as special equipment with a surcharge.

Services to be provided by the customer

Barriers

Barriers that may be required in accordance with DIN EN ISO 13857 where there are roadways immediately in front of, adjacent to or behind the systems. This also applies during the construction stage.

Parking space numbering

Parking space numbering, if required.

Building services systems

Any lighting, ventilation, fire-extinguishing and fire-alarm systems that may be required, plus clarification and compliance with corresponding official documentation.

Lighting

The customer must observe local regulations pertaining to the illumination of parking spaces and roadways. In accordance with DIN EN 12464-1 'Light and lighting - Lighting of work places', an illumination level of min. 200 lx is recommended for the parking spaces and operating area of the system. A floating contact can be provided for actuation of parking space lighting provided by the customer.

Floor structure – rails

Floor structure in accordance with the details on the product data sheet (see "Detail of building configuration - rail system", page 7).

Recesses, tolerances for evenness of the roadway must be adhered to in accordance with DIN 18202, Table 3, row 3.
Lining for the rail system by means of cement screed over the entire length. Laying the screed

Wall openings

Wall openings, if required.

Supply cable to master switch - foundation earth

The customer must lay the supply cable to the master switch during assembly. Functional capability can be checked by our engineers on site, in conjunction with the electronics engineer. If this is not possible during assembly for reasons attributable to the customer, the customer must commission an electronics engineer.
The customer must earth the steel structure with a foundation earth connection (earthing distance max. 10 m) and equipotential bonding in accordance with DIN EN 60204.

Door suspensions

Please note that if the specified clear heights (see "Width dimension and door height", page 5) are not adhered to, additional measures for door attachment (door suspensions) will be required for a surcharge.

Door apertures

Door apertures, if required. This may be requested from KLAUS Multiparking for a surcharge.

Subject to technical changes

In the course of technical progress, KLAUS Multiparking shall be entitled to use newer or different technologies, systems, processes or standards to provide the services than initially offered, provided that this does not disadvantage the customer in any way.

KLAUS Multiparking GmbH

Hermann-Krum-Straße 2
88319 Aitrach / Germany

+49 (0) 7565 508-0

info@multiparking.com
www.multiparking.com