acstro

Transport Statement

New Residential Tower with Commercial Ground and First Floor Uses and Public Square

Harlech Court, Bute Terrace, Cardiff

September 2024

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A	2nd September 2024	First Issue

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1 Introduction

1.1 Acstro has been appointed to prepare a Transport Statement to support a planning application for the construction of a new 30-storey residential tower with commercial uses on the ground and first floor and adjacent public square.

1.2 The development will occur at Harlech Court, Bute Terrace, Cardiff. Harlech Court is a 1970's office building with ground and first floor podium uses and a second floor car park. Demolition consent for the existing buildings has been sought separately.

1.3 The general location of the site is shown in Figure 1.

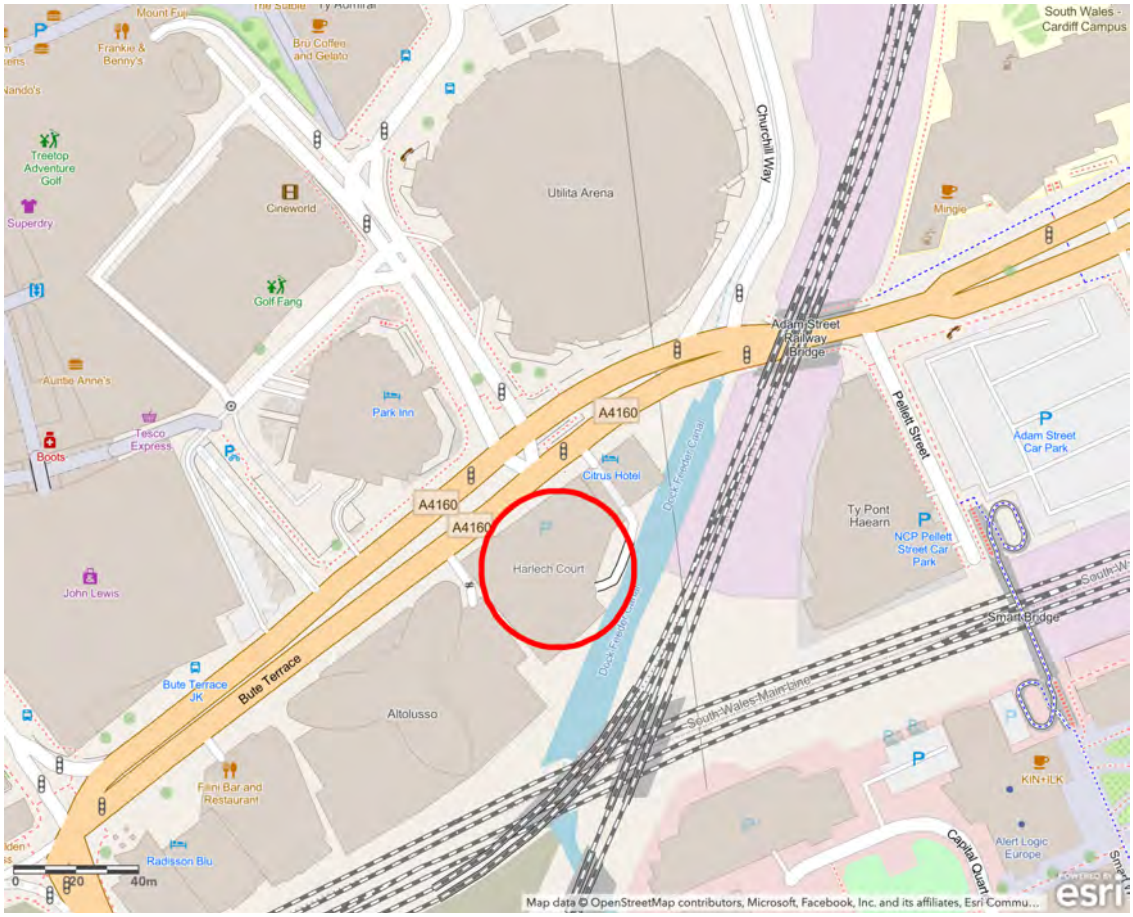


Figure 1 Location Plan

1.4 This document considers the transport implications associated with the development of the site. In particular, this Transport Statement demonstrates that the site is in a sustainable location that is closely related to existing facilities and services and is accessible to pedestrians, cyclists and public transport users.

1.5 The structure of the Transport Statement is as follows:

- Section 2 describes the relevant planning policy context that is relevant in terms of transport issues;
- Section 3 describes the site's location, its proximity to services and facilities and its accessibility by all forms of transport.

- Section 4 describes the proposed development and its access arrangements.
- Section 5 provides an estimate of the likely trip generation of the proposed development of the land is also provided.
- Section 6 provides a summary and conclusion.

2 Policy Context

Future Wales - The National Plan 2040

2.1 This is the national development framework that sets out the direction for development in Wales to 2040.

2.2 Policies 11 and 12 relate to national and regional connectivity, respectively. These seek to encourage longer-distance trips to be made by public transport, while also making longer journeys possible by electric vehicles. In urban areas, to support sustainable growth and regeneration, the priorities are improving and integrating active travel and public transport. Active travel must be an essential and integral component of all new developments.

2.3 Planning authorities must act to reduce levels of car parking in urban areas, including supporting car-free developments in accessible locations.

Planning Policy Wales (12th Edition)

2.4 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

2.5 In terms of transport related policies paragraph 4.1.1 states that "the planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport".

2.6 Paragraph 4.1.10 states that "the planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:

- are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;
- are designed in a way which integrates them with existing land uses and neighbourhoods; and
- make it possible for all short journeys within and beyond the development to be easily made by walking and cycling."

2.7 PPW advocates a sustainable transport hierarchy for planning, the hierarchy being, from top to bottom:

- Walking and Cycling
- Public Transport
- Ultra Low Emission Vehicles
- Other Private Motor Vehicles

2.8 It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of the private motor vehicles.

Llwybr Newydd – The Wales Transport Strategy 2021

2.9 This document sets out the Welsh Government's vision for how the country's transport system can help deliver on a pathway to creating a more prosperous, green and equal society. It lists its priorities as being:

1. Bringing services to people in order to reduce the need to travel. To this end a target has been set that of 30% of the workforce works remotely on a regular basis.

2. Allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure.
3. Encourage people to make the change to more sustainable transport.

2.10 Modal shift is at the heart of Llwybr Newydd. This means the proportion of trips made by sustainable modes increases and fewer trips are made by private cars.

2.11 The Welsh Government has set a target of 45% of journeys to be made by public transport, walking and cycling by 2040. This represents an increase of 13 percentage points on the estimated baseline (2021) mode share of 32%.

TAN18 Transportation

2.12 Planning Policy Wales Technical Advice Note 18 (TAN18) details the Welsh Government Government's policies in terms of transportation and repeats the general principles advocated in PPW i.e. that development is encouraged in sustainable, accessible, locations that will reduce the need to travel by car. Its aim is to promote an efficient and sustainable transport system and to counter the negative impacts associated with road traffic growth, for example increased air pollution, green house gases and congestion (2.1). It sees the integration of transport and land use planning as key (2.3) in achieving the Welsh Government Governments' sustainable development policy objectives by:

- promoting travel efficient settlement patterns;
- ensuring new development is located where there is good access by public transport, walking and cycling thereby minimizing the need for travel and fostering social inclusion;
- managing parking provision;
- ensuring that new development includes appropriate provision for pedestrians, cycling, public transport, and traffic management and parking/servicing;
- encouraging the location of development near other related uses to encourage multi-purpose trips; and
- ensuring that transport infrastructure necessary to serve new development allows existing transport networks to continue to perform their identified functions.

2.13 The needs of walkers and cyclists must be taken into consideration and the use of these most sustainable forms of transport encouraged in all developments (TAN18 Chapter 6). Similarly, all development should be accessible by public transport (Chapter 7).

The Active Travel (Wales) Act 2013

2.14 The Active Travel (Wales) Act 2013 is Welsh Government legislation aimed to support an increase in the level of walking and cycling in Wales; to encourage a shift in travel behaviour to active travel modes, and to facilitate the building of walking and cycling infrastructure.

2.15 The Active Travel (Wales) Act 2013 requires local authorities in Wales to produce maps of walking and cycling networks in their local area, known as Active Travel Network Maps (ATNMs). These maps are designed to show two main things:

- **Existing routes** – those current walking and cycling routes that already meet Welsh Government active travel standards, meaning they can be readily used for everyday journeys, and

- **Future routes** – new routes that the local authority proposes to create in the future, as well as current routes that are planned for improvement to bring them up to the standards.

2.16 An extract from the ATNM is provided below and shows that future walking and cycling routes are proposed along Bute Terrace, which passes the site, and all other side streets in the vicinity of the site.

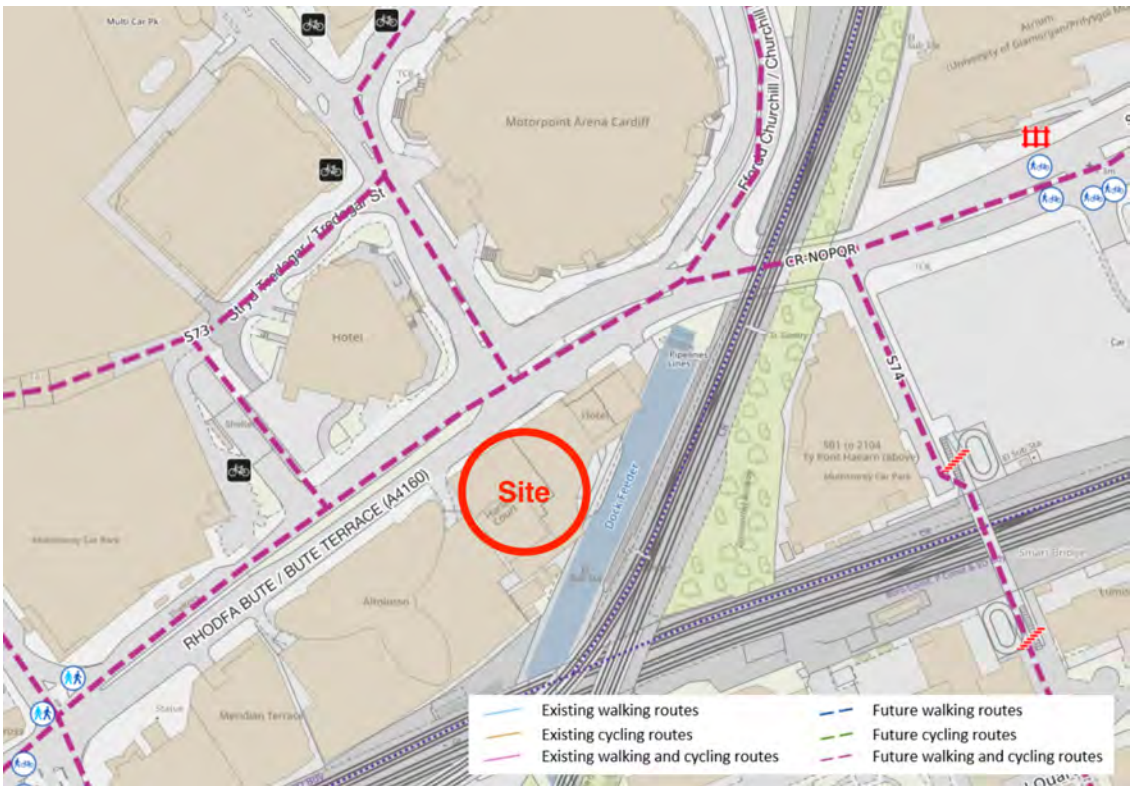


Figure 2 Active Travel Network Map

Cardiff Local Development Plan 2006 - 2026

2.17 In terms of transport related policies, KP4 (Masterplanning Approach) and KP5 (Good Quality and Sustainable Design) require that developments are in locations that are accessible by walking, cycling and public transport and where residents can easily access services by these sustainable modes of travel.

2.18 Policy KP6 (New Infrastructure) requires that new development makes appropriate provision for, or contributes towards, essential, enabling infrastructure that includes infrastructure relating to transportation and highways including access, circulation, parking, public transport provision, walking and cycling.

2.19 Policy KP8 (Sustainable Transport) requires that "Development in Cardiff will be integrated with transport infrastructure and services in order to:

- Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport.
- Reduce travel demand and dependence on the car;
- Enable and maximise use of sustainable and active modes of transport;
- Integrate travel modes;

- Provide for people with particular access and mobility requirements;
- Improve safety for all travellers;
- Maintain and improve the efficiency and reliability of the transport network;
- Support the movement of freight by rail or water; and
- Manage freight movements by road and minimise their impacts.

2.20 There are a number of more specific transport related policies that are relevant to the development proposal including T1 (Walking and Cycling), T5 (Managing transport Impacts) and T6 (Impact on Transport Networks and Services).

2.21 Bute Terrace adjacent to the site is identified for strategic bus corridor enhancements under policy T2. The policy sates that "provision will be made to facilitate the functional integration of these corridors and associated services with the wider transport network including the bus network and local walking and cycling routes".

Managing Transportation Impacts (Incorporating Parking Standards) – Supplementary Planning Guidance

2.22 The SPG sets out the maximum level of car parking provision and minimum level of cycle parking provision that should be made within new development. The application site is located within the defined Central Area

2.23 For all dwellings a maximum of 1 car parking space per unit and minimum of one cycle parking space per bedroom is specified.

3 Existing Conditions

3.1 Harlech Court is located within Cardiff's city centre, at the junction between Bute Terrace and Mary Ann Street. It lies opposite the Park Inn Hotel (1) and Utilita Arena (2). Its boundaries are formed by Bute Terrace to the north, the Altolusso (3) residential tower to the west and the Citrus Hotel (4) and Dock Feeder Canal to the east.

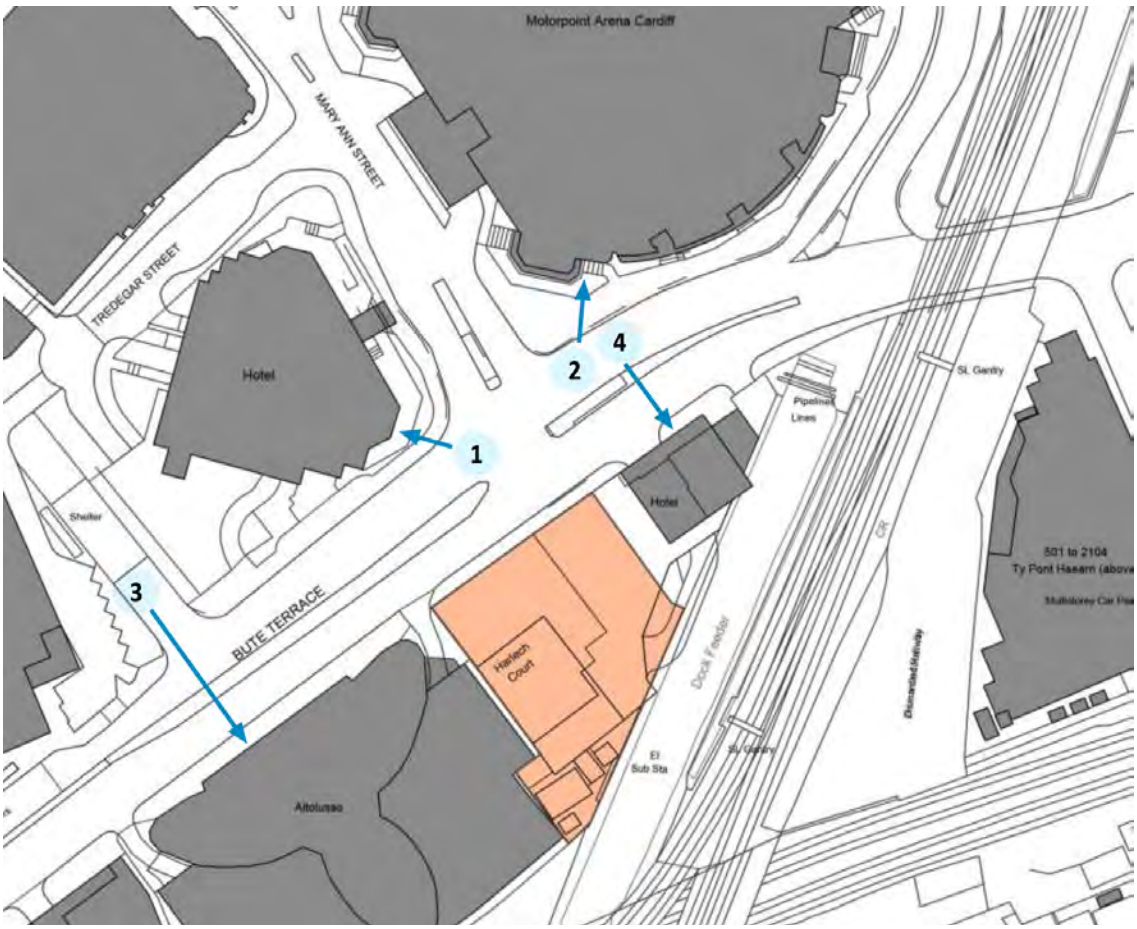


Figure 3 The Site

3.2 Harlech Court currently comprises of a 1970's office building located centrally on top of a two-storey concrete framed podium which is clad in pennant stone with faux Victorian warehouse window openings. Space within the podium formerly most recently accommodated a nightclub but is now vacant.

3.3 The roof of the podium provides shared car parking for Harlech Court and the adjacent Citrus Hotel, accessed from street level by ramp that meets Bute Terrace immediately to the east of the Mary Ann Street junction.

3.4 Prior approval for the demolition of the Harlech Court office building, restaurant, access ramp and podium was granted by Cardiff Council (24/00954/PRAP) in July 2024.

Proximity to Services & Active Travel

3.5 The site is located within the city centre and provides its future residents and users with easy access to a wide range of services and facilities within easy walking distance.

3.6 Guidance published in 2021 by TCPA advocates the development of 20-minute neighbourhoods. A 20-minute neighbourhood is a compact and connected place, with a range of services that meet most people's daily needs. The figure below shows the areas that can be reached within a 20-minute walk of the application site. It encompasses the whole of the city centre and the extensive range of shops, services, leisure, food and drink and employment opportunities within it.

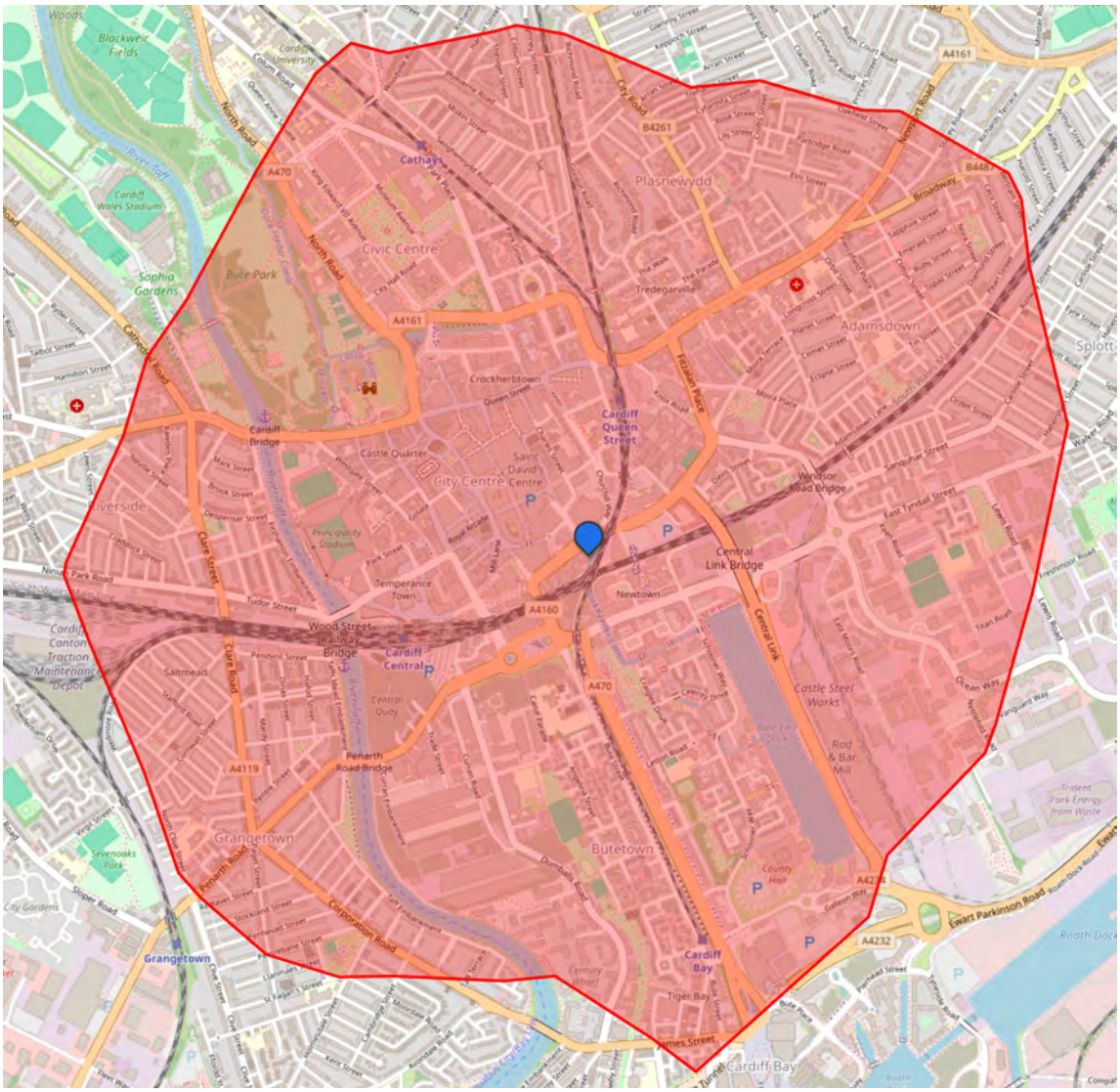


Figure 4 20-Minute Walk Catchment

3.7 The site is accessible to pedestrians from the footway that runs along Bute Terrace. There are signal controlled crossing facilities at the Bute Terrace / Mary Ann Street junction adjacent to the site, allowing for safe pedestrian journeys in all directions.

3.8 There are currently advisory cycle lanes running in both directions along Bute Terrace. The Council's ATNM shows that future improvements to walking and cycling routes are proposed for the streets around the site, including Bute Terrace (see 2.16).

Public Transport

3.9 There are many bus stops located within a few minutes' walk of the site that provide access to multiple public transport services. Cardiff's new Bus Interchange and Cardiff Central railway station are approximately 600m (9 minute walk) to the west of the site. Queen Street railway station is a similar distance to the north east of the site.

Highway Access

3.10 The site is accessed from Bute Terrace (A4160). The access is shared with the Citrus Hotel and leads to a ramp that rises to a shared car park (approximately 50 spaces) at second floor level.

Figure 5 Existing Access

3.11 Mary Ann Street joins Bute Terrace immediately opposite the application site. The junction between the two streets is signal controlled with yellow-box markings and signalised pedestrian crossing facilities on the Mary Ann Street and eastern Bute Terrace arms. The Harlech Court / Citrus Hotel access is located immediately to the east of the eastern approach's junction stop line.

3.12 On the eastern side of the junction, Bute Terrace has three traffic lanes in each direction. There is a kerbed central median that prevents right turns to and from the Harlech Court / Citrus Hotel access.

3.13 There are double-yellow lines on both sides of Bute Terrace with no loading permitted between 7.45am and 6pm, Mondays to Saturdays.

3.14 The Bute Terrace / Mary Ann Street junction and its approaches have a good safety record with only two, slight severity, injury collisions recorded in the latest 5-year period for which data is available (2018 to 2022 inclusive). Both incidents occurred in 2019 and resulted in slight injuries to pedestrians. One of the incidents occurred on the western approach to the junction where there are no pedestrian crossing facilities. The absence of clusters of collisions or collisions of greater severity indicate that the junction is operating within an acceptable level of safety.

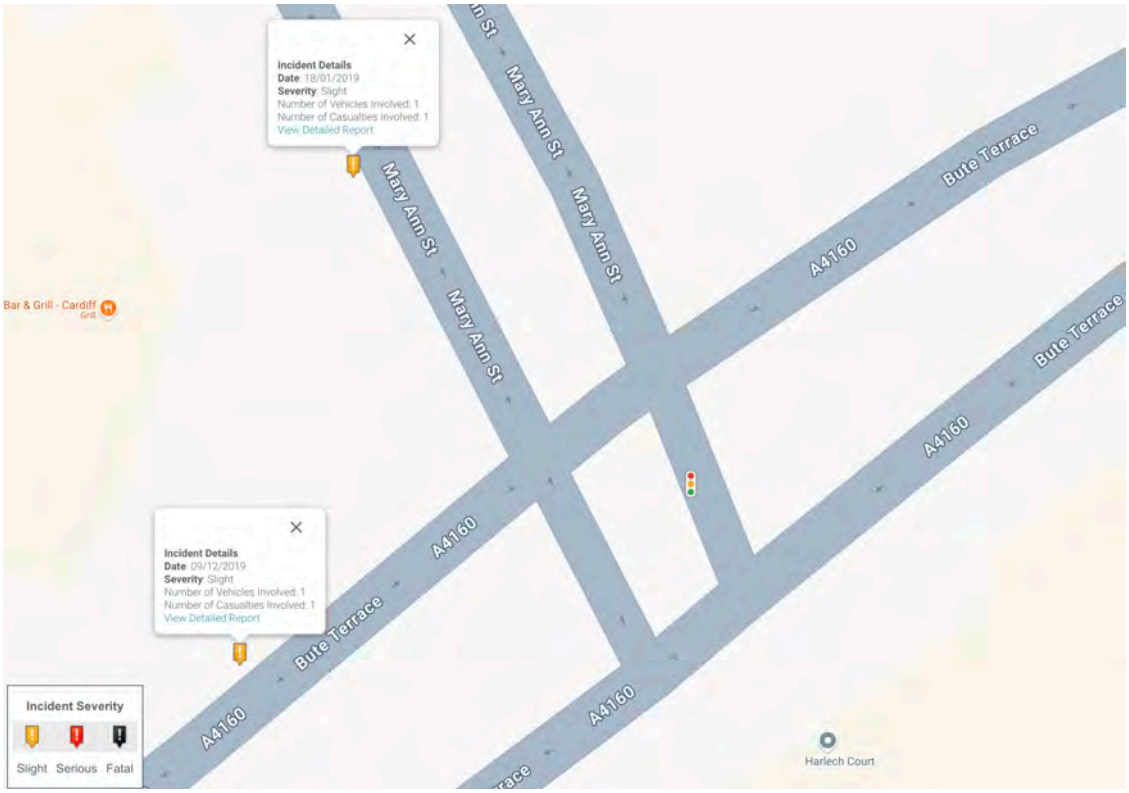


Figure 6 Injury Collision Location & Severity (2018 – 2022) (www.crashmap.co.uk)

4 Proposed Development

4.1 The proposed development comprises of the construction of a 30-story residential tower with mixed uses at ground and first floor level and associated external public realm and operational spaces.

4.2 The tower will accommodate 340 build to rent (BTR) units with a mix of internal and external amenity for residents provided by way of a square, lounges, roof gardens, gymnasium, café, working and social spaces.

4.3 A 190m^2 commercial unit (A1/A3 use) is provided at ground floor level.

Access, Parking and Servicing

4.4 Pedestrian and cycle access to the tower and ground floor commercial unit will be from Bute Terrace and the new square provided as part of the development.

4.5 Ample cycle parking for the BTR residents is provided in an internal, secure, cycle store that has capacity for 352 cycles in a two-tier bike rack system. Short term cycle parking stands are provided within the development's square for visitors and users of the commercial space.

4.6 No off-street car parking is provided within the development. This meets the requirements of Cardiff Council's Managing Transport Impacts (Incorporating Parking Standards) Supplementary Planning Guidance (Parking Standards SPG) requirements for development in the city's Central Area.

4.7 The existing access to the car park that Harlech Court shares with the Citrus Hotel falls outside of the development's extent and will be retained to serve 14 parking spaces that will be retained for the hotel's use. This is a significant reduction compared to the existing 50 or so parking spaces that are available and this will lead to a reduction in turning vehicle movements at the access.

4.8 A loading bay is proposed adjacent to the commercial unit that will allow delivery vehicles to stop without obstructing Bute Terrace's cycle and traffic lanes. The delivery bay will provide a safe facility also for refuse collection and deliveries to the residential element of the development also. A variation in the existing Traffic Regulation Order (TRO) will be required in order to facilitate and appropriately enforce the use of the loading bay, the details of which will be agreed with the Highway Authority.

4.9 The development includes a rear service yard that provides access to the tower's plant room. Access to the yard will be required on an infrequent basis, for scheduled and emergency maintenance. Access to the yard is via the development's square and a vehicle crossover will be provided across the Bute Terrace footway.

4.10 The crossover is shown indicatively being aligned with the development's eastern boundary. This provides the shortest crossing of the development's square by vehicles and as a result reduces the potential for conflict between vehicles and pedestrians within the square. Initial discussions with Highway Officers over the precise position and layout of the crossover have taken place and are continuing.

4.11 Swept path analysis has been undertaken to ensure that the service yard's design is adequate to accommodate service and emergency vehicles and is included as Appendix 1.

Appendix 1 Swept Path Analysis

5 Trip Generation

5.1 This section considers the likely trip generation of the proposed development. The assessment is made on the basis that the development will arise from a clean, empty, site as permission has already been granted for the demolition of the existing buildings and structures. No assessment is made of the number of trips that can be generated by the existing uses of the site on the basis that demolition can progress regardless of the outcome of the new development's planning application.

5.2 Nevertheless it is germane that the demolition of the existing site will result in the ending of the existing uses' trip generation, particularly given the removal of the existing 50-space car park with only 14 spaces being retained for the use of the adjacent hotel.

Residential

5.3 The potential trip generation of the proposed development of the site has been estimated by reference to the TRICS trip rate database, a database of over 7,100 traffic surveys of various types of development throughout the UK and Ireland.

5.4 From the TRICS database evidence of multi-modal trip rates of developments of privately owned flats have been obtained. TRICS does not provide any specific data on BTR schemes.

5.5 The sample of TRICS survey sites has been confined to those undertaken in town centre or edge of town centre locations in mainland Britain (excluding Greater London). The sample has an average of 56 units per site and the analysis has further been confined to those developments that provided no more than one car parking space per unit. It was found that applying a lower car parking provision resulted in too small a sample.

5.6 The detailed TRICS output is provided as Appendix 2 and summarised in the following tables.

Appendix 2 TRICS Multi Modal Trip Rate Data - Residential

Time Range	Trip Rate per Unit	Trip Generation 340 Units
07:00-08:00	0.46	156
08:00-09:00	0.72	244
09:00-10:00	0.37	124
10:00-11:00	0.37	124
11:00-12:00	0.35	120
12:00-13:00	0.46	157
13:00-14:00	0.36	123
14:00-15:00	0.33	113
15:00-16:00	0.51	175
16:00-17:00	0.52	178
17:00-18:00	0.67	227
18:00-19:00	0.77	263
Daily:	**5.90**	**2005**

Table 1 Total People Trip Rates & Trip Generation

5.7 The data suggests that the residential element of the development will generate around 2005 daily people trips.

5.8 The development will be attractive to those wishing to experience city living where services can be accessed on foot and where there is good access to public transport for longer distance journeys. The zero parking provision on site and the limited availability of on-street parking spaces for residents near to the site will make car ownership and use unattractive to residents. As such it is considered that the vast majority of the 2005 daily trips generated by the 340 BTR units will be made by sustainable modes of travel.

Commercial

5.9 The ground floor commercial unit provides a total floorspace of approximately 190m^2. For the purpose of this assessment it is assumed that the space will be occupied by a convenience store.

5.10 The typical trip rates of convenience stores has been obtained from the TRICS database, is included in full in Appendix 3 and summarised below.

Appendix 3 TRICS Multi Modal Trip Rate Data – Retail

Time Range	Total People	Pedestrians	Cyclists	Public Transport Users	Drivers	Vehicle Passengers
07:00-08:00	36.45	20.96	0.91	4.56	9.57	0.46
08:00-09:00	76.08	43.05	0.91	10.02	14.81	7.29
09:00-10:00	65.83	39.18	0.00	4.56	18.91	3.19
10:00-11:00	58.54	42.83	0.00	6.83	7.74	1.14
11:00-12:00	75.63	43.51	0.00	5.24	17.77	9.11
12:00-13:00	101.82	71.30	0.46	7.75	18.45	3.87
13:00-14:00	117.08	93.39	0.00	9.11	12.76	1.82
14:00-15:00	88.61	51.94	0.00	9.80	22.55	4.33
15:00-16:00	114.58	67.88	0.46	10.71	25.97	9.57
16:00-17:00	109.34	61.73	0.00	15.95	22.55	9.11
17:00-18:00	121.19	67.88	0.91	21.41	25.29	5.70
18:00-19:00	105.01	47.84	1.37	19.36	23.24	13.21
19:00-20:00	91.12	55.81	0.00	10.48	19.13	5.70
20:00-21:00	51.94	38.27	0.00	5.47	6.38	1.82
21:00-22:00	39.86	23.01	0.00	7.75	6.83	2.28
Daily:	**1253.08 (100%)**	**768.56 (61%)**	**5.01 (1%)**	**148.98 (12%)**	**251.94 (20%)**	**78.59 (6%)**

Table 2 Retail Multi-Modal Trip Rates (per 100m^2 Floor Area)

Time Range	Total People	Pedestrians	Cyclists	Public Transport Users	Drivers	Vehicle Passengers
07:00-08:00	69	40	2	9	18	1
08:00-09:00	145	82	2	19	28	14
09:00-10:00	125	74	0	9	36	6
10:00-11:00	111	81	0	13	15	2
11:00-12:00	144	83	0	10	34	17
12:00-13:00	193	135	1	15	35	7
13:00-14:00	222	177	0	17	24	3
14:00-15:00	168	99	0	19	43	8
15:00-16:00	218	129	1	20	49	18
16:00-17:00	208	117	0	30	43	17
17:00-18:00	230	129	2	41	48	11
18:00-19:00	200	91	3	37	44	25
19:00-20:00	173	106	0	20	36	11
20:00-21:00	99	73	0	10	12	3
21:00-22:00	76	44	0	15	13	4
Daily:	2381	1460	10	283	479	149

Table 3 Retail Multi-Modal Trip Attraction

5.11 The data suggests that the increase in retail space will attract some 2381 daily people trips. Very few of these trips will be newly generated trips however.

5.12 Some of the 2381 trips will be internal to the development. This is where visits to the ground floor commercial unit originate from and return to the residential units above.

5.13 Others will be pass-by trips where people visit the commercial unit as part of an existing journey that passes the site. These might be, for example, residents from the new units above that call into the commercial unit on their way out to, or home from, work or people stopping at the commercial unit as they walk past along Bute Terrace

5.14 Other trips will be linked with existing journeys. For example, people visiting the commercial unit as part of a wider shopping trip into the city centre. Other trips will divert from existing similar retail / commercial offerings in the local area.

5.15 The majority of these trips attracted by the commercial unit will therefore already be present on the surrounding transport network and will not place additional demand on the transport network.

5.16 Research into the breakdown of trip types is provided in the TRICS Report 95-2 – Pass-by & Diverted Traffic. It states that primary or new trips account for only a small proportion, up to 8%, of traffic generated by a new retail development. It explains that *"the very low proportion of newly generated trips on the network suggested by all of the above research is not entirely surprising. People are unlikely to go shopping for food on a more frequent basis simply because a new store opens. It has even been suggested that new store openings can result in a decrease in total vehicle mileage on the network if the new store brings a shopping opportunity nearer to where an existing market is situated*" (TRICS Report 95-2 para. 3.8).

5.17 Based on this research we will take a robust approach and assume that new trips attracted by the commercial unit will account for no more than 10% of the overall trip attraction volume. On that basis the commercial element of the development can be expected to generate some 238 new people trips per day.

Time Range	Total People	Pedestrians	Cyclists	Public Transport Users	Drivers	Vehicle Passengers
07:00-08:00	7	4	0	1	2	0
08:00-09:00	14	8	0	2	3	1
09:00-10:00	13	7	0	1	4	1
10:00-11:00	11	8	0	1	1	0
11:00-12:00	14	8	0	1	3	2
12:00-13:00	19	14	0	1	4	1
13:00-14:00	22	18	0	2	2	0
14:00-15:00	17	10	0	2	4	1
15:00-16:00	22	13	0	2	5	2
16:00-17:00	21	12	0	3	4	2
17:00-18:00	23	13	0	4	5	1
18:00-19:00	20	9	0	4	4	3
19:00-20:00	17	11	0	2	4	1
20:00-21:00	10	7	0	1	1	0
21:00-22:00	8	4	0	1	1	0
Daily:	**238**	**146**	**1**	**28**	**48**	**15**

Table 4 Retail Multi-Modal New Trips

Parking Demand

5.18 Applying the hourly vehicular trip rates to the overall 190m^2 of commercial floorspace allows for an estimate of the overall traffic attraction and parking demand of this element of the development.

5.19 It is estimated that overall parking demand for the commercial space will peak at 11 spaces. As described earlier in 5.11 only a small proportion, around 10%, of the trips attracted by the development's commercial space will be new and as such the commercial development will only generate additional demand for up to around 1 car parking spaces (see Table 5).

5.20 As there is no parking provision within the site, the small additional demand for parking generated by the commercial space will need to be accommodated in the nearby city centre public car parks.

Time Range	Trip Rate per 100m2			Overall Total				New Trips (10%) & Parking Accumulation			
				Trip Attraction (190m²)			Parking Acc.				
	Arr.	Dep.	Total	Arr.	Dep.	Total		Arr.	Dep.	Total	Parking Acc.
07:00-08:00	5.239	4.328	9.567	10	8	18	2	1	1	2	0
08:00-09:00	8.428	6.378	14.806	16	12	28	6	2	1	3	1
09:00-10:00	9.112	9.795	18.907	17	19	36	4	2	2	4	0
10:00-11:00	3.872	3.872	7.744	7	7	15	4	1	1	1	0
11:00-12:00	9.795	7.973	17.768	19	15	34	8	2	2	3	1
12:00-13:00	10.023	8.428	18.451	19	16	35	11	2	2	4	1
13:00-14:00	6.378	6.378	12.756	12	12	24	11	1	1	2	1
14:00-15:00	11.162	11.39	22.552	21	22	43	10	2	2	4	1
15:00-16:00	12.528	13.44	25.968	24	26	49	9	2	3	5	1
16:00-17:00	10.934	11.617	22.551	21	22	43	7	2	2	4	1
17:00-18:00	12.984	12.301	25.285	25	23	48	9	2	2	5	1
18:00-19:00	10.934	12.301	23.235	21	23	44	6	2	2	4	1
19:00–20:00	9.567	9.567	19.134	18	18	36	6	2	2	4	1
20:00-21:00	2.506	3.872	6.378	5	7	12	3	0	1	1	0
21:00-22:00	2.733	4.1	6.833	5	8	13	1	1	1	1	0
Daily:	**126.195**	**125.74**	**251.935**	**240**	**239**	**479**		**24**	**24**	**48**	

Table 5 Commercial Use Vehicle Trip Rate, Overall & New Trip Attraction & Parking Accumulation

Construction Traffic

5.21 A Construction Traffic Management Plan (CTMP) will be prepared in consultation with the Main Contractor and Highway Authority prior to the commencement of the development. The CTMP will detail measures that will be employed to minimise the impacts of construction traffic on the roads surrounding the site and their users. These will include details of how and when deliveries will be made, taking account of the site's constraints and highway conditions.

5.22 It is expected that the submission of a CTMP, its agreement and implementation will be a condition of the planning permission.

6 Summary & Conclusion

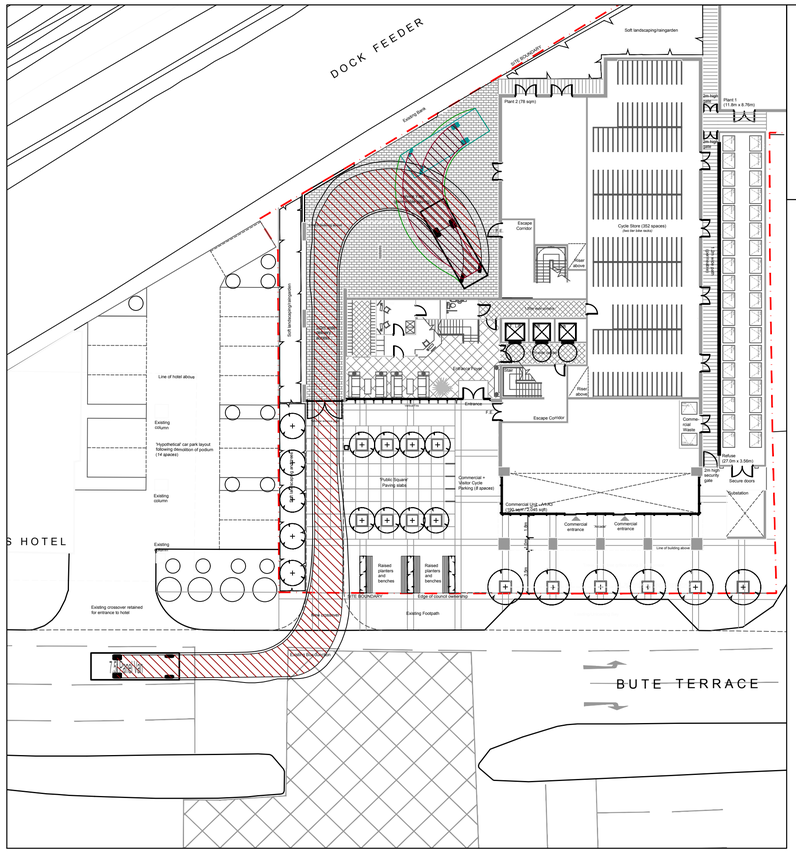
6.1 In summary this Transport Statement has demonstrated that:

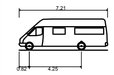
- Planning permission is sought for the construction of a new 30-storey residential tower, accommodating 340 BTR apartments with commercial uses on the ground and first floor and an adjacent public square.
- Harlech Court currently comprises of a 1970's office building located centrally on top of a two-storey concrete framed podium.
- The roof of the podium provides shared car parking for Harlech Court and the adjacent Citrus Hotel, accessed from street level by ramp that meets Bute Terrace immediately to the east of the Mary Ann Street junction.
- Prior approval for the demolition of the Harlech Court office building, restaurant, access ramp and podium was granted by Cardiff Council (24/00954/PRAP) in July 2024. The existing vehicular access from Bute Terrace is retained and will serve 14 car parking spaces retained for the use of the Citrus Hotel.
- The site is located in Cardiff's city centre providing residents of the future development with a wide range of services and facilities within a few minutes walk. The nearby bus stops, bus interchange and two railway stations provide access to regular and frequent public transport services.
- No car parking spaces are provided within the development, reflecting the central and highly sustainable position of the site where car-free living is achievable and desirable.
- 352 secure cycle parking spaces are provided within an internal cycle store. Additional short-stay cycle parking spaces are provided within the new public square catering for visitors to the residential units and commercial unit.
- Day-to-day servicing of the development will be from a new loading bay located on Bute Terrace. A rear service yard provides access for occasional visits to a plant room and will be accessed by way of a vehicular crossover access at the Bute Terrace / Mary Ann Street junction.
- In terms of trip generation the development will lead to an increase in trips associated with the new residential units and commercial space. The trips generated by the residential element of the development and attracted by the proposed commercial unit will be made by sustainable forms of transport. The absence of car parking provision within the development and the limited availability of freely available on-street parking on the surrounding streets make travelling to the site by car an unattractive proposition. As such, the development is unlikely to have any material impact on traffic generation and parking demand on the surrounding streets.

6.2 It is considered that the proposed development meets planning policy requirements in terms of being in an appropriate location that is safely accessible by all forms of transport and that there are no significant impacts of the continued operation and safety of the surrounding highway and transport network.

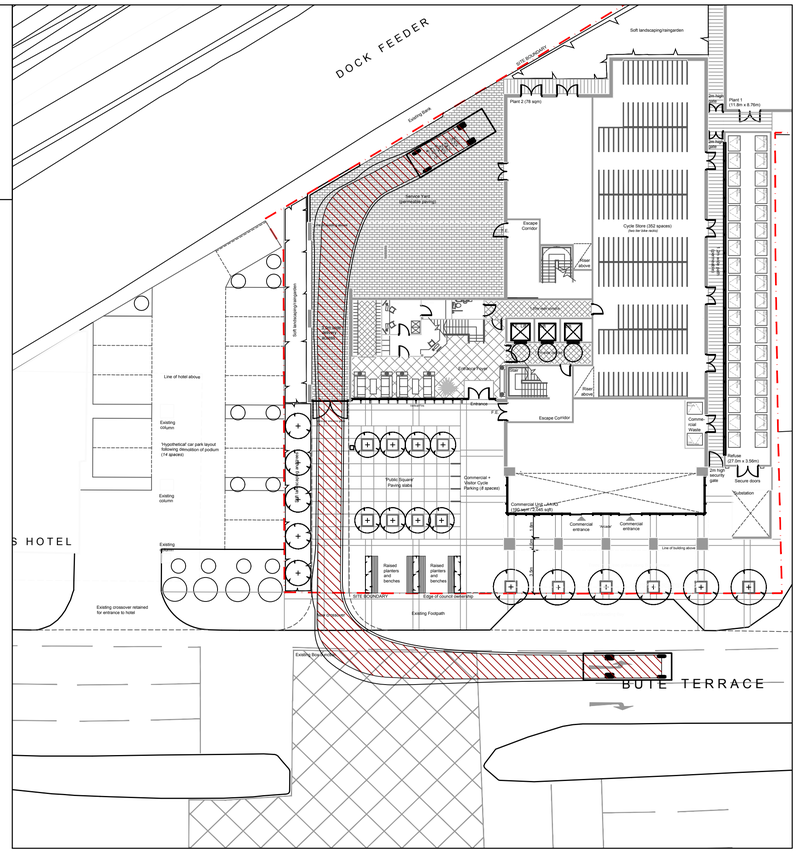
6.3 It is concluded therefore that there are no transport related issues that should prevent the proposed development.

Appendix 1 Swept Path Analysis





7.5t Panel Van	
Overall Length	7.210m
Overall Width	2.192m
Overall Body Height	2.544m
Min Body Ground Clearance	0.316m
Track Width	1.865m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m



A	First Issue	27-08-24

acstro
Unit 19, Yr Hen Farchnad,
Carmarthen Street, Llandeilo SA19 6BJ
E-mail: mail@acstro.com
www.acstro.com
Tel: 01558 824021

Project
HARLECH COURT

Drawing
SWEPT PATH ANALYSIS
REAR PLANT ROOM YARD

Drawing No.
1784-ACS-XX-ZZ-DR-T-004-A

Scale
1:250 @ A1

Appendix 2 TRICS Multi Modal Trip Rate Data - Residential

Acstro Ltd Salem Llandeilo Licence No: 648801

Calculation Reference: AUDIT-648801-240903-0954

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	CT	CENTRAL BEDFORDSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	PO	PORTSMOUTH	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	NG	NOTTINGHAM	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	1 days
10	WALES		
	CO	CONWY	1 days
11	SCOTLAND		
	HI	HIGHLAND	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 16 to 175 (units:)
Range Selected by User: 6 to 184 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 02/10/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	4 days
Wednesday	2 days
Thursday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	9

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Development Zone	1
Residential Zone	4
Built-Up Zone	4
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	8 days - Selected
Servicing vehicles Excluded	2 days - Selected

Secondary Filtering selection:

Use Class:

C3	10 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	6 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	3 days
125,001 to 250,000	3 days
250,001 to 500,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	4 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	2 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	10 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 CO-03-C-01 BLOCKS OF FLATS CONWY
MOSTYN BROADWAY
LLANDUDNO

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 37
Survey date: MONDAY *26/03/18* *Survey Type: MANUAL*

2 CT-03-C-01 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
WING ROAD
LEIGHTON BUZZARD
LINSLADE
Edge of Town Centre
Residential Zone
Total No of Dwellings: 175
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

3 CT-03-C-02 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
STANBRIDGE ROAD
LEIGHTON BUZZARD

Edge of Town Centre
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

4 CT-03-C-03 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
COURT DRIVE
DUNSTABLE

Edge of Town Centre
No Sub Category
Total No of Dwellings: 146
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

5 HF-03-C-03 BLOCK OF FLATS HERTFORDSHIRE
SHENLEY ROAD
BOREHAMWOOD

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 91
Survey date: THURSDAY *14/11/19* *Survey Type: MANUAL*

6 HI-03-C-02 BLOCK OF FLATS HIGHLAND
KING STREET
NAIRN

Edge of Town Centre
Residential Zone
Total No of Dwellings: 16
Survey date: WEDNESDAY *19/04/23* *Survey Type: MANUAL*

7 MS-03-C-04 BLOCK OF FLATS MERSEYSIDE
HOY DRIVE
NEWTON-LE-WILLOWS
EARLESTOWN
Edge of Town Centre
Residential Zone
Total No of Dwellings: 24
Survey date: MONDAY *12/04/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8	NG-03-C-03 CANAL STREET NOTTINGHAM	BLOCK OF FLATS		NOTTINGHAM
	Town Centre Built-Up Zone Total No of Dwellings:		46	
	Survey date: MONDAY		*02/10/23*	*Survey Type: MANUAL*
9	PO-03-C-01 CROSS STREET PORTSMOUTH	BLOCKS OF FLATS		PORTSMOUTH
	Edge of Town Centre Built-Up Zone Total No of Dwellings:		90	
	Survey date: TUESDAY		*05/06/18*	*Survey Type: MANUAL*
10	SF-03-C-05 FORE STREET IPSWICH IPSWICH WATERFRONT Edge of Town Centre Development Zone	BLOCKS OF FLATS		SUFFOLK
	Total No of Dwellings:		69	
	Survey date: WEDNESDAY		*23/06/21*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.51

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.036	10	76	0.160	10	76	0.196
08:00 - 09:00	10	76	0.062	10	76	0.204	10	76	0.266
09:00 - 10:00	10	76	0.073	10	76	0.074	10	76	0.147
10:00 - 11:00	10	76	0.065	10	76	0.086	10	76	0.151
11:00 - 12:00	10	76	0.078	10	76	0.093	10	76	0.171
12:00 - 13:00	10	76	0.095	10	76	0.099	10	76	0.194
13:00 - 14:00	10	76	0.069	10	76	0.070	10	76	0.139
14:00 - 15:00	10	76	0.057	10	76	0.071	10	76	0.128
15:00 - 16:00	10	76	0.107	10	76	0.075	10	76	0.182
16:00 - 17:00	10	76	0.132	10	76	0.071	10	76	0.203
17:00 - 18:00	10	76	0.163	10	76	0.086	10	76	0.249
18:00 - 19:00	10	76	0.204	10	76	0.118	10	76	0.322
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.141			1.207			2.348

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	16 - 175 (units:)
Survey date date range:	01/01/16 - 02/10/23
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.001	10	76	0.008	10	76	0.009
08:00 - 09:00	10	76	0.003	10	76	0.019	10	76	0.022
09:00 - 10:00	10	76	0.001	10	76	0.005	10	76	0.006
10:00 - 11:00	10	76	0.003	10	76	0.005	10	76	0.008
11:00 - 12:00	10	76	0.004	10	76	0.005	10	76	0.009
12:00 - 13:00	10	76	0.000	10	76	0.000	10	76	0.000
13:00 - 14:00	10	76	0.004	10	76	0.003	10	76	0.007
14:00 - 15:00	10	76	0.005	10	76	0.003	10	76	0.008
15:00 - 16:00	10	76	0.007	10	76	0.004	10	76	0.011
16:00 - 17:00	10	76	0.004	10	76	0.000	10	76	0.004
17:00 - 18:00	10	76	0.009	10	76	0.005	10	76	0.014
18:00 - 19:00	10	76	0.005	10	76	0.003	10	76	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.046			0.060			0.106

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.042	10	76	0.242	10	76	0.284
08:00 - 09:00	10	76	0.078	10	76	0.352	10	76	0.430
09:00 - 10:00	10	76	0.089	10	76	0.097	10	76	0.186
10:00 - 11:00	10	76	0.087	10	76	0.118	10	76	0.205
11:00 - 12:00	10	76	0.097	10	76	0.122	10	76	0.219
12:00 - 13:00	10	76	0.131	10	76	0.151	10	76	0.282
13:00 - 14:00	10	76	0.099	10	76	0.085	10	76	0.184
14:00 - 15:00	10	76	0.069	10	76	0.093	10	76	0.162
15:00 - 16:00	10	76	0.165	10	76	0.097	10	76	0.262
16:00 - 17:00	10	76	0.213	10	76	0.093	10	76	0.306
17:00 - 18:00	10	76	0.258	10	76	0.112	10	76	0.370
18:00 - 19:00	10	76	0.347	10	76	0.159	10	76	0.506
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.675			1.721			3.396

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.020	10	76	0.077	10	76	0.097
08:00 - 09:00	10	76	0.033	10	76	0.094	10	76	0.127
09:00 - 10:00	10	76	0.053	10	76	0.066	10	76	0.119
10:00 - 11:00	10	76	0.061	10	76	0.052	10	76	0.113
11:00 - 12:00	10	76	0.038	10	76	0.053	10	76	0.091
12:00 - 13:00	10	76	0.065	10	76	0.054	10	76	0.119
13:00 - 14:00	10	76	0.056	10	76	0.053	10	76	0.109
14:00 - 15:00	10	76	0.044	10	76	0.069	10	76	0.113
15:00 - 16:00	10	76	0.073	10	76	0.057	10	76	0.130
16:00 - 17:00	10	76	0.066	10	76	0.074	10	76	0.140
17:00 - 18:00	10	76	0.097	10	76	0.081	10	76	0.178
18:00 - 19:00	10	76	0.086	10	76	0.083	10	76	0.169
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.692			0.813			1.505

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.001	10	76	0.066	10	76	0.067
08:00 - 09:00	10	76	0.011	10	76	0.130	10	76	0.141
09:00 - 10:00	10	76	0.007	10	76	0.049	10	76	0.056
10:00 - 11:00	10	76	0.021	10	76	0.019	10	76	0.040
11:00 - 12:00	10	76	0.019	10	76	0.017	10	76	0.036
12:00 - 13:00	10	76	0.034	10	76	0.028	10	76	0.062
13:00 - 14:00	10	76	0.025	10	76	0.038	10	76	0.063
14:00 - 15:00	10	76	0.030	10	76	0.020	10	76	0.050
15:00 - 16:00	10	76	0.086	10	76	0.025	10	76	0.111
16:00 - 17:00	10	76	0.057	10	76	0.017	10	76	0.074
17:00 - 18:00	10	76	0.087	10	76	0.019	10	76	0.106
18:00 - 19:00	10	76	0.074	10	76	0.016	10	76	0.090
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.452			0.444			0.896

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.51

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	76	0.065	10	76	0.393	10	76	0.458
08:00 - 09:00	10	76	0.124	10	76	0.594	10	76	0.718
09:00 - 10:00	10	76	0.149	10	76	0.217	10	76	0.366
10:00 - 11:00	10	76	0.172	10	76	0.193	10	76	0.365
11:00 - 12:00	10	76	0.157	10	76	0.197	10	76	0.354
12:00 - 13:00	10	76	0.230	10	76	0.233	10	76	0.463
13:00 - 14:00	10	76	0.184	10	76	0.179	10	76	0.363
14:00 - 15:00	10	76	0.148	10	76	0.184	10	76	0.332
15:00 - 16:00	10	76	0.331	10	76	0.183	10	76	0.514
16:00 - 17:00	10	76	0.340	10	76	0.184	10	76	0.524
17:00 - 18:00	10	76	0.451	10	76	0.217	10	76	0.668
18:00 - 19:00	10	76	0.512	10	76	0.261	10	76	0.773
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.863			3.035			5.898

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Appendix 3 TRICS Multi Modal Trip Rate Data – Retail

Calculation Reference: AUDIT-648801-230323-0316

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : O - CONVENIENCE STORE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
	SY	SOUTH YORKSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	219 to 220 (units: sqm)
Range Selected by User:	70 to 1056 (units: sqm)

Parking Spaces Range: Selected: 1 to 10 Actual: 1 to 60

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 22/05/22

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Wednesday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	1
Built-Up Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	2 days - Selected

Secondary Filtering selection:

Use Class:
Not Known 2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included
Population within 1 mile:
15,001 to 20,000 1 days
50,001 to 100,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:
75,001 to 100,000 1 days
500,001 or More 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:
0.6 to 1.0 2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:
Included in the survey count 0 days
Excluded from count or no filling station 2 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:
No 2 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:
No PTAL Present 2 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 NY-01-O-02 SAINSBURY'S LOCAL NORTH YORKSHIRE
COLD BATH ROAD
HARROGATE

Edge of Town Centre
Residential Zone
Total Gross floor area: 220 sqm
Survey date: MONDAY *10/12/12* *Survey Type: MANUAL*

2 SY-01-O-01 SAINSBURY'S LOCAL SOUTH YORKSHIRE
DIVISION STREET
SHEFFIELD

Town Centre
Built-Up Zone
Total Gross floor area: 219 sqm
Survey date: WEDNESDAY *12/12/12* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 4.97

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	5.239	2	220	4.328	2	220	9.567
08:00 - 09:00	2	220	8.428	2	220	6.378	2	220	14.806
09:00 - 10:00	2	220	9.112	2	220	9.795	2	220	18.907
10:00 - 11:00	2	220	3.872	2	220	3.872	2	220	7.744
11:00 - 12:00	2	220	9.795	2	220	7.973	2	220	17.768
12:00 - 13:00	2	220	10.023	2	220	8.428	2	220	18.451
13:00 - 14:00	2	220	6.378	2	220	6.378	2	220	12.756
14:00 - 15:00	2	220	11.162	2	220	11.390	2	220	22.552
15:00 - 16:00	2	220	12.528	2	220	13.440	2	220	25.968
16:00 - 17:00	2	220	10.934	2	220	11.617	2	220	22.551
17:00 - 18:00	2	220	12.984	2	220	12.301	2	220	25.285
18:00 - 19:00	2	220	10.934	2	220	12.301	2	220	23.235
19:00 - 20:00	2	220	9.567	2	220	9.567	2	220	19.134
20:00 - 21:00	2	220	2.506	2	220	3.872	2	220	6.378
21:00 - 22:00	2	220	2.733	2	220	4.100	2	220	6.833
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			126.195			125.740			251.935

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	219 - 220 (units: sqm)
Survey date date range:	01/01/00 - 22/05/22
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	0.456	2	220	0.456	2	220	0.912
08:00 - 09:00	2	220	0.456	2	220	0.456	2	220	0.912
09:00 - 10:00	2	220	0.000	2	220	0.000	2	220	0.000
10:00 - 11:00	2	220	0.000	2	220	0.000	2	220	0.000
11:00 - 12:00	2	220	0.000	2	220	0.000	2	220	0.000
12:00 - 13:00	2	220	0.228	2	220	0.228	2	220	0.456
13:00 - 14:00	2	220	0.000	2	220	0.000	2	220	0.000
14:00 - 15:00	2	220	0.000	2	220	0.000	2	220	0.000
15:00 - 16:00	2	220	0.228	2	220	0.228	2	220	0.456
16:00 - 17:00	2	220	0.000	2	220	0.000	2	220	0.000
17:00 - 18:00	2	220	0.456	2	220	0.456	2	220	0.912
18:00 - 19:00	2	220	0.683	2	220	0.683	2	220	1.366
19:00 - 20:00	2	220	0.000	2	220	0.000	2	220	0.000
20:00 - 21:00	2	220	0.000	2	220	0.000	2	220	0.000
21:00 - 22:00	2	220	0.000	2	220	0.000	2	220	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.507			2.507			5.014

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	5.467	2	220	4.556	2	220	10.023
08:00 - 09:00	2	220	12.756	2	220	9.339	2	220	22.095
09:00 - 10:00	2	220	10.706	2	220	11.390	2	220	22.096
10:00 - 11:00	2	220	4.556	2	220	4.328	2	220	8.884
11:00 - 12:00	2	220	14.579	2	220	12.301	2	220	26.880
12:00 - 13:00	2	220	12.301	2	220	10.023	2	220	22.324
13:00 - 14:00	2	220	7.289	2	220	7.289	2	220	14.578
14:00 - 15:00	2	220	12.984	2	220	13.895	2	220	26.879
15:00 - 16:00	2	220	17.540	2	220	17.995	2	220	35.535
16:00 - 17:00	2	220	15.490	2	220	16.173	2	220	31.663
17:00 - 18:00	2	220	15.262	2	220	15.718	2	220	30.980
18:00 - 19:00	2	220	17.768	2	220	18.679	2	220	36.447
19:00 - 20:00	2	220	11.845	2	220	12.984	2	220	24.829
20:00 - 21:00	2	220	3.417	2	220	4.784	2	220	8.201
21:00 - 22:00	2	220	3.645	2	220	5.467	2	220	9.112
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			165.605			164.921			330.526

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	10.478	2	220	10.478	2	220	20.956
08:00 - 09:00	2	220	20.273	2	220	22.779	2	220	43.052
09:00 - 10:00	2	220	20.957	2	220	18.223	2	220	39.180
10:00 - 11:00	2	220	21.868	2	220	20.957	2	220	42.825
11:00 - 12:00	2	220	21.640	2	220	21.868	2	220	43.508
12:00 - 13:00	2	220	35.080	2	220	36.219	2	220	71.299
13:00 - 14:00	2	220	46.925	2	220	46.469	2	220	93.394
14:00 - 15:00	2	220	24.601	2	220	27.335	2	220	51.936
15:00 - 16:00	2	220	33.030	2	220	34.852	2	220	67.882
16:00 - 17:00	2	220	33.713	2	220	28.018	2	220	61.731
17:00 - 18:00	2	220	37.358	2	220	30.524	2	220	67.882
18:00 - 19:00	2	220	22.323	2	220	25.513	2	220	47.836
19:00 - 20:00	2	220	26.651	2	220	29.157	2	220	55.808
20:00 - 21:00	2	220	18.907	2	220	19.362	2	220	38.269
21:00 - 22:00	2	220	12.528	2	220	10.478	2	220	23.006
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			386.332			382.232			768.564

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	3.417	2	220	1.139	2	220	4.556
08:00 - 09:00	2	220	9.795	2	220	0.228	2	220	10.023
09:00 - 10:00	2	220	3.417	2	220	1.139	2	220	4.556
10:00 - 11:00	2	220	3.872	2	220	2.961	2	220	6.833
11:00 - 12:00	2	220	3.645	2	220	1.595	2	220	5.240
12:00 - 13:00	2	220	4.556	2	220	3.189	2	220	7.745
13:00 - 14:00	2	220	4.556	2	220	4.556	2	220	9.112
14:00 - 15:00	2	220	5.239	2	220	4.556	2	220	9.795
15:00 - 16:00	2	220	5.011	2	220	5.695	2	220	10.706
16:00 - 17:00	2	220	5.011	2	220	10.934	2	220	15.945
17:00 - 18:00	2	220	7.973	2	220	13.440	2	220	21.413
18:00 - 19:00	2	220	7.062	2	220	12.301	2	220	19.363
19:00 - 20:00	2	220	4.784	2	220	5.695	2	220	10.479
20:00 - 21:00	2	220	2.961	2	220	2.506	2	220	5.467
21:00 - 22:00	2	220	2.506	2	220	5.239	2	220	7.745
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			73.805			75.173			148.978

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/O - CONVENIENCE STORE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 4.97

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	220	19.818	2	220	16.629	2	220	36.447
08:00 - 09:00	2	220	43.280	2	220	32.802	2	220	76.082
09:00 - 10:00	2	220	35.080	2	220	30.752	2	220	65.832
10:00 - 11:00	2	220	30.296	2	220	28.246	2	220	58.542
11:00 - 12:00	2	220	39.863	2	220	35.763	2	220	75.626
12:00 - 13:00	2	220	52.164	2	220	49.658	2	220	101.822
13:00 - 14:00	2	220	58.770	2	220	58.314	2	220	117.084
14:00 - 15:00	2	220	42.825	2	220	45.786	2	220	88.611
15:00 - 16:00	2	220	55.809	2	220	58.770	2	220	114.579
16:00 - 17:00	2	220	54.214	2	220	55.125	2	220	109.339
17:00 - 18:00	2	220	61.048	2	220	60.137	2	220	121.185
18:00 - 19:00	2	220	47.836	2	220	57.175	2	220	105.011
19:00 - 20:00	2	220	43.280	2	220	47.836	2	220	91.116
20:00 - 21:00	2	220	25.285	2	220	26.651	2	220	51.936
21:00 - 22:00	2	220	18.679	2	220	21.185	2	220	39.864
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			628.247			624.829			1253.076

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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