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Parking Options Assessment

for

Abbey Creative Quarter Kilkenny

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ROADPLAN
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1 Introduction

1.1. INTRODUCTION

Roadplan Consulting was requested by Kilkenny County Council to identify and assess options for the provision of parking facilities to serve the future implementation of the Abbey Creative Quarter Masterplan (former Smithwick's Brewery site and adjoining area) and the city centre area generally, including the Medieval Mile. A Masterplan/Urban Design Framework for the re-development of the Abbey Creative Quarter area has been prepared and was approved by the Elected Members of Kilkenny County Council in July 2015.

In preparing this report, Roadplan Consulting has made reference to:

- the *Brief for the Appointment of a Consulting Engineer*, issued by Kilkenny County Council in June 2016.
- the *'Kilkenny City & Environs Development Plan 2014 – 2020'*.
- the *'Kilkenny City Centre Local Area Plan 2005'*.
- the *'Abbey Creative Quarter Masterplan – 2015'*.
- the *'Kilkenny City & Environs Mobility Management Plan 2009-2014'*.
- the *'Kilkenny Borough Council – Parking Control Bye Laws 2012'*.
- the *'Kilkenny City HCV Management Plan - 2013'*.
- the *'Traffic Management Guidelines (2003)'*.

1.2. BACKGROUND

Smithwick's Brewery closed in 2014. The brewery site, which measures approx. 10.9 acres, was purchased by Kilkenny Co. Co.

Objective 3C of the *Kilkenny City & Environs Development Plan 2014-2020* states an intention to “.. *prepare a Masterplan and urban design framework for the Smithwick's site and Bateman Quay during the lifetime of the Development Plan*” The inclusion of the area of Bateman Quay into the Masterplan further extends the overall area to approx. 18.5 acres.

1.3. ABBEY CREATIVE QUARTER MASTERPLAN

The Abbey Creative Quarter area is located on the western bank of the River Nore, immediately adjoining Kilkenny city centre. The site is divided by the River Breagh which flows in a west to east direction through the site. The site is bounded to the north by both residential and commercial properties which front onto Green Street. To the west are commercial buildings on both Parliament Street and Horse Barrack Lane, and to the south is Bateman Quay area, with commercial units and a public carpark. The site is also traversed by a new urban street: the recently-constructed Kilkenny Central Access Scheme (CAS), (see *Figure 1*).

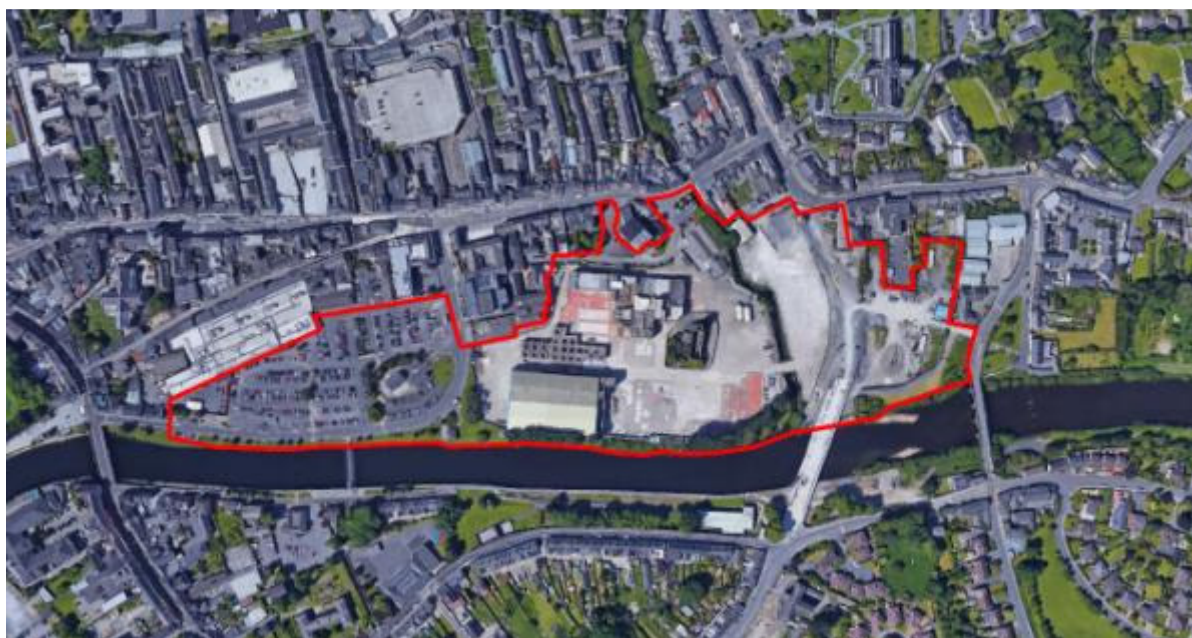


Figure 1: Aerial view of Abbey Creative Quarter: masterplan area outlined in red

The Abbey Creative Quarter is zoned for General Business use in the *Kilkenny City & Environs Development Plan 2014-2020*. A strip of land immediately adjoining the River Nore is zoned for open space.

The proposed layout of the Abbey Creative Quarter, as approved, is shown on *Figure 2*.



Figure 2: Approved layout of Abbey Creative Quarter (building numbers shown)

The approved layout has the following elements:

- a riverside linear park along the bank of the Nore;
- an urban park in the archaeologically sensitive area surrounding St Francis' Abbey and incorporating the following national monuments: Evan's Turret, City Walls and St Francis' Abbey Well (currently buried);
- a pedestrian and cyclist dominated urban street, running on a north south axis through the site, utilising the existing bridge over the River Breagagh, with traffic management measures to be incorporated into the street to prevent it becoming a thoroughfare for vehicular traffic;
- social and community housing in the area to the north of the Central Access Scheme;
- retention and renovation of the existing Brewhouse and Mayfair buildings for re-use;
- extension of existing laneways / pedestrian walkways from the city centre area into, and through, the site, linking with the riverside park and the River Nore.

Works on the Masterplan site are proposed to be completed in nine phases:

Phase 1:

Vacant site, post Smithwick's Brewery, with site clearance by Diageo. Buildings remaining include:

- St Francis' Abbey
- Brewery Sampling Room
- Brewhouse Building
- Mayfair Building
- Evan's Turret
- Tea Houses on Bateman Quay
- Chancellor's Mills

Phase 2:

- Noreside Linear Park developed from Bateman Quay to Green's Bridge.
- Brewhouse Building (Building No. 8) renovation and shell and core fit-out to 'grey box' standard in preparation for new occupiers.
- External spaces such as Berkley Square, Horse Barrack Lane, Tea House Square, and Parliament Square developed.
- Mayfair Building (Building No. 10) renovation, extension and shell and core fit-out to 'grey box' standard in preparation for new occupiers.
- Drainage, water, comms, district heating and all necessary infrastructure constructed prior to completion of Central Street.
- Archaeological investigations and studies carried out in the area of St. Francis' Abbey, St. Francis' Well, the City Wall and Evan's Turret.

Phase 3:

- Community Housing to north of Masterplan site (Bldg No. 14) completed.
- Continued Archaeological investigations and studies carried out in the area around St. Francis' Abbey.

Phase 4:

- Building No. 7 completed.
- Abbey Park completed.

Phase 5:

- Buildings No.'s 4 and 5 completed.

Phase 6:

- Buildings No.'s 6 and 9 completed.

Phase 7:

- Buildings No.'s 2 and 3 completed.

Phase 8:

- Buildings No.'s 12 and 13 completed.
- Bull Lane and Breagh Walk completed.

Phase 9:

- Slipway to Parliament Street completed.
- Building No. 11 (Extension to Watergate Theatre) completed.
- Building No.1 Bateman Quay completed.

1.4. MEDIEVAL MILE

Kilkenny's Medieval Mile is a tourist trail through the city stretching from Kilkenny Castle to St Canice's Cathedral, including all attractions in between (see Figure 3).

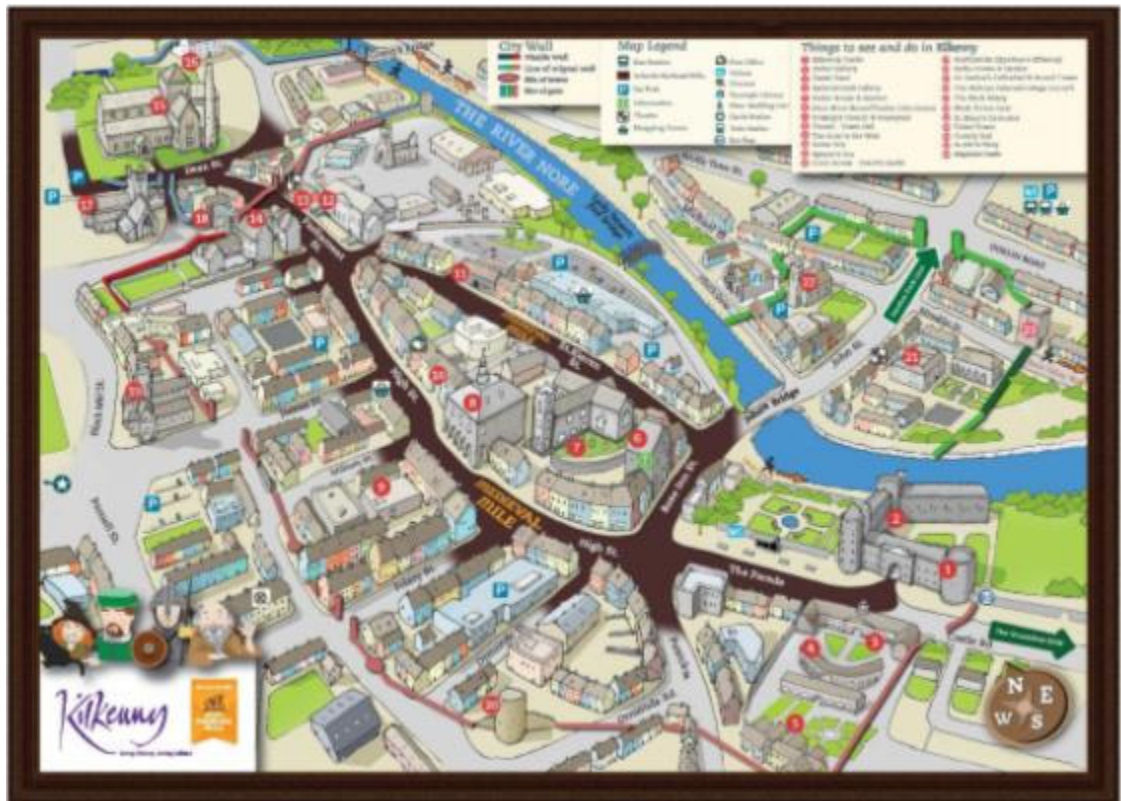


Figure 3: Medieval Mile Map

The objectives of the brand are to influence visitor movement in the city, to improve the level of engagement and to encourage tour operators to incorporate the northern part of the city into their itineraries so that the city is recognised not only for the castle but also for all the other great heritage and cultural offerings along and around the Medieval Mile. It is proposed that the development of the Brewery site will allow the Medieval Mile to incorporate its heritage structures, including St Francis' Abbey, the City Walls & Evan's Turret.

1.5. OBJECTIVE OF THE REPORT

Variation no. 1 to the *Kilkenny City & Environs Development Plan 2014-2020* incorporated high level principles from the masterplan into the development plan, and was adopted in July 2015. This variation includes an objective (3N) “*To provide for park and walk facilities for car and bus/coach parking at a site or sites in close proximity to the Abbey Creative Quarter Masterplan area to service both the Masterplan area and the city centre generally taking into account the mobility management plan for the city.*”

The objective of this report is to undertake a feasibility study and to identify options for the provision of car and bus/coach parking facilities for the future development of the Abbey Creative Quarter and the city centre generally, including the area of the Medieval Mile.

This report assesses the demand for carpark spaces likely to be generated by the Abbey Quarter as it develops in future years. It also assesses the occupancy of existing carparking facilities and the potential spare capacity within them to serve as park and walk facilities.

1.6. STUDY METHODOLOGY

The methodology of the report is summarised as follows:

- identification and quantification of existing car & coach parking facilities within walking distance of the *Abbey Creative Quarter*;
- assessment of proximity of the existing car & coach parks to the *Abbey Creative Quarter* and the determination of usage and occupancy rates of the existing carpark in the general city centre area;
- determination of the parking requirement. Potential carparking demand of the Abbey Creative Quarter was assessed by determining the likely number of vehicular trips it would generate, determined by reference to the TRICS database;

- identification of potential and preferred sites for new car and coach parking facilities in proximity to the Abbey Creative Quarter, that could serve as park and walk facilities to the Abbey Creative Quarter, the Medieval Mile and the city centre generally;
- preliminary cost estimates of the potential parking solutions.

2 Carparking

2.1 INTRODUCTION

There are a number of existing carparks and on-street carparking areas in the vicinity of the Abbey Creative Quarter and the Medieval Mile. The parking areas that are for the use of the public generally, are of four types:

- KCC carparks - pay & display (429 spaces);
- KCC carparks - barrier operated (619 spaces);
- Privately owned carparks – barrier operated (2,479 spaces); and
- Public on-street carparking (892 spaces).

The locations and capacity of the existing carparking facilities are shown on Figure 4, as are the walking distances to the Abbey Creative Quarter area. The more popular tourist attractions at the northern end of the city are also shown. Survey information on carpark usage was collected in the third quarter of 2016.

The overall numbers of spaces of each parking type are stated above, and the combined overall total of spaces of all parking types is 4,419.

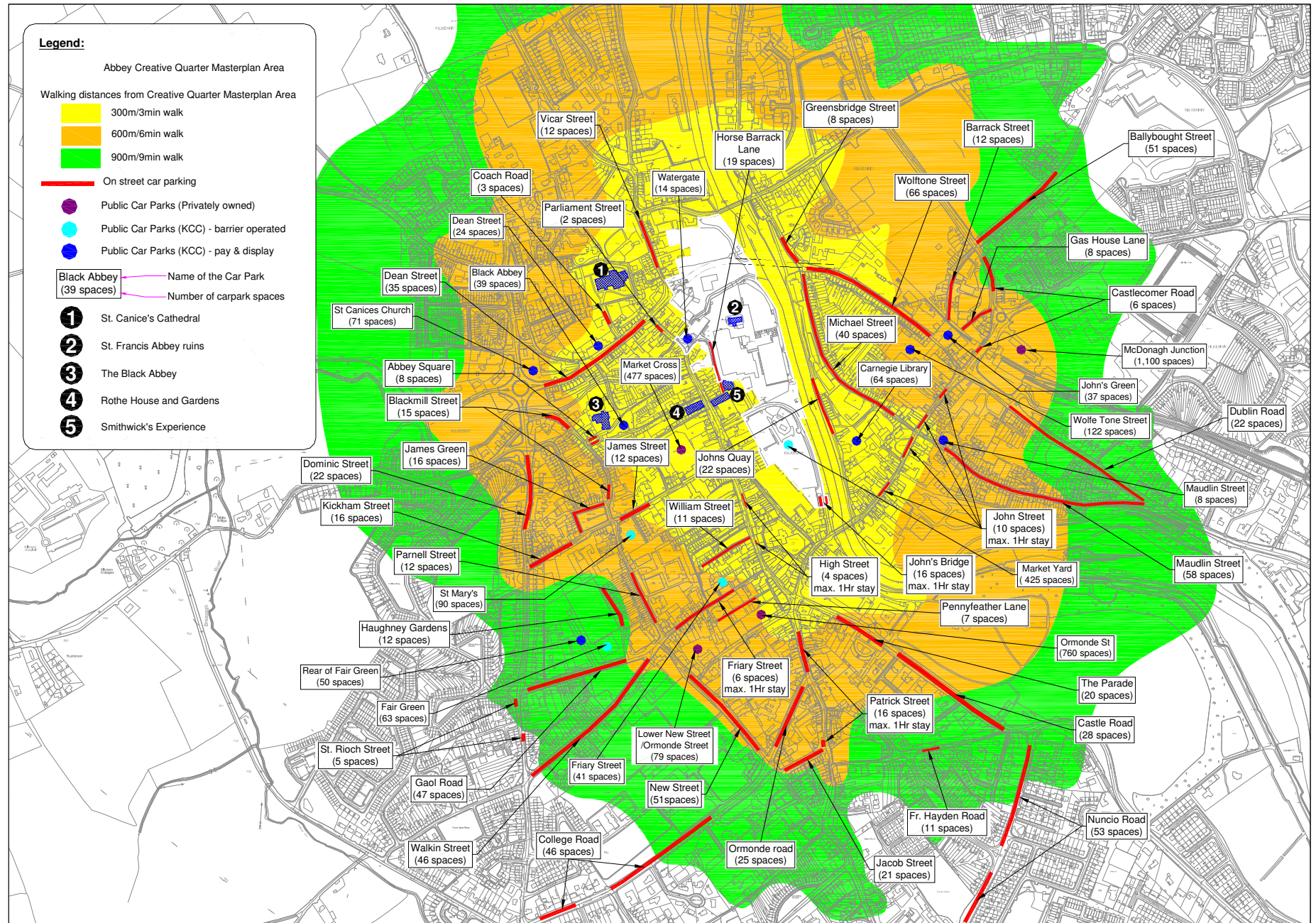


Figure 4 Existing Carparking Facilities

Details of each carpark are provided hereunder. The information dates from the third quarter of 2016.

2.2 PUBLIC CARPARKS (KCC) – PAY AND DISPLAY

• Rear of Fair Green	capacity: rate:	50 spaces €2/day (first hour free)
• Black Abbey	capacity: rate:	39 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• St Canice's Church	capacity: rate:	71 spaces €2/day (first hour free)
• Dean Street	capacity: rate:	24 spaces €2/day (first hour free)
• Carnegie Library	capacity: rate:	64 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Wolfe Tone Street	capacity: rate:	122 spaces €2/day (first hour free)
• John's Green	capacity: rate:	37 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Maudlin Street	capacity: rate:	8 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Watergate	capacity: rate:	14 spaces €1.30/Hr

2.3 PUBLIC CARPARKS (KCC) – BARRIER OPERATED

• Market Yard	capacity: rate:	425 spaces €1.30/Hr
• Friary Street	capacity: rate:	41 spaces €1.30/Hr
• St Mary's	capacity: rate:	90 spaces €1.30/Hr
• Fair Green	capacity: rate:	63 spaces €2/day (first hour free)

2.4 PUBLIC CARPARKS (PRIVATELY OWNED)

• Market Cross	capacity: rate:	500 spaces €1.30/Hr
• Ormonde St	capacity: rate:	800 spaces €1.50/Hr €16.00 Max. 24hr Charge
• McDonagh Junction	capacity: rate:	1,100 spaces €2 for 3 hours €1.50/each hr thereafter €6.0 maximum daily rate 1 hr free if spent €10 or more at Dunnes Store
• Lower New Street/ Ormonde Street	capacity: rate:	79 spaces €1.30/Hr €5/Day

2.5 ON-STREET CARPARKING

• Abbey Square (Pay and Display)	capacity: rate:	8 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Ballybought Street (Phone Pay)	capacity: rate:	51 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Barrack Street (Pay and Display)	capacity: rate:	12 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Blackmill Street (Pay and Display)	capacity: rate:	15 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Castle Road (Pay and Display)	capacity: rate:	28 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Castlecomer Road (Pay and Display)	capacity: rate:	6 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00

• Coach Road (Pay and Display)	capacity: rate:	3 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• College Road (Free of charge)	capacity: rate:	46 spaces All day free of charge
• Dean Street (Pay and Display)	capacity: rate:	35 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Dominic Street (Pay and Display)	capacity: rate:	22 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Dublin Road (Pay and Display)	capacity: rate:	22 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Fr. Hayden Road (Pay and Display)	capacity: rate:	11 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Friary Street (Pay and Display)	capacity: rate:	6 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Gaol Road (Pay and Display)	capacity: rate:	47 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Gas House Lane (Pay and Display)	capacity: rate:	8 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Greensbridge Street (Pay and Display)	capacity: rate:	8 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Haughney Gardens (Pay and Display)	capacity: rate:	4 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• High Street (Pay and Display)	capacity: rate:	4 spaces all blue badge spaces

• Horse Barrack Lane (Pay and Display)	capacity: rate:	19 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Jacob Street (Pay and Display)	capacity: rate:	21 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• James Green (Pay and Display)	capacity: rate:	16 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• James Street (Pay and Display)	capacity: rate:	12 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• John's Bridge (Pay and Display)	capacity: rate:	16 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Johns Quay (Pay and Display)	capacity: rate:	22 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• John Street (Pay and Display)	capacity: rate:	10 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Kickham Street (Pay and Display)	capacity: rate:	16 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Maudlin Street (Pay and Display)	capacity: rate:	58 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Michael Street (Pay and Display)	capacity: rate:	40 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• New Street (Pay and Display)	capacity: rate:	51 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Nuncio Road (Free of charge)	capacity: rate:	53 spaces All day free of charge

• Ormonde Road (Pay and Display)	capacity: rate:	25 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Parliament Street (Pay and Display)	capacity: rate:	2 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Parnell Street (Pay and Display)	capacity: rate:	12 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Patrick Street (Pay and Display)	capacity: rate:	16 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Pennyfeather Lane (Pay and Display)	capacity: rate:	7 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• St. Rioch Street (Pay and Display)	capacity: rate:	5 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• The Parade (Pay and Display)	capacity: rate:	20 spaces 0 - 15 mins €0.50 15 - 30 mins €1.00 30 - 60 mins €1.50
• Vicar Street (Pay and Display)	capacity: rate:	12 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Walkin Street (Pay and Display)	capacity: rate:	46 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• William Street (Pay and Display)	capacity: rate:	11 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00
• Wolf Tone Street (Pay and Display)	capacity: rate:	66 spaces 0 - 2 hours €1.50 2 - 4 hours €2.50 4 - 10 hours €5.00

2.6 ASSESSMENT OF EXISTING CARPARKING FACILITIES

The existing public carpark facilities (excluding the on-street carparking) have been surveyed to determine the following characteristics:

- proximity to the Abbey Creative Quarter;
- occupancy of the existing carpark on each day of the survey;
- daily turnover, accumulation and duration of stay at each carpark on each day of the survey.

2.7 PROXIMITY TO THE ABBEY CREATIVE QUARTER

The proximity of each carpark facility to the Abbey Creative Quarter is shown on *Figure 4*. It is presented by the way of 'bands' showing the areas within walking times of duration 3, 6 and 9 minutes between each carpark and the closest point of the site boundary of the Abbey Quarter area taking into consideration the shortest pedestrian routes in the environs of the site.

Six carparks are within a three-minute walk of the Abbey Creative Quarter; nine are within a six-minute walk, and two are within a nine-minute walk. The majority of the on-street parking is located within a six-minute walk of the area.

The overall number of publicly available carparking spaces (on-street and off-street) within a three-minute walk of the Abbey Creative Quarter area is 1,260; the number within a six-minute walk is 3,969, and within a nine-minute walk the number is 4,364. The remainder are within a 12-minute walk.

2.8 USAGE AND OCCUPANCY RATES OF EXISTING PARKING FACILITIES

A survey of each of the existing *Public Carparks (KCC) - pay & display* was carried out by Roadplan on a Tuesday, Thursday and Saturday between the hours of 8am to 8pm. Occupancy was recorded for each hour of each day. Surveys were carried out on Tuesday 19th and 26th July 2016; Thursday, 21st and 28th July 2016 and Saturday, 23rd and 30th July 2016.

Occupancy and usage data for the *Public Carparks (KCC) - barrier operated* was not surveyed, but was obtained from Kilkenny County Council. Likewise, the *Public Carparks (Privately owned)* data was obtained from the managers of the private carparks.

Details of the surveys are presented hereafter. The terms used to describe the parking characteristics are as follows:

- The accumulation diagrams show the rate of accumulation of parked cars at each carpark during each hour of the days of the surveys. There are three curves shown on each diagram: cumulative arrivals (blue), cumulative departures (red) and accumulation (grey). Cumulative arrivals at any time is sum of arrivals in all hours up to that time. Cumulative departures is likewise in respect of departing vehicles. Accumulation is therefore the difference between the number of cumulative arrivals and the number of cumulative departures, i.e. the number of vehicles parked in the carpark at that time.
- Occupancy means the percentage of the parking spaces that are occupied, i.e. the number of vehicles parked at the carpark during the surveyed hour divided by the total number of spaces in the carpark. For example, an occupancy rate of 100% means that a carpark is full and 0% means that it is empty.
- Parking turnover is the rate of use of the parking facility. It is determined by dividing the number of parking events vehicles in the stated time period by the number of parking spaces. For example a turnover rate of two means that each carpark space was used twice on average over the period of the survey. A higher turnover figure is indicative of a shorter duration of stay.
- However, turnover alone does not give sufficient detail in relation to usage. A carpark with a turnover rate of one could be associated with many different types of usage: at one extreme each space might have been occupied by the same vehicle for the entire duration of the survey; on the other hand 10% of the spaces might have been occupied for the

survey period, each space by 10 different vehicles over that time period. Each of these scenarios would give a turnover figure of one, but each is a very different pattern of usage. To provide greater differentiation, a parameter, which we call Relative Turnover is used. It is the ratio of the number of vehicles that generated the actual parking hours counted over the period of the survey to the theoretical minimum number of vehicles that could have generated the same parking hours over the same time period. For example, the 12-hr survey of the Fair Green carpark showed that 73 vehicles generated a total of 432 parking hours. The theoretical minimum number of vehicles that could have built up the same number of parking hours is 36. (i.e. 36 vehicles could stay for 12 hours each and generate 432 hours in total). The Relative Turnover rate is determined as follows: $73/36=2.05$. This means that number of vehicles generating the parking hours was twice higher than theoretical minimum over the period of the survey. A Higher Relative Turnover rate mean that a carpark is more frequently used, and it is common for carparks used by convenience shoppers with short duration of stay to have high rates. On the other hand, lower Relative Turnover rates are common for carparks used by commuters with longer duration of stay.

- Duration of Stay, another tabulated parameter, indicates the numbers of vehicles parked for different time durations, and Percentage of Stay is the ratio of the number of vehicles parked for a duration of stay divided by the total number of vehicles that use the carpark during the overall survey period, expressed as a percentage.

It should be noted that the total number of spaces within carparks were considered in calculating occupancy, turnover etc. However, some spaces in carparks are restricted to certain types of driver or classes of vehicle: blue badge holders, electric vehicles, taxis etc. The occupancy and turnover figures are therefore slightly underestimated because the spaces that are often available cannot be used by most vehicles or drivers. High occupancy rates are highlighted in the tables.

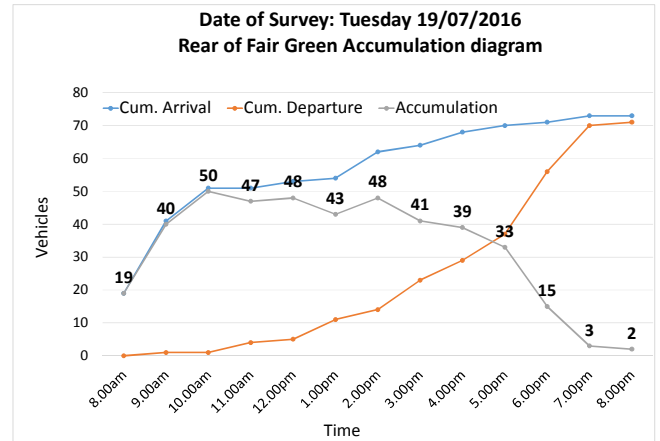
Aerial imagery is presented with the survey results (extracted from Google Maps). That imagery confirms that in many instances the only spaces unoccupied are restricted-use ones. The imagery dates from a time of the year when schools were open (the imagery shows school carparks to be in full use).

2.8.1 Rear of Fair Green - Public Carpark (KCC) - pay & display (50 spaces)

The carpark layout and survey results for the Fair Green carpark are shown in Figure 5.

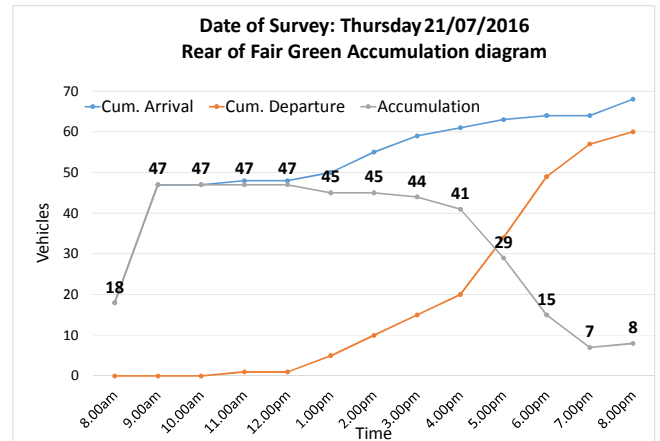
Time:	Occupancy	Turnover	Relative Turnover rate
8am	38%	1.46	2.05
9am	80%		
10am	100%		
11am	94%		
12am	96%		
1pm	86%		
2pm	96%		
3pm	82%		
4pm	78%		
5pm	66%		
6pm	30%		
7pm	6%		
8pm	4%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	14	19%
Stayed < 2.0h	10	14%
Stayed < 3.0h	4	5%
Stayed < 4.0h	1	1%
Stayed < 5.0h	4	5%
Stayed < 6.0h	3	4%
Stayed < 7.0h	4	5%
Stayed < 8.0h	7	10%
Stayed < 9.0h	13	18%
Stayed < 10.0h	6	8%
Stayed < 11.0h	6	8%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	1%
Total	73	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	36%	1.36	1.85
9am	94%		
10am	94%		
11am	94%		
12am	94%		
1pm	90%		
2pm	90%		
3pm	88%		
4pm	82%		
5pm	58%		
6pm	30%		
7pm	14%		
8pm	16%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	7	10%
Stayed < 2.0h	4	6%
Stayed < 3.0h	4	6%
Stayed < 4.0h	7	10%
Stayed < 5.0h	7	10%
Stayed < 6.0h	4	6%
Stayed < 7.0h	2	3%
Stayed < 8.0h	10	15%
Stayed < 9.0h	11	16%
Stayed < 10.0h	4	6%
Stayed < 11.0h	5	7%
Stayed < 12.0h	1	1%
Stayed >12.0h	2	3%
Total	68	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	18%	2.18	2.98
9am	42%		
10am	70%		
11am	94%		
12am	80%		
1pm	94%		
2pm	92%		
3pm	94%		
4pm	82%		
5pm	78%		
6pm	74%		
7pm	30%		
8pm	30%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	32	29%
Stayed < 2.0h	13	12%
Stayed < 3.0h	22	20%
Stayed < 4.0h	6	6%
Stayed < 5.0h	4	4%
Stayed < 6.0h	1	1%
Stayed < 7.0h	9	8%
Stayed < 8.0h	4	4%
Stayed < 9.0h	10	9%
Stayed < 10.0h	8	7%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	109	

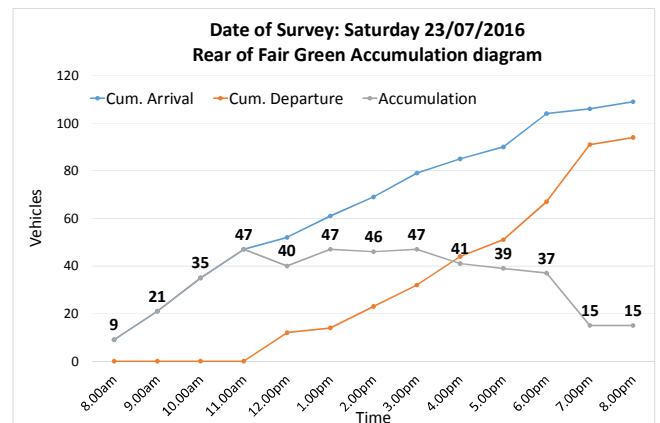




Figure 5: Rear of Fair Green - Public Carparks (KCC) - pay & display

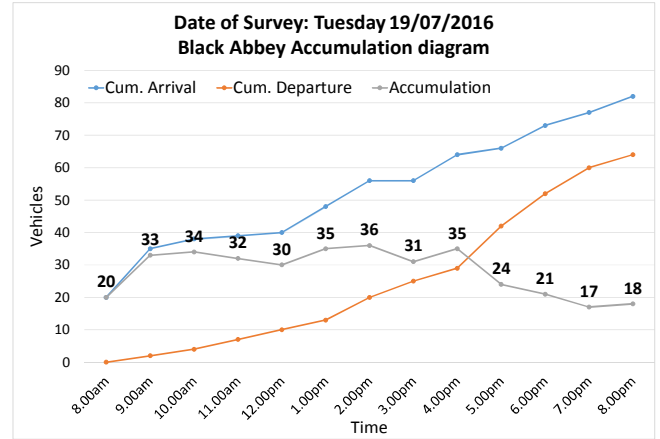
The Rear of Fair Green carpark has a low turnover rate and a longer duration of stay. The Relative Turnover rate is low and carpark occupancy is high between 9am and 5pm. This profile is common for long-term carparking used by commuters. The daily price of €2 and the proximity to the city centre are attractive features for long-term carpark users. There is practically no spare capacity at this carpark to be used by traffic generated by the Abbey Creative Quarter or the Medieval Mile. The image shows the only free spaces to be restricted-use ones.

2.8.2 Black Abbey - Public Carparks (KCC) - pay & display (39 spaces)

The carpark layout and survey results for the Black Abbey carpark are shown in Figure 6.

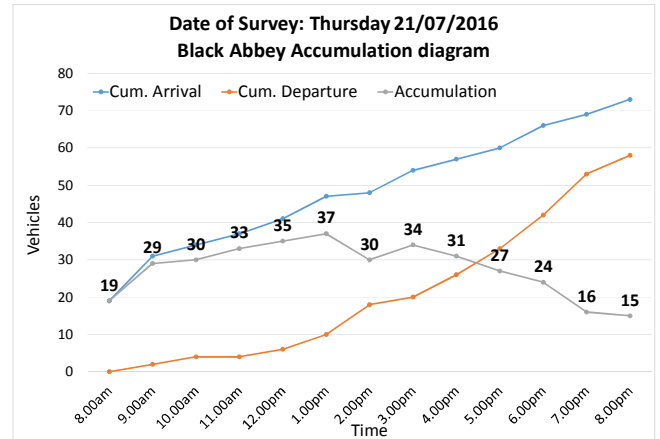
Time:	Occupancy	Turnover	Relative Turnover rate
8am	51%	2.10	2.69
9am	85%		
10am	87%		
11am	82%		
12am	77%		
1pm	90%		
2pm	92%		
3pm	79%		
4pm	90%		
5pm	62%		
6pm	54%		
7pm	44%		
8pm	46%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	23	28%
Stayed < 2.0h	14	17%
Stayed < 3.0h	9	11%
Stayed < 4.0h	6	7%
Stayed < 5.0h	3	4%
Stayed < 6.0h	1	1%
Stayed < 7.0h	5	6%
Stayed < 8.0h	2	2%
Stayed < 9.0h	7	9%
Stayed < 10.0h	7	9%
Stayed < 11.0h	3	4%
Stayed < 12.0h	0	0%
Stayed >12.0h	2	2%
Total	82	



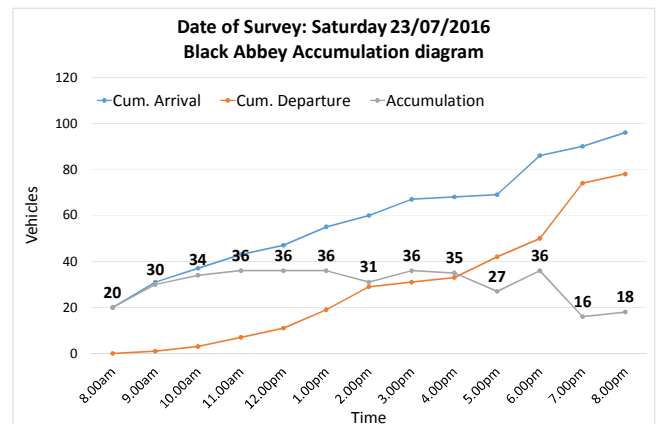
Time:	Occupancy	Turnover	Relative Turnover rate
8am	49%	1.87	2.43
9am	74%		
10am	77%		
11am	85%		
12am	90%		
1pm	95%		
2pm	77%		
3pm	87%		
4pm	79%		
5pm	69%		
6pm	62%		
7pm	41%		
8pm	38%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	21	29%
Stayed < 2.0h	9	12%
Stayed < 3.0h	6	8%
Stayed < 4.0h	4	5%
Stayed < 5.0h	5	7%
Stayed < 6.0h	1	1%
Stayed < 7.0h	3	4%
Stayed < 8.0h	4	5%
Stayed < 9.0h	8	11%
Stayed < 10.0h	7	10%
Stayed < 11.0h	1	1%
Stayed < 12.0h	2	3%
Stayed >12.0h	2	3%
Total	73	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	51%	2.46	2.95
9am	77%		
10am	87%		
11am	92%		
12am	92%		
1pm	92%		
2pm	79%		
3pm	92%		
4pm	90%		
5pm	69%		
6pm	92%		
7pm	41%		
8pm	46%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	34	35%
Stayed < 2.0h	18	19%
Stayed < 3.0h	9	9%
Stayed < 4.0h	6	6%
Stayed < 5.0h	3	3%
Stayed < 6.0h	1	1%
Stayed < 7.0h	2	2%
Stayed < 8.0h	1	1%
Stayed < 9.0h	9	9%
Stayed < 10.0h	7	7%
Stayed < 11.0h	1	1%
Stayed < 12.0h	0	0%
Stayed >12.0h	5	5%
Total	96	



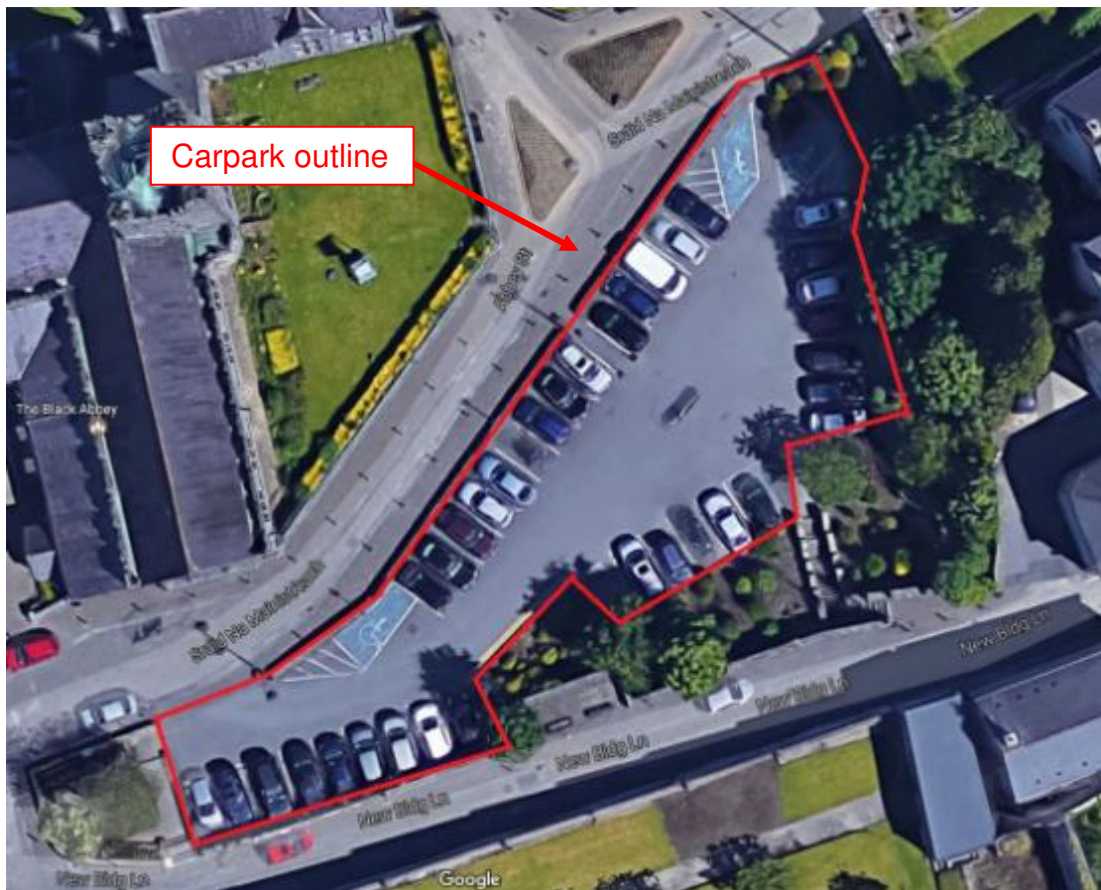


Figure 6: Black Abbey - Public Carparks (KCC) - pay & display

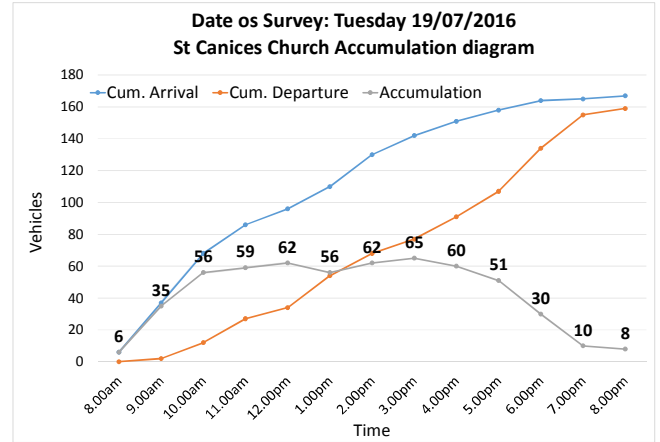
The Black Abbey carpark has a relatively low turnover rate, relatively low Relative Turnover rate and a medium duration of stay. Carpark occupancy is high between 9am and 4pm. It should be noted that occupancy is based on the total number of parking spaces, including “blue badge” spaces. On the basis that such spaces are not available to all users the practical occupancy is even higher than shown, and the image shows the carpark to be practically full (apart from the “blue badge” spaces). This profile would indicate usage by both shoppers and commuters. There is practically no spare capacity at this carpark to be used by traffic generated by the Abbey Creative Quarter or the Medieval Mile. The price of €5 for 4-10 hrs of stay may deter some long-stay drivers.

2.8.3 St Canice's Church - Public Carparks (KCC) - pay & display (71 spaces)

The carpark layout and the survey results for the St Canice's Church carpark are shown in Figure 7.

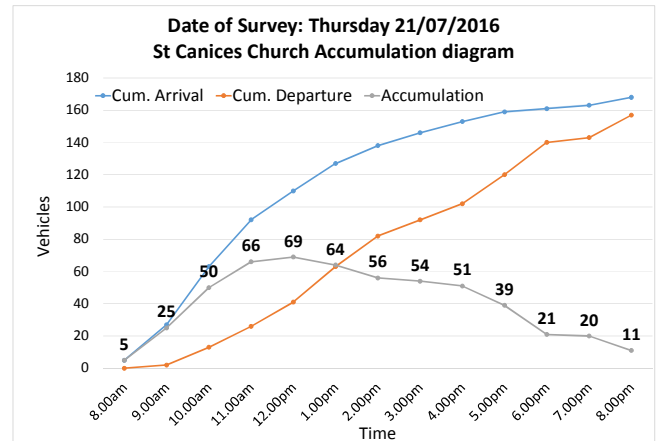
Time:	Occupancy	Turnover	Relative Turnover rate
8am	8%	2.35	3.57
9am	49%		
10am	79%		
11am	83%		
12am	87%		
1pm	79%		
2pm	87%		
3pm	92%		
4pm	85%		
5pm	72%		
6pm	42%		
7pm	14%		
8pm	11%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	71	43%
Stayed < 2.0h	25	15%
Stayed < 3.0h	10	6%
Stayed < 4.0h	16	10%
Stayed < 5.0h	8	5%
Stayed < 6.0h	6	4%
Stayed < 7.0h	8	5%
Stayed < 8.0h	5	3%
Stayed < 9.0h	10	6%
Stayed < 10.0h	6	4%
Stayed < 11.0h	1	1%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	1%
Total	167	



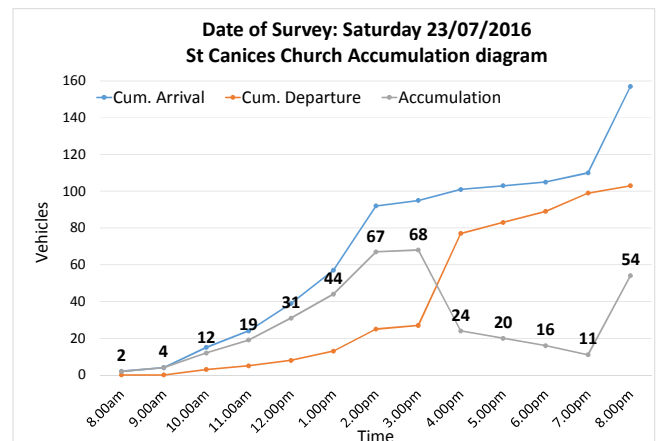
Time:	Occupancy	Turnover	Relative Turnover rate
8am	7%	2.37	3.80
9am	35%		
10am	70%		
11am	93%		
12am	97%		
1pm	90%		
2pm	79%		
3pm	76%		
4pm	72%		
5pm	55%		
6pm	30%		
7pm	28%		
8pm	15%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	73	43%
Stayed < 2.0h	28	17%
Stayed < 3.0h	19	11%
Stayed < 4.0h	8	5%
Stayed < 5.0h	8	5%
Stayed < 6.0h	3	2%
Stayed < 7.0h	5	3%
Stayed < 8.0h	8	5%
Stayed < 9.0h	8	5%
Stayed < 10.0h	4	2%
Stayed < 11.0h	4	2%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	168	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	3%	2.21	5.06
9am	6%		
10am	17%		
11am	27%		
12am	44%		
1pm	62%		
2pm	94%		
3pm	96%		
4pm	34%		
5pm	28%		
6pm	23%		
7pm	15%		
8pm	76%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	73	46%
Stayed < 2.0h	41	26%
Stayed < 3.0h	16	10%
Stayed < 4.0h	10	6%
Stayed < 5.0h	2	1%
Stayed < 6.0h	3	2%
Stayed < 7.0h	4	3%
Stayed < 8.0h	1	1%
Stayed < 9.0h	5	3%
Stayed < 10.0h	2	1%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	157	



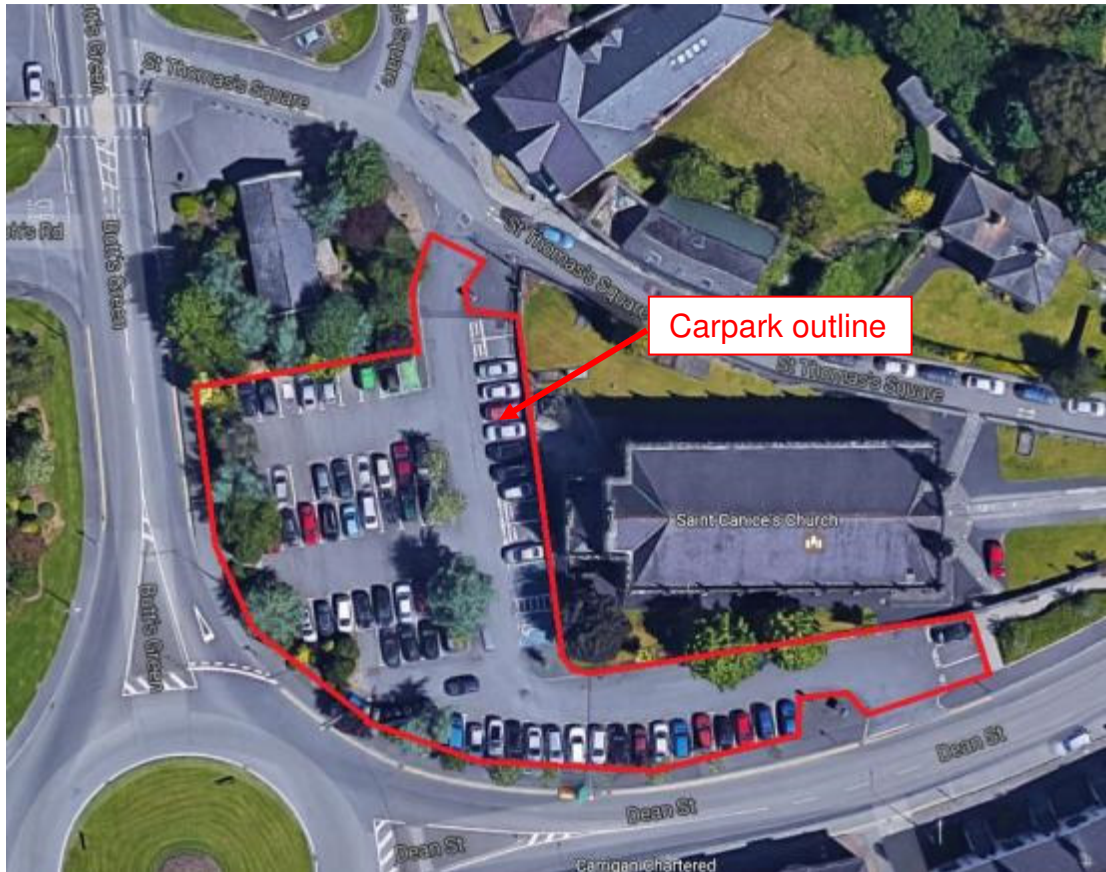


Figure 7: St Canices Church - Public Carparks (KCC) - pay & display

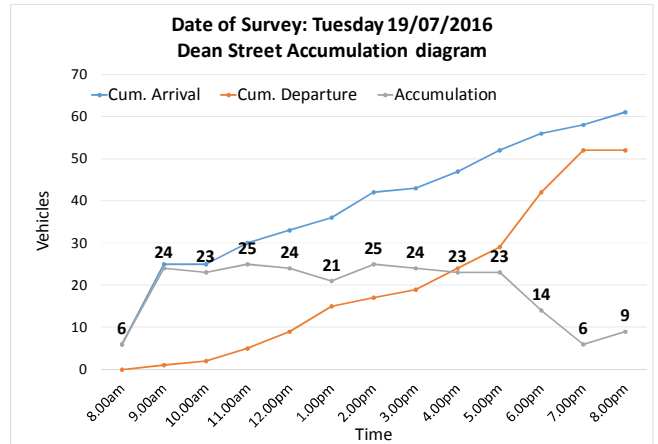
The St Canice's Church carpark has a relatively low turnover rate, a moderate Relative Turnover rate and a medium duration of stay. Carpark occupancy is high between 10am and 4pm. The €2/day charge rate probably encourages long-term parking but the overall medium duration of stay probably means that there is a significant amount of parking by patrons of adjacent businesses. There is very little spare capacity at this carpark to be used by traffic generated by the Abbey Creative Quarter or the Medieval Mile. Again it should be noted that eight of the spaces are reserved for certain types of user: blue badge holders, those on parish duty and those charging electric vehicles. The practical occupancy levels are therefore higher than the figures above would indicate and the available unrestricted spaces are in fact practically full during working days and on Saturday afternoon. Almost all the free spaces are restricted-use.

2.8.4 Dean Street - Public Carparks (KCC) - pay & display (24 spaces)

The carpark layout and survey results for the Dean Street carpark are shown in Figure 8.

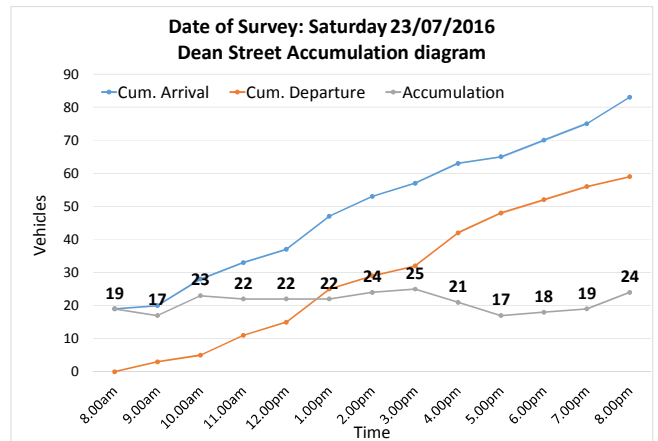
Time:	Occupancy	Turnover	Relative Turnover rate
8am	25%	2.54	2.96
9am	100%		
10am	96%		
11am	104%		
12am	100%		
1pm	88%		
2pm	104%		
3pm	100%		
4pm	96%		
5pm	96%		
6pm	58%		
7pm	25%		
8pm	38%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	19	31%
Stayed < 2.0h	8	13%
Stayed < 3.0h	8	13%
Stayed < 4.0h	4	7%
Stayed < 5.0h	6	10%
Stayed < 6.0h	0	0%
Stayed < 7.0h	3	5%
Stayed < 8.0h	1	2%
Stayed < 9.0h	8	13%
Stayed < 10.0h	3	5%
Stayed < 11.0h	1	2%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	61	



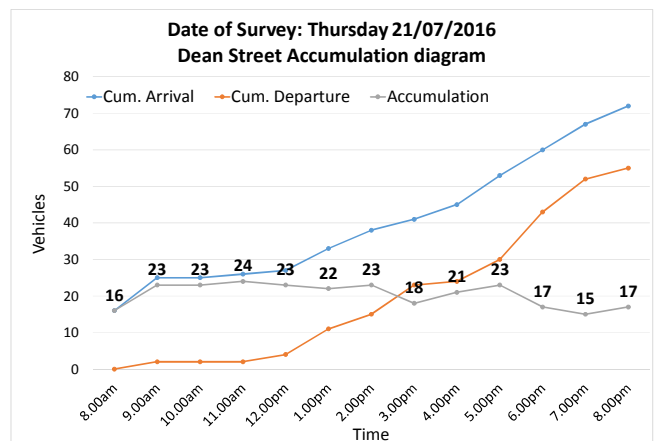
Time:	Occupancy	Turnover	Relative Turnover rate
8am	67%	3.00	3.26
9am	96%		
10am	96%		
11am	100%		
12am	96%		
1pm	92%		
2pm	96%		
3pm	75%		
4pm	88%		
5pm	96%		
6pm	71%		
7pm	63%		
8pm	71%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	27	38%
Stayed < 2.0h	12	17%
Stayed < 3.0h	6	8%
Stayed < 4.0h	3	4%
Stayed < 5.0h	8	11%
Stayed < 6.0h	2	3%
Stayed < 7.0h	3	4%
Stayed < 8.0h	0	0%
Stayed < 9.0h	5	7%
Stayed < 10.0h	4	6%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	2	3%
Total	72	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	79%	3.46	3.65
9am	71%		
10am	96%		
11am	92%		
12am	92%		
1pm	92%		
2pm	100%		
3pm	104%		
4pm	88%		
5pm	71%		
6pm	75%		
7pm	79%		
8pm	100%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	27	33%
Stayed < 2.0h	17	20%
Stayed < 3.0h	14	17%
Stayed < 4.0h	5	6%
Stayed < 5.0h	6	7%
Stayed < 6.0h	2	2%
Stayed < 7.0h	4	5%
Stayed < 8.0h	3	4%
Stayed < 9.0h	1	1%
Stayed < 10.0h	1	1%
Stayed < 11.0h	1	1%
Stayed < 12.0h	0	0%
Stayed >12.0h	2	2%
Total	83	



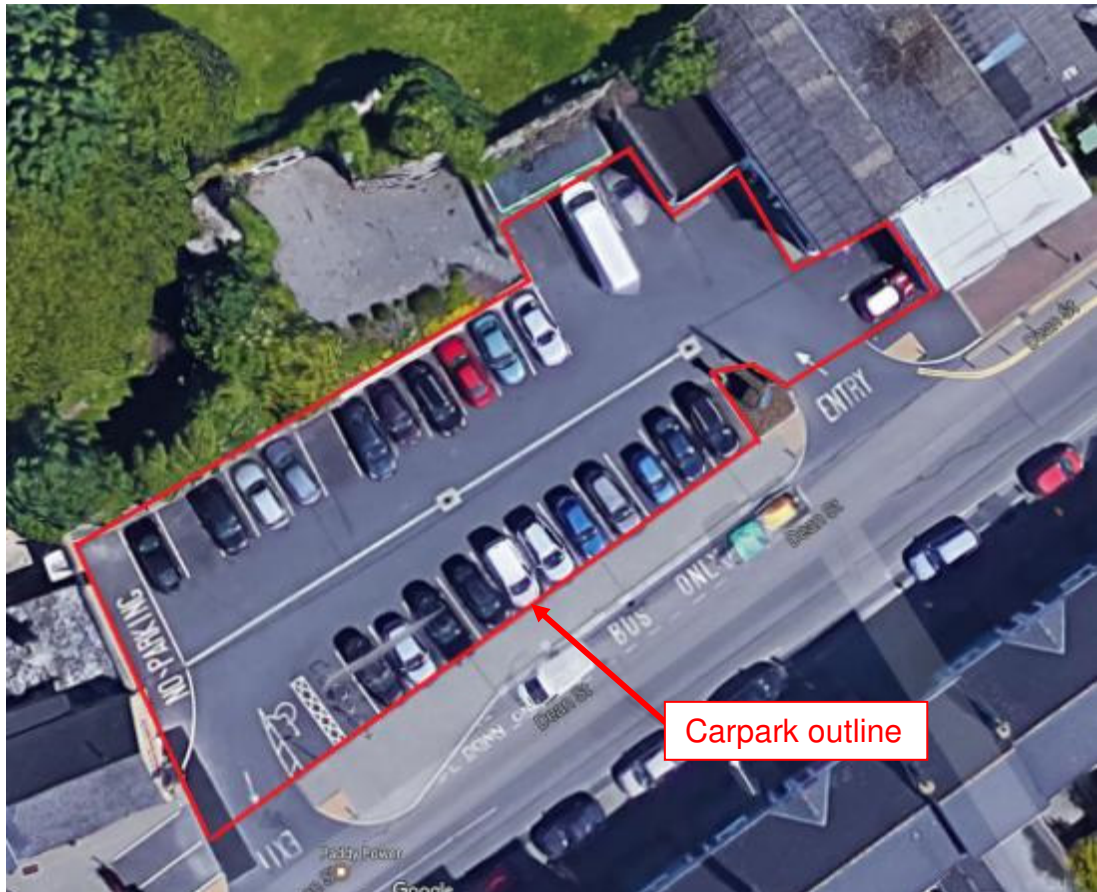


Figure 8: Dean Street - Public Carparks (KCC) - pay & display

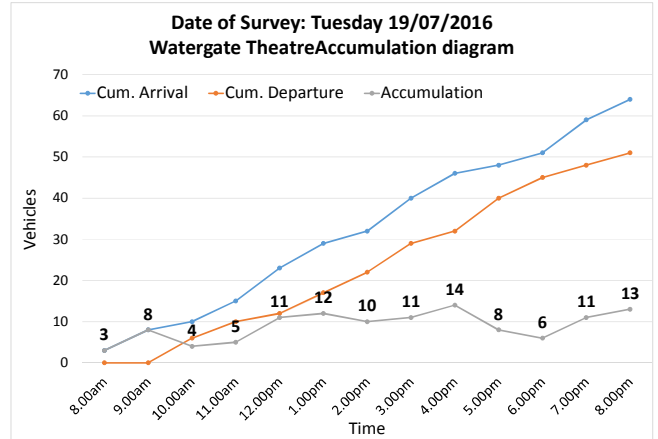
Dean Street carpark has a moderate turnover rate, a moderate Relative Turnover rate and a medium/long duration of stay. Carpark occupancy is high between 9am and 5pm. This profile is common for long term carparks used by commuters. There is practically no spare capacity at this carpark to be used by traffic generated by the Abbey Quarter area or the Medieval Mile. This carpark fills in the early morning and stays full for the day. It is likely that the €2 daily rate is leading to all-day parking. This is a very visible carpark, located beside the Cathedral and easy for tourists to find. It would seem more appropriate that it would have an hourly charge to deter all-day parking so that it is available for use by tourists. Alternative all-day parking could be provided elsewhere, close to Dean Street.

2.8.5 Watergate Theatre - Public Carparks (KCC) - pay & display (14 spaces)

The carpark layout and survey results for the Watergate Theatre carpark are shown in Figure 9.

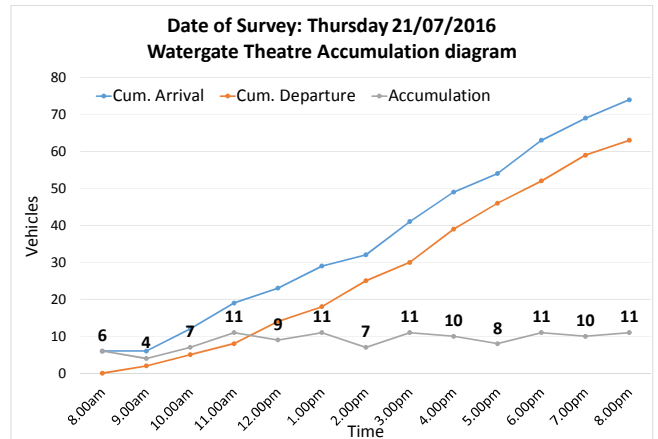
Time:	Occupancy	Turnover	Relative Turnover rate
8am	21%	4.57	6.45
9am	57%		
10am	29%		
11am	36%		
12am	79%		
1pm	86%		
2pm	71%		
3pm	79%		
4pm	100%		
5pm	57%		
6pm	43%		
7pm	79%		
8pm	93%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	28	44%
Stayed < 2.0h	24	38%
Stayed < 3.0h	7	11%
Stayed < 4.0h	3	5%
Stayed < 5.0h	2	3%
Stayed < 6.0h	0	0%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	64	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	43%	5.29	7.59
9am	29%		
10am	50%		
11am	79%		
12am	64%		
1pm	79%		
2pm	50%		
3pm	79%		
4pm	71%		
5pm	57%		
6pm	79%		
7pm	71%		
8pm	79%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	44	59%
Stayed < 2.0h	21	28%
Stayed < 3.0h	6	8%
Stayed < 4.0h	2	3%
Stayed < 5.0h	1	1%
Stayed < 6.0h	0	0%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	74	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	29%	4.14	5.90
9am	29%		
10am	43%		
11am	57%		
12am	57%		
1pm	86%		
2pm	71%		
3pm	64%		
4pm	86%		
5pm	57%		
6pm	71%		
7pm	93%		
8pm	100%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	28	48%
Stayed < 2.0h	17	29%
Stayed < 3.0h	7	12%
Stayed < 4.0h	0	0%
Stayed < 5.0h	3	5%
Stayed < 6.0h	2	3%
Stayed < 7.0h	0	0%
Stayed < 8.0h	1	2%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	58	

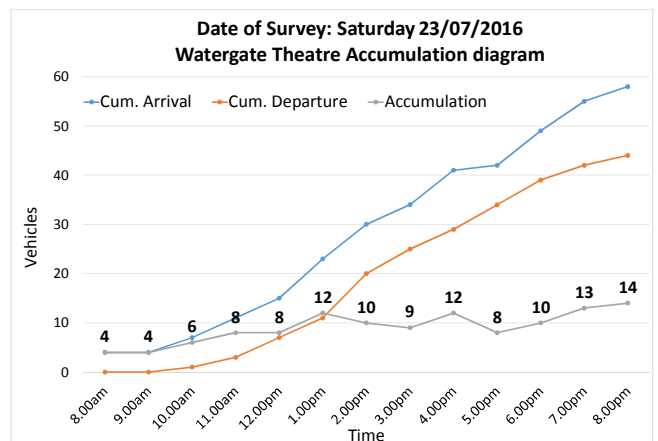




Figure 9: Watergate Theatre Public Carparks (KCC) - pay & display

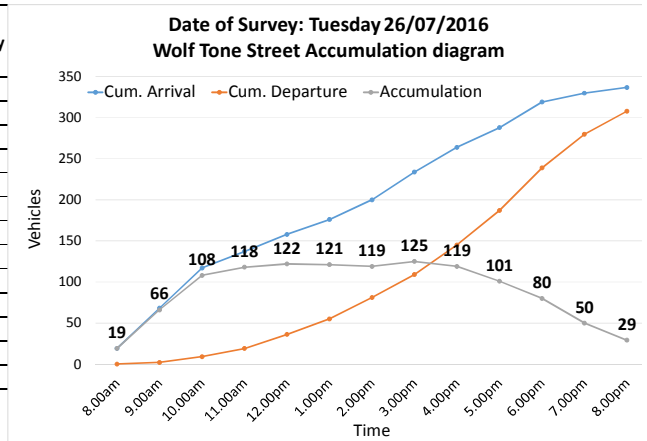
Watergate Theatre carpark is a small parking area. It has a high turnover rate, high Relative Turnover rate and short duration of stay. Carpark occupancy is higher in the evening, when the parking is free. This profile is common for the carparks used by shoppers. There is very little spare capacity at this carpark to be used by traffic generated by Abbey Creative Quarter Masterplan or Medieval Mile. The price of €1.30/Hr of stay would deter drivers using this carpark for longer periods. It is fully occupied in the evening when there is an event at the adjacent theatre.

2.8.6 Wolfe Tone Street - Public Carparks (KCC) - pay & display (122 spaces)

The carpark layout and survey results for the Wolfe Tone carpark are shown in Figure 10.

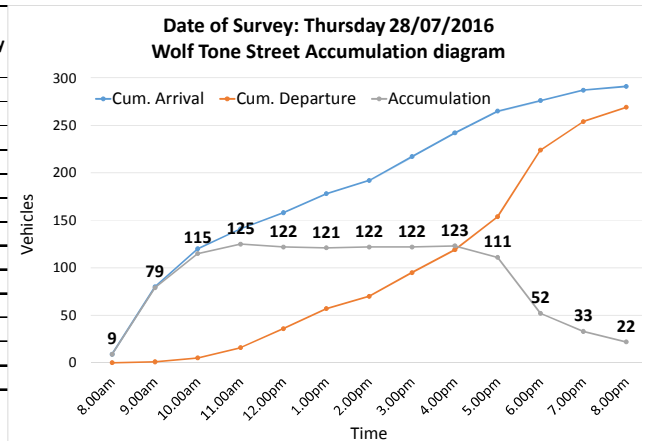
Time:	Occupancy	Turnover	Relative Turnover rate
8am	16%	2.76	3.44
9am	54%		
10am	89%		
11am	97%		
12am	100%		
1pm	99%		
2pm	98%		
3pm	102%		
4pm	98%		
5pm	83%		
6pm	66%		
7pm	41%		
8pm	24%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	128	38%
Stayed < 2.0h	63	19%
Stayed < 3.0h	26	8%
Stayed < 4.0h	24	7%
Stayed < 5.0h	13	4%
Stayed < 6.0h	14	4%
Stayed < 7.0h	13	4%
Stayed < 8.0h	14	4%
Stayed < 9.0h	26	8%
Stayed < 10.0h	13	4%
Stayed < 11.0h	3	1%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	337	



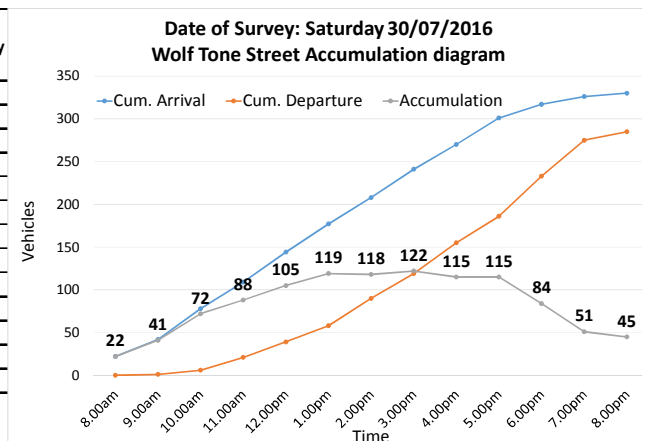
Time:	Occupancy	Turnover	Relative Turnover rate
8am	7%	2.39	3.02
9am	65%		
10am	94%		
11am	102%		
12am	100%		
1pm	99%		
2pm	100%		
3pm	100%		
4pm	101%		
5pm	91%		
6pm	43%		
7pm	27%		
8pm	18%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	106	36%
Stayed < 2.0h	45	15%
Stayed < 3.0h	25	9%
Stayed < 4.0h	14	5%
Stayed < 5.0h	10	3%
Stayed < 6.0h	11	4%
Stayed < 7.0h	11	4%
Stayed < 8.0h	17	6%
Stayed < 9.0h	29	10%
Stayed < 10.0h	17	6%
Stayed < 11.0h	3	1%
Stayed < 12.0h	3	1%
Stayed >12.0h	0	0%
Total	291	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	18%	2.70	3.61
9am	34%		
10am	59%		
11am	72%		
12am	86%		
1pm	98%		
2pm	97%		
3pm	100%		
4pm	94%		
5pm	94%		
6pm	69%		
7pm	42%		
8pm	37%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	130	39%
Stayed < 2.0h	56	17%
Stayed < 3.0h	33	10%
Stayed < 4.0h	21	6%
Stayed < 5.0h	18	5%
Stayed < 6.0h	17	5%
Stayed < 7.0h	15	5%
Stayed < 8.0h	11	3%
Stayed < 9.0h	15	5%
Stayed < 10.0h	9	3%
Stayed < 11.0h	1	0%
Stayed < 12.0h	1	0%
Stayed >12.0h	3	1%
Total	330	



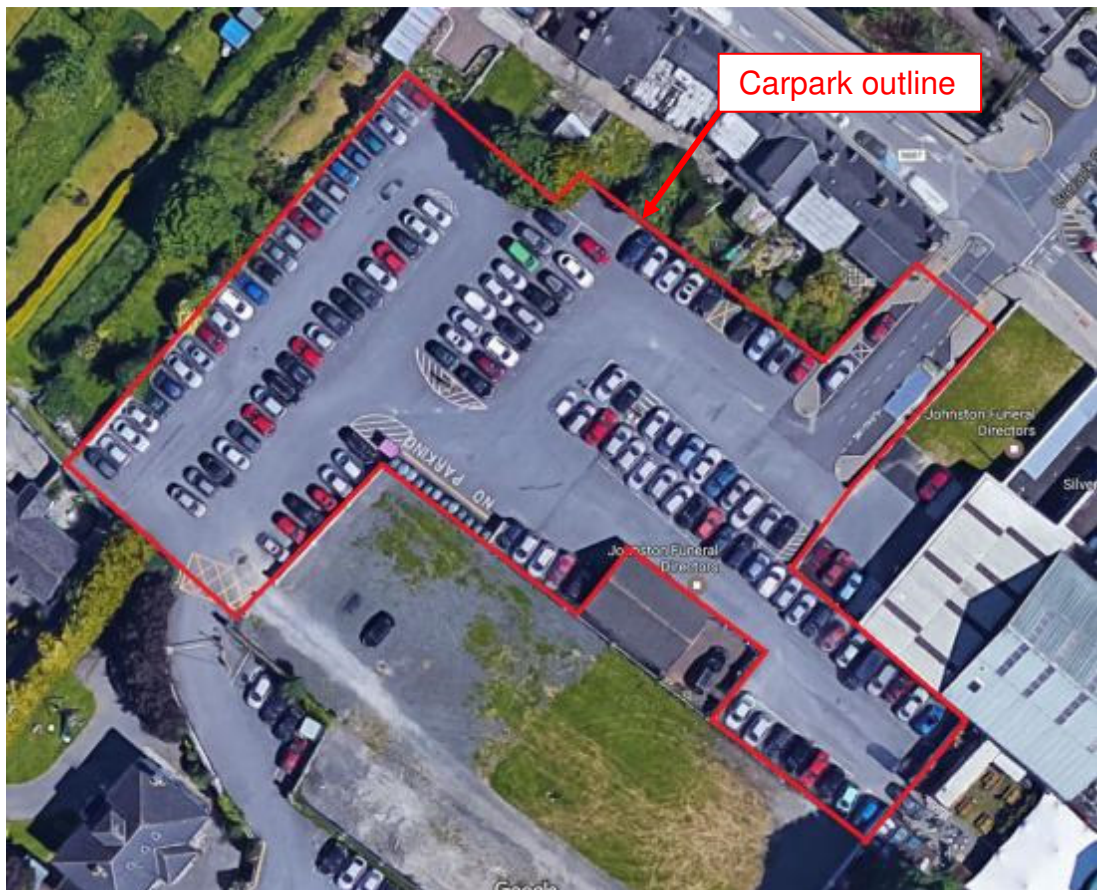


Figure 10: Wolfe Tone Street - Public Carparks (KCC) - pay & display

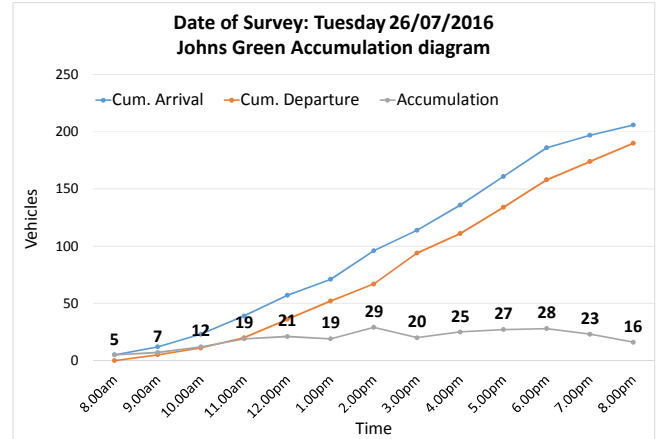
Wolfe Tone Street carpark has a moderate turnover rate, a moderate Relative Turnover rate and medium/long duration of stay. Carpark occupancy is high between 10am and 5pm – the carpark is completely full. This carpark is used by commuters and also by patrons of businesses and shops (despite the flat €2 flat charge rate, it is probably a cheaper alternative than the alternative hourly rate at MacDonagh junction). There is no spare capacity at this carpark to be used by traffic generated by the Abbey Quarter area or the Medieval Mile. A multi-storey carpark on this site is proposed by the *Kilkenny City Centre Local Area Plan*.

2.8.7 John's Green- Public Carparks (KCC) - pay & display (37 spaces)

The carpark layout and survey results for the John's Green carpark are shown in Figure 11.

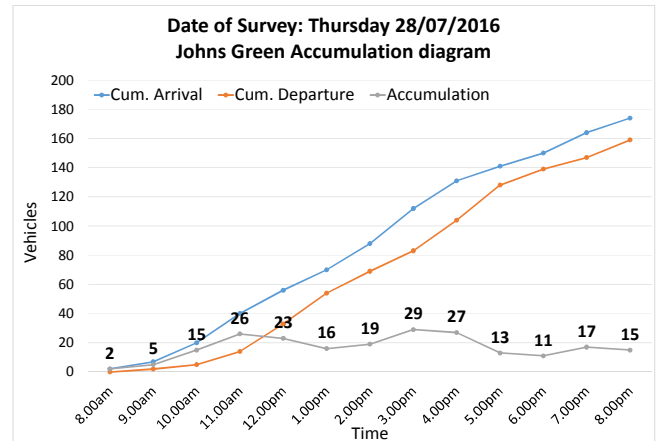
Time:	Occupancy	Turnover	Relative Turnover rate
8am	14%	5.57	9.85
9am	19%		
10am	32%		
11am	51%		
12am	57%		
1pm	51%		
2pm	78%		
3pm	54%		
4pm	68%		
5pm	73%		
6pm	76%		
7pm	62%		
8pm	43%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	174	84%
Stayed < 2.0h	26	13%
Stayed < 3.0h	2	1%
Stayed < 4.0h	2	1%
Stayed < 5.0h	1	0%
Stayed < 6.0h	1	0%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	206	



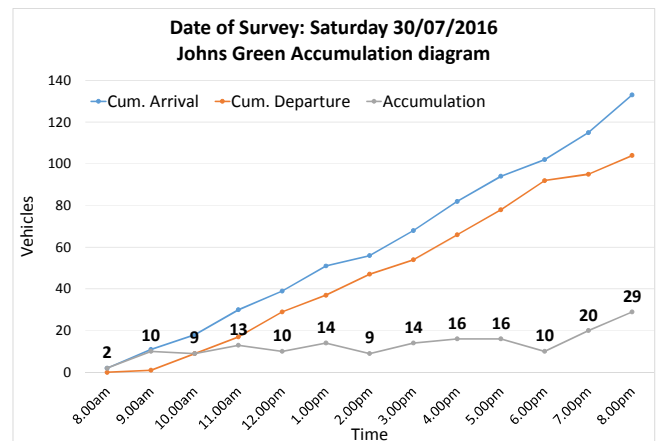
Time:	Occupancy	Turnover	Relative Turnover rate
8am	5%	4.70	9.58
9am	14%		
10am	41%		
11am	70%		
12am	62%		
1pm	43%		
2pm	51%		
3pm	78%		
4pm	73%		
5pm	35%		
6pm	30%		
7pm	46%		
8pm	41%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	147	84%
Stayed < 2.0h	18	10%
Stayed < 3.0h	5	3%
Stayed < 4.0h	2	1%
Stayed < 5.0h	1	1%
Stayed < 6.0h	0	0%
Stayed < 7.0h	1	1%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	174	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	5%	3.57	9.32
9am	27%		
10am	24%		
11am	35%		
12am	27%		
1pm	38%		
2pm	24%		
3pm	38%		
4pm	43%		
5pm	43%		
6pm	27%		
7pm	54%		
8pm	78%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	107	81%
Stayed < 2.0h	18	14%
Stayed < 3.0h	4	3%
Stayed < 4.0h	1	1%
Stayed < 5.0h	1	1%
Stayed < 6.0h	1	1%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	132	



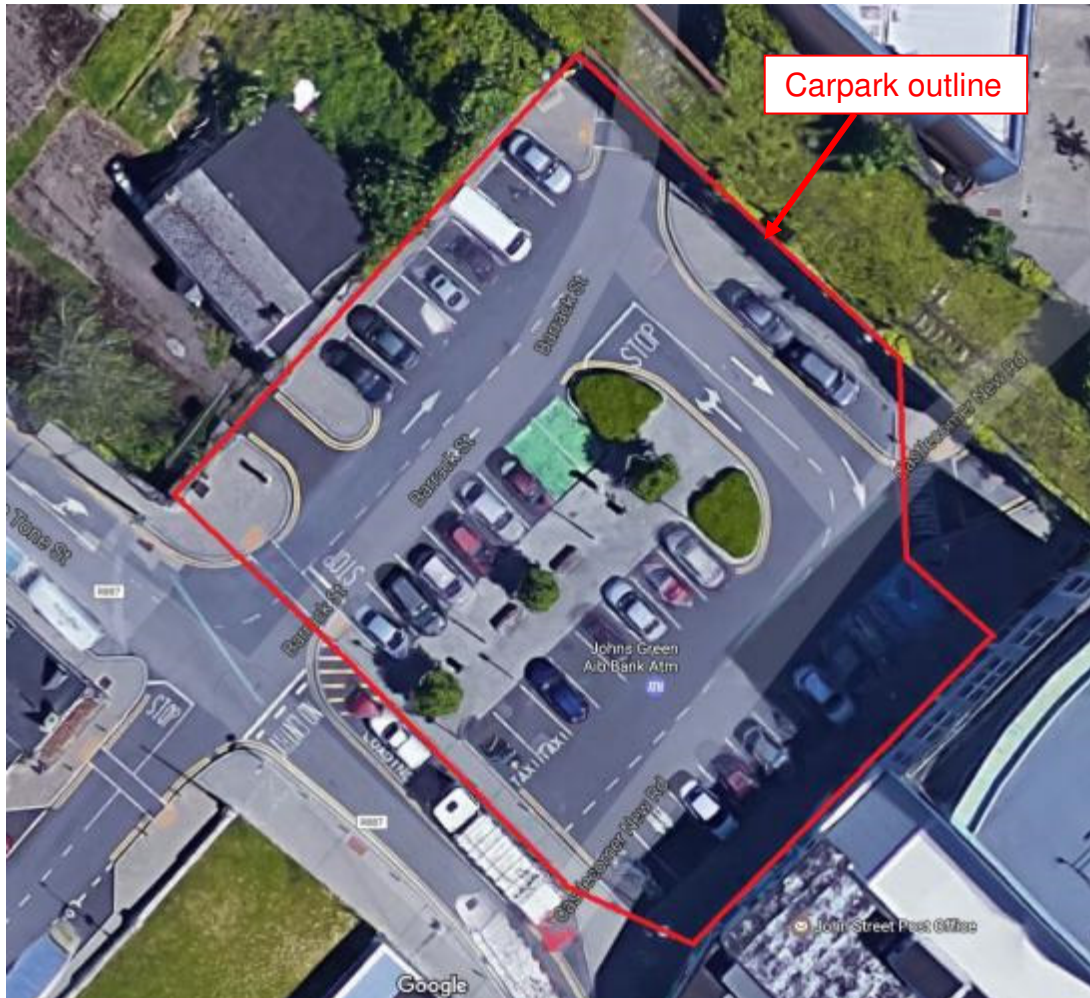


Figure 11: Johns Green - Public Carparks (KCC) - pay & display

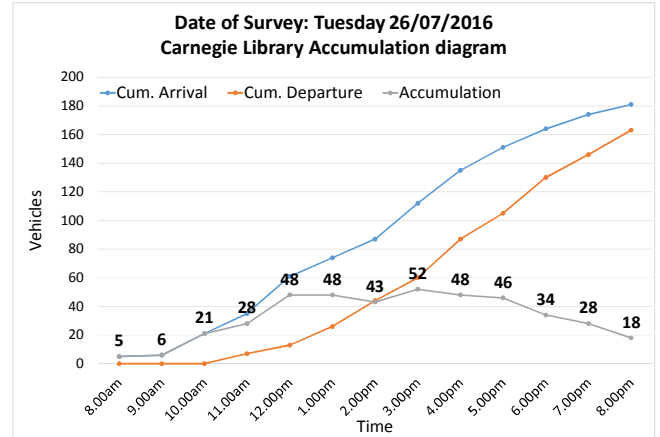
Johns Green carpark have high turnover rate, very high Relative Turnover rate and a short duration of stay (over 80% staying less than an hour). Carpark occupancy is relatively the same in the morning and in the afternoon. This profile is common for the carparks used by shoppers. Six of the spaces are reserved for certain uses; blue badge users, taxis and mother-and-child use. An occupancy of 80% or so, as recorded, therefore represents a bit less than full occupancy by normal users. There is therefore little spare capacity at this carpark, and in any event, the parking is needed for the adjacent supermarket. With parking time limited to one hour, the carpark would not be attractive to traffic generated by either the Abbey Quarter area or the Medieval mile.

2.8.8 Carnegie Library - Public Carparks (KCC) - pay & display (64 spaces)

The carpark layout and survey results for the Carnegie Library carpark are shown in Figure 12.

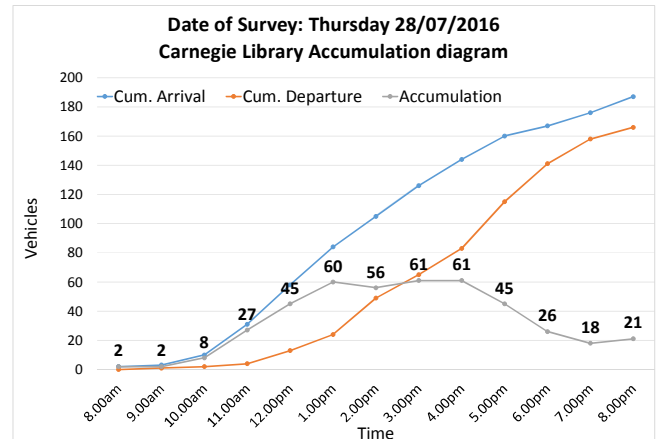
Time:	Occupancy	Turnover	Relative Turnover rate
8am	8%	2.83	5.11
9am	9%		
10am	33%		
11am	44%		
12am	75%		
1pm	75%		
2pm	67%		
3pm	81%		
4pm	75%		
5pm	72%		
6pm	53%		
7pm	44%		
8pm	28%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	68	38%
Stayed < 2.0h	55	30%
Stayed < 3.0h	29	16%
Stayed < 4.0h	12	7%
Stayed < 5.0h	7	4%
Stayed < 6.0h	4	2%
Stayed < 7.0h	3	2%
Stayed < 8.0h	0	0%
Stayed < 9.0h	1	1%
Stayed < 10.0h	1	1%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	1%
Total	181	



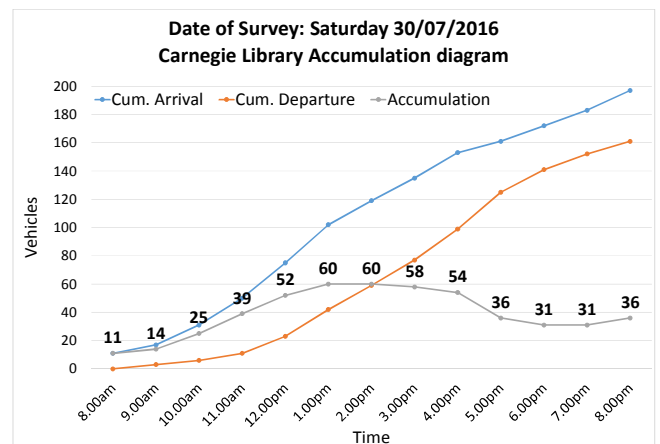
Time:	Occupancy	Turnover	Relative Turnover rate
8am	3%	2.92	5.19
9am	3%		
10am	13%		
11am	42%		
12am	70%		
1pm	94%		
2pm	88%		
3pm	95%		
4pm	95%		
5pm	70%		
6pm	41%		
7pm	28%		
8pm	33%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	77	41%
Stayed < 2.0h	50	27%
Stayed < 3.0h	26	14%
Stayed < 4.0h	18	10%
Stayed < 5.0h	5	3%
Stayed < 6.0h	3	2%
Stayed < 7.0h	4	2%
Stayed < 8.0h	2	1%
Stayed < 9.0h	2	1%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	187	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	17%	3.08	4.66
9am	22%		
10am	39%		
11am	61%		
12am	81%		
1pm	94%		
2pm	94%		
3pm	91%		
4pm	84%		
5pm	56%		
6pm	48%		
7pm	48%		
8pm	56%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	69	35%
Stayed < 2.0h	60	30%
Stayed < 3.0h	31	16%
Stayed < 4.0h	13	7%
Stayed < 5.0h	5	3%
Stayed < 6.0h	5	3%
Stayed < 7.0h	3	2%
Stayed < 8.0h	4	2%
Stayed < 9.0h	6	3%
Stayed < 10.0h	0	0%
Stayed < 11.0h	1	1%
Stayed < 12.0h	0	0%
Stayed >12.0h	0	0%
Total	197	



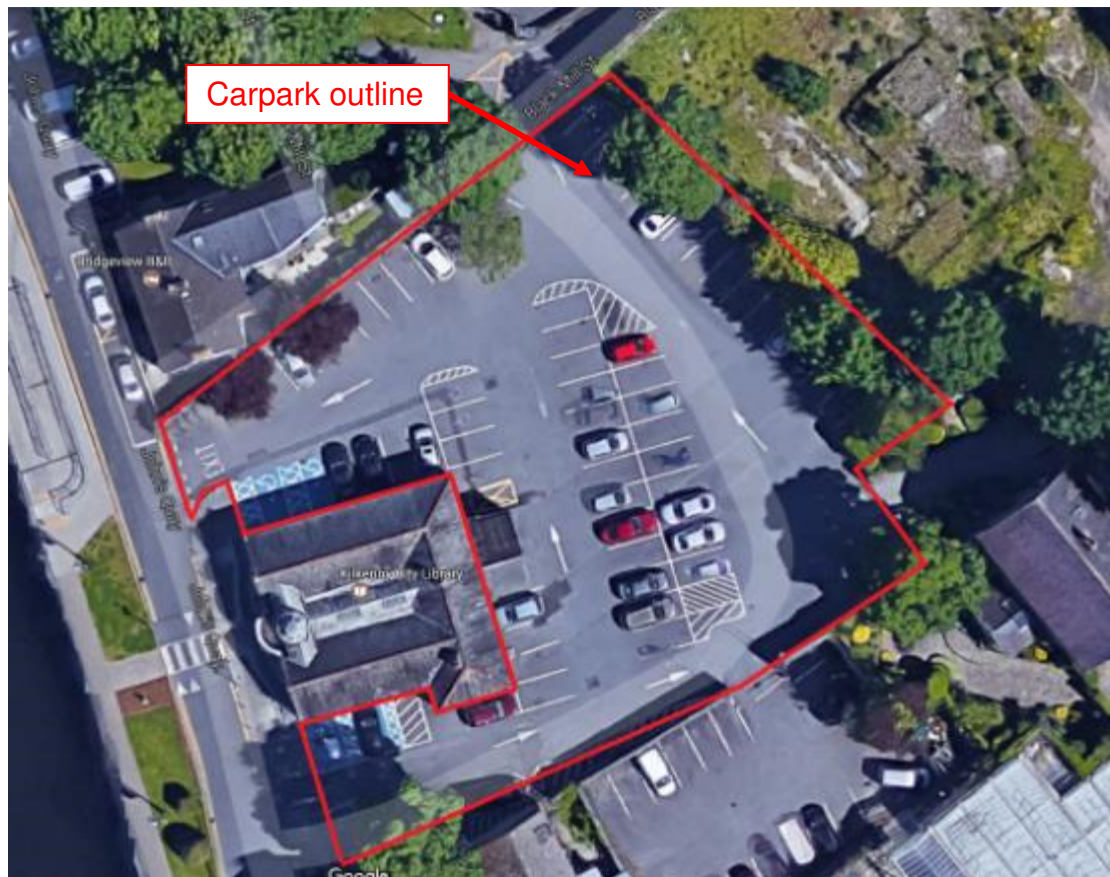


Figure 12: Carnegie Library - Public Carparks (KCC) - pay & display

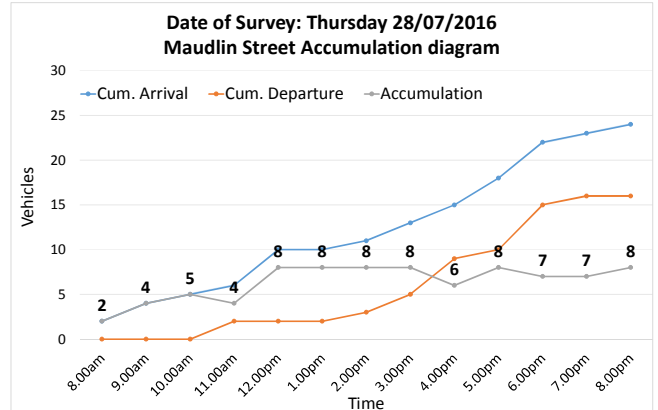
The Carnegie Library carpark has a moderate turnover rate, a high Relative Turnover rate and medium duration of stay. Carpark occupancy is higher in the afternoon than in the morning. This profile is common for the carparks used by shoppers. Four of the spaces are reserved for blue badge holders so the unrestricted parking spaces are actually fully occupied in the afternoons. There is spare capacity in the morning at this carpark. The rate of €5 for 4-10Hrs of stay may deter long-stay parking by commuters.

2.8.9 Maudlin Street - Public Carparks (KCC) - pay & display (8 spaces)

The carpark layout and survey results for the Maudlin Street carpark are shown in Figure 13.

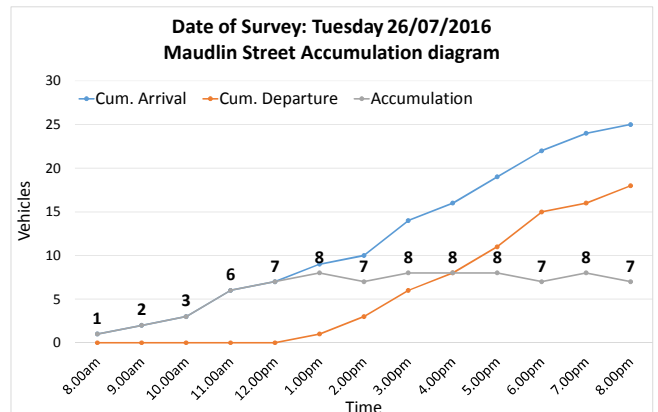
Time:	Occupancy	Turnover	Relative Turnover rate
8am	13%	3.13	3.75
9am	25%		
10am	38%		
11am	75%		
12am	88%		
1pm	100%		
2pm	88%		
3pm	100%		
4pm	100%		
5pm	100%		
6pm	88%		
7pm	100%		
8pm	88%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	7	28%
Stayed < 2.0h	8	32%
Stayed < 3.0h	2	8%
Stayed < 4.0h	2	8%
Stayed < 5.0h	3	12%
Stayed < 6.0h	1	4%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	1	4%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	4%
Total	25	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	25%	3.00	3.47
9am	50%		
10am	63%		
11am	50%		
12am	100%		
1pm	100%		
2pm	100%		
3pm	100%		
4pm	75%		
5pm	100%		
6pm	88%		
7pm	88%		
8pm	100%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	8	33%
Stayed < 2.0h	3	13%
Stayed < 3.0h	5	21%
Stayed < 4.0h	2	8%
Stayed < 5.0h	3	13%
Stayed < 6.0h	0	0%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	2	8%
Stayed < 10.0h	0	0%
Stayed < 11.0h	0	0%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	4%
Total	24	



Time:	Occupancy	Turnover	Relative Turnover rate
8am	25%	2.88	3.25
9am	25%		
10am	50%		
11am	88%		
12am	88%		
1pm	100%		
2pm	100%		
3pm	88%		
4pm	100%		
5pm	100%		
6pm	100%		
7pm	100%		
8pm	100%		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	6	26%
Stayed < 2.0h	5	22%
Stayed < 3.0h	5	22%
Stayed < 4.0h	2	9%
Stayed < 5.0h	1	4%
Stayed < 6.0h	1	4%
Stayed < 7.0h	0	0%
Stayed < 8.0h	0	0%
Stayed < 9.0h	0	0%
Stayed < 10.0h	0	0%
Stayed < 11.0h	2	9%
Stayed < 12.0h	0	0%
Stayed >12.0h	1	4%
Total	23	

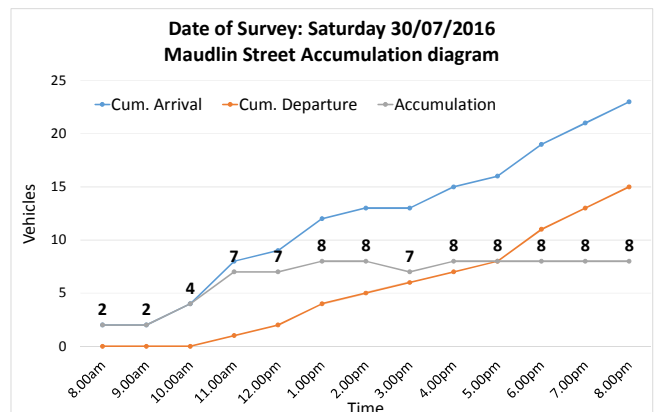




Figure 13: Maudlin Street - Public Carparks (KCC) - pay & display

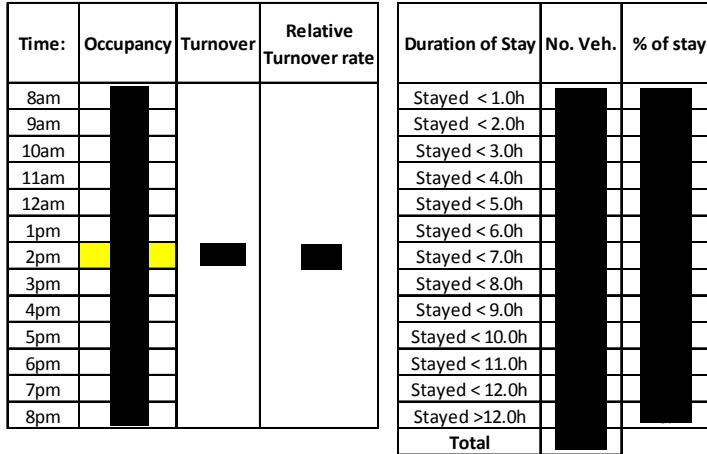
Maudlin Street carpark is small. It has a relatively high turnover rate, a relatively high Relative Turnover rate and a medium duration of stay. Carpark occupancy is high - higher in the afternoon than in the morning. This profile is common for the carparks used by shoppers. There is no spare capacity at this carpark. Additionally, the price of €5 for 4-10 Hrs of stay may deter long-stay parking by commuters.

Occupancy and usage data for the *Public Carparks (Privately Owned)* was provided to Kilkenny County Council by the owners of the private carparks. Details of the surveys are presented hereafter.

2.8.10 Market Cross - Public Carparks (Privately owned) - (477 spaces)

Survey results for the Market Cross carpark are shown in Figure 14.

19th July 2016 (Tuesday)



21st July 2016 (Thursday)



23rd July 2016 (Saturday)

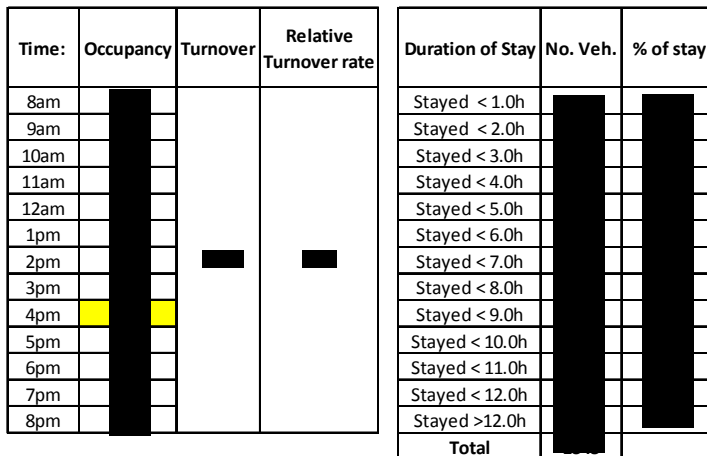


Figure 14: Market Cross - Public carpark privately owned - barrier operated



Market Cross carpark has a high Relative Turnover rate and a short duration of stay. Carpark occupancy is higher in the afternoon than in the morning. This profile is common for the carparks used by shoppers. There is spare capacity at this carpark that could be used by traffic generated by the Abbey Quarter area and Medieval Mile. The upper deck of the carpark is not in use during Sunday to Wednesday inclusive, and when open between Thursday and Saturday inclusive is, we are informed, [REDACTED] on average. However, the carpark (including the upper deck) fills completely on the busiest shopping days of the year (up to 10 days or so, many of which coincide with bank or public holidays). It could not be relied on that spaces would always be available for other users at this carpark, there is space to serve employment uses (almost always) and evening / overnight use. The price of €1.30/Hr would be a deterrent to long-stay parking.

2.8.11 Ormonde Street- Public Carparks (Privately owned) - (760 spaces)

Survey results for the Ormonde Street carpark are shown in *Figure 15*.

19th July 2016 (Tuesday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█		
2pm	█	█	
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h	█	█
Stayed < 3.0h	█	█
Stayed < 4.0h	█	█
Stayed < 5.0h	█	█
Stayed < 6.0h	█	█
Stayed < 7.0h	█	█
Stayed < 8.0h	█	█
Stayed < 9.0h	█	█
Stayed < 10.0h	█	█
Stayed < 11.0h	█	█
Stayed < 12.0h	█	█
Stayed >12.0h	█	█
Total	█	█

21st July 2016 (Thursday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█		
2pm	█	█	
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h	█	█
Stayed < 3.0h	█	█
Stayed < 4.0h	█	█
Stayed < 5.0h	█	█
Stayed < 6.0h	█	█
Stayed < 7.0h	█	█
Stayed < 8.0h	█	█
Stayed < 9.0h	█	█
Stayed < 10.0h	█	█
Stayed < 11.0h	█	█
Stayed < 12.0h	█	█
Stayed >12.0h	█	█
Total	█	█

23rd July 2016 (Saturday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█		
2pm	█	█	
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h	█	█
Stayed < 3.0h	█	█
Stayed < 4.0h	█	█
Stayed < 5.0h	█	█
Stayed < 6.0h	█	█
Stayed < 7.0h	█	█
Stayed < 8.0h	█	█
Stayed < 9.0h	█	█
Stayed < 10.0h	█	█
Stayed < 11.0h	█	█
Stayed < 12.0h	█	█
Stayed >12.0h	█	█
Total	█	█

Figure 15: Ormonde Street - Public Carparks (KCC) - barrier operated

Ormonde Street carpark has a low turnover rate, a moderate Relative Turnover rate and a short to medium duration of stay. Carpark occupancy is relatively █, mainly because the number of parking spaces is high. However, the number of parking events at this carpark █ number at the smaller town centre carparks of Market Cross and the Market Yard. These carparks are more used, probably because they are more convenient to the two supermarkets. The parking profile is similar to that of a carpark used by shoppers, but there is clearly a significant element of long stay parking. There is some spare capacity at this carpark which would be available to the Abbey Quarter area and the Medieval Mile; however, the distance from the Abbey Quarter area might deter use by visitors to that area.

and the price (€1.30/hr or the pre-book online price of €6/day) could deter use by lower-paid workers.

2.8.12 MacDonagh Junction - Public Carpark (Privately owned) - (1,100 spaces)

Survey results for the MacDonagh Junction carpark are shown in Figure 16.

19th July 2016 (Tuesday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█	█	█
2pm	█		
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h		
Stayed < 3.0h		
Stayed < 4.0h		
Stayed < 5.0h		
Stayed < 6.0h		
Stayed < 7.0h		
Stayed < 8.0h		
Stayed < 9.0h		
Stayed < 10.0h		
Stayed < 11.0h		
Stayed < 12.0h		
Stayed >12.0h		
Total	█	█

21st July 2016 (Thursday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█	█	█
2pm	█		
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h		
Stayed < 3.0h		
Stayed < 4.0h		
Stayed < 5.0h		
Stayed < 6.0h		
Stayed < 7.0h		
Stayed < 8.0h		
Stayed < 9.0h		
Stayed < 10.0h		
Stayed < 11.0h		
Stayed < 12.0h		
Stayed >12.0h		
Total	█	█

23rd July 2016 (Saturday)

Time:	Occupancy	Turnover	Relative Turnover rate
8am	█		
9am	█		
10am	█		
11am	█		
12am	█		
1pm	█		
2pm	█	█	█
3pm	█		
4pm	█		
5pm	█		
6pm	█		
7pm	█		
8pm	█		

Duration of Stay	No. Veh.	% of stay
Stayed < 1.0h	█	█
Stayed < 2.0h		
Stayed < 3.0h		
Stayed < 4.0h		
Stayed < 5.0h		
Stayed < 6.0h		
Stayed < 7.0h		
Stayed < 8.0h		
Stayed < 9.0h		
Stayed < 10.0h		
Stayed < 11.0h		
Stayed < 12.0h		
Stayed >12.0h		
Total	█	█

Figure 16: MacDonagh Junction - Public Carpark (Privately owned)

MacDonagh Junction carpark has a low turnover rate, a high Relative Turnover rate and a short duration of stay. Carpark occupancy is low, probably because the size of the carpark is very large. This profile is common for the carparks used by shoppers. There is spare capacity at this carpark. However, its distance from the Abbey Quarter area and the Medieval Mile and the price of €3/3 hrs of stay and €1.50 for each hour therefore would deter use by workers.

2.8.13 Lower New Street/Ormonde Street (Privately owned) - (79 spaces)

Occupancy, usage rates and duration of stay for the Lower New Street/Ormonde Street carpark were not available. However, the indicative occupancy of the carpark could be determined from the Google aerial view from 2016 year (see *Figure 17*).



Figure 17: Lower New Street/Ormonde Street - Public Carpark (Privately owned)

The occupancy of the carpark at the time of the photo is 82%. The price of parking is €1.30/Hr or €5 per day. There would appear to be little potential spare capacity at this carpark for use by the Abbey Quarter area and Medieval Mile. The price and its distance could deter long-stay use.

2.8.14 Fair Green - Public Carparks (KCC) – Barrier Operated (63 spaces)

The carpark layout and survey results for the Fair Green carpark are shown in Figure 18.

26 th July 2016 (Tuesday)			28 th July 2016 (Thursday)			30 th July 2016 (Saturday)		
Time:	Occupancy	Turnover	Time:	Occupancy	Turnover	Time:	Occupancy	Turnover
8am	86%	2.31	8am	83%	2.17	8am	39%	3.63
9am	100%		9am	100%		9am	71%	
10am	100%		10am	100%		10am	81%	
11am	100%		11am	100%		11am	95%	
12am	100%		12am	100%		12am	100%	
1pm	100%		1pm	100%		1pm	100%	
2pm	100%		2pm	100%		2pm	100%	
3pm	100%		3pm	100%		3pm	100%	
4pm	100%		4pm	100%		4pm	100%	
5pm	83%		5pm	90%		5pm	100%	
6pm	71%		6pm	71%		6pm	95%	
7pm	44%		7pm	2%		7pm	2%	
8pm	32%	8pm	20%	8pm	37%			



Figure 18: Fair Green - Public Carpark (KCC) – Barrier Operated

The Fair Green carpark has a relatively low turnover rate. Relative Turnover rate and duration of stay information was not available. Carpark occupancy is very high. This profile is common for the carparks used by commuters. The daily price of €2 and its proximity to the city centre are suitable for long-term carpark users. There is no spare capacity at this carpark.

2.8.15 Friary Street - Public Carparks (KCC) – Barrier Operated (41 spaces)

Survey results for the Friary Street carpark are shown in *Figure 19*.

19 th July 2016 (Tuesday)			21 st July 2016 (Thursday)			23 rd July 2016 (Saturday)		
Time:	Occupancy	Turnover	Time:	Occupancy	Turnover	Time:	Occupancy	Turnover
8am	5%	4.00	8am	3%	4.38	8am	8%	4.49
9am	41%		9am	33%		9am	26%	
10am	85%		10am	79%		10am	67%	
11am	79%		11am	87%		11am	79%	
12am	69%		12am	92%		12am	87%	
1pm	69%		1pm	82%		1pm	90%	
2pm	64%		2pm	95%		2pm	87%	
3pm	51%		3pm	79%		3pm	87%	
4pm	31%		4pm	72%		4pm	72%	
5pm	23%		5pm	56%		5pm	69%	
6pm	15%		6pm	8%		6pm	56%	
7pm	3%		7pm	3%		7pm	10%	
8pm	0%		8pm	3%		8pm	10%	

Figure 19: Friary Street - Public Carpark (KCC) – Barrier Operated

Friary Street carpark has a high turnover rate. Relative Turnover rate and duration of stay information was not available. Carpark occupancy is relatively high. This profile is common for the carparks used by patrons of shops and businesses. There is little spare capacity at this carpark to be used by the Abbey Quarter area or Medieval Mile. In addition, the cost of parking would be a deterrent in relation to the Abbey Quarter area. The carpark is not easy for visitors to find.

2.8.16 St. Marys - Public Carparks (KCC) – Barrier Operated (90 spaces)

Carpark layout and survey results for the St. Mary's carpark are shown in *Figure 20*.

19 th July 2016 (Tuesday)			21 st July 2016 (Thursday)			23 rd July 2016 (Saturday)		
Time:	Occupancy	Turnover	Time:	Occupancy	Turnover	Time:	Occupancy	Turnover
8am	17%	5.94	8am	21%	6.26	8am	17%	6.29
9am	49%		9am	58%		9am	76%	
10am	97%		10am	100%		10am	100%	
11am	100%		11am	100%		11am	100%	
12am	99%		12am	100%		12am	99%	
1pm	81%		1pm	100%		1pm	100%	
2pm	88%		2pm	100%		2pm	100%	
3pm	83%		3pm	100%		3pm	100%	
4pm	73%		4pm	100%		4pm	100%	
5pm	60%		5pm	97%		5pm	100%	
6pm	37%		6pm	70%		6pm	73%	
7pm	1%		7pm	56%		7pm	2%	
8pm	1%		8pm	2%		8pm	5%	



Figure 20: St. Mary's - Public Carpark (KCC) – Barrier Operated

St. Mary's carpark has a high turnover rate. Relative Turnover rate and duration of stay information was not available. Carpark occupancy is very high, and queues are often present on the road at this carpark. This profile is that of a carpark used by shoppers. There is no spare capacity at this carpark to be used by traffic generated by the Abbey Quarter area or the Medieval Mile.

2.8.17 Market Yard - Public Carparks (KCC) – Barrier Operated (425 spaces)

Occupancy rates for the Market Yard carpark are shown in *Figure 21*.

19th July 2016 (Tuesday)

Time:	Occupancy
8am	4%
9am	18%
10am	47%
11am	68%
12am	80%
1pm	81%
2pm	79%
3pm	72%
4pm	72%
5pm	55%
6pm	43%
7pm	1%
8pm	3%

21st July 2016 (Thursday)

Time:	Occupancy
8am	8%
9am	24%
10am	58%
11am	80%
12am	94%
1pm	99%
2pm	100%
3pm	100%
4pm	100%
5pm	83%
6pm	75%
7pm	70%
8pm	0%

23rd July 2016 (Saturday)

Time:	Occupancy
8am	14%
9am	27%
10am	63%
11am	100%
12am	98%
1pm	100%
2pm	100%
3pm	100%
4pm	100%
5pm	93%
6pm	69%
7pm	1%
8pm	6%



Figure 21: Market Yard - Public Carpark (KCC) – Barrier Operated

The number of parking events from a 2016 survey shown in *Table 1* below give an indication of the usage of the Market Yard carpark.

Date	No. of parking events
<i>19/07/2016 (Tuesday)</i>	1,912
<i>21/07/2016 (Thursday)</i>	2,427
<i>23/07/2016 (Saturday)</i>	2,481

Table 1: Parking events from 2016 survey

Market Yard carpark has a high occupancy rate. Turnover for Saturday was approximately 6 (2,481/425), and duration of stay information was, on average, less than 2 hours. This is the main shopping carpark for the centre and is full on the main shopping days of the year. This carpark is proposed to be removed and replaced by a multi-storey carpark by the *Kilkenny City Centre Local Area Plan*.

2.9 SUMMARY OF EXISTING CARPARK USAGE

A summary of the patterns of use of the existing carparks is given hereunder:

	max occupancy (8am - 8pm) Tuesday	max occupancy (8am - 8pm) Thursday	max occupancy (8am - 8pm) Saturday	Turnover (8am - 8pm)	Relative Turnover rate (8am - 8pm)	Predominant Usage
• Public Carparks (KCC) - barrier operated						
Market Yard (425 spaces)	81%	100%	100%	6	-	Short Stay
Friary Street (41 spaces)	85%	95%	90%	4	-	Short Stay
St Mary's (90 spaces)	100%	100%	100%	6	-	Short Stay
Fair Green (63 spaces)	100%	100%	100%	2	-	Long Stay
• Public Carparks (KCC) - pay & display						
Rear of Fair Green (50 spaces)	100%	94%	94%	2	2	Long Stay
Black Abbey (39 spaces)	92%	95%	92%	2	3	Short/Long Stay
St Canice's Church (71 spaces)	92%	97%	96%	2	4	Short/Medium Stay
Dean Street (24 spaces)	104%	100%	104%	3	3	Medium/Long Stay
Carnegie Library (64 spaces)	81%	95%	94%	3	5	Short stay
Wolfe Tone Street (122 spaces)	102%	102%	100%	3	3	Short/Long Stay
John's Green (37 spaces)	78%	78%	78%	5	10	Short Stay
Maudlin Street (8 spaces)	100%	100%	100%	3	3	Short Stay
Watergate (14 spaces)	100%	79%	100%	5	7	Short Stay
• Public Carparks (Privately owned)						
Market Cross (477 spaces)						Short Stay
Ormonde St (760 spaces)						Short Stay
MacDonagh Junction (1,100 spaces)						Short Stay
Lower New Street / Ormonde Street (79 spaces)	82%	-	-	-	-	Short Stay
• Summary						
Total carpark spaces (No)	3,464					
Unoccupied Spaces (No)	1,492	1,213	806			
Unoccupied Spaces (%)	43%	35%	23%			
* Total spaces City Centre (No)						
2,251						
Unoccupied Spaces (No)	678	506	440			
Unoccupied Spaces (%)	30%	22%	20%			

* City Centre does not include Fair Green, Rear of Fair Green and MacDonagh Junction carparks

Table 2: Summary of existing parking usage (2016)

In relation to the links between parking and activity in a town centre, the patterns of parking at any given location mirror the patterns of activity at the primary destination served by the parking.

Convenience and, specifically, proximity to destination is the principal factor affecting a short-stay parking decision. Short-stay parkers are generally less price sensitive and will prefer to pay in preference to walking more than about

150m/200m from their car to their destination. In the city centre of Kilkenny, it is likely that the threshold is about 150m. Parking policies should recognise this by ensuring excellent accessibility to all parking within 150m of the central core.

The following figure is a 'heat' diagram that shows the areas of the city centre that are within 150m distance of carparks and the number of parking events associated with each area. Essentially, it shows where motorists are choosing to park at present.

The number of parking events occurring at a given location is the information presented. Duration of stay is not a factor that is considered; that parameter would obviously be highest in the suburbs where cars are parked for long durations at people's homes. In a retail centre such as Kilkenny, long duration parking would be linked to work use rather than retail. The number of parking events (during a set survey period) is a parameter that is indicative of how busy an area is in terms of patrons visiting shops and businesses.

The figure shows clearly that the area of the city in which the highest number of parking events occurs is the northern end of High Street, between the Market Cross and the Market Yard carparks.



Figure 22: Heat Diagram - Busiest carparking areas in Kilkenny City

2.10 CONCLUSION OF THE PARKING SURVEYS

The conclusions that are to be drawn from the survey of existing car parks are as follows:

- The Council car parks are well used at present but offer some spare capacity to serve the parking needs of additional development of the city centre, be it the Masterplan area, the Medieval Mile or other development.
- There is some spare capacity on the privately owned car parks at Market Cross and Ormonde Car Park. Whilst there is some spare capacity at MacDonagh Junction, it is of very limited use in relation to the Masterplan area and the Medieval Mile in that it is too distant from both. The Ormonde is also somewhat distant from the northern sections of the Masterplan area, though it is adjacent to the Medieval Mile. These car parks are in private ownership and charge commercial parking rates.
- The area of the city that is closest to the highest usage of parking spaces (as demonstrated by the representation of parking events on Figure 22) is the lower end of High Street, between Market Cross and the Market Yard. This is where people choose to park at present, which is not surprising since it is adjacent to two shopping centres. The number of parking events in that area is close to 4,000 in 12-hrs, double that of the next highest area of the city centre. It is clear that this is the area in which users of the city centre wish to park.
- The most popular car parks are full at peak times and therefore it is not possible to be certain that demand for parking is not suppressed in those locations i.e. if additional parking were provided it might be used in preference to less convenient parking at alternative locations. This is particularly the case in relation to the area of the city centre contained within the Masterplan area at Bateman Quay. The Market Yard car park filled on the Thursday and Saturday of the surveys.
- The Masterplan area is located beside the most intensively used parking. That existing parking will not provide the additional parking required for the Masterplan area. The Abbey Quarter is located north of the city centre

carparking. The available capacity is largely to the south and east of the city centre and is not well located with respect to the Abbey Quarter or the northern end of the Medieval Mile.

3 Carparking Requirements

3.1 INTRODUCTION

The need for new carpark facilities is stated in the *Kilkenny City & Environs Development Plan 2014-2020* and in the Masterplan.

A variation to the *Kilkenny City & Environs Development Plan 2014-2020* outlines an objective (3N) “*To provide for park and walk facilities for car and bus/coach parking at a site or sites in close proximity to the Abbey Creative Quarter Masterplan area to service both the Masterplan area and the city centre generally taking into account the mobility management plan for the city.*”

The parking requirements of the Masterplan area and the city centre generally are therefore considered in this report. In addition, the parking needs of increased tourism associated with the Medieval Mile have been considered.

In determining the parking requirements the following aspects need to be considered:

- Demand for carparking is dependent on the type of development served: employment type uses have the highest demand (per sq m of Gross Floor Area (GFA)) because workers are present, often in high numbers throughout the working day. Leisure and recreational uses can have much lower parking demands.
- The demand arising during the weekday can be significantly different to that at the weekend, depending on the use. This is particularly true of shopping use. The potential for shared use should always be kept in mind; parking not required by workers at the weekend is available for use by weekend shoppers, and vice versa.

- The location at which the carparking is required: the distance that different user types consider acceptable varies; shoppers need adjacent carparks, workers will accept longer walks.
- The phased provision of carparking in conjunction with phased development: all Abbey Quarter buildings will not be constructed at once - there will be phased provision. Therefore all the parking need not be provided at once. Since the whole site is available from the outset, the option of using the undeveloped portions of the brownfield site for temporary parking should be given serious consideration.

3.2 ABBEY CREATIVE QUARTER MASTERPLAN

3.2.1 *The Development*

As stated above, the numbers of parking spaces required for a development is dependent on the development use. The development uses within the Abbey Quarter are not known at this time; however, the Vision Statement envisages

"...providing for a broad range of uses, sustaining growth in employment, 3rd and 4th level education..."

The parking requirements have therefore been assessed based on the following assumptions:

- The sizes of the developments within the Abbey Quarter area are as shown on the adopted Masterplan (the drawing showing the proposed developments within the Abbey Quarter area is provided below);
- Building heights will be 4-storey (the Abbey Creative Quarter Masterplan states that they will be three to five storey)
- The development type will be mixed use, but as noted above, the Masterplan does not restrict the development type. The traffic generation rates (and therefore the parking requirements) of a development are

fundamentally dependent on the development types. As the actual development types become known it will be necessary to reassess the parking requirements.

- Plots located north of the Breagh River has been retained by the Council for the provision of community housing. It is understood that the parking needs of the housing will be catered for on the site and therefore no additional parking is necessary for this use.

3.2.2 Parking

The *Kilkenny City & Environs Development Plan 2014 - 2020*, Table 10.5: *Car Parking Standards*, sets out the recommended parking provision for land use types. On the basis that the Abbey Quarter would contain employment type uses principally, the descriptor in that table that best fits such use would be 'Office'. The car parking standard stated for 'Office' use is one number car parking space per 15 m² of gross floor area and additional space to be determined by the Planning Authority. Use of that standard would give rise to the provision of 4,058 spaces (the GFA is 60,686 sq.m, as shown in Table 3 hereafter).

That level of provision would be very high; the total number of public car parking spaces serving the complete city centre (including MacDonagh Junction) is, as previously stated, 4,419, and although the Abbey Quarter would, when fully developed, be a significant generator of activity, it is unlikely that it would double the parking requirement of the city.

The Development Plan standard of provision is very high, particularly in respect of large developments. The land area that would be required to provide 4,058 surface parking spaces for the Abbey Quarter would be in the region of 23 acres. It would be neither feasible nor sustainable to provide that amount of land within the city centre for parking use. Multi-storey parking is more efficient but would, for that number of spaces, also require a very significant area of land.

However, the Abbey Quarter will not contain employment type uses only; it will be a mixed development. This gives rise to more efficient use of car parking, lowering the overall number of spaces required to serve the various developments. For example, a hotel has a high overnight demand whereas offices require daytime parking only; similarly, a worker parked for the day may also visit the convenience store at lunch time, without the need for additional parking. The beneficial impact of multi-use parking is recognised by the Development Plan; it contains the following statement:

'However, where a developer can demonstrate to the satisfaction of the Planning Authority that parking spaces will be utilised throughout the day by a number of different users, availing of different facilities within a proposed development, the Planning Authority may, in the interest of sustainability, take this multi-use into account when assessing parking needs.'

Taking these factors into account, the car parking requirement has been assessed on the basis of the likely number of trips it would generate and the impact of shared use. The impact of mobility management has also been included (it is discussed in more detail later). Based on the sizes and future uses of the proposed development within the Abbey Creative Quarter, the requirement for carparking has been determined by use of the TRICS database. This is an industry-standard database of trip generation rates associated with different development types (determined by survey). The difference between cumulative trip arrivals and cumulative trip departures indicates the parking demand of the development type.



Figure 23: Proposed developments within the Abbey Quarter area

Building number 11 is an extension to the existing Watergate Theatre. It is assumed that the size of the extension will not exceed two storeys. Buildings 10 and 8 are the Mayfair building and the Brewhouse building respectively. It is assumed that those two buildings are not to be increased above their existing sizes. All other buildings are new developments and are assumed to be four-storey. The overall GFAs are shown in *Table 3*.

Table 3: GFA of developments in the Masterplan area

	no. of storeys	Gross Floor Area
<i>Bld. no. 1</i>	4	4,544 sq.m
<i>Bld. no. 2</i>	4	4,372 sq.m
<i>Bld. no. 3</i>	4	5,708 sq.m
<i>Bld. no. 4</i>	4	2,992 sq.m
<i>Bld. no. 5</i>	4	4,784 sq.m
<i>Bld. no. 6</i>	4	5,556 sq.m
<i>Bld. no. 7</i>	4	4,704 sq.m
<i>Bld. no. 8</i>	3	6,000 sq.m
<i>Bld. no. 9</i>	4	7,700 sq.m
<i>Bld. no. 10</i>	1	1,500 sq.m
<i>Bld. no. 11</i>	2	1,206 sq.m
<i>Bld. no. 12</i>	4	6,804 sq.m
<i>Bld. no. 13</i>	4	4,816 sq.m
	Total:	60,686 sq.m

From the above table, the estimated GFA for all proposed developments in the Masterplan area is 60,686sq.m.

The nature of the mixed use is unknown, but for the purposes of this report is assumed to be mainly commercial. For that reason the mix of use categories considered most appropriate are “*Employment–Office*” and “*Employment - Business Park*” in equal share.

However, a development of this size is likely to have shared use of parking; for example, some of the development space is likely to be for leisure use after business hours or at lunch time by office workers (gym,

restaurant, bar) and there could be retail uses included in the mix (convenience retail to support the employment uses). As such the parking would be shared between the various uses, lowering the overall parking need. A 20% reduction to the trip generation rates has been made to take allowance of shared uses.

In addition, it is the intention of the Council to manage mobility within the city to encourage the use of non-car-based travel. As alternative transport begins to be used within the city the reduction in car-based travel will lead to a reduction in the demand for parking. In addition, mobility management planning should be used by each user of the Abbey Quarter buildings. Each company or body occupying a building should agree to implement mobility management measures and should report yearly on the effectiveness of their measures. Pricing of carparking is likely to be the most effective tool available to the council in relation to effecting change to sustainable travel. Scaled pricing may be required, whereby a basic complement of parking spaces per building is provided at a low rate (suitable for those who use less parking), and additional spaces are made available by the Council at ever-increasing annual unit charge rates. For companies occupying the buildings, an effective method of achieving use of sustainable travel would be to provide employees with a relocation allowance in lieu of carparking so that employees come to live in the city and can use sustainable travel rather than living elsewhere and commuting. Use of the cycle to work scheme should be actively encouraged. It is most likely that long-stay trips would be the ones to change travel mode, due to the relatively high cost of parking, and such change would lead to a significant reduction in trip generation and resulting parking demand, again assumed to be 20%.

These reduction factors have been applied to the TRICS trip rates (for Office and Business Park) and the resulting arrivals and departures profile of vehicles is shown in *Table 4*.

Based on these estimated arrivals and departures an accumulation diagram is plotted and is shown on *Figure 24*.

Table 4: TRICS database - Abbey Quarter Arrivals and Departures

02 - EMPLOYMENT / MIXED - USE			
Time Range		60,686sqm GFA	
		Arrivals	Departures
07:00	07:30	49	23
07:30	08:00	195	39
08:00	08:30	499	50
08:30	09:00	388	50
09:00	09:30	360	63
09:30	10:00	229	74
10:00	10:30	106	60
10:30	11:00	94	60
11:00	11:30	60	63
11:30	12:00	63	91
12:00	12:30	108	139
12:30	13:00	135	219
13:00	13:30	204	174
13:30	14:00	176	133
14:00	14:30	154	101
14:30	15:00	98	88
15:00	15:30	56	136
15:30	16:00	74	124
16:00	16:30	91	176
16:30	17:00	139	313
17:00	17:30	63	495
17:30	18:00	56	336
18:00	18:30	23	168
18:30	19:00	14	93

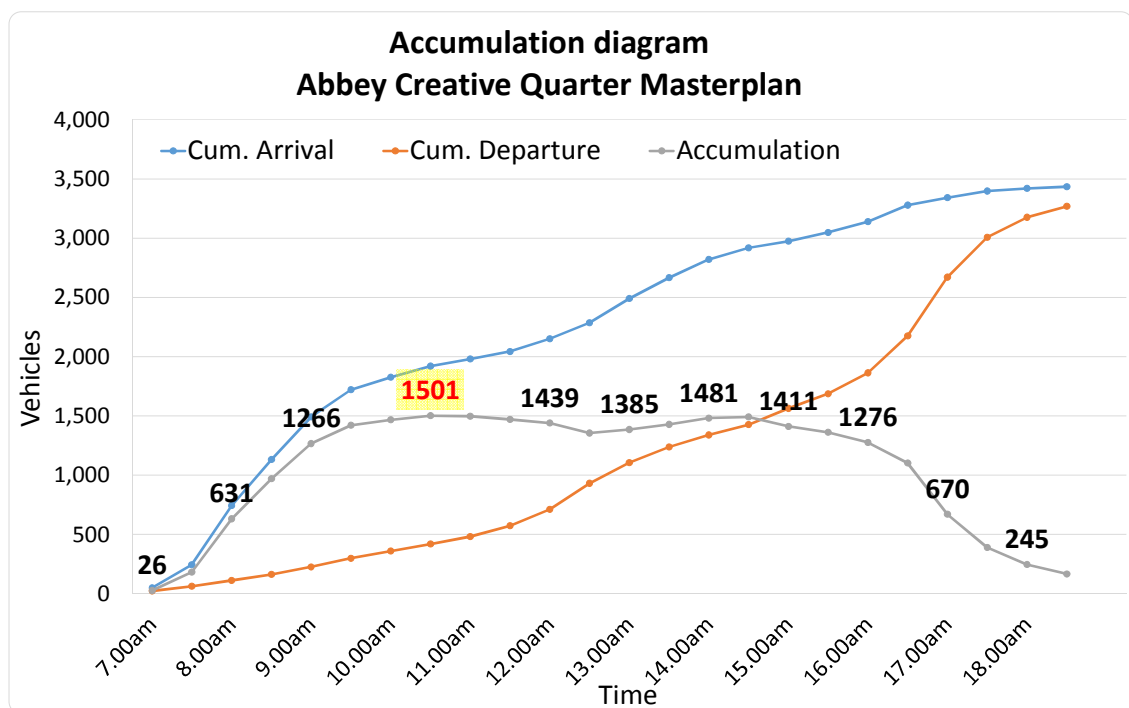


Figure 24: TRICS database – Vehicle accumulation diagram

On the basis that, firstly, the overall development type will be mixed such that shared parking occurs, and, secondly, that effective mobility management measures will be put in place the ultimate parking provision of 1,500 spaces for the Abbey Quarter is recommended, 500 of which would be provided for by the existing town centre car parks and 1,000 of which would be new spaces provided in the future at locations convenient to the development .

3.2.3 Other Considerations

It should also be borne in mind that carpark spaces within the former Brewery site have been lost to the city centre. Those spaces would have been used by employees for work purposes, but also for lunch-time shopping within the city centre. The notional number of spaces attached to brewery use on a site the size of the St Francis' brewery would run to hundreds, if assessed under the parking provision requirements for developments as outlined in the County Development Plan (one parking space per 60 m² of gross floor and operational area) . The brewery did have a significant workforce in the past, but at the time of its closure the number had reduced significantly. A review of aerial photography indicates that the number of marked parking spaces provided within the site is approximately 80.

Blue-badge holders, and users of parking for drop-off and deliveries, would need short-term surface parking in the Abbey Quarter. For managerial staff who travel during working hours, remote parking at a long-stay carpark may not be feasible; they may need on-site parking within the Abbey Quarter. The number of spaces estimated for blue badge users, set-down, deliveries and for management in the developments within the Abbey Quarter is 100 spaces. In cities where space for parking provision is restricted, basement parking is usually provided below the footprint of a multi-storey building to cater for such parking demand. However, this is not considered feasible in the Abbey Quarter because of archaeology and flooding issues. The spaces would therefore be supplied as surface spaces.

Section 4.1.6 of the Masterplan states that *“Limited new carparking will be provided within the Masterplan area, primarily for loading/unloading and for mobility impaired drivers. Options for the provision of additional off site carparking facilities, within a short walking distance of the Masterplan Area will be considered.”*

It is therefore recommended that the 100 or so spaces that were nominally attached to the brewery site would be retained within the Abbey Quarter site, distributed between the buildings (approx. eight number per building) to serve the following needs: disabled parking, set-down parking, deliveries etc.

The advice of property professionals in relation to the provision of parking was that the expectation of employment-type users would be to have an absolute minimum of two spaces per 100 m² GFA adjacent to the building with an additional one to two spaces elsewhere. This was considered to be a parking provision that would make employment uses viable, and conversely, were it not to be provided, might jeopardise such uses. The various buildings will, however, have different uses: employment, leisure, hospitality, residential etc., so such an intensity of parking would not apply to all buildings. Uses other than employment ones, within a mixed use development, would not require such a high level of parking. On that basis, for a mixed development of 60,686 m² GFA, the provision of 1,000 spaces adjacent to the site would cater for user expectations in relation to the portion of parking adjacent to the development. The availability of 500 spaces within the city would satisfy the recommendation for additional parking elsewhere in the city centre.

On the basis that the development uses would be mainly employment ones, there would be little demand from such uses during the weekend. However, as stated before, it is intended that the development would be mixed, and for that reason some weekend demand would occur. The level of demand would be dependent on the type of non-employment use and on the percentage mix of uses. A weekend demand of 25% of the weekday one has been conservatively assumed.

Another consideration is that the buildings numbered 1, 2 and 3, located within the existing market yard carpark on Bateman Quay, will, when constructed, remove a number of parking spaces from the existing carpark.

Figure 25 below shows the impacts of the buildings.



Figure 25: Impact of proposed Abbey Creative Quarter developments to the existing Market Yard carpark

The number of spaces that would be lost is 172, leaving 253 spaces within this 425 space carpark. This carpark is full at weekends and also at times during the week. Replacement of these spaces in a nearby location where they are of use to shoppers is considered essential for the continued viability of the immediate area. For that reason, 172 spaces for both weekday and weekend use should be provided in the immediate area.

3.2.4 Parking Provision

Table 5: Abbey Quarter Parking Requirement

Weekday	Weekend	Use	Location
900	225	Worker, visitor, patron use	Adjacent to the Abbey Quarter
100	25	Disabled, set-down, delivery etc.	Within Abbey Quarter
500	125	Provisional – offsite overflow of workers	Within the city generally
172	172	Shopping – replacing existing spaces lost to development	City core – in area of parliament end of High Street.

This recommended parking provision for the Abbey Quarter area is very dependent on the exact sizes and development types of the proposed buildings. It should therefore be kept under review as the exact uses and floor areas emerge. Once the first buildings are operational their actual parking usage should be examined and the forecast should be revised as the phased development proceeds.

Bearing in mind that that construction of the Abbey Creative Quarter will most likely occur over a long period, exceeding ten years, parking requirements should be assessed against construction phasing. This is discussed further later.

The ratio of parking spaces to development size in other areas of the city has been examined to check that the predicted provision for the Abbey Quarter is similar.

The size of the developments in the Abbey Quarter area is similar overall to the MacDonagh Junction development which has 1,100 carpark spaces. The usage survey of MacDonagh Junction carpark has shown the maximum occupancy of █% (█ spaces). It is not directly comparable to the Abbey Quarter development in that it is largely a retail development, though it has residential and office uses too. However, number of spaces

used in MacDonagh is less than the number predicted for the Abbey Quarter.

It should also be noted that approximately 2,251 public off-street spaces exist within the city central parking area. The Abbey Quarter increases that city centre developed area by a third approximately, and a similar increase in parking provision would be expected i.e. 743 or so carpark spaces approximately. An intended provision of 1,000 spaces appears robust, but should be subject to reassessment once the development types become known.

3.3 THE MEDIEVAL MILE

3.3.1 *Parking*

In order to assess the parking requirement of the Medieval Mile the tourist attractions that currently generate the tourist visits on the Mile were assessed. They are as follows: Kilkenny Castle, St. Canice's Cathedral, the Smithwick's Experience and Rothe House & Garden.

An assessment of the number of existing tourist visits to the Medieval Mile was made using information from the following sources:

Fáilte Ireland (provided by email following direct contact)

- Overseas tourists to county Kilkenny in 2015 was 267,000
- Irish residents' trips to county Kilkenny in 2015 was 228,000
- Kilkenny Castle tourist visits in 2015 was 282,588
- St. Canice's Cathedral tourist visits in 2015 was 48,000

Information from the tourists attractions themselves

- Smithwick's Experience tourist visits in 2015 was 57,500 (busiest month was August with 9,000 visits which is 15.7% of all visits in 2015)
- Rothe House & Garden tourist visits in 2015 was 16,000 (busiest month was August with 4,890 visits; which is 30.6% of all visits in 2015)

Tourism Ireland ('Market Profiles' website information)

Car use by overseas tourists using cars is as follows:

Table 6: Car usage - tourists

	Average
Car Not Used	58%
Car Hire or Car Own	42%

Using this data, the daily trips to the tourist attractions along the Medieval Mile were assessed. The assessment process is shown on *Figure 26* in Appendix A. The figure shows an estimated peak daily arrival rate of 1,188 cars and 29 buses.

It is likely that tourists spend on average no more than a half day parked in the town. The number of parking spaces used is therefore likely to be equal to half the number of vehicle trips. Applying that ratio to the total daily car and bus arrivals stated above, the existing peak tourist daily parking usage is estimated: carparking, 594 spaces; BUS parking, 15 spaces.

These trips are occurring at present, and their parking requirements are being accommodated at present within the city. Many of these drivers are likely to park at hotels, guesthouses etc.; not all would park in the city's carparks. The coaches, however, generally park at the castle.

Assuming that two thirds of tourists park within the city, and that all buses park at the castle, the resulting peak parking usage is 400 car spaces in the city and 15 coach spaces.

Fáilte Ireland has carried out research on the predicted impact of the marketing of the Medieval Mile brand and its attractions. Its research suggests that "*it has the potential to deliver an extra 600,000 overseas visitors (growth of more than 20%) to the region and increase visitor revenue by almost 25% to €950m in total by 2020*". (Source: Fáilte Ireland's; Ireland's Ancient East; PROJECT UPDATE 3; November '16)

Growth of 20% is predicted between 2016 and 2020. Assuming that some additional growth will occur in following years it is recommended that a 25% increase in parking demand be assumed for the Medieval Mile.

On that basis, the number of additional spaces to be provided is 100 carparking spaces and 4 coach parking spaces. However, on the basis of encouraging the diversion of some existing coach parking events from the Castle area it is recommended that up to 10 coach bays be provided.

It is emphasised that the estimate is of peak figures relating to a weekend in the month of August. Weekday demand would be less, but would be assumed to be high during the month of August – the traditional holiday time. Information could not be sourced on the proportions of tourist trips in a weekday relative to a weekend day. It is assumed that the weekday would be 80% of the weekend.

At the northern end of the Medieval Mile (the Canice's Cathedral end) there is an insufficient amount of available parking to serve the growth in visitor numbers to the attractions at that end of the city (which account for 30% or so of the Medieval Mile visitor trips (including those to the Castle)). It is our understanding that the visitor attractions at the northern end of the Medieval Mile are considered to be operating well below their potential, and that a key factor is that there is insufficient car parking and no existing coach parking. Coach parking and car parking should therefore be provided at this end of the town.

Table 7: Medieval Mile Parking Requirement

Weekday	Weekend	Use	Location
80	100	Tourist – both long and short stay parking	Northern end of Medieval Mile

3.4 THE GENERAL CITY CENTRE AREA

3.4.1 Parking

The growth in population of the City (Borough and Environs) over the last twenty years has been strong.

Table 8: Growth in population

1996	18,696	
2002	20,735	+10.9%
2006	22,179	+7.0%
2011	24,423	+10.1%
2016	26,512	+8.6%

Continued growth is forecast, and the predicted population in 2022 is 28,200 persons, an increase of 6.4% or 1,688 persons. (source: *City 2. Demographic and Socio-Economic Trends; Draft City Plan, Kilkenny; KCC*).

The Abbey Quarter is likely to have a sizeable working population, perhaps in the region of two thousand or so. Assuming that in time the majority come to live in the city and environs (with the remainder living within the county or in other counties) the projected increase in population is likely to be associated largely with the development of that site. The complement of city centre parking would need to be increased to serve the additional inhabitants.

The present number of city centre off-street public parking spaces is 1,800 (see section 3.2.4). These spaces are 80% occupied on Saturday, so the usage at present is $1,800 / 26,512$ (current population) \times 80% i.e 0.055 spaces per person. Applying that factor to the predicted additional population (1,688 persons) gives an additional requirement of 100 spaces. This demand would arise at weekends when the increased population is not working and is seeking to use the core city spaces for shopping and recreation. During the week, the majority of the population would be at work and the demand for core city spaces for shopping / recreation would be less. Generally weekday shopping activity during working hours would be no more than 60% of that at the weekend.

The parking requirement for the city centre is therefore as follows:

Table 9: City centre parking requirement

Weekday	Weekend	Use	Location
60	100	Shopping and business – short stay	City core

The development of the Abbey Quarter (located north of the city centre) and the further development of the Medieval Mile (with an emphasis on the currently under-utilised attractions at the northern end of the city centre) would be expected to generate additional trips in the High Street area, increasing demand for parking in that area. The availability of parking in other areas of the city centre, to the south and the east, would be of little use to shoppers using that area of High Street - the distance to those alternative parking areas is too great. Shoppers value convenient parking particularly since grocery shopping is a large part of the reason for visiting the centre. If activity such as grocery retail is to continue to be supported within the city core then the authorities must ensure that an adequate provision of easily-accessible parking spaces is available. Out-of-town shopping centres can provide free parking close to the door of the shop and it can be difficult for city centre shops to compete with such convenience.

3.5 OVERALL PARKING REQUIREMENT

The following tables summarises the car parking requirements generated by the Abbey Quarter, the Medieval Mile and the general city centre:

Table 10: Overall parking requirement

Parking Spaces	Weekday	Weekend	Location
Abbey Quarter	900	225	Adjacent to the Abbey Quarter
	100	25	Within Abbey Quarter
	500	125	Within city generally (provisional allocation)
	172	172	City core (replacing lost spaces at Market Yard)
Tourist	80	100	Northern end of Medieval Mile
City Centre	60	100	City Core
Total:	1,812	747	

4 Car parking options

4.1 PARKING REQUIREMENT

The following table shows the general locations where the car parking is required (as determined in *Chapter 3*), the availability of car parking in those areas (as determined from the surveys presented in *Chapter 2*), and the number of new spaces to be provided in those areas.

Table 11: Car parking requirements

Location	Weekday	Weekend	Availability
<i>Within Abbey Quarter</i>	<i>100</i>	<i>25</i>	<i>This number of spaces could be provided with ease as surface spaces within the site, even when for the it is fully built-out</i>
<i>Adjacent to the Abbey Quarter</i>	<i>900</i>	<i>225</i>	
<i>City centre</i>	<i>232</i>	<i>272</i>	
<i>City generally</i>	<i>500</i>	<i>125</i>	<i>Market Cross and Ormonde carparks have availability, at commercial rates.</i>
<i>Northern end of Medieval Mile</i>	<i>80</i>	<i>100</i>	
Total:	1,812	747	

The midweek requirement is highest, due to the impact of the Abbey Quarter. Therefore the midweek is the period assessed, on the basis that if the midweek provision is adequate the weekend would also be.

The surveys showed availability of 506 spaces midweek within the city centre (city car parking excluding MacDonagh Junction and Fair Green - both area considered somewhat too distant). This would provide for all the city centre requirement shown in the table above.

In addition, 100 spaces would be provided as surface spaces within the Abbey Quarter development.

Therefore the principal consideration relates to providing for the 1,212 spaces approximately (900 for the Abbey Quarter, 232 city centre and 80 Medieval Mile (north)) required adjacent to the City centre / Abbey Quarter site / northern end of Medieval Mile.

4.2 CONSIDERATIONS AND CRITERIA FOR SELECTION

In proposing locations for the new carpark facilities, the following was taken into consideration:

- The need for parking to be located so that it serves as many uses as possible. Parking that serves workers during working hours should be located so that it also serves night-time and weekend uses. The closer the parking is to the centre the more likely it is to be used at all times of the day and week, maximising its utility to the city.
- Parking needs to be located in the area of need. The surveys show that the area of highest demand is in the city centre, at the north end of High Street, beside the proposed Abbey Creative Quarter and the northern end of the Medieval Mile.
- A site needs to be large enough to accommodate a large carpark. The preferable size is 500+ spaces. The carparks need to be large enough to be signed on VMS real-time signage on the major approaches to the city. A plethora of smaller carparks could not be easily signed. Smaller carparks are more expensive per space to construct and maintain and cause additional town centre traffic circulation when full.
- Sites should be easily accessed from St Francis Bridge. Sites to the east side of a north / south line along High Street are therefore preferable. The west side of the city centre is not as accessible, since the roads infrastructure is not yet in place to serve it.

Specific criteria used in assessing suitability of site options was as follows:

- Accessibility of the sites; they need to be easily accessed by drivers;
- Likely availability of the land; sites in the ownership of a public body are more likely to be made available;
- Likely cost of construction of the carparking; multi-storey is significantly more expensive than surface carparking. Surface carparking of the required size is however very unlikely to be available at the locations required in the city.
- Current zoning objectives of the sites as per the *Kilkenny City & Environs Development Plan 2014 – 2020*.
- Environmental factors; areas of archaeological, ecological and cultural heritage abound in Kilkenny city; sites that impact significantly on such areas might be difficult and costly to develop.

In assessing the costs of proposed carparks a general price of €15,000 ex vat per multi-storey carpark space and €4,000 ex vat per surface carpark space are used.

4.3 SITE OPTIONS

Site options for carpark locations are identified in *Figure 27*. The sites were identified through an examination of the aerial photography of Google Maps; the photography is recent and so accurately depicts the current development of the city. Sites that were within the catchments of the locations where parking is required were identified. The sites needed to be large enough to accommodate a large carpark, and generally free from a level of existing development that would preclude their use.

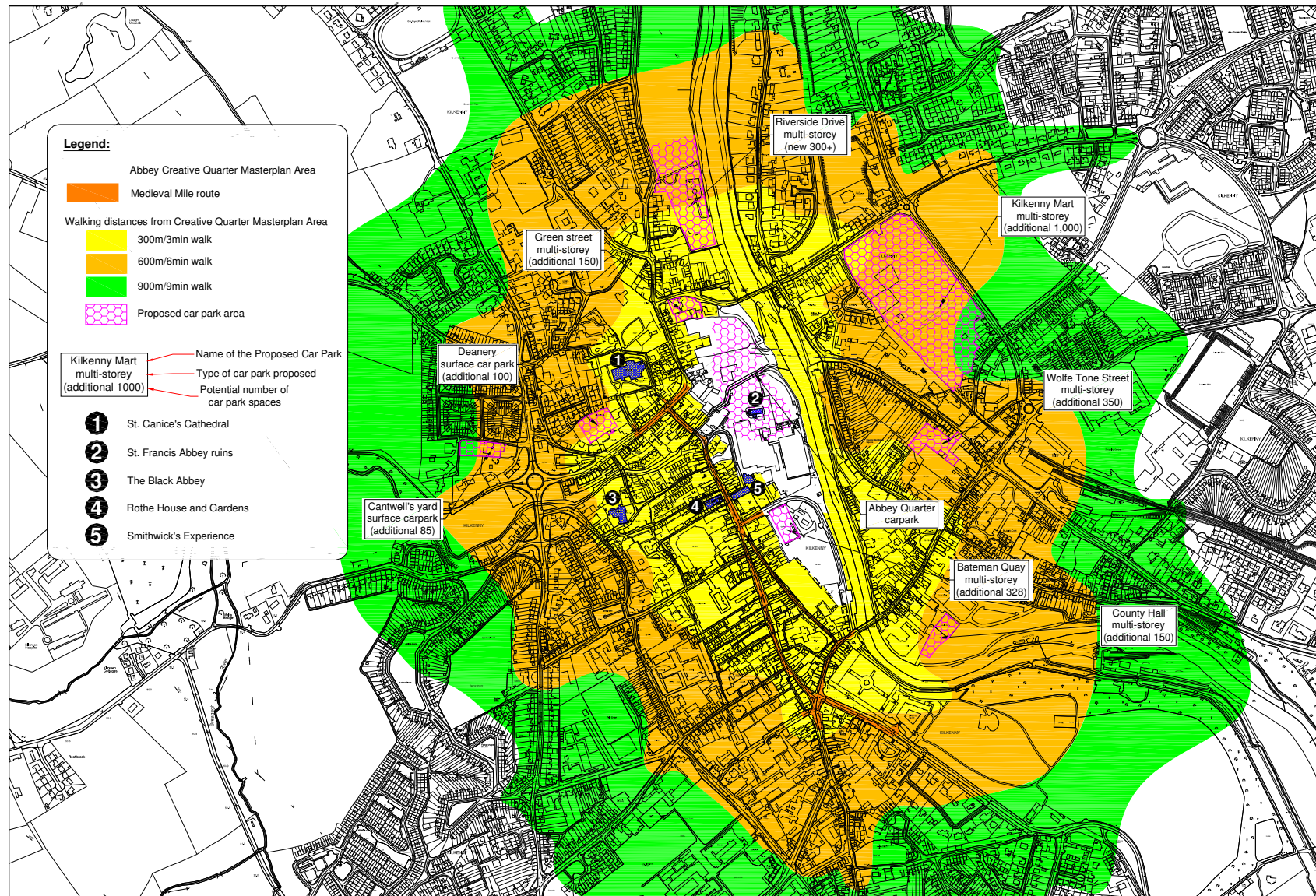


Figure 27: Possible carparks

A key consideration that emerged during discussions with the Council is availability of the site. Acquisition of large city centre plots by the Council for parking provision for the Abbey Quarter development might not be feasible and in any event would be costly. For that reason preference would be given to sites in the control of the Council.

The following sites were considered feasible and were brought forward for more detailed assessment.

4.4 SITE OPTIONS

4.4.1 *Kilkenny Mart multi-storey carpark*

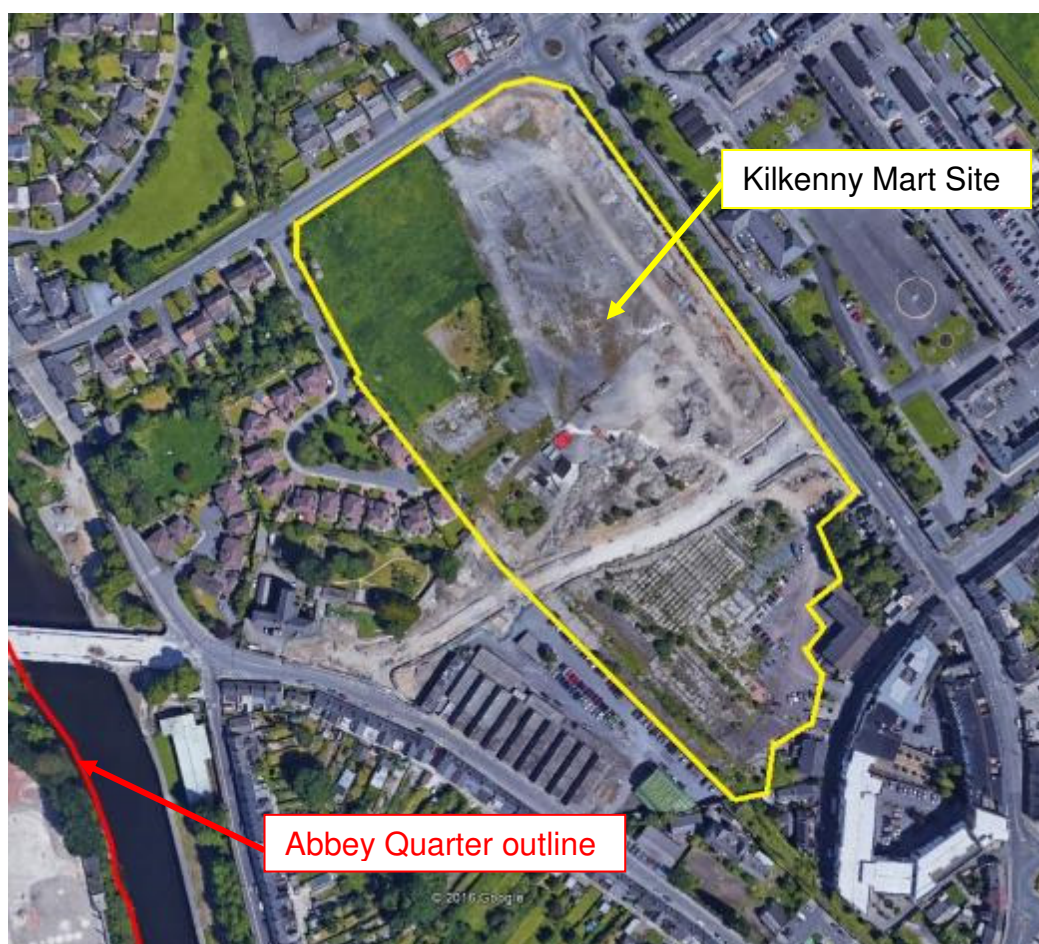


Figure 28: Aerial view of Kilkenny Mart site

The mart site would be expected to be developed for general business use as demand materialises in the coming years and such development could

to include multi-storey or basement carparking. On a site of this size it would be possible to provide more carparking spaces than required by the needs of proposed developments on the Mart site, thus providing extra spaces for the Abbey Creative Quarter and perhaps the Medieval Mile. There are clear advantages to provision of additional carpark spaces at this location and they are described below.

The advantages:

- The area is zoned for general business, and therefore appropriate for parking (in conjunction with other uses).
- The walking distance from this carpark to the Abbey Quarter and Medieval Mile would be approx. 6 mins.
- The size of the Mart plot is large and could accommodate a very large carpark.
- There is no other brownfield site within reasonable walking distance of the Abbey Creative Quarter and Medieval Mile large enough to accommodate such a large number of parking spaces.
- The carpark would be large enough to be signed using VMS real-time signage on the major approaches to the city.
- It is linked to the Abbey Quarter by way of the new bridge over the River Nore and would bring tourists past the new viewing platform where they would easily 'get their bearings' by having direct sight of the major tourist attractions of the city.
- The development of other uses such as the proposed cinema and would lead to use of the parking during the evening / night, ensuring some shared use of the carpark. In addition there is some existing demand for parking in the locality; nearby business rent spaces at present at remote locations, such as Nolan Park.
- The site is reasonably free of environmental issues and does not flood.
- The expectation is that the site will be developed.
- The carpark would be easily accessed from St Francis Bridge.

The disadvantages are as follows:

- The site is not in the ownership of the Council. This is clearly a significant issue. The cost of acquisition of the land and development of a carpark could be prohibitive.
- The carpark would be located on the east side of the river and might be seen by tourists, locals, and employees of the Abbey Creative Quarter as being somewhat remote from their destinations. Crossing the river might be unattractive during inclement weather.

4.4.2 Wolfe Tone Street multi-storey carpark



Figure 29: Aerial view of proposed location of the Wolfe Tone Street multi-storey carpark

The consolidation of Wolfe Tone Street surface carpark into a multi-storey carpark is a proposal in the *Kilkenny City Local Area Plan*.

The advantages:

- The area is zoned for general business, and therefore appropriate for parking (in conjunction with other uses).
- The walking distance from this carpark to the Abbey Quarter and Medieval Mile would be approx. 6 mins.
- The land is owned by the Council.
- The carpark would be relatively easily accessed from St Francis Bridge.
- The existing site is surfaced and drained. This would reduce the cost of construction.

The disadvantages are as follows:

- The carpark would be located on the east side of the river and might be seen by tourists and locals as being remote from their destination. Crossing the river might be unattractive during inclement weather.
- The size of the existing carpark is reasonably large (approx. 3,700 sq.m) but the plot shape is awkward; the site is close to residences and there could be restriction on the permitted height of a multi-storey carpark. For these reasons it might be difficult to provide the number of additional spaces required.
- There is land on the south side of the existing carpark which is free of development and, if available, would significantly improve the shape of the plot and increase the potential for a larger carpark. However, that land is privately owned and the cost of acquisition could make the proposal uneconomic. In addition, there is a funeral home located within the existing carpark that would need to be relocated, again entailing significant cost.

4.4.3 Bateman Quay multi-storey carpark

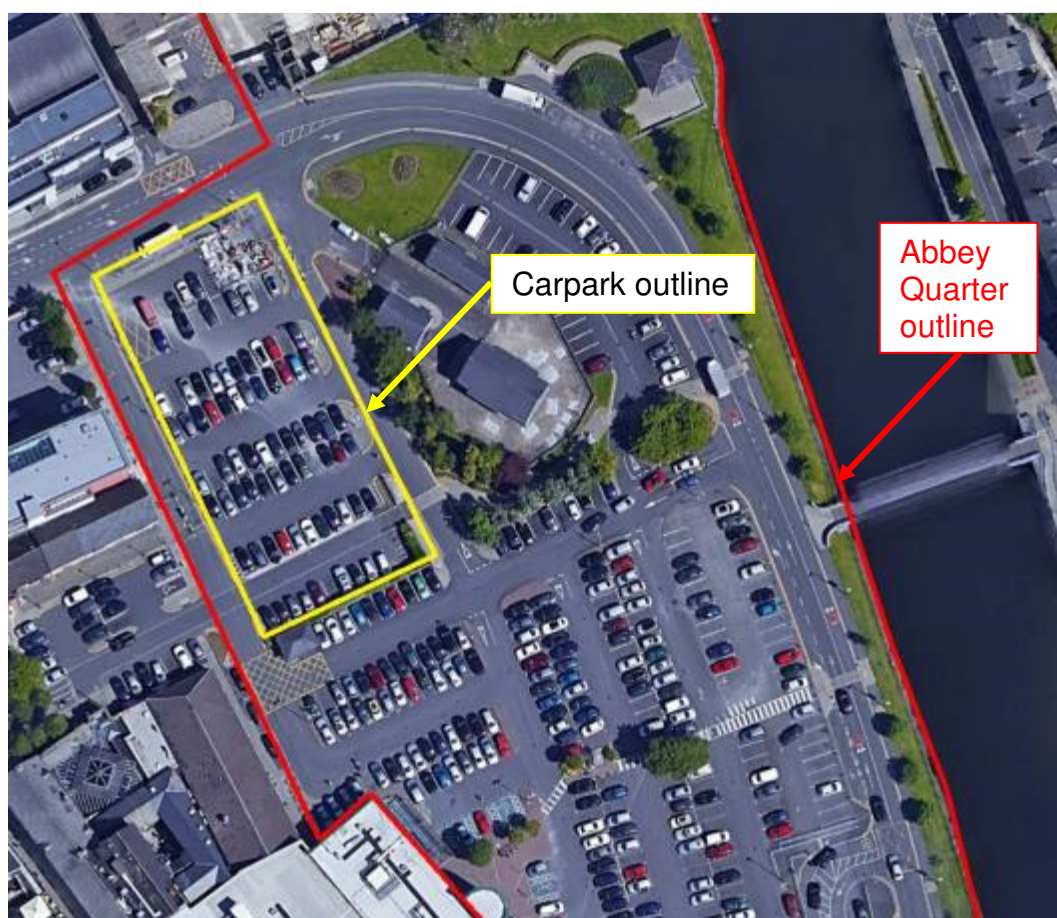


Figure 30: Aerial view of proposed location of the Bateman Quay multi-storey carpark

The Bateman Quay multi-storey carpark is one of the objectives stated in the *Kilkenny City Local Area Plan*. Car parking at this location is considered essential to serve the shops in the Dunne's Stores / Market Cross catchment area in the retail centre of the city. This is the section of the city in which there is the most intensive use of parking at present. The location shown, beside the Council's pumping station, would fit a 500+ space multi-storey carpark, which, in combination with the 253 retained spaces on the existing Market Yard surface carpark, would make a very effective and well-used city centre carpark.

The advantages are as follows:

- The site is available to the Council and is in use for parking at present.
- The parking spaces are located in the area of the city with the highest parking demand – they would be well used.

- The spaces would be used at daytime and evening/night, midweek and weekends, and during all months of the year. Their use would be for many purposes; shopping, business, tourism, entertainment. The parking would serve multiple areas: the city core, the Abbey Quarter, The Medieval Mile, the Courthouse, the theatre etc. Shared parking is efficient, and provision of parking that serves all time periods reduces the overall number of parking spaces necessary to satisfy demand.
- Because the parking is located where desired by users it would generate significant revenue.
- The parking would support the continuance of everyday retail activity in the High Street.
- It would be located centrally with respect to the medieval Mile tourist attractions.
- The construction costs of a multi-storey carpark would possibly be less per space than at other locations because the site base, the drainage and the access arrangements are largely in place.
- The existing carpark has barrier control – no further barriers or machine would be needed for the multi-storey element. This maximises the number of spaces that can be provided and it also may reduce the impact of customer dislike of multi-storey parking – the customer enters a surface carpark and in the knowledge that entry to the multi-storey part would be required only if and when the surface spaces are all full.

The disadvantages are:

- Building no. 3 of the masterplan would be a carpark – not an occupied building. Therefore, it would not generate rental; however, it would generate income as a carpark used by shoppers, workers, tourists etc.
- The carpark is in the centre of the city centre. Traffic will traverse therefore city centre streets to access it. The recent provision of St Francis Bridge would facilitate ease of access via Irishtown and Parliament Street. One of the main objectives of St Francis Bridge was to increase accessibility to the city, and for that reason the city centre carparks should be well connected to it. The Council may need to

implement measures to suppress through trips on High Street – trips whose origins and destinations lie outside the centre – to ensure that street capacity is retained for those accessing the city centre car parks..

4.4.4 County Hall multi-storey carpark



Figure 31: Aerial view of the County Hall multi-storey carpark

A multi-storey County Hall carpark is an objective of the *Kilkenny City Local Area Plan*. The location of this carpark is within the *Community facilities zone in Kilkenny City & Environs Development Plan 2014 – 2020*.

The vehicular access to this carpark would be from Maudlin Street (one-way eastbound at present). Consideration would need to be given to an alteration of Maudlin Street to two-way operation (it is currently one-way) from the County Hall carpark entrance to the junction of Maudlin Street / Dublin Road. Pedestrian access to the carpark would be via John's Street Lower. A footbridge over the river Nore directly from the carpark could, if provided, connect carpark users directly to the Canal Walk and Kilkenny Castle area and from there they would be within 6 minutes walking distance of the Abbey Creative Quarter.

The advantages of this site are as follows:

- The land is in the ownership of the Council.
- It could provide traffic relief to the Parade.
- It is located within 6min walk from the Abbey Creative Quarter area and Medieval Mile.

The disadvantages are as follows:

- The proposed alteration to traffic flow on Maudlin Street (altering the present one-way flow to two-way) might not be acceptable to local residents.
- The proposal would also result in a loss of on street car-parking.
- The carpark could be visually intrusive. It would be clearly visible from the Castle and would need to be designed to fit well into the urban landscape.
- For the above reason the construction cost could be high.
- Assuming a limit of 3-storeys the resulting size of the carpark could be small, and small multi-storey carparks are more expensive per space to maintain and operate.

4.4.5 Green Street carpark

The need to assess the feasibility of all well-located sites available to the Council has raised the consideration of locating a carpark on the northern end of the masterplan site. The site chosen is north of the river Breagagh, on the land between that river and St Francis Bridge. The Abbey Quarter masterplan proposes residential development within the site.

A 500+ space multi-storey carpark could be provided on part of the site, as shown in *Figure 32* below, with the community housing site boundaries adjusted to suit.

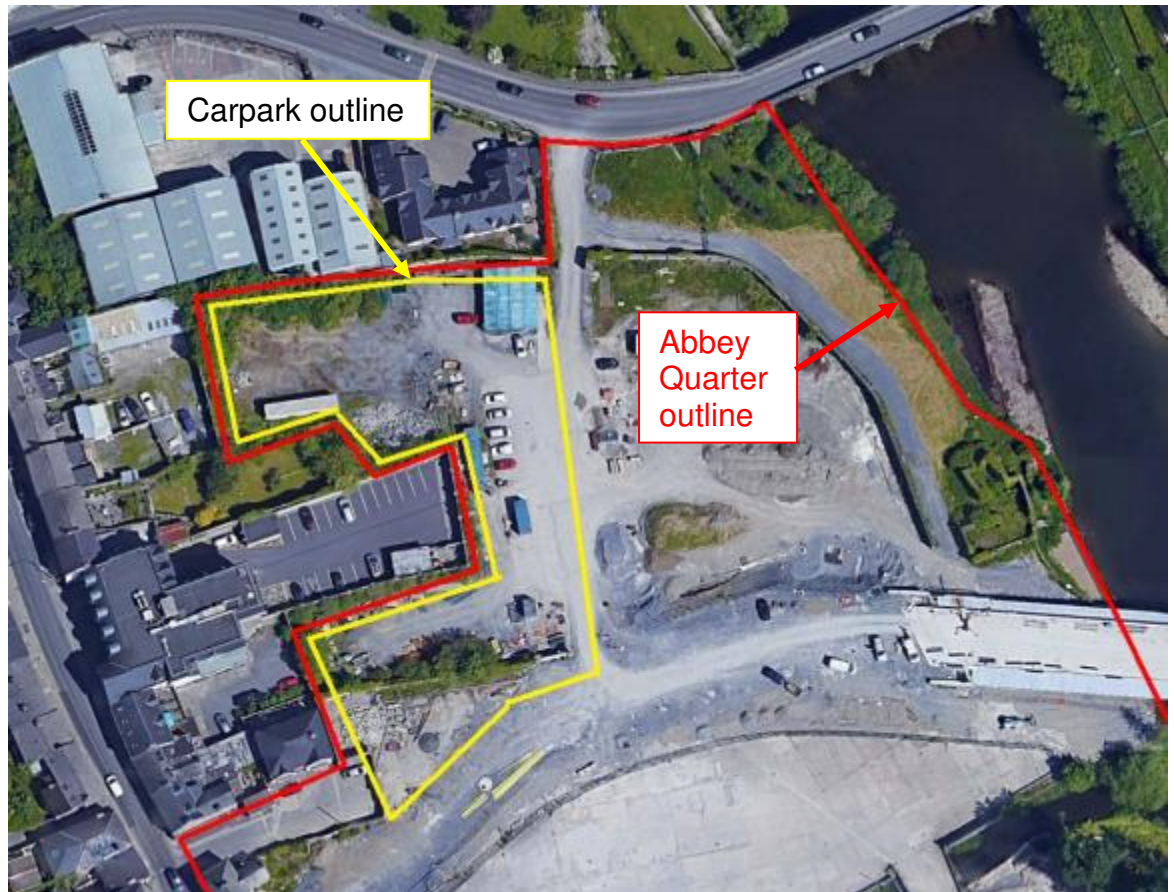


Figure 32: Aerial view of proposed location of the Green Street multi-storey carpark

The advantages of the site are:

- The site is available to the Council.
- The parking would be located centrally with respect to the Medieval Mile, Canice's Cathedral and the Francis Abbey tourist attractions.
- The carpark would be easily accessed from the Central Access Scheme.
- It would be ideal for workers in the Abbey Quarter.
- It could also act a catalyst for future development of this area of the town, better balancing the spread of development in the areas leading into High Street.

The disadvantages of the site are:

- The development proposed on this site would be reduced in scale, though the provision of adjacent parking would serve the night-time requirements of residents of a residential development .
- The extent of dual usage might not be as great as at other locations at present. The carpark might not be in high usage at night or at weekends; however, the carpark could facilitate growth in development that would utilise the availability of off-peak parking, such as the possible expansion of the existing nearby hotel.
- The shape of the site is inefficient, but could be rationalised in consultation with, and with the agreement of, adjoining landowners.

4.5 NON-FEASIBLE SITE OPTIONS

A certain number of the sites identified have constraints associated with their use that effectively render them unsuitable for use as carparks. These sites are discussed in brief below, for completeness, but have been ruled out of further consideration.

4.5.1 *Riverside Drive multi-storey carpark*



Figure 33: Aerial view of potential location of the Riverside Drive multi-storey carpark

The site is quite well located to serve the northern end of the Abbey Quarter area and Medieval Mile, and could be linked to the Abbey Quarter area by provision of pedestrian route along the west bank of River Nore and under Green's Bridge. However its proximity to the Riverside Drive residential area, its Green/Open space zoning, its propensity to flooding and its proximity to the ecologically designated river are significant constraints.

4.5.2 Deanery carpark



Figure 34: Aerial view of location

This site would significantly expand the existing Dean Street carpark and would effectively accommodate the tourist attractions on the northern end of the Medieval Mile, The Abbey Creative Quarter, and St Canice's Cathedral. However, archaeology and heritage considerations would be significant, ownership of the site is private, and the site is at significantly higher level than Dean Street surface carpark.

4.5.3 Troy's Gate multi-storey carpark

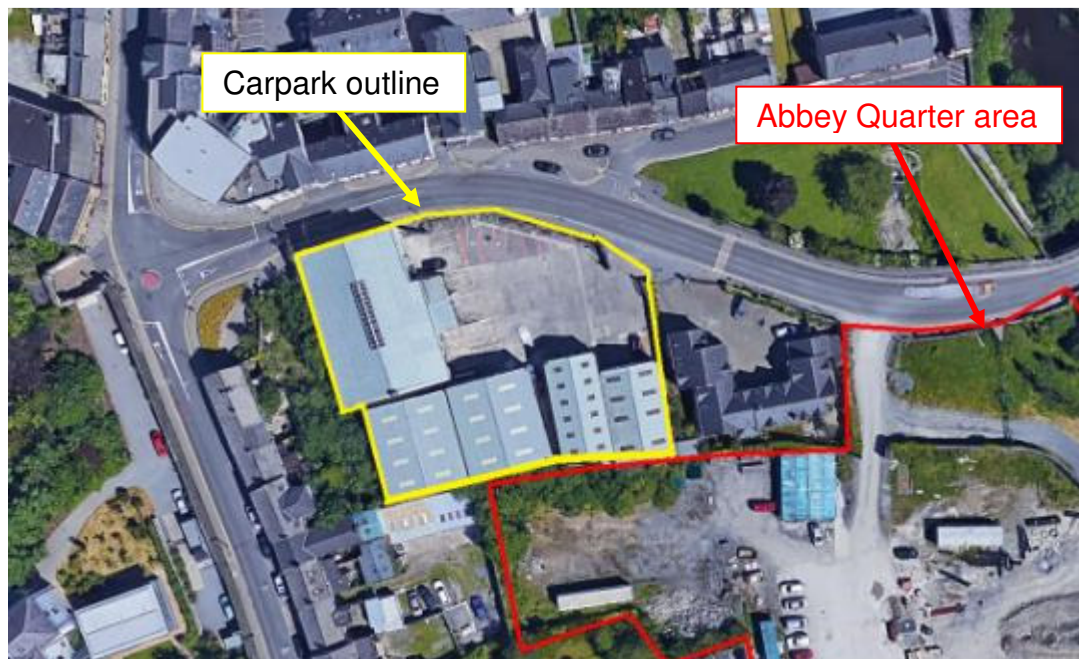


Figure 35: Aerial view of proposed location of the Troy's Gate multi-storey carpark

This site is convenient to the Abbey Creative Quarter and also to tourist attractions on the northern end of the Medieval Mile; however, this site is used by four retail stores, so the cost of acquisition would be high. There could be issues in developing a carpark close to neighbouring properties.

4.5.4 Cantwell's Yard surface carpark

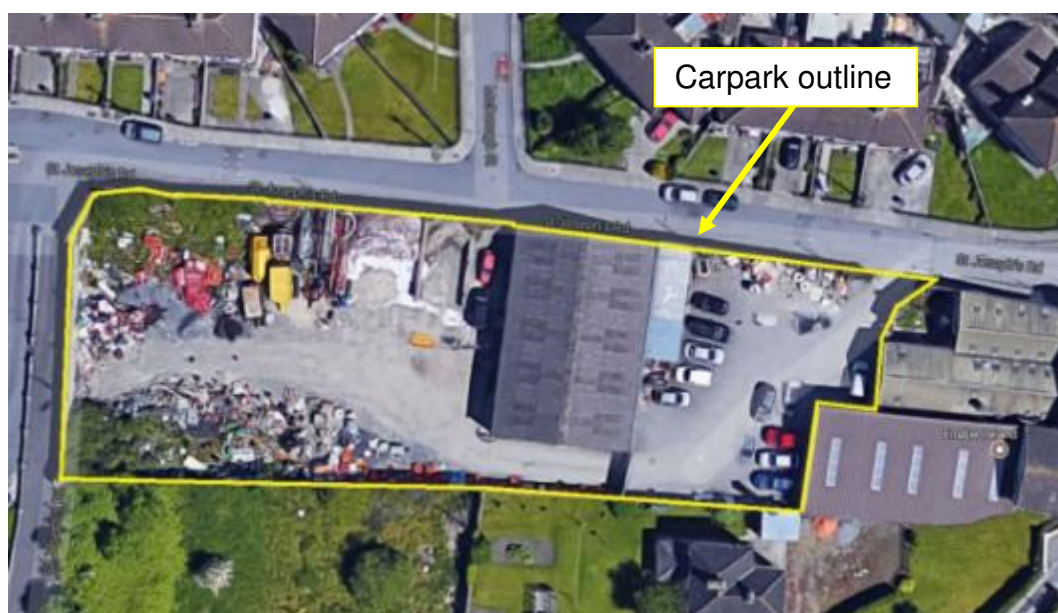


Figure 36: Aerial view of proposed location of the Cantwell's yard surface carpark

It is understood that the land is in Council control and it was therefore considered. However, the site is somewhat distant from the Abbey Quarter, it is located on the west side of the city and is not too readily accessed from St Francis Bridge. In addition, the site is being considered for residential use. For these reasons, its use was discounted.

4.6 SUMMARY AND RECOMMENDATION

A summary of the deciding characteristics of the feasible sites is provided below.

Table 12: Summary of Key Characteristics of Feasible Sites

	Carpark name and number of carpark spaces proposed	The key advantages	The key disadvantages
1.	Kilkenny Mart multi-storey carpark (new 1,000 spaces)	It could accommodate a very large carpark, in excess of 1,000 carpark spaces and could provide the most of the Abbey Quarter and Medieval Mile carparking requirements.	The site is not in the ownership of the Council
2.	Wolfe Tone Street multi-storey carpark (new 350 spaces)	The land is owned by the Council.	The site is close to residences and there could be restriction to the permitted height and size of a multi-storey carpark.
3.	Bateman Quay multi-storey carpark (new 550 spaces)	The parking is located where desired by motorists, would be well-used and would generate a strong income stream.	A building would be lost from the Abbey Quarter.
4.	County Hall multi-storey carpark (new 160 spaces)	It is located within 6min walk from the Abbey Creative Quarter and Medieval Mile.	The carpark could be visually obtrusive. Necessary changes to access might be difficult to achieve.
5.	Green Street multi-storey carpark (new 550 spaces)	The land is owned by the Council, is conveniently located with respect to the Abbey Quarter and Medieval Mile. The site is directly accessible from St Francis Bridge.	The area available for proposed housing is reduced.

As previously stated, the availability of the site to the council is a key consideration. In that regard the Bateman Quay site, the Green Street site and the County Hall sites are available to the Council; the Mart is not and neither is the full extent of the Wolfe Tone St lands. The County Hall site is somewhat remote from the Abbey Quarter, and its environmental and access difficulties could be difficult and costly to solve.

The Green St site is very accessible, ready for development and could support the growth of this area of the city. It is ideal for the Abbey Quarter and for serving tourists visiting the northern end of the Medieval Mile. It is recommended for consideration for use in the long term.

Bateman Quay is an excellent site; it generates significant revenue at the moment and is well used. The Bateman Quay site is recommend for consideration for use in the long term.

5 Car parking recommendations

5.1 CONSIDERATIONS

5.1.1 Costs

The funding of the car parking is a significant issue, particularly the long-stay car parking for workers. As previously stated the average cost of provision of a parking space is €15,000 in the case of multi-storey and €4,000 in the case of surface. Normally, multi-storey car parks are economical for well-used short-term parking and surface car parks for the long-term car parking. Taking into consideration the capital costs and running costs of a multi-storey space a revenue of €5 per space per day approximately is needed to be viable. The €2/day charge levied at present for all-day parking in Council-owned public car parks would be insufficient to cover the costs of multi-storey parking. This is a significant issue and it would need to be determined if the market would support direct charges and rents on buildings within the Abbey Quarter that would be high enough to pay for the development and operational costs of subsidised off-site parking.

5.1.2 Phasing

The need to fund such investment over time raises the issue of phasing of the provision of car parking so that a revenue stream would be in place to fund future provision. This is discussed further later.

Another factor to be kept in mind is the long-term risk relating to significant investment in car parking. Major future changes in motoring are predicted. Current forecasts relating to the future use of autonomous vehicles suggest that the period 2040 to 2050 will see the commencement of a reduction in parking demand. This will arise from the fact that many owner-driver vehicles will be autonomous and will not need to dwell in pay-parking car parks but would instead leave the city centre until required for collection. In addition, many city trips may be in shared-use autonomous

vehicles that would drop the user and leave to collect another. Under such a scenario there would be a reduced requirement for city-centre parking but an increased requirement for access and set-down. In that context care should be taken in relation to commitment to expenditure on high-cost multi-storey carparks that may have a limited repayment lifespan. The rate of increase in autonomous vehicle numbers in the national fleet should be kept under review as the Abbey Quarter develops and the impacts of any increase should be considered and addressed in the evolving car parking strategy. It might be the case that the multi-car park should be designed with a layout that would accommodate conversion to a different use (offices perhaps) at a later date. It might be sensible to use greater floor to floor heights to facilitate such different uses.

Construction of the Abbey Quarter is likely to have a timespan of well in excess of ten years. Some buildings are phased for construction later than others. Therefore, in addressing the parking provision for the Abbey Creative Quarter, City Centre and Medieval Mile, two aspects are considered:

- i) The ultimate car parking provision required on full build-out of the Abbey Creative Quarter – the long-term
- ii) The roll-out of the car parking provision in tandem with the phased construction of the Abbey Creative Quarter – temporary parking.

5.2 LONG TERM PARKING PROPOSAL

In providing for the long-term parking needs it is recommended that, as much as possible, the number of carparks should be minimised. This is to make sure that carparks can be easily signed for users, with signage on approach roads indicated the numbers of spaces available. It is feasible to provide such signed occupancy information in relation to a small number of carparks only, and it is important that such information is given so that wayfinding is easy for visitors. In addition, the provision of larger carparks reduces the amount of circulation by drivers on the city road network that would be associated with smaller carparks when full.

Bateman Quay and the Green St are the recommended sites (see Chapter 4). The ultimate future car parking requirements (excluding the 100 spaces recommended on the Abbey Quarter site) is 1,212 spaces.

The recommended apportionment of the carpark spaces to the recommended sites is indicated in *Table 13*.

Table 13: Car parking on proposed sites

Carpark	Provision	Comment
<i>Bateman Quay</i>	<i>550</i>	<i>Multi-storey, supplementing the retained 253 spaces and utilising its existing barrier system</i>
<i>Green Street</i>	<i>550</i>	<i>New multi-storey</i>
Total:	1,100	

The long-term provision of 1,100 spaces is 121 spaces less than the predicted demand of 1,212 spaces.

However, on the basis that the Bateman Quay multi-storey car park is recommended to be located on the site intended for building No. 3, the omission of that building will result in a reduction of 5,708 m² in development area and an associated reduction of 94 car parking spaces, almost offsetting the shortfall of 121 spaces. In addition, the ability to influence travel modes and parking requirements is in the control of the Council, both directly through the provision of measures facilitating non-car based travel, and indirectly through exerting pressure on those renting the buildings to implement effective mobility management measures. It is feasible therefore that the parking need might be reduced through effective mobility management, obviating the need for some of the additional spaces.

5.3 TEMPORARY PARKING PROPOSAL (INTERIM)

It is clear from the parking surveys that the provision of temporary parking within the Abbey Quarter site on undeveloped plots - on the lands between St Francis Bridge and the Green Street and on the lands containing plots

12 and 13 - would be viable because there is a demand for parking at those locations. That section of the Abbey Quarter area is adjacent to the highest existing demand area for parking in the city. The locations of the proposed temporary surface car parking areas, and the numbers of spaces they can contain, are shown on Figure 37 hereunder.

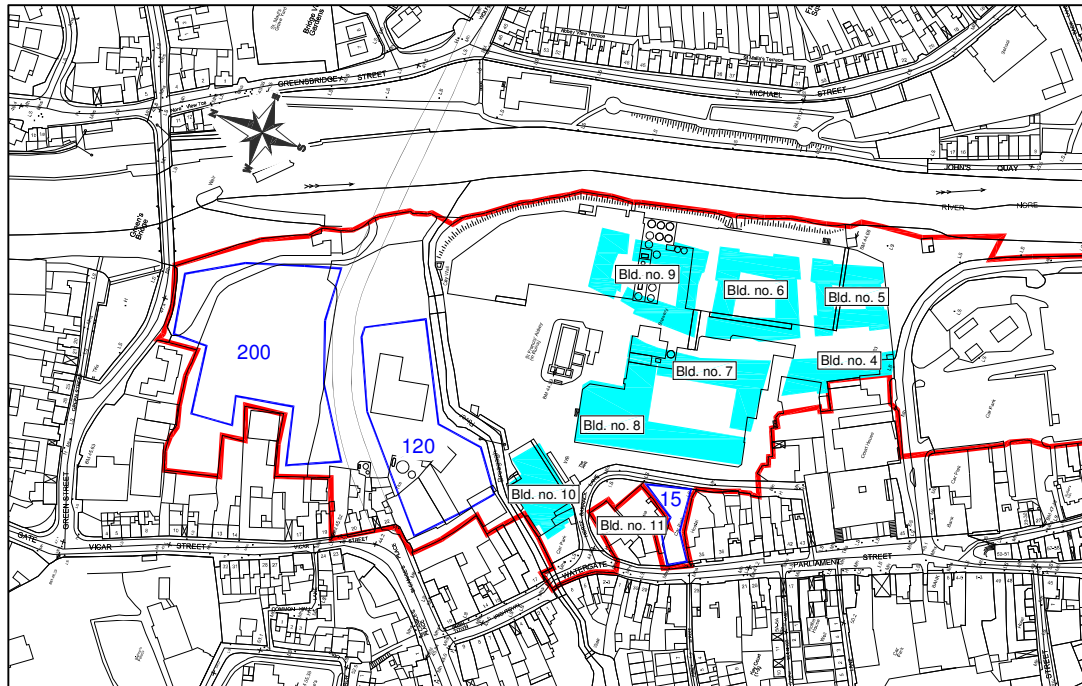


Figure 37: Potential locations of temporary surface carparks

Access could be provided from St Francis Bridge and the site has existing surfacing that would provide a base for parking with little additional investment required. This would provide an immediate revenue stream to fund future parking. Overall, the intention should be to utilise the undeveloped plots on the Abbey Quarter site to temporarily fulfil the parking needs of the developing Abbey Quarter, the Medieval Mile and the needs of the city centre. The site could generate revenue for the future construction of the multi-storey carparks that may be necessary once the parking demands of the developing Abbey Quarter and Medieval Mile exceed the capacity of the surface parking available on the site.

Initial development is likely to be the buildings numbered 5,6,7,8,9 and 10. These buildings account for 50% of the parking demand, i.e. 750 spaces.

The undeveloped plots would provide sufficient area for the following numbers of temporary surface car parking spaces.

- Area beside the Watergate Theatre (southern side) - 15 spaces
- Area between St Francis Bridge and the Breagagh - 120 spaces
- Area between CAS and Green Street - 200 spaces
335 spaces

Thereafter, multi-storey parking may be required. The actual amount of permanent parking to be provided could be more accurately assessed at that stage based on the actual parking demand of the emerging uses. In addition the charges imposed on the users of the temporary parking in the interim would have amassed a fund to offset to some degree the construction costs of new car parks.

5.4 OTHER RECOMMENDATIONS

It is likely that the first carpark that should be provided is the Market Yard. The site is in Council ownership and parking at this location should impact very positively on town centre retail as it exists at present.

5.4.1 *Carpark Access*

One of the principal objectives of St Francis Bridge was to improve accessibility to the city centre and to facilitate the development of its brownfield sites. The capacity of the road network within the city is restricted, however, and there should be a greater apportionment of that capacity to trips with a destination in the centre; through trips should be actively discouraged. Current predictions in relation to changes to future travel behaviour would result in a reduced demand for parking in the long term; however, with an ever ageing population, the need for accessibility would increase as would the need to get vehicles into the city centre for drop-off and collection.

The road through the masterplan area is not to be a through route; it is to offer access to the masterplan area only. It is to be primarily for the use of

sustainable form of travel, principally walking and cycling, and vehicular use is recommended to be by the following types of user and classes of vehicle:

- Disabled users, taxis, autonomous vehicles, set-down and deliveries.
- Electric vehicles accessing charge points. The Abbey Quarter should positively discriminate in favour of sustainable transport offering access to electric charge points.
- Vehicles accessing the few discretionary spaces per building serving the individual needs of the building occupiers.

5.4.2 Mobility Management

Mobility Management is considered to be a key factor in the success of the traffic and parking aspects of the Abbey Quarter. The following recommendations are made:

- Mobility Management planning should be mandatory for each occupier and it should be formalised in the lease agreements.
- There should be an expectation that those taking employment would be encouraged to move to the City rather than commuting from outside the city. The development of the Western Environs would help to achieve that objective.
- The council's Mobility Management Plan should be revised to specifically include the Abbey Quarter.
- Public transport should continue to be fostered. The masterplan area is a 10-minute walk from the train station which has services from Dublin/Waterford. The earliest scheduled arrival from Dublin direction (Carlow etc) is 9.01am, which is too late for commuters. This, and similar deficiencies, should be discussed with transport operators (Iarnród Éireann etc) as the Abbey Quarter develops. The proposed city bus service should serve the emerging needs of the Abbey Quarter.
- Where car use is the only feasible option – car pooling should be encouraged.

6 Coach Parking

6.1 COACH PARKING – EXISTING

The locations of, and walking distances from, existing Bus and Coach parking bays and stops, to the Medieval Mile are shown in *Figure 38*.

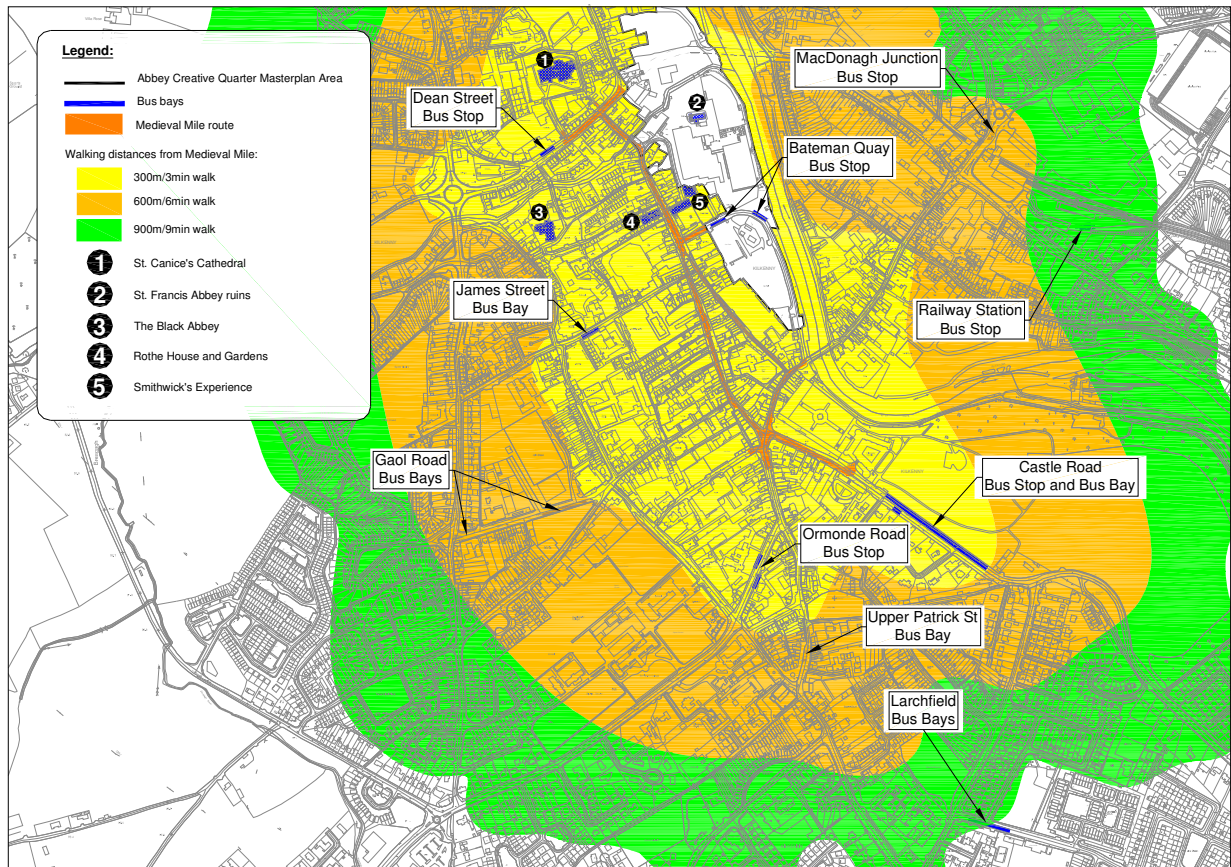


Figure 38: Existing BUS/Coach parking facilities

The total number of existing bus and coach stops and parking bays is 60. Bus/coach parking bays are located on Castle Road, Goal Road and Larchfield. All other facilities are bus stops for intended short duration of stay. The Castle Road bus bays are used intensively by coaches dropping tourists to the castle. Larchfield bus bays are normally used as an overflow to the Castle Road bus bays. Attractions located along the northern end of the Medieval Mile (St. Canice's Cathedral, The Black Abbey, etc.) do not have adjacent coach parking, and that may be a factor in the fewer number of tourist visits to those attractions.

There are no specific bus/coach parking objectives listed in the *Kilkenny City and Environs Development Plan 2014-2020* or in the *Kilkenny City Local Area Plan*. However, there is a general objective relation to improving tourist facilities, including coach parking, in the *Kilkenny City and Environs Development Plan 2014-2020*: “The Councils will encourage and assist development and tourist bodies in the provision of adequate recreational and tourism infrastructure and to further develop tourist orientated facilities in the City & Environs such as signage, public realm upgrading, coach parking facilities and traffic management”.

6.2 COACH PARKING – PROPOSED

In order to attract coach trips to the Irishtown end of the city the infrastructure needs to be as good as possible. The principal aspects are:

- Convenience of access from and egress to a good road network, avoiding narrow streets. St Francis Bridge has greatly improved accessibility for coaches that previously were constrained by narrow streets and tight turns.
- A relatively large site permitting a well-designed layout of parking and turning space.
- Proximity to the tourist sites.
- The facility to provide coach parking facilities to serve a hotel, were one to occupy one of the buildings on the site.

The area that stands out as catering for these requirements is the area of land between the River Breagh and the CAS. Coach parking in this area would be within short walking distance of the tourist attractions on the northern end of the Medieval Mile (less than 3mins). Pedestrian routes to the attractions along the Medieval Mile would be through the pedestrian routes within the Abbey Quarter area. The site is readily accessed directly from the CAS; it would be within a short walk of a hotel located within the Abbey Quarter. The site is large, and a good layout for easy turning could

be designed. It would readily accommodate the six-space coach set down requirement identified earlier.

These lands are intended to house buildings numbered 12 and 13. These are amongst the last buildings to be provided on the site, so provision of coach parking facilities at that location would give use to a plot that might otherwise lie idle in the short and medium terms.



Figure 39: Proposed BUS/Coach parking facilities within Abbey Quarter

It is also recommended that the plot be considered as the permanent location for coach parking, such are the advantages of the site. It is recommended that the space not occupied by the permanent buildings be used to provide the space required for the coaches. It would probably require re-configuration of the building plots identified in the masterplan. The plot is located outside the City Walls.

7 Summary and Conclusions

7.1 EXISTING CARPARKS

- The Council carparks operate at almost full occupancy. They were full during some hour on Thursday and Saturday, with some limited availability on Tuesday. They are well-located, well-used surface car parks catering for short-stay and long-stay parking (depending on the charging structure). Their popularity means, however, that they offer little capacity to serve the additional demands of the Abbey Quarter of the Medieval Mile.
- Not all the privately-owned carparks are as intensively used; Market Cross, the Ormonde and MacDonagh Junction carparks have spare capacity. Market Cross is well-located, and has capacity in its top floor to serve weekday use; however it fills on many weekends. The Ormonde has capacity during the week and at weekends, though it may fill at particularly busy times such as Arts Week. MacDonagh junction has significant capacity available, at both weekdays and weekends, though it is furthest from the Abbey Quarter.
- The heat diagram of parking events (*Figure 22*) shows clearly where the demand for parking events is concentrated: at the lower end of High Street, between Dunnes' Stores and Market Cross. Parking located within 150m or so of each shopping centre has high occupancy and turnover.
- There are essentially no parking areas of significant size to the north of the Market Cross / Market Yard parking areas. The parking areas that are present are small and are fully used. This means that surrounding the Abbey Quarter there is no existing parking capacity that could be relied on to provide any significant support to the development of the site; parking to the immediate south is in intensive use and there is no significant parking areas to the north or west.

7.2 PROPOSED CARPARKS

- The brewery site is large – 10.9 acres – and represents a very significant increase in the development of the core city area. Based on information contained in the Masterplan it has been estimated that there would be 60,500 m² or so of mixed-use development.
- The Medieval Mile project is gaining momentum and the Smethwick's Experience attraction has significantly increased its tourist numbers. It is likely that many of the visitors to Smithwick's Experience, Rothe House, St Canice's Cathedral etc. also visit the castle, so even though the number of visits to various attractions is increasing there may be no great increase in overall visitors numbers at present; however such visitors would tend to spend more time visiting a greater number of attractions and therefore they would park for longer durations, thereby requiring an increased amount of parking. Though tourist demand is likely to peak on weekends, the peak in overall parking demand is during the week (due to the impact of the Abbey Quarter).
- The increase in population projected for the city would increase the demand for city centre parking at weekends.
- The overall predicted demand is shown in the following *Table 14*:

Parking Spaces	Weekday	Weekend	Location
Abbey Quarter	900	225	Adjacent to the Abbey Quarter
	100	25	Within Abbey Quarter
	500	125	Within city generally (provisional allocation)
	172	172	City core (replacing lost spaces at Market Yard)
Tourist	80	100	Northern end of Medieval Mile
City Centre	60	100	City Core
Total:	1,812	747	

Table 14: Overall predicted demand

- The surveys showed availability of 506 spaces midweek within the city centre (city carparking excluding MacDonagh Junction and Fair Green). This would provide for most of the city centre requirement shown in the table above. Therefore 1,212 spaces (excluding the 100 spaces recommended on the Abbey Quarter site) are required adjacent to the City centre / Abbey Quarter site / northern end of Medieval Mile. The following table shows the recommended provision.

Carpark	Provision	Comment
<i>Bateman Quay</i>	<i>550</i>	<i>Multi-storey, supplementing the retained 253 spaces and utilising its existing barrier system</i>
<i>Green Street</i>	<i>550</i>	<i>New multi-storey</i>
Total:	1,100	

Table 15: Recommended car parking provision

- The long-term provision of 1,100 spaces is 112 spaces less than the predicted demand of 1,212 spaces. However, the replacement of an intended building on Bateman Quay by a carpark reduces the predicted parking demand from 1,212 spaces to 1,100 spaces approximately, removing the shortfall.
- In the short and medium terms, the emerging car parking needs of the developing Abbey Quarter should be served by the undeveloped plots within that site. This would allow a fund to be amassed through parking charges on the temporary parking to partially cover the capital cost of constructing two multi-storey car parks.

7.3 COACH PARKING

- The Canice's Cathedral area and the northern end of the Medieval Mile are not well served by tourist coach parking. Coaches park at the Castle and since the walking distance to St Canice's Cathedral and back is quite long it is likely that many tourists visit the Castle and the Parade area only and do not visit the attractions along the full length of

the Medieval Mile. The provision of coach parking close to the northern end of the Medieval Mile would allow visitors to be dropped at that location and collected from the Castle area once they have visited the attractions on the Medieval Mile. Ten coach parking bays area recommended, and the recommended location for them is on the lands between the CAS and the River Breagagh.

7.4 OTHER CONCLUSIONS

- In the UK High Street footfall is down. From 2008 to 2012, town centres suffered a cumulative loss of 18.7% in footfall, and 76% of all new gross retail floor space receiving planning permission in England was located out of town. The Abbey Quarter will reinforce the Kilkenny's city centre, and the CAS will strengthen access to that end of the city. An opportunity exists to achieve good accessibility to the city centre for all, without associated congestion. Traditional historic centres, such as Kilkenny, cannot easily accommodate the car, and striking the right balance is a difficult task. The access strategy for the city centre car parks, existing and proposed, should be carefully considered to ensure that lack of access and lack of parking are not factors that negatively impact on the vitality of the city centre.
- Parking should not be single purpose, such as parking that serves offices during the day, but for which there is no corresponding night-time use. Generally speaking, car parking closer the city centre is best in that regard because it is used more intensively, by a greater selection of users, and for longer periods of the day, than parking located away from the centre.
- Innovative methods of charging for parking are becoming possible due to technological advances, and these methods put control back into the hands of city centre traders. Retailers can have the capability of rewarding customers by making a contribution to their parking charges at Council-owned carparks. Value, or points, collected from particular stores, can be redeemed by customers at parking pay-points prior to

exit. Such systems could be incorporated into the Medieval Mile combined ticket where purchasers of that ticket would be entitled to discounted parking in convenient locations.

- A method should be devised to ensure that the additional parking spaces provided are available for those for whom they are intended. Spaces should not be reserved - that would be inefficient. They should be shared. However, workers in the Abbey Quarter and visitors to the businesses will rely on ready availability of parking.
- The pricing structure of long-term parking within the city centre should be assessed. The current long-stay rate of €2 per day available in Council car parks would not be economic in the case of a multi-storey car park. Car parks located furthest from the Abbey Quarter could retain a low rate, but those located closest may need a higher all-day rate. The cost and availability of car parking will be a consideration to those taking floor space within the Abbey Quarter, and is likely to be formalised in some way in the rental agreements.
- Connected, autonomous vehicles (CAVs) are becoming increasingly viable as a technology. It is generally acknowledged that once CAVs become sufficiently reliable and affordable, they will gain greater market penetration, generating significant economic ripple effects throughout many industries. One predicted impact is that CAVs will allow people to be dropped off at their location without the need to use parking spaces, and another prediction is that vehicle sharing will keep vehicles in more constant use and serve more people, further decreasing demand for parking. In general, current predictions are that significant change in parking demand resulting from shared CAVs will not occur until 2040 – 2050. However, it would be prudent that any carpark intended to be provided to serve the masterplan area would, if possible, be capable of being retrofitted in the future to a use other than for parking.

APPENDICES

**APPENDIX A - FIGURE 26: PEAK DAILY TRIPS TO THE
TOURIST ATTRACTIONS ALONG THE MEDIEVAL MILE**