

LEITH DOCKS – IS REDUCED PARKING PROVISION A REALISTIC TOOL IN DEVELOPING SUSTAINABLE COMMUNITIES?

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1. INTRODUCTION

In February 2005 City of Edinburgh Council (CEC) published a Development Framework for the Leith Docks area. The Leith Docks Development Framework has now been adopted as supplementary planning guidance (SPG). It outlines plans for mixed use development in the area, including a variety of housing types and commercial units as well as public spaces, transport routes, key landmarks and integral views.

The development of Leith Docks may lead to the building of up to 18,000 dwellings. The location and scale of the development means it offers major opportunities to maximise the role of sustainable transport, and it will be served by the proposed Edinburgh Tram. However it does raise significant traffic generation and air pollution challenges. This research was carried out in order to allow CEC and potential developers in the Leith Docks area to work together to implement practical measures that will aid the delivery of marketable residential developments that achieve parking provision levels significantly below one space per dwelling.

The research has now been completed and received by CEC. The Council's City Development Department is considering the report but at the time of writing CEC has yet to take a formal position on the report's recommendations.

1.1 Key Issues

Pressure on land availability and increased congestion in city centres combined with the need to promote sustainable development and reduced carbon emissions has meant that car parking provision for new developments is increasingly being used as a tool to influence travel behaviour. Guidance in the English PPG3 advocates parking provision less than 1.5 spaces per dwelling, with the acceptable level in urban locations often being one space per dwelling.

Initiatives such as car clubs and 'car free' developments have proved to be successful in reducing car ownership and car usage when combined with other favourable circumstances. The success of developments such as Beddington Zero Energy Development (BedZED) in the London Borough of Sutton demonstrates what can be achieved through a combination of associated transport measures. The development reduced usual parking

provision by 50% through the provision of a car club as an integral part of the design. However, at present such developments are very much isolated cases rather than the norm.

A key issue in reducing car parking is the impact on the commercial viability of a development. Reduced levels of parking below one space per dwelling are currently only prevalent in high density city centre dwellings. An additional concern with reduced allocation is the potential for 'overspill' by a development, where residents park their vehicles on street in neighbouring districts. This can create conflicts with existing residents and little benefit is gained in terms of reduced car use and ownership from the reduced parking allocation.

A significant issue in developing the Leith Docks area will be the management of car use and parking. This needs to be achieved through a combination of measures which target travel at three levels aiming to:

- firstly, reduce the need to travel;
- secondly, promote sustainable modes of transport where possible; and
- finally, provide alternatives to car ownership so that where households need to make some journeys by car, this does not automatically lead to purchase, with the parking problems and low marginal cost of car use that this entails.

Car parking provision in isolation is not the answer, instead a set of complimentary measures which involve land use planning as well as transport provision need to be developed for the area. This study sought to understand the links between these issues and identify the level of parking provision that is deliverable within the area and how this needs to change through the phasing of the development. This will provide a mechanism for both developers and the planning authority to determine parking allocations within the Leith Docks area.

2. STUDY AIMS AND OBJECTIVES

City of Edinburgh Council (CEC) appointed Halcrow together with partners at Napier and Loughborough Universities to undertake research aimed at allowing CEC and potential developers in the Leith Docks area to work together to consider practical measures that will aid the delivery of marketable residential developments that achieve parking provision levels significantly below one per dwelling. The study has encompassed the following research activities:

- Literature review of work undertaken to date on car parking allocations;
- Detailed review of a number of UK and European case studies. These were chosen because they exhibit similarities to the proposed Leith Docks development and have reduced levels of parking provision to a greater or lesser extent;

- Interrogation of the TRAVL database to establish links between parking provision and travel behaviour;
- Focus groups with a number of individuals within the Leith area to establish their priorities in terms of parking provision;
- Interviews with a variety of planning authorities throughout the UK; and
- Interviews with property consultants and developers;

The key outcome of the research was the development of a 'parking matrix tool' to provide a mechanism for identifying conditions which support reduced parking provision. It is envisaged this matrix will be used to help guide the development of the Leith Docks. This paper summarises the findings of this research, the development of the matrix tool and the influence this has had in proposed plans and developments within the Leith Docks area.

3. BACKGROUND

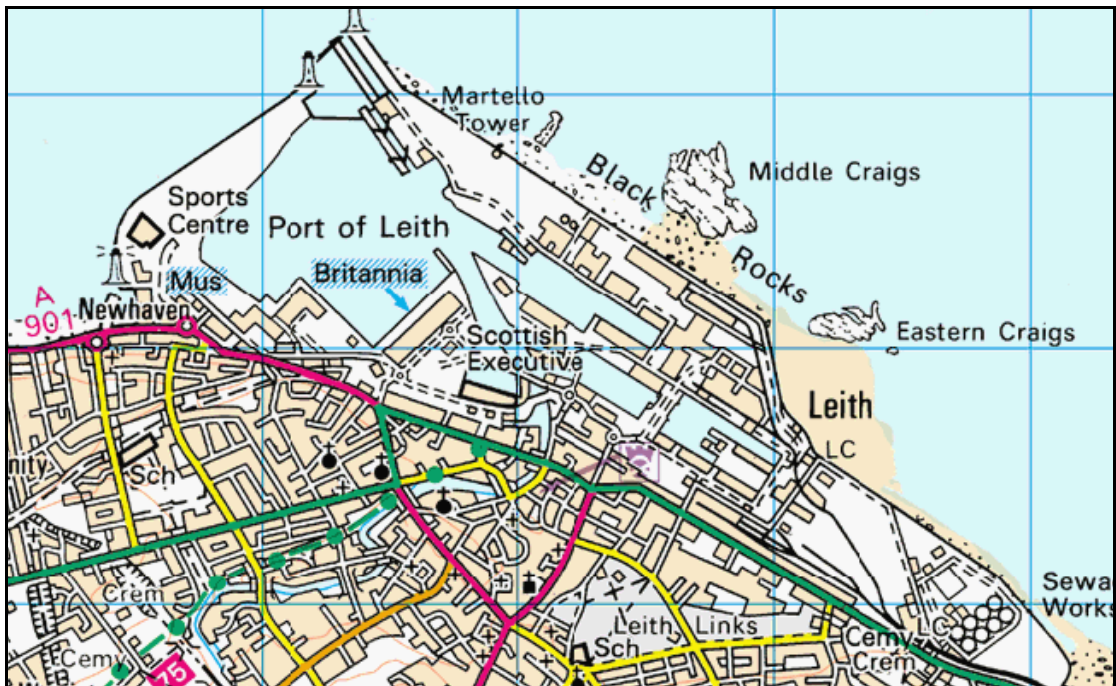
Edinburgh is the capital of Scotland and is situated on the east coast of the central lowlands, on the south shore of the Firth of Forth by the North Sea. Leith Docks is approximately two miles to the north east of Edinburgh City Centre shown in Figure 1.

Figure 1: Site Location north of Edinburgh City Centre



The docks provide a development site encompassing 170 hectares. Forth Ports and the CEC have agreed a long term vision to develop the area over the next 20 years. This may lead to the building of up to 18,000 dwellings, together with significant office and leisure development. The location and scale of the development means it offers major opportunities to maximise the role of sustainable transport, and it will be served by the proposed Edinburgh Tram. However it does raise significant traffic generation and air pollution challenges. Leith Docks are shown in Figure 2.

Figure 2: Leith Docks



3.1 Existing parking policy

Car parking guidelines for Scotland are provided in SPP 17 which advises that each council is required to adopt a set of maximum parking standards for on-site parking at new developments. Councils may also choose to set minimum standards. Many Scottish Councils are concerned about the risks of having maximum standards only; specifically that in some circumstances developers may be tempted to provide little or no car parking, resulting in on-street parking problems. CEC use a minimum and maximum range in its parking standards, published in 1999, though for some land uses, including city centre housing, the minimum is zero. The minimum standards have been set to

“avoid standards which cause excessive overspill problems or which might compromise the economic viability of development in locations which otherwise favour sustainable modes”.

SPP 17 asserts that the more accessible an area is by sustainable modes, the more restrictive the parking standards may be. The approach, basing parking provision decisions on factors such as location and type of housing, is extolled in PAN 57, which requires planning consent for housing developments with reduced parking provision should be considered. CEC has adopted this approach (and indeed did so prior to 1999 for most land uses), though for housing there are only two levels of standard, a maximum in the city centre and a minimum elsewhere. Both are set at 1 space per dwelling for general housing.

Edinburgh's parking standards do include provision for 'car reduced development' as shown in Table 1. Several conditions must be met to allow these standards to come into effect. These include the development being:

- within a controlled parking zone;
- within 300 metres of a major bus or other public transport route; providing a seven day service (including evenings) with at least eight buses per hour; and
- within 550 metres of a shop stocking food and/or newspapers.

Table 1: CEC Parking Standards for Car Reduced Developments

Spaces per Dwelling	Rooms per Dwelling (all rooms excluding bathrooms, WCs and separate kitchens)		
	1	2 or 3	4+
Minimum	0.33	0.5	0.75
Maximum	0.5	0.75	1.25

CEC identify Leith Docks as a 'Major Growth Area' and within such areas it is advised that parking standards focus on encouraging growth in walking, cycling and the use of public transport.

The use of minimum standards in Scotland is based on a different system to that used in England, where parking standards for new developments are set out in PPG 3 and PPG 13. PPG 13 clearly states that, with the exception of parking for disabled people, there should be no minimum parking standard, while SPP17 explicitly acknowledges that Councils may wish to have underpinning minimum standards.

4. METHODOLOGY

The study was carried out in stages beginning with the research elements and each stage is detailed in figure 3. The research began with a thorough review of previous work into car park allocations both in the UK and worldwide. The findings from this initial stage helped inform the further stages of research. Five UK and European case studies were identified and investigated to understand the impact of reduced parking provision and associated measures in reducing private car travel. The case studies were selected from a wide range of possible areas by the research team and CEC. These were selected due to similarities with the Leith Docks area and included:

- The Netherlands (The Hague and Amsterdam);
- Floridsdorf, Vienna;
- Vauban, Freiburg;
- Hammarby Sjöstad, Stockholm; and
- Greenwich and East London.

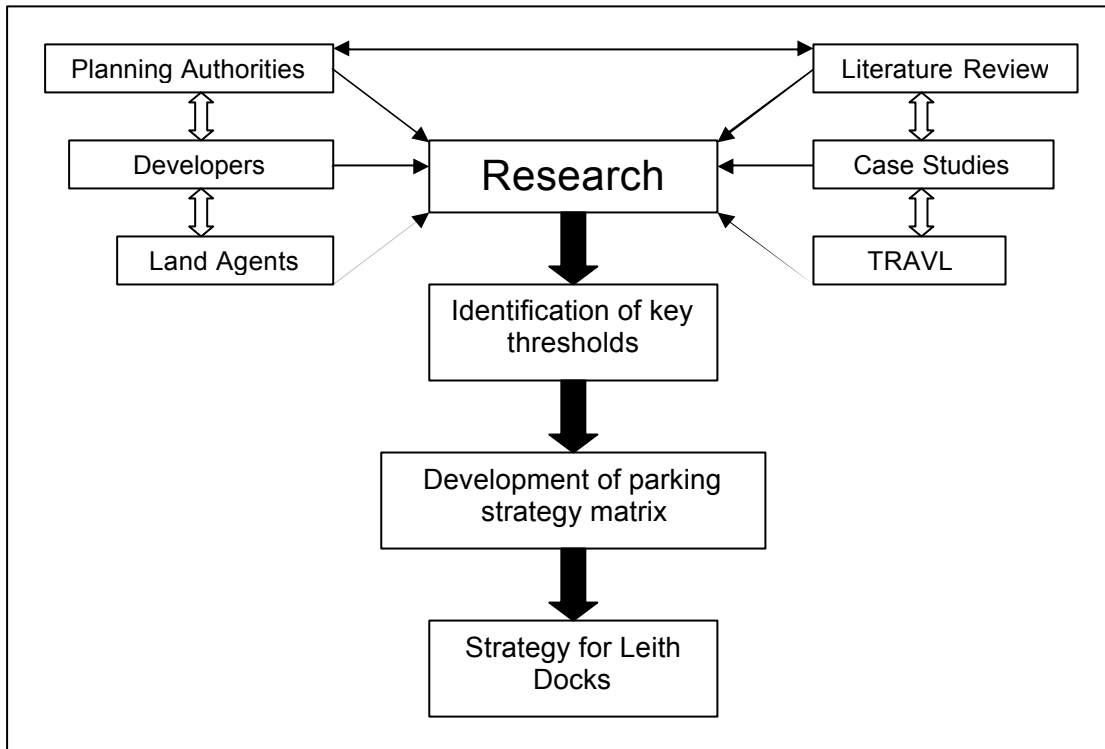
The consultation elements of the study then followed the case study investigations. To gain a better understanding of how parking policy operates in practice and how this affects the commercial viability of residential developments, a number of telephone interviews were undertaken. These were held with major planning authorities within the UK, land agents and developers. In addition four focus groups were held with local residents and employees in the Leith area to gain a better appreciation of the requirements of the ultimate end user. Attendees were recruited through CEC, City Car Club and locally based businesses and organisations. The focus groups were held with:

- members of Edinburgh City Car Club;
- residents with young families;
- young professionals; and
- existing Leith residents.

The final element of research involved interrogation of the TRAVL (Trip Rate Assessment Valid for London) database. TRAVL is a multi-modal trip generation database used to estimate the effect of proposed changes in land use on transport patterns. The database was examined to give an indication of how parking levels and public transport provision affect trip rates and modal splits. The database was also used to identify any interactions between parking provision and public transport and the effect these had on trip rates. T tests were carried out on the results to establish if the differences in trip generation between the different types of residential development were within expected levels of variation or significantly different.

The findings from each of the research elements were then assessed in order to identify key themes relating to the success of reduced car developments. These were used to gain a better understanding of the role of parking provision and the critical success factors required to achieve reduced car use and successful reduced car parking. This knowledge was fed into the development of the matrices, which were tailored to provide guidance based on key thresholds associated with the drivers of parking strategies.

Figure 3: Study Methodology



5. LITERATURE REVEIW

Before car ownership had become commonplace all residential areas were in effect car free with developments reflecting the need to access amenities on foot or by public transport. Research by Morris (2005) argues that:

“...recent changes in policy have attempted to restore the link between transport and land use planning in order to promote more mixed-use development; to reduce car dependency and the need to travel; to reverse the trend of suburbanisation and to regenerate inner-city areas.”

In London this change in policy direction is reflected in parking standards based on a public transport accessibility level (PTAL). PTAL was developed by the Borough of Hammersmith and Fulham in 1992 and it is now used throughout London as a standard accessibility measurement tool. PTAL takes into account walk access time and service availability and results in a score between 1 and 6, where 6 is the best and 1 is the worst.

Analysis showing car use relative to PTAL (Spatial Development Strategy, 2002) indicates that car use at a location with excellent public transport links may be as little as a third of that at a location with poor public transport links. This implies the strong influence of public transport accessibility on car use and adds to the case for lower levels of car parking at residential developments with good public transport links.

Crookston (2004) also believes public transport accessibility can influence car use. In research from 2004 he states the development of more houses will result in more cars and car use unless densities and accessibility to services

and public transport increases. His paper includes a matrix taken from research by Llewelyn-Davies, (2000) and reproduced here as Figure 3 showing the relationship between housing density, town centre accessibility and car parking provision.

Table 3: Relationship between housing density, town centre accessibility and car parking provision

		Habitable rooms per hectare (hrh)		
		Option 1	Option 2	Option 3
	Car parking provision	High 2-1.5 spaces per unit	Moderate 1.5-1 spaces per unit	Low <1 space per unit
	Predominant housing type	Detached and linked houses	Terraced houses and flats	Mostly flats
Sites within the town centre ped-shed (i.e. within 800 metres of town centre)	Central			650-1100
	Urban		200-450	450-700
	Suburban		150-250	250-350
Sites along transport corridors/ close to town centre ped-shed	Urban		200-300	300-450
	Suburban	150-200	200-250	
Currently remote sites	Suburban	150-200		

This research demonstrates that higher density housing goes hand in hand with the 'ped-shed' (an Australian planning term for the pedestrian accessibility 'watershed' of a town centre). In turn, the accessibility of these central locations using sustainable modes make them well suited to the lower parking provision that is often financially necessary in central areas due to high land prices.

5.1 Alternatives to Car Parking Spaces

It is well documented that car clubs are an effective way of reducing the numbers of car parking spaces required for new developments. Litman (2006) noted that one car club space generally substitutes for five private cars, therefore saving four spaces. Shoup, (2005) put forward evidence for the success of car clubs from the Symphony Towers development in San Francisco, (USA). This 141 unit apartment building gained planning consent with only 51 car parking spaces while local standards would usually require 100% parking provision. However two car club spaces were created and charges for regular parking spaces were unbundled from the apartment rents.

When parking is automatically provided for dwellings, the cost of the parking spaces is combined with the cost of the property: Shoup (2005) points out that this makes cars more affordable and housing more expensive. The cash-out approach (selling car parking spaces separately to houses or flats) as used in

San Francisco has also been applied successfully by Wimpey. At the Wimpey development in Lant Street, London, located adjacent to Borough tube station, the cash out approach (with parking spaces priced at £15,000) appeared to reduce demand for parking spaces significantly. Lant Street is located within a controlled parking zone (Southwark Borough Council Zone C2), operational Monday to Friday, between 08:30 and 18:30 hours.

Unallocated car parking spaces, as a parking management technique to enable the provision of less car parking overall, is recommended by English Partnerships (2006) who state the more spaces you allocate, the more you have to provide, and by Litman, (2006) who quantifies that car parking requirements may typically be reduced by 20% when unallocated.

Shoup (2005) also advocates offering free public transport passes to residents in lieu of a car parking space. A small annual outlay for public transport passes is likely to be substantially cheaper than providing car parking spaces on expensive land, and has the added benefit of fulfilling sustainable transport objectives and reducing traffic in the local area. When applied in State College, Pennsylvania, participating developers were also encouraged to include public transport amenities, such as bus shelters, on site.

5.2 Marketing Properties with Reduced Levels of Parking

There can be concerns over the marketability of dwellings with low parking levels or no parking, though Morris (2005b) indicates that when buying a property, potential purchasers are influenced more heavily by factors such as public transport, local amenities and architectural style than reservations over car free living.

Rye (2005) challenges the view of the RAC (2002) who state that *“people will buy and use cars even if their residential parking standards are restraint-based, and park them wherever they can”*, arguing that the success of restraint-based residential parking standards are likely to depend on the accessibility of an area using sustainable modes, and its land use mix. He argues putting strong parking enforcement measures in place will prevent this overspill into adjacent areas.

A reduced level of parking may be appropriate for certain types of residential development in Leith Docks. The Scottish census reveals that 40% of Edinburgh households do not have access to a car or van, just over 40% of households have access to one car or van and only 14% have two cars or vans. The figures for the Newhaven Ward (in which Leith Docks is located) indicate lower levels of car ownership: over 46% of households do not have access to a car or van.

6. FINDINGS

The research carried out found work had been carried out previously investigating parking allocations both in the UK and worldwide. The findings of this review are outlined in the earlier research review and provided the basis

for later stages. The results of each further element of research are detailed below.

6.1 Case studies

Appendix A provides a summary comparison of each case study area. A number of key lessons can be identified from the case studies and are outlined below:

Highly Accessible by Public Transport

The case studies demonstrate that for reduced parking provision to be successful the development must be highly accessible by public transport, on foot and by bike, preferably more accessible by these modes than by car. The one example where this is not the case is Ypenburg in The Hague, where reduced provision was not successful.

High Quality Cycle Parking

High quality secure cycle parking provision is an integral part of the case study developments. In Floridsdorf, Vienna there are over 2.5 spaces per unit with cycle ownership at 915/1000 residents.

Parking Control Mechanisms

Parking control mechanisms are fundamental to the success of reduced parking allocations. The European case studies have restricted on-street parking with permit parking for residents.

Car Clubs

Car clubs are a critical factor in the success of reduced parking developments and are an integral part of the development design. In the Stockholm case study 15 car club spaces were provided to replace 120 private parking spaces.

Associated Land Uses

Mixed land use and proximity to the central urban area or other developments are integral to the encouragement of reduced car travel. All case studies incorporate facilities such as primary schools, health facilities and food shops within the development to ensure that these regular trips can be made by foot.

Decoupled Parking

A number of case studies decouple parking from the cost of housing, either within an individual development or across the whole development area. In Vauban spaces are sold at a cost of 16,000 Euros, while spaces in the Woolwich development are being sold for between £10,000 and £15,000.

Car Parking Contingency

A number of case studies have set land aside as a contingency plan in the event that additional car parking becomes necessary in the future. In the case of Ypenburg where a contingency had not been identified additional spaces had to be created from public realm within the area.

Enhanced Environment

These case studies provide an indication of what can be achieved through good planning and developer/local authority partnerships. A major benefit afforded by reducing parking provision is that it releases space which can be used for larger gardens, better public space and less car dominated streets.

6.2 Consultation

Consultation with developers, land agents and planning authorities found that in city centres with comprehensive parking restrictions, overflow parking has not been an issue. However, where there are no parking restrictions developments with reduced parking can be difficult to manage. The consultation found that where developers have implemented reduced parking in an existing resident parking area, occupiers may be prevented from applying for a permit. Some planning conditions now specify that residents of such developments may not apply for permits should such a parking control scheme be implemented in the future

Developers were of the opinion studios usually do not require parking spaces while two-bed units definitely do. One developer felt strongly that, if parking levels were below 1 space per unit, residents should be able to purchase an allocated space. One property consultant noted that a common complaint by purchasers was that no visitor parking is provided for city centre developments and this should be considered when planning for parking levels.

The consultation found the marketing of city centre developments is generally unaffected by the provision of car parking and contract parking in commercial car parks can be an acceptable alternative to a private parking space for some buyers.

The main finding from the series of focus groups was that attendees felt if properties were available for sale with or without a car parking space they would opt for the cheaper property without parking and try to park elsewhere. This highlights the need for controlled parking surrounding such developments.

The groups felt that reduced parking was less practical for those with families or young children. It was felt younger people would be more likely to forgo the cost and hassle of car ownership when they had the amenities associated with a city centre lifestyle on their doorstep. Overall, focus group attendees felt the following criteria were important for a residential development with reduced parking: bicycle lockers; gym; 24-hour supermarket/shops within short walk; proximity to fast and frequent public transport services; cheap public transport in comparison to the cost of running a car; desirable, high quality properties; private outdoor space more important than public outdoor space; safe cycle route linking Leith with the city centre; good secondary schools; and a safe neighbourhood.

6.3 Analysis of TRAVL database

Analysis of the TRAVL database showed homes with parking provision of <1 space per unit have a much lower average trip rate than those with >1 parking space per unit, where on-street restrictions are present.

The database also indicated that households with good public transport links have a lower mode share of car trips and a higher mode share of walking and public transport trips than those with poorer public transport links.

Filtering the database by both parking allocation and public transport accessibility indicates that these two variables interact. Where parking provision of <1 space per unit is combined with high levels of public transport, the overall trip rate is significantly lower than the average for all developments. The results of this analysis are shown in Table 5.

Table 5 - Average two-way daily trip rates

Daily two way trip rate per unit (mode share)	Mode						Sample Size
	Car driver	Car p'ger	Walk	Cycle	Other	Total	
All residential sites	2.67 (31.4%)	1.00 (11.7%)	4.51 (53.0%)	0.22 (2.6%)	0.11 (1.3%)	8.51 (100%)	35
Parking <1 space per unit <i>and</i> PTAL 4 – 6	0.99 (23.3%)	0.28 (6.6%)	2.88 (67.9%)	0.08 (1.9%)	0.01 (0.3%)	4.24* (100%)	5
Parking <1 space per unit <i>and</i> PTAL 1 – 3	4.02 (39.0%)	2.49 (24.2)	3.38 (32.8%)	0.33 (3.2%)	0.08 (0.8%)	10.3 (100%)	7
Parking >1 space per unit <i>and</i> PTAL 1 – 3	2.71 (37.2%)	0.81 (11.1%)	3.49 (47.9%)	0.17 (2.3%)	0.11 (1.5%)	7.29 (100%)	14
Parking >1 space per unit <i>and</i> PTAL 4 – 6	1.70 (25.9%)	0.36 (5.5%)	4.19 (63.8%)	0.19 (2.9%)	0.13 (1.9%)	6.57 (100%)	5

* Trip rate significantly different at the 5% and 1% level to the rate for all residential sites.

Although there are small sample sizes and variance in development type within the data there are a number of general conclusions that can be assessed from the data, including:

- Reduced on-site parking does not affect car ownership and trip rates without accompanying restrictions on streets surrounding sites; and
- The combination of high public transport provision and low car parking, with associated parking restraint on-street can lead to lower car ownership, a greater proportion of trips made by sustainable modes and a reduced number of overall trips.

TRAVL is a London-specific database, but nonetheless it is useful to identify the potential impact that car parking provision and public transport accessibility may have on a development of the scale outlined in the Leith Docks Development Plan. The analysis showed when trip rates are multiplied by 18,000 (predicted total dwellings at Leith Docks), the level of parking provision and public transport accessibility have the potential to significantly affect the total number of trips generated and their modal split.

7. DEVELOPMENT OF PARKING MATRICES FOR LEITH DOCKS

A series of matrices were designed as a result of the literature review, case studies, TRAVL database interrogation and consultations. A number of key themes relating to the success of reduced car developments were identified. The data collected throughout the study was used to gain a better understanding of the role of parking provision and the critical success factors required to achieve reduced car use and successful reduced car parking. This knowledge has been fed into the matrices, which have been tailored to provide guidance based on key thresholds associated with the drivers of parking strategies. In developing these matrices it has been assumed that on-street parking restrictions will be present (e.g. through a controlled parking zone) as this is seen as a fundamental requirements for the promotion of reduced parking allocations.

To reflect the likely mix of properties within Leith Docks, three matrices were developed:

- Matrix A - 1 bedroom flats and studios;
- Matrix B - 2 bedroom flats; and
- Matrix C - larger flats and houses.

Matrix A has a recommended parking range of between 0.0 and 1.0 parking spaces per unit (see Figure 3,) Matrix B has a range of between 0.0 and 1.5 spaces per unit, and Matrix C has a range between 0.0 and 2.0 spaces per unit. This reflects the relationship between the type and relative affluence of occupiers and likely levels of car ownership. In developing the matrices it is assumed that a Controlled Parking Zone will be introduced throughout the Leith Docks area. The key components of the matrix include:

- public transport provision;
- facilities;
- parking; and
- sustaining travel behaviour.

Figure 3: Matrix A for one bedroom or studio flats

MATRIX A - 1 BEDROOM/STUDIO FLATS					
	CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5
	0.0 - 0.3	0.3 - 0.5	0.5 - 0.7	0.7 - 0.9	0.9 - 1.0
	Parking provision (spaces per unit)				
CRITERIA					
Public transport accessibility					
Minimum headway (mins)	8	12	16	20	30
PTAL level	4+	4	3	3	2
Facilities					
Food shop (walking time)	4 minutes (320m)	8 minutes (640m)	12 minutes (960m)	16 minutes (1280m)	over 16 minutes (over 1280m)
Primary school	16 minutes (1280m)	16 minutes (1280m)	16 minutes (1280m)	16 minutes (1280m)	over 16 minutes (over 1280m)
Health centre	12 minutes (960m)	12 minutes (960m)	12 minutes (960m)	16 minutes (1280m)	over 16 minutes (over 1280m)
Hospital	within 30 minutes by bus (door to door)	within 30 minutes by bus (door to door)	between 30 - 60 minutes by bus (door to door)	between 30 - 60 minutes by bus (door to door)	over 60 minutes by bus (door to door)
Employment	direct, frequent PT service to key employment sites	direct, frequent PT service to key employment sites	direct PT service to key employment sites	direct PT service to key employment sites	poor PT service to key employment sites
Parking					
Private parking	uncoupled	uncoupled	uncoupled	uncoupled	uncoupled
Location of private parking	Type 1	Type 1	Type 1 or 2	Type 1 or 2	Type 1,2 or 3
Separate provision for visitor parking	0.1 - 0.2	0.2 - 0.25	0.25	0.25	0.25
Car club	within 1 minutes walk (80m)	within 2 minutes walk (160m)	within 4 minutes walk (330m)	within 6 minutes walk (500m)	within 8 minutes walk (660m)
Secure, covered cycle parking	High quality dedicated provision integral to site development	High quality provision integral to site development	High quality provision	Secure, safe provision	Secure, safe provision
Sustaining Travel Behaviour					
Residential travel plan	Integral part of the site development	Elements of residential travel plans adopted.	Preferential	Optional	Optional

The matrices developed provide an at-a-glance method of determining the advisable level of provision, type and management of residential car parking for a proposed area. They have been developed specifically for the Leith Docks area, however the principles could be adopted and developed for other locations within the City of Edinburgh and beyond.

8. CONCLUSIONS

Reduced car parking can be an effective tool in working towards the objective of sustainable urban development. Reducing car parking can achieve higher residential development densities, lower car dependency, improved public transport services and air quality benefits. However to succeed reduced car parking must be part of a package. Key elements of the package include:

- Good public transport accessibility
- Strong links into the existing urban area;
- Local Facilities – shops, schools and health;
- Controlled on street parking in the vicinity
- Decoupled residents parking to allow the matching of car owning households to parking spaces;
- Visitor parking needs addressed either as part of on –street controlled parking or managed parking on development site
- Good quality, secure undercover cycle parking.
- Nearby car club cars;

Other elements may include

- Free or reduced rate public transport season tickets or car club membership
- A formal residential Travel Plan. This can have a role in ensuring that resident take up of the various initiatives is maximised.

In order to safeguard against undesirable future outcomes it is also recommended that some form of contingency against higher than expected parking demand is built into the development, at least in the early stages.

9. NEXT STEPS FOR CEC

The research has identified three key areas which should be addressed in order to pave the way for the application of the parking matrices to developments at Leith Docks. These include.

- Parking control
- A review should be made of parking control policy in the Leith Docks area, including the practicality of introducing a controlled parking zone. By clearly identifying a preferred plan of action for the future, CEC can then begin to use parking as a demand management tool in Leith Docks. Early action will send positive messages to residents at a time when they are forming new travel patterns and their decisions are most likely to be influenced.
- Accessibility thresholds
- CEC should assess the benefits of using PTAL as an accessibility threshold within the parking matrices, and decide whether PTAL is the most appropriate tool for use in Edinburgh. PTAL was initially developed for use in London and it may be that CEC would prefer to use more localised thresholds for assessing accessibility, possibly reflecting the improvements expected with the arrival of the new Edinburgh Tram system.
- Implementation of public transport improvements and local facilities

- In order for reduced parking to succeed from day one it is important that the supporting measures such as local shops and good public transport are in place concurrently with housing. CEC and Forth Ports need to address this as part of the plan for implementing development in Leith docks.

Given the scale of development envisaged for Leith Docks and the relatively innovative nature of the proposed approach, it is considered sensible to pilot the approaches to parking standards recommended in the report as opportunities arise, and to monitor the results.

The research has now been completed and received by CEC. The Council's City Development Department is considering the report but at the time of writing CEC has yet to take a formal position on the report's recommendations.

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