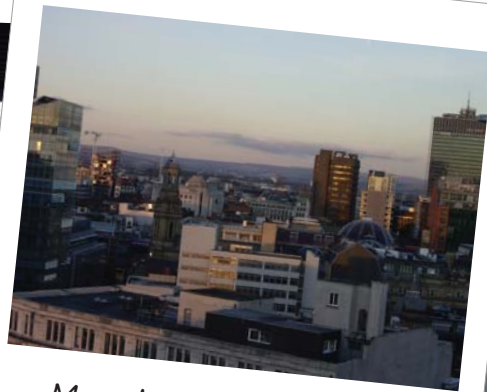


Innovative parking solutions in new developments

Experiences from Berlin, Manchester and
Vancouver



Berlin, Germany



Manchester, England



Vancouver, Canada

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on behalf of TUB Trafikutredningsbyrå AB

TUB
Trafikutredningsbyrå

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Innovative parking policies – Best Practice from the UK, Europe and Canada

1 Introduction

This report has been prepared for TUB Trafikutredningsbyrå AB as part of their work for the Swedish Governmental agency Vinnova on innovative parking policies.

The report summarises three case studies of innovative parking best practice in the UK, Europe and Canada. The case studies have been developed with the kind assistance of several local contacts whose details are provided at the end of each section. Key parking standards for the case study cities are included in Appendix A and B.

The report has been prepared by Kate Gifford and Chas Ball at Carplus Trust in Leeds. Carplus is the national organisation promoting car clubs and car sharing and encouraging alternatives to car ownership.

Objectives

The objectives of this research are to:

- Identify examples of innovative parking best practice from three cities in the UK, Europe and Canada;
- Identify initiatives undertaken by city authorities to encourage car clubs within new developments;
- Present a summary of key changes within parking policy over the past ten years; and
- Identify whether parking in new developments is generally determined by market forces or by regulation.

Report Structure

This report is structured as follows:

- **Chapter 2** provides an analysis of parking policies and low car developments in Vancouver, Canada;
- **Chapter 3** presents an analysis of parking policies and low car developments in Manchester, England;
- **Chapter 4** presents an analysis of parking policies and low car developments in Berlin, Germany; and
- **Chapter 5** presents a summary of key points.

2 Vancouver case study

Vancouver is the eighth largest city in Canada with a population of 603,502, whilst the Vancouver metropolitan area has a population of approximately 2.3 million¹. TransLink is Metro Vancouver's regional transportation authority, with responsibility for roads and transit and the responsibility for parking control lies with the City of Vancouver.

Is parking controlled by market demand or regulation?

Parking is controlled by planning bylaws that vary by Municipality. The Parking Bylaw² for Metro Vancouver sets out the required and permitted parking allocations for different building types and zoning locations (see Appendix A). Parking standards vary depending on location in the City, with parking allocations in the Downtown area being particularly restrictive. Parking standards for non residential uses in the Downtown area are as follows:

- A minimum of one parking space for each 145m² of gross floor area; and
- A maximum of one parking space for each 115m² of gross floor area³.

Supply of parking is also in the form of controlled off-street parking lots that are business enterprises so they are primarily market-led.

Car club market generally and initiatives from city authorities

The City of Vancouver encourages use of car clubs (known in Canada as car-sharing) and the City of Vancouver has worked in partnership with not for profit car club provider Modo to provide low emission vehicles for City employees since 2008. The City now has use of around ten Modo vehicles for its employees during the day, which are then available for Modo members to use at evenings and weekends. Low emission, hybrid and electric vehicles are also being made available to Modo members.

Two other car club operators also offer services in Vancouver – Zipcar, which operates on a commercial basis and Car2Go which offers point to point rentals within a zone in the City Centre. The City has promoted car clubs as part of residential developments and Modo now has vehicles funded as part of developments, particularly in higher density areas of the city such as the Downtown.

Integration of car clubs in new developments

Levels of car ownership and use in Vancouver are lower than in other Canadian cities due to higher than average levels of cycling and public transport usage. In addition to encouraging development in areas of good public transport accessibility, The City of

¹ Source

<http://www.metrovancouver.org/about/publications/Publications/Census2011PopulationGrowthTrends.pdf>

² Source <http://vancouver.ca/commsvcs/BYLAWS/parking/parking.htm>

³ Further details of parking standards for different zoning types can be found in section 4.3 <http://vancouver.ca/commsvcs/BYLAWS/parking/Sec04.pdf>

Vancouver has introduced a Green Building Strategy⁴ which has several transport demand management elements including:

- Providing additional relaxations for minimum parking requirements to support alternative travel modes;
- Reviewing the feasibility of unbundled parking requirements;
- Update requirements for secure bicycle parking and other end-of-trip facilities;
- Expanded transport demand management requirements for new developments; and
- Developing requirements for accommodating charging of electric vehicles (EVs).

Low car developments⁵ are relatively common in Vancouver and are preferred by developers in the City Centre as this increases flexibility and reduces the amount of land required (and therefore the costs of developments). There has been a gradual increase in on street parking restrictions over the past ten years and in the last four years, particularly in the Downtown area.

The Parking Bylaw sets out policies that incentivise car clubs as part of developments. If a car club vehicle is introduced as part of the development, this reduces the need to provide parking spaces by up to five. Modo (the Car Co-Op operating in Vancouver) has worked closely with developers to incorporate car sharing into condo and apartment complexes. This helps to reduce the number of parking spaces that developers are required to provide by the City of Vancouver.

In addition to promoting car clubs in new developments, the City of Vancouver has introduced a policy requiring all larger developments of new single-family units to have dedicated electric charging points for 20% of all parking spaces.

Policies regarding residential on-street parking (in denser areas and new developments)

Policies regarding residential on street parking and in new developments are set out in the Parking Bylaws for each Municipality (further information is provided in previous sections.)

Principal changes in parking policy for new developments in the last ten years

The principal change to parking policy for new developments in Vancouver was the changes to parking allocations provided as part of new developments that were introduced in 2005/6. These changes to the Parking Bylaw encouraged reduced numbers of parking spaces to be provided in new developments where car club bays and vehicles were funded by the developer. This change represented a significant shift from a previously inflexible policy which required developers to provide specific amounts of parking spaces for new developments. These changes have proved very popular amongst residents and developers as they mean less land for parking spaces is required, therefore reducing the construction costs of a new development. These

⁴ See <http://vancouver.ca/sustainability/GreenBuildingStrategy.htm> for further details

⁵ Developments where levels of car parking provided are below the usual standards applied.

costs savings are often passed on to the new residents. Some developments are now being constructed with car club bays as a replacement to parking spaces.

An important element in the success of this policy has been the support from the City of Vancouver and the way in which car club operator Modo has helped to establish a streamlined process for ensuring that the car club provision does not hold up completion of the development (and achievement of the Occupancy Permit for the development).

Changes in travel patterns of car club members

Modo's Social and Environmental Report (2008) provides useful information on changes in behaviour of members after they have joined the car club. On average, almost 20% of members were able to decrease the number of vehicles either owned or leased since joining the car club. Members also reported a 16% reduction in the number of vehicle kilometres driven since joining Modo, which equates to an average reduction of about 500kms per member per year. Most members use Modo for recreational and social trips and 62% of members report that they have reduced personal travel costs since becoming a member. Modo have also observed that car club members are more likely to walk, cycling or use public transport since joining the car club. Making multi purpose journeys ('trip-chaining') was also reported as having increased amongst Modo members since joining.

Car club members are also contributing towards reducing carbon emissions; with Modo reporting that members saved approximately 523,329 tonnes of CO2 in 2008 through a reduction in their car use and using more efficient vehicles.

Key sources of information

City of Vancouver – <http://Vancouver.ca>

Vancouver Metropolitan area – <http://metrovancover.org>

Modo – www.modo.coop

Modo Social and Environmental Report, 2008 (not available on the web)

Tim Barton – Bunt and Associates (15/02/12)

Chris Quigley, Senior Planner, Translink (17/02/12)

Phil Baudin, Executive Director, Modo car coop (27/02/12 and 2/03/12)

3 Manchester case study

Greater Manchester has a population of approximately 2.5 million, with the City of Manchester itself housing 498,800 people⁶. Greater Manchester's transport operations are managed by Transport for Greater Manchester, which is composed of two bodies; the Transport for Greater Manchester Committee (TfGMC)⁷ has responsibility for making policy decisions about transport provision, with TfGM (formerly GMPTE) having responsibility for implementing the decisions of GMCA and TfGMC.

Is parking controlled by market demand or regulation?

Parking policies for Greater Manchester are set out within the third Local Transport Plan (LTP3)⁸. The standards set out in LTP3 are based on National Planning Policy Guidance Note 13 (which has recently been revised and the national parking standards removed). The parking standards set by TfGM are advisory and are intended as a common framework on which the Greater Manchester Districts will develop locally appropriate parking standards⁹. Parking Policies for the City of Manchester are set out within the draft Core Strategy¹⁰.

When reaching decisions on planning applications, each District will have regard to their local parking policies. The box below provides an example of the parking policies in place in Manchester City and Rochdale (one of Manchester's District Centres).

Case study – parking policies in Manchester City Centre and Rochdale.

Within Manchester City Centre, all developments must meet the appropriate parking standards. Car parking standards set out in the draft LDF Core Strategy are maximum allocations (covering areas outside the City Centre, including District Centres), whilst standards for cycles, motorcycles and disabled people are set as minimums¹¹. Within the City Centre, parking allocations for developments will be considered on a case by case basis.

⁶ Manchester factsheet A01 (February 2012) -

http://www.manchester.gov.uk/downloads/download/4220/corporate_research_and_intelligence_population_publications

⁷ TfGMC is a joint committee of the Greater Manchester Combined Authority (GMCA) and the ten local authorities in Greater Manchester. See

<http://www.transportforgreatermanchestercommittee.gov.uk/> for further details.

⁸ Greater Manchester Parking Standards - <http://www.tfgm.com/ltp3/documents.cfm>

⁹ The TfGM parking standards are included in full in Appendix A. Each District is developing parking standards as part of the Local Development Framework (LDF) Core Strategy. The LDF development process is ongoing and only a small number of Districts have adopted their Core Strategy.

¹⁰

http://www.manchester.gov.uk/downloads/download/4280/core_strategy_publication_development_plan

¹¹ See Appendix B for details of parking standards. Source – TfGM Third Local Transport Plan <http://www.tfgm.com/ltp3/documents.cfm>

As an example of the approach taken by the Districts, Rochdale Metropolitan Borough Council are in the process of developing their LDF Core Strategy¹², which includes parking standards that are set out in Appendix B. In contrast to the approach taken in Manchester City Centre, Rochdale has set parking standards that apply to all developments, giving little opportunity for developers to negotiate levels of parking provision.

Car club market generally and initiatives from city authorities

Manchester City Council developed a partnership with commercial car club operator 'City Car Club' in 2006 to provide pay as you go car club facilities in the City Centre. In addition to providing low emission vehicles in the City Centre, City Car Club also has vehicles located in the Chorlton and Didsbury areas of the city.

Integration of car clubs in new developments

Whilst the City Council has encouraged provision of car club facilities in the City Centre, it currently does not have a policy of integrating car clubs into new developments or including them in the process for negotiating developer contributions for new development sites. It is not clear why this is the case, but neighbouring cities such as Leeds and Sheffield have taken a different and much more positive approach to encouraging car club provision as part of new developments.

Policies regarding residential on-street parking

Parking policies are set by each District in Manchester; with reference to the overall parking standards set out in the Third Local Transport Plan (see previous section for further details.)

Principal changes in parking policy for new developments in the last ten years

Manchester City Council are currently in the process of consulting with local residents about changes to the parking permit scheme which will introduce a range of permits based on time of day and will offer more flexible options to City Centre residents¹³.

Changes in travel patterns of car club members

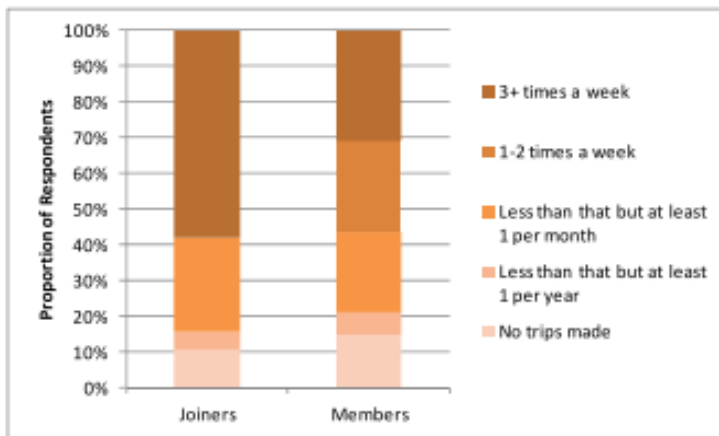
The Carplus Annual Survey (2010/11)¹⁴ provides considerable evidence on the behaviour change of car club members compared to people who have joined the car club in the past six months and the typical UK driver. Through understanding the 'real' costs of using a car, car club members are more likely to consider alternative modes for completing their journey. Figure 3.1 summarises the frequency of car club members and joiners use of cars.

¹² Rochdale Metropolitan Borough Council draft LDF Core Strategy - http://rochdale-consult.limehouse.co.uk/portal/planning_policy/core_strategy/publication_draft_consultation?tab=files

¹³ http://www.manchester.gov.uk/news/article/6203/city_centre_residents_asked_about_permit_scheme

¹⁴ TRL, 2011

Figure 3-1 - Frequency of travel as a car driver for members/new joiners whose car ownership has increased



On average, car club vehicles are typically 26% more efficient, in terms of emissions, than the average UK car. For car trips per person, car club members typically produce roughly a quarter of the CO2 emissions generated by the average British licence holder. 80% of car club members live in households that drive less than 4,827 kms per year (3,000 miles) compared with 8,045 kms per year (5,000 miles) driven by typical UK licence holders. Recent research suggested that when both use of lower carbon vehicles and members reduction in car use is taken into account, on average car club members save 1 tonne of carbon per year.

On joining a car club, a third of Annual Survey respondents have reduced the number of cars owned by their household. 30% of respondents reported that they would have bought a car, had they not joined the car club and a further 61% suggest that they are less likely to purchase a car in the next few years. The data collected as part of the Annual Survey 2010/11 suggests that each car club vehicle represents a reduction of over 20 privately owned vehicles that have either been sold or not purchased.

In urban areas, this reduction in car ownership can help to reduce the need for parking provision in all developments and also reduce on street parking pressure in high density residential areas.

Key sources of information

Manchester City Council – www.manchester.gov.uk

Transport for Greater Manchester – www.tfgm.com

Greater Manchester LTP3 – <http://www.tfgm.com/ltp3/>

Claire Milner, Planning Strategy Team, Manchester City Council (27/02/12)

Keith Kelly, Head of Locations and Development, City Car Club (27/02/12)

4 Berlin case study

Berlin is the capital city of Germany and its largest city. The city has a population of nearly 3.5 million people and with a population of 4.4 million, the Berlin urban area is the eighth largest in the European Union. Berlin's transport operations are managed by the city senate but responsibility for the administration of parking and other services being devolved to each District. National transport policies are set by the Federal Ministry for Transport, Building and Urban Development and there are also some relevant European policies that pertain to transport.

Market orientation or regulation

Overall parking policy for Berlin is set by the Senate¹⁵. In central Berlin, the demand for parking spaces is greater than the existing supply. As a result, controlled parking zones (CPZs) have been introduced to control the demand for parking spaces. Across the city, responsibility for the implementation of parking management and the setting of local parking priorities sits with the Districts. In seven Districts a total number of 81.000 parking spaces are included in a parking management system (43 zones)¹⁶.

Parking fees vary depending on the area and cost between one and three Euros an hour. Local residents pay 20 Euros for two year parking permits. In some areas of Berlin, short stay parking zones are in place which can be used free of charge with a parking disc for a limited period of time. Figure 4.1 illustrates the distribution of the six existing parking zones across the city centre. The red areas represent existing Controlled Parking Zone and the pink areas represent potential expansion of CPZ.

As a result of introducing parking controls, many commuters are choosing to travel by other modes. In Zone 29, parking pressure fell 20% as a result of increased controls being introduced¹⁷.

Car club market generally and initiatives from city authorities

Berlin has a dense public transport system and accessibility levels are high, especially in the inner city (inside the S-Bahn ring). Levels of car ownership are lower than in comparable European cities and together with the lack of available space for providing car parking, anecdotal evidence suggests that this has made the introduction of parking management measures easier as there are alternatives to using (or owning) a private car.

¹⁵ Berlin Parking Management Guide -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/download/l_eitfaden_parkraumbewirtschaftung.pdf

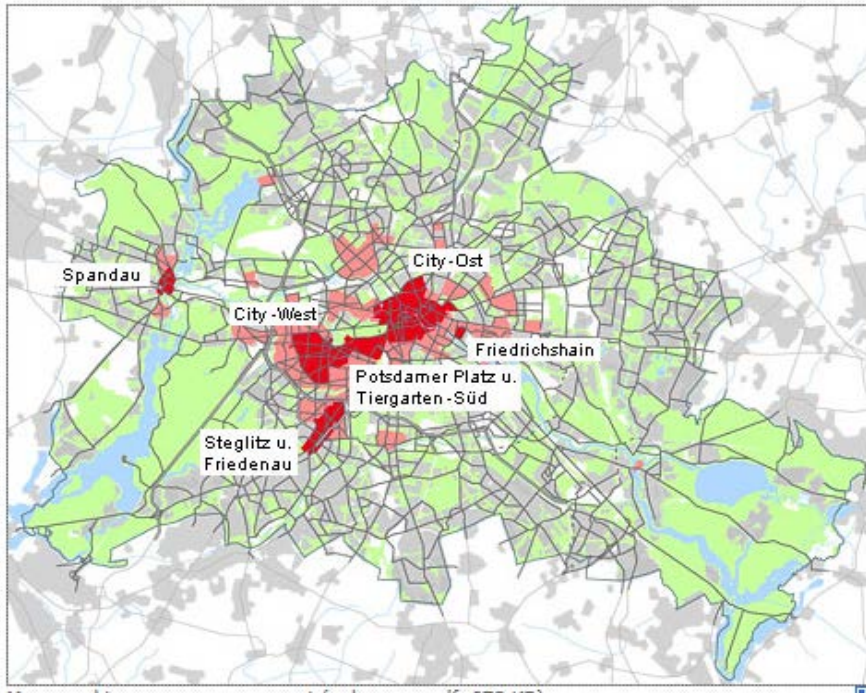
¹⁶ source: Senatsverwaltung für Stadtentwicklung: Mobilität der Stadt. Berliner Verkehr in Zahlen, Ausgabe 2010. Berlin2011

¹⁷ Berlin Parking leaflet -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/download/se_flyer_parkraum_2008.pdf

There are several car club operators that offer services in Berlin, including cambio Berlin, Hertz on Demand, DriveNow (BMW/Sixt), Greenwheels Germany, Flinkster and Stadtmobil Berlin. Car2Go is also launching 1,000 vehicles in Berlin in April 2012. There are also peer to peer car sharing services that enable people to borrow cars from other residents (Autonetzer, tamycar and Nachbarschaftsauto).

Figure 4-1 - Existing and proposed parking zones in Berlin¹⁸



Integration of car clubs in new developments

The federal state of Berlin is unique in Germany as there is no regulation about how many parking spaces have to be provided as part of new developments. Public parking is often provided as part of the construction of new developments in garages. Often it is difficult to find land to locate car club vehicles but research has illustrated that the car club stations which are provided on public roads result in a reduction in local car ownership¹⁹.

Co-operation between a developer and the car club operator is based on a private agreement, not a matter for the city administration. For many car clubs a new development is a good opportunity to get restricted parking places for their cars. The car club spaces within new developments (i.e. in parking garages) also avoid infringement of parking regulations and the resulting fines, which is a big problem for cars located at on-street parking places.

¹⁸ Source -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/index_en.shtml

¹⁹ Berlin Parking Study - http://www.mobilitaet21.de/stadt-und-ballungsraum/parken.html?user_umm21_pi1%5Bdetail%5D=110&cHash=5b106143dc

In Berlin, car clubs can also get access to dedicated on-street parking places, which is also unique in Germany. The legal basis for this regulation is a federal law in Berlin, the Berlin road law (Berliner Straßengesetz). The execution of this regulation is matter for each District.

The steps to get on-street parking bays in a District are the following:

1. All car clubs who want to get on-street parking places meet for an internal round table. They introduce their wishes for parking places (number of places, locations etc.) in a combined list.
2. The combined list is passed to the District so that the District administration will not know what a particular car club wants in detail. The District administration checks the list and provides details about which locations can be arranged without problems, which other locations could be allowed but with a smaller number of places allocated and which location would not be accepted.
3. A second round table of the car clubs discusses the answer of the District administration and works out a new 'wish list'. The operators have to reach a compromise and they send the revised list back to the District administration.
4. The procedure is repeated until they find a satisfactory compromise between the aspirations of the car clubs and what the administration will allow. During the whole process the administration does not find out details about the wishes and compromises of any single operator.
5. Parallel to that process the District parliament decides on a political resolution, to start the procedure for implementing on-street parking places for car club vehicles.

This procedure in Berlin, which is unique in Germany, may be a model for other German cities, if the German Parliament decides in favour of a nationwide solution for restricted on-street parking for car clubs (change of the national Highway Code). The problem in Berlin is that there is no enforcement of car club bays for drivers who park illegally. This causes major problems in some bay locations. The Districts do not have the power to introduce any barriers for the on-street parking bays (as has been implemented in Brussels) that protects against illegal parking.

Policies regarding residential on-street parking (in denser areas and new developments)

On street parking policies are set at a District level, with reference to Berlin and national parking policies (see section above for further detail). The quantity of managed parking by district is summarised in Figure 4.2.

Figure 4-2 - Managed parking in Berlin by district (2010)²⁰

District	Parking zone	Number of managed on street parking spaces	Total managed parking area (ha)
Charlottenburg – Wilmersdorf	4-9, 16, 17, 19	20800	500
Friedrichshain – Kreuzberg	18, 30	2970	70
Centre	1-3, 14, 15, 20-22, 29, 34, 35, 38, 41	27900	1110
Pankow	41-43	13560	405
Spandau	10-13	1200	95
Steglitz – Zehlendorf	23-25	7400	185
Tempelhof – Schöneberg	9,17,26-28	7150	160
TOTAL		80980	2525

Principal changes in parking policy for new developments in the last ten years

Between September 2007 and August 2009, a research project was carried out that looked at parking provision and policy in Berlin. The research was undertaken by four partners²¹. The study proposed several areas for improvement in parking management:

- New parking zone signs should be introduced together with a system of coloured road markings for parking spaces and free parking;
- Improvements to the application process for guest and other non resident permits enabling these to be applied for online;
- Examination of whether there are boundary areas where long term parking could be provided with a day rate of 3-5 Euros;
- Consider whether there are locations that could use parking discs instead of parking meters; and
- Develop a parking management plan for Berlin.

It is not clear how many of these recommendations have been adopted, however due to high parking pressure since 2005, the introduction of parking management has gathered pace, especially in Central Berlin. Several controlled parking zones have been introduced including in the Spandau suburb. Parking zone 14 was also

²⁰ http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/

²¹ The District Office of Berlin-Mitte, the Traffic Management Centre, LK Argus GmbH and the German Institute of Urban Affairs. See www.mobilitaet21.de/stadt-und-ballungsraum/parken.html

extended along Karl-Marx-Allee in Berlin-Mitte. Maps of each parking zone are available on the Berlin Senate website²².

Key sources of information

Berlin Parking Management Guide -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/download/leitfaden_parkraumbewirtschaftung.pdf

Berlin parking pages -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/

Berlin Parking Study - [http://www.mobilitaet21.de/stadt-und-](http://www.mobilitaet21.de/stadt-und-ballungsraum/parken.html?user_umm21_pi1%5Bdetail%5D=110&cHash=5b106143dc)

[ballungsraum/parken.html?user_umm21_pi1%5Bdetail%5D=110&cHash=5b106143dc](http://www.mobilitaet21.de/stadt-und-ballungsraum/parken.html?user_umm21_pi1%5Bdetail%5D=110&cHash=5b106143dc)

Berlin parking leaflet -

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/download/sse_flyer_parkraum_2008.pdf

Federal Ministry of Transport, Building and Urban Development -

http://www.bmvbs.de/EN/TransportAndMobility/transport-and-mobility_node.html

Willem Brouwer, International Transport Planning Coordinator, Team Red (7/03/12)

Willi Loose, Chief Executive, Bundersverband Car Sharing (13/03/12)

²² http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/strassen_kfz/parkraum/

5 Report summary

Trends in parking policy

- There are several trends in parking policy and management that have been outlined within this report. Over the past five years, there has been a move towards a more flexible way of handling parking within new developments which is exemplified by the case studies outlined in Berlin and Vancouver. In Berlin, there has been a move away from fixed parking standards towards a more market led system whereby developers negotiate parking provision for each new development site on a case by case basis.
- In Vancouver, whilst overall parking standards for new developments still apply, a similar approach is taken. Parking requirements are to some degree negotiable depending on the developer's willingness to fund and integrate car clubs as part of the development. Where provision of car club bays is made by the developer, a lower level of parking spaces can be negotiated.
- In Manchester, a much more regulated approach has been taken to parking provision in new developments. There are over 40 different parking standards that apply depending on the primary use of a building. Whilst TfGM are in the process of reviewing some of their on street parking policies there is no indication that they will move away from this heavily regulated approach.

How are parking policies set?

- Parking policies for new development sites are generally set by local and regional authorities in the three cities, with some guidelines or maximum standards set at a national level. Berlin is a notable exception to this – no local parking standards are set by the Berlin Senate and there are no national parking standards that are specified by the German government. This means that in practice, each developer is responsible for negotiating levels of parking provision on a case by case basis for new development sites.
- The case study examples from Berlin and Vancouver included in this report illustrate that on-street parking has become more regulated over the past ten years as a result of demand pressures and a lack of available land in city centres to provide additional parking.
- The most common response to demand pressures has been to restrict levels of on-street parking in certain zones and to introduce charging mechanisms that encourage people (particularly commuters) to use alternative modes of transport. At the same time this approach seems to have allowed cities to move towards more innovative approaches to parking in new developments. This includes the recognition of alternatives to parking space provision, for example in Vancouver where the provision of car club bays enables developers to provide fewer parking spaces.

Integration of car club provision into new developments

- Integration of car clubs into new developments varies between cities and is dependent upon the individual policies and outlook of each city authority. Vancouver represents particularly progressive policy in this context, with active policies to reduce the amount of car parking required where car club spaces are provided and the developers contribute towards funding these, at least for an initial start-up period.
- The integration of facilities for Electric Vehicle charging is also being planned as part of developments in Vancouver, which will become a more widespread requirement in the next five years.
- There are significant benefits to both residents and local authorities of the car club sector working collaboratively to negotiate arrangements with municipal authorities as currently happens in Berlin and some UK cities (excluding Manchester). The benefits of this approach include better provision of car club bays in new developments and the provision of subsidised car club membership in some London Boroughs.
- There is a clear behavioural link between car club membership and a reduction in car ownership amongst members. However, authorities in urban areas (including Manchester and Berlin) seem not to have fully recognised that car clubs can help to reduce the need to provide parking spaces and can reduce parking pressures.