

‘The Heineken effect’: car clubs and sustainable housing

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abstract

As the first schemes begin to take root in Britain, the relevance of city car clubs (called “car sharing” in mainland Europe and North America) in meeting the problems of a society that is over dependant on the car is beginning to be recognised.

Car clubs have been described as having the ‘Heineken effect’ – reaching the parts that other transport modes cannot. ‘Pay as you go’ car use offers a credible alternative to private car ownership and typically results in a shift of 50% of trips to other modes¹.

The average UK resident ‘spends’ over two tonnes of carbon dioxide per annum heating and powering their home². Similar CO₂ emission levels result from transport, food and waste. Sustainable homes are clearly as much about lifestyle as bricks and mortar.

A 2002 report commissioned by the Motorists Forum highlighted the opportunities for car club growth in tandem with new housing. Examples of successful collaborations with property developers exist in Germany, Austria and the Netherlands, and schemes in London and Edinburgh are leading the way in the UK.

Maximum parking standards, the emphasis on high density developments, more social and key worker housing and less space for parking are required to cope with increasing housing demand. Local government and housing developers are recognising the benefits of car clubs in this changing urban framework.

One car club vehicle typically replaces four to six privately owned cars. Integrating a car station into a new development adds credence to proposals for reduced parking standards. Offering innovative mobility solutions has helped developers ease the planning process. Land freed from parking spaces is invested in increased development densities or amenity. Marketing the car club as part of a modern lifestyle package also adds value.

Car clubs give local authorities confidence in reduced parking standards without fear of overspill parking. Pioneer authorities have developed car club supplementary planning guidance and are using section 106 agreements to deliver car stations integrated into, or in the vicinity of, new developments.

Successful car clubs offer members the option of combining car use on demand with public transport, walking and cycling. Car stations sited in developments within easy reach of public transport and local amenities are likely to maximise the benefits of membership.

A minimum size of a 100 unit development is required to support a two vehicle car club. Car clubs can be considered in smaller developments if the developer is amenable to extending membership to local residents, and the surrounding area is favourable.

The emergence of car clubs in planning guidance and local transport plans will be accelerated over the next few years as more policy makers recognise that offering a real alternative to personal car ownership can contribute to reduced car use, road congestion and car ownership. Through integration in new housing developments, car clubs offer a key tool in the move towards more sustainable homes.

¹ StattAuto

² Stockholm Environmental Institute, 2002

overview

As the first schemes begin to take root in Britain, the relevance of city car clubs (called 'car sharing' in mainland Europe and North America) in tackling the problems of a society that is over dependent on the car is beginning to be recognised.

This paper will introduce the city car club concept and outline the benefits it delivers in reducing dependence on the private car and supporting the shift to more sustainable transport modes. The importance of addressing personal transport in the pursuit of sustainable living will be highlighted using the eco-footprinting technique. Case studies from Europe and North America will illustrate the synergy of city car clubs and low car housing initiatives. These initiatives will be presented from the point of view of three key stakeholders – local government, property developers and car club operators. Factors for success and lessons learned will be examined to determine how the UK can capitalise on this experience and benefit from similar initiatives.

what is a car club?

Car clubs are neighbourhood-based services offering access to car use on demand. Car clubs have been operating in continental Europe for over a decade. The earliest examples emerged in North America in the late '90's and have taken off in the last three years. Car clubs have been described as having the 'Heineken effect' - reaching the parts other transport modes do not - as they offer access to a car and 'mobility insurance' without the need for private car ownership.

There are now some 130,000 car club members Europe-wide and around 35,000 service users in North America. Car club operations are varied in terms of aims, structure, size, tariffs and the use of technology, but all offer the same basic service.

Car club vehicles are based in reserved parking spaces within five to ten minutes walk of members homes or workplaces. Members typically pay an annual membership fee, then pay for each mile and hour the vehicle is driven, with a minimum booking of one hour. Many car clubs offer a range of vehicles so members can choose the vehicle best suited to their journey. Some operators use vehicle management technology to enable internet, 'phone and in-car bookings and to control access to vehicles. Mileage and time driven for each journey is recorded to create a monthly bill for car use. A partnership with a car rental company offers the opportunity to book a discounted vehicle for longer rentals.

environmental and social benefits of car clubs

Although the scale of impacts varies, similar trends are seen across all car club operations. Car club services displace private cars, releasing road space, and reduce the annual car mileage of members, reducing the greenhouse gas emissions associated with personal transport. European services consistently report that each car club vehicle replaces between four and six private vehicles. San Francisco based City CarShare has found that each of its vehicles replaces seven private cars.

BCS, the German car sharing association, reports that car club members cut their annual car mileage by up to 70% over five years. In their first year of operation, City CarShare found that the average mileage by car club members rose as membership induced car travel amongst non-car owners. However, figures for year two show average mileage falling as membership expands beyond early adopters to the car owning population. In the German city of Bremen, 28 car club members shared 3 vehicles in 1990. Today 2,200 people in a city with a population of 540,000 share 90 cars across the city. Members have cut their annual car mileage by an average of 3,500 miles and 500 to 700 private cars have been replaced, winning back 2.5km of street space.

Social impacts of car clubs are harder to measure. Anecdotal evidence suggests that car clubs can contribute to building a sense of community and increasing community safety as trips are transferred to walking and cycling creating more 'eyes on the street'. Established German schemes report a significant group of members from low-income households who would not otherwise be able to afford access to car travel.

where do car clubs work?

City car clubs prosper in high density urban areas with significant parking pressures, good public transport and local amenities. In short, car club members live in areas where car free living is a practical option, but access to a car is required from time to time. Civic minded, young, urban professionals living in these areas typify car club members.

the emergence of low car housing initiatives

Car free housing developments are nothing new. Until private car ownership became widespread, new housing was by default, car free. The renewed interest in the concept started in Germany in the mid-1990s. ‘Car free’ refers to the design of the development which limits access by motorised vehicles. Some of these developments separate parking and vehicle movement from living areas but do not seek to restrain car ownership or use. Others offer a radically reduced number of parking spaces for disabled use, visitors and sometimes for limited private parking.

In the UK, there is general acceptance of a need to increase housing densities and limit or reduce parking standards in order to accommodate the demand for new homes without significant loss of greenfield space. This is reflected in national and local policies and guidance with the move to minimum parking standards and higher development densities.

car clubs in the UK

Commercial scale car club services have been operating in the UK since 2000 and are now offered in five cities. Alongside commercial operators, services have been initiated by employers and communities in a further 15 locations. Combined car club membership in the UK is now approaching 1000.

a virtuous circle: car clubs supporting low car housing supporting car clubs...

Car clubs and low car housing are natural allies. The ‘pay-as-you-go’ driving offered by car clubs allows the member to see the true cost of their journey. As a result, members transfer a significant portion of their travel to public transport, walking and cycling and can meet their remaining driving needs through car club membership. As such, car clubs offer a practical alternative to car ownership and reduced parking standards can be introduced without compromising the mobility of residents. At the same time, the restraints imposed on car ownership in low car housing create a new market for car club membership. Moving to a new home opens a window of opportunity to encourage a change in travel patterns. Providing mobility services may be the catalyst required to clinch the decision to sell a second or first car.

the importance of transport in delivering truly sustainable housing

Work undertaken by the BioRegional Development Group (co-developers of the innovative BedZED development) demonstrates the crucial role managing mobility plays in delivering truly sustainable lifestyles. Eco-footprinting translates the impact of a product or activity into the area of land required to support it. This technique shows that if everyone in the world lived the same lifestyle as the average UK resident, three planets would be required to meet our needs. Achieving sustainability can therefore be defined as reducing our eco-footprint by two thirds. 10% of the eco-footprint of the average UK resident arises from personal transport. This is equivalent to the eco footprint of energy use in the home and five times larger than the impact of the materials used in home construction. This clearly illustrates that if we intend to build truly sustainable homes we have to look beyond bricks and mortar and seek to integrate mobility services.



integrating car clubs and low car housing: the stakeholders

A number of forward thinking local governments and developers are beginning to take this concept on board and are seeking to integrate car club services into new housing and commercial developments.

The development and delivery of these services requires the involvement of three key stakeholders - local government, property developers and car club operators. The following case studies illustrate the role of, and benefits to, each stakeholder in building these partnerships.

a local government view

The pro-active approach of San Francisco planning authorities is currently being formalised into planning policy. To date, city authorities have sought inclusion of car clubs in 40 new developments to mitigate for reduced parking standards. Car club operator City CarShare has concluded agreements on ten developments, two of which are now completed and occupied. The City of Boston has included car clubs in its 'Parking in Boston' guidance document and refers developers to local car club operator zipcar. zipcar currently has agreements with developers to integrate its services into eight high end developments totalling around 4000 properties.

A number of local authorities in the UK, including the London Boroughs of Sutton and Southwark, are exploring the use of section 106 agreements to support the incorporation of car club services into new developments. The London Borough of Sutton has produced Supplementary Planning Guidance on car clubs incorporating advice on car clubs and low car housing.

supporting reductions in parking standards

The realities of reducing parking standards are often of concern to local government officers, politicians and existing residents. Fears that low car housing residents will want to enjoy the benefits of a car free environment whilst parking a car off site must be addressed. The London Borough of Sutton was concerned about overspill parking at the low car BedZED development. The area is not covered by a controlled parking zone, so no mechanism exists for enforcing off-site parking. A Green Transport Plan offering a suite of mobility services, including a car club, enabled the local authority to have confidence in granting a 50% reduction in the parking standard on the site. As a result the site offers 84 parking spaces for 82 homes, 16 business units and a community sports facility. Sutton is building on this experience and requiring other developers to provide car club facilities to mitigate reduced parking standards.

Car clubs offer local government a practical tool to support reduced parking standards. Local authorities can seek to see space freed from parking invested in communal uses such as play, amenity or green space which make the development a more attractive place to live and to socialise out of doors. Alternatively, the local authority might seek increased housing densities. Overall this results in less land being allocated to roadways and parking, greater emphasis on other modes of transport and better integration of public transport into an urban area.

a developer view

Reduced parking standards allowed BedZED developer Peabody Trust to achieve higher development densities and revenue producing square footage, effectively financing many of the developments 'green upgrades'. The costs to Peabody Trust of integrating the car club service are the provision of three parking spaces free of charge to the club and the fees for the sustainability consultants who negotiated and established the service.

Eighteen months after the first residents moved in, 'ZEDcars' has 40 members sharing two vehicles. Roughly half of members are drawn from residents and half are business users. Seven members have sold or deferred the purchase of a private car in favour of the service. Although a suburban location, the development benefits from excellent rail, tram and bus links and improved cycle parking facilities. A Green Lifestyles Officer worked intensively with residents to establish the car club and other transport initiatives including cycle maintenance classes and guided cycle rides. ZEDcars membership is also open to the wider community.

The Gaia Building in Berkeley, California is a 91 unit development incorporating a cultural centre and café. Developer Panoramic Interests sought a reduction in the parking standard underpinned by a car club service. As a result the development has 0.5 parking spaces per residential unit. The footprint of parking provision has been further reduced by using hydraulic lifts to accommodate 42 parking spaces in stacks of three on 14 parking spaces. Some of the cost savings achieved by reducing parking standards have been invested in a subsidised car club service for residents. Two City CarShare vehicles are based in the Gaia Building.

In Boston, car club operator zipcar learned that developers were listing 'zipcar nearby' as a desirable attribute of new apartments. This illustrates the perceived value of car clubs as a modern lifestyle service in marketing new homes.

The marketing of the car club service at Electric Avenue in Vancouver attracted strong media interest. This 'free advertising' has reinforced the reputation of developer Wall Financial for fresh and innovative thinking and supported strong sales of Electric Avenue properties. Research suggests that potential purchasers see a car club service as a credible alternative to car ownership, softening any perceived disadvantage in lack of parking provision. In Cologne, Germany, where a car free housing team exists within the planning department, 4000 residents responded to a survey on car free living. 65% of respondents stated that they would wish to join a car club service to assist in achieving a car free lifestyle. Anecdotal evidence suggests that proposals to integrate mobility services can ease the planning process for developers.

Car club operators seek a range of contributions from developers wishing to integrate a car club. zipcar and City CarShare request free of charge parking spaces for car club vehicles and will seek an operating subsidy in less favourable locations. At Electric Avenue the developer will gift 10 vehicles to Co-operative Auto Network and provide free parking spaces. At Beginenhof in Bremen, Germany the developer provided free parking spaces in return for car club operator Cambio cutting membership costs for residents. UK operators typically seek free of charge parking, free first year membership, support for marketing and an operating subsidy to support early growth.

increasing profitability

A car club enables the ratio of parking spaces to units to be reduced, which can deliver financial benefits to the developer in a number of ways. A developer might increase the number of housing units that can be accommodated, or the value of units through better design. Costs may be avoided in a reduction in the requirement to construct parking, in infrastructure costs from reduced traffic and in reduced off-site highway infrastructure improvement required by planning conditions.

a car club operator view

Acquiring usable parking is a challenge common to all car club operators. Working with developers provides the opportunity to secure subsidised parking spaces, facilitating service expansion.

The construction of low car housing can create new markets for car club membership. Car club operator Co-operative Auto Network has seen a rise in membership enquiries as a result of marketing by partner developers.

Beginenhof in Bremen, Germany is a housing development exclusively for women. Car club operator Cambio has a well used two car station at the site. Cambio considers the membership potential of the area surrounding the development an essential consideration when working with new developments.

Securing free of charge parking spaces in new developments is a clear benefit in Boston where spaces can cost anything up to US \$400 per month. However, zipcar will only consider working on developments within their current operational area. 'Orphan' car stations away from their core area are difficult to service and do not benefit from the critical mass of membership and awareness in core areas. This approach proved right in the case of Union Place – a development with green values but in a marginal location. At the end of a six month trial the vehicle was removed due to insufficient utilisation. zipcar assumes a 4% take up of membership amongst residents, therefore require a 500 unit development to support one vehicle. San Francisco's City CarShare has an established system for prioritising new developments and calculating the subsidy required to operate in sub-optimal areas.

The GWL-Terrein car free development in Westerpark, Amsterdam was completed in 1998 and offers 110 parking spaces for 600 housing units – situated in a car park to one side of the development. Two car club operators – the Dutch national operator Greenwheels and Amsterdam-based operator Dix – offer services with a total of seven vehicles parked either on the

development or in the immediate surroundings. 10% of households at GWL-Terrein are car club members and operator Greenwheels reports that utilisation of its vehicles in the area exceeds rates elsewhere in the centre of Amsterdam.

facilitating expansion

In all of the examples described above the car club operator is working with property developers on a strategic basis. Operators will not work on developments that are remote from current operational areas and are clear in seeking additional underwriting where circumstances are sub-optimal for car club success.

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factors for success

location, location, location

Good low car housing design seeks to provide residents with an infrastructure that assists them in successfully leading a car free lifestyle. The design of the development can enable some lifestyle shift but locating the development with local access to day to day services, public transport infrastructure and a good cycle network is essential. Residents need to be convinced that life without a private car is a realistic option. Negative aspects of car ownership such as parking pressures and traffic congestion are also strong influences.

reaching target audiences

The nature and location of a development will determine who is likely to live there. The well educated young professionals who typify car club members are attracted to high density urban locations.

Dutch car club operator Greenwheels has been approached by local government to place vehicles at two new suburban districts – Leidsche Rijn near Utrecht and Amersfoort. In each case take up has been poor – with the Amersfoort vehicles remaining unused after 18 months. Operator Greenwheels attributes this lack of interest to the development location and householder profile. These city fringe developments are attracting families with busy working parents and heavily car dependent lifestyles. The public transport serving these new districts tends to follow several years after the first residents arrive, making the move away from private car ownership more difficult to countenance. A combination of the location and resident profile means that a car club service is unlikely to meet the mobility needs of local residents.

In the UK, car club operator Smart Moves is working in partnership with Bryant Homes to offer a car club to new residents at a development in Wallington, London Borough of Sutton. Early discussions with the developer suggested a strong match between the likely purchasers of the units and a typical car club member. However, a change in the market led to a significantly higher level of buy to let sales than anticipated. A different marketing strategy will therefore be required to reach new tenants as they move to the development.

marketing

Wall Financial, the developer of Electric Avenue in down town Vancouver, is working with Co-operative Auto Network (CAN) to offer car sharing services to mitigate a reduced parking standard. High profile marketing describes how purchasers can pay off their mortgage six years earlier by joining CAN rather than owning a private car. CAN and the developer estimated a 10% take up of the service. Car club membership was sold as an integral element of the property. When selecting options such as interior finishes, purchasers could opt in to car club membership and add CAN \$500 to their final purchase cost. 26% of the purchasers of the 456 properties have opted in to the service. On completion in 2004 CAN will base a fleet of 10 vehicles – eight hybrid Toyota Prius, and two small vans – at the development. The vehicles will be located outside the gated development to allow existing CAN members who are concentrated in this area to access the vehicles. Marketing of the service is key. The Electric Avenue development gave the car club service a high profile backed with a financially persuasive argument. Perhaps more importantly,

membership fees were integrated with property purchase. Adding CAN \$500 car club membership fee is relatively painless when purchasing a property starting at CAN \$167,000. Smart Moves has offered a range of incentive packages to prospective residents including free first year membership and early bird joining discounts.

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learning from these experiences in the UK

Maximum parking standards, the emphasis on high density developments, more social and key worker housing and less space for parking are required to cope with increasing housing demand. Local government and housing developers are recognising the benefits of car clubs in this changing urban framework.

policy framework

PPG3 on housing and PPG13 on transport include key objectives 'to seek to reduce car dependence', 'create more sustainable patterns of development', 'make more efficient use of land' and 'promote good design in new housing developments'. Achieving each of these objectives can be facilitated by the integration of car clubs into new housing. A 2002 report commissioned by the Motorists Forum highlighted the opportunities for car club growth in tandem with new housing. A Transport Select Committee Inquiry is currently investigating the car of the future – including trends in vehicle use and the extent to which car clubs can replace the need to buy a car.

how big does a development need to be to include a car club?

Assuming a 20% take up of membership and 1.5 adults per household, there will need to be 100 dwellings in the development or immediate surrounds to support a viable car station. Two vehicles serving a location of this size could support membership from up to 50 households. A car club service can also be considered for smaller developments, where the developer is open to extending membership to the wider community and the surrounding area is favourable for car club membership. The parking ratio is also a key factor, with reduced parking standards stimulating interest in car club membership.

where should car club spaces be located?

Car stations should be located at a central location within the development to promote ease of access by all residents. The spaces should be well lit and preferably overlooked to ensure residents are comfortable accessing the cars 24 hours per day. In the case of gated developments parking spaces should be located outside the controlled access area to enable access by non-residents to the car club service.

what sort of development mix best supports a car club?

Mixed use development is ideal for a car club where the complementary usage patterns of residents and corporate users maximise vehicle utilisation rates.

parking management

The strategy for managing parking spaces will also affect car club membership take up. At BedZED reduced parking standards are reinforced by an annual charge for parking which is twice the cost of annual car club membership.

section 106 agreements

A number of local authorities in the UK are exploring the use of section 106 agreements to support the incorporation of car club services into new developments. Smart Moves is working with Bryant Homes to offer a car club service to residents at a new development in Wallington, Sutton. The development has a 1:1 parking ratio, so the service will be offering an alternative to second car ownership. The car club service is open to the wider community and is located in a public car park adjacent to the development. Via a section 106 agreement Bryant Homes contributed to the start up costs of the club, marketing material and the provision of parking spaces. Free membership of the club for the first year of residence was also offered. The Smart Moves team provided training to Bryant marketing staff and provided marketing materials for the sales suite. First occupations are now completed and the first members are making use of the car club service.

Other authorities are seeking section 106 contributions from developers to support the provision of car club services in the area, rather than seeking integration to specific new developments.

conclusions

There is growing interest in the potential of combining car clubs and low car housing amongst local authorities and property developers. Early collaborations focused on developments with a specific environmental or social remit, but particularly in North America, it can be said that the concept is moving towards the mainstream. This is particularly the case where planning authorities have taken a strong role in recommending car clubs to developers seeking reduced parking standards.

The most successful collaborations are on developments in high density urban locations with good public transport and local amenities, aimed at young, urban professionals in areas already served by the car club operator. A good mix of residential and business members both from within and outside the new development is ideal to establish a well used, financially sustainable service. Fresh marketing teamed with a financially persuasive argument for car club membership is key to good membership take up amongst new residents and gaining positive media coverage for the developer.

The emergence of car clubs in planning guidance and local transport plans in the UK will be accelerated over the next few years as more policy makers recognise that offering a real alternative to the private car can contribute to reduced car use, road congestion and car ownership. Through integration in new housing developments, car clubs offer a key tool in delivering more sustainable homes.

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