

The practical problems faced by the University of East London in meeting the parking restraints within PPG13

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Abstract:

In increasing usage of its Docklands campus, the University of East London is subject to limits on parking provision, guidance for which is given in PPG13. Commuters balance opportunity costs when assessing their willingness to pay to commute. Staff members display opposing views with respect to their reliance on the car, but the car users both justify the need, which depends upon their home location and alternative provision, and articulate the difficulties in changing practice. The government is encouraging the use of car share schemes which could potentially be a viable solution. Compressed working weeks or home working depend upon the nature of teaching staff duties and must be supported by management and technology if a cultural change can be achieved that continues to provide a quality service for the students.

Keywords: commuting; parking restraints; public transport provision; home working; car sharing; managing change.

1 Parking policy and PPG13

Left to the individual, change is invariably slow and is overtly resisted if the proposal threatens to disturb familiar parameters of daily life (Allen et al., 2002). When imposed, change can be perceived to be threat, in that individuals have the right of choice taken away and with it, control of their actions. A core activity, influenced by both habit and available infrastructure, is the daily commute to work. The car provides the commuter with flexibility and security as well as, for many, psychological satisfaction in advertising status and wealth, (Marsh and Collet, 1986) so much so that the Director of Transport 2000 likened people's attitude to their cars with drug dependency (Joseph, 1996). However, growth in car use since the 1980s has caused it to become one of the major contributors to global warming and the government is taking steps to curtail its use, especially in areas of congestion where its polluting effects are magnified. Congestion itself is indicative of a further environmental problem facing large cities; a shortage of land and competition for its use. Land used for roads and parking could be used for housing, industry or commerce (CPRE, 2000). Thus, controlling car use is of great environmental import especially in the London area, which has seen rapid growth that is expected to continue (Dorling et al., 2004). Among the strategies adopted by government is that of controlling parking provision when approving new developments, allowing the resultant shortage to persuade the commuter to use alternative means. Guidance to comply with the Government's planning policy including that for greater London is set out in PPG13 (DoE, 1994; DTR, 1994).

2 The situation of the University of East London

The University of East London currently operates from four campuses over a four mile radius in East London. It is consolidating many of its activities on its Docklands campus, which will eventually double in size to incorporate five schools, over 600 staff and 17,500 students on the one site (UEL, 2003). Apart from providing for disabled drivers and resident students, there is currently provision for 200 student parking spaces and sufficient provision for the

276 staff who were working at the site when the plans to merge campuses were initiated. As yet, the transport plan has not been drawn up but it is clear that when the transition is complete, able staff and non-resident students will be encouraged to commute by public transport. A significant focus of this research is to establish staff commuting practices, determine their attitude to change and establish whether the nature of the job will facilitate the necessary change without compromising standards.

Successful transition requires that practical difficulties, creating barriers to change, be identified and pre-empted (Allen et al., 2002). Thus, this paper seeks to identify the barriers to successful reduction in car use at the University of East London. In doing so it explores staff attitudes to alternatives and assesses the potential action that the university could take, bearing in mind that it is seeking to alter behaviour in an area that falls outside its jurisdiction.

3 Environmental damage and car use

The level of emission from all forms of transport has risen by 3% from 1991's levels to 27% in 2001 (CPRE, 2004). Under the Kyoto agreement, Britain is committed to cutting emissions of CO₂ so that by 2012 levels should be 8% less than those of 1990 (Select Committee on European Scrutiny Fifth Report, 2003); however these targets are still well above those believed to be required for sustainability. Europe has recognised that CO₂ emissions would have to be cut by 77% by the year 2050 if sustainable levels are to be achieved (Spangenberg, 1997). Thus, controls developed by the government could be viewed as the herald of much more stringent measures to come.

3.1 The car and the use of resources

Pollution is not the only environmental problem caused by car use. An emerging problem, namely a shortage of finite resources, requires the same change of practice. This shortage involves two issues. Firstly, there is doubt regarding the quantity of oil reserves that remain viable to extract which, in Britain now accounts for 35% of fuel use (CPRE, 2004). The second, driving PPG13, is that of shortage of land. Cars not only require road space, but also land for parking, which could alternatively be used for industry or housing (CPRE, 2000). In the South East of England, this competition for land is the greatest

4 Commuting choices

The factors influencing commuting choices are complex. Historically, industrialisation spawned a move from rural to city dwelling but as transport became easier in the 1970's, the flow reversed and relatively long distance commuting became a norm. It is only as congestion and environmental harm has become apparent that this trend has attracted attention (Renkow and Hoover, 2000). The commuting experience in London and the suburbs is poor, with commuters tending to travel greater distances in more congested conditions than those in Europe (Reeves, 2002). Technically, people can choose to take work close to home, or at a distance from it. If working a distance from home they can relocate or commute (Renkow and Hoover, 2000).

4.1 Financial factors influencing the willingness to pay for commuting

A number of methods are used to determine the willingness to pay for commuting. On a purely financial basis the factors to consider are housing and travel costs and wages. Considering the first two, house prices tend to increase in line with their proximity to urban developments whereas transport costs decrease. Thus, a comparison of combined housing and transport in relation to the distance from a city revealed little

difference (Echinique and Homewood, 2003). Another simple model suggests that the choice depends upon the relative wage difference and the perceived cost of commuting (van Ommeren et al., 2000). Studies show that wages are lower outside cities (Kim et al., 2001). However in the university sector, there is a common pay scale throughout the country (Guardian, 2004) with compensation for the added expense of working in London provided through London Weighting (Utting, 2003). This has proved to be insufficient compensation and researchers have assessed a realistic figure for London Weighting to be £4,200 p.a. (Guardian, 2003). In the university sector it is currently less than £3,000 p.a. Wage difference is not a true indicator of the marginal 'will to pay' for commuting (van Ommeren et al., 2000). The mere social interaction derived from the workplace itself is a significant motivating factor (Reeves, 2002). Non financial benefits also include flexibility of work hours, the environment within the workplace and factors that build self esteem. The promise of these might tempt a worker to add to their commuting time whereas non delivery is reflected in the staff turnover rate which a company might experience, rather than the wage rate itself. Additionally, an unemployed worker will need a much lower incentive to take on commuting than one seeking to change his place of employment (van Ommeren et al., 2000). Pertinent to flexibility of hours, the will to pay for commuting is also influenced by the ratio of the time spent travelling, in proportion to the time spent once at work (Schwanen, 2002).

4.2 Problems associated with a London location

London is rated the world's second most expensive city in the world, the expense being largely accounted for by the cost of housing and transport (Mercer HR Consulting, 2004a). Mortgage brokers, who traditionally lend no more than three times the joint income of a household, provide an indicator of recognised acceptable housing costs. In many parts of London, the cost of housing is five times the average salary and thus out of reach of working couples (Utting, 2003). Key workers, including University staff, identified as those dependent upon London Weighting for any wage differential are thus seen to be at a disadvantage with respect to finding housing within their means in many parts of the city, including areas at the lower end of the market (Utting, 2003). In addressing housing, the Government is promoting 'affordable housing' schemes. These will be included in the development at Barking Reach, close to the Docklands Campus (English Partnerships, 2003). The intention is that it should consist of high density housing with all the amenities required to support the residents. The area is to be designed to be sustainable, in that, facilities for cars will be minimal (London Metropolitan University, 2003). The affordable housing initiative however is targeted at those seeking to gain a place in the housing market (Utting, 2003) and thus would not be available for more senior staff who are already well established in the suburbs.

4.3 Alternatives to using the car

Technically, the choice to commute by car includes consideration of the availability of alternative methods of travel but critically depends upon the perception of alternatives which can be far from accurate (Fujii et al., 2001). Non costs factors considered in the choice include the time involved and subjective issues including those of comfort, ease (van Ommeren et al., 2000) and reliability (van Vugt et al., 1996). The choice with respect to the mode used is also governed by habit, and research has proved that changing transport patterns can prove difficult. A worker who commutes short distances would not expect to change his mode of transport when changing the distance travelled because the habit already formed has become inextricably linked with the association with getting to work (Aarts and Dijksterhuis, 2000).

4.4 Family considerations

Finally, an individual must also consider the requirements of the other members of their family (Renkow and Hoover, 2000). This becomes more complex when children are involved, being an incentive to live in more rural locations where the potential to purchase a larger house and enjoy a higher quality of life with respect to schooling, safety and ease of travel, are greater (Echinique and Homewood, 2003). Commuting however, especially in dual career families, can add to the cost of childcare (Kim et al., 2001).

5 The role of transport provision

Traditionally, the government recognised that transport was an essential component of growth but their guidance produced jointly by DoE (1994) and DTR (1994) heralded a change of attitude, recognising that road provision itself stimulated growth that had not been previously envisaged. Thus it advised local planning authorities to integrate the use of land with that of transport provision. It considered this an area of critical importance because, although the annual development programme is not significant in size, its impact is both long lasting and cumulative.

5.1 London's transport infrastructure

London's transport system is a critical component required to facilitate this change. The Mayor has already made significant steps to encourage people on to public transport with comprehensive web facilities to help plan journeys and better information systems about disrupted services (Booth, 2004). However, the Government's efforts to limit the use of the car have come under criticism from the Association of British Drivers. They claim that it has only delivered the mechanisms to make car use less attractive but has not matched these with the investment required in the public transport system to facilitate alternative modes of commuting (Gregory, 1999).

The Mayor's plans for London Transport entail lobbying government for finance estimated to amount to £1b p.a. (Booth, 2004). The CBI maintains funding for transport that will support the requirements of London in 2010 now stand at £100b for plans including the Crossrail main line and extensions to the Docklands Light Railway (Marston, 2004a). When it comes to such high cost transport investment, the Government has a history of discussing rather than delivering action (Binyon, 2004 and Hall, 2004). Thus although plans are in place to meet the growing demand, questions regarding funding threaten to delay the proposed improvements.

Current investment in the underground system will not yield noticeable improvement in the next 5–15 years (Booth, 2004). In September 2001 the Docklands Light railway was considered to be running at full capacity, yet the development of Canary Wharf was not complete and further development of public transport provision was called for (Hirst, 2001). It was not until 2004 that a proposal to extend the length of platforms to facilitate the use of longer trains was published (Keep, 2004). In the interim, Canary Wharf has continued to be developed and a growing number of commuters travelled in less than ideal conditions. In moving Schools to the Docklands Campus, the University will be increasing the demand on areas of the public transport system connected to those feeding Canary Wharf. London transport claims that it has spare capacity, but this is during nonpeak periods (Booth, 2004).

5.2 Car sharing

A comparatively new option for commuters to consider is car sharing. Copying a German development, the first facilities to match drivers with passengers appeared in Britain in 1997 since when its growth has doubled each month. Considered the cheapest method of commuting, it is most appropriate for those with preplanned or regular journeys. Schemes run using the same methods as dating agencies, considering character types as well as journey details. However searching for a match can be time consuming, prove fruitless and users are advised to take careful precautions for personal safety (Wong, 2003). Reluctance to join car sharing schemes can stem from a preference for solitude and independence. Users mention the need to maintain good communication links and highlight the need for parking at pick up points, desiring cheap car park provision at motorway intersections (BBC, 2003). In dedicating the first motorway lane to multioccupancy vehicles during rush hour periods, the government recognises that car sharing is a feasible solution to congestion and is seeking to promote its uptake (Woodman, 2004).

5.3 Planning criteria

Against this background, The Planning Guidance (PPG13) states that Planning decisions should aim at reducing dependence on the car by providing alternatives, encouraging walking, the use of the bicycle or public transport (DoE, 1994; DTR, 1994). In choosing between developing its Barking or Docklands campus, regardless of other considerations, the Docklands campus fulfils the planning guidelines more closely than the one at Barking in that it is served by the Docklands Light Railway, with Cyprus station on its perimeter (UEL, 2004). Whilst the Barking campus is close to a number of facilities, it is not served as well by public transport, requiring a bus journey from Barking station or a 20 minute walk from the nearest mainline stations, encouraging a high degree of commuting by private car.

5.4 The control of car park provision in PPG13

The government has noted that a shortage of parking is an effective method of controlling car use, not disproportionately penalising the less well off. It has therefore written into the guidelines that there should be fewer spaces than there are workers, especially when there is good access to alternative means of transport (DoE, 1994; DTR, 1994). Their guidance notes (PPG13) states that maximum parking allowances for education establishments should be one space for two members of staff or fifteen students. However, these figures relate to all of England and they state that establishments in the South East should seek to fall well below the figures (Bennett Urban Planning, 2001). Thus the ability of London's public transport system to cope with the demand is a critical requirement for the University to be able to function at its Docklands campus as smoothly as it currently does at Barking.

Local authorities consider transport plans, along with any proposed development (DoE, 1994; DTR, 1994) Planning approval decisions made by the Mayor of London, show a consistent focus on transport. This includes the one made by the University of East London for its buildings to accommodate the School of Architecture at the Docklands site (Application P/02/1223). Each application articulates consideration that ensures that public transport can be utilised and added car use minimised (Livingstone, 2001), evidencing an overt monitoring of the creation of car parks. The principal difficulty for commuters when faced with the possibility of having their commuting habits disrupted stem from their initial choice with respect to their place of residence, which did not accommodate this eventuality. In its advice to businesses, the government suggests a number of measures that could be taken to help their

staff accommodate the change. It is suggested that businesses consider car sharing schemes or financial support in the form of subsidies or loans to finance season tickets.

6 The role of communication technologies and home working

In promoting less travel, the guidance suggests promoting video conferencing, supporting home working, and encouraging home working by instigating 'hotdesking', operating flexitime or compressed weeks. This also facilitates the management of time in a manner that enables staff to remain at home, either through home working or by compressing the working week or fortnight to reduce it by one day. Achieving one fewer trip to work a week would reduce commuting costs by 20%. Car sharing can reduce car use by at least 50% (DTR, 1994).

In many sectors, information technologies are making the option of home working feasible. Predicted in the 1970's and 1980's the practice has only taken hold recently, since the advent of the internet and email to aid communication (Reeves, 2002). It is estimated that in 2000, the use of econferencing in North American industry resulted in a transport saving that would have created of 5,40,000 tonnes CO₂. It is recognised however that commuters released from their journey to work might use the car for other activities and thus reduce the benefit gained (Tuppen, 2002). A recent survey revealed that whilst only 2.5% of UK's working population, state that their main place of work is their home, a further 25% work one day a week or less at home. 69.3% of the first group fulfil the general profile of the traditional home worker. The current trends show the employed sector rather than the self employed, being the fastest growing group of home worker (Felstead and Jeswon, 2004), indicating a greater level of acceptance and trust of the practice. Preferred activities include reading and preparing presentations, with more managers than administrative staff adopting the practice. It is also becoming evident that home workers are more productive (Reeves, 2002).

6.1 The advantages of home working

Apart from the saving on travel costs, the obvious advantages include flexibility of the hours 'at work', thus being able to integrate family and work obligations, and the higher productivity could be accounted for by the lack of interruption (Reeves, 2002). Whilst home workers can integrate their work with family life, it can prove difficult to find the necessary space within the home, especially with young children in the household. There is a preference for work to be carried out in a designated office rather than have it encroach into their private living space. However, this requires a spare room, which might prove beyond the means of many (Lacey, 2003).

6.2 Problems associated with home working

Electronic communication is not problem-free. Firstly, growing congestion on the web is creating inefficiencies which will take up to 30 years to resolve, requiring phone companies to replace copper wiring with the fibre optic cables necessary for broadband. Secondly, the appearance of electronic 'nasties' including viruses and similar damaging programmes potentially undermines efficient communication links and requires firewall maintenance (Chan, 1999).

Thirdly, as a principal communication link, email is problematic. Being a merger of ordinary speech and the formal written communication, it requires specialised skills largely because visual and oral cues to aid comprehension are missing. It tends to raise the number of communications, increasing the workload and to be less effective in solving even low level

problems. It is believed that effective work stems in part from mutual understanding, hard to achieve electronically alone, although mitigated by some face to face contact, especially at a social level. It is considered that the immediacy of telephone contact aids focus on the task in hand whereas the ability to consider and edit email supports divergent idea generation. A style of communication that ensures that misunderstandings are both minimised and reconciled effectively should be established. Thus home workers need managers with good communication skills, training and activities to help foster a sense of inclusion. Acquisition of requisite skills leads to better output and lower stress levels (Staples et al., 1998). Similarly, students prove to be more successful at distance learning when they first experience a crash course in which they get to know fellow participants (Haythornthwaite et al., 2000).

7 Relating theory with procedures at the University of East London

It is thus established that parking facilities will be restricted when the University of East London moves to Docklands in order to meet government requirements designed to alleviate the burden that transport places on the environment. The university is faced with a similar concern as other businesses established in cities suffering from congestion, but its ability to adopt recognised solutions is constrained by two factors. Firstly, the nature of the work is individual to the higher education sector and the ability of the students themselves demands a particular style of response. Secondly, the availability and quality of alternative transport options are unique to the location. This research is concerned with establishing the problems that the university is likely to experience in moving its operations to the Docklands campus, and assessing the viability of potential solutions. Various means, summarised in Table 1 were used to establish the ability of the staff to accommodate the required change and thus identify barriers to successful change.

Table 1 Details of research procedure

<i>Method</i>	<i>Source</i>	<i>Data sought</i>
Questionnaire (open and close questions)	UEL Staff in most departments and support services	Current commuting practice Feasibility and feelings with respect to converting to public transport use Perceived scope and limitations of home working Staff awareness regarding alternative methods to reduce the transport burden
Interview	Management	Details of the changes being made Practice in determining academic staff timetables
Observation	IT support staff Academic staff member	Current IT provision for staff Activities undertaken during a period of low teaching duties Purpose of interaction with others
Use of service provider calculators	AA Route planner Network rail Transport for London	Duration and cost of a sample of journeys for both car and public transport
Use of internet 'chat' pages	Transport user groups Car share groups	Current opinion regarding service provision

One hundred and fifty responses to the questionnaire were received, representing over 1/4 of the surveyed staff which were analysed to ensure that an acceptable spread was achieved. The activities identified by the members of academic staff were coded to assess the underlying

reasons why activities could not be carried out at home and to identify the person who benefited from the activity. The findings were used as a framework against which to assess feedback from the questionnaire.

7.1 The upper management perspective

The University of East London needed to assess its use of resources. The Barking Campus is old, entailing high maintenance costs and in comparison with similar universities, the rooms were underutilised. Thus, uneconomic use was being made of the land. In order to run efficiently it was considered expedient to develop the Docklands campus with new purpose built facilities and a 30% reduction of capacity, to achieve as nearly as possible, the norm of 75% room utilisation. There is a current preference to timetable classes in a manner that facilitates a long weekend and a short working day, a practice that must cease when the move is complete. This choice was not just for the convenience of staff; students prefer to buy a cheap day return and thus attendance at 9 o'clock lectures is notoriously poor. The Vice Chancellor confirmed that there will be increased pressure on parking spaces and acknowledged that while it was not mandatory, the University would undoubtedly have to take the guidance into account (Thorne, 2004). However, while PPG13 would limit parking provision, it could not be used to reduce current provision. The Pro Vice Chancellor (Estates), confirmed that in developing the transport plan, efforts would include encouraging condensed working days and home working.

7.2 Establishing individual staff teaching timetables

The current system of creating individual staff timetables is manual and highly involved, the overriding need being to coordinate activities within different schools for combined honours students. Thus a central structure was established that allowed individual course tutors certain freedom in the exact timing of classes, allowing them to choose times that staff and students alike prefer. The system relies upon significant over provision of rooms which will not be enjoyed on the new campus; thus, when the university finalises the process of consolidation it will move to an automated one, programmed with relevant data including constraints negotiated by individual members of staff. It will produce a timetable together with staff and room allocations. The system, currently used by other comparable universities, allows a degree of flexibility in enabling staff to limit their need to travel into campus but critically, requires extending both the working day and week. Not all staff will be able to enjoy their preferred working hours.

7.3 The need to be on campus

Ninety percent of the academics surveyed currently undertake home working, but few of the other roles were permitted to. This activity was investigated in order to determine the impact of permitted home working on the quality of service delivered. A six week period of non-teaching time, focusing on the experience of one member of teaching staff, was observed in order to determine a framework to assess the necessity of being on campus. Analysis informed a more detailed questionnaire and was the basis of determining the underlying issues.

During the period under observation, 107 activities were recorded of which 15% could have been conducted as efficiently from off campus. A notable outcome observed was that 25% of the activities arose because of absent staff, 2/3 of which were classified as collegial, undertaking their work or supporting those who felt isolated in the near empty campus and 1/3 benefiting students. On three days the description indicated that it involved a steady stream and as such, the '1/3' underrepresents the fact. It is generally recognised that students

required a high level of tutor support during their first weeks. Twenty five percent of the questionnaire responses relating to the difficulties that arise when colleagues work from home referred to this issue while 35% respondents found distance from their students a difficulty when home working. Technically, these students should have sought the support they were seeking from their personal tutor. There is no expectation for staff to be on campus outside teaching weeks on the off-chance that one of their students should seek support. However, students required immediate answers and it would not have served their interests or those of the university to redirect them to their personal tutors, who might be taking annual leave and thus be unable to provide an immediate response. It should be noted that the majority of the students seen had been encouraged to use electronic means for at least a year, but still prefer to make special trips to see tutors. Their perception of the quality of support will be diminished if staff members are not available for face to face contact. Discussion with a number of staff reveals a common opinion that first year students have not developed sufficient skill to learn through distance teaching methods, although they appear to become more capable as they progress through their studies.

The principal requisite for a physical presence on campus for the remaining activities related to course management, ranging from meetings and classes to informal requests for help and brainstorming to assist module development. Classes naturally dominate a significant period of time during the teaching weeks. Blended learning schemes could be considered, especially for the higher level student. Formal meetings are dictated by management who are seeking to reduce their numbers. The latter activities expose the limitations of electronic communication, which can be perceived as a barrier to the more casual or delicate problem. The activities also involved the need to transfer materials, including scripts for marking, reports and materials that needed printing. Electronic submission of coursework would lessen but not eliminate script transfer, and e-technology could be developed to enable material transfer to the print shop, but reports include hard copies of teaching materials and must be delivered in person. Tougher to resolve is the need to share common materials when working on module development, which would require duplication of materials or the facilities of broadband and lengthy telephone calls, to facilitate.

The efficacy of working from a distance also required a sophisticated culture. Nearly 20% of the activities included the need for a prompt response in order to meet university wide deadlines or facilitate smooth progression of work. Whilst much can be achieved using email, a culture of responding to messages promptly must be developed as well as advertising home working contact numbers, potentially through the use of a dedicated mobile number to ensure efficient progress. The degree of this problem is evident in that 40% of those explaining the problems relating to absent colleagues referred to a reluctance to contact them in their homes.

Activities carried out at home consisted largely of class preparation, research and marking but the staff does not consider it an ideal solution. Twenty five percent of the respondents found that work encroached upon home life, in terms of both time and mess. The problems of damage by children or competition for use of the computer were typical. Eight percent were aware of the added costs of phone calls whilst the remainder found the technology slow, web access difficult and their university homesite unavailable, or materials left at work. Of those who do not work at home, one would not do so on principle, and the others did not have the facilities.

7.4 The conditions of alternative transport provision

Rail user groups e-conversations appear to draw a common picture. Before privatisation, the c2c line running from Southend into Fenchurch Street was known as the 'Misery Line' but after privatisation and £ millions spent in upgrading its rolling stock, users expressed a high level of satisfaction. Since then however, the number of franchises has been reduced, allowing providers to shuffle their resources around more lines, resulting in c2c passengers seeing their new stock being moved to other lines. The number of carriages on some of their rush hour services has halved and services cancelled, restoring overcrowded conditions similar to that before the investment. There are similar reports of cut services and reduced train lengths from users travelling on many other lines. Overcrowding on some Great Western trains into Paddington has been so bad that there are reports of passengers unable to force themselves on to their train because of the crush. This problem is greater, the closer the train is to London, making the inwards journey for the person living closer to London more unpleasant. There is a high level of dissatisfaction about the cleanliness of some of the stations, especially Southall, on the line into Paddington. Passenger security is also a concern, comment from rail workers highlight the problem in noting how thinly the rail police are spread, thus resulting in lengthy waits for their assistance.

A web page inviting comment from car share users reveals mixed attitudes, with some finding it an ideal solution (BBC, 2003). Terms for car share clubs offer reduced rates for business membership, optimising the chances of finding matches and enabling the businesses thus involved to offer priority parking to staff who car share. Such clubs extend car pool facilities to participating organisations. Searching for universities providing such options reveals a number of sites encouraging their staff to car share, accommodating needs such as irregular hours and dropping and collecting children from schools enroute (University of Bristol, 2000).

7.5 The implications with respect to reducing transport demand

The pressure on parking will mean that some staff will have to review their mode of commuting. The reduced room capacity and associated requirement to work a 9-5 day poses two potential problems. Firstly, teaching at nine has been avoided in the past because of the resultant poor attendance and related student success which is used in the statistics determining the University's ranking. This is important to the University because it is used as a basis for government funding which could potentially suffer. Secondly if more classes are scheduled to start at 9.00 am, there will be a greater need for not only staff but also students who do not live on campus to travel during the rush hour, when London Transport stated their spare capacity was during off peak hours (Booth, 2004). On the other hand it raises the scope to provide staff with a full day of teaching, compensating for the time spent commuting (Schwanen, 2002). Car share is an emerging option to be considered.

7.6 The potential to reduce the need to be on campus

Undoubtedly not all activities require a presence on the campus but home working could threaten the quality of service provided for students, especially those with a poor capacity to manage their studies. Responses recognise that home working is not a simple solution, potentially creating a burden on staff who remain on campus, isolating both the home and the campus based worker and impeding the attainment of deadlines. Some staff members express a reluctance to contact home workers even by e-mail. However, careful management including training, communication of contact details and teaching students from the outset to use e-mail can improve the standard of service whilst reducing

the necessity to commute. With respect to the need to gain access to staff computing sites from home, instructions are in place on the University web site that inform staff how to create the link, provided their home computers are of a sufficiently high performance (56 mb). Staff members appear to be unaware of this provision which would indicate a need for better advertisement or training.

8 Staff practices and perception of change

Against the framework of management decisions and the demands of their role, staff members tailor their activities in a manner that optimises satisfaction including consideration of perks that compensate for commuting difficulties. Thus, attitudes with respect to commuting choices, converting to public transport and home working were sought through questionnaire.

8.1 Home location and travel costs

Analysis of the 150 responses was carried out in terms of the time rather than distance of the commute thus incorporating the benefit gained by working non standard hours and avoiding rush hour conditions. One hundred and forty five respondents indicated the time of their homeward journey, the average taking 50 minutes. Seventy one percent travel by car, with an average journey time of 42 minutes whilst the average for those using public transport is 76 minutes. A large proportion of those using independent means, car, motor bike or bicycle, however, have a shorter than average travel time, taking between 16–45 minutes while a relatively small number take nearly three times that length of time (Figure 1). When assessing the average times against age and gender, there appears to be a clear trend of men being prepared to take between 1/4 and 1/3 longer than the women, and the time of commute increasing with age.

Staff members apparently consider the number of weekly visits made to the campus when choosing the duration of their commute, with those requiring over 55 minutes per trip tend to visit the campus twice a week, whilst those attending more than five days have significantly shorter journey times (Figure 2).

Figure 1 Travel times by mode

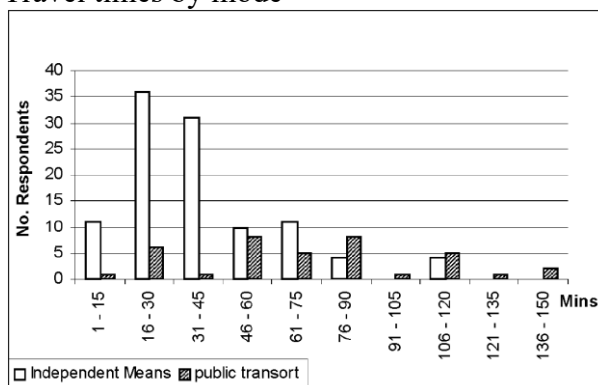
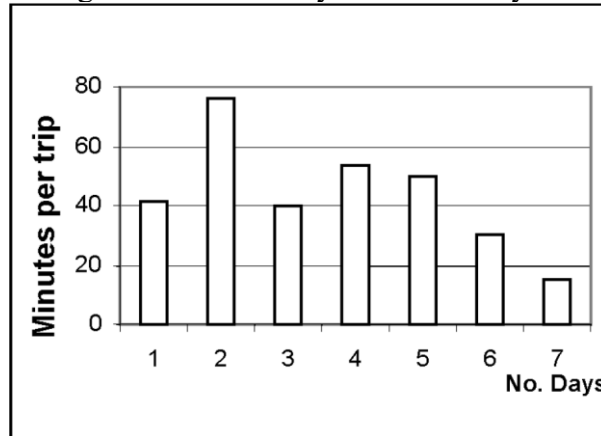


Figure 2 Average time travelled by number of days on campus



The profiles of the respondents, according to the roles undertaken within the university, reveal that 3/5 of the women in the youngest age group (18–35) comprise over one third of the administrators. The majority of the remaining females are divided between academic and administrative roles, with the remainder in support and management. Seven percent of the men in the middle age bracket (36–50) work in administration; roughly 2/3 are engaged in academic work and the remainder in Support Services where they comprise 2/3 of the respondents from that sector. Younger staff tended to be in administrative and support roles whereas the older age groups (51–65) fulfilled more of the academic roles. In assessing the mode of transport according to role, it is notable that nearly half of the support staff and hardly any administrative staff use public transport.

8.2 The quality of the mode of transport

Sixty nine respondents indicated the impact caused by rush hour on the time of their journey. This included 62% of the car users who, on average, experienced a 26 minutes delay and 24% of the public transport users who averaged a 13 minutes delay. The latter group however included journeys that were 10–15 minutes faster in rush hour. Of those using public transport, 37% reported potential delays averaging 28 minutes caused by missed connections. With respect to delays, the spread of reporting is similar to that of all usage, suggesting that all modes and distances are equally vulnerable.

Respondents were asked to indicate their opinion using a Likert scale, regarding the quality of their journey and in particular, its reliability, stressfulness, enjoyability and safety and the opinions assessed according to mode, distance travelled (Figures 3 and 4) and gender. A score of 1 indicated that each aspect had been considered very good and a score of 5, very poor. The cyclists were the most satisfied where, apart from one female respondent giving ‘safety’ a score of 2, a score of 1 was given for the remainder of the classifications. With a total of 12, the motor bike riders expressed the least satisfaction, a score of 1 for ‘reliability’, might be an indication of why the mode is chosen. The car users scored each category more favourably than the public transport users, the difference being more marked for the females, especially in the areas of stressfulness, enjoyability and safety. Both public transport users and those using independent means show a deterioration of satisfaction as the distance of the commute increases (Figures 3 and 4), although the small number of long distance car commuters is too small to draw reliable conclusions. 25 respondents provided more information with respect to the motivation behind choices that the travel choices made. The reasons ranged from service provision to cost. One person wanted to cycle but needed secure locking facilities and the ability to shower and change.

Figure 3 Opinion of current car users journey

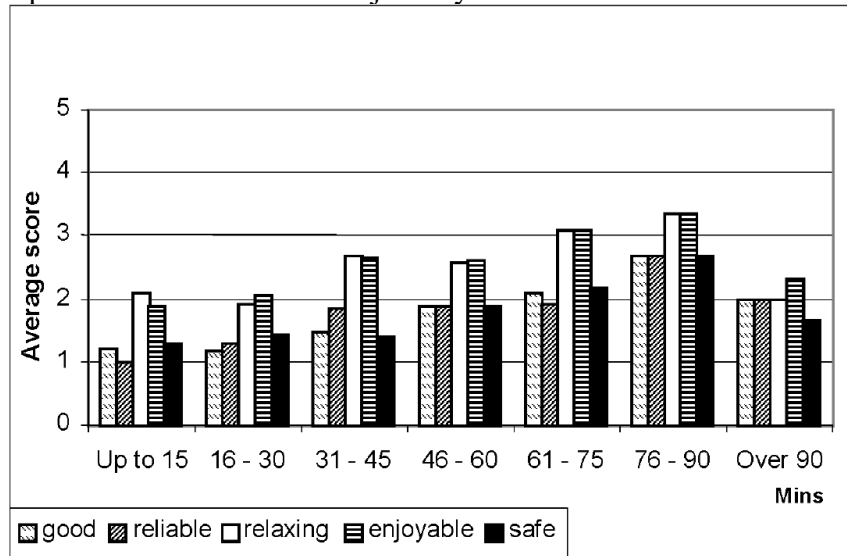
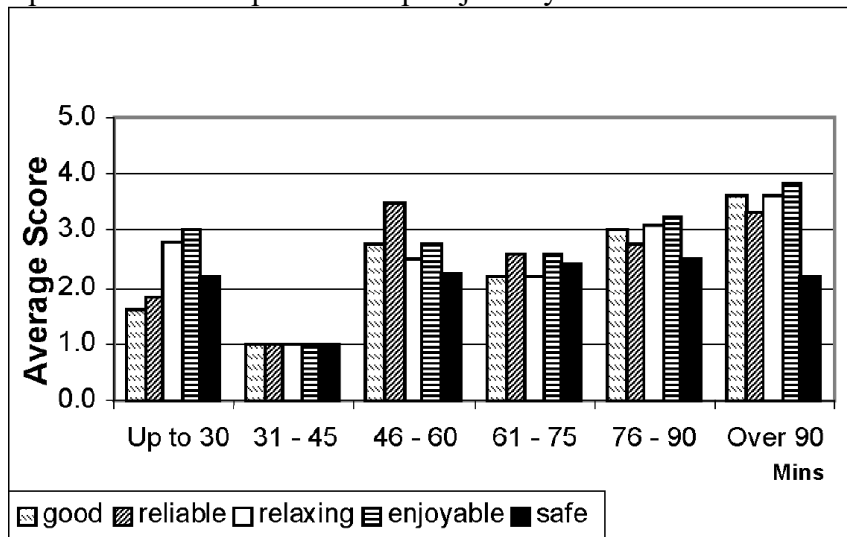


Figure 4 Opinion of current public transport journey



Respondents were asked to identify the materials they transported to work. Seventy two percent support staff, management and academics reported carrying materials. By far the most common were paperwork, books and students' work, including portfolios and projects. Lap top computers and printers, cameras and videos, as well as display equipment are also transported, all of which are bulky and of value.

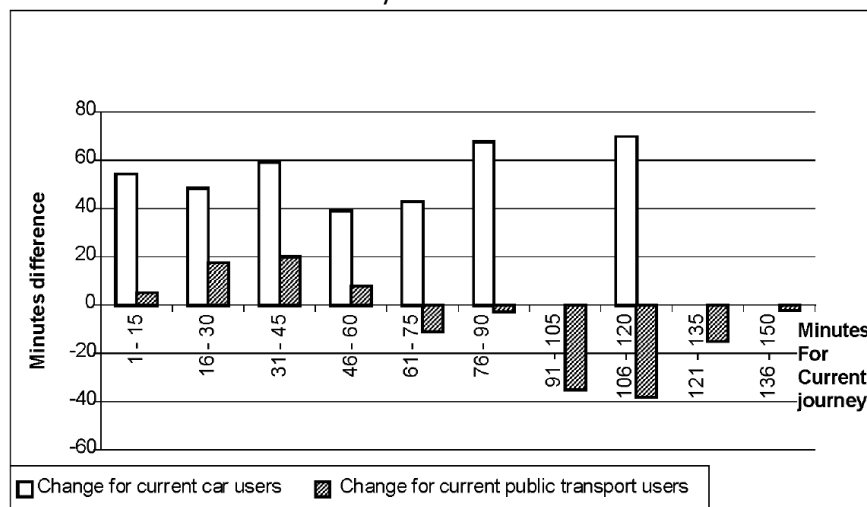
8.3 Public transport facilities

One hundred and twenty six respondents described the route they would have to take to get to the Docklands campus, using public transport. It is served by Cyprus station, on a branch of the Docklands Light Railway that only connects to one mainline station, Limehouse, on the c2c line, from Southend to Fenchurch Street. Thus, few people using public transport can achieve the journey without changes. The local bus provision is better, but also requires the user to live very close to the campus.

8.4 The perceived change time costs

One hundred and thirty seven respondents provided both the current time to travel home and an estimate of the time it will take by public transport. The average time for a single journey rose from 50 to 88 minutes, but for current car users it is predicted to double from 43 minutes to 95 minutes, whereas that for the existing public transport users is predicted to fall from 79 to 75 minutes. The average increase in the time away from home for staff working five days a week and converting from car to public transport use is predicted to rise by 50, 8 hour days a year, assuming six weeks of holiday are taken. This potential cost was overtly resented. The added time reflects both a change from car to public transport, and the change of campus, but the additional time is disproportionate to an increase of just 4 miles. It was however noted that there appeared to be a strong tendency to round the travel time by public transport to the nearest hour or half an hour which in itself might be an indication of the negative view of non public transport users. The group predicting the greatest change involves those who currently enjoy the shortest journeys, with significantly fewer people managing to get to work in less than 30 minutes. Whilst the average time difference at the upper end is negligible, it does mask individual instances of significant increased journeys (Figure 5). In contrast, over half of the current public transport users will enjoy time savings, the average time decreasing by four minutes. Locations further than 30 miles from the university were less sensitive to the time.

Figure 5 The difference in travel times by mode



In the light of a possible negative bias as suggested by Fujii et al. (2001), the findings were confirmed through the use of journey planners for Network Rail, TFL Journey Planner and the AA. A sample of locations was used and the difference in time and cost determined. In terms of time, those within a 15 mile radius and currently travelling for an average of 15 minutes suffer an average increase of 30 minutes, although from Romford, the increase in time was negligible (Figure 6). It should be noted however that no provision was made to include the time required to get to mainline stations, which, especially in the more rural locations can be considerable. This spread is notable because it involves those who have actively made the choice of living close to their place of work. Subsequent analysis of the figures suggests that it would be the younger female and thus a high proportion of the administrative staff who are most likely to be the worst affected by this change. Comparing these figures with those supplied by the staff would indicate that their estimates were reliable.

Financial change is harder to assess, involving potential savings through travelling off peak or with an Oyster card, London Underground's saver card. The figures used to assess changes in transport costs compare the cost of getting to Docklands by car with those to get there by train using a full price ticket (Figure 7). Being the only station on the underground in the survey, the figure for Dagenham was calculated using the Oyster card. This is because any commuter seeking to work from home for a week will not benefit from a season ticket and the university will be starting more classes at 9.00 a.m. It is conceivable therefore that figures could be 1/3 less for the staff members who can arrive late, purchasing a cheap day ticket. However, the price only covers the rail journey, ignoring added costs of getting to the station and parking. The cost of using the car has been calculated using the price per mile supplied by the AA. The figure used is 17.14 p per mile, being the average for the three lowest categories of car.

Figure 6 Comparison of time from sample stations

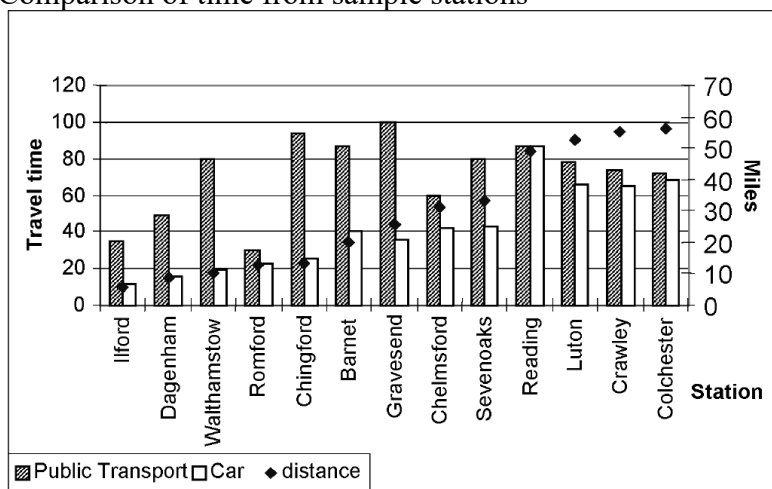
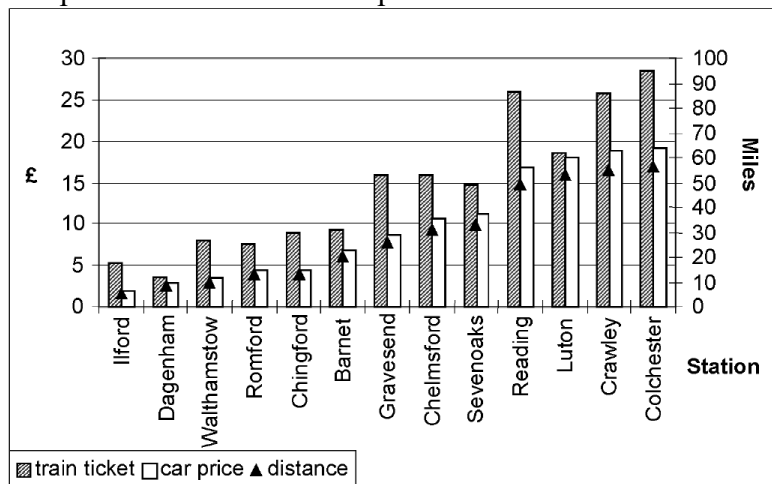


Figure 7 Comparison of cost from sample stations



The staff members living close to the campus will experience the greatest percentage increase in travel costs. Assuming that the staff maintains a five day week, and takes six weeks holiday, the actual sums involved average £967 p.a, a cost to be borne on top of the increased travel time. Even staff members living as close as Romford and Ilford will experience a rise of £700 p.a. These are staff members who maintain that they have high cost housing and a local job rather than high city salaries and as discussed above, analysis shows that it involves a high number of the younger female administrative staff, those who can least afford the

added expense. Those who will find little change to their travel costs are dependent on the zoning system working in their favour. The exact delineation between those experiencing positive and negative effects is outside the scope of this research but the example of Reading in Figure 7 shows that costs do not always correlate with distance travelled.

8.5 Staff opinion with respect to changing to public transport

Respondents were asked to express their opinions about commuting by public transport using the same Likert scale as that for their current transport (Figures 8 and 9). The differences between the two sets of answers are revealing. The male cyclists who expect to continue to cycle show no difference, but the female respondents consider the route to be less satisfactory in all respects apart from safety, which they considered improved. The female car users register a slightly greater change than the males, both groups considering that reliability will be compromised the most. Apart from the cyclists, the motor cyclists, who were least satisfied with their current mode of travel, register the smallest perceived change when compared with those travelling by independent means. Those using public transport barely registered a change, the female respondents considering the journey to be better than the one to Barking. The findings of Fujii et al. (2001) should temper conclusions with respect to the reliability of the opinions of all but the current public transport users. Lack of familiarity is sufficient cause for respondents to predict an outcome that is worse than the fact, however, the similarity of responses from the relevant groups and confirmation of findings discussed above reflect a degree of accuracy.

Figure 8 Public transport group opinion of getting docklands

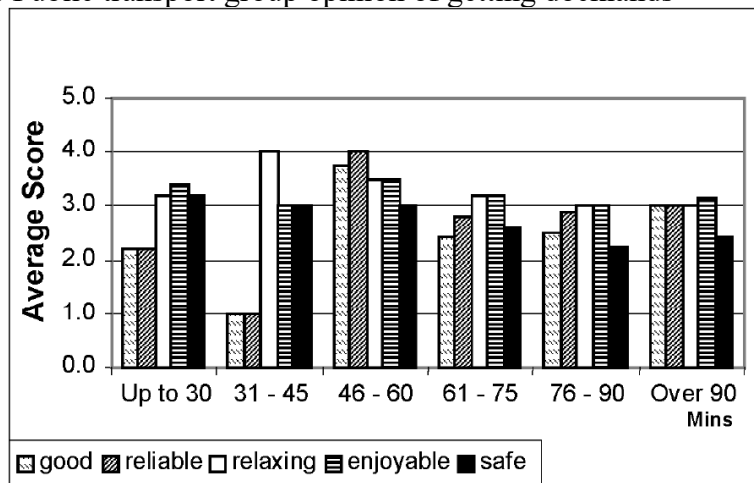
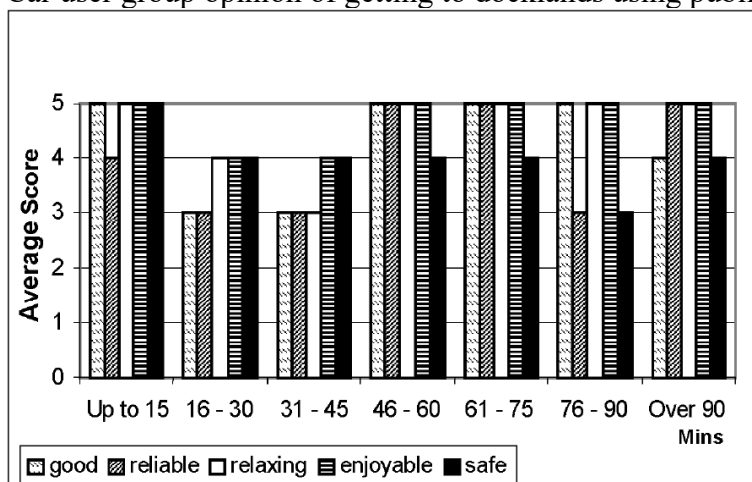
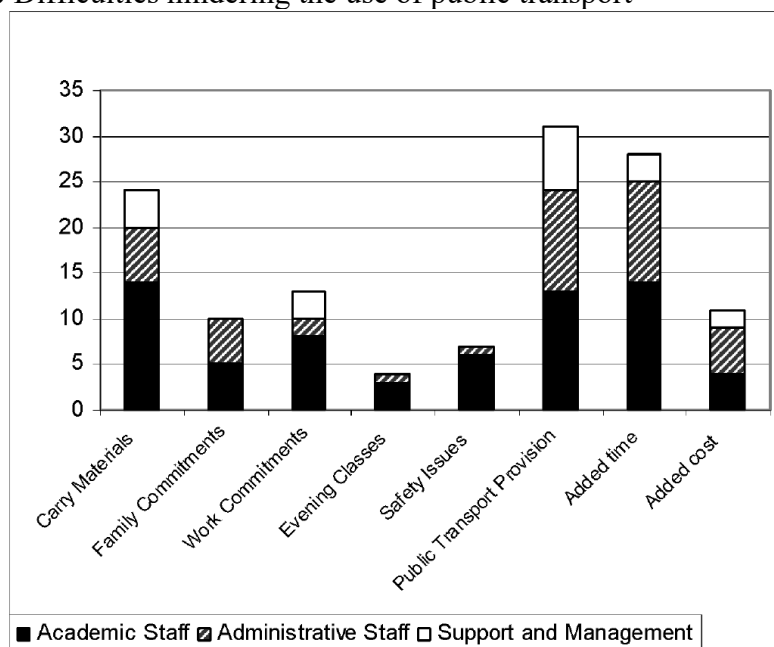


Figure 9 Car user group opinion of getting to docklands using public transport



Respondents were asked to indicate if they believed they experience special circumstances, excluding disability, enabling them to claim a parking space. Seventy five percent of the car users would make a claim. This figure comprises 68% of the respondents to this question and 53% of the total, indicating the difficulty that will be experienced in seeking to satisfy the staff within the government’s planning restrictions. The spread of those claiming the right shows a higher concentration both close to the university and taking above 1 3/4 hours to drive. Thus 89% of those within 15 minutes of the campus compares with 63% at one hour and 45% at 1 1/2 hour prefer to drive. The decline halts at this point with 75% of the long distance commuters claiming a right. Justification (Figure 10) includes a lack of alternative transport provision, the nature of the job, the need to integrate childcare arrangements and safety with respect to evening classes. Subsequent comment revealed that those who did not feel they had a right for a claim were far from satisfied and some would consider leaving the university. There was a high level of resentment at the added costs that would be entailed, it being viewed as an erosion of perks.

Figure 10 Difficulties hindering the use of public transport



When asked to rate safety at night as a separate issue on a scale of 1–5 with 5 representing a totally safe route, the average score was 2, with only the men between 20 and 35 rating it 3. One fifth of the staff went on to place a limit on the time they would be prepared to travel, precluding the ability to teach or support evening classes finishing at 9.00.

Fifty one suggestions to help reduce commuting by car were provided by staff. The most frequently offered suggestion was to reduce the need to be on campus by managing duties and resources to facilitate home working. One fifth of the suggestions related to provision of facilities to support cyclists who need to be able to lock their bikes securely and request shower. Half this number suggested ‘park and ride’ from the old Barking campus, and 6% considered car share feasible. Two respondents suggested that a first-come, first-served basis would not be equitable for those scheduled to teach late in the day. Administrative and support staff that considered flexi time would reduce the stress of having to be at work by nine and thus this suggestion could make them more amenable to converting to public transport. Thus a number of potential remedies exist within the jurisdiction of the university;

however this research has identified a further problem that in itself could be considered an easily remedied barrier to successful change. Twice the number of staff who considered car share suggested 'Park and ride' suggesting that a lack of awareness of the development and benefits of car share that could be rectified by training or advertisement of associated perks such as preferential parking facilities for dual car users.

8.6 The option of relocation

Staff generally displayed a reluctance to move closer to Docklands. Only 10% considered that they lived sufficiently close, but their comments revealed a realisation that distance was not the issue. They had to live in the right place if they were to get to the campus without difficulty, and were not prepared to make the slight alteration to their place of residence. A third of the respondents cited cost as the reason for not moving and marginally fewer felt that they and their families were too settled, 21% referring to schools or their partner's workplace. Twenty five percent of the respondents described the locality as being unpleasant or unsafe for a residence while 17% have no intention of moving, preferring to commute rather than live within London. Five percent of the staff stated that they would rather leave than move, some clearly stating that using public transport would cause the fringe benefits of working at the University to be eroded.

8.7 Managing parking spaces

It is thus clear that staff members are not prepared to move in order to avoid using the car, and 53% consider that they have good cause to continue driving to the university. This figure is above the national average allowed under PPG13, which is more lenient than that expected for the location. Thus the liberty to park must be managed. The greatest apparent difficulty in converting to public transport is suffered by those closest to the university and half of those affected are administrative staff members who work regular hours. Providing this group with a right to park, or allowing the car parks to be used on a first-come, first-served basis, will be detrimental to those concerned about safety, who arrive later at the campus to teach on the evening classes. Rationing car parking spaces through charging and Park and Ride facilities would undermine the principles within PPG13, of not penalising the poorer worker and reducing road use, apart from the vicinity of the campus respectively.

9 Mitigating the perceived problems raised by restricting parking

This research has proved that the key barrier to success is outside the university's control, being public transport provision. Over half the respondents articulated real problems with many staff facing a considerable increase in costs (finance and time) as well as the inconvenience of a less pleasant journey. Safety concerned a few respondents, especially in conjunction with evening classes. The optimal solution would be one where no staff member was asked to convert to public transport use against their preference. To this end, the university can offer two alternative approaches. Firstly, it can assist staff in reducing single car commuting. The university is already offering interest free loans for season tickets but it can do more by joining a car share club to assist staff find good matches. Information on the web site and clearly defined parking spaces reserved for dual occupancy cars would advertise the facility, which would help overcome the apparent ignorance currently creating a barrier to change. Similarly, access to a car pool would allow those who need a car, once at work, to commute by public transport if desired. A further barrier to change, the need to carry and share materials, can be mitigated with electronic submission of assessments, training and management. Secondly, the university can encourage a formal adoption of home working. Current barriers to this include UEL's requirement for administrative and support staff to be

on campus during standard office hours, the inability to timetable free days, with sufficient time for team meetings and student support, inadequate home computer systems and a lack of training in electronic communication skills. All of these issues can be minimised with proactive management and technical support. Supportive management is critical in this respect to ensure that the experience of both student and staff and thus retention of both is not compromised.

The final barrier that should not be underestimated is human nature. It is hard to change habits, especially when they involve added cost and uncertainty. Proactive action from management is required to prevent the development of negative attitudes towards the change and educate staff with respect to viable options to aid success. Thus, although barriers to successful change have been identified, the impact of the principal problem, public transport provision can be reduced by developing alternative working practices and encouraging car share schemes.

10 Summary

Congestion is a growing sustainability issue faced by all major cities and the British government is using parking constraints set out in their planning guidance (PPG13) as a method to curtail car use. When the University of East London consolidates its activities at its Docklands campus, the staff will be required to adjust their commuting habits. This research clarifies barriers to successful change and suggests viable solutions. The option of using public transport depends largely upon the available infrastructure, which for the Docklands campus is not ideal. The campus is situated on the perimeter of the London Transport network and few staff can get to the site by public transport without involving several changes. Converting to public transport would add an average of £967 and 58 hour days p.a., a cost resented by staff. Thus 53% of staff responding to the survey claimed they would require parking facilities, higher than that permitted for higher education establishments in PPG13. Those prepared to accept the cost would be required to travel on congested trains, there being little spare capacity in the rush hour period. Few staff members are prepared to move, those already in the vicinity understanding that access to specific stations is of greater relevance than the distance itself and most are not prepared to uproot families, some preferring, if necessary, to leave the university. Thus for the University of East London, the traditional alternative of public transport will not meet its entire transport need.

This research recommends promotion of car share schemes and home working, extending this option to the administrative and support staff where appropriate. Both of these solutions require overt technical and management support and promotion to be successful.

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