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SYMPOSIUM: Inclusive Transport and Urban Design - AUNT-SUE is older and wiser

Programme 18 January 2006

*Entrance/ Reception Area
Tower Building*

9am – 10am: Registration/ Welcome

*Henry Thomas Room
(Tower Building)*

10.00am: Introduction to Symposium

Stephen Shaw, Director of the Transport Research and Consultancy Centre (TRaC) at the Cities Institute, London Metropolitan University

10.10am: Principles into Practice

Stephen Shaw and Richard Simon, iCube Ltd.

10.40am: Benchmarking Accessibility

Roger Mackett, Professor of Transport Studies at UCL, Juliet Solomon, Researcher of the Transport Research and Consultancy Centre (TRaC) at the Cities Institute, London Metropolitan University and Trevor Mason, Principal Engineer for Transport Planning and Monitoring at Hertfordshire County Council.

11.10am: Design-for-all

J. Mark Porter, Professor of Design Ergonomics in the Department of Design and Technology at Loughborough University and Professor Graeme Evans, Director of the Cities Institute at London Metropolitan University.

11.40am: 20 Minutes BREAK

12.00pm: Camden and Hertfordshire “testbeds”

Nick Tyler, Chadwick Professor of Civil Engineering and Head of the Department of Civil and Environmental Engineering at UCL.

12.30pm: Discussion

Dai Powell (Rapporteur) Director Hackney Community Transport

01.00pm: Close

(Old Staff Café, T1-20, TB)

1pm – 2pm: Lunch

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Presentation: 10.10am – 10.40am

Abstract: P0 ‘Tackling Exclusion in Transport and Urban Design: Principles into Practice’

Stephen Shaw, Cities Institute, London Metropolitan University and Richard Simon, iCube Ltd.

Urban designers are sometimes given a rare opportunity to deliver significant improvements to a disadvantaged urban area: to make its streets and public spaces more accessible, attractive and inclusive. At the last AUNT-SUE Symposium, participants emphasised the need to put these important principles into practice. Well-intentioned, high-level policies must not be allowed to fail at ‘street level’. But, how to ensure that the design process responds fully to the needs of diverse communities - not just those individuals and interest groups that shout the loudest? How to gain commitment from the wide range of infrastructure providers that determine the design of the public realm and affect its upkeep? In the transport-led regeneration of Brick Lane, AUNT-SUE partners LB Tower Hamlets appointed design consultants to elicit the views and establish the preferences of local residents, workers and small businesses, as well as the growing number of visitors to the restaurants, festivals and other attractions of *Banglatown*. In a socially and ethnically diverse area of London’s East End, they sought to accommodate the ‘community’s’ disparate, sometimes conflicting requirements, without compromising the vision and integrity of the whole. The presenters will discuss the evolution of this project and consider how the outcome was influenced by over two years of consultation and discussion. They will also introduce a new tool for participation in street design that will be developed and tested by a research team drawn from AUNT-SUE, DISTILLATE and VivaCity 2020 consortia, with funding from EPSRC.

Presentation: 10.40am – 11.10am

Abstract: P1 'Benchmarking Accessibility'

***Professor Roger Mackett, Centre for Transport Studies,
University College London***

A key element of this part of the project is to develop a software tool that can be used by planners to incorporate social inclusion into the transport planning process and then to use the tool to assess how far transport policies help socially-excluded people reach benchmarks of social inclusion.

In order to do this it is necessary to define benchmarks that reflect reasonable levels of access to various facilities such as shops, work, medical facilities and leisure activities. These benchmarks reflect the levels of access that those who are not socially excluded enjoy. The rationale of the work is that transport policies will help people who do not enjoy such levels of access because of the factors that define the nature of their social exclusion, to do so.

Usually this type of benchmark is defined in terms of the median (or some other summary measure) of the time or cost of reaching the facility being considered. For example, the benchmark might set at twice the mean, so that, if the average time to travel to the shops to buy food is 12 minutes, then the benchmark is 24 minutes. There are a number of weaknesses in this approach: for example, the average time spent travelling reflects what people do, it does not necessarily reflect what they would like to do or regard as reasonable. Also, setting the benchmark at twice the average is arbitrary, and has no basis in reality.

The approach being adopted in this work is to ask people what they regard as 'reasonable' in terms of accessibility. This approach also raises questions such as the interpersonal variation in the interpretation of the term 'reasonable', and the extent to which the present situation influences what people regard as reasonable.

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A survey has been carried out in Hertfordshire to establish what people think is a reasonable amount of money and time to spend travelling to work, to the shops for food and the doctor, and how much time and money they do spend on these trips. These data can be disaggregated by age, gender, employment status, social class, ethnicity, and so on. To complement this work, analysis is being carried out on National Travel Survey (NTS) data to establish which journeys are important to the less privileged groups and what should be facilitated if transport is to be inclusive; for example, for older groups, the frequency of social and shopping trips appears to be at least as significant as the time spent travelling on the type of trip that is normally described as essential. The data is being disaggregated by age, employment, income, household structure, access to a car, and travel difficulties.

The next stage of this part of the work is to draw up a set of such pointers and test them in the field by means of interviews and focus groups.

Presentation: 11.10 am – 11.40am

Abstract: P2 ‘Design-for-all’

***Professor Mark Porter, Department of Design and Technology at
Loughborough University and Professor Graeme Evans Cities Institute,
London Met.***

‘Design for all’ or inclusive design needs to move from being a philosophical viewpoint to being a central feature of design practice. Sadly, the commonly accepted view for mainstream design is to cater for only the 5th to 95th percentile users of a product or service. This is designing for numbers, not people. Today, we believe that it is no longer acceptable to continue this approach of deliberate ‘designing out’ of people who are in the top or bottom 5% of size or ability.

Furthermore, people can be excluded from using a product or service because of a wide range of factors including their personal cognitive and emotional dimensions. For example, a person may be able to reach a control but not able to manipulate it as required; able to see a timetable but not able to plan a journey route; able to walk 100 metres but not confident enough to cross a busy road; able to climb stairs but not willing to walk past a group of teenagers in an environment dominated by graffiti; and so on.

Our recent research in the AUNT-SUE project has been focussed on developing both our inclusive design tool (HADRIAN) and an inclusive design quality indicator (DQI) audit tool for the whole journey environment.

We are expanding HADRIAN to include data on an individual’s ability to undertake a variety of transport-related tasks, such as vehicle ingress/egress, coping with uneven surfaces, steps, escalators, lifts, street furniture and complex pedestrian environments. The tool will provide a database of physical, emotional and cognitive information for 100 individuals, carefully selected to cover a very wide range of abilities. Progress to date on the HADRIAN tool includes: the design and

construction of rigs for assessing ease of ingress/egress to a variety of vehicles; setting up our newly acquired body scanner to be able to create 3D virtual human models of the individuals who will form the HADRIAN database; designing and piloting our 'journey planner' questionnaire that identifies physical, cognitive and emotional issues that are experienced when travelling using a variety of modes of transport; developing a detailed experimental protocol for the data collection phase and gaining approval from our ethical committee. Data collection has now commenced and will keep us busy until summer 2006.

Initial work on the inclusive urban design audit tool will involve assessing environmental design, accessibility and planning approaches and techniques to mobility and transport provision. The prototype tool will be developed by undertaking comprehensive street environmental audits of selected routes and journeys. The physical and perceptual barriers to local transport usage and pedestrian access will be assessed, as will community safety and crime prevention through environmental design.

Progress on the design audit tool includes conducting a detailed literature review and developing a conceptual framework for modelling the inclusive "Whole Journey Environment"; evaluating design, accessibility audit and related policy interventions. Consultation has been undertaken with officers (planning, street engineering, GIS) from test bed boroughs, the Met Police and local residents groups. Fieldwork has included street observation and documentation (policy, planning, visual, photo/video) and GIS mapping of Camden test bed areas – including social, crime, demographic, deprivation data analysis; street and housing layout and land-use. GIS mapping of recorded crime data in test bed areas and the production of crime cluster hotspot analysis is being overlaid with the socio-demographic and land-use data in order to establish correlations and highlight risk and safety factors along various pedestrian routes and access points.

Presentation: 12.00pm – 12.30pm

Abstract: P3 ‘AUNT-SUE “testbeds” London Borough of Camden and Hertfordshire County Council’

Professor Nick Tyler, Head of the Department of Civil and Environmental Engineering at University College London

The testbed has enabled us to study the accessibility profiles of two areas of Camden - Somerstown and Elm Village. The profiles have been encoded using a database designed, written and compiled in Microsoft Access by the project researcher. The data can be collected either on paper forms or by recording directly into the database loaded into a Tablet PC. The survey covered the pedestrian environment (footways, pedestrian crossings, streets) transport services (bus routes, stops), built environment and safety. The coordinates of each data item were also located on a 1:2000 Ordnance Survey Map, thus, the data can also be used for GIS analysis. A GIS database is being created, using the street survey and environmental design audit information, which will be synthesised with a range of social and urban design data to build up a rich 3-dimensional picture of accessibility and the journey environment.

Much work consisted in cross-validation of borderline cases of possible barriers; to help illustrate types of barriers to accessibility and avoid bias, the data collection also included extensive photographic evidence.

The profiles are being analysed to determine exactly how to start evaluating accessibility in these areas. The analysis of the data would reveal correlations and relationships between variables, whether positive or negative, and help classify barriers. The final stage would be to apply sensory and physical capabilities to find the extent of these barriers and the conditions where they apply to design appropriate interventions.

AUNT-SUE Team Biographies

The AUNT-SUE Consortium includes researchers from London Metropolitan University (LMU), University College London (UCL), Loughborough University (LU). Our partners include London Borough of Camden; Hertfordshire County Council; Royal National Institute of the Blind (RNIB).

Nastaran Azmin-Fouladi BSc, MSc is research fellow with the Cities Institute at London Metropolitan University. Since graduation from Architectural school she has been involved in various design projects from harbours, airport terminal, a university campus and sports hall to a variety of housing and urban planning/design schemes. Her interest in the relationship between design and behaviour led to her involvement with the Medical Architecture Research Unit's project on the therapeutic effects of design of high-secured psychiatric hospitals. She is currently involved in investigating the urban design aspect of the AUNT-SUE project.

Keith Case BSc PhD CEng FErgS FBCS is Professor of Computer Aided Engineering and leader of the Product Realisation Technologies research group in Mechanical and Manufacturing Engineering at Loughborough University (LU). He also leads the Innovative Digital Manufacturing Research Group within LU's Innovative Manufacturing Research Centre (funded by EPSRC). He has been a Principal Investigator on projects concerned with information support systems, manufacturing features in design, process capability modelling, automobile seat evaluation and design, gestural input for conceptual design, and human spine modelling.

Graeme Evans MA PhD FCCA Dip.Com.Eval. (**Principal Investigator**) is Director of the Cities Institute at London Metropolitan University. With Stephen Shaw he has led several urban transport impact and amenity planning studies for European, national and local authorities and an EU LEONARDO project on ICT and travel & tourism. He is a member of the core team of the EPSRC SUE *VivaCity* consortium

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researching mixed-use and sustainable development. He has served as an Enabler and Design Quality Facilitator with the Commission for Architecture & the Built Environment, and on the Science Review Panel of the Office for Science & Technology at the DTI. He is a visiting professor at Central St Martins College of Art & Design, and at the INRS-Montreal.

Antoinette Fennell BSc PhD is Human Factors Scientist in the RNIB Scientific Research Unit. She is currently involved in work on accessible keypad design, the European ASK-IT project (primarily facilitating independent travel for people in general, with a focus on promoting independence for disabled people) and the SNAPI project (coding of special needs requirements onto Smart Cards). Prior to working with the RNIB she worked in the Department of Zoology in University College Dublin, where she completed her PhD.

John Gill is RNIB's Chief Scientist, a member of the Foresight Taskforce on Applications of Communication and Information Technology to the Ageing Population, Information Manager for Accessibility for All to Services and Terminals for Next Generation Networks, and an associate member of the Intelligent Transport Society.

Diane Gyi MSc PhD DipCOT MErgS is a Senior Lecturer in the Department of Human Sciences at LU and has over 10 years experience of research in the areas of health, disability and the design of equipment and tasks. Prior to developing her career in design ergonomics, Diane worked as an Occupational Therapist. She is a member of the Steering Committee for the EPSRC EQUAL Network and a member of the EPSRC College.

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Rana Imam BE MSc is a Research Fellow in the CTS at UCL, as well as a part-time PhD student in Transport Studies at UCL. Her qualifications include a Bachelor in Civil Engineering and an MSc in Transport Studies. She is a member of the Accessibility Research Group which focuses on basic and applied research into all aspects of accessibility to transport systems. Prior to working on the AUNT SUE project, Rana worked on the COCCINELLA project with the National Trust which investigated the impacts of wheelchair access on historic houses and was funded by the Leverhulme Trust.

Andy Kemp, heads the Accessible Transport Service at London Borough of Camden, where social inclusion in transport is a key policy area requiring practical, well-researched solutions. He has previously worked with Nick Tyler on accessibility and mobility issues and with Space Syntax, UCL on pedestrian accessibility in Clear Zones.

Roger Mackett, BA MSc PhD FIHT FCILT (**Co-Investigator**) is Professor of Transport Studies in the Department of Civil and Environmental Engineering at UCL. His research interests include analysis of the impact of policy, the inter-relationship between transport, urban activities and the environment, and public transport planning and operations.

Russel Marshall, MEng PhD MIEE is a lecturer in the Department of Design and Technology at LU. He has over 11 years of research experience in the design area including product development, human modelling and user-centred design. He is the lead developer of the HADRIAN system and is also involved in the ongoing development of the SAMMIE human modelling system.

Trevor Mason, BSc MCILT is a Principal Engineer for Transport Planning and Monitoring at Hertfordshire County Council. He has 17 years experience of working on strategic transport policy in local government. His current responsibilities include developing and monitoring delivery of the Local Transport Plan, including accessibility planning, transport data and modelling and school travel plans.

J. Mark Porter BSc PhD EurErg FErgS (**Co-Investigator**) is Professor of Design Ergonomics in the Department of Design and Technology. His Design Ergonomics Research Group specialises in inclusive design, vehicle ergonomics, human modelling CAD, hand performance and tool design, design and disability, and user centred design. He is MD of SAMMIE CAD Ltd, an Ergonomics Society Registered Consultancy, and he has managed over 250 national and international design and research projects. He is currently a Principal Investigator on two EPSRC grants and has experience of running other grants funded by EPSRC, AHRB, Department of Health/HSE and Brite Euram (EC).

Juliet Solomon (LondonMet, TRaC) is known on issues concerned with users, accessibility, young people, local transport policy, rural and community transport, and co-ordinated the pathbreaking study, *Social Exclusion and the Provision & Availability of Public Transport* for the DETR (2000). Her recent work includes accessibility of further education, and evaluation of the effects of transport measures and policies in 'New Deal' areas. She recently advised the Mobility and Inclusion Unit of the Department for Transport on research concerning Children & Young People's Transport and is currently directing work on benchmarking for the AUNT-SUE project, and (with Paul Beecham & Associates) is involved in a review of Travel Training schemes for the Mobility and Inclusion Unit at the DfT.

Ruth Sims BSc MSc PhD is a Research Associate in the Department of Design and Technology. Her qualifications include a BSc in Psychology, an MSc in Ergonomics, and a PhD in the area of 'Design for All'. Ruth has previously worked on an ESRC-funded project under the EQUAL initiative, and was also part of the SUE consortium for the pilot study that led to the current AUNT-SUE (Accessibility and User Needs in Transport) project.

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Stephen Shaw BA PGD TP MRTPI FCILT FRGS (**Co-Investigator**) is Director of the Transport Research and Consultancy centre (TRaC) at the Cities Institute, London Metropolitan University. Steve has published a wide range of books and articles; current topics include tourism and the built heritage of immigrant communities, urban landscapes and cultural diversity in 'world cities.' His current work includes *Sustainable Cities - Policy and Practice* (Canadian Studies Foundation/ High Commission, 2005-7); *Heritage Protection – Local Delivery* (English Heritage/DCMS 2005); and *Inclusive and Sustainable Infrastructure for Tourism and Urban Regeneration* (EPSRC, 2005-7).

Helena Titheridge BSc MSc PhD is a lecturer in the Centre for Transport Studies at UCL. She has over 8 years of research experience in the areas of land use, transport and GIS and has been involved in several research projects related to measuring accessibility for different socially disadvantaged groups.

Nick Tyler MSc PhD ARCM (**Co-Investigator**) is the Chadwick Professor of Civil Engineering and Head of the Department of Civil and Environmental Engineering at UCL. He has a track record of research that brings conceptual innovations and their implementations together in an environment in which implications, effects and outcomes can be tested.

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