

Scientific Report for Short Term Scientific Mission, COST C23

Yan Wang, Welsh School of Architecture, Cardiff University (UK)

Ref. code: COST-STSM-C23-04965

Period: 17th – 25th June 2009

Host: Paulo Pinho, Research Centre for Territory, Transports and Environment, University of Oporto, Porto (PT)

Purpose of the visit

The purpose of the visit was to learn and discuss how research can assist policy-making in delivering urban sustainability and low carbon development. I planned to spend five working days on literature review, having small discussion meetings with researchers in CITTA, and doing site visits as well.

Before this trip, my knowledge about CITTA was largely through papers, its website and others' introduction, and thereby I had expected to use this visit to gain firsthand knowledge of CITTA and the research they are conducting, when establishing personal contact and seeking opportunity for further collaboration.

Description of the work carried out

1. Meeting with Prof. Paulo Pinho

I met Prof. Pinho at the beginning of the visit. Our discussion was general and concerning urban planning and the academic research in the area. We discussed the key objectives, apart from the traditional land use notion, of the urban planning: sustainability or carbon reduction? Prof Pinho introduced the urban planning experience in Lisbon and Porto, including the EXPO 98 urban development project in Lisbon.

2. Meetings with Dr. Vitor Oliveira

Our discussion was mainly concerning “evaluation in planning”. Evaluation has become increasingly important topic for the planning research, and is regarded as an essential part of a planning process which monitors the process and feeds information back to the process/system so the planning objectives / processes can be refined / redesigned to response to the reality. Nevertheless, evaluation is still a complicated and controversial issue to address, and key elements of planning evaluation need to be agreed, including the evaluation criteria, method(s), process, the objects of planning evaluation, performance criteria and their assessment methods etc.. Our discussion has also lightly touched the topic of performance-based planning and what evaluation means for the performance-based planning.

3. Meetings with Dr. Fabrizio Giulietti and Dr. Cecilia Silva

I met them in two separate meetings, but the main topic was both about “accessibility / mobility in planning”, although from different aspects. Dr. Fabrizio Giulietti is a sociologist. Our discussion was mainly based on a project he is currently involved - “Mobility Patterns and Urban Structures (MOPUS)”. In this project, urban mobility is addressed from two different aspects: i) how land use

pattern and transport infrastructure affect the residents' mobility, and ii) within a geographic area, how residents behave and move around, and the complex relationships between urban land use and travel is also further explored, including a comprehensive analysis of socioeconomic as well as of attitudinal characteristics of travelers. We discussed the research methods including the questionnaire design, the survey and its result analysis, the likely prospect when comparing and merging the two sets of analysis results (structural/behavioural), and the implication for formulating policy for sustainable urban mobility.

The discussion with Dr. Cecilia Silva was concerning a policy design support tool – Structure Accessibility Layer (SAL) which she developed based on the model of GIS. The SAL tool integrates land use and transport policies based on the concept of structural accessibility. It is able to demonstrate the extent to which the land use and transport system enable individuals to reach different types of (activities) opportunities, and reflects the spatial distribution of opportunities as well as availability and service level of different transport modes. In one way, the tool is able to present the measurement of the accessibility in a quantitative form which is rather desirable for policy-making. Potentially, this tool can be a useful tool for urban planning policy making, if it can overcome some operational obstacles, which include the availability of data required for analysis, and then convincing policy-makers of its reliability. SAL is currently applied in the MOPUS project and used to analyse the accessibility in the Copenhagen metropolitan area. It will be really interesting to see how the analysis result will turn out.

4. Meeting with Dr Sara Santos Cruz

The meeting with Dr. Cruz was concerning an ongoing EU FP7 project “Sustainable Urban Metabolism for Europe (SUME)”. The SUME project adopts a concept of urban metabolism that helps to understand and analyse the way how (urban) societies use resources of the environmental system such as energy and land for maintaining and reproducing themselves. Based on the urban metabolism approach, the flows of resources, energy and waste maintaining the urban system are explored. The project analyses the impacts of the existing urban forms *i.e.* the spatial qualities of built urban systems on resource use and estimates the future potential to transform urban building and spatial structures in order to significantly reduce resource and energy consumption. The key aspect of this project is to closely associate the resources management with the spatial urban form that has not been fully explored at the existing research. One of the project result is to develop impact assessment methods for existing structures and models of future urban forms which are application-oriented and can be used by urban planners and policy makers to metabolically improve their development strategies. The project is at the first year of running, and I intended to closely follow the project approach and results with the assistance from Dr. Cruz.

5. Site visit

My original plan was to visit PORTO VIVO – SOCIEDADE DE REABILITAÇÃO URBANA (SRU) and WWF “One Planet Community” project in Mata de Sesimbra. Due to different reasons (the one planet community project is still under development while SRU did not response to my request for an

interview), instead I visited the EXPO 98 urban development project, Parque das Nações (“National Park” in English). As Pinho (2008)¹ introduced, this development illustrates the nature of urban planning, as a complex and often misinterpreted professional activity and research field. This development was set to lead a strong, economic competitive and environmentally sustainable new urban centrality which was able to generate a wave of regeneration in its region that has been traditionally problematic. When visiting the site, by the first impression it presented as a lively and multi-purposed built urban development with commercial office, residential housing, leisure and relaxation facilities with lot of public green/blue space. It was attracting visitors from both local and abroad. Nevertheless, it was also obvious that the site was isolated from the rest of region, and there is no obvious connection in term of physical formation or architectural /cultural identity etc. between the development and the rest of region. The architectural style was contemporary and concrete which separates it from the vernacular architecture. In all, the development has promoted researchers to question if sustainability should be a key indicator for planning urban development because of its all-embracing nature which does not provide an effective operative framework for urban planning. That again reflects the point raised during my discussion with Prof. Pinho.

Description of the main results obtained

As mentioned above, this visit was the first time for me to have direct contact with the researchers in CITTA. Therefore, the most obvious result was that the visit enabled us, from both sides, to develop good understanding of each other’s research area, interests and capacity, and to establish the links for future communication and possible collaboration.

The researches in CITTA show strong inclination to closely link various urban studies with spatial urban form that I think it is important, and demonstrate the use of different approaches and multi-disciplinary nature in the area of urban planning and policy-making, which are valuable for and benefit my research.

Meanwhile, the visit provided an opportunity to learn Portugal as a country, its culture and vernacular architecture etc.. For example, it was first time that I realised that the ceramic tile could be such an useful and beautiful façade material if it is used artistically and innovatively, which could be useful for my works in China.

Future collaboration with host institution (if applicable)

It is still too early to discuss the future collaboration, but there is definitely intention where the opportunity presents itself.

Projected publications/articles resulting or to result from the STSM (if applicable): N/A

¹ Pinho P., 2008, The difficult path to sustainability through strategic urban projects, *From Vision to Realisation*