



Wednesday, 14th November 2012 4pm, Mill Lane Lecture Room 1

Predicting health and wealth performance within cities using network models

Abstract:

There is a growing interest in network models of cities as tools both for urban analysis and prescriptive design. Cardiff University's Institute for Sustainable Places is one of four groups around the world to have developed software to analyse accessibility by a mix of geometric and topological measures at variable spatial scales. sDNA (spatial Domain Network Analysis) is an advanced tool based on ideas first implemented in Space Syntax, which measures the global and local systemic accessibility of nodes or links in an urban grid. In this talk, Professor Webster will briefly describe the method and then, using research data, demonstrate its utility in explaining and predicting (a) land values and (b) health outcomes. It turns out that the complex information contained within a simple network model of a city's street grid can be used to predict land values with a high degree of accuracy. Every urban scholar knows that accessible locations are generally more valuable; but it is less easy to say which accessible parts of the city are likely to yield net positive urban externalities and which are likely to yield net negative externalities. sDNA, Space Syntax and other such models use urban configuration information alone do this as well as offering many other insights and predictions, such as where housing market boundaries are likely to fall. If street connectivity metrics can predict land value, which is a derived demand (leaving aside speculation, land is valued ultimately by what use can be made of it), then they can also predict the spatial distribution of other phenomenon of interest. Professor Webster reports on an epidemiological study that seeks to explain in the finest detail ever attempted, the correlation between built environment design/configuration and individual health outcomes. Holding constant a comprehensive set of personal health, social, environmental and built environmental variables, a location's 'urbanity' (a particular type of accessibility), land use mix and topography all have a significant correlation with (hypothesised impact on) Body Mass Index (a measure of obesity) and mental health. Urban design, it appears, can be scientifically shown to influence both private wealth (land values) and public health (the distribution of individual morbidity outcomes)

Speaker:

Professor Chris Webster

Biography:

Chris Webster is Professor of Urban Planning, and Head of the School of Planning and Geography at Cardiff University where he has been teaching and researching since 1984. Before taking up a university post he worked as an urban planner in London and as an economic modeller in a development bank in Bangkok. He is often regarded as an economist because of his style of analysis, but most of his economics has, in fact, been learnt on the job. He is committed to interdisciplinary research, believing that triangulation across paradigms and methods leads to greater insight than is often found in mono-disciplinary scholarship. Since 1999 he has co-organised a multi-disciplinary network investigating the global spread of gated communities and private urban governance. He is probably one of the only professors anywhere to be an editor of both a research journal (co-editor of *Environment and Planning B*) and a teaching journal (founding editor of *CEBE Transactions*). His commitment to excellence in teaching and to maintaining a healthy teaching-research-practice link within universities led him to set up the Centre for Education in the Built Environment, which he has directed from 2000 to 2012.