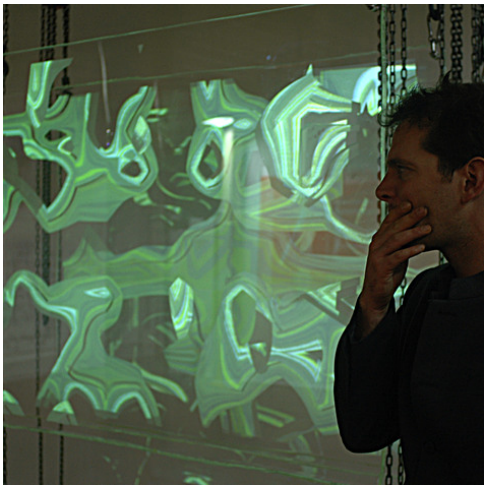
David Cotterrell: Model Junction No1

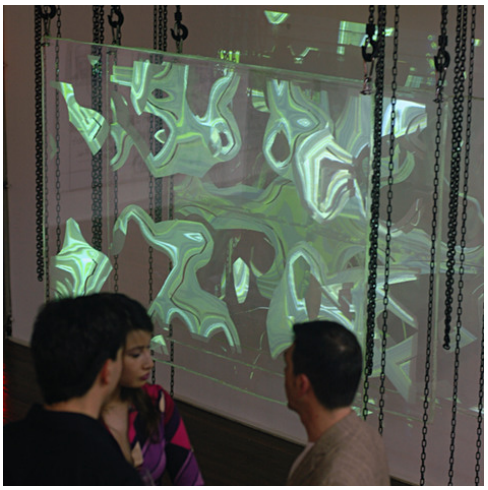
Date: 13th May 2006
Dimensions(m):2.0, 1.8, 1.2
Materials:
Perspex, Vinyl, Data Projector and Custom Software

A generative installation using traffic simulation technologies

Model Junction No.1 was created as a prototype abstraction of an intersection created through an unswerving adherence to rules and assumptions of traffic movement and development. The project was realised through a generative installation exploring the limitations of MicroSimulation as analysis of human behaviour. MicroSimulation is used worldwide by planners, to test the design of transport infrastructure. This project developed a simple closed system, which reversed the role of MicroSimulation. A MicroSimulation system was positioned as the author of virtual infrastructure mandated to develop unchecked in response to predictions of driver behaviour and capacity growth. The evolving schematic landscape was rendered by custom software through the duration of the exhibition via computer etched vinyl contours and algorithmic digital projection. MicroSimulation is the process of attempting to model complex systems and scenarios through the behaviour of individual behavioural entities. These kinds of models have been used to investigate a wide range of scenarios including cellular structures, financial trends or pedestrian movement. While working in Shanghai and having the opportunit to visit Beijing and Chongqing, I became curious as to the influence of these systems on the shifting landscape of urban China. Through inquiries with the Shanghai planning authorities and their advisory bodies it became clear that systems developed in Barcelona and Leeds had formed the basis for the computer testing and simulation systems in use. The interesting aspect of this international information sharing is that MicroSimulation is dependent on assumptions of human behaviour. Within traffic systems common parameters are 'Gap tolerance', 'Lane discipline' and 'Aggression'. The parameters and tendencies for the individual component objects to demonstrate these characteristics are set through observational analysis of local behaviour. It has been proved that systems calibrated and designed to predict congestion in the UK fail to prove accurate in Italy. Additionally systems calibrated for London may offer misleading information on the success of infrastructure in Glasgow. In China the inherent risks of MicroSimulation are illustrated. Road systems are being designed in haste to reflect increased demand, yet with car-ownership recently assessed to be an average 3 vehicles per hundred households (2003), the observational data required to calibrate systems is not available. Simulating future behaviour and volume is courageous and problematic, yet it is being used as a component for the justification for the complete redesign of major cities and to support assumptions of future economic development, social trends and environmental impact. Current MicroSimulation generally deals with snapshot views, which illustrate the impact of highways and structures on existing circulation. Simulation, which attempts to reflect parallel research into the relationship between increasing capacity and increased demand for car-ownership is rarely employed. The result is that road-design, is frequently responding to a static model rather than a shifting landscape and has been proven to be a disaster. If transport infrastructure acts as its own incentive, the only checks on growth are legislative and social. In my work I allow a system to develop unchecked and I allow an algorithmically derived virtual infrastructure to progress. It is limited only by the restrictions of the vocabulary of the road-building software. The seductive aerial geometry of road systems would progressively trace the logical conclusion of the systems employed to offer myopic temporary solutions. This installation is a prototype attempt to perversely test to destruction the apparently rational and authoritative computer aided reassurance of simulation.



Thomas Chaveriat & Model Junction No1 Credit: David Cotterrell (2006)



Installed at Island6 Credit: David Cotterrell (2006)

Projection on perspex Credit: David Cotterrell (2006)