Ravensbourne’s Competition for “GATEway 2030: The Future with Driverless Cars” Shows Design Excellence

As part of an exciting collaboration between Ravensbourne, Transport Research Laboratory (TRL) and Royal Borough of Greenwich, young designers showcase their visions of a re-imagined Greenwich Peninsula with the introduction of driverless cars. Ravensbourne continue in a longstanding reputation of nurturing design talent by inviting students to take inspiration from the TRL-led GATEway project to propose their own model of driverless vehicle. GATEway (Greenwich Automated Transport Environment) is an £8 million funded research project based in Greenwich with the aim of helping industry and policymakers to understand the implications of automated vehicles in the urban environment.

The winning project of GATEway 2030, Transmission Fluid by Jay Jordan

Ravensbourne’s competition, GATEway 2030: The Future with Driverless Cars, underlines a distinct move towards considerations of how autonomous transport will affect our day-to-day living, offering a chance to discuss how social space, as much as personal space, should inform designs for improved transportation. Prof Nick Reed, Academy Director at TRL, describes the GATEway project as an opportunity for “testing how automated vehicles could improve mobility in urban centres around the world”. Of the competition, Reed says, “The work of the Ravensbourne students in response to the GATEway 2030 project was incredibly impressive, showing fantastic vision and innovative thinking using a range of media, including posters, videos and 3D printed designs, to show how transport needs might be met by automated vehicles in Greenwich in 2030. It will be fascinating to see how developments in the real world compare to their wonderful concepts.”
Surrounded by the bustle of innovation and industry, and harnessing the design possibilities made available by Ravensbourne’s state-of-the-art facilities, all of the students presented projects of an exceptionally high creative standard, but it was Transmission Fluid, by Jay Jordan, which really caught the imagination of the judging panel that included representatives from both the consortium and Ravensbourne. Jordan’s winning presentation proposes a driverless vehicle designed for multiple passengers. Inspired by the “School on Wheels” concept, a large, flexible architecture would respond to passengers’ preferences, with each segment taking on attributes of activity-led spaces; an office, a classroom, a playground, a gym - each space afforded a specific but easily changeable purpose. This is an ambitious proposal for the use of time in motion, where the getting from A to B could be more efficiently used to forge relationships, improve skills, increase knowledge, through work or play.

**Dr Brigitta Zics**, the project leader of GATEway 2030 competition, and Deputy Head at Postgraduate Department explains that: “Students used design fiction methods to envision how cities, and particularly the Greenwich Peninsula, could be transformed by the arrival of autonomous cars. Their designs integrate emerging and speculative technologies of smart materials, kinetic engineering and immersive interfaces. It was important to make students think about the human factors of a journey and design for a more productive, stimulating or relaxing experience, for example. The results are highly innovative and often visionary, with insights that can inspire future solutions of the automobile industry.”
Samuel Lewis’ Shop to Go echoes another landmark for Greenwich’s tech industry; the first of its kind, a trial of self-driving delivery robots, created by Starship Technologies, and which took place earlier this year. Lewis’ project identifies a similar need for driverless deliveries but proposes a much more sophisticated vehicle, one capable of transporting heavier loads for longer distances. Finlay Johnson’s, AsOrb, was awarded third prize by the judging panel. Making excellent use of 3D printing in his presentation of the project, AsOrb is lightweight and compact in form, aiming to reduce environmental impact by allowing only a fixed number of driverless vehicles on the road. A shared transport system similar to that of car
pooling, the interiors of the vehicle can be changed in between each ride to meet the desire for personalised space.

_Finlay Johnson’s AstOrb_
Dr Mike Short, Vice President, Telefonica Europe (a GATEway consortium partner) has been instrumental in the facilitation of the competition. He shared his thoughts on the project outcomes in the following: “It was great to see Ravensbourne students rising to the design challenge of driverless cars, but add real creativity to how we think about urban planning and real human factors. With limited time/resources they came up with really innovative ideas and concepts that we had not considered from a GATEway driverless car trial perspective and will really help with outreach for broader acceptance of driverless cars.”

D.D.E.S by Ioannis Vasileiou and Louis Stocks

Driverless Domicile Entertainment System (D.D.E.S) by Ioannis Vasileiou and Louis Stocks, is perhaps the model most would recognise as a ‘car’, at least as we understand them now, but with its 360 degree wheels (“mecanum wheel”) and polymorphic shell, it has the most futuristically luxurious appearance. The emphasis is on smooth navigation on the road and around buildings, and a keenness to establish an independent sense of comfort, entertainment and privacy whilst in motion that isn’t currently available to passengers. Similarly, at the touch of a button, a seamless transition from one entertainment environment to another can be made in Hinto, as proposed by Adriane Jimenez Escarfullery. Hinto cars would be stored, and lifted to ground-level from the side of skyscrapers, transporting users directly from their living rooms, entertained with screened performances within the vehicle, until they reach their final destination, such as the O2 stadium for a live entertainment experience.
Live Happy, devised by Leonardo Carmo Silva and Hasan Jamshed, scooped the second prize, impressing judges with their human-centric position. Beyond the possibility of increased safety whilst on the road, Live Happy would ensure that proposed models are inclusive and accessible for all. From airbags fitted on both the interior and the exterior, to the use of health monitoring data and the adjustable nature of the vehicle’s interior space, the variable nature of people’s mobility and medical needs were at the forefront of this design.

What shines through in these presentations is a sensitivity to a range of ethical questions that will inevitably be raised. If the concept of driverless cars is no longer a distant or abstract one, it’s progression will need to be rooted in solutions to the challenges of modern urban living. Subsequent markets for driverless cars will of course generate business growth as they respond to the demand of the consumer but what is striking about each of these projects is that they articulate such hopeful ideals towards a better society, surely one of the characteristics of great design. Layton Reid, Associate Dean of the Department of Architecture, has been advising architecture and interior design students on the GATEway 2030 project and, alongside colleagues, selected the six finalist projects. He asked students to think about the following questions: “The driverless car is already a reality. The real question is what do you do when you don’t have to drive? Journey times will become more stable and predictable, rather than faster. What happens to your life cycle when you have more time for you? Do we use it to become stronger, healthier, and more intelligent ourselves? Do cars lose their current character and become something beyond mere...
transport? Instead, they might be a facility in motion, to fulfill desires, to exchange ideas and to dream.”

Live Happy by Leonardo Carmo Silva and Hasan Jamshed

As growth of the Smart Cities global market emphasises a need to understand how new technologies will shape our future, London has been busy looking ahead to those that have the greatest potential to revolutionise public space, transport and services. In 2015, The Royal Borough of Greenwich launched its ‘Smart City Strategy’, setting out plans for the implementation of ‘smarter’ solutions to the challenges of urban living, and of which transport systems are a central part. It’s no coincidence that this collaborative initiative has evolved in the heartland of London areas currently undergoing significant redevelopment. Greenwich Peninsula, Charlton Riverside and Thamesmead are all local communities predicted to benefit greatly from the opportunities associated with ‘smart’ technologies.
With industry, academia and local government working together, the future of driverless cars might not only be directed towards convenience and time-management, but go some way to address civic and environmental concerns - always, as ever, connected to spatialised experience. Idrees Rasouli, course leader for BA (Hons) Interior Design Environment Architectures was the academic lead on the project and supervised the students’ efforts, and speculates on what may become the defining features of driverless cars but why, in particular, it is important to look at them through the eyes of an architect: "I believe, driverless cars are going to have a significant impact on our cities - especially on our immediate urban environments. I think that it would be positive but disruptive. It will reshape our understanding of how we perceive cars aesthetically and use them practically as our means of transport on a daily basis, suggesting that the driverless car will be shared, smaller, lighter, convenient, flexible with multipurpose usage/programme. There will be less of them on the roads - resulting in significant decrease in car ownership.

TRL’s recently established UK Smart Mobility Lab in Greenwich is one of only a few to promote the study, development and integration of connected and automated vehicles in this context. Ravensbourne is committed to enriching its industry relationships and bringing creative excellence to industry sectors that can benefit from innovative practice of emerging designers. In turn this fulfils the institutional strategic aim to facilitate best practice in practice-based learning for students. GATEway 2030 is a good example of this, where the creative outcomes strongly complement the research delivered by the GATEway consortium. Since this ground-breaking research is happening right on Ravensbourne’s doorstep, bringing self-driving vehicles to our city far sooner than we might imagine, it will provide Ravensbourne students with ongoing opportunities and further collaborations to work with some of the most transformative innovations in technological history.