

DEPARTMENT OF CIVIL, ENVIRONMENTAL  
& GEOMATIC ENGINEERING

CENTRE FOR TRANSPORT STUDIES



# UCL

# PEARL

Person-Environment-Activity  
Research Laboratory



# EDUCATION

# The What, Why & How of PEARL

## What is PEARL?

PEARL (Person-Environment-Activity Research Laboratory) is a unique facility to explore the ways in which people interact with their environment. It is a massive space – around 4,000m<sup>2</sup> and 10m high – in which we can create life-sized environments – a railway station, high street, town square – under controlled conditions, so that we can examine how people interact with the environment and other people in these types of places. We can change the profile, type and material of the floor, simulate lighting of any colour and intensity, create sound from the tiniest bird song to the most massive explosion, include other senses, such as smell, and much more.

## Why PEARL?

Much of our understanding about how cities work is based on a lot of assumptions about how people respond to, use and act in the environment. Many of these assumptions are based on experience over many years and are valid in general, but often the models we use just don't represent what actually happens. PEARL enables us to study in detail how people actually interact with the environment and each other, by enabling us to test detailed differences in the environment – such as space, colour, lighting, sound – under controlled conditions, so that we can obtain rich data for use in the design of real urban systems.

## How can we use PEARL?

PEARL allows the public, researchers, regulators, implementers and others to see, hear, smell, feel and try out for themselves what operation and design ideas would be like, so cutting the cost of trying out new ideas by testing them in the laboratory before trialling them for real on-street. We can help designers work out how people will respond to their designs, for example, of trains. Sometimes we need to instrument people with sophisticated systems, such as eye trackers, accelerometers and motion detection systems, so that we can track how they move around the environment.

# Types of Educational Initiatives

## Transforming the way we learn

PEARL is instrumental in the execution of existing Undergraduate and Masters programmes, including UCLs radical MEng/BEng in Civil Engineering and our joint MSc in Transport with Imperial College London. Our focus is on developing the ability to solve urban design related scenarios - major problem-based challenges - through hands-on group work and design. With the ability to simulate urban scenarios at real-scale, we allow students to get a real feel for what they are dealing with, better prepared for designing the real world.

## Doctoral research programmes

In addition to doctoral programmes directly related to transport and engineering, PEARL also supports the research of the Leverhulme Trust-funded Ecological Brain Doctoral Training Programme, concerned with the interactions between people and their environments.



Figure 1. Tube train experiment

## Innovative masters courses

We also have two new Masters programmes in the works:

### **MASc: Decision-making**

Focussed on bringing multiple strands together in order to develop solutions to complex challenges. Involving world-renowned decision-makers from a number of fields.

### **MSc: City curation**

Advancing the concept of city planning, a 'city curator' looks after a city, learns about its inhabitants as well as its history, seeks to develop a narrative to take the people forward towards the future and then has the capacity to design the city that will make that story real.

# PEARLs Educational Impact

## A community hub

PEARL is the ideal meeting place for people of all ages to learn about their built environment from hands-on experience. We welcome all members of the community - from local residents to businesses - to come and see how our research is relevant to your daily life.

## Connecting with local schools

In particular, we believe in investing in the future of local schools, whether your students are curious to see what we do; or your staff would like us to host interactive activities as part of their normal teaching curriculum. Hands-on in our approach, we offer the opportunity to try out experiments and learn through “doing”.

## Internships and Apprenticeships

Committed to providing opportunities for young people to grow their skills, we support work experience, internships and apprenticeships in collaboration with local colleges, schools and relevant industries.

## Continuing Professional Development

In order to ensure that our research is translated to where it is needed, we provide CPD education and training to relevant practitioners.

## Innovative knowledge dissemination

With the ability to simulate a variety of environmental conditions and accommodate up to 600 people, PEARL is excited to be able to host innovative conferences and immersive exhibitions which allow you to experience concepts rather than simply talk or hear about them.

## Learning from you!

Most importantly, our students and staff are committed to understanding your needs so that we can better design the environment to suit those needs. Get in touch so that we can also learn from you!