

Parametric Places 2017: Small and Dynamic Atmospheric Data in Urban Design

Course Number, Time and Location: ARCH 4/523, Fall 2017: T + TH, 12:00- 3:50pm, LA 279

Instructor: Philip Speranza, speranza@uoregon.edu

How does our **understanding** of the environment today interact with data? How do we **design** with data? At what scale of space and time do we include ecology and the **atmosphere**?

The method taught in this class will investigate the measurement of small-scale and time-based geospatial understandings using Rhino Grasshopper and Arduino microprocessor based sensor prototypes. Students will analyze and design for ecological phenomena that vary within the space of a project site. Micro-climatic differences will be studied simultaneously across small scaled urban and non-urban spaces. This data will be compared to baseline conditions via EPW weather database files using Grasshopper plugin Ladybug, often situated at nearby airports weather stations.

Contextual spatial analysis of ecological conditions including water, air, heat/light, wind, sound, humidity and other natural and social phenomena will be measured across and within the scales of a city, a neighborhood and a space such as a street, square or private parcel.

Urban ecological knowledge will be based in urban theory from Barcelona Urban ecology including new three-by-three block pedestrianized areas called *Superilles*, or super islands, designed as refuges of healthy living within urban problems of congestion and air pollution. Research about this topic has recently been published by the instructor in the *Journal of Urbanism* and elsewhere. Comparative locations of data acquisition within Eugene will include the downtown Hult Plaza, Spencer Butte, Skinner Butte and an east facing hillside near Hendricks Park.

Architecture, landscape architecture, urban design, sociology, computer science and other disciplinary contributions will be made.

Students will test the application of this data acquisition based knowledge to design work.

*Basic knowledge of Rhino Grasshopper is required. Readings, media exercises and urban design methods will occur in lecture, workshop and tutorial formats. <http://www.lcabcn2016uo.wordpress.com>, <http://www.lcabcn2017uo.wordpress.com>, <http://parametricplaces14.wordpress.com/>

**You should email the instructor with a description of basic Rhino Grasshopper knowledge via professional or academic work in order to register.