ARCH 402/505
DIGITAL DESIGN BUILD STUDIO
6 Credits

Instructor: Mark D Gross

Course Description: Together we will explore the architecture of the not-too-distant future when it becomes possible to embed communicating microprocessors with sensors and actuators into the built environment. Smart materials, responsive building components, intelligent controls will become part of the architect's palette.

Twentieth century architect Le Corbusier coined the phrase - "house as a machine for living." Paraphrased for the new century this becomes "building as brain". The spaces and places we will inhabit will begin to have significant computational power. Over the past several years we have seen the development of wearable computers. Now researchers are working to develop computers that are literally the size of dust particles. What are the architectural implications of these near-future developments?

The goal of the studio is to examine the emerging technologies for embedded computation including a range of sensors and actuator technologies and microprocessors to explore the capabilities of present-day models of future technologies and to project the inherent architectural possibilities.

This digital design build studio will demand a willingness to explore a range of disciplines architecture of course, but also to dabble in the mechanics, electronics, and software that are part of engineering these new environments. The studio will be a laboratory for building working models of intelligent environments. No previous experience with computer hardware or software is required, though the work will demand a variety of skills beyond those traditionally found in Architecture design studio.

Course Objectives: Challenge participants to think ahead a few years to when embedded computation will be part of the architectural landscape, and to project how these technologies will (positively and negatively) influence architectural design. To learn to design with these new architectural elements.

Course Requirements: Participation, completion of design work.

Course Evaluation: Participation, design work throughout the quarter, final design project.

Required Texts: None requirer

Recommended Readings: See studio web site (http://dds.caup.washington.edu/sp01)