Arch 407/507 Spring 2009
Passive Cooling Workshop, Portland
CRN 36819, 36820
Prof. John S. Reynolds, FAIA, University of Oregon, Eugene
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Saturday April 11 at White Stag Building 152
9 AM to 5 PM
1 Credit Hour, P/N only

This workshop is NOT open to students who took the Building Design: Cooling seminar in Eugene in Fall 2008!

The primary focus of this one day workshop is on the design impacts of various passive cooling strategies. Architecture is a combination of aesthetics, social issues, and technical performance; all will be a part of the discussion.

Calculations are required, and the workshop will be profusely illustrated.

We begin with heat avoidance techniques, including building form and orientation, and shading devices, including landscape. The major heat sinks are the earth, the air, and the sky; each has major implications for building design.

The passive cooling techniques include cross and stack ventilation, night ventilation of thermal mass, evaporative cooling, radiative cooling (including roof ponds, and courtyards), and earth tubes. Examples of each will be critiqued.

We study the relationship between passive cooling and the other passive strategies of daylighting and solar heating, as well as to mechanical cooling equipment.

Participants are expected to have some familiarity with heat gain calculations; those who have completed Arch. 491/591, Environmental Control Systems at the University of Oregon (or equivalent elsewhere) should readily understand the material in this workshop.

Participants should bring a hand calculator, and a copy of Mechanical and Electrical Equipment for Buildings, 10th edition, © 2005, Stein, Reynolds, Grondzik, Kwok; publisher John Wiley and Sons.