HEAT PUMP TO GROUND LOOP
GROUND LOOP EVAPORATIVE FLUID COOLER CHILLER TO GROUND LOOP

HEAT PUMP TO GROUND LOOP + BOILER

GREEN FROM THE GROUND UP
GALLAGHER HALL, UC DAVIS: LEED PLATINUM—PRELIMINARY RESEARCH

BY DAVID GRUPP, WESTERN COOLING EFFICIENCY CENTER | STATE PARTNERSHIP FOR ENERGY EFFICIENT DEMONSTRATIONS

RADIANT HEATING AND COOLING SYSTEM

GALLAGHER HALL TECHNOLOGIES
THE MAIN TECHNOLOGIES THAT HELP MAKE GALLAGHER HALL LEED PLATINUM

1. Radiant Floor and Ceiling Panels
2. Chiller & Heat Pump
3. Ground Loop
4. Evaporative Fluid Cooler
5. Efficient Condensing Boiler

DEDICATED OUTSIDE AIR SYSTEM
6. Air Handler with Indirect Evaporative Cooling
7. Displacement Ventilation
8. Operable Windows

SOLAR MANAGEMENT
10. Photovoltaic Power Inverters
11. Rain Screen/Window Shading
12. Light Well Natural Lighting

VENTILATION SYSTEM
DEDICATED OUTDOOR AIR SYSTEMS VERSUS CONVENTIONAL SYSTEMS

DOAS
The Gallagher DOAS (Dedicated Outdoor Air Systems) uses only the minimum amount of air needed for ventilation and handles much of the conditioning load through the more efficient radiant system.

CONVENTIONAL
Conventional building systems supply all space conditioning with large amounts of forced air even though only a small fraction is fresh, outdoor air.

GALLAGHER BY THE NUMBERS
SITE EUI AND SOURCE EUI

BUILDING SITE ENERGY

RADIANT VS. DOAS CONDITIONING

BUILDING CONDITIONING SOURCE