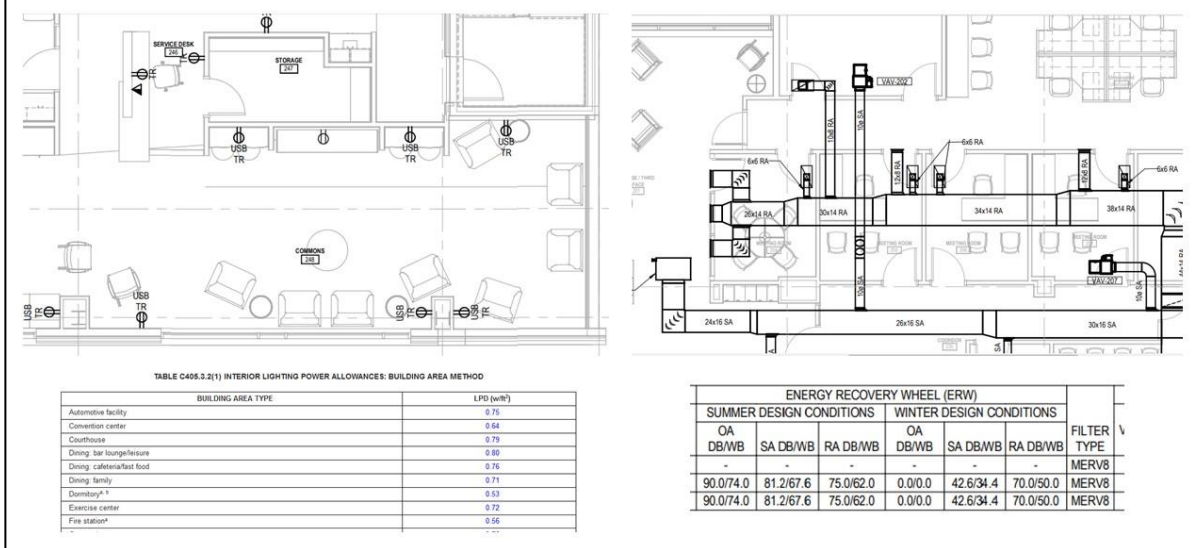


48-432 Design Integration of Active Building Systems



Excerpts from IECC 2021 and Drawings for Pittsburgh's New Homeless Shelter, developed by Action Housing, Inc.

48-432: Environment II: Design Integration of Active Building Systems

Units: 9

Instructor: Nina Baird, PhD

If there is a benefit to recent global and national upheavals, it may be that we are even more keenly aware of the importance of equity, of social justice, and of working towards a more sustainable future. That sustainability must cover the full range of the UN Sustainable Development Goals and your understanding of how you can contribute to that future through design in the built environment is a primary goal of this course. High performance buildings are achieved with designs that effectively integrate passive and active systems. This course focuses on active systems in commercial buildings and strategies for their successful integration with passive components. We also consider building codes that address outside air requirements for ventilation, and energy and water efficiency, and discuss where related US building codes lead or lag in promoting exceptional building performance. Environmental sustainability and buildings within the United States receive the greatest emphasis in our work, but we also consider how performance definitions may change where resources like energy or water are limited or unavailable. The active systems covered include lighting, ventilation, heating/cooling, water distribution and water heating, vertical building transportation, renewable energy production & storage, and active fire protection and smoke control.