

# SUSTAINABLE DESIGN CASE STUDIES

ANALYZING FOUR CASE STUDIES THROUGH THE LENS OF PSYCHOLOGY TO HELP  
CREATE ONE CASE STUDY OF WALLIN MEDICAL BIOSCIENCES BUILDING

By using the Psychology of Sustainable Behavior Tips as a lens to look at various case studies, useful data was found to help inform what makes an effective case study.

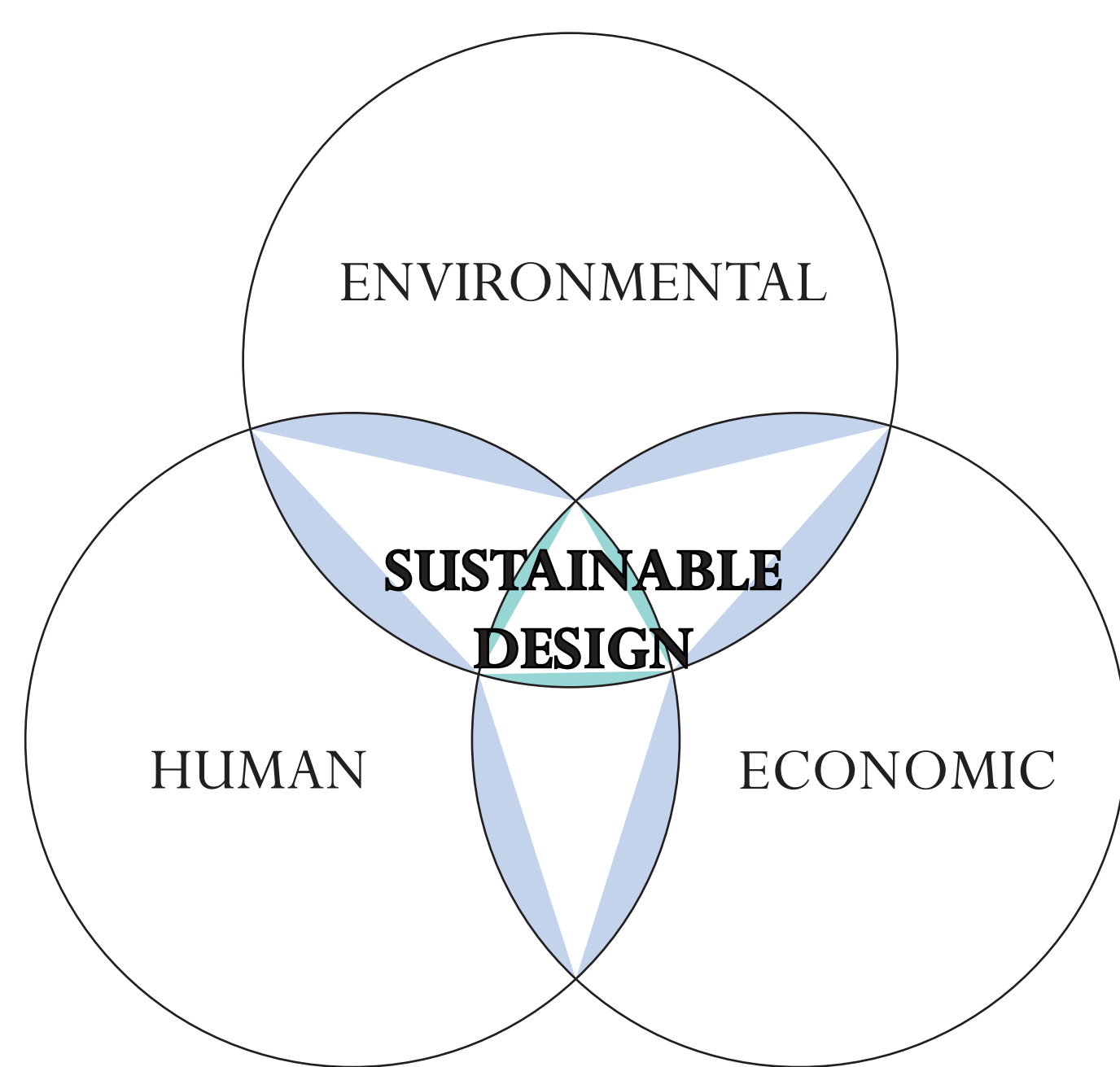
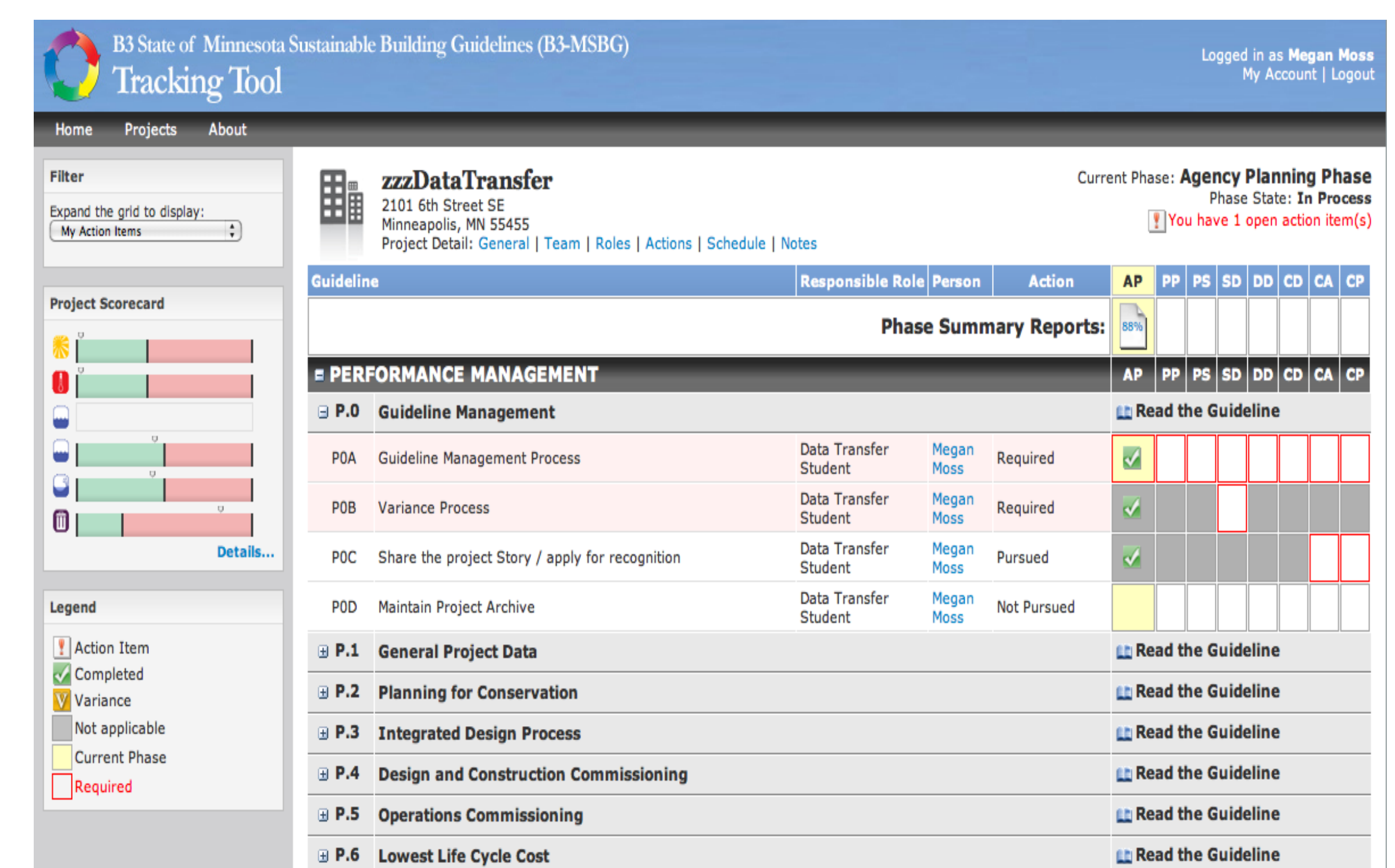
Tips from ***The Psychology of Sustainable Behavior***  
written by Christie Manning, Ph.D. September 2009

1. Make sustainable behavior the social default ➤
2. Emphasize personal relevance ➤
3. Make hidden information visible ➤
4. Foster mindfulness ➤
5. Create opportunities for competence, skills, and knowledge ➤
6. Make change a byproduct of other events ➤
7. Balance urgency with realistic hope ➤

	Baldwin Hills Scenic Overlook *Architectural Record	Al Loehr Veterans & Apartments *U.S. Green Building Council	Clearview Elementary School *Minnesota 2030	Science House *High Performance Building Database
Normative Information is Communicated	✓		✓	✓
Understand Audience's Worldview/Beware of Labels			✓	
Perceptual Barriers Not Blocking Information	✓	✓	✓	✓
Engage Thinking with Attention Grabber or Phrases	✓		✓	✓
Communicate Effective Actions				
Find the Moment of Flux	✓		✓	
Positive Vision Emphasizing Solutions		✓	✓	✓

By transferring the data from the Excel workbook into the Tracking Tool, I was able to become familiar with the biosciences building, and see how the building is incorporating sustainable practices.

Data Transferred from Excel Workbook into the B3-MSBG Tracking Tool designed by the Center for Sustainable Building Research. Screen shot of online Tracking Tool pictured below.



Sustainable design can be reached when human, economic, and environmental needs are all met. The excerpts from a case study to the right gives a brief introduction into the building and then gives one example of how the building incorporates environmental, human, and economic factors into its design.

## Winston and Maxine Wallin Medical Biosciences Building

Location: 2101 6th Street SE  
Minneapolis, Mn 55414

Building Opened December 2009

Gross Square Footage: 118,858 sq ft.

Building Type: Laboratory/Offices

The Medical Biosciences Building is located on the University of Minnesota-Twin Cities Campus and follows the B3-State of Minnesota Sustainable Building guidelines (B3-MSBG). The biosciences building achieved energy savings 45% better than what was required for code, and the calculated carbon footprint is 59 pounds of CO2 emissions per square foot per year.

### Environmental:

- 82% of construction waste diverted from landfill
- Stormwater runoff rate was reduced from 13.15 cfs to 5.48 cfs
- Potable water use for irrigation was reduced by 56.61%

### Human:

- Access to daylighting and views from most occupied spaces
- Adjustable task lighting
- Office and Conference Rooms have a designed maximum noise curve (NC) at NC-35

### Economic:

- Electric consumption has savings of \$2,491,793 (37%) annually beyond
- Flexible lab layouts and furniture improve long term use
- Energy savings beyond code totaled \$304,730 (45%) annually

Architect: Perkins & Will    Owner: University of Minnesota-Twin Cities    Engineer: AEI Affiliated Engineers    Energy Analysis: Weidt Group

If I were to continue this UROP I would analyze more case studies through a different lens than the Psychology of Sustainable Behavior. I would try and look into which case studies have become popular for architects or the public to use and try and find a common denominator. I would want to research what aspects of case studies people are trying to look at (energy, water, etc.) or see how in depth most people would want their case study to be. Lastly, I would look to see if a case study became too general if it then lost its credibility.