THE WEIDT GROUP®

COLLABORATION
ANALYSIS
RESEARCH

30+ YEARS

ENERGY DESIGN℠

U.S. GREEN BUILDING COUNCIL MEMBER

ENERGY STAR PARTNER

TWGI.COM
HIGH PERFORMANCE BUILDINGS

Founded in 1977
Chaska, MN Office

The Weidt Group was founded in 1977 to help the design and construction community understand and account for the environmental impacts of building design and construction.

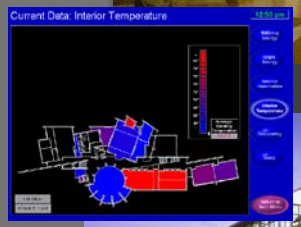
Our work is guided by integrity in all dealings and respect for science and the natural environment.

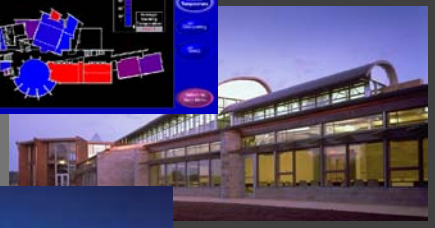
We believe in accountability, working communications and quality services that result in highly satisfied clients and collaborators.

The Weidt Group's second office in Chaska, Minnesota. Adaptive reuse of an existing structure, daylighting with high-bay windows, and solar penetration control using an operable awning—and baseball caps.

30+ Years of Innovation and Measurable Success

The Weidt Group Staff





- Founding Members Building Energy Performance Standards (B.E.P.S)
- Founding Members of ASHRAE 90.1 Committee
- Founding Members of the NFRC
- Participants in DOE's Whole Building Design Roundtable
- Pioneers in software for the A/E Industry
- Members International Program for Measurement and Verification Protocols (IPMVP) for New Construction
- Contributors to the NCARB Sustainable Design monograph
- 26 LEED® Accredited Professionals
- Principle contributors to the Minnesota Sustainable Building Guidelines (B3)

One of the First Commercial Daylighting Projects

Security State Bank, Wells, MN

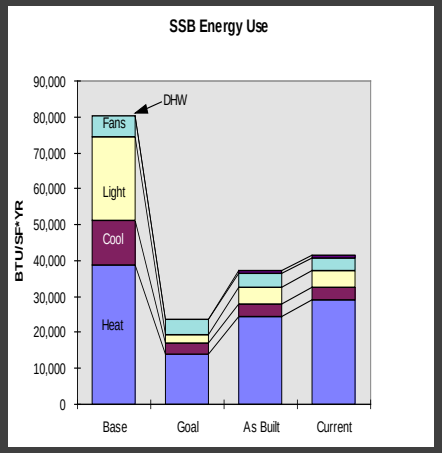
- Designed in 1981- U.S. Department of Energy Passive Solar Commercialization Project
- Daylighting and passive heating and cooling design.
- Three-year monitoring period showed the building consumed less than 35 KBtu/ft2- a 60% energy savings.
- The building's actual energy performance still meets the original energy model—more than 25 years later.

Design Goals

- Passive Daylighting
- Passive Solar Heating
- Natural Cooling
- Lower Utility Bills
- Higher Occupant Comfort

1980 Design Tools

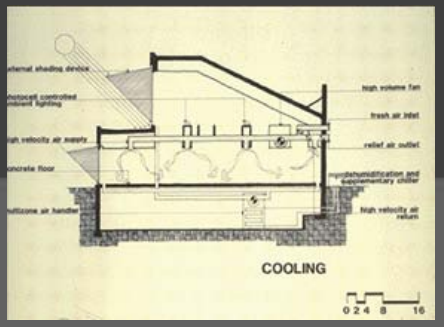
- PEGFIX/PEGFLOAT
- MPSLR
- BUEHRER
- Energy Graphics
- HDD and Bin Weather
- Proprietary Programs
- Physical Models



"Our bank is a joy to work in.
It is quiet, open and full of light."
-Pat Hart, Owner

Daylighting model

As constructed



Hickey Thorstenson Grover Architects
with Emanuelson Podas Engineers

First Commercial Design Assistance Program

Energy Design Assistance Program, Xcel Energy

- Since 1993, the Energy Design Assistance (EDA)-Custom Consulting program from Xcel Energy has enabled collaboration between The Weidt Group and the building design and construction community in Minnesota.
- The Weidt Group currently coordinates the EDA program for Xcel Energy in Minnesota and Colorado.

Currently known as Xcel Energy's Energy Design Program:

- Over 400 buildings have participated, including offices, schools, hospitals, government buildings, multi-family housing, and more
- Savings average about 30% over Minnesota Energy Code
- Paybacks typically range from 1-4 years
- Owner receives incentives from Xcel Energy to reduce the cost of conservation measures
- Sophisticated computer analysis of 50-80 strategies per building
- Owner and Architect/Engineer team make decisions based on hard numbers

InterDistrict Downtown School, Minneapolis
Cuningham Group Architecture, P.A.
with Michaud Cooley Erickson Engineers

MN Departments of Agriculture and Health
Lab Building, St. Paul
Hammel, Green and Abrahamson, Inc.
Architects and Engineers

First Net Zero Energy Building

Science House, Science Museum of Minnesota

- The Weidt Group provided design guidelines, including building and window orientation, ratios of windows relative to wall and floor area, insulation levels, and minimum sloped roof area variables for integrated PV panels.
- Overall, the actual building exceeded the design goals, using on average 22,385 Btu/ft2-yr (0.61 kWh/m2-yr) annually and generating 30,864 Btu/ft2-yr (0.84 kWh/m2-yr) to result in a building that generated more energy than it used from 2005-2006.

Features and Results

- Southern exposure for passive solar heating
- A protected and earth sheltered north exposure
- A “tuned” fenestration design which optimally balances conduction loss, solar gain and daylight
- Daylighting for the entire projects’ floor area
- High quality, bilateral daylighting
- An unconditioned vestibule “tower” with natural ventilation
- Site landscaping to buffer northern winds in the winter and shade the south plaza in summer

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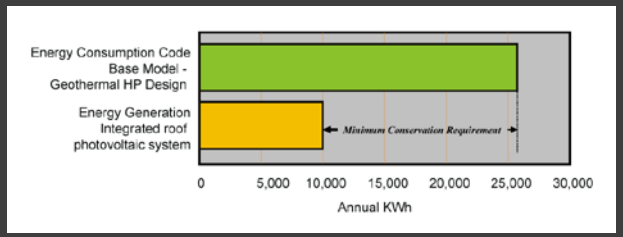
Barbour/LaDouceur Design Group with Martin Mechanical Design, Inc. and Vareberg Engineering



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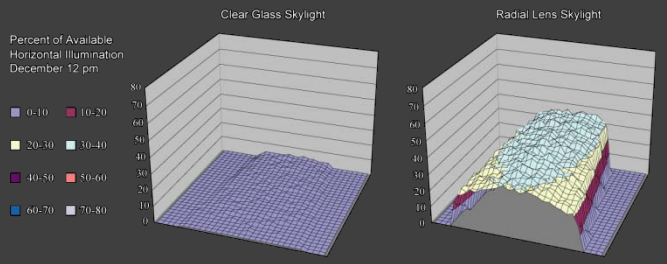
First LEED® Gold Laboratory
Pharmacia Chemistry Lab

- 200,000 sf LEED pilot chemistry lab in Skokie, Illinois
- The Weidt Group provided computerized solar penetration and daylighting analysis, sustainable design recommendations and DOE-2 modeling of alternative strategies to conserve energy

Energy and Atmosphere

- Commissioning
- Optimize Energy Performance
- High performance glazing and daylighting controls
- High efficiency lighting designs with controls
- High efficiency chillers, motors, VSDs & heat recovery
- Measurement and Verification

Pharmacia Radial Lens Analysis



The Weidt Group provided design collaboration and analysis on this innovative daylighting system to even out daily and annual solar distribution in the atrium.

© Steve Hall, Hedrich Blessing

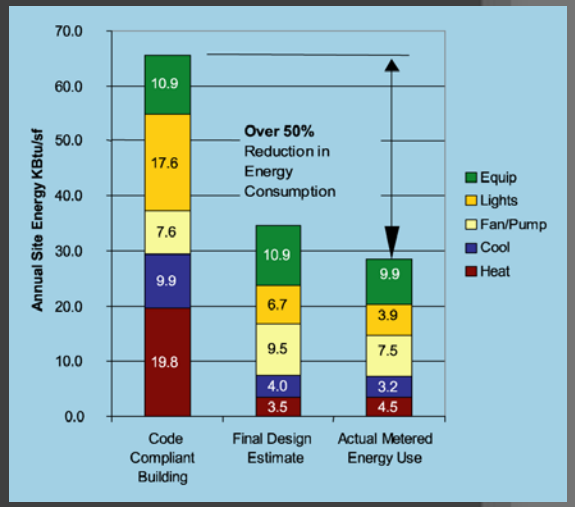
© Steve Hall, Hedrich Blessing

Flad Architects and Engineers

First AIA COTE Top Ten Green Project

IAMU Office & Training Facility

- Designed before the advent of the LEED Rating System
- Iowa Association of Municipal Utilities building helped define and embody high performance sustainable design on a speculative office building budget
- 2002 AIA National Committee on the Environment Top Ten Green Project



Sustainable Design Principals

- Reduce building energy consumption
- Improve the ecology of the site
- Appropriate selection of building materials
- Provide a healthy and productive human environment
- Restore agricultural field to natural prairie
- Reduce storm-water runoff from site to re-existing conditions and process wastes utilizing sanitary wetland technology
- Material selections based on recyclability, reuse, IAQ, embodied energy

Assassi Productions

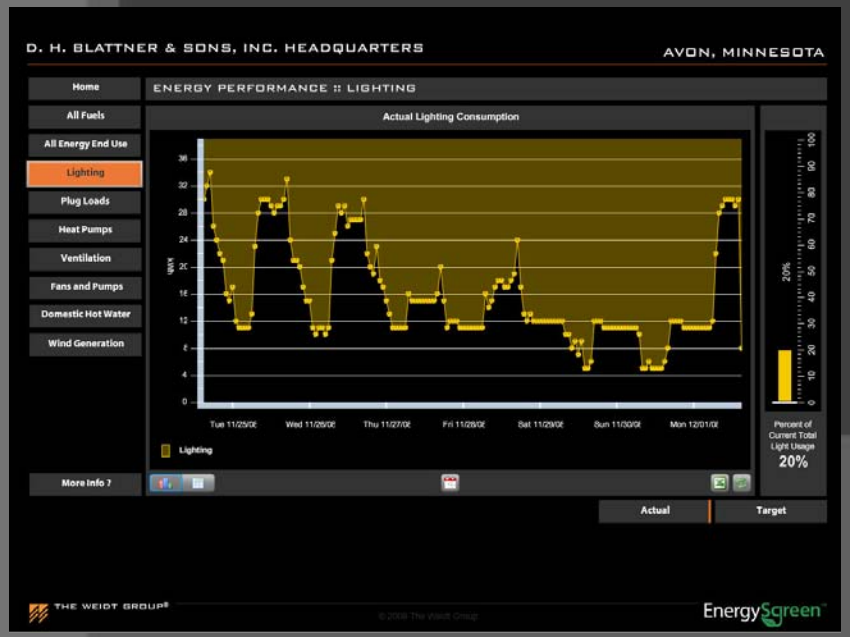
RDG Planning & Design, Architects
with Alvine and Associates, Engineers

Assassi Productions

First Real-time Energy Use Monitoring vs. Model

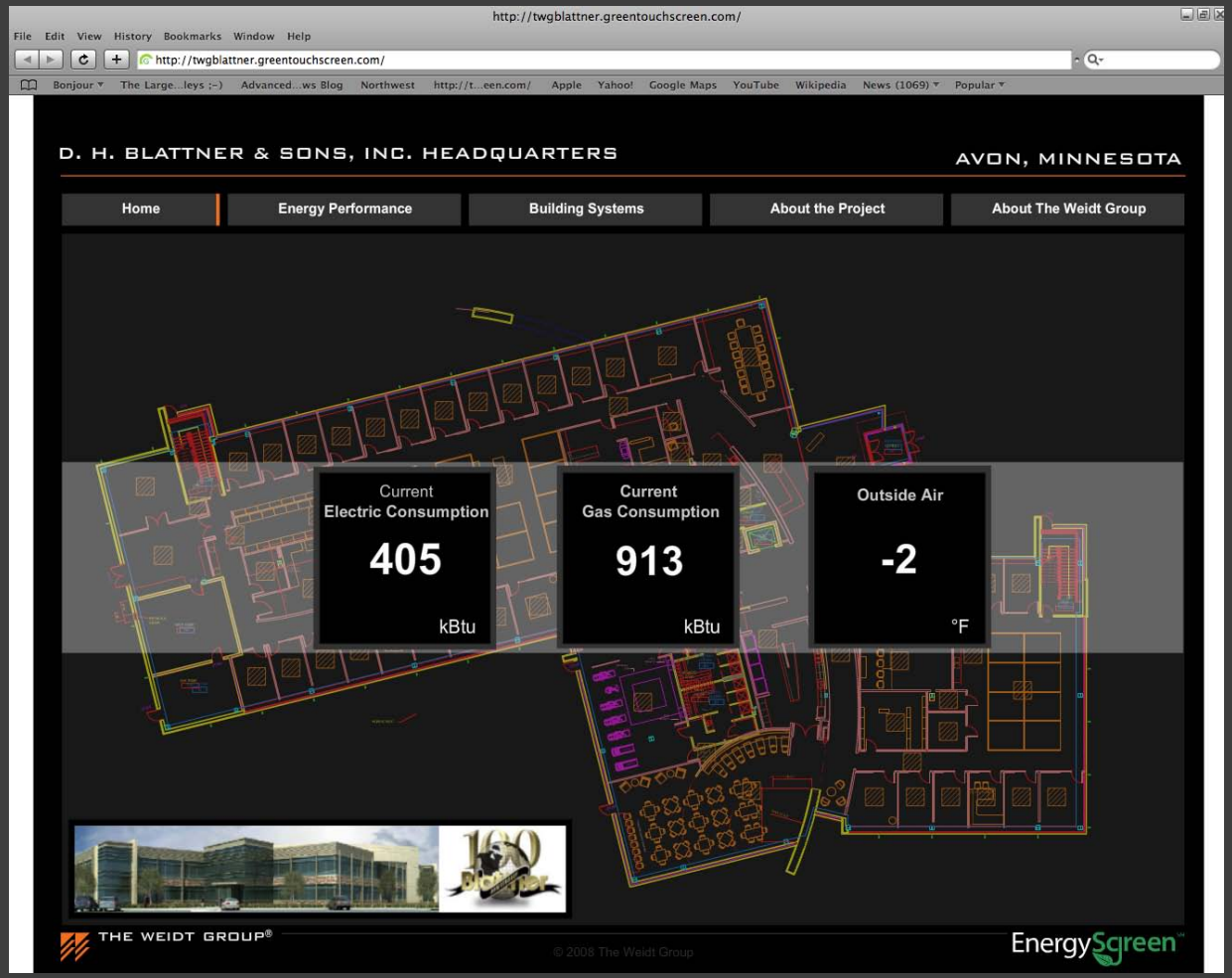
DH Blattner Headquarters Ongoing Monitoring

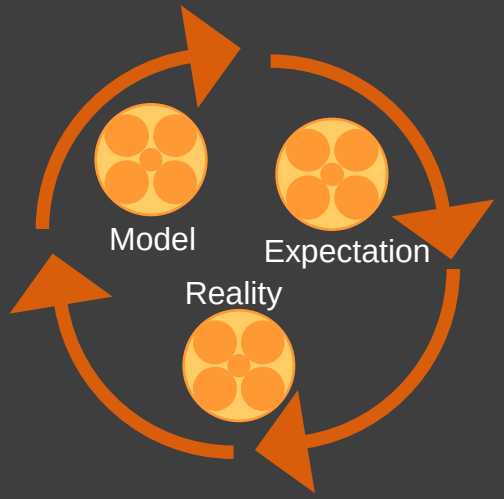
- 51,000 square-foot D.H. Blattner & Sons, Inc. headquarters in Avon, Minnesota
- For ongoing Measurement & Verification (M&V), the modeled data was imported into Quality Attributes Software's iBPortal™ platform and is compared to real-time data
- The first image shows the variable lighting system and how daylight affects the lighting electrical load. The second image shows the same profile against the original model, allowing the owner to understand their return on investment of the lighting system.



First Real-time Energy Use Monitoring vs. Model

DH Blattner Headquarters Ongoing Monitoring





First Joint Utility CNC Program in Iowa

MidAmerican Energy Company and Alliant Energy/IPL

© King's Pointe Waterpark Resort

King's Pointe Hotel and Water Park
BCDM Architects
with Schaefer Engineering

- Commercial New Construction projects:
  - King's Pointe Hotel and Water Park, Storm Lake, IA
  - Hiawatha City Hall, Hiawatha, IA
  - Storm Lake Elementary School, Storm Lake, IA
  - Hy-Vee Warehouse Addition, Cherokee, IA
  - Evans Middle School, Ottumwa, IA
  - Conveyor Engineering Facility, Cedar Rapids, IA
  - All Saints Catholic Church, Cedar Rapids, IA
  - Iowa Job Corps Center, Ottumwa, IA
  - Wave Basin Building, University of Iowa, Coralville, IA
  - Benton Atkins Elementary Addition & Renovation, Atkins, IA
  - Marion ISD High School Addition, Marion, IA
  - Town Center - The Meth-Wick Community, Cedar Rapids, IA
  - Data Center, University of Iowa, Coralville, IA

© Knutson Construction Services

© Knutson Construction Services

Hiawatha City Hall
Novak Design Group with West Plains Engineering

Thank you