

Sustainability in Iowa's Newest Prisons: A UNIQUE GLIMPSE INTO THE WORLD OF SUSTAINABLE CORRECTIONAL FACILITIES DESIGN



Presenter:

Michael Morman, AIA/LEED BD+C – Shive-Hattery Inc.

Existing Prison



Existing Prison ISP



New Prison - ISP



Existing and New Prison - ISP



New Prison - ISP



New Prison - ICIW



ISP

- HOK – Design Architect / Engineer / LEED
- Venture – Administrative Architect
- Shive-Hattery – Architect / Engineer / LEED
- TOK – Owner’s representative / Field representative
- Iowa Department of Corrections (DOC) – Owner
- Iowa Department of Administrative Services (DAS) – Owner
- Iowa State Penitentiary (ISP) – Owner/facility operator
- Weidt Group – Utility Company Partner / Provider of Rebate information
- Walsh Construction - Contractor

ICIW

- STV – Executive / Design Architect
- BBS – Engineer
- Design Alliance – Architect
- Shive-Hattery – LEED Facilitator
- Samuel Group – Owner’s representative / Field representative
- Iowa Department of Corrections (DOC) – Owner
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Sustainability Challenges

- Material types
- Operational hours – 24/7 – 365 regardless of weather
- Visibility
- Safety
- 150 year old facility
- Indirect verses direct supervision
- Technology



Integrating Sustainability with Security

- Step 1: Have an owner that expects integration from day one
- Step 2: Bring in national expertise in detention and sustainability to help set the direction
- Step 3: Integrate the design from day one so concepts are hard to VE out
- Step 4: Have an A/E team that works throughout the process and partners with the design lead to facilitate the process through design and construction.
- Step 5: Don't bend during construction



BHAG's

- Solar analysis
- Wind analysis
- Geothermal analysis
- Methane Capture



Mandating a BIM Process

- Writing the DOC requirements for use of Building Information Modeling - ISP
 - Also used for:
 - ICIW – Women’s prison
 - 5 community based correctional facilities
 - First thing accomplished on the project
- Planned use for design, construction, transition team, and facility operation
- Products used:
 - Revit
 - Navisworks
 - C6 Lab
 - Facilities Management Integration

From Revit to Virtual Reality

Iowa State University – C6 lab





Resiliency

- The previous facility lasted 150 years so high expectations were put on this project
- The ability to design and construct a building that could weather any storm and be self sufficient
- To grow and change over time as the needs of the facility change



Comparison ICIW to ISP

- Versions and type of LEED
 - ISP – Version 2.2 Campus
 - ICIW – Version 2009 Multi-Building Campus
- Pro's and Con's
- Why was it important on both?

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Questions:

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