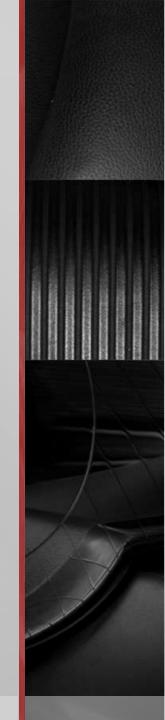
#### **Sustainability in Iowa's Newest Prisons:**

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
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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?

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

#### **Questions:**

#### Presenter:

Michael Morman, AIA/LEED BD+C – mmorman@shive-hattery.com Shive-Hattery Inc.

