AGENDA

WHAT WE HOPE TO LEARN TODAY

CHALLENGE

Problem statement facing today’s airports

SOLUTION

Process for untangling O+M decision making
  · Overview of process
  · Step-by-step discussion

CALL TO ACTION

QUESTIONS
STRETCHED THIN
THE “WHY”? 
PROBLEMS AND CHALLENGES

COSTS
- Utility Bills
- Parts & Materials
- Qualified Labor
- Sophistication of Systems
- Cost of Money

BUDGETS
- Maintenance
- Operations
- Personnel
- Capital Expenditures
LOWERS RISK

SETS THE STAGE

SUPPORTS INNOVATION
THE SOLUTION

INFRASTRUCTURE MASTER PLANNING (IMP)

A comprehensive, process-driven approach to evaluating options using financial metrics
IMP OVERVIEW

DEFINE GOALS
DEVELOP OPTIONS
SET BASE CURRENCY
QUANTIFY UNKNOWNS
IMPLEMENT
DEFINE WHAT’S IMPORTANT

Document

- Project goals
- Measurable criteria
- Cost considerations
- Benchmarks
- Definition of success
DEFINE GOALS

So, what is important?

Community

Comfort

Sustainability

Code Compliance

Cost of Money

Life-cycle cost

Energy Efficiency

Tax Savings

Occupancy

Acoustics

Redundancy

Reliability

Maintainability

Security

Aesthetics

Constructability

DEFINE GOALS

DEVELOP OPTIONS

SET BASE CURRENCY

QUANTITY UNKNOWNS

IMPLEMENT
DEFINE GOALS

SO, WHAT IS IMPORTANT?

- Redundancy
- Sustainability
- Energy Efficiency
- Tax Savings
- Aesthetics

- Community
- Comfort
- Code Compliance
- Life-Cycle Cost
- Acoustics

- Occupancy
- Reliability
- Security
- Maintainability
- Constructability

DEFINITE GOALS DEVELOP OPTIONS SET BASE CURRENCY QUANTIFY UNKNOWNS IMPLEMENT
DEFINE GOALS

INDUSTRY BENCHMARKS TIE PROJECT VALUES TO MEASURABLE METRICS
DEFINE GOALS
SET BASE CURRENCY
QUANTIFY UNKNOWNS
IMPLEMENT

DEVELOP OPTIONS

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DEVELOP OPTIONS
DEFINE GOALS
DEVELOP OPTIONS
QUANTIFY UNKNOWNS
IMPLEMENT

SET BASE CURRENCY

ALL OPTIONS MUST BE QUANTIFIED BY THE SAME UNITS (CURRENCY)
QUANTIFY UNKNOWNS

FOCUS ON WHAT YOU DO KNOW TO BOOKEND WHAT YOU DON’T
QUANTIFY UNKNOWNS
DEFINE
GOALS
DEVELOP
OPTIONS
SET BASE CURRENCY
IMPLEMENT

QUANTIFY UNKNOWNS

### Photovoltaic Solar Resource in the United States

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>System Size (KW)</td>
<td>900</td>
</tr>
<tr>
<td>Base System Cost</td>
<td>$2,730,000</td>
</tr>
<tr>
<td>Utility Rebate</td>
<td>$300,000</td>
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<tr>
<td>Net System Cost</td>
<td>$1,375,675</td>
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<tr>
<td>Yearly O&amp;M Cost</td>
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<tr>
<td>Salvage Cost</td>
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<tr>
<td>Annual Consumption (KWh/yr)</td>
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<tr>
<td>Annual Production (KWh/yr)</td>
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<tr>
<td>Annual Electricity Cost</td>
<td>$4,665,300</td>
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<tr>
<td>Years to Payback</td>
<td>23</td>
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<tr>
<td>IRR</td>
<td>4.35%</td>
</tr>
<tr>
<td>Estimated Roof Area (SF)</td>
<td>90,000</td>
</tr>
</tbody>
</table>
SUMMARY

DEFINE GOALS
Create Value Set

DEVELOP OPTIONS
Unchosen Value

SET BASE CURRENCY
Same Units

QUANTIFY UNKNOWNS
Constrain Problem

IMPLEMENT
Create BoD
Implement Plan