DOD FACILITY INVESTMENTS
ASSESSMENT, RISK & PRIORITIZATION METRICS

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Traditional Approach

- **Process**
  - Expert survey collects deficiencies and estimates costs to address
  - Prioritize and fund, usually in worst-first approach (by facility CI)

- **Results**
  - *Subjective* results based upon experience and interpretation of organizational standards by inspector(s)
  - *Reactive* management occurs after items fail
  - *Limited* forecasting to depict consequences of different investment strategies and levels

No systematic assessment of risk
Engineering Approach

Process
- Perform where investment action take place – at the facility component(-section)
- Rating scale based upon observed condition
- Modeling and Analytics to project component deterioration
- **Enterprise** defines condition standards (i.e. thresholds) that trigger investment
- **Enterprise** defines prioritization metrics and weights to develop 1-N list
  - Consider engineering, cost, and function risks as determined by organization mission

Results
- **Transparent** development of investment requirements based upon Enterprise-wide standards
- **Traceable** requirements from portfolio to local execution
- **Foresight** into future conditions and results of investment strategies and tradeoffs

2013 DoD Policy Memo – Standardizing Condition Assessments

- **Assessment**
  - Determine Condition of Asset Portfolio
- **Analysis**
  - Compare current condition against mission requirements
- **Prioritization**
  - Invest to ensure mission readiness and maximize ROI
- **Execution**
  - Based upon priorities and availability, fund and execute.

Building
- **Facility**

System
- **(B20) Exterior Closure**
- **(D30) HVAC**

Component
- **(B2010) Walls**
- **(B2020) Doors**
- **(D3020) Heating**

Section
- **Masonry**
- **Metal Panel**
- **Curtain Wall**
- **300 MBH Gas Boiler**
A Few Thoughts on FCI…

- [F]CI is required reporting metric for all Federal Facilities
  \[
  \text{FCI} = \left(1 - \frac{\text{Repair Needs}}{\text{Plant Replacement Value}}\right) \times 100
  \]

- Sum of assets CRV != PRV
  - FCI of 0 happens sooner than total facility degradation
  - Facility mission often changes from original design
  - Rapid pace of technology change, especially for R&D facilities

- How to consider deferred or alternative investment requirements?
  - I.E. repair today is deferred for replacement/upgrade in 2 years

- PRV “target” is imprecise
  - Original construction vs. current design standards


FCI is an effective metric to communicate incurred risk, but be careful of assumptions about the scale of values
OUTCOMES

Engineering-based investment plan
✓ Provides decision support to all echelons of the organization
✓ Highlights investment opportunities to stretch limited SRM resources
✓ Balances mission and economic priorities based on mission requirements
✓ Provides course of action analysis
  • Avoidance of big ticket item failure (Future Shock)
  • Awareness of the consequences of today’s decisions (Law of Unintended Consequences)
✓ Provides a consistent [F]CI calculation based upon objective assessments and Enterprise-defined rules

All at costs 50-75% less than traditional deficiency-based assessments
Proven GOTS solution

Sustainment Management System

- Modules for buildings, pavement, track, fuels*, and utilities*
- Department of Defense Standard
- Multiple Federal Agencies
- Commercial availability through licensing partners

* Under development

Over 1.1B Sq Ft!
More Information

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