Asset and Infrastructure Management for Airports

Larissa James | Principal Consultant, GHD Consulting Inc
# ACRP 01-16 Asset and Infrastructure Management for Airports

## Long Survey Participants
- Miami International Airport
- Corpus Christi International Airport
- Toronto Pearson International Airport
- Cincinnati/Northern Kentucky Int. Airport
- Churchill Manitoba Airport
- Jackson Municipal Airport
- Minneapolis/St. Paul International Airport
- Sacramento International Airport
- Fresno Yosemite International Airport
- Hartsfield-Jackson Atlanta International Airport
- Chicago O’Hare International Airport
- Dallas/Fort Worth International Airport
- Reno-Tahoe International Airport
- McCarran International Airport
- Bangor International Airport
- Greenville Spartanburg International Airport
- Palm Springs International Airport
- Jacksonville International Airport
- Oakland International Airport
- Charlottetown Airport
- Memphis International Airport
- Seattle Tacoma International Airport
- Vancouver International Airport
- Winnipeg Airports Authority
- Springfield Branson National Airport
- Salt Lake City International Airport
- Louisville International Airport
- Louis Armstrong New Orleans Int. Airport
- Addison Airport
- San Francisco International Airport
- Tallahassee Regional Airport
- Washington Dulles International Airport
- Nashville International Airport
- Gatwick, UK

## Short Survey Participants
### Large Hub
- Addison Airport
- Arlington Municipal Airport
- Baltimore Washington International Airport
- Chicago O’Hare International Airport
- Denver International Airport
- Detroit Metro Airport
- George Bush Intercontinental Airport
- Minneapolis/ St. Paul International Airport

### Medium Hub
- Austin Bergstrom International Airport
- Cincinnati/Northern Kentucky
- Colorado Springs Municipal Airport
- General Mitchell International Airport
- Lambert St. Louis International Airport
- Manchester Boston Regional Airport
- Memphis International Airport
- Sacramento International Airport
- South West FL. International Airport
- Vancouver International Airport
- Albuquerque International Airport

### Non-Hub
- Bangor International Airport
- Grand Canyon National Park Airport
- Metropolitan Knoxville Airport Authority
- Missoula International Airport
- Pittsburgh International Airport
- Saint John Airport Canada

## Small Hub
- San Diego International Airport
- Atlantic City International Airport
- Baton Rouge International Airport
- Corpus Christi International Airport
- Des Moines International Airport
- Fresno Yosemite International Airport
- Gerald Ford International Airport
- Greenville Spartanburg International Airport
- Huntsville International Airport
- Long Island Macarthur Airport
- Preston Smith International Airport
- Tallahassee Regional Airport
- Tucson International Airport
- Tulsa International Airport
- Valley International Airport
- Wichita Mid-Continent Airport

## Site Visits
- Dallas/Fort Worth International Airport
- Miami International Airport
- Addison Airport
- Greenville Spartanburg International Airport
- Sacramento International Airport
- Toronto Pearson International Airport
- Bangor International Airport
- Gatwick London Airport
- Brisbane Airport Corporation
- Auckland Airport
- Charlotte Douglas International

## Conference Calls
- Port Authority of NY and NJ
- Port of Seattle
- Sarasota International Airport
- Denver International Airport
- Cincinnati International Airport
ACRP 01-16 Asset and Infrastructure Management for Airports

• Primer outlines:
  • What asset management is
  • What the executive’s role is in the implementation of an asset management framework

• Guidebook outlines:
  • What the components are of an Asset Management Framework
  • How to implement and improve an Asset Management Framework
  • How to develop an Asset Management Plan

Publish: Summer 2012
Key Airport Asset Management Objectives

• Achievement of Levels of Service specific goals and targets
  • Aircraft turnaround time (operational aspects)
  • Terminal capacity – passenger throughput
  • Performance standards for systems – code, regulatory, legislative compliance
• Reduce post budget capital project shock
• Do more with less – reduce budget, maintain performance/level of service
• Understand future cash flows needed to maintain levels of service
• Future vision into rates and charges
Overview

- The Airport Context for AM
- Asset Failures – the Range of Consequences
- AM Planning
- Implementation
EXCELLENCE IN ASSET MANAGEMENT

Context for AM - Multiple Integrated Relationships

**BUSINESS PARTNERS**
- Products & Services (Concessions, repairs, maintenance, energy)
- Ground Departures (cars, taxi, bus, train)

**PASSENGERS**
- Customer Inflows (private car, self-park, drop-off, bus, taxi, trains)

**GOVERNANCE**
- Boards
- Commissions
- Councils

**AIRCRAFT DEPARTURES**
- Aviation Departures (All types)

**AIRCRAFT ARRIVALS**
- Aviation Arrivals (commercial passenger, GA, Military, Freight, etc.)

**WASTE STREAMS**
- Plumbing, trash, liquids

**SECURE**
- TSA

**NON-SECURE**
Airport Asset Management Complexity

- Multiple customer types
  - Airlines
  - Tenants
  - Passengers/Residents
  - Community
  - Regional economy

- Outside of regulated asset groups, many discretionary levels of service to consider
Multiple Impacts due to Asset Failures

- Typical Impacts
  - Wait times
  - Safety issues associated with crowding
  - Delayed flights
  - Negative media coverage
  - Impact on concessions (maybe positive or negative)
  - Impact on future use of the airport by impacted travellers
Power Failure to Airfield Lighting – Airport Closure

- 1000s delayed
- 17 flights diverted
- Major disruptions
- Media attention

Source: OneNews
Power Failure – Check In, Security impacts

Picture: Damian Shaw  
Source: The Sunday Telegraph  
TheAustralian.com.au
Jetbridge Collapse LAX – Captain & Passenger Injured

Photo: Crews inspect jet bridge damage. Credit: KTLA-TV News
LA Times
Asset Management Plans

Often contain variants on the following content:

1. Overview of the Facility/System or Network
2. Levels of Service—Current performance and targets
3. Strategies and Investments to close performance gaps
4. Risk assessment
5. Risk mitigations
6. Renewal Plan
7. Demand and Growth
8. Capital Plan (new assets)
9. 10 year Infrastructure Investment Plan
10. 10 year Funding Plan
11. Business Improvement (business process, data)
12. Challenges for implementing the plan
13. Staffing requirements
Relationship to other plans and processes
Asset Management Planning Approach

1. What is the current state of my assets?
   - Develop Asset Registry
   - Assess Performance, Failure Modes
   - Determine Residual Life
   - Determine Life Cycle & Replacement Costs
   - Set Target Levels of Service (LOS)
   - Determine Business Risk ("Criticality")

2. What is my required level of service?

3. Which assets are critical to sustained performance?

4. What are my best O&M and CIP investment strategies?
   - Optimize O&M Investment
   - Optimize Capital Investment

5. What is my best long-term funding strategy?
   - Determine Funding Strategy
   - Build AM Plan

Excellence in Asset Management
## Managing Operational Risk

### Likelihood x Consequence

<table>
<thead>
<tr>
<th>Weighting</th>
<th>Score</th>
<th>Nil</th>
<th>Minor</th>
<th>Major</th>
<th>Critical</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Consequence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Operating Budget Impact – Cost of Failure</td>
<td>5</td>
<td>No impact</td>
<td>&lt;$50k</td>
<td>$50k - $100k</td>
<td>$100k - $200k</td>
<td>&gt;$200k</td>
</tr>
<tr>
<td>Resource and Operational Impacts</td>
<td>10</td>
<td>No impact</td>
<td>Minimal impact managed by in house staff.</td>
<td>Disruption to operational process manageable by existing contract arrangements</td>
<td>Possible disruption to stakeholder operations requiring re-scheduling of operations to remediate. Possible action against the airport.</td>
<td>Significant disruption to stakeholder operations requiring executive intervention to resolve the issue. Breach of contractual obligations causing legal action to be taken against the airport</td>
</tr>
<tr>
<td>Environmental Regulatory Compliance</td>
<td>15</td>
<td>No impact</td>
<td>Environmental nuisance. No long term environmental damage. Insignificant risk of breaching environmental compliance.</td>
<td>Material short term environmental harm. Regulator warning received.</td>
<td>Event will cause environmental harm that requires immediate remediation works to be carried out. Regulatory violation incurred with possible fines.</td>
<td>Extreme violation of regulations. Environmental harm causes long term impacts on the environment. Fines enforced.</td>
</tr>
<tr>
<td>Weighting</td>
<td>Type of Consequence</td>
<td>Nil</td>
<td>Minor</td>
<td>Major</td>
<td>Critical</td>
<td>Extreme</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>-----</td>
<td>-------</td>
<td>-------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>15</td>
<td>Health &amp; Safety (staff, customers, public)</td>
<td>No impact</td>
<td>Injury/illness requiring first aid and/or medical treatment on site.</td>
<td>Injury/illness resulting in compensable injury. Medical treatment required.</td>
<td>Fatality or permanent disability injury serious.</td>
<td>Multiple fatalities or work related diseases (not natural causes)</td>
</tr>
<tr>
<td>15</td>
<td>Legal and Regulatory Compliance</td>
<td>No impact</td>
<td>Minimal non-compliance to relevant legislation or regulatory code.</td>
<td>Non-compliance with legislation or regulatory code affecting landside or airside operations. Regulatory notice received with possible fines.</td>
<td>Major non-compliance with legislation or regulatory code.</td>
<td>Non-compliance with legislation or regulatory code affecting closure of core Airport operations or key business activities. Litigation imminent with the potential for class action.</td>
</tr>
<tr>
<td>10</td>
<td>Aircraft Turnaround Times</td>
<td>No impact</td>
<td>Minor disruption to airline schedules. Flight delayed &lt; 30 mins</td>
<td>Major disruption to airline schedules. Flights delayed 30 mins – 1 hour</td>
<td>Major disruption to airline schedules. Flights delayed 1-4 hours.</td>
<td>Major disruption impacts airline schedules &gt;4 hours</td>
</tr>
<tr>
<td>10</td>
<td>Passenger Throughput Times (peak)</td>
<td>No impact</td>
<td>Minor impact on passenger throughput time. (&lt;15 mins)</td>
<td>Moderate impact on passenger throughput time. (15 – 30 mins)</td>
<td>Major impact on passenger throughput time (30 - 45 mins)</td>
<td>Extreme impact on passenger throughput time (&gt;45 mins)</td>
</tr>
<tr>
<td>Weighting</td>
<td>Nil</td>
<td>Minor</td>
<td>Major</td>
<td>Critical</td>
<td>Extreme</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>----------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Type of Consequence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>security system, vertical transportation, aircraft turnaround.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of service impact</td>
<td>No Impact</td>
<td>Impact to concessions and other airport businesses &lt;1 hour.</td>
<td>Significant impact resulting in loss of sales or ability to carry out business. &gt; 4 hours</td>
<td>Significant impact resulting in loss of sales or ability to carry out business &gt; 8 hours</td>
<td>Significant impact resulting in loss of sales or ability to carry out business &gt; 24 hours</td>
<td></td>
</tr>
<tr>
<td>Airport Credibility</td>
<td>No Impact</td>
<td>10-20 customer complaints</td>
<td>Reported on local media</td>
<td>Reported on national media</td>
<td>Intervention required by CEO.</td>
<td></td>
</tr>
</tbody>
</table>
Tolerability

- Which consequences aren’t tolerable?
- Are Business Continuity Plans in place?
- Do maintenance strategies manage critical assets?
  - Run To Failure
  - Condition Based Maintenance
  - Schedule Based Maintenance
  - Design Change
- Does Renewal timing reduce failure of high risk assets?
### Critical Assets – Passenger Boarding Bridge

#### Figure 28  Consequence of Failure Assessment

<table>
<thead>
<tr>
<th>Asset Register and Hierarchy</th>
<th>Probability of Failure</th>
<th>Loss of Service Impact</th>
<th>Public Health &amp; Safety</th>
<th>Airport Credibility</th>
<th>Cost of Failure (Restoration Cost)</th>
<th>Resource and Operational Impacts</th>
<th>Level of Service Impact</th>
<th>Regulatory Violations, Air/Water/Land Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Gate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-111 PC Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1111 Air Hose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1112 Condenser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1113 Compressor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-112 400 Hz Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1121 Cord</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1122 Plug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1123 Refractor/Cable Hoist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-113 Potable Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1131 Cabinet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1132 Hose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-114 Inteiors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1141 Wall covering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1142 Carpet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1143 Hand rails</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-115 Rotunda</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1151 Bearings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1152 Curtain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1155 Base Column</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-116 Paddle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-117 Tunnel Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1171 Tunnel Assemblies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1172 Tunnel Roller Assemblies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-118 Wheel Bogie</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1181 Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1182 Wheel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1183 Fire Pneumatic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1184 Wheel Motor DC Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1185 Wheel Motor AC Drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1186 Tim Refit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-119 Lift Column</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1191 Lift Column Motors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1192 Lift Column Ball Screws</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-120 Cab Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-121 Cab Curtain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-122 Cab Bumper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-123 Stairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-124 Bag chute</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-125 User Power meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The table values represent ratings and ratings for each asset, indicating the level of consequence of failure.*
Critical Assets – Risk Plot

Figure 29  Business Risk Exposure Plot
Renewal and Maintenance Forecast

Investment Profile - Passenger Boarding Bridge

- Operations $ (Purple)
- PM $ (Green)
- Capital $ (Blue)
- Avg Annual $ (Red)

Year:
- 2011
- 2013
- 2015
- 2017
- 2019
- 2021
- 2023
- 2025
- 2027
- 2029

Values:
- $250,000
- $200,000
- $150,000
- $100,000
- $50,000
- $0
Asset Management Evolution ...

Asset
• Maintenance management
• Run, monitor, replace

Strategy
• Renewal planning
• Optimized Capital, Operations, Maintenance

Enablers
• Systems, processes, procedures,
• Competencies, organization function, roles, responsibilities, accountabilities, vision, leadership, change management, continuous improvement processes

PAS 55 - ISO 55000 Series (2013)
Implementation

Policy, Objectives, Strategies

Roles, Responsibilities, Procedures, Standards, Guidelines, IT, e.g. Capital Program Development, Asset Handover

AMPs, Project Justifications, Capital Program, Maintenance Plans, Operating Plans, Budgets, Performance Reports, triggers, actions
Identifying Improvements and Managing Change

- Information Systems
- Data & Knowledge
- Lifecycle Process & Practices
- Organizational Issues
- People Issues

Total Asset Management Plan

Service Delivery

Sustainable, best value service delivery
PAS 55:2008 Gap Assessment
## Implementation Plan

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BAC Asset Management Improvement Program</td>
</tr>
<tr>
<td>2</td>
<td><strong>100 Setting Direction</strong></td>
</tr>
<tr>
<td>3</td>
<td>100.1 Develop a corporate AM Policy for adoption by the CEO and Board</td>
</tr>
<tr>
<td>4</td>
<td>100.2 Establish AM Objectives and Targets</td>
</tr>
<tr>
<td>5</td>
<td>100.3 Document Corporate AM strategy including outline of all processes, procedures and guidelines for the consistent application of AM</td>
</tr>
<tr>
<td>6</td>
<td><strong>200 Programming</strong></td>
</tr>
<tr>
<td>7</td>
<td>200.1 Document Procedure for the Capture, develop and maintenance of asset replacement cost information</td>
</tr>
<tr>
<td>8</td>
<td>200.2 Develop policy guidance for condition information capture and utilisation</td>
</tr>
<tr>
<td>9</td>
<td>200.3 Establish procedures for Life Cycle Cost capture - capital, maintenance and operating</td>
</tr>
<tr>
<td>10</td>
<td>200.4. Formalise asset operational risk management policy and procedures including guideline on risk assessment and tolerability, roles and responsibilities for management.</td>
</tr>
<tr>
<td>11</td>
<td>200.5 Review capital project evaluation policies and procedures</td>
</tr>
<tr>
<td>12</td>
<td><strong>300 Preparation</strong></td>
</tr>
<tr>
<td>13</td>
<td>300.1 Establish a Levels of Service Statement and reporting framework</td>
</tr>
<tr>
<td>14</td>
<td>300.2 Formalise Asset Management Plan development and update procedures and guidelines</td>
</tr>
<tr>
<td>15</td>
<td>300.3 Revise maintenance contracts according to recommendations from AMPs and from Maintenance Function review</td>
</tr>
<tr>
<td>16</td>
<td><strong>400 Implementation</strong></td>
</tr>
<tr>
<td>17</td>
<td>400.4. Formalise process and responsibilities for AMP implementation - capital program development, budgeting, process improvement and maintenance strategy and contract modifications.</td>
</tr>
<tr>
<td>18</td>
<td><strong>500 Asset Monitoring</strong></td>
</tr>
<tr>
<td>19</td>
<td>500.1 Implement functionality in Maximo to capture and update condition ratings</td>
</tr>
</tbody>
</table>
Benefits

Julieanne Alroe, CEO of Brisbane Airport, Australia,

“One of the greatest benefits of asset management has been the ability to provide information to the Board on infrastructure capabilities and future needs – this type of knowledge is invaluable and is essential for making the best, justified investment decisions”
GHD

- 6,000 professionals
- World’s top 50 global design firms (ENR)
- Markets and Services:
  - Transportation
    - Transport economics & logistics
    - Aviation
    - Marine
    - Rail, roads & highways, bridges
  - Energy and resources
  - Environment
  - Property and buildings
  - Water
Where are we?
GHD Asset Management - Leadership

- Original authors of the International Infrastructure Management Manual

- Authors and providers of training on Advanced Asset Management for the US EPA

- Review role for PAS55 Publicly Available specification for Optimization of Physical Assets

- Technical Advisory Group for ISO55000 series on Asset Management
Definition

Asset Management is defined by PAS 55 as:

“Systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks, and expenditures over their life cycles for the purposes of achieving its organizational strategic plan”

An organizational strategic plan is defined as:

Overall long-term plan for the organization that is derived from, and embodies its vision, mission, values, business policies, stakeholder requirements, objectives and the management of its risks.”