

Sustainable Construction Practices

OMP Case Studies

South Airfield Lighting Control Vault

- Joel Saucedo, Construction Management, O'Hare Modernization Program
- Fritz Hengge, Chief Architect, McDonough Associates

Airfield Vaults and Associated Duct Banks



Project Overview

- Start Date: August 7, 2006
- Final Completion: August 15, 2008
- Contract Value: \$33,257,815.55

Key Players

- Team
 - OMP
- Design Team
 - McDonough Associates Inc.
 - CCJM Engineers
 - Branco & Zroka
 - TGD Associates Inc.
- Contractor
 - Divane Brothers Electric Co.



Project Description



- Construction of new South Airfield lighting-control vault
 - Provides and regulates power / control for new and future runway & taxiway lighting
- Expansion of North Airfield lighting-control vault
 - Provides supplemental power / control for new and future runway & taxiway lighting
- New Airfield Lighting Control System (ALCS) to control all runway & taxiway lighting
- New 84-way ductbank system to satisfy the current / future Airport Layout Plan

Key Features

- South Airfield Lighting Control Vault
 - Relocated 102 active circuits while keeping the airport operational
 - New intelligent switchgear to maintain commercial independent power feeds and engage standby emergency generators as required
- Power to the airfield lighting circuits is now controlled by the latest technology, enabling ATC to manage lighting from multiple sites



Key Features

- 18,000 SF Vegetated Green Roof
- 104 New Regulators
- 4- High Efficiency 2,275 Kw Emergency Generators
- 10,000 LF of Duct Banks
- 250,000 LF of Airfield Lighting Cable
- State-of-the-Art touch screen Airfield Lighting Control System



Sustainable Design Features

OMP General Design Guide including: City of Chicago Sustainable Design Manual

1.0 Sustainable Site Management

- Erosion and Sedimentation Control
- 18,000 SF Extensive Green Roof:
 - Stormwater Management
 - Reduce Heat Island Effect
- Light Pollution Reduction



Sustainable Design Features

2.0 Water Efficiency

- Irrigation of roof plants not required after 2 years
 - Minimal Irrigation for Landscaping
 - Use of low maintenance tall fescue seed mix
- Water Use Reduction of 23% by use of low-flow fixtures

3.0 Energy and Atmosphere

- Optimized Energy Performance
 - Use of energy efficient heat pumps – 26% improvement
 - Energy efficient lighting – 45% improvement

Sustainable Design Features

4.0 Materials and Resources

- Recycled content of building materials $\geq 10\%$
- Regionally manufactured material $> 22\%$
 - $\geq 75\%$ of construction waste diverted from landfill disposal



Sustainable Design Features

5.0 Indoor Environment Quality

- Low-Emitting Materials:
 - Low VOC Paints
 - Low VOC Adhesives and Sealants



Sustainable Design Award

