The Port of LONG BEACH

Command and Control Center

AAPA Facilities Engineering Seminar

November 7, 2007

Tom Baldwin

Project Manager, Senior Civil Engineer

Joint Command & Control Center

- $20 million project
- 25,000 square-foot, three-story building
- The building will serve as the communications hub and headquarters for the Port of Long Beach Security Division and house security units from the Long Beach Police Department and Port of Los Angeles.
- It will also accommodate the U.S. Coast Guard, and U.S. Customs and Border Protection during an emergency.

Port Facts at a Glance

- 3,200 acres
  - 80 berths
- 7.3 million TEUs in 2006
  - 13% of U.S. containers
- $105 billion a year in cargo
- World's 12th busiest container seaport

Federal Grant

- Vulnerability Studies
- Changing Security Environment
- In February 2003 as an initiative to step up the nations security defense measures, the Port was awarded $8.12 M from the Department of Homeland Security.

Port Security Challenges

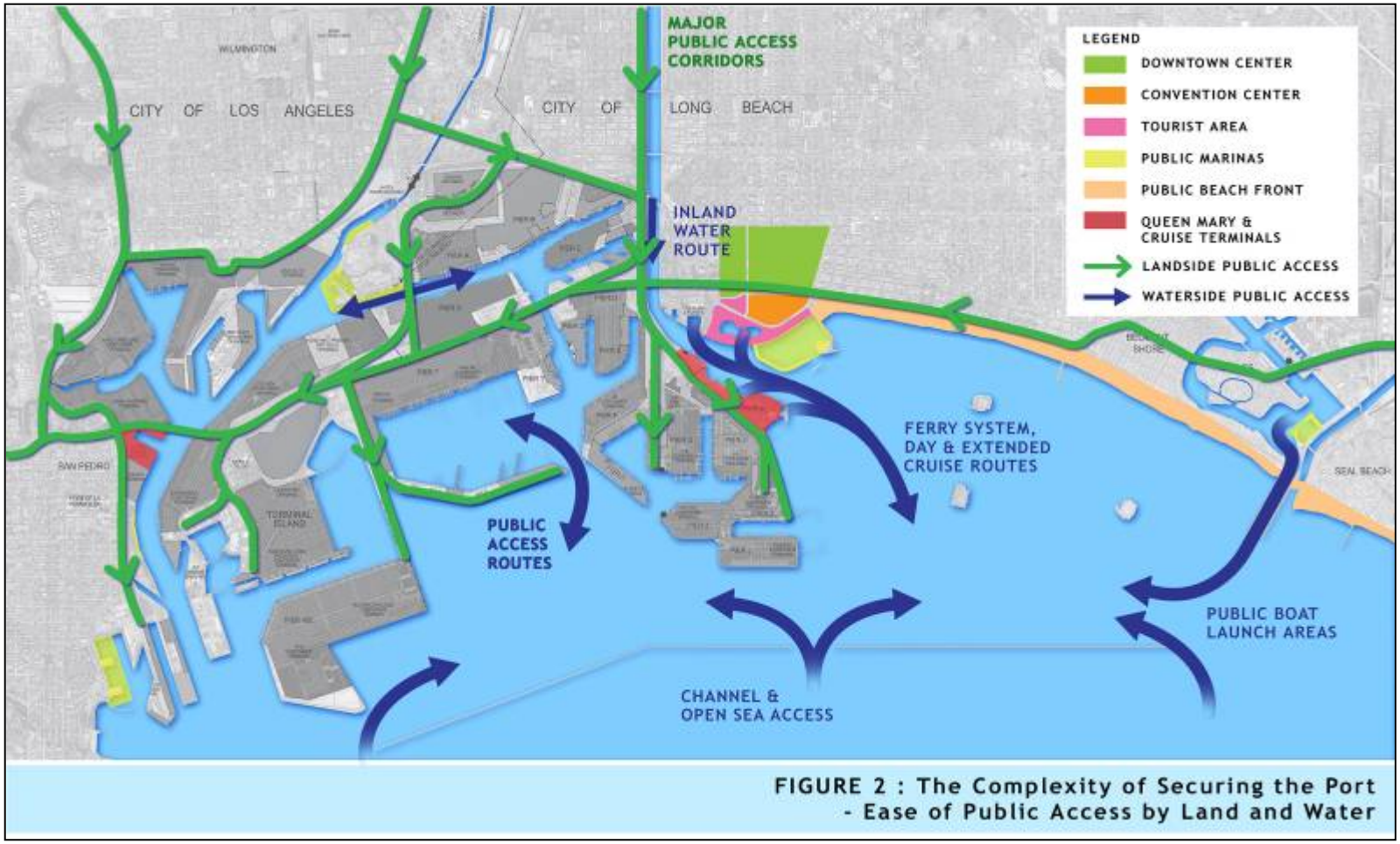


FIGURE 2 : The Complexity of Securing the Port
- Ease of Public Access by Land and Water

Maritime Domain Awareness Program

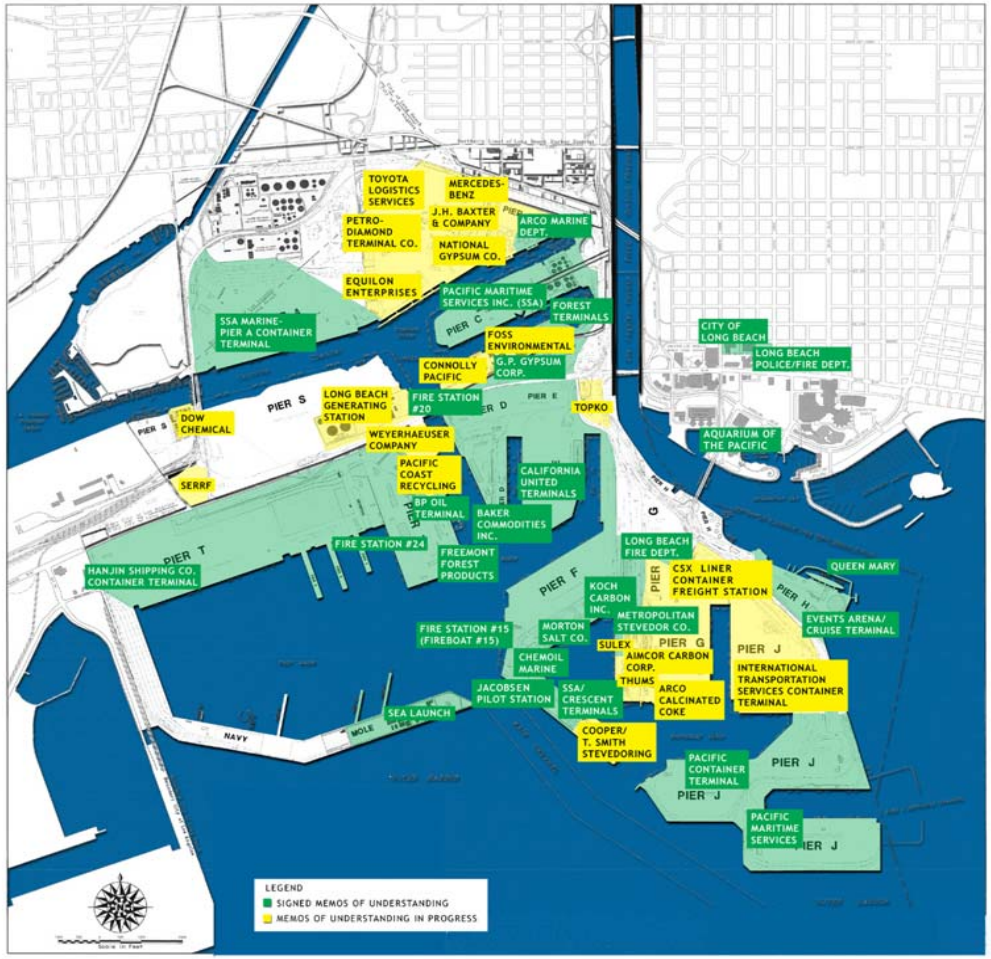


FIGURE 3 : Maritime Domain Awareness, Regional Collaboration - Memorandum of Understanding

Control Center goals

- Reduce response time
- Enhance surveillance
- Increase and share inventory and resources
- Update, improve and integrate security Technologies

Objectives and Stakeholders

Objective: Centrally located, jointly operated facility for surveillance and coordinated security response

Stakeholders: Port of Long Beach, U.S. Customs and Border Patrol, Coast Guard, Port of Los Angeles, Long Beach Police Department

Ideal Site Characteristics

- Central location
- Accessible by land and water
- Approximately 3 acres
- Boat dock

Site Constraints

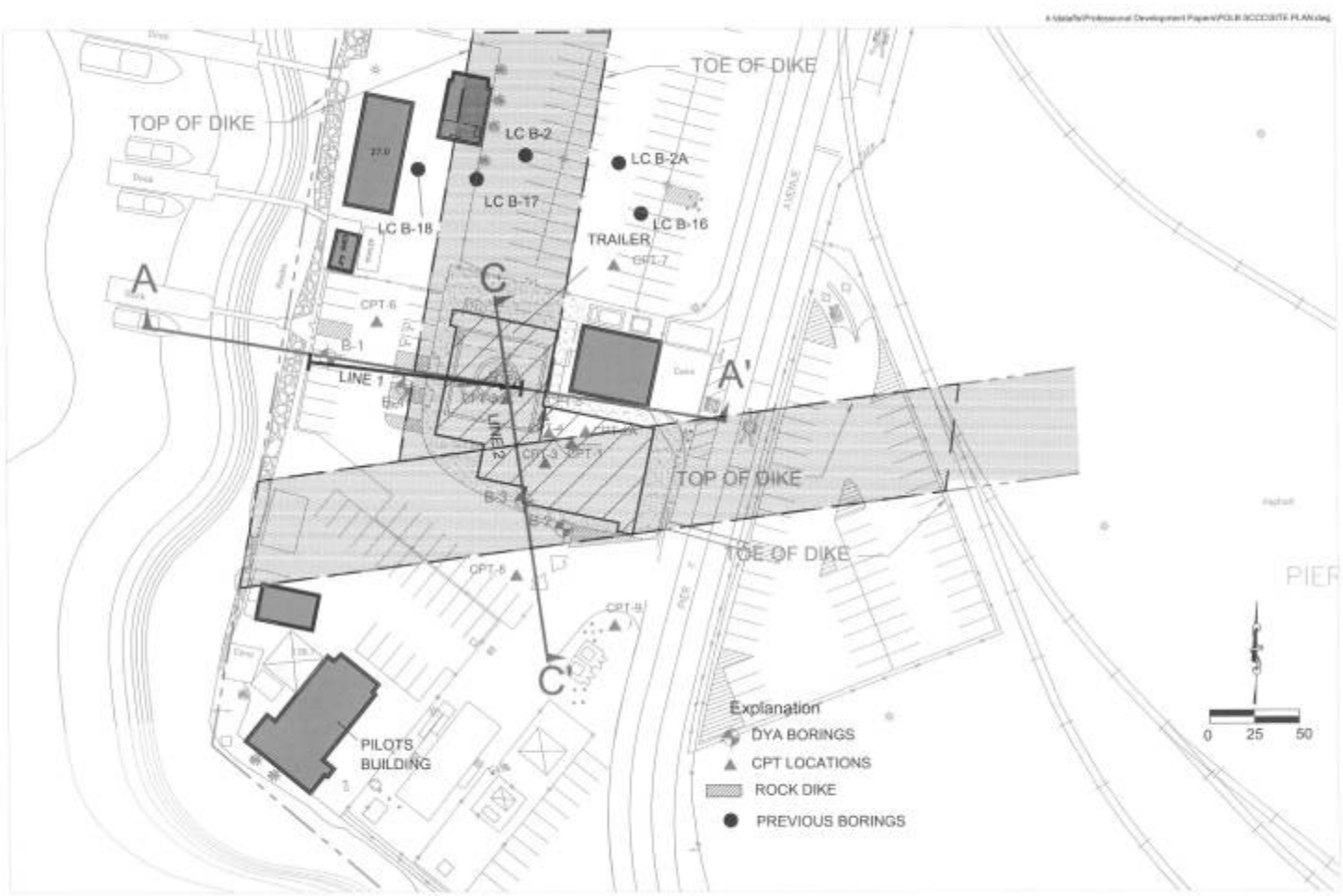
- **Small site**
  - Multiple-story building
  - Construction staging
- **Insufficient parking**
  - Street realignment
- **Irregular shaped building**
  - Existing Fire Department facilities

Geotechnical Constraints

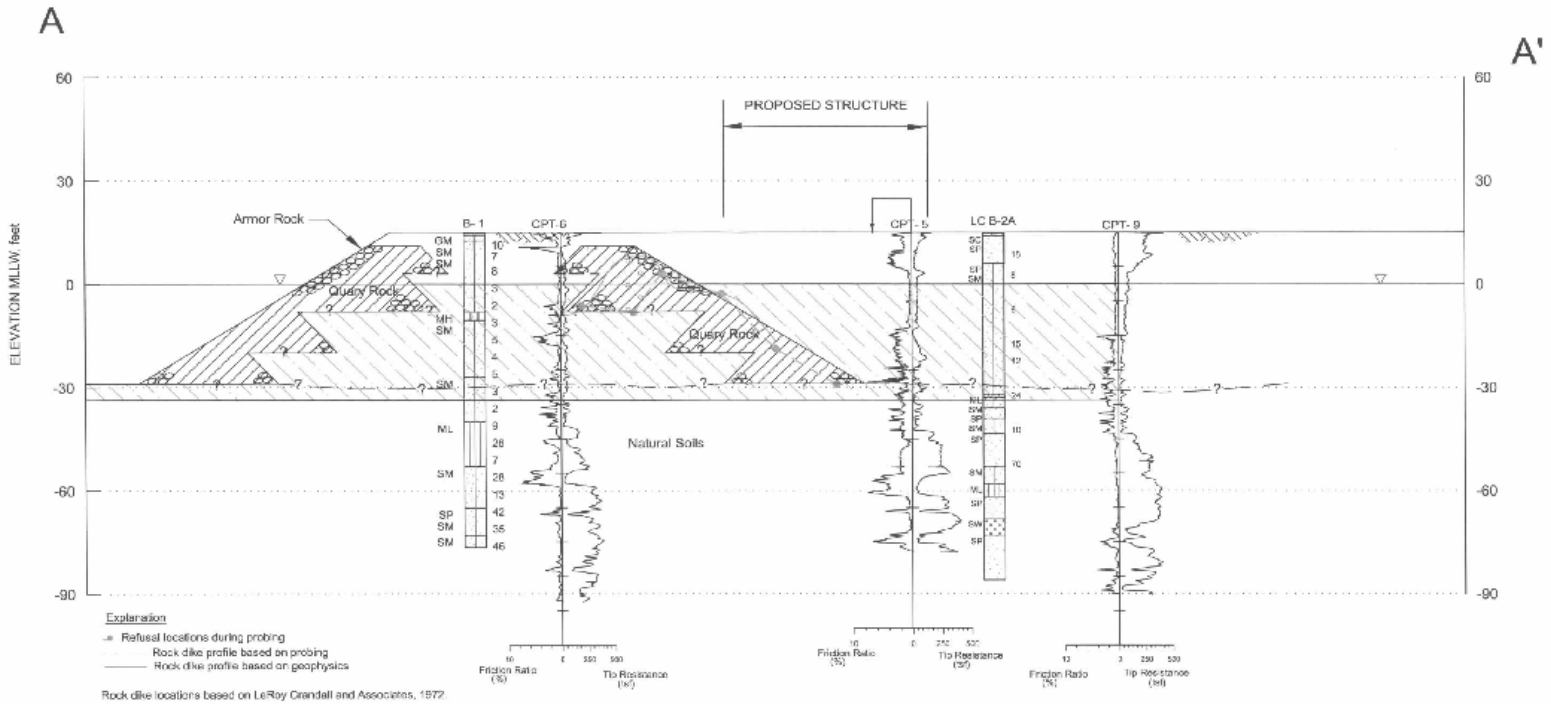
- Burier rock dikes below building footprint
- Loose fill
- Potential liquefiable soil
- Solution:

  Drive piles to support building

Geotechnical Constraints



Geotechnical Constraints



Reference: LeRoy Crandall and Associates, 1972.

Geotechnical Constraints

Drilling into armor rock

Using a 3 stage reverse drill to core through armor rock in order to drive the piles.

Security Technology Challenges

Identifying surveillance systems and needs

- CCTV
- Radar
- Sonar
- Communication
  - VOIP
  - PA System
  - Video
  - Data Network

State Health & Safety Criteria

Essential criteria (State of Cal. Health and Safety Code: Any Building for public agencies to use as a fire or police station, emergency operations center, or emergency dispatch center is required to be essential)

- **Increased Importance factor from 1 to 1.25.**

  Requires heavier roof and floor diagrams, lateral force resisting system and grade beams.

- **Increase in seismic forces on building utilities by 50%**

  Requires sizes and weights of connections and seismic braces to be increased

LEED Scorecard

The Port of LONG BEACH

LEED Green Building Rating System v2.1 — Project Scorecard

Project Name: Port of Long Beach Pier Security Command & Control Center

Version: Construction Documents Evaluation - Version 2.1 - 5/8/2006

Y	P	N/A	Total Project Score	Possible Points 69
35	6	28		

Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

LEGEND: T = Targeted Point in Project / P = Possible Point / N/A = Not Applicable

Sustainable Sites — Possible Points 14

T	P	N/A			
Y			Prereq 1	Erosion & Sedimentation Control	0
		1	Credit 1	Site Selection	1
		1	Credit 2	Urban Redevelopment	1
		1	Credit 3	Brownfield Redevelopment	1
		1	Credit 4.1	Alternative Transportation, Public Transportation Access	1
1			Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
	1		Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1
1			Credit 4.4	Alternative Transportation, Parking Capacity	1
		1	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	1
		1	Credit 5.2	Reduced Site Disturbance, Development Footprint	1
1			Credit 6.1	Stormwater Management, Rate and Quantity	1
	1		Credit 6.2	Stormwater Management, Treatment	1
		1	Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	1
1			Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1
1			Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points 5

T	P	N/A			
1			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
1			Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
		1	Credit 2	Innovative Wastewater Technologies	1
1			Credit 3.1	Water Use Reduction, 20% Reduction	1
1			Credit 3.2	Water Use Reduction, 30% Reduction	1

Energy & Atmosphere — Possible Points 17

T	P	N/A			
Y			Prereq 1	Fundamental Building Systems Commissioning	0
Y			Prereq 2	Minimum Energy Performance	0
Y			Prereq 3	CFC Reduction in HVAC&R Equipment	0
1			Credit 1.1a	Optimize Energy Performance, 2.5% New / 0% Existing - T24	1
1			Credit 1.1b	Optimize Energy Performance, 7.5% New / 4% Existing - T24	1
1			Credit 1.2a	Optimize Energy Performance, 12.5% New / 8.25% Existing - T24	1
1			Credit 1.2b	Optimize Energy Performance, 17.5% New / 9.76% Existing - T24	1
		1	Credit 1.3a	Optimize Energy Performance, 22.5% New / 12.8% Existing - T24	1
		1	Credit 1.3b	Optimize Energy Performance, 27.5% New / 17.8% Existing - T24	1
		1	Credit 1.4a	Optimize Energy Performance, 32.5% New / 20.8% Existing - T24	1
		1	Credit 1.4b	Optimize Energy Performance, 37.5% New / 27.8% Existing - T24	1
		1	Credit 1.5a	Optimize Energy Performance, 42.5% New / 32.8% Existing - T24	1
		1	Credit 1.5b	Optimize Energy Performance, 47.5% New / 37.8% Existing - T24	1
		1	Credit 2	Renewable Energy, 5%	1
		1	Credit 2.2	Renewable Energy, 10%	1
		1	Credit 2.3	Renewable Energy, 20%	1
1			Credit 3	Additional Commissioning	1
1			Credit 4	Ozone Depletion	1
		1	Credit 5.1	Measurement & Verification	1
	1		Credit 6	Green Power	1

Materials & Resources — Possible Points 13

T	P	N/A			
Y			Prereq 1	Storage & Collection of Recyclables	0
		1	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	1
		1	Credit 1.2	Building Reuse, Maintain 100% of Existing Shell	1
		1	Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	Construction Waste Management, Divert 50%	1
1			Credit 2.2	Construction Waste Management, Divert 75%	1
		1	Credit 3.1	Resource Reuse, Specify 5%	1
		1	Credit 3.2	Resource Reuse, Specify 10%	1
1			Credit 4.1	Recycled Content, Specify 5%	1
1			Credit 4.2	Recycled Content, Specify 10%	1
1			Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	1
1			Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points 15

T	P	N/A			
Y			Prereq 1	Minimum IAQ Performance	0
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	0
1			Credit 1	Carbon Dioxide (CO2) Monitoring	1
		1	Credit 2	Increase Ventilation Effectiveness	1
1			Credit 3.1	Construction IAQ Management Plan, During Construction	1
1			Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
1			Credit 4.2	Low-Emitting Materials, Paints	1
1			Credit 4.3	Low-Emitting Materials, Carpet	1
1			Credit 4.4	Low-Emitting Materials, Composite Wood	1
1			Credit 5	Indoor Chemical & Pollutant Source Control	1
		1	Credit 6.1	Controllability of Systems, Perimeter	1
		1	Credit 6.2	Controllability of Systems, Non-Perimeter	1
1			Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1
1			Credit 7.2	Thermal Comfort, Permanent Monitoring System	1
	1		Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
1			Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

Innovation & Design Process — Possible Points 5

T	P	N/A			
		1	Credit 1.1	Innovation in Design 1 - Sustainable Design Education	1
1			Credit 1.2	Innovation in Design 2 - Exemplary Performance WEc3	1
	1		Credit 1.3	Innovation in Design 3 - Exemplary Performance MRc4	1
	1		Credit 1.4	Innovation in Design 4 - Exemplary Performance MRc5	1
1			Credit 2	LEED™ Accredited Professional	1

Helicopter Pad

The Port of LONG BEACH

Project Cost

Contract to construct: $13.79 million

Total budget, including design, construction management, inspection, permitting and other costs: $20.65 million.

Construction Photos

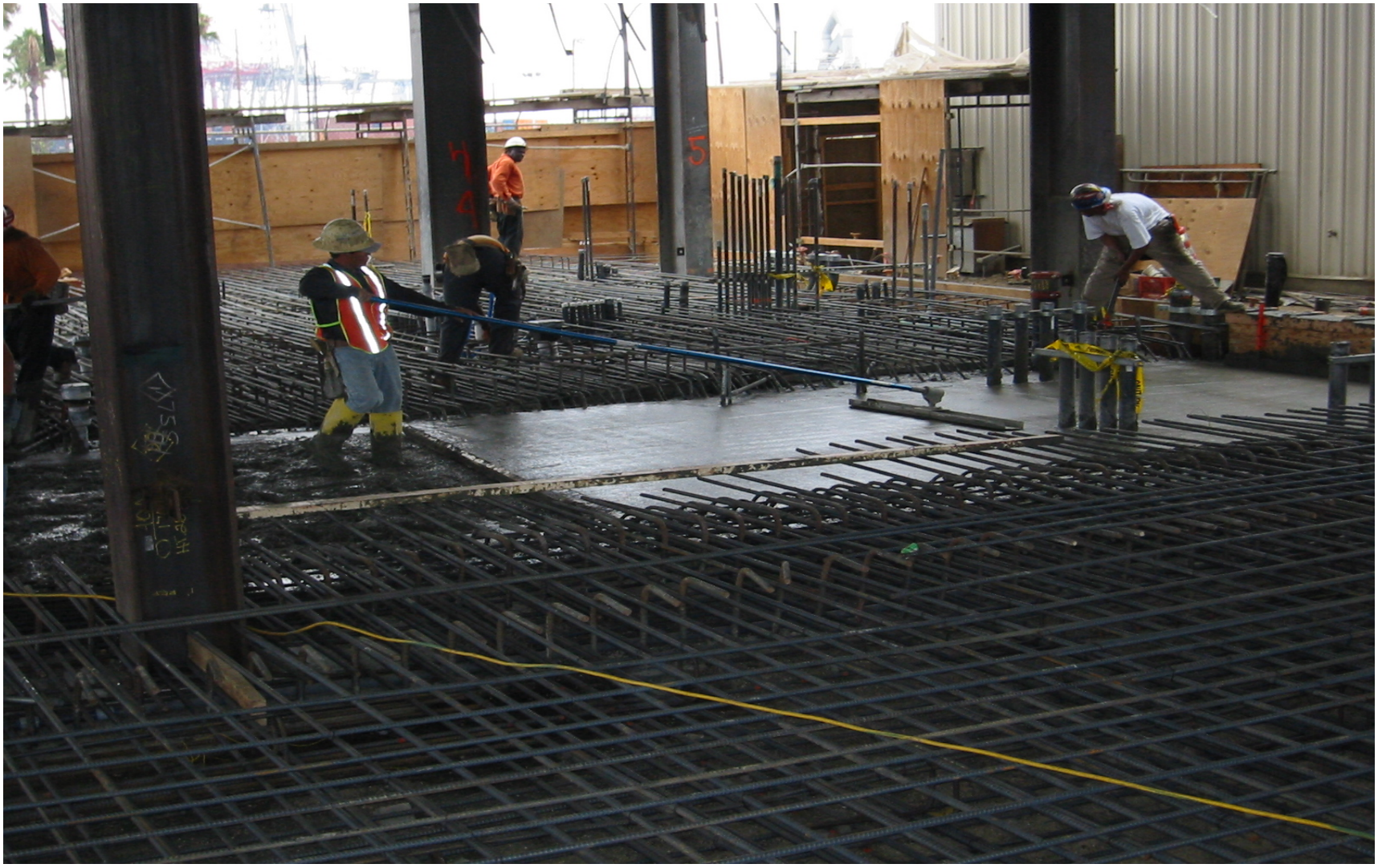
The Port of LONG BEACH

The Port of LONG BEACH

The Port of LONG BEACH

The Port of LONG BEACH

The Port of LONG BEACH



The Port of LONG BEACH

The Port of LONG BEACH

Thank You

The Port of
LONG BEACH