

Reducing the Environmental Impact of Quayside Cranes on Neighboring Communities

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Environmental Issues

Noise

Visual impact



Sources of Noise



Machinery on Trolley



Rope Towed Trolley



Noise Levels Without Abatement

Distance	Noise Level
Source	115 dB(A)
200 feet (60 m)	70 dB(A)

Noise Abatement Strategy

Component	Abatement Strategy
Machinery House	Noise absorbing panels, Isolated machinery bases
Trolley Drive	8 Wheels Cushioned suspension
Festoon Trolley	Synthetic Wheels
Girder and Boom	Not practical

Noise Levels With Abatement

Distance	Noise Level
Source	100 dB(A)
200 feet (60 m)	55 dB(A)

Case Study: Ceres Paragon Terminal in Amsterdam



Terminal and Surrounding Neighborhood

9 of 29

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Dockside Container Cranes

10 of 29

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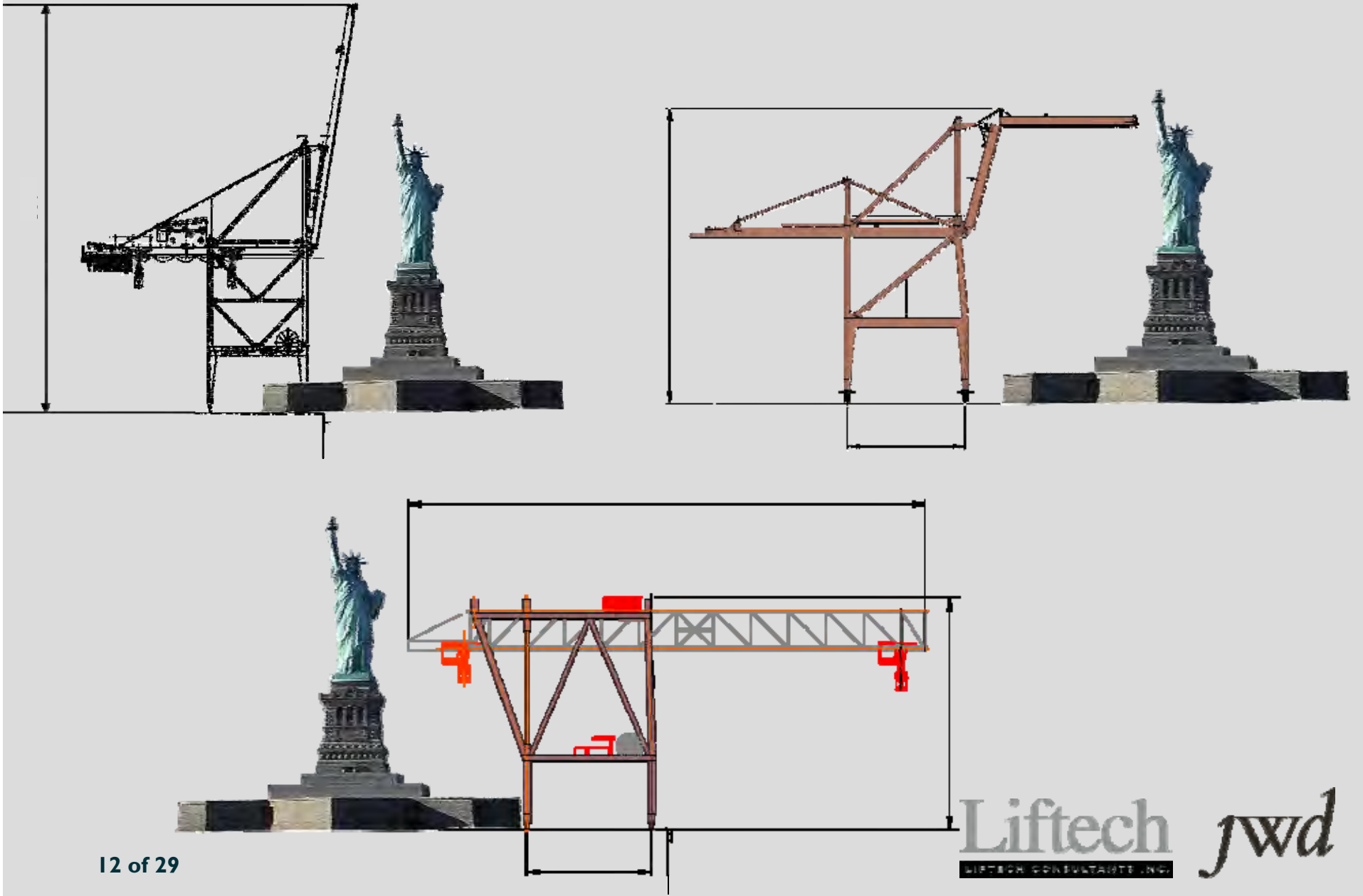
Visual Impact

Crane Configurations

Key Features

Case Study

Crane Configurations

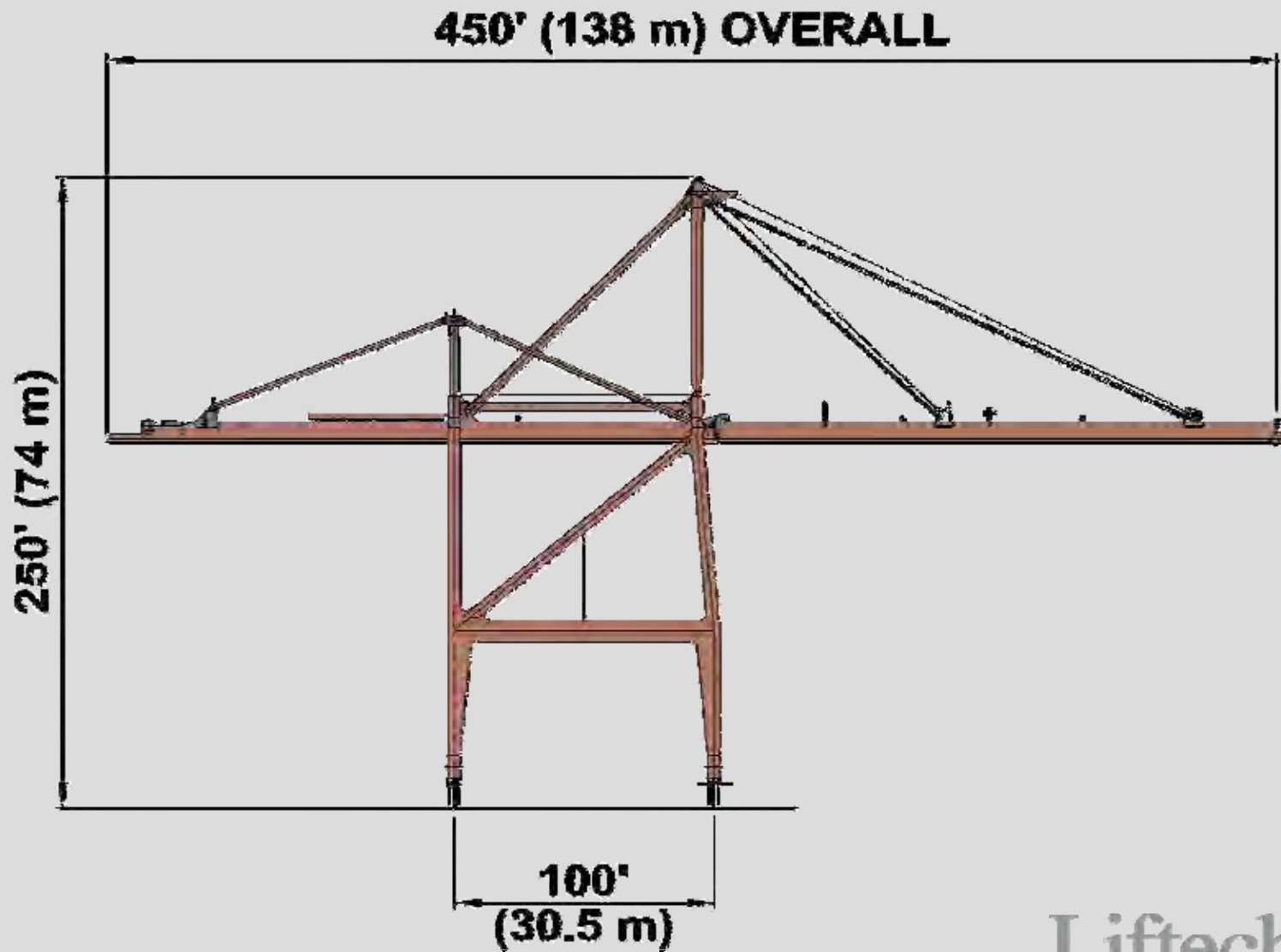


Visual Impact – Crane Configuration

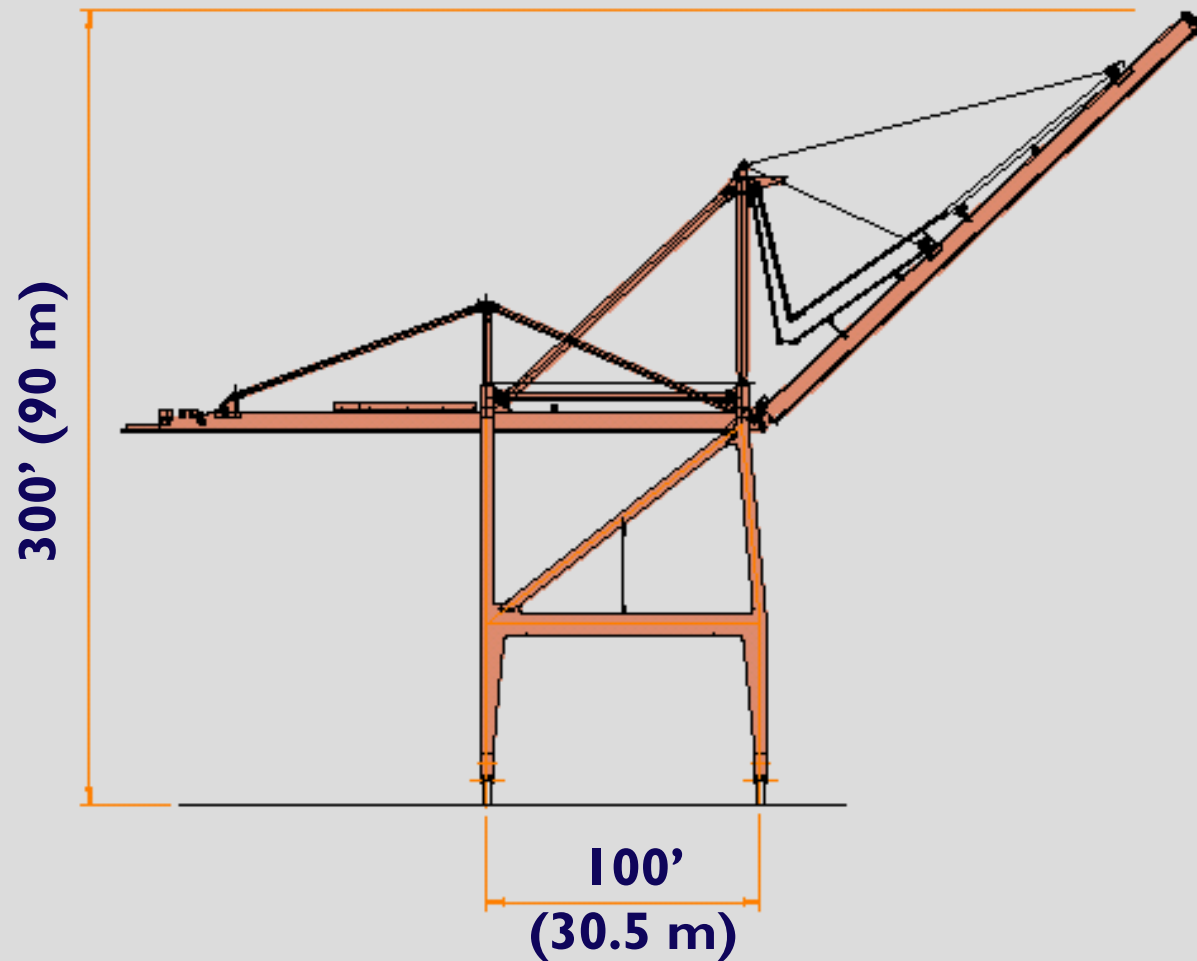


Conventional Crane
Boom Stowed

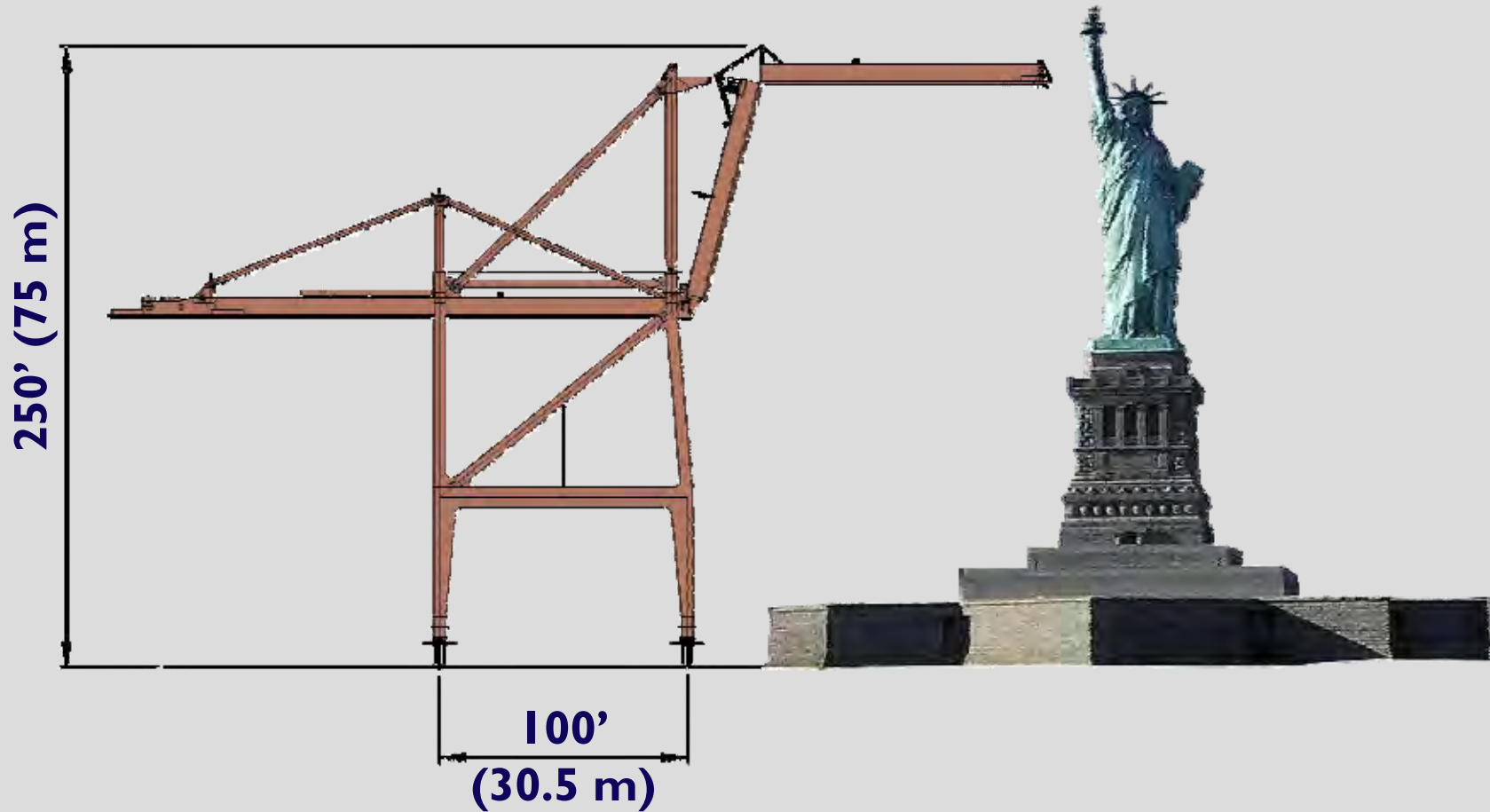
Conventional Crane - Operating Mode



Conventional Crane - Stowage Mode



Articulated Boom Crane

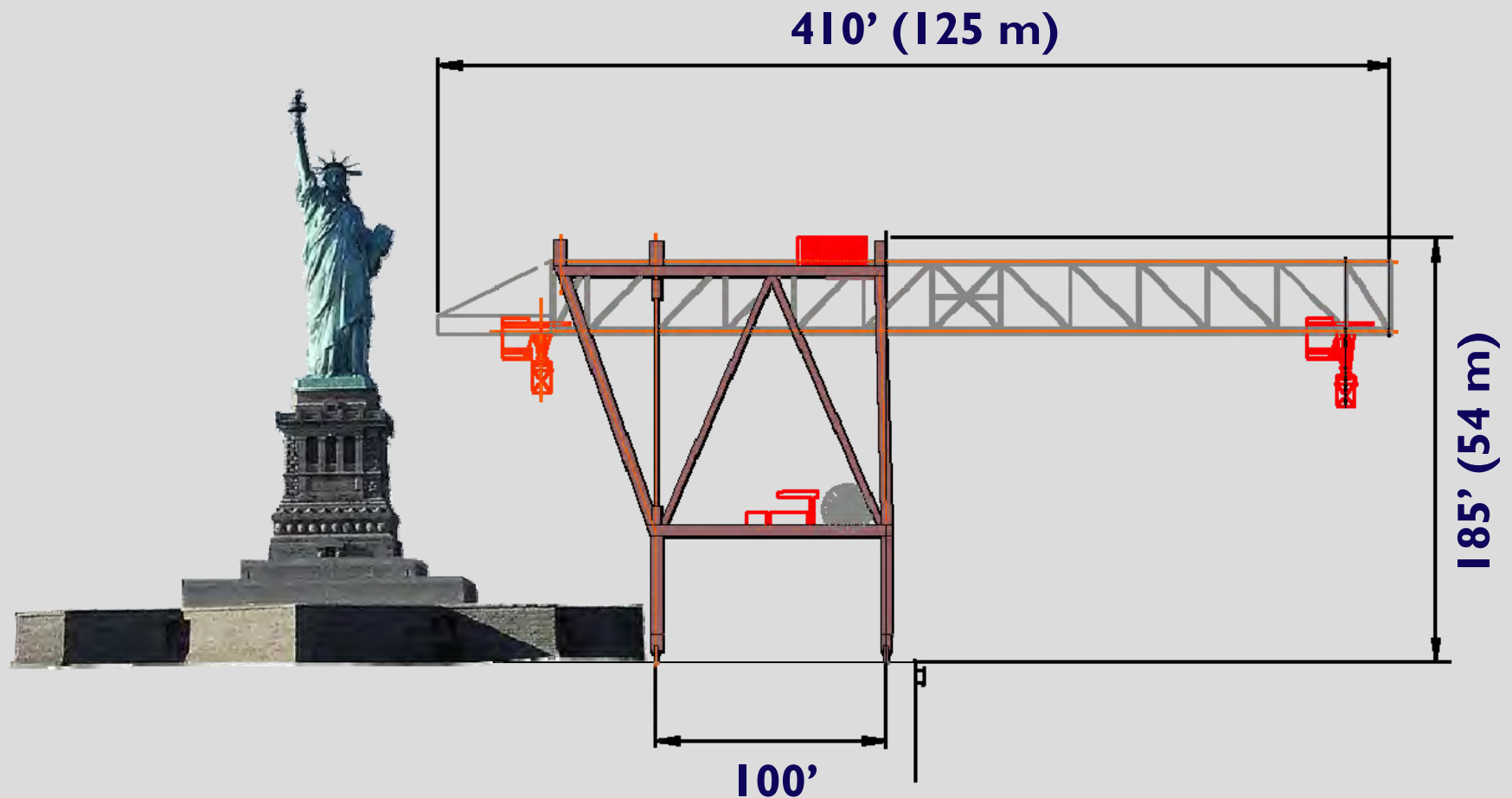


Normal Stow and Maintenance Mode

Articulated Boom (18-Wide)



Low Profile Crane – 22 Wide



Operating Mode

Low Profile (16-Wide)

Aircraft Clearance Line



Features - Conventional Cranes

Highest profile with boom stowed

Least Expensive

Lowest Wheel Loads – Less Wharf Cost

No Tie-downs for West Coast, USA

Features - Articulated Boom Cranes

Intermediate height with boom stowed

Length comparable to conventional

Price – 5% Premium Over Conventional Cranes

Wheel Loads Comparable to Conventional Cranes

No Tie-downs for West Coast, USA

Features – Low Profile Cranes

Lowest profile

Length comparable to conventional

Price – 50% Premium Over Conventional

Wheel Loads – 25% Higher Than Conventional

Ballast Required for Stability, Tie-downs Not Desirable

Visual Impact

Subjective

Depends on Viewer Location

Options Have Pros and Cons

Color Schemes May Mitigate Some

Case Study

Port of Los Angeles

West Basin Container Terminal

Evergreen Terminal

Visual Impact Case Study

Port of Los Angeles

The Sites:
Evergreen Terminal
Berths 227 – 232

West Basin
Container Terminal
Berth 100

Courtesy- Jones and Stokes



Existing Cranes (Evergreen Terminal)



Rendered Conventional Cranes (Evergreen Terminal)



Rendered Low Profile Cranes (Evergreen Terminal)



Existing Conventional Cranes (WBCT)



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Rendered Low Profile Cranes (WBCT)



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