

Major Works of Panama Canal Expansion



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Major Works

Background

- **The Panama Canal expansion proposal is supported by more than 120 studies that were initiated in 1998 on:**
 - **Environmental and social elements**
 - **Capacity and operations**
 - **Financing and economics**
 - **Marketing and competitiveness**
 - **Technical and engineering**

Major Works

Background

- Major works are segmented in the following components:
 - Design and construction of new locks
 - Dredging of existing navigational channels and approaches to new locks
 - Excavation of Pacific approach channel

Design and construction of new locks

Background

- **New locks concept was developed from:**
 - **Different alignment evaluations:**
 - 8 for Atlantic
 - 16 for Pacific
 - **Extensive geological investigations**
 - **Analysis of different vessel positioning systems, which evaluated the use of locomotives, tugboats and others**

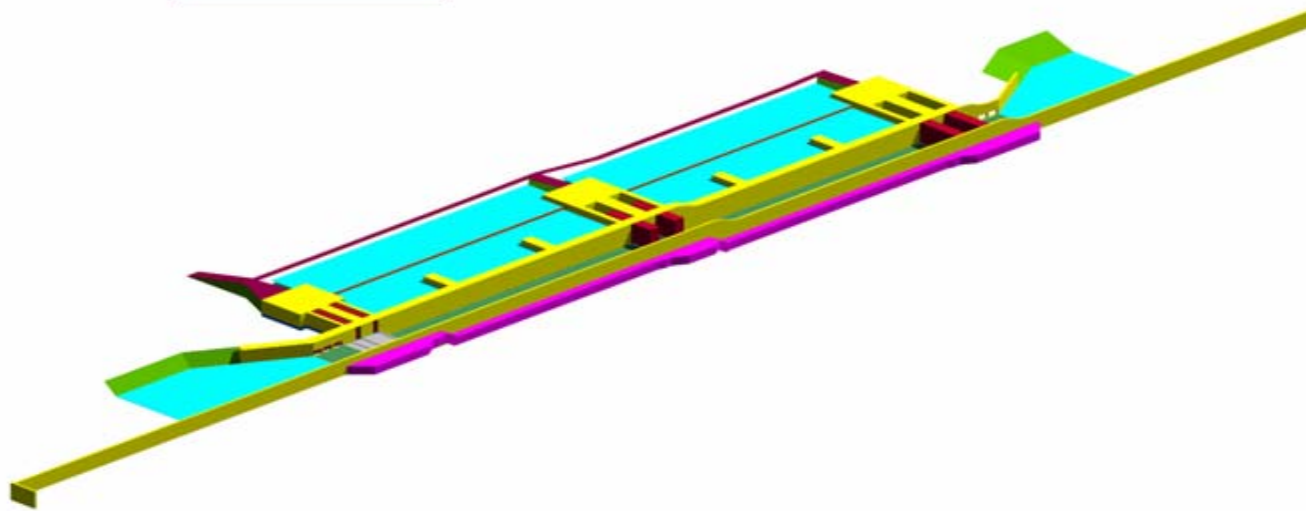
Design and construction of new locks

Background

- Two independent contracts for concept designs:
 - Which analyzed lock configurations of 1, 2 and 3 lifts with 2, 3 and 6 water saving basins

Lock configurations

Two lifts

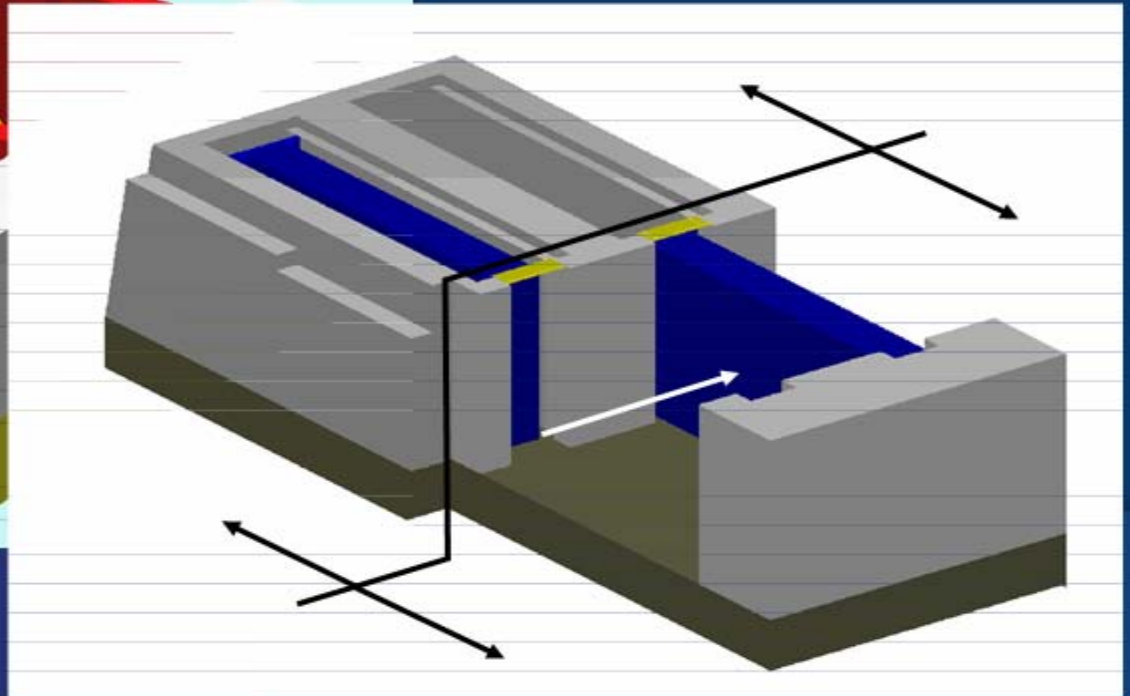
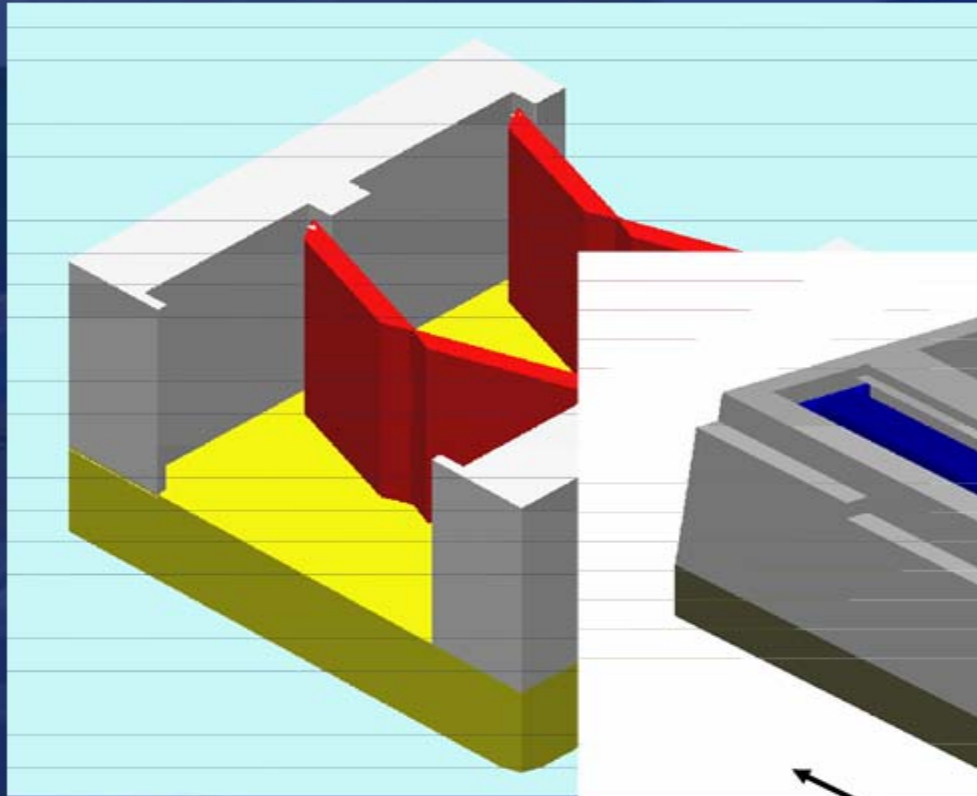


Design and construction of new locks

Background

- Two independent contracts for concept designs:
 - Which analyzed lock configurations of 1, 2 and 3 lifts with 2, 3 and 6 water saving basins
 - Different type of gates and valves

Types of Gates

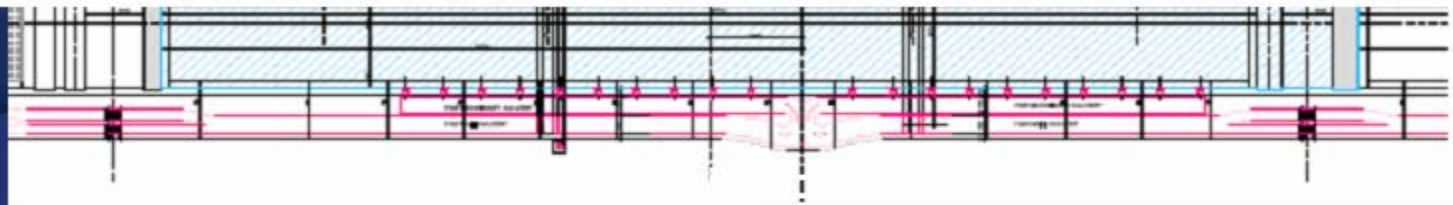
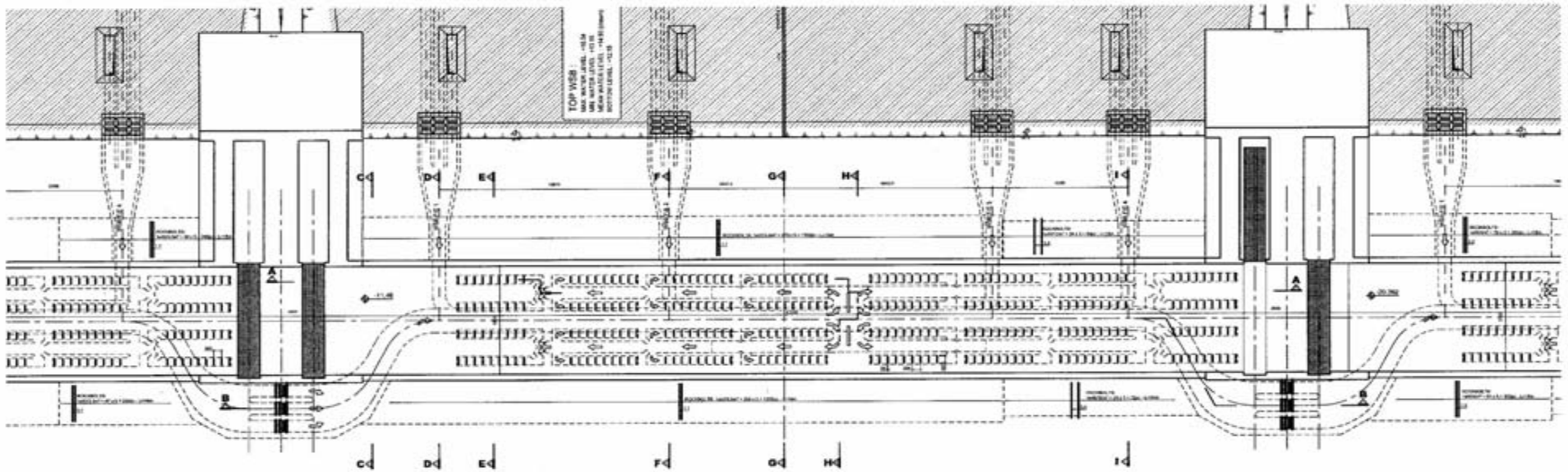
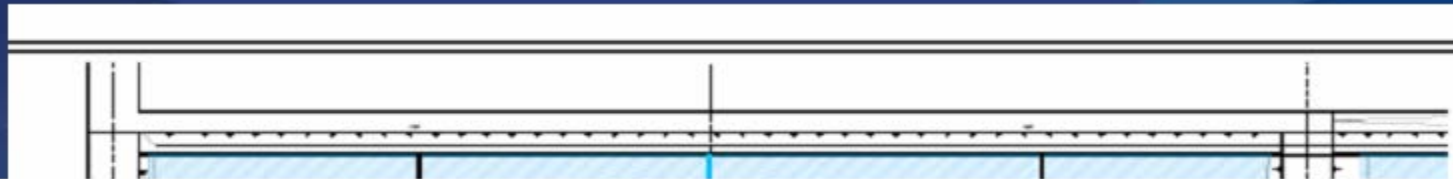


Design and construction of new locks

Background

- Two independent contracts for concept designs:
 - Which analyzed lock configurations of 1, 2 and 3 lifts with 2, 3 and 6 water saving basins
 - Different type of gates and valves
 - Alternative water filling and emptying systems

Water filling and emptying systems



Side-port system

Design and construction of new locks

Background

- Analysis of different lock dimensions
- Salinity studies
- Constructability studies
- Cost estimates, sensitivity and risk analyses

Dredging Program

Background

- **The dredging program was elaborated based upon:**
 - **More than 100 years of dredging experience in the Panama Canal**
 - **Vast knowledge of site and operating conditions**
 - **Environmental evaluations**
 - **Analyses of recent contracts**
 - **Dredging market investigations**

Dredging Program Background



Dredging Program Background



Bum Bum

Dry Excavations

Background

- **The dry excavation program for the Pacific approach channel was developed by ACP leveraging upon:**
 - **Vast knowledge of site conditions**
 - **Extensive capability for conducting investigations, designs and analyses**
 - **Environmental evaluations**
 - **Analysis of several recent contracts and excavation methodologies**

Next

- Presentations of:
 - Design and construction of new locks
 - Dredging program for Canal expansion
 - General excavation plan for Pacific approach channel