CEDAR Group

CIVIL ENGINEERING DESIGN AND RESEARCH

MID-TERM PRESENTATION
TUCKER'S WHARF 36 UNIT HOTEL
LOCATED IN QUIDI VIDI VILLAGE

Company Members:

Peter Fudge

Jenny Earle

Jonathan Wong

Craig Reynolds

Scope

- Contracted by DBA Consultants
- 36 unit hotel in Quidi Vidi Village
- Design of hotel building & supporting wharf
- Selection of design – concrete/steel or wood
- Review cost, suitability, codes, structural analysis

Site Background

- Existing Site

Site Background

- Retaining Wall / Wharf Interface

•Along Rennies River

•Pre-cast Concrete

•Built late 1990s

•Structurally sound

Site Background

- Existing Wharf / Slipway

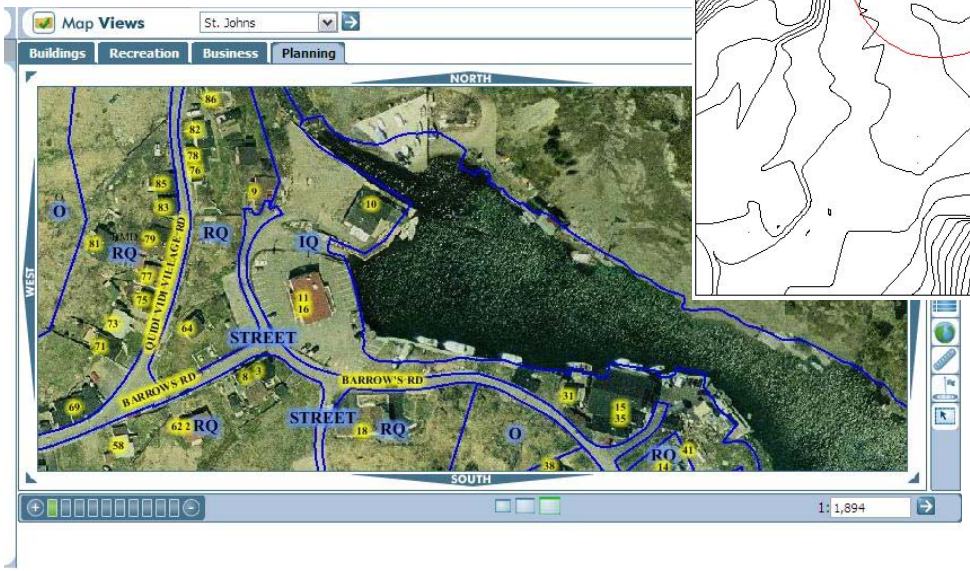
  - Wooden crib
  - Recently inspected by Afonso Group
  - In need of total reconstruction
  - Slipway to be recovered

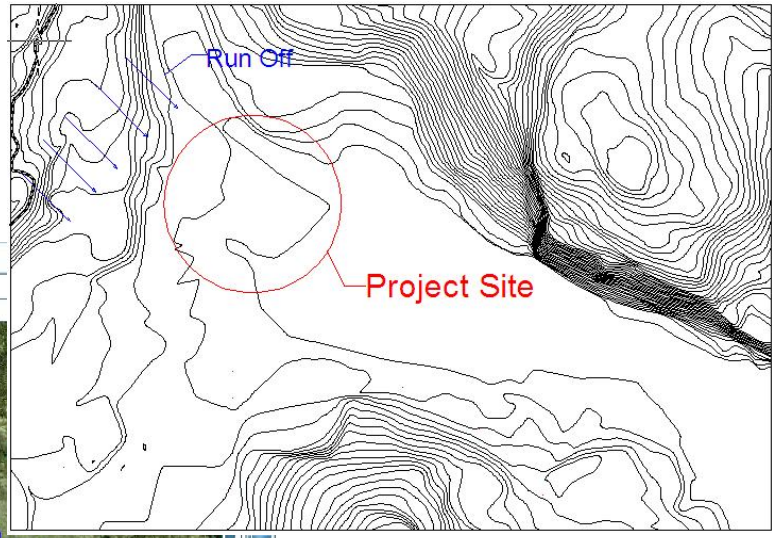
Site Background

- Existing Building
  - Built prior to 1929
  - Former Fish Plant

Site Background

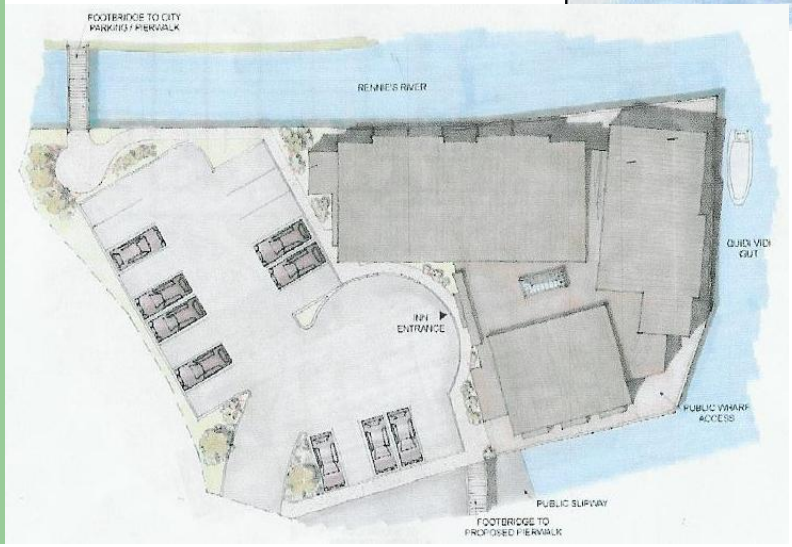
- Zoning
- Water and Sewer
- Contours





Concept Design

Proposed Hotel



Top View

Structural Steel/Concrete

Advantages

- Higher Capacity
- More Resistance To Live Loads
- Higher Fire Rating (ie. Lower Insurance Cost)

Disadvantages

- Installation Costs Are Higher
- Require More Skilled Workers (ie. Rework Costs Are Higher)
- Mobilizing Equipment To Location

Wood Frame Structure

Advantages

- Less Equipment Required (ie. Noise, Acess)
- Quick Erection ;)
- Results In Lighter Building (ie. Creep, Settle)

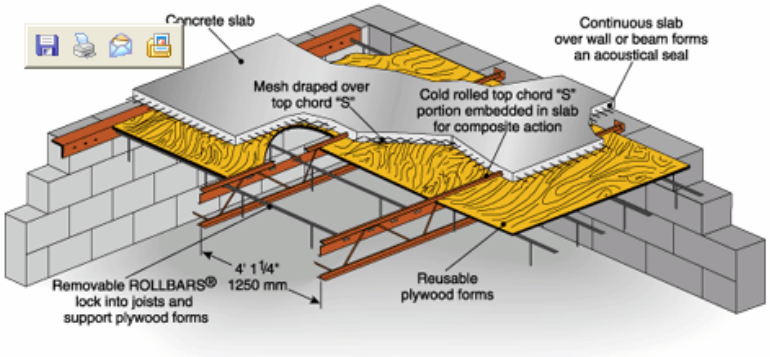
Disadvantages

- Less Durable
- Affected By Temperature And Moisture (ie. Increase In Energy Costs)
- Waste generated = 20%

Flooring System

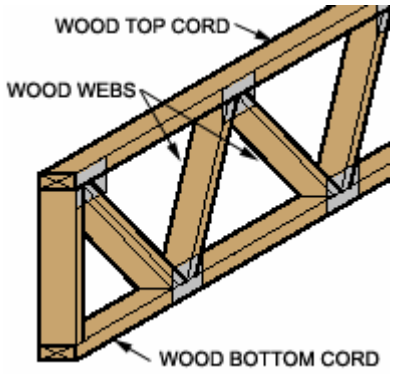
Hambro

- Composite flooring system
- Used in any type of construction
- Ease of Installation
- High Fire Rating
- Economical



Open Web Wood Truss Joist

- Made entirely of Wood
- Light Weight
- Use same tools as wood construction
- Smaller Spans
- Low fire ratings



Wharf and Foundation Design

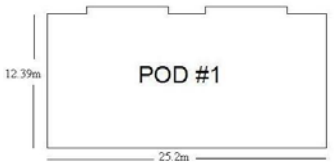
- Building Foundation
  - Rock Fill and Structural Fill
- Retaining Structures
  - Pre-Cast Concrete
  - Steel Sheeting
  - Wood Crib Wharf

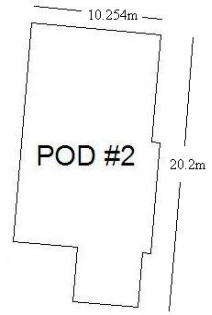
Wharf and Foundation Design

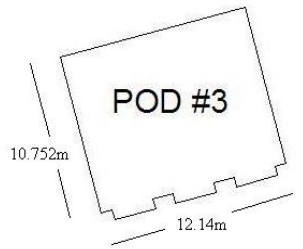
- Design Considerations
  - Ice
  - Waves
  - Settlement
  - Rennies River

Loading

- Non-symmetrical, three pods
- Roof slope less than 15°
- Roof slanted in one direction
- Snow Load max = 2.7 kPa
- Wind Loads
- Seismic Loads







Remaining Work

- Wharf calculations and drawings
- Wood structure design
- Structural drawings