Tsing Ma Bridge

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CEE 491 – Group Project 1
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Tsing Ma Overview

- Hong Kong
- Hong Kong Department of Highways
- Tsing Yi to Ma Wan
Technical Specification

- Total Length – 2167 m
- Length of Main Span – 1,377 m
- Height of Towers – 206 m
- Clearance Height – 62 m
- Diameters of Cables – 1.1 m
Cost

- $930 Million US Dollars
- Toll Fees
  - Motorcycles – HK $20
  - Cars – HK $30
  - Heavy Vehicles – HK $40 - 80
- Rail Cost
  - HK $30 – 40
Project Use, Social and Economic Benefits

- Used as a motorway bridge, freeway bridge and a railway bridge
- Enabled Hong Kong and South East Asia to continue its economic growth and maintain its important role as an international centre for business, shipping, aviation and tourism
- Famous tourist destination known for its scenic views and impressive light display in the evening
Tsing Ma Bridge By Day
Tsing Ma Bridge By Night
Technical Issues

- Typhoon Winds
  - First long span suspension bridge in typhoon zone
  - Performed many experiments
  - One-deck bridge not stable
  - Double-deck bridge is heavier
  - Deck is aerodynamically shaped

- Man-Made Island
  - Suspension span too long
  - Holds one of the two bridge towers
  - 130 meters from Ma Wan Island
Social and Policy Issues

- Span to Sham Tseng rather than Tsing Yi
  - Shorter span but cheaper
  - Man made island very costly
- Pro-competition policy
  - Deck fabricated in Britain and Japan
  - Construction done by Cleveland Bridge
  - China is new to competition
    a) Hard for the old companies and franchises
Thank You!