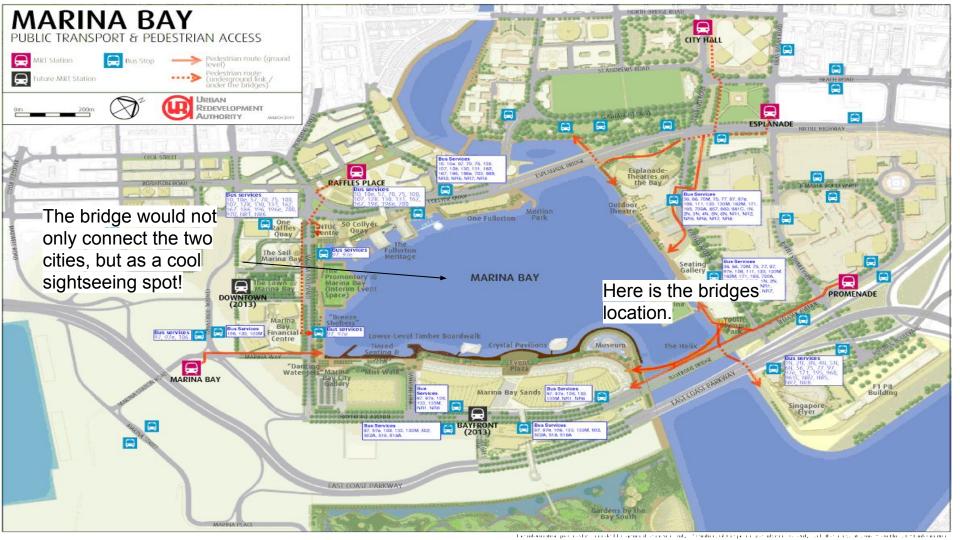


#### The Helix Bridge: Marina Bay, Singapore

Moses Apostol

Matthew Skowronski

Robotics Period 4



### Bridge History/ Purpose

- -Construction started at 2007.
- Officially opened on **April 2010**

Inside Look.

- -Would serve as a pedestrian bridge
- -Would be one of Singapore's crown jewels for engineering feats.
- -Would be the FIRST type of Helix Bridge.

Quoted From: http://www.arup.com/News/2010\_04\_April/24\_Apr\_2010\_Helix\_bridge\_opening.aspx

"The design is the result of a successful collaboration between Arup, Australian architects Cox Group and Singapore-based architects 61. The team was appointed in March 2006 by the Urban Redevelopment Authority of **Singapore** after emerging as the winner from a field of 36 bids."



Helix Bridge / Cox Architecture with Architects 61

© Angus Martin

#### Bridge History/ Purpose Con.

- -Construction time was over two years!?!
- -Would be the gateway for Singapore's first art park, the Youth Olympic Park
- -Would represent Renewal, Endurance, and Life in general.

Quote <a href="http://www.archdaily.com/185400/helix-bridge-cox-architecture-with-architects-61">http://www.archdaily.com/185400/helix-bridge-cox-architecture-with-architects-61</a> stated:

Architects: Cox Architecture with Architects 61

Location: Queen Elizabeth Walk, Esplanade Mall, Singapore

Project Team: Philip Cox, Michael Rayner, Hang Chung Ling, Spyros Barberis, Lynn Heng, Michael Ngu, Siti Suriah Taib, Sunita Menon.

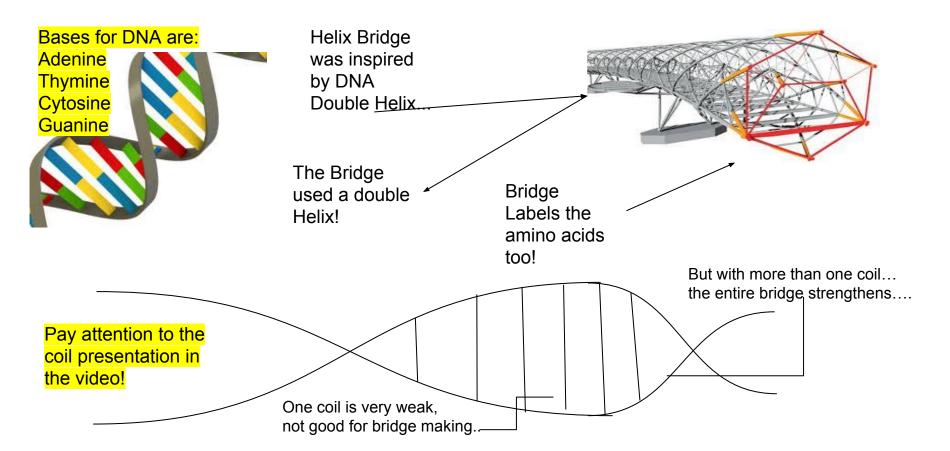
Consultant Team: Arup - Structural consultant, Arup - Civil consultant, Arup - Mechanical consultant, Arup - Electrical consultant, Arup - Lighting consultant, Tierra Design - Landscape consultant, Davis Langdon Seah - Cost Consultant.

Cost At Completion Of Construction: SGD\$82.900.000

Construction Team: Sato Kogyo (S) Pte Ltd - Builder

Area: 1379.08 sqm

### Bridge Design

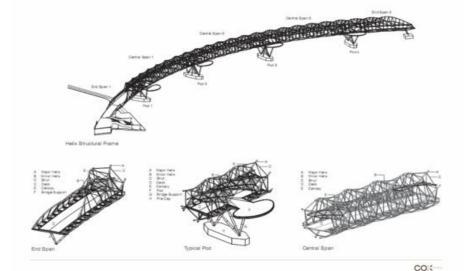


# Video



## Statistics/ Concept Gallery:

- -The Helix Bridge used approximately 650 tonnes of duplex stainless steel and 1000 tonnes of carbon steel.
- -The bridge weighs about 1700 tonnes in total.
- The Bridge is around 280 meters or 0.17 miles.
- -if all the metal used for the bridge were stretched out end to end it would be 2.25 Kilometers which would be over a mile.

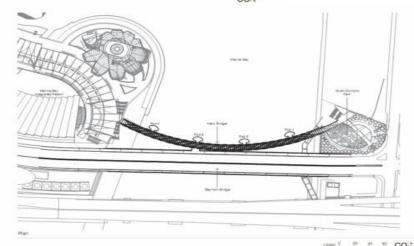


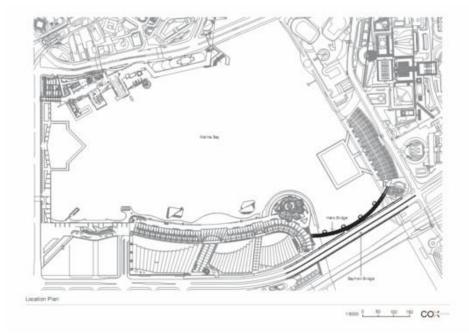
#### Detail Drawing Concept!

<u>—</u>

#### Plan concept







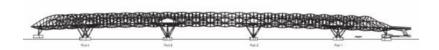
#### The Location Plan!



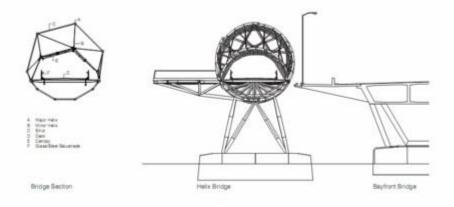
You can see the bay on your left!

#### **Elevation Plan**

Identify the span!



Elevation



Cool concept design of the interior of the HELIX Bridge!

Section



### What is Special About the Bridge?

- -It is the first type of its kind. (Helix Bridge)
- -One of the most iconic bridges in Singapore.
- -Has won "The World's Best Transport Building" award
- -The colored letters A,T,C,G are lit up on the bridge at night. this being a reference to the base amino acids that make up DNA.
- -Would represent Endurance, renewal, and innovation.
- -Would revolutionize how engineers could create bridges.
- -Is a marvel of engineering, incorporating more than one coil



-Notice how the bridge has overlapping arches.... its an engineering marvel!

## Sources

- -All images from Google Images.
- -Channel News Asia
- -http://travel.cnn.com/singapore/play/worlds-first-curved-double-helix-bridge-marina-bay-505668
- -https://en.wikipedia.org/wiki/The\_Helix\_Bridge
- -http://www.thousandwonders.net/The+Helix+Bridge
- -http://www.archdaily.com/185400/helix-bridge-cox-architecture-with-architects-61
- -https://www.youtube.com/watch?v=WHFpZc3nryE
- http://www.arup.com/News/2010 04 April/24 Apr 2010 Helix bridge opening.aspx