**Engineering Failures, Flops, and Flaws**

Background

We have been discussing Newton’s Laws of Motion. These simple laws pertain to all fields of engineering and design. Bridges and Buildings succeed or fail based on the consideration of forces, loads, and stress & strain. Forces and loads take the form of tension, compression, torque (rotation), bending, and shear. Engineering structures fail when these forces exceed the design limits.

In this assignment, you will prepare a 5-minute PowerPoint or Prezi on an Engineering Failure of your choice.

We have discussed several examples. You are welcome to find others:

* The I-35 Bridge Collapse over the Mississippi River, Minneapolis, MN
* The Hyatt Regency Skyway Collapse, Kansas City, MO
* The Pedestrian Bridge Collapse at Florida International University, Miami, FL
* The Tacoma Narrows Bridge Collapse, Tacoma, WA
* The World Trade Center Collapse, New York, NY
* The Lotus Riverside Apartment Building tipping-over incident, Shanghai, China
* The famous Fallingwater House (The Frank-Lloyd-Wright “Kaufmann Residence”) cantilevered deck failure, Fayette County, PA
* The Surfside Condominium Collapse (Champlain Towers South), Surfside, FL
* Chernobyl Nuclear Disaster
* Fukushima Nuclear Disaster

Assignment

Do internet research on the causes of the disaster, and prepare a 5-minute PowerPoint or Prezi presentation with diagrams and pictures. In your presentation, cover the following:

1. Outline and explain the possible causes. Explain from Physics standpoint how each could have contributed to the collapse. USE PROPER PHYSICS OR ENGINEERING TERMS.
2. What was the damage… Deaths? Injuries? Property damage? Cost?
3. Who do you think was responsible, and why?
4. If you could go back in time with 20-20 hindsight, what specific actions would you take to prevent the disaster? (assuming you had the power to do so)
5. Be prepared to present your report in 5 minutes at an upcoming class. You will be timed, so practice your timing.

Resources

You will need to do some research! Consult the internet for pictures, videos, and discussion. All these examples are covered in great detail on the internet.