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# **QUALITY ASSURANCE AND QUALITY CONTROL IN INFRASTRUCTURE PROJECTS**

**Sam F. Nassif, P.E.  
EGAT/IE/RDMA**



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**If Presidents are elected on 51% of the votes, why being correct 80 and 90 percent of the time isn't sometimes acceptable?**



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## **At 99.9% we would have to accept:**

- 500 incorrect surgical operation every week
- 20,000 incorrect drug prescription every year
- 16,000 pieces of mail lost by USPS every hour
- 32,000 missed heartbeats per person every year
- 1 hour of unsafe drinking water every month
- 2 unsafe plane landings at O'Hare airport every day
- 50 newborn babies dropped by doctors each day
- 22,000 checks deducted from wrong account every hr



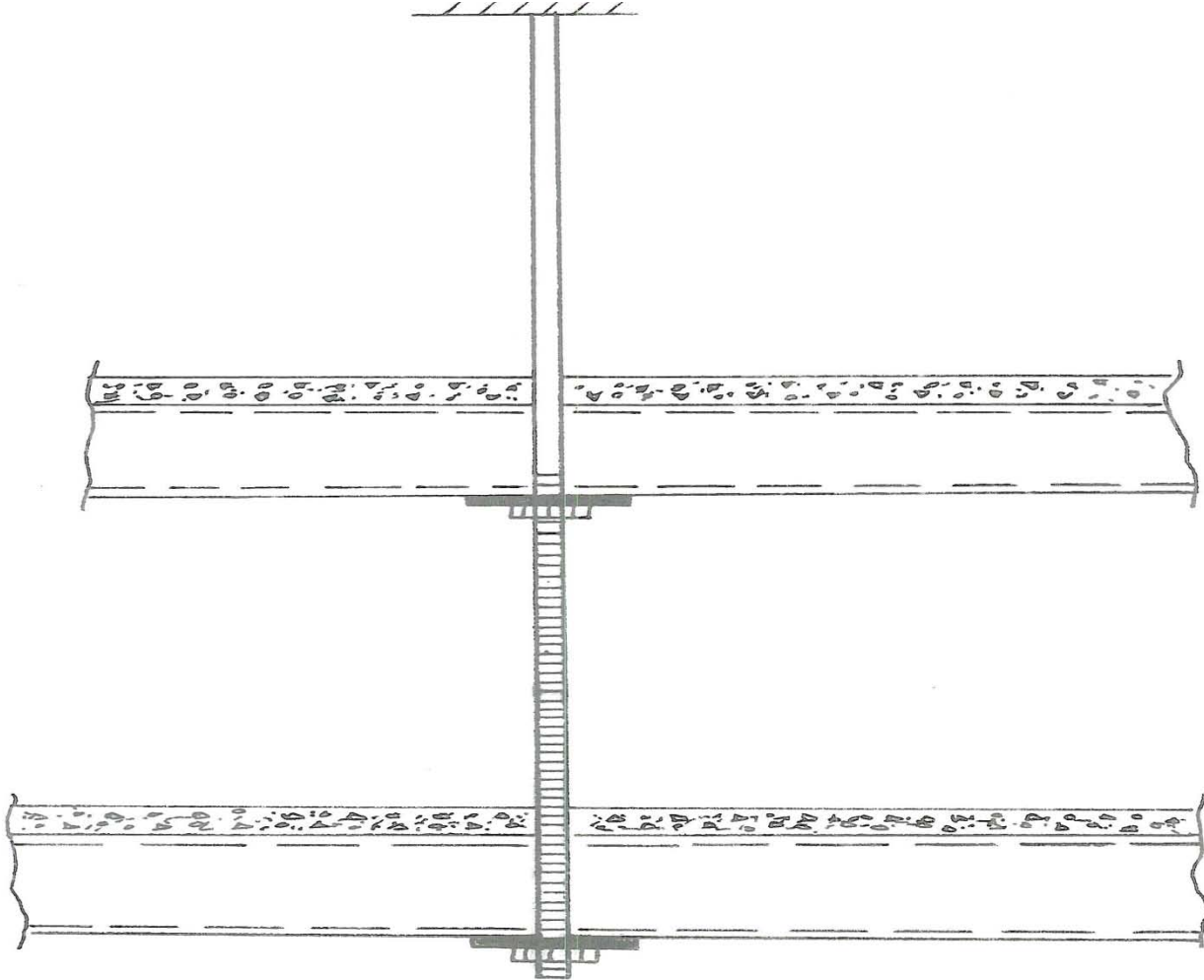
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# How important quality is?

## “A Tale of 2 Walkways”



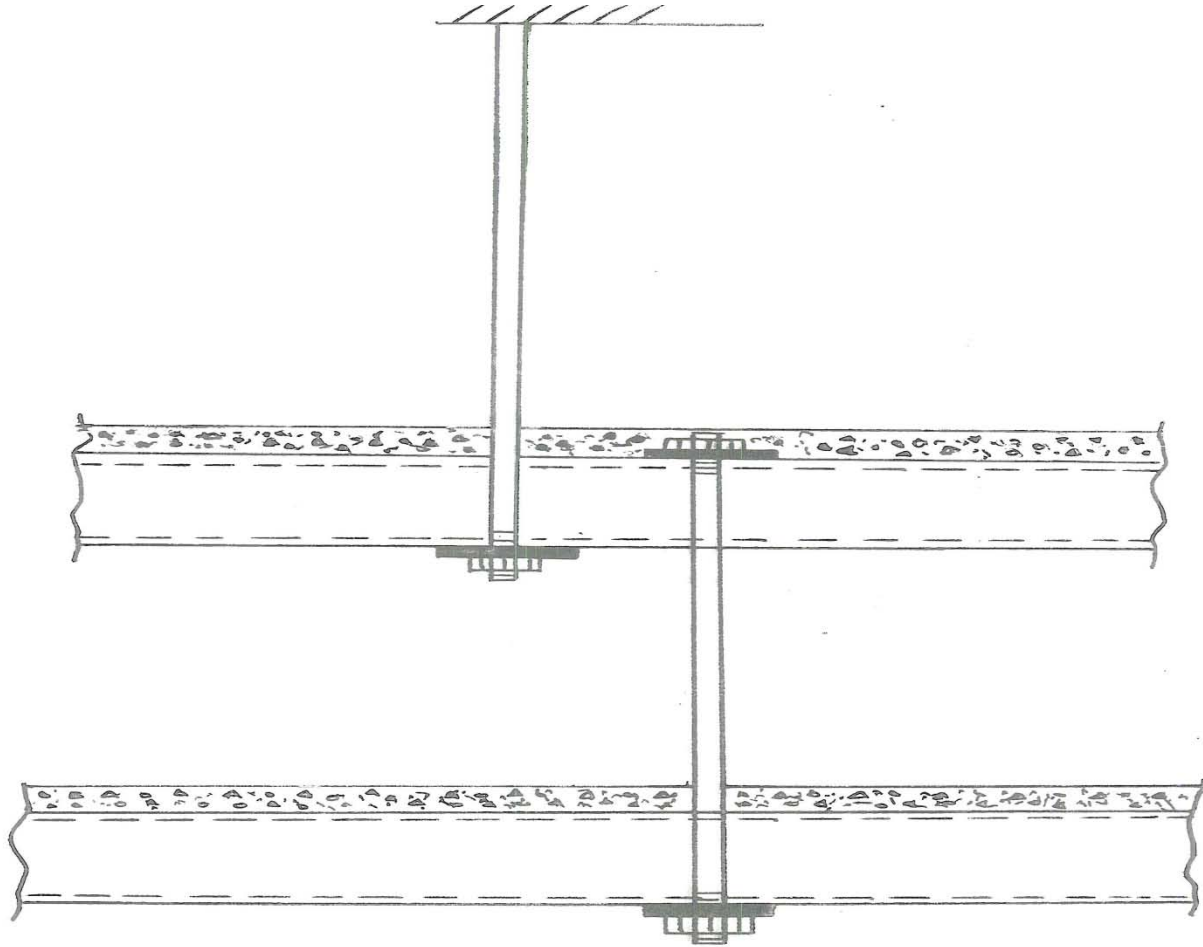
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Section A-A (Original Design)



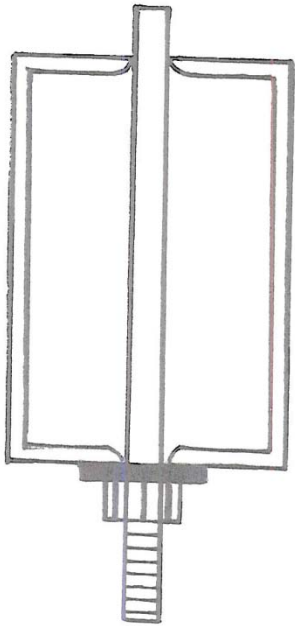
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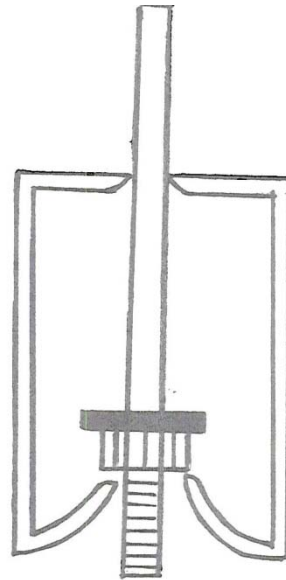
**Section A-A (Alternate Design)**



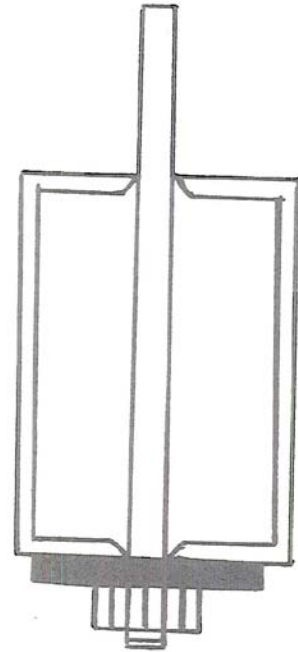
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**What it was?**



**What Happened!**



**What it should  
have been**



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## *Hyatt Regency Walkway Collapse – July 17, 1981*







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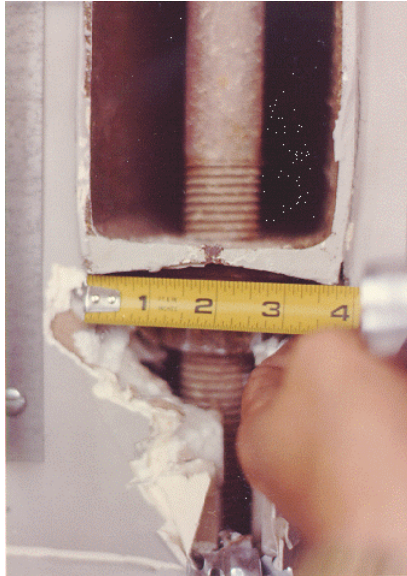
## *Hyatt Regency Walkway Collapse – July 17, 1981*





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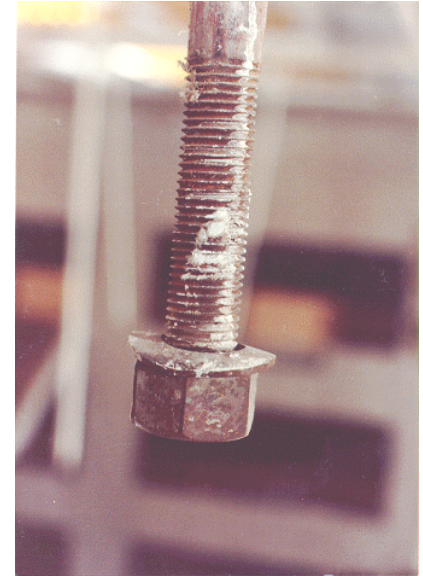
## *Hyatt Regency Walkway Collapse – July 17, 1981*



**2<sup>rd</sup> Floor Hanger  
Rod And Cross  
Beam Assembly**



**4<sup>th</sup> Floor Beam**



**Hanger Rod,  
Washer, And  
Supporting Nut**



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# Contributing Factors to the Collapse

- **Poor communications**
- **Poor engineering design**
- **Poor QA/QC**
- **Failure to adhere to the engineering code of ethics**



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**“You may never reach perfection but if you pursue it long enough, you may catch excellence”.**

**Edward Demming**