



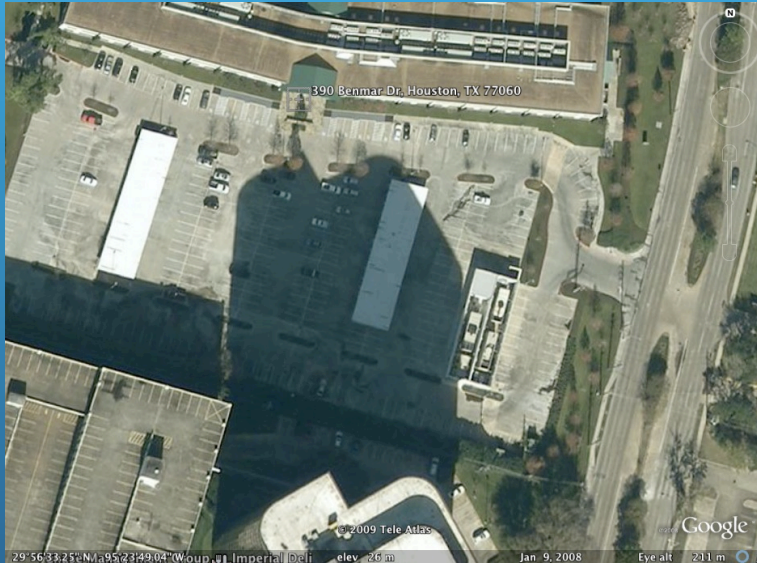
Datacenter Disaster Lessons Learned

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The Event

- June 2008 The Planet experienced a catastrophic failure at it's HSTNTX1 datacenter.
 - Complete power loss
 - Several thousand servers down
 - Lots of unhappy customers
 - Nobody Injured!
- Temporary (Generator) power restored in <24 hours
- Permanent (Utility) power restored in ~21 days

The Planet HSTNTX1



- N+1 Generator Redundancy
- N+1 UPS redundancy
- None of this mattered because of the nature of the failure

What happened?

- Root cause still being determined
 - It may have been that the incident was caused by an electrical short in the conduit carrying the high-power lines from the utility provider into the datacenter, vaporizing the ground water in the conduit
 - A “rapid expansion of steam” may have resulted in:
 - The destruction of the transformer tie-in outside the datacenter
 - The destruction of the power switching equipment and the power room of the datacenter
 - The destruction of the high power cabling and conduit in the ground

Changes made post-event

- Installation of circuit breakers at the transformer to protect long cable runs into the datacenter
 - We do this on our new datacenter builds already
- Changes in diagnostic testing of cabling
 - Integrity testing prior to energizing
 - Requires disconnection of utility power and transfer to generators
 - Standard operating procedure at all 6 datacenters
- Ran new conduit applying some BCP around conduit spacing and installation
 - Concrete poured around the conduit rather than run in dirt
 - All conduit is spaced a minimum of 3" apart in concrete
 - Generator and Utility conduits are spaced further apart (6")

What We Learned

- Deeper diligence required when purchasing a pre-built datacenter
 - The things you don't know will burn you later
 - The things you're aware of will burn you later if you don't address them
- Small improvements in infrastructure and testing processes can help prevent and identify issues prior to disaster striking
- Invest in good facilities people - they will pay for themselves
- Open and honest communications with your customers will pay dividends

Photos of the Damage



Photos of the Damage



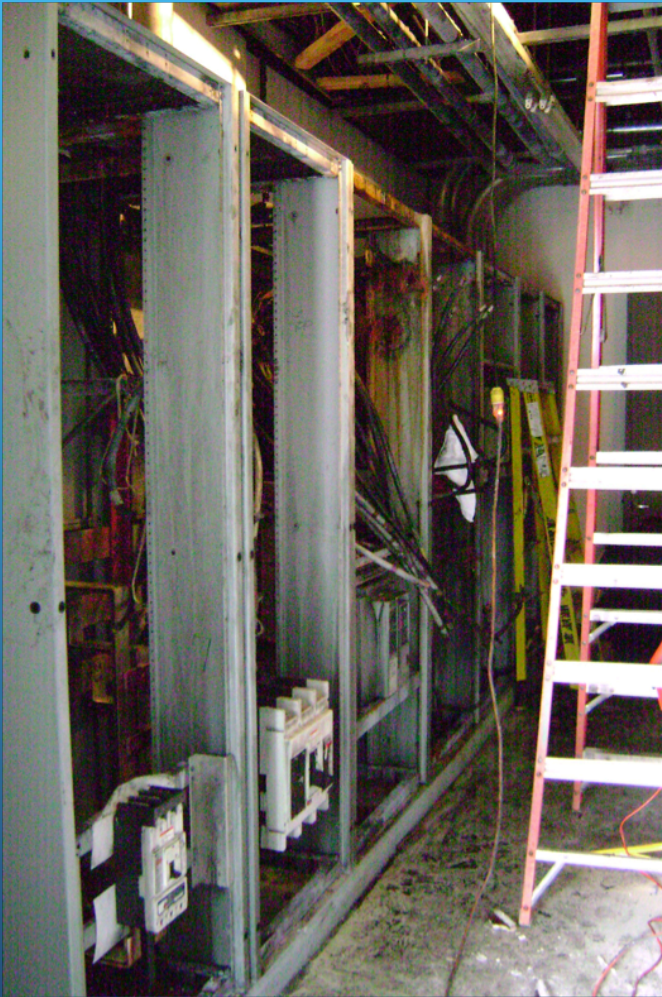
Photos of the Damage



Electrical Service Handoff-Outside



Service Entrance Switchgear-Interior



Transfer Switch & MDP - Phase 1



Wall/Structural Damage



Underground Conduit

