

Mechanical Option  
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The Thomas Jefferson National Accelerator Facility (Jefferson Lab)  
Technology and Engineering Development (TED) Building  
Newport News, VA

### Presentation Outline

- 1. Introduction (5)**
  - a. Title slide, Presentation Outline (2)
  - b. Building information, Site, Design (3)
- 2. Existing Mechanical System (3)**
  - a. Air
  - b. Hydronic
  - c. Geothermal
- 3. Depth 1 – Horizontal Directional Drilling (HDD) Geothermal Field (6)**
  - a. Why HDD (3)
  - b. HDD design for TED and energy comparison (3)
- 4. Breadth – Construction Management of HDD Field (3)**
  - a. Construction Site
  - b. Construction Process
  - c. Budget and Schedule Impact
- 5. Depth 2 – Radiant Floor Slab Cooling (9)**
  - a. Radiant slab design, set points, and parameters (3)
  - b. Modeling the slab, effect on loads, new air system (3)
  - c. Results on energy profile (3)
- 6. Breadth – Construction Management of Radiant Floor Slab (2)**
  - a. Cost of implementation vs. current design
  - b. Schedule impact – use of modular tubing sections
- 7. Final Conclusions, Discussion, and Recommendations (3)**
- 8. Acknowledgements (1)**

Total Slides: 32