

SUSTAINABLE UNIVERSITY SYMPOSIUM
Geothermal Systems at UIC

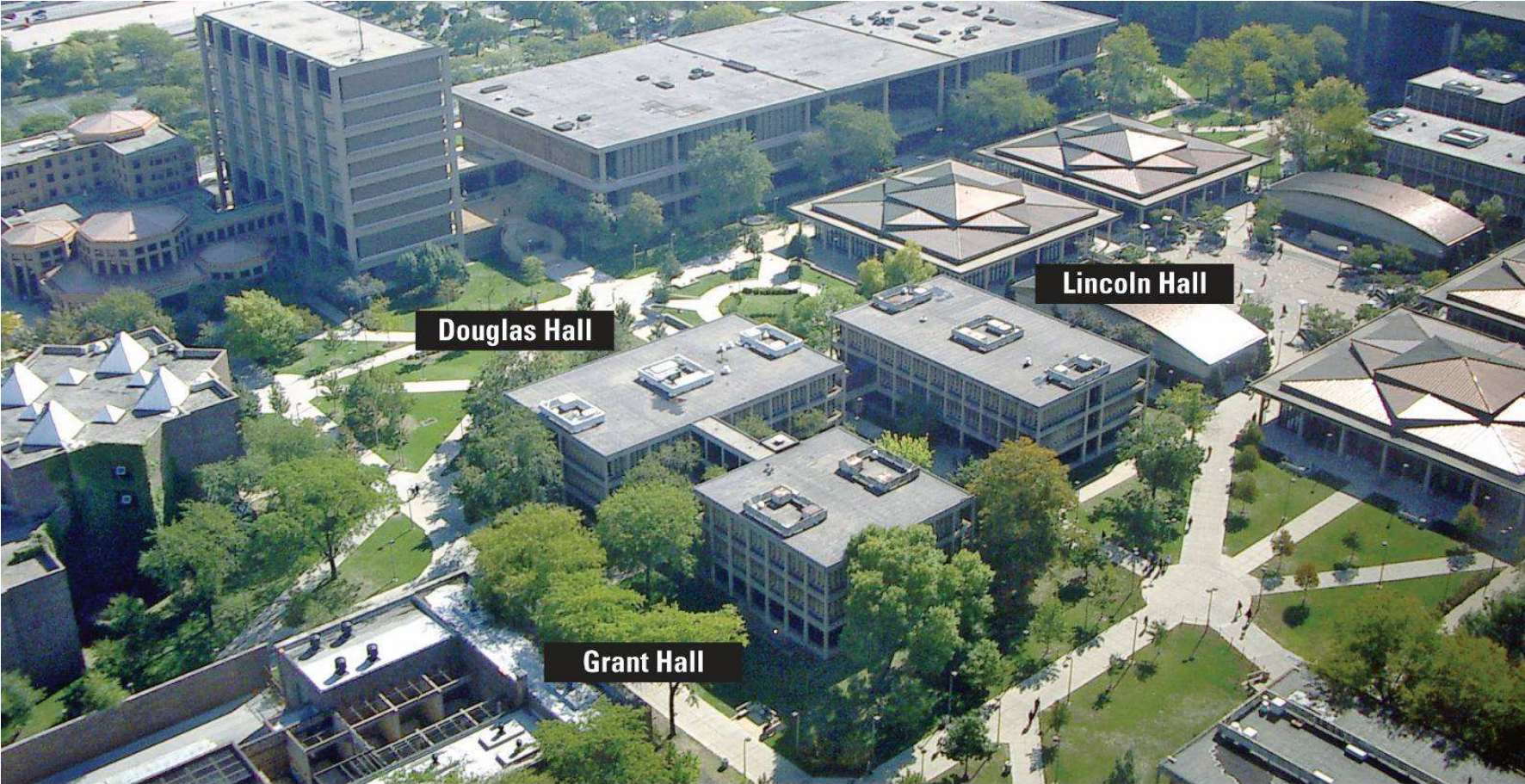


**Sandi Port Errant Language
and Culture Center at Grant Hall**

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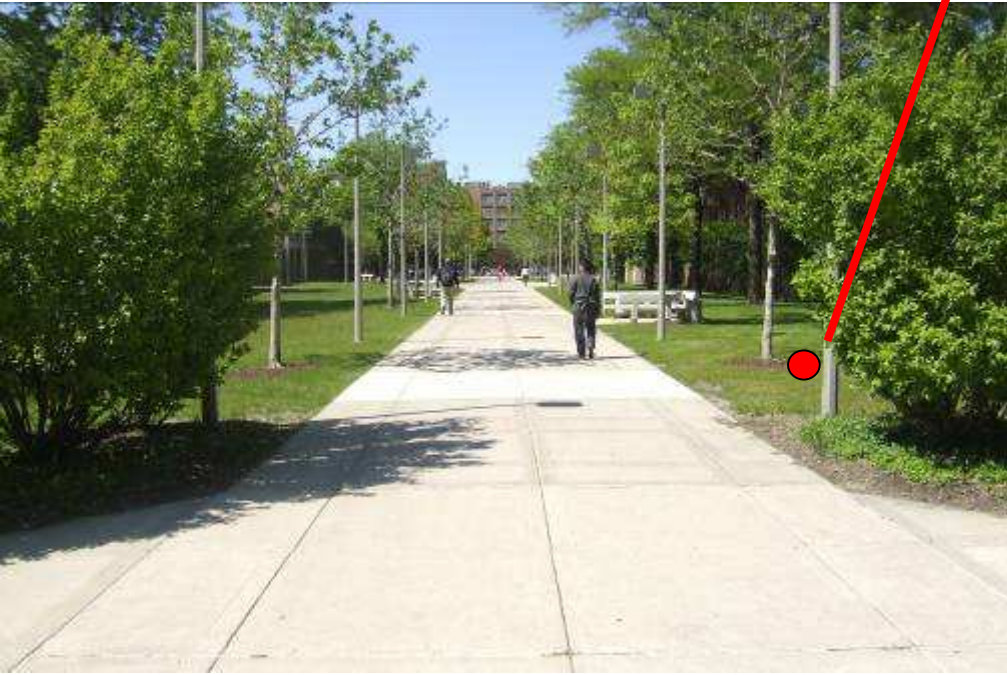
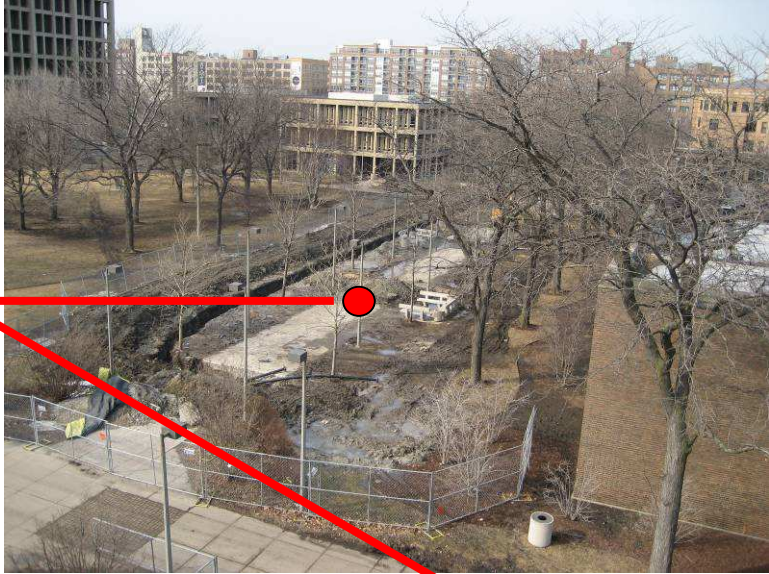
SUSTAINABLE UNIVERSITY SYMPOSIUM
Geothermal Systems at UIC

Grant Hall
Geothermal Field



SUSTAINABLE UNIVERSITY SYMPOSIUM
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during and after construction



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Geothermal Systems at UIC

Why Geothermal and Heat Pumps?

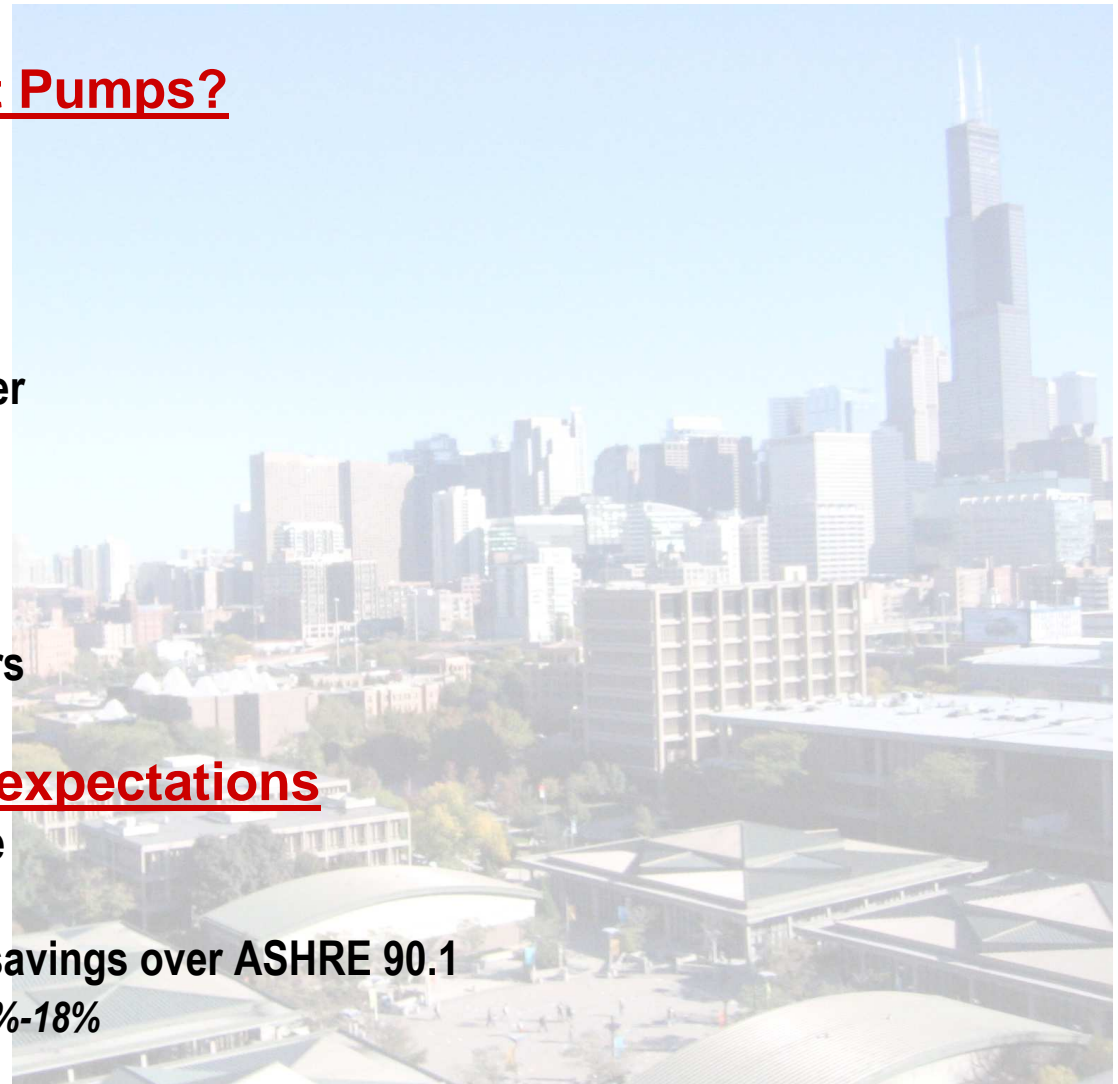
- Reduced energy usage
- Year round cooling

Challenges

- Finding a qualified design engineer
- Optimizing field size
 - *250 vs. 500 foot wells*
 - *14 vs. 28 wells*
- Planning for the future
- Comfort level of building engineers

Performance - Exceeding expectations

- No use of heat exchangers to date
- No hot/cold complaints
- Design predicted 12-16% energy savings over ASHRE 90.1
 - *Installed system is achieving 17%-18%*



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Geothermal Projects at UIC

- **Grant Hall**
 - *Complete 2007*
- **Lincoln and Douglas Halls**
 - *Under construction – Complete 2009*
- **National Center for Rural Health Professions – Rockford**
 - *Bids in September 2008*
 - *Complete 2010*
- **Six more classroom buildings on the Chicago campus**



SUSTAINABLE UNIVERSITY SYMPOSIUM
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Lincoln and
Douglas Halls
Geothermal Field



SUSTAINABLE UNIVERSITY SYMPOSIUM
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Stevenson Hall
Geothermal Field



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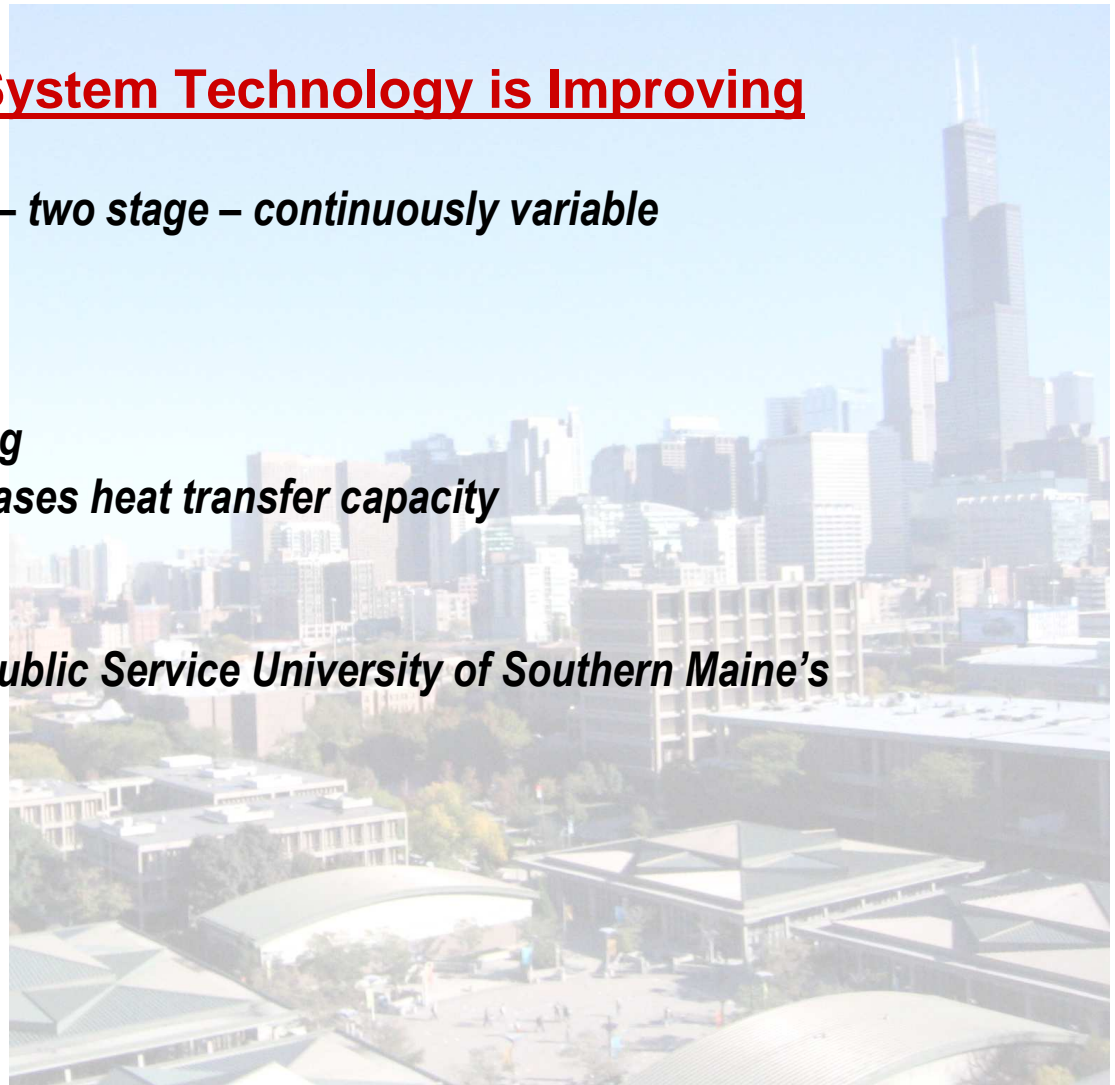
Jefferson and
Henry Halls
Geothermal Field



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Geothermal / Heat Pump System Technology is Improving

- Heat pumps
 - *Compressors – single stage – two stage – continuously variable*
 - *Reduced noise*
- New field pipe option
 - *Reduces well bore diameter*
 - *Decreases volume of grouting*
 - *Increased surface area increases heat transfer capacity*
- Greater well depths
 - *250', 300', 500'*
 - *1,500' at Muskie School of Public Service University of Southern Maine's Portland campus*



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