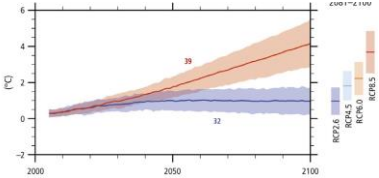
NEST AC UPGRADE

Project Rationale:

SCD301-20



•Climate Change: All models project daytime high and nighttime low temperatures to rise. While temperature can be expected to increase year round, the greatest increases will occur in the summer months. By the 2050s, daytime high temperatures will be substantially warmer (an increase of 3.7°C) in summer. By the 2080s, we can expect summer daytime highs to increase by 6°C. (Source- COV Climate Impact Study)

•Sustainability: Was a big driver in developing the Nest and is still so. This project will maintain the current LEEDS checklist and work to do better

•Building Satisfaction: The AMS staff register complaints with the summer interior temperature. Additionally our C&C department field a lot of complaints and summer is our busiest time. Additionally over the years we have seen an increase in student summer Nest usage – many of these events involve physical activity

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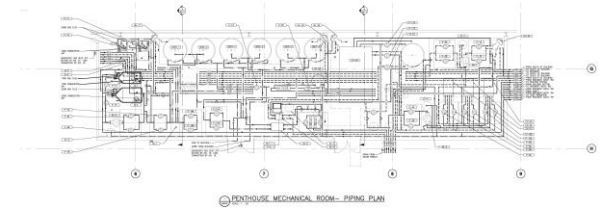
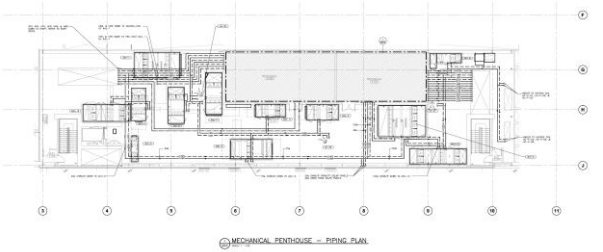
Scope of Work:

•This project considers the addition of cooling to zones served by air handlers AHU- 6, 7, 8, 11. These AHU'S have space for future cooling coils, and the fan motors have been selected to accommodate the additional pressure drop from an additional coils

•The principle areas of coverage would be the second floor, third floor admin. areas and Service Centre

•Lower & main floor is cooled by the substantial volume of air exchange and the fourth floor has specific area cooling in addition to passive ventilation. It is a relatively small footprint and low occupancy





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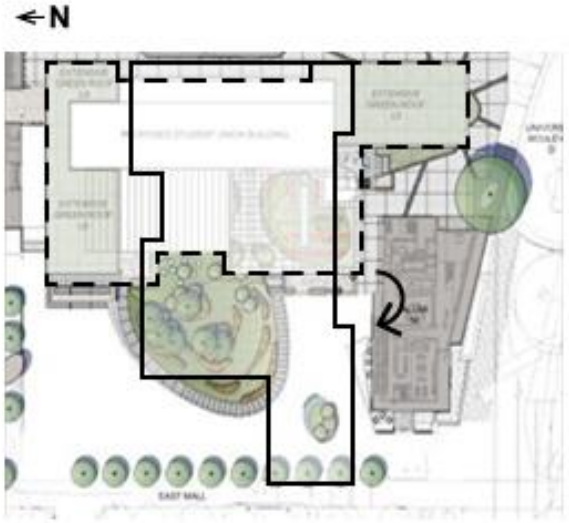
Project Flags:

- Building orientation is NS not EW and thus has a greater heat gain
- Increase complaints from students, staff and conference organizers
- Chilled water deficiency – AMS F& B equipment



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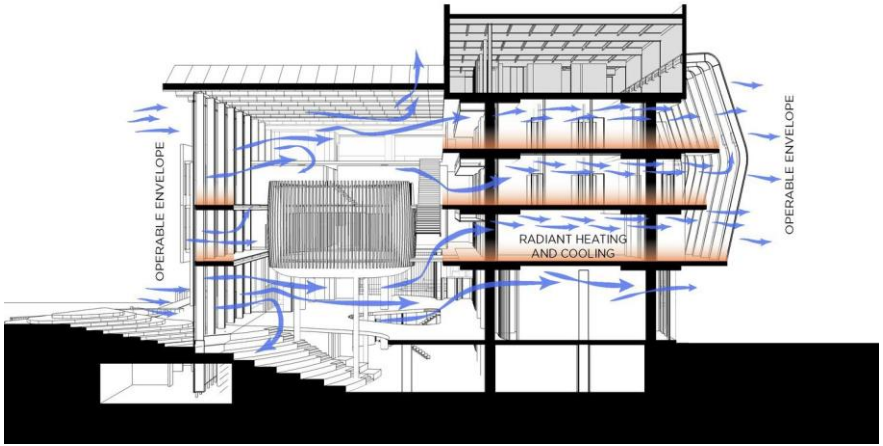
Nest Cooling Strategy:

- The Nest use the principle of passive ventilation and convection

- Five areas have independent cooling



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Sustainability:

- There is a potential to increase solar panels on roof
- Increased energy reduction and carbon footprint

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Budget:

- Retain AME Mechanical Consultant to prepare option recommendation - $15,000.00+- +taxes
- Retain Mechanical Consultant to prepare contract documents and administer implementation - $35,000.00+-
- Capital value of project is $250,000.00+-
- Why now??
  Construction inflation rate 1.0% per month so in three years the project cost will rise $107K

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Timeline:

- 2019 UBC Mechanical Dept. Technical Services analyzed current situation and provide three options
- 2020 Consultants RFP prepared