

NEST AIR CONDITIONING SYSTEM UPGRADE



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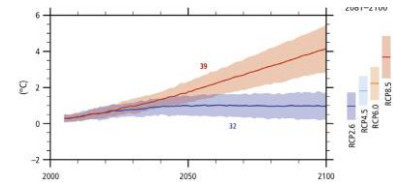
Project Rationale:

Do you remember last week when it hit record highs people complained well that will be the new normal.

- Climate Change: Currently Vancouver regional climate modeling projects 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 it still is. This project will maintain or better the current LEEDS checklist

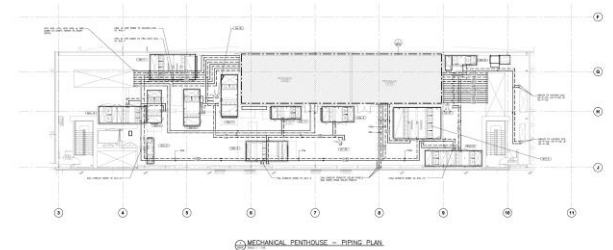
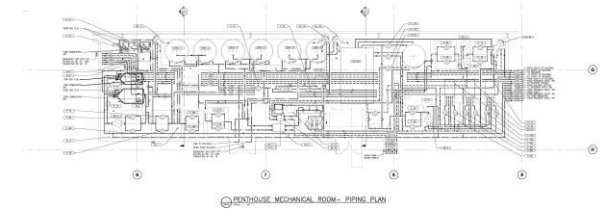
- Building Satisfaction: The AMS staff register complaints with the summer interior temperature. Additionally our C&C department field a lot of complaints and summer is our busiest time. Additionally over the years we have seen an increase in student summer Nest usage – many of these events involve physical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

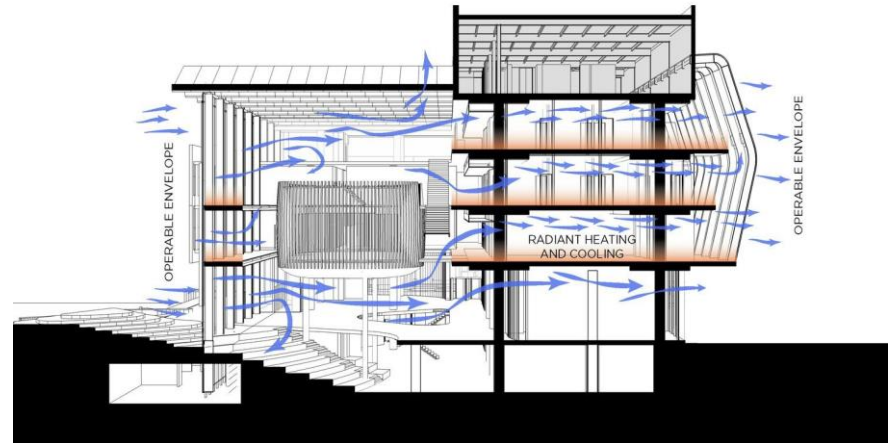
- Building orientation is NS not EW and thus has a greater heat gain
- Increase complaints from students, staff and conference organizers
- Chilled water deficiency – AMS F& B equipment



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Nest Cooling Strategy:

- The Nest uses the principle of passive ventilation and convection and an operable envelope strategy
- Heating & cooling of the radiant slab
- Three areas have independent cooling



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Sustainability:

- There is a potential to increase usage of District Energy
- Increased energy and carbon footprint reduction
- Increased energy efficiency of existing equipment
- Elimination of temporary fans and AC rental units



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Budget:

- Spent to date \$16,000.00+- + taxes to retain AME Mechanical Consultants to prepare AC options – Centralized or localized AC units
- Next step retain Mechanical Consultant to prepare Design Development (DD) documents and undertake re-costing exercise - \$39,000.00+-
- Capital value of project is \$250,000.00++
- Why now
Temperatures are rising and so is construction inflation rate 1.0% per month so in three years the project cost will rise \$107K
- Exploring two opportunities for funding assistance UBC Cyclical maintenance & Nest as 'Cooling Centre'

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Timeline & next phase:

- 2019 UBC Mechanical Dept. Technical Services analyzed current situation and provide three options
- 2020 Consultants RFP prepared
- June 2020 Consultants 1st report
- December 2020 Consultants 2nd report
- May 2021 Consultants 2nd report revision
- Aug 2021 Council

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Questions ?