

Rakai, Pacholek

Geometry

Numerica model

Results

HVAC investigation of building 311 ventilation system

Rakai, Pacholek

December 12, 2014

EN Engineering Department



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Original CAD geometry



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Contain Cleaned up CFD geometry

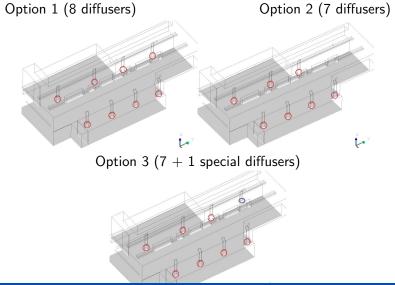
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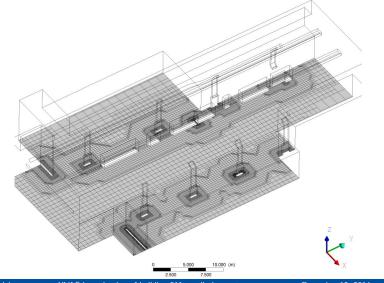


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o 25000 $\frac{m^3}{h}$ 18 °Ccooling air ventilated o 20 kW heat from equipment (boxes) o 30 kW heat from environment o 0.23-0.26 $\frac{m}{c}$ inlet velocity depending on diffuser design

o Steady state solver with SIMPLE pressure velocity coupling $% \left({{{\rm{SIMPLE}}} \right)$

o Natural convection with Boussinesq approximation

Comm Velocity magnitude at 1 m height

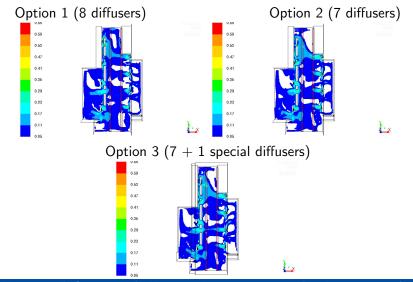


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Constant Velocity magnitude at 1.5 m height

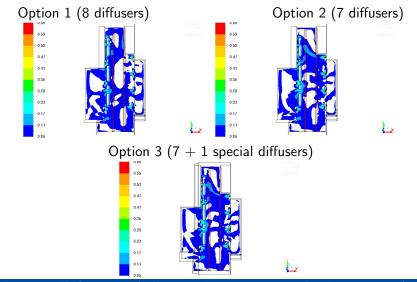
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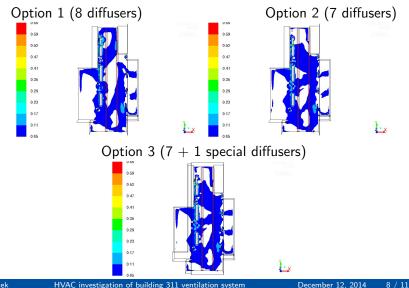


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Velocity magnitude at 2 m height CFD team



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Constant Velocity magnitude at 2.5 m height

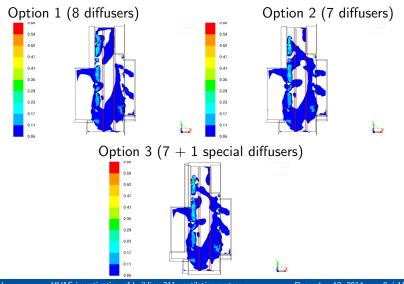


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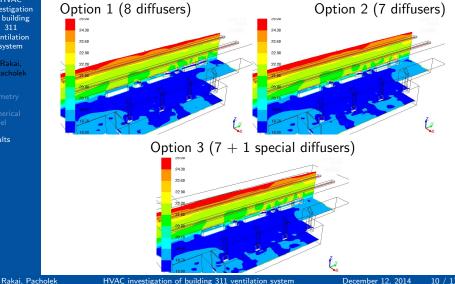


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Carrier Temperature: average outlet 24 °C

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Thank you for your attention!

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