

Kohta Ueno

Simplified Space Conditioning Strategies Lessons Learned: Where's the Edge?



BSC Building Science Corporation
CONFERENCE + TRADE SHOW FOR RENEWABLE ENERGY AND GREEN BUILDING PROFESSIONALS
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Comfort Complaint

- Many superinsulated/airtight houses running successfully with two mini split heads
- Comfort complaint in Central MA house
- Custom house plan (first floor bumpout, bonus rm)



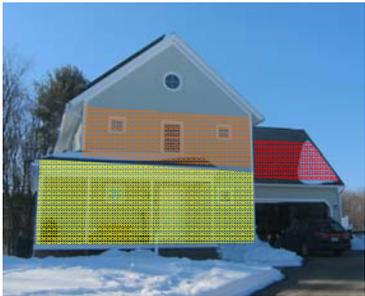
View from Southeast View from Northeast



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Comfort Complaint

- Downstairs Ts even
- Constant setpoint
- Front BR warmest
- Rear BR colder
- Bonus room ~50 F (homeowner)
- Worse w. garage door open
- BR doors open/closed
- ~300 CFM 50 (0.8 ACH 50)

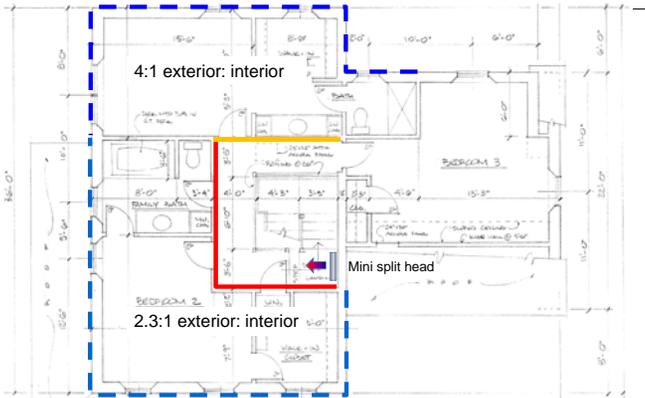


View from East (front)



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Comfort Complaint



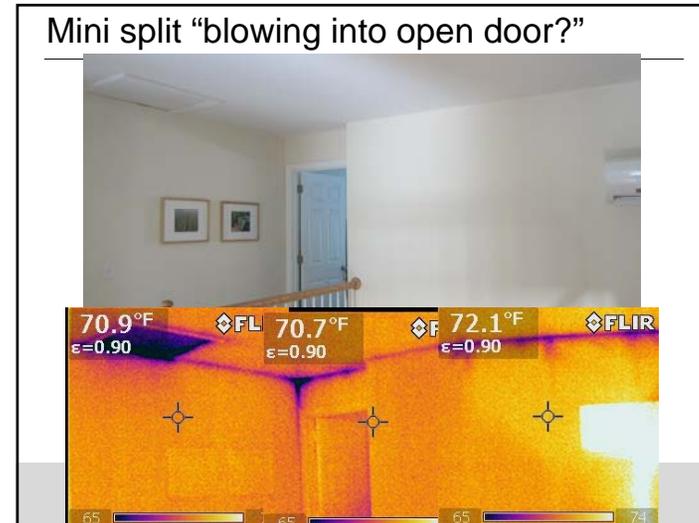
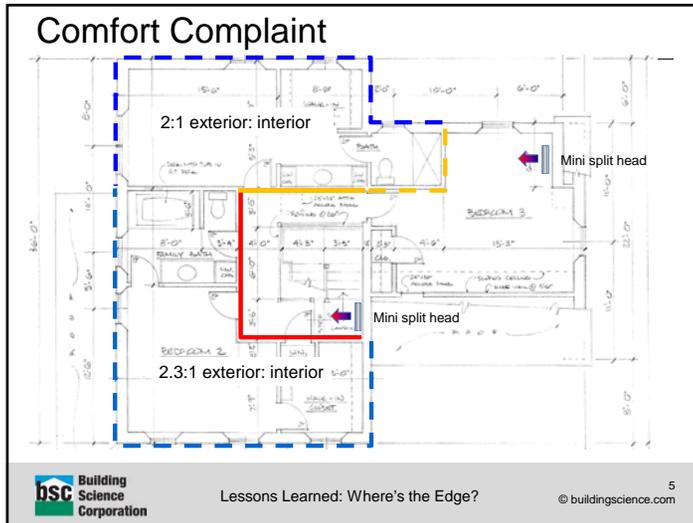
4:1 exterior: interior

2.3:1 exterior: interior

Mini split head

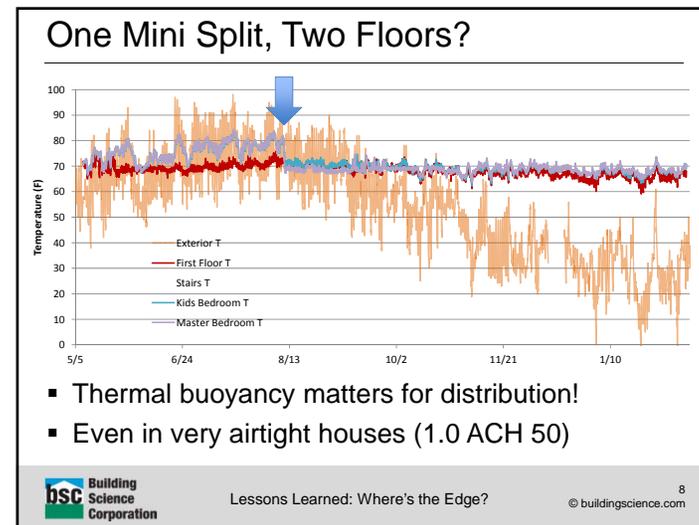


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One Mini Split, Two Floors?

- Second floor unit rarely runs (20 F days), 2600 sf
- REM/Rate Design Load:
 - 11 kBtu/hr heating, 7.3 kBtu/hr cooling (left)
 - 12.5 kBtu/hr mini split heating capacity at 5 F
- Single mini-split head on first floor



Questions?

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