

Climate Change Impacts on Thermal Impacts for Enclosures and Future Building Codes



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Building and Project Types

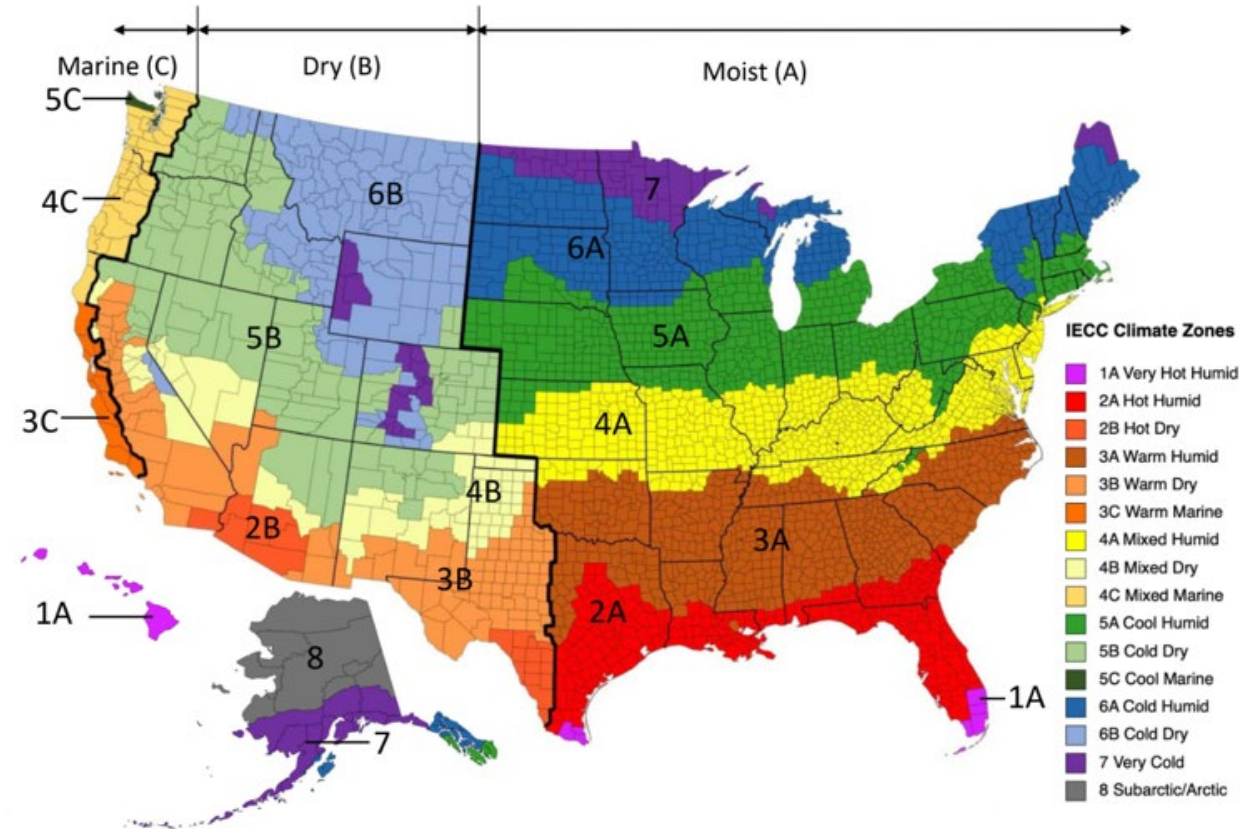


Building and Project Types



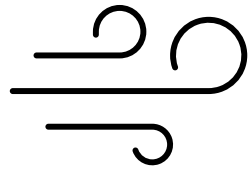
Climate Forward Design

- Important to think of future climate considerations
- Volume of existing buildings
- Delivery efficiency of grid
- Not using outdated data
- Aged building materials (color)

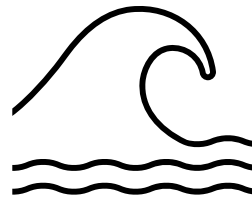


IECC 2021 Climate Map

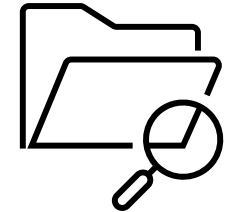
Climate Forward Design and Code



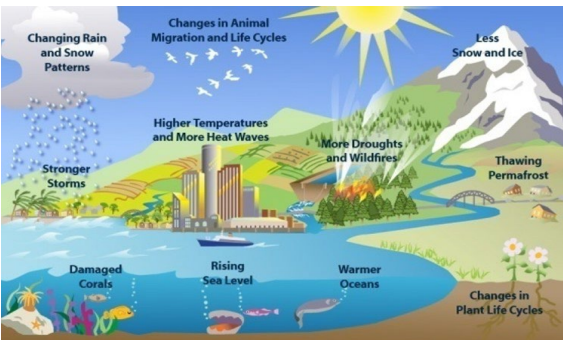
Wind Buffering



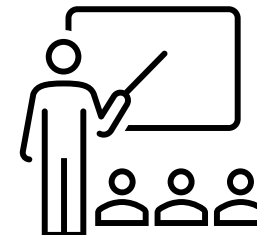
Flood Proofing



Latest Data & Future Mapping for Climate Ready Codes



Three Storm Design

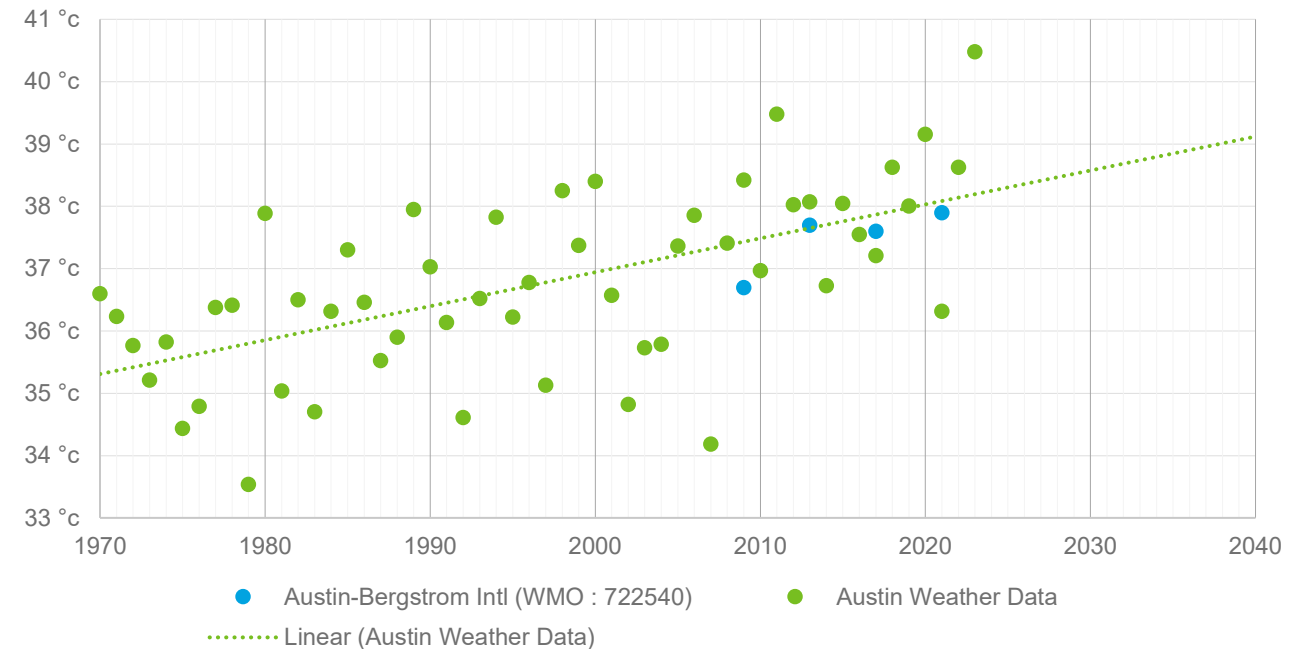


Apprenticeship Programs



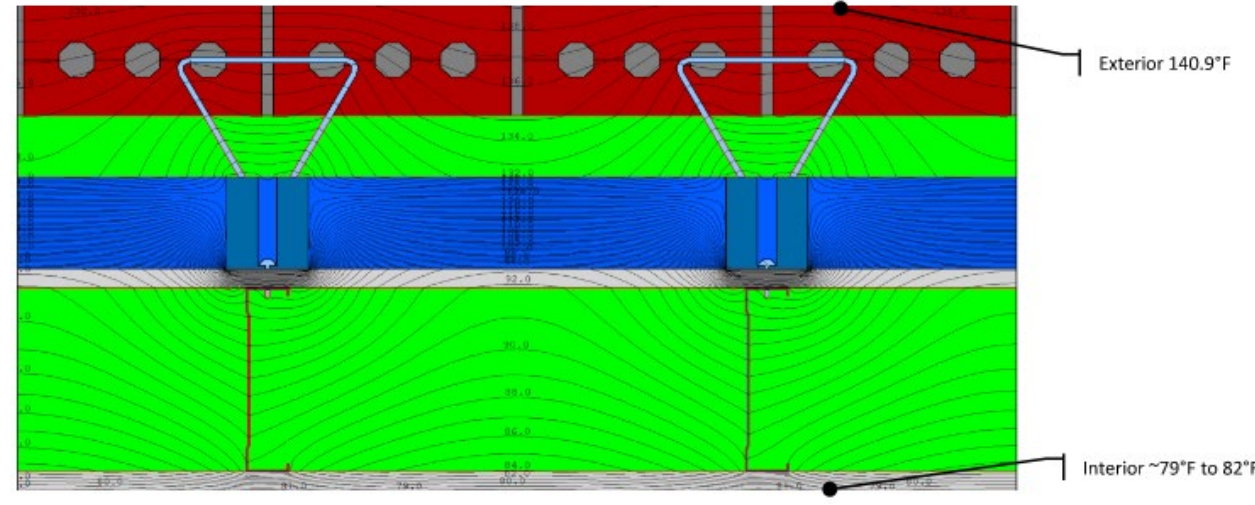
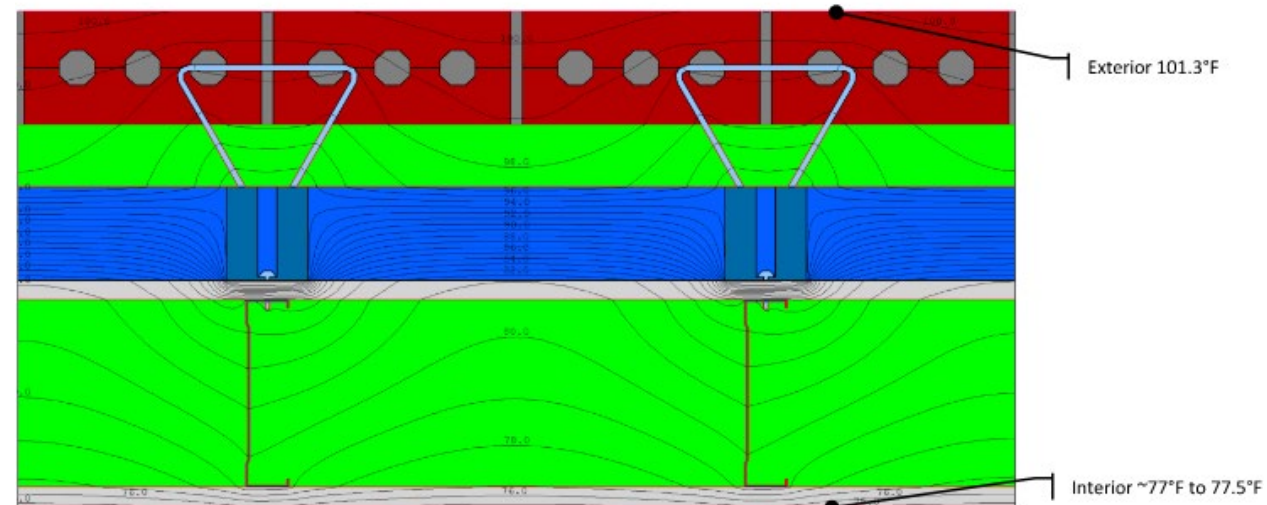
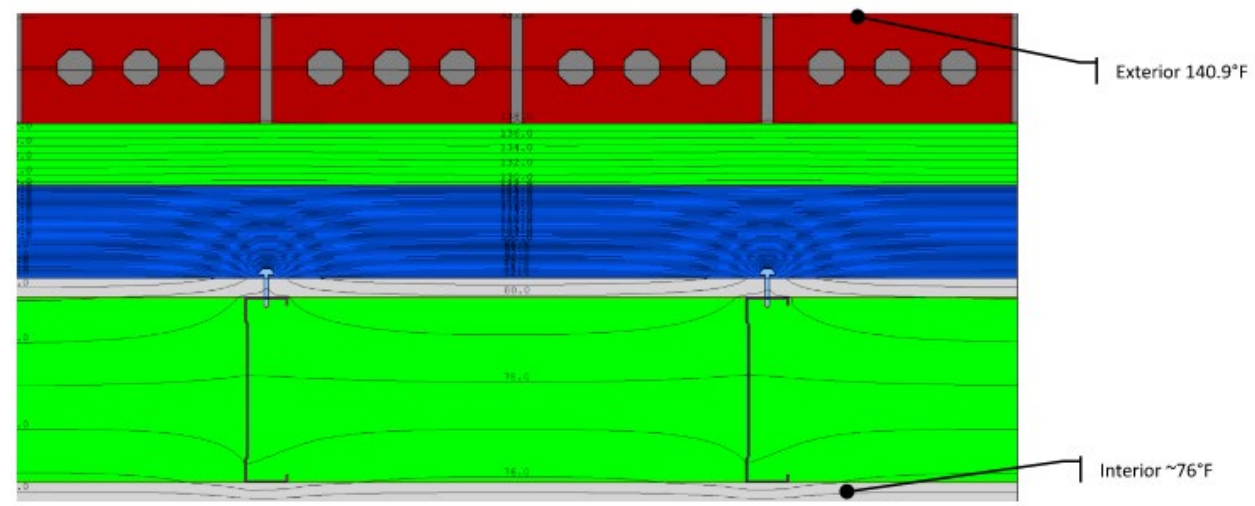
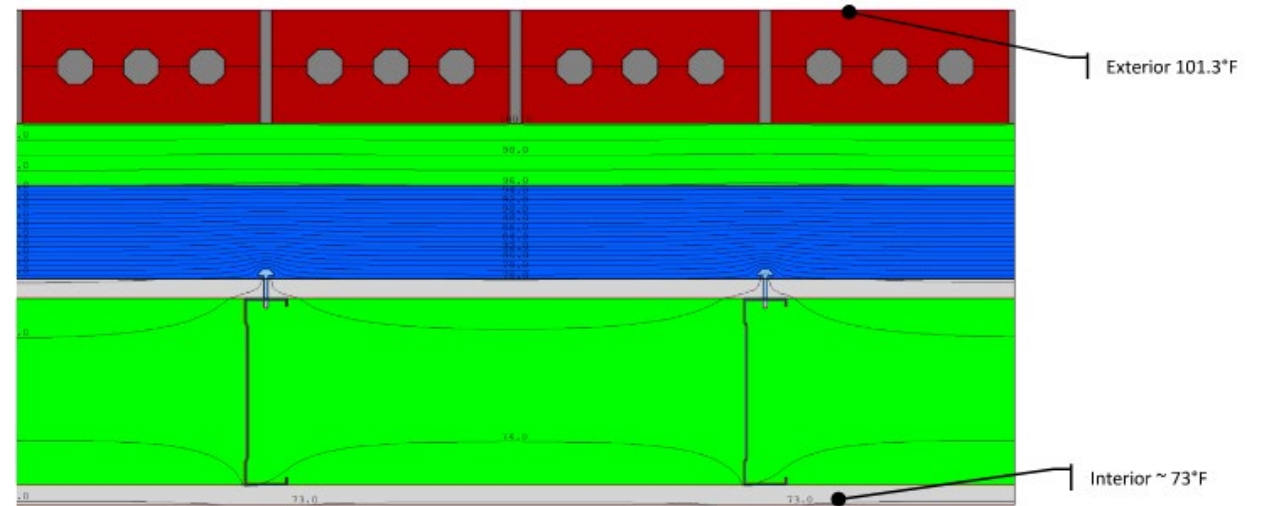
Climate Forward Design

- Current outdated data
- Updated data sets
- 0.4% and 1% CDD Temps as written are now 4 to 8%
- Factor of 10 – a data set used today may miss by 10 to 15 °F
- With aged materials – darker – more absorption – 30 to 40 °F

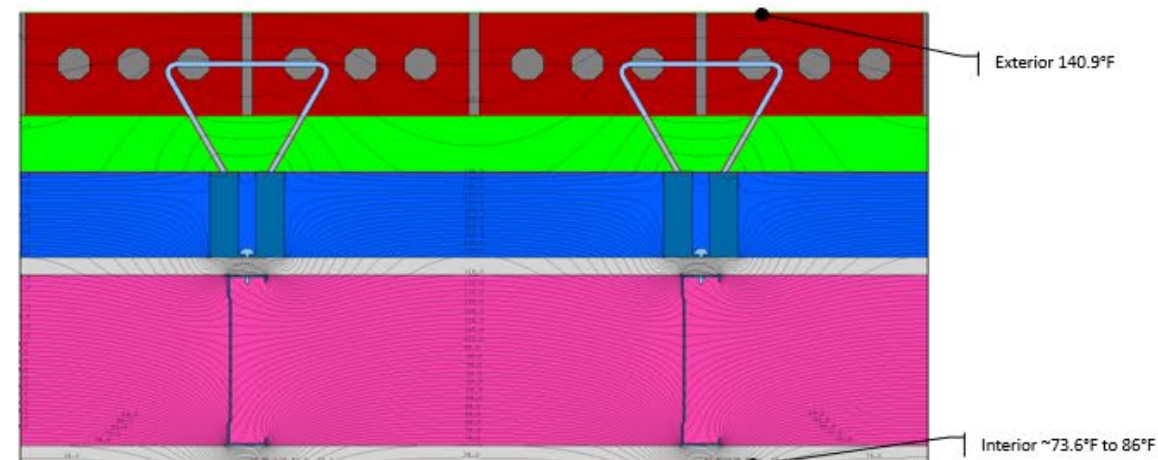
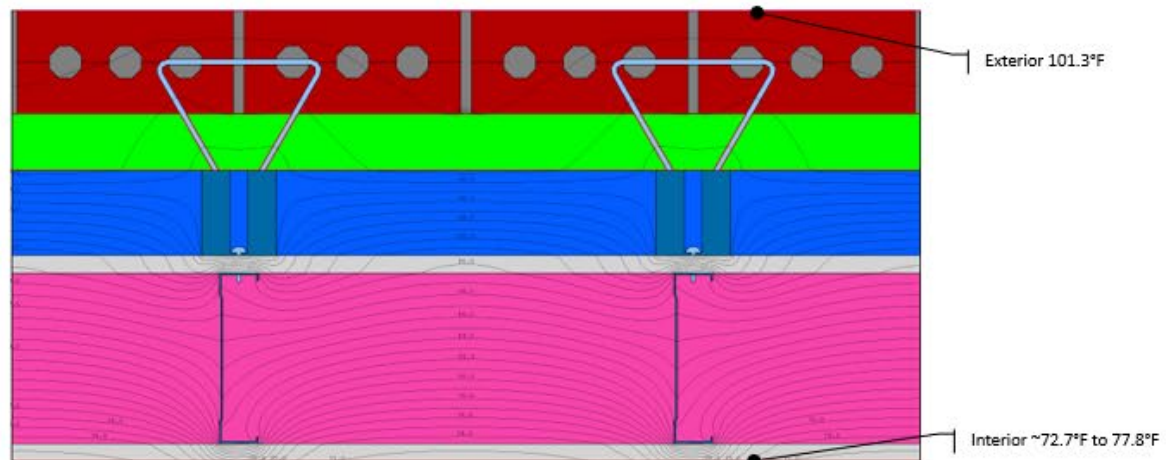
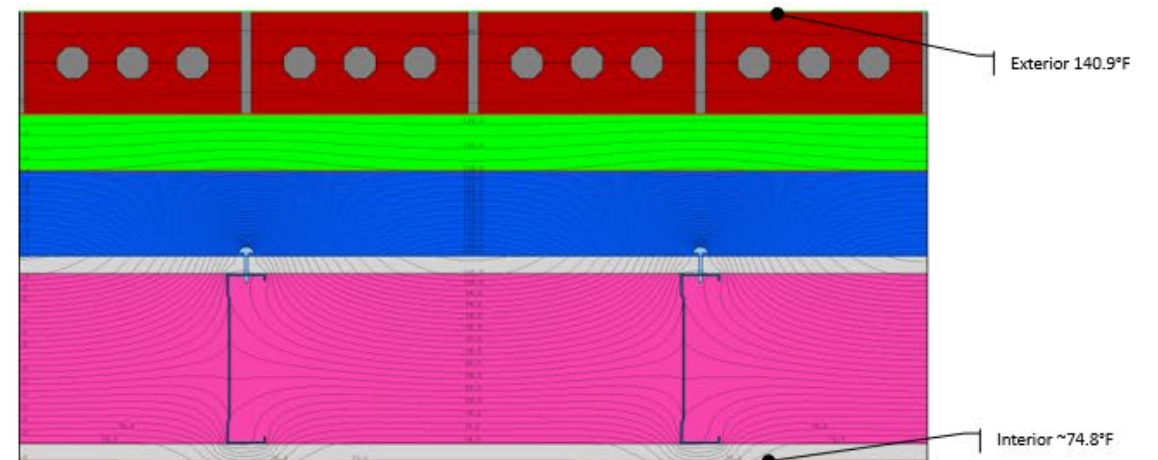
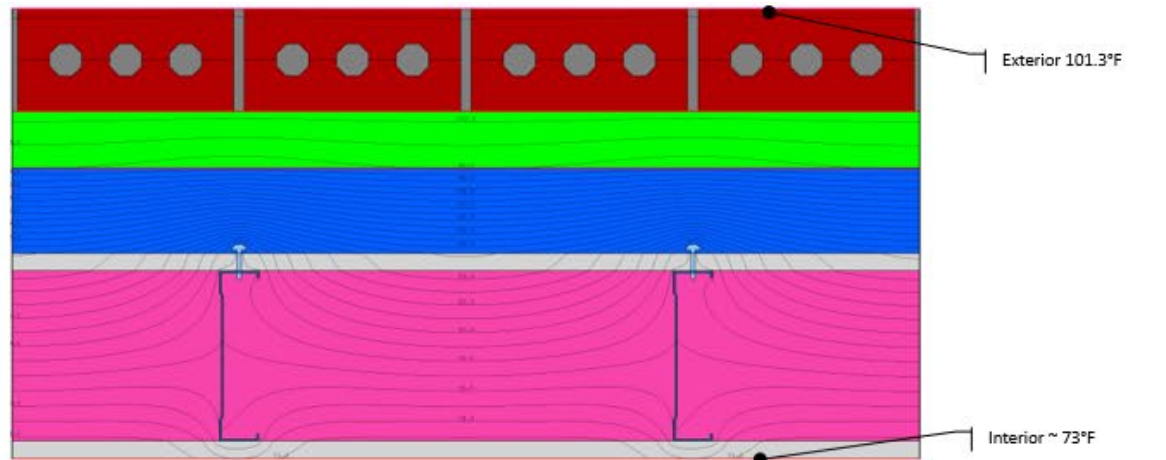


Austin 0.4% Cooling Design Temperature - Weather Data vs. ASHRAE Climatic Design Conditions (2009/2013/2017/2021)

Thermal Analysis



Thermal Analysis



Code Changes – Immediate Need Hot Climates

- Update CDD temperatures to realign - 8 to 15 °F jump in hot climates
- Update to latest climate files and build future predictive files and make code to follow both
- Used aged and stained values for material absorption
- Increased insulation to reduce heat gains
- Improve the massive existing building stock to be 30% better
- More localized energy generation including improved alternative energy
- Educate the industry and change how we design

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