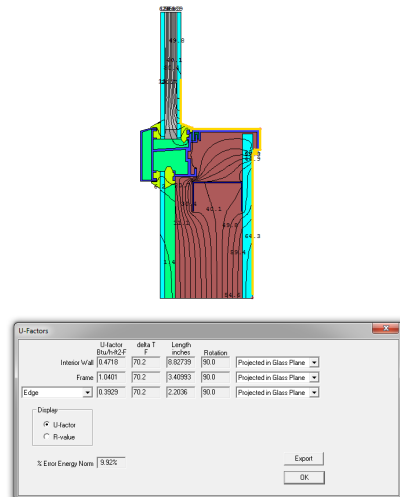
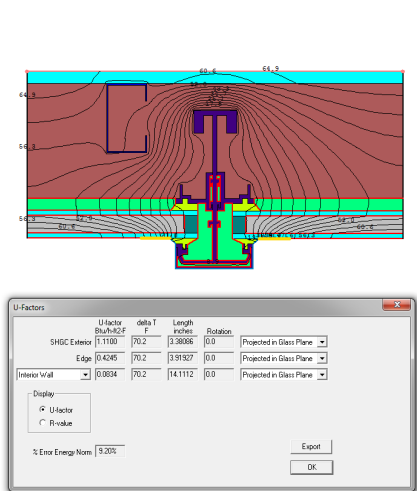
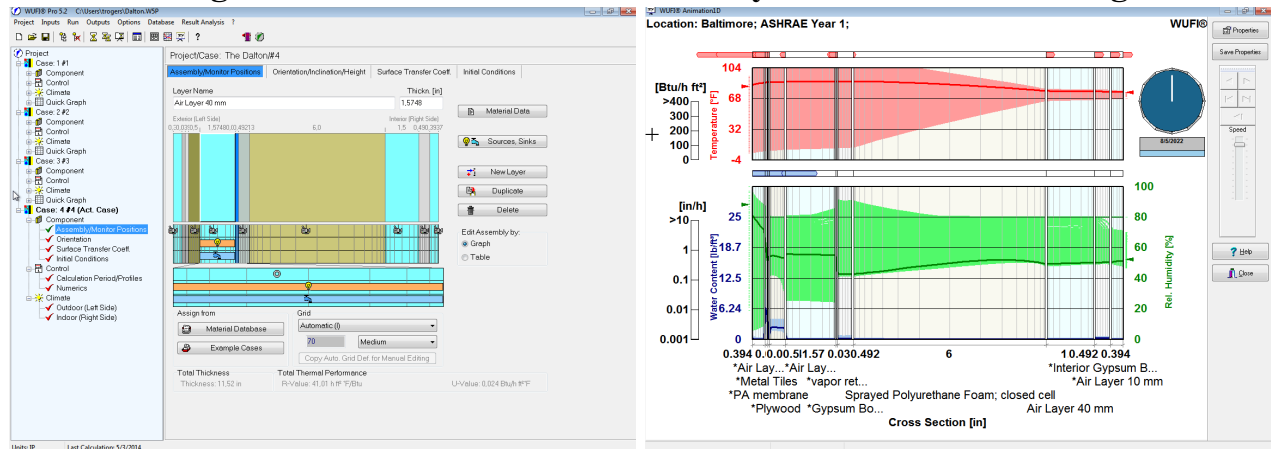


Heat and Moisture Transfer Modeling Design and Construction Phase Quality Assurance Consulting



D&A utilizes state-of-the-art computer programs to model one- and two-dimensional heat and moisture transfer in multi-layer wall and roof assemblies, as well as building fenestration (windows, storefronts, curtain walls) for the purposes of identifying the potential for condensation on/or within moisture-sensitive components of the wall assemblies due to vapor diffusion, liquid transport or thermal bridging in building materials. Where the potential for condensation occurs, we provide recommendations for modifying the system or components in order to mitigate this potential.

Challenge:

- Developing effective wall/roof assembly alternates during the design phase or assembly modifications during the construction phase, where the potential for condensation occurs, while minimizing cost and constructability impact.

Value Added:

- On multiple projects D&A has been instrumental in identifying damaging condensation potential within the building envelope. Solutions have included cost-effective, high-performance, high-permeability weather resistive barriers (WRB's) in lieu of lower-performing systems; spray foam continuous insulation/air/vapor barrier systems in conjunction with spray foam interior insulation in lieu of conventional rigid continuous insulation, air/vapor barrier and batt interior insulation resulting in single source installation for walls and roof; introduction of "smart" vapor retarders capable of bi-directional drying; and field modification of complex wall/roof assemblies with spray foam insulation avoiding extensive reconstruction.

Service performed: Design and construction phase heat and moisture transfer modeling of walls, roofs and fenestration.

Client/Contractor: Various

Architect: Various

Duration: 2008 - Present