ReNEWW (Retrofit Net-zero Energy, Water, and Waste) House
Dr. Eckhard A. Groll - Whirlpool Corporation
Objectives and Methods

- 3-year project
- Retrofit existing home 1920’s era, reaching zero energy, water consumption and waste generation
- Year 1 – collect baseline data
- Year 2 – conduct advanced envelope upgrade to determine improvement
- Year 3 – introduce experimental approaches and technologies to bridge gap reaching project goal
Simulation Results

Impact of Year 2 renovation

- Department of Energy Simulation – BeOPT Software
- Determines optimal improvements
- Tradeoff between renovation cost and reduced consumption
- Predict over 50% site energy consumption savings with envelope improvements

Alternative System Layouts
Additional Images of Finished/Original Envelope