



Mobile Building Energy Audit and Modeling Tools

**Cooperative Research and Development
Final Report**

CRADA Number: CRD-11-00441

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Cooperative Research and Development Final Report

In accordance with Requirements set forth in Article XI.A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

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CRADA Title: Mobile Building Energy Audit and Modeling Tools

Parties to the Agreement: concept 3D

Joint Work Statement Funding Table showing DOE commitment:

Estimated Costs	NREL Shared Resources
Year 1	\$ 53,500.00
Year 2	\$ 00.00
Year 3	\$ 00.00
TOTALS	\$ 53,500.00

Abstract of CRADA work:

Broadly accessible, low cost, accurate, and easy-to-use energy auditing tools remain out of reach for managers of the aging U.S. building population (over 80% of U.S. commercial buildings are more than 10 years old*). concept3D and NREL's commercial buildings group will work to translate and extend NREL's existing spreadsheet-based energy auditing tool for a browser- friendly and mobile-computing platform. NREL will also work with concept3D to further develop a prototype geometry capture and materials inference tool operable on a smart phone/pad platform. These tools will be developed to interoperate with NREL's Building Component Library and OpenStudio energy modeling platforms, and will be marketed by concept3D to commercial developers, academic institutions and governmental agencies. concept3D is NREL's lead developer and subcontractor of the Building Component Library.

Summary of Research Results:

This CRADA produced extensions to OpenStudio and the Building Component Library that enable a mobile building energy audit tool. NREL specifically focused on defining an audit data schema that could be collected by a mobile device, referenced in the Building Component Library, and used by OpenStudio to articulate a building energy model. concept3D developed mobile device user interfaces to define building geometry and underlying software architecture for a complete mobile auditing solution. NREL and concept3D developed more detailed use cases and design documentation for the system.

NREL and concept3D collaborated to prepare a joint DoD ESTCP proposal to create and demonstrate an integrated energy auditing system.

Subject Inventions Listing: None

Report Date: 2/15/13

Responsible Technical Contact at Alliance/NREL: Larry J. Brackney

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