

RETSCREEN EXPERT ANALYSIS OF BELIZE RESIDENTIAL HOME

Comparison of Existing Energy Consumption to Consumption After Upgrades



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# Executive Summary

The Executive Summary should be one or two pages at the most, depending on the size of the report. The Summary should be on its own page, at the beginning of the report.

The Individual Project will serve as a study of the RETScreen Expert software, using a Belize residential home plan as a guide for the construction type, and an Excel example of the proposed upgrades. A technical report will be written to identify cost, energy and emission reductions based on the upgrades with recommendations to improve the home’s comfort and health.

# Objective

The objective of this project is to collect data from a plan drawing of a residential home in Belize City and create a base model of the home in RETScreen Expert, and using the same base model, add upgrades to improve the building’s energy efficiency and demonstrate cost, energy and emissions reductions resulting from the upgrades.

# Scope

Create an Excel sheet with input data for the house measurements. Example: Height, width, and thickness of concrete walls to calculate the area and R-value of the slab. This data will be entered into the RETScreen Expert file. Compiling the data first will make entering the data into RETScreen easier and will provide a backup for areas and R values.

Calculate dimensions and R-values for all envelope components, (an example Excel sheet is provided)

Model all information from the drawing in your RETScreen Expert File, taking screenshots for each building component and pasting them into a Word document.

Model upgrades in RETScreen Expert and demonstrate cost, energy and emission reductions based on the upgrades. Example: Add two inches of expanded polystyrene to the walls and compare the base building model to the upgraded building model to determine cost, energy and emissions reduction, taking screenshots for each building component and pasting them into a Word document.

Write a technical report on the results of the RETscreen Expert base model and upgrades using the **American Psychological Association (APA) formatting style**. Use the reports tab in RETScreen to generate various reports and include them in your own report submission.

Technical Report Components

Student Title Page per APA Guidelines [Purdue Edu Technical Report Writing Example](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html)

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# Executive Summary

 A one-page summary of key findings that are written once the report has been written. The summary is read by an Executive stakeholder (decision maker or owner) in the project to determine the action required based on the summary. The reported outcome should be captured in the summary, providing critical information without the need to read the entire report.

# Main Body of Report

Using applicable citations for information used that has a copyright rule and correct Heading format (Heading 1, 2, 3 etc.). Use this report example for headings.

# Conclusion

A summary of the next steps based on the report’s findings. The summary should not include any new information that has not been delivered in the Executive Summary of the Main Body of the report.

# Appendix

Appendices of the reports generated from the RETScreen Expert model, and any technical documents related to the proposed mechanical upgrades. Example: APPENDIX A: Short description, centered on the page. Only one Appendix A, B, C etc., per page.

 Please see the example on the next page.

# APPENDIX A: Domestic Hot Water Upgrade Tank Specifications

