

# Environmental Building Declaration Summary

Brock Commons Tallwood House,  
University of British Columbia



**Athena**  
Sustainable Materials  
Institute



Photo courtesy of UBC

## About this Summary

The data shown here reports the lifetime environmental footprint of this building. Results were calculated using an analytical technique known as life cycle assessment (LCA), a scientific method for assessing all the interactions between a building and nature and estimating the resultant burdens on air, land and water. Additional results for this building are transparently reported in a detailed and publically-available Environmental Building Declaration (EBD). The Athena Institute performs LCA in accordance with the international standards ISO 14040 and 14044. The Environmental Building Declaration conforms to Athena's North American interpretation of the EN 15978 standard, which specifies how LCA is to be performed and reported for buildings.

## Full Report

"Brock Commons Tallwood House, University of British Columbia: An Environmental Building Declaration According to EN 15978 Standard," Athena Institute, January 2018.

*Find this report and more information about EBDs at [www.athenasmi.org](http://www.athenasmi.org).*

## References

EN 15978:2011 Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method.

ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and framework.

ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and guidelines.

## Date of Assessment

February 2017

## Assessor

Matt Bowick,  
Athena Institute

## Verifier

Jamie Meil,  
Athena Institute

## Life Cycle Impact Assessment Method

TRACI v2.1; Cumulative  
Energy Demand (CED)

## Scope of Assessment

- Cradle-to-grave assessment with a 100-year study period
- All major building materials for core, shell interior partitions and finishes are included
- Landscaping materials, furnishings and mechanical/electrical equipment are excluded
- Operating energy and water are included
- System boundary includes EN 15978 modules A1-C4 with the exception of B1 and B5, due to inadequate scenario data for those modules at the time of the study

## Data sources

- Athena Institute life cycle inventory database
- US life cycle inventory database
- ecoinvent life cycle inventory database
- Project-specific data provided by the design team

[www.athenasmi.org](http://www.athenasmi.org)

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## Life Cycle Results

<i>EN 15978 Environmental Indicator</i>	<i>Unit</i>	<i>Per-m<sup>2</sup>-year</i>
<b>Environmental Impacts</b>		
Global warming potential	kg CO <sub>2</sub> eq.	1.98E+01
Depletion of the stratospheric ozone layer	kg CFC-11 eq.	7.15E-08
Acidification potential of land and water	kg SO <sub>2</sub> eq.	1.22E-01
Eutrophication potential	kg N eq.	2.84E-02
Formation potential of tropospheric ozone photochemical oxidants	kg O <sub>3</sub> eq.	9.93E-01
Abiotic resource depletion potential for elements	kg Sb eq.	xx
Abiotic resource depletion potential of fossil fuels	MJ surplus	4.36E+01
<b>Resource Use</b>		
Renewable primary energy excluding energy resources used as raw material	MJ	4.88E+02
Renewable primary energy resources used as raw material	MJ	1.72E+01
Non-renewable primary energy excluding resources used as raw material	MJ	3.08E+02
Non-renewable primary energy resources used as raw material	MJ	3.79E+00
Secondary material	kg	1.48E+00
Renewable secondary fuels	MJ	xx
Non-renewable secondary fuels	MJ	xx
Net use of fresh water	m <sup>3</sup>	8.81E-01
<b>Waste Categories</b>		
Non-hazardous waste disposed	kg	3.74E+00
Hazardous waste disposed	kg	xx
Radioactive waste disposed	kg	xx
<b>Output Flows Leaving the System</b>		
Components for re-use	kg	6.43E-01
Materials for recycling	kg	5.35E+00
Materials for energy recovery (not being waste incineration)	kg	0.00E+00
Exported energy	MJ	0.00E+00

xx = inadequate data for assessment