

Embodied Emissions in New Construction Phase 1

Date:	May 2, 2022
Department, GM:	Kate Zanon, General Manager of Community Development
Project Manager:	Mary De Paoli, Manager of Policy Planning
Staff Lead:	Laura Sampliner
Project Origin:	☒ Council Motion <u>#CW22/017 to 019</u> ☐ Staff Initiated ☐ Other:
Priority Area:	☐ Exceptional Service ☒ Environmental Leadership ☐ Healthy City ☐ Economic Prosperity ☐ Community Evolution
Strategic Alignment	<u>Objective & Action 2.4:</u> Provide leadership in climate change by thinking globally and acting locally. Respond and adapt to climate change through planning and policy development
Proposed Priority	☐ Priority Level 1 ☒ Priority Level 2 ☐ Priority Level 3

Project Description
Under the Embodied Emissions in New Construction project, staff plan to undertake research, industry consultation, and a legal review to outline options and implementation considerations for requiring and/or incentivizing embodied emissions reduction in new construction projects. Staff will consult with industry experts, other municipalities and present options and background information to Council for their consideration. This project proposal form outlines scope of work to undertake the most recent Council direction from February 22, 2022.

Relevant Background
In June of 2019, the City of Port Moody declared a state of climate emergency. In July of 2020, City Council endorsed the Climate Action Plan. One of the six goals included in the Climate Emergency Declaration is to cut the carbon content of construction projects by 40% (compared to 2018) by the year 2030. In 2019 Council passed the following motion based on a report Councillor Madsen brought forward regarding cement use: <u>RC19/445</u> THAT Council direct staff to report back with an assessment of the benefits, costs, feasibility, and implementation steps that would be required for the City to require that Portland-Limestone Cement (or its enhanced variant, Contempra) be used wherever cement might be called for in any future civic/public projects within the City of Port Moody, per the report dated September 28, 2019 from Councillor Hunter Madsen titled Recommendation to Reduce Local GHG Emissions by Requiring Portland-Limestone Cement in All Future Construction within Port Moody;

AND THAT staff's assessment include consultation with the Cement Association of Canada, regional cement providers, and a selection of construction firms that would be affected by this change;

AND THAT, if staff's assessment supports this recommendation, then the use of Portland-Limestone Cement/Contempra shall be encouraged in all private construction within our city through its inclusion and positive weighting in the Planning Department's Sustainability Checklist, and through consideration of its use in City evaluation of all rezoning applications;

AND THAT, if staff's assessment supports this recommendation, then the Mayor shall be directed on behalf of Council to petition the Province for modification of the B.C. building code to require use of PLC/Contempra cement in all B.C. construction; and also bring this same proposal for consideration at the next general sessions of the Lower Mainland Local Government Association and the Union of B.C. Municipalities.

The City's Community Development – Policy Planning division staff have incorporated the reduction of embodied emissions, including the use of low-emissions materials such as Portland-limestone cement, in the updated Sustainability Report Card, active since April 1, 2022.

In 2020, Port Moody passed the following resolution in regard to the Tall Wood Early Adoption Initiative. To participate in the Tall Wood Early Adoption Initiative City staff are required to be trained and knowledgeable on mass timber projects.

RC20/223

WHEREAS Council is aware that the Province is considering changing the regulation pursuant to section 3 of the *Building Act*, SBC 2015, c. 2, which will authorize and regulate the construction of encapsulated mass timber buildings 7-12 stories in height (the "Tall Wood Early Adoption Initiative");

AND WHEREAS Council, together with the Planning and Development Department and Port Moody Fire-Rescue, support participation in the Province of BC's Tall Wood Early Adoption Initiative;

THEREFORE BE IT RESOLVED THAT staff be directed to submit a request to register the City of Port Moody with the Province of BC to include the City of Port Moody as a participating local authority in the regulation for the Tall Wood Early Adoption Initiative as outlined in the report dated April 28, 2020 from the Planning and Development Department – Building, Bylaw, and Licensing Division regarding Tall Wood Early Adoption Initiative.

This motion was completed by the City's Community Development – Building, Bylaws, and Licensing division.

On March 9, 2021 Council passed the following motions based on a report by Councillor Milani:

RC21/124a and RC21/125

THAT staff report back to Council with options on how best to:

- a) prioritize and incentivize Mass Timber (Cross-Laminated Timber (CLT)) construction for buildings over six storeys in height; and
- b) discourage the use of concrete as the main component of buildings over six storeys in height.

On July 6, 2021, staff presented a project proposal to carry out the motions above. The direction from Council was to await mass timber research being undertaken by the City's Climate Action Committee – Sustainable Building Practice Sub-Committee.

At the February 22, 2022 Regular Council meeting, Councillor Lahti presented a report detailing the summary of research and recommendations from the Climate Action Committee – Sustainable Building Practices Sub-Committee related to mass timber and embodied emissions in buildings. The following motions were passed:

CW22/017 to 019

WHEREAS Embodied carbon in a building is largely a function of materials, which means most of this impact is “upstream” of building occupancy;

AND WHEREAS Portland Limestone Concrete reduces CO2 emissions by 10% compared to traditional cement and is readily available locally;

AND WHEREAS The factors which will affect a decision on choice of building material would be determined based on the project as well as the efforts made in each proposal to reduce greenhouse gas and embodied carbon;

AND WHEREAS Cross Laminated Timber (CLT) building is an emerging industry and there are knowledge gaps for City staff specifically regarding code compliance and inspection;

THEREFORE BE IT RESOLVED THAT staff be directed to report back on the costs and implications to the city and the development community to set benchmark targets for embodied carbon output on all new construction;

AND THAT the City of Port Moody take all steps under the law to require that any concrete used for construction be Portland Limestone;

AND THAT City staff be trained in all aspects of CLT construction as it relates to code compliance and inspection;

AND THAT the City of Port Moody encourage the use of CLT construction when possible.

Project Objectives

- To understand the costs and implications to the development community to set benchmark targets for embodied emissions output on all new construction

- To research and outline ways in which the municipality may incentivize and/or require embodied carbon emissions in new construction

Scope

In Scope	- Research - Consultation with industry experts, building community, and municipal staff - Legal review and analysis - Recommendations for meeting project objectives - Consultant assistance - Presentation to Council
Out of Scope	- Policy and bylaw amendments - Public engagement

Work Plan Overview

Project start date: Climate Action Plan Phase 2 Implementation, 2023-2024	Project end date: Q3/Q4 2023
The following elements could compress the timeline and/or reduce the budget: The Climate Ready Homes and Buildings Plan (to be presented for Council consideration summer 2022) will address embodied emissions reduction in new buildings. Information around estimated cost and staff resources to undertake recommended actions impacting embodied emissions will be included in the Climate Ready Homes and Buildings Plan. Depending on actions identified in this Plan, the following project scope may be reduced or incorporated into another project. Cities such as Nelson and Vancouver are advancing building-related embodied emissions reductions work over the next year that would be valuable for Port Moody to refer to and utilize, once publicly available. Additionally, the Province is expected to publish a Lifecycle Impact Assessment Guide for Buildings and implement other initiatives aimed at reducing embodied emissions from buildings. There may also be grants that become available to support this work in the next few years, as currently there is minimal external funding available. The work completed by other cities and the province may also allow the City to reduce the following project scope and cost.	
<i>Deliverable/Milestone:</i>	<i>Date:</i>
Consultant procurement	2 months
<u>Phase 1 - Ground truthing</u> Research to understand best practices, review and interview other municipalities, costs and implications to the City and development community. Undertake a legal review to understand the City's jurisdiction and opportunities to incentivize and/or	1-3 months

require. Report back to Council with results of legal review and research, and revise scope of work based on research and legal review.	
<u>Phase 2 - Consult industry experts</u> Engage with industry experts, material suppliers (concrete, timber, etc.) and local builders to share research findings and receive feedback to inform options. Consult with development community regarding incentives and potential requirements.	2-3 months
<u>Phase 3 - Draft Options</u> Based on phases 1 & 2 research and review, develop options to meet project objectives and seek legal review of options. Outline information on amendments to policies/bylaws required for the options and incentives to support the roll out of options.	2 months
<u>Phase 4 - Prepare Documents</u> Prepare supporting documents, presentation, and report to Council to present options for consideration that meet project objectives.	4-6 weeks
<u>Phase 5 - Report to Council</u> Present report and attachments to Council.	TBD – based on earlier phases

Budget	
Budget Source: TBD	
Consultant Legal Fees Project Management Communications and Engagement	Estimated \$25,000 - \$35,000 Estimated \$10,000 Estimated \$5,000 - \$8,000 Estimated \$5,000 - \$8,000
☒ Request Consideration with Phase 2 Climate Action Plan Implementation for 2023-2024	Estimated between \$45,000 - \$61,000

Decision Notes (Corporate Planning Advisor use only)		
Date	Meeting	Decision