
Memo

Date	July 3, 2017
Project	Portland Building
Project No.	74-16113-00
Subject	Summary of Alternate Cladding Materials Explored

The following is a matrix of the primary alternate materials that the design team explored for use in the rainscreen cladding system and a brief synopsis of why the material was not pursued as part of the proposed solution. Because of the historic significance of this building, the team was aware that material character would be of great concern. As noted below, the alternate materials had characteristics that created functional issues, had unintended aesthetic impacts, or durability concerns that made them unsuitable for the project.

Material	Comments
Precast Concrete Panels	<ul style="list-style-type: none"> • <i>Similar in material to historic material</i> • <i>Would require painting to create exact match to historic colors and surface</i> • <i>Panel size limitations are smaller than existing reveal pattern, would create new joints</i> • <i>Panel would likely be approx. 5" thick for panels this large, would substantially increase thickness of rainscreen system</i> • <i>Added weight would require invasive work to strengthen the building walls and foundations</i>
Glass Fiber Reinforced Concrete (GFRC)	<ul style="list-style-type: none"> • <i>Similar in material composition to historic material</i> • <i>Panel size limitations are smaller than existing reveal pattern, would create new joints</i> • <i>Durability – propensity for surface cracking</i> • <i>Not well suited for a rainscreen application due to the rough texture and absorbent nature of the backside of the panel make it difficult to create a sealed watertight unit</i> • <i>Porous material collects dirt and would require regular cleaning and/or the application of a coating</i>

<p>Ventilated Stucco Rainscreen</p>	<ul style="list-style-type: none"> • <i>Painted surface would be similar texture to historic surface</i> • <i>Would require modification to the reveals to make them functional control joints and weep screeds with flashings</i> • <i>Durability – Not intended for use on high-rise buildings. Usually used in low to mid-rise residential applications. Requires reinforced back-up to a</i> • <i>Maintenance – Stucco must be painted for protection. Painted coating would require regular inspection and maintenance.</i> • <i>Functionality – Ventilated stucco rainscreen offers a drainage plane, but no substantial air space. It is not pressure equalized and susceptible to pressure driven moisture intrusion</i>
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Formed Solid Aluminum Plate Panels

As outlined in detail in our submittal, the team ultimately selected **3mm solid aluminum plate** panels as the cladding material for the proposed rainscreen system. Below is a summation of the primary benefits that this type of cladding offers:

- *It is available with a color-stable, factory applied finish that is able to replicate the paint color and sheen of the original historic materials*
- *It can be formed to replicate the same shapes and profiles of the existing corners and reveals*
- *At approximately 3/4", the aluminum panel profiles allow for the slimmest panel depth in the unitized curtainwall.*
- *It is available in panels large enough to replicate the existing reveal pattern*
- *The 3mm thickness is heavy-weight enough to resist warping (oil-canning), while still being light enough to be supported by the existing structure*
- *It is a non-combustible and durable material that is well suited to rainscreen applications and high-rise building*
- *Low maintenance – Does not require repainting*

The design team agreed that the aluminum panels best fulfilled the project performance requirements. While it is a departure from the historic material in composition, it is able to replicate the visual character of the historic façade as demonstrated in our visual mock-up.