

MARPOLE COMMUNITY CENTRE

Vancouver, BC | Design Phase

Role of the firm: Structural Engineer of Record

Area: 42,000 sq.ft (3,901 sq.m)

Architect: Diamond Schmitt Architects

Client: City of Vancouver

The new Marpole Community Centre is envisioned as a comprehensive, mass timber-based structure that will be prominently expressed and exposed throughout. This state-of-the-art facility is set to replace an aging two-storey building, effectively doubling its size. The center will encompass a gymnasium, fitness amenities, multipurpose rooms, and a childcare facility.

At the heart of its construction lies the gravity system, which predominantly features timber as the primary structural material. Cross-laminated timber (CLT) panels rest upon glulam beams and columns, forming the floors and terraces, while the curved roof combines steel beams with CLT panels. The foundation and parkade, on the other hand, find their strength in reinforced concrete. This combination of materials not only provides a strong and resilient structure but also aligns with sustainable building practices.

In terms of lateral support, the building relies on a system composed of light-wood shear walls strategically placed within the architectural partitions. This placement ensures minimal intrusion into the building space while maintaining structural integrity. A key architectural feature of the building is the doubly curved cantilever roof, supported by long-span steel beams. During the design process, close coordination was required with the design team and contractors to ensure that this curvature was achievable within the structural elements.

The Marpole Community Centre stands as a model of structural excellence, combining aesthetic appeal with engineering innovation to effectively serve its community.

