Exterior Architectural Modeling & Rendering for Multi-Residential Development

(Architectural Modeling & Rendering,BIM & VDC Coordination Services)

CASE STUDY

TECHTURE

Client	: Architect	**Team Size**	: 2 Nos. (BIM Architect & BIM Coordinator)
Disciplines	: Architecture	**Duration**	: 2 Weeks
Scale	: -	**Software**	: Revit & Lumion
Type	: Residential	**Location**	: Manitoba, Canada

Project Overview

This project focused on creating an exterior architectural model at LOD 200 and producing high-quality rendered visuals for a large residential development. The modelling was executed strictly based on the provided drawing set, covering all visible façade elements and site landscape components. The final model served as the base for generating six exterior renderings aimed at design visualization and presentation needs.

Scope & Deliverables

- Development of an LOD 200 architectural model for exterior façade elements, including walls, windows, doors, mullions, roofs, and visible site features.
- Landscape modelling at LOD 200 based on the provided site plan.
- Creation of six exterior renders: four main façade views and two isometric perspectives.
- One revision cycle for render outputs to ensure alignment with expected visual standards

Challenges

- Ensuring accurate material, color, and façade texture representation based solely on 2D drawings without detailed material specifications.
- Achieving realistic lighting, shadows, and environmental context within limited inputs while maintaining consistency across all six render views.
- Balancing model simplification at LOD 200 with the visual detail needed for high-quality exterior render outputs.
- Managing clarity and realism for large building elevations and wide-angle views, especially with only one revision cycle available.

Techture Approach

- Prepared a clean LOD 200 SketchUp model optimized for Lumion import, ensuring proper geometry, face orientation, and layer structuring for smoother rendering.
- Applied Lumion materials, texture maps, and façade presets to accurately represent exterior finishes despite limited material details in the drawings.
- Used Lumion's lighting engine, HDRI environments, and real-time global illumination to achieve consistent lighting across all render views.
- Set up standardized camera compositions, perspective angles, and landscaping placeholders to maintain uniformity across the six exterior visuals.
- Conducted a sample test render early in the workflow to align expectations and fine-tune quality settings before full production.

Benefits

- Optimized SketchUp-to-Lumion workflow ensures faster rendering times and reduces the need for post-editing or rework.
- Lumion's material library and lighting tools enhance realism even when limited material specifications are provided.
- Consistent camera setups and environment settings improve visual coherence across all six deliverables.
- Early sample rendering minimizes revisions, ensures clarity on quality standards, and streamlines the overall delivery process.