

### PROJECT ROLES:

- Structural Engineer
- Façade and Building Envelope Consultant
- Timber and Steel Detailing Consultant

DeSimone's integrated, multi-disciplinary team collaborated with COOKFOX Architects for the design of this sustainable, hybrid timber, and steel structure, streamlining collaboration across teams, boosting accuracy, and expediting delivery of this 30,000 SF cultural landmark through advanced fabrication-ready modeling and close coordination.



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### STRUCTURAL DESIGN:

Challenges included integrating a hybrid structure of mass timber, steel, concrete, and masonry exterior shear walls — with a double-height, 70-foot-long, column-free, performance space. We designed a lateral system comprised of perimeter masonry shear walls and perimeter steel brace, to leave the interior as exposed mass timber — reducing embodied carbon without sacrificing safety, aesthetics, or acoustics. Working with Timberlab and DeSimone's detailers, we optimized the framing to reduce Glulam and CLT quantities, eliminating custom beam hangers to improve constructability and lower material costs.



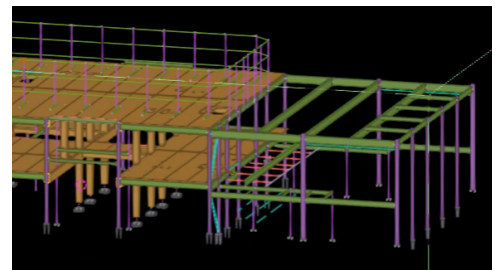
### FAÇADE AND BUILDING ENVELOPE:

Our façade experts collaborated closely with our structural engineers to advise on the technical execution of this unique enclosure system, much of which ties back to the primary timber structure. Challenges included supporting the large, one-story-tall weathering steel panels and the glass curtain wall on the theater's north elevation, which is secured by 21 vertical structural steel knife plates spanning two stories from roof to the ground floor and doubling as architectural design elements within the theater interior.



### TIMBER AND STEEL DETAILING:

We detailed the mass timber and structural steel within a single, fully integrated Tekla model, coordinating with DeSimone structural designers and the connection design consultant, to resolve interfaces between glulam beams and columns, CLT floor panels, and steel components. Modeling the mass timber (with Timberlab) and steel (for Metropolitan Walters) in one, in-house model eliminated the need for separate discipline models — typically produced across multiple firms — significantly reduced coordination gaps, tolerance risks, and fabrication conflicts while enabling real-time collaboration, minimizing field adjustments, accelerating approvals, and streamlining fabrication for both materials.



#### Media Contact:

Rosemary Siciliano, Assoc. Dir. of Communications  
rosemary.siciliano@desimone.com, 207.332.9008

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