Architect & Senior Associate

Brendan Mullins

Objective

Innovative architect with diverse experience in all phases of design seeking new opportunity in driving digital design strategy across Stantec's Buildings BOU. Manages large, highly detailed projects with multi-disciplinary teams using cutting edge technology to aid in delivery.

Experience July 2023 - Present

Regional Digital Delivery Lead (RDDL) US West & Senior Associate Stantec

Regional technology partner working closely with DL's, OL's, RBL and Principals to define technology strategy, educate on industry trends, rescue major projects, and contribute to project pursuits. Lead BIM staff hiring. Lead the USW Tech Team, defining strategy and managing team, we deliver ongoing presentations to USW Principals defining technology strategy and offerings *(linked here & here)*.

In Digital Practice I lead the development of virtual reality and artificial intelligence design workflows. As part of the AI work, I created an <u>AI Peer to Peer group</u>, <u>rolled new visualization methods</u> to active project teams, shared our work at multiple conferences, and am currently leading an effort to <u>develop inhouse AI models</u>. I presented our virtual reality and artificial intelligence work to our investor group, Board of Directors, and Stantec C-Suite in February of this year (<u>linked here</u>).

June 2013 – July 2023

Architect & Senior Associate Stantec

Promoted four times in nine years (previously Designer, Design Coordinator, & Associate)

Project Architect on the Lucas Museum of Narrative Art in Los Angeles for 6.5 years, including detailing, documentation, permitting, construction administration, and BIM Management for this revolutionary project. Managed computational design staff to develop Grasshopper/Dynamo scripts for documentation of complex geometry. Led VR presentations to client and their Board of Directors.

Lead integration of virtual reality (VR) into the design cycle at Stantec. Train and upskill colleagues on BIM management and consult on advanced project visualization across the firm. Published in numerous outlets including Autodesk (*here* & *here*), <u>Building Design + Construction</u>, and <u>Architects Magazine</u>. Awarded and managed over \$90k in research grants to study VR, AR, & XR at Stantec. Published comprehensive report on VR (*linked here*). Other project work includes Hamad Medical City Master Plan (Doha, Qatar), Cleveland Clinic Cancer Building (Cleveland, Ohio), and San Ysidro Land Port of Entry.

Other Experience

Assistant Project Manager Jensen + Partners (September 2012 – June 2013) Mentor & Team Lead ACE Mentoring Program (September 2012 – September 2023)

Education

August 2008 - May 2012

B.S. Environmental

Design in Architecture

Minor in Digital Media

U. of Colorado, Boulder

Skills

- Team ManagementBIM Management
 - Innovation through
 - TechnologyResearch

Documentation

Interests

- Guitar & Songwriting
- Ceramics
- Hand Drawing
- Astronomy
- Photography

Contact

1365 Idylberry Rd San Rafael, CA 94903 (415) 218-2071 bmullinsdesign@gmail.com http://www.bmullinsdesign.com To whom it may concern, thank you for considering my application.

I am a passionate architect and technologist who has a proven track record of driving strategy and adoption of cutting-edge technologies to transform our design process. I have cut my teeth on some of Stantec's most prestigious work, including the Cleveland Clinic Cancer Building, San Ysidro Land Port of Entry, and Lucas Museum of Narrative Art. I push future-forward technology into every aspect of the design process, including advanced computational design, VR, and Al. Active project work has offered the ultimate testing ground for implementing new technology, allowing it to be vetted against budgets and deadlines while simultaneously raising our standing with clients. I am driven by a process of innovation and discovery and prioritize inspiring and collaborating with my colleagues to innovate alongside me. I am diligent about research documentation, always making sure to document and share each new technology case-study both internally and externally to drive adoption.

In my decade working at Stantec, I have a proven track record of professionalism, execution, strong public speaking, and thoughtful research documentation. I have presented to large audiences both internally and externally, mentored young staff, and published extensive technology reports – all of which allow me to clearly communicate innovative and complex ideas to staff and clients of any level and background.

Driving technology implementation in design is a multi-faceted challenge requiring a leader to build trust with team members, define priorities, outline strategy, create a culture centered around innovation and thoughtful risk, follow through on commitments, and document outcomes. Every project has an opportunity to innovate; the challenge lies in identifying the opportunities, creating the right culture, and structuring a team that can execute.

I graduated from college top of my class in computational design, but upon entering the workforce I lacked the industry knowledge to know how to apply my abilities to Stantec's healthcare work, though plenty of opportunities existed. I've since learned that senior staff often have limited understanding of the capabilities of computational design. This has taught me a valuable lesson: involve and empower technologically savvy staff early to find opportunities to innovate on projects. As BIM & Technology Manager on the Lucas Museum I collaborated with highly skilled computational designers to create innovative workflows for importing and documenting the complex geometry across the interiors of the project. Automation was a high priority - invest time upfront to save exponential time down the line; this investment also minimized the risk of human error.

During my time as a Designer on the Cleveland Clinic Cancer Building (CCCB), Stantec awarded me a large research grant to explore virtual reality implementation in the design process, which I then used to document case-studies and share my knowledge. The work began as 360-degree renderings of CCCB and then moved to full immersive single player virtual healthcare mockups for Hamad Medical Corporation and UCSF. On the San Ysidro Land Port of Entry, we used VR with US Border Agents to do security analysis of the new facilities. On the Lucas Museum of Narrative Art, multiplayer virtual reality was used for design review of complex architectural spaces, client presentations, and walkthroughs with the Lucas Museum Board of Directors.

In my tenure as RDDL for US West, I have quickly gained the trust of leadership, documenting ROI for strategic technology planning, and organizing teams of technology professionals that can share knowledge and act as a resource for our Regional Leadership. I am building a culture of innovation and inspiring projects teams to try new tools that are on the bleeding edge of what is possible.

Additionally, I have led the way for AI implementation across our firm utilizing image generation tools such as Stable

Diffusion. The cutting-edge workflows I created, including live sketch to rendering, cardboard healthcare mockup to rendering, and nearly real-time model view to rendering, have been rolled out to teams across Buildings and to other BOU's such as Mining. I have a proven ability to learn these tools quickly, and at times, have built the tools myself. I frequently identify opportunities to transform the way we work, roll out these new processes to teams, and document the findings and case studies. The work has garnered enough excitement to be presented on company-wide calls, to the Stantec Investors group, and to our C-Suite/Board of Directors. I am also currently working closely with Stantec's new Al Lead to develop Al image generation models in-house at Stantec, a true differentiator in the market.

The breadth of my technological and architectural experience speaks to my pride in being a generalist. Through a broad range of experience, a diverse set of interests, and a passion for learning new things, I am uniquely positioned to identify opportunities for a technological revolution in our design process.

Thank you for your consideration for this important role at our firm.

Sincerely,

Mullun

Brendan Mullins, Architect

SELECTED WORKS

Lucas Museum of Narrative Art Complex Geometry Documentation

Client or Project, if applicable: Project: Lucas Museum of Narrative Art (Los Angeles, CA)

Problem Being Solved: *Documenting complex Rhino 3D Geometry in Revit for issuance to contractor for construction.* **Solution**: *Rhino, Grasshopper, Revit, Dynamo*

Subject Matter Expert Involved: Brendan Mullins (San Francisco, CA), Michael Corless (Los Angeles, CA), Cory Hill (Los Angeles, CA)

Time and/or Money Saved / Value-Add: Allows for 3D models to be issued to the contractor as a construction document. Full Description: As our Lucas Museum of Narrative Art (LMNA) design team entered the construction documentation phase, we knew that we had to solve the problem of documenting complex interior architecture and finding a way to issue it in a construction drawing set. The 3D models of these interior spaces were created in Rhino, but our documentation was being done in Revit. The team created a strategy for importing the Rhino models to Revit while including their metadata (i.e. associated room, panel number, XYZ location values of edges and corners) so that the geometry could be scheduled, tagged, and documented in Revit using its core features. This created an intelligent link between the software only possible with extensive Grasshopper and Dynamo scripting. It also created a roadmap for future complex geometric architecture to be issued on projects across Stantec.

Refer to 18:05 on this link for an in-depth explanation: <u>https://www.autodesk.com/autodesk-university/class/Lucas-Museum-Narrative-Art-Innovative-Workflows-Delivering-Complex-Buildings-2018#video</u> (this link includes a full presentation of our digital tools on LMNA as of 2018)

Additionally, the <u>handout</u> I issued with this presentation six years ago is a testament to my tireless pursuit of understanding what it takes to structure a team that can innovate through technology.



Realtime sketch to Al

Client or Project, if applicable: Case-Study

Problem Being Solved: Creating renderings from in-progress sketching in realtime

Solution: Stable Diffusion with ComfyUI plugin

Subject Matter Expert Involved: Brendan Mullins (San Francisco, CA)

Time and/or Money Saved / Value-Add: Existing sketch to schematic rendering workflow +/- 2 hours. This workflow creates renderings in real-time as your draw at 1 frame per second.

Full Description: The ComfyUI visual programming language for Stable Diffusion allows users to make unique workflows which can further set us apart from our competitors. In this case-study, a script was created that gives real time feedback to a digital sketch. The script is first fed a precedent image that is used to guide and aesthetic for the end result. The script can decide how heavy to weight this precedent. Next, a text prompt is input to guide the Al image creation. Lastly, the user begins sketching using their mouse, a digital drawing pad (i.e. Wacom), or connected iPad (via remote desktop software). The script then returns renderings as you draw at roughly 1 frame per second (depending on the strength of your GPU). Workflows like this have only been possible for a few months and are truly at the bleeding edge of what is possible, opening up large potential for PR opportunities.

Visit this link to see the workflow in action: https://www.youtube.com/watch?v=CkpM_NDy99o



Healthcare Mockup to Design Ideation Imagery

Client or Project, if applicable: Case study presented at Healthcare Design Conference (HCD) 2023

Problem Being Solved: *Quickly creating large quantities of design ideas from a photograph while sticking to the original architectural intent.*

Solution: Stable Diffusion with ControlNet plug-in

Subject Matter Expert Involved / Value-Add: Brendan Mullins (San Francisco, CA)

Time and/or Money Saved: *Existing workflows – +/- 2 hours per schematic rendering. This workflow – 30 seconds per rendering. 240x time savings.*

Full Description:

On November 3rd, 2023, a group of design leaders from across Stantec attended the Healthcare Design Conference + Expo in New Orleans. At the conference, Stantec lead a live workshop during which conference attendees actively participated in the design and construction of full-scale cardboard mockups of healthcare rooms. This process replicated a common practice among our advanced healthcare design teams across Stantec. During the workshop, we processed photographs of the cardboard mockup through artificial intelligence software to turn photos of a cardboard mockup into fully rendered images of the space. This real-time use of Al in the design process is unprecedented in the industry and makes a valuable case-study. At the conclusion of this workshop, Stantec had created several valuable marketing assets including:

- Professional photography and videography of the event
- Digital 3D Models of the cardboard mockups
- Architectural drawings of the mockups
- The AI imagery created live during the mockup
- Testimonials from participants

These assets, all of which are digital, are compiled in a "Virtual Showroom" which can be visited in virtual reality by participants. The "Virtual Showroom" is collaborative: multiple users can enter virtual reality at the same time to view the experience and collaborate.

<u>Visit this link for a full tour of the Virtual Showroom: https://www.youtube.com/watch?v=PsunVjdUU58</u> Example imagery created live during the conference:



