Cover Letter

Dear Team Gensler, thank you for considering my application for the Regional Design Technology Lead - Computation position at Gensler. I have attached my Curriculum Vitae and a curated portfolio highlighting my experience in computational design, architectural technology, and digital workflow innovation. For a comprehensive view with additional technical documentation and interactive demonstrations, please visit:

https://adib.work/hello-gensler

Throughout the current span of my career, I have focused on bridging architecture and technology, specifically of developing workflows that enhance design delivery and team collaboration. This role at Gensler resonates deeply with me as it represents an opportunity to drive technological innovation at a global scale. My experience spans both architectural practice and computational tool development, with particular expertise in creating solutions that streamline the transition from design intent to execution while maintaining design fidelity.

In my current role at DP Architects, I've witnessed firsthand the transformative impact of architectural technology, particularly in projects where I developed automated solutions for complex geometry translation and BIM model preparation. These experiences, especially in major projects across the Middle East and North Africa, have reinforced my belief in technology's capacity to not only streamline processes but also to enable new possibilities in architectural design and execution.

My independent research projects, under the umbrella term of Senibina *(Malay for "to build")*, emerged during a deliberate pause from academia to focus on family caregiving. This period of reflection led to practical innovations in architectural technology. The initiative focuses on democratizing computational design through accessible interfaces and automated workflows, making sophisticated architectural tools available to a broader audience. One of which has received pre-seed investment validation too, demonstrating my ability to identify industry challenges and develop scalable solutions while maintaining focus on user needs and practical implementation.

Gensler's commitment to technological innovation in architecture, particularly through the Design Technology team's focus on digital transformation and sustainable solutions, aligns so much with with my personal and professional aspirations. My background in developing automated BIM workflows, creating custom computational design tools, and implementing technology solutions for complex architectural challenges can directly support Gensler's mission to enhance design delivery through technological advancement. I am particularly excited about contributing to the firm's initiatives in AI-driven design, sustainability analysis, and cross-platform interoperability. I am eager to bring this expertise to Gensler's innovative environment, where emerging technologies are embraced and integrated into architectural practice to create meaningful impact across global markets.

Curriculum Vitae

Adib Zailan *(b. 1994)* is a cross-disciplinary technologist and advocate for human-centred, performance-based design methodologies. Having a keen interest in (emerging) technologies, his other pursuits revolve around research related to programming, computational design and fabrication.

Certifications

2021 – Present WELL® AP

Education

National University of Singapore
2022 – 2025 B.A. (Arch)

BCA Academy
2018 – 2021 Diploma in Architecture (Technology)

Temasek Polytechnic
2011 – 2014 Diploma in Product & Industrial Design

Awards

2021 BCA Chairman Award; BCA Gold Medal Award
2018 – 2021 BCA-Industry Built Environment Scholarship

Work Experiences

DP Architects
Sep 2024 – Present Architectural Technologist / BIM Modeller

Lead high-priority technical initiatives and provide specialized computational design support for complex projects across the MENA region. Develop and implement automated BIM workflows, custom design tools, and innovative solutions to streamline project delivery and enhance team capabilities.

Jun 2022 – Sep 2024 Technical Officer

Supported project teams with concept development, schematic design, and detailed design for mixed-use projects in Mecca, Dubai, and Morocco, combining traditional design approaches with computational co-authorship methodologie. During this time, I received valuable mentorship from Digital Practice leads who taught coordination best practices and complex project management, providing foundational knowledge of coordination protocols and technical workflows that became crucial during movement into more specialized technical responsibilities.

China State Construction Engineering
Jun 2021 – Feb 2022 BIM Specialist

Supported BIM workflow optimization for prefabricated concrete components at Singapore Institute of Technology's Punggol Campus, collaborating with architects, engineers, and construction teams. Implemented just-in-time methodologies to streamline drawing-to-construction documentation, with a focus on exterior modular elements. Ensured seamless coordination between design and construction phases while maintaining regulatory compliance.

B+H Architects
May 2018 – Oct 2018 Junior Designer

Contributed to the Changi Hospital Medical Centre project through custom furniture and fitout design, leveraging my product design background to bridge industrial design principles with architectural spaces. Additionally led the studio's digital presence initiatives by developing and maintaining web-based platforms, marking my first exploration into programming and web development. This multifaceted role provided valuable exposure to architectural practice while allowing me to apply and expand my cross-disciplinary skills in both physical and digital design realms.

Selected Works: Practice

2025 – Present

Dubai Square (DSq)

Solving the critical breakdown in design-to-construction workflows when translating complex G2/G3 geometries from Rhino into production-ready Revit BIM families for documentation and coordination.

Technology Stack

Rhinoceros, Grasshopper, RhinoCommon, Rhino.Inside, Revit, Dynamo, Revit API, C#, Python

Problem

Traditional conversion methods produce bloated, reference-only geometry incompatible with Revit's modeling engine, creating unbuildable families that cannot be documented, coordinated with consultants, or manufactured to specification.

1. **Technical**: Manual geometry recreation through Rhino.Inside bridges results in week-long processes for single components
2. **Coordination**: Non-parametric reference geometry undermines consultant coordination and value engineering discussions
3. **Manufacturing**: Non-standardized dimensions ignore fabrication tolerances, weakening position during construction documentation
4. **Quality Control**: Inconsistent rebuilds across geometries create unpredictable file performance and documentation reliability

! **Business Impact**: Eliminated the bridge dependency that produced unbuildable reference geometry, establishing direct pipeline from complex G2/G3 design surfaces to production-ready BIM elements

Solution & Impact

Curve Type Evaluator
Grasshopper Component

Automatically analyzes and categorizes curve complexity, providing intelligent rebuild recommendations that preserve design intent while optimizing geometry for Revit compatibility

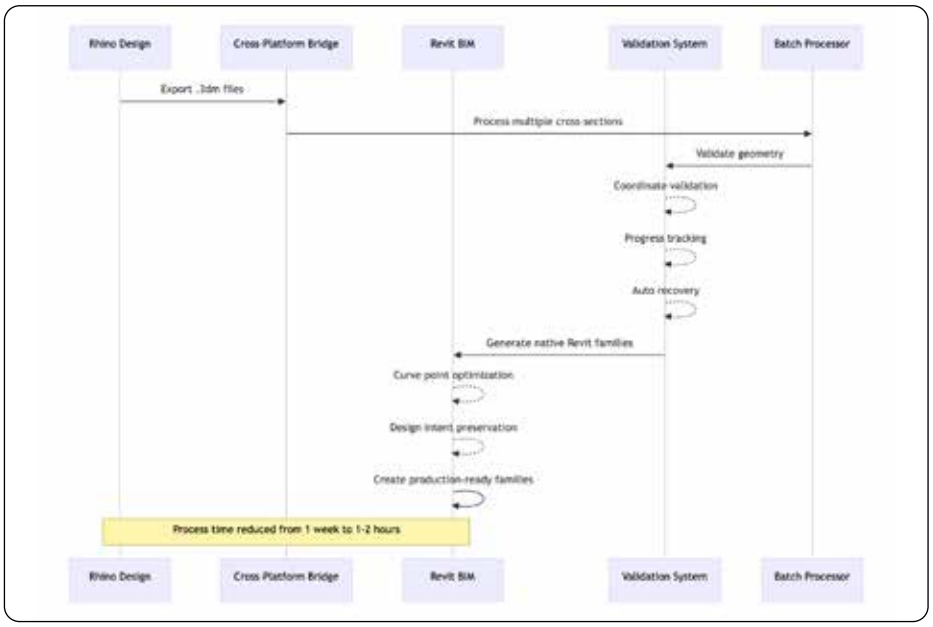
Rhino to Revit Converter
ZeroTouch Node

Directly processes .3dm files into native Revit adaptive families, eliminating manual geometry recreation and translation layers that previously caused reference-only geometry issues

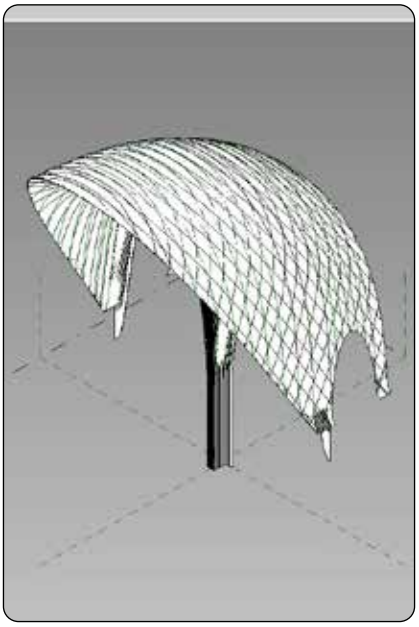
1. **Time Reduction**: Complex components reduced from weeks-long manual processes to 1–2 hours including rationalization
2. **Workflow Automation**: Batch processing of hundreds/thousands of curves with consistent optimization criteria
3. **Design Fidelity**: Maintains geometric accuracy while ensuring Revit performance and manufacturability
4. **Coordination Efficiency**: Creates documentation-ready families that support coordination and value engineering processes

☺ **Technical Takeaway**: Established automated pipeline that preserves design intent while optimizing complex geometry for manufacturing tolerances and BIM coordination requirements

a sequence diagram of the automated Rhino to Revit conversion workflow logic



a WIP of a converted geometry in Revit



2024

Expo City Dubai (ECD)

Rapidly developing automated BIM model preparation tools to meet critical Dubai Municipality IFC submission deadlines while stop-work orders threatened project continuity.

Technology Stack

Revit, Dynamo, Revit API, C#, Python

Problem

Authority BIM submission deadlines created critical project risk when Dubai Municipality's (DM) new IFC 4 mandate required comprehensive model preparation while construction work faced stop-work orders pending approval.

1. **Timeline Pressure**: Stop-work orders on-site created contractual obligations and potential litigation without successful IFC approval
2. **Resource Constraints**: Original design team had demobilized, leaving minimal manpower for extensive BIM model preparation
3. **Technical Limitations**: Legacy models with existing IFC mapping would break if upgraded to versions with better mapping tools
4. **Coordination Complexity**: Manual element re-hosting operations risked breaking associations, creating weeks of downstream work

! **Business Impact**: Without approval, ECD faced construction delays, contractual disputes, and potential litigation while coordination became increasingly difficult under scope changes

Solution & Impact

Element Level Consolidator
ZeroTouch Nodes

A suite of element consolidation nodes that offer intelligent re-hosting that prevents downstream element breakage when moving elements between levels

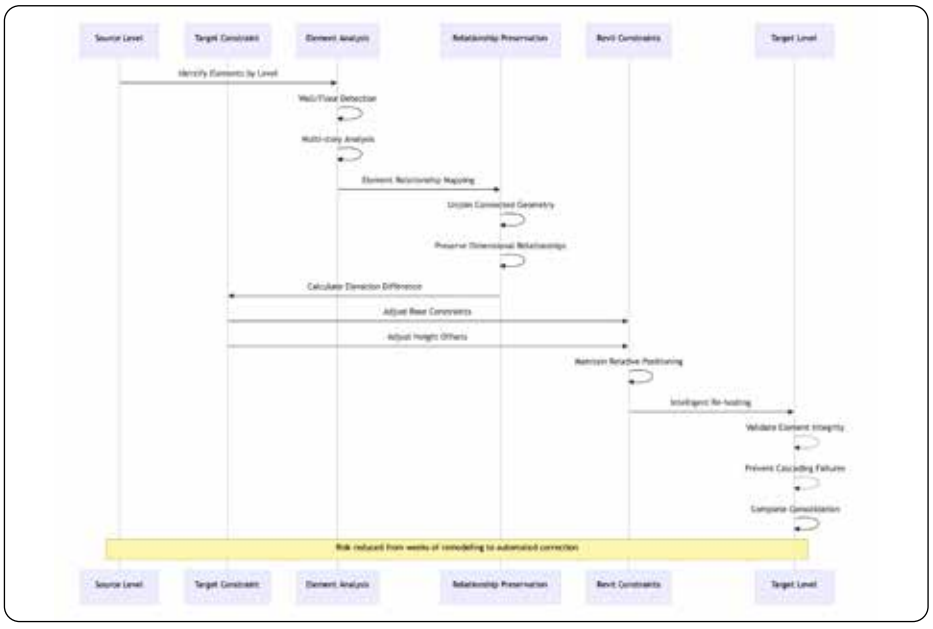
Room-to-Element Conversion
ZeroTouch Nodes

Automated geometry conversion of Rooms to Floors or Ceilings with intended setting-out for IFC compliance requirements

1. **Risk Reduction**: "Wrong move" consequences reduced from weeks of remodeling to days of automated correction
2. **Process Acceleration**: Manual model preparation streamlined to meet critical authority deadlines
3. **Consultant Coordination**: Faster alignment between DPA and Zutari teams for Dubai Municipality correspondence
4. **Community Contribution**: Tools shared and actively worked on allowed for an understanding of user-need workflows

☺ **Technical Takeaway**: Preserved model integrity under extreme time pressure, enabling successful authority submission while maintaining project continuity and avoiding contractual disputes

a sequence diagram of the relationship preservation logic for the Wall and Floor consolidator nodes



a vignette of Sky Residences on Plot 1

Selected Works: Research

2024 – Present

Senibina

Empowering homeowners with spatial intelligence tools previously reserved for professionals, allowing users to create, visualize, and manage their spaces with confidence throughout the entire lifecycle.

Technology Stack

JavaScript/TypeScript, React, Zustand, Next.js, Tailwind, Paper.js, Three.js, Rhino3dm.js, ThatOpen, Supabase, RhinoCommon, Revit API, C#, Node.js, ngrok

Context

Traditional homeowner spatial planning produces fragmented, disconnected experiences that leave owners dependent on professionals throughout their property's lifecycle, creating barriers to autonomy, informed decision-making, and cost-effective maintenance.

1. **Technical**: Manual floor planning through consumer apps results in low-fidelity outputs incompatible with professional workflows, creating unbridgeable gaps between homeowner vision and contractor execution
2. **Coordination**: Non-standardized home documentation undermines effective communication between homeowners, contractors, and service providers, leading to miscommunication during renovations and maintenance
3. **Manufacturing/Quality**: Inconsistent spatial understanding across renovation phases creates unpredictable project outcomes and limits homeowners' ability to evaluate contractor proposals or quality effectively
4. **Project-Specific**: Limited post-renovation spatial intelligence prevents homeowners from independently managing ongoing maintenance, warranty tracking, and future improvements throughout their property's 20+ year lifecycle

Current Solution & Development Roadmap

Space Planner
MVP

Web-based 2D floor plan creation with automated server-side processing pipeline converting consumer spatial data to professional .IFC formats for frontend rendering

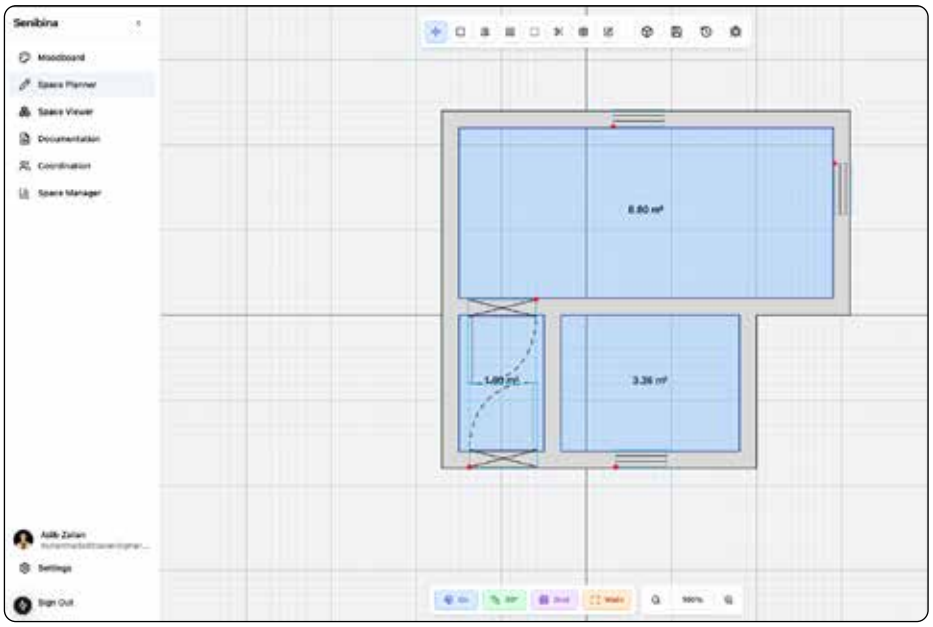
Space Planner
MAP

Enhanced platform integrating manufacturer asset libraries and collaborative design networks to bridge professional-grade spatial planning with accessible consumer interfaces

◊ **Research Impact**: Establishes architectural practitioner-led computational methodology for democratizing professional spatial intelligence, developing comprehensive cross-platform BIM integration and scalable module ecosystem architecture. Proves complex AEC accessibility gaps can be systematically addressed through hybrid architectural-programming methods validated by Antler pre-seed investment.

☺ **Technical Takeaway**: Demonstrates that knowledge of the architectural domain and full-stack development opportunities can converge to create consumer spatial intelligence platforms with automated server-side processing pipelines. Eliminates professional software dependencies while preserving seamless BIM compatibility, solving systemic industry accessibility barriers through intelligent workflow automation.

demo of the frontend of the Space Planner module



demo of the metadata-rich IFC model auto-created

2025 – Present

Senibina.Supply

Bridging parametric tools with everyday goods design, democratizing complex computational methods to make advanced design technology accessible for creating innovative daily life objects.

Technology Stack

JavaScript/TypeScript, React, Remix, Vite, Tailwind, Hydrogen, Three.js, Rhino3dm.js, Rhino Compute, Grasshopper, RhinoCommon, C#, Node.js, ngrok, Google Compute Engine

Context

Traditional product customization platforms produce simplistic parameter adjustments that fail to leverage sophisticated parametric design intelligence, preventing designers from offering meaningful personalization while maintaining creative control.

1. **User Accessibility**: Complex parametric design tools remain locked behind professional software barriers, preventing everyday users from accessing the geometric intelligence and design sophistication that these systems offer for product customization
2. **Platform Integration**: E-commerce systems operate independently from parametric design workflows, creating a disconnect where customization cannot seamlessly translate into transactions and manufacturing specifications
3. **Consumer Reach**: Professional parametric tools like Grasshopper have no direct pathway to reach everyday users, requiring designers to abandon sophisticated design logic when creating consumer-facing products
4. **Intent-to-Production**: Customer preferences cannot directly generate production files through parametric systems, requiring manual intervention rather than automated user-to-fabrication workflows

Current Solution & Development Roadmap

Senibina.Supply
POC

Integrated architecture combining Rhino.Compute processing with Hydrogen frontend, enabling real-time product customization and user-intent-to-fabrication workflows for 3D printing applications

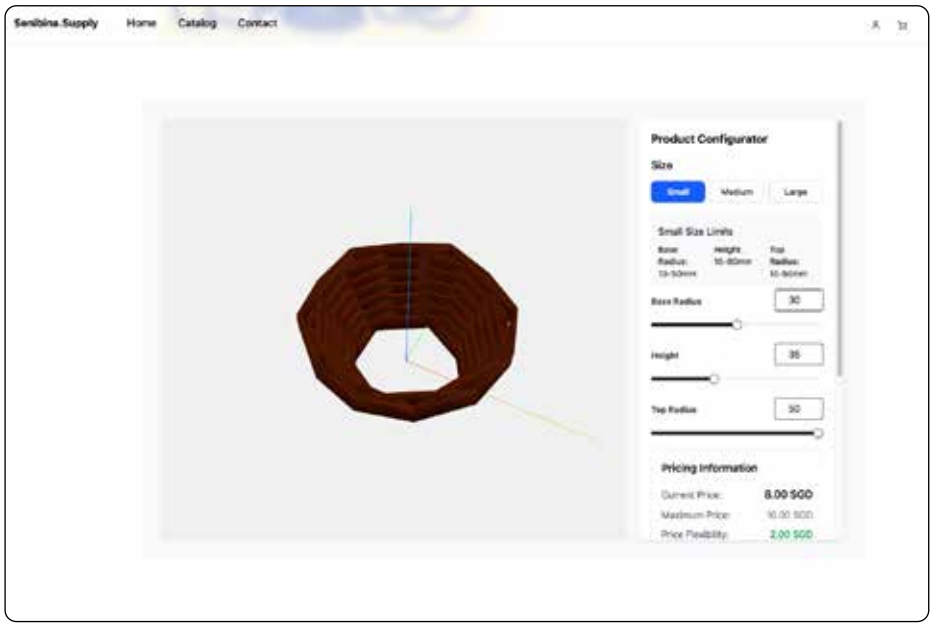
Senibina.Supply
MVP

Multi-fabrication platform expanding parametric intelligence across digital manufacturing including laser cutting and CNC, with enhanced UI/UX for customization and consumer accessibility

◊ **Research Impact**: Establishes parametric design democratization methodology for consumer product customization, successfully bridging professional computational tools with e-commerce platforms through direct practitioner-led development. Validates that Rhino.Compute can be systematically made accessible to everyday users while preserving design authority, creating scalable framework for expanding into multi-fabrication applications.

☺ **Technical Takeaway**: Demonstrates that architectural domain expertise and full-stack development capabilities can converge to eliminate traditional barriers between professional parametric design tools and consumer accessibility. Establishes automated user-intent-to-fabrication workflows through hybrid architectural-programming methods, solving systemic gaps in product customization.

demo of the frontend of the product configurator for a 3D printed product



post-processed image of the 3D printed configuration