

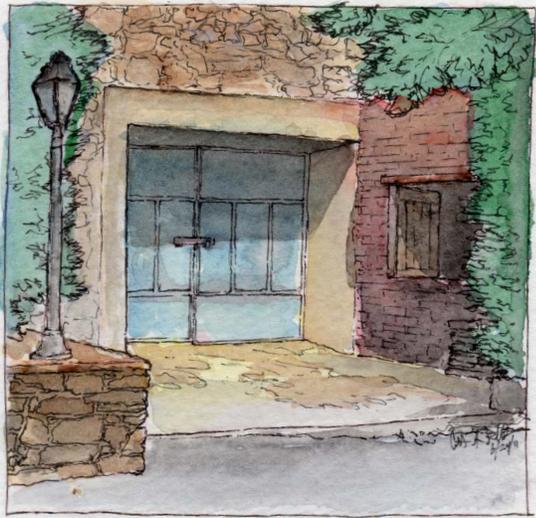
CURTIS PATTEE

Condensed Portfolio

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PART ONE
CREATED 2013
UPDATED 2018

HELLO! THANK YOU FOR VIEWING MY CONDENSED PORTFOLIO. THE OBJECTIVE OF THIS DOCUMENT IS TO PRESENT A HEALTHY SAMPLING OF MY WORK IN ORDER TO GIVE YOU AN IDEA OF WHAT SOME OF MY SKILLS ARE AND WHAT I LIKE TO DO. THIS IS SIMPLY JUST A SNAPSHOT OF MY WORK CATALOG THAT AIMS TO OUTLINE MANY OF MY CREATIVE SKILLS. MY COMPLETE PORTFOLIO CAN BE ACCESSED AT **CURTISPATTEE.COM** AND **CULTIVATEDDESIGNS.COM**.

SKILLS & INTERESTS

- 2 DRAWING & HAND RENDERING
- 3 CAD, 3D MODELING & RENDERING
- 4,5 PHOTOGRAPHY
- 6 CRAFT, MODELING & FABRICATION
- 7 GLASS KILN-FORMING & BLOWING

FEATURED INTERESTS

- 8 FURNITURE & SCULPTURE
- 9 PARAMETRIC DESIGN

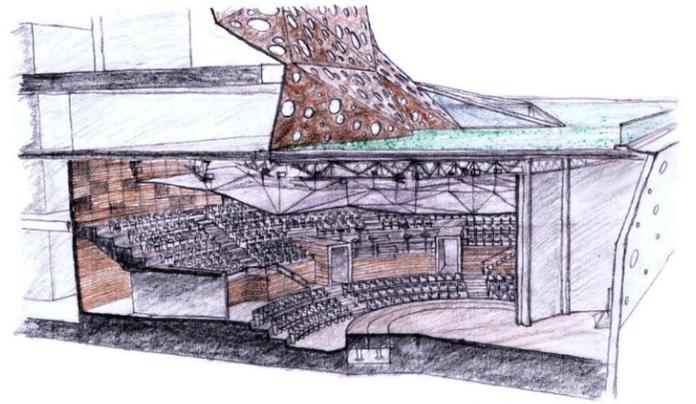
FEATURED PROJECTS

- 10 PRACTICE SPACE
- 11 WINE CELLAR
- 12 TBD - USDB INSTALLATION PROPOSAL
- 13 TBD - CLIMBING BOULDER INSTALLATION
- 14 INTIMATE OBJECTS
- 15 ARCHITECTURAL OBJECTS

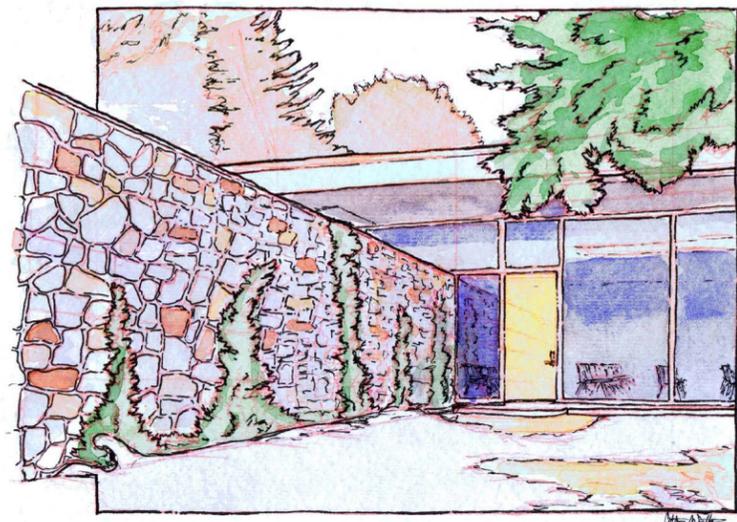
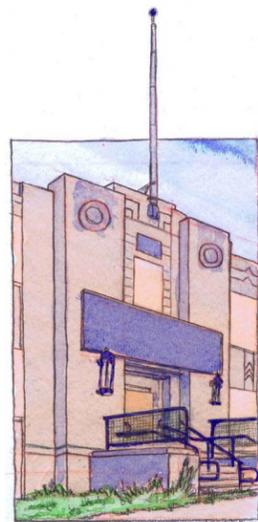
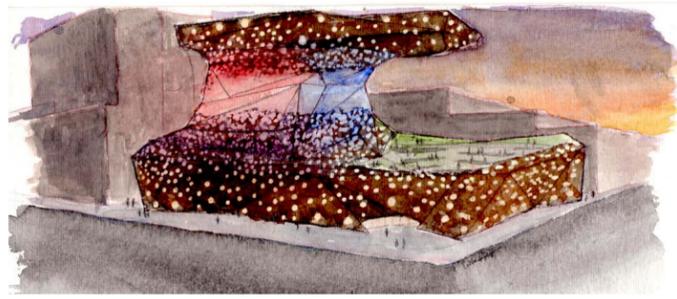
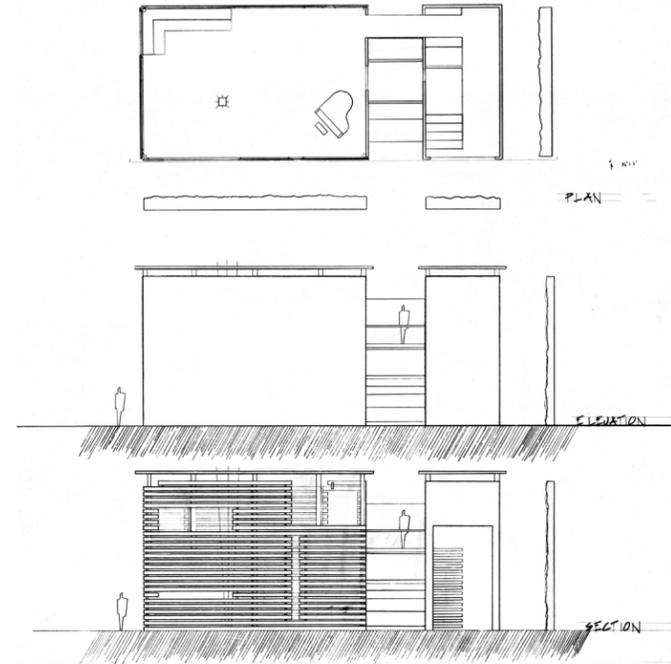
DRAWING & HAND-RENDERING

MY INTEREST IN DRAWING AND PAINTING IS BASED ON A LIFELONG PASSION FOR CREATIVITY AND ART. WHAT BEGAN AS A SIMPLE CHILDHOOD PASTIME STEADILY DEVELOPED INTO A PURSUIT OF HAND ART ON A MORE PROFESSIONAL LEVEL. I HAVE A GREAT APPRECIATION FOR BEAUTIFUL DRAWINGS AND AM WELL-TRAINED IN

TRADITIONAL DRAFTING METHODS, SKETCHING, AND FREEHAND PERSPECTIVE DRAWING. MY RENDERING TECHNIQUES INCLUDE, BUT ARE NOT LIMITED TO: CHARCOAL, LINE & TONE, INK LINE, MARKER, AND WATERCOLOR.



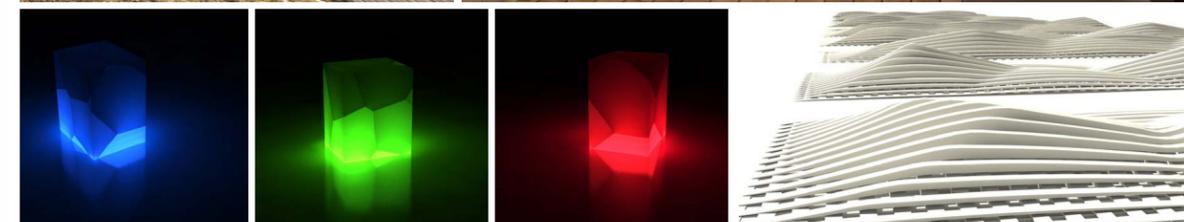
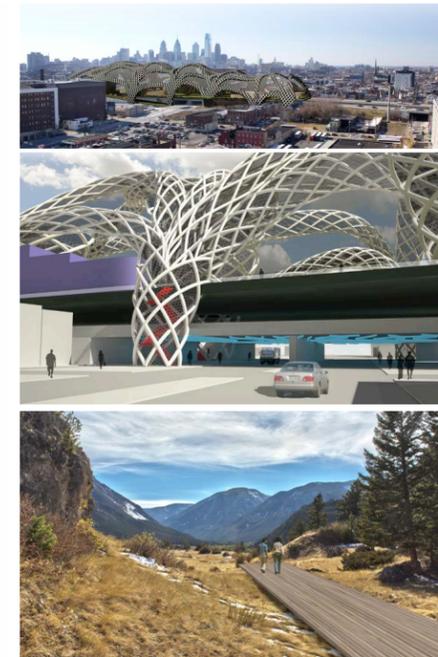
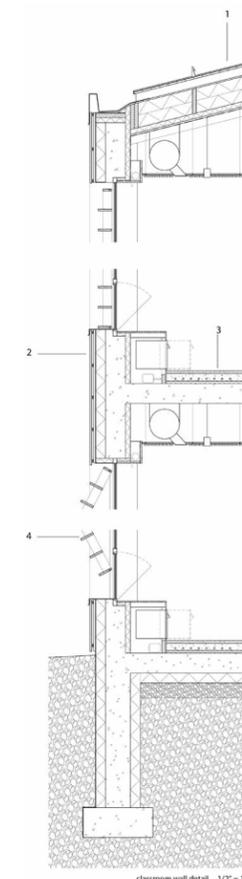
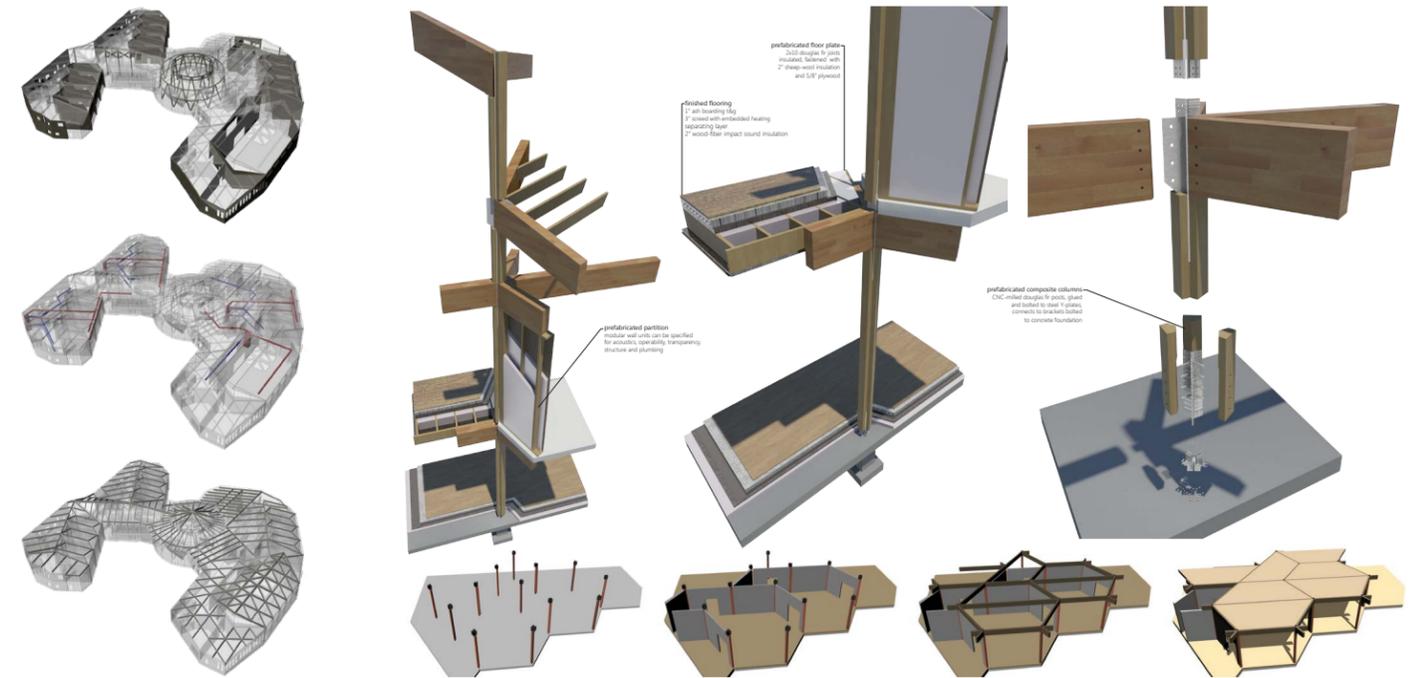
SMALL PERFORMANCE SECTION



CAD, 3D MODELING & RENDERING

I WAS FORTUNATE ENOUGH TO HAVE ACCESS TO CAD AND 3D MODELING SOFTWARE AT A YOUNG AGE. NOT ONLY DID I FIND THE SKILLS TO BE USEFUL, BUT IT QUICKLY BECAME SOMETHING THAT I THOROUGHLY ENJOYED TO DO. MY SKILLS ARE ROOTED IN CLASSIC CAD, WHICH QUICKLY EXPANDED TO INCLUDE 3D

MODELING, RENDERING, CAD CNC, 3D PRINTING, AND PARAMETRIC DESIGN. I AM SKILLED WITH MULTIPLE TYPES OF SOFTWARE AND AM ABLE TO FLUENTLY WORK BETWEEN PROGRAMS; THIS INCLUDES WORKING BETWEEN DIGITAL AND ANALOG DESIGN PLATFORMS.



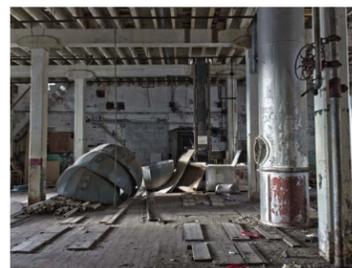
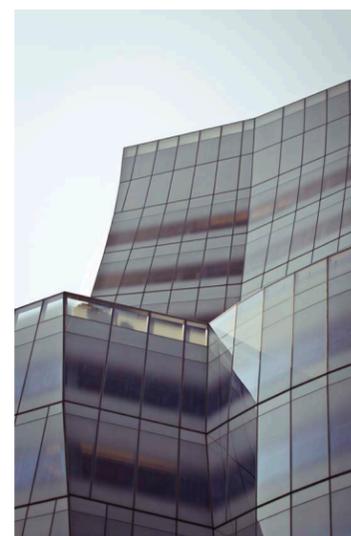
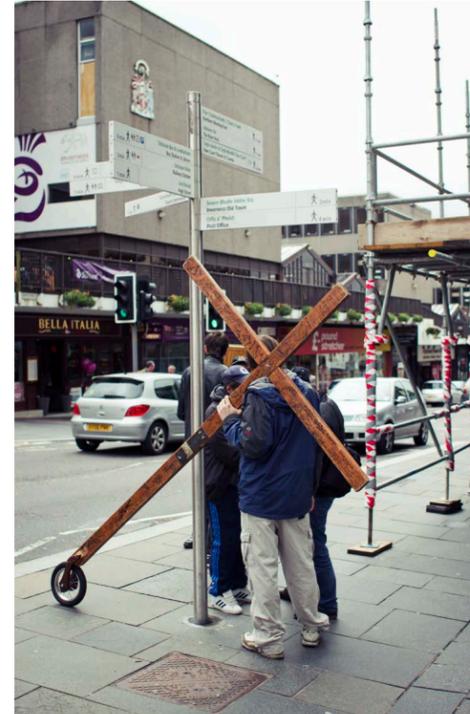
PHOTOGRAPHY

THE PRACTICE OF PHOTOGRAPHY HAS HAD A PROFOUND EFFECT ON MY LIFE. MY INTEREST WAS IGNITED AROUND THE SAME TIME THAT I BEGAN TO STUDY ARCHITECTURE, AND INCREASED SIMULTANEOUSLY WITH MY GROWING PASSION FOR DESIGN. FOR ME, PHOTOGRAPHY BECAME A RIGOROUS INVESTIGATION OF SPACE,

LIGHT, AND THE HUMAN EXPERIENCE, WHICH COINCIDES WITH THE CORE PRINCIPLES OF MY ARCHITECTURAL EDUCATION. I FEEL THAT MAKING PHOTOGRAPHS HAS ALLOWED ME TO BE MORE RESPONSIVE TO THE EMOTIONAL QUALITIES OF THE SPACE WE OCCUPY.

AS I BECAME MORE SKILLED WITH A DIGITAL CAMERA, I WAS ABLE TO ENGAGE IN A MORE SERIOUS EXAMINATION OF THE ART AND REFINE MY PHOTOGRAPHIC PRACTICE. TODAY, I HAVE A DEEP INTEREST IN PHOTOGRAPHING THE BUILT ENVIRONMENT, ESPECIALLY PLACES THAT ARE ABANDONED OR IN RUIN; I ALSO

ENJOY MAKING LANDSCAPE, FINE ART, AND STREET PHOTOGRAPHY. OVER THE YEARS I HAVE DEVELOPED A SOLID UNDERSTANDING OF PHOTOSHOP AND POST-PROCESSING; I ALSO HAVE ENJOYED EXPLORING METHODS IN PHOTO MANIPULATION AND TIME-LAPSE PHOTOGRAPHY.



CRAFT, MODELING & FABRICATION

THE ACT OF MAKING SOMETHING WITH MY HANDS IS ONE OF THE MOST IMPORTANT AND REWARDING ASPECTS OF LIFE; IT OFTEN BECOMES A MEDITATIVE PROCESS. I ENJOY BUILDING WITH A VARIETY OF MATERIALS AND AT VARIOUS SCALES, AND ALWAYS HOLD MYSELF TO A VERY HIGH STANDARD WHEN IT COMES TO THE DETAILS.

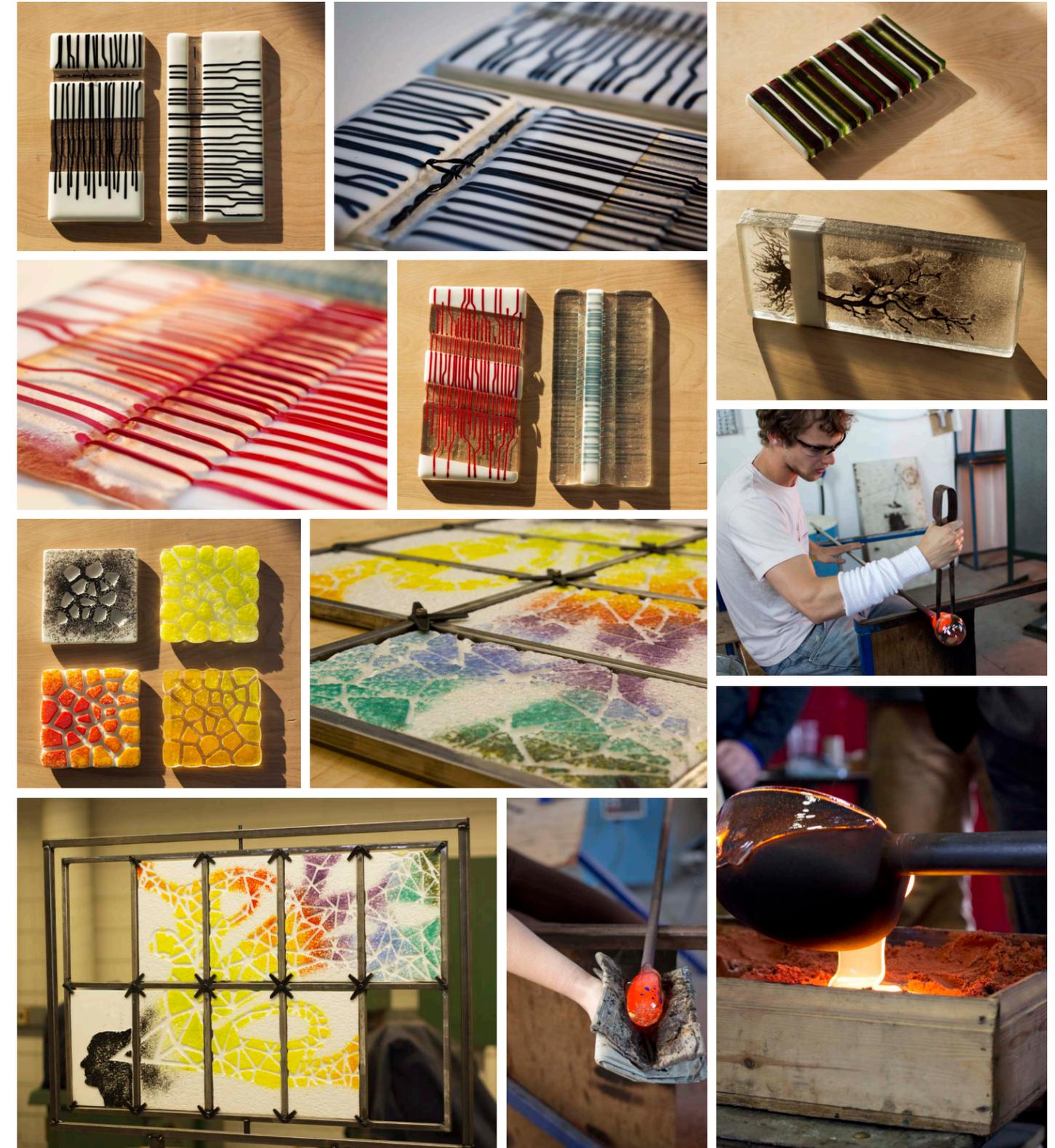
MY SKILLS COVER A BROAD RANGE, INCLUDING: SMALL DETAIL AND SCALE MODELS, LARGE FABRICATION PROJECTS AND FURNITURE, AND CNC/3D PRINTED DESIGNS. I CAN WORK WITH METAL, GLASS, AND CONCRETE AND AM CAPABLE OF QUALITY WOODWORKING WITH MACHINE AND HAND TOOLS.



GLASS KILN-FORMING & BLOWING

WORKING WITH GLASS HAS QUICKLY BECOME ONE OF MY FAVORITE PRACTICES. THE MATERIAL IS BEAUTIFUL AND APPEARS TO HAVE, QUITE LITERALLY, AN INFINITE AMOUNT OF POSSIBLE FORMS. MY STUDY OF GLASS BEGAN WITH FUSING AND KILN-FORMING UNDER THE INSTRUCTION OF HEATH (TAD) BRADLEY,

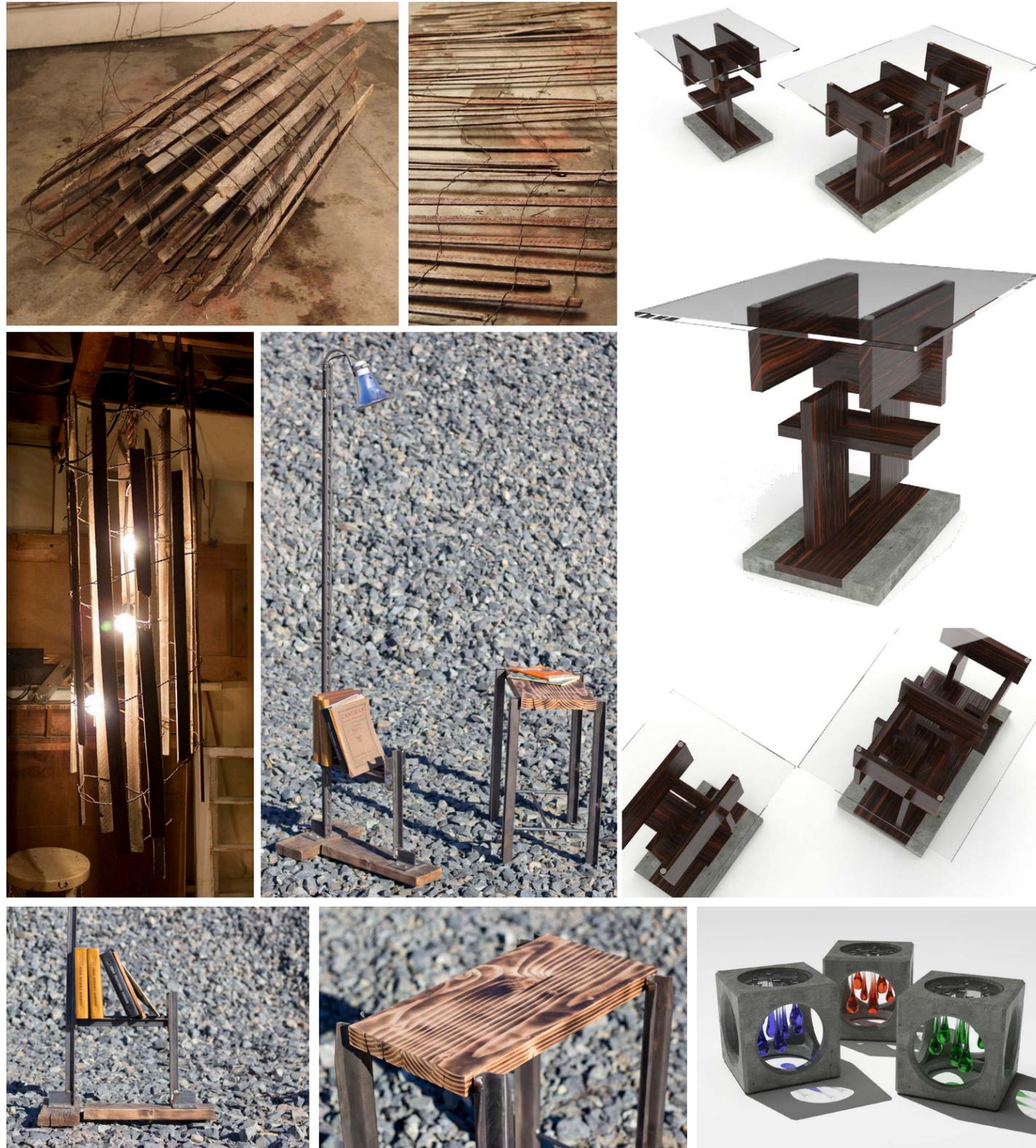
WHO ENCOURAGED ME TO TRY "CRAZY, STUPID THINGS." I WAS IMMEDIATELY DRAWN TO THE ART, AND LATER HAD AN OPPORTUNITY TO EXPAND MY SKILLS IN SCOTLAND AT AN ADVANCED GLASS SYMPOSIUM, LEARNING TECHNIQUES IN CASTING, BLOWING, AND COLD-WORKING.



FURNITURE & SCULPTURE

I HAVE DEVELOPED A DEEP APPRECIATION FOR THE EVERYDAY OBJECTS THAT MAKE OUR LIVES EASIER, OR THAT ARE SIMPLY THERE JUST TO BE SOMETHING BEAUTIFUL. MY PASSION FOR DESIGN TENDS TO BE DIRECTED AT THE INTIMATE OBJECTS WE INTERACT WITH IN OUR DAILY LIVES; THE *COMPONENTS* OF A SPACE. I ENJOY

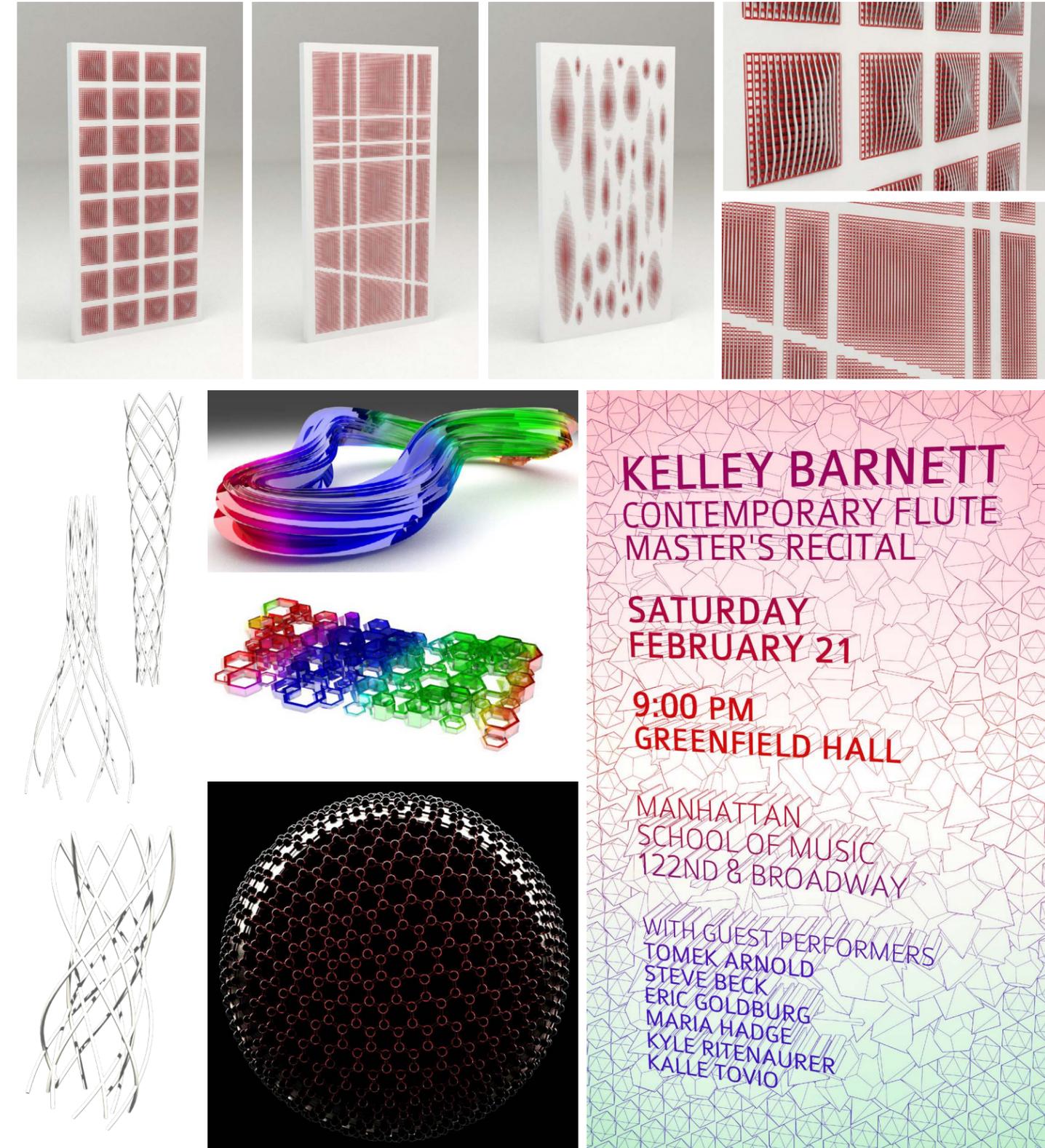
EXPLORING IDEAS THAT FUSE TECHNOLOGY WITH CRAFT-OF-HAND, AND I ABSOLUTELY LOVE WORKING WITH OLD SALVAGE & RECYCLED WOOD. I AM A COMPETENT FABRICATOR WITH EXPERIENCE IN WOOD, STEEL, AND GLASS DESIGN.



PARAMETRIC DESIGN

I CAME TO UNDERSTAND THE PRACTICE OF PARAMETRIC DESIGN IN THE LATER YEARS OF ACADEMIA. I IMMEDIATELY FELL IN LOVE WITH THE CONCEPT OF GEOMETRY-PRODUCING ALGORITHMS, AND MATHEMATICAL MANIPULATION OF SPACE. FOR ME, IT IS EXTREMELY ENJOYABLE BECAUSE IT INCORPORATES SEVERAL OF

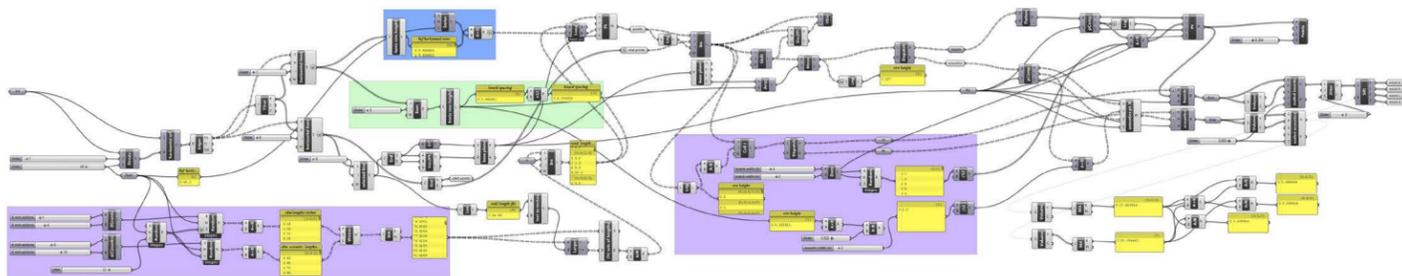
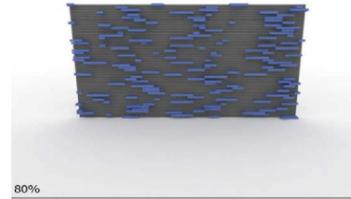
MY FAVORITE THINGS: 3D MODELING, MATHEMATICS, LOGIC, AND CREATIVE PROBLEM-SOLVING. I FEEL THAT THIS PROCESS HAS VIRTUALLY LIMITLESS POTENTIAL IN THE DESIGN WORLD, AND CAN INFUSE ITSELF IN OTHER 2D AND 3D PRACTICES.



PRACTICE SPACE

THIS PROJECT WAS ENVISIONED AS A VERY SIMPLE REHEARSAL AND PRACTICE SPACE FOR MUSIC PERFORMERS, SITUATED NEAR THE EDGE OF THE CUSTER NATIONAL FOREST. ONE OF THE MAIN FOCUSES OF THE DESIGN WAS THE DEVELOPMENT OF SCRIPT THAT ARRANGES COMPOSITE BOARDS IN A PSEUDO-RANDOM FASH-

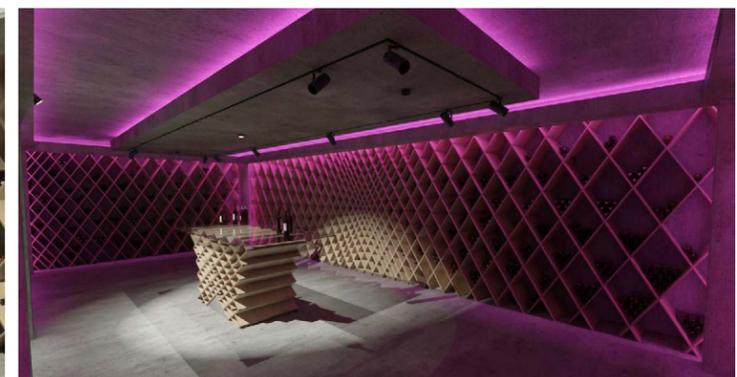
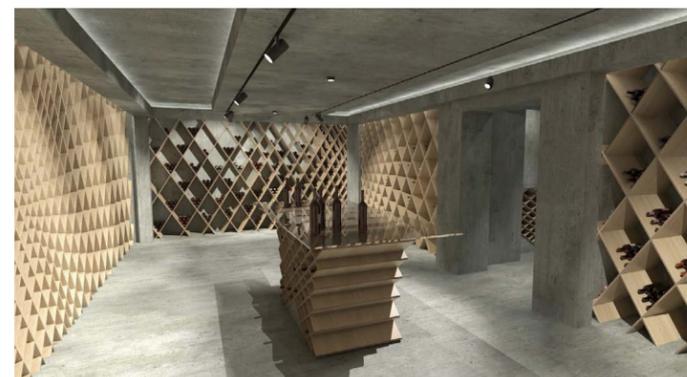
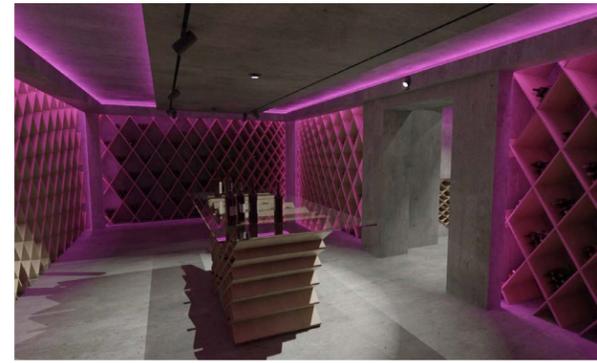
ION. IT ALLOWS FOR THE AMOUNT OF EXPOSED FOAM TO BE CONTROLLED, SO AS TO MEET THE REQUIRED ACOUSTIC PROPERTIES. THIS PROJECT WAS DONE FOR THE ENJOYMENT OF THE PRACTICE, AND SIMPLY, JUST THE PLEASURE OF MAKING SOMETHING.



WINE CELLAR

A MODERN WINE CELLAR BASED ON A SIMPLE PATTERN OF ARRANGED PLYWOOD BOARDS, WHICH ARE CUT BY ROBOTIC MILLS. THIS $N=N+1$ PATTERN PRODUCES GEOMETRY THAT IS PRACTICAL FOR THE STORAGE OF WINE AND VISUALLY STIMULATING, WITH THE RECTILINEAR ROOM HAVING A SLIGHT WARPED FEELING.

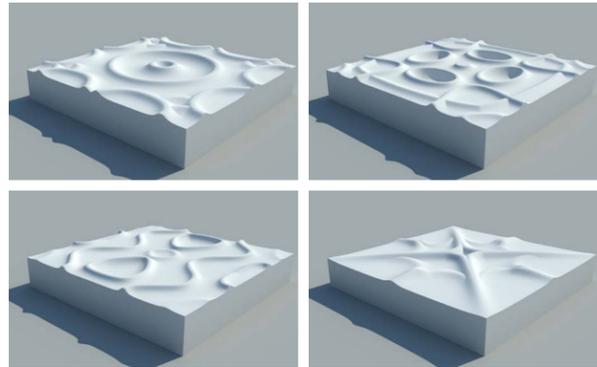
FOR THIS PROJECT, I WAS FOCUSED ON DYNAMIC LIGHTING SCENARIOS AND ACCURATE TEXTURE MAPPING IN ORDER TO PRODUCE A SET OF CLEAN, PHOTOREALISTIC RENDERINGS. THIS IS ANOTHER DESIGN EXERCISE DONE FOR THE PURPOSES OF JOY AND PERSONAL DEVELOPMENT.



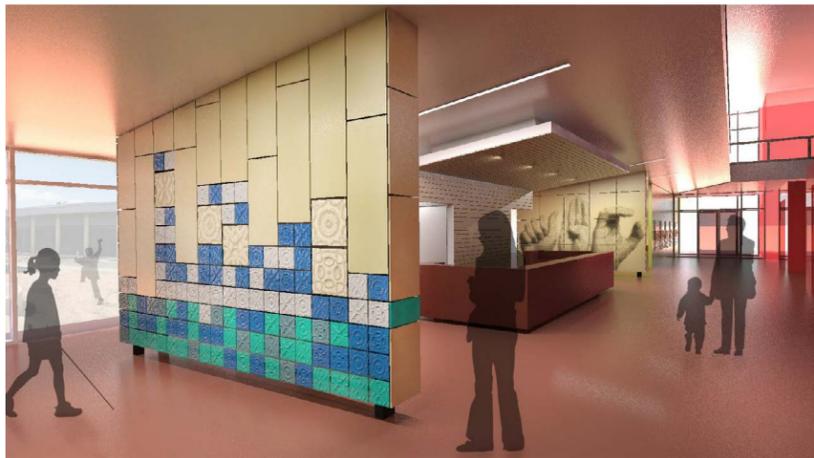
TBD - USDB INSTALLATION PROPOSAL

FOR TAD BRADLEY DESIGNS, I WAS TASKED WITH TWO OBJECTIVES: GENERATE A MODELING SCRIPT TO REPRODUCE CYMATIC PATTERNS, AND CREATE RENDERINGS TAD'S PROPOSED DESIGN WITHIN THE NEW UTAH SCHOOL FOR THE DEAF AND BLIND. HIS DESIGN CALLED FOR A SERIES OF MANUFACTURED PANELS THAT

WERE TO BE FIXED ON FRAMES IN A HANDS-ON SETTING. USING THE DRAWINGS FOR THE UNDER-CONSTRUCTION SCHOOL, I DEVELOPED A DIGITAL MOCK-UP OF THE ARTIST'S INSTALLATION, THEN RENDERED SEVERAL SCENES SHOWCASING THE CUSTOM-FORMED CYMATIC PANELS AND HALFTONE IMAGES.



TAD'S PROPOSAL INVOLVED PHYSICAL RE-PRODUCTIONS OF SOUND-GENERATED PATTERNS IN SAND, WHICH WERE TO BE FABRICATED IN WOOD, ACRYLIC, AND GLASS, THEN ARRANGED ON INTERACTIVE DIVIDERS. MY GRASSHOPPER SCRIPT WAS USED TO TRANSLATE DOCUMENTED CYMATIC PATTERNS AND GENERATE A 3D MODEL TO BE USED FOR CNC FABRICATION.



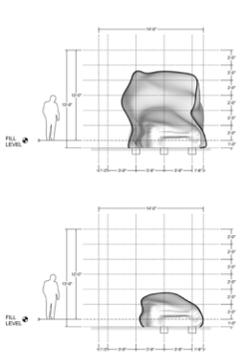
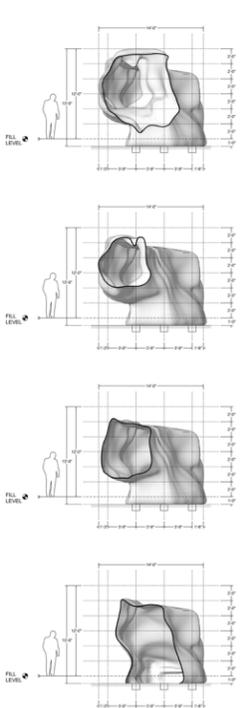
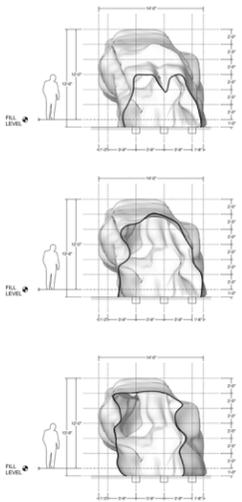
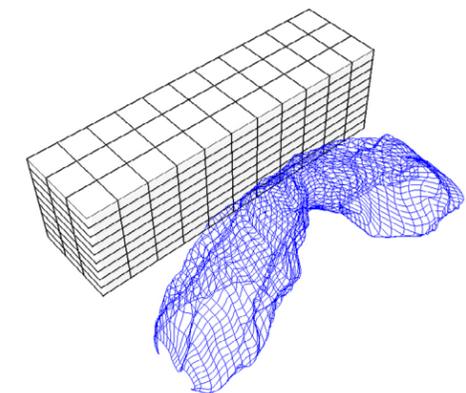
TBD - CLIMBING BOULDER INSTALLATION

A 3D MODELING AND RENDERING PROJECT FOR TAD BRADLEY DESIGNS. TAD'S PROPOSAL CALLED FOR AN ARCHED BOULDER THAT WAS TO BE CONSTRUCTED FROM STEEL, CONCRETE, AND STONES. THE ARTIST DEVELOPED HIS DESIGN AND PRODUCED A SCALE CLAY MODEL OF THE STRUCTURE, WHICH WAS USED

TO GENERATE AN ACCURATE DIGITAL MODEL OF THE PROPOSED INSTALLATION. I DEVELOPED RENDERINGS OF THE BOULDER IN-SITU, AND ALSO PROVIDED DRAWINGS AND STRUCTURAL OVERLAYS TO ASSIST IN FABRICATION.



original clay model by Tad Bradley



INTIMATE OBJECTS

THE ACT OF MAKING WITH MY OWN TWO HANDS HAS BECOME A SACRED AND CHERISHED PRACTICE IN MY LIFE. I AM INFATUATED WITH BEAUTIFUL DETAILS, AND AM CONSISTENTLY REACHING FOR HIGHER LEVELS OF CRAFTSMANSHIP IN MY OWN WORK. MY PROJECTS VARY; SOMETIMES IT IS A GIFT FOR A LOVED ONE --SUCH

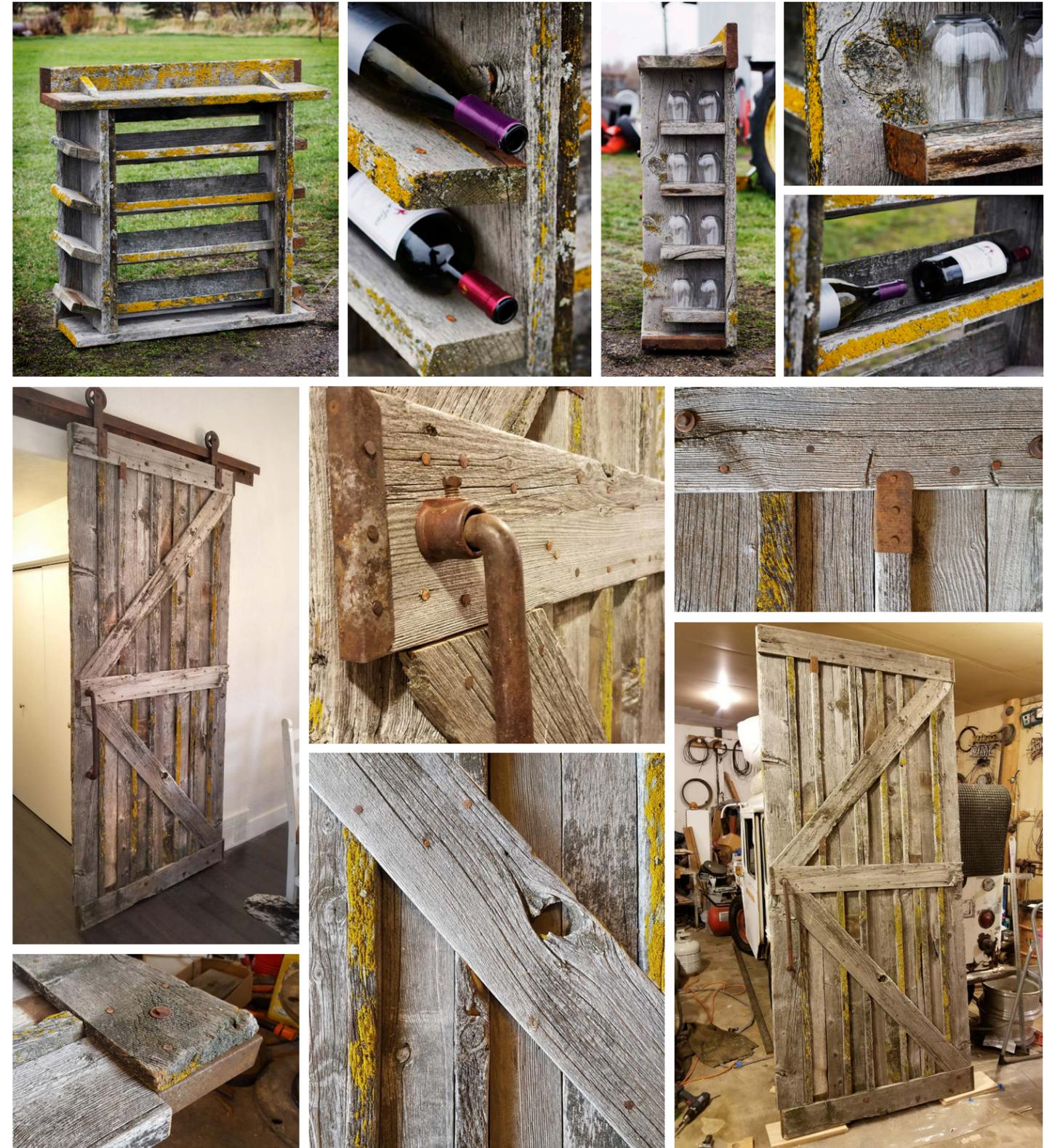
AS A POCKET CRIBBAGE BOARD-- OR SOMETIMES IT'S A SERIES OF SCULPTURAL INCENSE HOLDERS, MADE JUST FOR THE FUN OF IT. REGARDLESS OF THE PURPOSE OR REASON, THE ITEMS THAT I CRAFT ARE A REFLECTION OF ME; THEY ARE UNIQUE, HONEST, AND SOMETIMES A LITTLE WEIRD.



ARCHITECTURAL OBJECTS

MY FASCINATION WITH OLD AND WEATHERED STRUCTURES ALSO FUELS MY PASSION FOR DESIGNING WITH SALVAGE AND RECLAIMED MATERIALS. FOR TWO OF MY MOST RECENT BUILDS, I USED WOOD FROM OLD CORRAL GATES ALONG WITH STEEL THAT WAS FOUND LYING AROUND. THE WOOD HAD A BEAUTIFUL, SILVER GLOW, WITH

VIBRANT LICHEN CREEPING ALONG THE EDGE AND FACE OF THE BOARDS. IN DETAILING BOTH PROJECTS, I MADE LIBERAL USE OF WEATHERED STEEL, INCLUDING FABRICATING A CUSTOM HANDLE FROM A STEEL BAR AND SOME PIPE FITTINGS. THESE ARE TWO OF MY FAVORITE FABRICATION PROJECTS TO-DATE.



PART TWO
ADDED 2024

HELLO AGAIN, AND THANK YOU FOR VIEWING PART TWO OF MY CONDENSED PORTFOLIO. THIS PORTION WAS CREATED TO HIGHLIGHT SEVERAL NOTABLE PROJECTS FROM MY TIME WORKING AS AN INDEPENDENT CONTRACTOR.

I FOUNDED CULTIVATED DESIGNS LLC IN 2016 AS I WAS BEGINNING TO ESTABLISH MYSELF AS A MULTI-DISCIPLINE FREELANCE DESIGNER. SINCE THEN, I'VE COMPLETED DOZENS OF PROJECTS ACROSS A WIDE RANGE OF INDUSTRIES, INCLUDING ARCHITECTURAL DESIGN, INTERIOR DESIGN, FURNITURE, SCULPTURE, AND HOME & INDUSTRIAL PRODUCTS. HAVING A BROAD RANGE OF TASKS AND PROJECTS HAS ALLOWED ME TO FIND NEW CHALLENGES, AND ENCOURAGES ME TO THINK LATERALLY. IT'S ALSO BEEN A DRIVING FACTOR IN MY DESIRE TO LEARN NEW THINGS AND EXPAND THE SKILLS I HAVE DEVELOPED OVER THE YEARS.

RUNNING MY OWN SOLO BUSINESS HAS BEEN AN EXTREMELY REWARDING EXPERIENCE, EVEN THROUGH THE UNIQUE DIFFICULTIES IT PRESENTS. I'VE LEARNED A TREMENDOUS AMOUNT; BOTH FROM MY OWN EXPLORATIONS, AND FROM WORKING WITH SO MANY GREAT CLIENTS AND TEAMS.

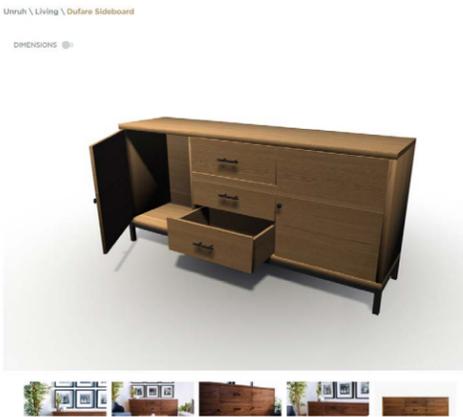
RENDERING & PHOTO EDITING EXERCISE PRODUCTS
PHOTO EDITING ROOM PAINT PREVIEW
3D MODELING & RENDERING BEVERAGE PRODUCT
3D MODELING FOR PRODUCTION SPORTS BOTTLE
ARCHITECTURAL PHOTOGRAPHY NEW AIRPORT CONSTRUCTION
3D MODELING & RENDERING CONCEPT AIRCRAFT
3D MODELING & RENDERING SPORTS BAR VENUE
PARAMETRIC DESIGN FURNITURE WEB APPLICATION
3D MODELING & RENDERING BIKE PRODUCT
3D MODELING SPECIALIZED HAND TOOL
PARAMETRIC 3D MODELING PAVILION PROPOSAL
DRAWING & CAD VECTORIZE FLOOR PLANS
3D MODELING & RENDERING SCIENTIFIC GRAPHICS
3D MODELING & RENDERING HOUSEHOLD PRODUCT
WATERCOLOR RENDERING HOME EXTERIOR
3D MODELING SPECIALIZED DRAIN ADAPTOR
3D MODELING & RENDERING HOME EXTERIOR
3D MODELING 2D TO 3D FLOOR PLAN
PARAMETRIC DESIGN CUSTOMIZABLE PET CAGE
3D MODELING & RENDERING HEALTH INFO KIOSK
3D MODELING & RENDERING TV SET PROPOSAL
3D MODELING & RENDERING FOOD TRUCK CONCEPT
PARAMETRIC DESIGN FURNITURE WEB APPLICATION
3D MODELING & RENDERING SPA RENOVATION CONCEPT
3D MODELING & RENDERING CORNER BAR CONCEPT
3D MODELING FOR PRINT SCALE MODEL CITY
PHOTO EDITING HOME COLOR PREVIEWS
3D MODELING & RENDERING STAIR & BATHROOM CONCEPT
DRAWING & CAD FLOOR PLAN MODIFICATIONS
3D MODELING & RENDERING INTERIOR SPACE CONCEPT
PARAMETRIC DESIGN LARGE SCULPTURE FABRICATION
3D MODELING & RENDERING HEALTH PRODUCT PACKAGING
3D MODELING & RENDERING SCULPTURE INSTALLATION PROPOSAL
3D MODELING & RENDERING INTERIOR BAR CONCEPT
3D MODELING & RENDERING PROPOSED SOLAR CAR PORTS
3D MODELING & RENDERING NEW HOME INTERIOR RENDERINGS
3D MODELING & RENDERING DRIVE-THRU PROPOSAL
3D MODELING FOR PRINTING CUSTOM PRODUCT MODIFICATIONS
PARAMETRIC 3D MODELING 3D PARTS FOR CERAMIC SCULPTURE
PARAMETRIC 3D MODELING FRACTAL SCULPTURE CONCEPT
3D MODELING & RENDERING NEW KITCHEN PROPOSAL
PARAMETRIC DESIGN PREFABRICATED STRUCTURE DESIGN
3D MODELING & RENDERING BLAST ENCLOSURE PRODUCTS
3D MODELING FOR PRINTING PRINTABLE BOAT MODELS
3D MODELING & RENDERING PROPOSED EDUCATIONAL SPACE
3D MODELING & RENDERING PROPOSED STAIRCASE ADDITION
PARAMETRIC DESIGN FURNITURE PARAMETRIC DOCUMENTATION

PARAMETRIC DESIGN FURNITURE FOR INTERACTIVE WEB APPLICATION

CLIENTS:
UNRUH FURNITURE
GEOVIN FURNITURE



UNRUH Dining Living Bedroom Office Discover Showroom



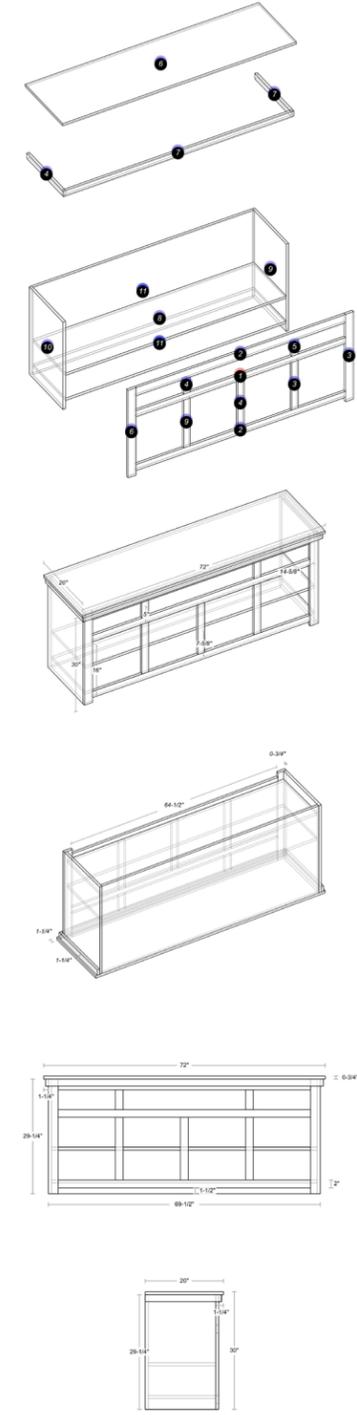
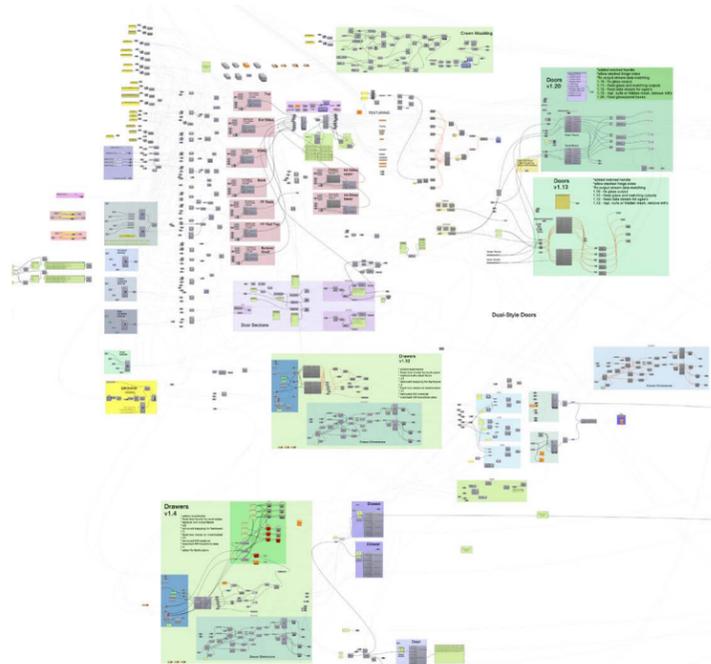
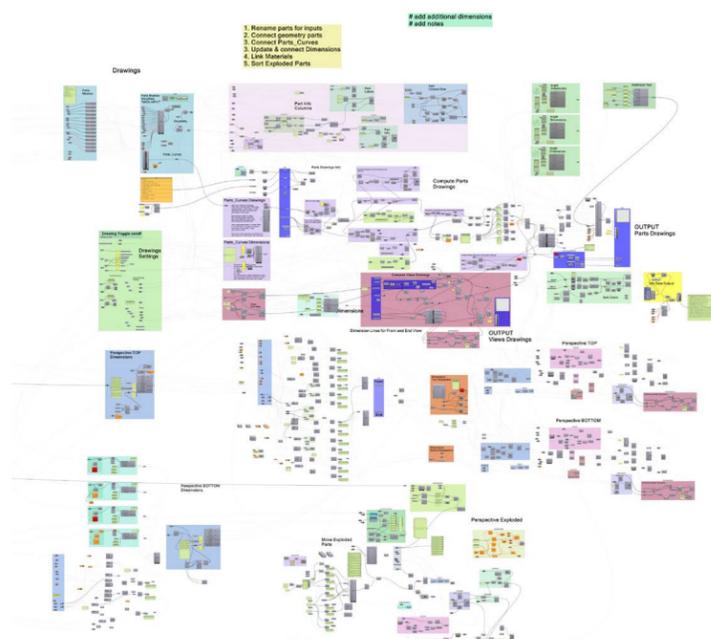
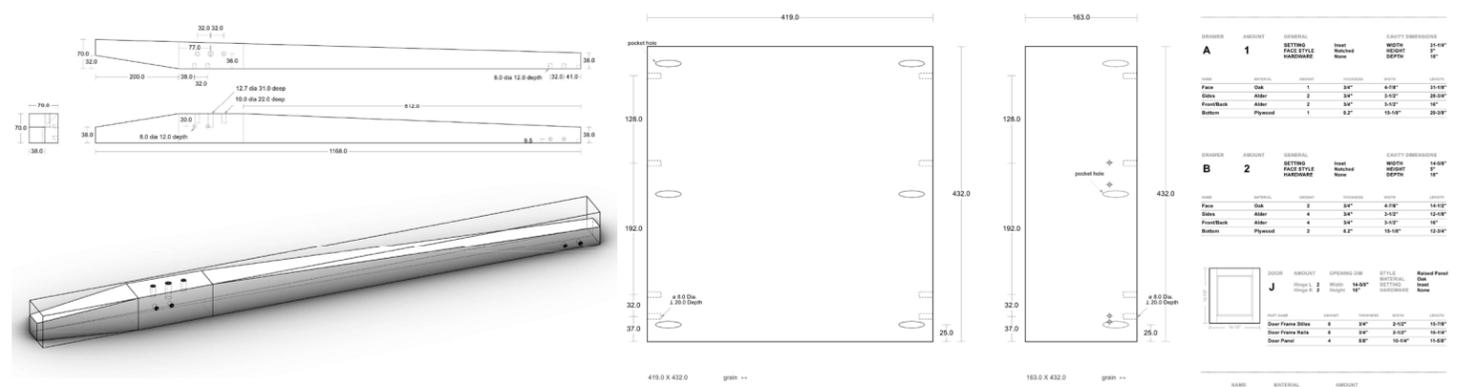
UNRUH Dining Living Bedroom Office Discover Showroom



MY FIRST TWO LARGE-SCALE CONTRACTS WERE BOTH WITH FAMILY-OWNED FURNITURE COMPANIES WHO WANTED TO DIGITIZE THEIR ENTIRE COLLECTION INTO PARAMETRIC 3D MODELS. THE CLIENT'S PRIMARY GOAL WAS TO HAVE AN APPLICATION ON THEIR WEBSITE WHERE CUSTOMERS CAN VIEW A RENDERED MODEL OF A PIECE OF FURNITURE, AND SEE IT UPDATED IN REAL-TIME WHEN THEY CHANGE THEIR SELECTED OPTIONS. THOSE OPTIONS INCLUDED EVERYTHING FROM SIZE, WOOD TYPE, WOOD FINISH, BASE STYLE, DOOR STYLE, DRAWER CONFIGURATION, AND HARDWARE OPTIONS.

THE SCRIPTS I DEVELOPED WERE USED TO GENERATE THE GEOMETRY FOR THE 3D MODELS, BASED OFF ONLY A HANDFUL OF PARAMETERS AND A LOT OF MATH. IN ADDITION TO CREATING GEOMETRY, THE SCRIPTS ALSO GENERATED A WIDE ARRAY OF ADDITIONAL INFORMATION: PART LISTS, DRAWINGS, CUT SHEETS, DXF AND CSV EXPORTS ARE SOME EXAMPLES.

BOTH CLIENTS UTILIZED THE SHAPEDIVER PLATFORM, WHICH PORTS GRASSHOPPER SCRIPTS TO A WEB-READY VIEWER. THIS METHOD ALLOWED US TO DEVELOP EXTREMELY POWERFUL SCRIPTS, AND CREATE USER-FRIENDLY PARAMETRIC MODELS THAT CAN DO JUST ABOUT ANYTHING THE CLIENT WISHED FOR.

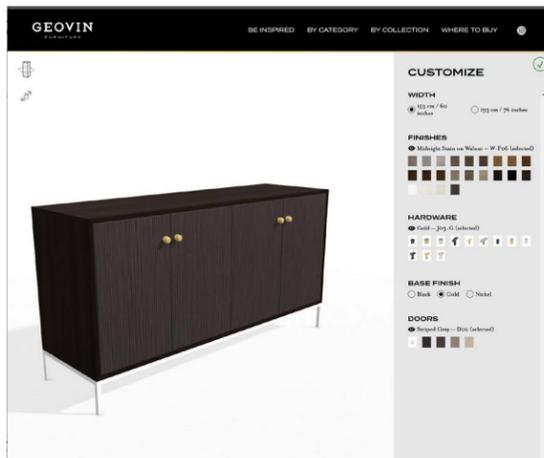


DESIGNER	AMOUNT	GENERAL	WIDTH	DEPTH	HEIGHT
A	1	SETTING FACE STYLE PARTS/MATERIAL	14 5/8"	14"	14"
FACE	Oak	1	14 5/8"	14"	14"
FRONTBACK	Alber	2	14"	14"	14"
BOTTOM	Pyramet	1	14"	14"	14"

DESIGNER	AMOUNT	GENERAL	WIDTH	DEPTH	HEIGHT
B	2	SETTING FACE STYLE PARTS/MATERIAL	14 5/8"	14"	14"
FACE	Oak	2	14 5/8"	14"	14"
FRONTBACK	Alber	4	14"	14"	14"
BOTTOM	Pyramet	2	14"	14"	14"

DESIGNER	AMOUNT	GENERAL	WIDTH	DEPTH	HEIGHT
J	2	SETTING FACE STYLE PARTS/MATERIAL	14 5/8"	14"	14"
FRONTFRONT SIDES	Alber	2	14"	14"	14"
FRONTFRONT SIDES	Alber	4	14"	14"	14"
FRONTFRONT	Alber	4	14"	14"	14"

NAME	MATERIAL	AMOUNT
1 Top	Walnut	1
2 Ext Stiles	Oak	2
3 Top Int Stiles	Oak	2
4 Bottom Int Stiles	Oak	3
5 Top Rail	Oak	1
6 Rails	Oak	2
7 Ext Sides	Oak	2
8 Back	Oak	1
9 Bottom/Shelf	Oak	2
10 Crown	Oak	1
11 Crown Sides	Oak	2



**PARAMETRIC DESIGN
DESIGN ENGINEERING
FOR SCULPTURE
FABRICATION**

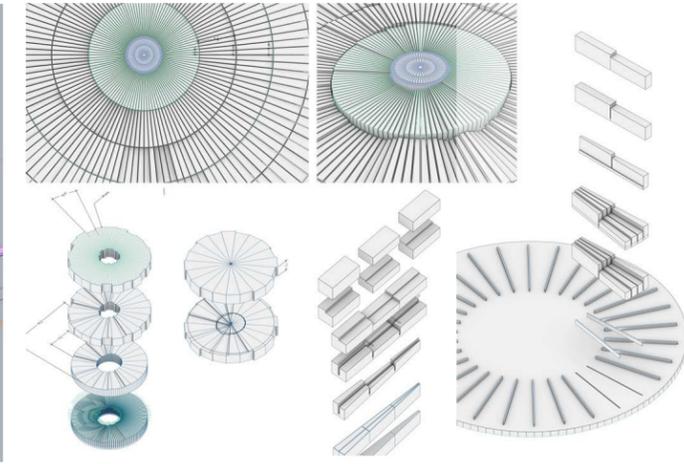
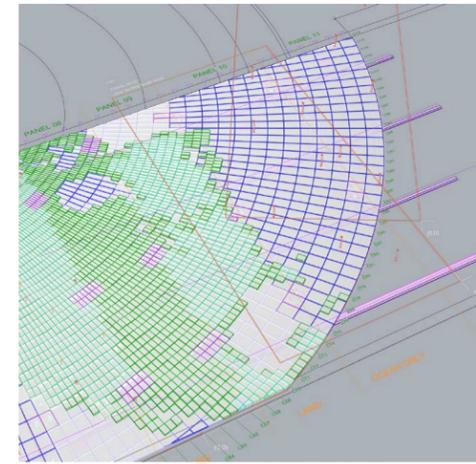
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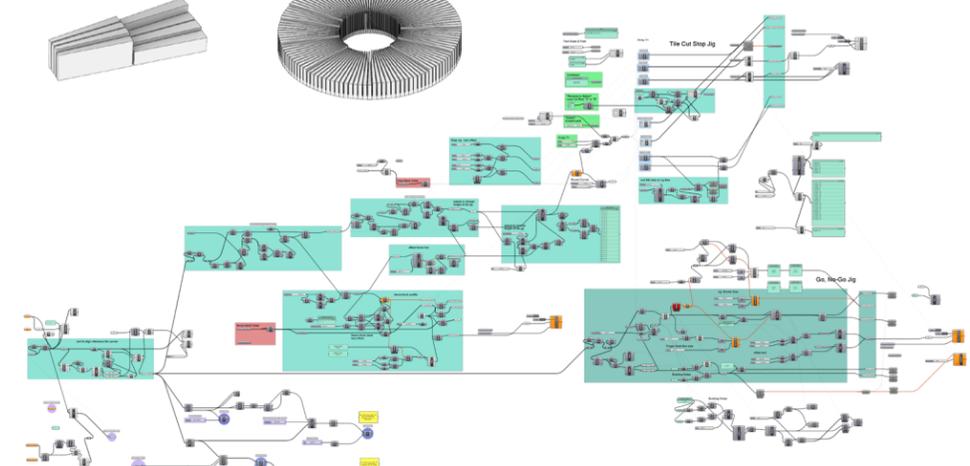
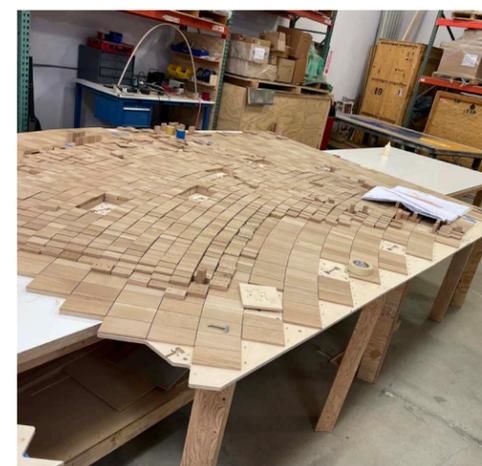
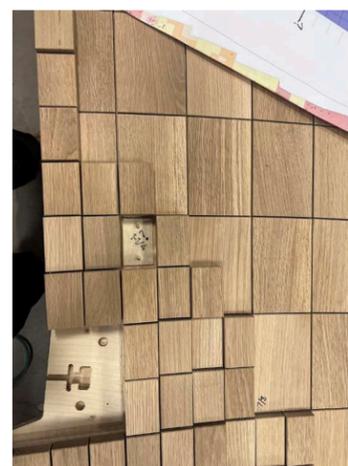
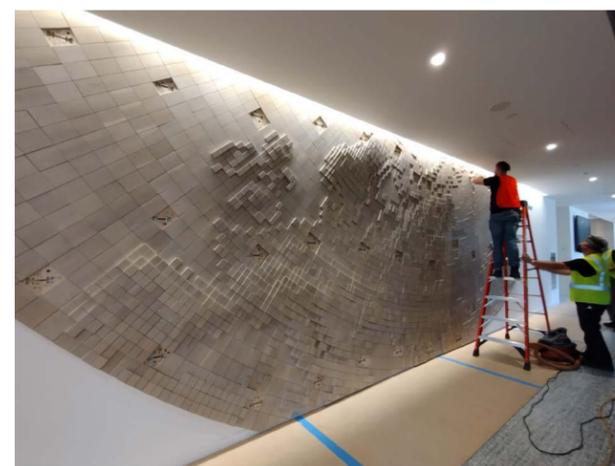
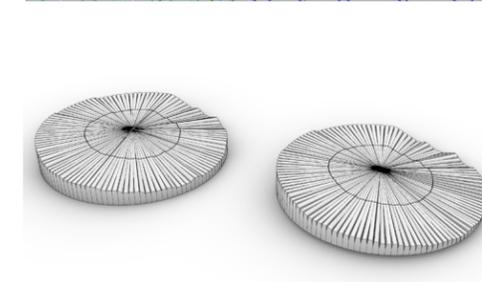
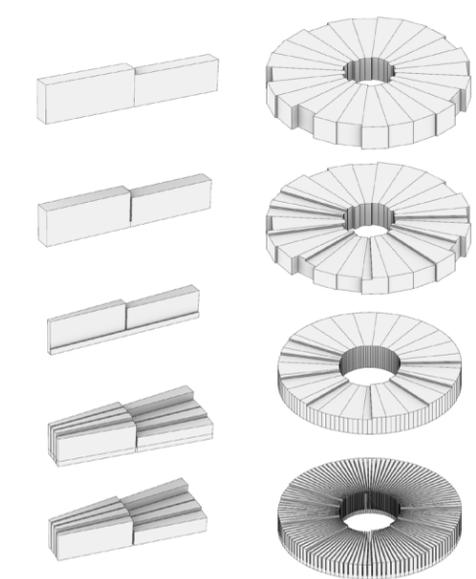
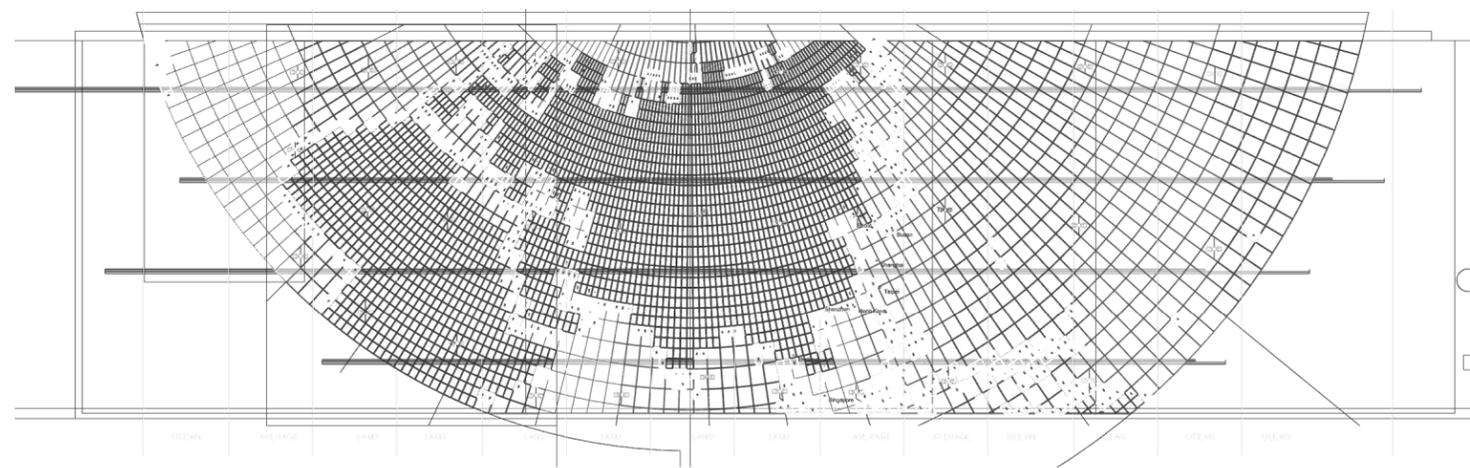
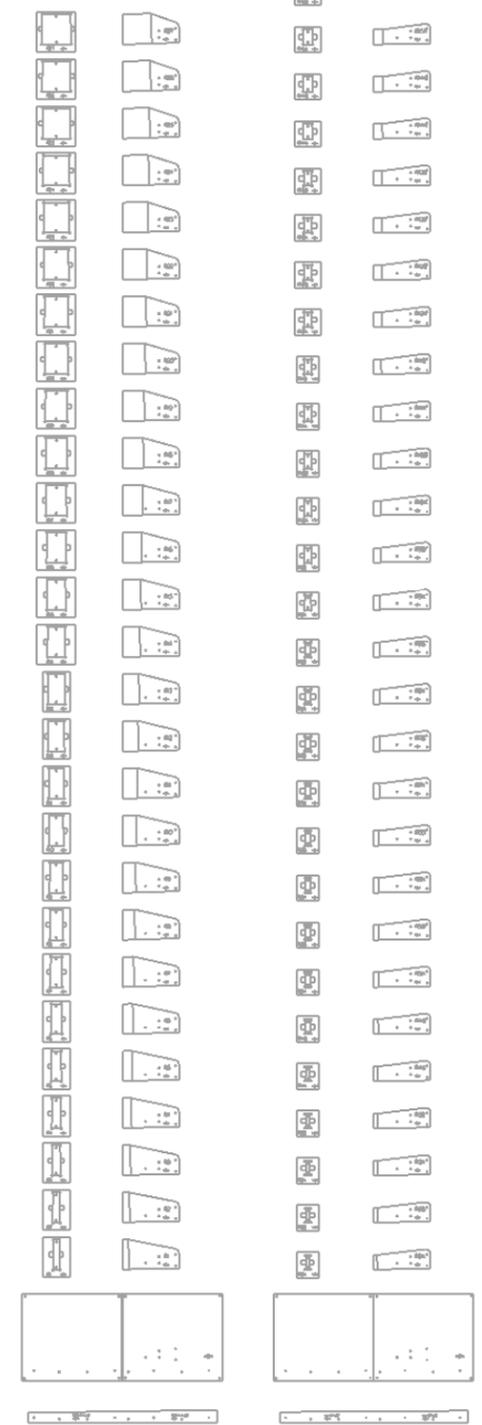
I WAS BROUGHT ON TO THE COMPANY'S DESIGN ENGINEERING TEAM TO ASSIST WITH OPTIMIZING PRODUCTION OF SEVEN LARGE SCULPTURES, EACH COMPOSED OF THOUSANDS OF INDIVIDUAL OAK TILE PIECES. THE TEAM HAD ALREADY DEVELOPED A SYSTEM TO GENERATE THE BASE GEOMETRY FOR THE TOPOGRAPHIC MAPS, BUT THEY STILL REQUIRED A LOT OF ADDITIONAL INFORMATION IN ORDER TO PRODUCE THE TILES EFFICIENTLY, AND MEET TIGHT DEADLINES FOR THE PROJECT.

MY TASKS INVOLVED CREATING SCRIPTS THAT PERFORMED VARIOUS OPERATIONS, SUCH AS GENERATING CNC FILES, CREATING DATABASES, AND SIMULATING PROTOTYPES. DUE TO THE HUGE SCALE OF EACH CONTINENT, AND THE SHEER NUMBER OF UNIQUE TILES FOR EACH INSTALLATION, EFFICIENCY IN THE SHOP WAS OF UPMOST IMPORTANCE. FOR THIS, OUR TEAM DEVELOPED A LIBRARY OF JIGS AND GAUGES TO BE USED FOR CUTTING AND DRILLING. EACH CONTINENT

HAD ITS OWN SET OF CNC-CUT PIECES THAT FIT INTO LARGER, RE-USABLE SLEDS AND MOUNTS. THIS ALLOWED THE SHOP WORKERS TO PRODUCE A TREMENDOUS NUMBER OF PARTS IN A SHORT AMOUNT OF TIME--AND WITH VERY HIGH ACCURACY. IN ORDER TO KEEP TRACK OF EVERYTHING, I ALSO DEVELOPED A SERIES OF FUNCTIONS THAT GENERATED DETAILED INFORMATION FOR EACH MAP: MAP-WIDE TILE COUNTS & LABELING, ASSEMBLY-LEVEL SECTION TILE COUNTS, LOCATIONS,



THICKNESSES, AND INFORMATION RELATING TO INSTALLATION. THE PROJECT WAS A SUCCESS AND EVERYTHING WAS INSTALLED ON-SCHEDULE; I WAS VERY PLEASED TO BE INVOLVED WITH SUCH A LARGE-SCALE PROJECT, AND HIGHLY EFFICIENT DESIGN TEAM. IT WAS GREAT TO UTILIZE MY PARAMETRIC DESIGN SKILLS FOR SUCH A BEAUTIFUL AND DETAILED PROJECT. I FEEL LIKE I THRIVE IN THIS KIND OF ENVIRONMENT, SOLVING THESE TYPES OF PROBLEMS.





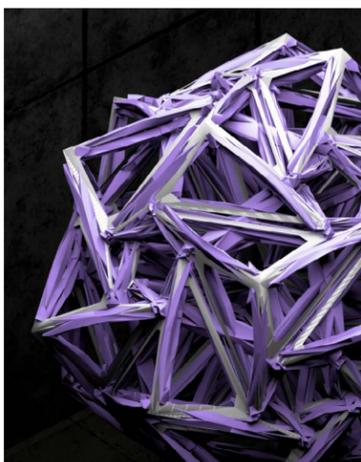
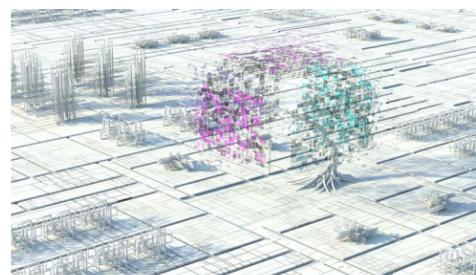
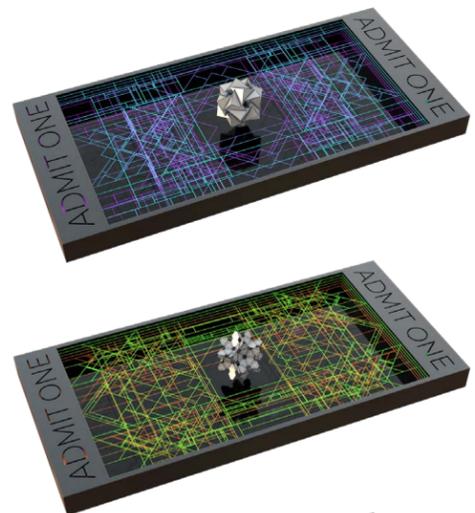
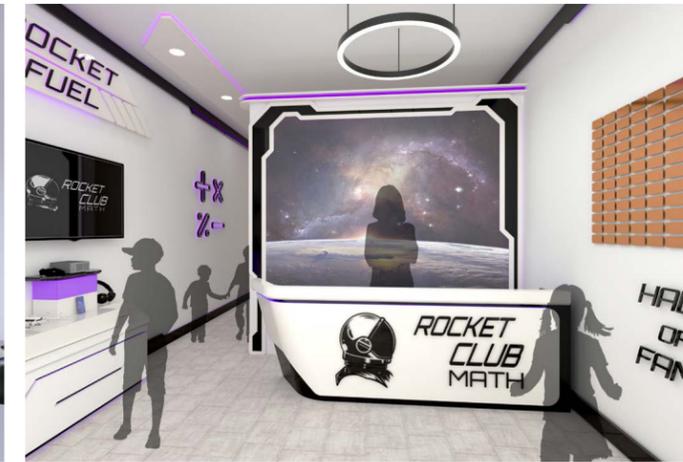
3D MODELING & RENDERING AND COMPOSITE IMAGE CREATION

VARIOUS CLIENTS



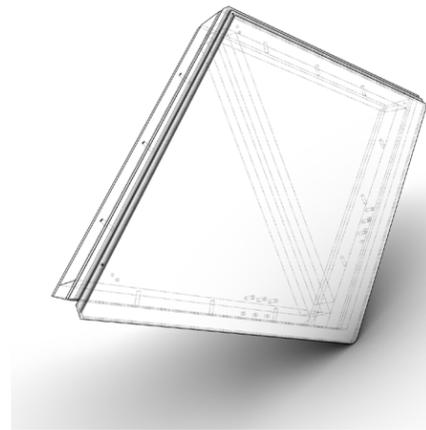
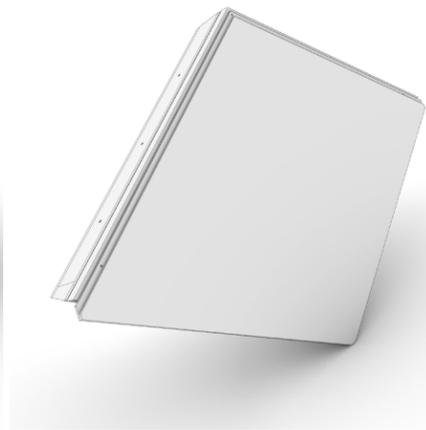
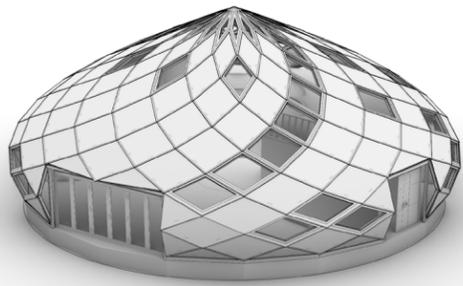
OVER THE YEARS, I'VE WORKED WITH DOZENS OF CLIENTS ACROSS VARIOUS INDUSTRIES, AND CREATED HUNDREDS OF RENDERINGS AND COMPOSED IMAGES. 3D MODELING AND RENDERING HAVE ALWAYS BEEN A TYPE OF ARTISTIC FOUNDATION FOR ME; IT HAS HELD MY INTEREST SINCE I BEGAN EXPERIMENTING WITH 3D DRAFTING SOFTWARE OVER 20 YEARS AGO. I'M VERY GRATEFUL TO HAVE BEEN ABLE TO FORM A BUSINESS AROUND DOING SOMETHING I ENJOY, AND IT'S BEEN A FANTASTIC WAY TO IMPROVE MY SKILLS WITH THE UNIQUE CHALLENGES THAT EXIST IN EACH PROJECT.

I CAN WORK WITH VIRTUALLY ANY SUBJECT, AT ANY SCALE, AND AT VARYING LEVELS OF DETAIL AND REALISM. IN MOST CASES, POST-PROCESSING IS DONE IN PHOTOSHOP, SOMETIMES COMPOSING WITH OTHER RENDERINGS OR PHOTOGRAPHS. I'M ALSO CAPABLE OF PRODUCING ANIMATIONS.



WHILE I AM OCCASIONALLY SUPPLIED WITH A 3D MODEL TO WORK WITH, MOST JOBS REQUIRE BUILDING GEOMETRY FROM SCRATCH, WHICH IS OFTEN AIDED BY MY KEEN USE OF PARAMETRIC SCRIPTS. I CAN WORK WITH BASICALLY ANYTHING: A SET OF PLANS, A SKETCH, PHOTOGRAPHS, EVEN SIMPLY AN IDEA. I LOVE THE CHALLENGE.





PARAMETRIC DESIGN ZONES - PREFABRICATED STRUCTURES

CLIENT: SHELL DWELLINGS

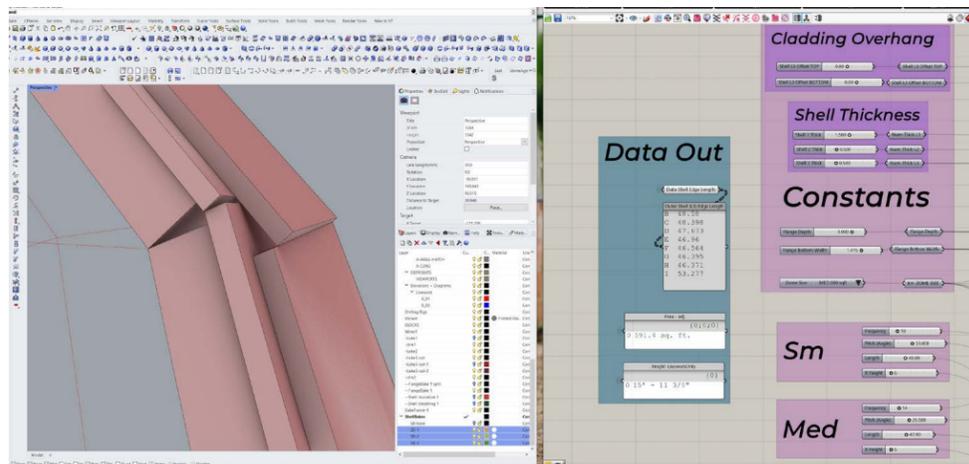
FOR THIS PROJECT, I WAS TASKED WITH CREATING A CUSTOMIZED SOLUTION FOR GENERATING ALL OF THE NECESSARY INFORMATION FOR THE CLIENT'S LINE OF PREFABRICATED STRUCTURES. THEIR VISION IS CENTERED AROUND A GEOMETRIC SHAPE CALLED A ZONOHEDRON, WHICH CAN BE DEFINED BY JUST A FEW PARAMETERS AND CONTAINS ROWS OF REPEATING PARALLELOGRAMS. AT THE BEGINNING, THE COMPANY HAD ALREADY DESIGNED A PROTOTYPE--

BUT THEY DID EVERYTHING MANUALLY, SO REPEATING THE SAME DESIGN AT A DIFFERENT SIZE WOULD REQUIRE STARTING FROM THE GROUND-UP. IT WAS THE PERFECT SITUATION FOR A COMPREHENSIVE PARAMETRIC SOLUTION.

AT ITS CORE, THIS TYPE OF SCRIPTED MODELING IS JUST A LOT OF MATH AND FUNCTIONS. ALL TYPES OF GEOMETRY CAN BE BROKEN DOWN INTO SIMPLER ELEMENTS, AND ULTIMATELY INTO JUST NUMBERS; WITH THAT WE CAN WORK BACKWARDS (OR LATERALLY, TO BE MORE ACCURATE) TO GENERATE AND MANIPULATE THE NUMBERS/GEOMETRY IN A MANNER AKIN TO COMPUTER PROGRAMMING. FOR THE ZONES, I STARTED WITH THE BASICS, THEN CREATED AN EVER-EXPANDING SERIES OF FUNCTIONS TO RESOLVE THE GEOMETRIC PROBLEMS, IN ORDER OF NECESSITY. AND OVER THE COURSE OF ALMOST A YEAR, WHAT WE HAVE IS THE MOST COMPLEX AND ROBUST SCRIPT I'VE EVER MADE.

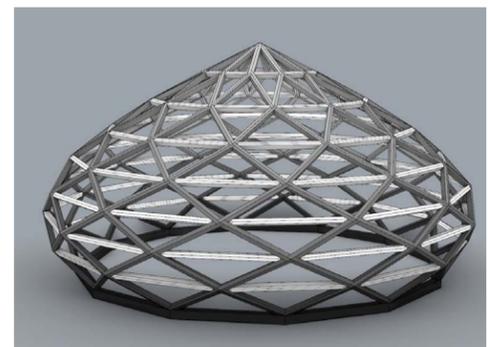
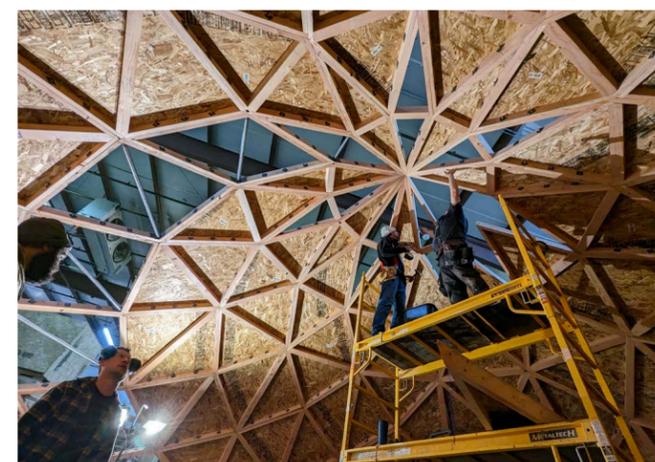
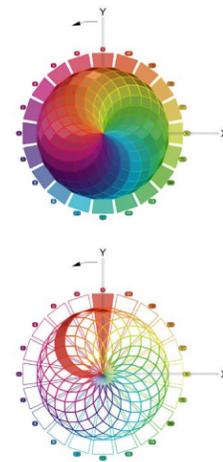
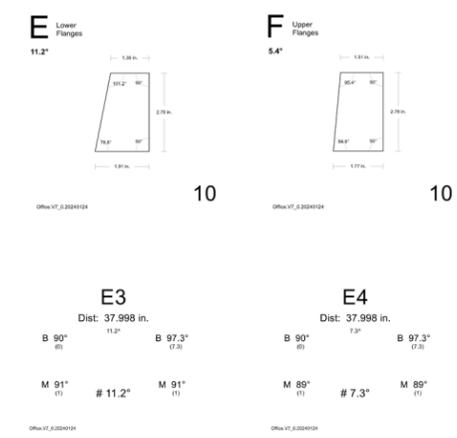
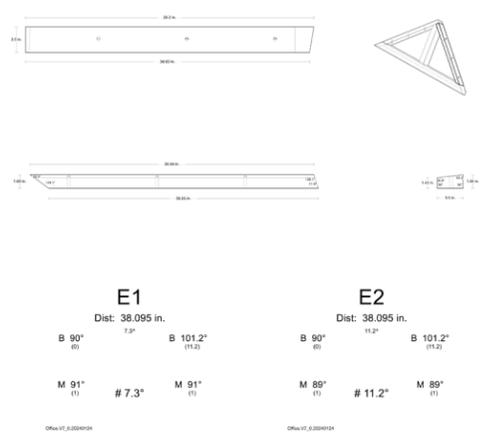
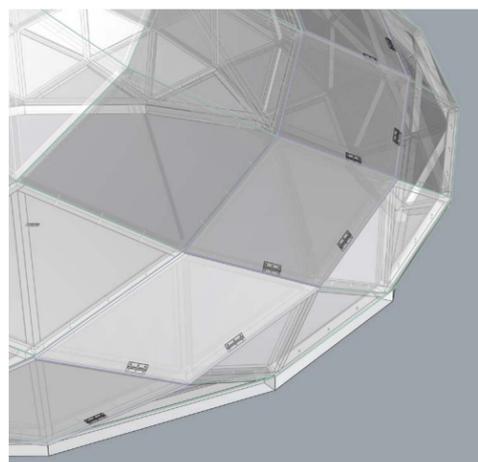
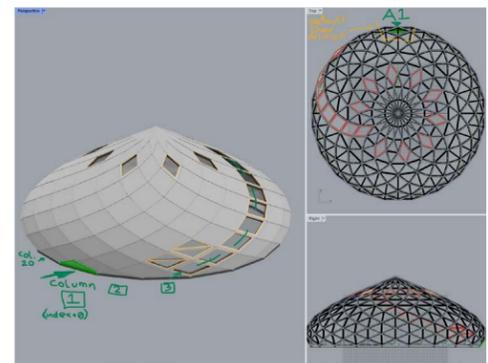
THIS CANVAS SCREENSHOT MAY SEEM A LITTLE CHAOTIC (IT OBJECTIVELY IS) BUT IT CARRIES OUT A WIDE RANGE OF TASKS, AND INCLUDES A LOT OF METICULOUSLY-PLANNED FUNCTIONS, AS WELL AS SEVERAL AREAS FOR QUICK TESTING AND RAPID PROTOTYPING.

- SOME OF THE OUTPUTS OF THIS SCRIPT:
- FULL 3D GEOMETRY: FRAMING, CLADDING, SHEATHING, INSULATION, DOORS, WINDOWS & HARDWARE
 - PART DRAWINGS
 - CUT SHEETS
 - CSV DATA SHEETS
 - DXF FILES FOR CNC
 - GEOMETRY BLOCK EXPORTS FOR REVIT
 - DIAGRAMS/DRAWINGS FOR ASSEMBLY

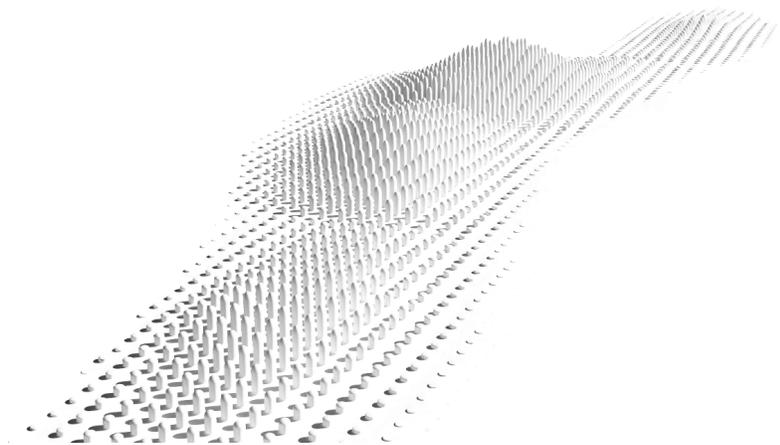


THE GOAL WAS TO MAKE THE ENTIRE MANUFACTURING PROCESS AS STREAMLINED AS POSSIBLE; WE NEEDED TO KEEP THE PRODUCTION SHOP BUSY WITH INFORMATION TO FILL ORDERS AND BUILD NEW PROTOTYPES, WHILE ALSO DESIGNING IN A MANNER THAT REDUCES WASTE AND EXTRA COSTS. THERE WERE MANY COMPLICATED PROBLEMS TO SOLVE ALONG THE WAY, AND A GREAT DEAL OF CRITICAL THINKING WAS REQUIRED BY MYSELF AND OTHER MEMBERS OF THE

TEAM. THE RESULT IS A VERY POWERFUL SERIES OF FUNCTIONS, WHICH ALL WORK OFF A SET OF ADJUSTABLE INPUT DATA: ZONE PITCH/FREQUENCY, EDGE LENGTH, THICKNESSES, AND RAW MATERIAL SIZES ARE A FEW EXAMPLES. WITH THAT, WE ARE ABLE TO GENERATE ALL OF THE NECESSARY INFORMATION TO CREATE EACH COMPONENT AND ASSEMBLY--WE ARE ALSO NOW ABLE TO DO THIS QUICKLY, WHILE OFFERING MULTIPLE SIZES, AND AN ARRAY OF FEATURES & CUSTOMIZATION.



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