PORTFOLIO (2023 NEW)

LU MIAO / ARCHITECTURAL DESIGNER

+ 卢淼

建筑设计师 | UCL建筑学硕士

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汉语 | 英语 | 德语

个人简介

本人于2018年在英国伦敦大学学院取得建筑学硕士学位，同时拥有法学学士双学位，现就职于国际一线建筑设计咨询公司。本人具有很强的设计管理能力和多方协调能力，熟知建筑法规及设计、施工全流程，善于以创新性思维和对客户需求的深刻理解，协助客户在关键问题上进行复杂的技术判断并给予理性的选择参考。设计师的工作培养了我严谨的逻辑、缜密的思维、强大的分析能力和对美学及细节把控。而作为项目经理的经历培养了我的宏观思维、统筹能力、精准表达的文字能力和简明阐述的汇报技巧。本人拥有良好的建筑学素养及扎实的基本功，对建筑设计尤其是商业建筑有一定的理解和体会，能够独立承担设计工作并达到预期的目标和效果。

代表项目

石家庄正定新区“蓝域叁叁广场”项目
北京新东安市场（APM）外立面改造
北京通州恒隆家园商住综合体
河北省兆华医院
天津临海新城第二社区中心
珠海斗门商业街
北京环球金融中心地下广场改造
北海海丝文旅项目总体规划和建筑设计
中关村工业互联网科技园
万达商业创新版研发
宁夏西鸽酒庄二期
湖南常德释心堂酒庄
杭州智造谷产业服务综合体
小米集团上海金融总部设计
武汉长江新区中心片区城市设计及核心地块建筑集群方案设计
金盏国际合作服务区中区重点区域城市设计
富邦人寿台北市松山区敦化段开发案
西咸新区秦创原·金湾科创区市民中心
杭州华丰造纸厂综合体项目
德施曼智能家居安防产业基地建筑设计
杭州城西CBD生态文化轴建筑及景观设计
五粮液元水组团酿酒核心区方案设计

教育背景

University College London | 建筑学硕士 2017.09 - 2018.09
- 主攻方向：建筑离散化与数字化设计、AR技术在建筑搭建中的应用与交互设计
- UCL离散化、数字化建筑设计实验室组长

四川大学 | 建筑学学士 2012.09 - 2017.06
- 主攻方向：建筑设计、空间规划、项目管理、建筑法规
- 成都城市空间设计及研究（中法合作）组长、四川大学学生会副主席

四川大学 | 法学学士（双学位） 2015.09 - 2017.06
- 主攻方向：法理学、民法、商法、知识产权法、经济法
- 荣获优秀毕业论文及答辩评分A级

工作经验

凯达环球建筑设计咨询（北京）有限公司
建筑设计师 2021.11 - 今

UDO PARTNERS
建筑设计师 2020.09 - 2021.11

LWK+PARTNERS
助理建筑设计师 | 项目经理助理 2019.06 - 2020.06

成都基准方中建筑设计有限公司（实习）
见习建筑师 2016.09 - 2016.11

中国海洋置业有限公司（实习）
项目开发部助理 2016.06 - 2016.09

软件技能

AutoCAD | Revit | SU | Rhino | Grasshopper
Keyshot | Vray | Lumion
PS | AI | ID | AE | LR
Unity | Processing | AI建筑生成及交互

其他经历

全球摄影网认证摄影师 2016.06 - 今
LAC设计类作品集顾问 2018.10 - 今

主要参与项目

长江新区中心片区城市设计及核心地块建筑设计
CHANGJIANG NEW DISTRICT URBAN & ARCHITECTURAL DESIGN

主要工作：
1. 统筹项目进度与联合体成员工作
2. 方案设计及建模（核心区规划设计、多种立面形式设计及建模）
3. 主要负责与效果图、动画、多媒体、模型公司对接
4. 汇报本册内容把控

石家庄正定新区“蓝域叁叁广场”项目
ZHENGDING NEW DISTRICT “LANYU SANSAN PLAZA” PROJECT

主要工作：
1. 前期调研及设计概念生成
2. 方案设计及图纸绘制（平面CAD至SD阶段、墙身大样绘制、分析图绘制）
3. 形体推敲及建模
4. 规委会、专家会准备及沟通联络
5. 与各材料商、设备厂商对接

金盏国际合作服务区中区重点区域城市设计
JINZHAN INTERNATIONAL COOPERATION SERVICE CENTER DESIGN

主要工作：
1. 方案设计及分析图绘制（商业部分概念产出、设计理念表达）
2. 形体推敲及建模（片区塔楼部分多种立面形式设计及建模）
3. 地下空间设计及相关图纸绘制

德施曼智能家居安防产业基地
DESSMANN INTELLIGENT HOME SECURITY INDUSTRY BASE PROJECT

主要工作：
1. 形体推敲及模型搭建
2. 施工图阶段图纸绘制（平面CAD调整、立面及剖面CAD）
3. 辅助LDI绘制FDD阶段图纸

上海长三角G60科创之眼
SHANGHAI CHANGJIANG DELTA G60 INNOVATION CENTER

主要工作：
1. 设计概念生成（手图绘制及相关设计理念表达）
2. 形体推敲及建模
3. 分析图绘制及本册制作

北京新东安市场（APM）外立面改造项目
BEIJING WANGFUJING APM RENOVATION PROJECT

主要工作：
1. 前期调研（实地调研、商场现状与历史报审图纸对比分析、调研报告编辑）
2. 方案设计及图纸绘制（墙身大样及节点大样绘制、分析图绘制）
3. 与北京市、东城区规划局对接（全程筹备专家会并负责日常沟通对接）

长江新区中心片区城市设计及核心地块建筑设计

CHANGJIANG NEW DISTRICT URBAN & ARCHITECTURAL DESIGN

中国，武汉

WUHAN, CHINA

用地面积：1,664,410 平方米

建筑面积：4,601,337 平方米

项目阶段：概念设计

设计时间：2022

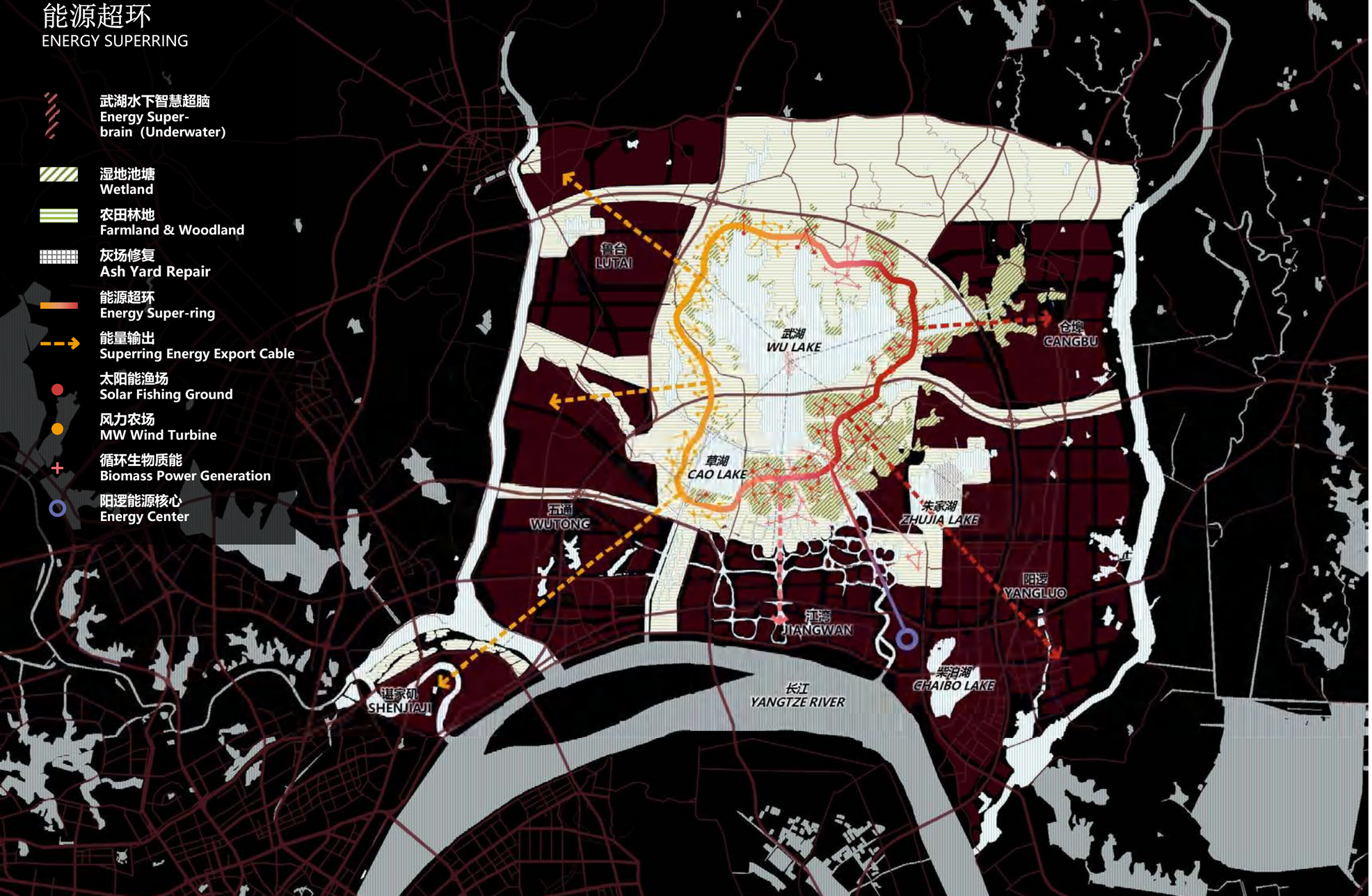
项目概况：

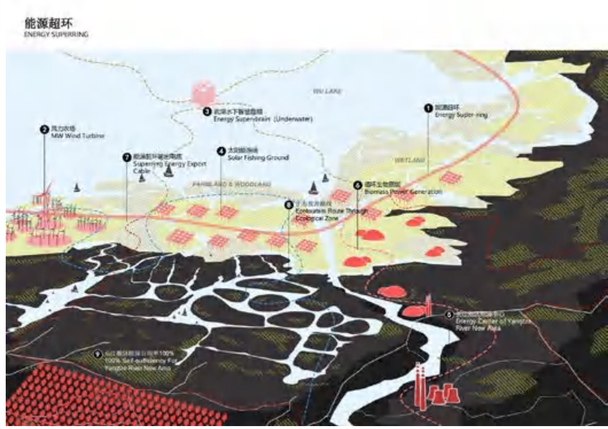
本次江湾中心片研究范围55.7平方公里，重点城市设计4.7平方公里。我们在整个新区范围内研究自然本底、双碳战略与能源格局三大课题，形成三个全域策略：1、弹性水网；2、碳汇农场；3、沿武湖周边打造环状放射、服务周边组团的能源超环。

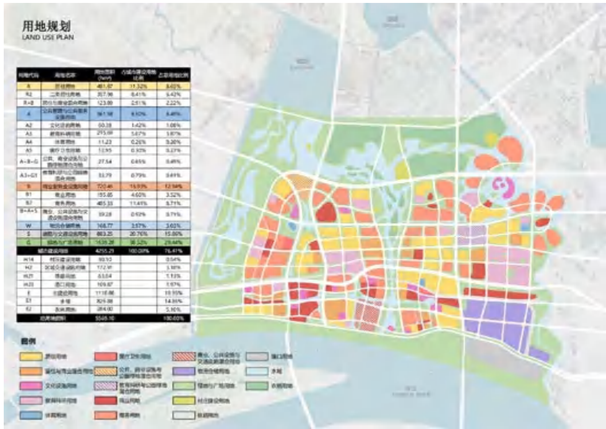
鸟瞰图 Aerial View

能源超环
ENERGY SUPERRING

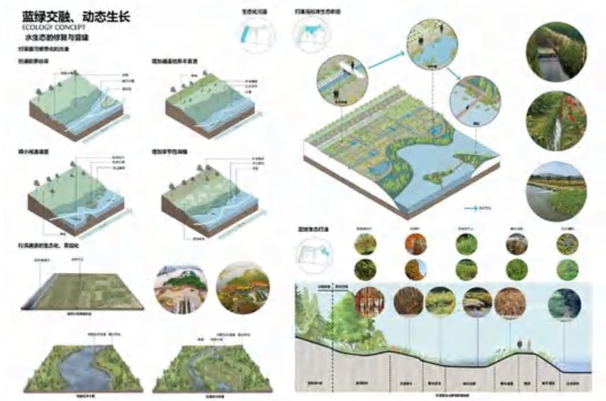
- 武湖水下智慧超脑 Energy Super-brain（Underwater）
- 湿地池塘 Wetland
- 农田林地 Farmland & Woodland
- 灰场修复 Ash Yard Repair
- 能源超环 Energy Super-ring
- 能量输出 Superring Energy Export Cable
- 太阳能渔场 Solar Fishing Ground
- 风力农场 MW Wind Turbine
- 循环生物质能 Biomass Power Generation
- 阳逻能源核心 Energy Center





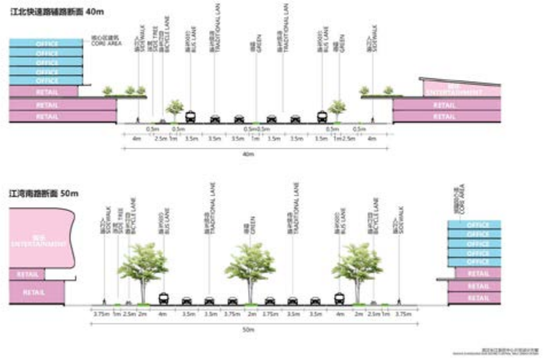


区域空间分析
REGIONAL SPATIAL ANALYSIS



长江新区，是武汉“主城做优、四副做强”的关键节点。

道路断面
ROAD SECTION



空间亮点
SPACE SPOTS

超级TOD策略
SUPER TOD STRATEGY

交通分析
TRAFFIC ANALYSIS

交通组织-无人车交通组织

The vehicle depot is covered with a whole floor of parking space, which can be used as a centralized platform for shared cars. By establishing a unified digital management system, it forms one of the auxiliary modes of public travel, making reservations and parking efficiently, and establishing a senseless way to enter the expressway section and parking space. The payment system can reserve parking spaces in advance, avoid competition for commuting parking spaces, share the parking space in the area, and make efficient use of the platform.

交通组织-无人船交通组织

The independently operated smart unmanned ship system, relying on the smart platforms near the entrances of each area, is connected with the internal business formats of the core area by means of canalized traffic, green light adjustment, unmanned driving, etc., and provides commuting and viewing services at the same time. The people-vehicle and slow-moving systems are seamlessly connected.

慢行系统
SLOW TRAFFIC SYSTEM

交通组织-自行车

Provide last-mile travel services and establish a bicycle-to-home slow-moving network on the second floor of the city, which will become the last link of seamless connection between water transportation, car dealerships and destinations, using the way of joint cooperation between public municipalities and operators, flexibly manage the centralized parking spots of bicycles to avoid the situation of bicycle parking blocking traffic during rush hour.

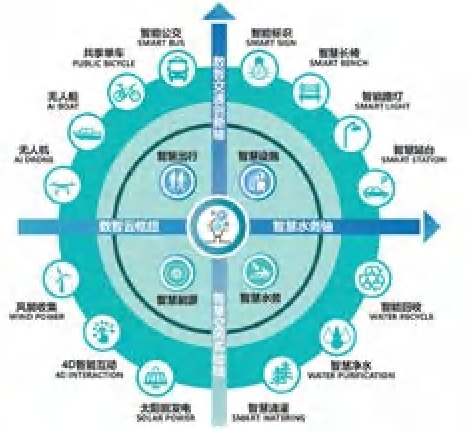
交通组织-人行

The rich platform system and landscape axis provide pedestrians with a variety of walking experiences. The pedestrian system in the central area is seamlessly connected with the trails of the ecological green space, effectively connecting various types of business together.

智慧系统
SMART SYSTEM

依托本次规划方案的整体空间结构，分别从东西、南北两条公共廊道的空间功能出发，整合"智慧出行、智慧设施、智慧水务、智慧能源四个板块，形成东西向的"智慧空间实验轴线"，和南北向的"数智交通创新轴"，集中设置各类智慧设施与智慧装置，创造新型数字技术应用场所。

RELYING ON THE OVERALL SPATIAL STRUCTURE OF THIS PLANNING SCHEME, STARTING FROM THE SPATIAL FUNCTIONS OF THE EAST-WEST AND NORTH-SOUTH PUBLIC CORRIDORS, THE FOUR SECTIONS OF "SMART TRAVEL, SMART FACILITIES, SMART WATER AFFAIRS, AND SMART ENERGY ARE INTEGRATED TO FORM AN EAST-WEST "SMART SPACE EXPERIMENT" AXIS", AND THE NORTH-SOUTH "DIGITAL-INTELLIGENT TRANSPORTATION INNOVATION AXIS", WHICH WILL FOCUS ON SETTING UP VARIOUS SMART FACILITIES AND SMART DEVICES TO CREATE NEW DIGITAL TECHNOLOGY APPLICATION PLACES.




LOUIS VUITTON

金盏国际合作服务区中区重点区域城市设计

JINZHAN INTERNATIONAL COOPERATION SERVICE CENTER DESIGN

中国，北京

BEIJING, CHINA

用地面积：678,000 平方米

建筑面积：1,100,000 平方米

项目阶段：概念设计

设计时间：2022

项目概况：

北京CFZ整体空间策略由产业空间布局出发，依托管庄路西口站TOD综合体的优越地理区位激活站点西侧活力商业组团， 并在北小河水岸打造滨水休闲商业街区和文化艺术综合体。将文创、数智、商务商业产业组图围绕在核心区边界内侧。以环形动线串联各大产业组团，并建立通往水岸的直接链接。紧邻TOD综合体打造中央公园景观绿带，并沿环形流线打造绿意圈及一系列开放空间节点。 形成一核、一圈、多轴的复合空间结构。

鸟瞰图 Aerial View


际合作服务区中区前庆区域城市设计
International Cooperation Service Central District Core Area Urban Design


活力圈
Vibrant Circle
功能复合“活力圈”
FUNCTIONAL VIBRANT CIRCLE
复合功能
Mixed-use
特色商业
Commercial Cluster
国际交往配套功能
International Communication Facilities


文化圈
Culture Circle
多元交融“文化圈”
INTERACTING CULTURAL CIRCLE
多元文化的体现
Muli-cultural Experience
文化地标和文化场所的穿插
Mix of Iconic Cultural Landmarks and Venue
多元尺度空间载体
Various Space Scale


绿意圈
Joy Circle
开放友好“绿意圈”
JOYFUL OPEN SPACE CIRCLE
开放空间 Open Space
人车友好 Balanced Pedestrian-vehicular Circulation
滨水生活 Waterfront Lifestyle
地上地下一体联动 Integrated Vertical City

功能复合 '活力圈'

功能业态

Function Formats

文创产业办公
CREATIVE INDUSTRY

枢纽商务办公
BUSINESS OFFICE

国际艺术教育
ART EDUCATION

商务酒店
BUSINESS HOTEL

数字智慧社区
DATA SCIENCE CAMPUS

精品酒店
BOUTIQUE HOTEL

休闲餐饮街区
F&B

滨水艺术中心
WATERFRONT CULTURAL CENTER

艺术展览空间
ART GALLERY

零售商业
COMMERCIAL

大型主题商业
THEME SHOPPING MALL

- 活力商业 COMMERCIAL
- 大型商业中心 SHOPPING MADLL
- 休闲餐饮街区 F&B
- 酒店 HOTEL
- 枢纽商务办公 BUSINESS OFFICE
- 智慧科创办公 SCIENTIFIC CAMPUS
- 文化公建 CULTURAL CENTER
- 朋友圈 CIRCLE OF FRIENDS
- 绿谷步道 GREEN AXIS

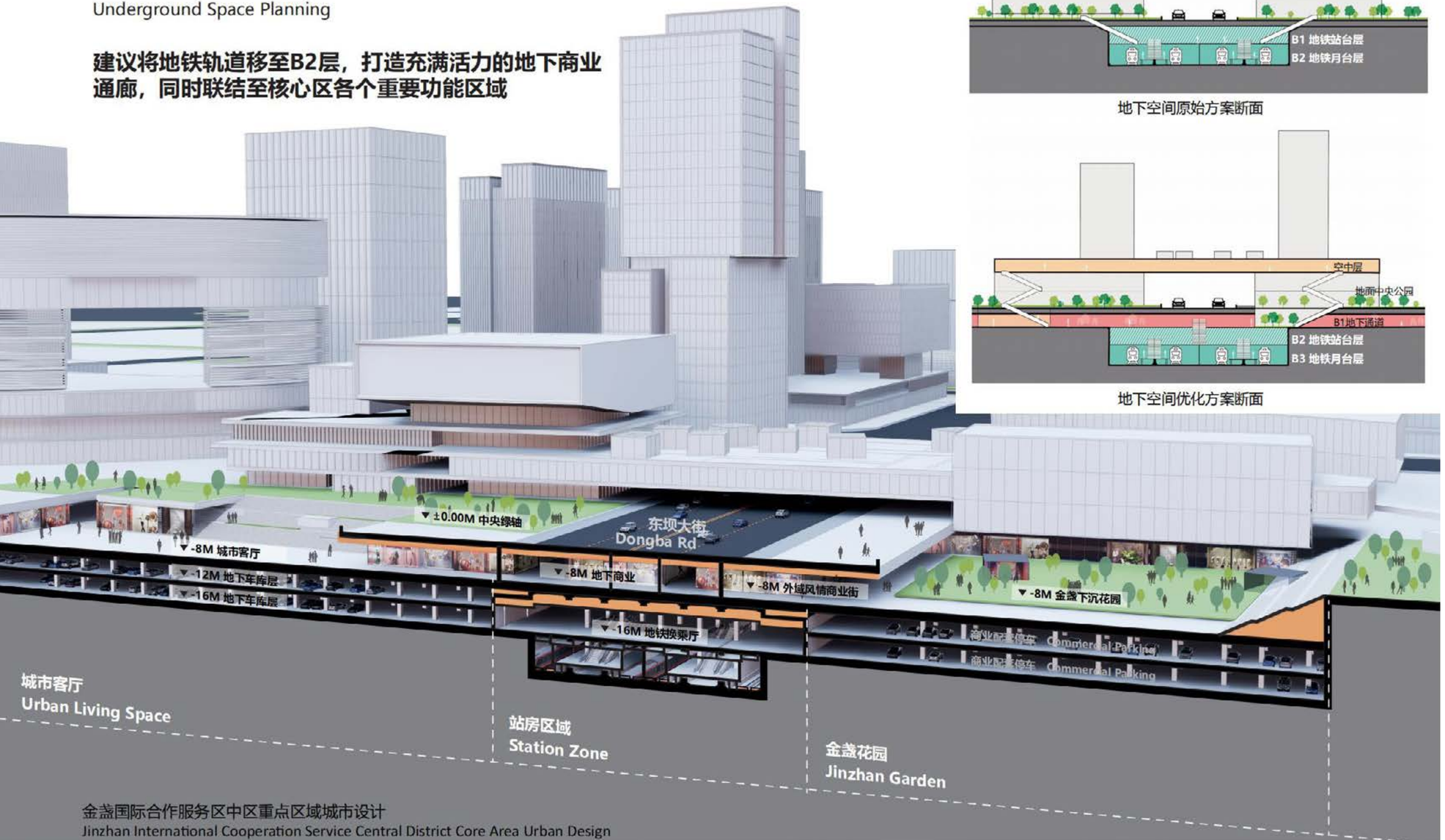
金盏国际合作服务区中区重点区域城市设计
Jinzhan International Cooperation Service Central District Core Area Urban Design

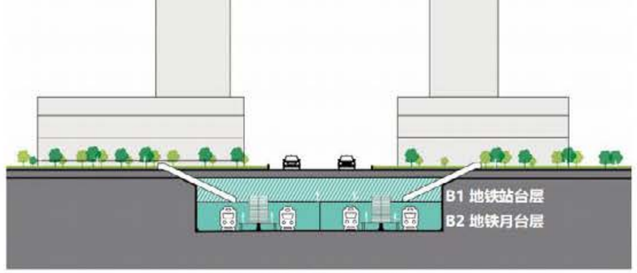
重点项目

地下空间总体利用

Underground Space Planning

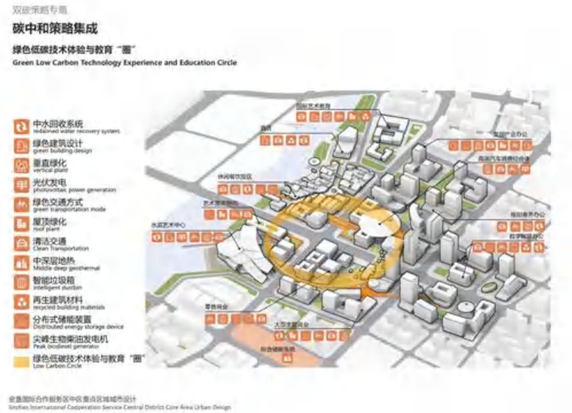
建议将地铁轨道移至B2层，打造充满活力的地下商业通廊，同时联结至核心区各个重要功能区域

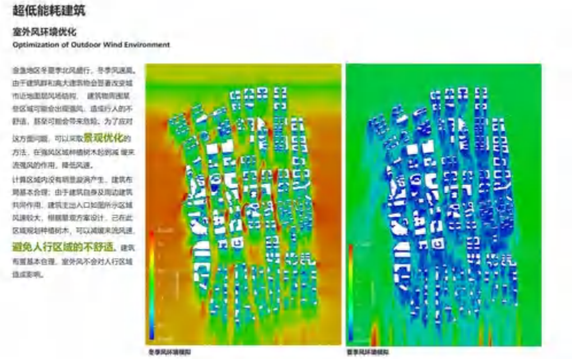




地下空间原始方案断面

地下空间优化方案断面





金盏国际合作服务区中区重点区域城市设计
Jinzhan International Cooperation Service Central District Core Area Urban Design


book

郑州东盟中心规划建筑方案设计项目

ASEAN CHINA CENTRE URBAN PLANNING & ARCHITECTURAL DESIGN

中国，郑州

ZHENGZHOU, CHINA

用地面积：52,200 平方米

建筑面积：62,500 平方米

项目阶段：概念设计

设计时间：2022

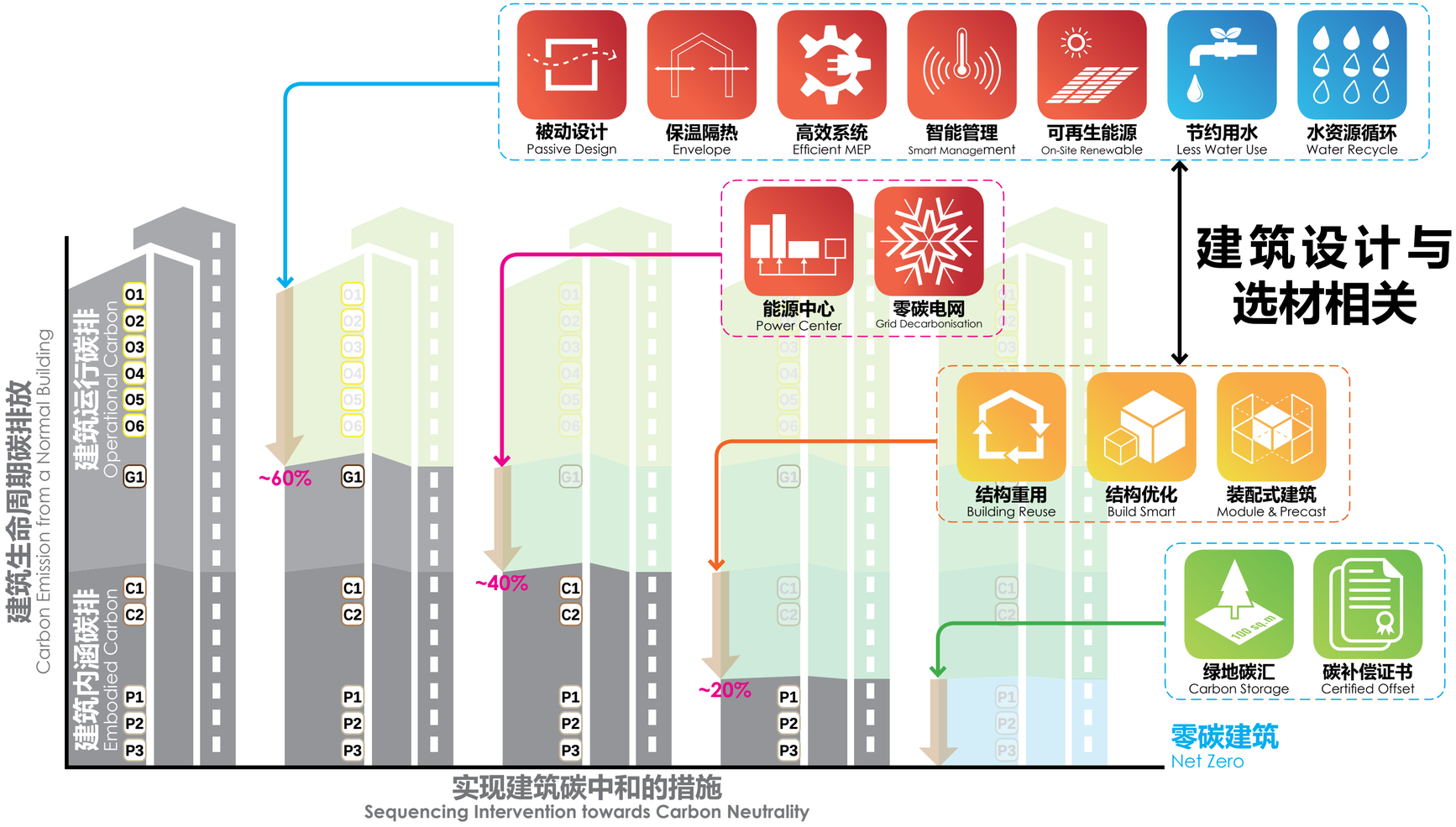
项目概况：

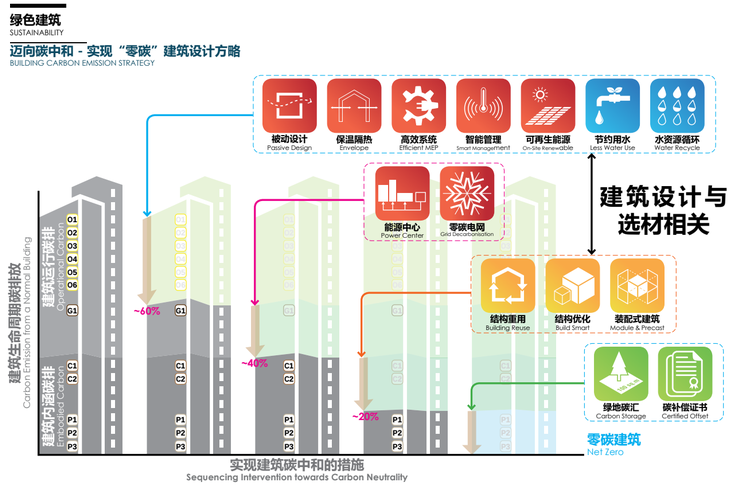
项目致力于打造功能复合、自由活力的特色办公集群，创造以文化交流为主的多元文化滨水办公街区。园区将会营造专业而开放的城市形象，连接城市景观轴线提供花园式体验。创造开放友好、能够辐射周边的活力核心，形成生态与创新交汇、滤色可持续的活力样板。

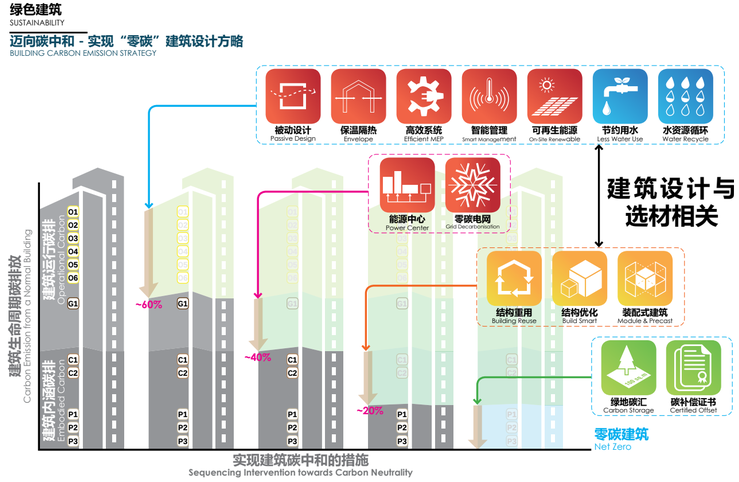
鸟瞰图 Aerial View

绿色建筑
SUSTAINABILITY

迈向碳中和 - 实现“零碳”建筑设计方略
BUILDING CARBON EMISSION STRATEGY







鸟瞰图 Aerial View

上海长三角G60科创之眼

SHANGHAI CHANGJIANG DELTA G60 INNOVATION CENTER

中国，上海

SHANGHAI, CHINA

用地面积：452,180 平方米

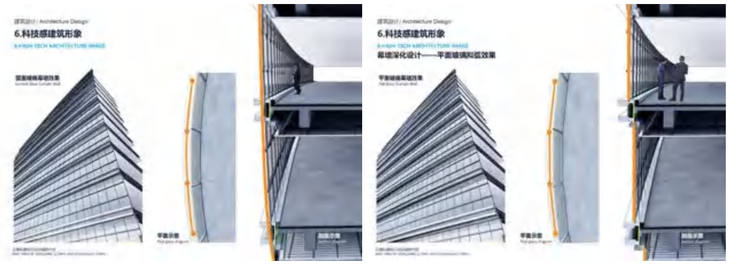
建筑面积：628,420 平方米

项目阶段：概念设计

设计时间：2021

项目概况：

临港松江科技城位于青松生态廊道，近郊绿环及长三角G60科创走廊交汇处，是打造“科技、人文、生态的现代化新松江”的重要承载区。




商务会谈
BUSINESS MEETING
餐饮聚会
DINNING PARTY
水畔慢跑
RUNNING


下沉庭院
SUNKUN
COURDYARD
下沉庭院
SUNKUN
COURDYARD

石家庄正定新区“蓝域叁叁广场”项目

ZHENGDING NEW DISTRICT “LANYU SANSAN PLAZA” PROJECT

中国，石家庄

SHIJIAZHUANG, CHINA

用地面积：28,900 平方米

建筑面积：43,350 平方米

项目阶段：概念设计 - 方案设计

开工年份：2021

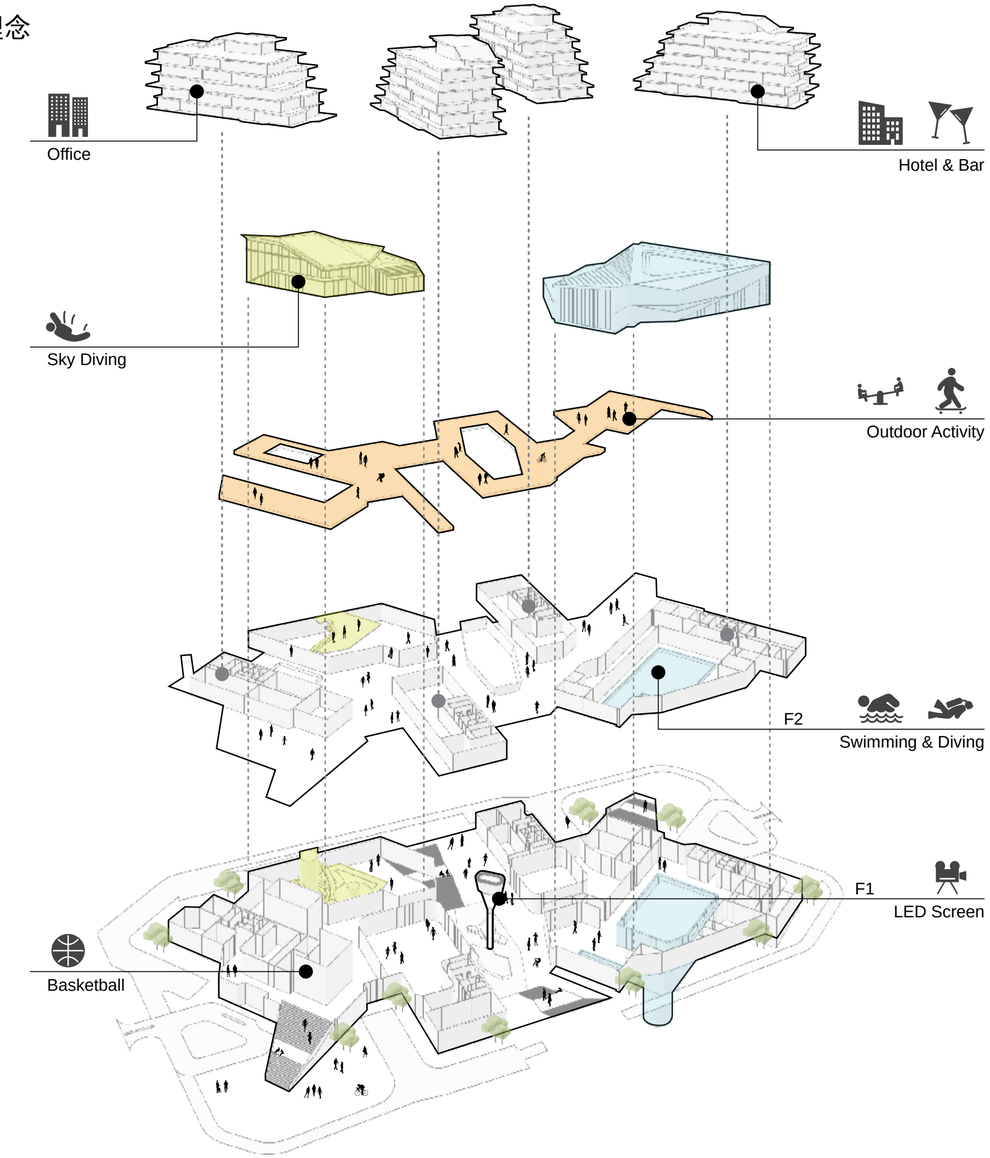
项目概况：

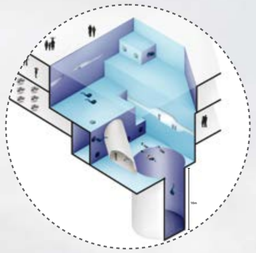
“蓝域叁叁广场”项目位于石家庄正定新区，片区将打造全亚洲最深的33米深洞潜水馆，室内风洞体验馆，以及办公、酒店等配套塔楼。项目规划总用地面积2.89公顷，地上总建筑面积35536平方米。

鸟瞰图 Aerial View

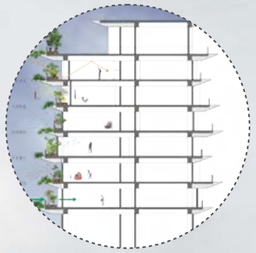
设计构思

设计理念





DIVING POOL ANALYSIS



GREEN ANALYSIS

UNDERWATER RESTAURANT

DIVING CENTER INTERIOR

AERIAL VIEW OF SUNKEN PLAZA

潜水馆人视图 Perspective

风洞馆人视图 Perspective

北京新东安市场（APM）外立面改造项目

BEIJING WANGFUJING APM RENOVATION PROJECT

中国，北京

BEIJING, CHINA

改造面积：40,000 平方米

项目阶段：概念设计 - 施工配合

竣工年份：2020

项目概况：

北京新东安市场为香港新鸿基地产集团在内地打造的首座年轻、时尚、潮流型购物中心。本次改造注重建筑对传统文化与元素的传承，同时也通过现代的手法赋予了其新的时代意义与内涵。总改造面积40000平方米。

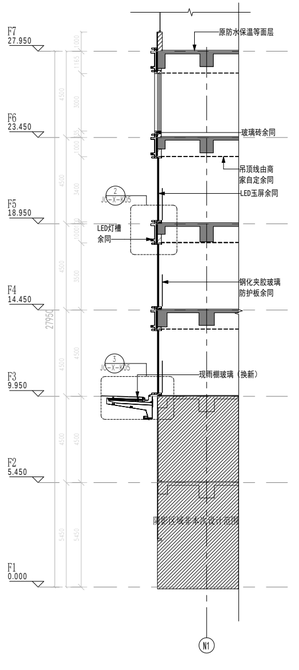
鸟瞰图 Aerial View

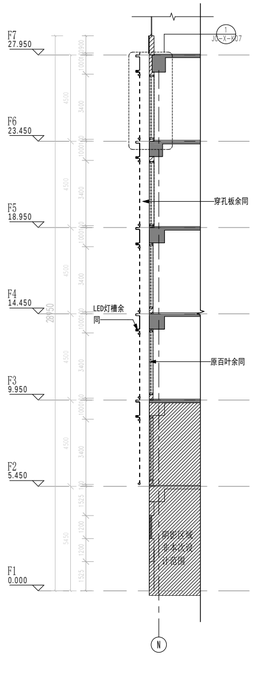
人视图 Perspective

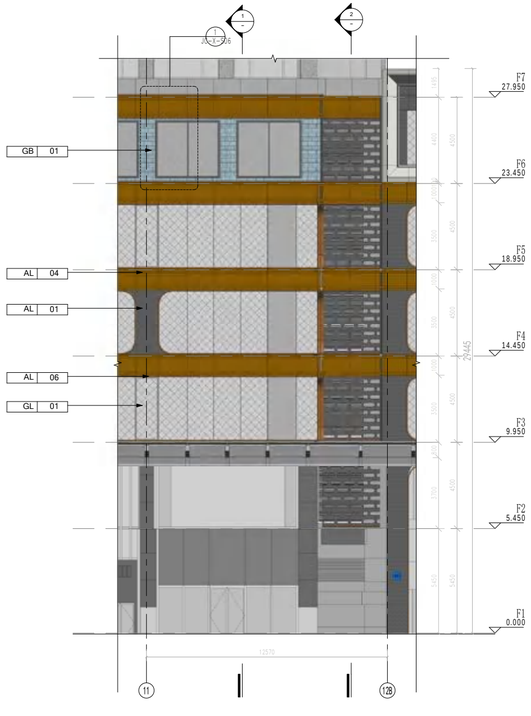
人视图 Perspective

方案设计

图纸大样







1 节点2 剖面2-1（新）
scale 1：100

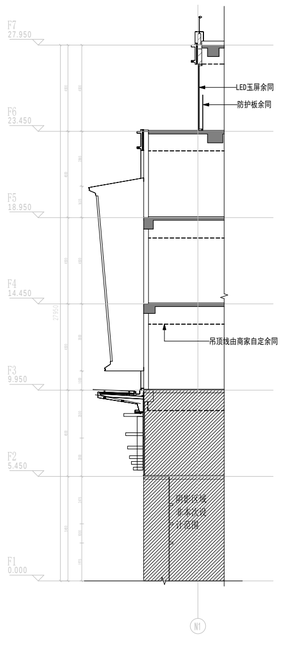
2 节点2 剖面2-2（新）
scale 1：100

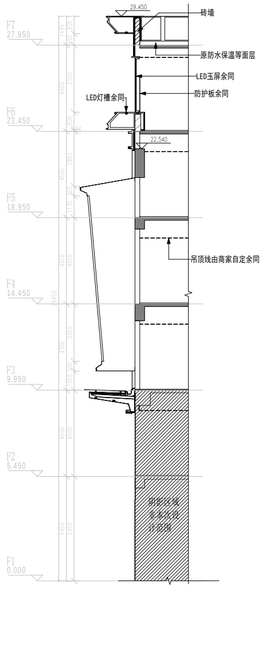
3 节点2 立面（新）
scale 1：100

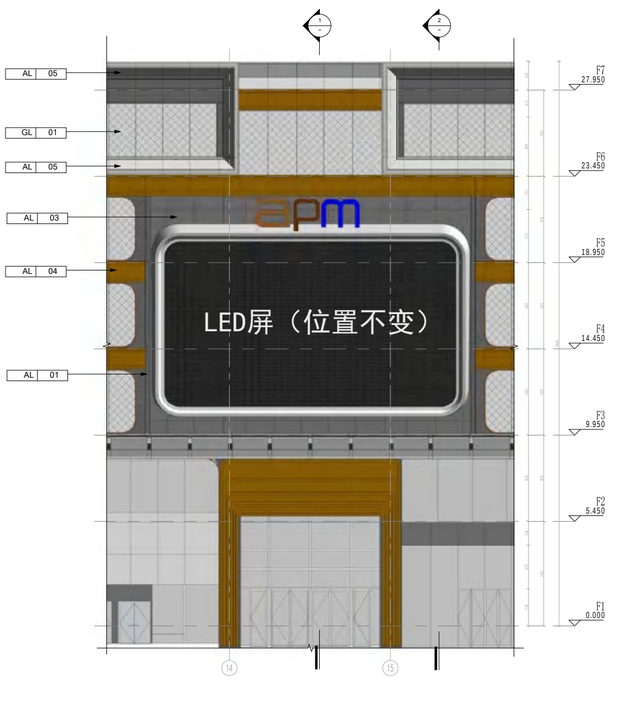
说明：
1. 本图纸仅表示外立面轮廓造型设计，具体构造以设计院图纸为准。
2. 本次设计范围为F3-F7层。
3. 建筑内部平面图为2006版业主提供的图纸。
4. 各层结构板边线详结构专业图纸。
5. 本项目幕墙部分详幕墙专业二次深化设计
6. 本项目无特殊表明处，地台饰面及抹面50mm。防护板高度为1800mm，距离建筑完成面150mm高。
7. 吊顶线由商家自定

图例：

AL01 深灰色铝单板	GL01 高透超白low-e中空玻璃	苹果店上方柱	媒体LED
AL03 深灰色铝复合板	GL02 高透超白low-e中空玻璃	石砖浅黄色	LED广告位
AL04 香槟色铝复合板	GL03 高透超白钢化夹胶玻璃	SS01 不锈钢灰色	
AL05 银白色铝复合板	GL04 磨砂白玻璃	上悬外开窗	







1 节点7 剖面7-1
scale 1:100

2 节点7 剖面7-2
scale 1:100

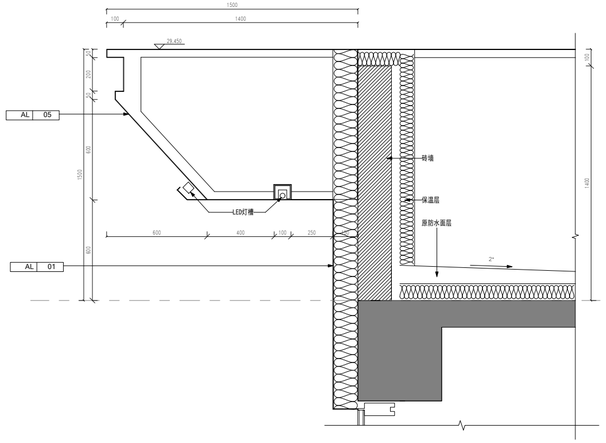
3 节点7 立面
scale 1:100

说明：
1. 本图纸仅表示外立面轮廓造型设计，具体构造以设计院图纸为准。
2. 本次设计范围为F3-F7层。
3. 建筑内部平面图为2006版业主提供的图纸。
4. 各层结构板边线详结构专业图纸。
5. 本项目幕墙部分详幕墙专业二次深化设计
6. 本项目无特殊表明处，地台饰面及抹面50mm。防护板高度为1800mm，距离建筑完成面150mm高。
7. 吊顶线由商家自定

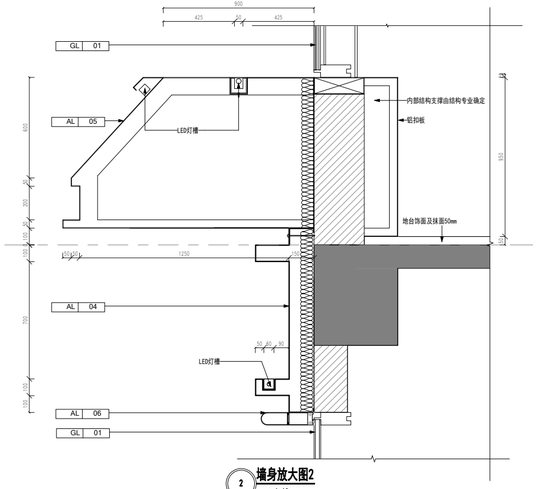
图例：

AL01 深灰色铝单板	GL01 高透超白low-e中空玻璃	苹果店上方柱	媒体LED
AL03 深灰色铝复合板	GL02 高透超白low-e中空玻璃	石砖浅黄色	LED广告位
AL04 香槟色铝复合板	GL03 高透超白钢化夹胶玻璃	SS01 不锈钢灰色	
AL05 银白色铝复合板	GL04 磨砂白玻璃	上悬外开窗	

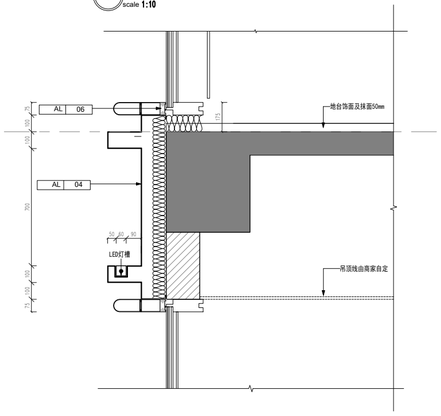
方案设计
图纸大样



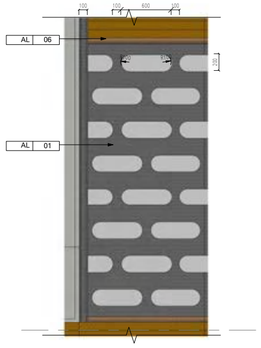
1 墙身放大图1
scale 1:10



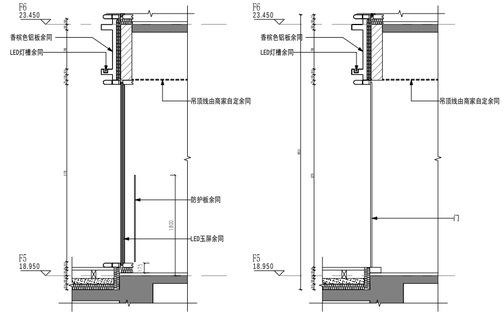
2 墙身放大图2
scale 1:10



3 墙身放大图3
scale 1:10

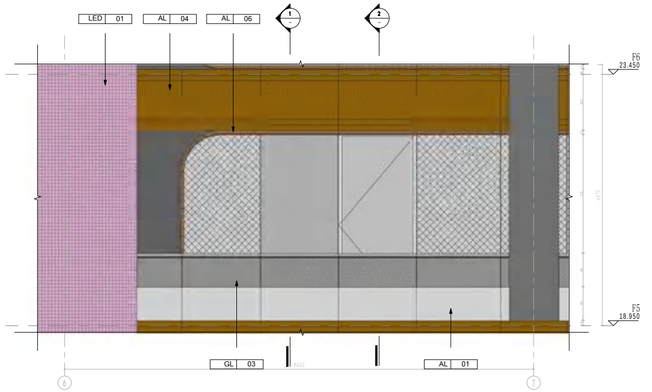


4 穿孔板放大图4
scale 1:10

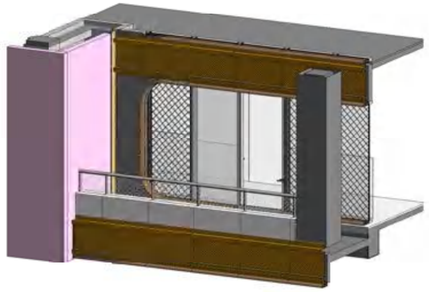


1 阳台门节点 剖面1
scale 1: 30

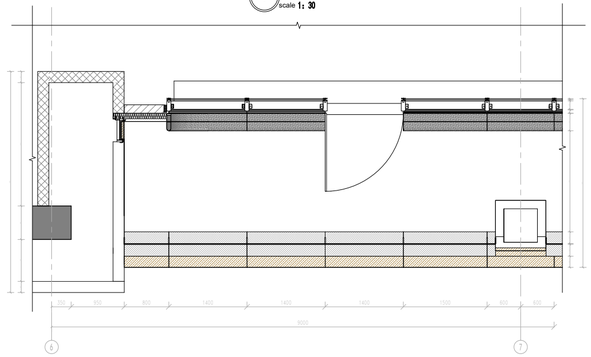
1 阳台门节点 剖面2
scale 1: 30



1 阳台门节点 立面
scale 1: 30



1 阳台门节点 三维
scale 1: 45



1 阳台门节点 平面
scale 1: 30

说明：
1. 本图纸仅表示外立面轮廓造型设计，具体构造以设计院图纸为准。
2. 本次设计范围为F3-F7层。
3. 立面图中的门窗分格尺寸，以门窗立面详图为准。
4. 建筑物立面朝向应按垂直于立面的法线角度确定，朝向范围如下：
（1）北向：北偏东30°~北偏西60°；
（2）南向：南偏东30°~南偏西30°；
（3）西向：西偏北30°~西偏南60°（含西偏北30°和西偏南60°）；
（4）东向：东偏北30°~东偏南60°（含东偏北30°和东偏南60°）。

图例：

AL01 深灰色铝单板	GL01 高透超白low中空玻璃	苹果店上方柱	媒体LED
AL03 深灰色铝复合板	GL02 高透超白low中空玻璃	石砖浅黄色	LED广告位
AL04 香槟色铝复合板	GL03 高透超白钢化夹胶玻璃	SS01 不锈钢灰色	
AL05 银白色铝复合板	GL04 磨砂白玻璃	上悬外开窗	

图例

	砖墙
	防火墙
	穿孔铝板
	幕墙
	防火分区
	防火卷帘
	救援窗
	百叶

德施曼智能家居安防产业基地

DESSMANN INTELLIGENT HOME SECURITY INDUSTRY BASE PROJECT

中国，杭州

HANGZHOU, CHINA

用地面积：12,748 平方米

建筑面积：60,195 平方米

项目阶段：概念设计 - 施工图

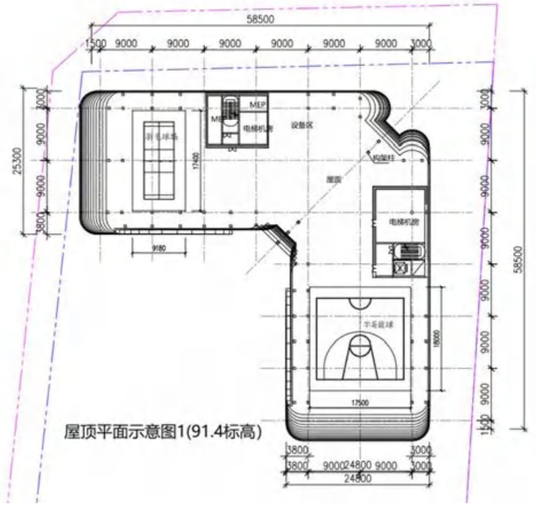
施工时间：2022

项目概况：

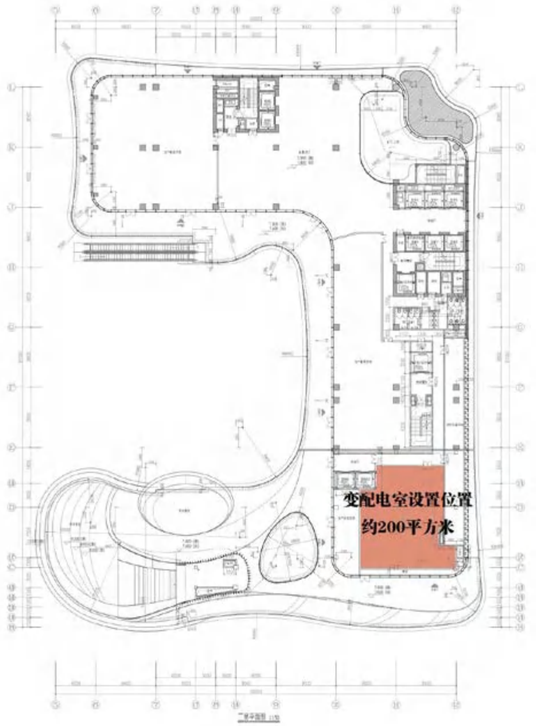
项目定位于浙江省最具代表性的集研发、设计、生产为一体的产业化基地。项目由主体建筑，和裙房整体形成;型布局。设计力求体现德施曼企业特色和滨江区周边整体城市形象，并在满足功能的前提下，营造简洁、高效的总部办公氛围。周边多为产业化基地，资源丰富，统筹处理地块与周边环境的关系 以提升区域建筑群整体形象。

擦窗机区域

擦窗机轨道设计沿幕墙结构布置，轨道优化为“一”字型，架起位于+99.700M标高位置，未使用时间藏匿幕墙内部，不影响外部立面效果。



屋顶平面示意图1(91.4标高)



释心堂生态酒庄

SHIXINTANG ECOLOGICAL WINERY

中国，湖南常德

HUNAN, CHINA

用地面积：47,912 平方米

建筑面积：28,770 平方米

项目阶段：概念设计

开工年份：2021

项目概况：

湖南常德，古称武陵、朗州，别名“柳城”，是湖南省辖地级市，省域副中心城市。常德位于湖南北部，江南洞庭湖西侧，史称“川黔咽喉，云贵门户”，是长江经济带、环洞庭湖生态经济圈的重要城市。项目位于湖南省常德市桃源县陬市镇，常德市柳叶大道与杭瑞高速交汇处，距离常德市区车程10分钟。具有鲜明的地理特征，自然景观优美，文化底蕴深厚。

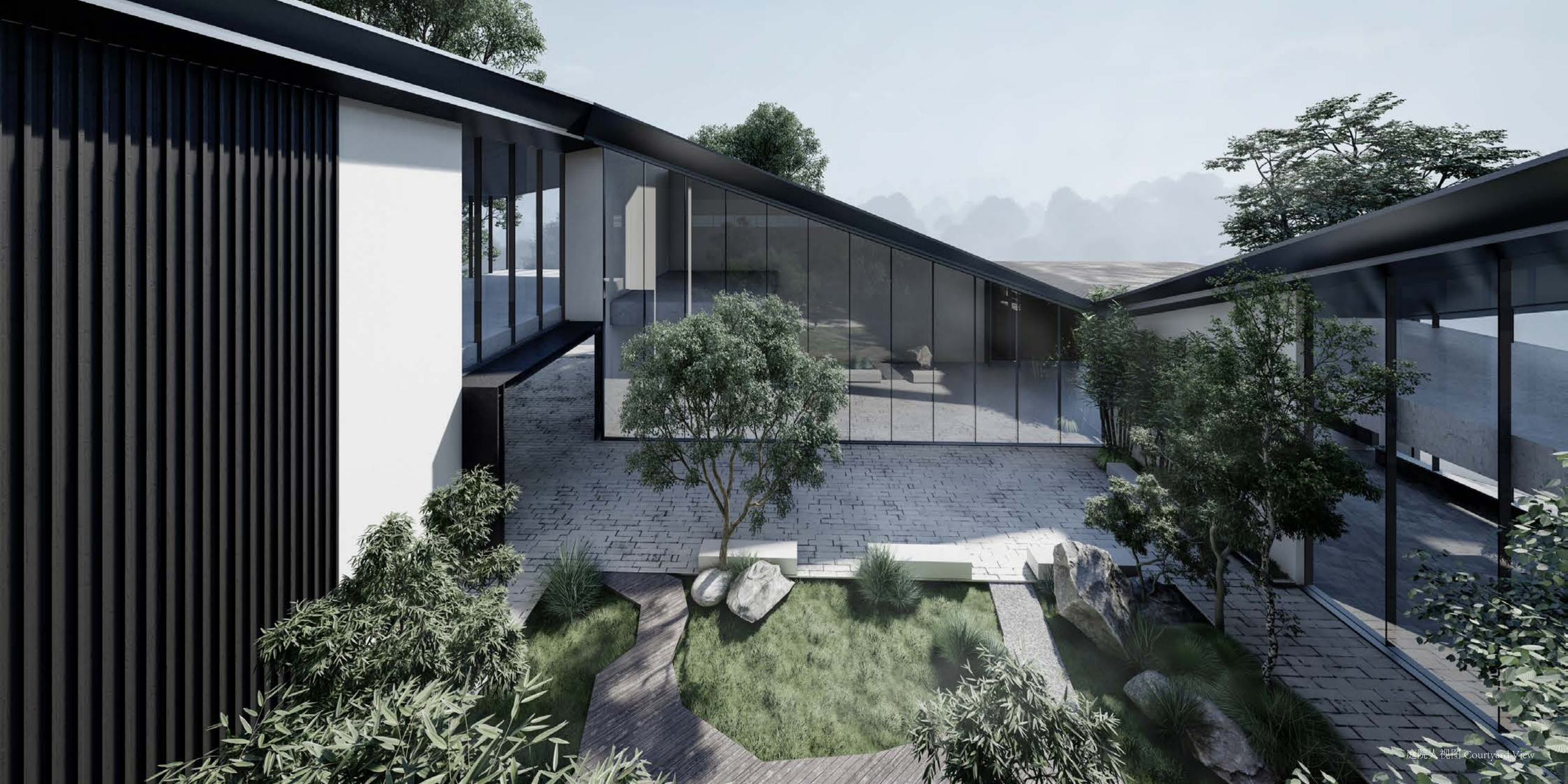
鸟瞰图 Aerial View

设计构思

设计理念

酒庄包含三个主体功能，接待，办公及生产车间。整体打造集参观体验、会议接待，酒文文化展示以及生产的复合型现代化园区。园区位于山地中，有相对较复杂的地形限制条件。设计中，依托山势，借用古典园林中的造园手法，处处造景，并借景自然，集中打造园区整体环境以及氛围，将建筑与景观完美融合，创造富有诗意的文人墨客把酒言欢的场所。建筑采用围院方式构建，塑造不同功能内的独立环境，打造咫尺山林多方胜景的意向。通过屋顶的错落，视线相互退让，同时将外部景观引入室内。

总平面图 Masterplan



庭院入视图 Courtyard View

行政办公人视图 Administrative Office View

酒窖人视图 Wine Cellar View

智造谷产业服务综合体项目设计

SMART MANUFACTURE VALLEY INDUSTRIAL SERVICE PROJECT

中国，杭州

HANGZHOU, CHINA

用地面积：15,520 平方米

建筑面积：14,440 平方米

项目阶段：概念设计

开工年份：2021

项目概况：

智造谷产业服务综合体项目用地位于杭州滨江区。本项目主要为商务办公、研发办公、人才公寓、酒店及配套商业、服务设施。整体布局创造大尺度的内环境开放场地，并利用商业公共空间，景观公共空间，空中景观步道连接两个地块，打造园区整体性，丰富园区活力。高层建筑对内对外均获得优越的空间条件和产品均好性。

西南鸟瞰图 Southwest Aerial View

设计构思

设计理念

场地北侧为城市快速路，西侧毗邻古越河，T字型公共交通贯穿地块。办公放置地块北侧得以最佳展示面，商业主入口放置在场地西北角加强可达性，商业紧靠古越河提升商业特色附加值，公寓布置在场地南侧远离快速路噪音并且日照最佳。办公产品位置错动增强室外公共空间减少相互干扰，街区式商业加强与周边环境互动，人才公寓错动布置降低与办公高层视线干扰。办公，公寓高低变化丰富园区天际线。空中连桥加强园区整体性，绿色公共空间提升园区生态性，立面形体变化增强园区标志性。

经济技术指标表

序号	项目		B1/B2/B3-16地块	B1/B2-17地块	合计	单位
1	用地面积		52357	38194	90551	m^2
2	总建筑面积		299011.00	212547.00	511558.00	m^2
3	地上建筑面积		209324.00	152760.00	362084	m^2
	其中	办公	156630.00	79560.00		m^2
		商业	32027.00	1440.00		m^2
		酒店	16592.00			m^2
		人才公寓		71760.00		m^2
		文化娱乐设施	4000.00			m^2
		公厕	75.00			m^2
4	地下建筑面积		89687.00	59787.00	149474.00	m^2
5	建筑高度		97.4	97.4		M
6	建筑层数（地上/地下）		23/3	31/3		层
7	容积率		4.00	4.00		
8	建筑占地面积		20893	12600	33493	m^2
9	建筑密度		39.90%	32.99%		
10	绿地率		25%	25%		
11	机动车停车位		2240	1679	3918	辆
12	非机动车停车位	公共非机动车停车位	1115	476	1591	辆
		普通非机动停车位	1672	714	2386	辆

总平面图 Masterplan

东南鸟瞰图 Southeast Aerial View

西南人视效果图 Southwest Perspective

商业内庭院效果图 Retail Perspective

中关村工业互联网科技园

ZHONGGUANCUN INDUSTRIAL INTERNET PARK

中国，北京

BEIJING, CHINA

用地面积：462,500 平方米

建筑高度：45 米

项目阶段：概念设计

竣工年份：2024

项目概况：

中关村工业互联网科技园是一个高密度、城市型总部产业园区。规划与建筑设计关注的核心是提供优质的园区环境，并凸显企业总部的独栋形象，同时在众多相互制约的限制条件中取得平衡。项目不仅提供了高端总部办公独栋产品，并涵盖公交首末站上盖物业及地下商业服务区，提升了城市周边区域整体发展水平。

西南鸟瞰图 Southwest Aerial View

内院效果图 Office Courtyard

西南效果图 Southwest View

石家庄正定新区兆华医院项目

ZHAOHUA HOSPITAL DEVELOPMENT OF SHIJIAZHUANG

中国，石家庄

SHIJIAZHUANG, CHINA

用地面积：115,000 平方米

建筑面积：207,000 平方米

项目阶段：概念设计 - 扩初设计

开工年份：2021

项目概况：

石家庄兆华医院位于石家庄正定新区。项目整体理念改变医院一贯给市民冰冷的形象，不仅为市民提供医疗服务，还为市民提供大量的公共空间，尽量把医院组群融入社区生活当中。

整个设计中置入大量的庭院，退台花园，给就医病人和家属提供一个舒适宜人的就医环境。本医院项目建成后将成为国家三甲级综合医院，为石家庄乃至全国提供世界级尖端医疗技术支持。

鸟瞰图 Aerial View

鸟瞰图 Aerial View

人视效果图 Perspective

效果图 Perspective

K项目总部高管办公区室内改造

K PROJECT HQ EXECUTIVE AREA RENOVATION

中国，北京

BEIJING, CHINA

用地面积：47,912 平方米

建筑面积：28,770 平方米

项目阶段：概念设计 - 施工配合

竣工年份：2021


Cloud make
new growth possible

方案设计

平面图

六层平面图

北京颐堤港空间提升设计项目

BEIJING INDIGO MALL UPGRADE PROJECT

中国，北京

BEIJING, CHINA

用地面积：59,000 平方米

建筑面积：1,760,000 平方米

项目阶段：概念设计 - 扩初设计

项目概况：

颐堤港商场位于北京市朝阳区，2012年开业。集商场、甲级办公楼、商务酒店为一体。占地面积5.9万平方米，总建筑面积17.6万平方米。项目旨在通过空间提升拉近购物中心与消费者、品牌与消费者的关系，从而提升购物及休闲体验，满足消费者的全新需求与更加精致的生活方式。项目应用了“设计思维理念”，在前期调研中更加科学深入的了解客户及用户需求，对设计提出更有针对性的建议及报告。


ZARA
glentiss


choos shoos

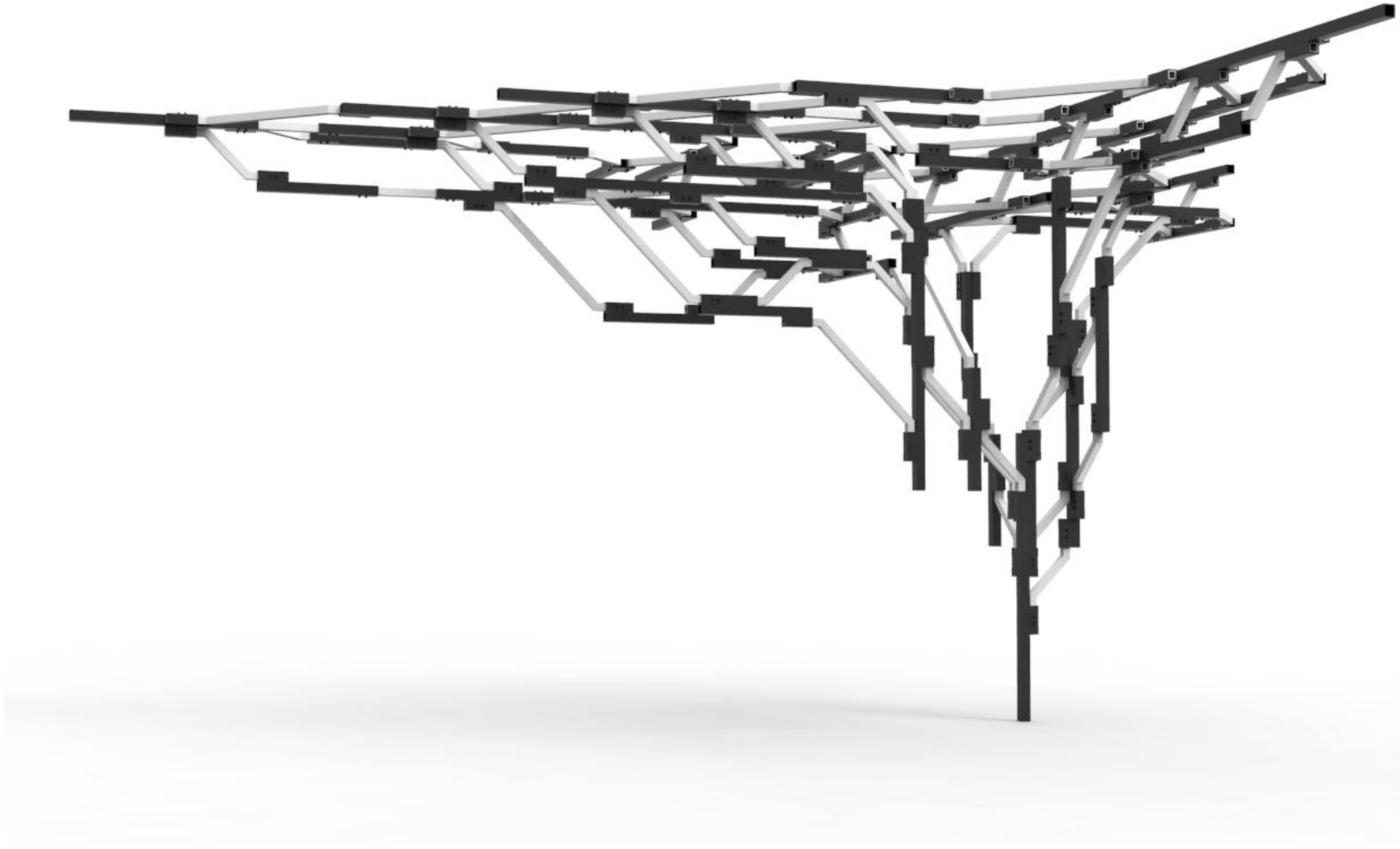

CAKE & COFFEE
Fresh
BREAD

PORTFOLIO (STUDENT)

LU MIAO / ARCHITECTURAL DESIGNER

1 CLICK PIPES

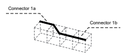
Group Work / 2017.08 - 2018.09



This project proposed a solution to fabricate a discrete building consisted of plastic tubes. By using light-weight, easy-shaping and reusable digital materials and a set of primitive structure singletons, the final structure could be low-cost and highly efficient. We analogized a determined computation system so that a deterministic structure could be produced. Moreover, this project would break the limitation of specific joints nowadays, and the newly designed joint would not be too complicated and expensive anymore. At last, this paper would propose a solution for fast fabricating a stiff structure in the large scale, by using discrete elements and highly efficient methods.

[UNIT DESIGN]

Combination of two basic bars

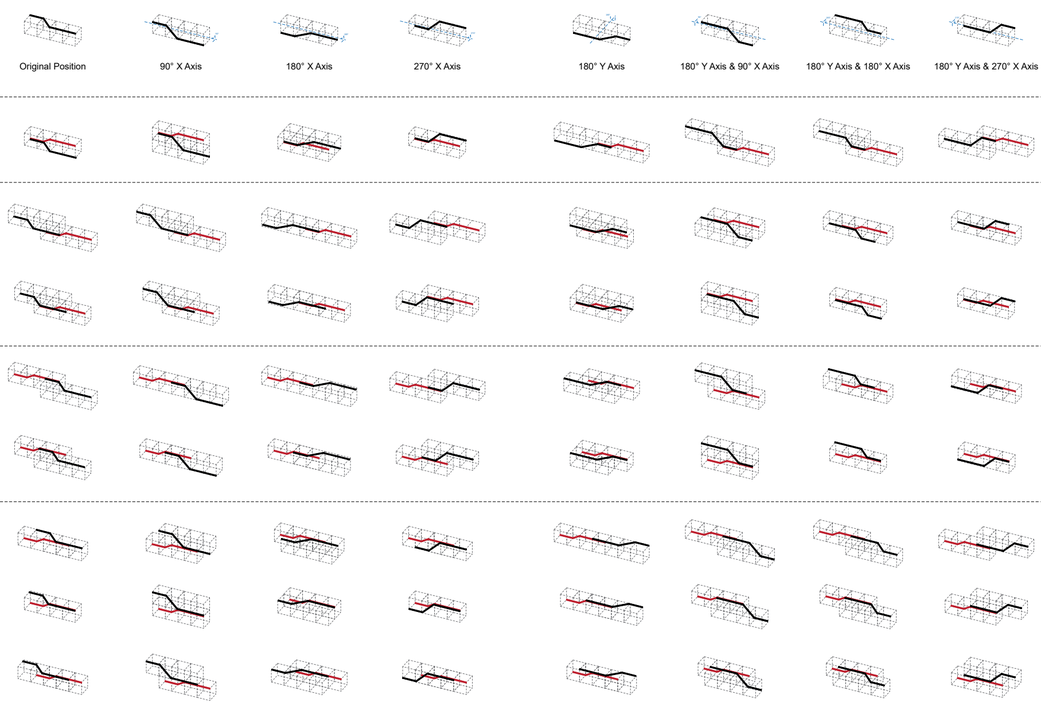


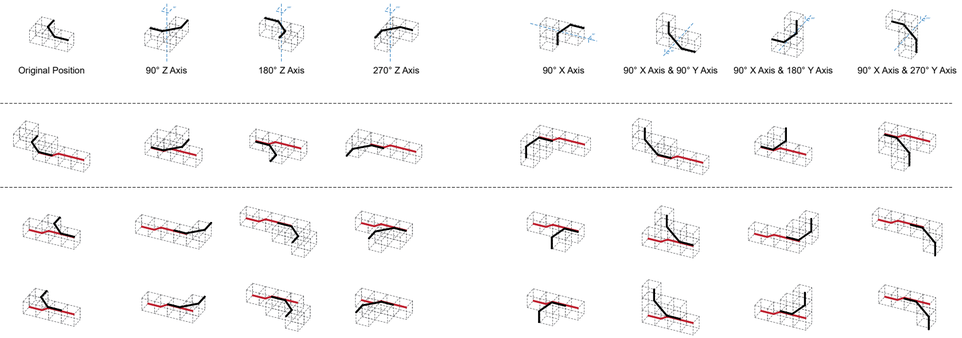
Basic Bar 1

Basic Bar 3

Basic Bar 2

Basic Bar 3

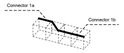




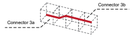
Based on the five basic elements, this research is about the catalogue of position and direction among these bars. As the red one is the supporter in the space, every black bar (bent in 2D plane) should connect to the red one after rotation in one or more axis. However, not all of them can be used in the final computation, every group should obey the following conditions.

[UNIT DESIGN]

Combination of two basic bars

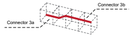


Basic Bar 1



Basic Bar 3

Basic Bar 2



Basic Bar 3

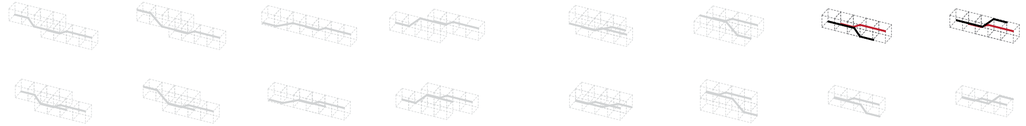
Original Position | 90° X Axis | 180° X Axis | 270° X Axis | 180° Y Axis | 180° Y Axis & 90° X Axis | 180° Y Axis & 180° X Axis | 180° Y Axis & 270° X Axis

Original Position | 90° Z Axis | 180° Z Axis | 270° Z Axis | 90° X Axis | 90° X Axis & 90° Y Axis | 90° X Axis & 180° Y Axis | 90° X Axis & 270° Y Axis

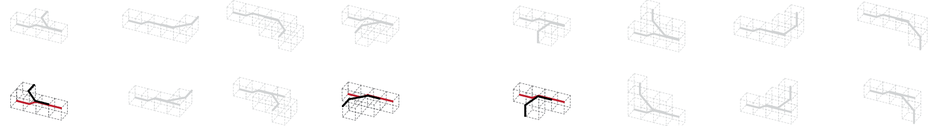
Connector 1a -- Connector 3a

Connector 2a -- Connector 3a

Connector 1b -- Connector 3a

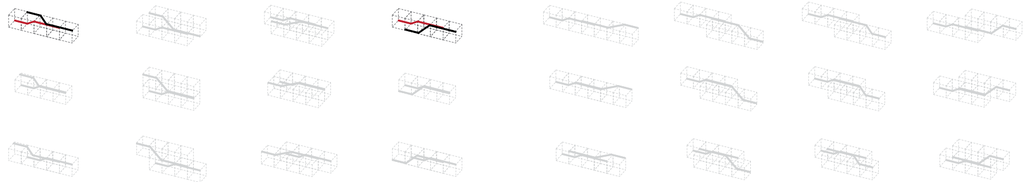


Connector 2a -- Connector 3b

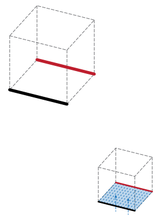


Connector 1a -- Connector 3b

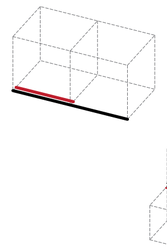
Connector 1b -- Connector 3b



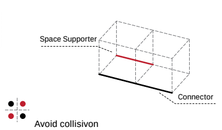
Conditions



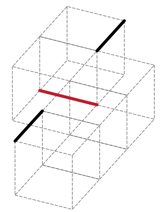
1. Two bars in one surface.

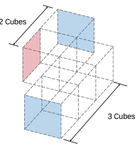


2. The Connector is longer



Avoid collisivon





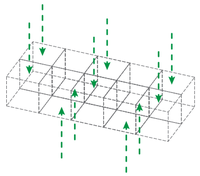
3. Two endpoints

[COMBINATION]

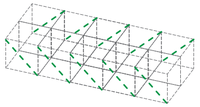
Unit Design based on Stress Analysis

When organizing the bars, this design tests different types of forces in the space first. Then put specific elements in the space to counteract the force. The space supporter (red bars) should always be the first one to put, then can be the 2D connector with rotation and different positions. Based on the best result of counteracting the force, three types of basic unit are found.

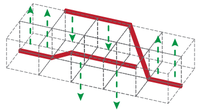
Pressure



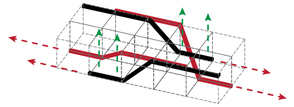
Pressure



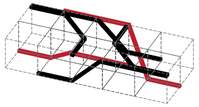
Pressure Analyze
(Fill the space)



Adding Space Connector

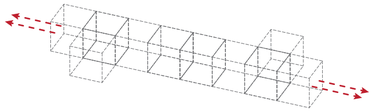


Adding Connector

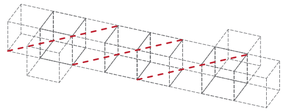


Type 1

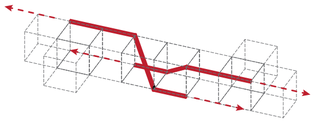
Tensile Force



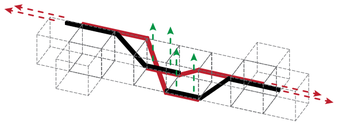
Tensile Force



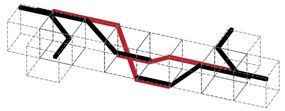
Tensile Force Analyze
(Fill the space)



Adding Space Connector

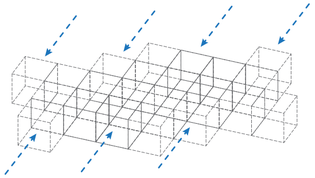


Adding Connector

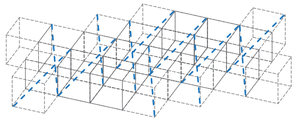


Type 2

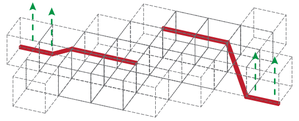
Compression



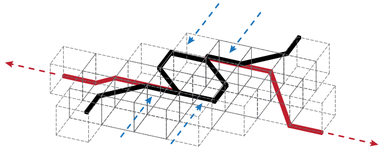
Compression



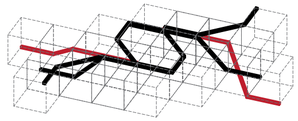
Compression Analyze
(Fill the space)



Adding Space Connec-
tor



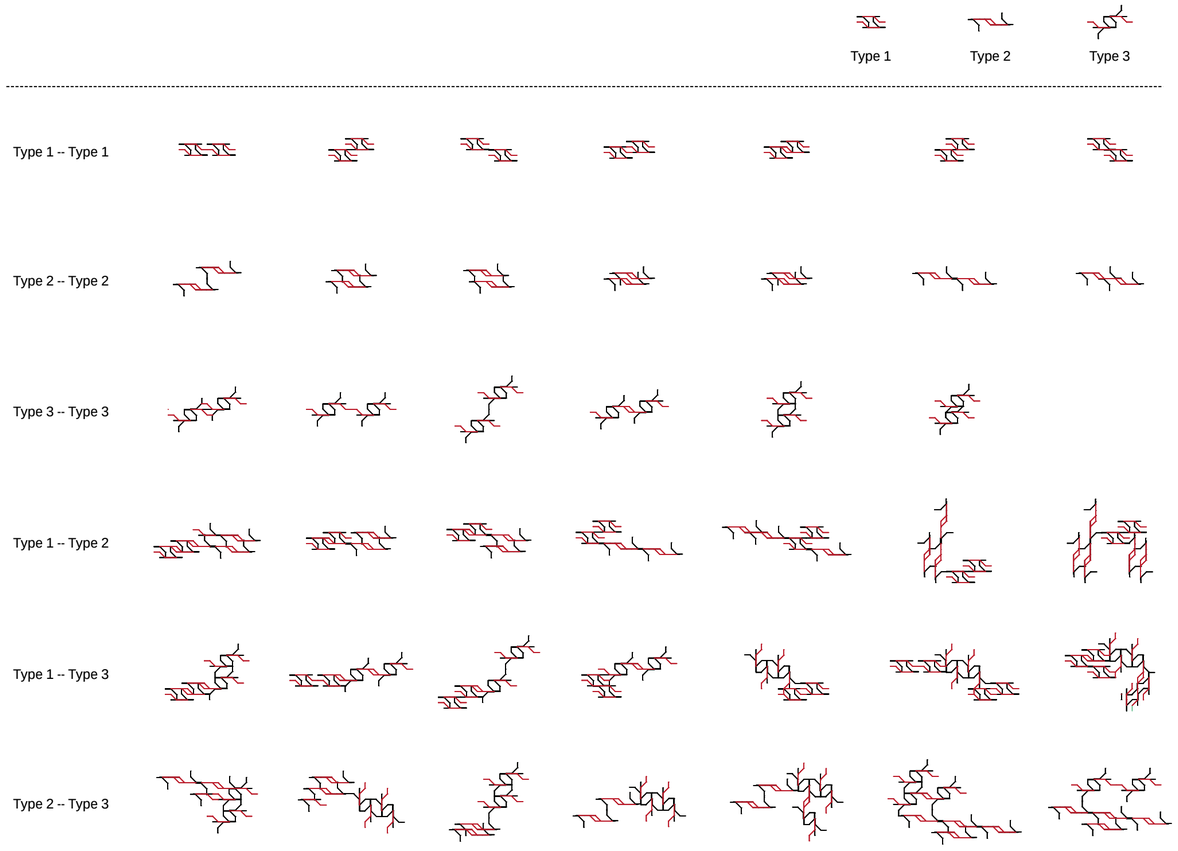
Adding Connector

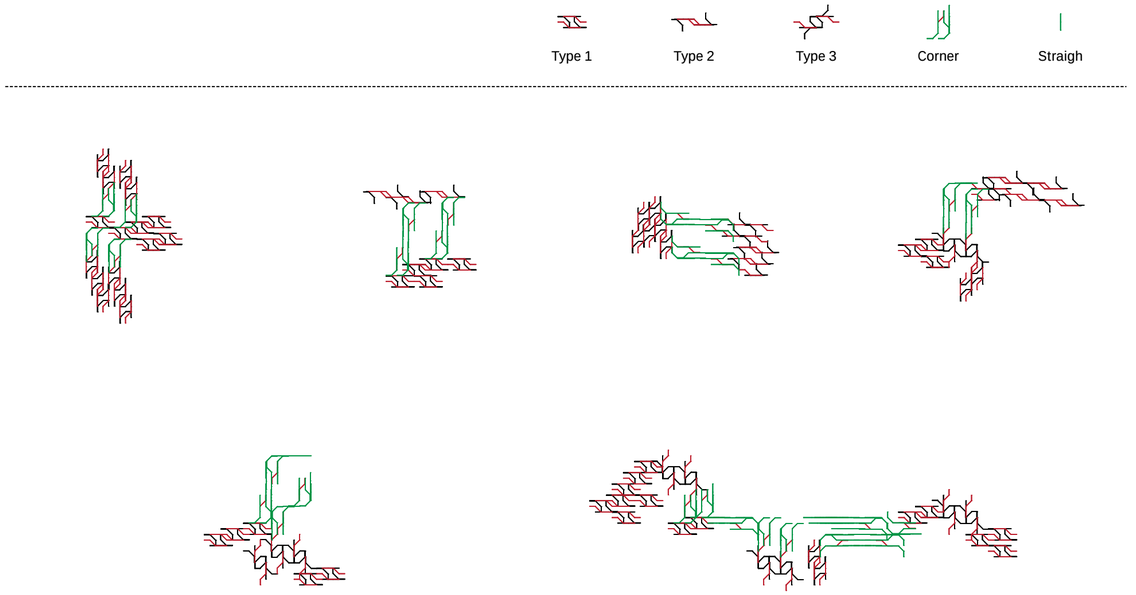


Type 3

[COMBINATION]

Connection of units

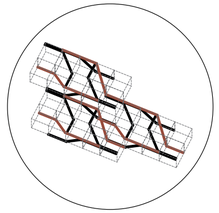




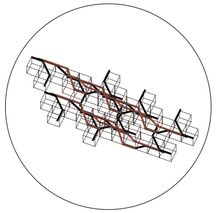
As the basic rules have been set between each unit, we can figure out more possibilities of connection. Once the position and rotation has been changed in one unit, the length as well as the rotation of the whole group will be changed. One more important task is to figure out the special connections between different types of units and how the corner can be connected perfectly to the whole structure. Thus, the more ways of connections we found, the more clearly it could be.

[COMBINATION]

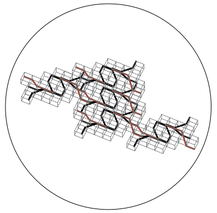
Combination based on Stress Analysis



Group 1

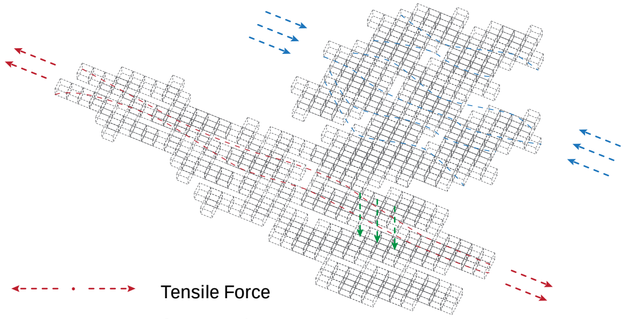


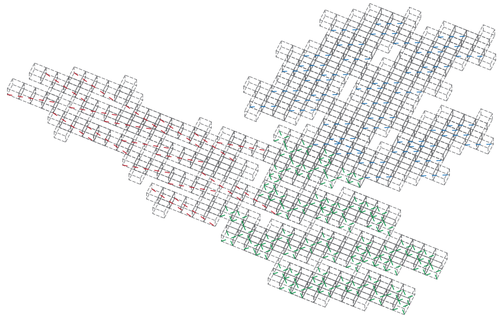
Group 2



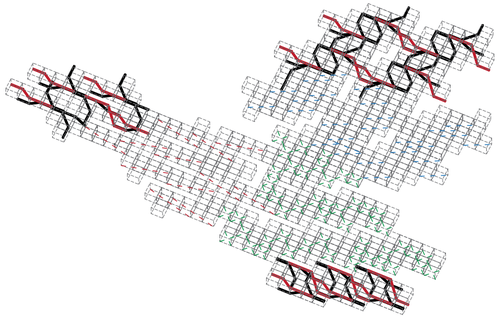
Group 3

Three types of connections have been talked before. In the computation works, we analysed the space into different force types, including the Tensile Force, Compression and Pressure. Each unit has a different tendency to the forces. The whole structure is assembled based on the force analyse. As the possibilities of connections have been talked before, the structure can be considered into larger ones in the future.

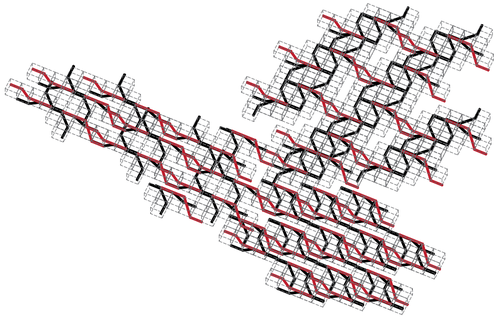




Stress Analyze



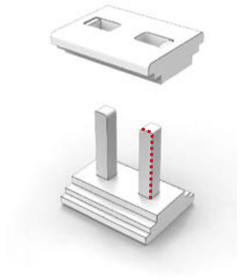
Type Analyze



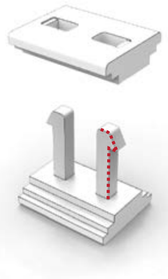
Whole Structure

[UNIT DESIGN]

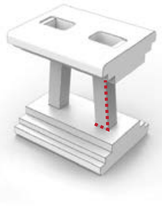
Joint Design



Basic Joint



Adding a Locker

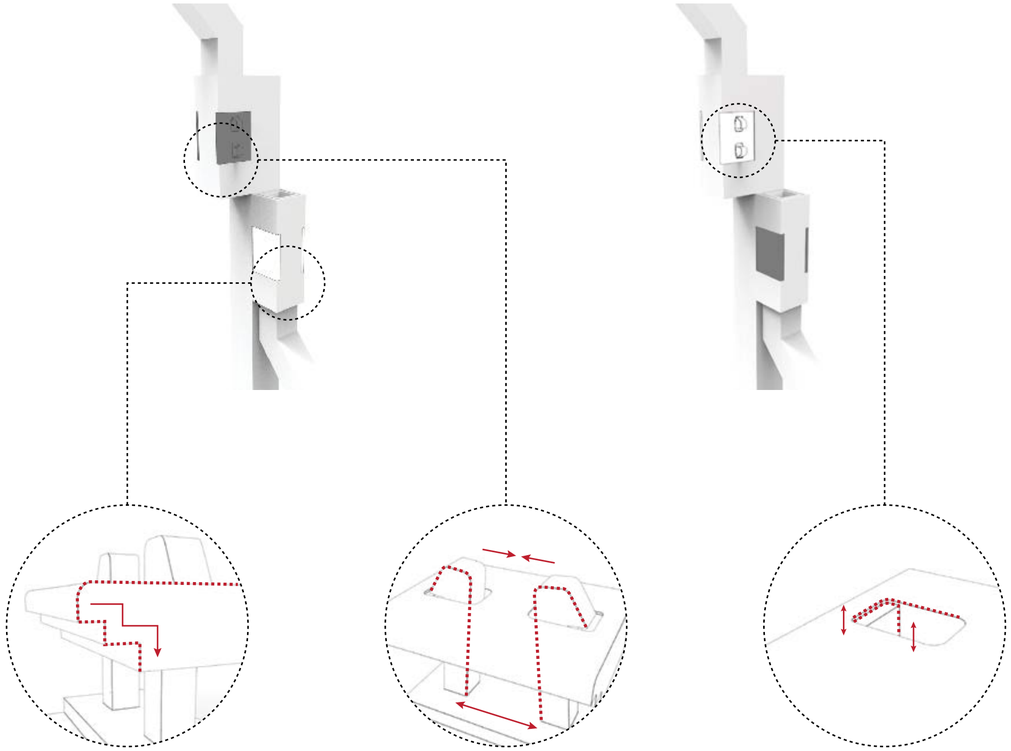


Shape change

Insert the Joint

Press

Take off the Joint



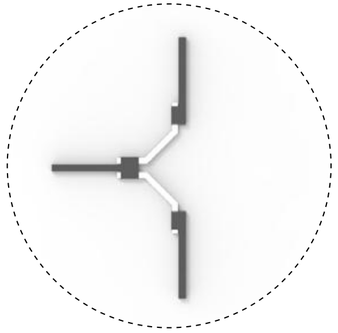
Fulfilling the space
between the pipes

Using the shape
change to lock the joint

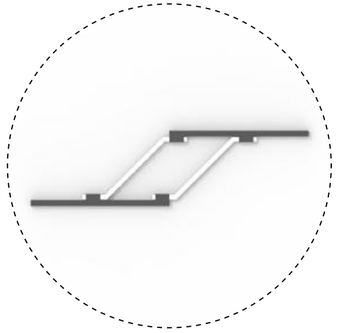
Modifying the tolerance

[UNIT DESIGN]

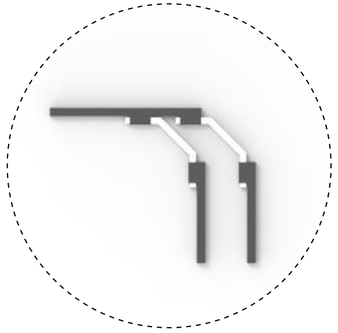
Small Scenario Aggregation



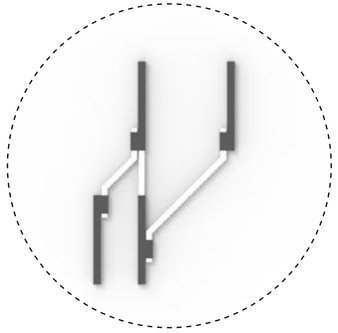
Unit 1



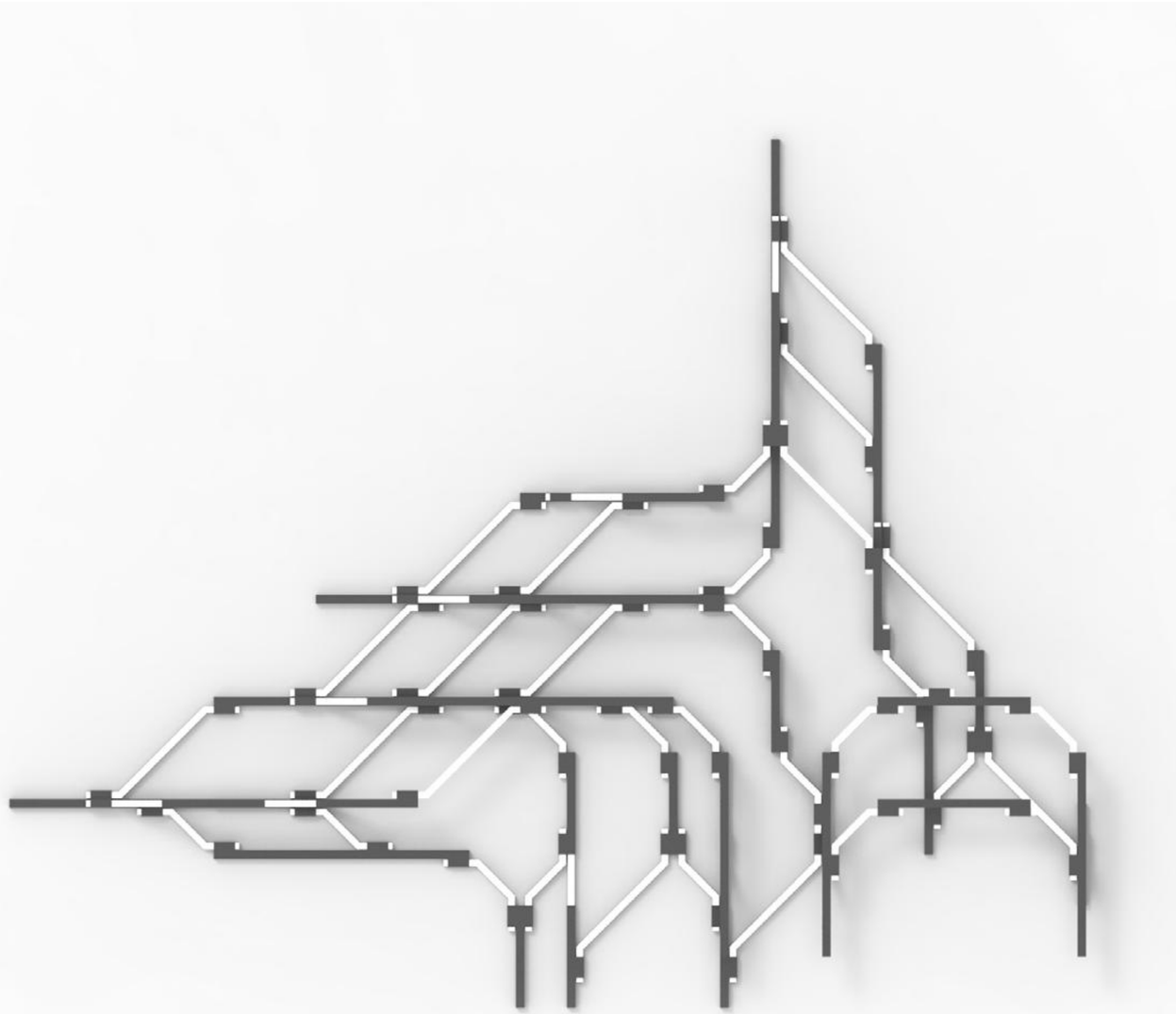
Unit 2

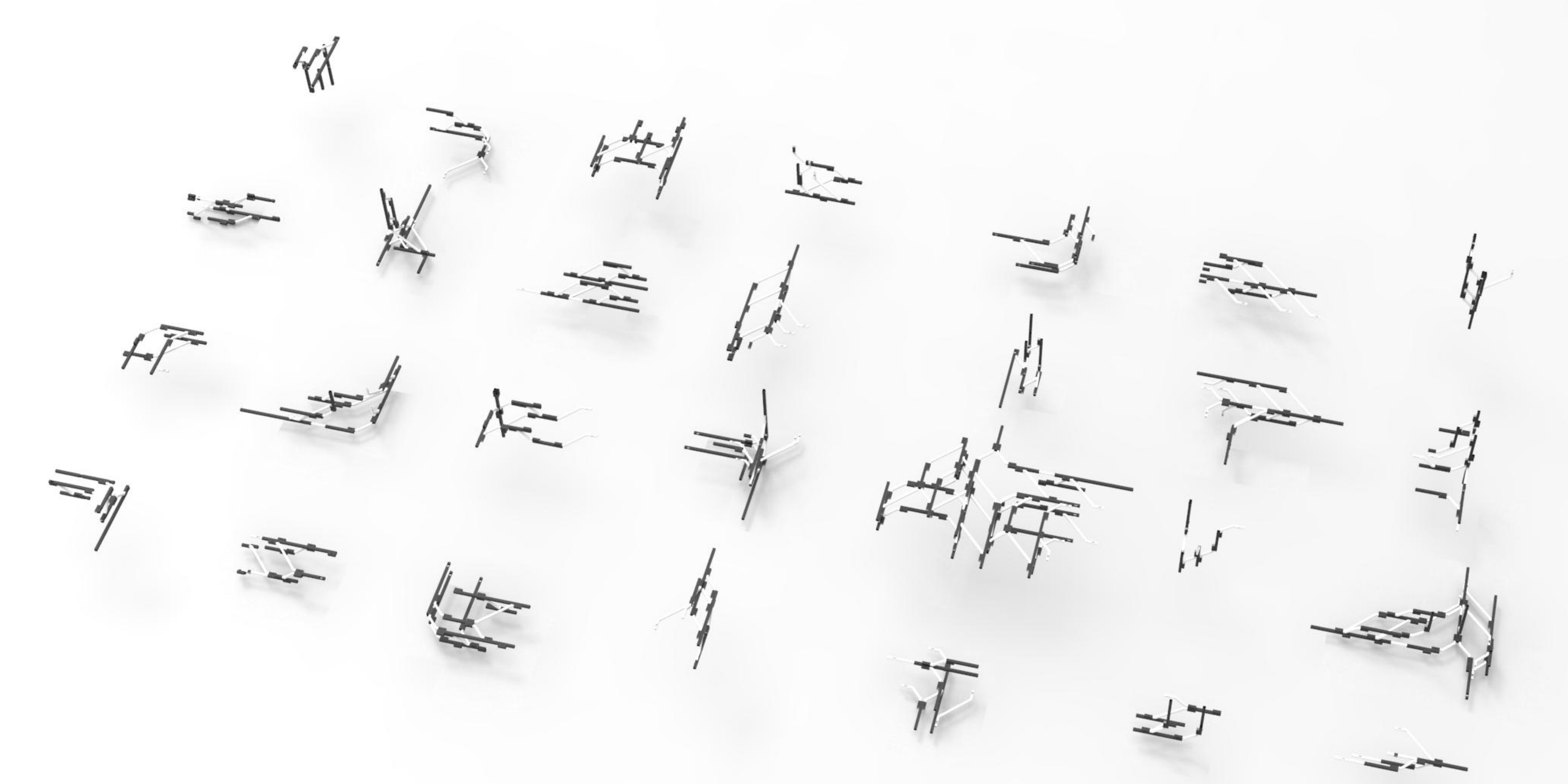


Unit 3

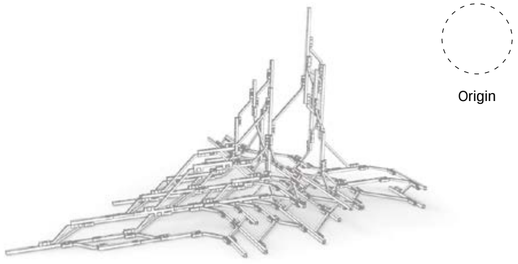


Unit 4

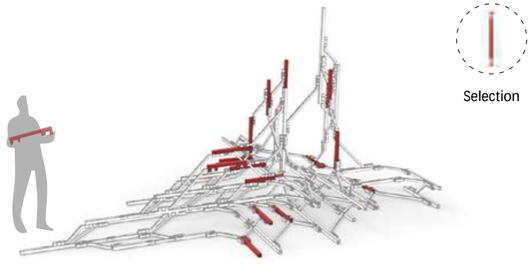




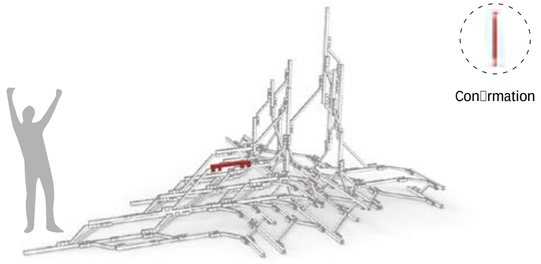
[ASSEMBLY TUTORIAL]



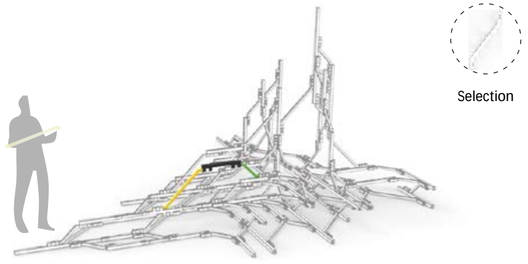
Original Set



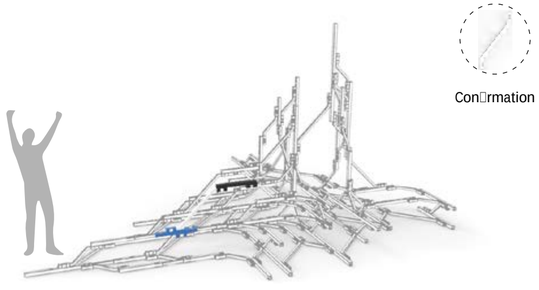
Possible Positions



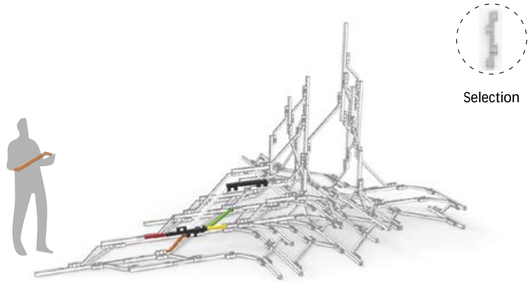
Chooing the □rst position



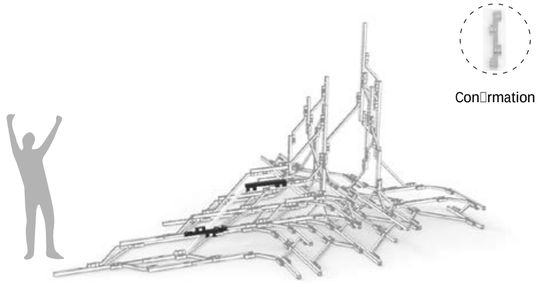
Showing the next possible positions



Choosing the second position



Showing the next possible positions

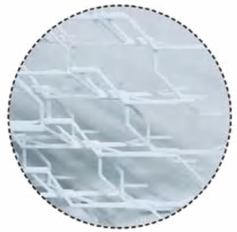


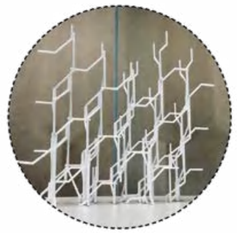
Choosing the next position

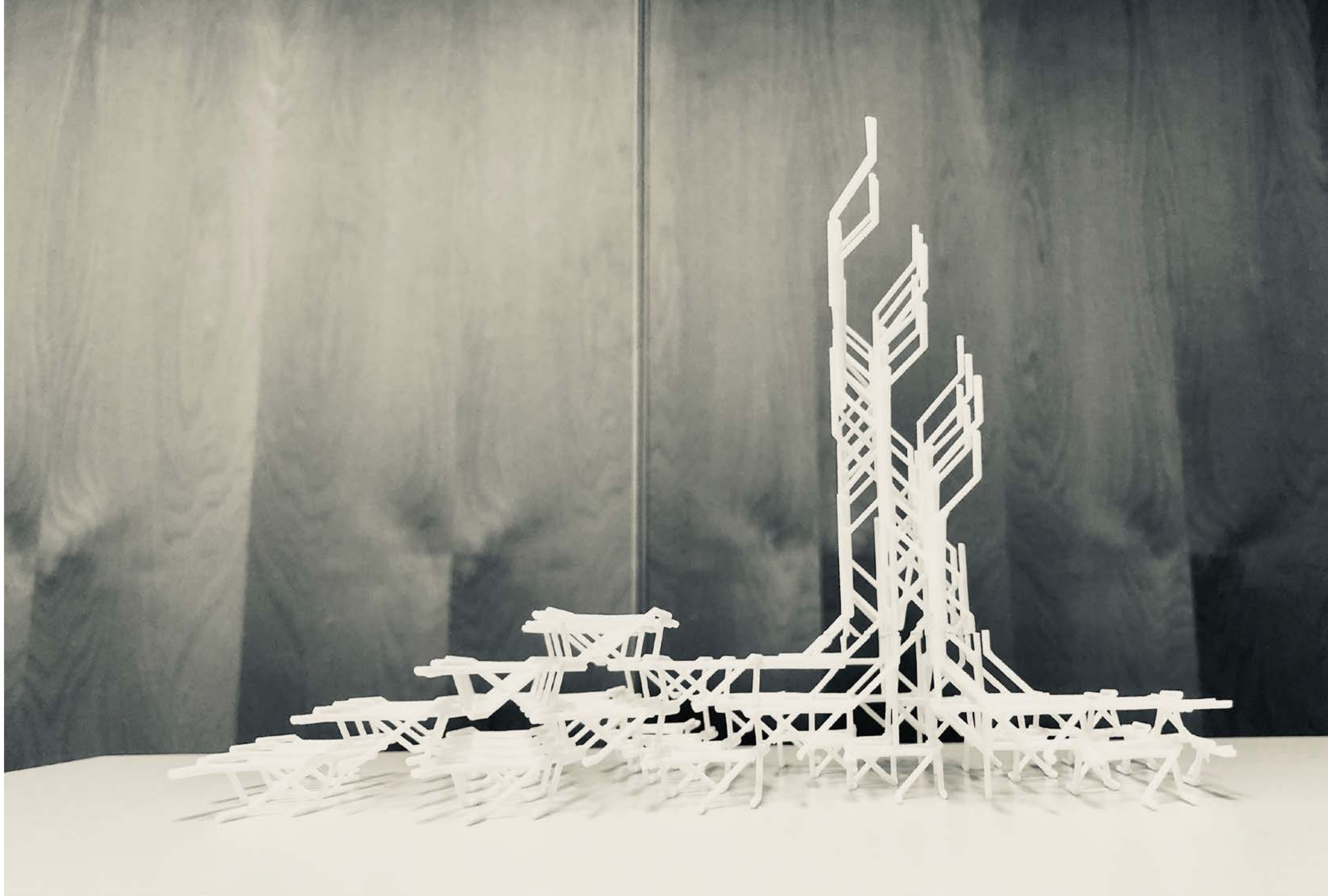
Final model

[UNIT DESIGN]

3D Printing Test

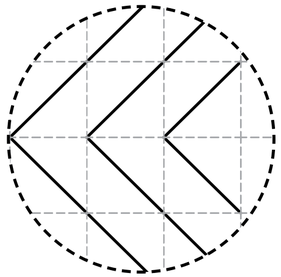




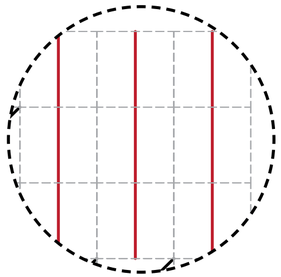


[UNIT DESIGN]

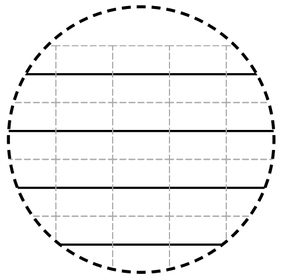
3D Printing Test



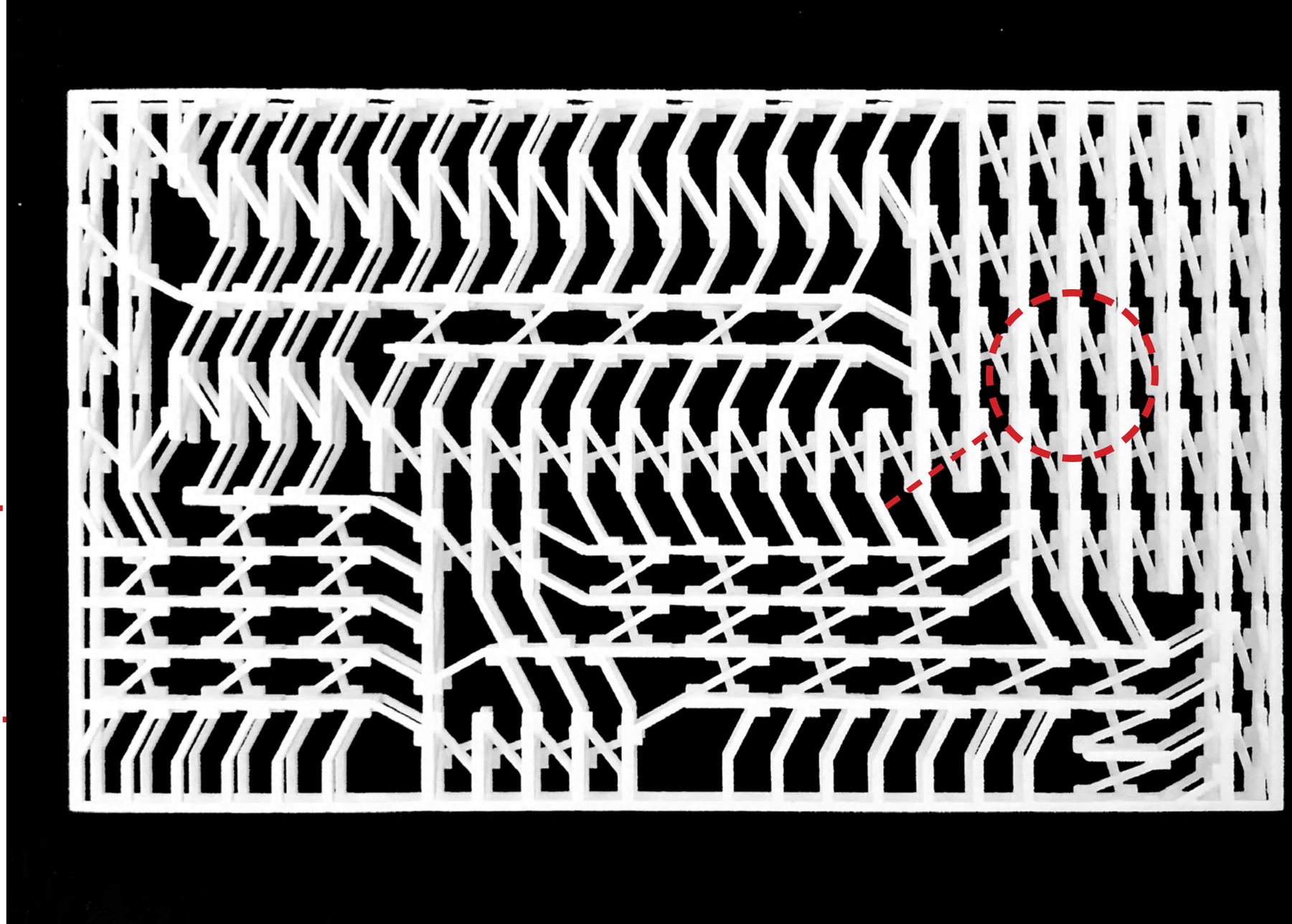
Corner Pattern



Horizontal Pattern

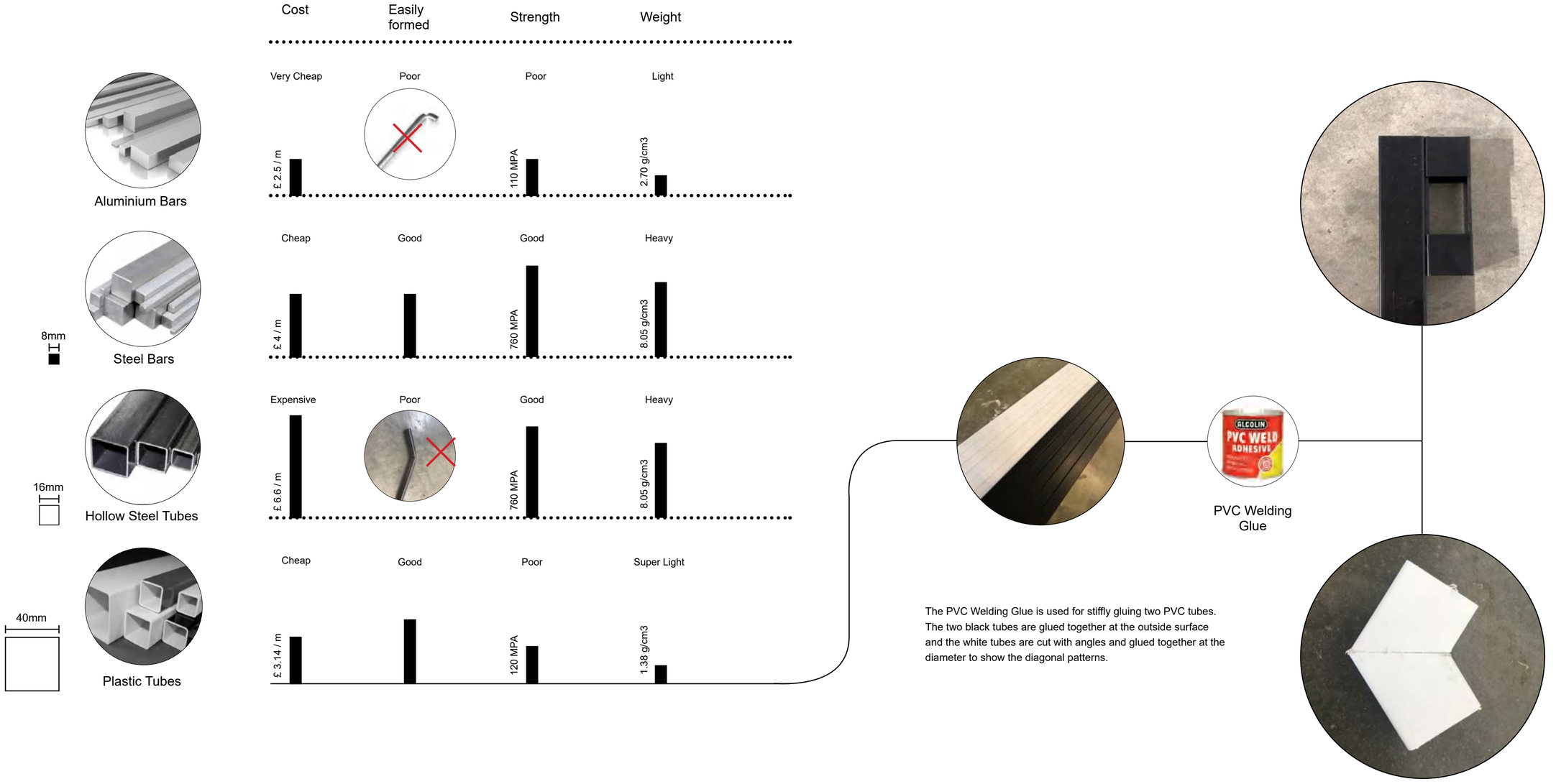


Vertical Pattern



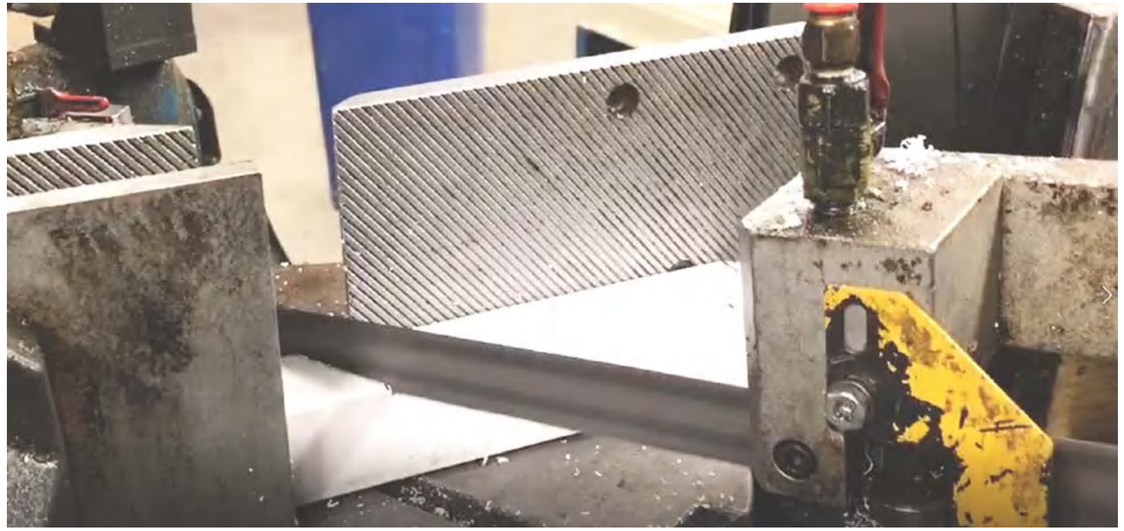
[FABRICATION]

Material Research



[FABRICATION]

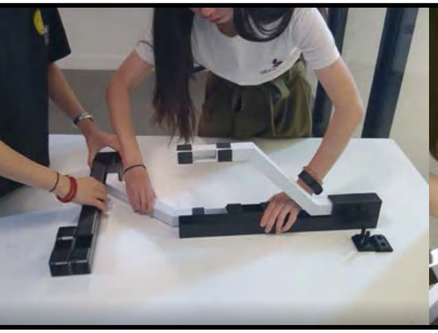
Analog Fabrication



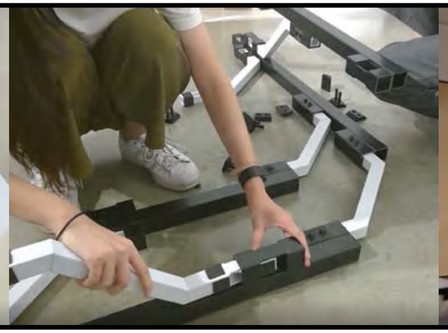
Both black and white plastic tubes are cut into pieces with angles with the machine.
The holes are drill with milling machine in both sides of some of the tubes.

[FABRICATION]

Physical Model Making



Single Unit Connection



Insert the Basic Elements

Connecting the Basement

Hanging Up the Basement

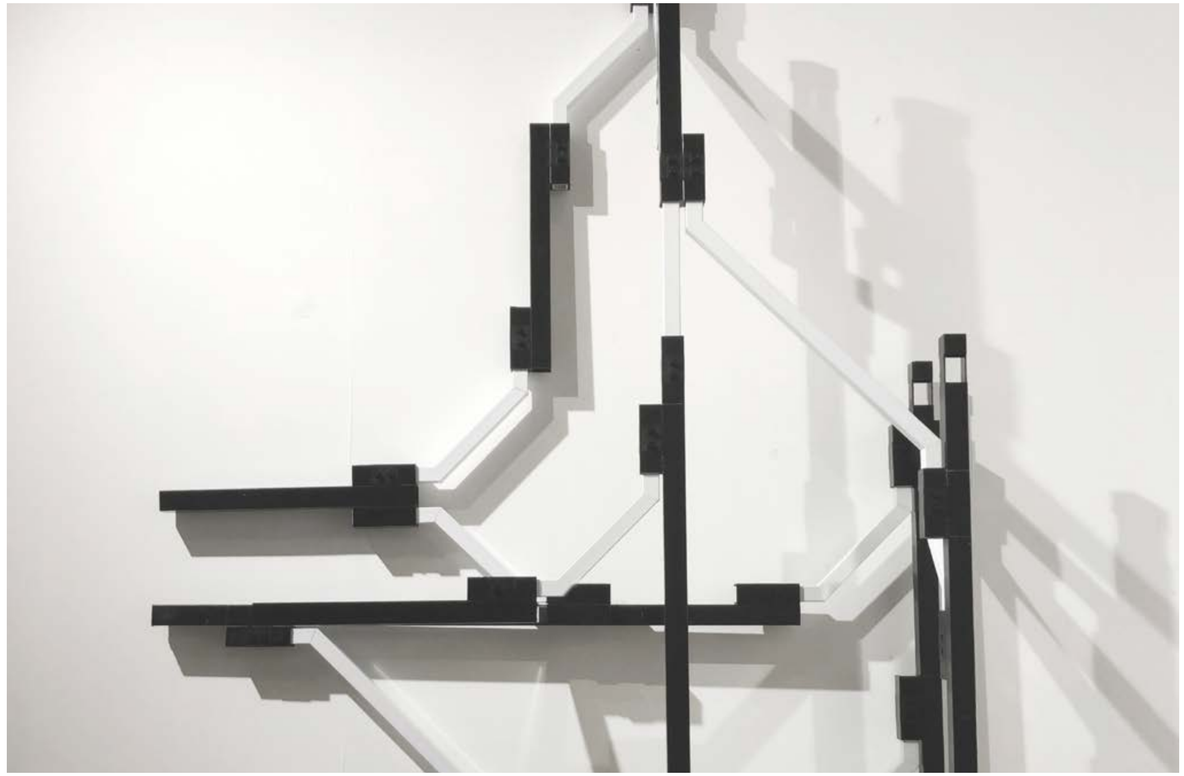
Connecting the Column

Adjusting the Structure

[FABRICATION]

Physical Model

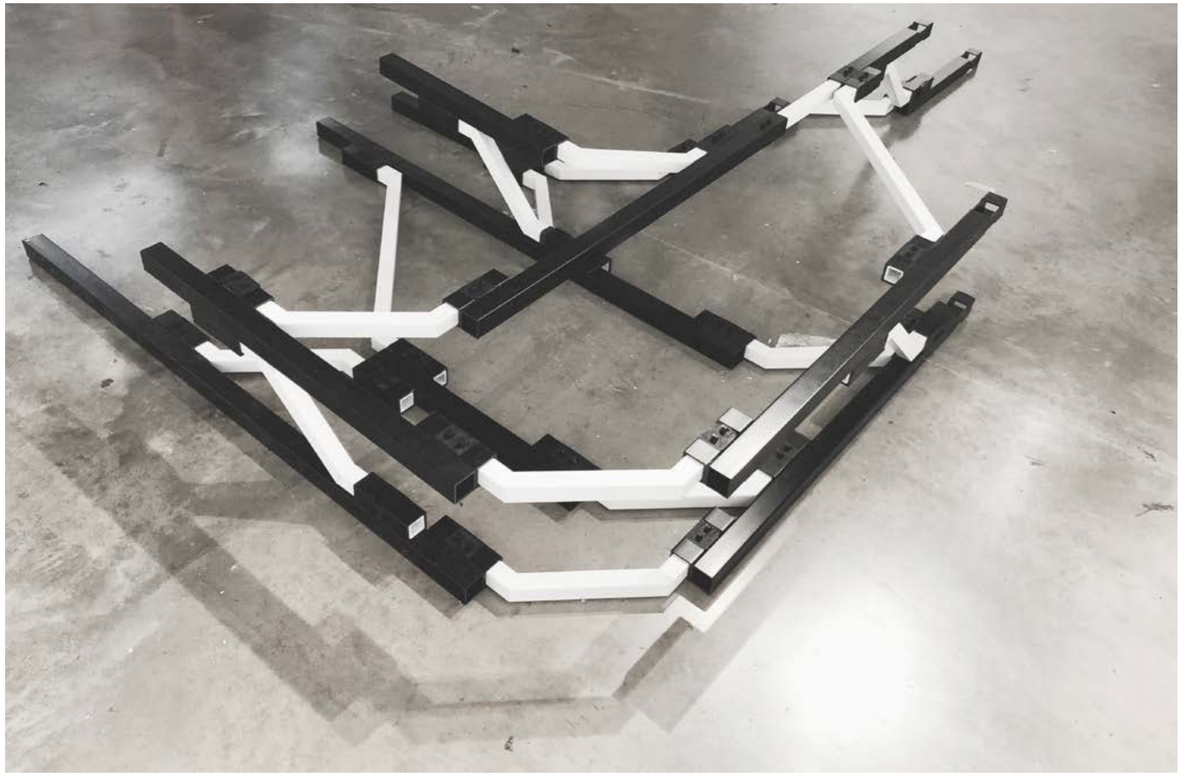
The physical model of some connections of black pipes with white ones.
The final model is combined by the existing connections.



Plan of physical model

[FABRICATION]

Physical Model



Physical model

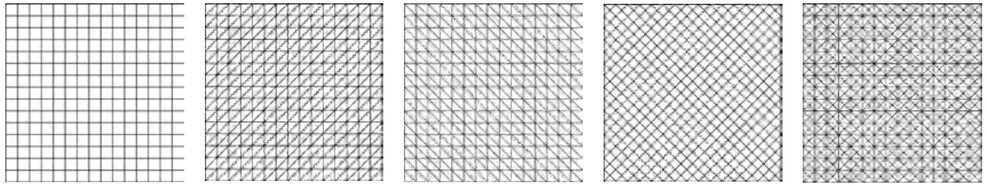
Detail of connection of tubes with joints

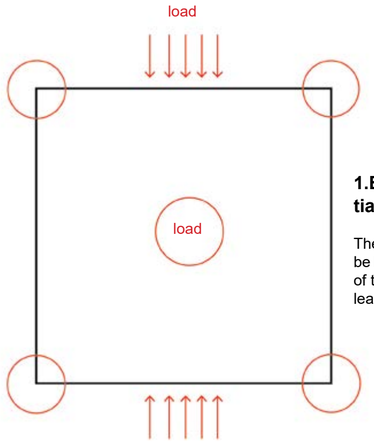
[AGGREGATION]

Aggregation Strategy

From initial design and development stages, aggregation methods have changed from different stress level elements to the same components with different directions.

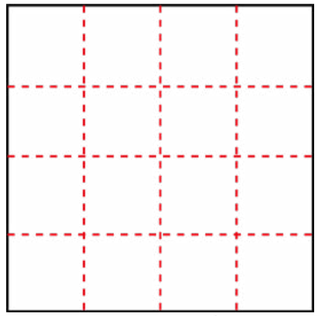
In the final design stage, the research is based on the simplified units with directions to improve the efficiency of materials, but the structure still keep the assembly feasibility.





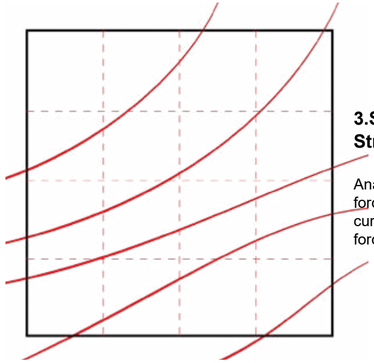
1.Basic Site with Initial Information

The size of the square to be built and the condition of the structure should be learned first.



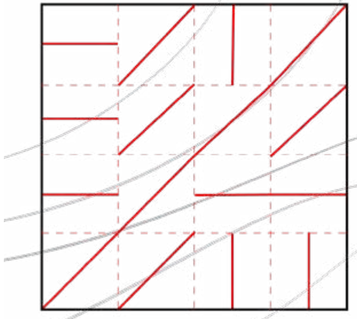
2. Grid Generation

In 2D condition, it is the grid generation in the space, and in 3D volume, it is voxelization of the structure.



3.Shear Forces& Stress Tensor (FEA)

Analysis of the stress forces of the site . The curves are showing the forces directions.

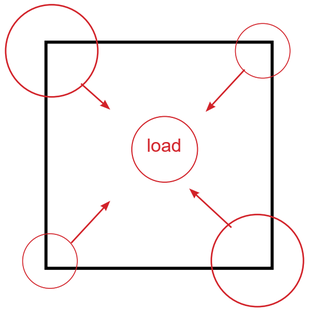


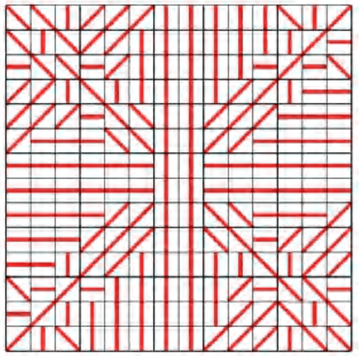
4. Discrete Direction

The data of each component is discretized in each grid and the discrete elements have finite directions with real directional elements.

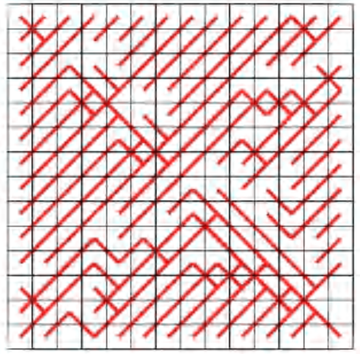
[AGGREGATION]

Stress Analysis in 2D

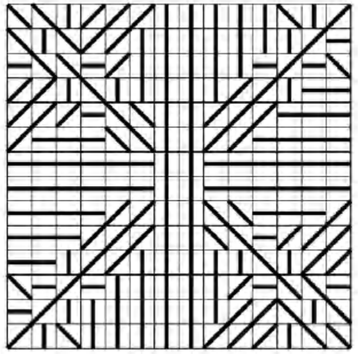




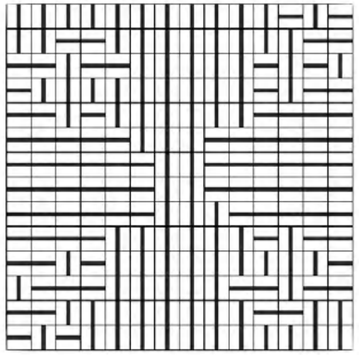
Shear force resistance in 4 directions



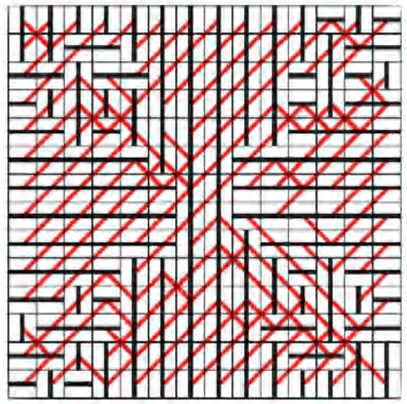
Shear force resistance in 2 diagonal directions



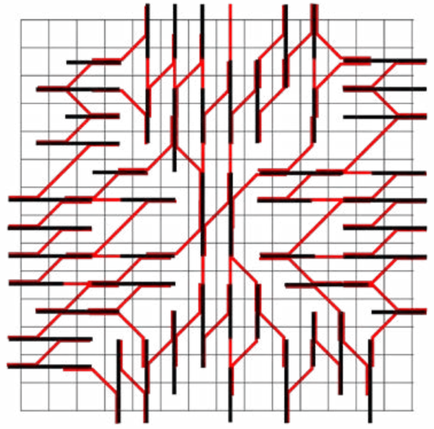
Stress Tensor in 4 directions



Stress Tensor in 2 straight directions



Stress-Shear forces 2D pattern



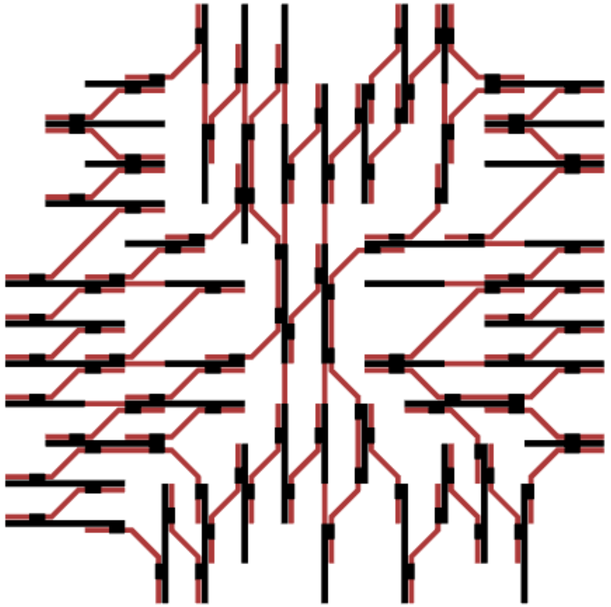
Discrete bars based on the stress analysis

[AGGREGATION]

2D Pattern Generation Simulation

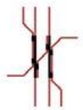
The pattern simulation of the pattern generation is following three steps of simulation: Firstly, in the centre of the plane pattern, the thicker pipe is generated based on the stress tensor. Then following the basic rule of the combination of discrete elements, the thinner pipes are connected based on the shear force resistance information.

Finally, the connected black thicker bars are generated. This loop will continue until the pipes fill the bound of the pattern.



Iteration 1

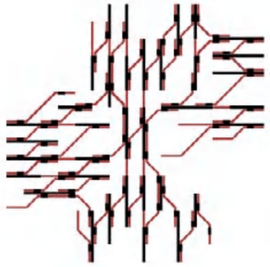
Iteration 2



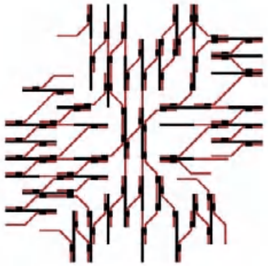
Iteration 3

Iteration 4

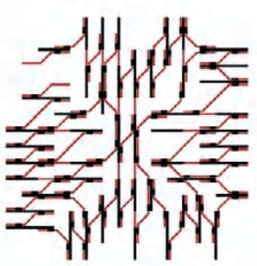
Iteration 5



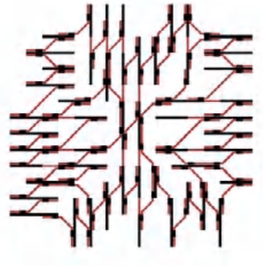
Iteration 6



Iteration 7

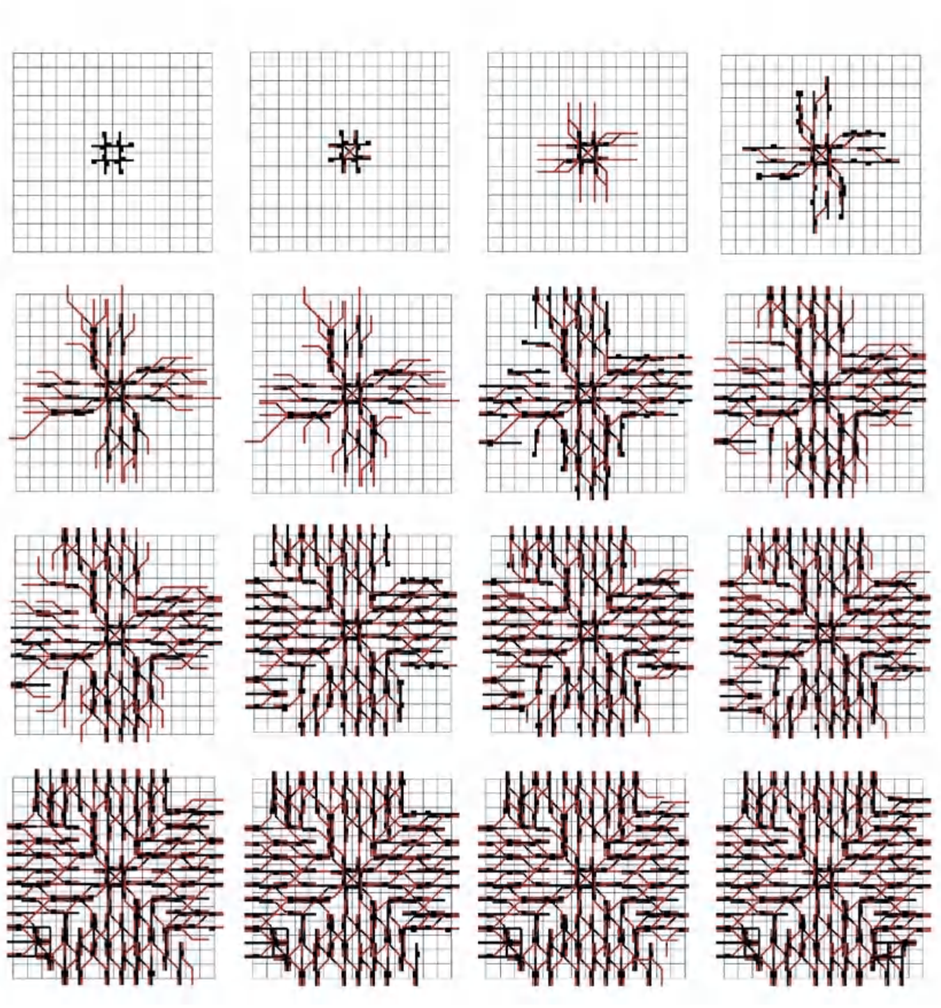


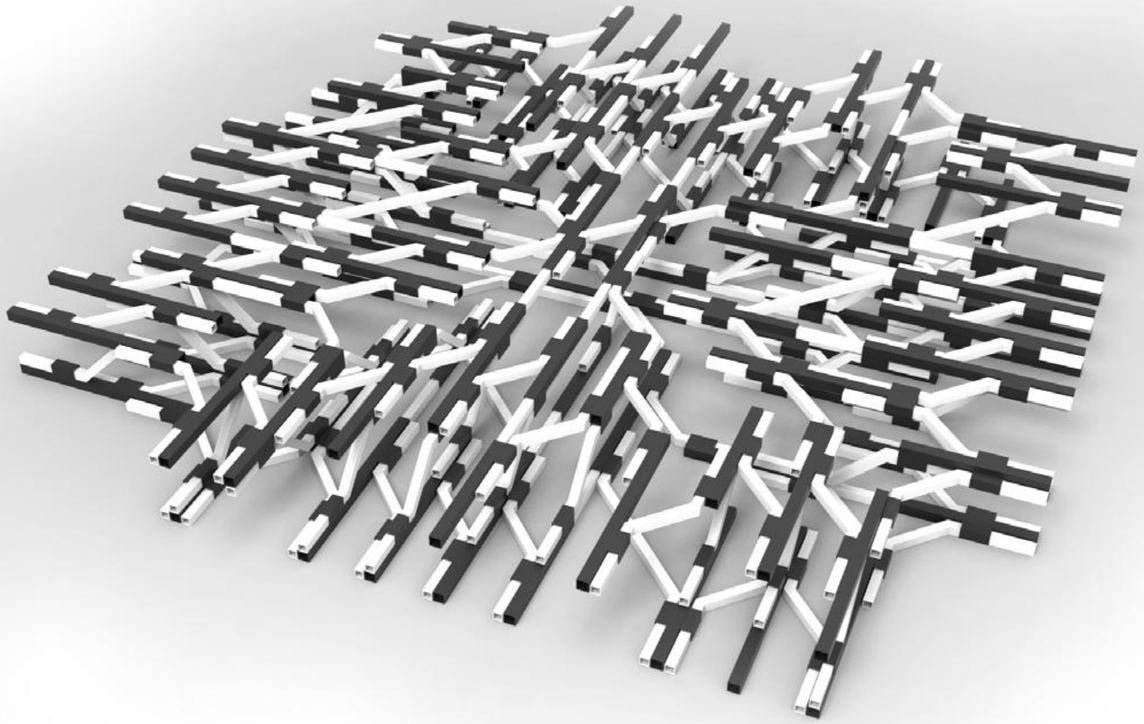
Iteration 8



[AGGREGATION]

2D Pattern Generation Simulation

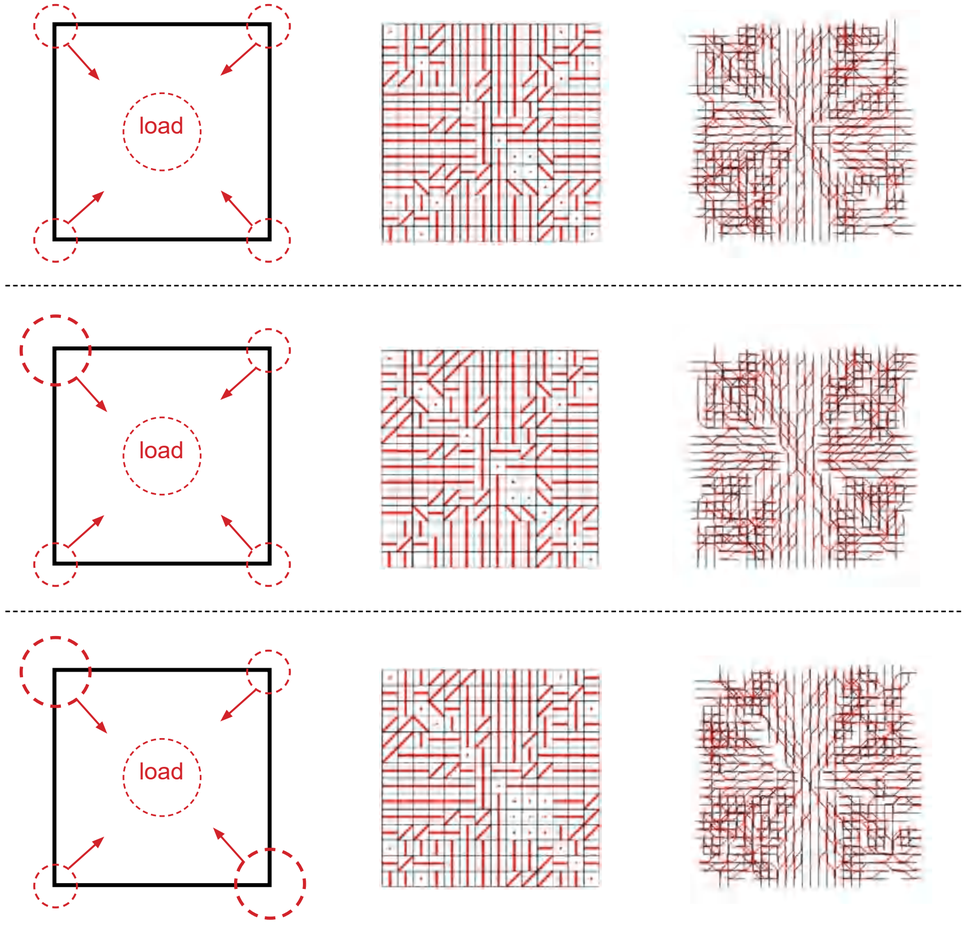




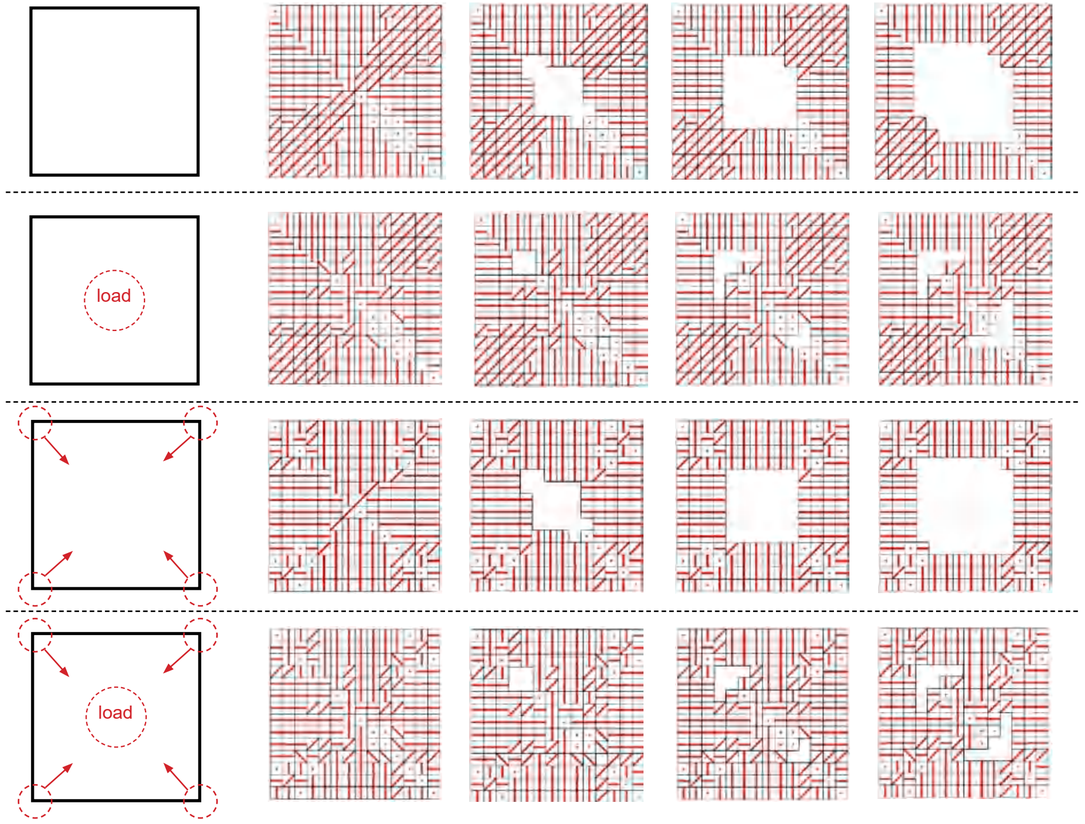
The aggregation of plane following the same method used in pattern simulation.

[AGGREGATION]

Patterns in Different Stress Conditions



Patterns with Topological Optimization



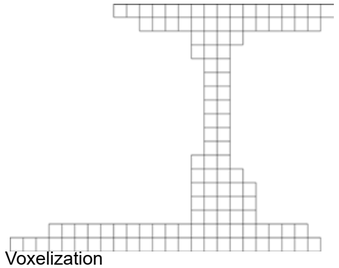
[AGGREGATION]

3D Aggregation

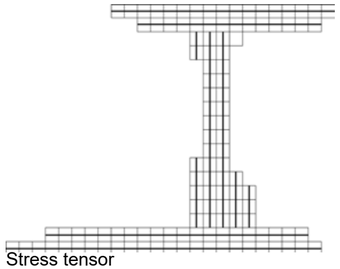
When it comes to 3D aggregation, the assembly of bars are similar to the 2D pattern and planes. The difference of the aggregation is that the discrete elements have more directions.

The left figures show the process of simulation of a 3D structure, first step is still the voxelization based on finite element analysis, and then the stress tensor in three dimensions will be calculated and discretized into 3 straight directions.

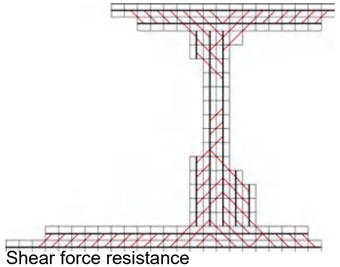
Following the same method, the resistance of shear forces will also be operated. Finally the data will transform into the assembly stage with original rules to assemble the real structure.



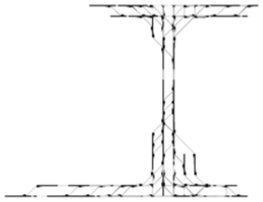
Voxelization

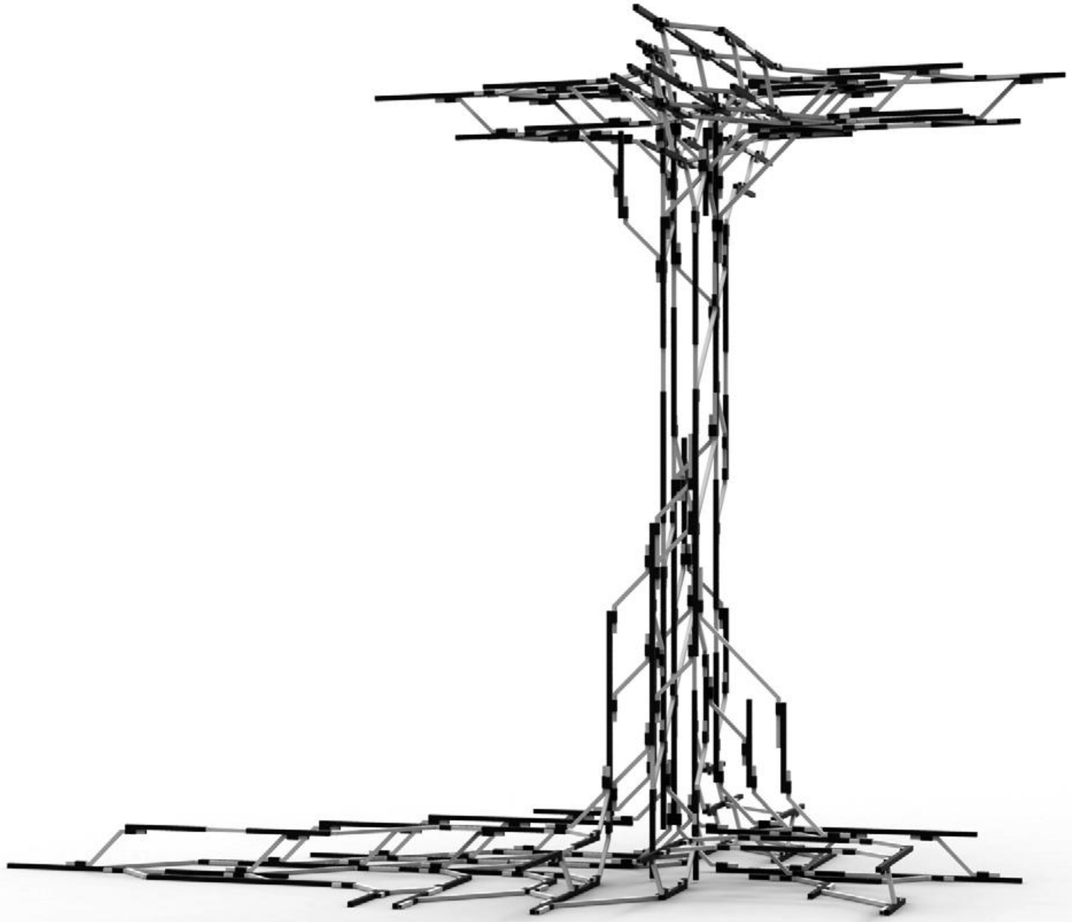


Stress tensor



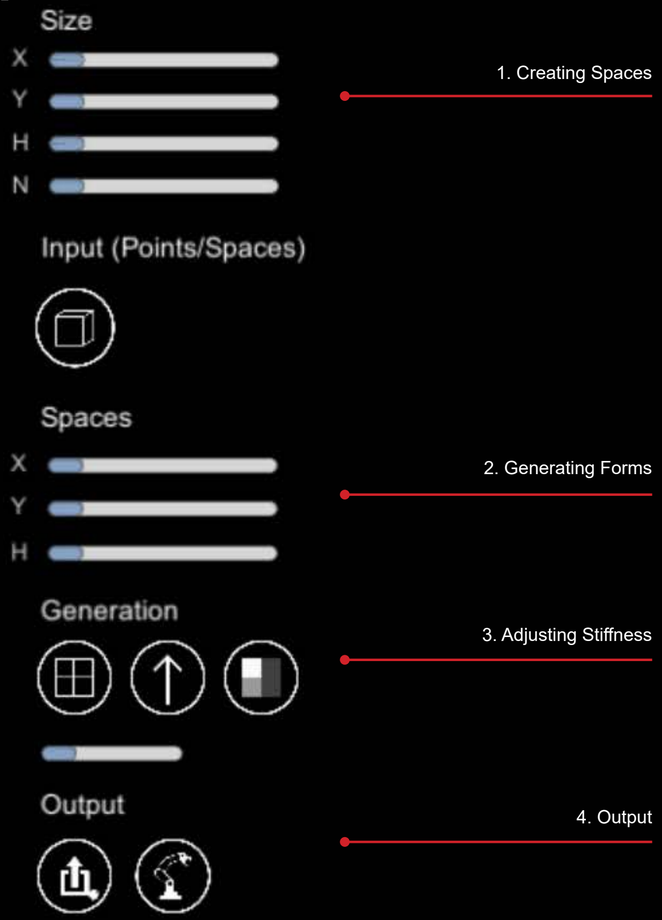
Shear force resistance





[AGGREGATION]

Interface Design



1. Creating Spaces

2. Generating Forms

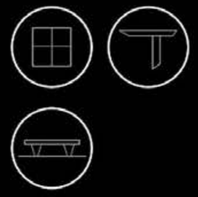
3. Adjusting Stiffness

4. Output

[AGGREGATION]

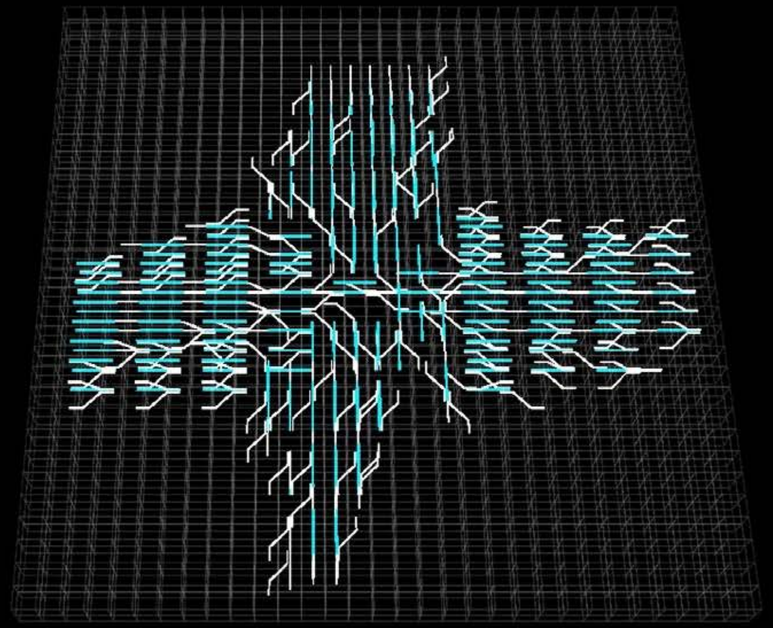
Simulation

Scenario



Analysis

Assembly



TYPE A
112

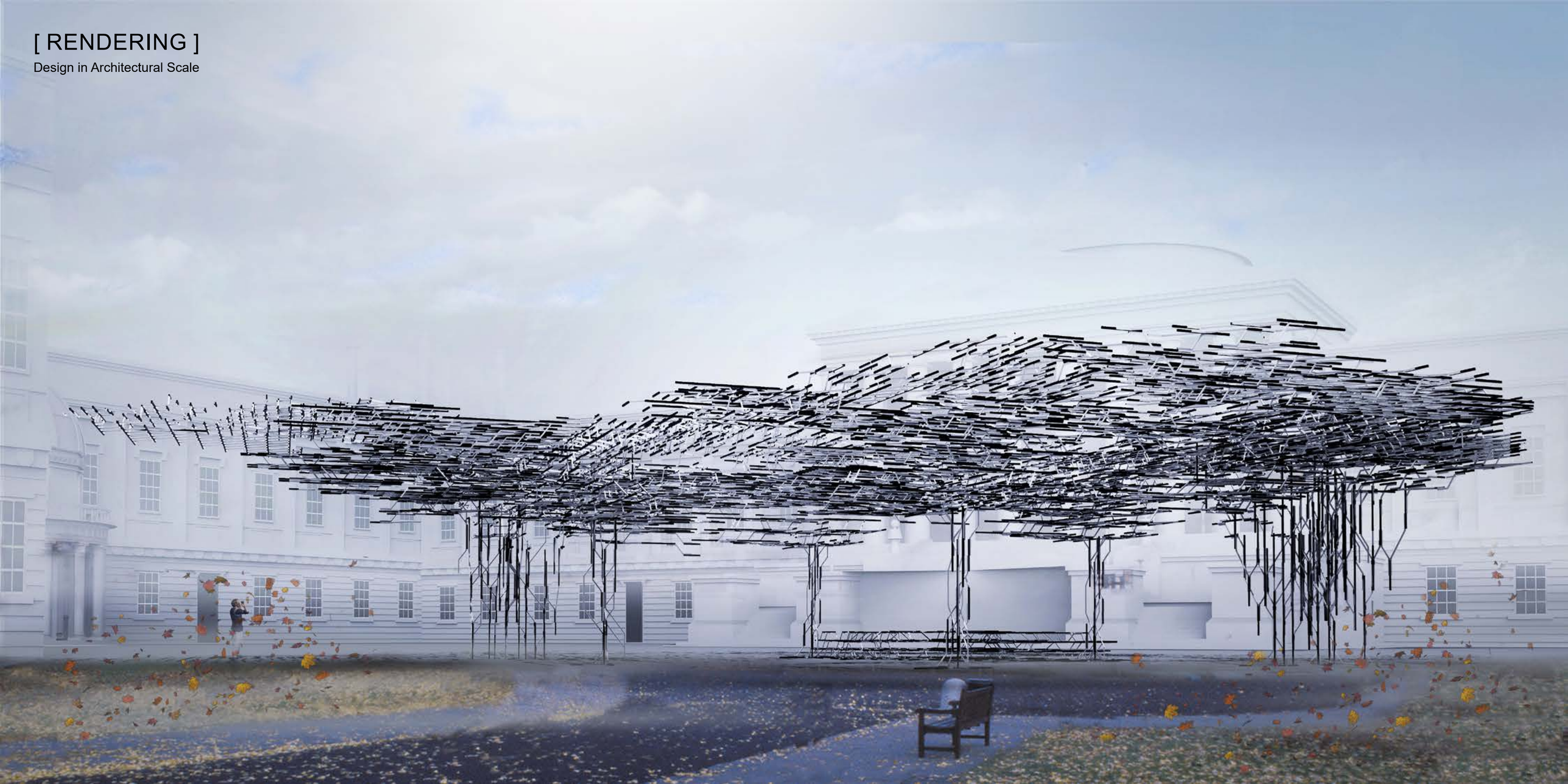
TYPE B
100

TYPE C
11

TYPE D
158

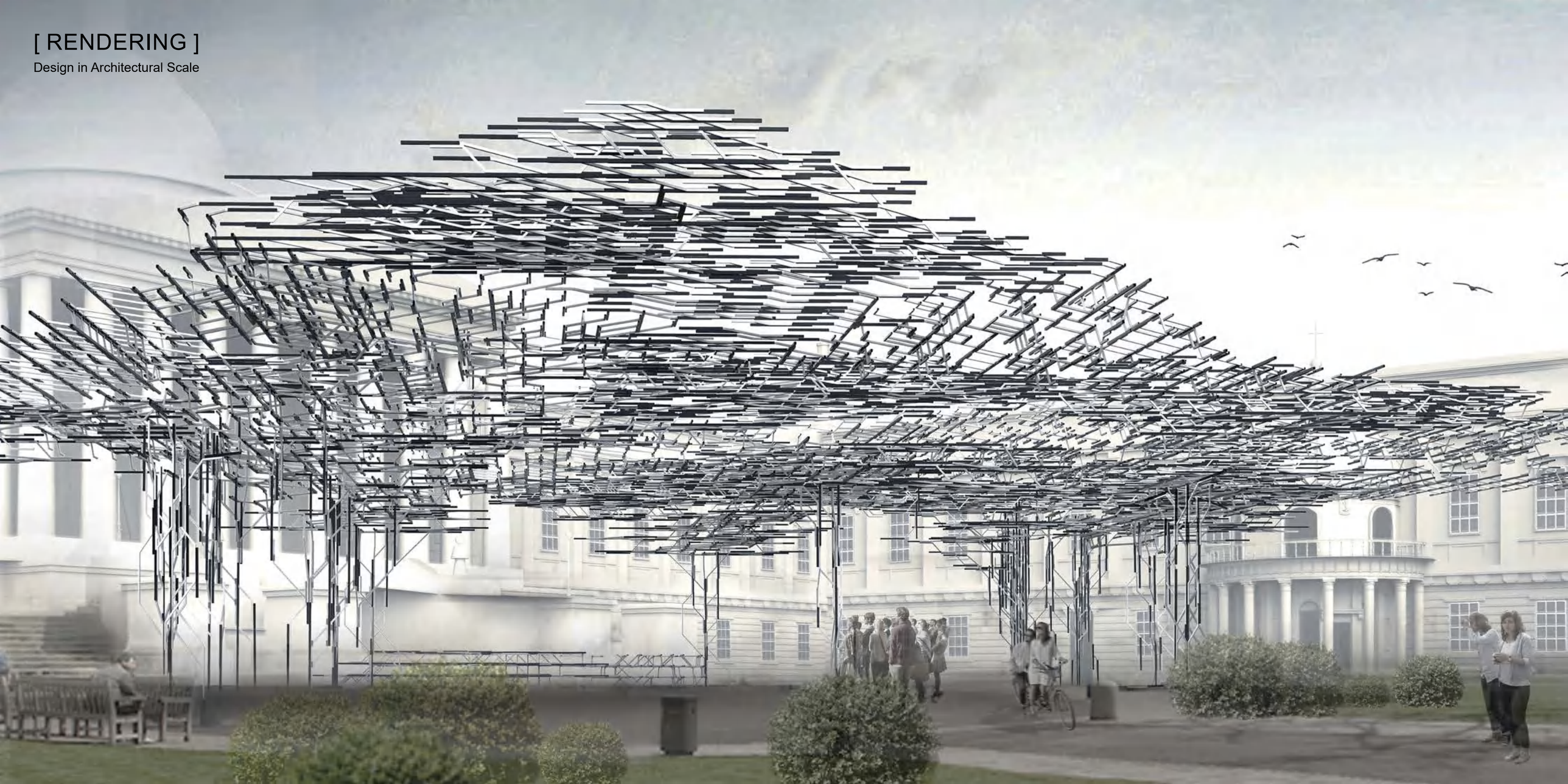
[RENDERING]

Design in Architectural Scale



[RENDERING]

Design in Architectural Scale



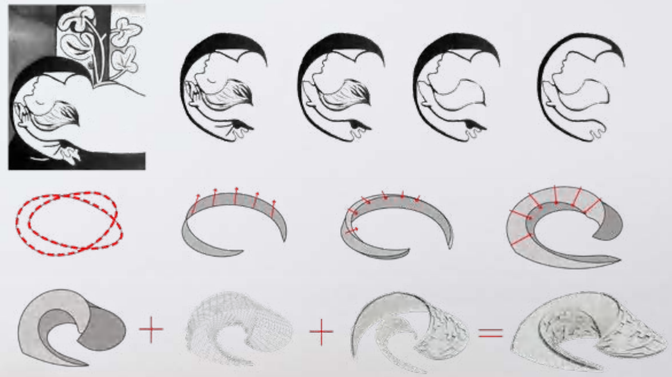
2 ART MUSEUM

Self Work / 2016.11

The Art Museum is a conceptual design based on deconstruction.

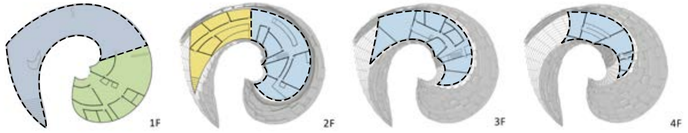
Inspiration from Pablo Picasso’s “Nude in a Black Armchair”, as one of the representative works of deconstruction. The whole picture is filled with Round, Square and Angle stability and instability. Cubist paintings of crushing, parsing, restructuring performance characteristics of deconstruction architecture.

Using two dynamic instability lines to superposite, intersect, repetite, expand and distort to get the prototype of the building.



FUNCTION ANALYSIS

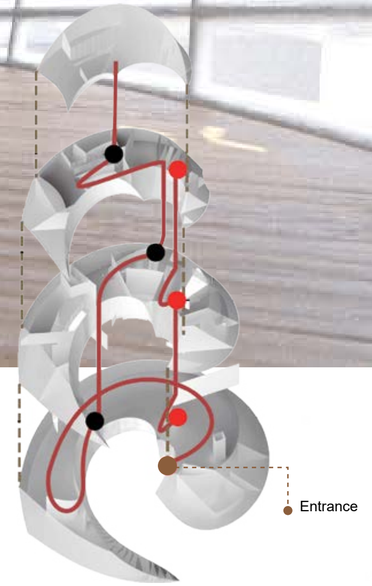
The interior space use the Building Deconstruction technique, through the connection and staggered floors between the squares, each functional space has its own atmosphere.



- Exhibition
- Reception
- Working
- Teaching and Recreation

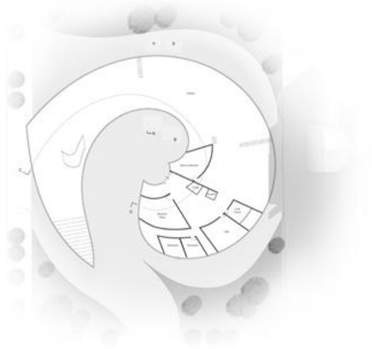
ROUTE ANALYSIS

Trying to start from the irregular plane, breaking the traditional approach, in order to use the stairs and fire channel to connect each function, making the space and dimension decomposed.

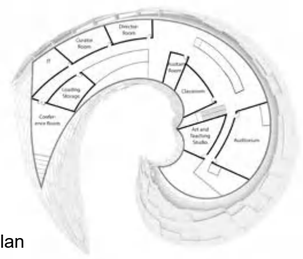


- Ramp
- Stair
- Entrance
- Circulation

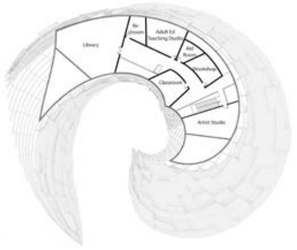
PLAN



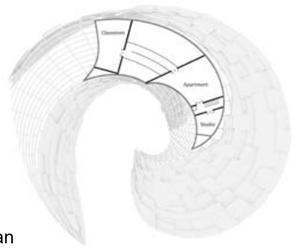
First Floor Plan



Second Floor Plan



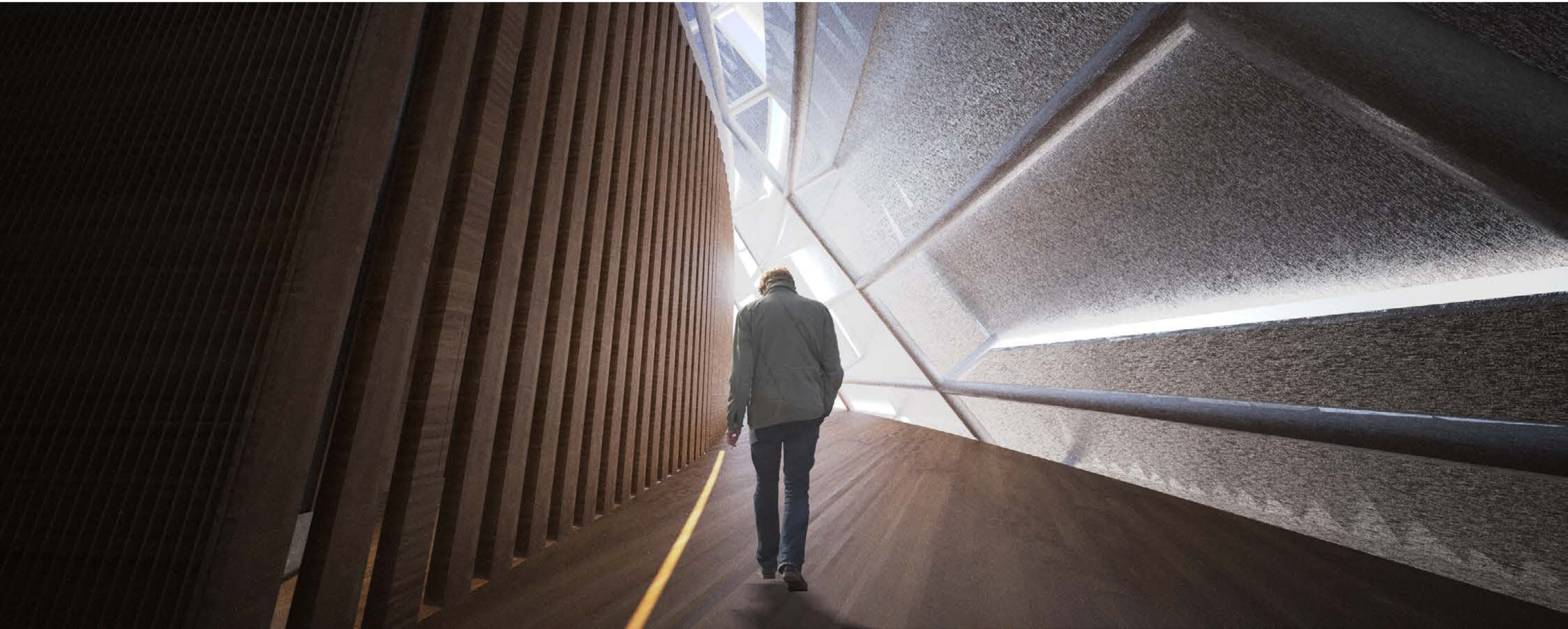
Third Floor Plan



Fourth Floor Plan

- Gallary
- Curator Room
- Teaching Studio
- Aid Room
- Director Room
- Workshop
- Corridor
- Artist Studio
- Saloon
- Apartment
- IT

SECTION PLAN



The solar heat absorbing plate can turn the heat energy into electrical energy.

Building skin material

It is the truss structure to support the cambered surface structure of the building. A truss frame is formed by adjusting the joint angles between the components.

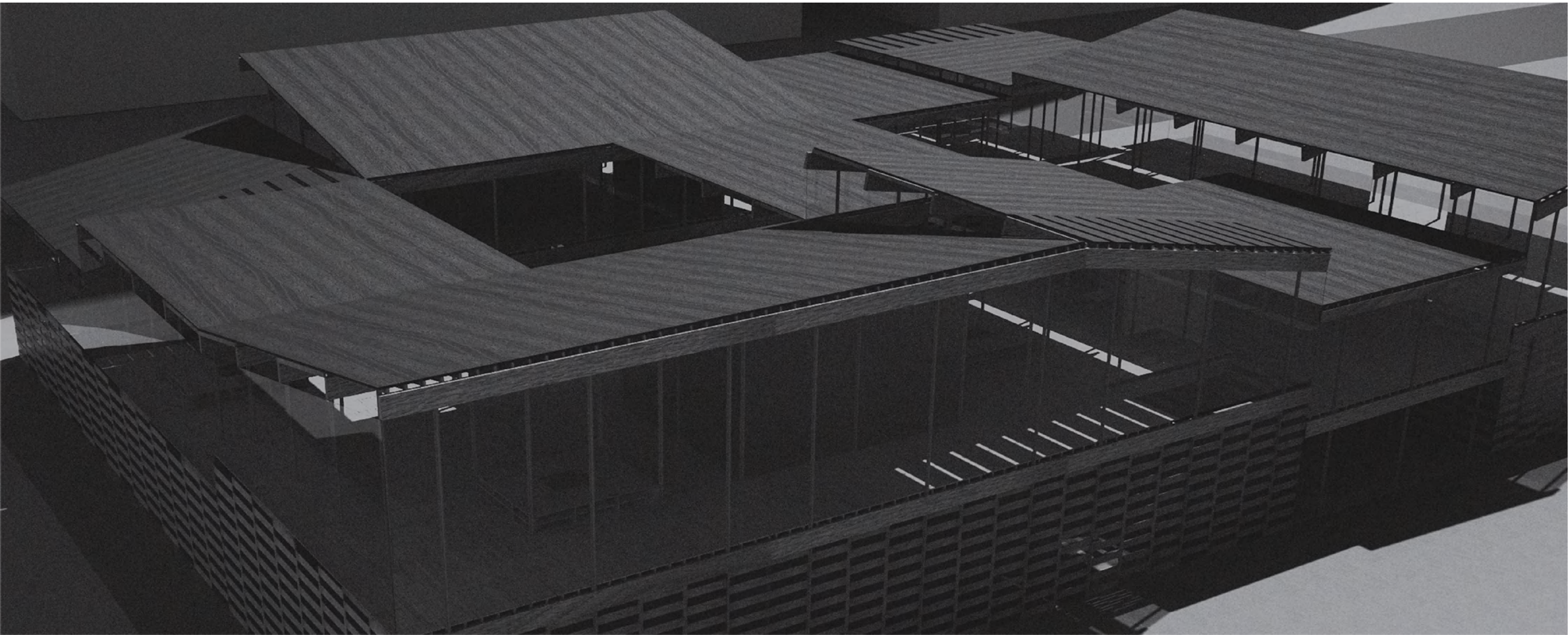
Building structure

The top surface of the arc-shaped structure form a nature rainwater collection system, making the water from the height directly into the lower.

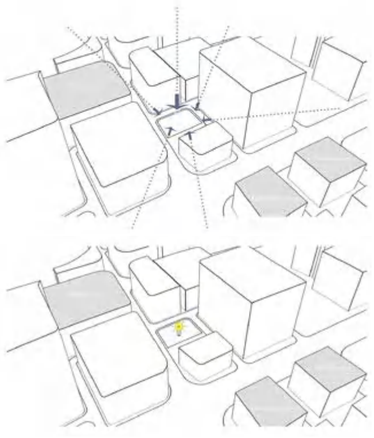
Rainwater collection system

3 LIBRARY DESIGN

Self Work / 2015.03



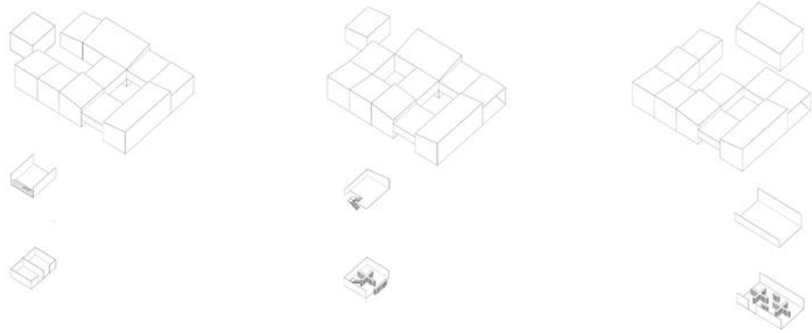
SITE

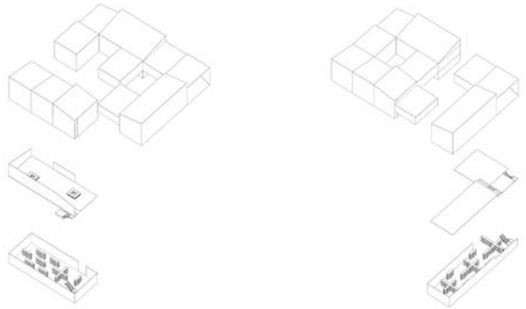


Do not wish to long kept in natural and artificial, but keep a harmonious relationship with nature. This idea also affect the layout and the image characteristics of the building.

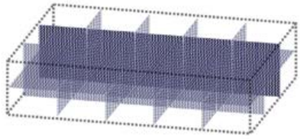
Building winning by groups, pay attention to mix, and concave curve of the attachment within the earth, and the characteristics of the lateral spread image adapted to express and nature, in harmony of artistic conception. It is embodied in the design of the building the same thoughts with nature.

GENERATE

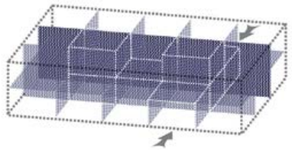




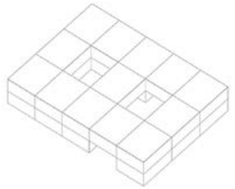
RESHAPE



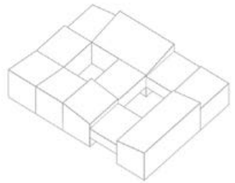
1. The same box, cloth 15 the same squares, stacked double.



2. Extracting channel line, before and after opening. Pedestrians can move back and forth among them.

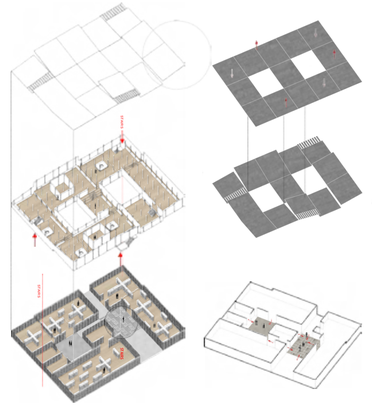


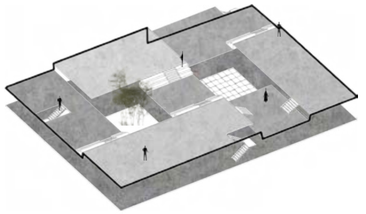
3. Draw surround close space, interior space to surround close, and the external space development and become a contradiction, fuzzy space.



4. According to surround close need, into the atrium, four class backwater, forming within the inclined or external oblique roof.

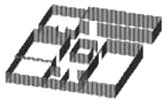
ASSEMBLE



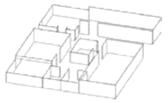


STRUCTURE

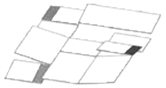
Column



Connect

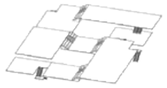


Wall



Fold

Connect



Stairs

Roof

MATERIAL

Wooden Structure

The reuse of wooden structure and modern steel column, the insertion of transition space, longitudinal and transverse space, as well as the intersection and expand space gives the view that it is not a closed block.

Wooden Floor

As the most important element, wood extends from the outdoor space to the interior space. Besides, woodiness floor Belong to the wood, and the overall architectural style

Frosted Glass

Frosted glass seems not important and also few configuration. But the truth is that, it is the third space over the actual space.

White Steel

White steel column In order to use thin steel column open space. At the same time with the wooden grille, bookcase, desk divided different average space, be included in the unity of order.

Wooden Grid

Wooden grid staggered up and down, repeat combination. Become a single simple parallel universe. Semi-closed nakedness became the first space with the changes in the shadow.

Structure
Cross steel column longitudinal extension isometric clearance arrangement, tensile longitudinal space. Clearance order is the same.
The first layer of exterior walls, wooden grille, semi-closed. Daylighting, introducing medium at the same time. Change ratio of transverse space
The first layer of inner wall, wooden grille, semi-closed. Daylighting, introducing medium at the same time. Change ratio of transverse space
Double beam, the most simple structures, staggered, with wooden grid order. Extend, affects the transverse space, proportion
Floor, the floor, frame and double wooden beam, flat, entity. The transition form
Double beam, the most simple structures, staggered, with wooden grid order. Extend, affects the transverse space, proportion
Roof, wood quality.
The whole material wood, wood dry time attribute cold. Easy to transmission medium. The nature and the nature, belong to honesty

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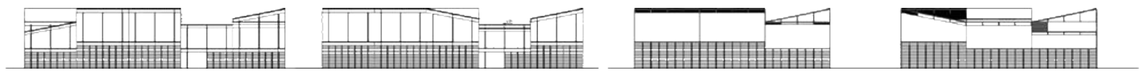
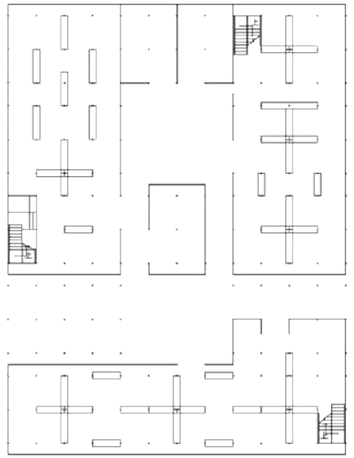
First for real, grid and sunshine, under the shadow into a solid surface, intersect in the service space, on the second floor for the incorporeal, entity, incorporeal too much space to use ground glass, three space state. When the thermal properties of sunlight filtered dry property grid, mapping properties of glass in the cold, and wet properties on the ground. Various elements of the secondary property will change and transformation. See is a simple process, the viewer in the three space also happening subtle change. Thus standoff, external elements more space. Let viewers back to the nature of emotion, that is thinking.

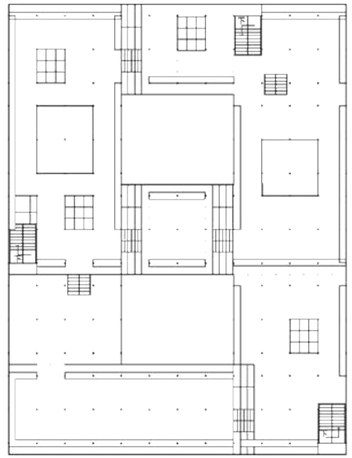
ELEVATION



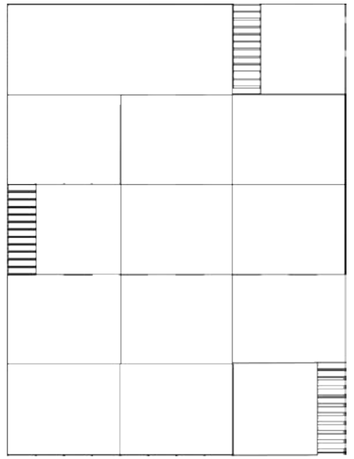
PLAN



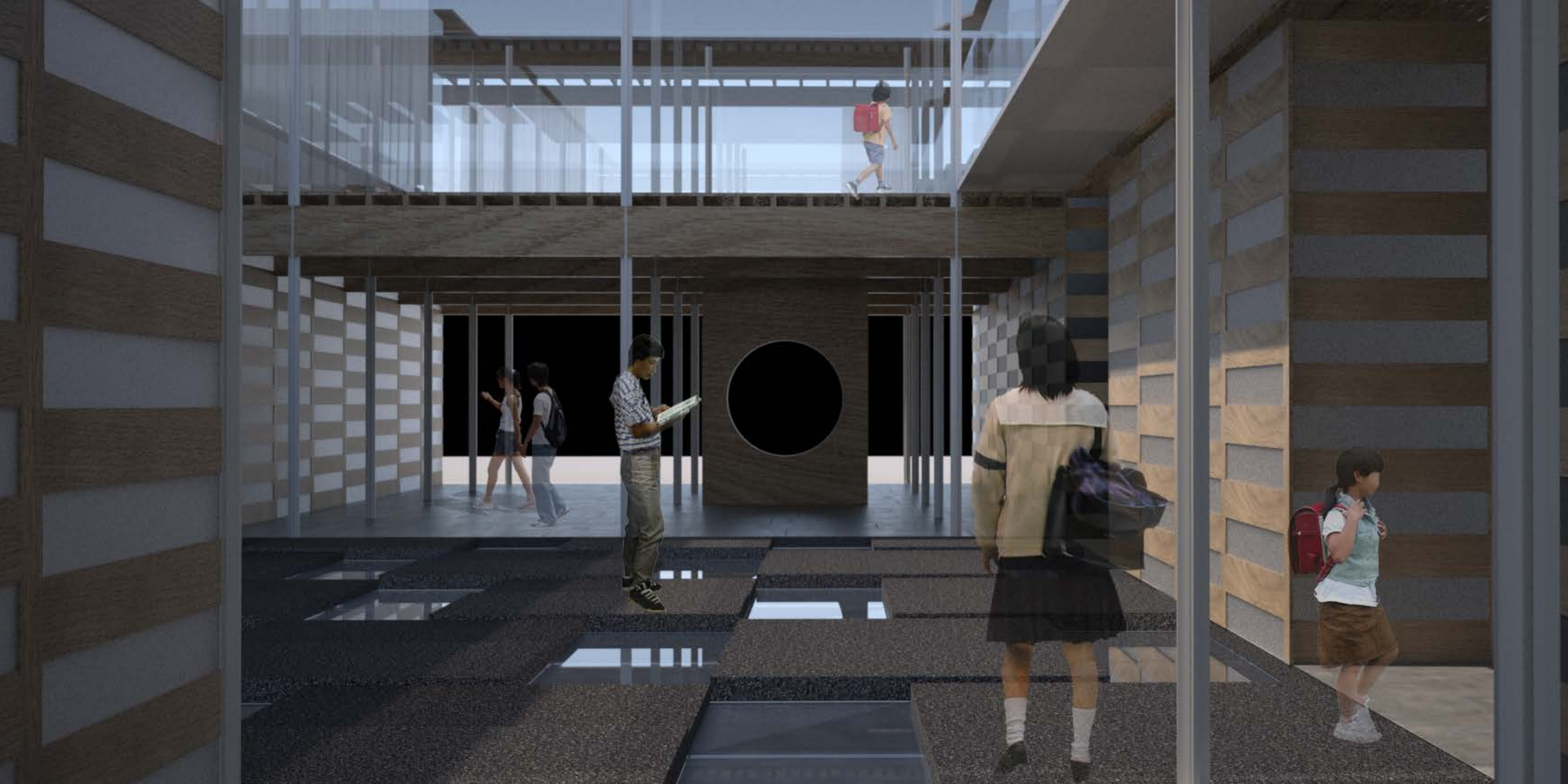
First Floor Plan



Second Floor Plan

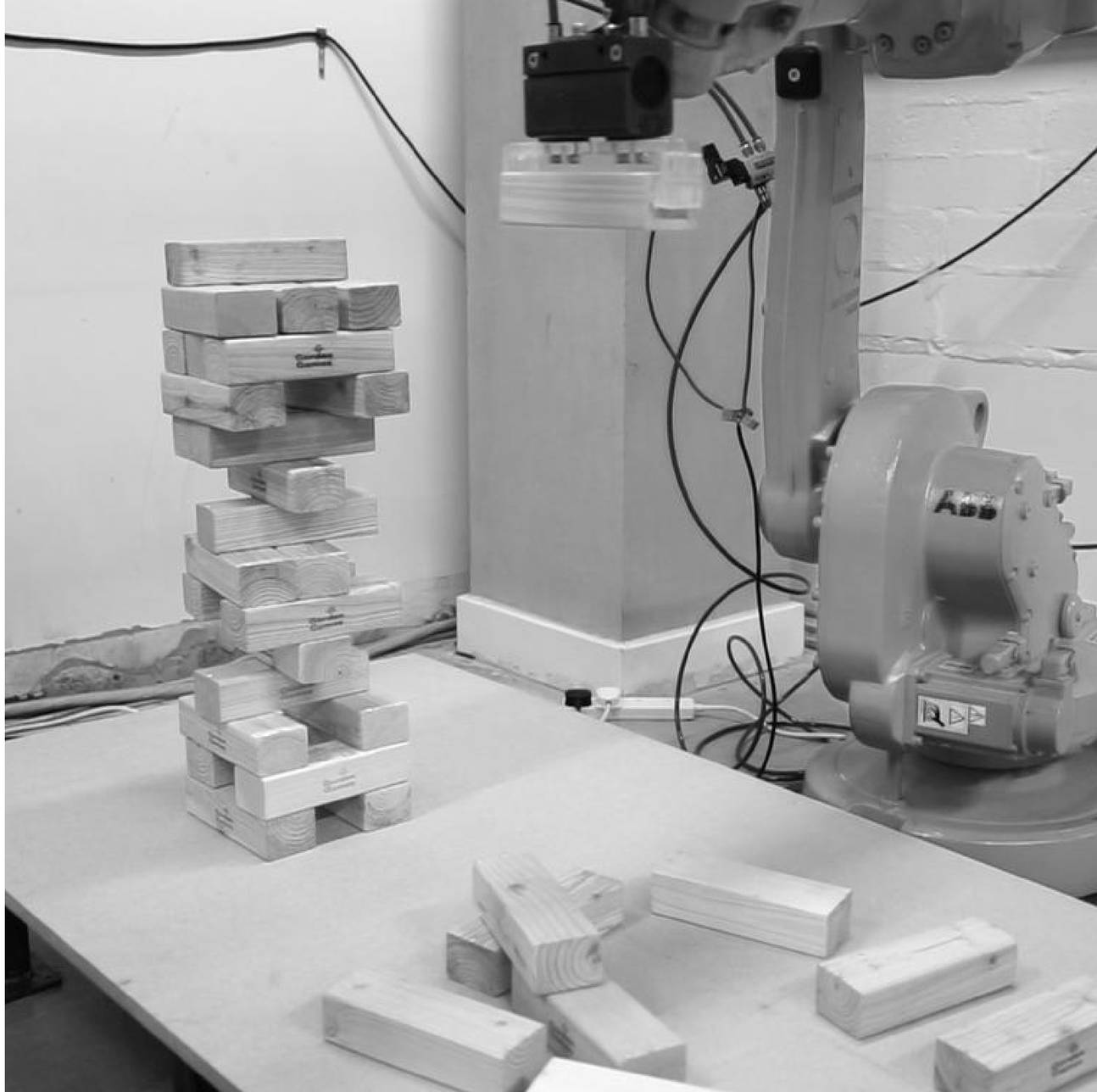


Third Floor Plan



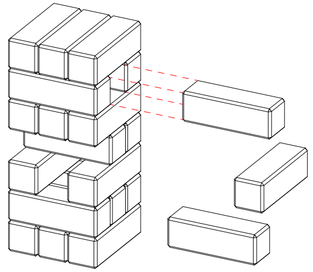
4 WORKSHOPS

Group Work / 2017.08 - 2018.09

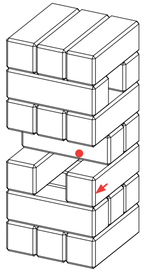


[ROBOTIC CONSTRUCTION]

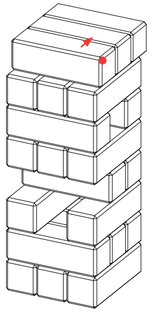
Basic Logic



1. We took 3 tiles away manually each time.

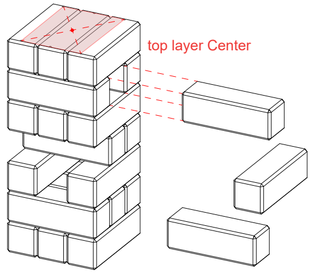


2. Then the gravity of the tower changed.

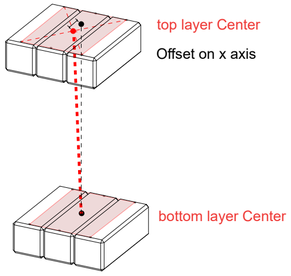


3. The tile removed will be put onto the top by robot to keep the tower balanced.

How To Find Gravity Change



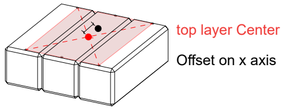
4. The top layer of tower will be scanned by camera and the center could be found.



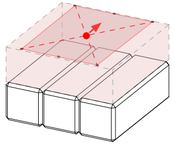
5. Then the offset of top layer center from bottom layer center can be worked out.

The center (x, z axis value)of top layer will be compared with that of bottom to find which direction is the tower tilting to. Offset on each axis will be worked out, which will affect the position of the tiles to put onto the top.

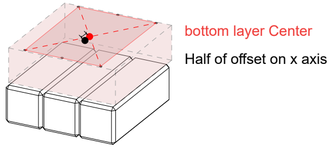
How To Find Place to Put Tile



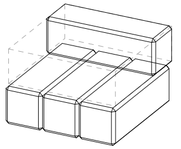
1. We set a rule that the layer of three tiles put onto the top would fix the offset by half of it.



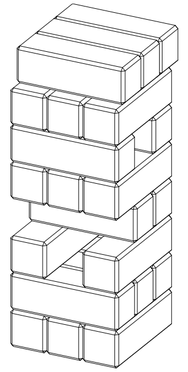
2. The tower was supposed to be created straight upward.



3. Now the put layer will move half of the existing offset on x axis to the opposite to modify the center of gravity of the tower.



4. After determining the center of the layer of tiles which is going to be put onto the top, the first one to put is the very opposite one to the tilt direction.

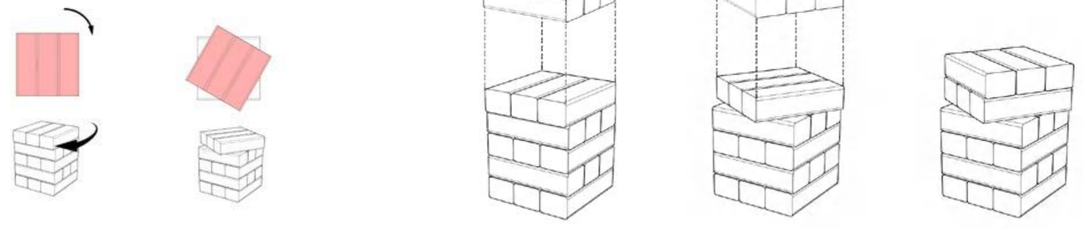


5. Then after the first tile done, the second and third tile will be taken by us and put by robot next to the previous one. Then the three tiles become a new top layer.

[ROBOTIC CONSTRUCTION]

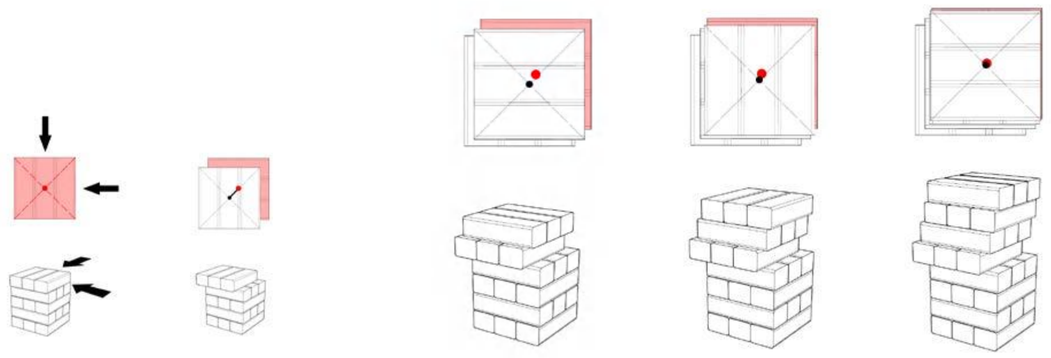
Basic Logic

Rotation Test

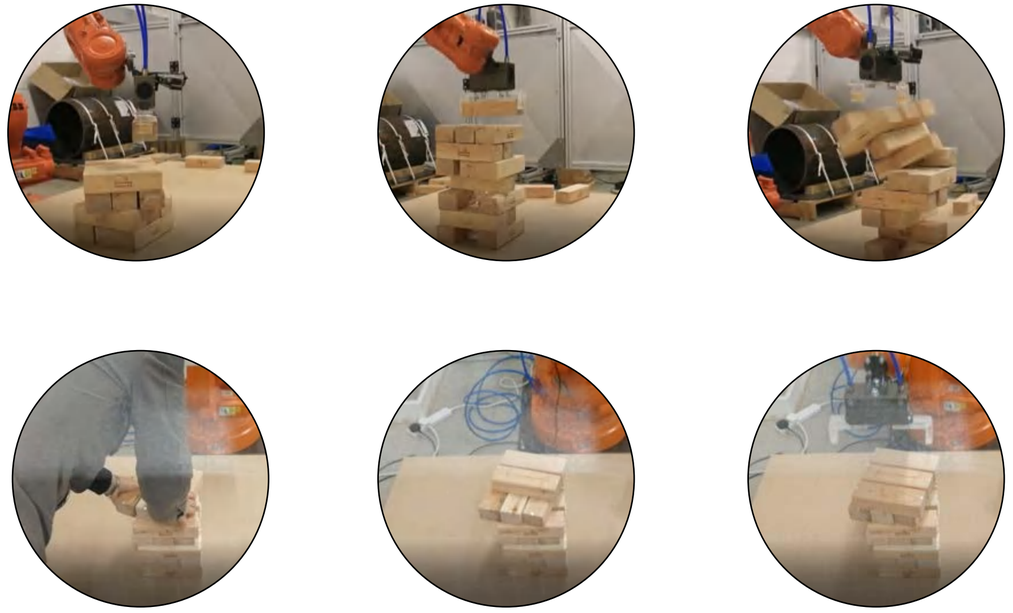


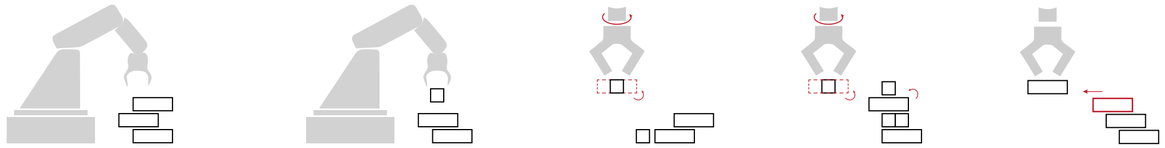
If the top layer rotate with an angle from the original layer, new layer should be placed following the new rotation in Jenga rules.

Offset Test



When the top layer offset a distance from the original center,new layer should be placed toward the original center to make the tower stable.





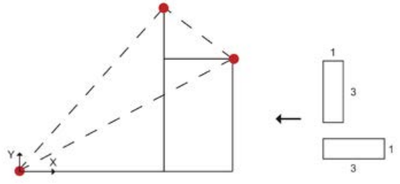
[PRINTING PATH]

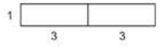
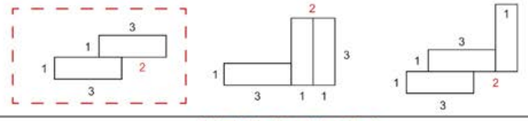
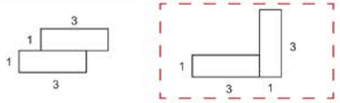
Travel Salesman Problem

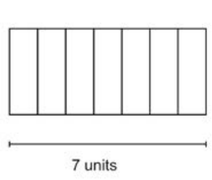
Build assembly using Jenga tiles to reveal the routine.

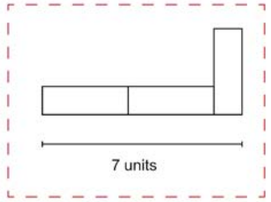
Tiles should be put in orthogonal direction, so that the assembly could be stable.

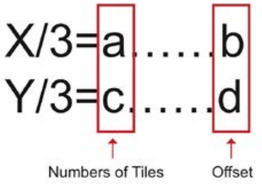
So we resolve the vector between 2 set points by x and y axis, along which the tiles should be assembled.

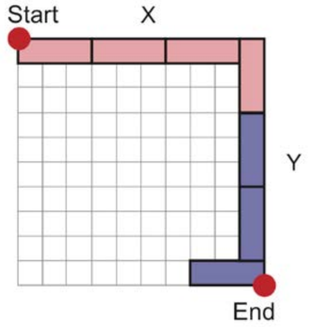


X/3=2……0	
X/3=1……2	
X/3=1……1	
X/3=1……0	
X/3=0……2	
X/3=0……1	





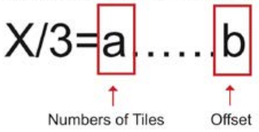




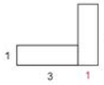
Goal

To minimize the number of tiles, according to Manhattan Distance Algorithm, we have to ensure that we use as many as 3-unit-length edges to fulfil the distance on both axis.

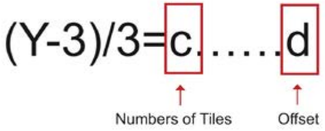
1. Choose one axis to put tiles along



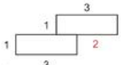
When b=1,

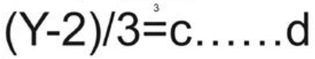


The verticle tile give 1 unit on x axis and 3 units on y axis

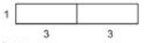


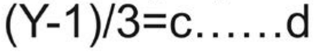
When b=2,





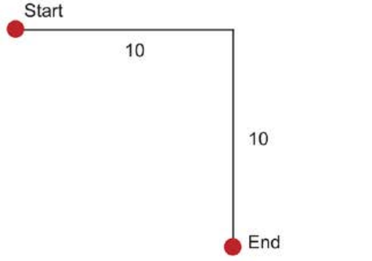
When b=0,



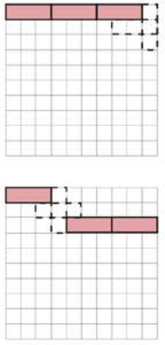


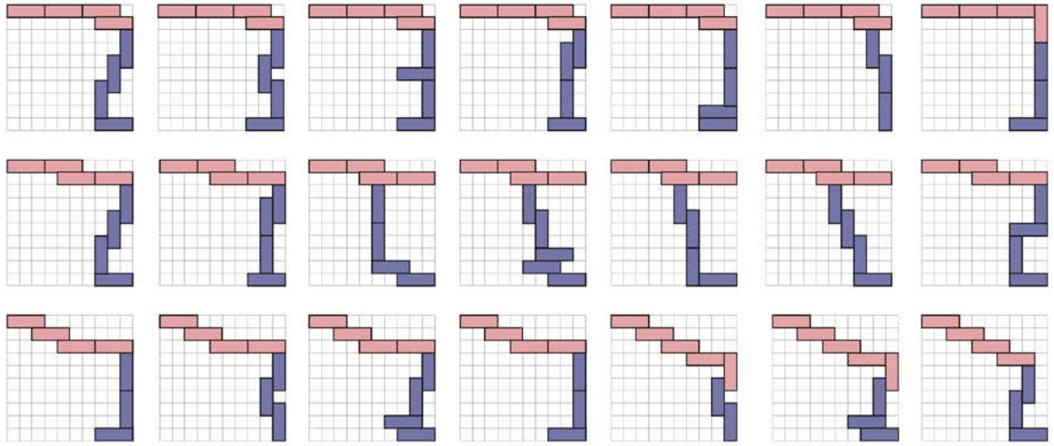
[PRINTING PATH]

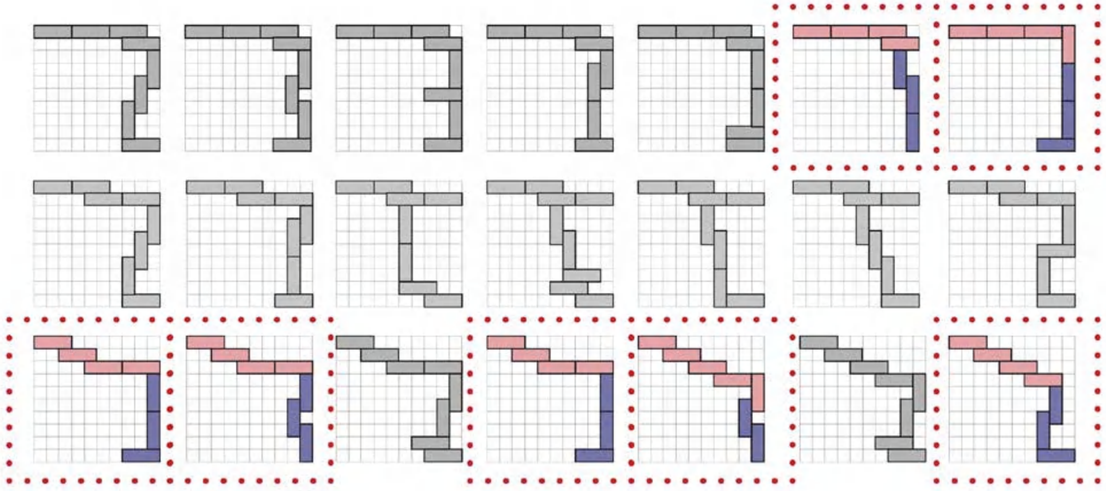
Travel Salesman Problem



X axis
10/3=3.....1
3 tiles with 1 unit offset







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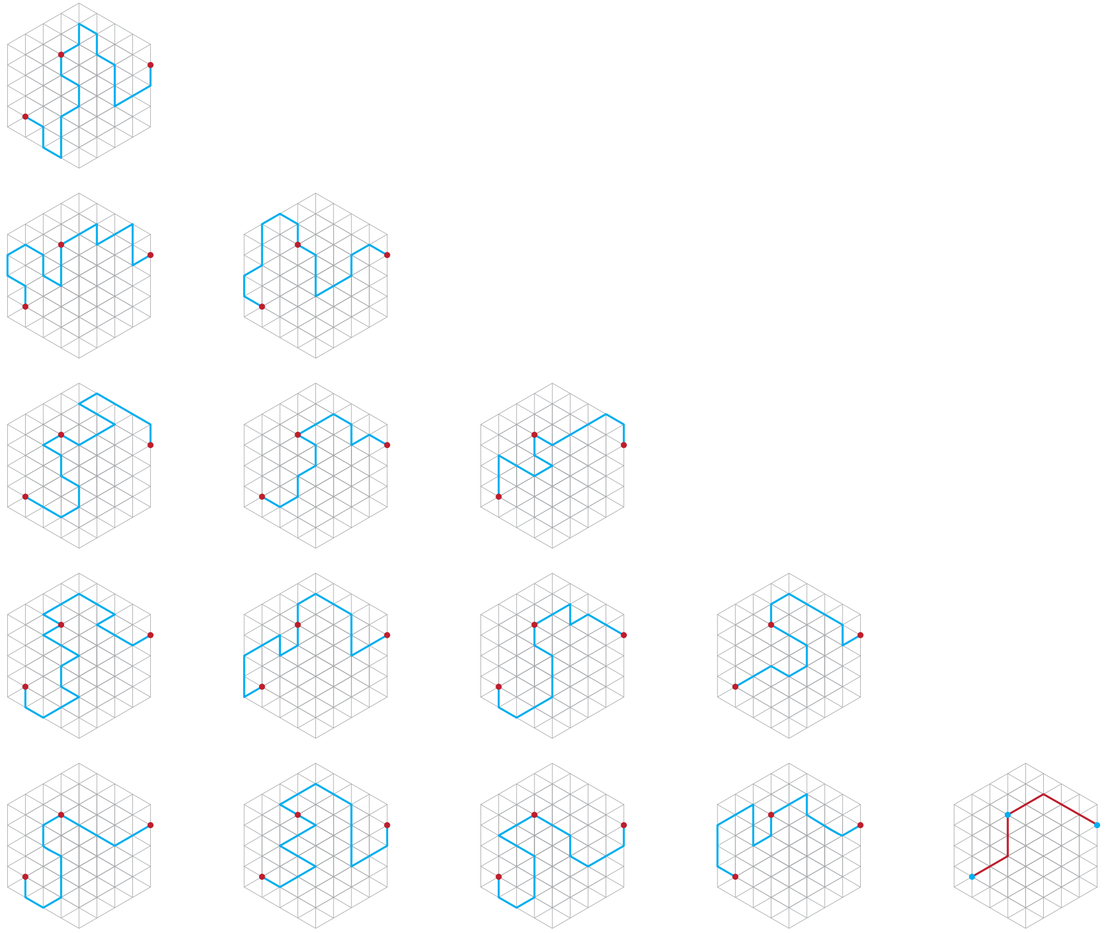
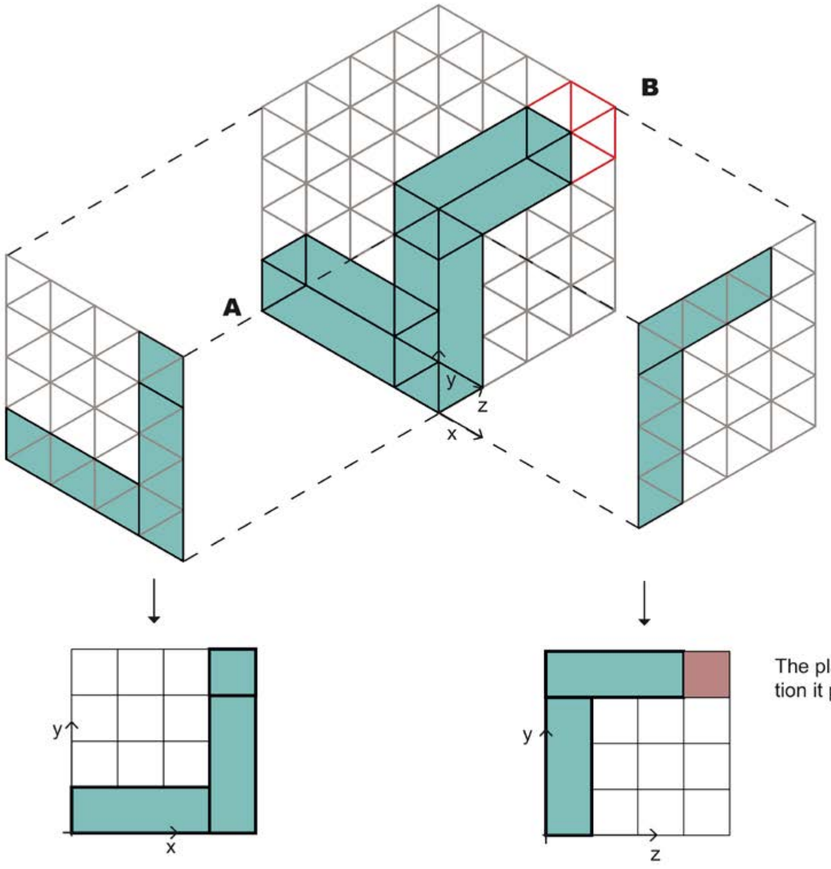
Travel Salesman Problem





The place of last tile depends on the direction it points to next point in space.

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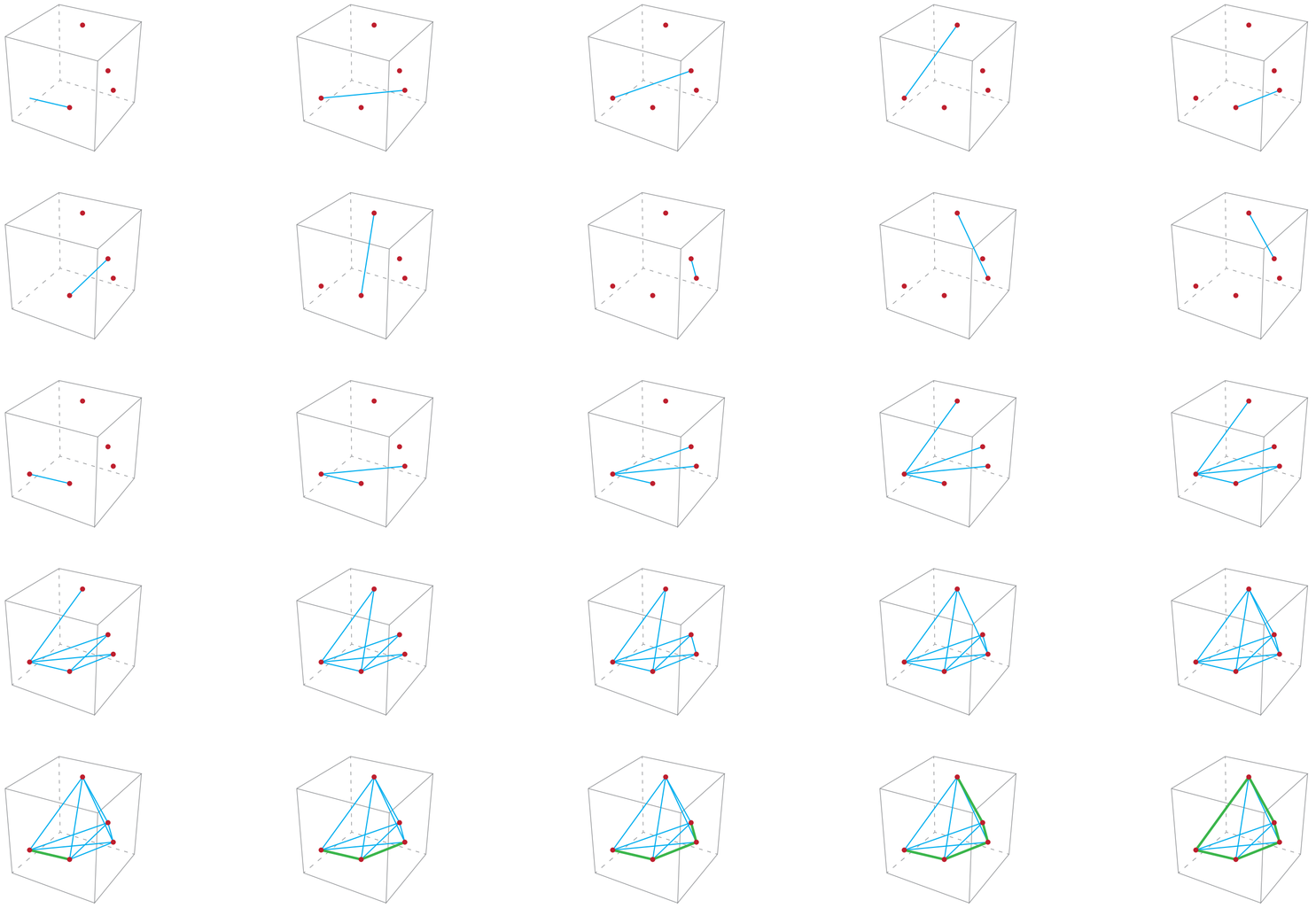
Travel Salesman Problem

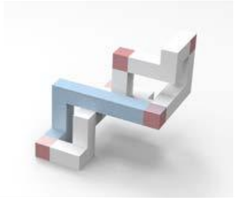
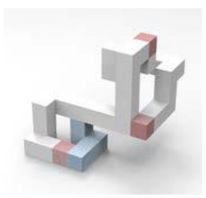
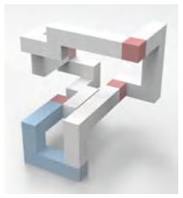
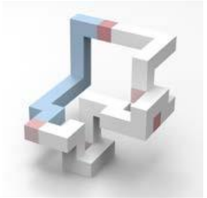


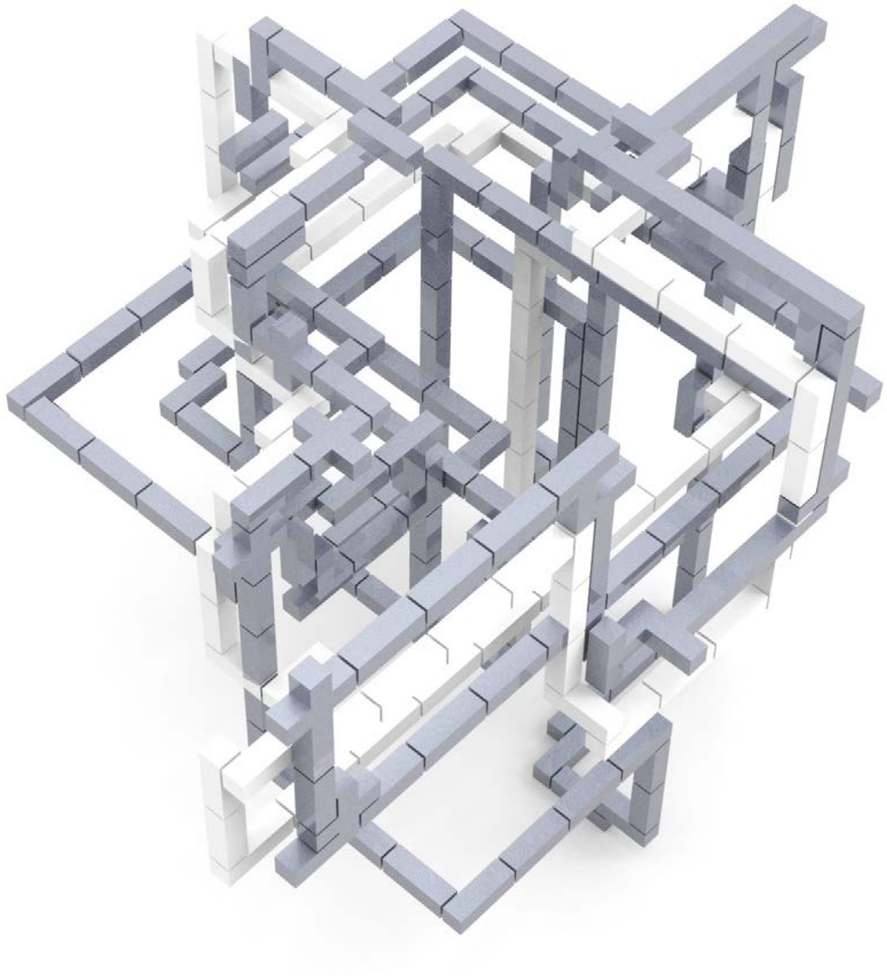
Given a list of cities and the distances between each pair of cities, what is the shortest possible route that visits each city exactly once and returns to the origin city?

To find the shortest path to go through all the set points, and back to the start.

[PRINTING PATH]

3D Simulation

3 Points				
4 Points				
5 Points				



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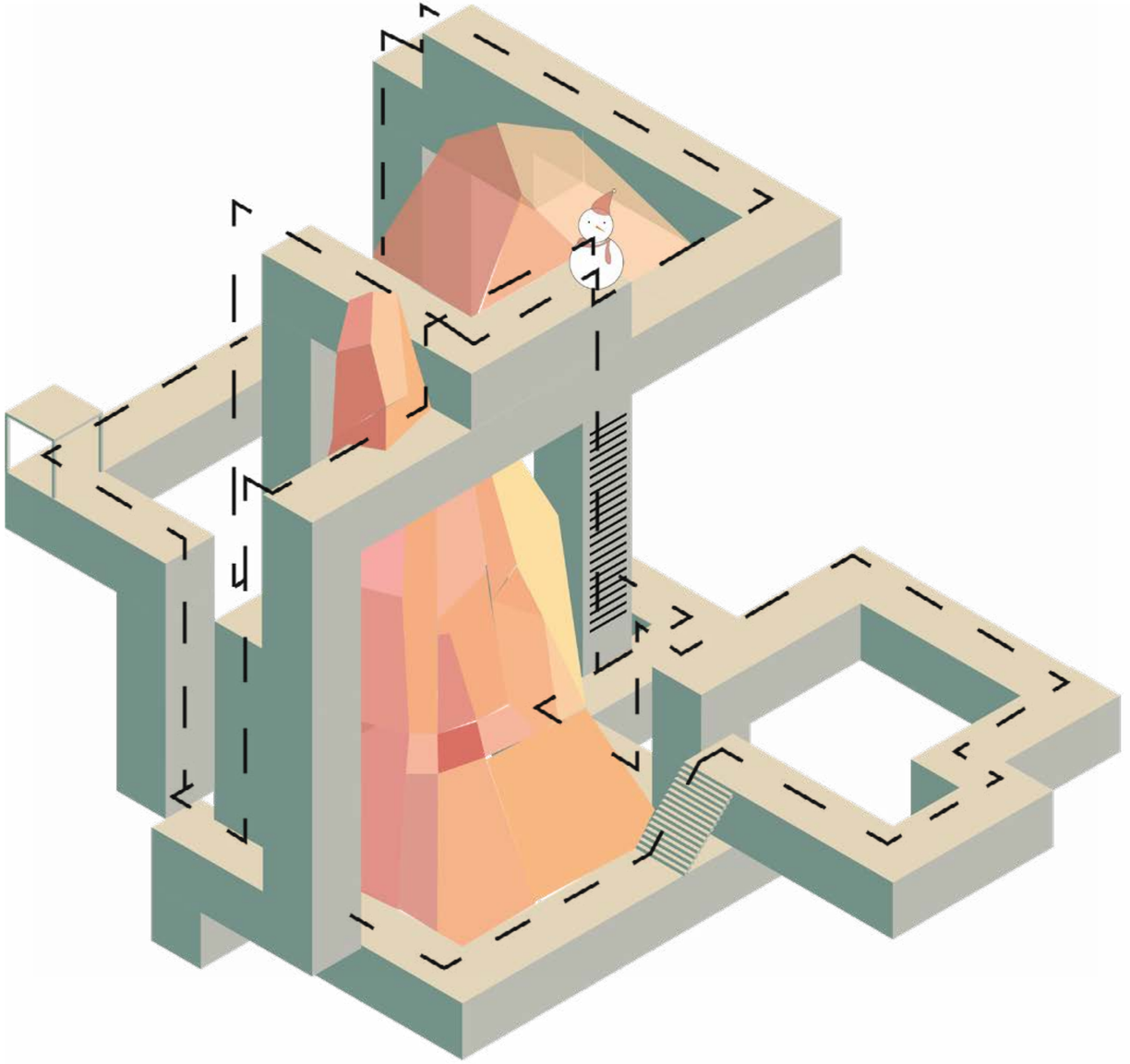
Future Design Thought



5 APPENDIX

Photography





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