

# The Shanghai Museum of Glass

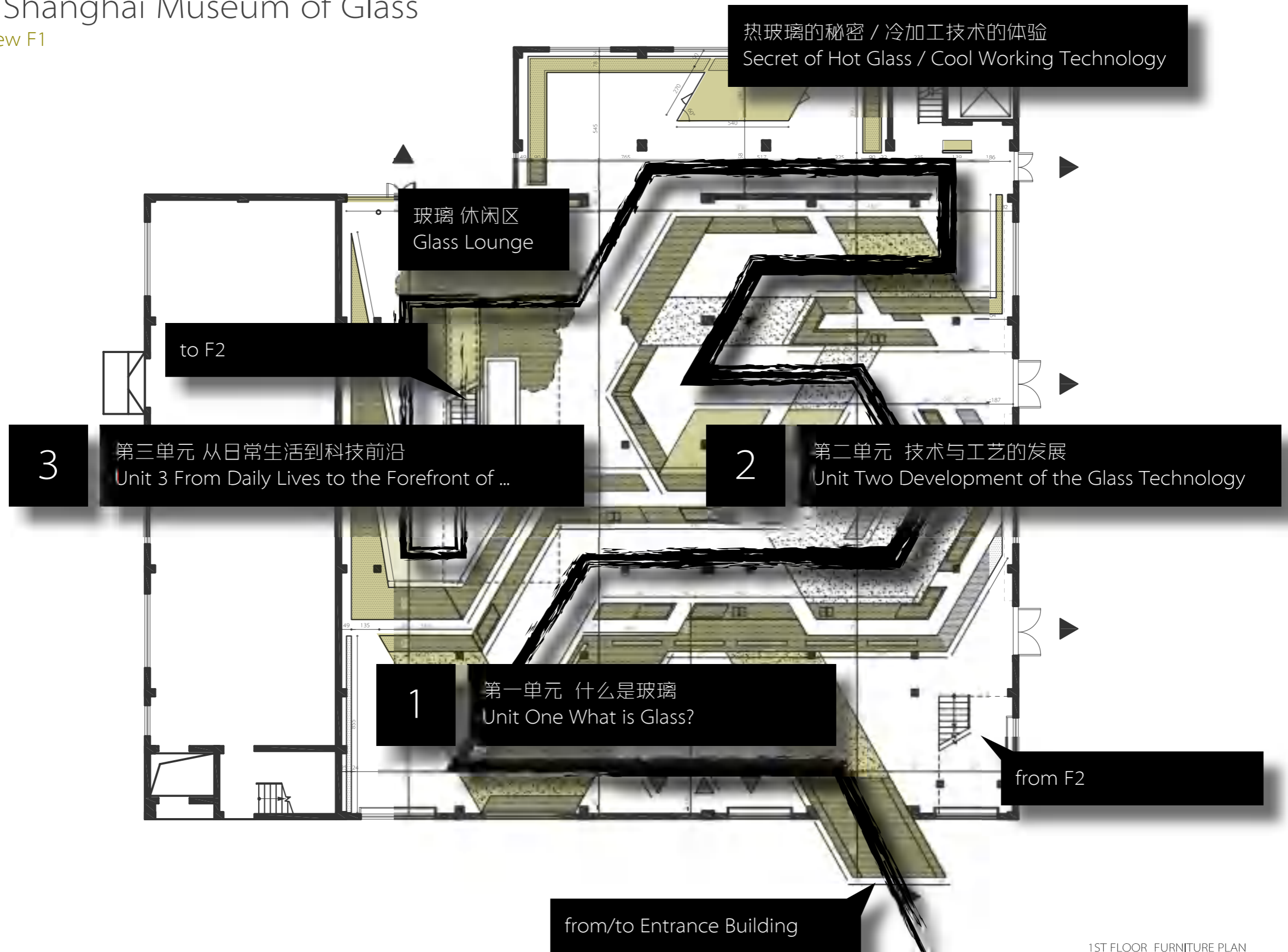
## 上海玻璃博物馆

# 展览设计 及 内容分布

Exhibition Design and Content Allocation  
Presentation 10th February 2009

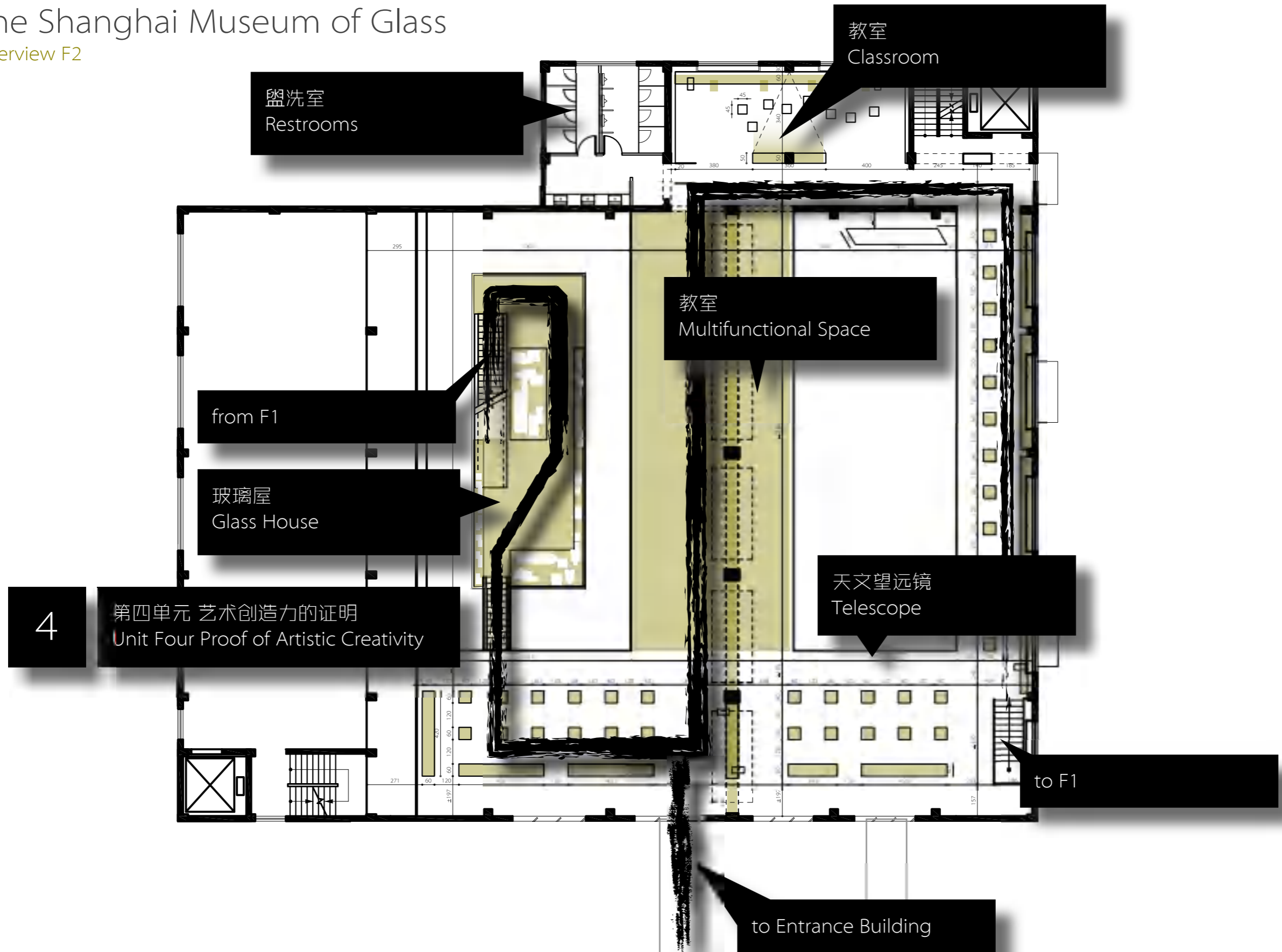
上海玻璃博物馆 平面图  
The Shanghai Museum of Glass Floorplans

上海玻璃博物馆  
The Shanghai Museum of Glass  
Overview F1



1ST FLOOR FURNITURE PLAN  
SCALE 1:200

上海玻璃博物馆  
The Shanghai Museum of Glass  
Overview F2



上海玻璃博物馆 首次参观  
The Shanghai Museum of Glass The first visit

第一单元 什么是玻璃  
Unit One What is Glass?



入口  
Entrance  
Concept



万花筒 Kaleidoscope

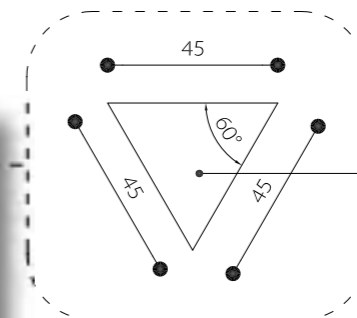


万花筒 Walk-in Kaleidoscope

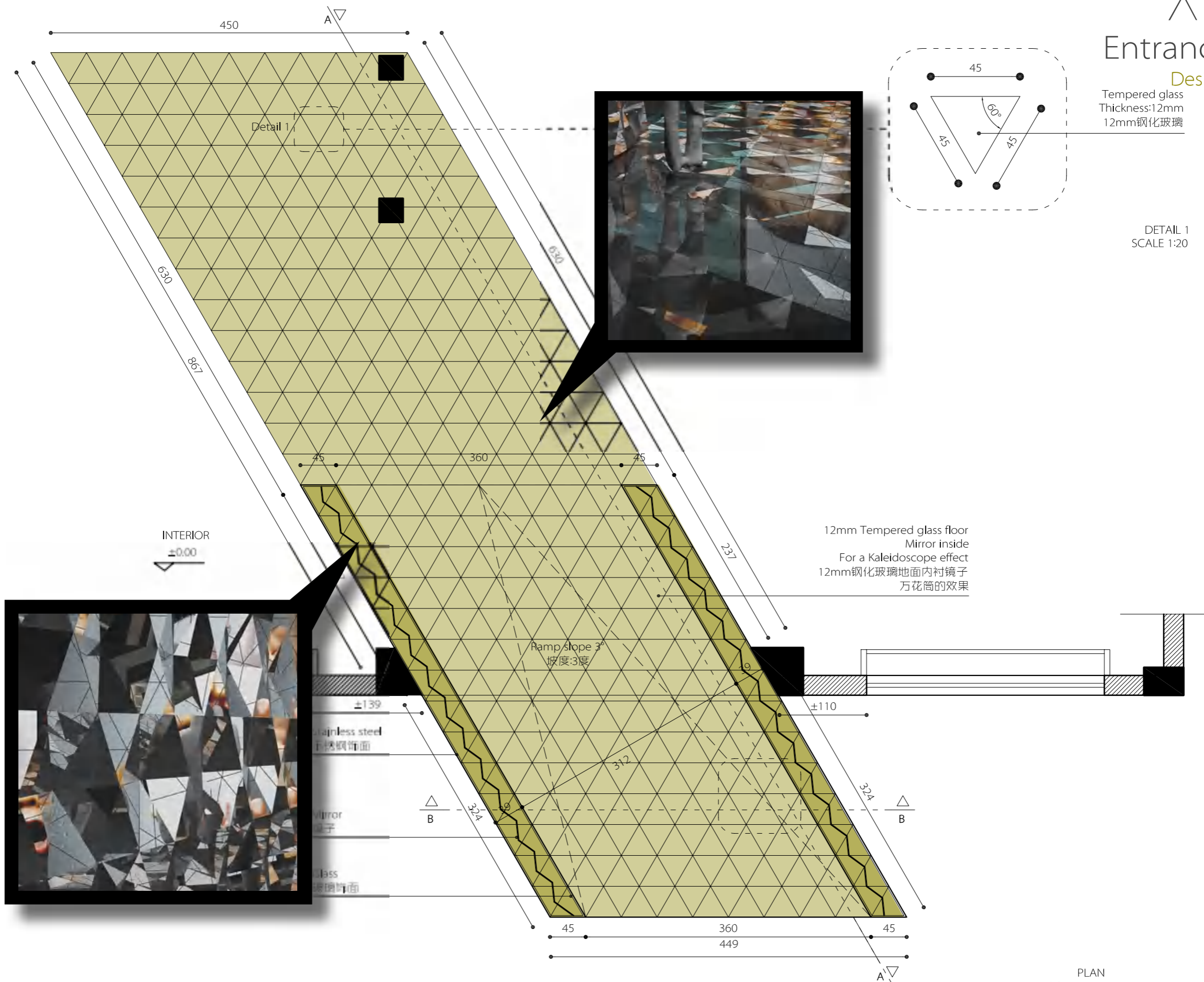


# Entrance Design

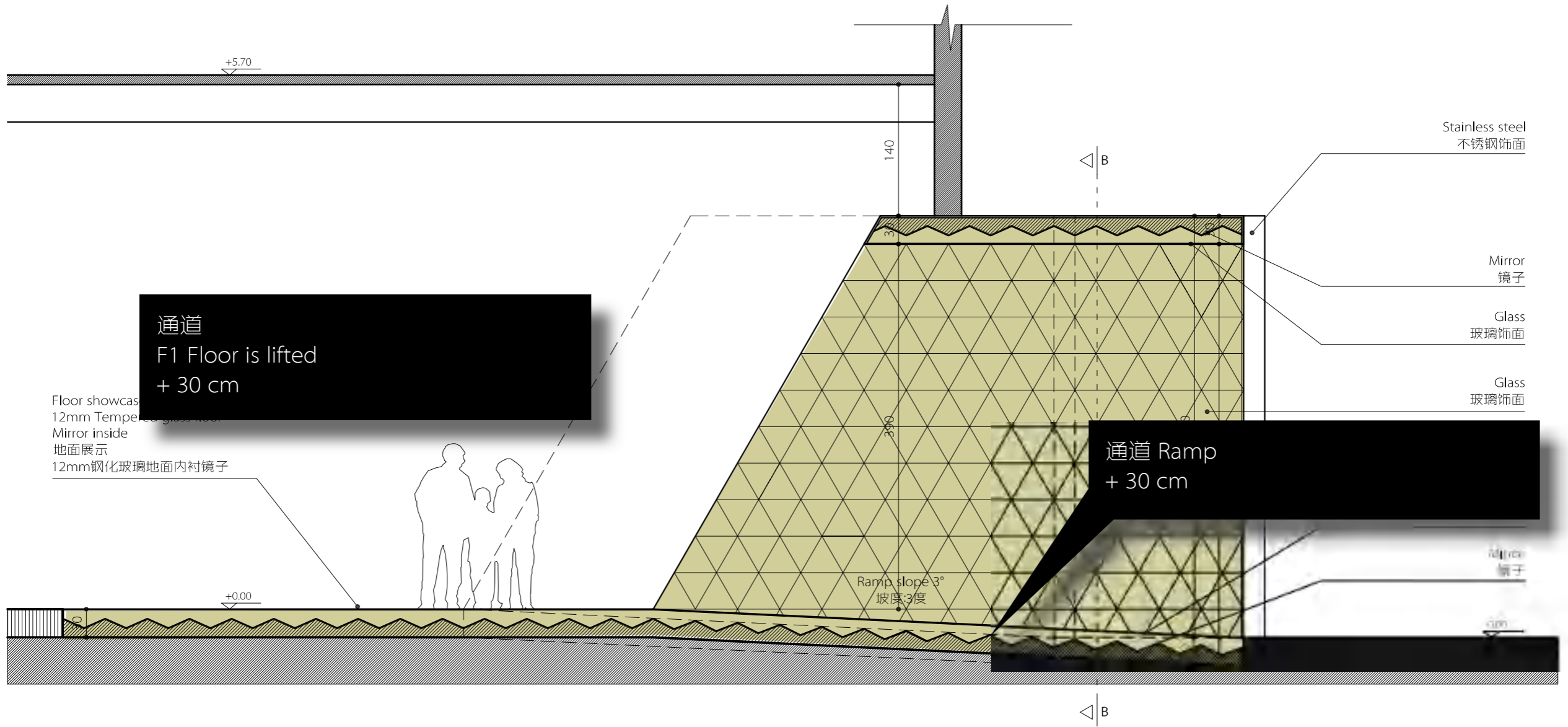
Tempered glass  
Thickness:12mm  
12mm钢化玻璃



DETAIL 1  
SCALE 1:20



入口  
Entrance  
Design



# 玻璃的定义

## Definition of Glass

Overview



1ST FLOOR FURNITURE PLAN  
SCALE 1:200

# 玻璃的定义

## Definition of Glass

Design



序 Preface

玻璃与人类生活 Glass and human life

视频 Movie

# 玻璃的定义

## Definition of Glass

Design



序 Preface

玻璃与人类生活 Glass and human life

视频 Movie

# 玻璃的定义

## Definition of Glass

Content

### 1-2. 玻璃的结构 Structure of Glass

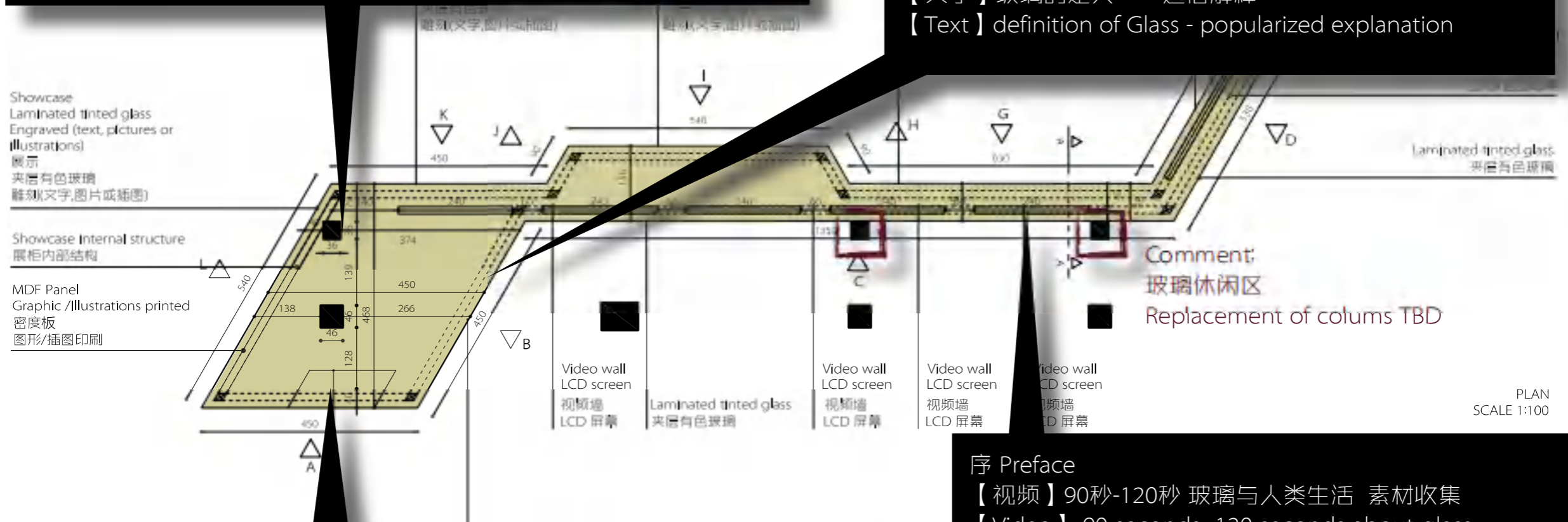
【模型】玻璃结构参照立体模型  
 【Model】 three-dimensional model of glass structure



Showcase  
 Laminated tinted glass  
 Engraved (text, pictures or illustrations)  
 展示  
 夹层有色玻璃  
 雕刻(文字,图片或插图)

### 1-1. 玻璃的定义 Definition of Glass

【文字】玻璃的定义——通俗解释  
 【Text】 definition of Glass - popularized explanation



【图片】兰德尔、查哈简介及照片  
 【Image】 Randall, Zachariasen profile and photographs



### 序 Preface

【视频】90秒-120秒 玻璃与人类生活 素材收集  
 【Video】 90 seconds -120 seconds about glass and human life (material collect)

# 玻璃的定义

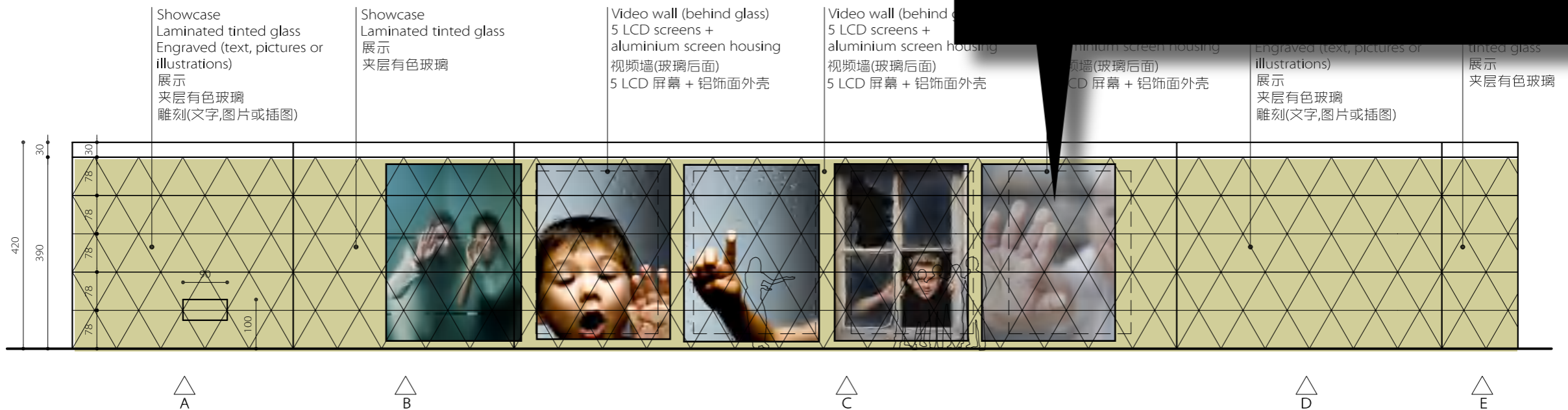
## Definition of Glass

### Content

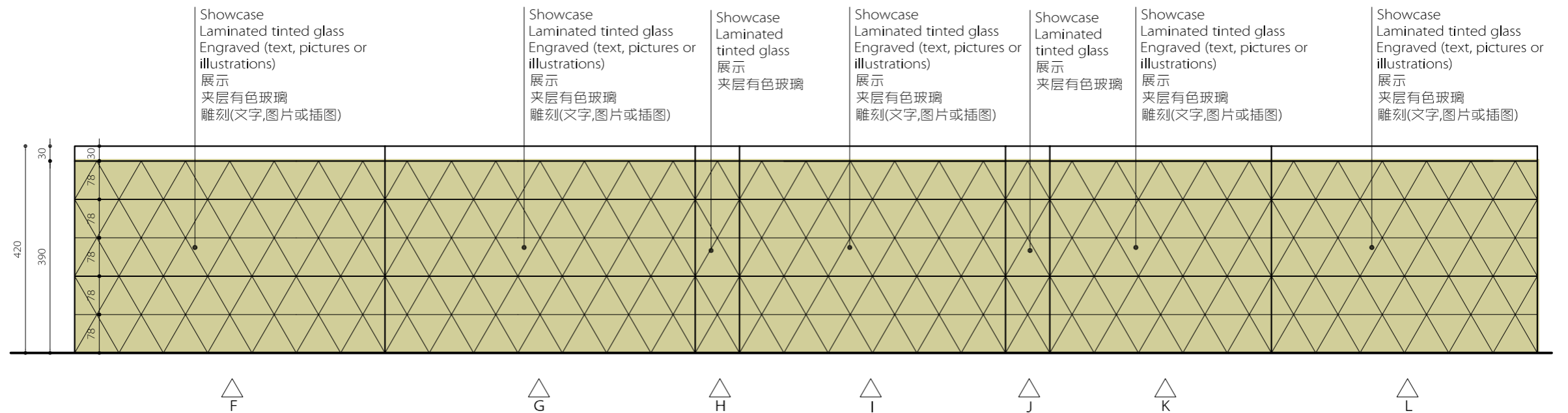
#### 序 Preface

【视频】90秒-120秒 玻璃与人类生活 素材收集

【Video】90 seconds -120 seconds about glass and human life (material collect)



ELEVATION SCALE 1:50



ELEVATIONS SCALE 1:100

# 玻璃的定义

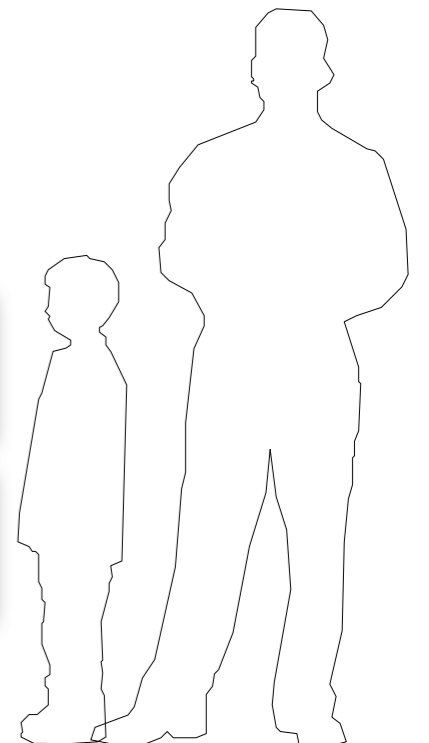
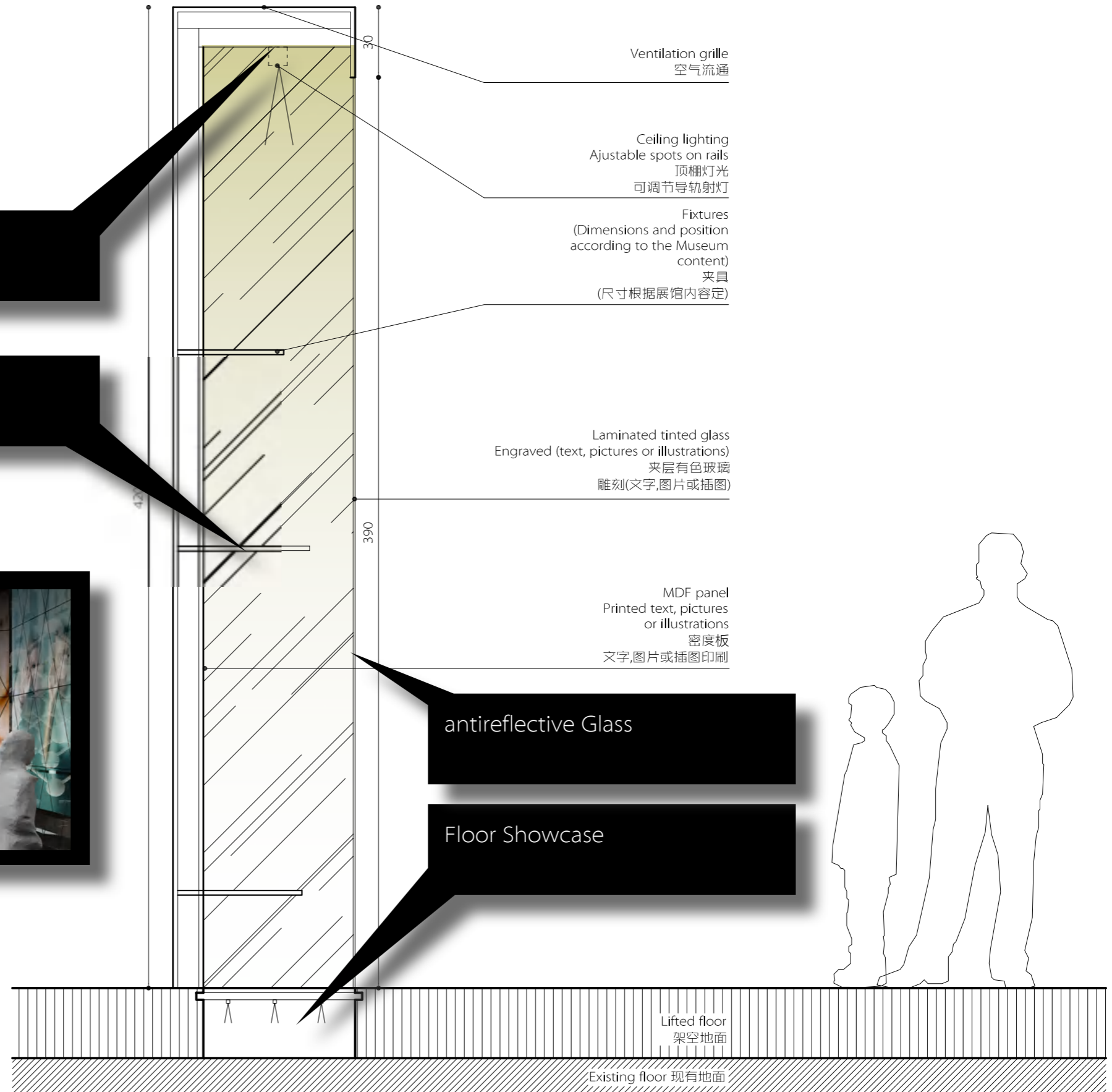
## Definition of Glass

Design

lighting fixtures  
ventilation

variable fixtures

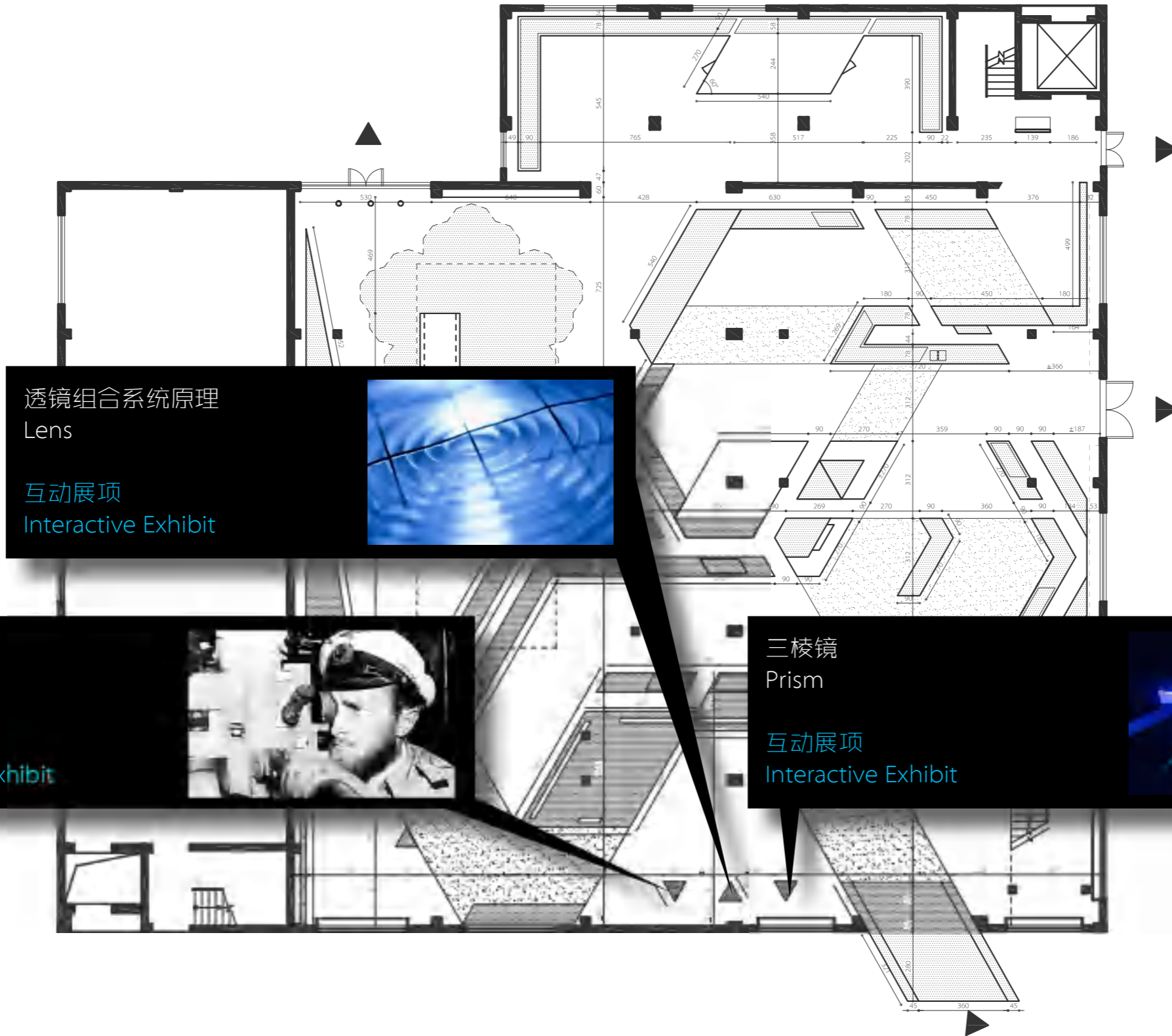
Standard Detail  
Showcase



# 玻璃的光学性质

## Optical Properties of Glass

Overview



潜望镜  
Periscope

互动展项  
Interactive Exhibit



三棱镜  
Prism

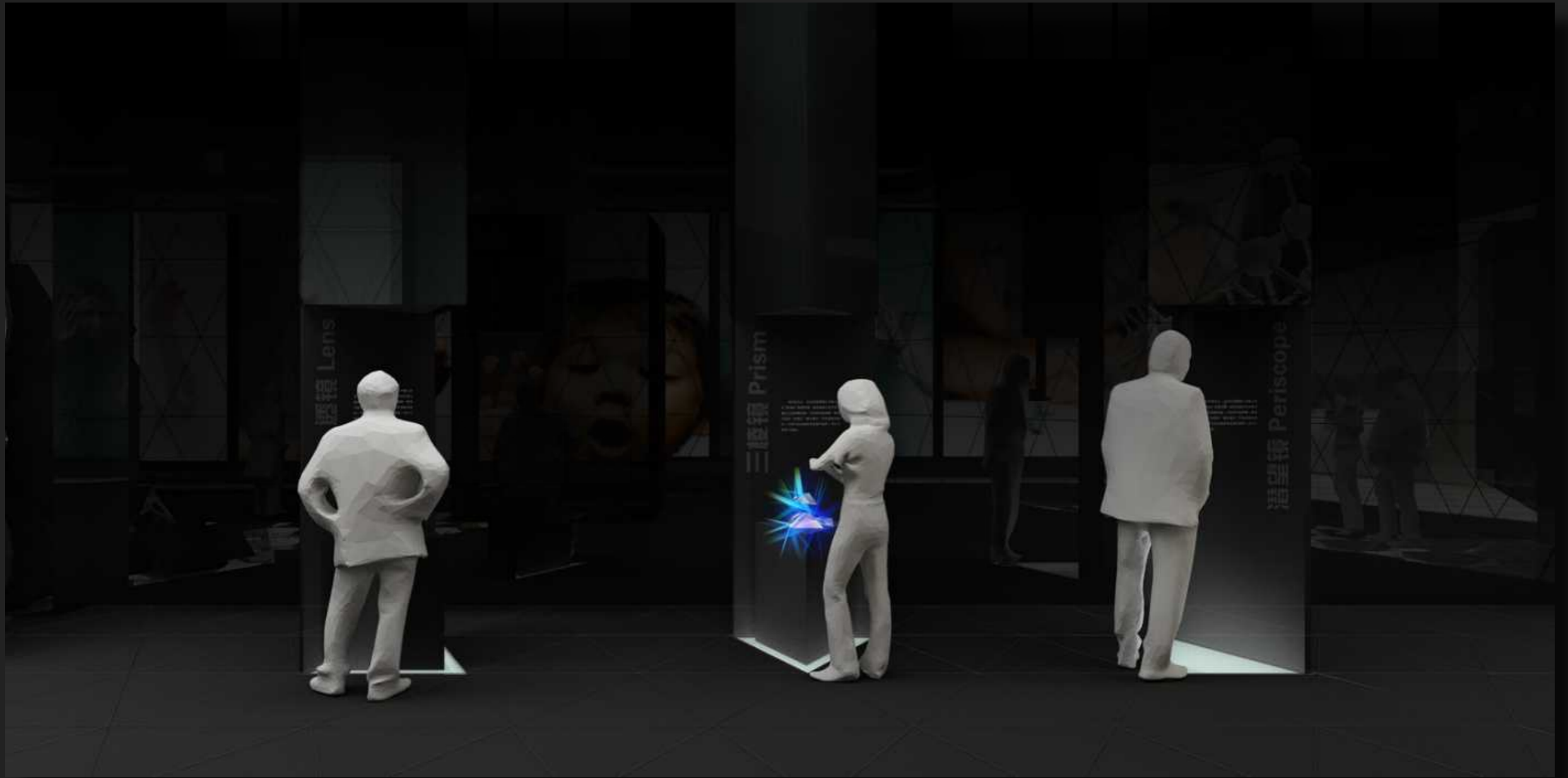
互动展项  
Interactive Exhibit



# 玻璃的光学性质

## Optical Properties of Glass

Design



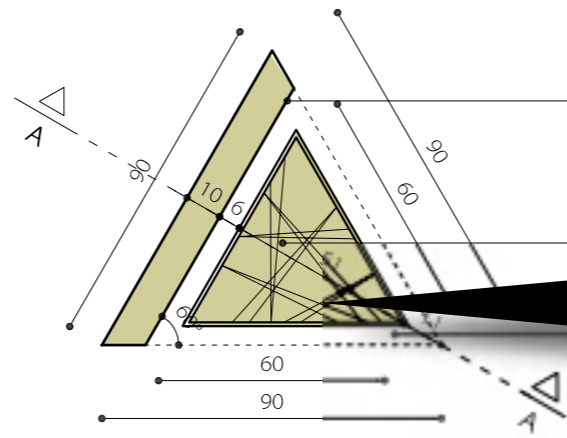
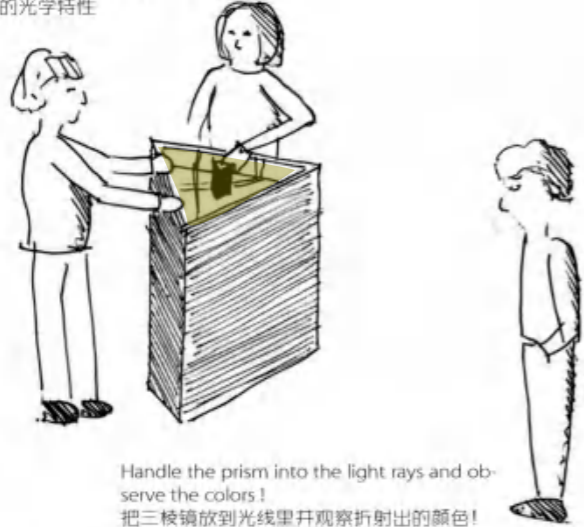
三棱镜 Prism / 透镜组合系统原理 Lens / 潜望镜 Periscope  
互动展项 Interactive Exhibits

# 三棱镜

## Prism

### Content & Design

Discover glass optical properties  
发现玻璃的光学特性



MDF panel  
Black mat painting  
Printed texts, pictures  
or illustrations  
密度板  
黑色哑光喷漆  
打印文字,图片或插图

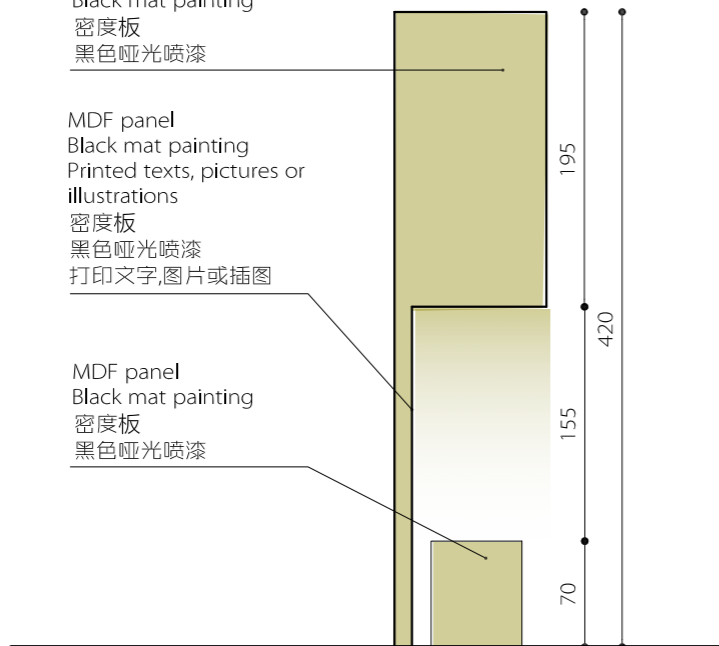
MDF table-top  
White mat painting  
密度板台面  
白色哑光喷漆

【装置】三棱镜  
【Device】Prism  
  
【图片】牛顿发现色散现象  
【Image】Newton found the phenomenon of dispersion

MDF panel  
Black mat painting  
密度板  
黑色哑光喷漆

MDF panel  
Black mat painting  
Printed texts, pictures or  
illustrations  
密度板  
黑色哑光喷漆  
打印文字,图片或插图

MDF panel  
Black mat painting  
密度板  
黑色哑光喷漆



ELEVATION  
SCALE 1:50

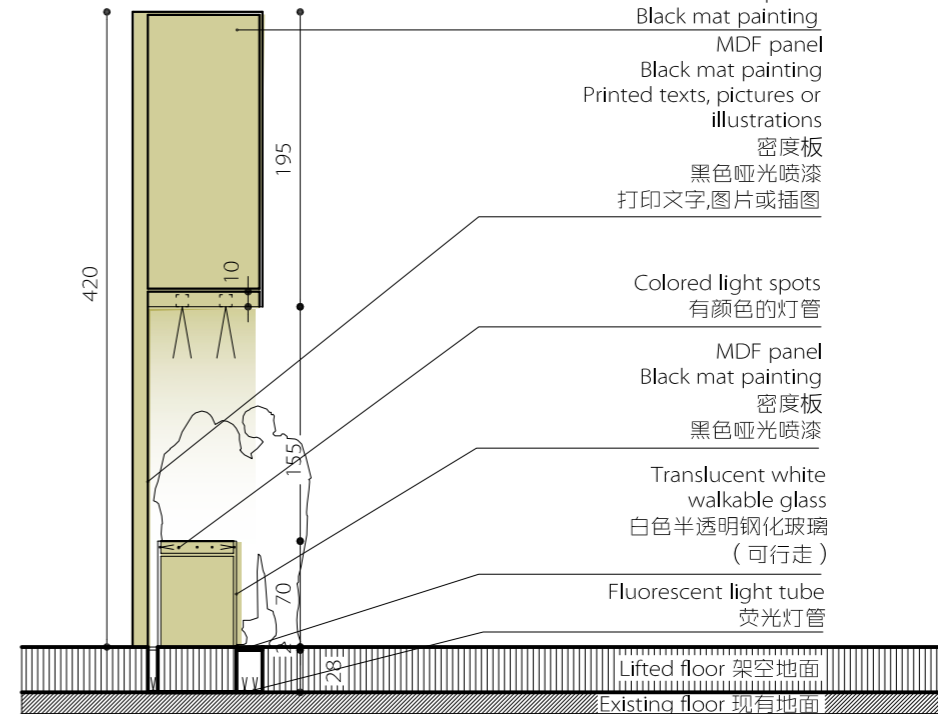
MDF panel  
Black mat painting  
MDF panel  
Black mat painting  
Printed texts, pictures or  
illustrations  
密度板  
黑色哑光喷漆  
打印文字,图片或插图

Colored light spots  
有颜色的灯管

MDF panel  
Black mat painting  
密度板  
黑色哑光喷漆

Translucent white  
walkable glass  
白色半透明钢化玻璃  
(可行走)

Fluorescent light tube  
荧光灯管



SECTION  
SCALE 1:50

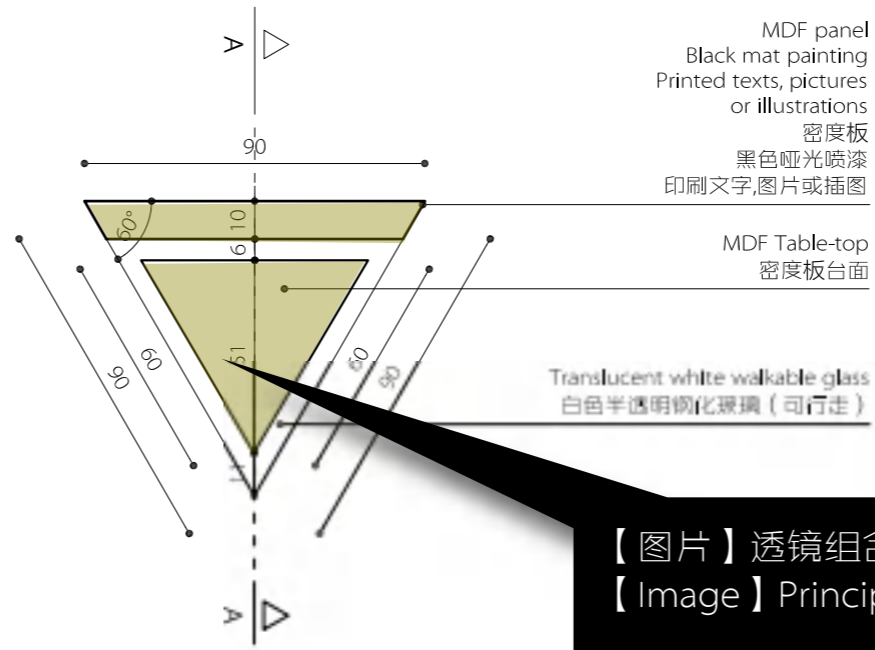
# 透镜组合系统原理

## Lens

### Design

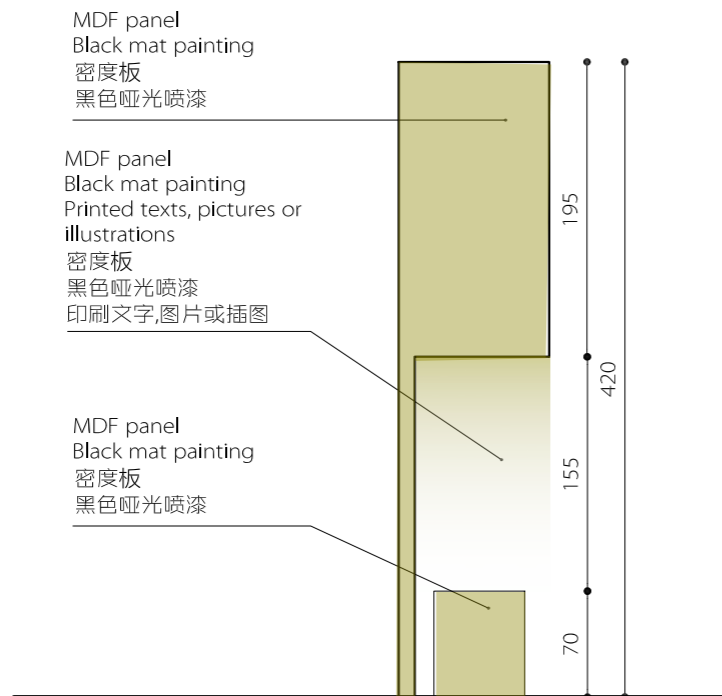
Learn more about the power of lens!  
了解更多透镜的功用

Turn the showcase and observe how the object inside appears distorted.  
旋转展柜并观察里面的展品 出现扭曲的现象。

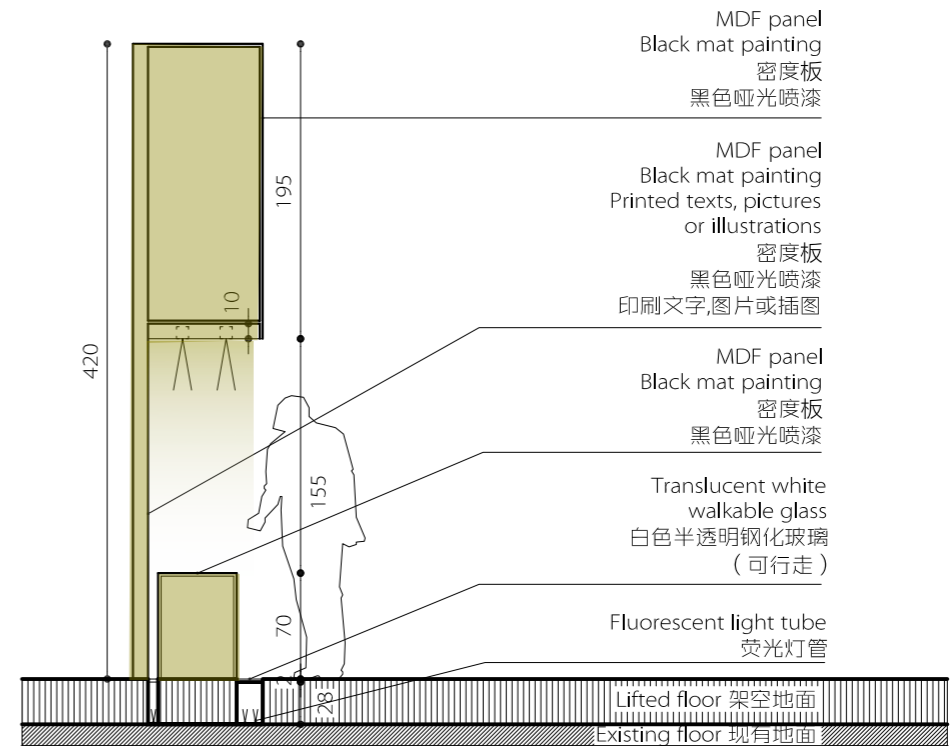


【图片】透镜组合系统原理

【Image】Principle of Lens combination system



ELEVATION  
SCALE 1:50



SECTION  
SCALE 1:50

# 潜望镜

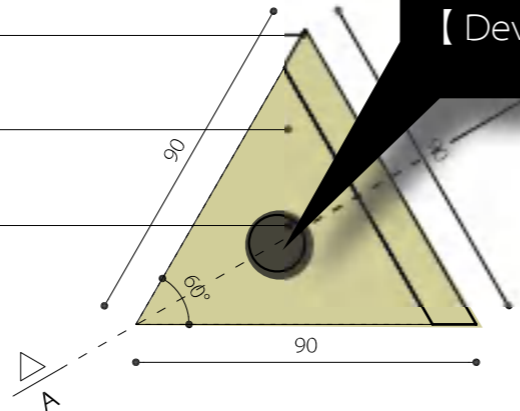
## Periscope

### Content & Design

MDF panel  
Black mat painting  
Printed texts, pictures or illustrations  
密度板  
黑色哑光喷漆  
印刷文字,图片或插图

Translucent white walkable glass  
白色半透明钢化玻璃 (可行走)

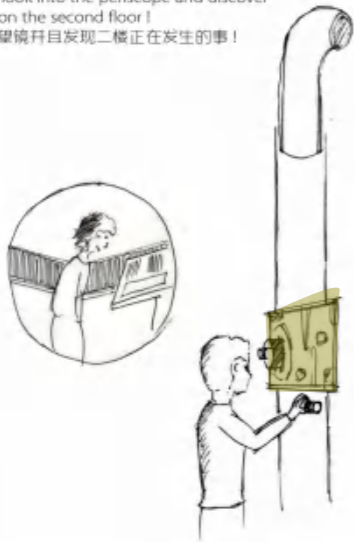
Periscope  
潜望镜



【装置】潜望镜 (协调设计后定做)  
【Device】Periscope



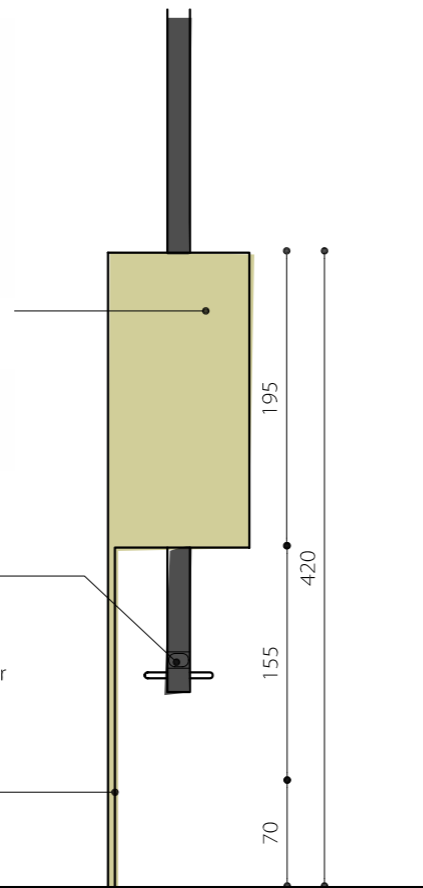
Have a look into the periscope and discover what's on the second floor!  
观察潜望镜并发现二楼正在发生的事!



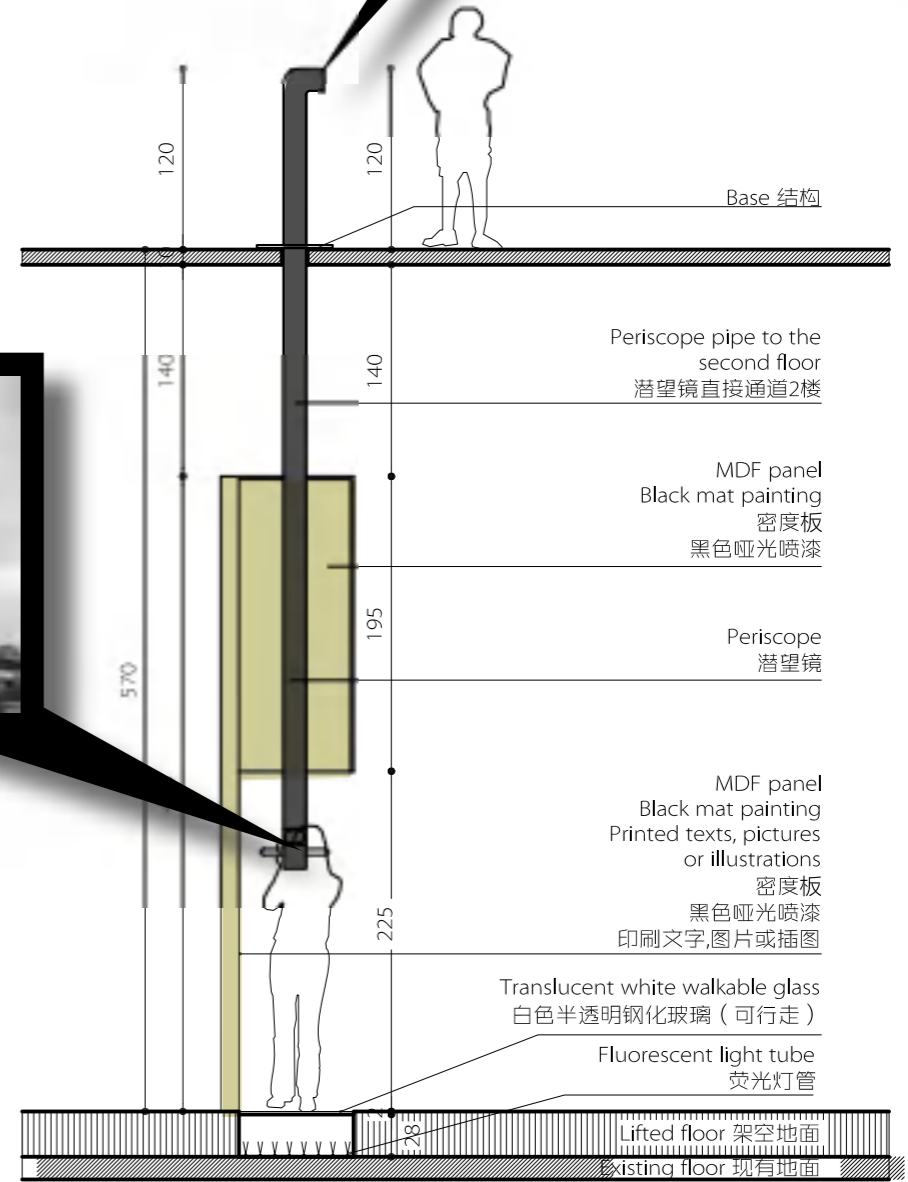
PERISCOPE  
潜望镜

Periscope  
潜望镜

MDF panel  
Black mat painting  
Printed texts, pictures or illustrations  
密度板  
黑色哑光喷漆  
印刷文字,图片或插图



PLAN  
SCALE 1:20

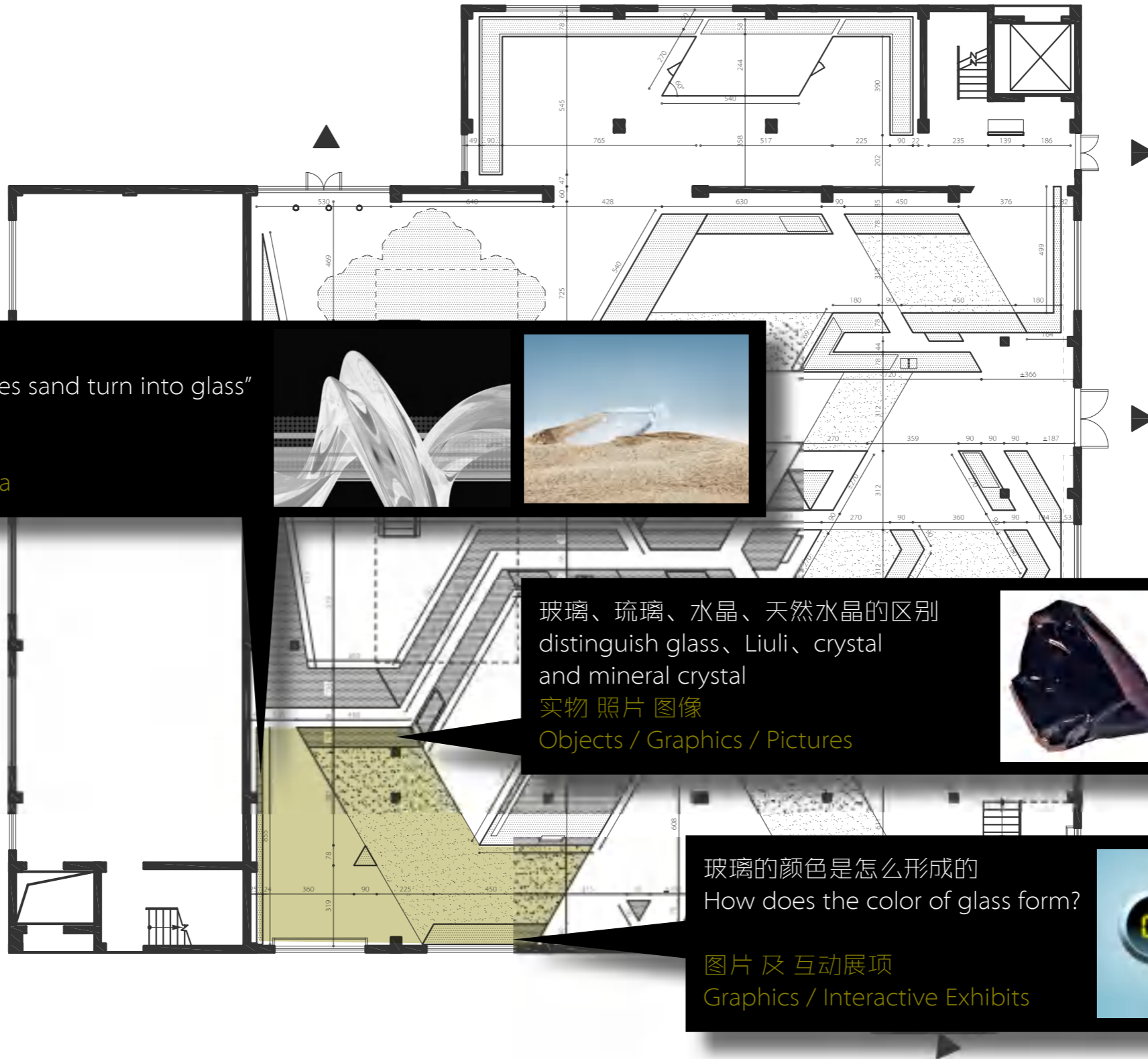


SECTION  
SCALE 1:50

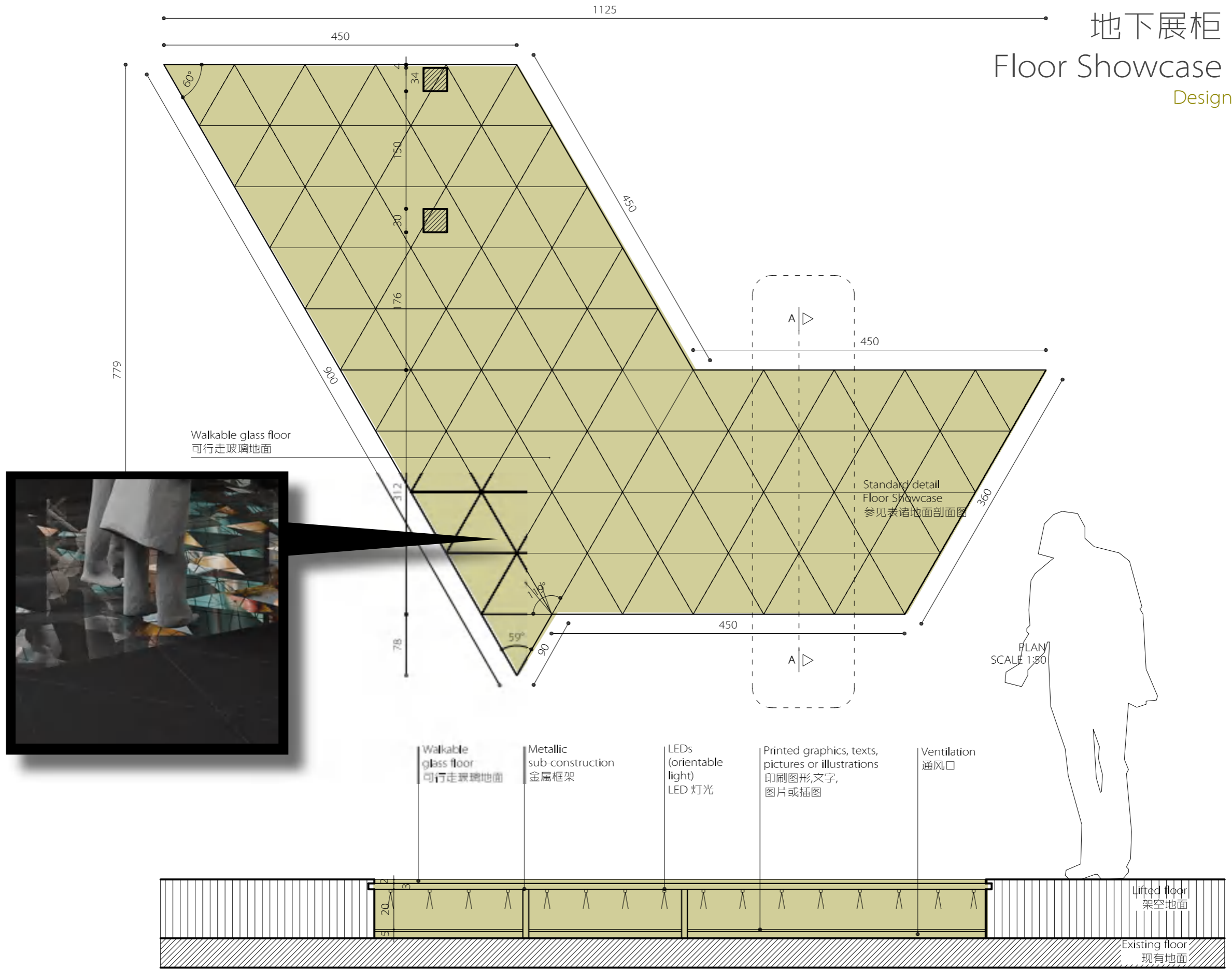
# 玻璃的定义

## Definition of Glass

Overview



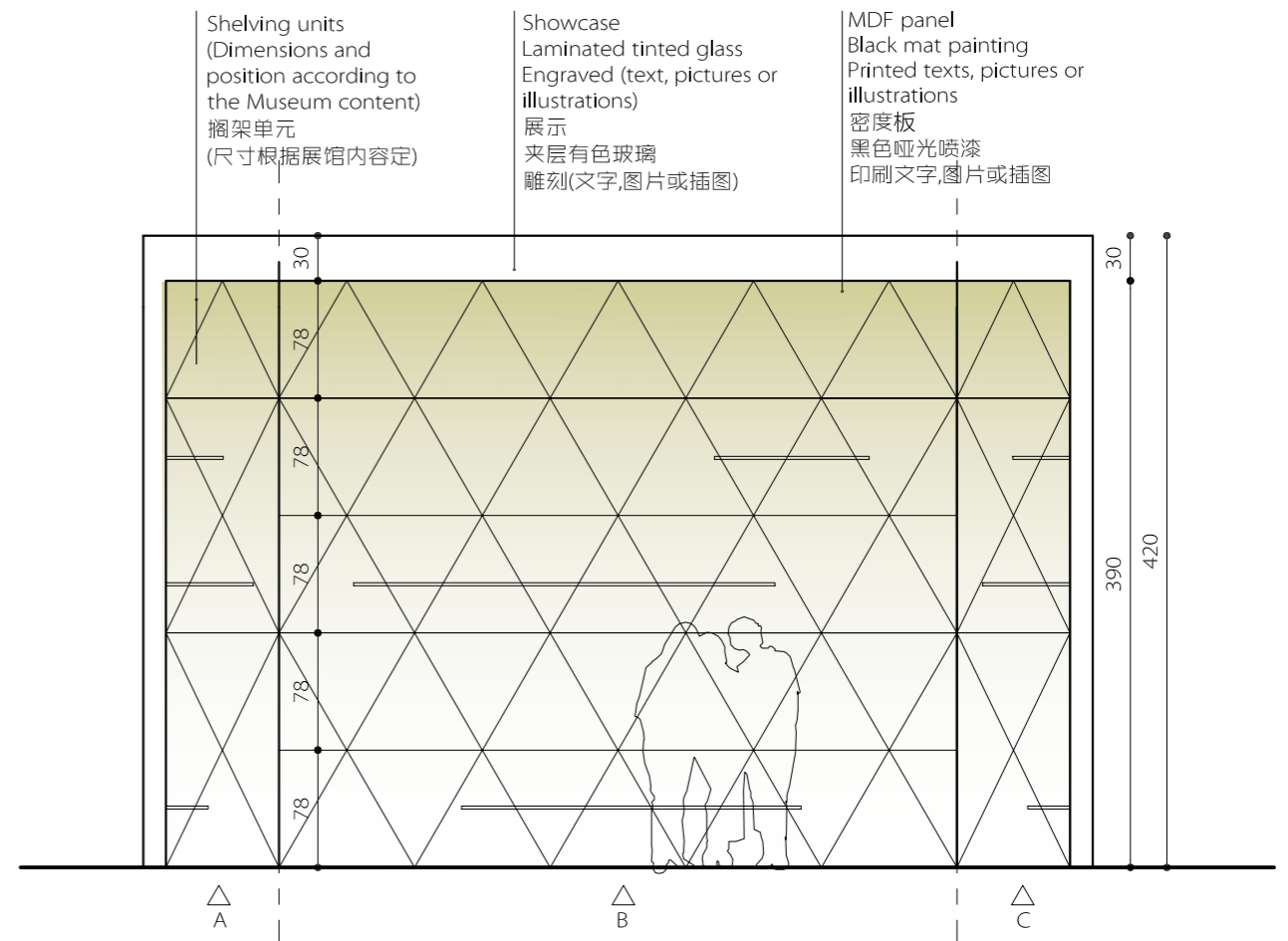
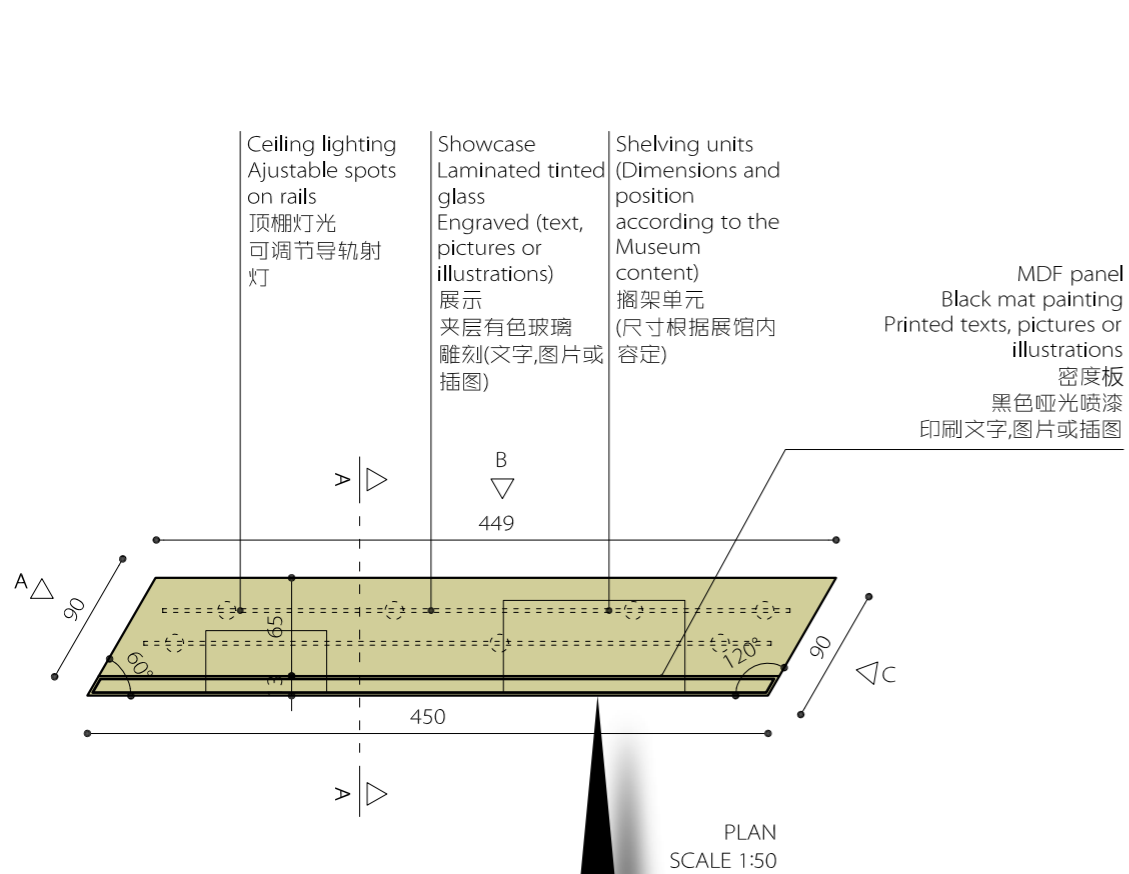
# 地下展柜 Floor Showcase Design



# 玻璃的颜色是怎么形成的

## How does the color of glass form?

### Content



ELEVATION SCALE 1:50

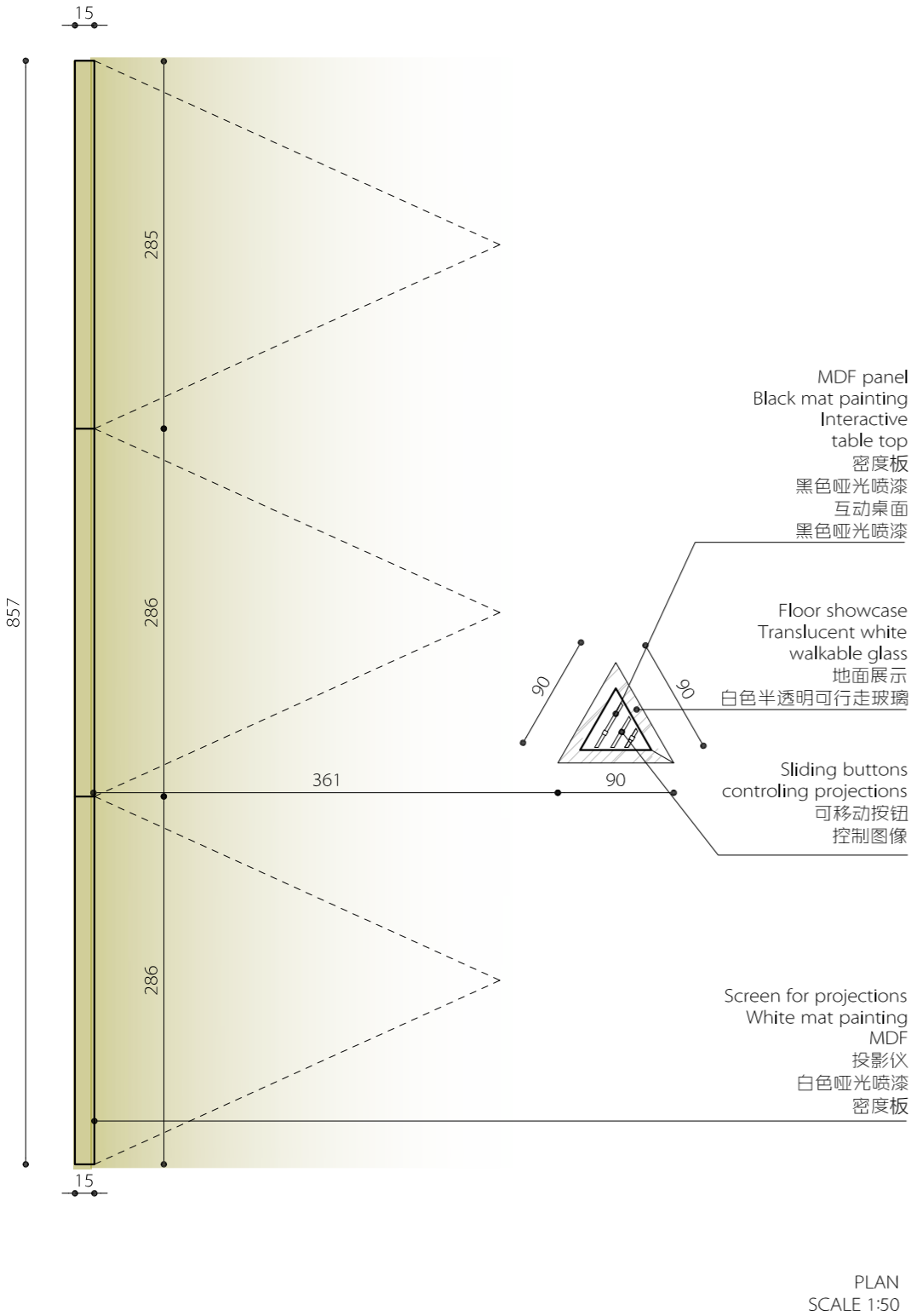
### 1-4.玻璃的颜色是怎么形成的 How does the Color of Glass Form

- 【装置】稀土玻璃 (不同光源互动)
- 【Device】Rare-soil glass [oxides is used] (reflected in different light)
  
- 【装置】二次显色金红玻璃
- 【Device】golden red glass

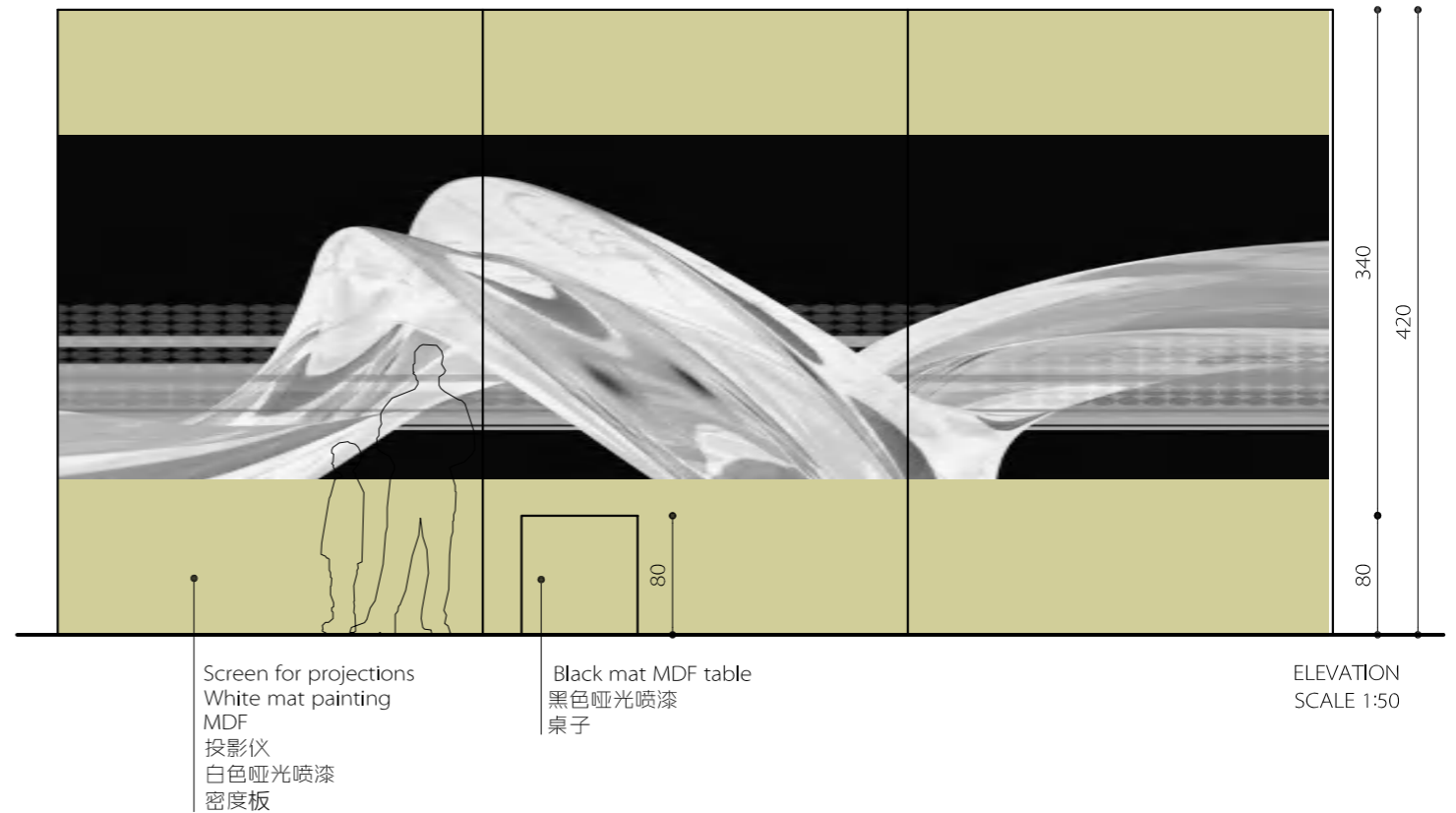
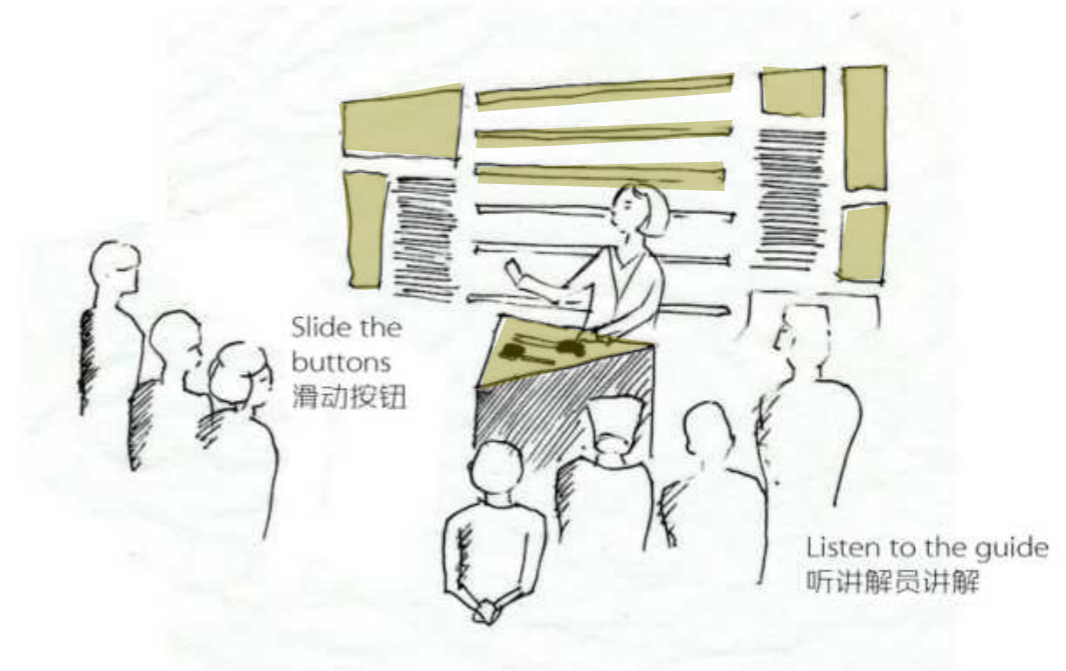
# 沙子到玻璃的故事 The story of "How does sand turn into glass"

## 多媒体互动 Interactive Multimedia

Design

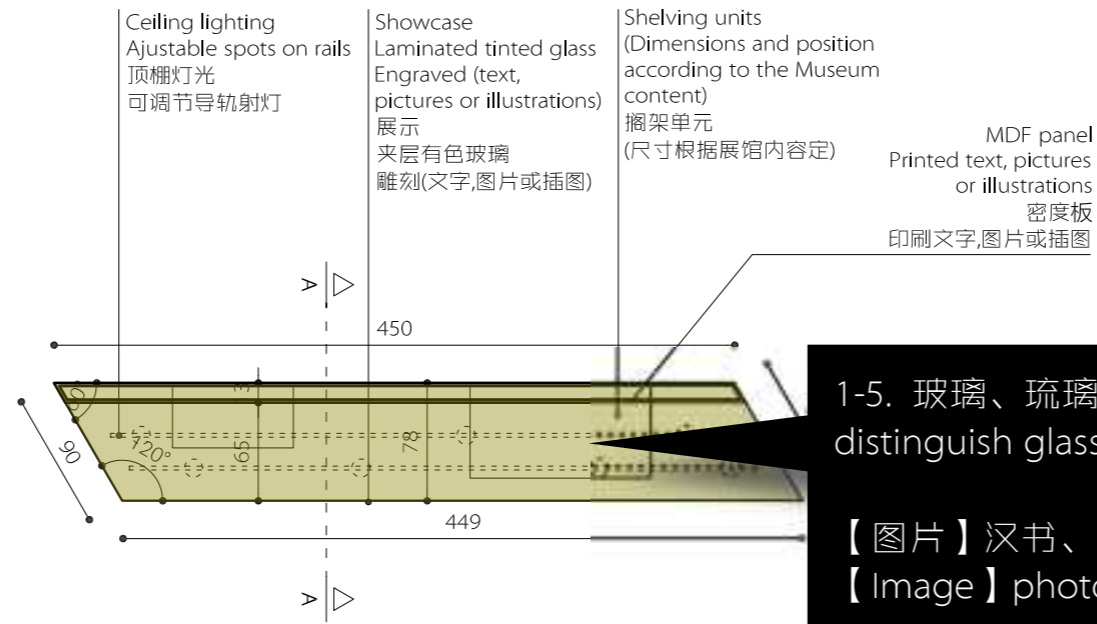


Mix the glass components and create new colors!  
混合玻璃元素创造出新的颜色!



# 玻璃、琉璃、水晶、天然水晶的区别 distinguish glass、Liuli、crystal and mineral crystal

Content



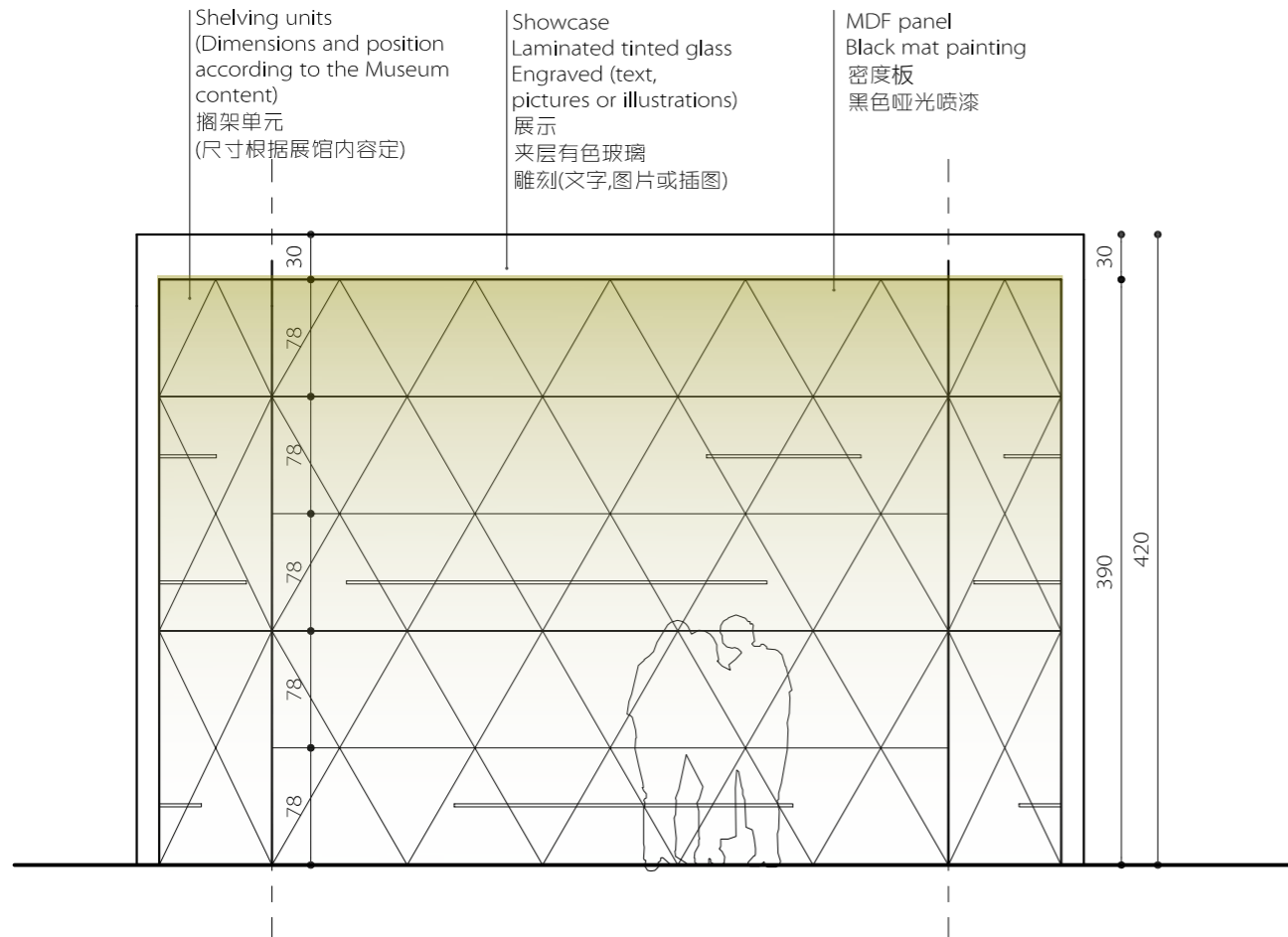
1-5. 玻璃、琉璃、水晶、天然水晶的区别  
distinguish glass、Liuli、crystal and mineral crystal

【图片】汉书、后汉书原件翻拍

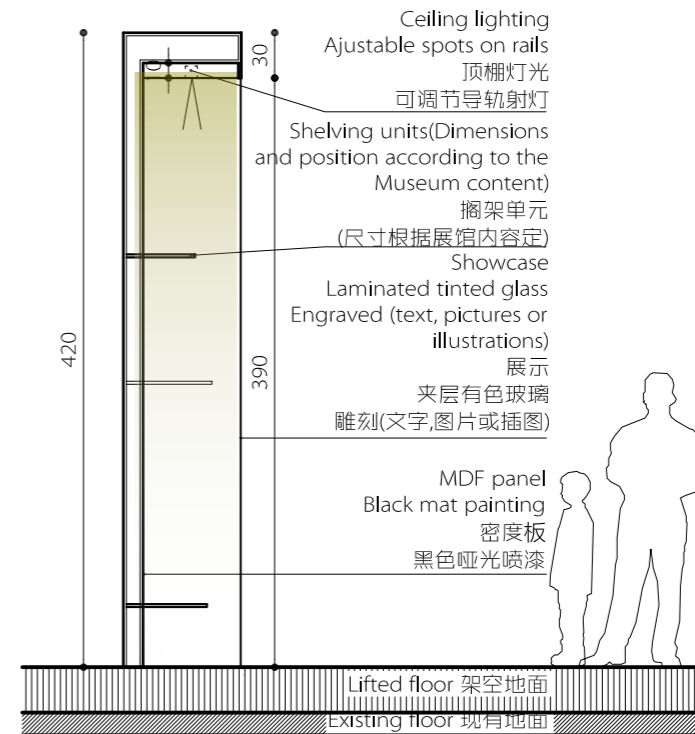
【Image】photo shooting from ancient book

【实物】玻璃（庄）琉璃（琉园）水晶（施华洛世奇）天然水晶

【object】 Glass ( from Mr. Zhuang), Liuli (from tittot), Crystal (Swarovski) and Natural Crystal



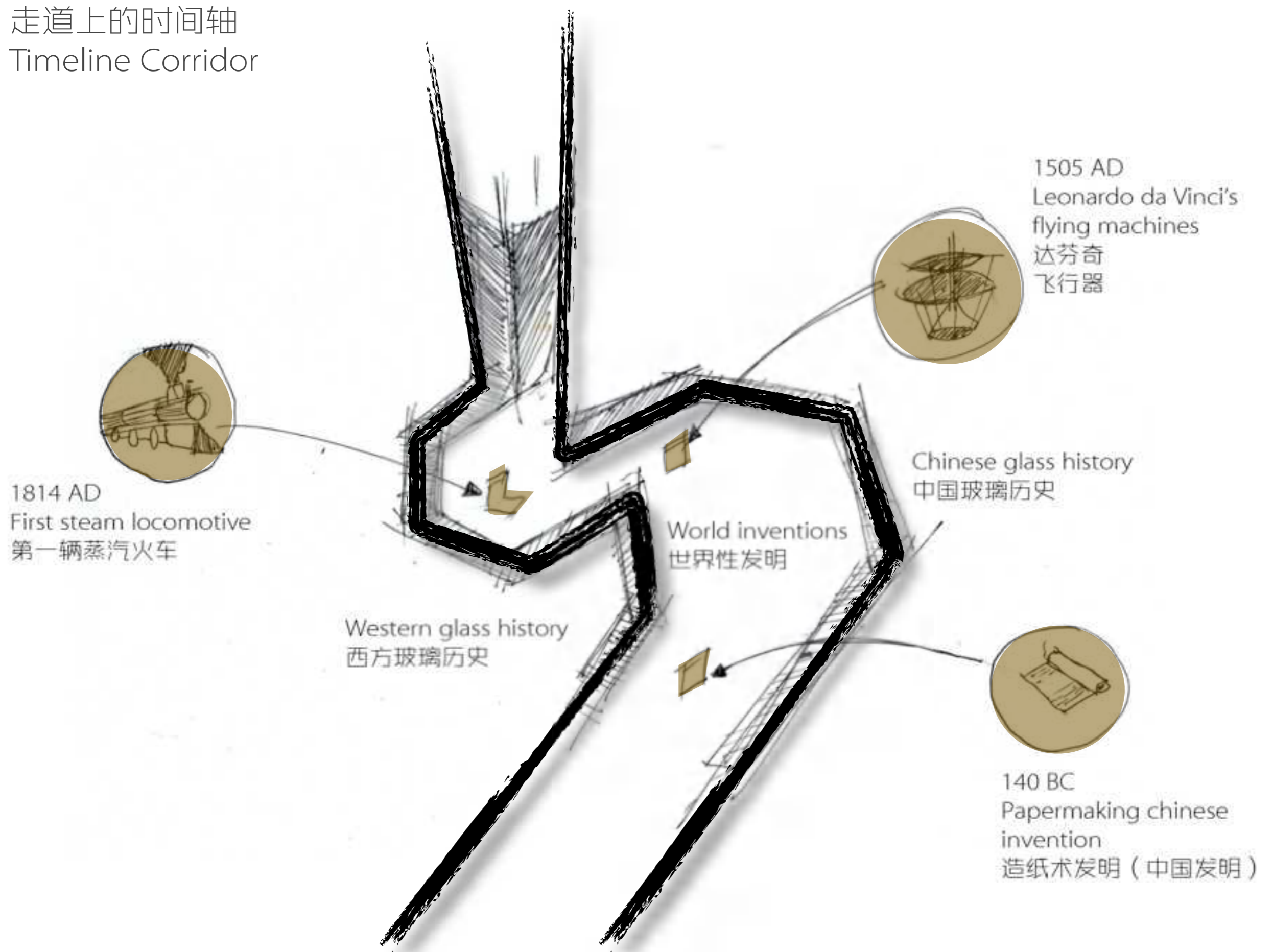
ELEVATION  
SCALE 1:50



SECTION  
SCALE 1:50

第二单元 技术与工艺的发展  
Unit Two Development of the Glass Technology

走道上的时间轴  
Timeline Corridor



# 人类发展大事记

## Major Events of Human Development

西方 早期文明（3500B.C.-1000B.C.） West: Early Civilization  
中国 先商——商朝 China: early Shang – Shang Dynasty

公元前2780年，埃及人开始建造金字塔。  
2780 BC, Egyptians began building pyramids.  
公元前17世纪前后，中国已开始冶铸青铜。  
Around 17th century BC, China has started smelting and casting bronze.  
公元前16—前11世纪，中国发明了石灰釉，出现釉陶。  
16 - 11th century BC, the Chinese invented the lime glaze, glazed pottery appeared.

西方 古典文明时期（1000B.C.-500A.D.）  
West: Classical Civilization Period  
中国 西周时期——春秋战国——两汉——魏晋六朝晚期  
China: Western Zhou Dynasty - Spring and Autumn Period & Warring State Period- Han - Wei and Jin Dynasties

公元前4世纪，中国《考工记》问世。  
4 century BC, Chinese book "Kao Gong Ji" is published.  
公元前4—前3世纪，希腊欧几里德几何体系。希腊阿基米德关于浮力定律、杠杆定律以及二次曲线、螺线的发现。  
3-4 century BC, discovery of the Greek Euclidean geometry system, Archimedes on buoyancy law, lever law and secondary curve line and the spiral line.  
公元前140—前87年，西汉劳动人民发明了造纸术。公元前105年，中国蔡伦改进造纸术。  
140 - 87 BC, the Western Han Dynasty invented paper-making techniques. 105 BC, Chinese Cai Lun improved the paper-making techniques.  
公元前1世纪，中国《周髀算经》引用勾股定理，论证盖天说。  
1st century BC, Chinese book "Zhou Bi Suan Jing" quoted the Pythagorean Theorem, demonstrating the theory of celestial dome.  
132年，中国张衡创制世界第一个地动仪。  
132 AD, Chinese Zhang Heng invents the world's first seismograph.  
2世纪，希腊托勒密提出地心说。  
2 century, Greek Ptolemy proposed geocentric theory.  
2世纪，中国东汉末已掌握制瓷的技术，品种主要是青瓷。  
2 century, China has mastered the porcelain-made technology in late Eastern Han Dynasty, the variety is mainly Celadon.  
770B.C.-221A.D. 春秋战国时期发明司南。  
Chinese invented Compass during Spring and Autumn Dynasty.

西方 中世纪时期（500A.D.-1500A.D.）  
West Medieval Period  
中国 魏晋六朝末期—隋唐——宋元——明中期  
China: late Wei and Jin Dynasties - Sui and Tang Dynasties- Song and Yuan Dynasties - mid Ming Dynasty

5世纪，中国祖冲之计算π值精确到第七位有效数字。  
5 century, Chinese Zu Chongzhi calculated the value of π accurate to the seventh digits.  
7—8世纪，中国已用刻板印书，是世界上最早的印刷术。  
7-8 century, China has a stereotype printed books, it is earliest printing technique in the world.

814年，阿拉伯人在巴格达哈利发阿尔·马蒙组织下，在美索不达米亚实测了子午线的长度。Arabs in Baghdad, organized by Khalifa Aermameng measured the length of the meridian in Mesopotamia.  
9世纪，中国发明火药。  
9 century, Chinese invented gunpowder.  
1041—1048年，中国毕昇，发明活字印刷术。  
Chinese Bi Sheng invented movable-type printing techniques.  
约1200年至1300年，欧洲人开始使用眼镜。  
Around 1200-1300 AD, Europeans started using glasses.  
1271—1295年，意大利人马可·波罗东游中国，归后著有《马可·波罗游记》。  
Italian Marco Polo took the tour in Far East-China; afterwards, wrote the book of "Travels of Marco Polo"

西方 文艺复兴时期（14世纪-16世纪）  
West: Renaissance period (14-16 century)  
中国 元末期——明代中期  
China: late Yuan to mid-Ming Dynasties

1492年，哥伦布发现新大陆。  
Columbus discovered the Newland  
约1541年，明代学者罗洪先绘制的《广輿图》是中国最早的分省交通地图。  
Around 1541 AD, Ming Dynasty Scholar: Luo Hong first drew "wide atlas", it is the earliest transportation map with the sub-provincial of China.  
1569年，荷兰墨卡托绘世界地图。  
Dutch Mercator painted map of the world  
1590年，荷兰眼镜匠詹森父子用一片凸透镜和一片凹透镜相重叠发明了第一架真正的显微镜。  
Dutch spectacle maker: Father & Son of Johnsons, invented the first real microscope with a convex and a concave lens overlap with each other  
1590年，意大利伽利略做自由落体定律实验。  
Italian Galileo establishes Free-Fall Law.

西方 17世纪 West: the 17 century  
中国 清初期 China: early Qing Dynasty

1637年，法国笛卡尔创立解析几何。  
French Descartes founded analytic geometry.  
1640年，中国徐霞客著《徐霞客游记》，最早记载了岩溶地貌的考察和研究。  
Book "Xu Xia-ke Travels" by China's Xu Xia-ke is the earliest records of the study and research of the karst topography.

西方 18世纪 West: the 18 century  
中国 清初中期——中期 China: early to mid Qing Dynasty

1705年，英国哈雷发现第一颗周期彗星，并预言周期为76年，即为哈雷彗星。  
1705 AD, British Halley discovered the first cycle time of a comet, and predicted the cycle time of it is 76-year, it was named as Halley's Comet.  
1752年，美国富兰克林发明避雷针，揭示雷电本质。

1752 AD, U.S. Franklin invented the lightning rod, revealed the nature of lightning.  
1765年，英国人瓦特发明了蒸汽机，从此，揭开了人类工业革命的序幕。  
1765 AD, British Watt invented the steam engine, since then, opened a prelude to the industrial revolution.

西方 19世纪 West: the 19 century  
中国 清中期——清中晚期 China: Mid Qing Dynasty

1814年，斯蒂芬森的蒸汽机车火车头问世。  
Stephenson's steam locomotive came out.  
1826年，法国尼普斯制造拍摄了世界上第一张照片。  
French Niepce created and shoot the world's first photo.  
1831年，英国法拉第发现电磁感应现象。  
British Faraday discovered The phenomenon of electromagnetism.

1859年，英国达尔文发表《物种起源》，奠定了达尔文进化论的基础。  
British Darwin published "Origin of Species", it laid the foundation of Darwin's theory of evolution for evolution theory.  
1880年，美国爱迪生发明白炽电灯泡。  
American Thomas Edison's invented incandescent bulbs.  
1876年，电话发明人亚历山大·贝尔通过电话成功传出的第一句话：“沃森先生，请立即过来，我需要帮助！”电话从此诞生了，人类通讯史从此掀开了一个全新的篇章。  
Telephone inventor Alexander Graham Bell successful spread out the first sentence through phone: "Mr. Watson, please come, I need help!" then the Telephone was born, and from then on, the human communication history has opened a new chapter.  
1885年，世界公认的汽车发明者是德国人卡尔·弗里特立奇·奔驰研制出世界上第一辆马车式三轮汽车，并于1885年1月29日获得世界第一项汽车发明专利，这一天被大多数人称为现代汽车诞生日，奔驰也被后人誉为“汽车之父”。  
Car inventor - German Fleet RichTek Karl Benz, he developed the world's first vehicles in carriage-style three-wheeled, and in January 29, 1885, he won the world's first automobile invention Patents, this day was regarded as the birth of the modern day cars by most of the people, since then on Mercedes-Benz is also called future "Father of cars."  
1895年，德国伦琴发现X射线。  
German Roentgen discovered X-ray

西方 20世纪 West: the 20 century  
中国 清晚期——中华民国——中华人民共和国  
China: Late Qing Dynasty - Republic of China – People's Republic of China

1903年，美国莱特兄弟，自制轻便内燃机，第一次成功实现用螺旋桨飞机飞行。  
American Wright brothers, made lightweight internal combustion engine by themselves, and realized the first successful flight with the propeller-driven aircraft.  
1904年，英国物理学家约·弗莱明发明了人类第一只电子管（热电子真空二极管），电子管是用玻璃作外壳的，标志着世界从此进入了电子时代。

UK physicist John Ambrose Fleming invented the first hot-electron vacuum diode and the tube is made by glass. It marks that the world entered the electronic age.  
1905年，瑞士、美籍德国科学家爱因斯坦，提出光量子假说，并用以解释光电效应。提出狭义相对论。  
Swiss American Einstein proposed light quantum hypothesis, and used it to explain the photoelectric effect. Proposed special theory of relativity.  
1924年，英国科学家约翰·洛吉·贝尔德发明了最原始的电视机，用电传输了图像。  
British scientist John Logie Baird invented the most primitive television and transmitted images by using electric.  
1945年，世界上第一颗原子弹在美国新墨西哥州爆炸。  
The world's first atomic bomb exploded in New Mexico State, US.  
1946年，美国宾西法尼亚大学的科学家建造了世界上第一台多用途电子数字电脑，标志着电脑时代的开始。  
American scientists from University of Pennsylvania built the world's first multi-purpose electronic digital computer, marking the beginning of the computer age.  
1953年，生物学家沃森和克里克发现了生命遗传的基因物质——DNA的双螺旋结构模型。

Biologist Watson and Crick discovered genetic DNA double-helix structure.  
1951年，法国拉瓦朗发明电子望远镜和光电成像技术。  
French Lalmand, invented the electronic telescope and optical imaging techniques  
1964年，中国第一颗原子弹在罗布泊爆炸成功。  
China's first testing nuclear bomb exploded successfully in Luobupo Area.  
1969年，美国五角大楼首创因特网。  
first Internet established in the Pentagon in US.  
1969年，阿波罗飞船发射升空，宇航员阿姆斯特朗踏上月球。  
Apollo 13 Spaceship was launched and brought the first spaceman- Armstrong to the Moon.  
1971年，第一台微型电子计算机诞生。  
The birth of the first micro-computer.  
1976年，马丁·库珀发明移动电话。  
Martin Cooper invent mobile phones



西方玻璃技术发展

Development of western glass technology

早期文明时期

Early civilization (3500 BC - 1000 BC)

古典文明时期

Classical civilization (1000 BC - 500 AC)

# 西方玻璃技术发展

## Development of western glass technology

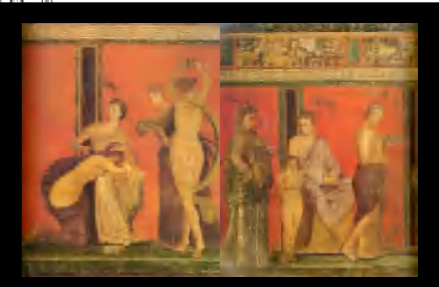
Overview



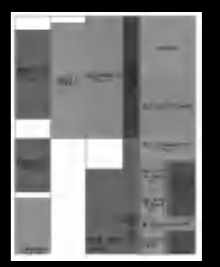
早期文明时期  
Early civilization  
3500 BC - 1000 BC  
实物 模型 Objects / Models  
图片 地图 Graphics / Maps



古典文明时期  
Classical civilization  
1000 BC - 500 AC  
实物 模型 Objects / Models  
图片 地图 Graphics / Maps



西方与中国玻璃技术与工艺发展索引  
History of the Western and Chinese Glass Technology  
时间列表插图  
Illustrated timeline



1ST FLOOR FURNITURE PLAN  
SCALE 1:200

# 西方玻璃技术发展

## Development of western glass technology

Design



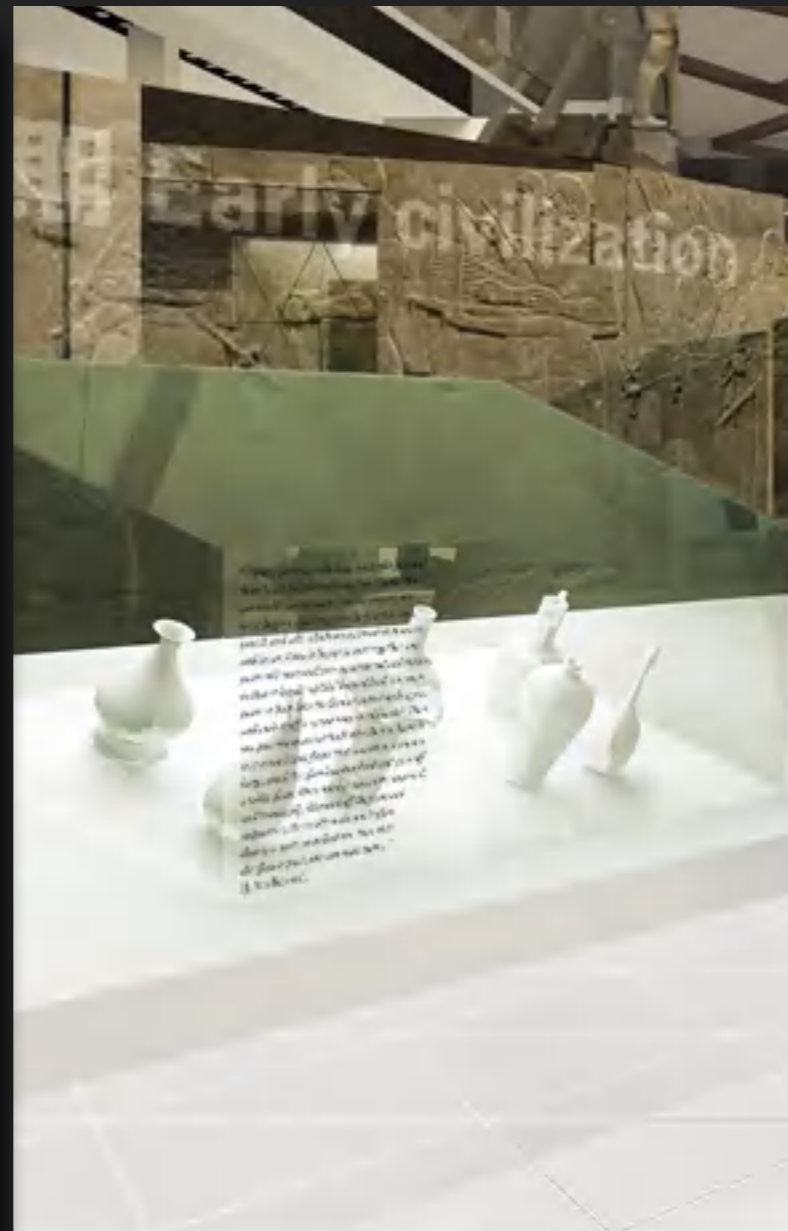
早期文明时期

Early civilization

3500 BC - 1000 BC



镜子 图片  
Mirror / Pictures



展柜  
Showcase



步骤图 图片  
Illustrations / Pictures

# 早期文明时期

## Early civilization (3500 BC - 1000 BC) Mesopotamia

### Content

#### Background Image



【模型】镶嵌珠制作步骤分解模型（意大利购买）

【Model】decomposition model to show the steps of Mosaic bead production (purchase in Italy)

#### 【图片、多媒体】

- (1) 与玻璃相关的两河流域地区古壁画、石刻等
- (2) 当时两河流域地图
- (3) 两河流域其它玻璃制品图片
- (4) 泥板上记录玻璃釉的楔形文字拓本

#### 【Image, Multimedia】

- (1) ancient murals, stone carvings from Mesopotamia region, glass related
- (2) ancient Mesopotamia Map
- (3) images of glass product in Mesopotamia area
- (4) Clay rubbings recorded about habitat-shaped glass

#### 【素描】胚芯法制作玻璃瓶

【Drawing】core forming techniques of making glass bottles

#### 【实物】制作工具

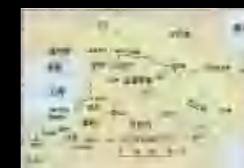
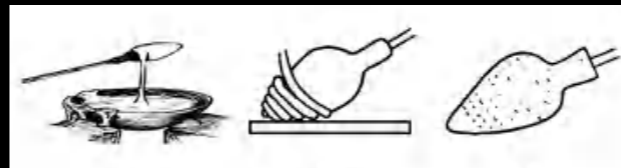
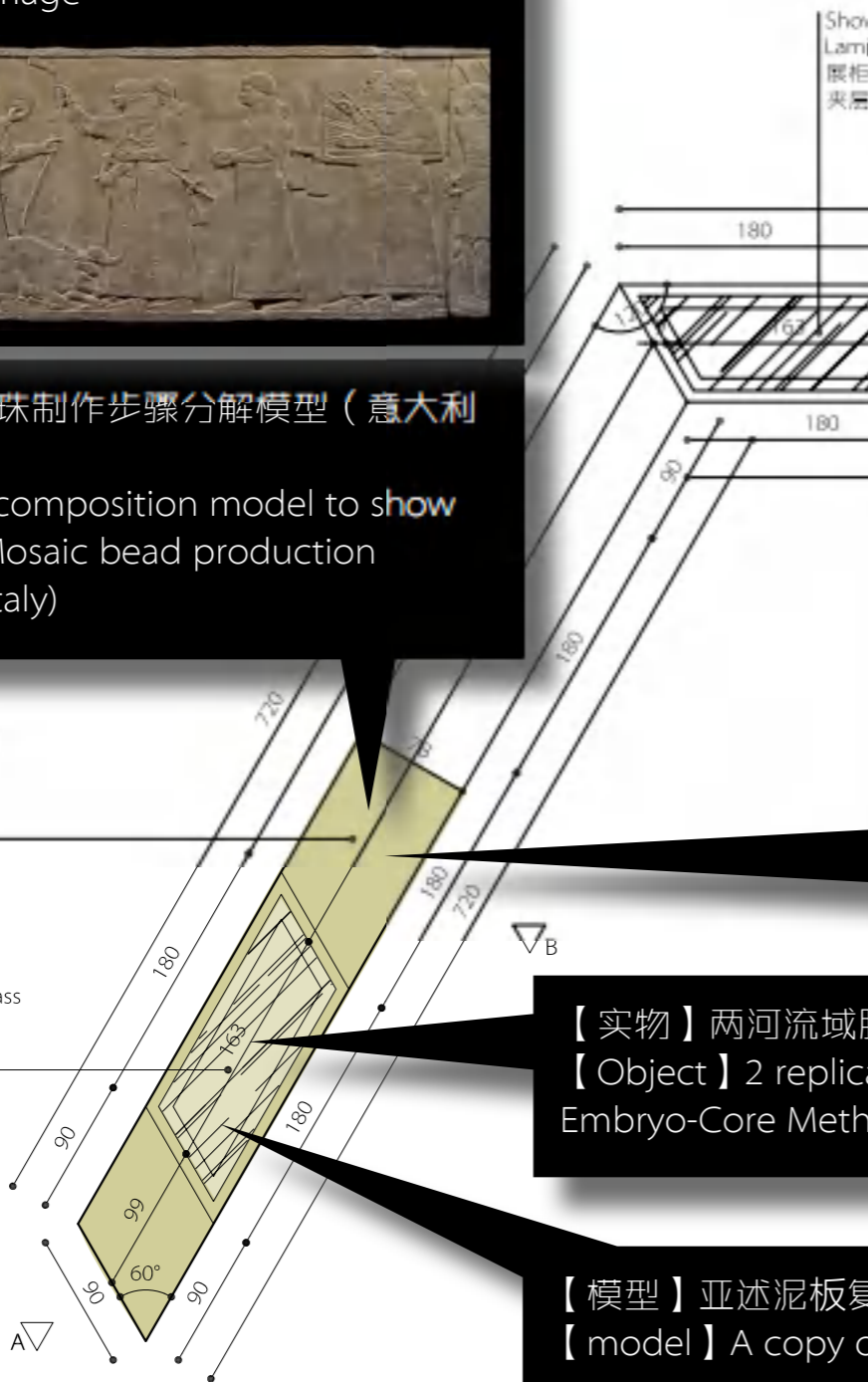


Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光烤漆

Showcase  
Laminated tinted glass  
展柜  
双层有色玻璃



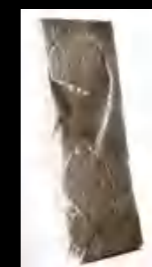
【实物】两河流域胚芯玻璃瓶复制品2件（意大利购买）

【Object】2 replica of Mesopotamia Glass [ancient Embryo-Core Method] (purchase in Italy)



【模型】亚述泥板复制品1件

【model】A copy of an Assyrian clay tablet



# 早期文明时期

## Early civilization (3500 BC - 1000 BC) Egypt

### Content

【实物】制作工具

【Object】Tools

【模型】(1) 镶嵌玻璃珠制作步骤分解模型

【Model】(1) decomposition model showing making steps of mosaic glass bead

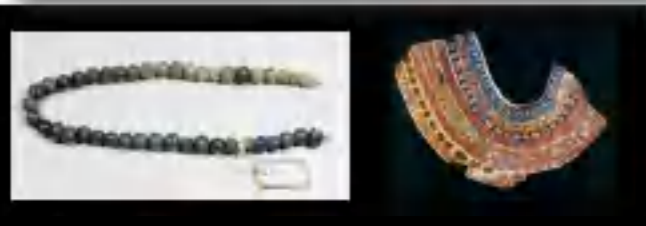
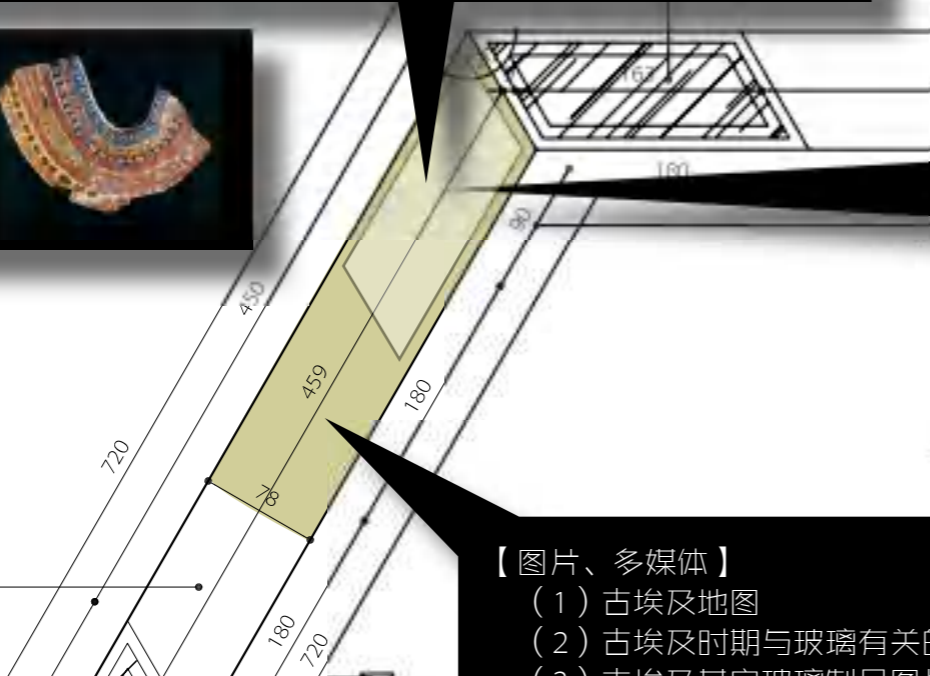


Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆



【实物】(1) 古埃及玻璃鱼复制品1件 (意大利购买)

(2) 镶嵌珠原件1件 (意大利购买)

(3) 古埃及玻璃马赛克复制品1件 (国内复制)

(4) 古埃及玻璃瓶复制品2件 (意大利购买)

(5) 古埃及法老头像复制品1件 (国内复制)

(6) 古埃及半身像及全身像2件 (意大利购买)

(7) 1000颗以上镶嵌珠 (意大利购买)

【Object】(1) a replica of ancient Egyptian glass fish, (purchase in Italy)

(2) one original mosaic beads (purchase in Italy)

(3) a replica of an ancient Egyptian glass mosaic (made in domestic)

(4) 2 replicas of an ancient Egyptian glass vase (Italy purchase)

(5) a replica of a glass-made ancient Egyptian Pharaoh head (made in domestic)

(6) two replicas of ancient Egyptian bust and body like (purchase in Italy)

(7) 1000 or more inlaid beads (purchase in Italy)

### Background Image



【图片、多媒体】

(1) 古埃及地图

(2) 古埃及时期与玻璃有关的生活场景壁画、石刻，如：法老面具等

(3) 古埃及其它玻璃制品图片

(4) 古埃及壁画蓝绿色用玻璃粉绘制 (国内定制)

(5) 古埃及熔玻璃坩埚

【Image, Multimedia】

(1) Map of Ancient Egypt

(2) Ancient Egypt period, life scenes relevant to glass murals, stone carvings, such as: Pharaoh masks.

(3) Other glass products pictures of ancient Egypt

(4) Ancient Egyptian period: murals blue-green paint with glass powder (made in domestic)

(5) ancient Egypt crucible for melting glass

【素描】(1) 釉砂 (费昂斯) 技术

(2) 缠丝法制作玻璃珠管

【Sketch】(1) Glaze sand (Faience) techniques

(2) Wrapping-method techniques for glass beads tube

# 古典文明时期

## Classical civilization (1000 BC - 500 AC) Greece

### Content

Background Image



【实物】 (1) 复制古希腊玻璃碗1件  
(2) 复制古希腊玻璃花瓶1件

【Object】 (1) a replica of the ancient Greek glass bowl  
(2) a replica of the ancient Greek glass vase



【实物】 制作工具  
【Object】 Tools

【图片、多媒体】 (1) 古希腊时期与玻璃有关的生活场景、文化、历史  
(2) 当时古希腊地图  
(3) 古希腊其它玻璃图片

【Image, Multimedia】 (1) Ancient Greece period: glass-related scenes of life, culture, history  
(2) ancient Greece map  
(3) Other Glass picture in Ancient Greek period

【素描】 (1) 失蜡浇铸玻璃碗技术  
(2) 熔铸玻璃花瓶技术

【Drawing】 (1) Lost-wax technology for casting glass bowl  
(2) Technology of Casting glass vase

Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆

Showcase  
Laminated tinted glass  
展柜  
双层有色玻璃

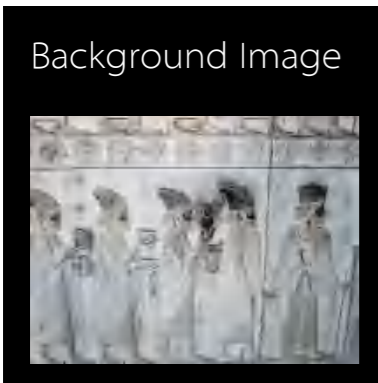


PLAN  
SCALE 1:50

# 古典文明时期

## Classical civilization (1000 BC - 500 AC) Rome & Persia

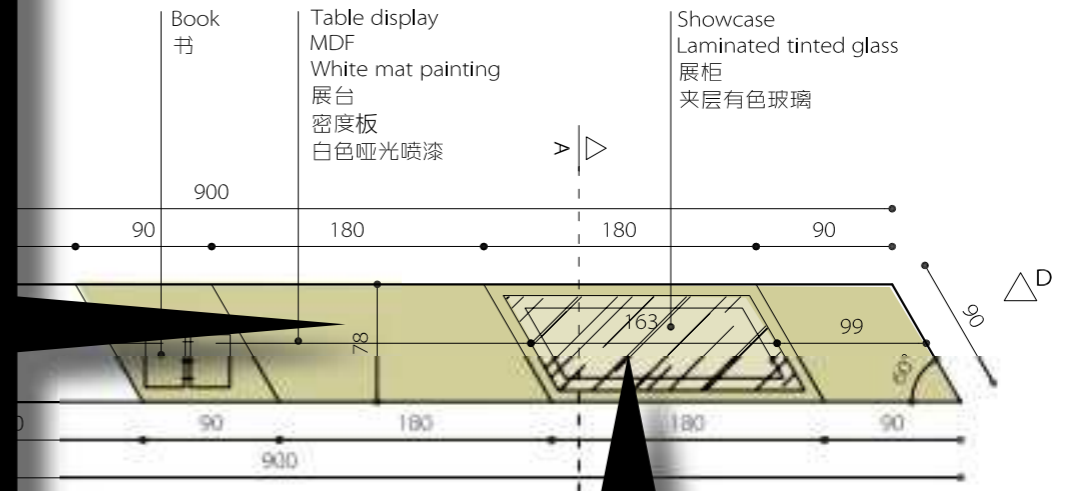
### Content



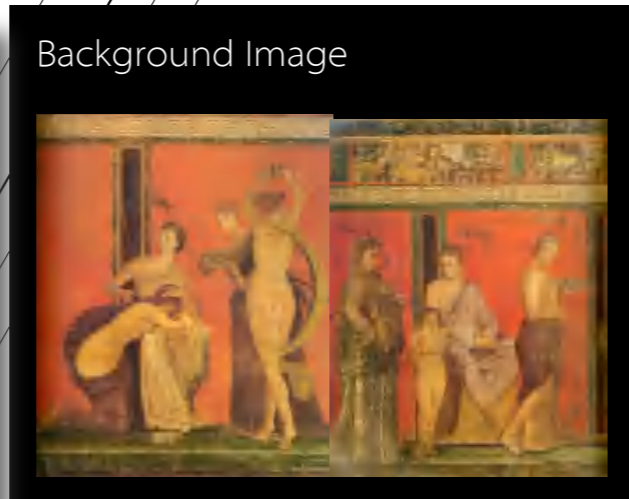
【Image, Multimedia】 (1) Ancient Roman period: glass-related scenes of life, culture, history  
 (2) Map of Ancient Rome  
 (3) Roman Glass picture

【素描】 (1) 搅丝玻璃 (2) 吹制玻璃  
 【实物】 制作工具  
 【模型】 (1) 繁花玻璃制作步骤分解模型 (2) 马赛克玻璃制作步骤分解模型

【Drawing】 (1) Stir wire glass (2) Blowing glass



7. 【实物】波斯萨珊王朝玻璃花瓶1件 (国外购买)  
 波斯萨珊王朝玻璃花碗2件 (国外购买)  
 【图片、多媒体】 (1) 波斯时期与玻璃有关的生活场景、文化、历史  
 (2) 古波斯地图  
 (3) 波斯玻璃图片  
 【素描】 (1) 切割技术 (2) 研磨技术  
 【实物】 制作工具  
 【Object】 Sassanian dynasty glass vases, 1 piece (purchase abroad)  
 Sassanian dynasty glass bowls, 2 pieces (purchase abroad)  
 【Image, multimedia】 (1) Persian period: glass-related scenes of life, culture, history  
 (2) 古波斯地图 Ancient Persian map  
 (3) 波斯玻璃图片 images of Persian glass  
 【Drawing】 (1) cutting techniques (2) grinding techniques  
 【Object】 Tools



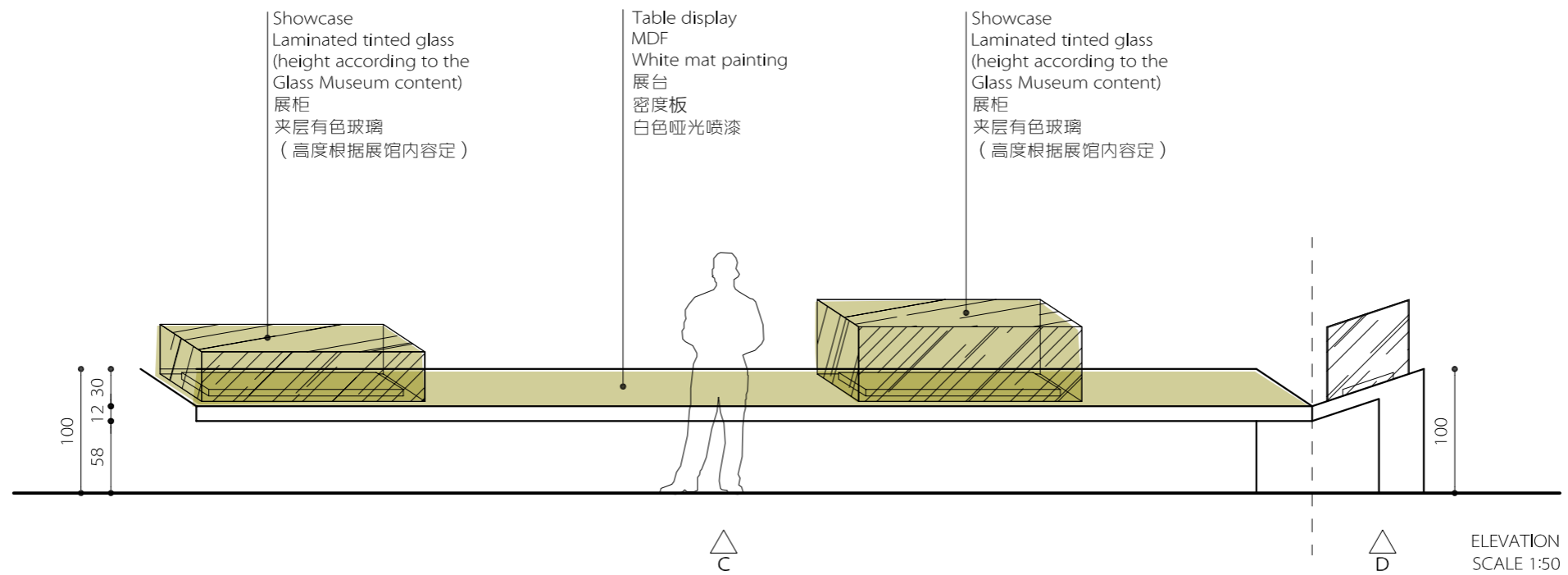
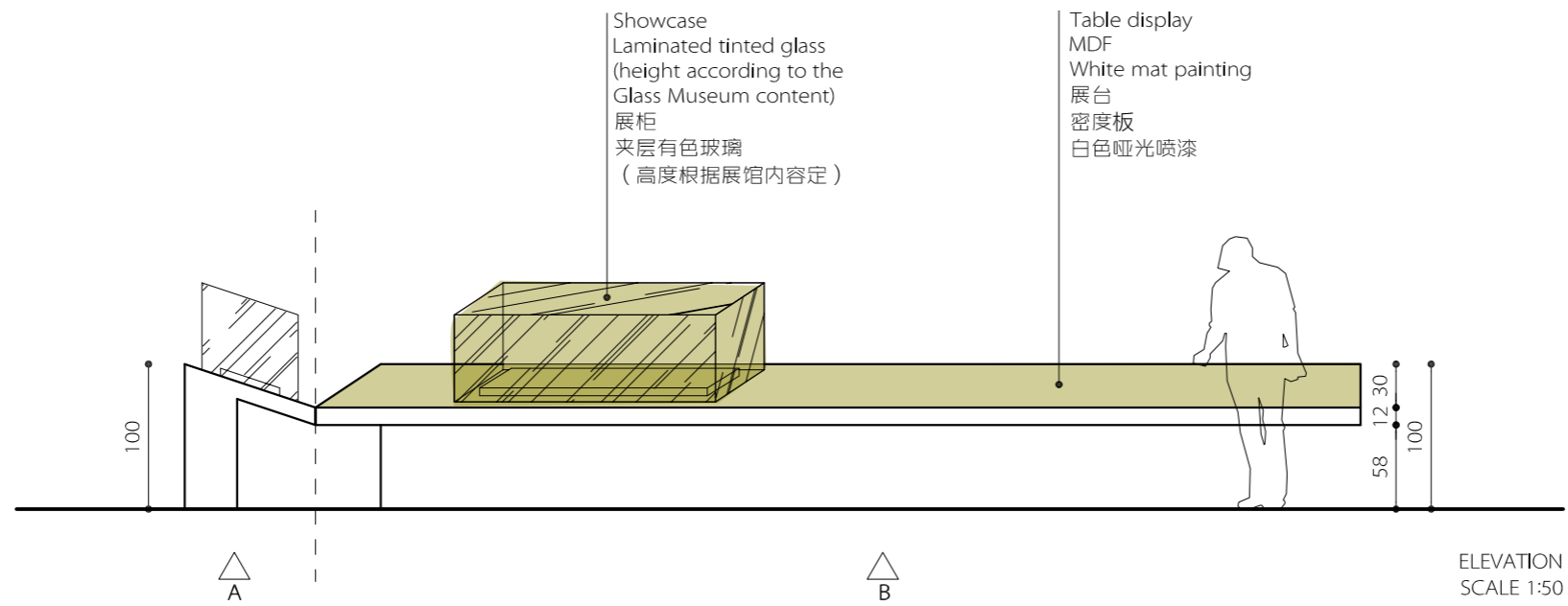
【实物】 (1) 购买古罗马颜色一致的玻璃器1套 (8件)  
 (2) 购买古罗马波特兰花瓶1件  
 (3) 购买早期雕花玻璃杯1件  
 (4) 购买繁花玻璃1件  
 (5) 复制古罗马宫廷马赛克1件  
 (6) 复制搅丝玻璃碗1件  
 【Object】 (1) Purchase ancient Roman glass, 1 set of the same color (8 pieces)  
 (2) Purchase ancient Roman Portland Vase, 1 piece  
 (3) purchase early period flower-engraved glass, 1 piece  
 (4) purchase millefiori glass, 1 piece  
 (5) a replica of ancient Rome mosaic  
 (6) a replica of stir wire glass bowl

【Object】 Tools  
 【Model】 (1) decomposition model showing production steps of (2) decomposition model showing production steps of Mosaic glass

# 桌面展示 及 桌面展柜

## Table Display and Showcases

Design



# 桌面展示 Table Display

Design

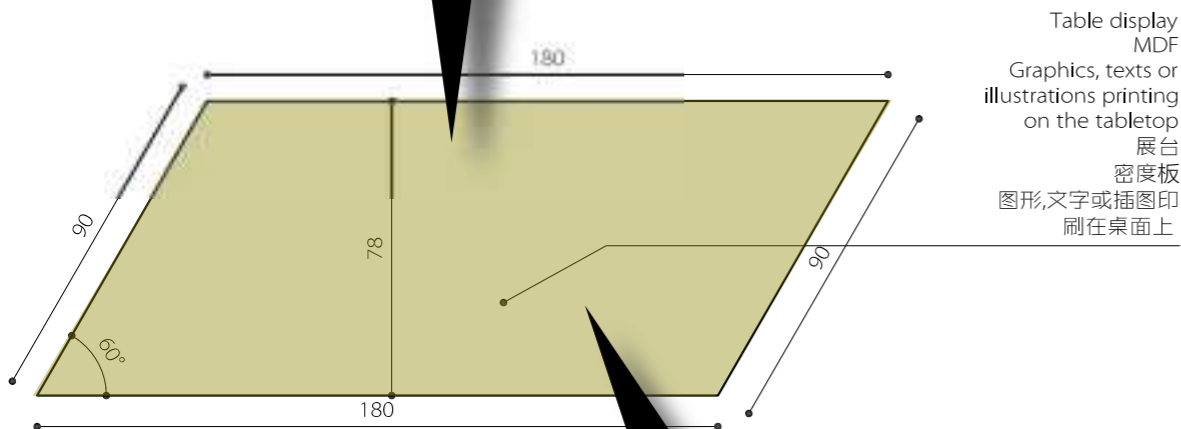
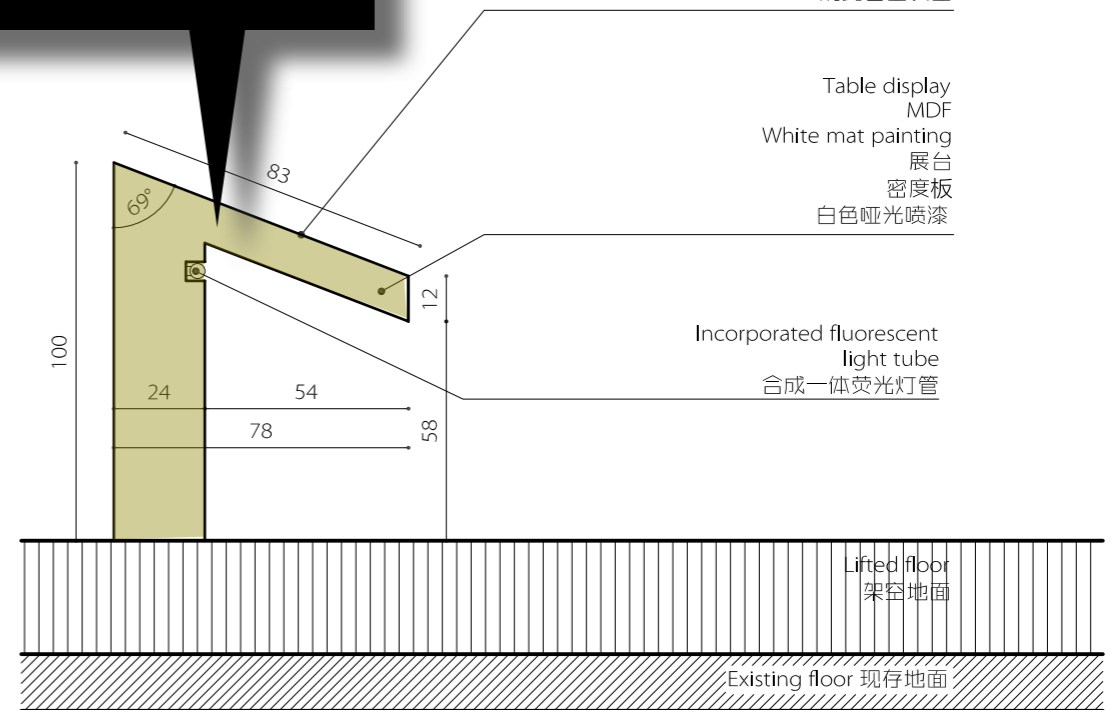


Table display  
MDF  
Graphics, texts or  
illustrations printing  
on the tabletop  
展台  
密度板  
图形,文字或插图印  
刷在桌面上

Graphics, texts or  
illustrations printed  
on the tabletop  
图形,文字或插图印  
刷到台面表面

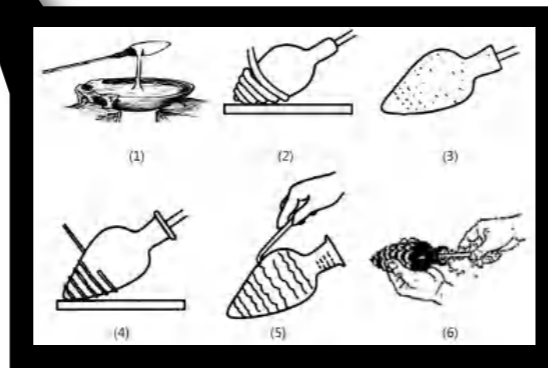
Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆



Incorporated fluorescent  
light tube  
合成一体荧光灯管

Lifted floor  
架空地面

Existing floor 现存地面

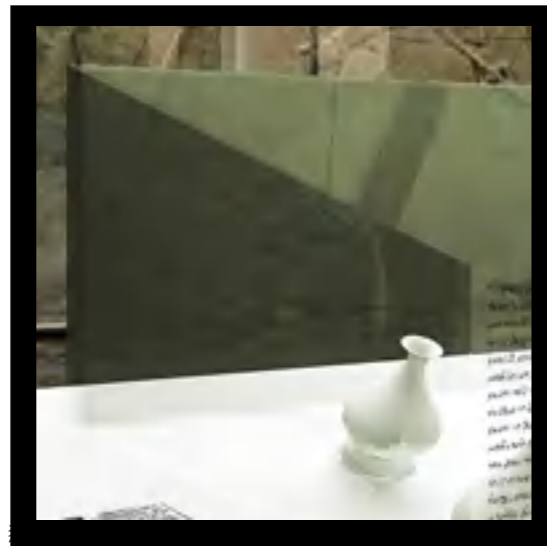


SECTION  
STANDARD DETAIL  
TABLE SHOWCASE  
SCALE 1:20

# 桌面展示 及 桌面展柜

## Table Display and Showcases

Design



入口：电动垂直提升系统

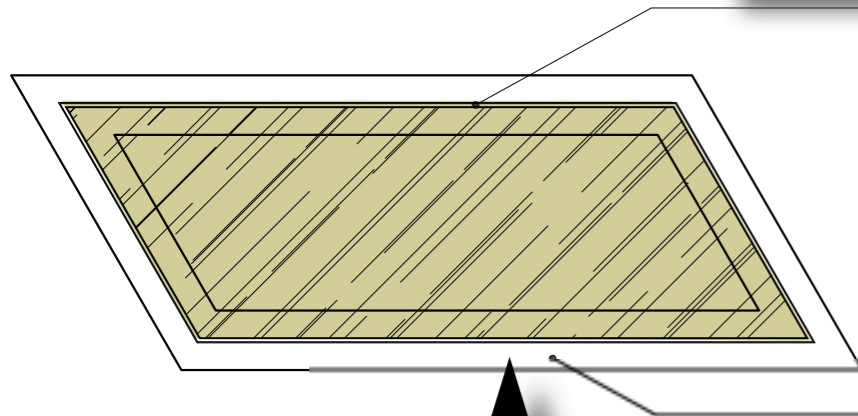
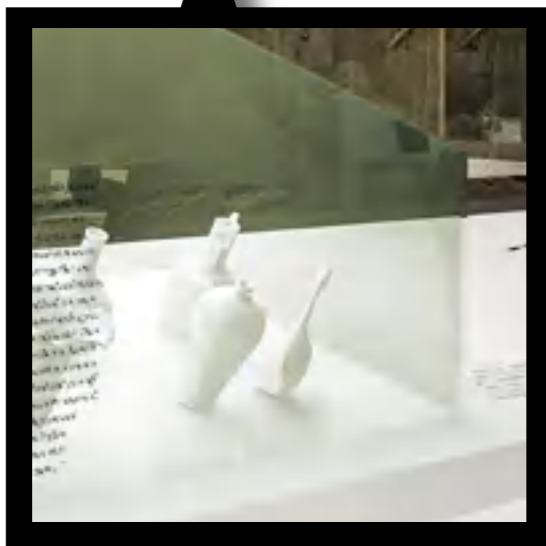
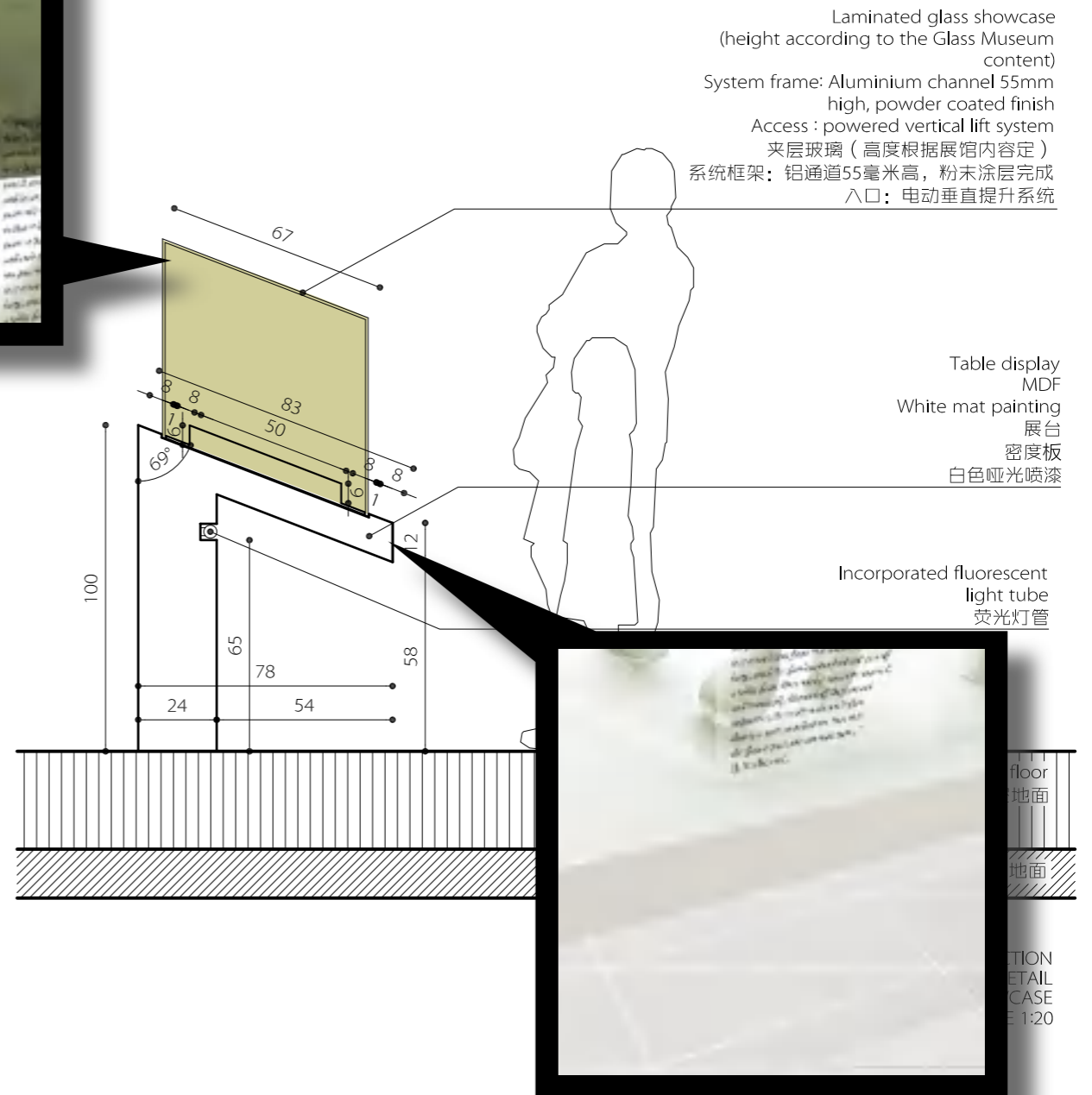


Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆



PLAN  
STANDARD DETAIL  
GLASS SHOWCASE  
SCALE 1:20



floor  
地面  
地面  
SECTION  
DETAIL  
GLASS  
SHOWCASE  
SCALE 1:20

中国玻璃技术发展

Development of Chinese glass technology

西周

Western Zhou period (1046 BC - 771 BC)

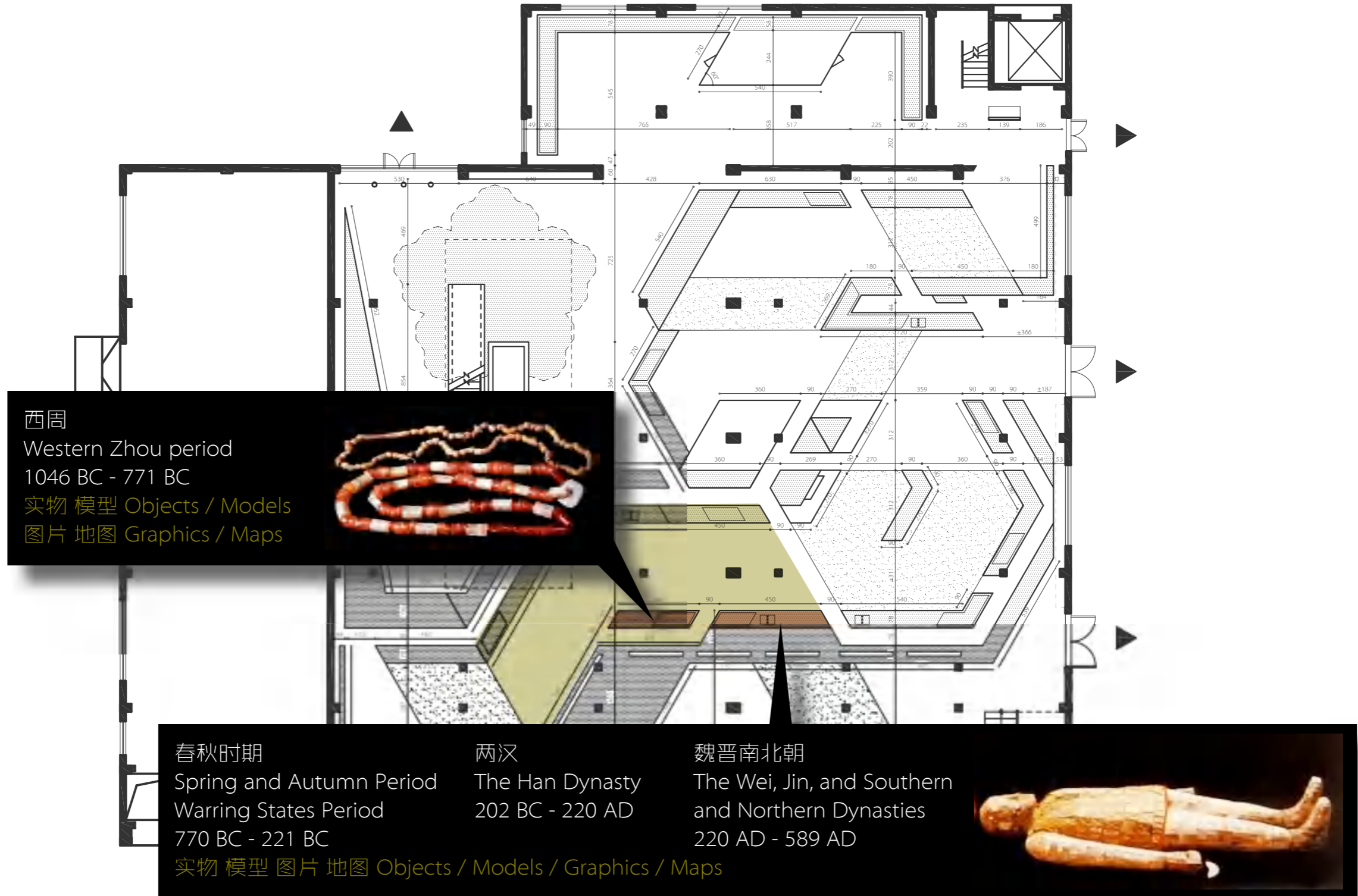
春秋时期 / 两汉 / 魏晋南北朝

Spring, Autumn, Warring States, Han, Wei Jin, South.  
and North. Dyn. (770 BC - 589 AD)

# 中国玻璃技术发展

## Development of Chinese glass technology

### Overview



1ST FLOOR FURNITURE PLAN

SCALE 1:200

# 中国玻璃技术发展

## Development of Chinese glass technology

Design



西周

Western Zhou period

1046 BC - 771 BC

# 西周

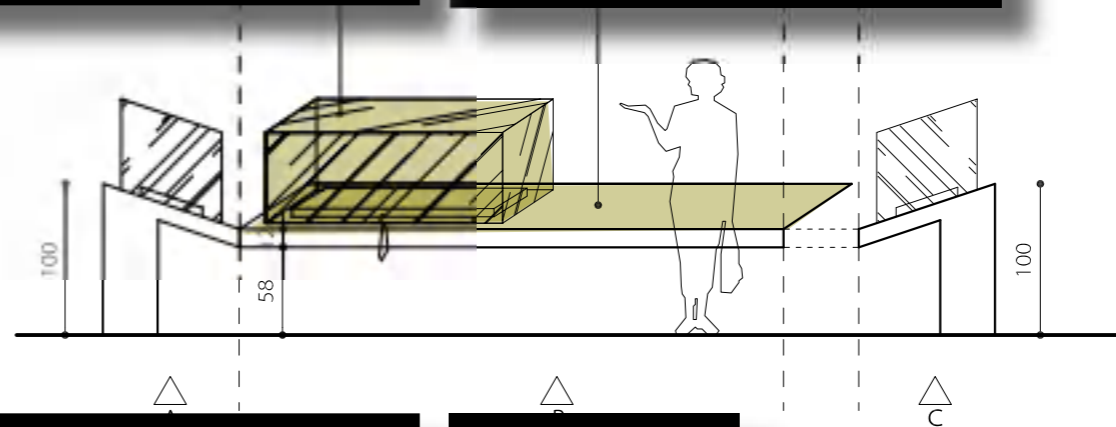
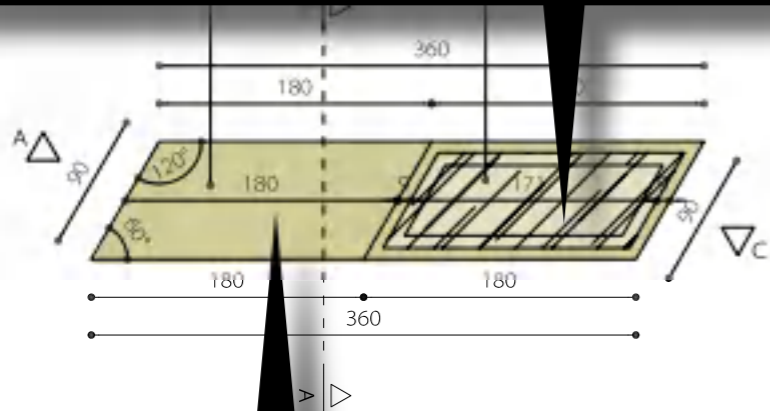
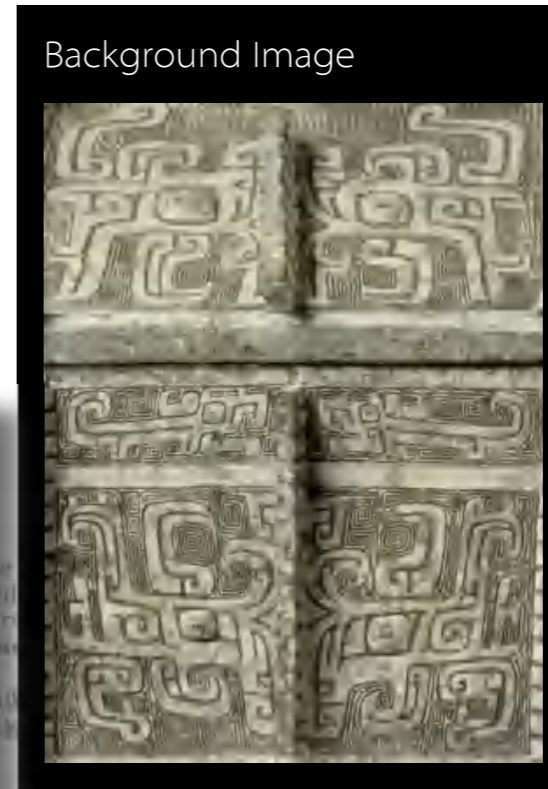
Western Zhou period (1046 BC - 771 BC)

Content

【实物】西周料珠2颗（洛阳博物馆）  
西周料珠串1件（洛阳博物馆）  
西周原始瓷器 1件（洛阳博物馆）



【Object】 Western Zhou Dynasty Material bead, 2 pieces (from Luoyang Museum)  
Western Zhou Dynasty Materials bead string, 1 string (from Luoyang Museum)  
Western Zhou Dynasty porcelain, 1 piece (from Luoyang Museum)

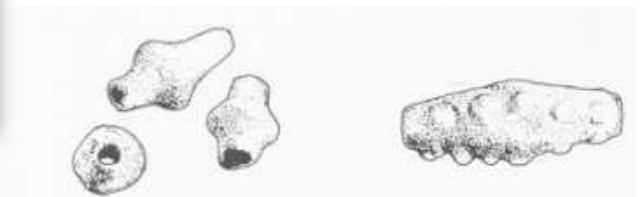
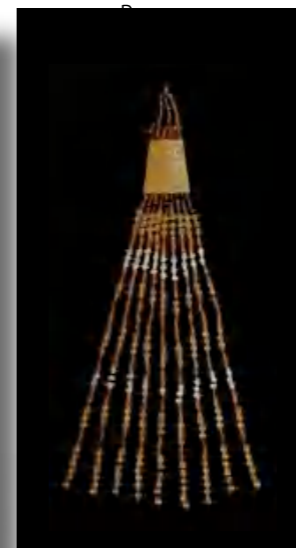


ELEVATION  
SCALE 1:50

【图片或照片】（1）庞家沟、茹家庄等西周墓葬挖掘现场资料（洛阳博物馆）  
（2）西周料珠图片（洛阳博物馆）  
（3）玻璃与古代礼祭  
（4）西周时期地图（绘制示意图+文字说明）

【Image or Photo】

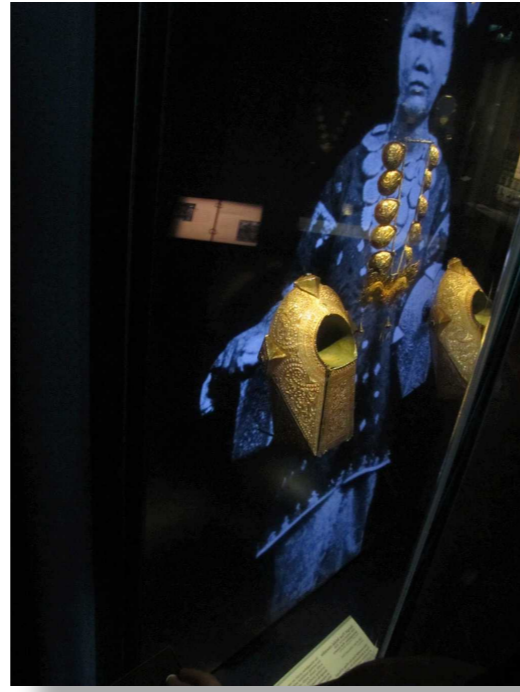
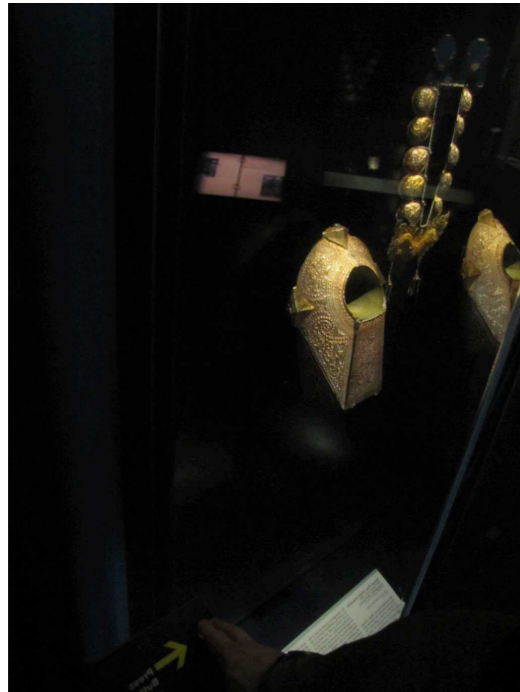
（1）Data of Pang Jia Chimb, Ru Jia Village and other excavated Western Zhou Dynasty tombs (from Luoyang Museum)  
（2）Western Zhou Dynasty material beads pictures (from Luoyang Museum)  
（3）Glass and Ancient Ceremony Festival  
（4）Western Zhou Dynasty map (Draw diagram + text description)



# 展柜 互动图片

## Showcase / Interactive Picture

Concept



Push the button ..... and see who was wearing these nice necklace !  
按下按钮——看是谁戴上了这条漂亮的项链！

春秋时期 / 两汉 / 魏晋南北朝

Spring, Autumn, Warring States, Han, Wei Jin, South. and North. Dyn. (770 BC - 589 AD)

Design

replica bronze sword with inlaid glass bead of King from Yue State (HuBei Province Museum), 1 piece

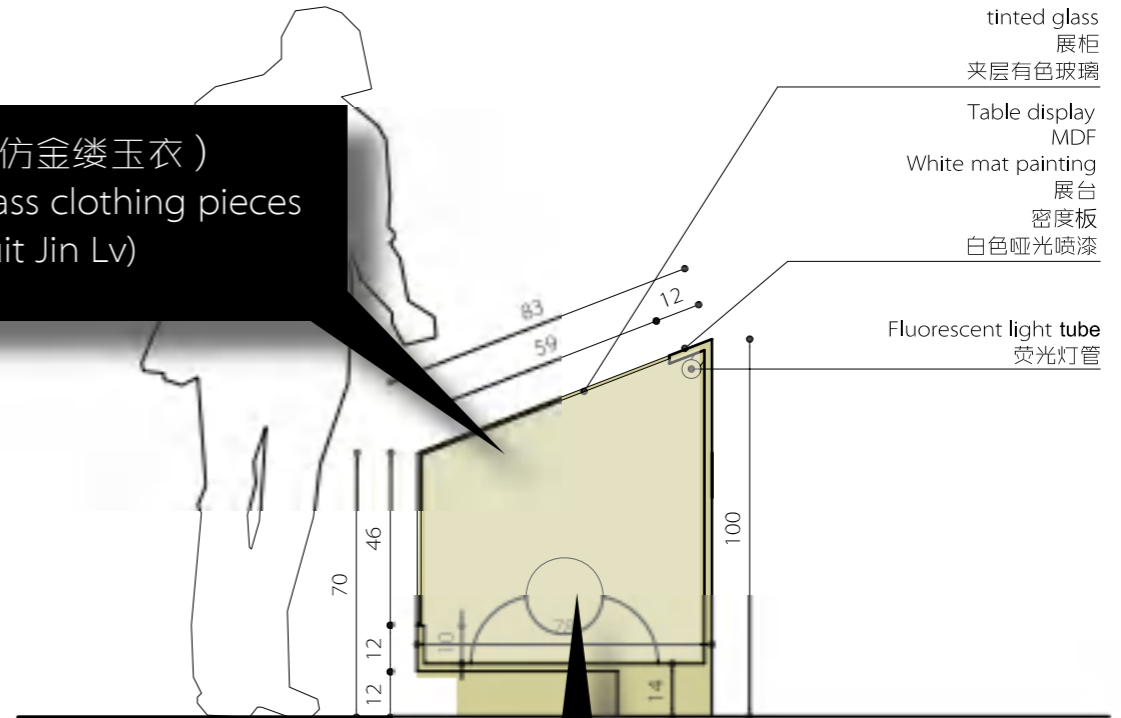
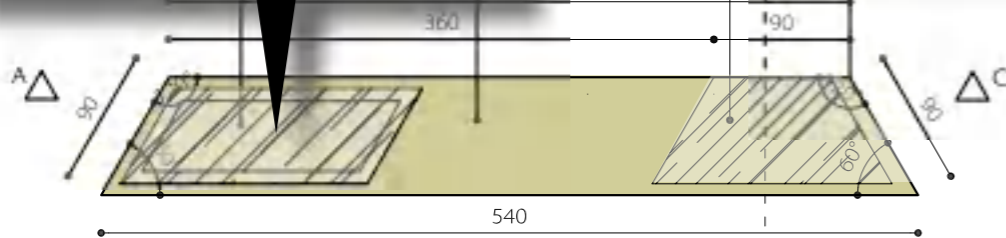


仿制汉代玻璃衣片10片 (仿金缕玉衣)  
Han Dynasty imitation glass clothing pieces  
10 item (imitation jade suit Jin Lv)

Showcase  
Laminated tinted glass  
展柜  
夹层有色玻璃

Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆

Fluorescent light tube  
荧光灯管



Background Image

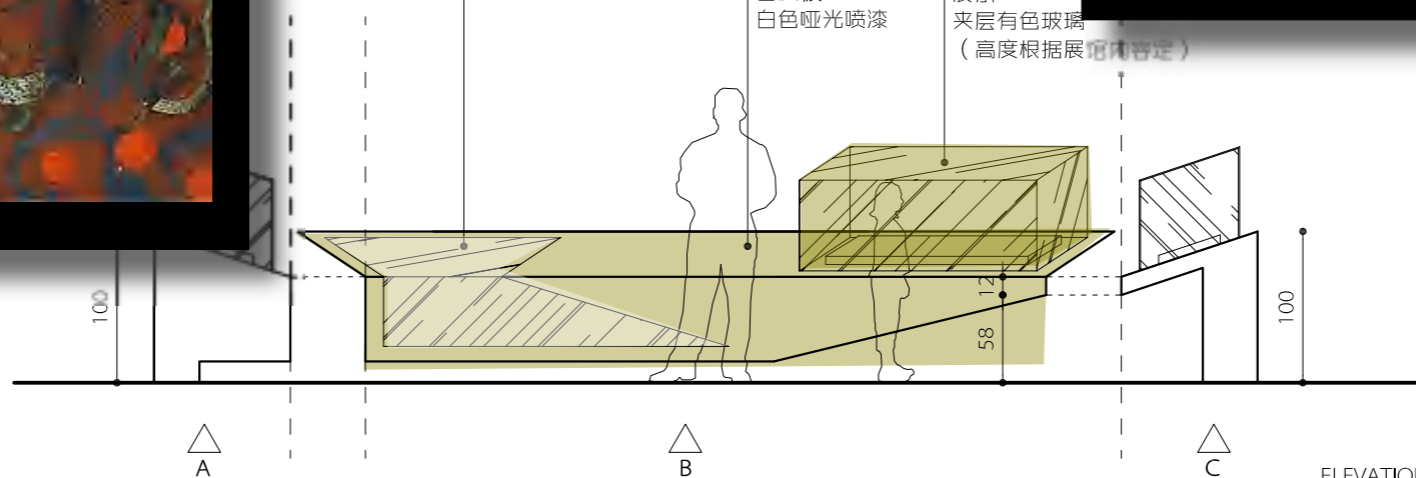


PLAN  
SCALE 1:50

Box showcase  
Laminated tinted glass  
展示  
夹层有色玻璃

Table display  
MDF  
White mat painting  
展台  
密度板  
白色哑光喷漆

Showcase  
Laminated tinted glass  
(height according to museum content)  
展示  
夹层有色玻璃  
(高度根据展馆内容定)



ELEVATION  
SCALE 1:50

# 春秋时期

## Spring and Autumn Period and Warring States Period

### Content

- 【实物】 (1) 春秋时期来自古埃及的镶嵌珠原件1颗
- (2) 仿制越王勾践青铜镶玻璃珠剑1把 (湖北省博物馆)
- (3) 仿制玻璃璧3件
- (4) 仿制玻璃剑首及剑珕3件
- (5) 仿制中空玻璃珕5件
- (6) 仿制玻璃印章1件
- (7) 青铜器物原件2件
- (8) 古代模具原件4件

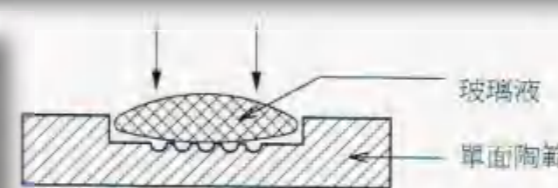
- 【Object】 (1) Original inlaid Material Bead from Ancient Egypt during Spring and Autumn Period, 1 piece
- (2) replica bronze sword with inlaid glass bead of King from Yue State (HuBei Province Museum), 1 piece
- (3) replica Glass Bi- Plate with hole in center, 3 pieces
- (4) replica handle of sword and ears of sword, 3 pieces
- (5) replica hollow glass earrings, 5 pieces
- (6) replica Glass stamp, 1 piece
- (7) Original bronze wares, 2 pieces
- (8) Ancient original molds, 4 pieces

- 【图片、多媒体】 (1) 战国时期君王手持青铜镶玻璃珠剑场景
- (2) 战国时期妇女耳带玻璃珕图片
- (3) 战国时期装饰玉器、玻璃剑首及剑珕青铜剑图片
- (4) 春秋战国时期玻璃图片及发掘资料
- (5) 春秋战国时期地图
- (6) 来自美国康宁博物馆的中西方玻璃化学成分化验文件

- 【Image, Multimedia】
- (1) Scene of the King from Warring States Period hold Bronze sword inlaid with glass
- (2) Pictures of Women from Warring States period wearing glass ear-decorations
- (3) Pictures of Warring States period of the decoration of sword with jade and glass
- (4) Other glass pictures of Spring & Autumn Period and related documents of excavation
- (5) Spring and Autumn Period Map
- (6) laboratory documents from Corning Museum of United States in Glass chemical composition of the West and the East

- 【模型】 (1) 单面压模法 (2) 泥芯范铸法 (3) 青铜技术 (与玻璃技术的对比+文字说明)

- 【Model】 (1) Single pressing-die method (2) Soil core casting method (3) Bronze techniques (contrast to glass technology, + text description)



- 【实物】 (1) 仿制汉代玻璃碗1件  
(2) 仿制汉代玻璃杯2件  
(3) 仿制汉代玻璃衣片10片 (仿金缕玉衣)  
(4) 仿制汉代玻璃蝉4件  
(5) 汉代玉器原件2件  
(6) 仿制汉代玻璃矛2件  
(7) 汉代玻璃模具原件2件

#### 【Object】

- (1) Han Dynasty imitation glass bowl 1 item  
(2) Han Dynasty imitation glass 2 items  
(3) Han Dynasty imitation glass clothing pieces 10 item (imitation jade suit Jin Lv)  
(4) Han Dynasty imitation glass cicada 4 items  
(5) Han Dynasty jade piece 2 items  
(6) Han Dynasty imitation of glass spear 2 items  
(7) Han Dynasty glass molds 2 items

- 【图片、多媒体】 (1) 汉代时期与玻璃有关的生活场景、壁画、画像砖等  
(2) 汉代用玻璃杯喝水图片  
(3) 汉代时期其它玻璃器图片及发掘资料  
(4) 两汉代时期地图  
(5) 汉代一系列玻璃制造技术的记载  
(6) 丝绸之路路线图及绘本 (西北及海上丝绸之路)  
(7) 介绍丝绸之路《汉书 西域传》拓本

#### 【Image, multimedia】

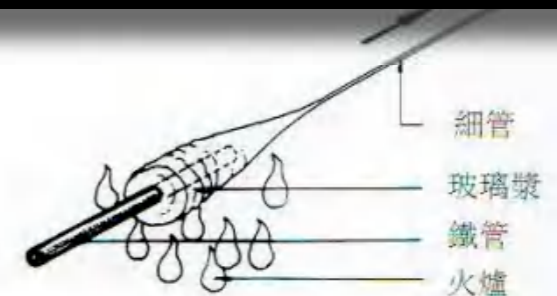
- (1) The Han Dynasty: glass-related life scenes, murals, portraits and brick  
(2) The Han Dynasty: picture of people using glass cup to drink water  
(3) Other glass pictures of Han Dynasties and related documents of excavation  
(4) Map of the Han Dynasty period  
(5) Series of glass-making techniques recorded in Han Dynasty  
(6) Silk Road, the routine map and picture books (Northwest Silk Road and marine Silk Road)  
(7) Rubbings picture of Introduction of Silk Road, "Han Book- Western Regions"

- 【模型】 (1) 双面压模法 (2) 拉管法

- 【实物】 制作工具

- 【Model】 (1) double pressing-die method (2) tube forming techniques

- 【Object】 Tools



# 魏晋南北朝

## The Wei, Jin, and Southern and Northern Dynasties

### Content

- 【实物】 (1) 仿制魏晋南北朝玻璃钵1件  
(2) 仿制罗马玻璃杯1件  
(3) 仿制玻璃鸭形器1件  
(4) 仿制湖北鄂城五里墩 121号墓出土玻璃碗1件

【Objects】

- (1) Northern and Southern Dynasties imitation glass bowl 1 item  
(2) Imitation Roman glass cup 1 item  
(3) Imitation duck-shaped glass ware 1 item  
(4) Imitation glass bowl from Hubei Province Wu Lidun No. 121 tomb, 1 item



- 【图片、多媒体】 (1) 魏晋南北朝时期玻璃吹制图片  
(2) 魏晋南北朝时期与玻璃有关的生活场景  
(3) 《魏书》及《北史》拓本图片  
(4) 玻璃器与佛教 如：云岗大佛玻璃眼珠、玻璃钵  
(5) 魏晋南北朝时期其它玻璃器图片及发掘资料  
(6) 魏、晋、南北朝时期地图  
【素描】 (1) 中国最早的吹制法

【Image, multimedia】

- (1) pictures of Wei, Jin and Southern and Northern Dynasties glass-blowing  
(2) Wei, Jin and Southern and Northern Dynasties: glass-related scenes of life  
(3) "Wei Book" and "Northern History Book" rubbings picture  
(4) Glass ware and Buddhism, such as: glass eyes of Yungang Grottos Buddha, glass bowl  
(5) Other glass pictures of Wei & Jin & Southern and Northern Dynasties and related documents of excavation  
(6) Map of Wei, Jin, Northern and Southern Dynasties  
【Sketch】 (1) China's earliest glass-blowing method



中国玻璃技术发展

Development of Chinese glass technology

隋唐

The Sui & Tang Dynasty (581 AD - 907 AD)

宋元

The Song & Yuan Dynasty (960 AD - 1368 AD)

# 中国玻璃技术发展

## Development of Chinese glass technology

### Overview



1ST FLOOR FURNITURE PLAN

SCALE 1:200

# 中国玻璃技术发展

## Development of Chinese glass technology

Overview



隋唐

The Sui Tang Dynasty

581 AD - 907 AD

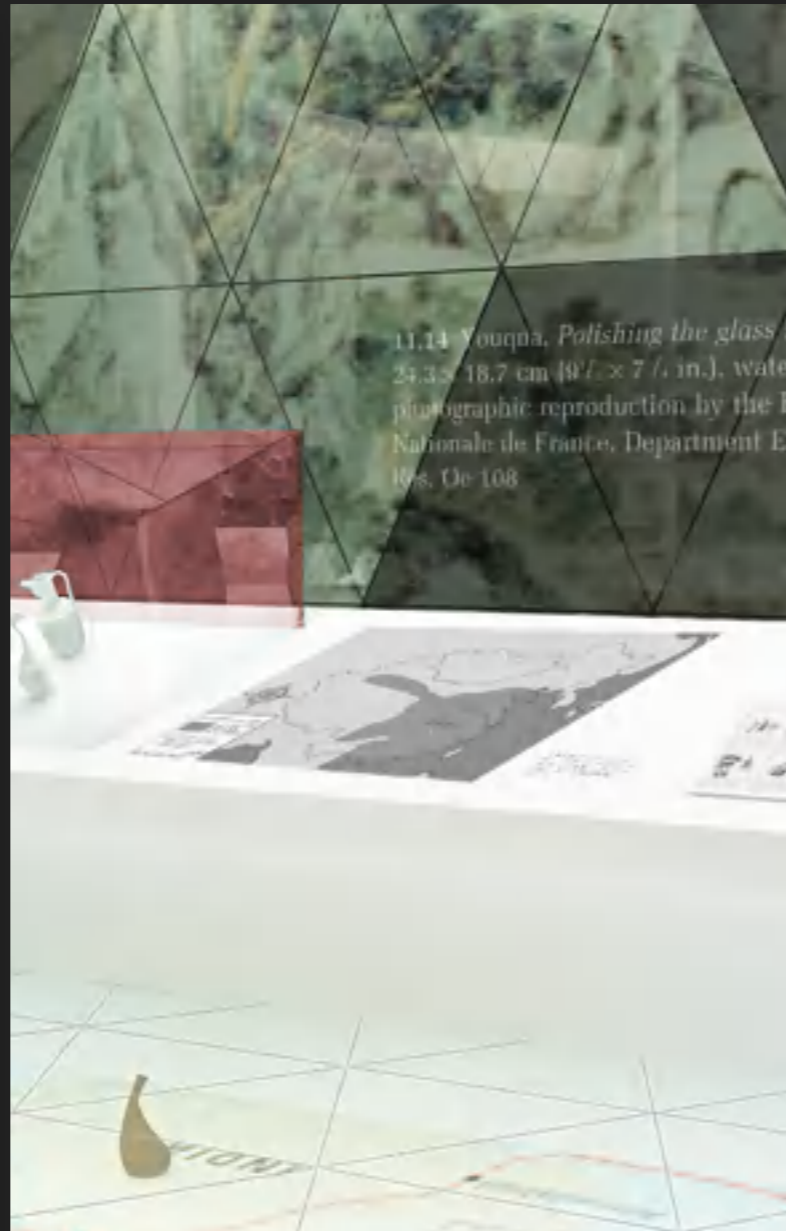
# 中国玻璃技术发展

## Development of Chinese glass technology

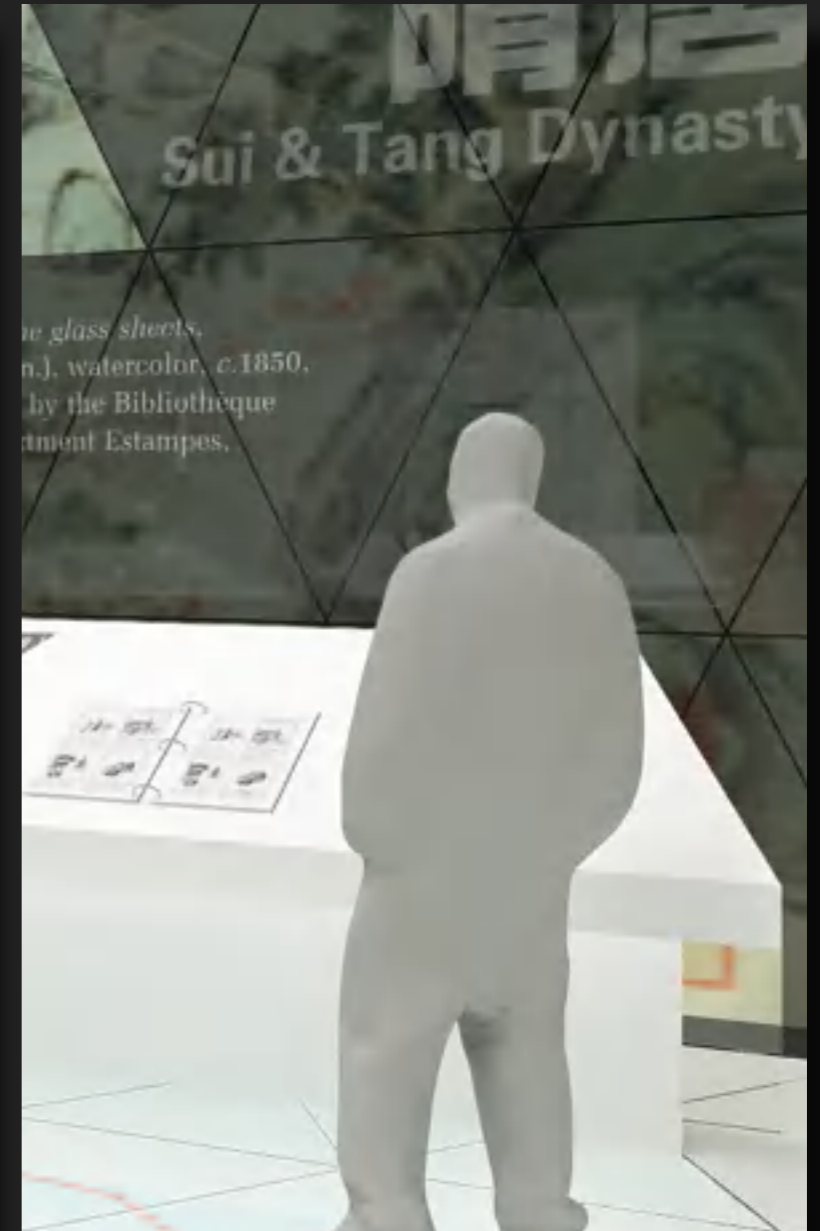
Overview



展柜 / 地下展柜  
Showcase / Floor Showcase



图片 地图  
Graphics / Maps



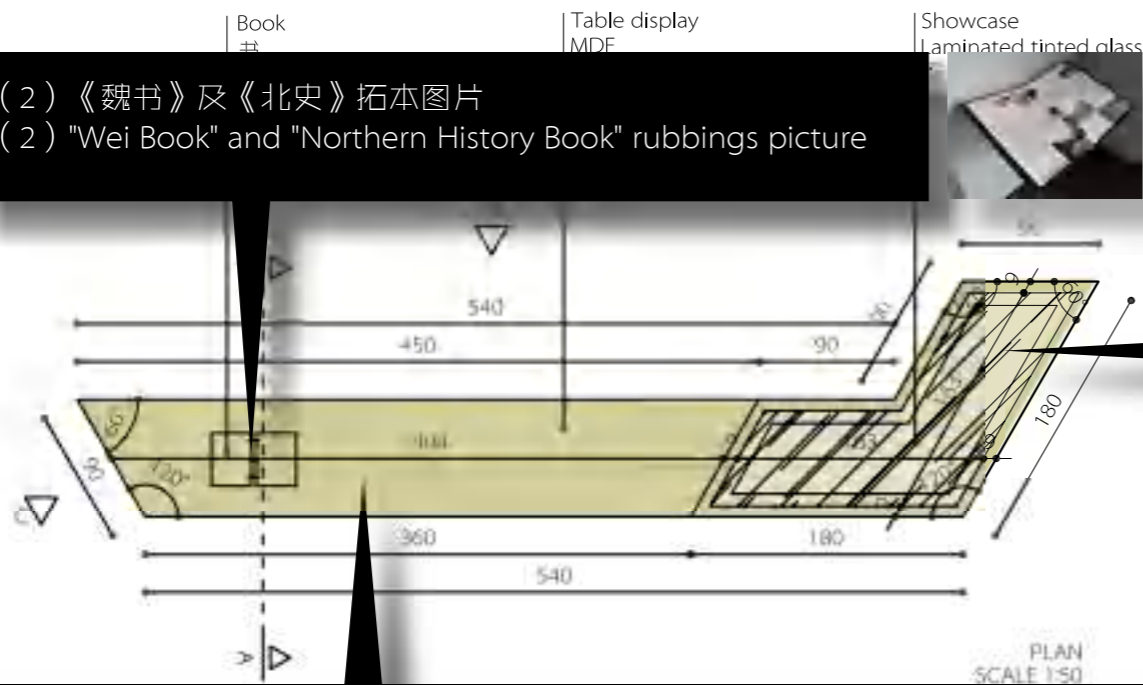
书  
Book

# 隋唐

## The Sui & Tang Dynasty (581 AD - 907 AD)

### Content

- (2) 《魏书》及《北史》拓本图片
- (2) "Wei Book" and "Northern History Book" rubbings picture



- 【图片、多媒体】(1) 隋唐时期与玻璃有关的生活场景，如：用玻璃茶具喝茶场景
- (2) 《魏书》及《北史》拓本图片
- (3) 隋唐时期其它玻璃器图片及发掘资料
- (4) 玻璃器型与白瓷器型对比如：玻璃茶具与白瓷茶具器型对比或玻璃花瓶器型与瓷花瓶器型对比
- (5) 玻璃器与伊斯兰教 如：伊斯兰教文饰
- (6) 隋、唐时期地图、丝绸之路地图

- 【素描】(1) 铁棒整修口沿 (2) 粘玻璃条

#### 【Image, Multimedia】

- (1) Sui and Tang dynasties: glass-related life scenarios, such as: Using glass tea cup to drink tea
- (2) "Wei Book" and "Northern History Book" rubbings picture
- (3) Other glass pictures of Sui & Tang Dynasties and related documents of excavation
- (4) Contrast the Shape of Glass ware to the shape of white porcelain, for example: glass tea set with white porcelain-type comparison or glass vase-type and the porcelain vase-type comparison.
- (5) Glass ware and Islam, such as: Islam tattoo
- (6) Map of The Sui and Tang Dynasty period, Map of Silk Road

- 【Sketch】(1) Iron bar rim trimming (2) pasting glass stick

- 【实物】(1) 仿制隋代带盖玻璃盒1件
- (2) 仿制隋代玻璃杯2件
- (3) 仿制唐代玻璃盘2件
- (4) 仿制唐代玻璃茶托1件
- (5) 仿制唐代玻璃瓶1件
- (6) 唐代瓷器（唐三彩）原件2件
- (7) 仿唐代玻璃佩 2件
- (8) 仿唐代玻璃净水瓶1件

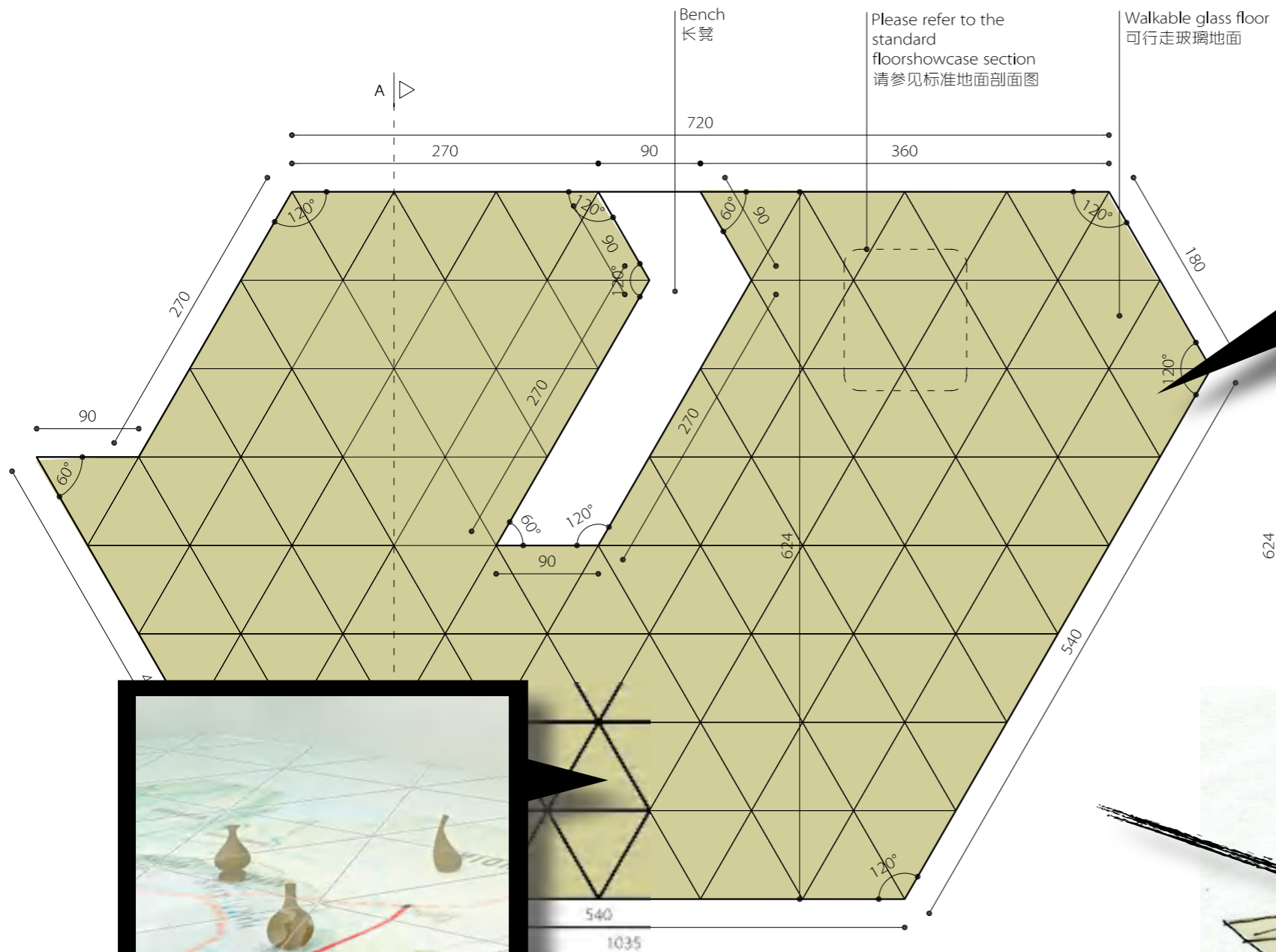
- 【Object】(1) Imitation glass box with cover of Sui Dynasty 1 item
- (2) Imitation glass cup of Sui Dynasty 2 items
- (3) Imitation glass plate of Tang Dynasty 2 items
- (4) Imitation tea tray of Tang Dynasty 1 item
- (5) Imitation glass bottle of Tang Dynasty 1 item
- (6) Tang Dynasty Porcelain (Tang San Cai -- 3 main color for porcelain at that time) 2 original items
- (7) Imitation glass ornaments, 2 items
- (8) Imitation glass vase (Buddhism), 1 item

#### Background Image

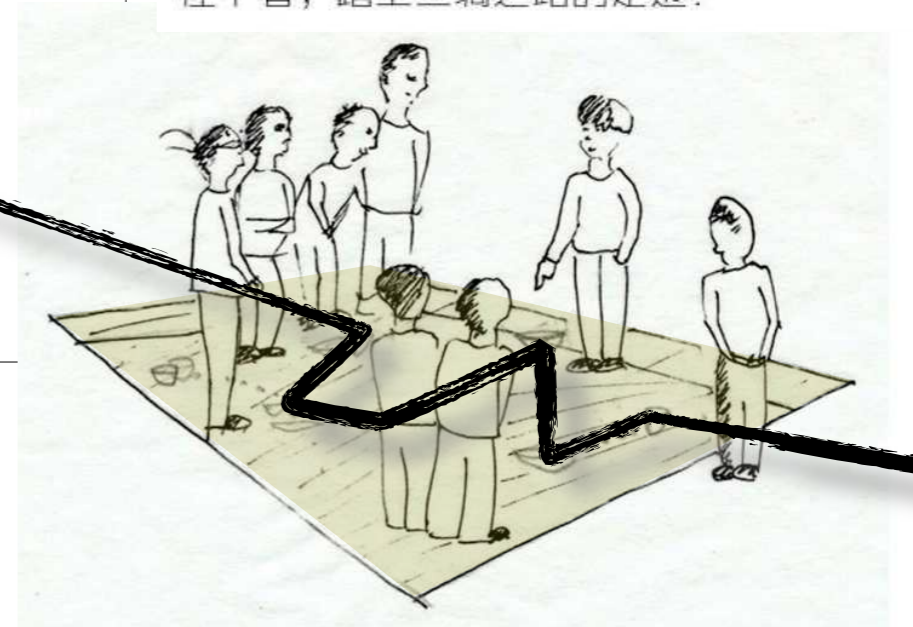
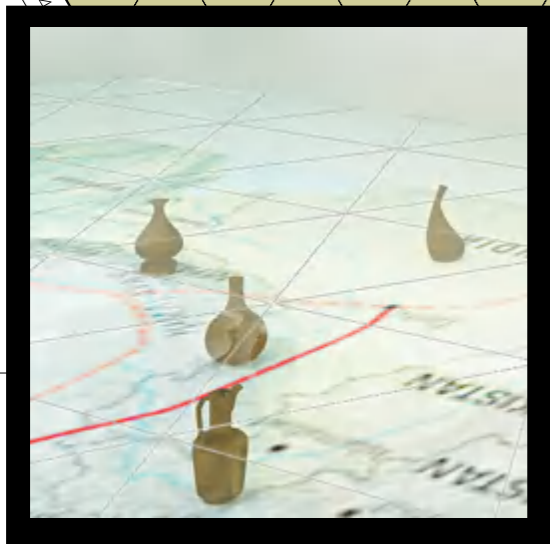


ELEVATION  
SCALE 1:50

# 地下展柜 丝绸之路 Floor Showcase Silk Road Content & Design



Look down and walk into the silk road tracks!  
往下看，踏上丝绸之路的足迹！



# 宋元

## The Song & Yuan Dynasty (960 AD - 1368 AD)

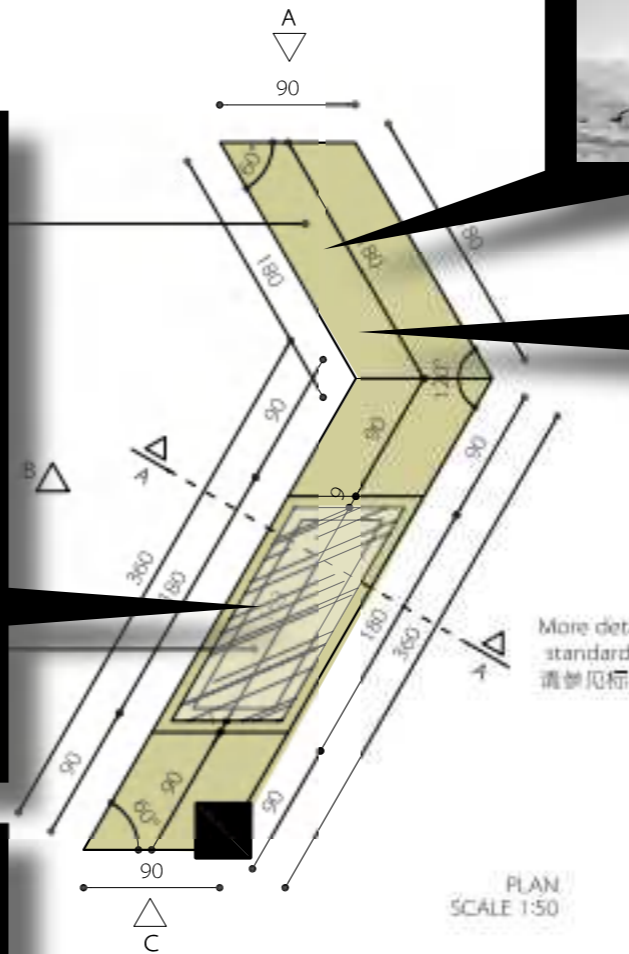
### Content

Table display  
MDF

- 【实物】 (1) 仿制宋代玻璃鸟1件  
 (2) 仿制宋代葫芦器2件  
 (3) 仿制宋代其它玻璃器2件  
 (4) 仿制宋代同时期辽金玻璃器2件  
 (5) 仿制元代莲花盏1件  
 (6) 仿制元代玻璃圭1件  
 (7) 仿制元代象玉圭1件

- 【Object】 (1) Imitation glass bird of Song Dynasty 1 item  
 (2) Imitation glass gourd of Song Dynasty 1 item  
 (3) Imitation other glass ware of Song Dynasty 2 items  
 (4) Imitation Liao & Jin glass ware of Song Dynasty period 2 items  
 (5) Imitation Lotus lamp cup of Yuan Dynasty 1 item  
 (6) Imitation glass tablet of Yuan Dynasty 1 item  
 (7) Imitation jade tablet of Yuan Dynasty 1 item

### Background Image



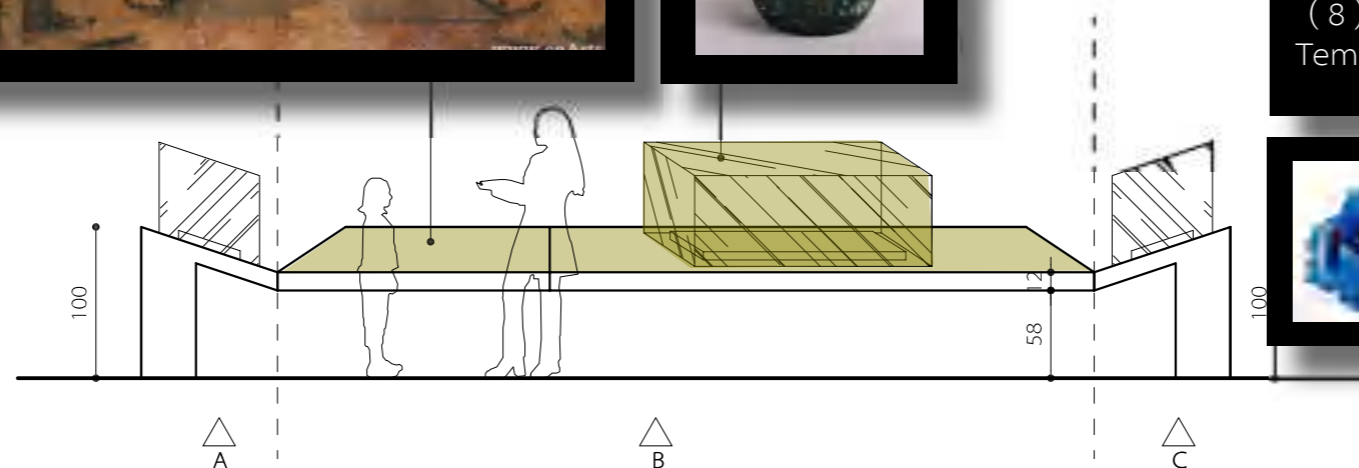
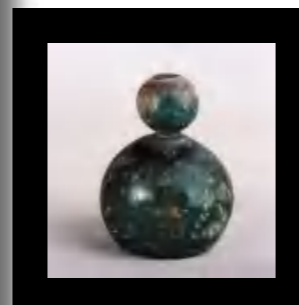
Model



- 【图片、多媒体】 (1) 宋元时期与玻璃有关的生活场景，如：永乐宫壁画  
 (2) 新疆玻璃作坊遗址  
 (3) 宋元时期其它玻璃器图片及发掘资料  
 (4) 宋辽金、元时期地图  
 (5) 宋代开宝寺琉璃塔  
 (6) 元代“瓘玉局”（中国第一个玻璃官窑）  
 (7) 《大明词典》拓本  
 (8) 大报恩寺琉璃塔 出土构件

### 【Image, Multimedia】

- (1) Song and Yuan period glass-related scenes of life, such as: Yongle Palace Murals  
 (2) Relic site of glass workshop in Xinjiang Region  
 (3) Other glass pictures of Song and Yuan Dynasties and related documents of excavation  
 (4) Maps of Song, Liao, Jin and Yuan periods  
 (5) Glass tower of Kai-Bao Temple in Song Dynasty  
 (6) Yuan Dynasty "Gwan Yu Board", China's first glass official kiln  
 (7) "Da-ming Dictionary" rubbings  
 (8) component of glass tower of BaoEn Temple in Nanjing



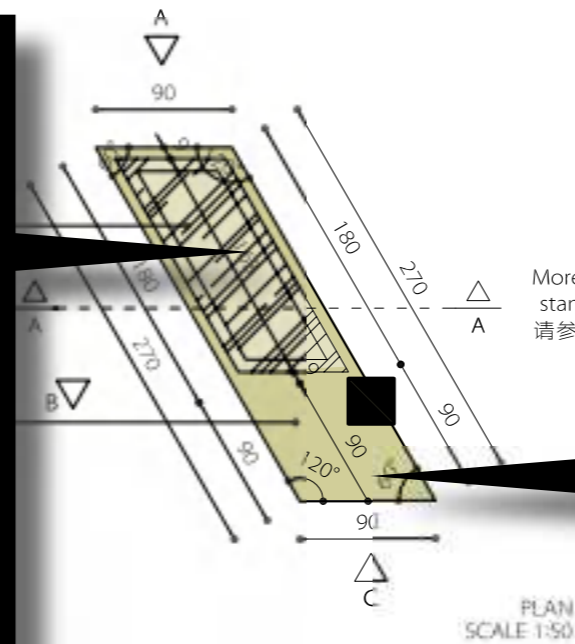
# 明

## The Ming Dynasty (1368 AD - 1644 AD)

### Content

- 【实物】 (1) 明代玻璃组佩原件1件  
 (2) 仿制明代青帘1件 (用于祭坛、清庙)  
 (3) 仿制明代双耳方形杯1件  
 (4) 仿制明代玻璃围棋1套  
 (5) 仿制明代各类玻璃发饰、花饰4件 (发钗、手镯等)  
 (6) 仿明代玻璃砚 1 件

- 【Object】 (1) Ming Dynasty glass jewelry set, 1 original item  
 (2) Imitation Green glass curtain of Ming Dynasty 1 item (for the altar, Qing Temple)  
 (3) Imitation square-ear glass cup of Ming Dynasty 1 item  
 (4) Imitation glass Go game of Ming Dynasty 1 set  
 (5) Imitation various types of glass hair ornaments of Ming Dynasty and floriation (hair hairpin, bracelet, etc.)  
 (6) Imitation glass inkstone



### Background Image

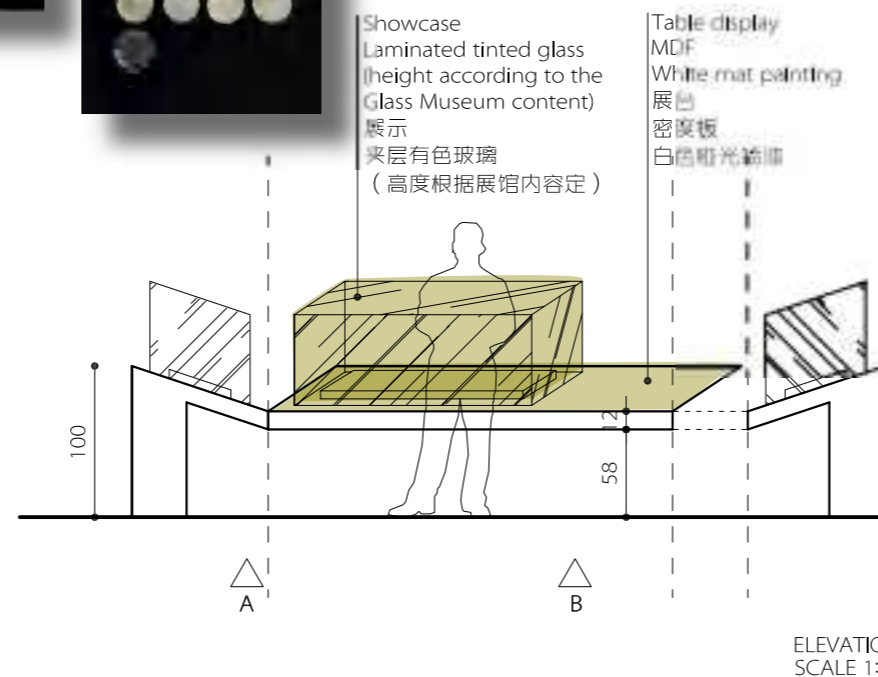
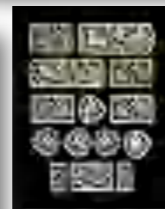
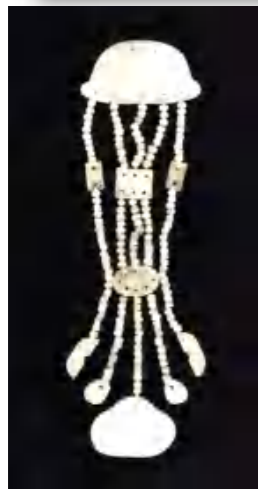


### 【图片、多媒体】

- (1) 明代与玻璃有关的生活场景, 如: 带玻璃发饰、花饰仕女图  
 (2) 颜神镇玻璃作坊遗址  
 (3) 《天工开物》及《颜山杂记》拓本图片  
 (4) 明代地图  
 (5) 明代其它玻璃器图片及发掘资料

### 【Image, Multimedia】

- (1) Life of the Ming Dynasty and glass-related scenes, such as: hair ornaments with glass, floriation Ladies  
 (2) glass workshop relic site in Yan Shen Town  
 (3) "Heavenly Creations" and "Yen Shan Miscellaneous notes," rubbings picture  
 (4) Map of Ming Dynasty  
 (5) Other glass pictures of Ming Dynasties and related documents of excavation



西方玻璃技术发展

Development of western glass technology

中世纪时期

Medieval (500 AD - 1500 AD)

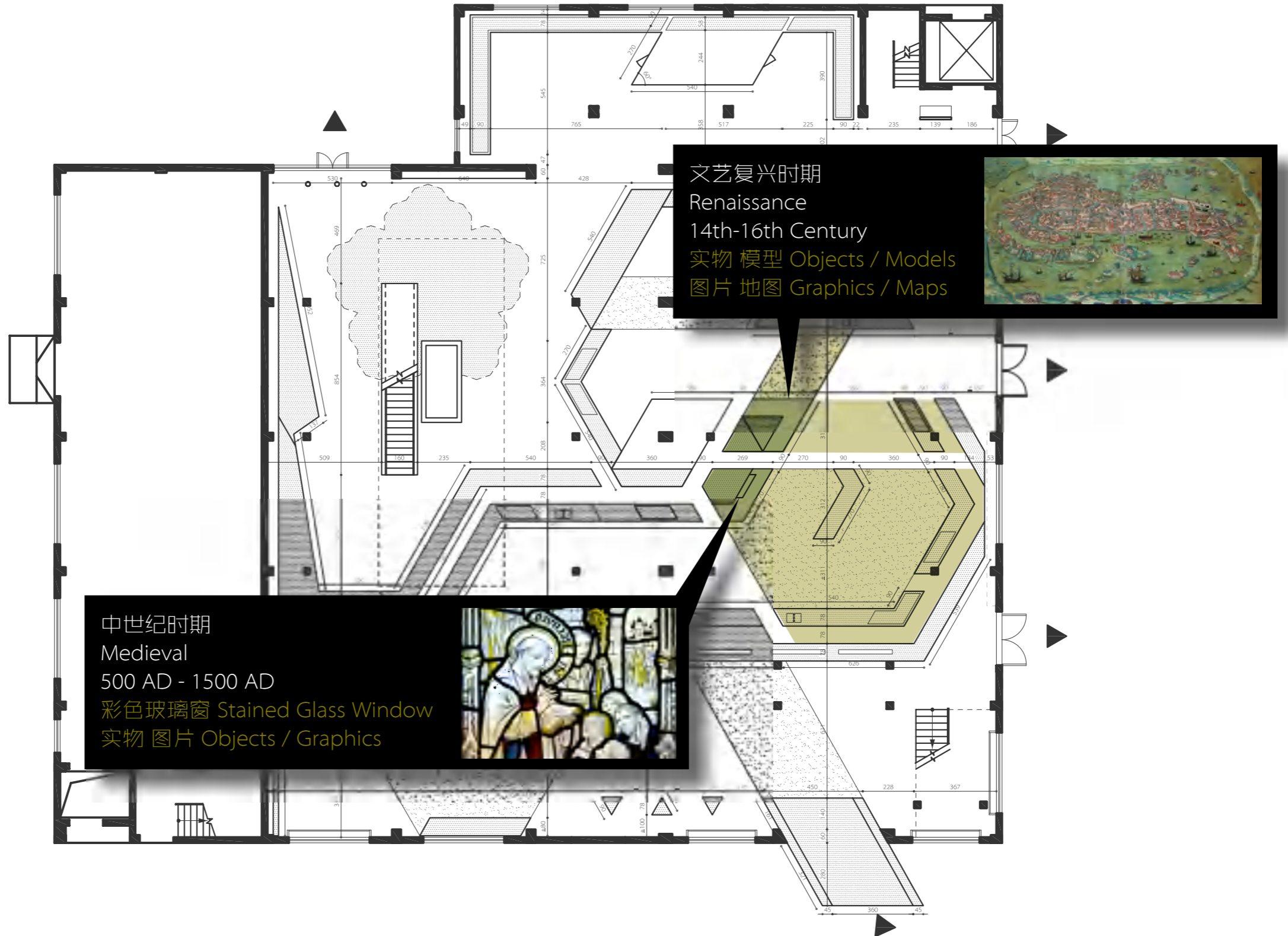
文艺复兴时期

Renaissance (14th-16th Century)

# 西方玻璃技术发展

## Development of western glass technology

### Overview



文艺复兴时期  
Renaissance  
14th-16th Century  
实物 模型 Objects / Models  
图片 地图 Graphics / Maps

中世纪时期  
Medieval  
500 AD - 1500 AD  
彩色玻璃窗 Stained Glass Window  
实物 图片 Objects / Graphics

1ST FLOOR FURNITURE PLAN  
SCALE 1:200

中世纪时期 / 文艺复兴时期

Medieval (500 AD - 1500 AD) / Renaissance (14th-16th Century)

Design



中世纪时期  
Medieval  
500 AD - 1500 AD

文艺复兴时期  
Renaissance  
14th-16th Century

# 中世纪时期 / 文艺复兴时期

Medieval (500 AD - 1500 AD) / Renaissance (14th-16th Century)

Design



彩色玻璃窗 Stained Glass Window  
实物 图片 Objects / Graphics



实物 模型 Objects / Models  
图片 地图 Graphics / Maps

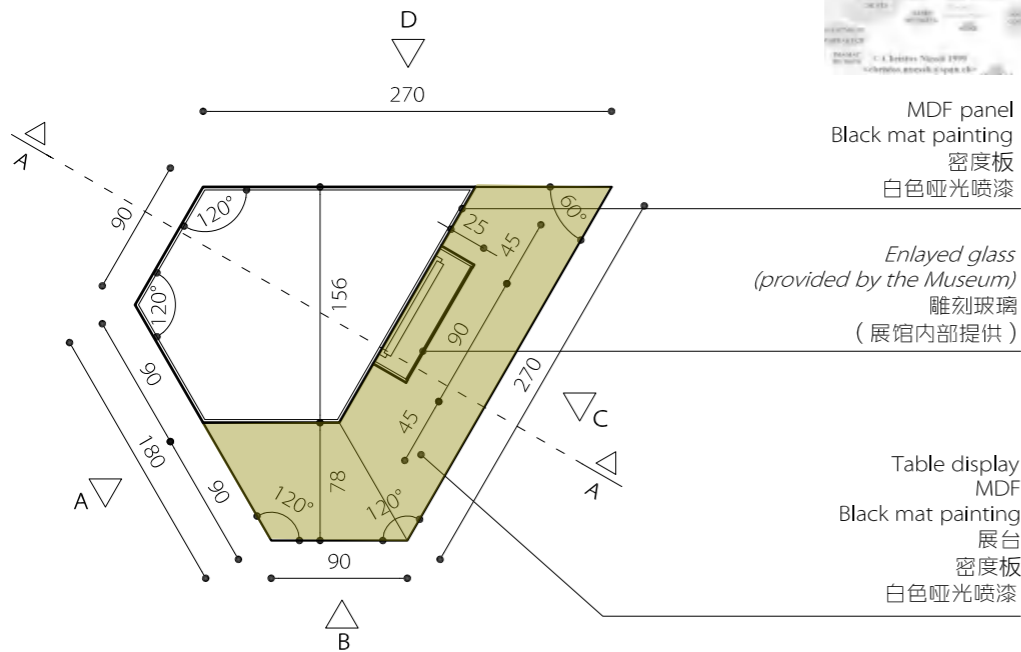


地下展柜 Floor Showcase  
地图 实物 Map and Objects

# 中世纪时期

## Medieval (500 AD - 1500 AD)

### Content



- 【图片、多媒体】(1) 中世纪时期与玻璃有关的生活场景、文化、历史
- (2) 中世纪地图
- (3) 中世纪玻璃器图片
- 【幻灯片】所有中世纪教堂玻璃
- 【素描】(1) 珐琅玻璃
- 【实物】制作工具
- 【模型】彩绘玻璃制作步骤分解模型 (意大利购买)

#### 【Image, Multimedia】

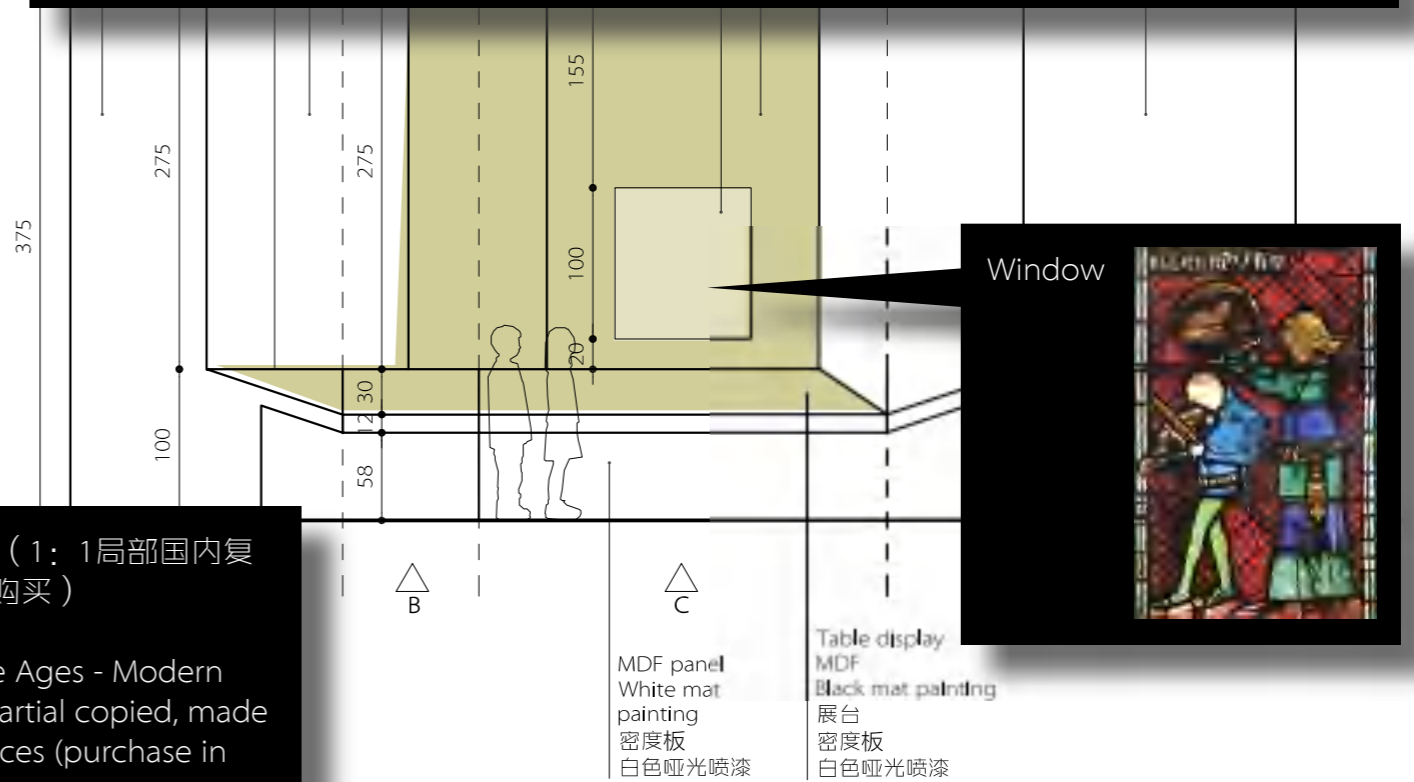
- (1) Medieval Period: glass-related scenes of life, culture, history
- (2) Medieval Map
- (3) Medieval glass pictures

#### 【Slides】All churches glass from medieval period

#### 【Sketch】(1) enamel glass

#### 【Object】Tools

#### 【Model】decomposition model showing production steps of Stained glass (Italy purchase)



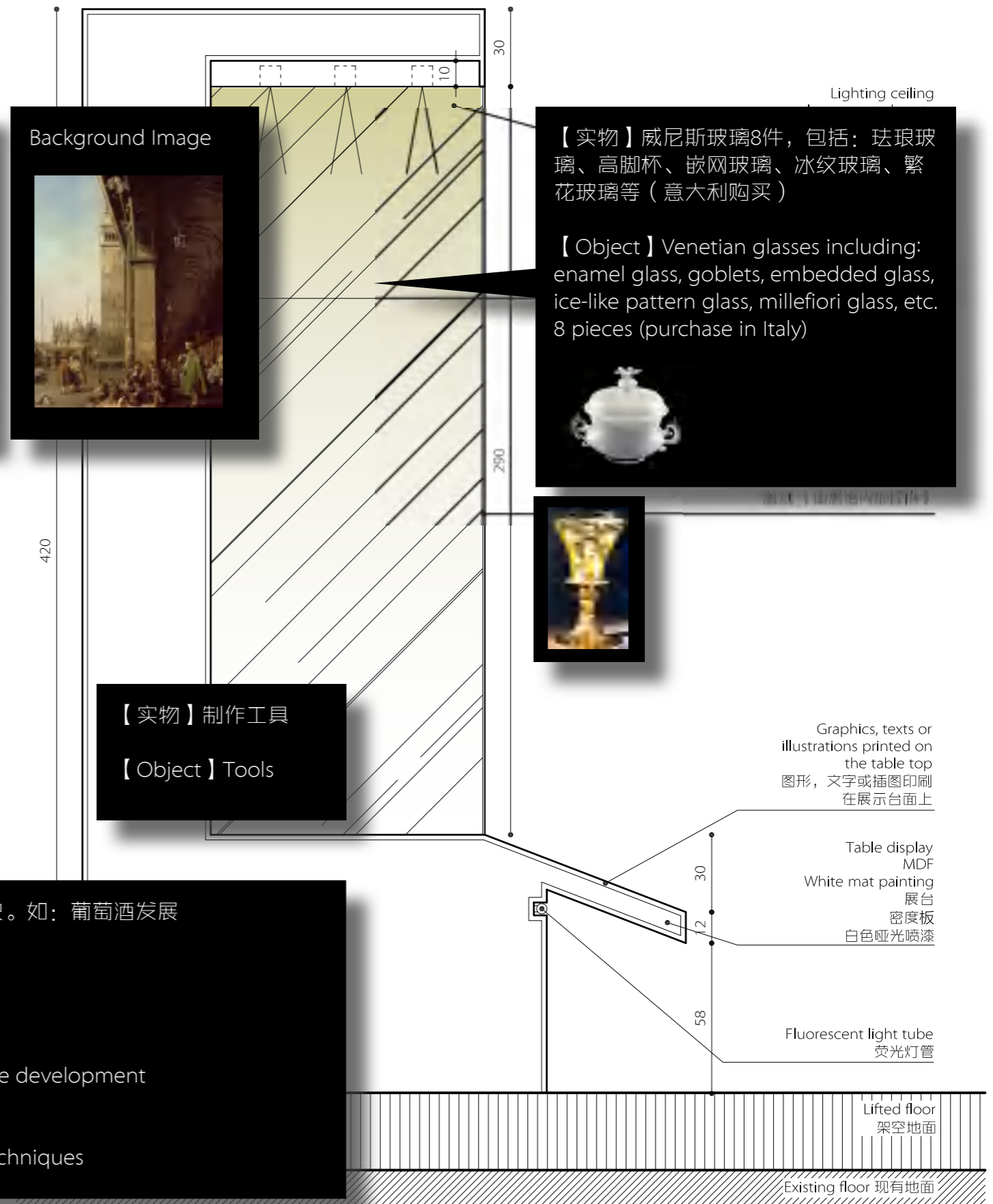
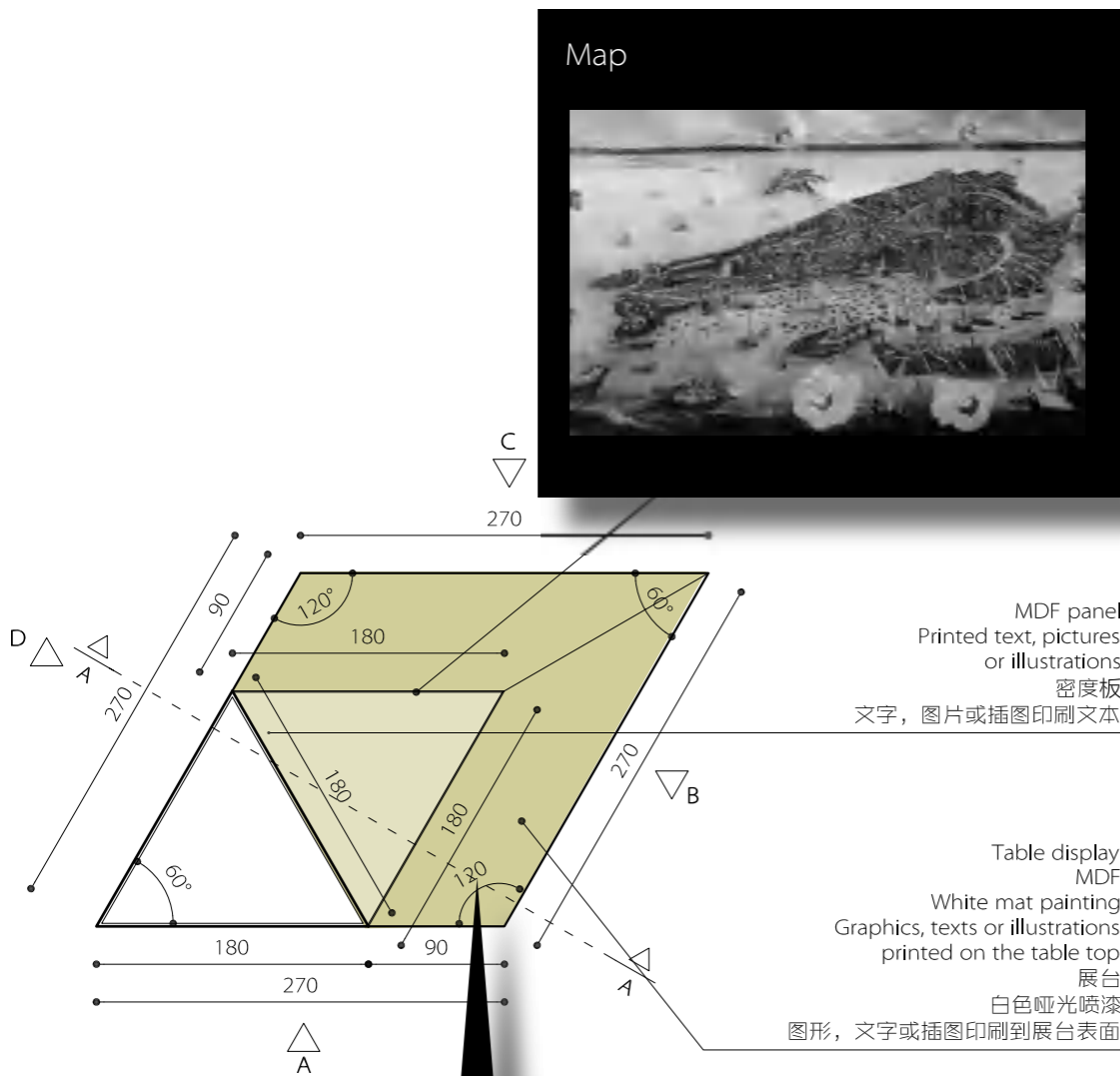
【实物】从中世纪——现代教堂玻璃10件 (1:1局部国内复制) 中世纪珐琅玻璃 3件 (意大利或捷克购买)

【Object】Church Glass From the Middle Ages - Modern Times, 10 pieces glass objects (1:1 scale Partial copied, made in domestic) Medieval enamel glass 3 pieces (purchase in Italy or the Czech Republic)

# 文艺复兴时期 Renaissance (14th-16th Century)

## Content

SECTION  
SCALE 1:20



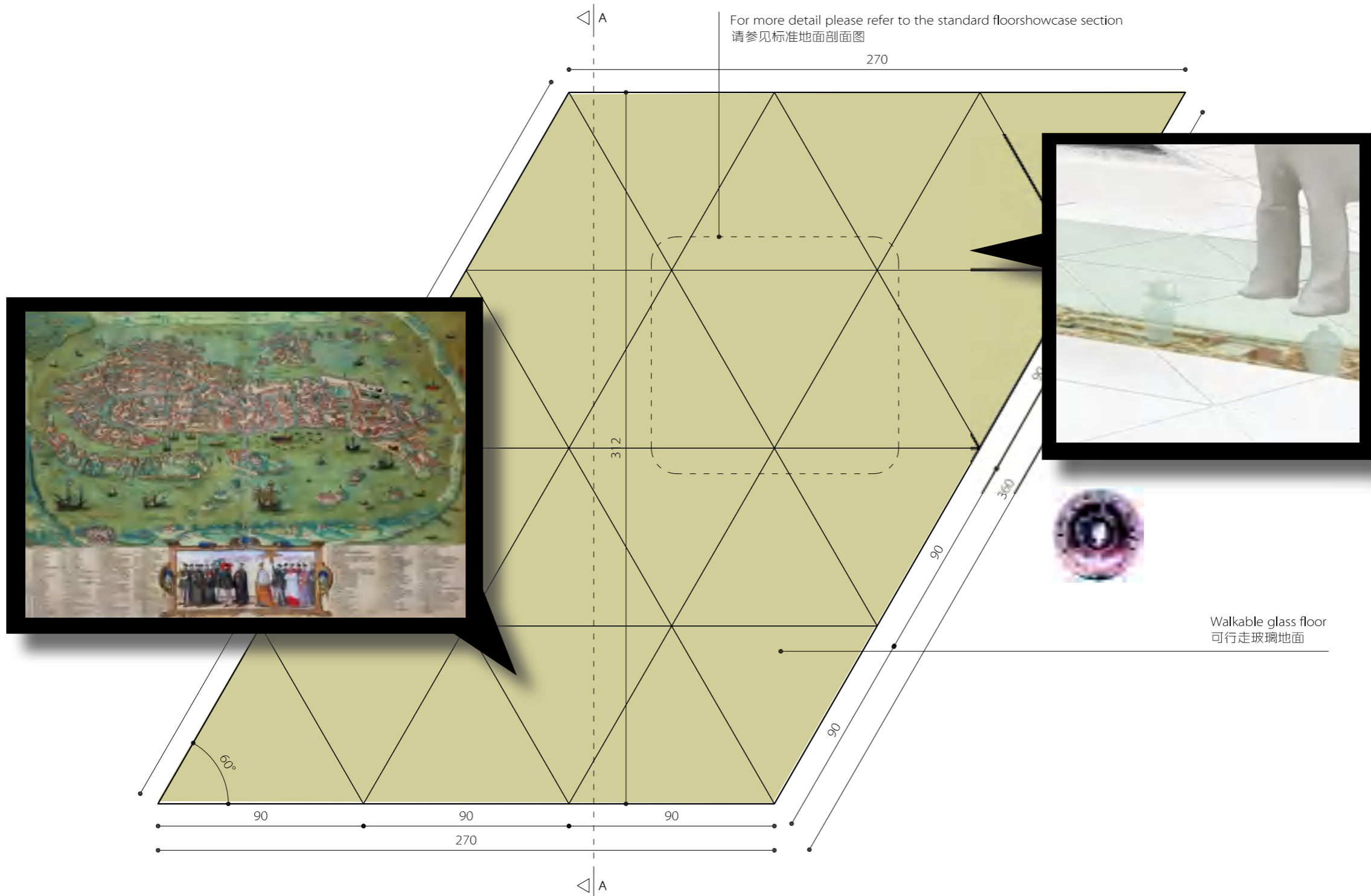
【图片、多媒体】(1) 文艺复兴时期与玻璃有关的生活场景、文化、历史。如: 葡萄酒发展  
(2) 莫拉诺地图  
(3) 威尼斯时期其它玻璃制品图片  
【素描】(1) 嵌网技术 (2) 冰纹技术

【Image, Multimedia】  
(1) Medieval Period: glass-related scenes of life, culture, history, ex. wine development  
(2) Zamorano Map  
(3) more glass pictures of Venetian period  
【Sketch (1) embedded glass techniques (2) ice-like pattern glass techniques

# 地下展柜

## Floor Showcase Venice Murano

Content & Design



中国玻璃技术发展

Development of Chinese glass technology

清

The Qing Dynasty (1644 AD - 1912 AD)

西方玻璃技术发展

Development of western glass technology

波西米亚

Bohemia (17th Century) Workshop

德国 英国

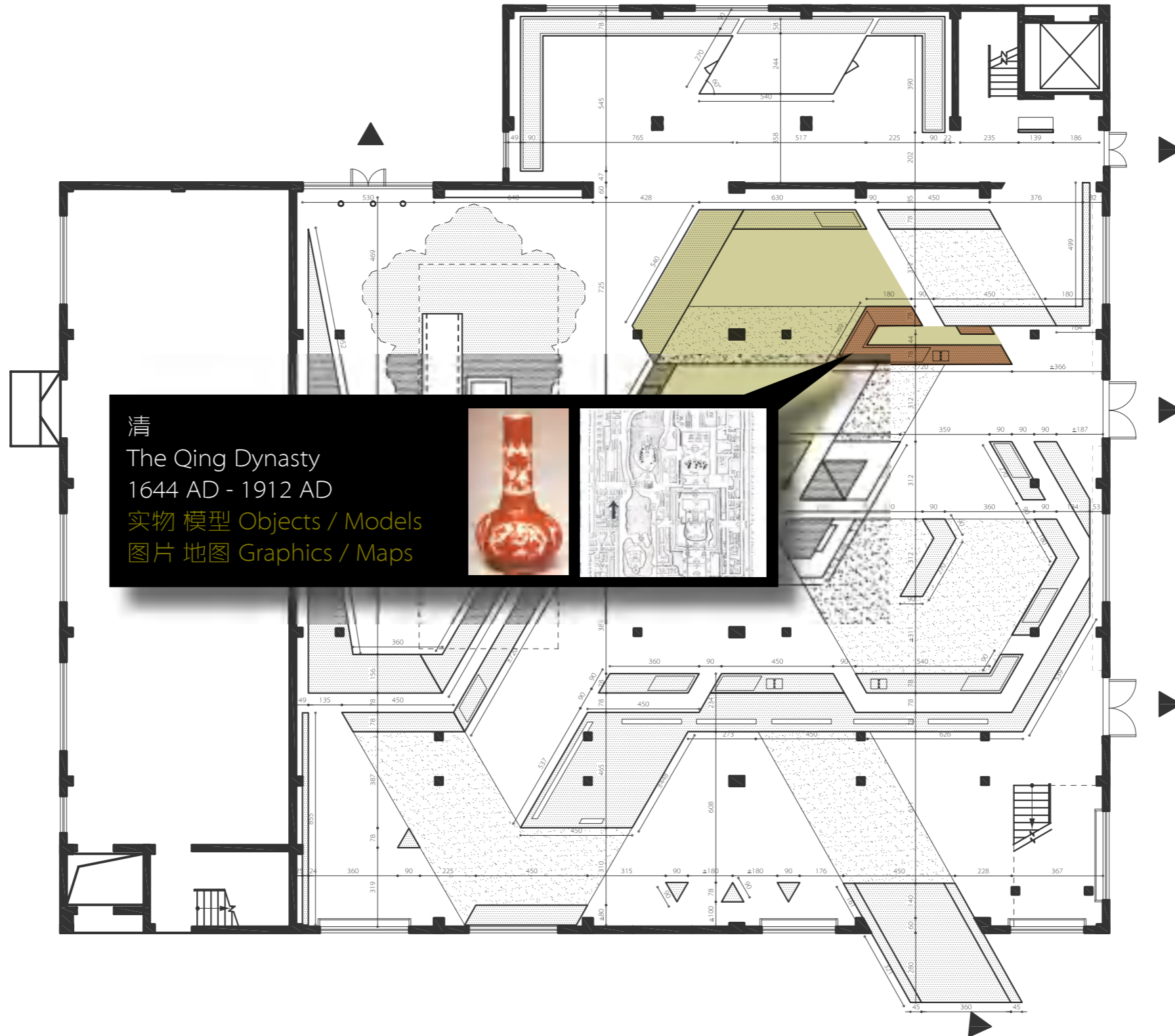
Germany / UK

工业玻璃 / 手工艺玻璃

Industrial Glass / Handicraft Glass

# 中国玻璃技术发展 Development of Chinese glass technology

Overview



1ST FLOOR FURNITURE PLAN

SCALE 1:200

清

# The Qing Dynasty (1644 AD - 1912 AD)

Design



清

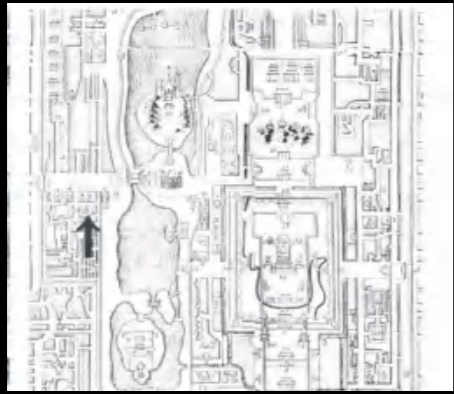
The Qing Dynasty  
1644 AD - 1912 AD

清

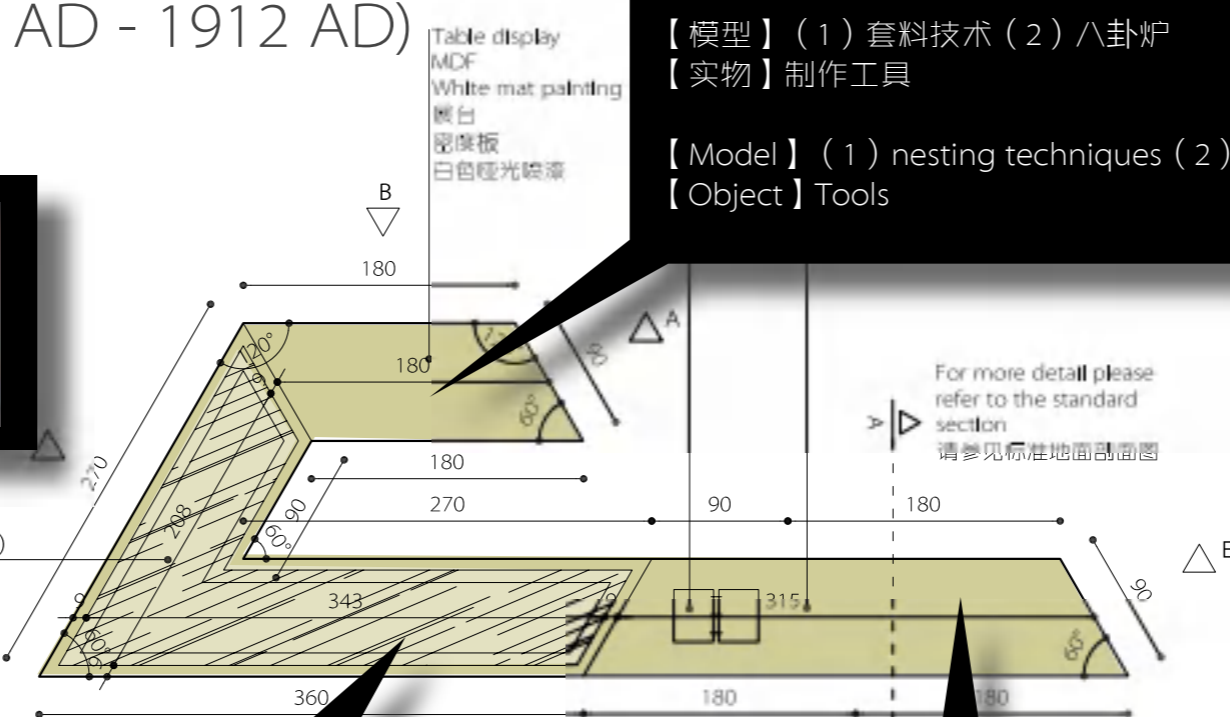
# The Qing Dynasty (1644 AD - 1912 AD)

Content

Background Image



玻璃 (字、图片或插图)



【模型】(1) 套料技术 (2) 八卦炉

【实物】制作工具

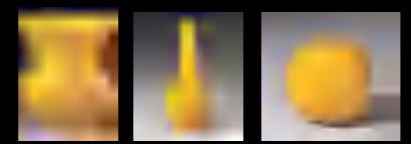
【Model】(1) nesting techniques (2) octagonal furnace

【Object】Tools



For more detail please refer to the standard section  
请参见标准地面剖视图

- 【实物】(1) 清代套料玻璃原件2件
- (2) 仿制清代正黄色玻璃1套
- (3) 仿制清代金星玻璃2件
- (4) 仿制清代搅料玻璃2件
- (5) 仿制清代玻璃碗2件
- (6) 仿制清代鼻烟壶3件
- (7) 清代朝珠1件及顶戴1件



- 【Object】(1) Qing Dynasty nesting glass, 2 original items
- (2) Imitation royal-yellow glass of Qing Dynasty, a set
- (3) Imitation aventurine glass of Qing Dynasty, 2 items
- (4) Imitation mix-material glass of Qing Dynasty, 2 items
- (5) Imitation glass bowl of Qing Dynasty, 2 items
- (6) Imitation glass Snuff bottle of Qing Dynasty, 3 items
- (7) Qing Dynasty court peals and court hat, 1 items each

- 【图片、多媒体】(1) 宫廷造办处琉璃工场的发展 (图片+cctv北京档案)
- (2) 清代与玻璃有关的生活场景
- (3) 山东博山及广东玻璃作坊

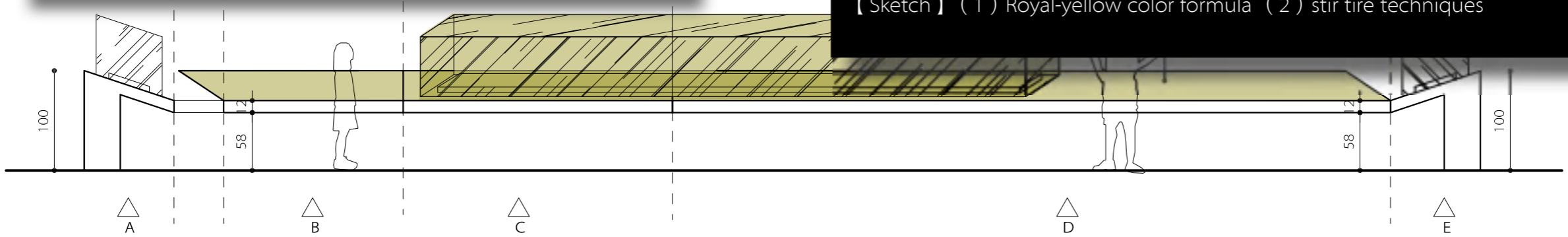
- (4) 《勇庐闲话》拓本图片
- (5) 清代玻璃出口的清单及其它一些宫廷档案
- (6) 清代地图

【素描】(1) 正黄色配方 (2) 搅胎技术

【Image, multimedia】

- (1) Development of glass making manufacture in royal court department (picture + cctv channel-Beijing file)
- (2) glass-related scenarios of life in Qing Dynasty
- (3) Glass workshop in Boshan of Shandong Province and Guangdong Province
- (4) "Yong Lu leisure scold" rubbings picture
- (5) export list of Qing Dynasty glass and files of other royal court
- (6) Map of Qing Dynasty

【Sketch】(1) Royal-yellow color formula (2) stir tire techniques



# 西方玻璃技术发展

## Development of western glass technology

### Overview

工业玻璃  
Industrial Glass  
17th-20th Century  
实物 图片 Objects / Graphics  
视频 地图 Movies / Maps


手工艺玻璃  
Handcrafted Glass  
17th-20th Century



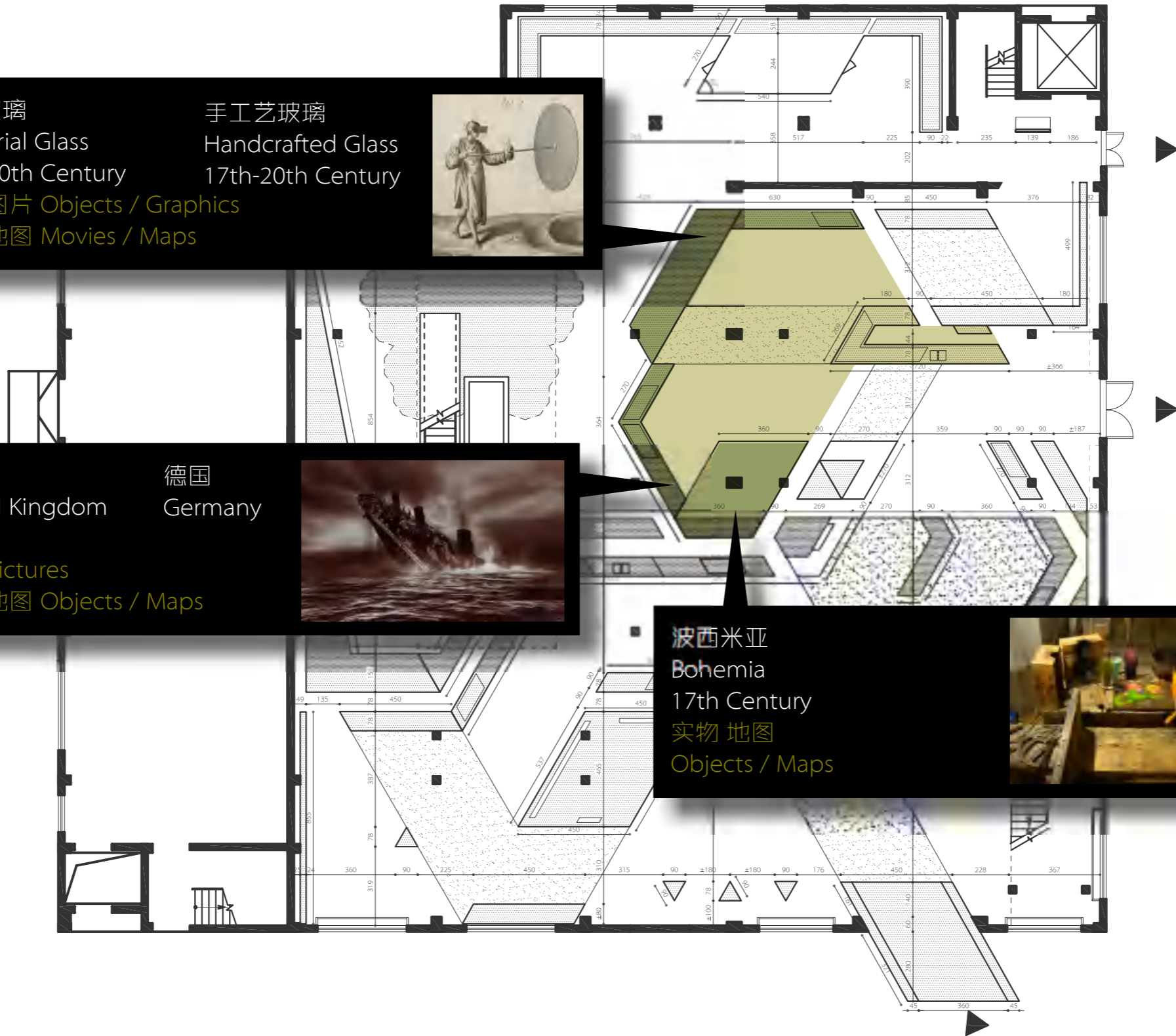

英国  
United Kingdom

德国  
Germany

图片 Pictures  
实物 地图 Objects / Maps



波西米亚  
Bohemia  
17th Century  
实物 地图  
Objects / Maps



# 西方玻璃技术发展

## Development of western glass technology

Design



波西米亚  
Bohemia  
17th Century

英国  
United Kingdom

# 西方玻璃技术发展

## Development of western glass technology

Design



书  
Book

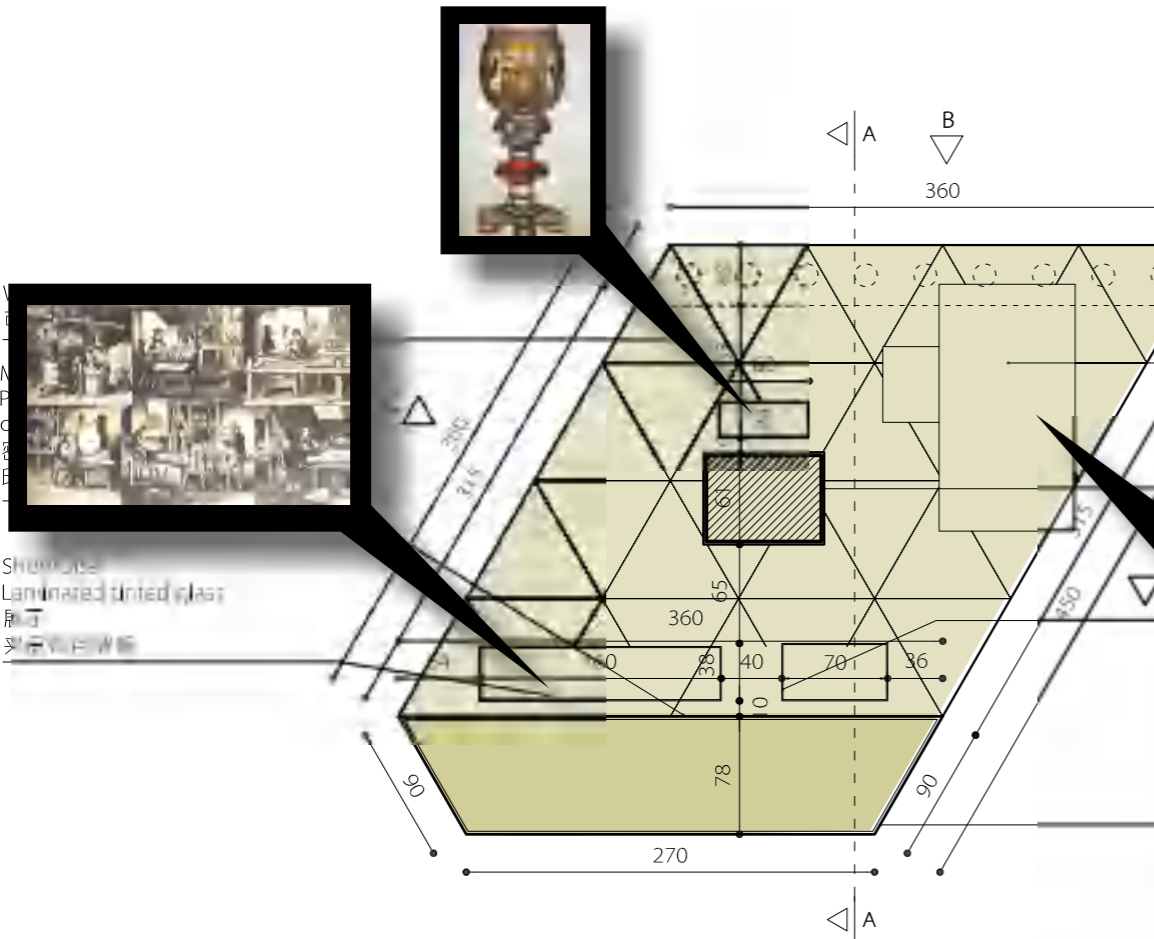


展柜  
Showcase

# 波西米亚 Bohemia (17th Century) Workshop

Content

Come into a real bohemian glass studio!  
进入真正的波希米亚玻璃工坊!



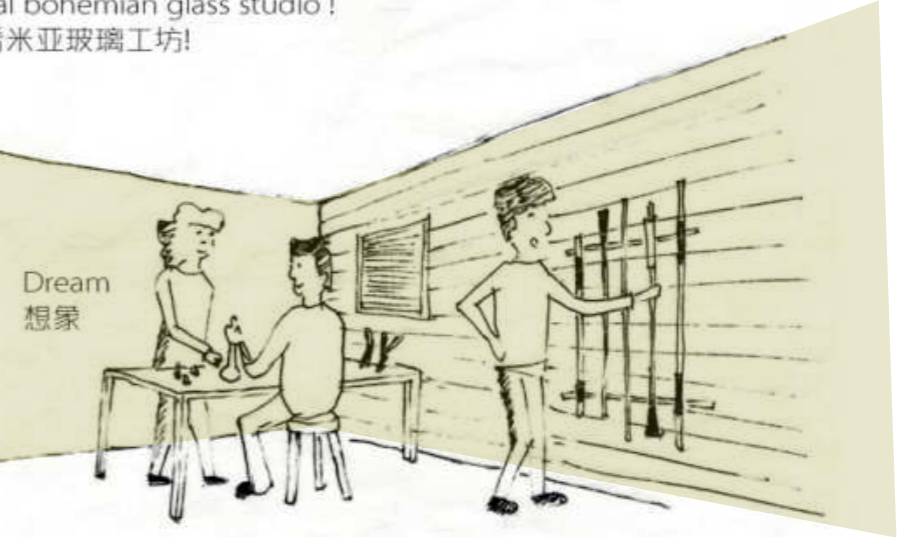
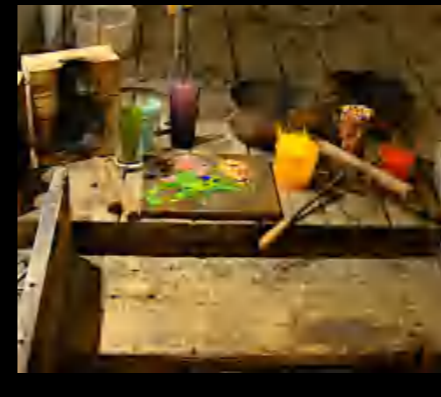
Ceiling lighting  
Incorporated spots  
顶棚灯关  
一体射灯

Table  
桌子

Wooden covering an  
existing column  
木饰面  
包住现有的柱子

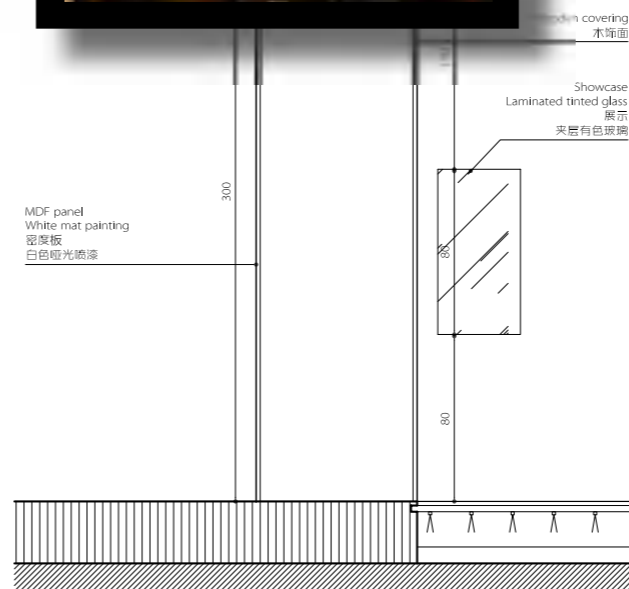
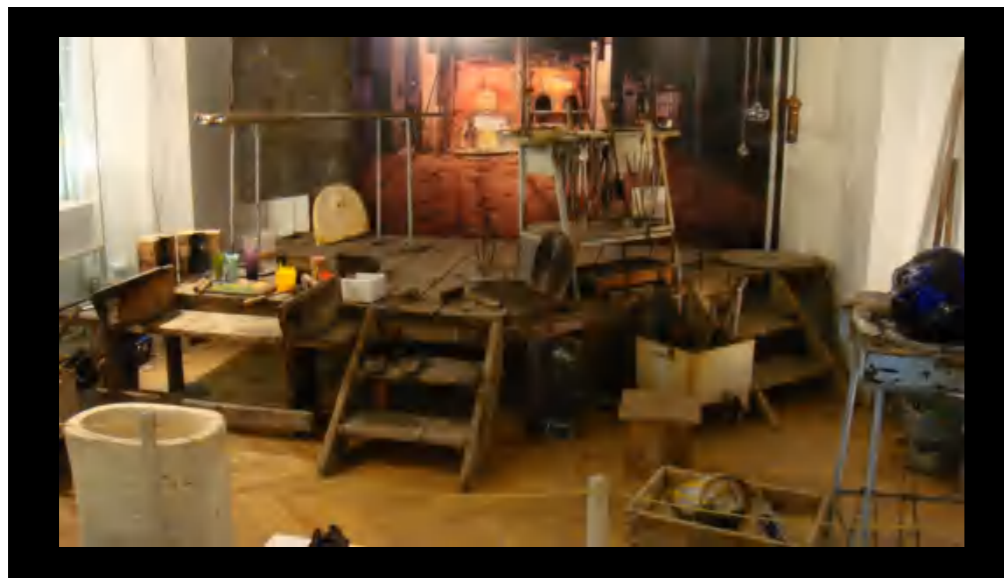
Showcase

Table



Handle  
操纵

Showcase  
Laminated tinted glass  
展示  
夹层有色玻璃



1. 波西米亚【实物】波西米亚玻璃5-8件，包括：雕花玻璃、高脚杯、鼻烟壶等（捷克购买）

制作玻璃瓶模具

【图片、多媒体】（1）波西米亚地区与玻璃有关的生活场景、文化、历史，如：当时的音乐

（2）波西米亚地区地图

【素描】（1）制作森林玻璃

【实物】制作工具

1. Bohemia

【Object】5-8 pieces of Bohemian glass, including: flower-engraved glass, goblets, snuff bottles, etc. (Purchase in Czech Republic) and molds of glass production

【Image, multimedia】

（1）Bohemian Area: glass-related scenes of life, culture, history, ex. Ancient music

（2）Map of Bohemia Area

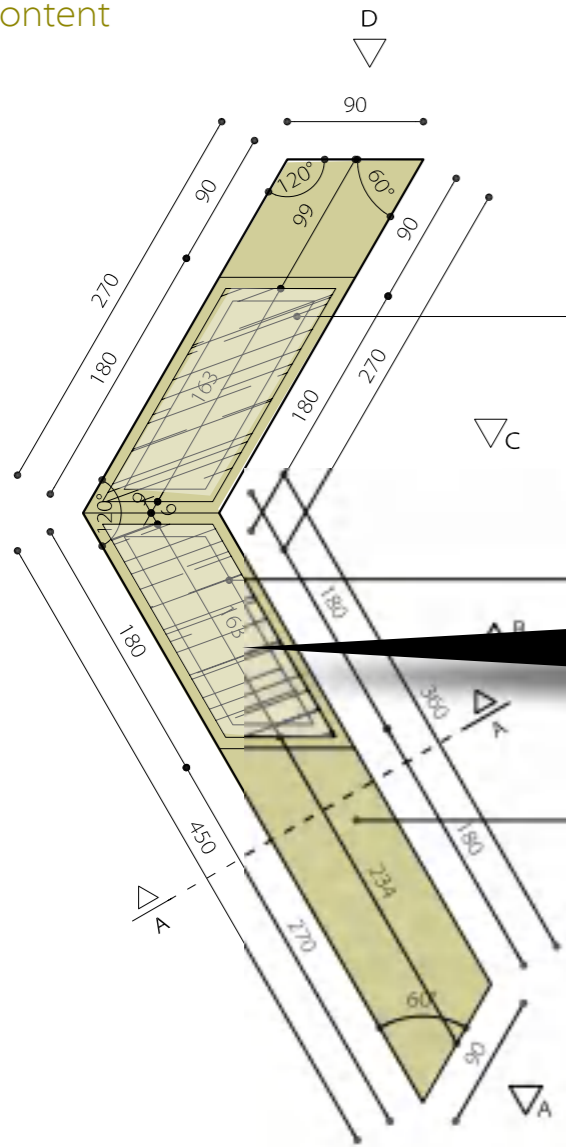
【Sketch】Production Forest-color Glass

【Object】Tools

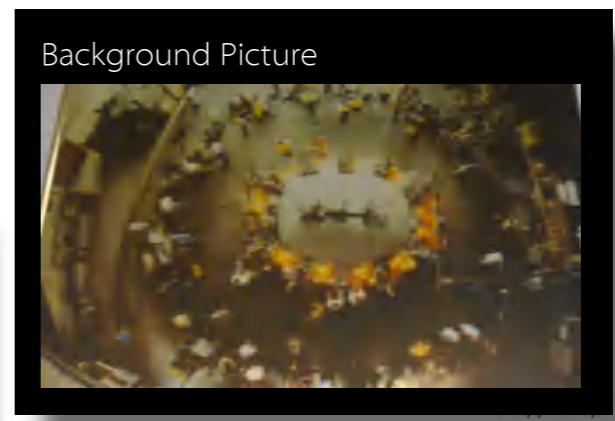
# 德国 英国

## Germany & UK

### Content



Showcase  
Laminated tinted glass  
展示  
夹层有色玻璃



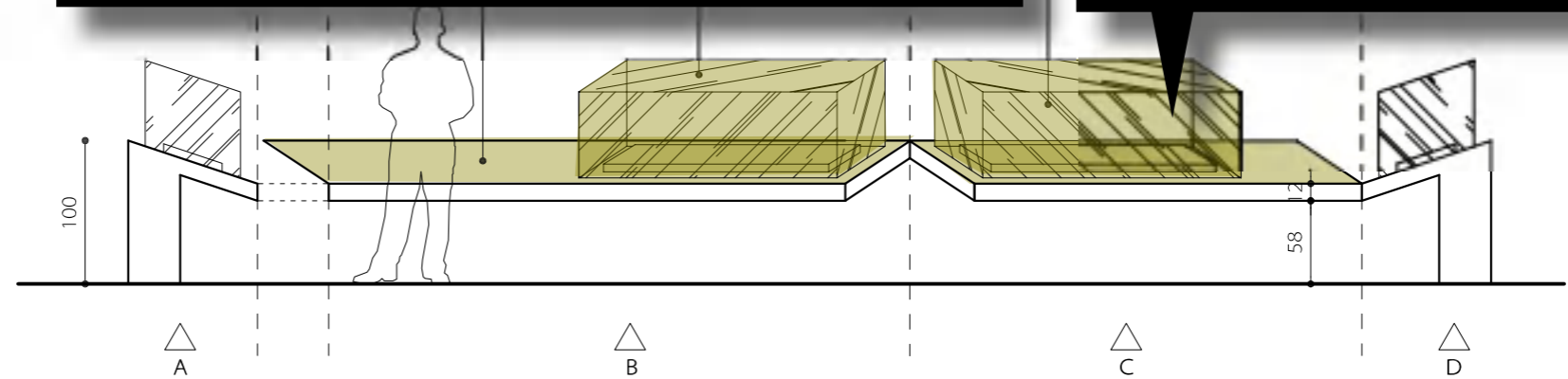
2. 英国 United Kingdom  
 【实物】(1) 英国玻璃道格拉斯水晶玻璃一套 (购买、捐赠未定)  
 (2) 英国雕花玻璃盘3件 (购买)  
 【图片、多媒体】(1) 英国地区与玻璃有关的生活场景 (泰坦尼克)  
 (2) 当时英国地图  
 (3) 英国玻璃图片  
 (4) 英国燃煤窑炉图片  
 (5) 铅玻璃的发明

2. United Kingdom  
 【Object】  
 (1) British Douglas crystal glass, 1 set (purchase/donation)  
 (2) English flower-engraved glass plates, 3 pieces (purchase)  
 【Image, multimedia】  
 (1) England region: glass-related scenes of life, culture, history (Titanic)  
 (2) British map at that time  
 (3) Pictures of British Glass  
 (4) image of British coal-kiln furnace  
 (5) The invention of Strass (lead glass)



3. 德国  
 【实物】(1) 德国FRAUENAU考古碎片 (捐赠)  
 (2) 当时的木头模具及铁模具  
 (3) 椎脚球形酒杯 2件  
 (4) 森林玻璃2件  
 (5) BAVARIA鼻烟壶3件  
 (6) 德国珐琅玻璃 2  
 【图片、多媒体】(2) 德国地区与玻璃有关的生活场景  
 (3) 德国地图

3. Germany  
 【Object】  
 (1) German FRAUENAU archaeological splinter (donations)  
 (2) the wood and iron molds at that time  
 (3) Roemer glass cup, 2 pieces  
 (4) Forest-color Glass pieces, 2 pieces  
 (5) BAVARIA snuff bottle, 3 pieces  
 (6) German enameled glass, 2 pieces  
 【Image, Multimedia】(2) glass-related scenes of life in Germany  
 (3) German map



工业玻璃 / 手工艺玻璃  
Industrial Glass / Handicraft Glass  
Design



工业玻璃  
Industrial Glass  
17th-20th Century

手工艺玻璃  
Handicraft Glass  
17th-20th Century

# 工业玻璃 / 手工艺玻璃

## Industrial Glass / Handicraft Glass

### Content

Showcase internal structure  
展示内部结构



### 5. 手工艺玻璃 Handicraft Glass

- 【实物】威廉·莫里斯仿品3件
- 埃米里·加莱作品仿品2件
- 刘易斯·康福特·蒂法尼作品仿品3件
- 勒内·拉里克作品仿品2件
- 孟菲斯集团玻璃作品仿品2件
- 【素描】(1) 乳色玻璃技术
- 【模型】(1) 孔雀系列花瓶制作步骤分解模型
- 【实物】制作工具
- 【图片、多媒体】(1) 与玻璃有关的生活场景
- (2) 上述著名玻璃工艺家的其它玻璃作品
- (3) 其他一些工艺家的玻璃作品

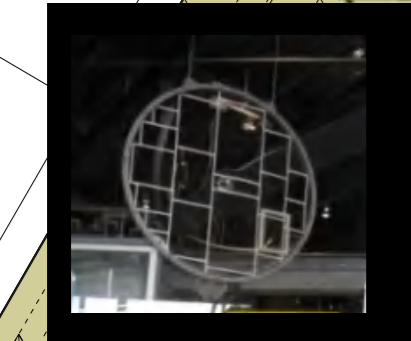
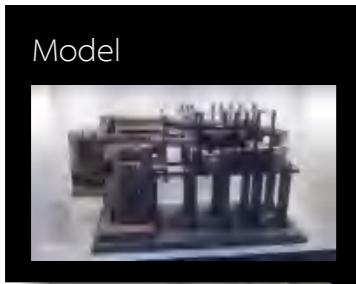
### 5. Handicraft Glass

- 【Object】replica of William Morris works, 3 pieces
- replica of Amy Regeila works, 2 pieces
- replica of Rene Lalique works, 2 pieces
- replica of Tiffany works, 3 pieces
- replica of Memphis Group works, 2 pieces
- 【Sketch】(1) techniques of Opal Glass
- 【Model】(1) decomposition model showing production steps of vases-Peacock series
- 【Object】Tools
- 【Image, Multimedia】(1) glass-related life scenes
- (2) Other glass art-pieces from the above well-known glass artists
- (4) works from other glass artists



Walkable glass floor  
可行走玻璃地面

Lifted floor 架空地面  
Existing floor 现有地面



### 工业玻璃 Industrial Glass

- 【实物】平板玻璃——圆形玻璃、筒状玻璃、现代平板玻璃3块
- 【图片或照片】英国水晶宫、当时生产过程的照片
- 【模型】吹圆球、吹筒法生产制作模型
- 有机玻璃弗克法生产窑炉（介绍博物馆为原有生产车间改造，建筑特征）
- 浮法生产窑炉
- 【Object】
- Plate Glass - round glass, cylinder-shaped glass, modern plate glass, 3 pieces
- 【Image or Photo】British Crystal Palace, the production process at that time
- 【Model】
- Production models of blowing ball method and blowing cylinder method.
- Production Furnace of organic glass under F-Method (named after the inventor) (introducing the transforming of the building from the former workshop space turning into today's glass museum, architectural features)
- Glass production furnace of Floating-method

- 【模型】吹制玻璃——菲利普压-吹法及半自动制瓶机吹-吹法
- 【影像】欧文全自动化成型机
- 滴料供料机
- 【版画或照片】(1) 弗克法 (2) 全自动化成型机及滴料供料机

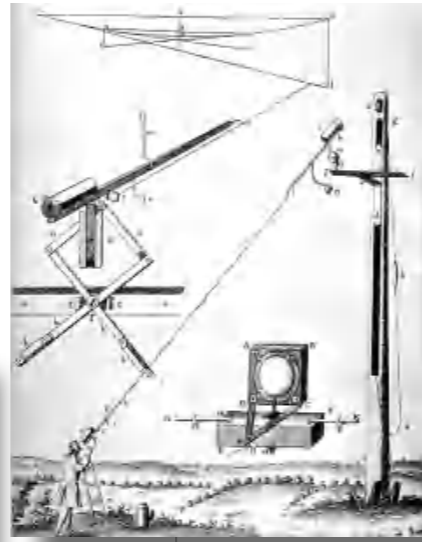
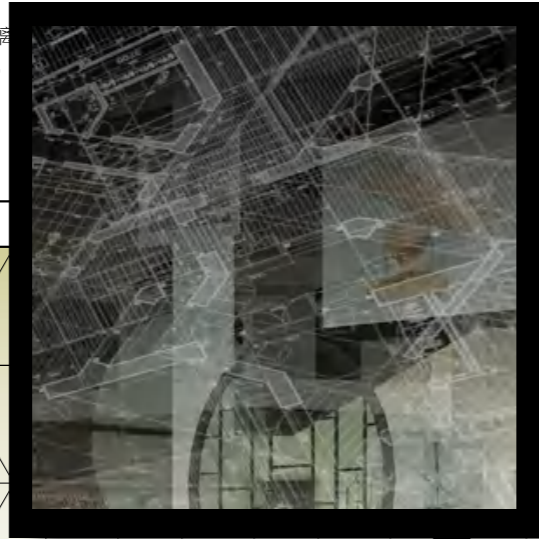
- 【Model】Blowing glass - Philip "pressing-blowing" method and "semi-automatic bottle machine, blowing - blowing" techniques
- 【Video】Owens fully automated molding Machine
- Drip feed-Feeding Machine
- 【Prints or Photos】(1) E-Fourcault Method techniques (2) Fully automated molding Machine and Drip feed-Feeding Machine

# 工业玻璃 / 手工艺玻璃

## Industrial Glass / Handicraft Glass

Design

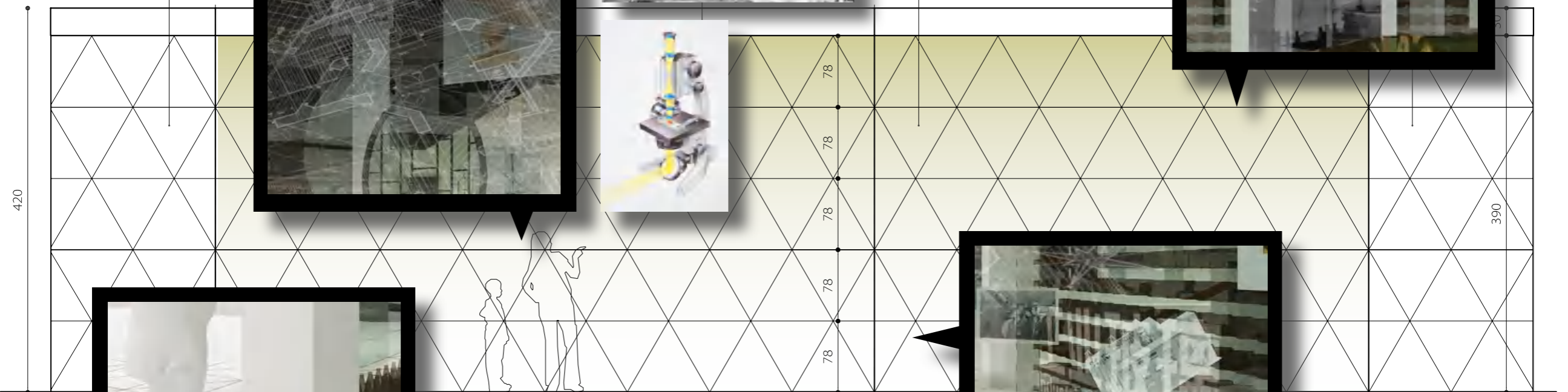
Showcase  
Laminated tinted glass  
Engraved (text, pictures or illustrations)  
展示  
夹层有色玻璃  
雕刻 (文字,



Showcase  
Laminated tinted glass  
Engraved (text, pictures or illustrations)  
展示  
夹层有色玻璃  
雕刻 (文字, 图片或插图)



Laminated tinted glass  
Engraved (text, pictures or illustrations)  
展示  
夹层有色玻璃  
雕刻 (文字, 图片或插图)



B

D

ELEVATION  
SCALE 1:50

上海玻璃技术的发展  
Shanghai Glass Technology Development

# 上海玻璃技术的发展 Shanghai Glass Technology Development

Overview



1ST FLOOR FURNITURE PLAN

SCALE 1:200

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

Design



上海玻璃技术的发展  
Shanghai Glass Technology Development  
19th - 21st century

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

Design



实物 Objects

多媒体 Multimedia

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

### Content

30年代，在上海建立的晶华玻璃厂是我国第一家采用池炉和自动机连续制造玻璃瓶罐的工厂  
The Jinhua Glass Factory which founded in 1930th is the first which use continuous automotion to produce Glass bottles

1925年，上海协新国货玻璃厂制造国内第一只国产保温瓶。  
In 1925, Shanghai Xie Xin National Glass manufactory produced first "Kirin Brand" Thermos in Domestic

1958年，上海耀华玻璃厂年产 500吨无碱玻璃纤维车间投产，标志着我国玻璃纤维工业正式诞生。  
In 1958, Shanghai Yao Hua Glass manufactory set up the Alkali glass fiber workshop which had annual 500 tons output. It marks the birth of Glass fiber production in our country. Shanghai Yao Hua Glass Manufactory is the first base for Chinese Glass fiber, annual output is 2000 tons glass fiber.

1955年，周同庆教授研发成功了第一支X光管。  
In 1955, under the leading of Prof. Zhou Tongqing, China developed the first X lights pipe by us. Fill the blank of this technique in domestic

1958年，新沪玻璃厂研制成功第一块HC光学玻璃，第一根不透明石英管。  
In 1958, Xin Hu Glass Manufactory: Successfully developed the first HC optical glass, the first untransparent Quartz tube.

1962年，研制成功防辐射玻璃。  
In 1962, completed the task of developing Radiation protection glass

60年代，蔡祖泉在复旦大学创建了我国第一个电光源实验室，中国第一个氢灯、高压汞灯、氩灯、长弧氙灯、节能灯等成果陆续诞生。  
In 1960th, Cai Zuquan founded the first electric light source lab in Fudan University Shanghai, in 1961, the first light source - high-voltage mercury lamp was invented. The first hydrogen lamp, krypton lamp, xenon long-arc lamp, efficient lightbulb were followed.

1960年，上海电子管厂建成第一条收讯放大管生产线。  
In 1960, the first electric scale up receiver pipe product line was founded in Shanghai electric pip manufactory,

1960年，特殊玻璃材料应用于中国第一枚成功发射的导弹。  
In 1960 the special glass material was used in the first guided missile launched China

1962年，上海亚明灯泡厂建成国内第一条年产500万只普通照明灯泡生产线和第一条年产10万只高压钠灯生产线。  
In 1962, Shanghai Yaming Lamp bulb built up the first product line for ordinary lamp bulb which the annual output is 5 million. And the first product line for high pressure sodium lamp which the annual output is 1,000,000

1966年，上海玻璃器皿二厂首创微晶玻璃成功。  
In 1966, Shanghai No.2 Glassware manufactory successfully developed pyroceram, then become the first manufactory in domestic which produced pyroceram

70年代初期，上海硅酸盐研究所拉制出我国第一根实用性光导纤维，继而试制成功并提供了我国第一条光纤通讯试验线路的光缆。  
At the beginning of 1970th, Shanghai silicate research studio made the first practicability optical (waveguide) fiber, later successfully trial-produced the first experiment electronic optical communication cable.

1979年，上海新沪玻璃厂研制成功制造天文望远镜的最佳材料—大型超低膨胀微晶玻璃。  
In 1979, Shanghai Xinhua Glass Manufactory developed the best material for astronomical telescope — Large-scale ultra-low expanding crystalline glass

1983年，上海耀华玻璃厂与英国皮尔金顿公司合资成立上海耀华皮尔金顿玻璃股份有限公司，拥有国内最先进的浮法玻璃生产线。  
In 1983, Shanghai Yaohua Glass manufactory and Pilkington Glass Manufactory from UK founded the first Glass joint venture in Shanghai for flat glass production. it has the most advanced product line in domestic.

1983年，由上海工业院承担设计的上海显像管玻璃厂设计年产31厘米玻壳400万套，是国内最早设计的大型黑白显像管玻壳生产厂。  
In 1983, Shanghai Industry Institute was in charge of the designing task of 4million set 31 cm glass bulb as an annual output for Shanghai teleron Glass Manufactory, was the earliest manufactory for for designing large-scale white-black teleron glass bulb in domestic.

1990年，轻工业部玻璃搪瓷工业科学研究所、上海电子管二厂研制，泛射束象元管玻璃，研究内容涉及室外全天候超大屏幕彩色图像显示装置中的关键材料的制造技术。该成果使我国进入世界彩色图像显示技术的先进行列。  
In 1990, the glass technique (flooding beam way tube glass) developed by Light industry Glass cremic science studio and Shanghai No.2 electric pipe factory had related to the key technique of production on outdoor-whole day-super scale color screen device. The achievement made a foundation on our own-produced color large-scale screen device, which led us edge into the advanced ranks in the world.

1993年，澳大利亚ACI包装集团与中国上海轻工玻璃有限公司共同投资创办上海澳联玻璃有限公司。采用O-I的专利技术和设备，年生产玻璃瓶罐超4.5亿只。

In 1933, Shanghai Ao Lian Glass Company Limited which invested by Australia ACI Packing group and Shanghai Light Industry Company Limited took the O-I patent technique and equipment, make the annual output of glass bottle over 450 million.

1996年，中科院上海硅酸盐研究所研制出中国第一台扫描电声显微镜，性能达到世界先进水平。  
In 1996, Chinese academy of sciences and Shanghai silicate research studio developed the first scanning electron acoustic microscope, the quality has reached the advanced world levels.

自70年代至今，中国科学院上海光学精密机械研究所先后研制成功三代激光玻璃。  
From 1970th to nowadays, CAS and Shanghai Institute of top tics and fine mechanics, successfully developed 3rd generation laser-light glass, made a big contribution to the related projects of the country.

1992年，透远紫外玻璃研制成功。  
In 1992, transparent Ultraviolet glass was developed successfully

1994年，我国著名微波与光纤专家黄宏嘉院士研制出具有国际先进水平的8种特种光纤。我国第一根单模光纤传输线也是在他主持下诞生的。  
In 1994, under the leading of famous scholar Huang Hongjia, we developed 8 types world advanced fiber optical for special requirement, the first single mode fiber optical transfer cable was produced under his guidance as well

1995年，高技术硅酸盐材料应用于神舟五号中国首次发射的载人航天飞行器。  
In 1995, the high-tech scallite material was used on the No.5 Manned aircraft-- Shenzhou No.5 spaceship which was launched by China.

2000年，上海耀华皮尔金顿玻璃有限公司研制成功彩釉钢化玻璃。  
In 2000, Shanghai Yao Hua Pilkington Glass Company limited successfully developed color-glazed tempering glass

2000年，国内第一只具有知识产权的大屏幕多媒体彩管—上永牌21英寸多媒体彩管在上海永新彩管厂研制成功。  
In 2000, 4th June, the first national-owned intellectual property large scale multimedia pipe - Shang Yong Brand 21-inch Multimedia color pipes was successfully developed.

2003年，上广电与世界第五大液晶显示器制造商—日本NEC合资，总投资80亿元的国内第一条第五代薄膜晶体管液晶显示器(TFT-LCD)生产线开工。  
In 2003, 28th Dec, Shang Broadcasting and Television had cooperation with the fifth biggest LCD producer - Japanese NEC, together invested 8 billion RMB for the first product line of 5th generation thin film TFT-LCD in China

2004年，上海耀华皮尔金顿玻璃股份有限公司生产的强吸收紫外和红色的绿色玻璃达到国际先进水平。  
In 2004, Shanghai Yao Hua Pilkington Glass Company Limited filled the blank of domestic with ultraviolet rays and infrared ray strong absorption green glass, and reach the advanced levels in the world.

2005年，华东理工大学研制成功新型亚纳秒闪烁玻璃。  
In 2005, East China university of Science and technology successfully developed the new type subnanosecond flicker glass

2008年，上海硅酸盐研究所研制生物活性玻璃修复材料。  
In 2008, Shanghai silicate research studio developed the artglass material for biological activity glass

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

Design



纵贯线 时间表  
Vertical Timeline

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

Design



太空人  
Spaceman

# 上海玻璃技术的发展 Shanghai Glass Technology Development

## Content

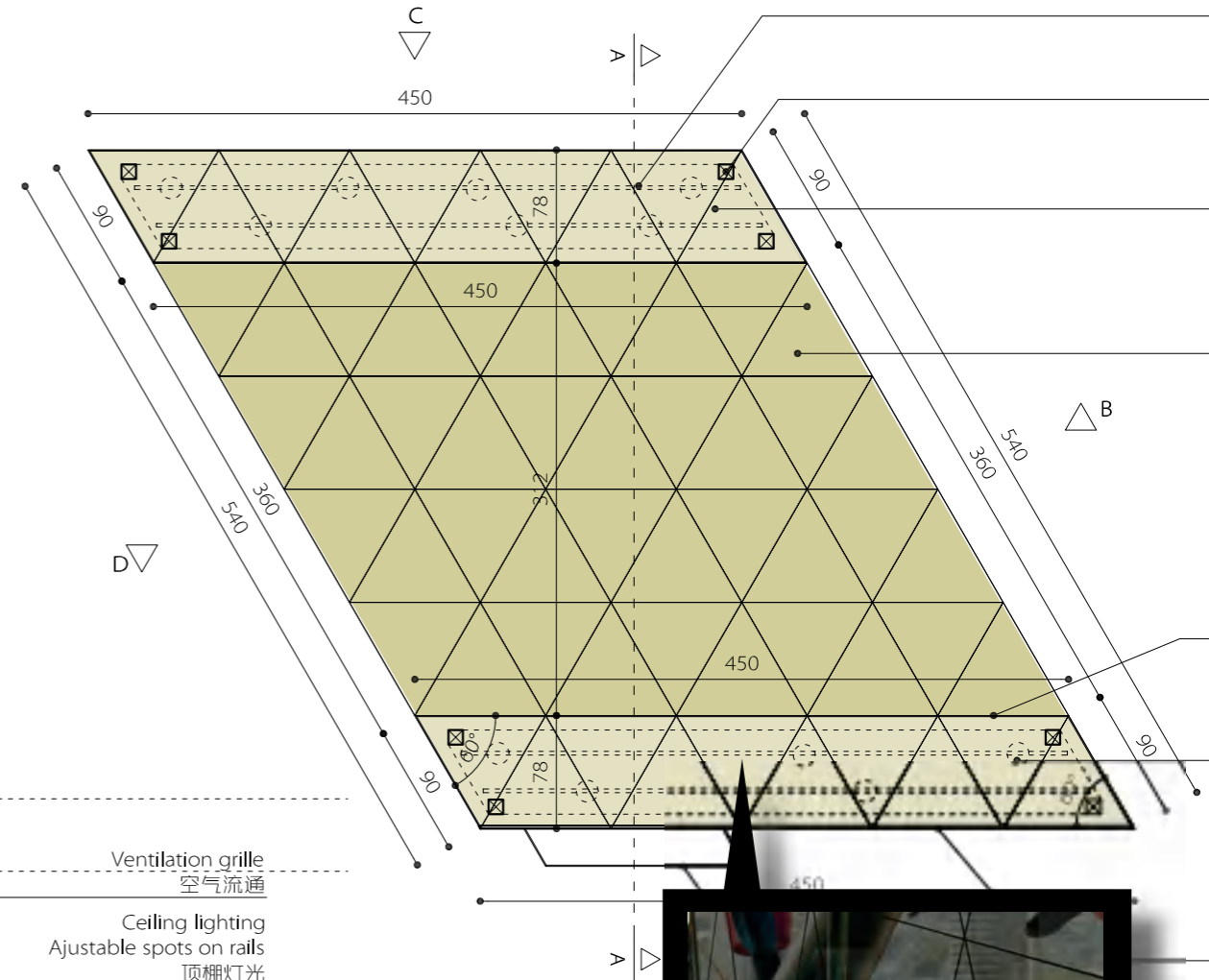
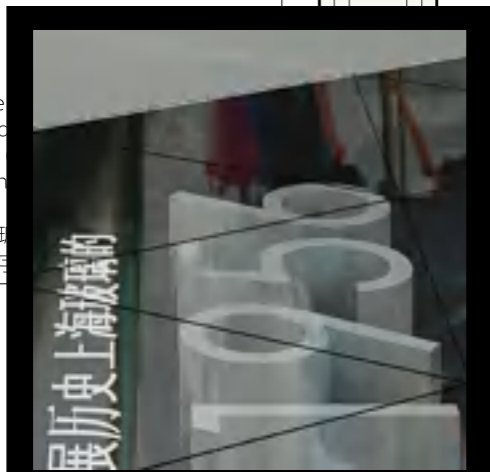
Ventilation grille  
空气流通

Ceiling lighting  
Adjustable spots on rails  
顶棚灯光  
可调节导轨灯

Showcase internal structure  
展示内部机构框架

Showcase  
Laminated  
Engraved  
illustration  
展示  
夹层有色玻璃  
雕刻(文字)

Walkable glass floor  
可行走玻璃地面



Ventilation grille  
空气流通

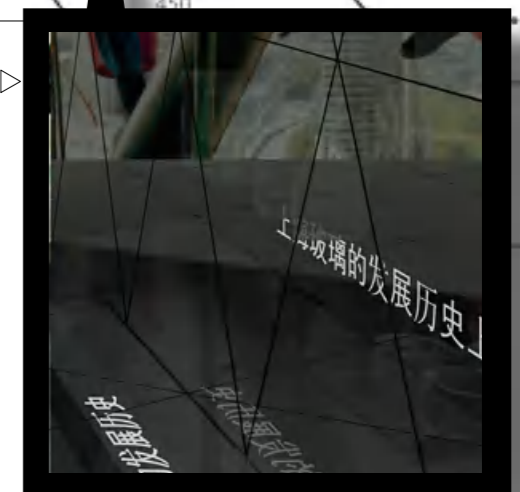
Ceiling lighting  
Adjustable spots on rails  
顶棚灯光  
可调节导轨灯

Showcase internal structure  
展示内部机构框架

MDF panel  
White mat painting  
Printed text, pictures  
or illustrations  
密度板  
白色哑光喷漆  
印刷文字, 图片或插图

Showcase  
Laminated tinted glass  
Engraved (text, pictures or  
illustrations)  
展示  
夹层有色玻璃  
雕刻(文字, 图片或插图)

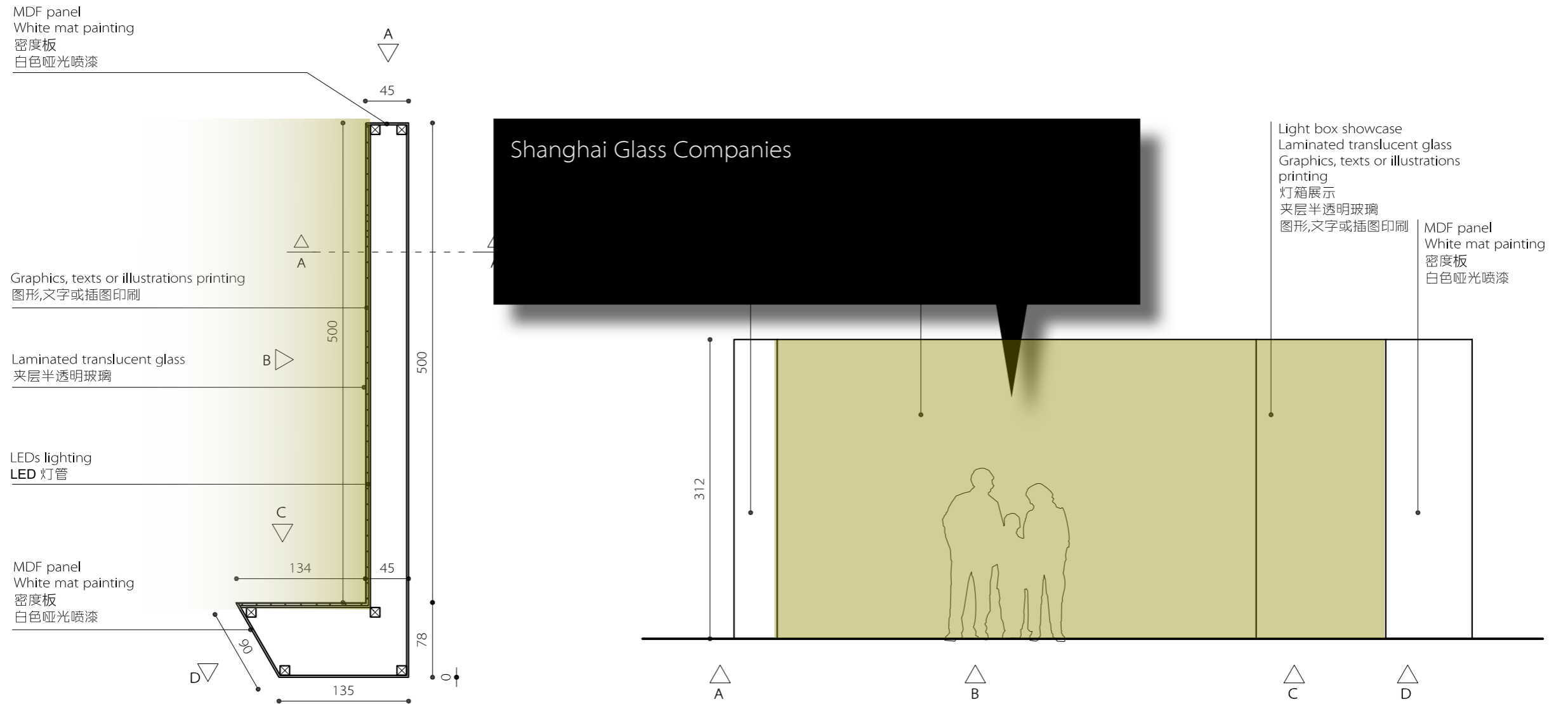
Showcase  
Laminated tinted glass  
展示  
夹层有色玻璃



# 上海玻璃技术的发展

## Shanghai Glass Technology Development

### Content



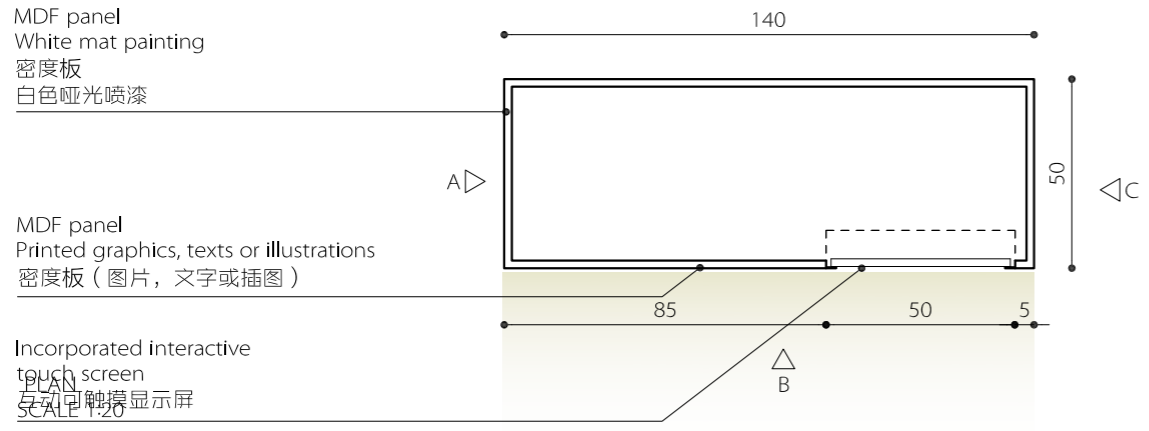
热玻璃的秘密 / 冷加工技术的体验  
Secret of Hot Glass / Cool Working Technology



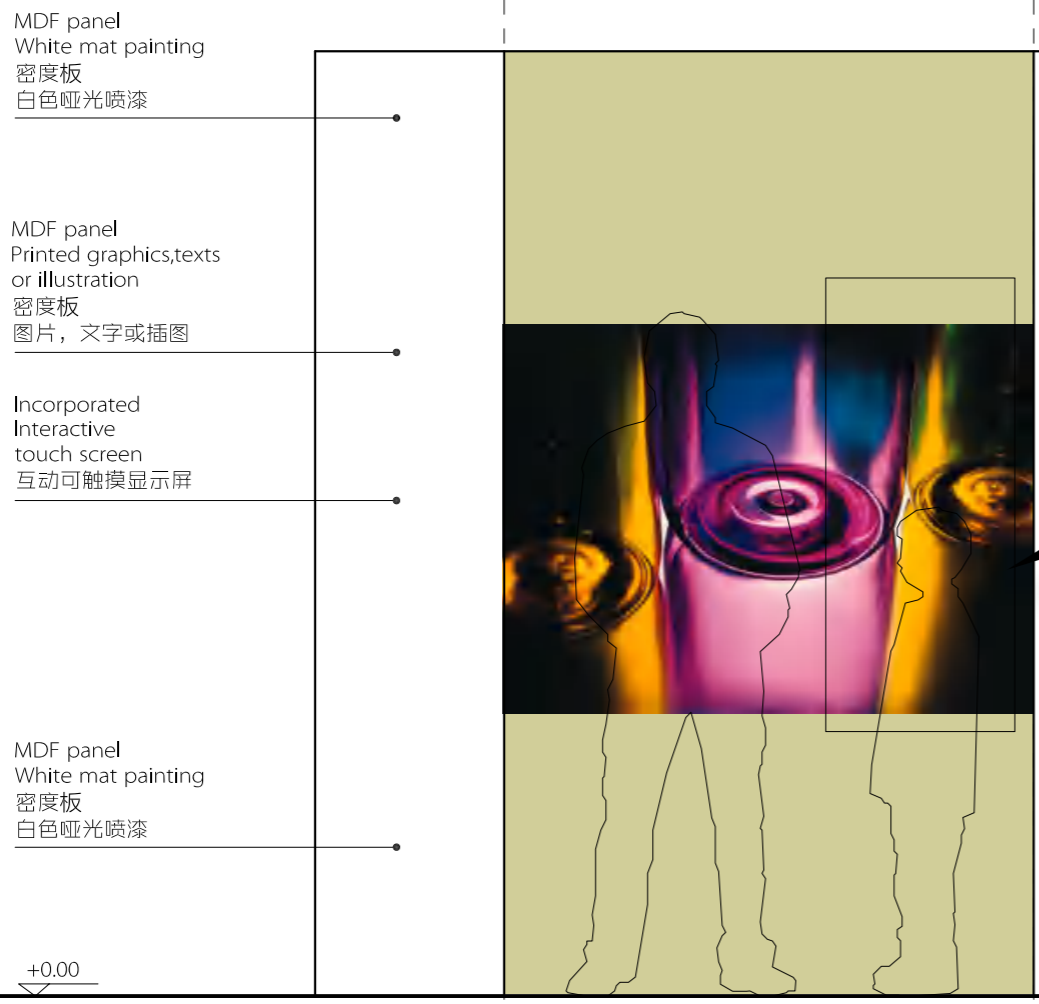
# 温度变化对玻璃形态的影响

## Temperature affects glass shape

Content



PLAN  
SCALE 1:20



ELEVATION  
SCALE 1:20

【影像】窑炉内的各种玻璃形态

- (1) 釉体状态
- (2) 融合状态
- (3) 软化状态
- (4) 缓慢流动状态 (颜色相互渗透)
- (5) 快速流动状态流入精细模具

【Multimedia】the impact of temperature change on glass shapes  
【Video】a variety of glass state in furnace

1. Glaze state
2. Fusion state
3. Softening state
4. Slow flowing state (color inter-penetration)
5. Fast flowing state into the fine mold

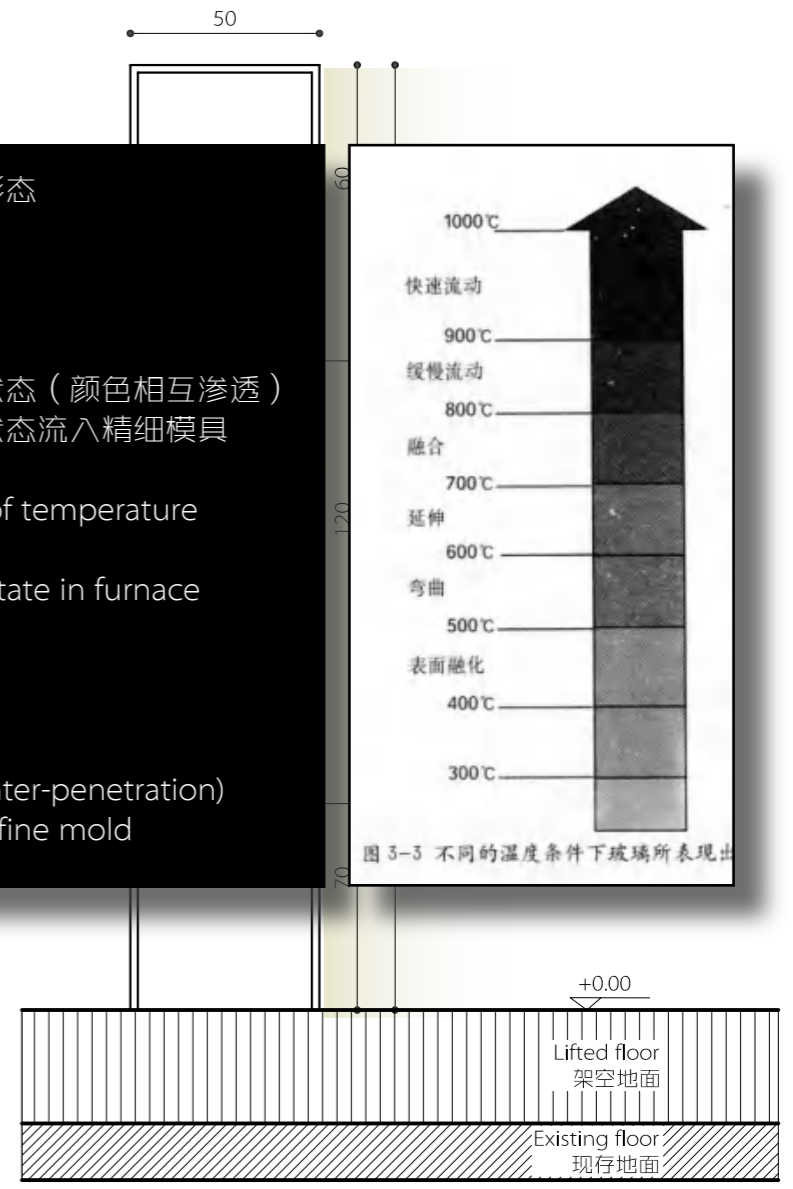


图 3-3 不同的温度条件下玻璃所表现出

SECTION  
SCALE 1:20

# 热玻璃的秘密

## Secret of Hot Glass

Design



根据不同温度变化形成的热工艺技术  
Different hot working technologies under different temperatures

# 热玻璃的秘密

## Secret of Hot Glass

Design



制作台  
Workbench



制作工坊 Workshop  
现场表演 Live Performance  
灯工 雕花 Lampworking Carving

制作工坊 Workshop / 现场表演 Live Performance  
灯工 雕花 Lampworking Carving  
Concept

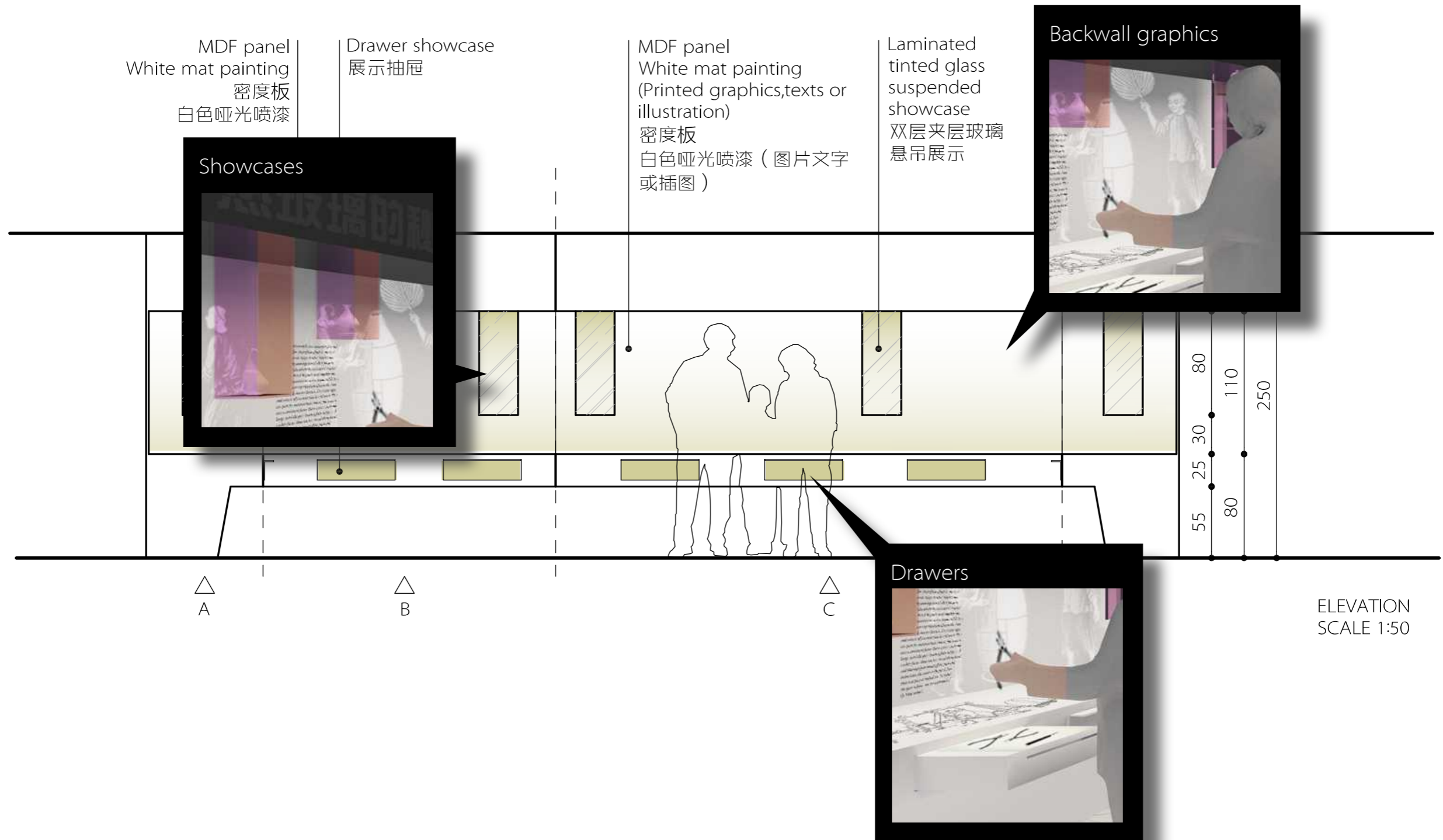
Learn and understand!  
了解并且理解!

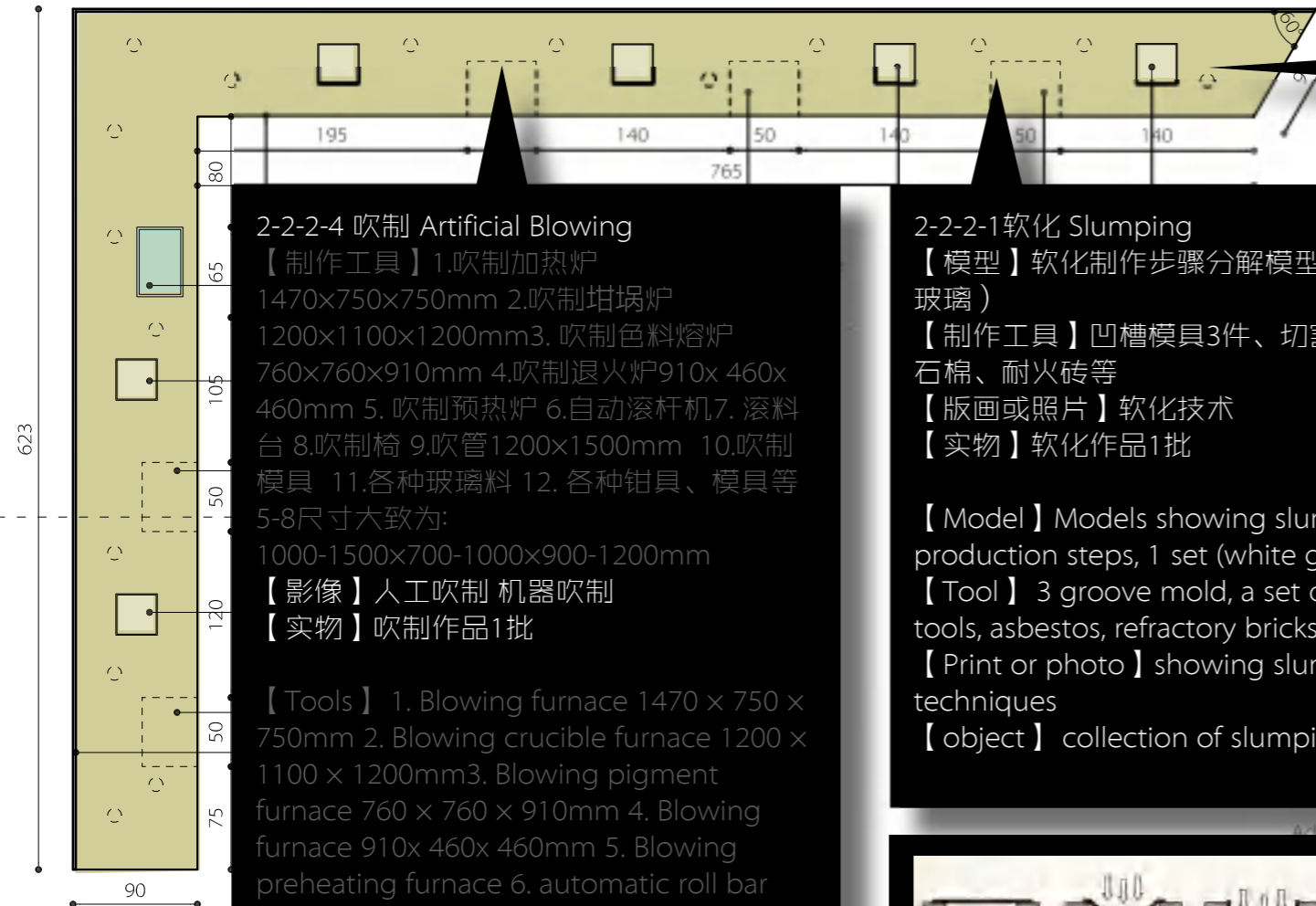


# 热玻璃的秘密 / 冷加工技术的体验

## Secret of Hot Glass / Cool Working Technology

Design





2-2-2-4 吹制 Artificial Blowing

【制作工具】1.吹制加热炉 1470x750x750mm 2.吹制坩埚炉 1200x1100x1200mm 3.吹制色料熔炉 760x760x910mm 4.吹制退火炉 910x 460x 460mm 5.吹制预热炉 6.自动滚杆机 7.滚料台 8.吹制椅 9.吹管 1200x1500mm 10.吹制模具 11.各种玻璃料 12.各种钳具、模具等 5-8尺寸大致为: 1000-1500x700-1000x900-1200mm

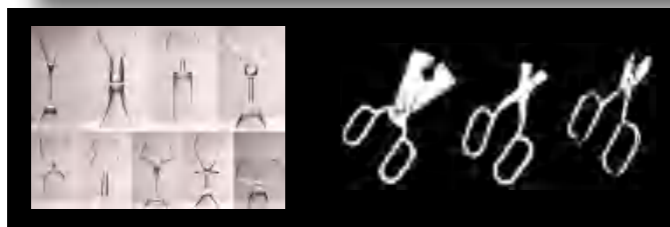
【影像】人工吹制 机器吹制

【实物】吹制作品1批

【Tools】 1. Blowing furnace 1470 x 750 x 750mm 2. Blowing crucible furnace 1200 x 1100 x 1200mm 3. Blowing pigment furnace 760 x 760 x 910mm 4. Blowing furnace 910x 460x 460mm 5. Blowing preheating furnace 6. automatic roll bar machine 7. roll feed units 8. blowing chair 9. blowpipe 1200 x 1500mm 10. blow mold 11. all kinds of glass frit 12. a variety of pliers tools, molds and other dimensions roughly 5-8 To :1000-1500 x 700-1000 x 900-1200mm

【Video】 man blowing, machine blowing

【Object】 collection of blowing works



2-2-2-1 软化 Slumping

【模型】软化制作步骤分解模型1套（白色玻璃）

【制作工具】凹槽模具3件、切割工具1套、石棉、耐火砖等

【版画或照片】软化技术

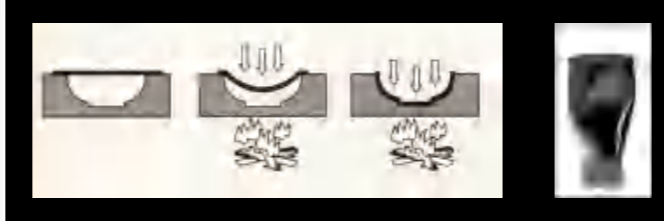
【实物】软化作品1批

【Model】 Models showing slumping production steps, 1 set (white glass)

【Tool】 3 groove mold, a set of cutting tools, asbestos, refractory bricks, etc.

【Print or photo】 showing slumping techniques

【object】 collection of slumping works



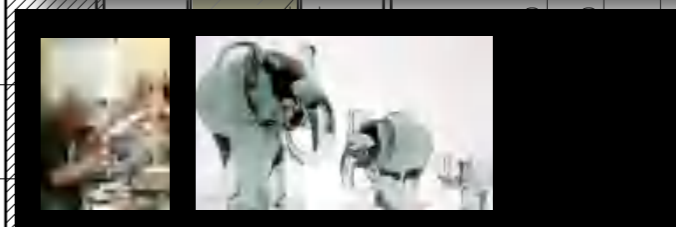
2-2-2-2 灯工 Lampworking

【灯工工具】灯工台、喷灯、吹气工具、氧气罐、铁钳、夹具、碳棒、打孔钢针、活塞钳、量具、使火焰变成扁窄状的耐火用具、塑型辅助工具、各种模具、储物柜、玻璃管棒等

【实物】实验仪器、真空机、蒸馏器

【Tool】 light industrial units industrial tools, blowtorch, blowing tools, oxygen tanks, pincers, fixtures, carbon rod, punch needle, piston pliers, measuring, so that the flame into a narrow flat-shaped fire-resistant utensils, plastic auxiliary tools, all kinds of mold, lockers, glass rods, etc.

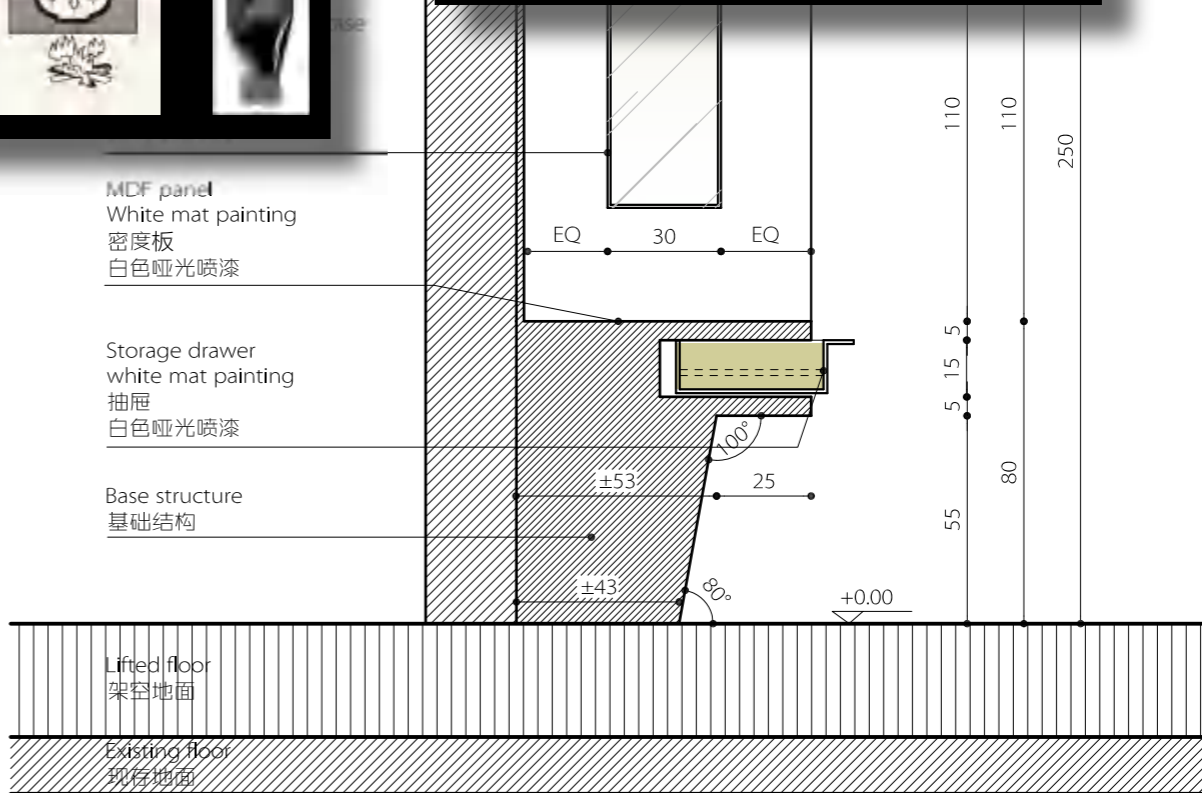
【Object】 experimental apparatus, vacuum machines, stills



MDF panel  
White mat painting  
密度板  
白色哑光喷漆

Storage drawer  
white mat painting  
抽屉  
白色哑光喷漆

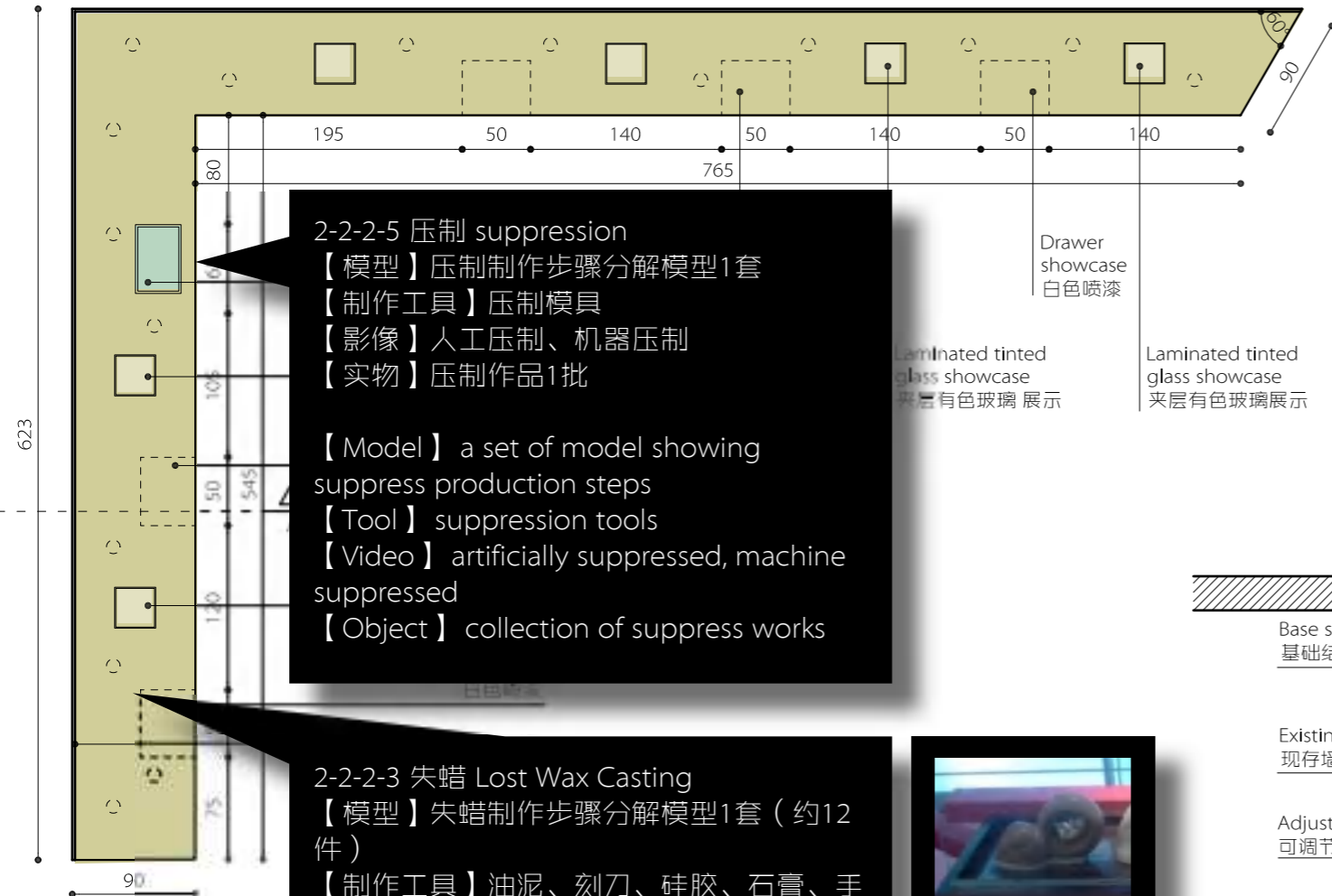
Base structure  
基础结构



热玻璃的秘密  
Secret of Hot Glass

Content

900

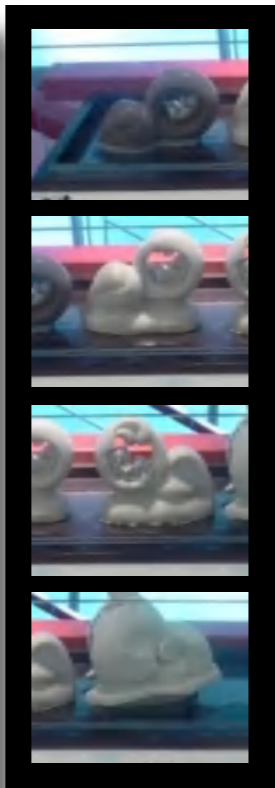


2-2-2-5 压制 suppression  
 【模型】压制制作步骤分解模型1套  
 【制作工具】压制模具  
 【影像】人工压制、机器压制  
 【实物】压制作品1批

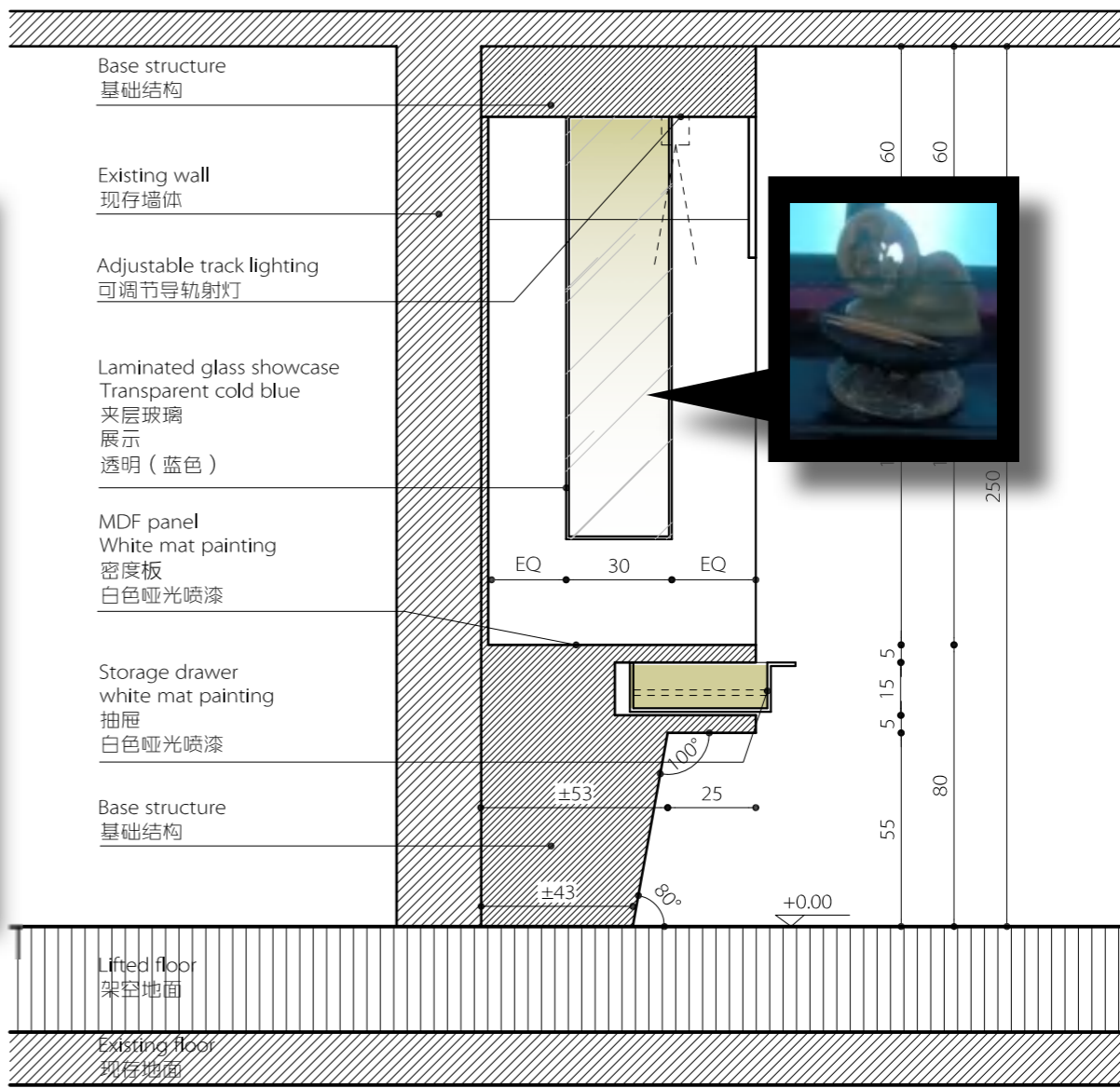
【Model】 a set of model showing suppress production steps  
 【Tool】 suppression tools  
 【Video】 artificially suppressed, machine suppressed  
 【Object】 collection of suppress works

2-2-2-3 失蜡 Lost Wax Casting  
 【模型】失蜡制作步骤分解模型1套 (约12件)  
 【制作工具】油泥、刻刀、硅胶、石膏、手套、面具、石蜡、脱蜡机、量具、玻璃料块  
 【版画或照片】失蜡技术  
 【实物】失蜡作品1批

【Model】 A set of lost wax model showing production steps (about 12 pieces)  
 【Tool】 Sludge production tool, burin, silica, gypsum, gloves, mask, paraffin, wax machine, measuring tools, glass block material  
 【Print or photo】 showing lost wax techniques  
 【Object】 collection of lost wax works



PLAN SCALE 1:50



SECTION SCALE 1:20

# 热玻璃的秘密

## Secret of Hot Glass

Content

冷加工技术的体验  
Cool Working Technology  
Design



冷加工技术的体验  
Cool Working Technology

# 冷加工技术的体验

## Cool Working Technology

### Content

#### 镶嵌 Inlaid Glass

- 【模型】蒂凡尼作品镶嵌制作步骤分解模型 1套
- 【镶嵌工具】不同颜色的玻璃块、不同种类铅条、
- 【影像】镶嵌制作
- 【实物】蒂凡尼镶嵌灯具作品1件

- 【Model】a set of mosaic model showing Tiffany production steps
- 【Tools】pieces of color glass, pieces of different types of lead article
- 【Video】Mosaic production
- 【Object】collect one piece of Tiffany inlaid lamp



#### 砂蚀 Sand erosion

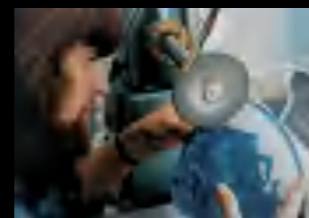
- 【模型】砂蚀制作步骤分解模型1套
- 【车刻工具】不同比目的金刚砂
- 【影像】人工砂蚀、机器砂蚀
- 【实物】砂蚀作品1批
- 【版画或照片】选用不同比目的金刚对玻璃砂蚀刻程度对比

- 【Model】a set of model showing sand erosion production steps
- 【Tool】for different Emery
- 【Video】artificial/man-made sand erosion, sand erosion machines
- 【Object】collection of sand erosion works
- 【Prints or photos】showing different emery with different degree of erosion in comparison

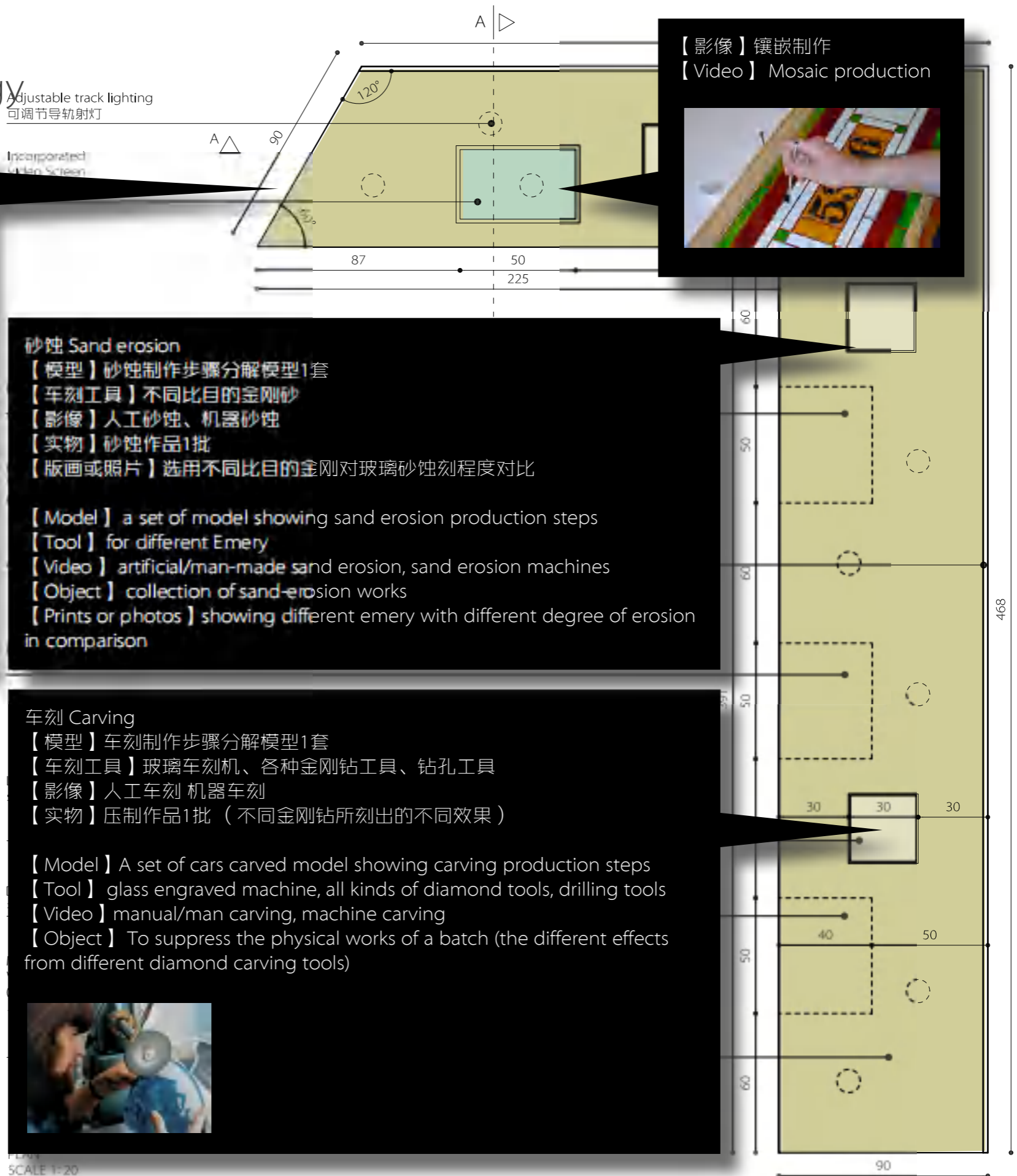
#### 车刻 Carving

- 【模型】车刻制作步骤分解模型1套
- 【车刻工具】玻璃车刻机、各种金刚钻工具、钻孔工具
- 【影像】人工车刻 机器车刻
- 【实物】压制作品1批（不同金刚钻所刻出的不同效果）

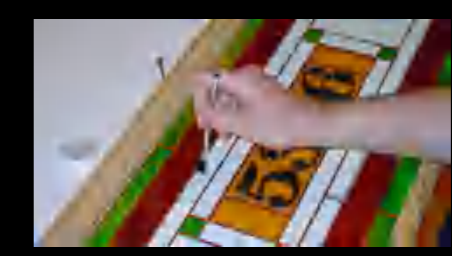
- 【Model】A set of cars carved model showing carving production steps
- 【Tool】glass engraved machine, all kinds of diamond tools, drilling tools
- 【Video】manual/man carving, machine carving
- 【Object】To suppress the physical works of a batch (the different effects from different diamond carving tools)



SCALE 1:20



【影像】镶嵌制作  
【Video】Mosaic production



玻璃 休闲区  
Glass Lounge

第三单元 从日常生活到科技前沿  
Unit 3 From Daily Lives to the Forefront of Science and Technology

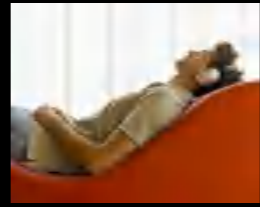
# 玻璃 休闲区 Glass Lounge

Overview

玻璃工厂 现场 - 观察镜  
Glass Factory Site - Scope



玻璃 休闲区  
Glass Lounge  
音乐 视频 Sound / Movieclips  
图书 实物 Books / Objects



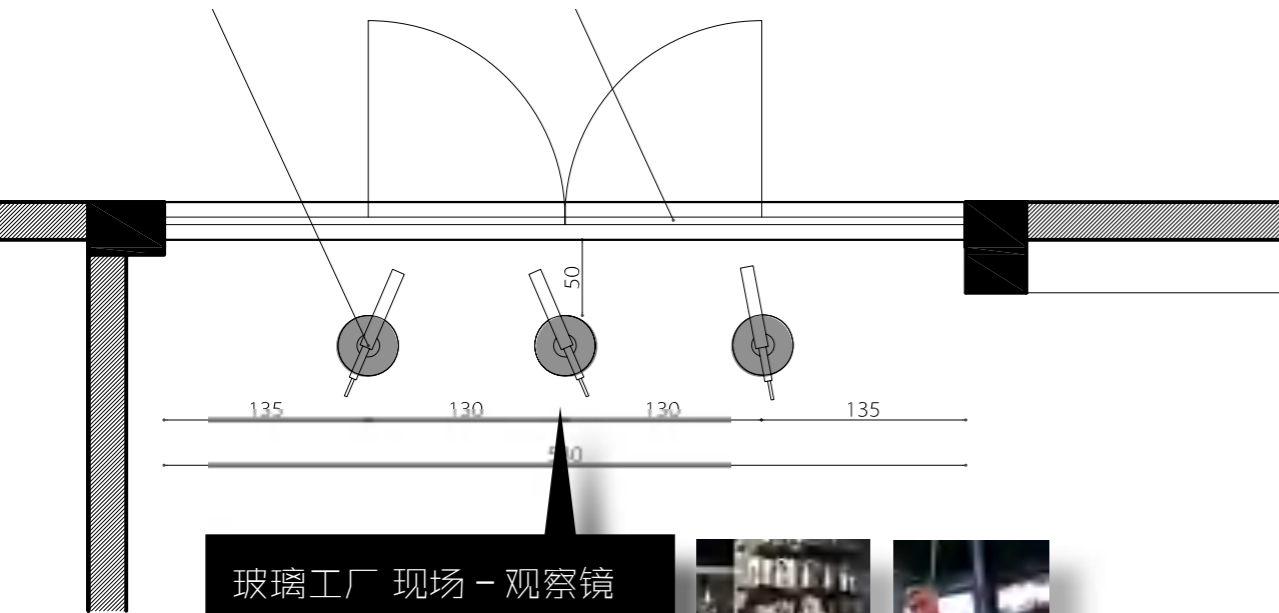
玻璃 休闲区  
Glass Lounge  
Design



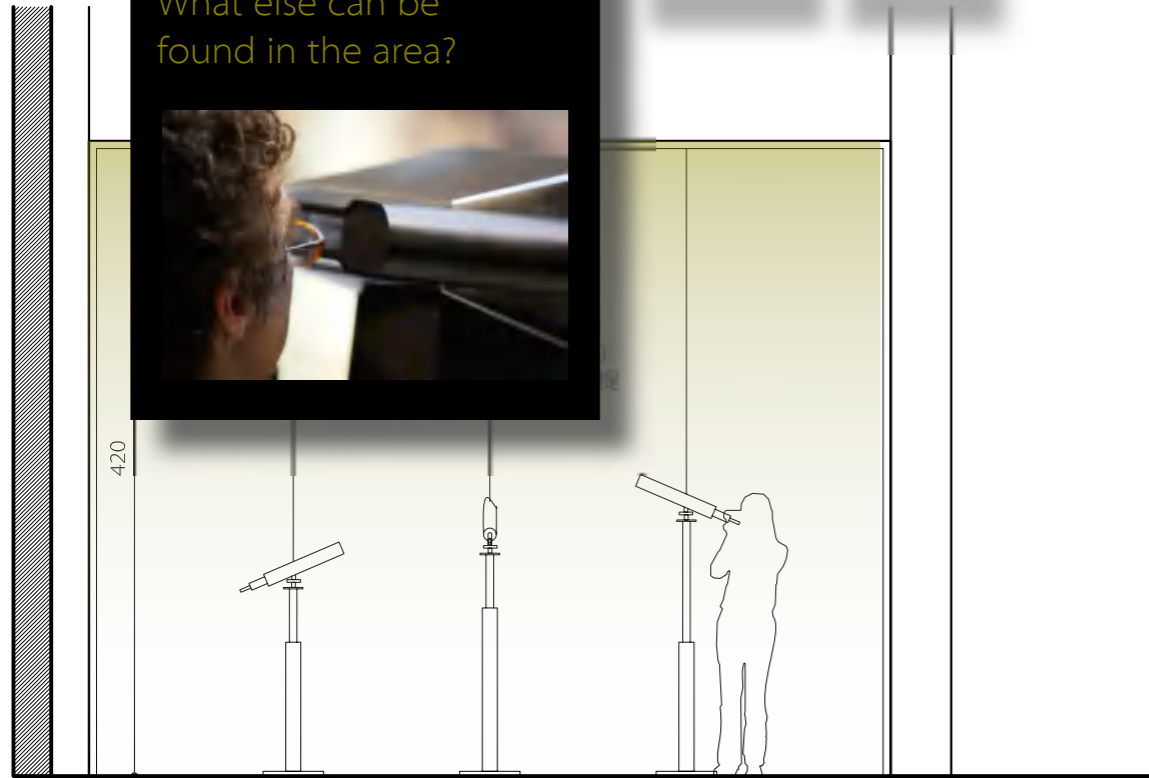
玻璃 休闲区  
Glass Lounge

# 玻璃 休闲区 Glass Lounge

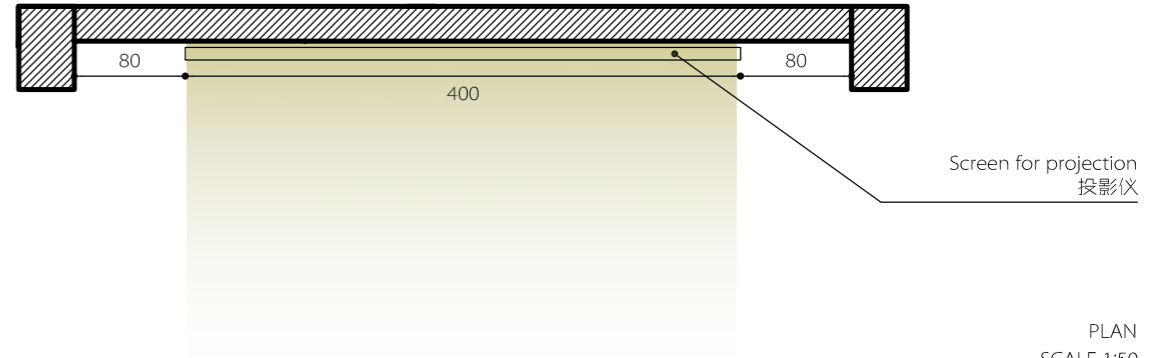
Content



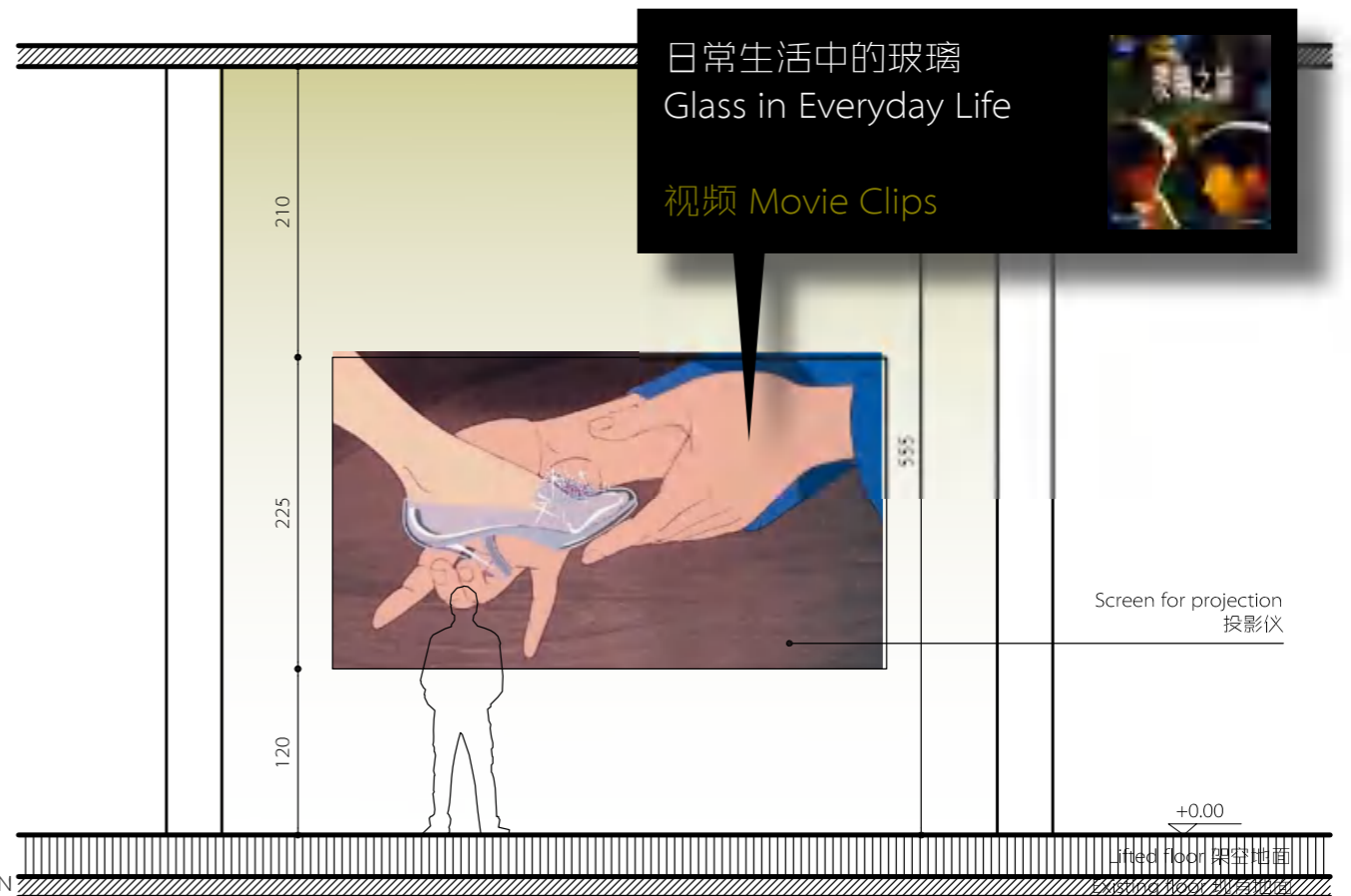
玻璃工厂 现场 - 观察镜  
Glass Factory Site-Scope  
在这儿还能发现些什么?  
What else can be found in the area?



ELEVATION  
SCALE 1:50



PLAN  
SCALE 1:50



日常生活中的玻璃  
Glass in Everyday Life  
视频 Movie Clips

Screen for projection  
投影仪

+0.00

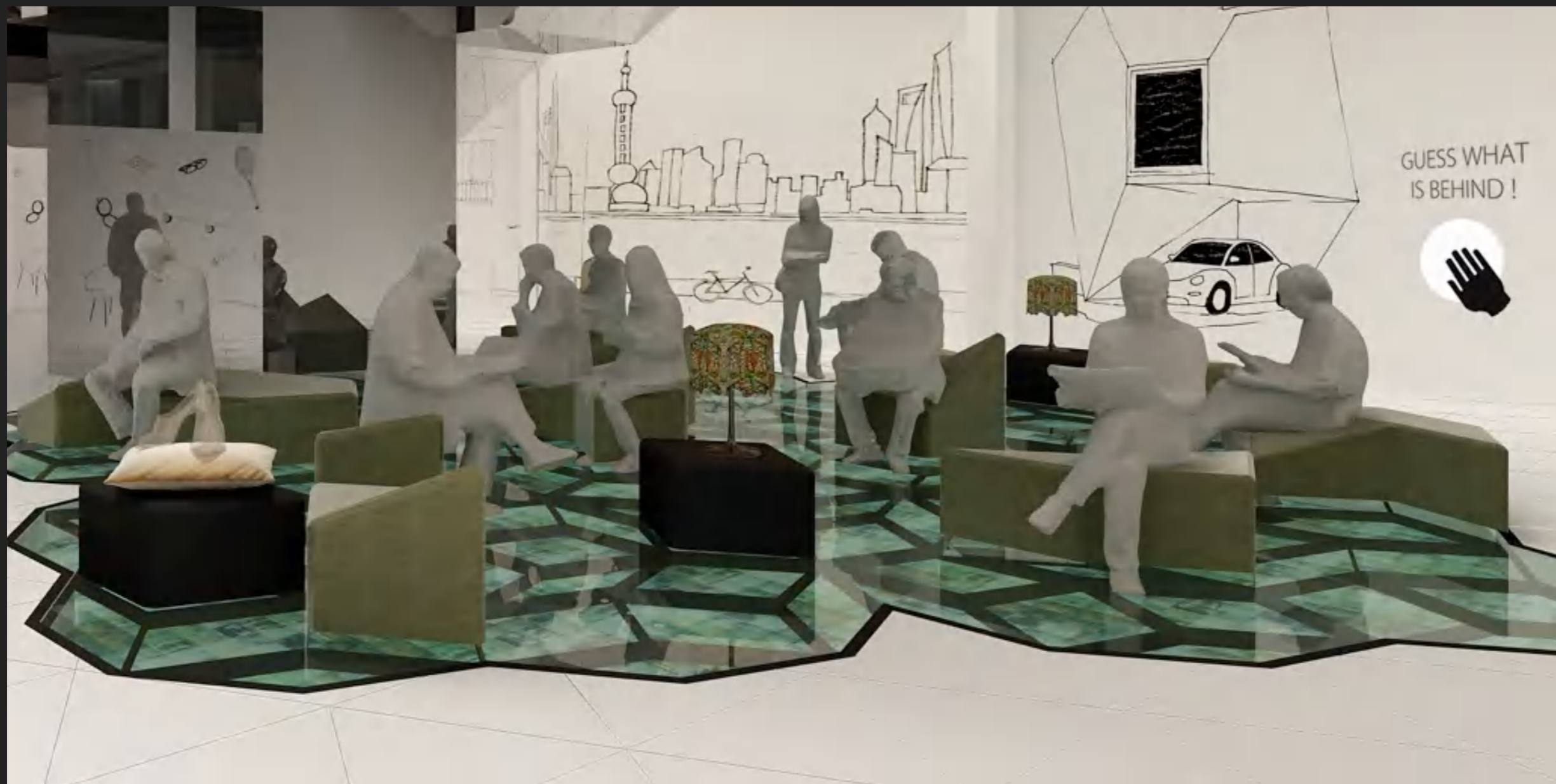
Lifted Floor 架空地面

ELEVATION  
SCALE 1:50

玻璃 休闲区 / 从日常生活到科技前沿

Glass Lounge / Lives to the Forefront of Science and Technology

Design



玻璃 休闲区  
Glass Lounge

# 玻璃 休闲区

## Glass Lounge

Design & Content



玻璃 休闲区  
Glass Lounge  
音乐 视频 Sound / Movieclips  
图书 实物 Books / Objects

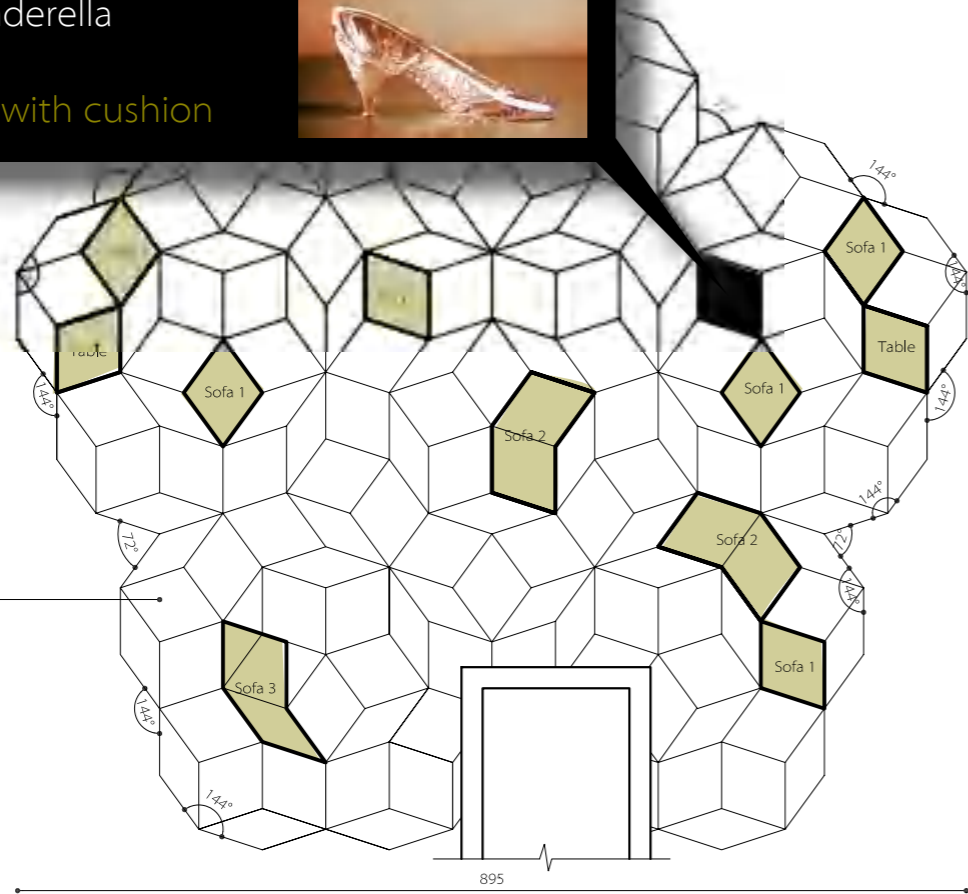


水晶鞋 Crystal Shoe  
灰姑娘 Cinderella

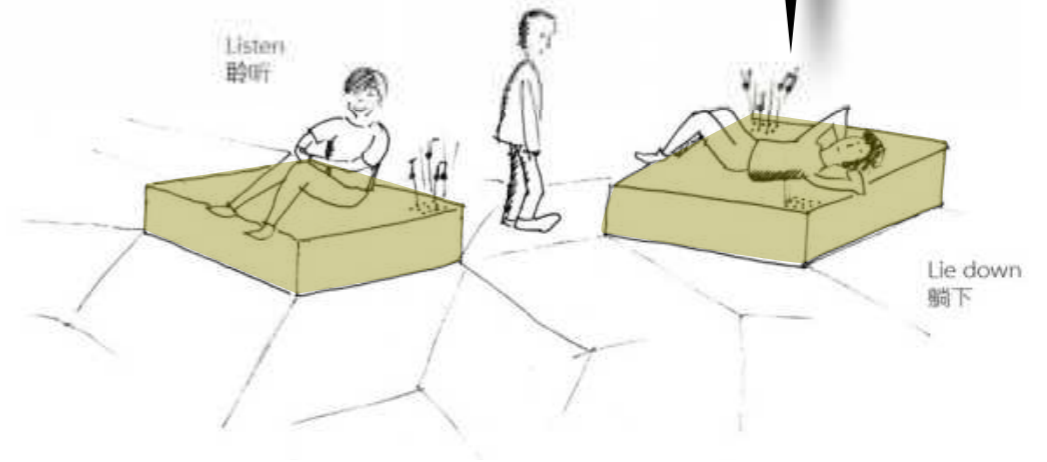


Showcase with cushion

Translucent walkable glass  
Floor showcase  
地板展示  
透明钢化玻璃 (可行走)



PLAN  
SCALE 1:50

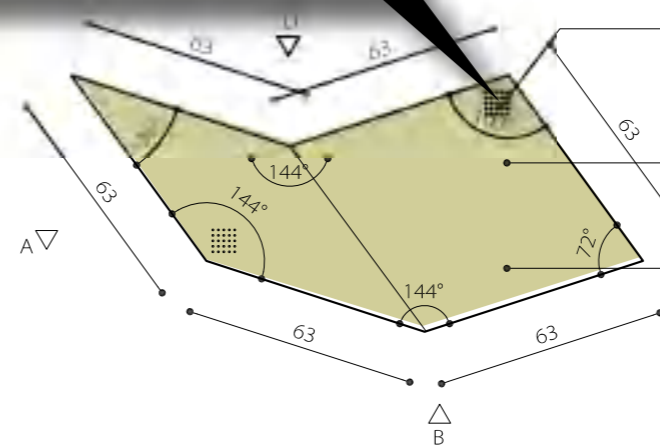


Integrated Loudspeakers

Integrated headphones  
集成耳机

Leather  
皮革

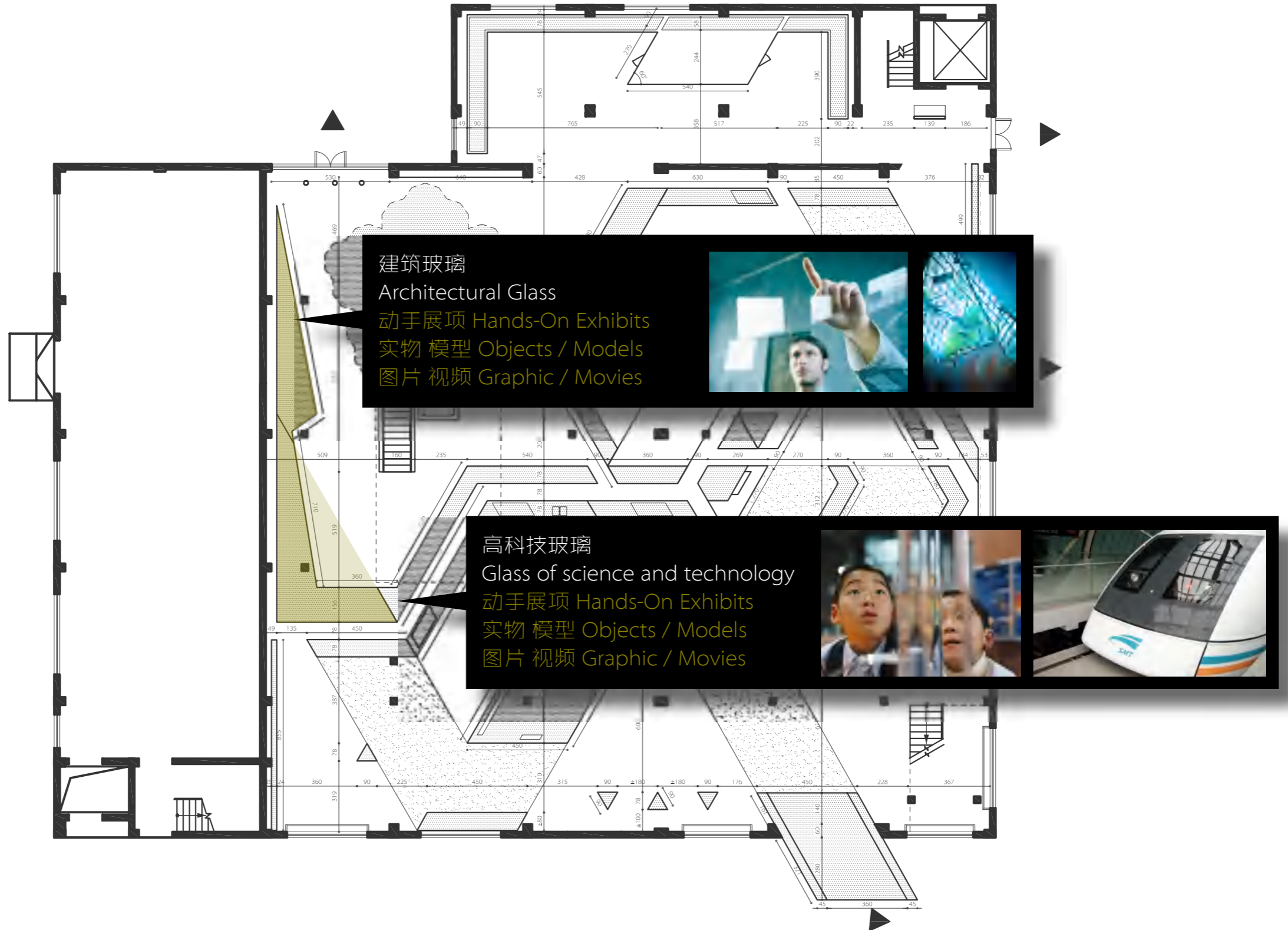
Foam construction + polyester quilting  
泡沫建筑+聚酯纤维缝



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Overview



从日常生活到科技前沿

Lives to the Forefront of Science and Technology

Design



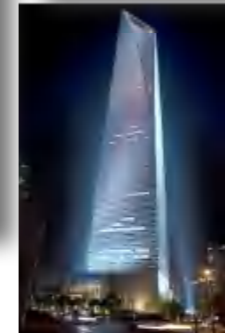
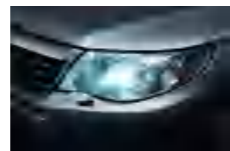
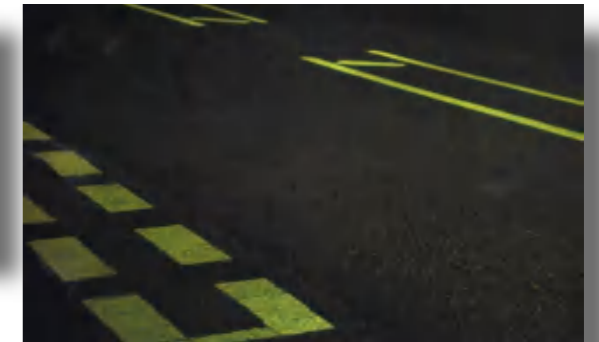
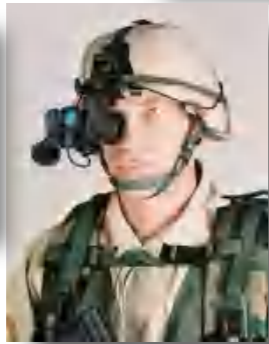
从日常生活到科技前沿

Lives to the Forefront of Science and Technology

# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Concept Studies

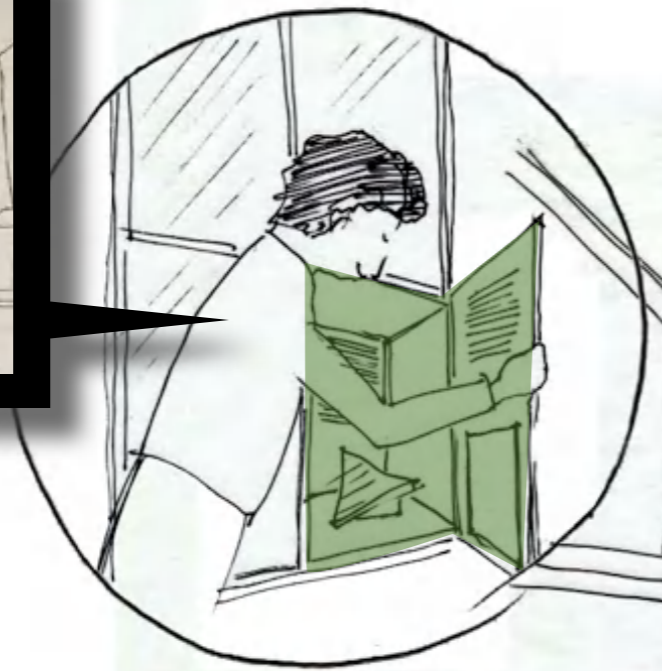
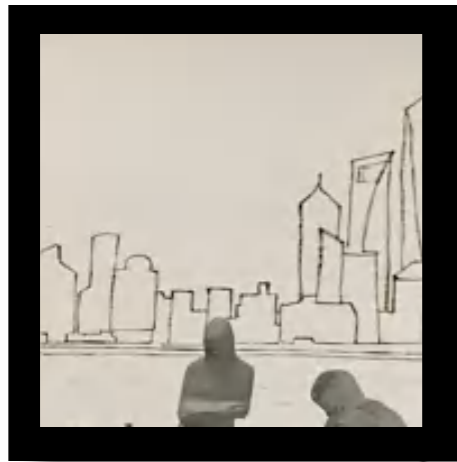


# 门之谜

## Riddle Doors

Concept

Glass is everywhere. Guess where and open the hidden doors to get more information!  
玻璃无处不在。猜猜玻璃在哪里并打开隐藏的门了解更多的消息！



Open the doors  
打开门



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

Concept Studies

Find the hidden doors in the fresco and guess what's behind!  
找到壁画中的隐形门并猜猜后面是什么!



Find out ...

How much Glass,  
was used for the IFC ...



建筑玻璃 Architectural Glass

【图片】国内使用各类玻璃的著名建筑（城市墙）

【Image】 famous Domestic glass buildings names (city wall)

【制作工具】各类建筑玻璃制作工具或安装工具

【Tools】 Various types of architectural glass making tools or installation tools

# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

Concept Studies



Find the ...

Night Goggles



眼镜（光学玻璃）(glasses - optical glass)  
例如：近视镜、远视镜、夜视镜、偏光镜等  
Ex: short-sighted glasses, Far-sighted glasses, night vision glasses, polaroid glasses, etc)  
近视镜、夜视镜：  
(short-sighted glasses, night vision goggles)

# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

Concept Studies

Switch on the ...

LED Glass

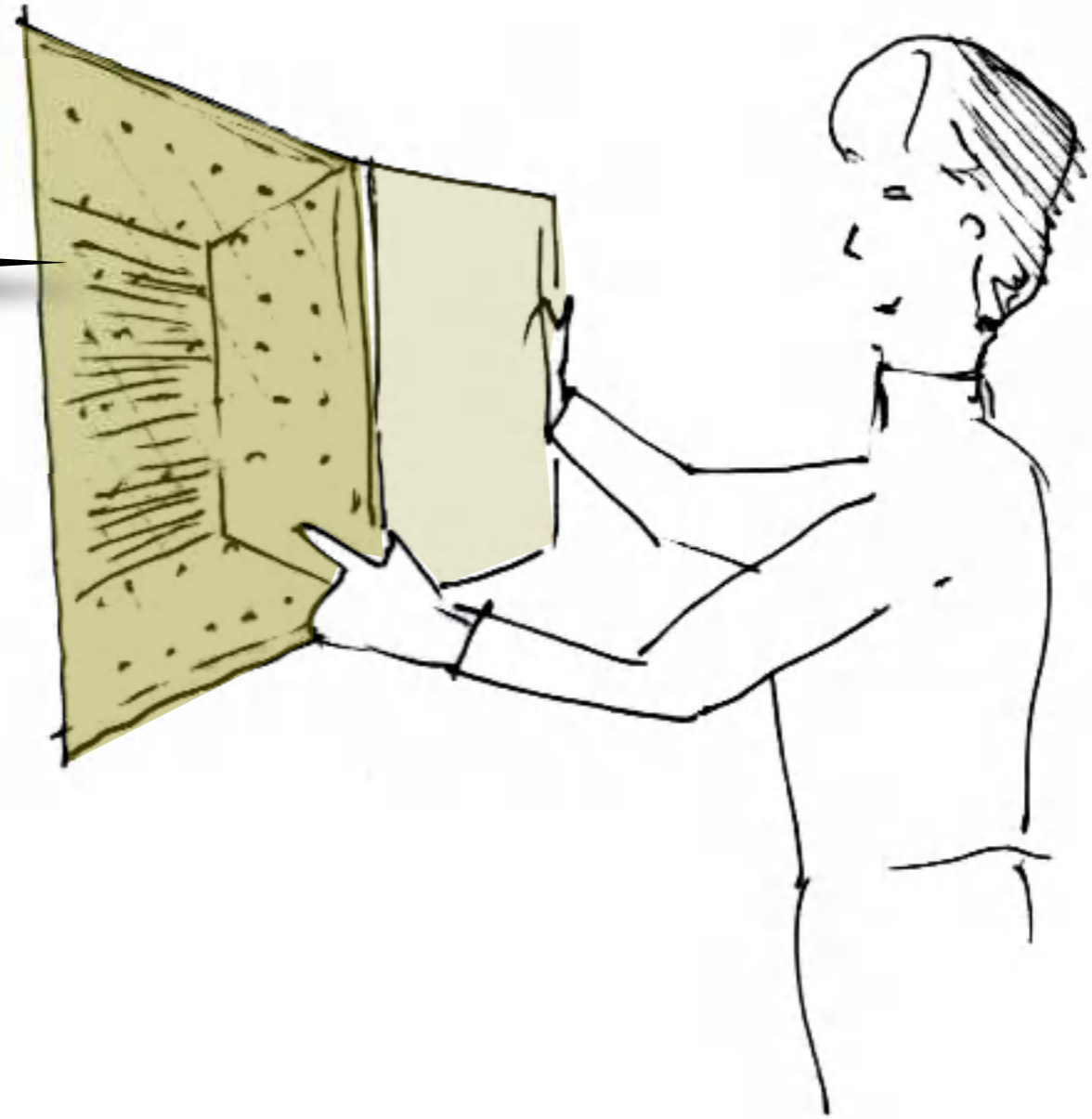


LED玻璃 ( LED glass )

【文字】【text】

LED玻璃也称电光源玻璃，是一种将LED技术与透明玻璃的结合，形成各种图案及文字的高科技玻璃专利产品，由美国Polytronix,Inc研究发明的。

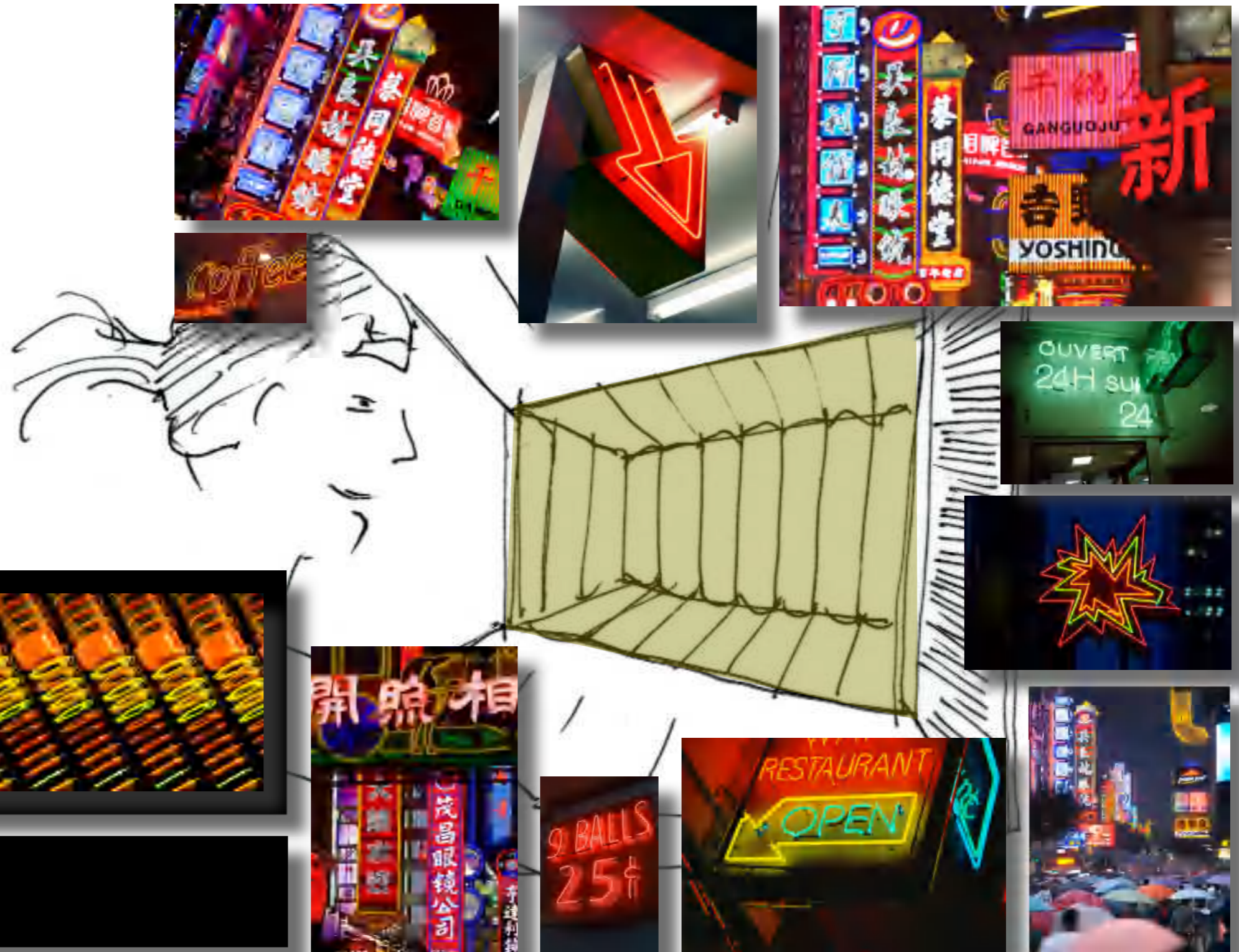
Also called electric light source glass, a technology combines the LED with transparency glass. It is invented by Polytronix, Inc, USA



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

Concept Studies



Blinded by ...

Neon Light

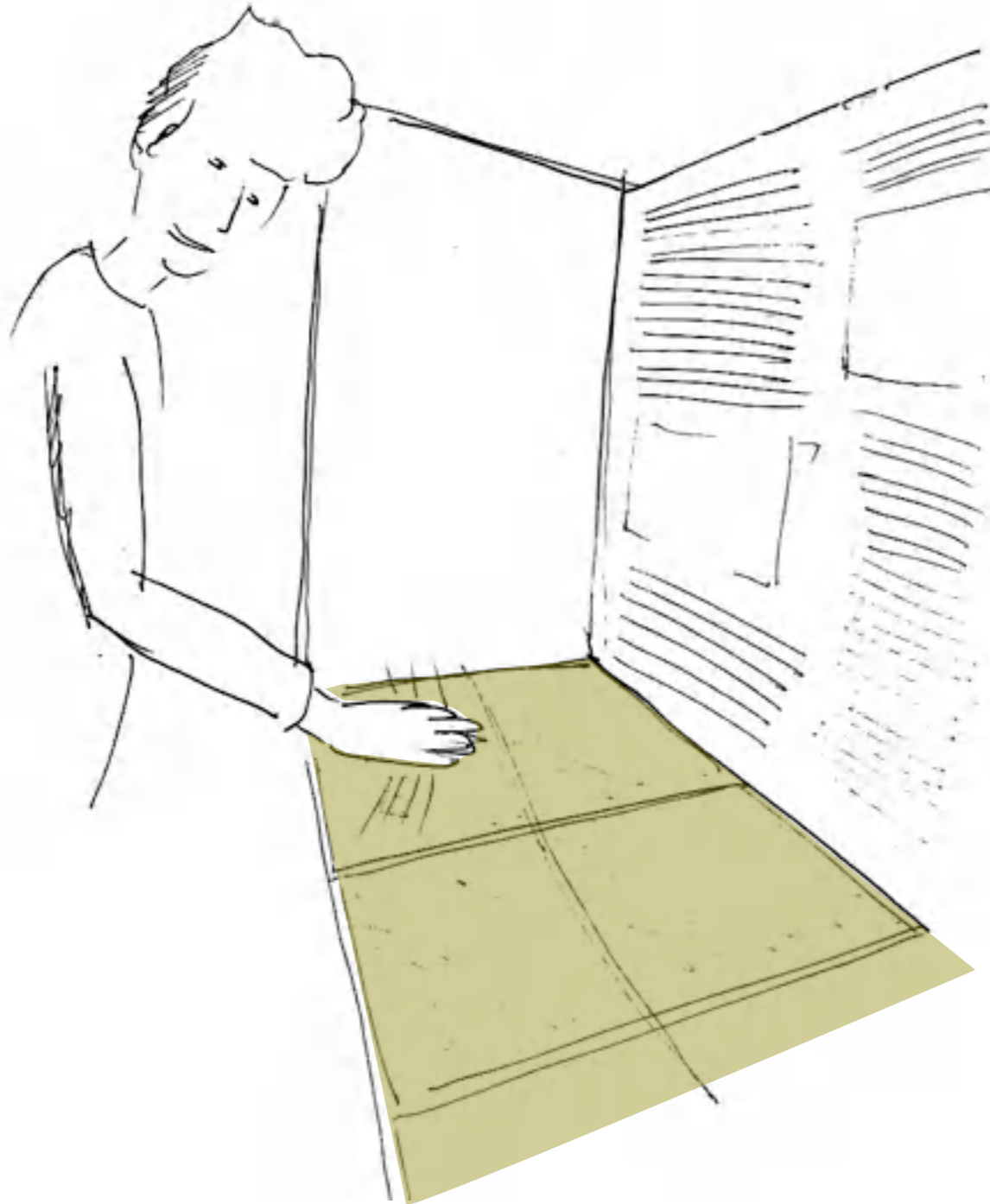


霓虹灯管 (碱玻璃)  
(neon lights - alkali glass)

# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

Concept Studies



Feel the ...

effect of Low-E Glass ...



LOW-E玻璃 ( Low-E glass )

【文字】【text】

Low-E玻璃又称低辐射玻璃，是在玻璃表面镀上多层金属或其他化合物组成的膜系产品。具有优异的热性能和良好的光学性能。

Low-E玻璃对太阳光中可见光有高的透射比，可达80%以上，而反射比则很低。从室外看，外观更透明、清晰，即保证了建筑物良好的采光，又避免了以往大面积玻璃幕墙、中空玻璃门窗光反射所造成的光污染现象，营造出更为柔和、舒适的光环境。

Low E glass also called low emission glass, it is to put a coating (mixture metal and other chemical combinations) on the surface of the glass and has a good nature of hot property and optical property.

# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Concept Studies

Understand how ...

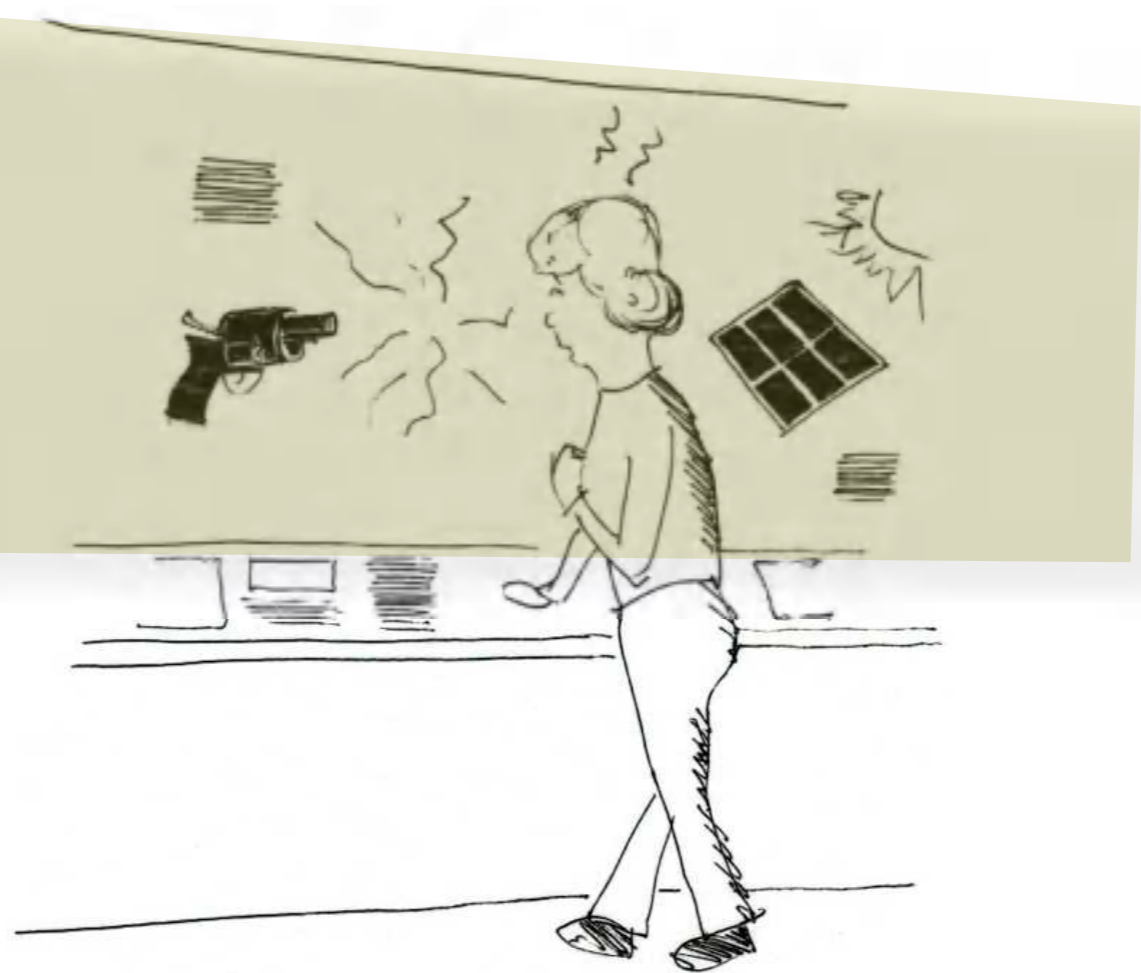
... laminated Glass works ...



夹层玻璃 (Laminated glass)

【文字】【text】

夹层玻璃系两片或多片平板玻璃之间嵌夹透明塑料薄片，经加热、加压，粘合而成的平面或弯曲的复合玻璃制品。夹层玻璃的抗冲击性比普通平板玻璃高出几倍。玻璃破碎时不裂成碎块，仅产生辐射状裂纹和少量玻璃碎屑，而且碎片仍粘贴在膜片上，不致伤人。夹层玻璃的透光性好，还具有耐久、耐热、耐湿、耐寒等性质。夹层玻璃还可以用作汽车和飞机的风挡玻璃、防弹玻璃以及有特殊安全要求的建筑物的门窗、隔墙、工业厂房的天窗和某些水下工程。With the thin plastic coating in the middle of two or even more layers of the glass, the resistance to impact is much higher than the other type glass and will not break into pieces when it's broken. It used mainly in windshield for car or airplane, bullet proof glass and other architectural buildings which have higher or special requirement on windows or doors.



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Concept Studies

Find out ...

... how Self-cleaning Glass works.



自洁玻璃 (Self-cleaning glass)

【文字】【text】

自洁玻璃又称自净玻璃，属于生态环保型“绿色玻璃”，在平板玻璃表面涂覆一层透明的二氧化钛，光催化剂薄膜，就可制成自洁玻璃。当被称为光触媒的二氧化钛光催化剂薄膜遇到太阳光或荧光灯、紫外线照射时，在外界光的激发下会使附着在表面的有机物、污染物变为二氧化碳和水并自动消除。

It's a eco-friendly "green glass", to put a titanium dioxide on the surface and use the day-light, it could compose the dirty things with the titanium dioxide to become water and carbon dioxide to reach the self-cleaning purpose.



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Content

#### 日用玻璃 Domestic Glass

【实物】各种日用玻璃

【Object】A variety of everyday glass

保温瓶的发明 Why is a thermos insulated?

眼镜（光学玻璃）(glasses - optical glass)

例如：近视镜、远视镜、夜视镜、偏光镜等

Ex: short-sighted glasses. Far-sighted glasses, night vision glasses, polaroid glasses, etc)

近视镜、夜视镜：

(short-sighted glasses, night vision goggles)

偏光镜：(polaroid glasses)

相机镜头（光学玻璃）

(camera lens - optical glass)

手机电容式触摸屏(镀膜导电玻璃)

(touch panel - conductive coated glass)

电脑显示器（抗辐射玻璃）

(computer monitor - anti-irradiation glass)

电视机显像管（抗辐射玻璃）

(television tube - anti-irradiation glass)

玻璃家具(glass furniture)

例如：镜子、灯具、茶几、柜子、玻璃电子秤等

汽车上的玻璃(glass applied in auto)

(1) 汽车屏风（热弯玻璃、钢化玻璃、夹层玻璃）

(windshield - hot bending glass, tempered glass, laminated glass)

(2) 汽车后视镜（抗辐射玻璃）

(rearview mirror - anti-irradiation glass)

(3) 汽车仪表盘（抗辐射玻璃）

(instrument panel - anti-irradiation glass)

(4) 汽车车灯

(auto lamp)

霓虹灯管（碱玻璃）

(neon lights - alkali glass)

玻璃音乐喇叭

(trumpet)

#### 建筑玻璃 Architectural Glass

【图片】国内使用各类玻璃的著名建筑（城市墙）

【Image】famous Domestic glass buildings names (city wall)

【制作工具】各类建筑玻璃制作工具或安装工具

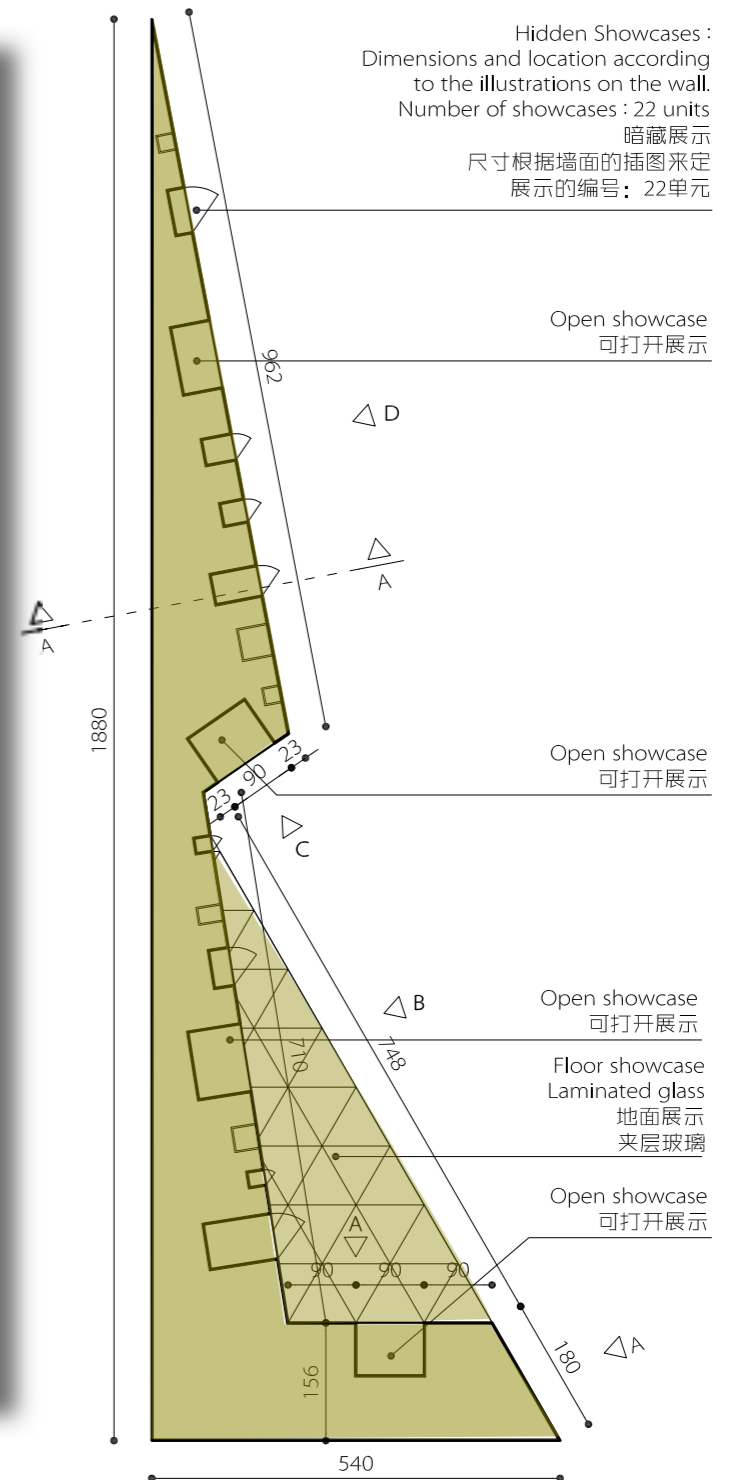
【Tools】Various types of architectural glass making tools or installation tools

【实物】各种建筑玻璃

【Object】A variety of architectural glass

玻璃镶嵌马赛克、彩绘玻璃、钢化玻璃（淬火玻璃）、夹层（胶合）安全玻璃、热弯玻璃、镀膜玻璃、LED玻璃、电控液晶玻璃、热反射玻璃、吸热玻璃、防火玻璃、夹丝玻璃、中空玻璃、防弹玻璃（防弹玻璃）、玻璃砖、Low-E玻璃（低辐射玻璃）、槽型玻璃（U型玻璃）、泡沫玻璃、自洁玻璃

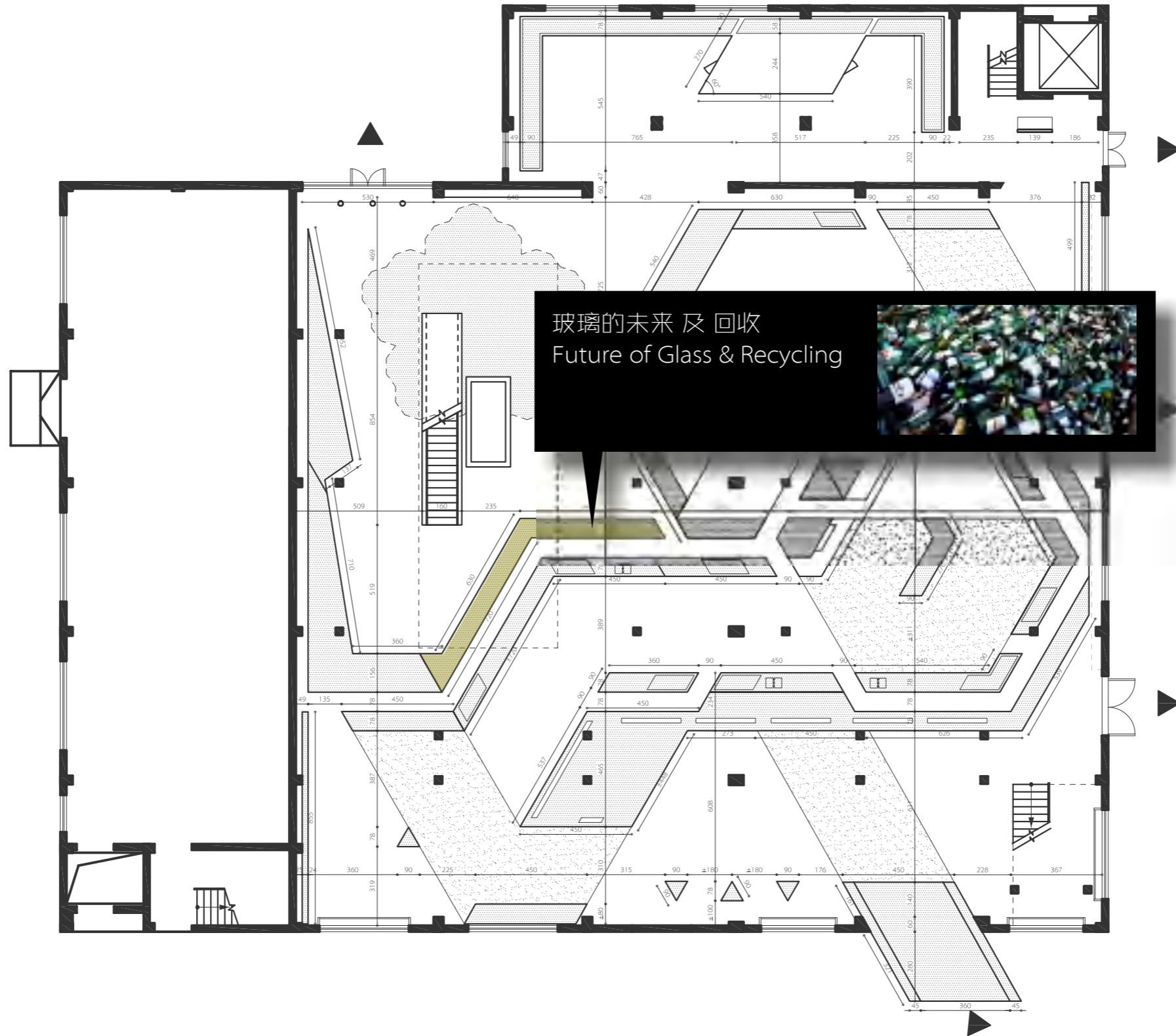
Mosaic glass, stained glass, tempered glass (quenched glass), laminated (glued) safety glass, hot bending glass, coated glass, LED glass, electronically controlled liquid crystal glass, heat-reflective glass, heat-absorbing glass, fire glass, wired glass, insulating glass, bullet-proof glass (bulletproof glass), glass brick, Low-E Glass (Low Radiation glass), groove glass (U-type glass), foam glass, self-cleaning glass



# 从日常生活到科技前沿

## Lives to the Forefront of Science and Technology

### Overview



玻璃的未来 及 回收  
Future of Glass & Recycling  
Design



玻璃的未来 及 回收  
Future of Glass & Recycling

# 玻璃的未来 及 回收

## Future of Glass & Recycling

### Design & Content

Showcase internal structure  
展示内部机构框架

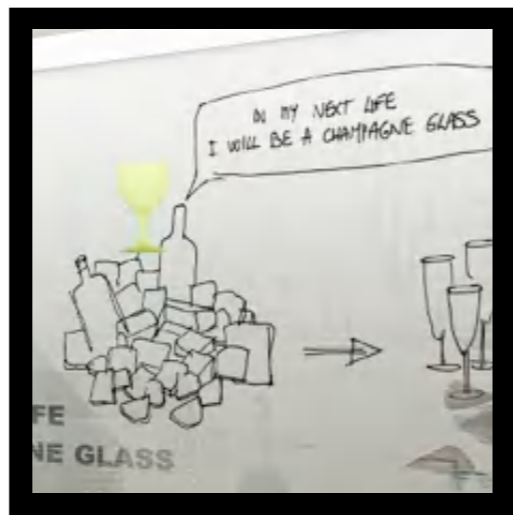
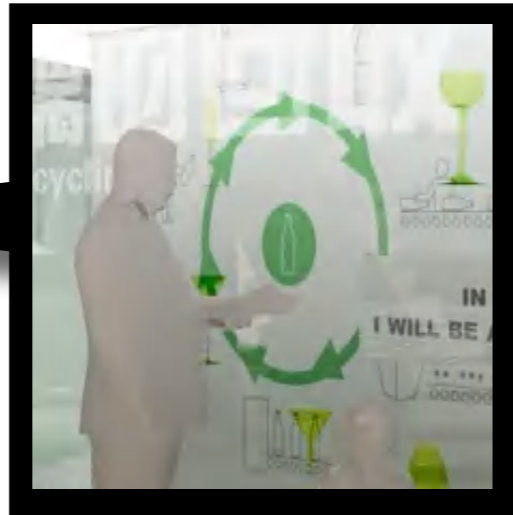
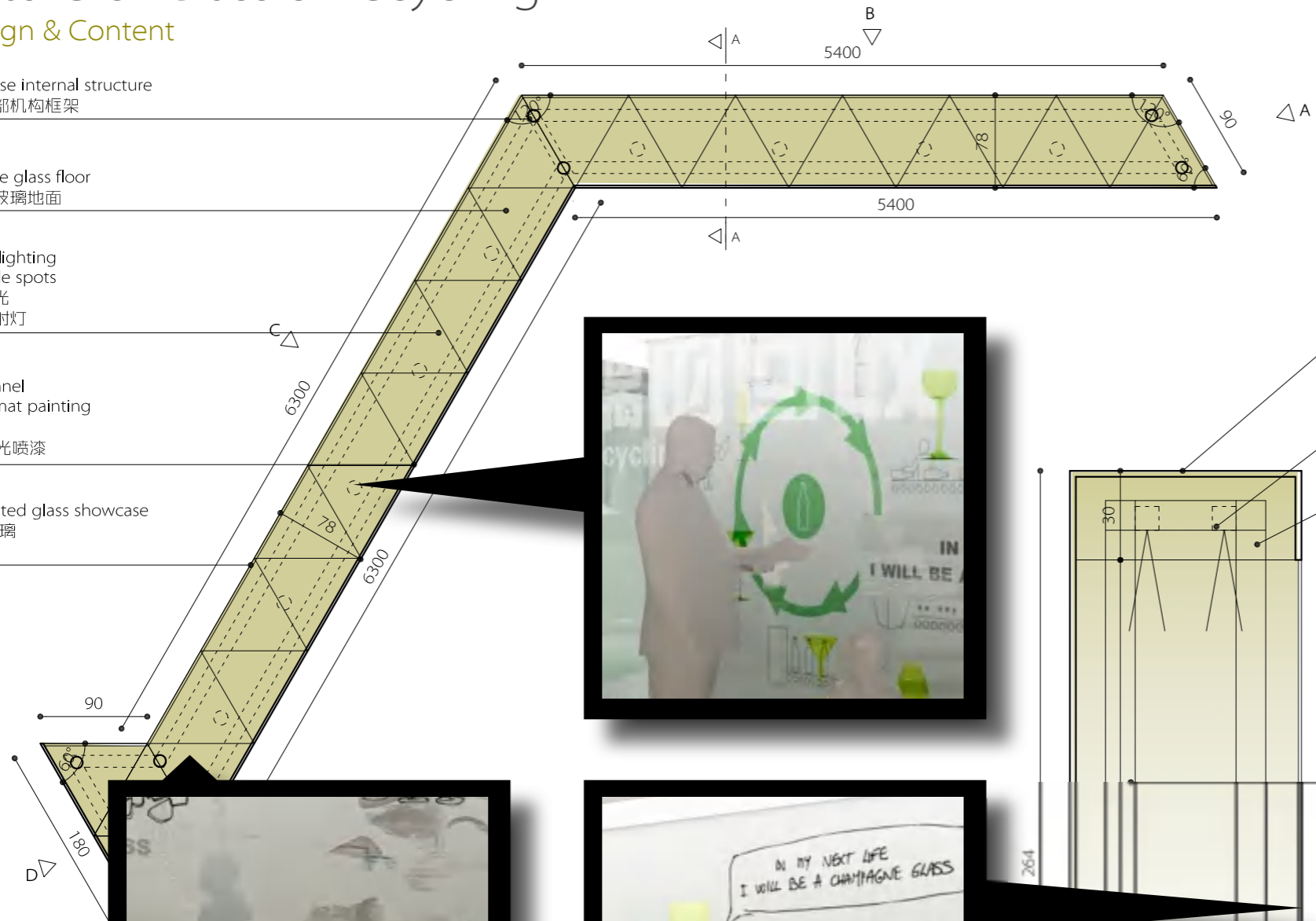
Walkable glass floor  
可行走玻璃地面

Ceiling lighting  
Adjustable spots  
顶棚灯光  
可调节射灯

MDF panel  
White mat painting  
密度板  
白色哑光喷漆

Laminated glass showcase  
夹层玻璃  
展示

PLAN  
SCALE 1:50



refer to the standard  
floor showcase detail

### 玻璃的回收 (Glass recycling)

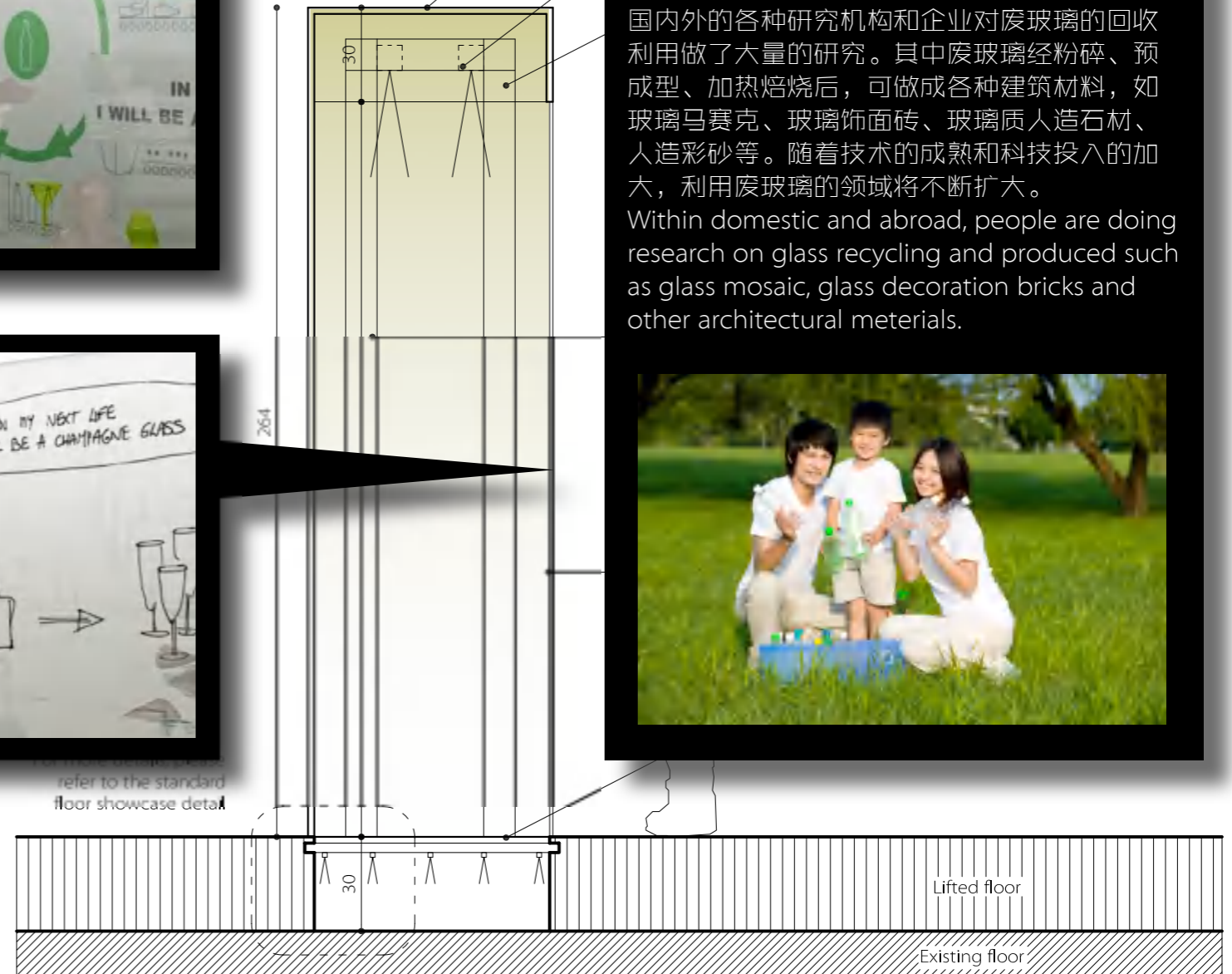
【文字】【text】

玻璃是人们日常生活中离不开的重要物品，然而碎玻璃和废玻璃制品一旦随意乱丢就成为很难处理的环境污染物，玻璃是不可降解的废弃物。熔炼有色玻璃，还必须掺入一些特种物质。这些原料，大都属于不可再生的矿物资源。

Glass is a daily-used production for human life, but once the glass bottles or productions have been thrown away, it would become non-degradable materials.

国内外的各种研究机构和企业对废玻璃的回收利用做了大量的研究。其中废玻璃经粉碎、预成型、加热焙烧后，可做成各种建筑材料，如玻璃马赛克、玻璃饰面砖、玻璃质人造石材、人造彩砂等。随着技术的成熟和科技投入的加大，利用废玻璃的领域将不断扩大。

Within domestic and abroad, people are doing research on glass recycling and produced such as glass mosaic, glass decoration bricks and other architectural materials.



第三单元 从日常生活到科技前沿

Unit 3 From Daily Lives to the Forefront of Science and Technology

玻璃屋

Glass House

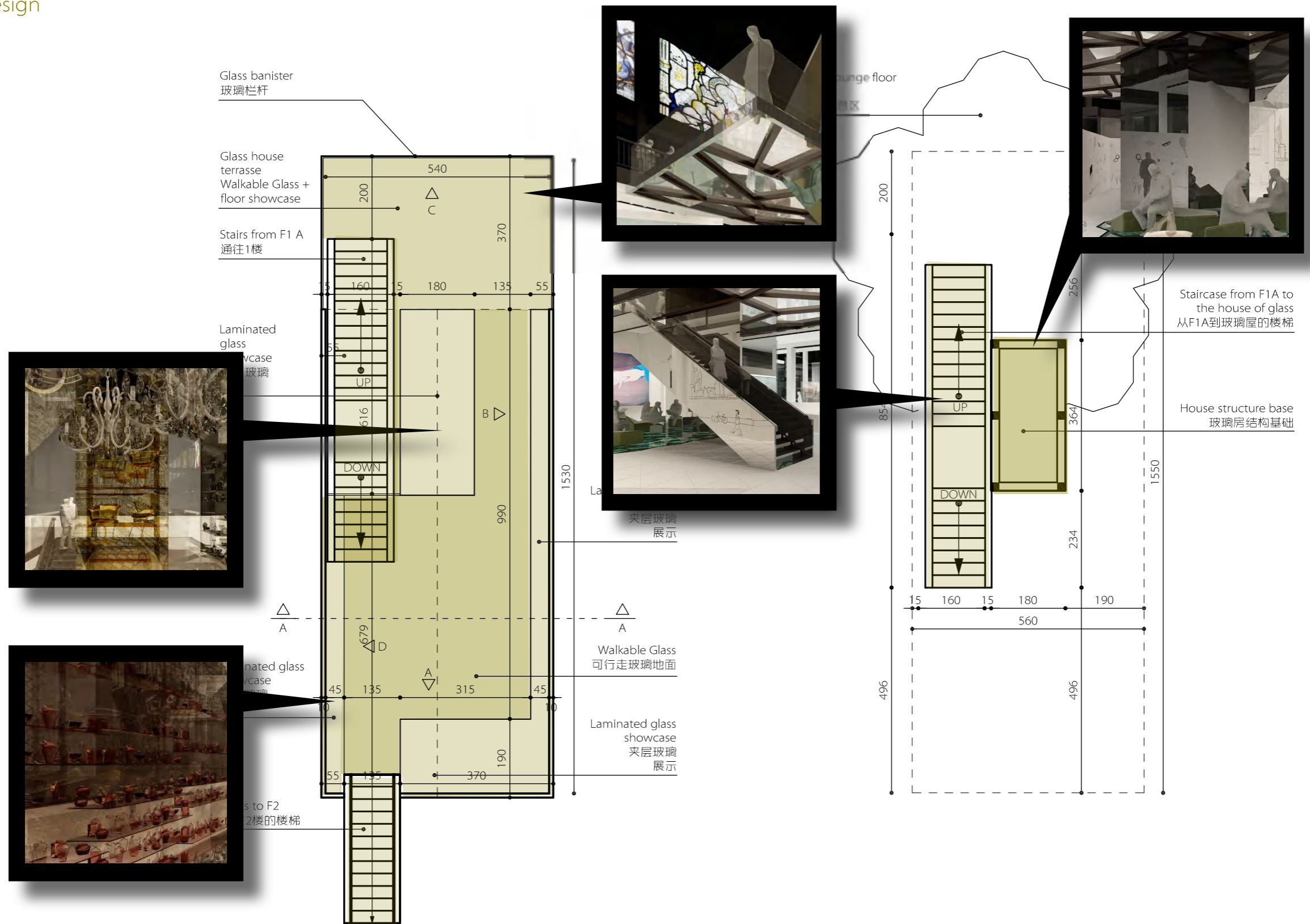


玻璃屋  
Glass House  
Design



国内玻璃作品  
Domestic Glass  
展品设计  
Design Objects

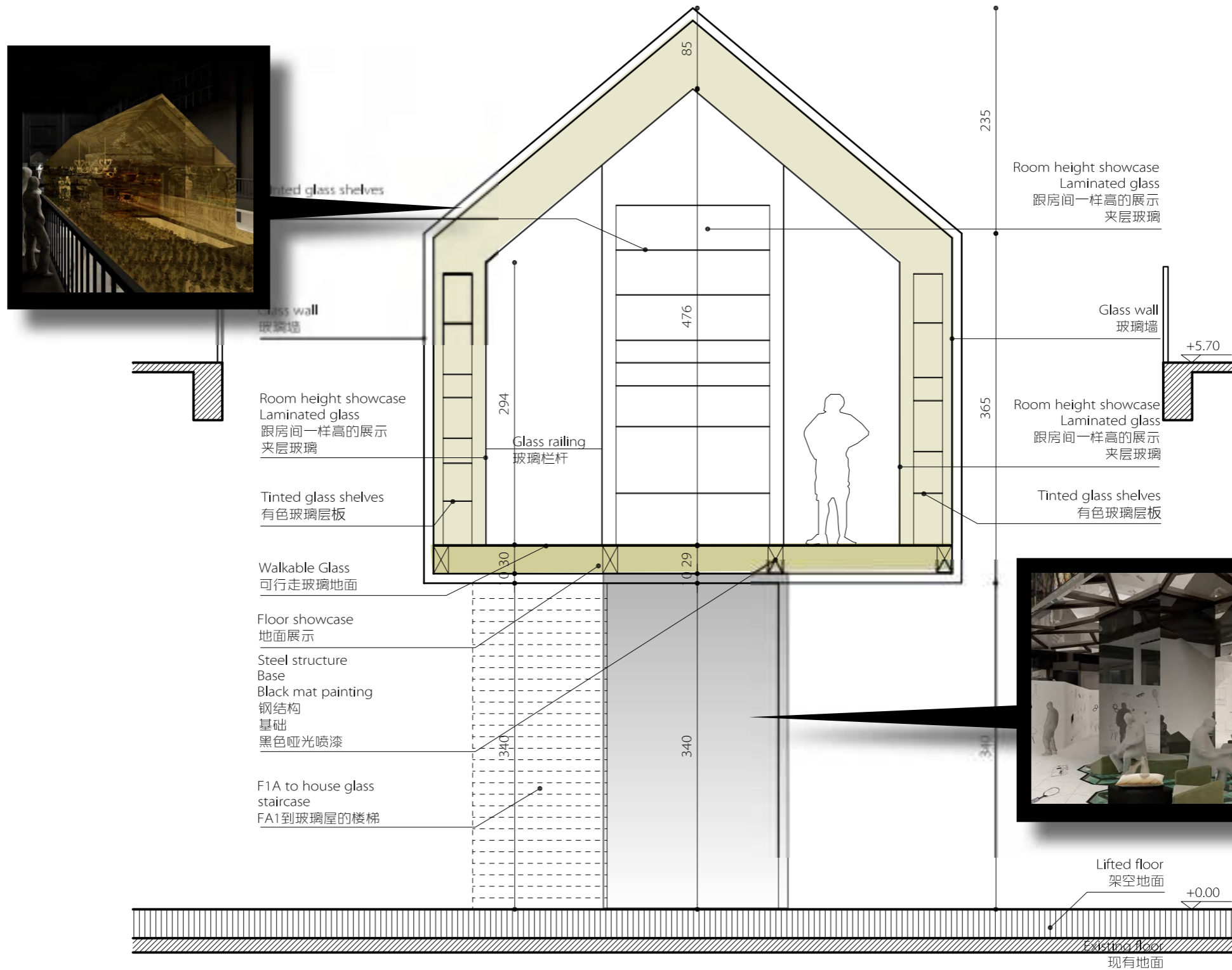
# 玻璃屋 Glass House Design



GLASS HOUSE PLAN  
SCALE 1:100

GLASS HOUSE STRUCTURE  
SCALE 1:100

# 玻璃屋 Glass House Design



SECTION  
SCALE 1:50

玻璃屋  
Glass House  
Design



彩色玻璃  
Glass Windows

玻璃屋  
Glass House

## 第四单元 艺术创造力的证明

### Unit Four Proof of Artistic Creativity

Design



玻璃屋  
Glass House

著名艺术家作品  
Works from Famous Artists

第四单元 艺术创造力的证明  
Unit Four Proof of Artistic Creativity



# 第四单元 艺术创造力的证明

## Unit Four Proof of Artistic Creativity

Design



著名艺术家作品  
Works from Famous Artists

彩色玻璃  
Glass Windows

天文望远镜  
Telescope

# 彩色玻璃 Glass Windows Design

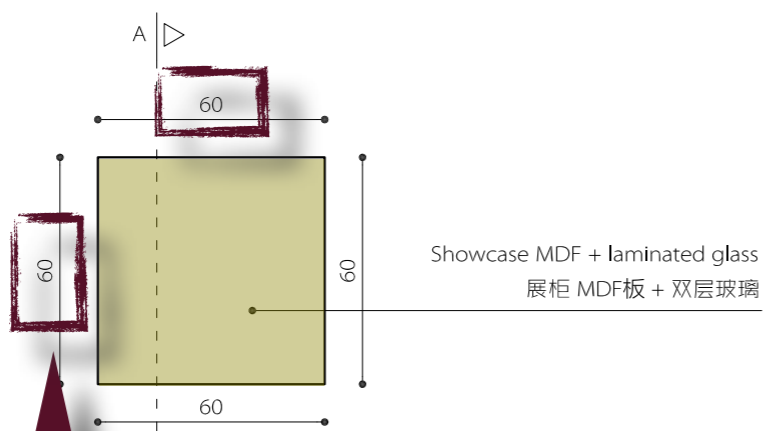


SECTION  
SCALE 1:50

ELEVATION  
SCALE 1:100

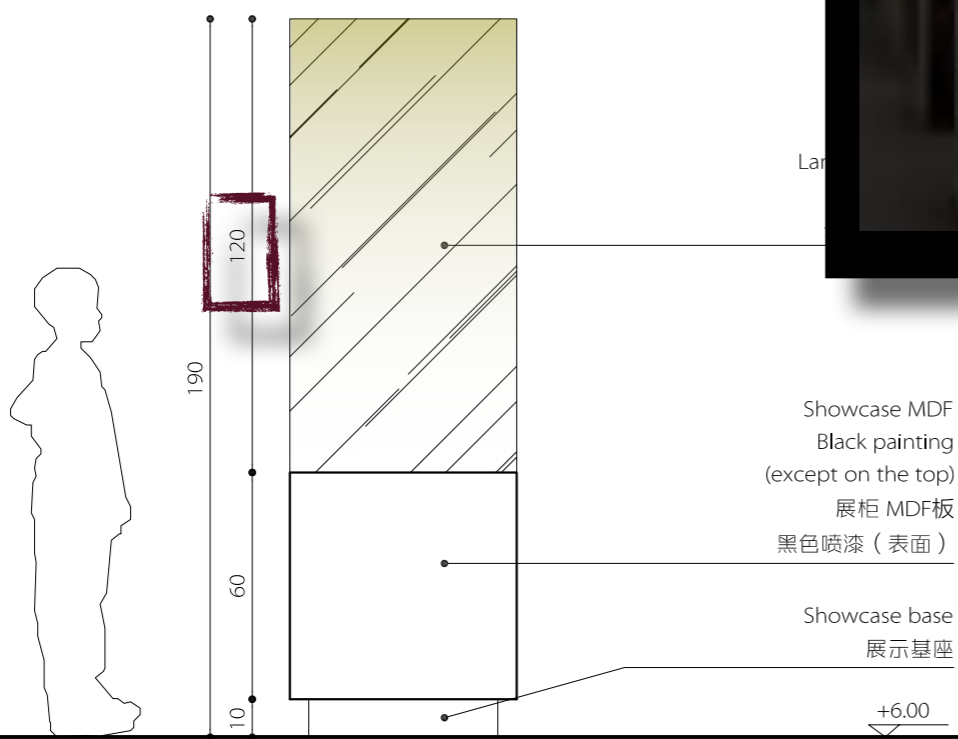
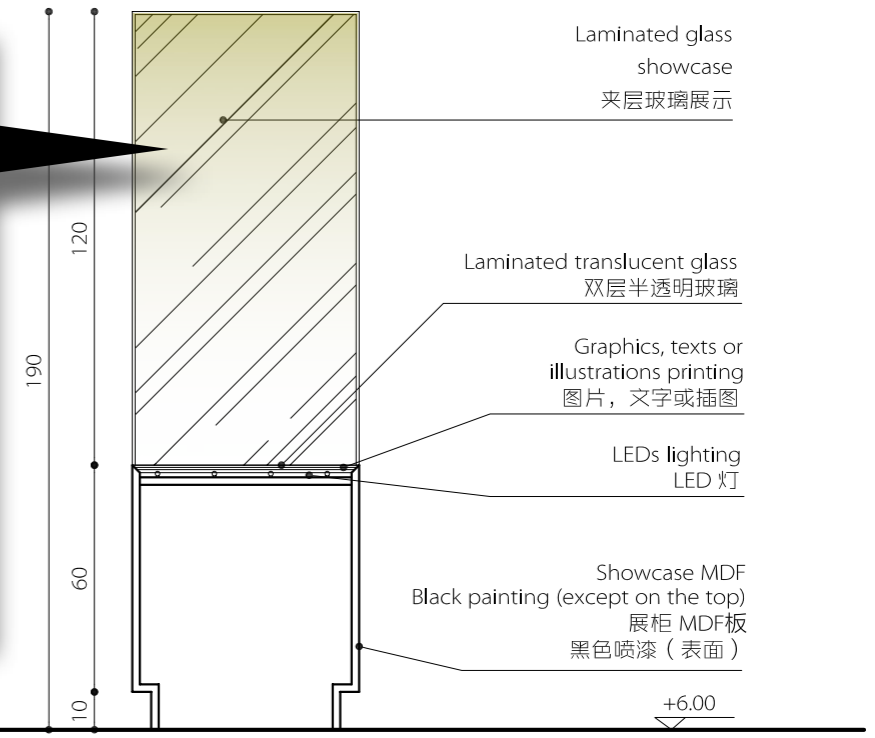
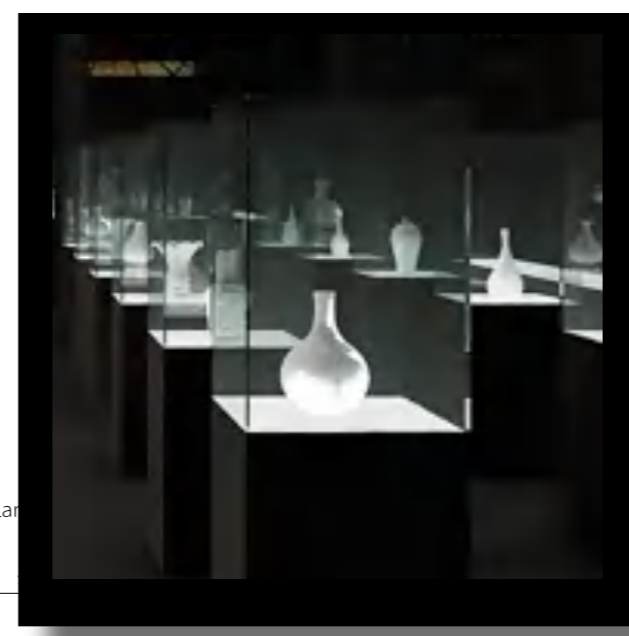


# 展柜 Showcase Design



Showcase MDF + laminated glass  
展柜 MDF板 + 双层玻璃

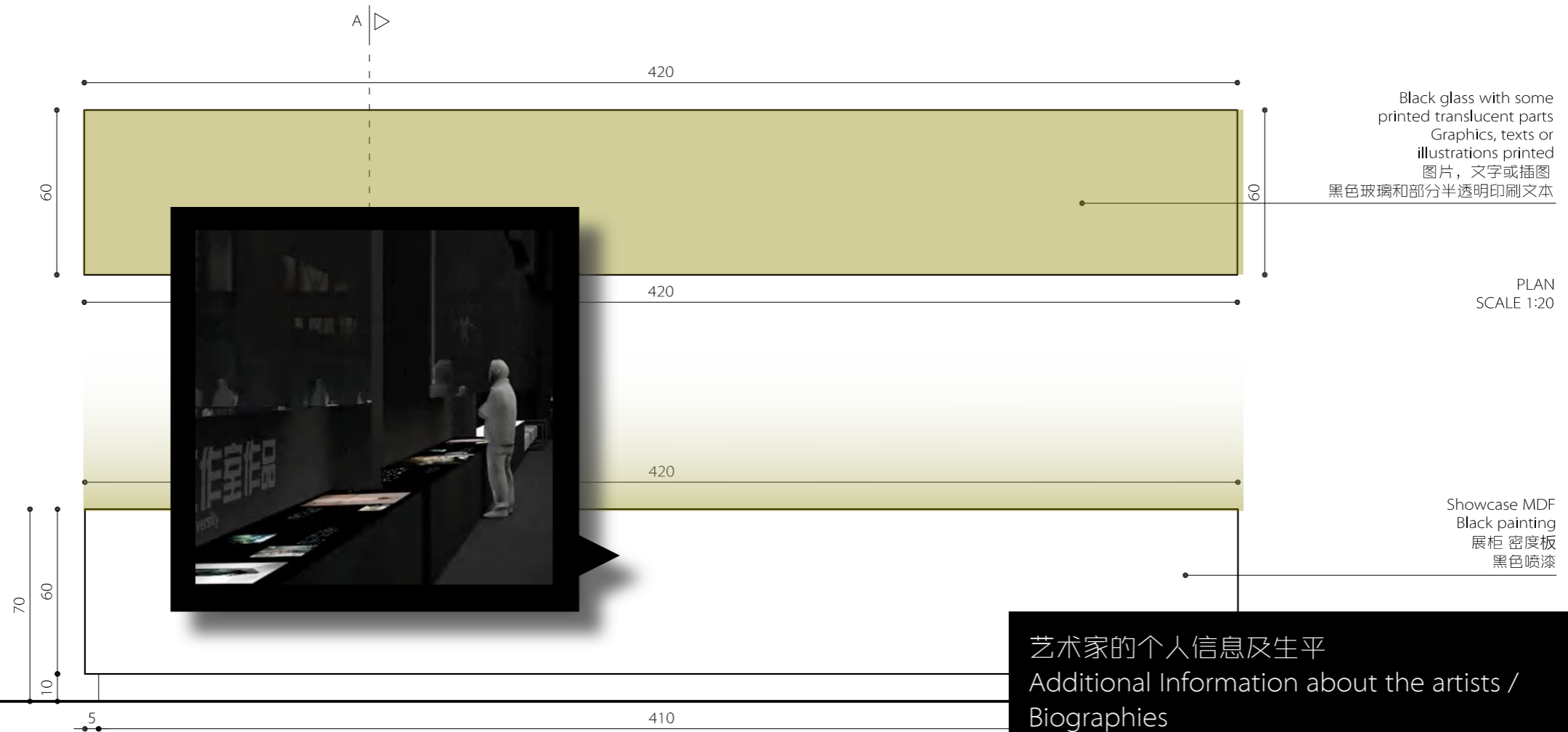
最终根据艺术品确认尺寸  
Final size depending on the actual dimensions of the artworks



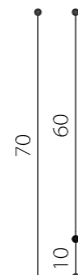
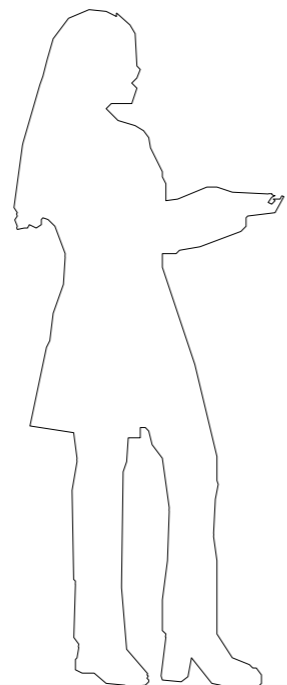
Showcase MDF  
Black painting  
(except on the top)  
展柜 MDF板  
黑色喷漆 (表面)

Showcase base  
展示基座

ELEVATION  
SCALE 1:20



背光展示桌  
Lighttable  
Content & Design



Black printed  
illu  
图  
黑色玻璃和部分

Black painting (except on the top)  
展柜 MDF板  
黑色喷漆 (表面)

+6.00

艺术家的个人信息及生平  
Additional Information about the artists /  
Biographies

- 4-1 斯坦尼斯拉夫 里宾斯基夫妇 Stanislav Libenský & Jaroslava Brychtová
- 4-2 戴尔·奇胡利 Dale Chihuly
- 4-3 利诺·塔格利佩拉 Lino Tagliapietra
- 4-4 史蒂文·温伯格 Steven Weinberg
- 4-5 MgA Radek Stehlik



SECTION  
SCALE 1:20



## 第四单元 艺术创造力的证明

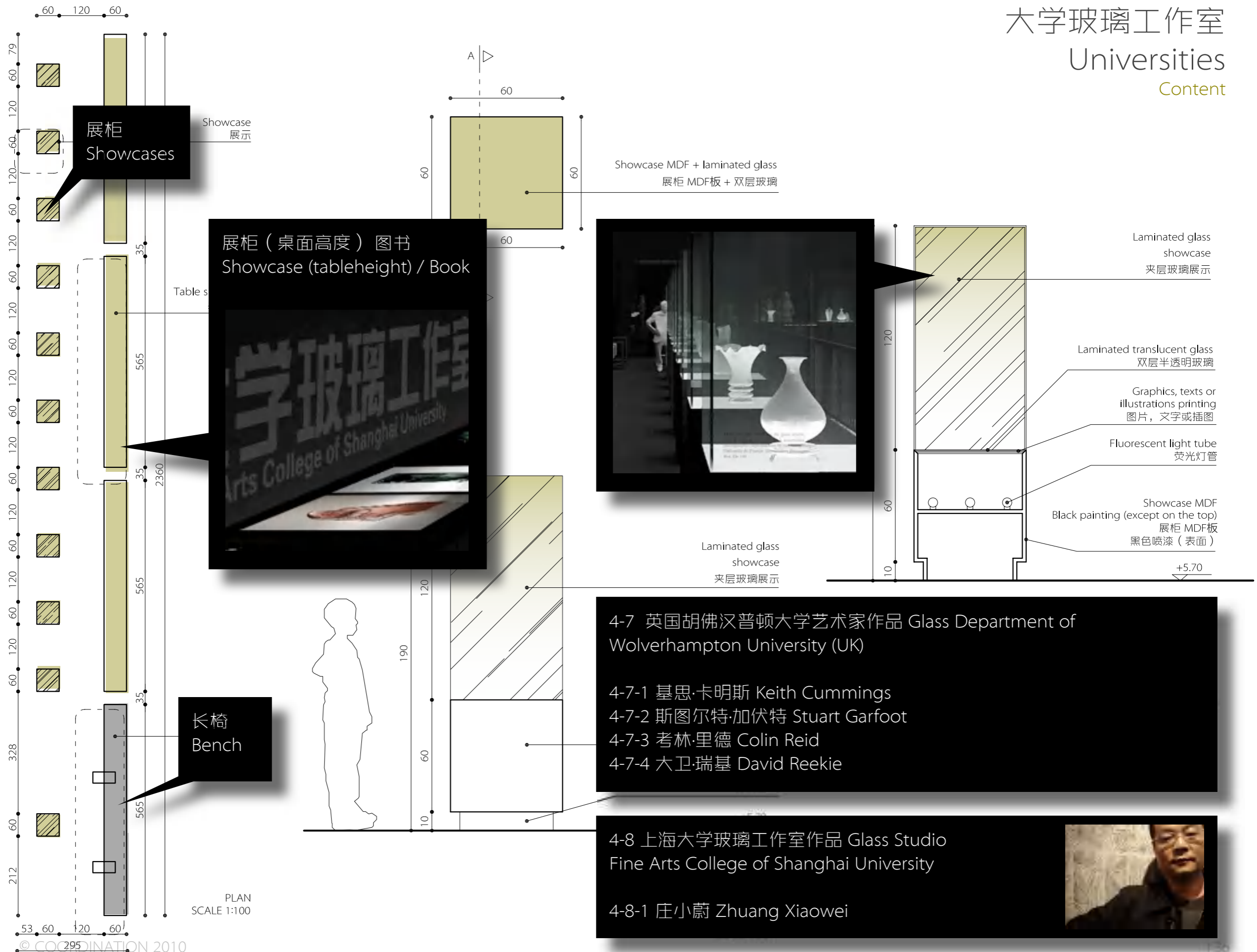
### Unit Four Proof of Artistic Creativity

Design



上海大学玻璃工作室作品

Glass Studio, Fine Arts College of Shanghai University





第四单元 艺术创造力的证明  
Unit Four Proof of Artistic Creativity



彩色玻璃  
Glass Windows

太空人  
Spaceman

上海大学玻璃工作室作品  
Glass Studio, Fine Arts College of Shanghai University

# 上海玻璃技术的发展

## Shanghai Glass Technology Development

Design

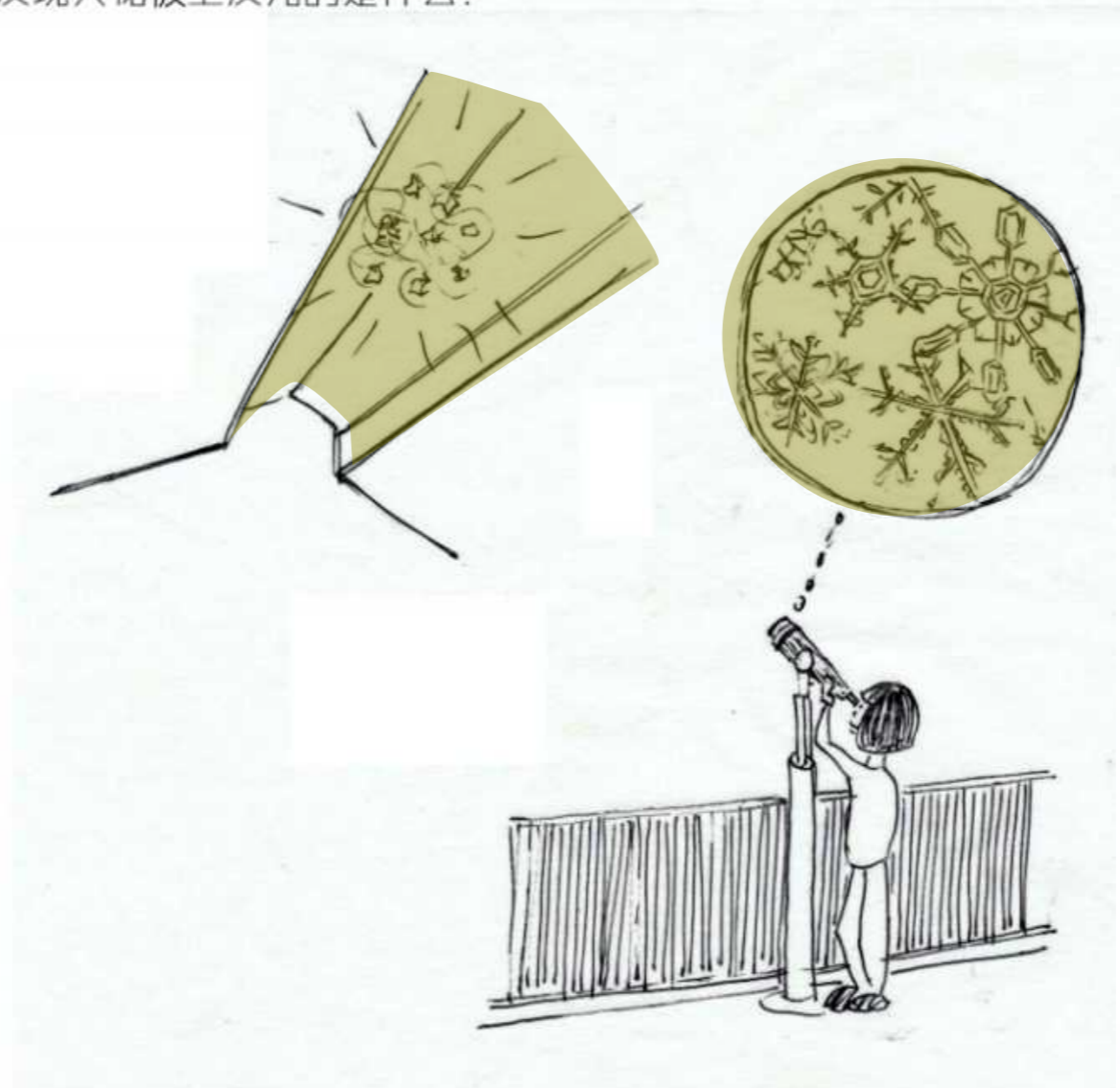


人造卫星 / 太阳能板  
Satellite / Solar Panel

# 水晶星 Crystal Stars



Discover what is shining on the ceiling!  
探索发现天花板上发光的是什么!



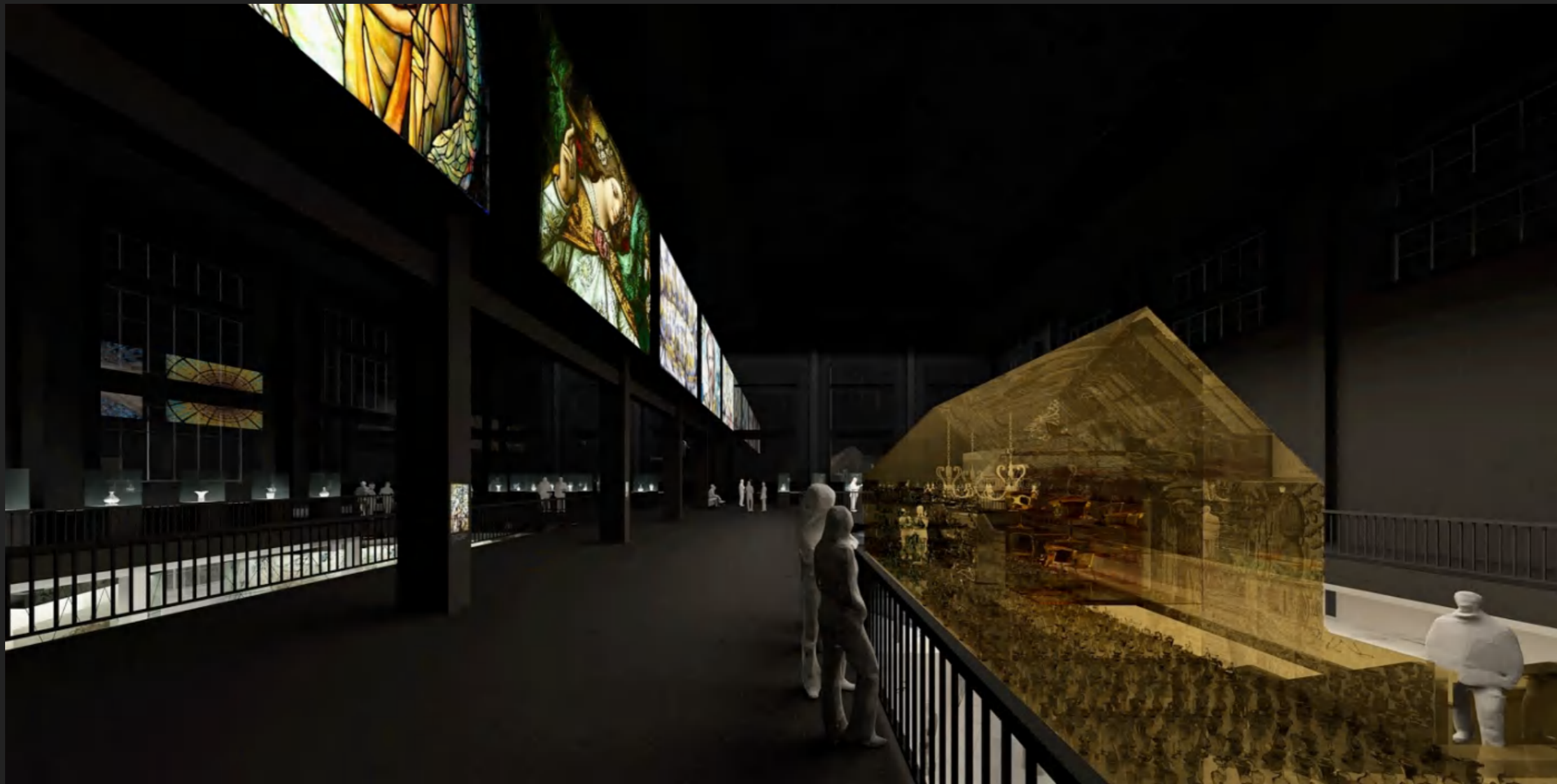
多功能区域  
Function Rooms



多功能空间

Multifunctional Space

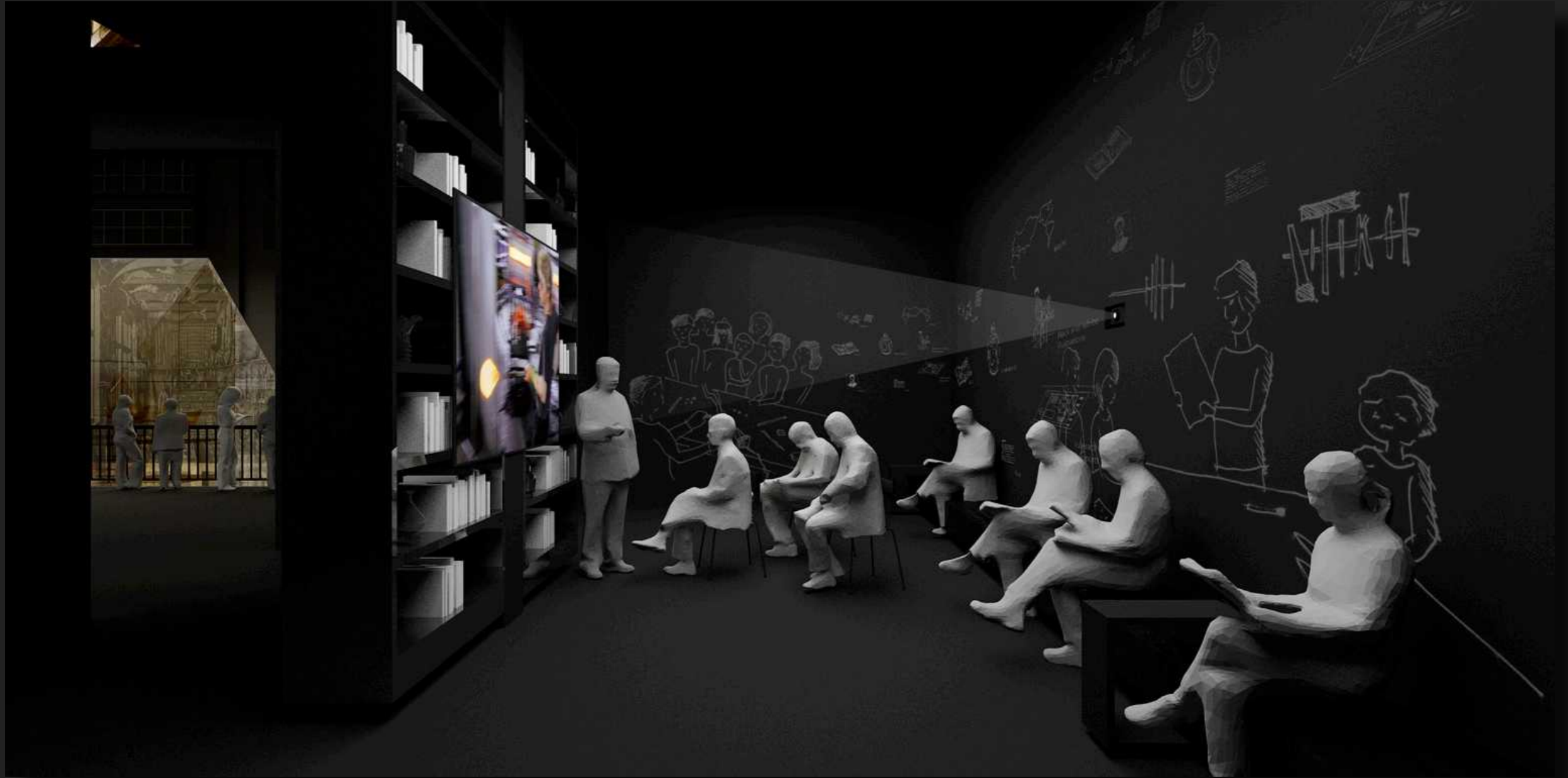
Design



彩色玻璃  
Glass Windows

玻璃屋  
Glass House

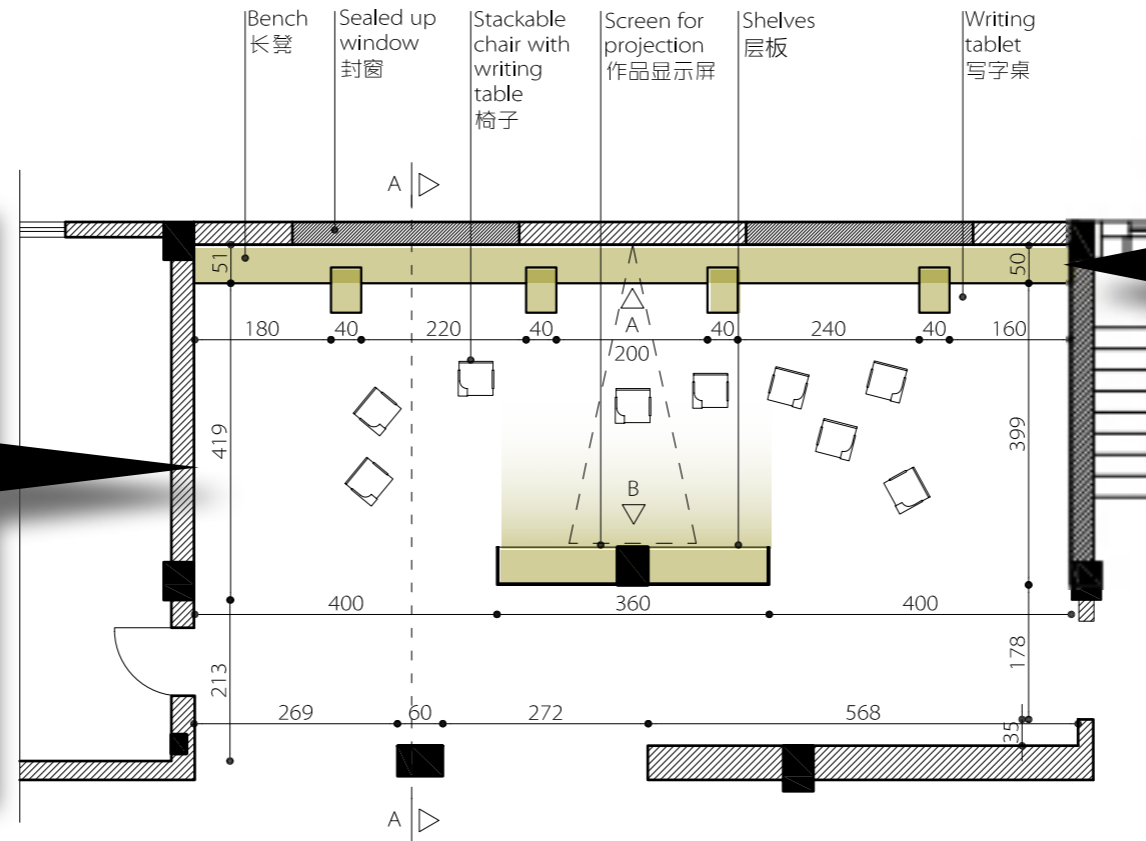
教室  
Classroom  
Design



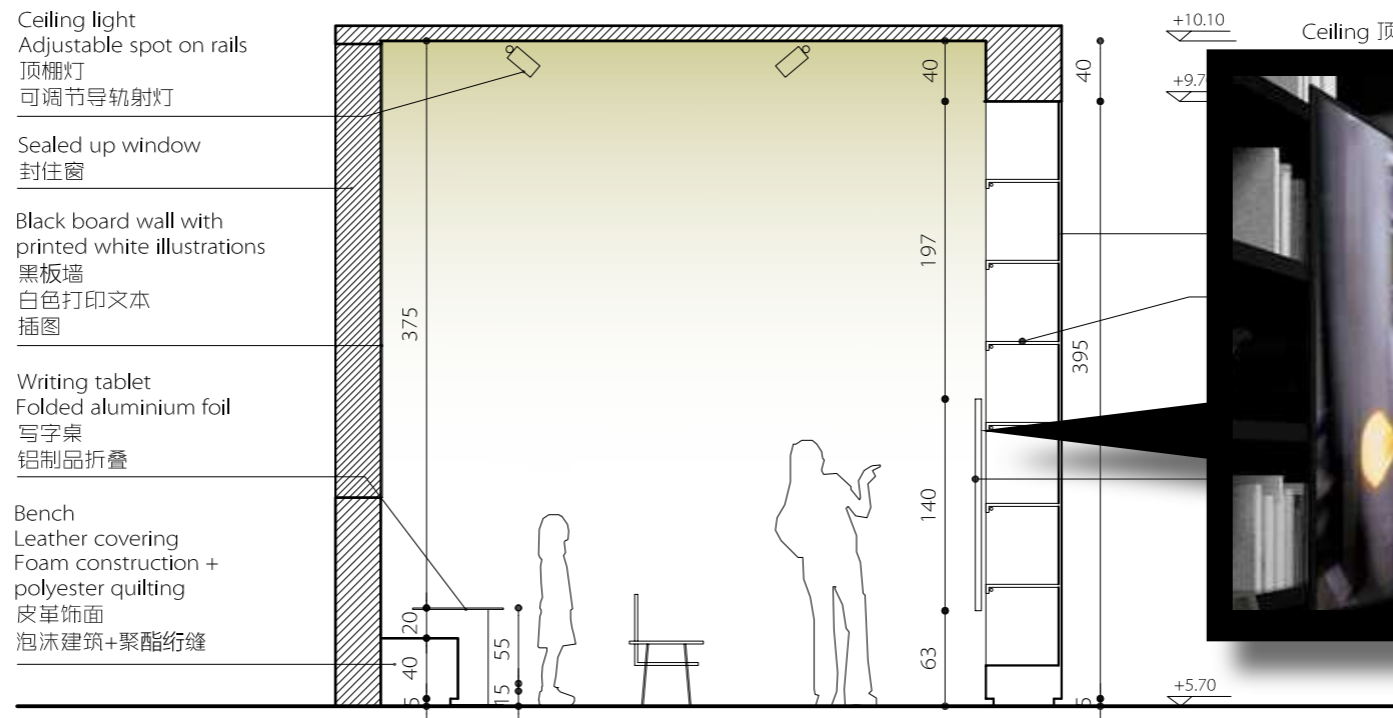
制作工坊 / 报告厅 / 影像室  
Workshops / Presentation / Screening Room

# 教室 Classroom

Overview



PLAN  
SCALE 1:100



SECTION  
SCALE 1:50

盥洗室  
Restroom  
Design

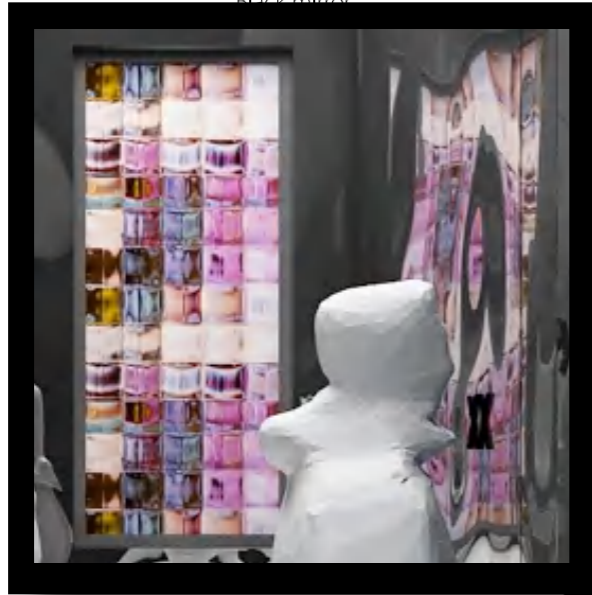


盥洗室  
Restroom

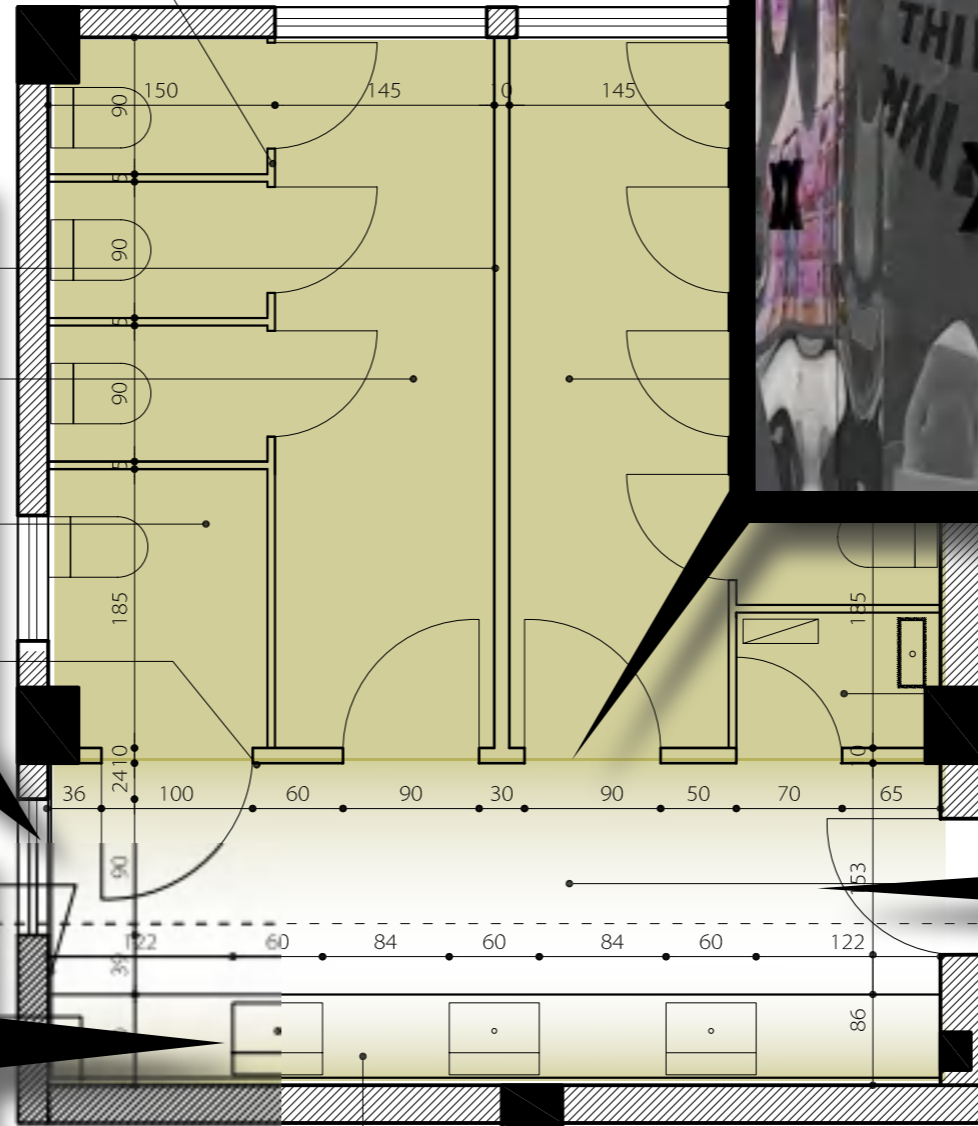
# 盥洗室 Restroom Design

Grey mat painting  
灰色哑光喷漆

Black mirror

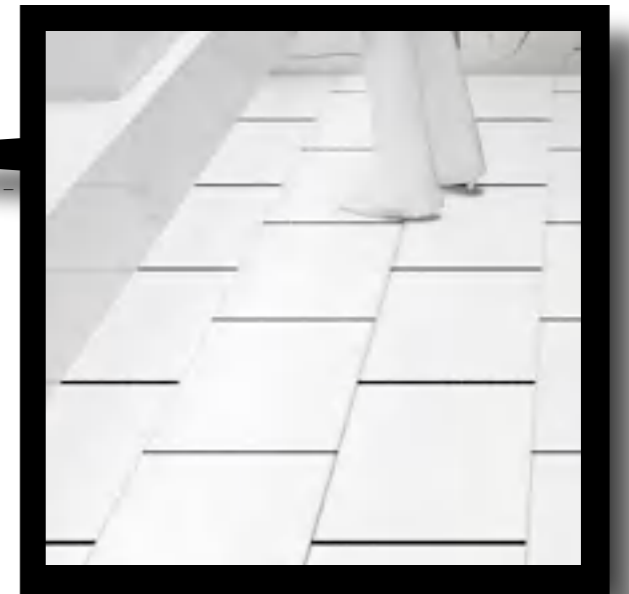


Mirror



room  
卫生间

Storage  
储藏室



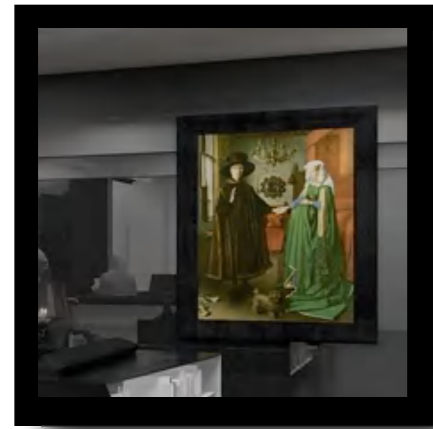
PLAN  
SCALE 1:50

图书馆  
Library F1B  
Design

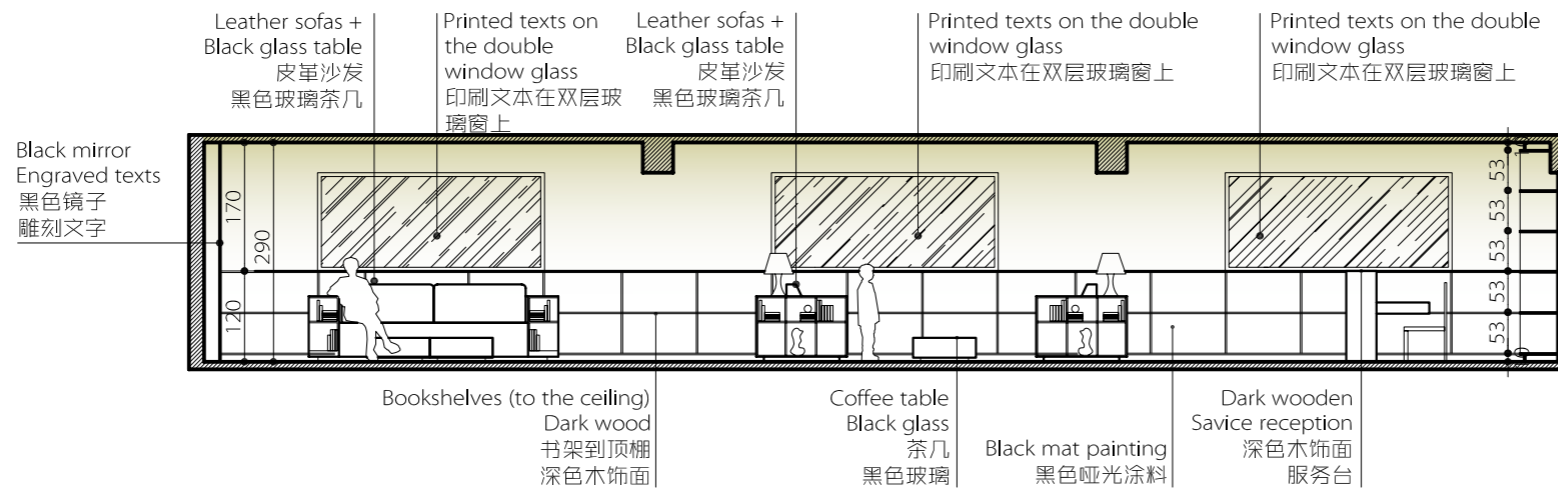
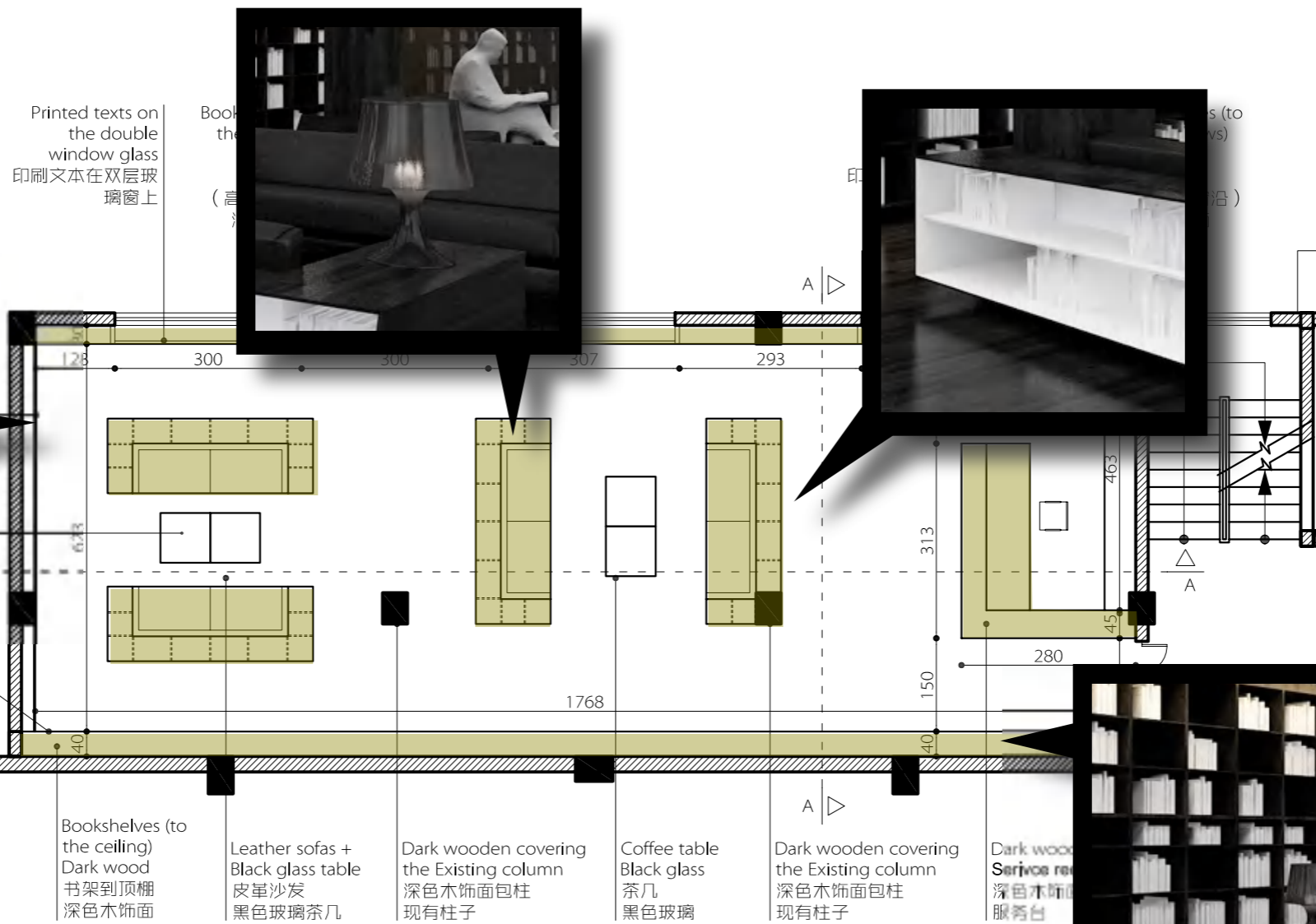


图书馆  
Library

# 图书馆 Library F1B Design



Bookshelves Dark wood  
书架  
黑色木饰面



SECTION AA  
SCALE 1:100



结语  
Conclusions

结语  
Conclusions



Signature Wall

结语  
Conclusions



上海建强玻璃仪器有限公司  
Shanghai Jianqiang Glass Instrument Co.,Ltd



Signature Wall

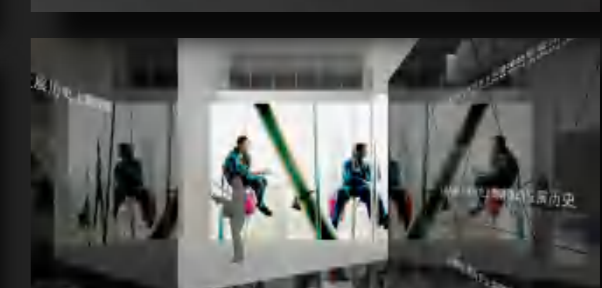
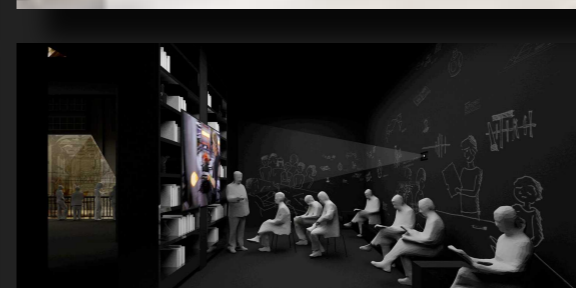
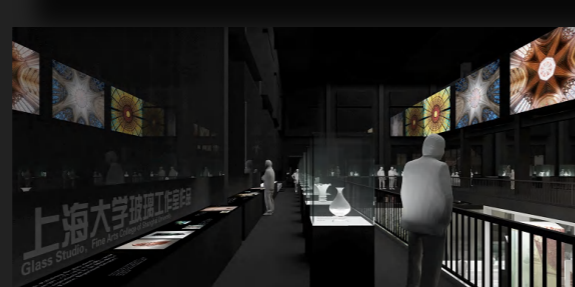
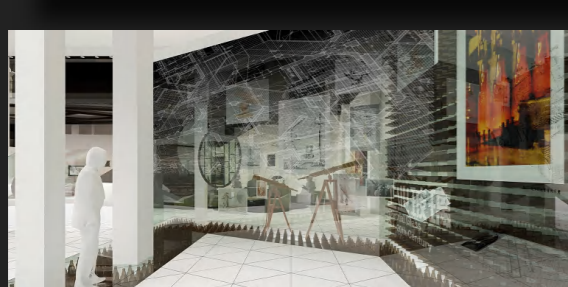
结语  
Conclusions



Signature Wall & Book with Letters and Portraits



# The Shanghai Museum of Glass 上海玻璃博物馆



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