MIT TUDelft
PARIS GRADUATION PROJECT

SAINT LAZARE MODERN ART MUSEUM
LOURDES LOPEZ GARRIDO
SITE
URBAN DEVELOPMENT

Data sources: AFUR Atelier Parisien d'Urbanisme
HISTORY
URBAN DEVELOPMENT
ST. DENIS Abbey

ST. LAZARE LEPROSERIE

NOTRE DAME

PARIS (12th Century)

ST. LAZARE

PARIS WALLS

ILE DE LA CITE

HISTORY

URBAN DEVELOPMENT
CITY SCALE
URBAN DEVELOPMENT
ST. LAZARE Monastery (17th C)
HISTORY
URBAN DEVELOPMENT

ST. LAZARE Monastery (17th C)

ST. LAZARE Prison (18th C)
ST.LAzmRE Monastery (17th C)

ST.LAzmRE Prison (18th C)

ST.LAzmRE Hospital (19th C)

source of records: Les Archives de Paris
ST. LAZARE (actual situation)
URBAN DEVELOPMENT
MASTER   PLAN
masterplan urban proposition:
St. Lazare Museum provides an east-west axis public route throughout the building block
MUSEUM FRONT GARDEN ROOFING THE PARKING. SLOPE LEADING TO THE MUSEUM EXTENSION ENTRANCE AT SECOND LEVEL.

DIFFERENT CHARACTERS OF THE SLOPPING ROUTE
ACCESSIBILITY TO THE UNDERGROUND PARKING FROM THE MUSEUM FRONT GARDEN
DESIGN
MUSEUM PROGRAMME

MUSEUM EXISTING BUILDING
Free entrance
Modern Art exhibitions

MUSEUM EXTENSION
non-free entrance
Contemporary Art exhibitions
PERMANENT COLLECTION (1449m²)
PAINTING
SCULPTURE
GRAPHIC ART

MUSEUM PROGRAMME
DESIGN
TEMPORARY COLLECTION
PAINTING (2232m²)
SCULPTURE
ARCHITECTURE
PHOTOGRAPHY
MEDIA
GUESTS ARTISTS WORK

PERMANENT COLLECTION (1449m²)
PAINTING
SCULPTURE
GRAPHIC ART

MUSEUM PROGRAMME
DESIGN
TEMPORARY COLLECTION (2232m²)
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PHOTOGRAPHY
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GUESTS ARTISTS WORK

PERMANENT COLLECTION (1449m²)
PAINTING
SCULPTURE
GRAPHIC ART

AUDITORIUM
425m²

LIBRARY
490m²

MUSEUM PROGRAMME
DESIGN
MUSEUM PROGRAMME

TEMPORARY COLLECTION (2232m²)
PAINTING
SCULPTURE
ARCHITECTURE
PHOTOGRAPHY
MEDIA
GUESTS ARTISTS WORK

14 LOFTS (GUESTS ARTISTS)
1180m²

RESTAURANT
490m²

PERMANENT COLLECTION (1449m²)
PAINTING
SCULPTURE
GRAPHIC ART

AUDITORIUM
425m²

LIBRARY
490m²
ROUTING (A)
MUSEUM MAIN ENTRANCE (PERMANENT COLLECTION)
ROUTING (A)
DESIGN ROUTING
ROUTING (B)
MUSEUM EXTENSION ENTRANCE (TEMPORARY COLLECTION)
& RESTAURANT
CURRENT SITUATION

NEW SITUATION
Entrance Museum RESTAURANT (above)
Auditorium Terrace (below)
transition of Light: from the dark gloomy gallery to the zenithal enlightened gallery
ROUTING (B)
DESIGN ROUTING
first floor open gallery view towards the main Hall
GUESTS GALLERY
(Basement Level)
ROUTING (C)
MUSEUM LIBRARY ENTRANCE
(BASEMENT LEVEL)
ACCESSIBILITY TO MUSEUM LIBRARY AT UNDERGROUND LEVEL
SAINT LAZARE
EXISTING BUILDING
(19th & 20thC.)

MUSEUM EXTENSION
NEW CONSTRUCTION (21stC.)

ECOLLE MATERNELLE
EXISTING BUILDING
(20thC.)

CONSTRUCTION DESIGN
MUSEUM 19th C. EXISTING BUILDING

Three to four-storey loadbearing masonry walls
structural clay and reinforced concrete
floor slabs.

CONSTRUCTION DESIGN
MUSEUM EXTENSION
(AUDITORIUM)

One-storey steel truss construction
(Castellated beams) spanning 17m.
diagonal stability steel bracings.
Precast concrete hollow core slabs units.

CONSTRUCTION
DESIGN
MUSEUM EXTENSION

Up to Three-storey concrete construction
Concrete hollow core floor slabs
W-shape columns encased in concrete
Natural stone panels cladding
TRANSLUCENT FACADE
MARBLE PANELS CLADDING
FIXED BACK TO THE STEEL COLUMNS BY STEEL BRACKETS (SLIDING SYSTEM)
DOUBLE INSULATED TOUGHENED GLAZING

OPAQUE FACADE
MARBLE PANELS FIXED BACK TO THE CONCRETE STRUCTURE
RIGID CORE OF INSULATION (POLYURETHANE FOAM)
NATURAL STONE

MATERIALS & LIGHT

DESIGN

L. Lopez Garrido
MATERIALS & LIGHT

MARBLE STONE PANELS CLADDING
(2000x1600x18)

DESIGN
Natural stone (30mm)

Marble stone (8mm) and glass (10mm) PANELS

MATERIALS & LIGHT DESIGN
undesirable light quality for a Museum

ideal light quality for a Museum
CERAMIC TILES FLOOR

MATERIALS & LIGHT

DESIGN
ZINC PLATES ARE USED FOR THE ROOFING AND UPPER WALLS OF THE MUSEUM EXTENSION BUILDING AND BACCARAT

MATERIALS & LIGHT

DESIGN
THE MECHANICAL EQUIPMENT IS CENTRALIZED IN THE MAIN BUILDING
THE DUCTS SPREAD FROM THERE TO THE ADJACENT EXTENSIONS
SCHEMATIC-DIAGRAM OF THE COMBINATION AIR-WATER SYSTEM USED IN THE BUILDING

INSTALLATIONS
DESIGN BUILDING PHYSICS
## MUSEUM VENTILATION REQUIREMENTS

<table>
<thead>
<tr>
<th>Space Type</th>
<th>Occupant Conditions</th>
<th>$T_{\text{min}}$ (°C)</th>
<th>$T_{\text{max}}$ (°C)</th>
<th>Airflow (m/s)</th>
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<tbody>
<tr>
<td>Open Court</td>
<td>no wind, rain, frost outdoor clothing</td>
<td>5</td>
<td>--</td>
<td>--</td>
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<tr>
<td>Closed Court &amp; Corridors</td>
<td>walking indoor clothing</td>
<td>15</td>
<td>$T_{\text{out}} + 5$</td>
<td>&lt;0.5</td>
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<tr>
<td>Exhibition galleries</td>
<td>light movement indoor clothing</td>
<td>18</td>
<td>24</td>
<td>&lt;0.25</td>
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<tr>
<td>Museum shop</td>
<td>light movement indoor clothing</td>
<td>18</td>
<td>24</td>
<td>&lt;0.25</td>
</tr>
<tr>
<td>Lobby</td>
<td>light movement indoor clothing</td>
<td>18</td>
<td>24</td>
<td>&lt;0.25</td>
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<tr>
<td>Auditorium</td>
<td>seated indoor clothing long stay</td>
<td>20</td>
<td>25</td>
<td>&lt;0.25</td>
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<tr>
<td>Film &amp; Video room</td>
<td>seated indoor clothing long stay</td>
<td>20</td>
<td>25</td>
<td>&lt;0.25</td>
</tr>
<tr>
<td>Museum Library</td>
<td></td>
<td>20</td>
<td>25</td>
<td>&lt;0.25</td>
</tr>
<tr>
<td>Restaurant</td>
<td></td>
<td>20</td>
<td>25</td>
<td>&lt;0.25</td>
</tr>
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SCHEMATIC AIR-DISTRIBUTION PLAN OF THE BUILDING WITH A VARIABLE-AIR VOLUME (VAV) SYSTEM
DOUBLE SKIN FACADE

INTERIOR SKIN
Double Glazing
with Low E-coating
U=1.8W/m²K

EXTERIOR SKIN
Single Glazing
U=5.4 W/m²K

Thermal buffering
Cavity (600mm)

MUSEUM HALL  West Facade

INTERIOR SKIN
Double Glazing
with Low E-coating
U=1.8W/m²K

EXTERIOR SKIN
Marble stone plate &
glass pane composite
(28mm)

Thermal buffering & flue
Cavity (350mm)

MUSEUM EXTENSION  South, East and North Facades

DESIGN BUILDING PHYSICS
MODEL