Graduation
Explore Lab 15
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Battersea
Recharged

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Introduction

documentary 2 min
BPS- Battersea Re-charged
location
recharging
Integrated

Research

analysis
guidelines

Design

history
location
function
Recharging
Light
Layering
Sustainability

Materialisation

Dimensions
Cores
Construction

Battersea Re-charged

Questions
Introduction

Iconic Old Battersea Power Station — decommissioned coal-fired power station.

Stands on the largest undeveloped riverside site in central London.

Two individual power stations built in two stages

<table>
<thead>
<tr>
<th>Year</th>
<th>Power Station</th>
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<tbody>
<tr>
<td>1930</td>
<td>Battersea Power Station A</td>
</tr>
<tr>
<td>1950</td>
<td>Battersea Power Station B</td>
</tr>
</tbody>
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in the form of a single building

With its wellknown four-chimney layout

Ceased generating electricity in 1983,

Now one of the best known landmarks in London.
This short part of a documentary shows the beauty of the building.
It is clear

‘Always in my mind when I think of the skyline of London’
It is Iconic
‘What London is about, a place where different things pop up...maybe this is the NEW place, it has...’
‘...great energy, and people always look for the next place to build and create’
It is an inspiration!

‘inspiration is in your surroundings’
It is clear

Battersea Power Station needs to be ReCharged
Location

The Highlights in the city of London

Located on the south bank of the River Thames, 188 Kirtling Street, in Battersea, South London.
Bounded by the River Thames to the north and Battersea Park Road to the south. The area is formed by railway lines in and out of Victoria Station.
Recharging

The city of London realizes something has to be done with the Battersea Power Station and its area.

1983 indoor theme park.
1990 mixture of offices, shops and a hotel.
1993 parkview proposal; retail, housing and leisure complex.
2006 Architect Rafael Vinoly (Treasury Holdings) apartments, offices, an energy museum.
2008 Chelsea Football Club considered a new built stadium

Not been realised due to money issues.

Present New Malaysian owners, SP Setia, pledged that the historic site will finally be redeveloped. Treasury Holdings, plans of Rafael Vinoly.
The area is in transition already, developments around the Battersea Power Station are in process.

- Riverfront living; Apartments by Riverlight
- New Covent garden; Apartment and offices
- American Embassy
- Linear Park; a green walk
To create ideas competitions are written: one of them the competition of Archtriumph: designing a Museum of Architecture. A competition of which I thought was a plausible idea, and subscribed.

Archtriumph is a platform for innovative design concepts. Offers architects, graduate architects or student architect the unique and vital platform to pitch for work and present ideas.
So after visiting London and the building, I knew what to do!

Design an exceptional concept for an exceptional building.

Focused on creating something ‘new’ for the City of London.
In my opinion three principles should be used to create a successful integrated project: Function, History and Sustainability.

- **Function**: Museum of Architecture.
- **History**: Redeveloping Battersea Power Station,
- **Sustainability**: Can a building like this be sustainable?
According to the three principles my ambitions are:

<table>
<thead>
<tr>
<th>Function:</th>
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<tbody>
<tr>
<td>Designing an architecture museum, which is part of a bigger plan, and architecture centre.</td>
</tr>
<tr>
<td>Creating something NEW for the city, a new place to be.</td>
</tr>
<tr>
<td>Focus on the attraction of the building and its functions within.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>History:</th>
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<tbody>
<tr>
<td>Respect the building in its historical content.</td>
</tr>
<tr>
<td>Preserve the iconic image of the building: the four chimneys and the old facades.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sustainability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re use of an old decomissiond building;</td>
</tr>
<tr>
<td>Designing something New conceptual; An old power station, generating its own power.</td>
</tr>
<tr>
<td>Use of solar energy, wind energy</td>
</tr>
<tr>
<td>Use of natural light and flexible floorplans</td>
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</table>
Converting an old disused building to a new public function is a complex assignment.

So the focus of my research was trying to answer the complex questions raised while thinking of a conversion to a public function.

Creating a few **guidelines** and **interventions** for my design. Strengthening the design and ensuring its feasibility.

Research

My method of use was an analysis of four museums, two architecture museums, and two museums in a converted building with a big attraction value.

- DAM Deustches Architektur Museum, Frankfurt, Germany
- NAI - Netherlands Architecture institute, Rotterdam, The Netherlands
- Tate Modern, London, United Kingdom
- ZKM Centre for Art & Media Technology, Karlsruhe, Germany
Guidelines

From the result of the analysis three conclusions were important for my design, the conclusions on: Preservation, Location and Function.

These conclusions form the base/ guideline for interventions on the urban plan and building.
Preservation

- The architecture of the old building needs to be considered.
- Preserving distinct features of the old building in order for the public to have the historical connection.

Location

- Important for a public building
- **Connection** with public routes and buildings: a key success factor in feasibility
- Re-using, like the Battersea Power Station, the location is given:
  Addition to the **route** and surroundings have to be considered carefully, to make up for things it lacks by itself.

Function

- Architecture museum is a specific function with a specific public it attracts.
- For feasibility important to attract more than just this specific public.
- Adding other functions to the building. Making the museum and building part of an attraction for the city, an experience.
Preservation

- Preserving the distinct image of the four Chimney lay out
- Preserving the old facades
Location

Connecting Battersea Power Station and area to the city of London

- adding metrostop
- adding ferry stop, connecting with the Tate Boat, a boat that departs from Tate Modern to Tate Britain. Tate Britain is on the other side of the BPS.

- Strengthening access by foot and bicycle, creating a Boulevard along the Thames and connecting a new bridge to the railway bridge to the other side of the Thames.
Atmosphere images for my interventions
Function

Important to attract more than just a specific public.

The museum should become an experience; and attraction for the city: The experience of an Architecture Centre

To achieve this, adding functions

Adding Apartment and Hotel facilities to the surroundings.
By only connecting the area to the city, the building itself will not be an experience.

The building design needs to connect to the city as well, Recharging the building.

To express this connection I translated a ‘weave’ of vertical and horizontal streets to both the scheme and floorplan of the building.
The sculpture street and **main entrance** level on +7.2 m

A street with architectural sculptures, maybe even 1:1 scale parts of a building

and an overview of the new museum in the old building.
The Main street with the square of the city in the middle and an up floor entrance level on +12 m

A street of

- Meeting
- Shopping
- Eating
- Relaxing
- Enjoying
- Seen and be seen
The collection and studio street terraces from the first to the fifth floor.

An escalator route is carefully placed, to create a walking route through the collections and viewing the Main street. All the way up the sixth floor and the conference centre.
An educational and conference street from the sixth to the ninth floor.

A place of
- Learning
- Studying
- Meeting
- Sharing

And a rooftop for
- Music festivals
- Architecture Biennales
- Rooftop views.
To accentuate the square on 12m a vertical street in the form of construction. Holding a roof and a hanging auditorium.

The place where famous architects would want to give their lectures.

And the ‘engine’ of Battersea Re-Charged.
Another important aspect in the design is light. The way the light enters the big brick building.

In my design I wanted daylight to enter the building as far as the ground floor.
To achieve this the terraces shaped atria guide the light all the way down to the archives.
Layering

To create human scale in this immense scaled building layering is an important factor in my design.
Sustainability

For the sustainability of the building the design consists of several solutions.

Chimneys

The chimneys will be rebuild in four energy ‘creators’.

The two chimneys on the front will be solar chimney, creating a natural ventilation. With windturbines creating energy from the up flowing air.

It will also be an attraction for the public, having the chance to walk up the chimney for amazing views of the City.

The two chimneys on the back side will consist of windturbine. It will be a steel structure with the windturbine catching all the airflow.
Solar energy

The roofstructure will consist of PV cells covering the entire roofsurface. This energy will be used in the building.

The PV Cells are placed in an angle of 28 degrees which will ensure the best efficiency of the cells.
The other sustainable solutions used in the building are:

- Water storage
- Aquifer
- Natural light
- Green atrium
- Materials

The building will not be able to completely count on the natural ventilation of the chimneys. This has to be done with mechanical installations, placed on ground floor.
Materialisation

To preserve the ‘feeling’ the old power station gives. The materialisation of the new structures need to ‘feel’ industrial; materials such as steel and glass structures will be used.
The roof covering the big atrium and viod will be of the same materialisation as the old roofstructure seen in the picture, respecting the old structure.
The facades will consist of big industrial looking aluminium sliding doors. The lower part has a horizontal line.

These doors can be opened individually creating a facade which is flexible in use. If there is an event all doors can be opened. The studios can choose to open their doors for interaction with public or exhibition of their own work.

A clear division between public and private can be made.

The higher part will have vertical windows.

The horizontal and vertical lines will also divine the difference of function.
The hanging auditorium will be covered by custom made plating material. To accentuate the lines of the cover, LED lighting will be placed between the plating.

This will create an interesting light object above the square.
The dimension of the grid used in the building is 10800 mm x 10800mm.

In this grid the cores are placed. With these dimensions, the spaces can be used flexible.
Cores

The cores are all placed according to fire regulations.

The main cores are the four middle ones. The rest including the chimneys are mainly for escape routes.

The two front chimneys have access to the top of the chimney.
On the grid of 10800mm x 10800mm the steel structure of IPE and HEA Columns and beams carry a Bubbledeckfloor system.

This floorsystem has a span of 8-12 m. And can be seen as a sustainable option.
A construction is needed to hang the construction of the auditorium.

It was clear this auditorium should be hanging from the big spaceframe roof.

Giving the square an amazing view up to the auditorium, the ‘engine of the building’.

By using a **space-frame** the points of hanging and loads can be determined. The forces holding the auditorium lead downwards through the construction.
The auditorium will be made of a steel structure consisting of banana shaped beams and a 1000mm wide construction for the round shape.

Because it is a round shape this dimension is necessary for the construction not to collapse.

But it also gives enough space for installations needed in the auditorium, like air supply, lighting, etc.
Battersea
Re-Charged
Questions?