FASCINATION AND CONCEPT

- Context with water
- Fascination for floating structures
- Floating is flexibility
- Performing arts need flexibility
- Floating centre for the performing arts
FASCINATION AND CONCEPT

- FLOATING ASPECTS

Horizontal displacement

Vertical displacement (sinking)

Rotation

Skewing
FASCINATION AND CONCEPT

- STAGES / SCENES

- Basic stage: changeable background

- Changeable orientation stage

- Three-dimensional stage
FASCINATION AND CONCEPT

- TRIBUNE
FASCINATION AND CONCEPT

- COMBINATION: STAGES + TRIBUNE

- NEW THEATRE CONCEPT:
  - TRIBUNE IS ROTATABLE (Z-AXIS) AND FIXED IN X-Y MOVEMENT
  - STAGES ARE FREE TO MOVE IN ANY DIRECTION
FASCINATION AND CONCEPT

- CONCEPT SKETCH
FASCINATION AND CONCEPT

- CONCEPT SKETCH - ANALYSIS
LOCATION AND CONCEPT

- DIFFERENT CHARACTERS OF CONTEXT

HARBOUR ENTRANCE  DUNES

FISH AND CITY
LOCATION AND CONCEPT

- LINES OF SIGHT
LOCATION AND CONCEPT

- SECTION DIAGRAM 1

1

large vessels
horizon
sea
harbour entrance
LOCATION AND CONCEPT

- SECTION DIAGRAM 2

2

dunes
nature
harbour
LOCATION AND CONCEPT

- SECTION DIAGRAM 3

(fishing) boats
harbour
urban
CONCEPT AND CONTEXT

- SKETCH INTO CONTEXT
CONCEPT AND CONTEXT

- CONTEXT INTO SKETCH
CONCEPT AND CONTEXT

- SKETCH AND CONTEXT
CONCEPT AND METAPHOR

- WRAPPING AROUND / PROTECTION
CONCEPT AND METAPHOR

- NATURE / OYSTER:
  WRAPPING AROUND AND PROTECTING THE PEARL
CONCEPT

- SECTION SKETCH
CONCEPT

- SECTION SKETCH – FIXED VS. FLOATING
CONCEPT

- SECTION SKETCH
CONCEPT

- SECTION SKETCH - ANALYSIS
CONCEPT

- PLAN SKETCH
CONCEPT

- PLAN SKETCH - ANALYSIS
PROGRAM

- FUNCTIONS AND RELATIONS
ZONES

- FIXED / SEMI / FLOATING
SHAPE OF TRIBINE

- SHAPE BASED ON THE PHILHARMONIE BERLIN, WHICH HAS THE BEST ACOUSTICS IN THE WORLD (ORCHESTRA)
SHAPE OF TRIBINE - EVOLUTION

- VIEW IS BLOCKED BY PICTURE FRAME
SHAPE OF TRIBINE - EVOLUTION

- OPENING UP AND REMOVING PICTURE FRAME
SHAPE OF TRIBINE - EVOLUTION

- CREATING FLOATING REMOVABLE PICTURE FRAME FOR TRADITIONAL THEATRE
SHAPE OF TRIBINE - EVOLUTION

- ROUNding the SHAPE FOR rotation purposes AND to show the dynamic aspects
PLANS - 1:200 - FLOOR 02
SECTIONS - 1:200

SECTION A-A WINTER HIGH TIDE

SECTION A-A SUMMER LOW TIDE
FRAGMENT - 1:20 AND DETAILS 1:5

1. FRP panel, 14 mm thick (Glass Fiber Reinforced Polymer)
2. inner wall of portal
3. structure and structure, 150 mm for composite panel
4. main steel structure, 120 mm
5. rubber, black
6. clamp connection stiff and flexible rubber
7. elastic rubber cover, black
8. rotation axis (1)
9. hinge (no bollard, fixed change)
10. rubber rib seating, black
11. glass facade, steel forms, door
12. rolling wheel, for rotation
13. metal spring, black (coating)
14. flexible connect (anti-revert)
15. FRP panel mounting
16. rubber window sealing
17. secondary floor structure, 306 mm
18. strain structure, 400 mm
19. Anchor bolts fixed the 150 mm, while coating
20. glass facade, steel forms
21. reinforced concrete (intervention)
FAÇADE - SHELL

- GRFP (COMPOSITE) WITH TEXTURE DARK COLOR
- SOLARPANELS
FAÇADE - SHELL

- GRFP (COMPOSITE) WITH TEXTURE DARK COLOR
- SOLARPANELS
FAÇADE - SHELL
FAÇADE - PEARL

- GRFP (COMPOSITE) WITH SMOOTH, WHITE COLOR
ELEVATIONS - 1:200
ENGINEERING - FLOATING

- APPROACH: FORM FOLLOWS FORCE

Uniform load = uniform body

Non-uniform load = non-uniform body
ENGINEERING - FLOATING

- FLOATING BODY AND MAIN STRUCTURE
ENGINEERING - FLOATING

- FLOOR SLAB
ENGINEERING - FLOATING

- AIR BRIDGE
ENGINEERING - FLOATING

- ACOUSTIC CEILING
ENGINEERING - FLOATING

- WALLS
ENGINEERING - FLOATING

- SHELL
ENGINEERING - FLOATING

- CALCULATIONS CENTRE OF GRAVITY (GRASSHOPPER)
ENGINEERING - FLOATING

- CALCULATIONS CENTRE OF GRAVITY (GRASSHOPPER)
CENTRES OF GRAVITY (GRASSHOPPER)

1. bridge
2. ac.ceil.
3. shell
4. wall
5. structure
6. floor
ENGINEERING - FLOATING

- CALCULATION DEADWEIGHT, FLAT FLOATING BODY
ENGINEERING - FLOATING

- MAKING HOLLOW = BETTER FOR STABILITY
ENGINEERING - FLOATING

- CALCULATION DEADWEIGHT, HOLLOW FLOATING BODY
ENGINEERING - FLOATING

- CALCULATION DEADWEIGHT, FORM FOLLOWS FORCE
ENGINEERING - FLOATING

- CALCULATION DEADWEIGHT, FORM SHAPED BY FORCE
ENGINEERING - FLOATING

- CALCULATION DEADWEIGHT, FINAL BODY
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD PEOPLE WALKING
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD PEOPLE SITTING
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD PEOPLE REAL-LIFE
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD WIND-SIDE
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD WIND-FRONT SUMMER SITUATION
ENGINEERING - FLOATING

- CALCULATION LIVE LOAD WIND-FRONT WINTER SITUATION
ENGINEERING - FLOATING

- FINAL STRUCTURE
ENGINEERING - FLOATING - PONTOON

- CALCULATION FLOATING SCENE (PERMANENT LOAD + 9 ACTORS)
ENGINEERING - FLOATING - ROTATION MECHANISM

- FIXING THE BUILDING: FOUNDATION POLE (GREEN)
ENGINEERING - FLOATING - ROTATION MECHANISM

- VERTICAL MOVEMENT (Z-AXIS): TELESCOPIC CYLINDER (CYAN)
ENGINEERING - FLOATING - ROTATION MECHANISM

- **ROTATION (Z-AXIS):** AXIS (GREY) WITH SLEWING RING (PURPLE) AND HYDRAULIC ENGINE
ENGINEERING - FLOATING - ROTATION MECHANISM

- ROTATION IN X-Y-AXIS AND TRANSLATION FOR ROTATION IN Z-AXIS: CONSTANT-VELOCITY (CV) JOINT
ENGINEERING - FLOATING - ROTATION MECHANISM

- FIXING THE ROTATION STRUCTURE TO THE FLOATING AND ABOVE STRUCTURE
ENGINEERING - FLOATING - ROTATION MECHANISM

- CONSTANT-VELOCITY (CV) JOINT
ENGINEERING - FIXED

- STRUCTURAL ELEMENTS
ENGINEERING - FIXED

- STRUCTURAL ELEMENTS - PLAN
ENGINEERING - FIXED

- STRUCTURAL ELEMENTS - STABILITY
ENGINEERING - FIXED

- STRUCTURAL ELEMENTS - STABILITY
ENGINEERING - CLIMATE PRINCIPLE

- SUMMER SITUATION
ENGINEERING - CLIMATE PRINCIPLE

- WINTER SITUATION
IMPRESSION
THANK YOU