

CIVILIZATION 0.000

FLOATING POWER STATION

DATA

FUNCTIONS

LIVING AREAS, RESEARCH & EDUCATION, DINING AREAS, SPORT AND LEISURE, CONTROL CENTER, METEOROLOGICAL RESEARCH INSTITUTE, TECHNICAL LEVELS, PORT, HELIPORT, POWER STATIONS

CREW

MAX. 500 RESIDENTS - 400 SCIENTISTS + 100 STUDENTS

POWER STATIONS

19 WIND TURBINES, 4 WAVE POWER PLANTS, 6 TIDAL POWER TURBINE

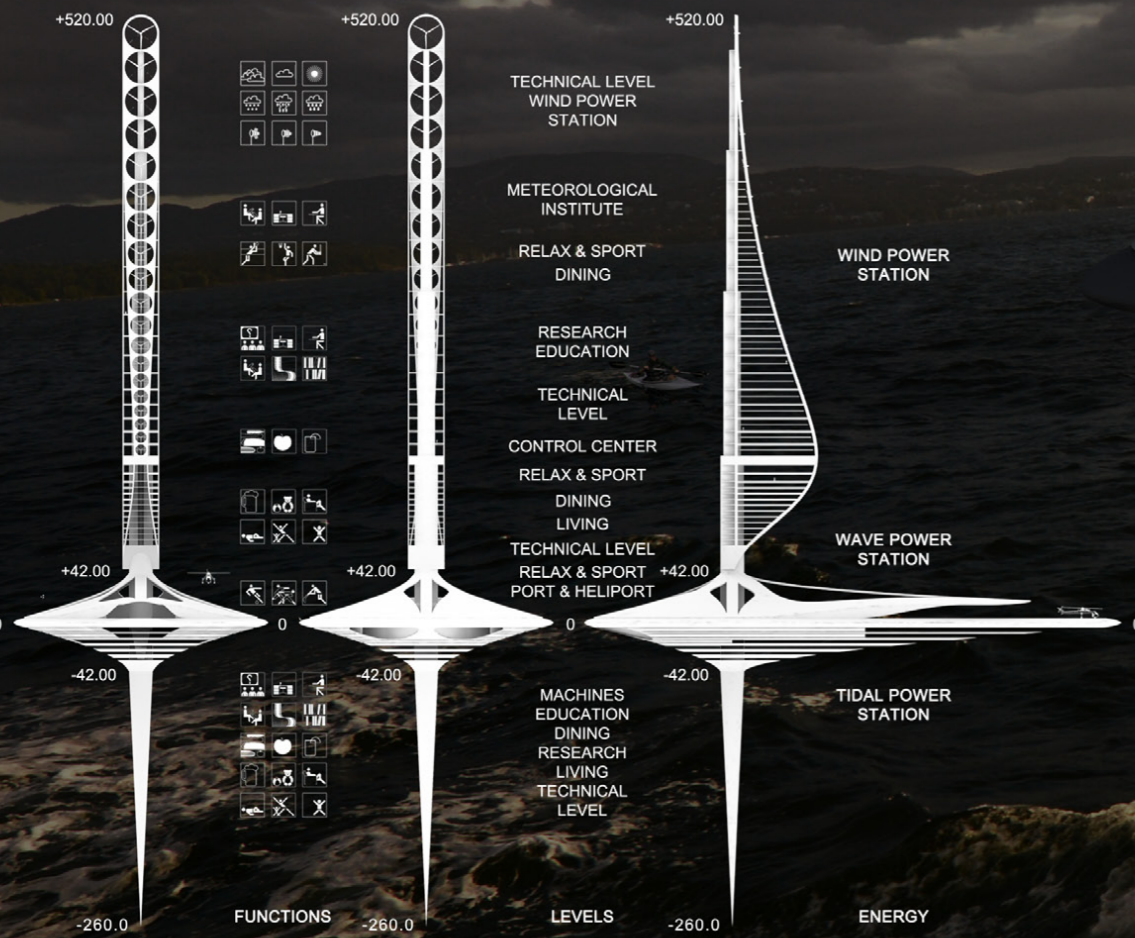
DESIRED ELECTRICAL POWER OUTPUT

100 MILLION KWH OF RENEWABLE ENERGY PER YEAR

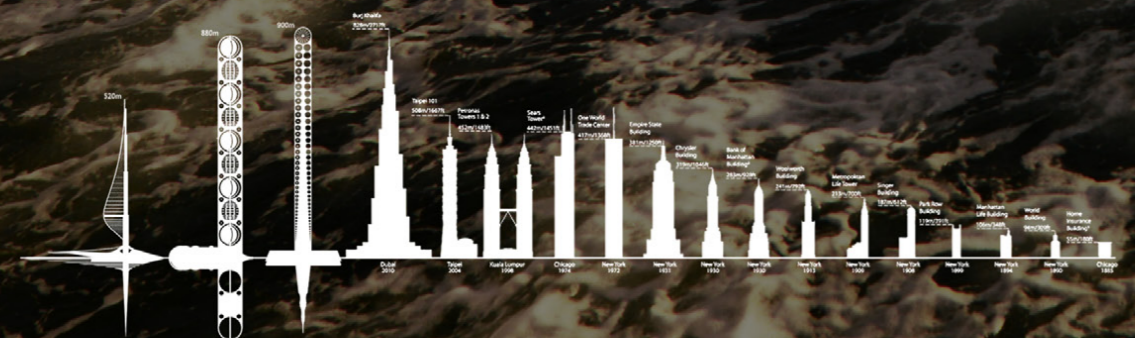
GENERAL DATA

HEIGHT - 520M ABOVE SEA LEVEL + 260M BELOW SEA LEVEL
WEIGHT - 800'000T

ELEVATIONS & FUNCTIONS



SCALE & EVOLUTION



"WE TALK ABOUT CIVILIZATION AS THOUGH IT'S A STATIC STATE. THERE ARE NO CIVILIZED PEOPLE YET, IT'S A PROCESS THAT'S CONSTANTLY GOING ON... AS LONG AS YOU HAVE WAR, POLICE, PRISONS, CRIME, YOU ARE IN THE EARLY STAGES OF CIVILIZATION."
JACQUE FRESCO

OUTSIDE VIEW

CIVILIZATION 0.000



STORY

INSPIRED BY JACQUE FRESCO'S IDEAS FOR A RESOURCE-BASED ECONOMY, CIVILIZATION 0.000 IS THE ARCHITECTURAL IMPLEMENTATION OF THIS NEW WORLD VIEW. THE PROJECT SHOULD BE UNDERSTOOD PRIMARILY AS A GENERAL CRITICISM ON OUR PRESENT DOMINANT FORM OF SOCIAL STRUCTURE - THE SO-CALLED CONSUMER CULTURE. CIVILIZATION 0.000 IS THE RESULT OF A NEW ADVANCED SOCIETY AND REPRESENTS A NEW ERA OF HUMAN EVOLUTION.

CONSUMER CULTURE

ONE OF THE AIMS, THAT CIVILIZATION 0.000 TRIES TO ACHIEVE, IS TO RETHINK OUR CURRENT SOCIAL STRUCTURE, BASED ON ENORMOUS CONSUME, PROFIT & MONEY AS MOTORS OF A GLOBAL ECONOMY. A SYSTEM WHERE 30000 CHILDREN DIE EACH DAY FROM PREVENTABLE DISEASES. A SYSTEM THAT PURSUITS PROFIT & NOT SUSTAINABILITY, A SYSTEM THAT USES PLANNED OBSOLESCENCE TO INCREASE THE GLOBAL CONSUME.

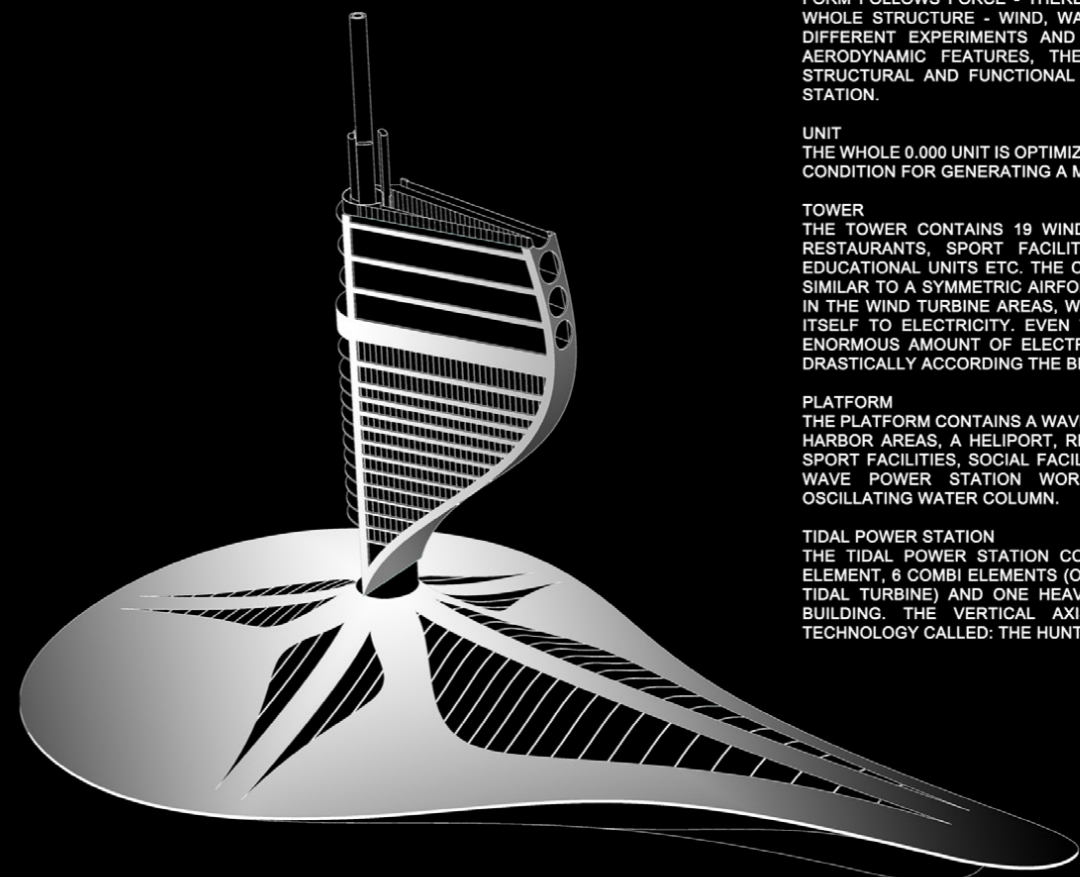
RESOURCE-BASED ECONOMY

THE RESOURCE-BASED ECONOMY OFFERS A NEW DIRECTION, FOLLOWING THE NATURE BY USING SCIENCE & TECHNOLOGY. WITH THE ENORMOUS AMOUNT OF KNOWLEDGE THAT WE HAVE, HUMANITY DOESN'T NEED TO BUY WATER, FOOD OR ANY OTHER HUMAN BASIC NEEDS ANY MORE. SO WE HAVE THE KNOWLEDGE, WE HAVE THE SCIENCE, WE HAVE THE TECHNOLOGY, WE HAVE THE RESOURCES TO BUILD A COMPLETELY NEW SOCIETY. WHY ARE WE THEN NOT DOING IT? - BECAUSE IT IS NOT PROFITABLE, BECAUSE IT IS AGAIN A SYSTEM BUILT BASICALLY ON PROFIT. SO WE ACTUALLY CAN'T DO ANY PROGRESS WITHIN THIS CORRUPT SOCIAL STRUCTURE. LANDING ON THE MOON WHILE MILLIONS STARVE TO DEATH ISN'T A REAL PROGRESS, RATHER IS MORE PRIMITIVE THAN MANY OTHERS CIVILIZATION IN THE PAST.

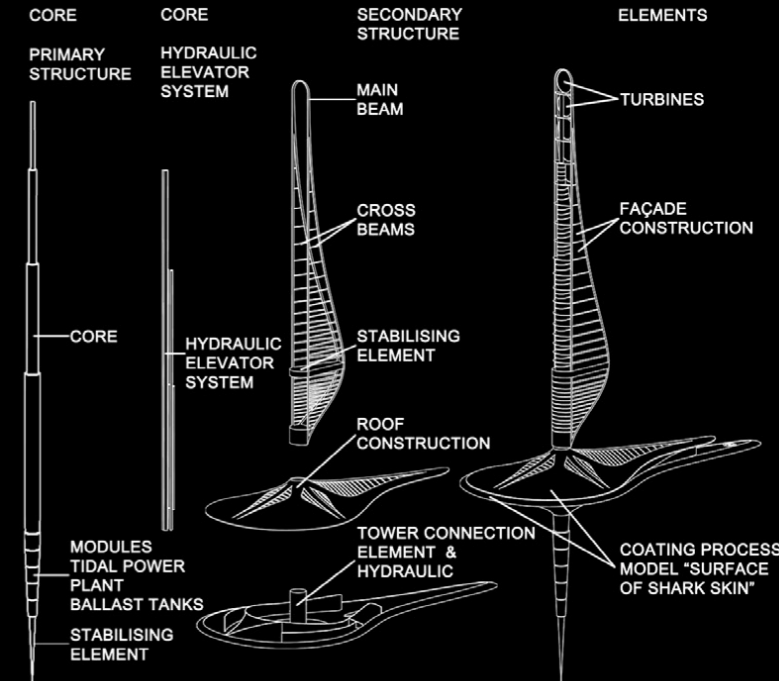
CIVILIZATION 0.000

WHAT EXACTLY IS CIVILIZATION 0.000 AND HOW DOES IT FUNCTION? ONCE EINSTEIN SAID "IF YOU CAN'T EXPLAIN IT SIMPLY, YOU DON'T UNDERSTAND IT". SO FIRST OF ALL WE HAVE TO LOCALIZE, DEFINE & MEASURE ALL AVAILABLE EARTH RESOURCES - RENEWABLE & EXHAUSTIBLE. (THEY ARE NO COUNTRIES, BORDERS, GOVERNMENTS OR ANY KIND OF UNNATURAL DIVISION ANY MORE, THE EARTH IS AN ORGANISM). SECOND OF ALL WE HAVE TO CREATE THE TECHNOLOGY THAT USES THESE RESOURCES TO FULFILL THE WHOLE SPECTRUM OF HUMAN NEEDS. CIVILIZATION 0.000 PROPOSES A NETWORK OF CONNECTED HIGH-TECH STRUCTURES (0.000 UNITS) THAT USE THE LOCAL AVAILABLE EARTH RESOURCES. THESE 0.000 UNITS WILL HAVE BASICALLY 6 FUNCTIONAL CORES IN A PARTICULAR RELATION TO EACH OTHER - LIVING SPACE, EDUCATION, RESOURCE MANAGEMENT, (MACHINE)PRODUCTION, ENERGY STORAGE & ELECTRICITY GENERATION. FOR INSTANCE A 0.000 UNIT IN SAHARA WOULD SPECIALIZE IN GENERATING ENERGY AND PROBABLY NOT IN CREATING LIVING SPACE, BECAUSE OF THE NATURAL CONDITIONS THERE.

AXONOMETRIC VIEW



BUILDING COMPONENTS



CAPE HORN

THE FIRST EVER DESIGNED 0.000 UNIT WILL BE PLACED AT CAPE HORN, THE SOUTHERNMOST HEADLAND OF THE TIERRA DEL FUEGO ARCHIPELAGO OF SOUTHERN CHILE. THIS UNIT WILL BE SPECIALIZED IN GENERATING ELECTRICITY. IF WE TAKE A LOOK ON THE GLOBAL ENERGY MAPS, WE'LL RECOGNIZE THE ENORMOUS AMOUNT OF WIND-, WAVE-, AND TIDAL ENERGY CONCENTRATED IN THIS AREA. THE CHOICE TO DESIGN THE FIRST 0.000 UNIT THERE IS ALMOST SELF-EXPLANATORY.

DESIGN

FORM FOLLOWS FORCE - THERE ARE THREE MAIN FORCES, THAT DEFINE THE WHOLE STRUCTURE - WIND, WAVE & TIDAL ENERGY. THROUGH A SERIES OF DIFFERENT EXPERIMENTS AND OPTIMIZATIONS ACCORDING ITS AQUA- AND AERODYNAMIC FEATURES, THE BUILDING IS COMPOSED OF THREE MAIN STRUCTURAL AND FUNCTIONAL AREAS - TOWER, PLATFORM & TIDAL POWER STATION.

UNIT
THE WHOLE 0.000 UNIT IS OPTIMIZED TO ORIENT ITSELF TOWARDS THE BEST WIND CONDITION FOR GENERATING A MAXIMUM AMOUNT OF ENERGY.

TOWER
THE TOWER CONTAINS 19 WIND TURBINES, RESEARCH UNITS, LIVING UNITS, RESTAURANTS, SPORT FACILITIES, SOCIAL FACILITIES, CONTROL CENTER, EDUCATIONAL UNITS ETC. THE CROSS SECTION OF THE TOWER IS DEVELOPED SIMILAR TO A SYMMETRIC AIRFOIL, CONCENTRATING THE WHOLE WIND ENERGY IN THE WIND TURBINE AREAS, WHERE ABOUT 40% OF THIS AMOUNT CONVERTS ITSELF TO ELECTRICITY. EVEN THE SMALLEST WIND TURBINES PRODUCE AN ENORMOUS AMOUNT OF ELECTRICITY BECAUSE THE WIND SPEED INCREASES DRASTICALLY ACCORDING THE BERNOULLI'S PRINCIPLE.

PLATFORM
THE PLATFORM CONTAINS A WAVE POWER STATION, FOUR GIANT TURBINES, TWO HARBOR AREAS, A HELIPORT, RESEARCH UNITS, LIVING UNITS, RESTAURANTS, SPORT FACILITIES, SOCIAL FACILITIES, EDUCATIONAL UNITS, LIBRARY ETC. THE WAVE POWER STATION WORKS ON A SPECIAL TECHNOLOGY CALLED: OSCILLATING WATER COLUMN.

TIDAL POWER STATION
THE TIDAL POWER STATION CONSISTS OF 7 ELEMENTS - ONE CONNECTING ELEMENT, 6 COMBI ELEMENTS (ONE ELEMENT = BALLAST TANK + VERTICAL AXIS TIDAL TURBINE) AND ONE HEAVY SOLID ELEMENT TO STABILIZE THE WHOLE BUILDING. THE VERTICAL AXIS TIDAL TURBINES WORK ON A SPECIAL TECHNOLOGY CALLED: THE HUNTER TURBINE.

BIRD'S-EYE VIEW

CIVILIZATION 0.000



WAVE ENERGY PLANT

VOITH WAVE POWER PLANT
 WITH THIS TECHNOLOGY, SEA WATER TURBINES DO NOT COME INTO CONTACT WITH WATER. INSTEAD, A COLUMN OF AIR IS SET IN MOTION WHICH DRIVES THE MACHINES. IN DETAIL, THIS WORKS IN THE FOLLOWING MANNER: THE WAVES SPILL INTO A HOLLOW CONTAINER WHICH IS OPEN TO THE SEA. THIS COMPRESSES AND CALMS THE AIR COLUMN IN A SO-CALLED COLLECTOR IN A SIMILAR WAY TO HOW AN AIR PUMP WORKS. THE POWER PLANT "BREATHES" IN AND OUT. THE PRESSURE DIFFERENCE IS THEN TURNED INTO ROTARY ENERGY IN A SO-CALLED WELLS TURBINE (NAMED AFTER ITS INVENTOR). THIS IS IN TURN PASSED TO A GENERATOR WHERE ELECTRICITY IS PRODUCED. THIS MEANS THAT THE TURBINE HAS THE AIR PERIODICALLY FLOW THROUGH IT FROM BOTH SIDES, DEPENDING ON WHETHER THE DEVICE IS "BREATHING" IN OR OUT. BECAUSE OF THE SPECIAL ROTOR GEOMETRY, THERE IS NO NEED TO EITHER PERIODICALLY CHANGE THE BLADE ANGLES OR THE DIRECTION OF ROTATION. IF YOU CONSIDER THE FACT THAT AN AVERAGE OF SOME 3 MILLION WAVES BREAK ON TO THE COAST EVERY YEAR, IT IS CLEAR THAT ONLY THIS SIMPLE TURBINE DESIGN CAN OFFER MAXIMUM RELIABILITY.

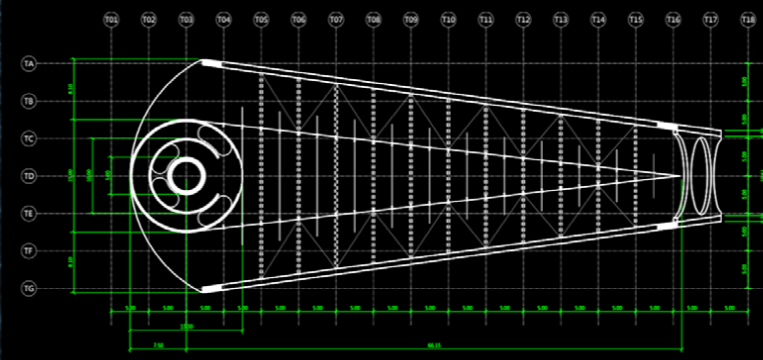
WIND TURBINE

ENERCON E-126
 THE ENERCON E-126 IS A WIND TURBINE MODEL MANUFACTURED BY THE GERMAN COMPANY ENERCON. WITH A MAXIMUM HUB HEIGHT OF 135 M (443 FT), ROTOR DIAMETER OF MAXIMUM 126 M (413 FT) AND A TOTAL HEIGHT OF 198 M (650 FT), THIS LARGE MODEL CAN GENERATE UP TO 7.58 MEGAWATTS OF POWER PER TURBINE, MAKING IT THE WIND TURBINE WITH THE HIGHEST NAMEPLATE CAPACITY. THE POWER OUTPUT OF THE GENERATOR WAS CHANGED FROM 6 MW TO 7 MW AFTER TECHNICAL REVISIONS WERE PERFORMED IN 2009. SINCE 2011 THE E-126 IS AVAILABLE AS A 7.6 MW NAMEPLATE WIND TURBINE. ACTUAL OUTPUT IN SERVICE MAY SLIGHTLY EXCEED THE NOMINAL RATING. THE E-126 INCORPORATES POWER ELECTRONICS AND OFFERS GRID STABILISING CAPABILITIES.

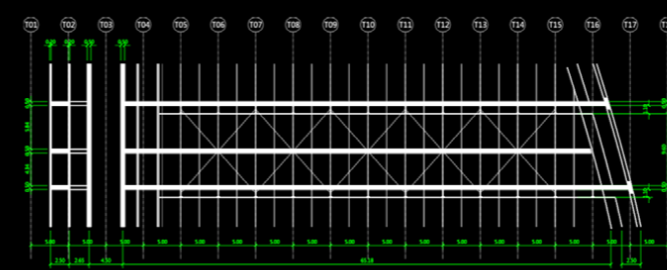
TIDAL POWER PLANT

THE HUNTER TURBINE
 THIS IS THE DESIGN OF THE LATE JOHN HUNTER, WHOSE PATENT DESCRIBES A TURBINE CONCEPT BY WHICH THE POWER CAN BE EXTRACTED FROM A RIVER OR OCEAN CURRENT. THE FIGURE ILLUSTRATES HUNTER'S CONCEPT FOR HIS VERTICAL AXIS MACHINE. IT CONSIST OF SEVERAL FLAPPING BLADES, WHICH ARE ALL HINGED ON A REVOLVING DRUM. THE TURBINE WORKS UPON THE PRINCIPLE THAT FLAPPING BLADES ARE OPENED BY THE INCIDENT FLOW ON THE WORKING SIDE OF THE REVOLVING DRUM UNTIL THEY ARE RESTRAINED IN THE FULLY OPEN POSITION BY STOPS, WHILST THE BLADES ON THE OPPOSITE SIDE ARE CLOSED BY THE FLOW TO ALLOW THE WATER PAST THE DRUM WITH MINIMUM RESISTANCE. THE RESULTANT TORQUE DRIVES THE TURBINE, PRODUCING POWER THAT CAN BE CONVERTED TO ELECTRICITY BY A GEARED OR DIRECT-DRIVE GENERATOR. THUS, MOST OF THE KNOWLEDGE OF THE HUNTER TURBINE STILL PERTAINED TO THE MACHINE'S PERFORMANCE UNDER LABORATORY CONDITIONS, AND NO SYSTEMATIC EXPLORATION HAD BEEN CARRIED OUT. HOWEVER, FOR POSSIBLE FUTURE PRACTICAL APPLICATIONS, THE PROBLEMS OF HOW TO DESIGN A TURBINE AND HOW TO ESTIMATE POWER OUTPUT UNDER SPECIFIC PRACTICAL CONDITIONS HAVE TO BE FACED. IN VIEW OF THE PRESENT STAGE OF DEVELOPMENT OF THE HUNTER TURBINE, THIS RESEARCH IS FOCUSED ON THE PREDICTION OF POWER OUTPUT BY MEANS OF CFD, AIDED BY FLOW VISUALIZATION EXPERIMENTS, WITH A VIEW TO EXTRAPOLATING TO A COMMERCIAL SCALE.

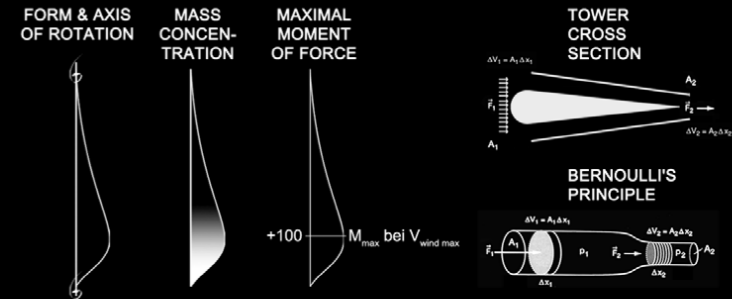
TYPICAL TOWER LEVEL - PLAN



TYPICAL TOWER LEVEL - SECTION



AERO DYNAMIC FORM OPTIMIZATION



WIND TUNNEL SIMULATION



BUILDING SERVICES ENGINEERING

ENERGY STORAGE SYSTEM
LIQUID METAL BATTERIES
 THE LIQUID METAL BATTERY (LMB) PROJECT SEEKS TO DEVELOP A LOW COST AND LONG LIFESPAN BATTERY FOR GRID-SCALE STATIONARY ENERGY STORAGE. THE BATTERY UTILIZES THREE LIQUID LAYERS AS THE ELECTROACTIVE COMPONENTS, INCLUDING A LIQUID METAL POSITIVE ELECTRODE, A FUSED SALT ELECTROLYTE, AND A LIQUID METAL NEGATIVE ELECTRODE. THE THREE LIQUID LAYERS FLOAT ON TOP OF ONE ANOTHER DUE TO THEIR DENSITY DIFFERENCES AND IMMISCIBILITY, PROMISING LOW ASSEMBLY COST WITH USE OF INEXPENSIVE MATERIALS. FURTHERMORE, LIQUID ELECTRODES AVOID COMMON FAILURE MECHANISMS OF SOLID-STATE BATTERY COMPONENTS, POTENTIALLY ENABLING A LONG LIFESPAN DEVICE.

EVERSE OSMOSIS PLANT
 A REVERSE OSMOSIS PLANT IS A MANUFACTURING PLANT WHERE THE PROCESS OF REVERSE OSMOSIS TAKES PLACE. AN AVERAGE MODERN REVERSE OSMOSIS PLANT NEEDS SIX KILOWATT-HOURS OF ELECTRICITY TO DESALINATE ONE CUBIC METRE OF WATER. THE PROCESS ALSO RESULTS IN AN AMOUNT OF SALTY BRINY WASTE. THE CHALLENGE FOR THESE PLANTS IS TO FIND WAYS TO REDUCE ENERGY CONSUMPTION, USE SUSTAINABLE ENERGY SOURCES, IMPROVE THE PROCESS OF DESALINATION AND TO INNOVATE IN THE AREA OF WASTE MANAGEMENT TO DEAL WITH THE WASTE. SELF-CONTAINED WATER TREATMENT PLANTS USING REVERSE OSMOSIS, CALLED REVERSE OSMOSIS WATER PURIFICATION UNITS, ARE NORMALLY USED IN A MILITARY CONTEXT.

HVDC CONVERTER STATION
 AN HVDC CONVERTER STATION (OR SIMPLY CONVERTER STATION) IS A SPECIALISED TYPE OF SUBSTATION WHICH FORMS THE TERMINAL EQUIPMENT FOR A HIGH-VOLTAGE DIRECT CURRENT TRANSMISSION LINE. IT CONVERTS DIRECT CURRENT TO ALTERNATING CURRENT OR THE REVERSE. A SUBSTATION IS A PART OF AN ELECTRICAL GENERATION, TRANSMISSION, AND DISTRIBUTION SYSTEM. SUBSTATIONS TRANSFORM VOLTAGE FROM HIGH TO LOW, OR THE REVERSE, OR PERFORM ANY OF SEVERAL OTHER IMPORTANT FUNCTIONS. BETWEEN THE GENERATING STATION AND CONSUMER, ELECTRIC POWER MAY FLOW THROUGH SEVERAL SUBSTATIONS AT DIFFERENT VOLTAGE LEVELS.

HIGH-VOLTAGE DIRECT CURRENT
 A HIGH-VOLTAGE, DIRECT CURRENT (HVDC) ELECTRIC POWER TRANSMISSION SYSTEM USES DIRECT CURRENT FOR THE BULK TRANSMISSION OF ELECTRICAL POWER, IN CONTRAST WITH THE MORE COMMON ALTERNATING CURRENT (AC) SYSTEMS. FOR LONG-DISTANCE TRANSMISSION, HVDC SYSTEMS MAY BE LESS EXPENSIVE AND SUFFER LOWER ELECTRICAL LOSSES. FOR UNDERWATER POWER CABLES, HVDC AVOIDS THE HEAVY CURRENTS REQUIRED TO CHARGE AND DISCHARGE THE CABLE CAPACITANCE EACH CYCLE. FOR SHORTER DISTANCES, THE HIGHER COST OF DC CONVERSION EQUIPMENT COMPARED TO AN AC SYSTEM MAY STILL BE WARRANTED, DUE TO OTHER BENEFITS OF DIRECT CURRENT LINKS. HVDC ALLOWS POWER TRANSMISSION BETWEEN UNSYNCHRONIZED AC TRANSMISSION SYSTEMS. SINCE THE POWER FLOW THROUGH AN HVDC LINK CAN BE CONTROLLED INDEPENDENTLY OF THE PHASE ANGLE BETWEEN SOURCE AND LOAD, IT CAN STABILIZE A NETWORK AGAINST DISTURBANCES DUE TO RAPID CHANGES IN POWER. HVDC ALSO ALLOWS TRANSFER OF POWER BETWEEN GRID SYSTEMS RUNNING AT DIFFERENT FREQUENCIES, SUCH AS 50 HZ AND 60 HZ. THIS IMPROVES THE STABILITY AND ECONOMY OF EACH GRID, BY ALLOWING EXCHANGE OF POWER BETWEEN INCOMPATIBLE NETWORKS.

SECTION

CIVILIZATION 0.000

MANAGEMENT

CONTROL CENTER & WIND RESOURCE ASSESSMENT
COMMUNICATION & DATA PROCESSING SYSTEM

EATING AREA

FOOD, NUTRITION & HEALTH
SOCIAL LIFE & FUN

LIVING AREA

LIVING AREAS FOR SCIENTISTS
SOCIAL LIFE & FUN

LEGEND - SECTION

1. STABILISING ELEMENT (PLATFORM)
2. TIDAL POWER STATION
3. BALLAST TANKS
4. CONNECTOR
5. ELEVATOR SHAFT
6. STEEL BEAM HEB 1000
7. MAIN INTERNAL STAIRCASE
8. UNDERWATER WINDOWS
9. HELIPORT
10. CORE
11. STABILISING ELEMENT (TOWER)
12. FAÇADE (TOWER)

MAIN LEVEL

CONTROL CENTER & WAVE RESOURCE ASSESSMENT
COMMUNICATION & SPORT ACTIVITIES

MACHINES

ENGINEERING ROOMS
MAIN SANITARY FACILITIES

EDUCATION

ENERGY EDUCATION SCIENCE AND TECHNOLOGY
EDUCATIONAL FACILITIES

RESEARCH

WAVE, TIDAL & OCEAN ENERGY TECHNOLOGIES
ELECTRONIC DATA PROCESSING EQUIPMENT

LIVING AREA

LIVING AREAS FOR STUDENTS & RESEARCHERS
SOCIAL LIFE & FUN

WIND POWER PLANT

WIND TURBINE - ENERCON E-126
BERNOULLI'S EQUATION OF TOTAL ENERGY

STABILISING ELEMENT

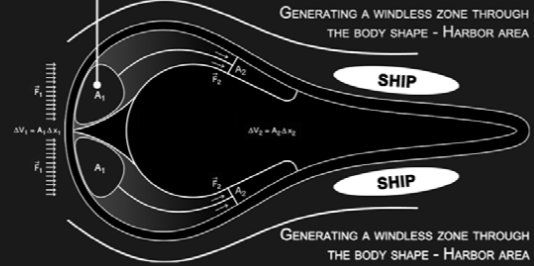
STABILISING ELEMENT FOR ADDITIONAL BRACING - TOWER
ACCORDING TO STATIC REQUIREMENTS

SURFACE

SHARKSKIN COATING
REDUCES FRICTIONAL RESISTANCE

WAVE POWER PLANT

VOITH WAVE POWER PLANT
BERNOULLI'S EQUATION OF TOTAL ENERGY



TRANSPORT

PORT & HELIPORT AREA
WINDLESS ZONE

HVDC CONVERTER

THE HVDC CONVERTER STATION CONVERTS DIRECT
CURRENT TO ALTERNATING CURRENT OR THE REVERSE

REVERSE OSMOSIS PLANT

THE LARGEST AND MOST IMPORTANT APPLICATION OF THE REVERSE
OSMOSIS PLANT IS THE SEPARATION OF PURE WATER FROM SEAWATER

TIDAL POWER STATION

5 COMBI MODULES OF TIDAL TURBINES & BALLAST TANKS. THE BALLAST
TANKS ARE INTEGRAL TO THE STABILITY OF THE FLOATING BUILDING

STABILISING ELEMENT

STABILISING ELEMENT ACCORDING TO STATIC REQUIREMENTS
MASS CONCENTRATION FOR OPTIMAL STATIC BALANCE OF THE BUILDING

I. RESEARCH

1. SERVER ROOM, ELECTRONIC DATA PROCESSING SYSTEM
2. LOUNGE
3. KITCHEN, RELAX
4. CONFERENCE ROOM
5. RESEARCH UNITS
6. TEAMWORK
7. STORAGE ROOM
8. WIND TURBINE

III. EATING AREA

1. LOUNGE
2. SMALL EATING AREA
3. SANITARY FACILITIES
4. KITCHEN
5. STORAGE
6. MAIN EATING AREA
7. BAR

V. MAIN LEVEL

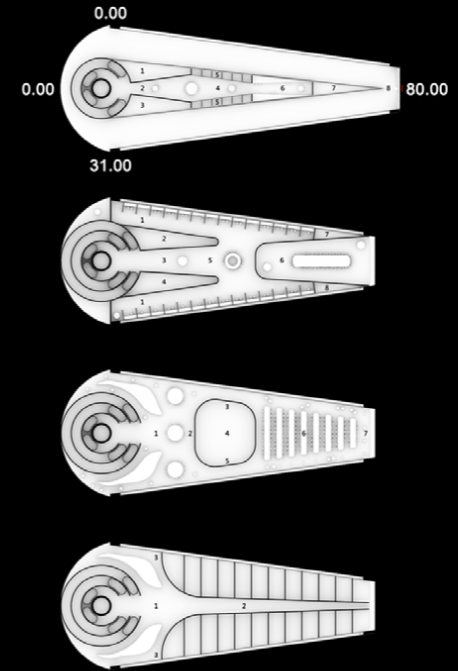
1. WATER OUT & IN
2. INNOVATIVE SPA AREA, SANITARY FACILITIES
3. TURBINE LEVEL
4. CENTRAL ACCESS CORE
5. MULTI-SPORTS AREA
6. MACHINE LEVEL - WAVE POWER PLANT
7. MAIN INTERNAL STAIRCASE
8. LOUNGE
9. MOORING AREA OF LANDING SHIPS
10. OUTDOOR AREA
11. HELIPORT

VII. RESEARCH

1. RESEARCH UNITS
2. TEAMWORK
3. LOUNGE, SANITARY FACILITIES RECREATION ROOM
4. CONFERENCE ROOM
5. SERVER ROOM, ELECTRONIC DATA PROCESSING EQUIPMENT, STORAGE ROOM

IX. LIVING AREA

1. ONE-ROOM APARTMENTS
2. RECREATION ROOM



II. MANAGEMENT

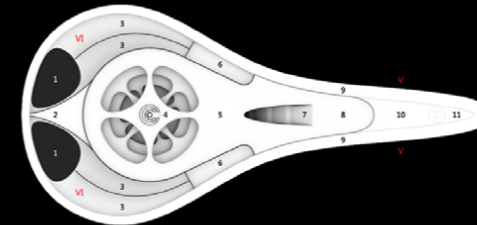
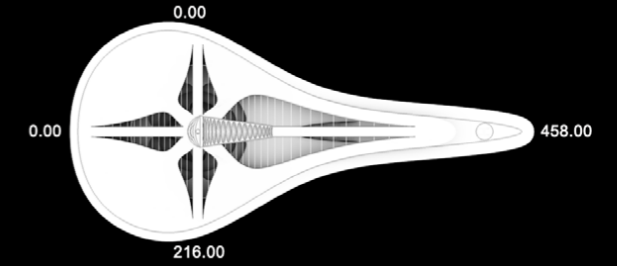
1. OPERATOR'S POSITIONS
2. SANITARY FACILITIES
3. KITCHEN
4. SERVER ROOM, ELECTRONIC DATA PROCESSING SYSTEM
5. LOUNGE
6. CONFERENCE ROOM
7. STORAGE ROOM
8. CHAIR STORAGE

IV. LIVING AREA

1. LOUNGE
2. ONE-ROOM APARTMENT
3. CHILDREN'S PLAYGROUND

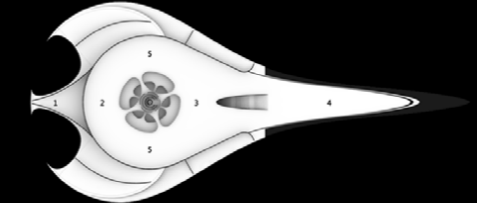
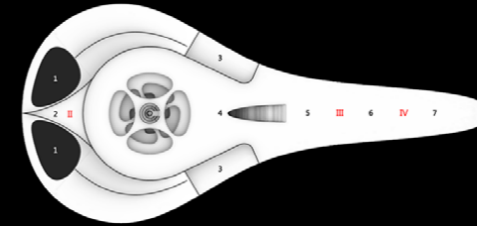
FLOOR PLANS

CIVILIZATION 0.000



VI. MACHINE LEVEL

1. WATER OUT & IN
2. SEAWATER DESALINATION SYSTEM
3. MACHINE LEVEL - WAVE POWER PLANT
4. TECHNICAL LEVEL, SANITARY FACILITIES
5. CURRENT TRANSFORMER
6. ELECTRICAL SUBSTATION
7. HVDC CONVERTER STATION



VIII. EDUCATION

1. IT SECURITY SPACE
SERVER ROOM
STORAGE ROOM
SANITARY FACILITIES
2. READING ROOM
3. LOUNGE
4. AUDITORIUM
5. TEAMWORK

