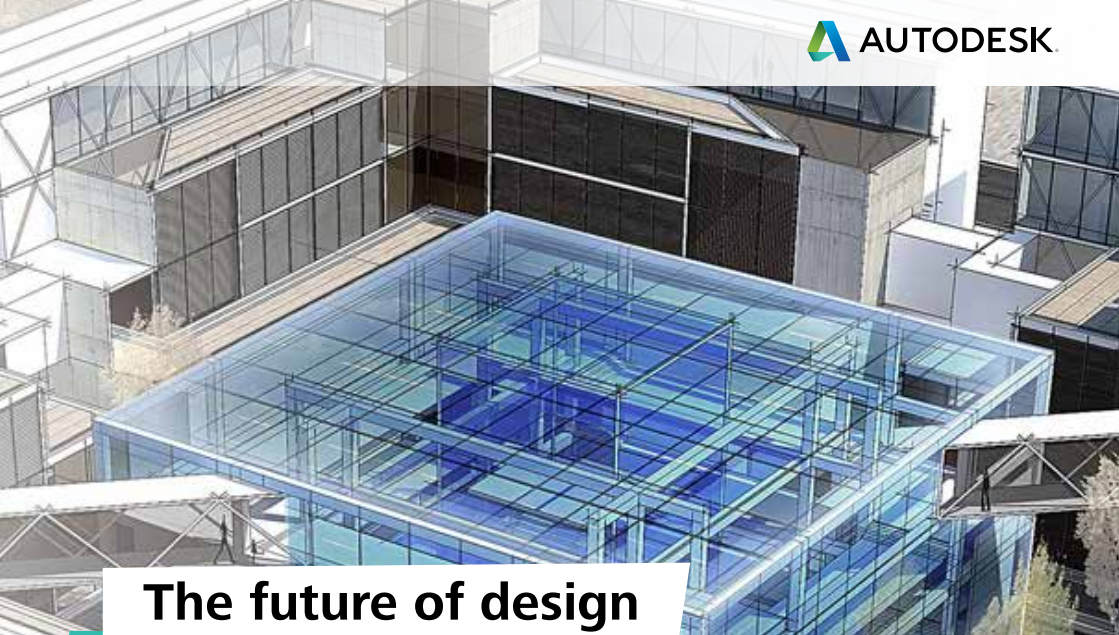
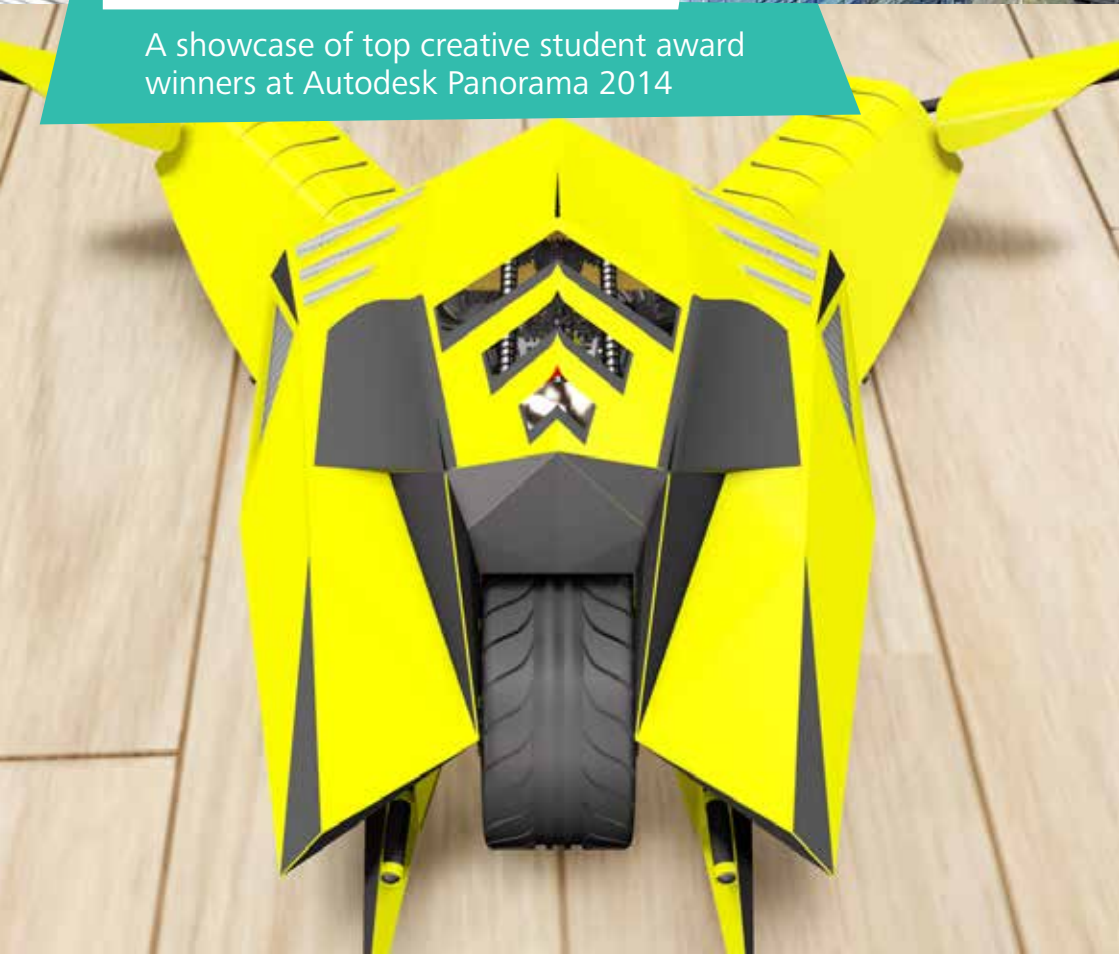




The future of design

A showcase of top creative student award winners at Autodesk Panorama 2014



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AUTODESK PANORAMA 2014

This eBook celebrates our aspiring young designers, engineers and architects of tomorrow as we feature a showcase of creative works by the most talented and promising student designers from across the world who have emerged as champion winners of **Autodesk Panorama 2014**. Created with industry-leading Autodesk software, these projects best demonstrate the powerful convergence of technology and creativity to solve some of the world's most prominent challenges.

A tall, modern building with a green, triangular lattice facade, surrounded by trees and a paved area. The building's facade is composed of a grid of green triangles, creating a distinctive geometric pattern. The building is situated in a landscaped area with several trees and a paved walkway. The sky is a mix of blue and orange, suggesting a sunset or sunrise.

LAJE

- Flocos de aço anti-impacto galvanizado, pintado com tinta automotiva branca, fixado a laje abaixo.
- Laje isolante flutuante perfurada de 100mm.
- Perfil de aço "T" pintado com tinta automotiva branca, suportado a laje abaixo.
- Laje de aço treliça tridimensional flutuante no concreto, suportada a laje.

O isolamento térmico flutuante recebe todos os pontos das lajes. Os pontos de fixação de treliça tridimensional no concreto resultam de um pavimento para outro.

TELA DE AÇO E LAMINAÇÃO

A trama de concreto armado no centro da edificação contém uma escada e, isolada, não fixada a esta trama, elevadores de passageiros e um elevador de carga.



Manufacturing

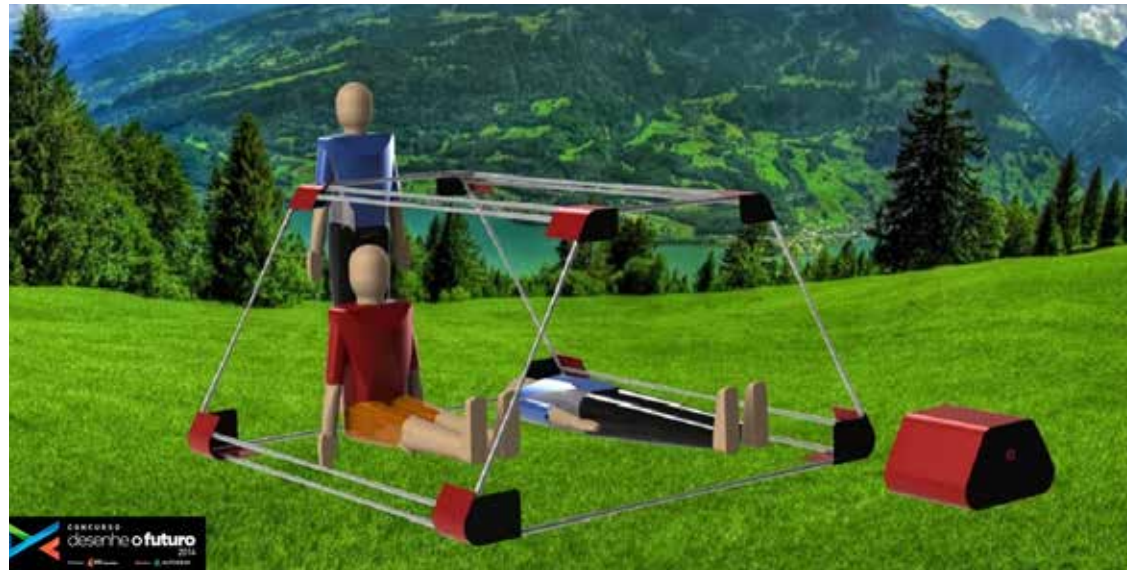
Country: Brazil

Institution: Braz Cubas University

Members: Flávio Ferreira Junior and Giovanni Bruno Monteiro Ferreira

Project Title: Easy Shelter with Telescopic System: An Option in Crisis Management and Rescue in Hostile Environments

Autodesk Software: Autodesk Inventor



The easy shelter strives to serve as a temporary shelter to home the thousands of people made homeless as a result of natural disasters. Stemmed from an observation of crisis management decisions during major natural disasters which have occurred across the world, this project is underpinned by sustainability as a main focus, with two critical factors considered; promoting job generation for the production of the proposed shelter; and encouraging the use of recyclable materials to reduce the emission of pollutants and solid waste. The main structure consists of fiberglass, and the canvas is produced from the reuse of polyester fibers from PET bottles.



Architecture

Country: China
Institution: Harbin Institute of Technology
Members: Hao Fu, Hangda Lv and Yuqiao Zhang
Project Title: Enclose and Core
Autodesk Software: Autodesk Revit



Based on a concept of “Enclose” and “Core”, this multi-structured building includes spaces ranging from relatively closed zones to opened zones. “Enclose” refers to independent zones such as studios or tutorial rooms used for individual study. “Core” refers to public study zones where workshops, exhibitions and presentations can be held. Commodious corridors will connect “Enclose” and “Core” to form a complete space. Open zones will be equipped with Geothermal Heat Pump System to boost heating/cooling system efficiency and reduce operational costs. We believe this design will provide a conducive environment for academic learning and activities.

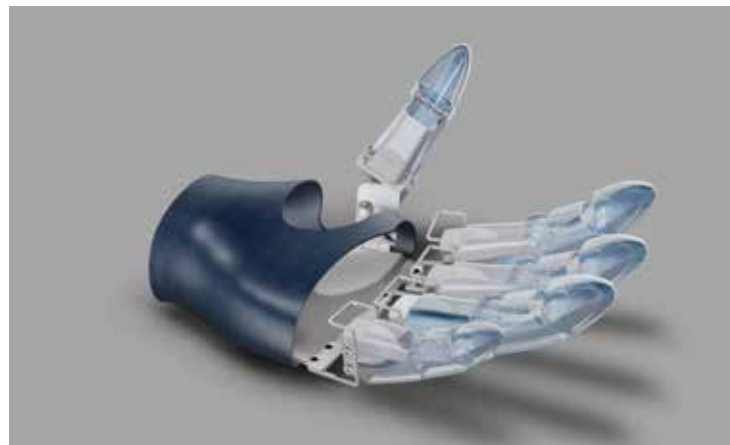


Manufacturing

Country: China
Institution: Beijing University of Technology
Members: Jiangzhou Su, Zhifang Ke and Luxuan Wang
Project Title: Mechanistic Model & Prosthetics Design
Autodesk Software: Autodesk Inventor



Inspired by vestigial fingers, Fox Fingers represents a type of prosthetic fingers designed mainly to help those who have lost their fingers overcome their disability. The prosthetic fingers can perform common actions such as grasping and kneading by working together, based on the independent movements of each finger. Moreover, users can bring together the fingers at will according to specific movements required, as all the fingers are attached to a 'supporter' finger attached to the supporter, which enlarges the application area of the prosthetics.

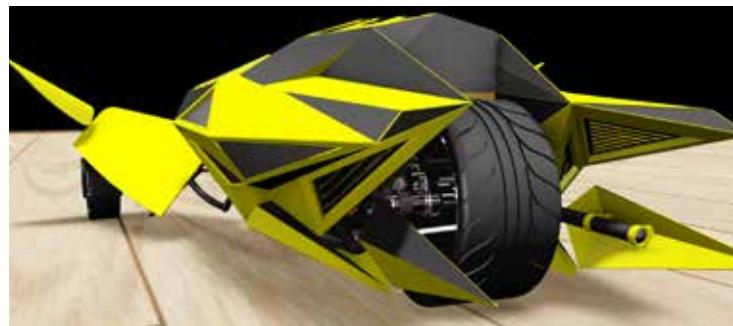
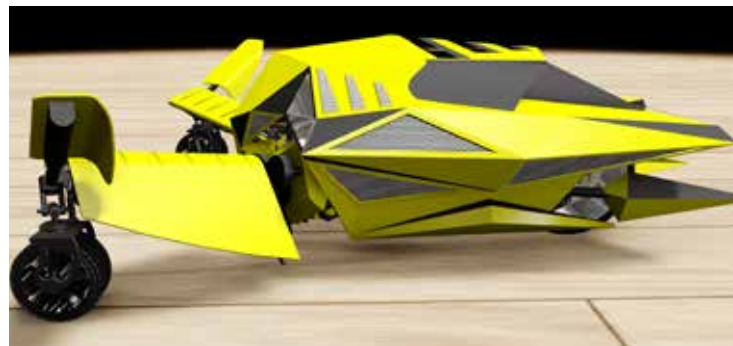


Manufacturing

Country: China
Institution: Dalian University of Technology
Members: Song Liu, Xianjian Feng and Jiabin Liang
Project Title: The Super Turtle
Autodesk Software: Autodesk Inventor, Autodesk Showcase



Designed mainly as a toy for youths, Super-Turtle can both swim underwater and traverse on land with the help of a tele-controller. The wing flaps of the Super-Turtle enable the body to “swim” instead of going through the motions via a screw propeller. In addition, the toy includes an underwater detector by virtue of a camera installed right at the front of it.



Architecture

Country: India

Institution: Thiagarajar College of Engineering, Madurai

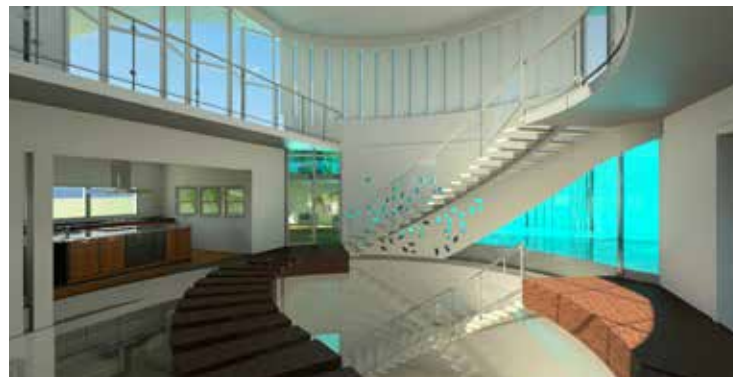
Members: Sruthi Venkatesh and Kaviya Lakshmi Ayyappan

Project Title: Hermes

Autodesk Software: Autodesk Revit, Autodesk Ecotect, Autodesk Vasari, Autodesk Showcase, Autodesk Pixlr and Cloud Render



Based on the concept of a “dream house”, this project consists of sprawling rooms which are spacious and trendy; an elegant living room, a ritzy home theatre, opulent kitchen, a well-lit playroom and unique bedroom. The dream house features three levels, and its walls are made of photovoltaic glass which generates electricity. BIM was used during design development to improve visualisation, with real-time rendering enabling users to easily understand the project.



Manufacturing

Country: India

Institution: Malaviya National Institute of Technology, Jaipur

Members: Devang Darode Anant, Mandeep Singh Kapoor and Mitesh Shivraj Singh Rajput

Project Title: Gravida

Autodesk Software: Autodesk Inventor, AutoCAD



This project consists of a unique bicycle featuring a dual arc-shaped bicycle frame, and which encourages the use of less parking space due to its retractable basket and a convertible handle design. It also comes with shock absorbing wheels, and it is equipped with an ergonomically adjustable seat in both the vertical and horizontal directions. Its handle is adjustable for different riding postures such as in the city, for a simple cruise or competitive sport. The bicycle also comes with a safe laptop bag holder.



Manufacturing

Country: Indonesia

Institution: Universitas Muhammadiyah Yogyakarta, Indonesia

Members: Satriawan Dini Hariyanto, Panji Prihandoko and Romario Aldrian Wicaksono

Project Title: Muhammadiyah Yogyakarta Exoskeleton

Autodesk Software: Autodesk Inventor, Autodesk Fusion



This project strives to serve as a solution to help disabled people move in a more natural way free of their physical limitations. Featuring an exoskeleton design, Muhammadiyah Exoskeleton-0, or MYX-0, helps the disabled stand, sit, walk, go upstairs/downstairs, or enable other basic movements. Designed for those with permanent or temporary disablement in mind, MYX-0 can be used as a rehabilitation tool, replacing crutches or wheelchair, and serves as their thighs or legs to help them move as if they have normal limbs. A motor and controller is used to adjust the extension and retraction of the transmission string system according to the type of movement desired.



Manufacturing

Country: Japan

Institution: The University of Tokyo

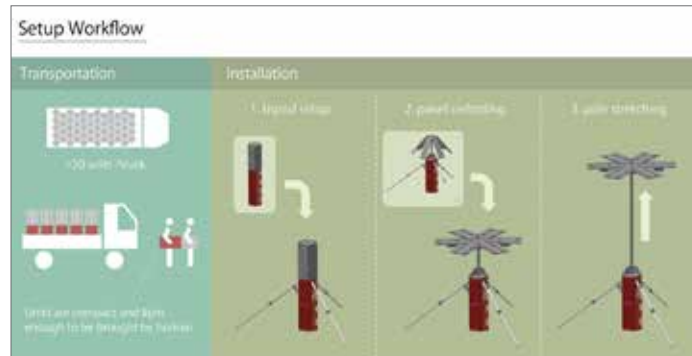
Members: Kaoru Yamaoka, Kazuhiro Sasabuchi and Ryohei Suzuki

Project Title: Helioperch

Autodesk Software: Autodesk Inventor, Autodesk 3ds Max



The Helioperch is designed to serve as a drone for construction work in developing areas. It is equipped with a solar panel head which opens up like an umbrella to light up the ground. Apart from serving as a drone, it can be used as a light source. Its base/body tank stabilises the solar panel. The tripods prevent tumbling that may occur from winds at the top panel. Water, dirt, and any other objects can be used to fill up the tank and give it its weight. The installation process is also simple; simply place the Helioperch at the designated installation spot, raise the tripod, unfold the panel, and stretch the neck of the panel. It is also easily portable (an estimated 50 units can be loaded in one truck).

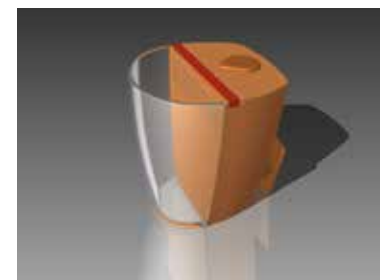
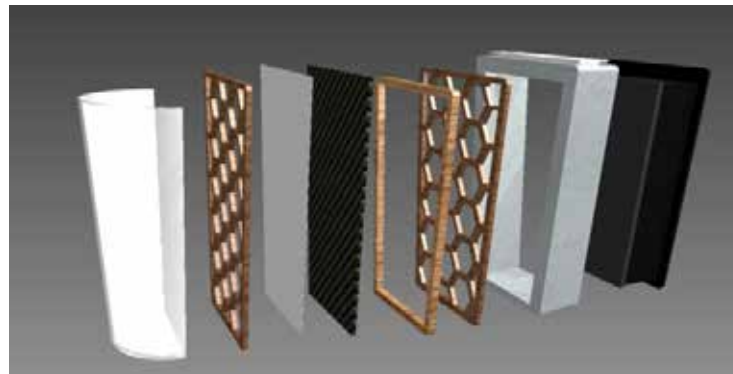


Manufacturing

Country: Korea
Institution: Sungkyunkwan University
Members: Donggyun Ju and Garam Lee
Project Title: Handy Water Purifier, Kkolkkak
Autodesk Software: Autodesk Inventor



Designed as a national public project, this handy water purifier strives to encourage Korean citizens to drink clean tap water. Apart from being portable and easy to carry around, the water purifier rectifies the awkward posture required to drink tap water straight from the sink.



Media & Entertainment

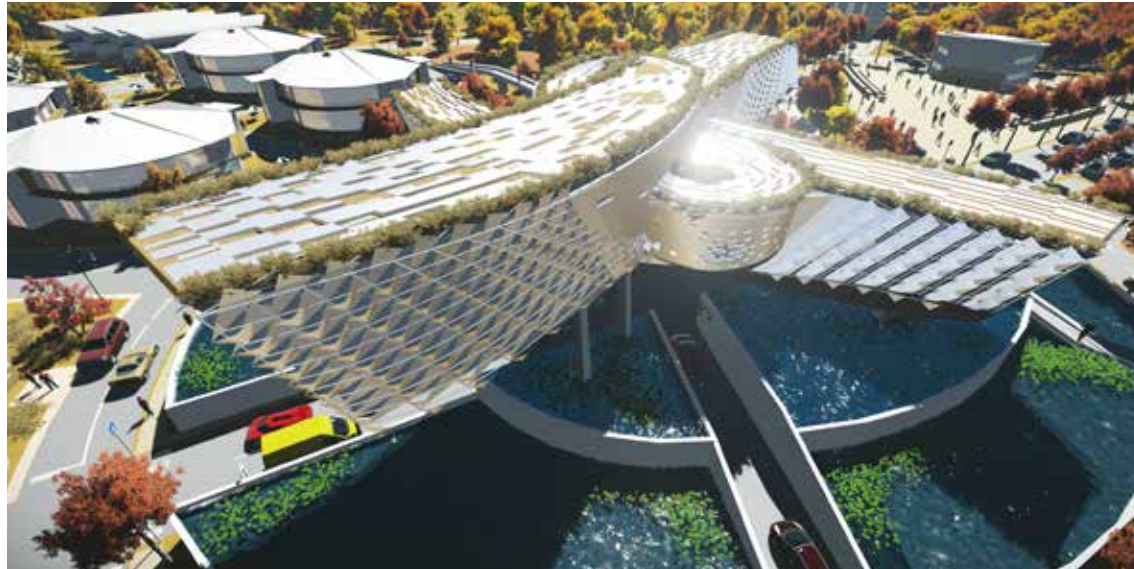
Country: Malaysia
Institution: Universiti Teknologi MARA (UiTM)
Members: Muhammad Aliff bin Ali Azizan
Project Title: Formula Advance
Autodesk Software: Autodesk 3ds Max



Primed to be the new racing machine, Formula Advance represents a convergence of the conventional turbo system and jet engine to support combustion and overall power of the racing car. Featuring a unique exterior and high-tech theme, the car comes with an avant-garde suspension system and tyre rotation mechanism. Also equipped with large carbon fibre wings at its rear, and immaculate front wings, the car will boast a top speed of 244 mph.

Architecture

Country: Russia
Institution: Far Eastern Federal University
Members: Dmitrii Fedchun and Victor Baranov
Project Title: Sy(E)nergy of Whirlwind
Autodesk Software: Autodesk Revit



The main purpose of this project is to design and create a centrally located multi-functional public centre which will be designated as a tourist attraction. The project will be situated on the coast of Japan Sea in Primorsky Krai, Russia, near the city of Vladivostok.



Manufacturing

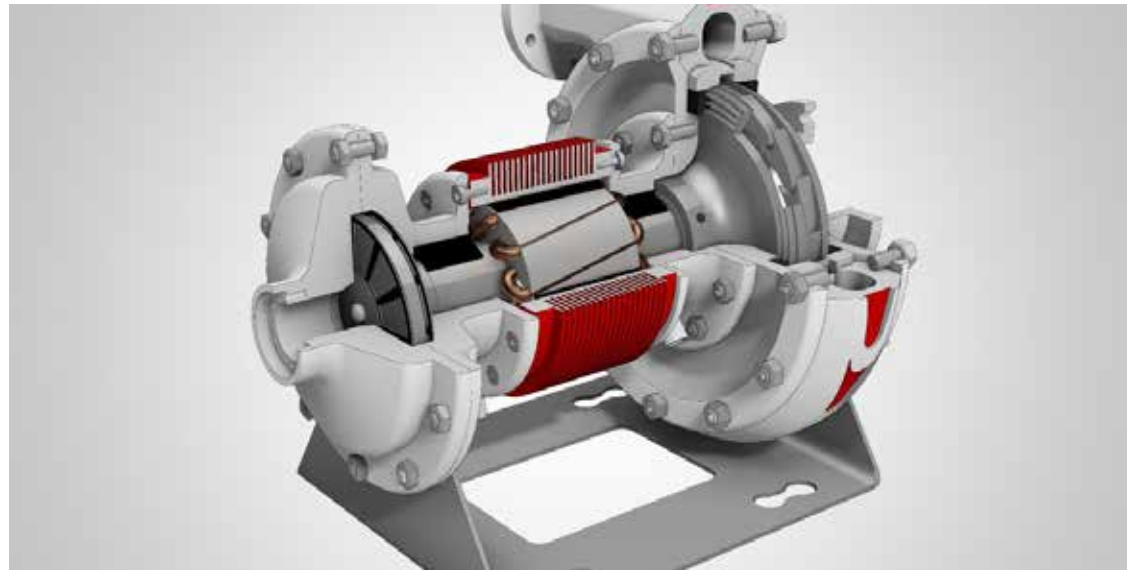
Country: Russia

Institution: Bryansk State Technical University

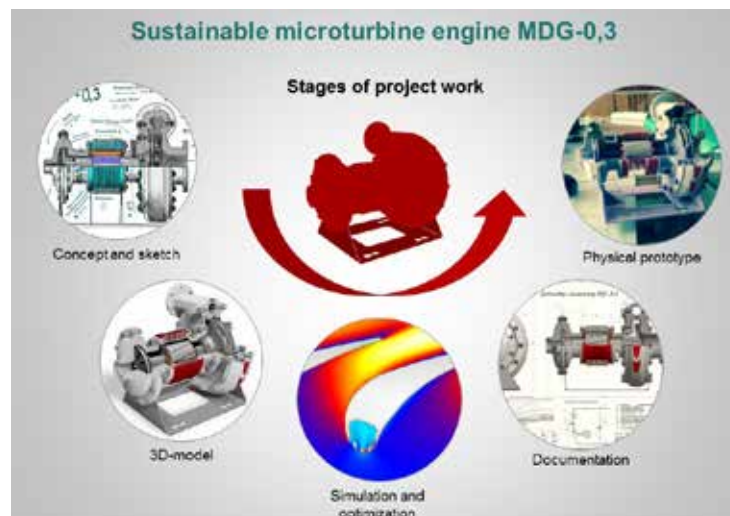
Members: Evgenii Tulubenskii, Dmytro Mukhin and Anton Vasiliev

Project Title: Sustainable microturbine engine MDG-0,3

Autodesk Software: Autodesk Inventor, SketchBook, Showcase, FlowDesign, Simulation CFD 360, Simulation Mechanical 360



Before natural gas gets into homes, it passes through a Gas Distribution Point (GDP), where pressure needs to be reduced using a throttle valve. This means the potential energy that may be produced by the gas is simply lost during the process. However, with the use of the sustainable microturbine engine instead of a pressure reduction valve, there is now an opportunity to produce electricity which is ever so essential for GDP fracturing away from power lines.



Architecture

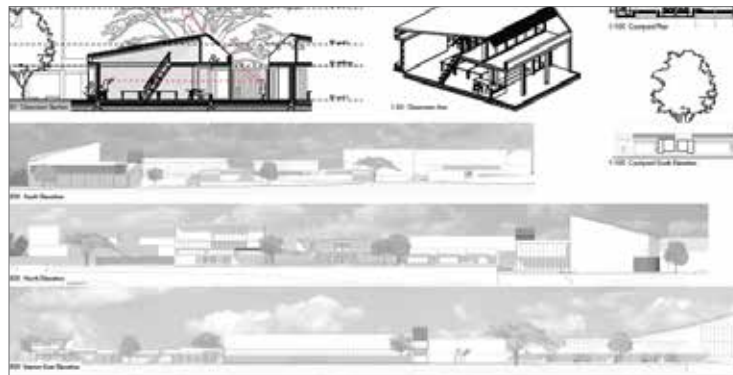
Country: Singapore
Institution: Singapore University of Technology and Design
Members: Song Pei Yeo and Yuheng Chua
Project Title: Offwhite
Autodesk Software: Autodesk Revit



Inspired by the image of a lone tree emerging from the forest canopy, this project seeks to design a series of residential towers that rise above surrounding buildings, creating a landmark for a sleepy sub-urban residential town in Singapore. It also aims to improve the quality of living for residents by providing greater access to greenery, minimising energy consumption, and the ample multi-purpose social spaces throughout the block. Each residential block comprises 3 types of unit; 3-bedroom, 4-bedroom and penthouse units. The units are arranged in a staggered manner to create a double volume area at the periphery of each 4- bedroom unit. Vertical greenery completes this double volume area as the foliage acts as shading for the interior of the apartments.

Architecture

Country: South Africa
Institution: University of the Witwatersrand
Member: Nico van Loggerenberg
Project Title: Brixton School
Autodesk Software: Autodesk Revit, AutoCAD, Autodesk 3ds Max

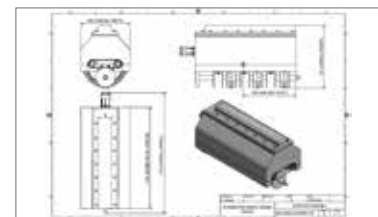
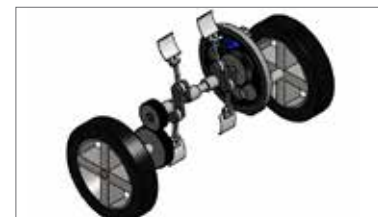
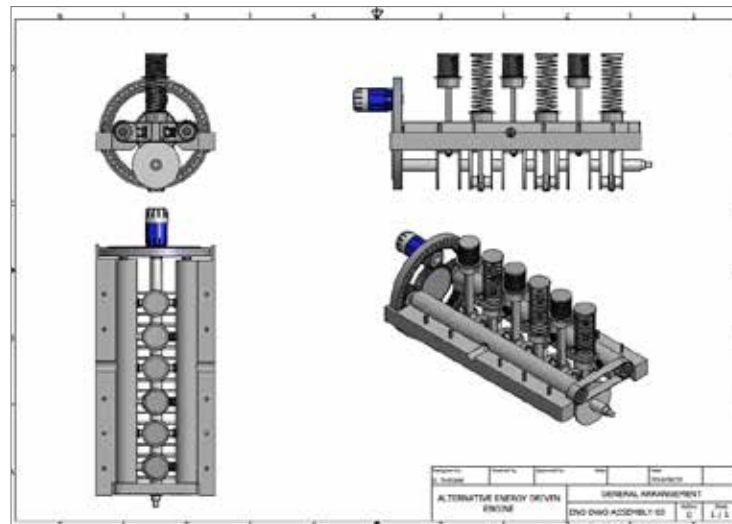
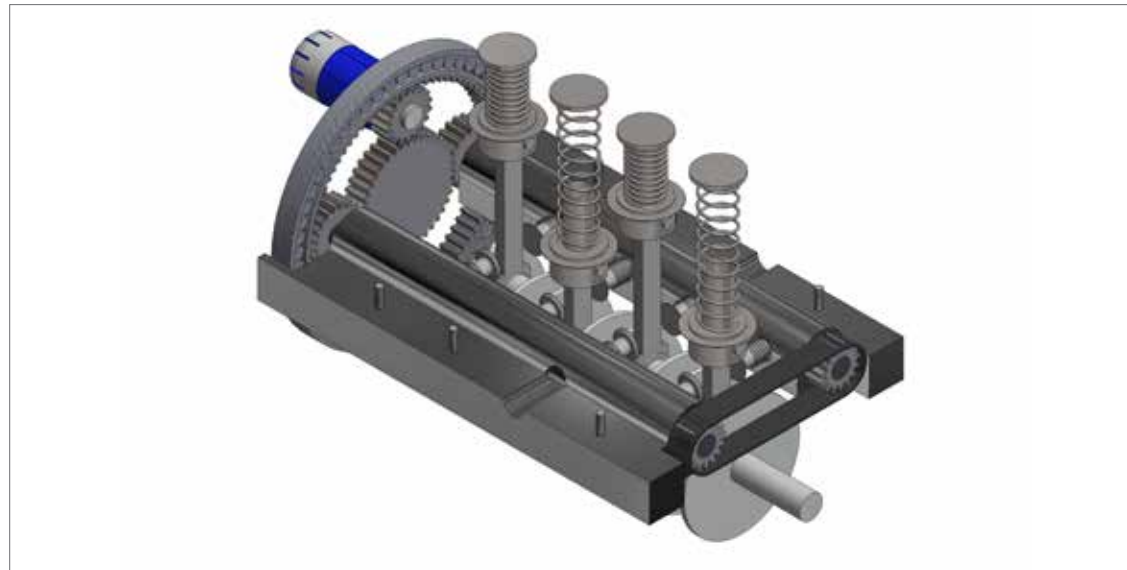


Brixton is a suburb with a fascinating urban fabric: streetside shops, alleyways and sidewalks packed with school children during the afternoon hours. Unfortunately, it is also a suburb that has failed to keep pace with the requirements of its inhabitants. The open site on the intersection of Brixton and Crosby currently sits on the ridge like an open wound. Children in the surrounding schools have no place to wait for their parents after class, and spend their time walking up and down the site, throwing rocks and making up games with the building rubble. Neglected dirt roads strewn with rubbish cross over site, and it sits amongst a number of small schools with no presence or usable street edge, hugging the Witwatersrand.



Manufacturing

Country: South Africa
Institution: University of Johannesburg,
 South Africa
Member: Sandisiwe Thisani
Project Title: Alternative Energy Driven Motor
 Engine Design
**Autodesk
 Software:** Autodesk Inventor



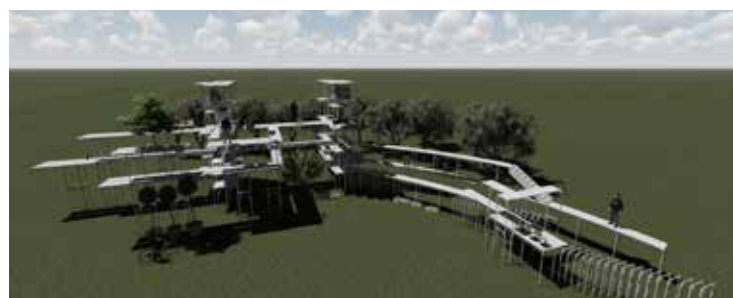
Today, numerous alternative energy-driven and fuel efficient engines have been introduced to the automotive market by the world's leading car manufacturers, but none have enjoyed global success. Despite the constant upward trend in petrol and diesel prices, fossil fuel internal combustion motors remain the preferred choice over the more eco-friendly motor engines. Two conceptual ideas were considered during the design process. Firstly, to identify and decide on a suitable energy source which is renewable, readily available, easy to store and cost efficient. Compressed air was then selected to be used as the medium to produce energy. Secondly, to evaluate the different engine layouts and select the most suitable for the conceptual solutions. This included space constraints, train lengths, amount of material required and the cost of the solution the decision was made to create both concepts to suit an F-F engine layout.

Architecture

Country: Taiwan
Institution: Feng Chia University
Members: Mei Kay Leong, Nien-Chin Wu and I-Cheng Wu
Project Title: Illegal Construction
Autodesk Software: Autodesk Revit



Designated in a district once ruled by Japan, this project is situated at the heart of Taichung City, Taiwan, amongst prominent government buildings. However, due to land scarcity, there is great demand for residential space. Buildings were mostly erected with iron scaffolding, which gradually emerged as a unique feature of Taiwanese private housing. From our site analysis, students have been identified as the main users. Therefore, this project includes a reading space. By converting old building elements into new forms, this space exemplifies the heritage of this area. Due to sunlight, every layer of the building that faces different directions will reflect several angles upon the streets.



Manufacturing

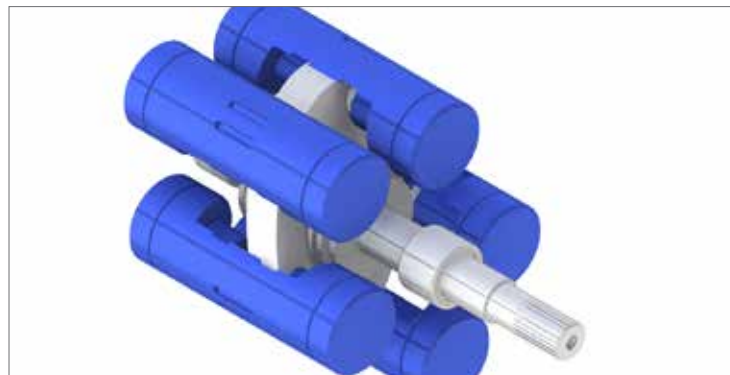
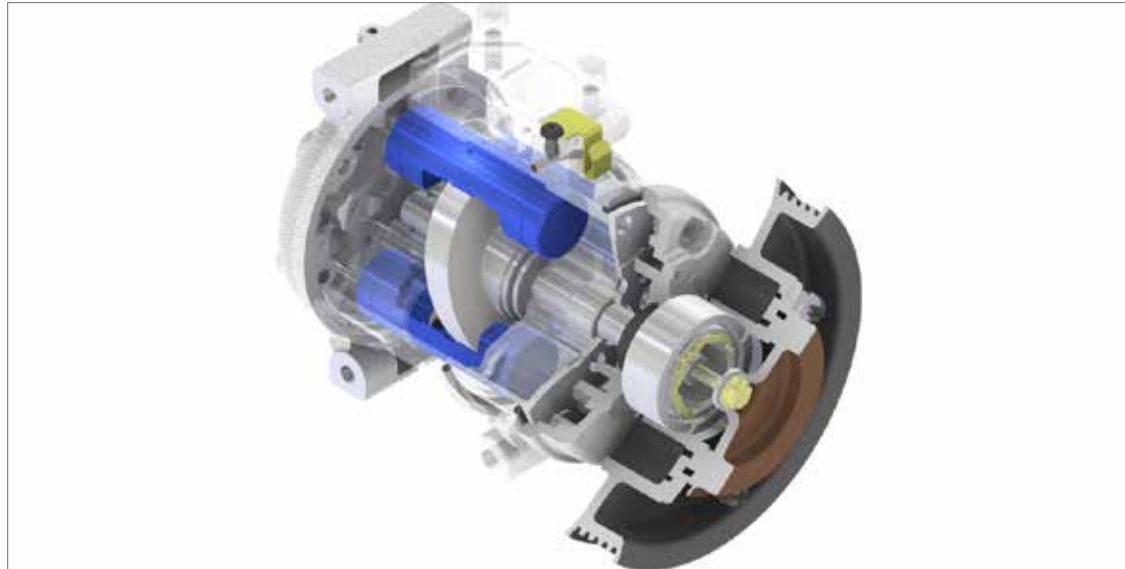
Country: Taiwan

Institutions: National Tsautun Commercial & Industrial Vocational Senior High School and National Formosa University

Members: Pai Yi Tseng, Jia-Zhen Huang and Jia-Hong Lin

Project Title: Air-Conditioner Compressor

Autodesk Software: Autodesk Inventor



A collaboration between students from National Tsautun Commercial & Industrial Vocational Senior High School and National Formosa University, this project strived to develop an innovative, more efficient fan for air conditioning units by using the 3D design technology of Autodesk Inventor. Autodesk Inventor provides a more systematic approach to design because once an optimum input specification for a given design criteria (i.e. minimum loss, cavitation suppression, secondary flow suppression, etc.) has been obtained, it can be used to develop new prototypes very rapidly, reducing development time for new designs. Apart from a key focus on fan efficiency, the students managed to use the software to improve compressor efficiencies.

Manufacturing

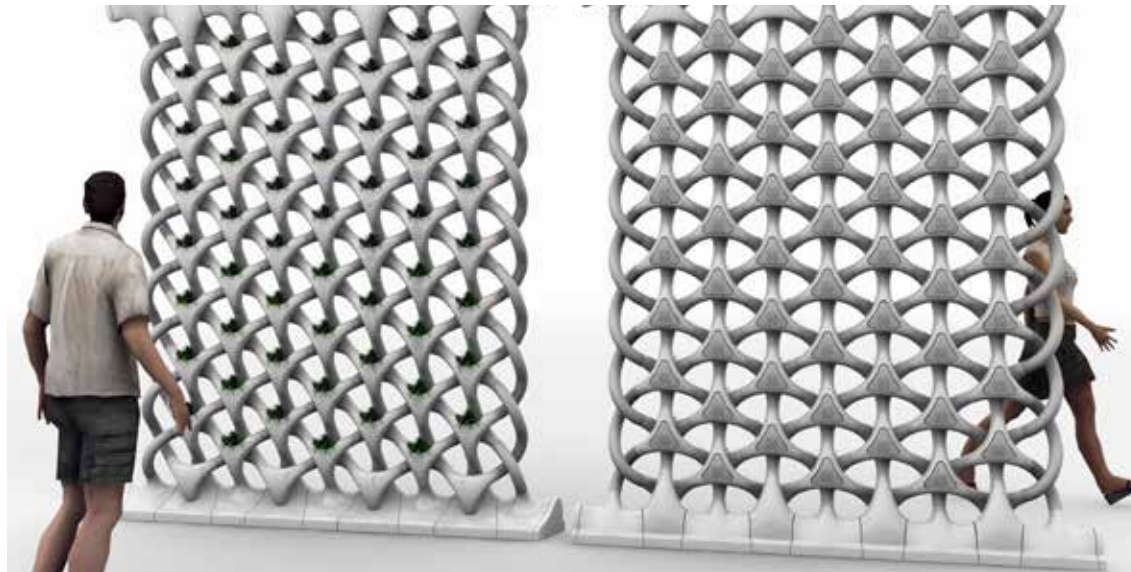
Country: Taiwan

Institution: National Yunlin University of Science & Technology

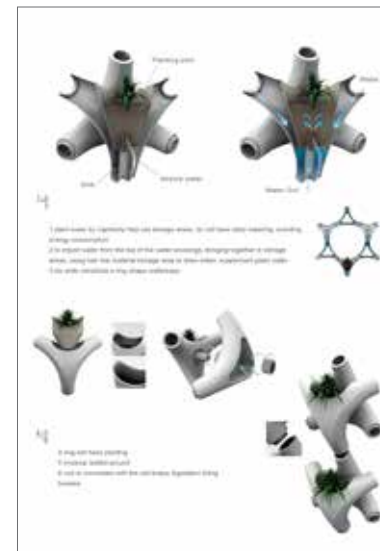
Members: Ching-Hsu Chang, Wen-Min Gu
and Chih-Yuan Lee

Project Title: Garden System

Autodesk Software: Autodesk Fusion, Autodesk Inventor

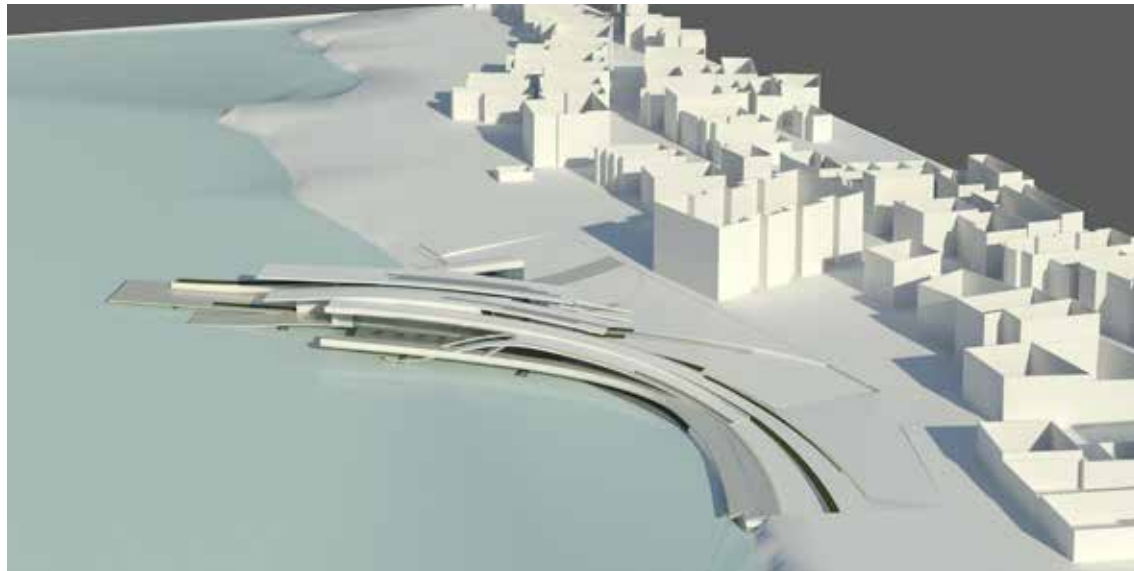


The Garden System consists of a garden system wall equipped with cavity waterways, produced using 3D printing technology. The products and cavity structure was constructed using Catia 3D surface modeling software, and simulation for the product materials and operating environment was done using C4D software. Depending on environmental needs or personal preferences, the solar light assembly may be swapped with other components such as bird feeders or small furniture, and plant components may be replaced to achieve the effect of greenery on either side.

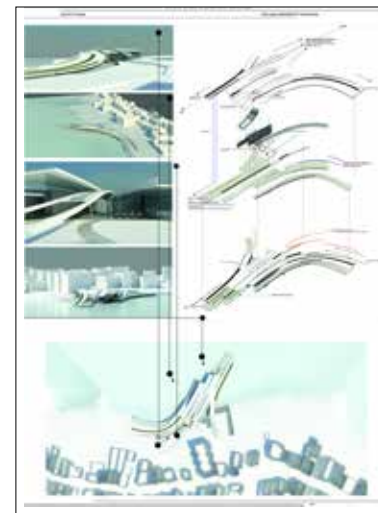
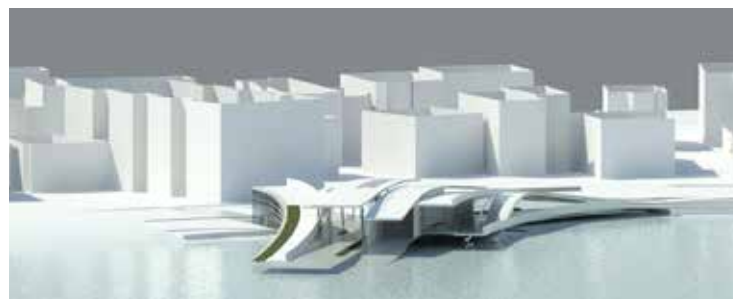
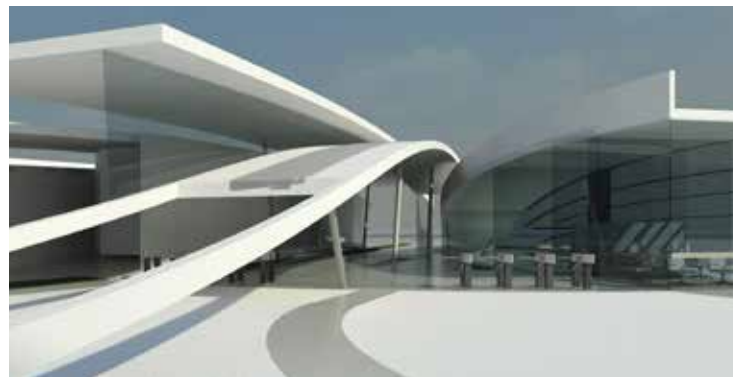


Architecture

Country: Turkey
Institution: Istanbul Technical University
Members: Dilek Yildiz, Ece Bahar Elmaci and Damla Ozturk
Project Title: An Accessible Seaport for Istanbul
Autodesk Software: Autodesk Revit



The goal of this project is to design a sustainable and accessible seaport for Princess Islands of Istanbul. This location was chosen due to the frequent use of sea ambulances and the requirement of an eco-friendly design for a natural preservation site. The seaport design is inspired by the “selective permeable” nature of a cell membrane, positioned as an organic extension to the shoreline with a light lifting structure.

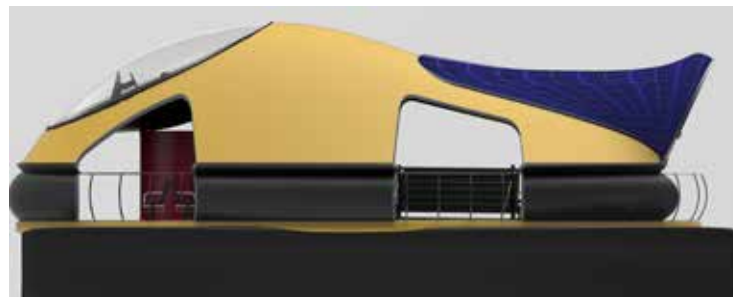
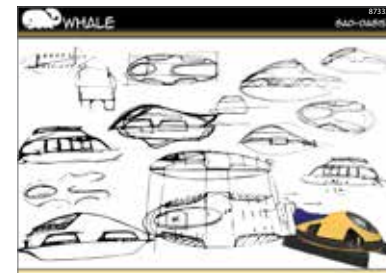


Manufacturing

Country: Turkey
Institution: Gazi University
Members: Demet Parlak, Aysun Ocak and Merve Coskun
Project Title: Whale: An Accessible Ferry Boat
Autodesk Software: Autodesk 3ds Max, Autodesk Inventor



Inspired by the form of a whale, this ferry is designed to serve as an intra-city sea transportation vehicle for up to 70 passengers. The ramp system implemented on the side provides a comfortable onboarding for physically disabled citizens with wheelchairs. The central station is placed in the upper deck to maximise the flat area for passengers. The back part of the deck is left open to provide a sightseeing area for passengers who prefer to travel at sea in open air. The solar panels placed on the tents at the upper deck serve to contribute to a portion of the lighting electricity of the ferry.





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