



FACADE FABRICATION MODELING SPECIALIST

# HEROES

Behind

# ARCHITECTS & ENGINEERS

[www.heroesae.com](http://www.heroesae.com)



# CODING THE FACADE

Since 2012, Heroes Architects and Engineers (HAE), a Dubai-based design firm, has been generating complex facade designs in a different way. Instead of drafting 2D CAD drawings, they model the complete facade envelope in Rhino, by writing codes in Grasshopper - with their own developed plugin "FacadeHub".

Throughout the years, HAE grew to a group of 60+ professionals serving the facade industry in the Middle East, Hong Kong, Malaysia and the United States. Our team members are not just ordinary facade designers, but a group of coders, specialized in the facade detailing, who are doing their best to become the 'Game-Changer' in the facade design industry.

From the Opus from Zaha Hadid to the Dubai Expo pavilions, HAE leaves their legacies in the region through completing the complicated facade projects with precisions, efficient and commitments.

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A GUIDE TO HAE'S

# Advanced BIM Management

HOW HAE WORKS WITH BIM

SKILL 1



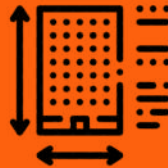
Project Specific  
BIM Execution Plan

SKILL 2



COBie

SKILL 3



LOI - Shared  
Parameters

SKILL 4



BIM Schedules

SKILL 5



BOQ/BOM



3D design  
Coordination



Digital  
Fabrication



2D sheets  
generation/As  
built sheets



Construction  
Simulation -  
Synchro Software



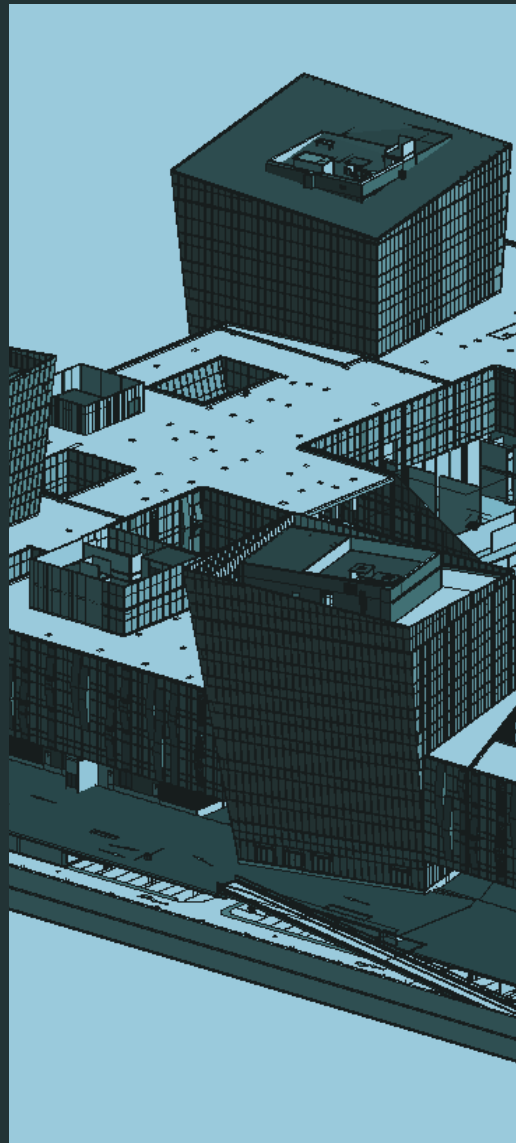
As Built Modeling



# OUR SERVICES



Fabrications Modeling



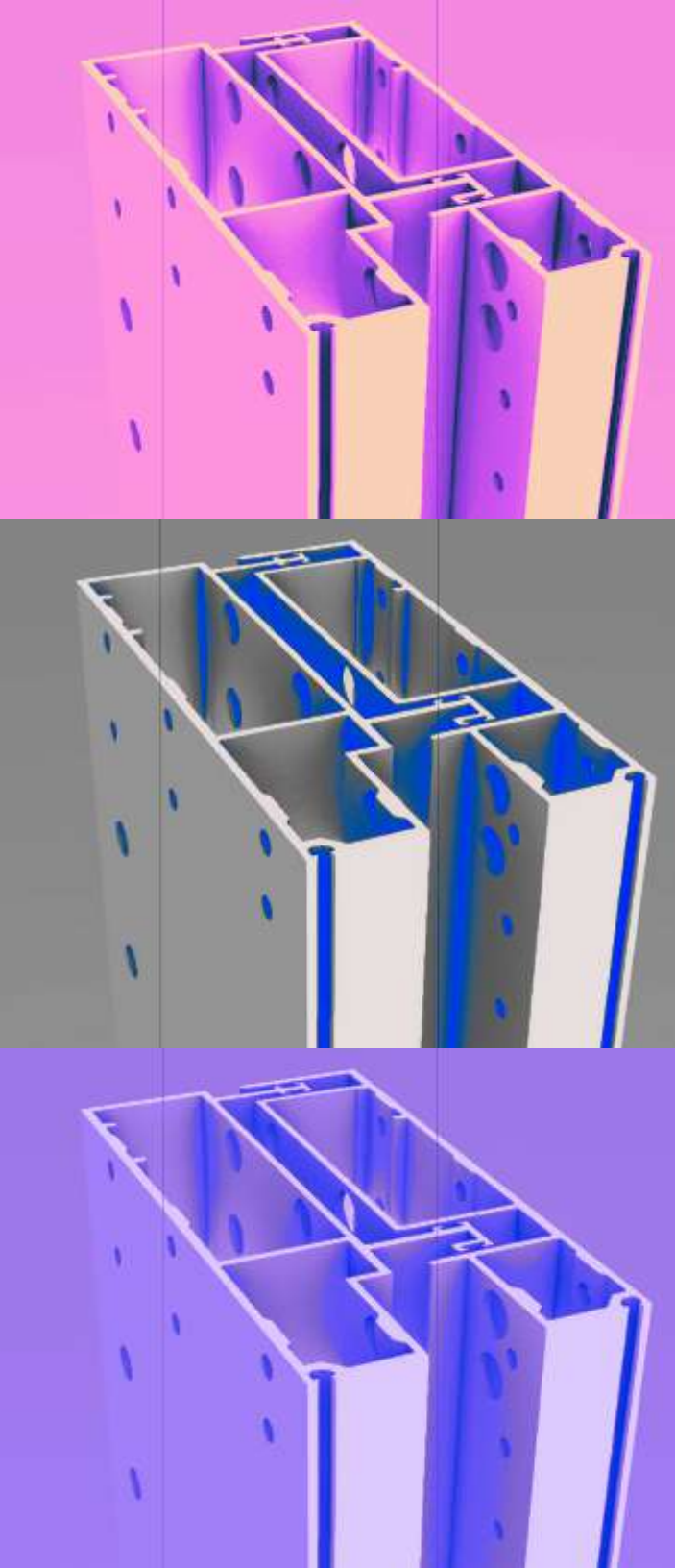
BIM Modeling



Engineering Consulting



Software Development



# FABRICATION MODELLING

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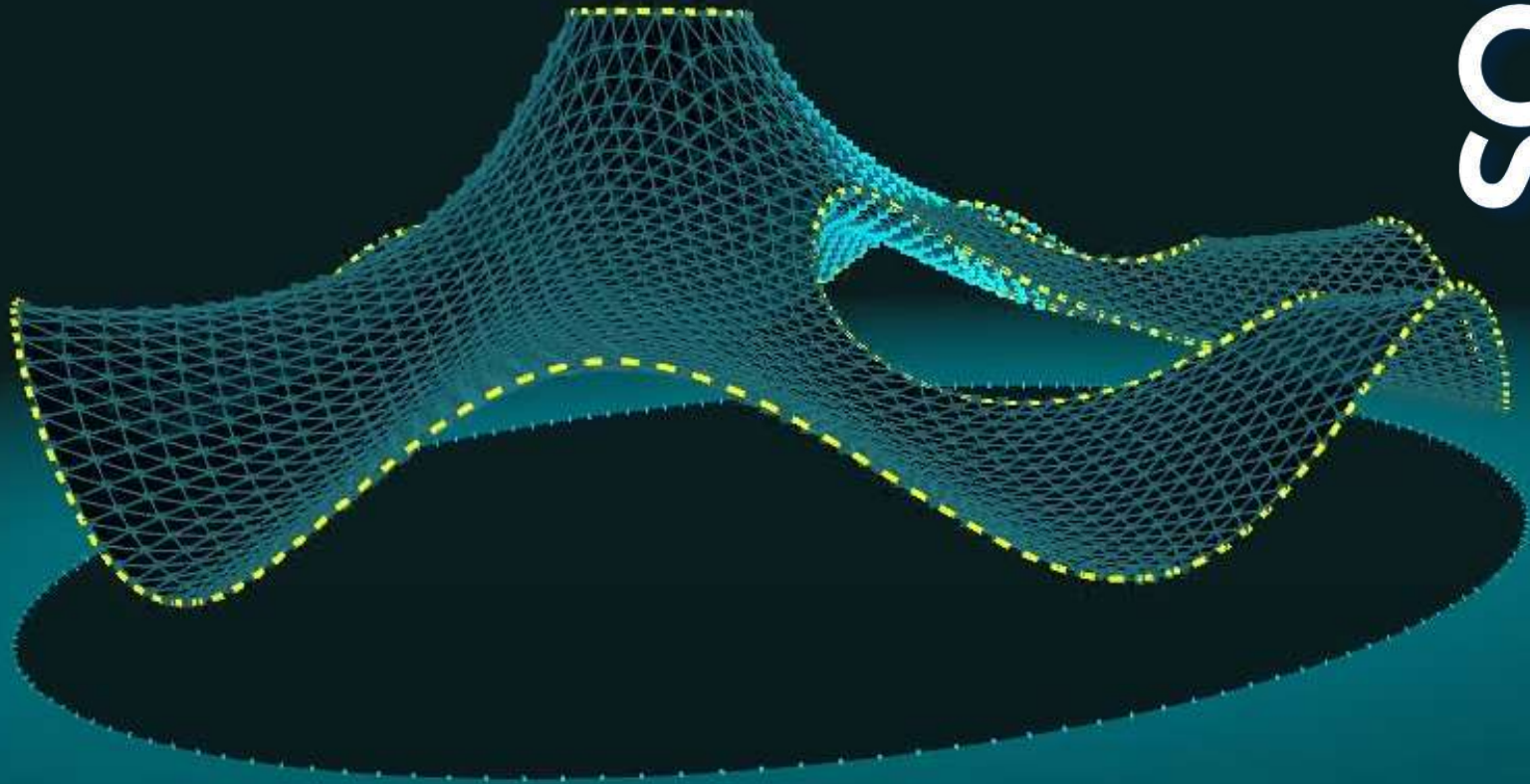
**HAE** can produce a stunning façade model with level up to fabrication detail.

We use our in-house plug-in 'Facade Hub' in Grasshopper, to script the design and fabrication drawings are automatically generated in this process.

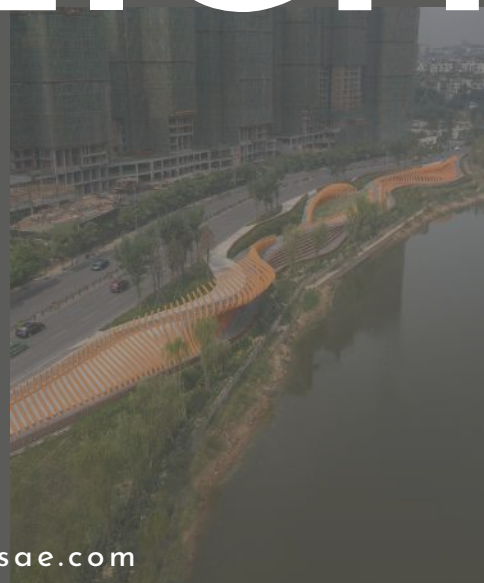
# SOFTWARE DEVELOPMENT

**FaçadeHub** is a Grasshopper® plug-in for modelling a complete façade model. It is dedicated to the façade system to be able to automatically generate the 3d model of the unitized facade from 2d section details. It also provides enhanced components for producing dimensions, especially for façade fabrication drawings.

**ParaStaad** is a Grasshopper® plug-in for professional structural analysis. You can use it to conduct complex structural analysis by using the building model in Rhino® and directly link it with the engineering software StaadPro®. With the editor components, you can do any modification you can in the StaadPro® by just update the codes in Grasshopper®.







# PROJECT HIGHLIGHTS

# Remarkable Collabs



## OPUS, Dubai

Year of completion: 2015

Scope of work:  
LED Optimization  
Algorithm Design



## NorthSouks, Beirut

Year of completion: 2016

Scope of work:  
Facade Design,  
Engineering & BIM





# AL WASL PLAZA EXPO 2020

## Facade BIM Modeling

### About the project

The world's first look at expo, the 360-degree dome will be the main staging area for the opening ceremony on October 20, 2021. It will also host performances, concerts and events throughout during the six-month expo before staging the closing ceremony. Striking images, films and dazzling lights will be beamed on to the translucent dome via more than 200 projectors that have been fitted within it.

### Scope of Work:

- Full LOD 400 facade modeling - including all facade systems, canopy and doors.
- Link CAD with full tagging and dimensions
- COBie



# METRO STATION EXPO 2020

3D Fabrication & BIM

## About the projects

An expanded metro line that will connect travellers to the Expo 2020 Dubai.

## Scope of Work

Fabrication modelling and  
Fabrication 2D drawing package





# XIAN SILK ROAD INTERNATIONAL EXHIBITION CENTRE

3D Fabrication

## About the project:

Xi'an Qujiang International Convention and Exhibition Center is an Exhibition & Convention Centre located in Xi'an, China

## Scope of Work:

HAE produced the 3D fabrication for the facade design





# THE ADDRESS SKYVIEWS

3D Fabrication & Facade consultancy

## About the project

Address Sky View, a panoramic city viewpoint gracing Dubai's skyline with two resplendent towers conjoined at the summit by an architecturally marvellous Sky Bridge,

## Scope of Work

Produced the fabrication model through Rhino & Grasshopper, Provided facade engineering consultation





# CHENGDU TOWER

## 3D Fabrication Modelling

### About the project

The form of the tower was inspired by the unique ice mountain topography around the city, with an angled, mountainous façade that emulates the cool bluish hue of the rocky formations in deep winter. Like the mountain ridges reflecting the light of the sky and the valleys reflecting light from the earth, the tower will perform as a light sculpture to diffuse light from 360 degrees

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### Scope of Work

Produced the fabrication model through Rhino & Grasshopper,



# SABIC

## 3D Fabrication Modelling

### About the project

The building is an iconic sustainable landmark that offers a seamless flow between the inside and the outside of the building.

The light sandy/ beige color tone of the shading panels is chosen to match the color of the sand, as well as reducing any potential discomfort. The texture consists of both smooth and rough surfaces, depending on where a need for sand and birds to slide off or for the reduction of glare applies.

To realize the architect's vision, variety of panels used in the project.

### Scope of Work

Produced the fabrication model through Rhino & Grasshopper,



An aerial architectural rendering of the Kai Tak Sports Park. The central feature is a large stadium with a distinctive, iridescent, 'Pearl of the Orient' shaped roof. To its right is a large building with a green roof and a white, geometric-patterned section. The park includes various sports facilities: a red running track, a yellow field, a blue tennis court, and a green field with pink cherry blossom trees. The surrounding area includes parking lots, roads, and other urban buildings.

# KAI TAK SPORTS PARK

## BIM Modelling

### About the project

The design consists of a covered Kai Tak Sports Avenue, connecting key facilities of the Sports Park with the adjacent Station Square, Kai Tak MTR Station, Sung Wong Toi MTR Station and the harbourfront promenade.

The Sports Park comprises a 50,000-seat Main Stadium, with 'Pearl of the Orient' as its façade design theme.

### Scope of Work

Produced the BIM model through Rhino & Grasshopper,





# QETAIFAN ISLAND NORTH PHASE 1 HOTEL

## Shop Drawings & Fabrication Modelling

### About the project

Qetaifan Island North Phase 1 hotel  
Canopy in Lusail city, Doha, Qatar.

A luxurious project for visitors  
attractions & experiences.

### Scope of Work

Produced the 3D fabrication  
model through Rhino.



# SHERATON TAIBA HOTEL

## Facade Consultation

### About the project

A five star hotel in KSA with two tower and connecting bridge. The maximum allowable BUA above ground is 15,754 sqm for plot 108 and 15,175 sqm for plot 153 and 4000 sqm for basement per plot.

### Scope of Work

Producing full Facade developmnet package from concept to tender stage.





# ESPLANADE MALL

## Shop Drawings

### About the project

A new mall, besides the mall of the emirates in Dubai, 13 buildings plus concourse buildings. Each building with a different facade typology.

### Scope of Work

Producing shopdrawings and as built drawings.

A modern glass skyscraper at night, illuminated from within and without. The building features a complex, angular design with large glass panels and vertical metallic fins. A vibrant, multi-colored digital graphic, resembling a stylized 'Q' or a network diagram, is projected onto the upper right portion of the facade. The sky is dark with some clouds, and the foreground shows a street with a car and some landscaping.

# MEDIA ZONE HOTELS

## BIM Modelling

### About the project

The project in Yas Island, Abu Dhabi. It is developed in phases over an area of 95,000 sqm and expandable to 300,000 sqm. It includes offices, television studios, retail units, a warehouse, an industrial unit, infrastructure and associated facilities.

### Scope of Work

Produced BIM Model LOD 400



The image is a composite architectural rendering of the Al Juraina Mall. The top half shows a close-up of the building's facade, featuring a central glass-enclosed tower with a grid-like structure and two large, white, spherical light fixtures. To the left, a series of large, rectangular windows are illuminated from within, showing a warm yellow glow. To the right, a white, curved building section is visible. The bottom half shows a wider view of the mall's entrance area. A large glass-enclosed tower is the central focus, with several people walking around its base. To the right, a white, curved building section is visible, and a group of people is standing near a small, green, rectangular structure. The overall scene is set against a clear blue sky.

# AL JURAINA MALL

## Facade Design & Installation

### About the project

The project involves construction of a 'new-generation' shopping mall comprising a basement level, a ground floor, an additional floor and a roof. The mall will have 16,000 square metres of leasable area and a built up area of 37,000 square metres, which includes the parking space for 490 vehicles. The project will also include new F&B options, IMAX screen and a fitness centre.

### Scope of Work

Facade Design



An aerial perspective of a modern architectural complex. The central feature is a large, circular pavilion with a blue, segmented roof that resembles a stylized sun or a flower. The pavilion is surrounded by a series of smaller, similar structures and a network of walkways and green spaces. In the background, a dense urban landscape with white, rectangular buildings is visible. The overall scene is brightly lit, suggesting a sunny day.

# SUSTAINABLE PAVILION EXPO

## BIM Modelling

### About the project

The pavilion is one of three at the expo, presenting the opportunity to deliver an aspirational message about the natural world, ecology, and technology to a global audience. Drawing inspiration from complex natural processes like photosynthesis, the dynamic form of the pavilion is in service to its function, capturing energy from sunlight and fresh water from humid air.

### Scope of Work

Produced BIM Model LOD 400





# AXIOM HEADQUARTERS

## Facade Modelling

### About the project

The design concept was to create an iconic Headquarter Building in Dubai Silicon Oasis capable of binding and representing the Brand Identity of Axiom Telecom, a leading telecommunication company in the United Arab Emirates.

### Scope of Work

Facade Design and Built



# REFAD BUSINESS PARK

## Facade Consultation

### About the project

A retail, commercial & Hospitality building in KSA, a total development area of 12,537 sqm. office tower (Tower A) with a ground floor, 15-storeys, and a total development area of 14450 sq.m. and , 5-star hotel tower (Tower B) with ground floor, 15-storeys and a total area of 14,450 sqm. The project will also include a car park with 25200 sqm over a land area of 42,000 sq.m along with associated facilities.

### Scope of Work

Facade consultation from Concept to schematic to detailed design stage to tender support & RFI.





# MEISHAN TRADING CENTRE

Facade 3D Fabrication

## About the project

Meishan Guofeng Trading Co., Ltd. is located in Meishan, Sichuan, China and is part of the Farm & Garden Equipment Wholesalers Industry..

## Scope of Work

Produced 3D Fabrication Model on Rhino and Grasshopper.



# II PRIMO A4 TOWER

## Facade Shop Drawing

### About the project

Emaar properties development project, a 77 storey Residential Tower.

### Scope of Work

Produced shop drawing packages for each of the building parts..





# ADDRESS OPERA A2/A3

Shop Drawing/Engineering/BIM Modelling

## About the project

Emaar properties development project, it is fire protected with 55,000 sqm of alucopanel A2 installed in its facade. Fascinating spot and views for Burj Khaleefa and Dubai Mall.

## Scope of Work

Produced 3D Fabrication Model on Rhino and Grasshopper.





# THE GRANDE HOTEL

BIM Modeling, MEP/HVAC & Structural Engineering

## About the project

A luxurious 3-Star Hotel in Bahria Town, Rawalpindi, Pakistan

## Scope of Work

Producing BIM Model LOD350, MEP/HVAC and structural calculations



# OLYMPIA DUMBO 30 FRONT

## 3D Fabrication Modelling

### About the project

A 235 years project in the making, luxurious Condo development in Brooklyn, New York USA, Olympia Dumbo has a total of 76 units.

### Scope of Work

Producing 3D Fabrication Model on Rhino and Grasshopper.



The background image shows the Zayed National Museum, a large, modern building with a distinctive, undulating, shell-like facade. The building is composed of several large, curved, metallic panels that create a complex, organic form. The sky is a soft, hazy blue, and the foreground is filled with lush green palm trees and other tropical vegetation. The overall atmosphere is one of a modern, architectural marvel in a natural setting.

# ZAYED NATIONAL MUSEUM

## Facade Consultation

### About the project

The Facade wing project, a complex form in which each building has a different panel typology and each panel in the building is not like the other.

### Scope of Work

Providing facade consultation and creating a 3D fabrication Model on Rhino & Grasshopper.





GRAND PLAZA MOVEPICK MEDIA CITY HOTEL



CHINA STATE CAPITAL INVESTMENT TOWER



SOLAR INNOVATION CENTER

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