

Off-site Project of the Year Award

Sindalah Island
Construction Technology Awards - 2025



Company Overview

BEC Arabia Construction Ltd.

Emerging as one of the most formidable forces in the construction industry, BEC Arabia first established its roots in the United Arab Emirates (UAE) in 2000, laying a strong foundation for its future growth. In 2010, the company expanded its operations into the Kingdom of Saudi Arabia (KSA), solidifying its presence in one of the region's most dynamic markets. Today, BEC Arabia stands as a dynamic and diverse organization, offering an extensive range of services that include Tier-1 contracting, real estate development, ready-mix concrete solutions, landscaping, and facility management.



BEC Arabia's Code of Conduct and strong Core Values guide the Company and its employees to uphold the highest ethical standards. BEC Arabia is an industry leader and an award-winning firm in health and safety. We are committed to upholding dependable governance structures, reflecting diversity within all levels of the company, and enhancing our culture of inclusion.

At BEC Arabia, we understand the profound impact that the construction industry can have on our natural resources and the environment. As a result, we prioritize integrating sustainable practices into all facets of our operations, ensuring that our activities, policies, and procedures align with environmentally responsible principles. We also acknowledge the essential role of advancing the Sustainable Development Goals (SDGs) in achieving a sustainable future where both people and the planet can thrive.

BEC
العربية
ARABIA

25
Years

+10K
Employees

120
Delivered Projects

100m
Hours of Safety

**Construction
Week**

Health & Safety Initiative
of the Year 2023

arabian
Business

Construction Entrepreneur
of the Year 2023



نيوم NEOM

**Construction
Week**

Residential Project of the
Year 2022

ihmar[™]

Best Construction
Company 2022

HSE Achievement
Award 2023

Introduction

At BEC Arabia, we take pride in our proven expertise in modular and offsite construction, which has become a cornerstone of our ability to deliver efficient, high-quality, and sustainable projects. By embracing cutting-edge manufacturing techniques and advanced technologies, we optimize the construction process to ensure superior outcomes. Our approach involves producing components in controlled factory environments, which allows for unparalleled precision, consistency, and quality control, ensuring every detail meets the highest standards.

With a track record of successfully executing large-scale projects, we have demonstrated our ability to harness the full potential of modular and offsite construction. Our innovative methods allow us to meet and exceed client expectations, delivering projects that are not only efficient and cost-effective but also sustainable and future ready.

General Information

Nominated Project	Sindalah Island
Location	NEOM, Saudi Arabia
BEC Arabia's Role	Main Contractor
Project Status	Ongoing
Construction Start Date	November 2022
Completion Date	June 2025

Project Overview

The World's Most Sought-after Destination

Nestled in the heart of NEOM, Sindalah is a distinctive luxury destination spanning over 840,000 square meters of breathtaking landscapes and surrounded by a stunning and diverse ocean environment. As one of the flagship projects under Vision 2030, Sindalah represents a fusion of architectural brilliance, sustainable innovation, and world-class amenities, setting a new standard for ultra-luxury destinations.

Set to welcome up to 2,400 guests per day by 2028. The Island promises its future guests an exquisite hospitality experience with a seamless blend of opulent accommodations, featuring ultra-luxury resorts, private villas, and serviced apartments. In addition to a wide array of entertainment and lifestyle offerings including 38 unique culinary destinations, 51 high-end retail shops, a nine-hole beachfront golf course, and a vibrant Beach Club offering poolside lounging by day and mesmerizing music experiences by night.

Perfectly positioned as a glamorous gateway to the Red Sea, Sindalah will be the closest ultra-prime superyacht marina to Europe and the Mediterranean. Expected to become an iconic destination for the world's yachting community.

840K

Square meters

2400

Guests per day by 2024

440

Premium hotel rooms

218

Luxury services apartments

51

Luxury retail shops

38

Culinary offerings

BEC Arabia's Scope of Work

BEC Arabia is proud to lead the delivery of the iconic, multi-billion Sindalah Island development. As the principal contractor, we are entrusted with creating multiple luxury hospitality and entertainment assets.

ORAYA, An Autograph Collection Hotel

The Autograph Collection Hotel by Marriot is an ultra-luxury 5-star resort that offers guests a unique blend of comfort and sophistication, featuring 16 villas each with private pools and 50 luxury rooms in an intimate island setting.

The SYANNE, A Luxury Collection Resort

An ultra-glamorous 7-star resort offering 50 avant-garde rooms and suites, 20 villas with private pools, five distinctive restaurants and a spa and fitness center- in an exquisite island setting.

Golf Club by IMG

Sindalah Golf Club stands as an architectural landmark with its stunning leather-textured turtleback roof and top-tier facilities, ensuring an unmatched golfing experience. This ultra-luxurious golf club offers a service basement, simulation, and golf training suites, as well as a complete lobby for hosting visitors.

Beach Club by MDL BEAST

Set on the water's edge, Sindalah Beach Club is a vibrant and glamorous global hub for celebrating cultural diversity and creativity. This exclusive destination features a relaxing pool, a high-end restaurant, and private dining facilities. Sindalah Beach Club is set to become the ultimate venue for cutting-edge events, with world-class production and events company MDLBEAST curating a dynamic music program featuring performances by renowned DJs and artists.

Sports Club

Our state-of-the-art Sports Club offers water sports including kite surfing, wakeboarding, and windsurfing, as well as a dive center. In addition to land activities such as gymnasium, tennis courts, and sports courts.

Off-Site Construction Approach

BEC Arabia adopted a comprehensive off-site construction strategy to streamline project execution while adhering to the highest standards of quality and sustainability. Leveraging pre-fabrication and modular construction techniques, a significant portion of the construction was completed in controlled environments away from the site. This approach reduced on-site labor requirements, improved safety conditions, and minimized construction waste.

- **Off-Site Fabrication of Steel Components**

In ORAYA, An Autograph Collection Hotel, and The SYANNE, A Luxury Collection Resort we used a **Steel Structure System**; which comprised about 30,000 tonnes of steel structure designed/fabricated offsite with steel gauges pods for the rooms erected directly into the core and shell of the building, capitalizing on the typological similarities of the units to maximize efficiency. Floor slabs executed via structural decking sheets with wet concrete finishing. The modular components for this project were meticulously prefabricated in a controlled factory environment, resulting in superior quality and precision. The rapid assembly of prefabricated modules has allowed us to achieve significant milestones ahead of schedule, setting a new benchmark for efficient construction.

In the Golf Club, we utilized the **off-site fabrication of steel components** for the turtleback roof structure. By creating these components in a dedicated facility, we minimized the complexities and potential delays associated with on-site fabrication. The result was a faster, more efficient construction process, with higher precision in the production of each steel piece. This also allowed components to be tested and quality-checked before being transported to the site, ensuring the integrity of the structure upon assembly.

- **Unitized Steel Structural System with GRP Panels**

We also used a unitized **steel structural system paired with GRP** (Glass Reinforced Plastic) panels in the Golf Club construction. These panels were finished off-site, featuring a luxurious leather skin finish, which not only ensured a high-quality aesthetic but also contributed to durability and weather resistance. By manufacturing steel components and panels off-site, we were able to significantly reduce on-site construction time and maintain a controlled environment for quality assurance, ensuring every piece met the project's stringent specifications.

- **3D Temporary Support System**

In addition to the off-site fabrication of structural elements, we have developed a **standardized 3D temporary support system**, composed of **repeatable components** designed specifically for the Golf Club. This support system was crucial for the accurate and safe

assembly of the turtleback roof. The modular nature of the support structure facilitating faster installation of steel components. By using a repeatable system, we ensured precision and safety throughout the process, minimizing the risk of errors and improving overall efficiency.

Off-Site Materials and Fabrication

In Sindalah, the use of off-site materials and prefabricated components played a pivotal role in achieving exceptional quality, efficiency, and sustainability, contributing to the project's remarkable success. Key materials and elements were meticulously fabricated off-site to meet the project's high standards while aligning with NEOM's vision for innovation and environmental responsibility.

All Joinery Materials

All joinery components, including doors, cabinets, and furniture elements, were pre-manufactured in off-site facilities to ensure precision and consistency. By leveraging controlled manufacturing environments, these materials were crafted to exact specifications, reducing material waste and enhancing overall quality. Off-site fabrication also enabled faster on-site installation, significantly reducing project timelines and ensuring seamless finish across residential and communal spaces.

Poly-Carbonate Panels (Facades)

Poly-carbonate panels were custom-designed and pre-fabricated off-site for use in facade construction. These lightweight yet durable panels provided an innovative solution for achieving aesthetic appeal and energy efficiency. Their off-site production reduced the need for complex on-site fabrication, streamlining installation processes and ensuring flawless execution. Additionally, their use supported the project's sustainability objectives by optimizing thermal insulation and minimizing resource consumption.

Blue Moon Panels (Facades)

The inclusion of Blue Moon panels as a facade material highlights the project's commitment to incorporating cutting-edge design elements. Fabricated off-site to the highest standards, these panels offered a unique aesthetic while providing functional benefits such as enhanced durability and weather resistance. The off-site production process allowed for meticulous quality checks and reduced on-site construction activities, contributing to a cleaner and safer working environment.

Planning and Execution

The successful execution of the project relied heavily on Agile Project Management principles and meticulous planning processes. By employing a dynamic approach, the project team adapted to evolving challenges and priorities, ensuring consistent progress and high-quality outcomes throughout the project lifecycle. Below is a detailed account of the project planning and execution strategies:

Agile Project Management

Agile project management and the rolling wave method formed the foundation of the project's planning approach, enabling progressive detailing and iterative workflows. This strategy allowed the team to address immediate priorities while maintaining flexibility for long-term objectives. Initial planning centered on high-level milestones, with detailed tasks progressively unfolding as the project advanced. Short-term plans were revisited and refined weekly, ensuring responsiveness to real-time challenges and evolving priorities. By dividing the project into manageable phases, the team-maintained focus on specific sections without compromising the overall timeline. Frequent reviews and feedback loops facilitated the integration of lessons learned from earlier phases, driving continuous improvement and efficiency throughout the project.

Monitoring and Productivity Tracking

To maintain high productivity rates, the project employed a combination of close monitoring techniques tailored to each phase of construction. Hourly tracking was used to oversee critical activities, allowing immediate intervention when inefficiencies arose. Daily productivity reports highlighted progress and identified areas needing improvement, while weekly team reviews facilitated cross-functional collaboration and swift problem resolution. At the executive level, monthly high-level monitoring ensured that milestones were aligned with the overall timeline and project objectives. This multi-layered approach to monitoring provided a comprehensive understanding of project performance and progress.

Supervision and Quality Assurance

Supervision played a pivotal role in ensuring that the highest quality standards were achieved on the first attempt. To meet this goal, the project maintained an exceptionally high supervision rate, with supervisory staff accounting for nearly 23% of the total workforce. These teams were strategically assigned to oversee specific trades and tasks, ensuring that every detail was meticulously executed. Routine inspections verified compliance with quality standards and specifications, while complicated trades were entrusted to experienced subcontractors. These subcontractors were held to strict manpower and quality requirements, guaranteeing consistent results throughout the project.

Extreme Control in Harsh Conditions

The unique environmental challenges of the island, particularly its harsh weather conditions, necessitated advanced control and organization of work schedules. To ensure worker safety and productivity, work hours were optimized to avoid peak heat times, and cooling stations and hydration points were strategically positioned across the site. These measures not only mitigated heat stress but also ensured uninterrupted progress. Additionally, overlapping construction activities were carefully planned to prevent disruptions and minimize the need for rework, further maximizing efficiency under challenging circumstances.

Sophisticated Workforce Management

The project's complexity demanded a well-structured workforce and robust management practices. Highly skilled engineers were assigned to oversee sophisticated activities, providing technical expertise and maintaining accountability within a structured organization chart. These engineers played a critical role in managing the intricate details of the project, ensuring quality and precision at every stage. Furthermore, an incentive program was implemented to motivate both staff and laborers, fostering a culture of excellence. Rewards were tied to individual and team performance, encouraging proactive problem-solving and innovation among the workforce.

Innovation

The successful and timely completion of the Sindalah Island project within NEOM was achieved through a series of innovative strategies that addressed the unique challenges of constructing a luxury destination on a remote island.

Three-Shift Work System

One of the key approaches was the implementation of a three-shift work system, ensuring continuous construction activities around the clock. This 24/7 operation not only maximized productivity but also significantly reduced the overall project timeline.

On-Site Workforce Accommodation

To accommodate the workforce efficiently, a dedicated on-site camp was established on Sindalah Island. This strategic move minimized transit times, allowing workers to remain on-site and focus on their tasks without the delays associated with daily commuting. The proximity of accommodation to the work site enhanced coordination and responsiveness, contributing to the project's swift progress.

Material Logistics Strategy

In terms of material logistics, a combination of marine and air freight solutions was employed to source and transport construction materials from various parts of the world. Given the island's location in the Red Sea, marine freight was utilized for bulk materials, leveraging the existing maritime infrastructure. For time-sensitive or critical components, air freight provided a faster alternative, ensuring that essential materials were available precisely when needed, thereby preventing potential delays.

Technological Integration

The project embraced cutting-edge technologies to enhance efficiency and precision. The use of Digital Twins allowed for real-time project visualization, enabling stakeholders to monitor progress and make informed decisions promptly. Additionally, 3D Building Information Modeling (BIM) facilitated meticulous planning and execution, reducing errors and optimizing resource allocation. Advanced laser scanning technology further improved accuracy in construction by capturing intricate details and creating accurate digital replicas of the project environment.

ESG Impact

Sustainability was a core consideration throughout the project. Energy-efficient designs were integrated to minimize environmental impact, and the use of recycled materials was prioritized wherever possible. Comprehensive waste management strategies were implemented to ensure responsible disposal and recycling practices, aligning with NEOM's commitment to environmental stewardship.

Environmental Impact

1. Minimized Carbon Footprint:

The adoption of off-site construction methods significantly reduced the environmental footprint of the project. Prefabrication and modular construction ensured that components were manufactured in controlled environments, leading to lower energy consumption and reduced emissions compared to traditional on-site construction.

2. Waste Reduction:

By fabricating materials off-site, the project minimized material waste through precision engineering and the reuse of surplus resources. This approach also eliminated the need for excessive on-site material storage, reducing the risk of spoilage and overuse.

3. Sustainable Materials:

Environmentally friendly materials such as Polycarbonate and Blue Moon Panels were utilized, enhancing the project's sustainability. These materials not only reduced resource depletion but also contributed to better energy efficiency in the final structures.

4. Optimized Logistics:

Centralized off-site production reduced transportation frequency to the remote Sindalah location, leading to lower fuel consumption and emissions. Consolidated deliveries and marine transport further streamlined logistics, supporting environmentally responsible practices.

Social Impact

1. Enhanced Worker Welfare:

The off-site approach improved worker safety and well-being by reducing the number of on-site laborers exposed to harsh weather conditions and construction hazards. Instead, workers operated in safer, climate-controlled environments during the prefabrication phase.

2. Skill Development:

The project created opportunities for workforce upskilling by employing advanced technologies and techniques in off-site facilities. Engineers and laborers gained valuable experience in modular construction, elevating their expertise and employability for future projects.

3. Community Engagement:

Sindalah's infrastructure prioritizes a high standard of living for its workforce through the Construction Village. This includes housing, recreational facilities, and healthcare services, showcasing the project's commitment to the social well-being of its employees.

Benefit Realization

Faster Construction Time

Offsite manufacturing of steel structure components allowed for parallel work, meaning components are built simultaneously, reducing overall project duration. This can translate to weeks or even months saved on a project timeline. To be specific, we have managed

to create an overlapped duration of three months between the onsite activities and the offsite activities, which means a total reduction of project duration by the same amount. As Sindalah is located in an area where winds dominate the weather conditions which directly impacted the work, if we constructed the project through traditional methods huge delay would have occurred.

Improved Cost Control

Offsite manufacturing often leads to better predictability due to reduced on-site variables and the ability to standardize components. This can result in lower overall project costs and reduced change orders. This benefit was realized through reduction in manpower onsite which consequently reduced direct and indirect cost for the project as the total number of manpower needed to install 20,000 tons of steel does not exceed 500 workers, while if we are using traditional methods at least triple this amount of workers would be needed.

Enhanced Quality and Precision

Manufacturing components in a controlled factory environment minimizes the impact of weather and other site-related factors, leading to higher quality and precision. This can reduce rework and defects, further contributing to cost savings.

Increased Safety

Offsite construction reduces the number of workers on-site, minimizing potential safety hazards and risks. Additionally, manufacturing in a controlled environment often has stricter safety protocols, further enhancing worker safety. At Sindalah, we managed to execute the super structure works without any injuries or accidents, this period lasted for more than 10 months.

Reduced Waste

Offsite manufacturing allows for more efficient use of materials, leading to less waste generation compared to traditional on-site construction. This is beneficial for both environmental sustainability and cost savings. Typical construction methods would have wasted at least 5 to 10% of the concrete being poured onsite, which was not the case in Sindalah as we have opted for prefabricated methods. This is a solid achievement for waste reduction.

Kindly download supporting documents: [Off-site Project of the Year](#)

- [BEC Arabia Corporate Deck](#)
- [Project Renders](#)
- [Project Images](#)



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