

SMART CITIES

RESILIENT CITIES CONNECTING DIGITAL WORLD



TRANSFORM YOUR CITY DIGITALLY

Making Your Cities Smarter - Our Smart Cities and Urban Infrastructure team is dedicated to making your city more sustainable and resilient while focusing on convenience, satisfaction, security, and seamless system integration.

Over the last 65 years, Meinhardt has become synonymous with trust, innovation and engineering excellence around the world. Our customers value our highly-build-able and sustainable solutions for complex projects that are commercially successful, save time and money.

Spanning developers, construction companies, government agencies, Multinational Corporations and NGOs, our customers from around the world count on our 5,000-strong global team in 51 offices to deliver projects to the highest quality. As a Group, we work with clients all over the world with diverse types of projects which include tall buildings, roads and highways, aviation, metros and railways, water, ports and power.

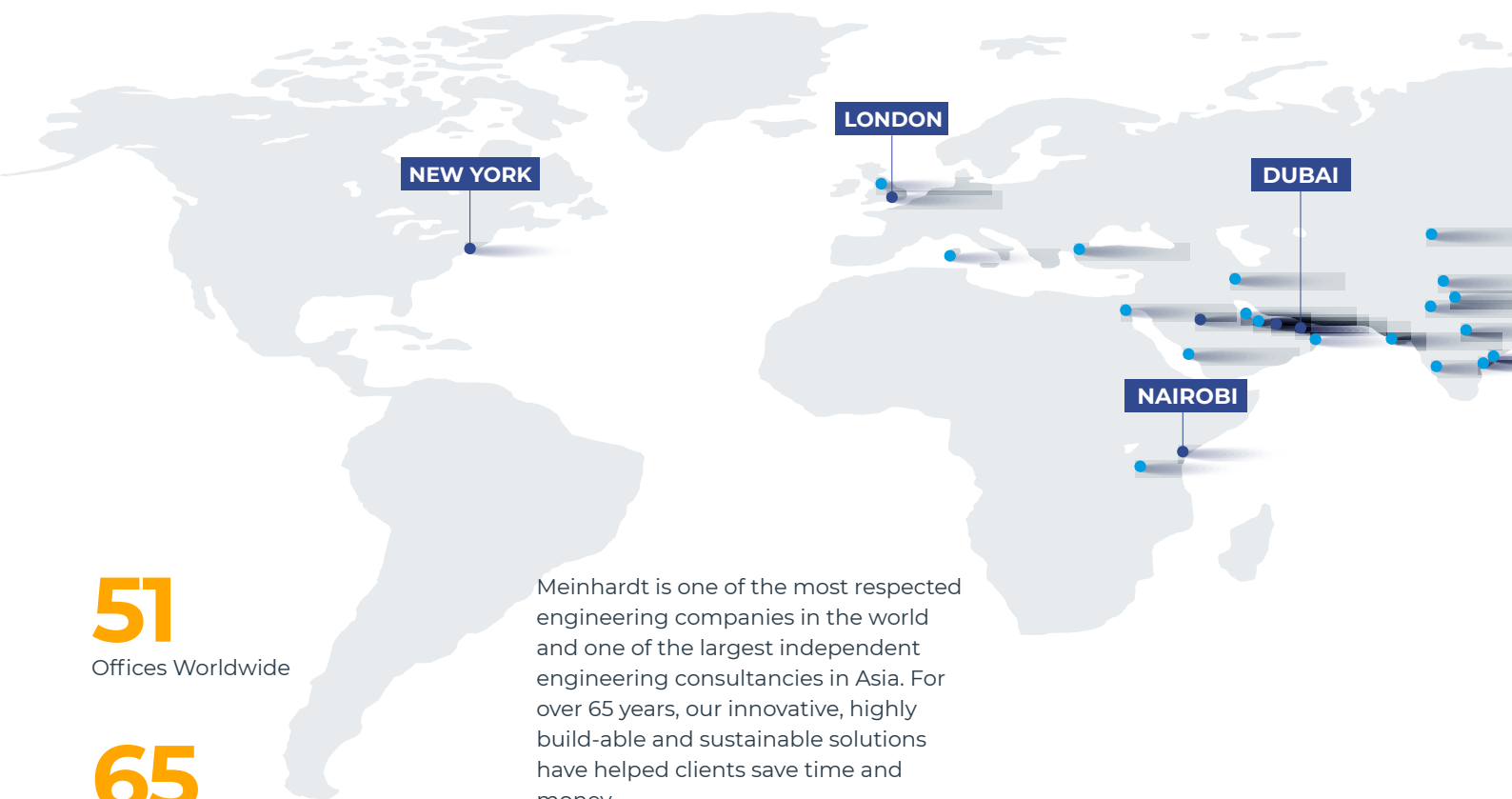
A global company with a personal touch, our professional staff believe in challenging the status quo and delivering quality work that consistently exceeds clients' expectations.

That is why more than 50% of them are repeat customers. With our Australian heritage, global headquarters in Singapore and proven track record in Asia, the Middle East & Europe since the 1970s, we blend the best of East & West in our thinking and management. We aspire to be the world's preferred infrastructure and urban solutions partner.



Be the world's preferred urban & infrastructure solutions provider deliver commercially successful, highly build-able, sustainable solutions exceeding clients' expectations.

GLOBAL FOOTPRINT



51

Offices Worldwide

65

Years Track Record

450+

Awards Globally

5,000+

Professionals

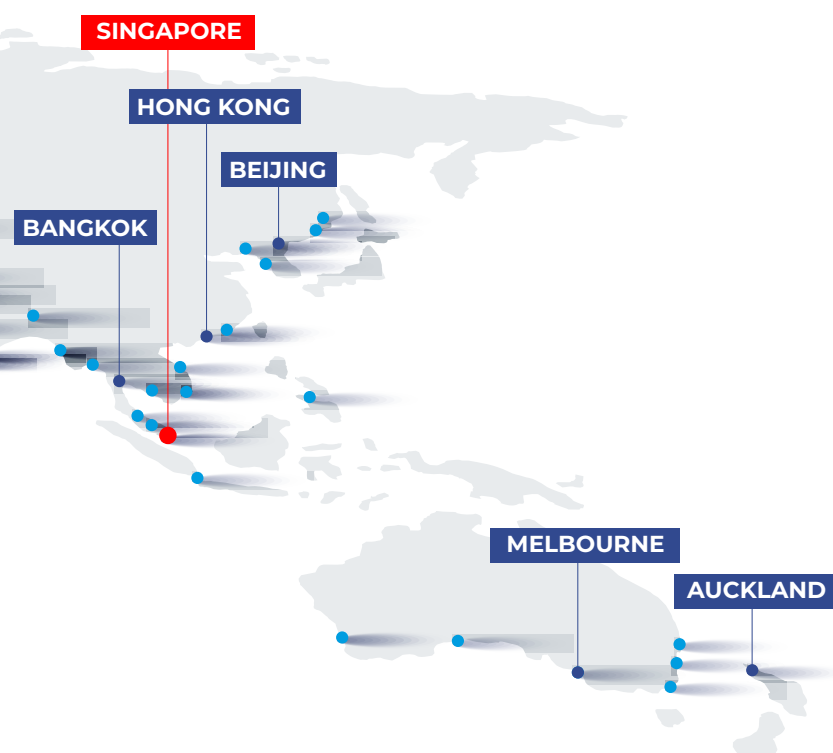
\$25B

Value of projects annually

Meinhardt is one of the most respected engineering companies in the world and one of the largest independent engineering consultancies in Asia. For over 65 years, our innovative, highly build-able and sustainable solutions have helped clients save time and money.

A global company with more than 51 offices, we help solve the world's most pressing infrastructure and urban challenges, while maintaining the personal touch. That is why more than half of our clients are repeat customers who have been with us for at least 10 years.

As a connected global city, business and financial hub, Singapore is Meinhardt's base for its internationalisation efforts. From Singapore, we have grown Meinhardt's global footprint into Asia and beyond. Many projects were undertaken with expertise from Singapore's global headquarters.



● HEAD OFFICE
● REGIONAL OFFICES
● OFFICES

GLOBAL AMBITIONS

As a connected global city, business and financial hub, Singapore is Meinhardt's base for its internationalisation efforts.

From Singapore, we have grown Meinhardt's global footprint into Asia and beyond. Many projects were undertaken with expertise from Singapore's global headquarters.

- ASSET MANAGEMENT
- BUSINESS PLANNING
- CIVIL & STRUCTURAL
- CONSTRUCTION & PROJECT MANAGEMENT
- DESIGN MANAGEMENT
- ENVIRONMENTALLY SUSTAINABLE
- EPCM
- FAÇADE ENGINEERING
- FIRE PERFORMANCE
- INFRASTRUCTURE PLANNING
- LEAD CONSULTANCY
- LIGHTING
- MECHANICAL, ELECTRICAL & PLUMBING
- TECHNICAL ADVISORY
- URBAN PLANNING
- VALUE ENGINEERING



**We aspire to be the
World's preferred
infrastructure and
urban solutions partner.**



ENGINEERING A GREEN FUTURE

Smart cities solutions are ever changing, there are no absolute definitions of smart cities, no end point, but rather a process by which cities become more **'LIVEABLE'** and resilient and, hence, able to respond quicker to new challenges.



Meinhardt operates Singapore's first and only Smart Cities Centre of Excellence by an engineering consultancy firm, promoting best practice solutions for integrated sustainable and future-proofed smart applications Meinhardt's Smart Cities Centre of Excellence offers best practice solutions and assists in developing new opportunities and technological options.

SMART CITIES CENTRE OF EXCELLENCE

FINANCIAL AND LEGAL STRUCTURES TO SUPPORT YOUR SMART CITIES INITIATIVES



INFRASTRUCTURE AND BUILDING OPERATIONS & MANAGEMENT PLANS, ASSET MANAGEMENT PLANS



SMART CITIES FEASIBILITY STUDIES AND SUSTAINABLE CITY CONCEPTS



CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL ENGINEERING CONCEPT AND DETAILED DESIGN & PROJECT MANAGEMENT



ENERGY ASSESSMENTS, ENVIRONMENTAL SUSTAINABLE DESIGN AND SMART CITIES DETAILED DESIGN



URBAN INFRASTRUCTURE MASTERPLANNING & DEVELOPMENT
INFRASTRUCTURE DEMAND ANALYSIS





OUR DIGITAL INFRASTRUCTURE SERVICES



01.
ICT &
Communication
Security



02.
Integrated
Operations



03.
Smart
Security &
Surveillance



04.
Platforms,
Dashboards
AR/VR



05.
Intelligent
Transport
Services



06.
Smart Energy
Management



07.
Smart Water
Management



08.
Smart
Sustainability and
Urban Resilience



09.
Organisation
Restructuring &
Branding



10.
Revenue &
Financial
Opportunities



DIGITAL TRANSFORMATION OF THE LARGEST AIRPORT CITY IN SOUTH ASIA

A “Smart Airport 4.0 in 2027 vision” achieved by integrating and upgrading all three terminals and 1327 acres of landside (including 295 acres of Aerocity development) into a Smart Airport city. The project is anchored on the strong principles of bridging digital divide between sectors, enhancing customer experience, integrating and achieving efficiency in operations, monitoring, control and optimization. It also focuses on smart utilities and asset management framework for energy, water and security management, climate resilience, and takes part in the Smart Green Initiative.

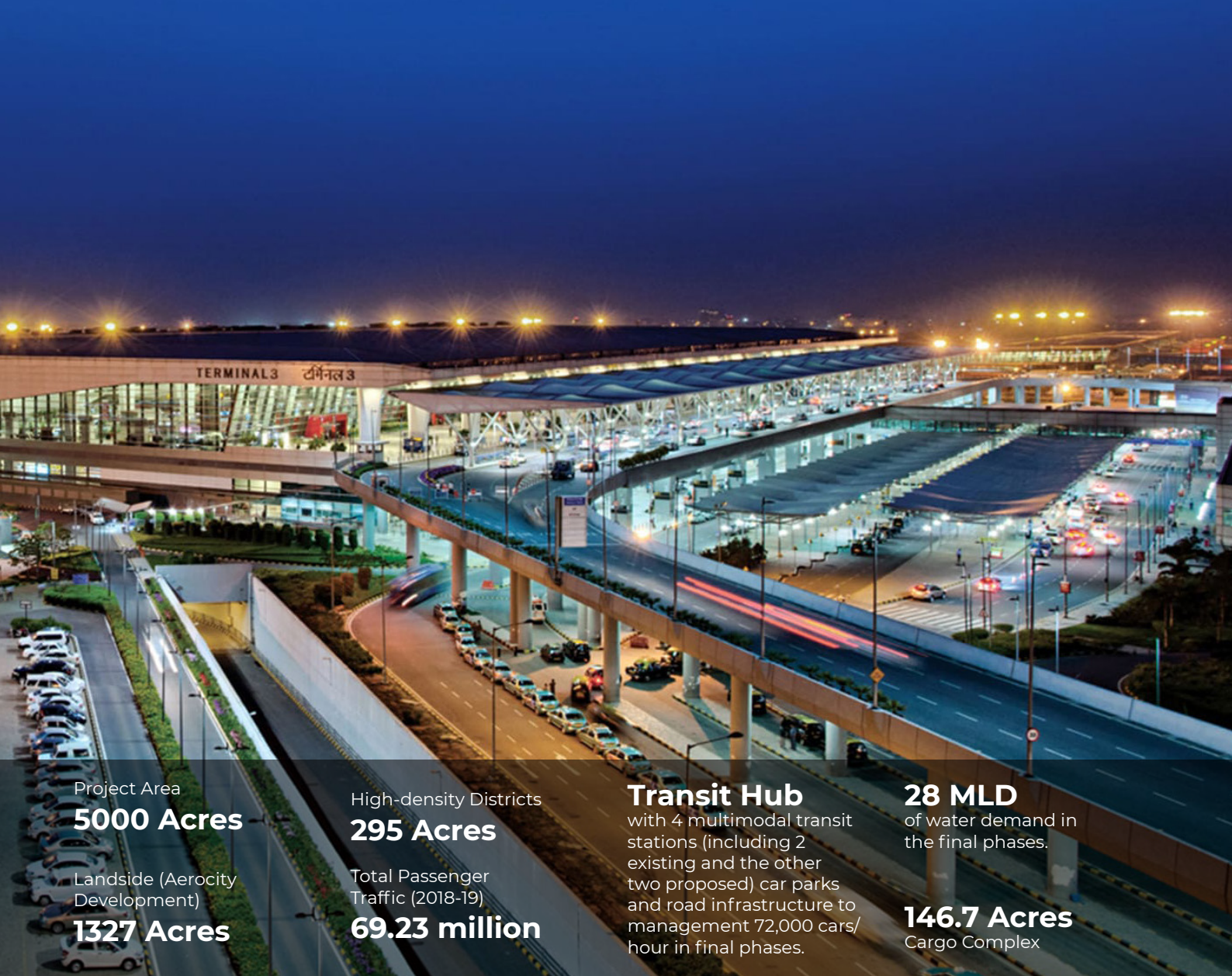
SERVICES PROVIDED:

Data-Driven Gap Assessment, Visioning Through Stakeholder Engagement and Consultative Workshops, Setting Macro & Micro KPIs, Organizational Restructuring, Identification of Revenue Opportunities, Detailed Implementation and Phasing Strategy, Technical Blueprint and Tender Document Preparation

After a careful review of the global smart cities standards which are under development, and digital transformation initiatives, Meinhardt worked towards a unique definition, vision, goals and objectives for the Smart Airport City 4.0.

The role of the integrated infrastructure and ICT team was to look at aspirational and accountable KPIs, various architectures (with a technical focus for implementation), and technical solutions for various areas such as transport, energy, environment, utilities and the APIs integration. This final aim was for large-scale implementation and interoperability.

Meinhardt conducted ground surveys, sector-wide gap assessment and strategic visioning workshops to formulate comprehensive technical blueprints and tender documents for the development of terminals and an integrated smart city. The blueprints detailed 2 to 6 years of phasing strategies with respect to the seven pillars of innovations in data and communication management, terminal and landside operations, traffic management, energy management, water management, security management, smart lighting and wayfinding, and smart environmental management. Furthermore, the scope covered:



Project Area

5000 Acres

Landside (Aerocity Development)

1327 Acres

High-density Districts

295 Acres

Total Passenger Traffic (2018-19)

69.23 million

Transit Hub

with 4 multimodal transit stations (including 2 existing and the other two proposed) car parks and road infrastructure to management 72,000 cars/hour in final phases.

28 MLD

of water demand in the final phases.

146.7 Acres

Cargo Complex

- Review of individual data input, overviews of departmental operations and standard operating procedures to draw up corresponding action plans.
- Review of existing Terminal and landside master plans, business operations, organizational structure and business processes.
- Understanding and tailoring the passenger's journey from landside to terminal side and working towards the aspirations of Gen X.
- Gap Assessment on the smart city parameters and forming a unique scoring system.
- Visioning, strategy, goals and development of micro & macro KPIs.
- Review of existing SOPs and upgrading to improve response time and customer experience.
- Development of sector specific solutions for security surveillance (including detailed TVRA), intelligent transportation system (MaaS), water and wastewater management, drainage, urban resilience and sustainability, smart grid, data communications and terminal and landside operations management. Each pillar was deliberated in depth for various phases based on the following parameters
 - Supported Protocols
 - Available Technologies
 - Software Requirements
 - Hardware Requirements
 - Datasets
 - Regulatory Requirements
 - Privacy & Security Requirements
 - Capital Cost & Lifecycle Cost
 - Targeted Timeframe for Implementation.
- Development of implementation framework, cost benefit analysis and phasing strategy
- Development of 8 dashboards and Integrated Super App
- Digital Twin and AR/VR development
- Development of Tender document and tendering support.

- **100mil** passengers (2034)
- **12** multi-sectoral departments
- **08** pillars
- **01** Digital Blueprint
- **01** Tender document
- **77** Technology Solutions
- **18** months of Dedicated Engagement



DIGITAL STRATEGY @ NEOM INTERNATIONAL AIRPORT

NEOM, KINGDOM OF SAUDI ARABIA

PROJECT AREA

Confidential

CLIENT

NEOM Company

COMPLETION STATUS

On-Going

Meinhardt provided Digital Airport Operations, Digital Airport Customer Experience and Digital Airport Infrastructure.

“Live and shape the future of air mobility through a seamless and customer-centric connectivity, rooted in cutting-edge technology”.

NEOM will offer a fully integrated, seamless and personalized end-to-end passenger experience by 2028.

NEOM International Airport is set to be the gateway to the futuristic city of NEOM; it is positioned as a key node in global production and enterprise systems, offering speed, agility and connectivity, becoming a powerful engine of local economic development, attracting aviation-linked businesses of all types to their environs.

A new airline owned by NEOM Company is envisioned and will be based at NEOM International Airport. It will support the local traffic development and will take advantage of the centralized location of the city to provide a broad network and transfer possibilities for all passengers in the long term.

The Airport shall embrace the Digital concept through a strong ecosystem and aims to provide a deeply integrated offer for all Airport actors.

Meinhardt has been appointed to define a roadmap to achieve a fully digitized NEOM international airport by 2028. Meinhardt's Digital Strategy scope includes the following:

1. Develop a digital intent to drive growth and efficiency
2. Define digitalization targets for each selected segment, namely Digital Airport Operations, Digital Airport Customer Experience and Digital Airport Infrastructure:
3. Study a high-level business case and assess its viability
4. Road Map—identify all actions, stakeholders, risks and related timeline required to achieve the strategy defined



SMART AEROCITY MASTER PLAN & INFRASTRUCTURE DESIGN

DELHI INTERNATIONAL AIRPORT
INDIA

PROJECT AREA

295 Acres

CLIENT

Confidential

COMPLETION STATUS

Completed in 2020

Meinhardt provided Infrastructure Masterplan, Traffic Planning, Civil, Electrical Engineering, Water and Wastewater Systems, Security & IT and Smart City Framework

The Vision for Delhi Aerocity is to develop it as a “Safe, Smart and Sustainable Commercial District” providing highly connected and interactive urban precincts for the socio-economic growth of the Airport community. The 295-acre Smart Aerocity comprises three primary districts - Hospitality District, Gateway District and Terminal District and three sub-districts, namely City Centre, North Park and South Park. Meinhardt was instrumental in integrating smart city initiatives and state-of-the-art engineering solutions in the infrastructure master plan of the Smart Aerocity. Meinhardt provided the conceptual infrastructure planning and costing covering the following aspects.

- Smart City Planning & design
- Intelligent Transportation System design
- Smart Security Planning
- Feasibility of Electric Buses for Public mobility
- Feasibility of Centralised Utility Corridor
- Feasibility of Pneumatic waste management and planning for integrated solid waste management
- Feasibility of District Cooling
- Multi modal transport planning and Traffic Impact Assessment

Infrastructure Planning & Design Scope

- Site Grading, Cut & Fill Analysis
- Water Supply & Wastewater Treatment
- Fire-Fighting Systems
- Sewage Collection, Treatment Plants & Reuse Of Treated Water
- Stormwater Management & Flood Mitigation
- Rainwater Harvesting
- Irrigation System
- Gas Supply
- High Voltage & Low Voltage Power Supply
- Street & Road Lighting
- Central Utility Energy Plants & Associate Infrastructure
- Common Services Reticulation
- Cooling & Centralized Energy Systems
- Solar Energy
- Waste Management System



WATER-BASED ENTERTAINMENT DISTRICT CONFIDENTIAL

JEDDAH, SAUDI ARABIA

PROJECT AREA

3335.92 acres

CLIENT

Qiddiyah

COMPLETION STATUS

On-Going 2021

Meinhardt provided Concept master plan development for Mobility and Connectivity, Sustainable Infrastructure and Utilities Planning, Sustainability and Environmental Strategy

Situated on a natural Red Sea promontory one hour north of Jeddah. This new 13.5 km² development will set a global benchmark for water-based entertainment. With 8 km of turquoise blue coastline, sandy beaches, lagoons, and mangroves, The Water-based Entertainment District will combine state-of-the-art water parks and attractions with a full range of leisure, adventure, and eco-based tourism activities, creating a destination of unparalleled and world-class appeal for both domestic and international visitors. It will be supported by a complete offering across hospitality, retail, and F&B, plus extensive residential options aimed at creating a 'coastal community' of weekend retreats and second homes.

Meinhardt has been appointed to provide Concept Master Plan Consultancy Support for this prestigious competition in Kingdom of Saudi Arabia. Meinhardt team with its smart city team at SUIT and integrated infrastructure, traffic and transportation team (transport planners, Road Engineers, Simulation experts, Civil Engineers) is working together for the Concept Master Plan.

Meinhardt's Smart City Strategy includes:

- Existing engineering information review and query
- Explore the site internal and external transportation framework (mobility story)
- Key sustainability design and planning principles
- Green infrastructure, ecology, and landscape
- Guidance on internal water system from environment perspective
- Sustainable initiatives in the use of renewable energy, waste management solutions, installation of shading devices, irrigation and use of water.
- Estimation of energy consumption based on project-wide development programmes;
- Smart utilities framework for energy, potable water, wastewater treatment, solid waste, data and communications.
- Multi-service infrastructure such as common utility ducts
- Local prototypical park irrigation system.
- Integrated community safety and security technologies
- Future ready city strategy



NEW JEDDAH DOWNTOWN

JEDDAH, SAUDI ARABIA
COMPETITION (WON)

PROJECT AREA

1236 Acres

CLIENT

Confidential

COMPLETION STATUS

Completed in Sept 2020

Meinhardt provided sustainable Infrastructure Master planning & Smart City Vision Study

Designing for a Smart and Sustainable Environment in Jeddah

- Green Infrastructure supporting active lifestyle, outdoor comfort, smart energy and water sensitive urban design.
- Smart environment built with smart utilities, smart sensors and smart urban furniture.
- Smart Buildings offering smart façade and sustainable building materials.

Anchored on the vision to create a healthy and resilient city focusing on climate change adaptation across actions and reduction of greenhouse emissions through sustainable infrastructure practices.

Integrated urban infrastructure systems: wastes from one process are seen as fuel for another - integration of energy, solid waste, transportation and sewage systems.

Smart city technologies creating opportunities for collaboration – smart transportation, smart energy grids, smart waste and water management systems.

A unique mixed-use waterfront corniche development with a 5 million square meter development site,

the project aims to create a unique and attractive environment to support Jeddah's ambition of becoming one of the world's top 100 cities. The prestigious project is part of the Jeddah's Program to transform and revitalize its downtown; An initiative to create an iconic mixed-use waterfront area that includes museums, shopping districts, commercial areas, parks, resorts, central innovation area, beaches and residential areas.

Meinhardt's Smart City Strategy includes:

- sustainable initiatives in the use of renewable energy, waste management solutions, installation of shading devices, irrigation and use of water.
- estimation of energy consumption based on project-wide development programmes;
- smart utilities framework for energy, potable water, wastewater treatment, solid waste, data and communications.
- Multi-service infrastructure such as common utility ducts
- local prototypical park irrigation system.
- integrated community safety and security technologies
- smart city operation management strategy and IOT integration



NEOM SILVER BEACH

NEOM CITY,
SAUDI ARABIA

PROJECT AREA

111.20 Acres

CLIENT

T.R. Hamzah & Yeang Sdn
Bhd

COMPLETION STATUS

Completed in Sept 2019

Meinhardt provided Infrastructure Master planning & Smart City Vision Study

NEOM will be the first independent special zone within the Kingdom of Saudi Arabia. It encompasses a total area of 26,500 km² and it is projected to emerge as a leading global hub that exemplifies the future of human civilization by offering its inhabitants an idyllic lifestyle combined with exceptional economic prospects. It will be at the forefront of digital transformation. The region will be powered by 100% renewable energy, primarily by a combination of solar and wind energy generation.

The targeted economic sectors encompass a wide range of advanced technology, research and 'high-value' businesses, including: Energy, Water, Mobility, Biotech, Food, Advanced Manufacturing, Media, Entertainment, Technology & Digital sciences.

The 45 sq.km Silver Beach will be a mixed-use development with appealing street and public space design that facilitates pedestrian movement, outdoor living, and the intensive use of public space.

Meinhardt provided Sustainable infrastructure Planning and Smart City Strategies including:

- Smart Energy solutions
- Smart Water & Wastewater Management solutions
- Smart Mobility solutions
- Smart Infrastructure Management solutions
- Resilient Structures



MAKKAH CITY CONCEPT MASTERPLAN

MAKKAH,
SAUDI ARABIA

PROJECT AREA

Confidential

CLIENT

Royal Commission for
Makkah City and Holy
Sites (RCMC)

COMPLETION STATUS

Completed in 2020

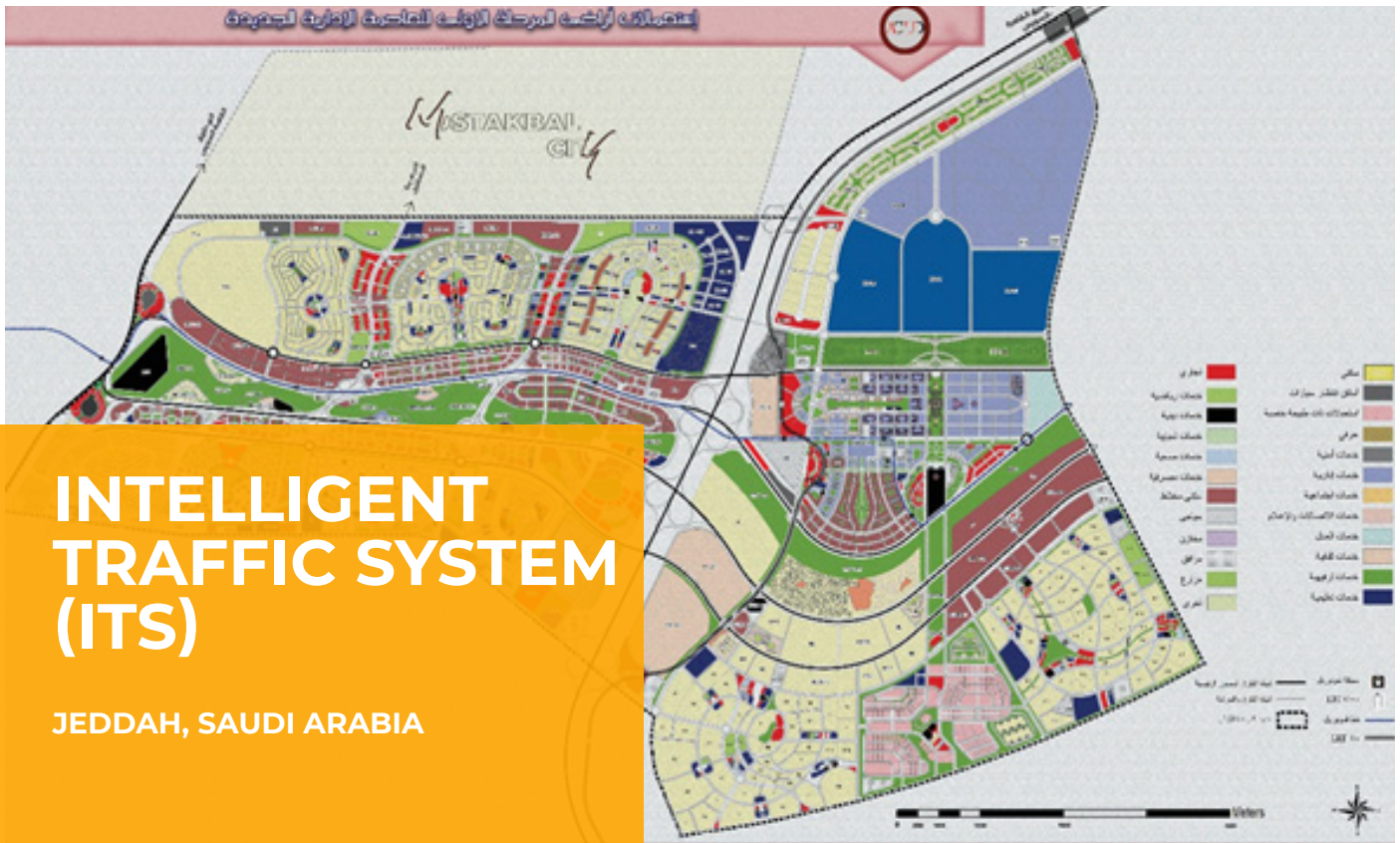
Meinhardt provided Infrastructure Master planning & Smart City Vision Study

The Concept Master Plan is to establish and define the long-term (50 years) strategic land use, development intensity, transportation and infrastructural needs to meet the aspirations of the Saudi Vision 2030 and Makkah City's Strategic Direction taking into consideration the need to preserve Makkah City's unique positioning to bring out its distinctive character as a City for Worship, Work, and Living.

The Concept Master Plan will provide the macro land use, intensity and mobility parameters to guide the preparation of the Land Use Master Plan, based on the population and economic projections.

Meinhardt provided Integrated infrastructure design and Smart City Strategy including:

- Smart Energy
- Smart Water & Wastewater Management
- Smart Mobility
- Smart Infrastructure Management
- Smart Security Strategy



PROJECT AREA

40,000 acres

CLIENT

Administrative Company
for Urban Development /
GIZA SYSTEMS

COMPLETION STATUS

On-Going 2021

Meinhardt provided Urban development, Civil and Traffic System Management.

Meinhardt has been appointed to provide Pre-Tender Consultancy Support for Implementation of Intelligent Traffic System (ITS) for the Administrative Capital for Urban Development, Egypt. Meinhardt team with its smart city team at SUIT and integrated infrastructure, traffic and transportation team (transport planners, Road Engineers, Simulation experts, Civil Engineers and ITS experts) is working together for Technical Bid submission requirements for Proposed Solution including:

- Technical Proposal for Update of Traffic Master Plan for New Administrative Capital (Phase 1- 40,000 feddan) and Existing Traffic Study for Priority Phase Immediate ITS Deployment Area (Priority Phase 10,000 feddan)
- Technical Proposal for ITS Plan for Priority Phase Immediate ITS Deployment Area
- Technical Design Offer for ITS Deployments at New Administrative Capital (Phase 1)
 - Proposed ITS services
 - ITS Deployment Plan
 - System architecture for proposed systems

- Technical Design and Build Offer for Priority Phase Immediate ITS Deployment Area
 - Overall specifications of proposed Priority Phase immediate deployment area systems Including data sheets of systems and equipment packages.
 - ITS Deployment Plan for proposed systems, including locations and proposed assembly points
 - ITS System Architecture of proposed solution (organizational, logical, functional, physical and communication)
 - International standards and protocols used
 - Concept of operations
 - Testing Strategy
 - Service and maintenance strategy
 - Training and capacity building strategy
 - Complete technical submittal including requirements, design, and data sheets for all provided systems and equipment packages.
 - Detail design submittals per unit deployment of all immediate Priority Phase ITS deployment packages from field equipment level till proposed assembly points.
 - POC design proposed to be demonstrated as part of bidding process.
 - Project Management Plan.
 - xiii. Detailed BOQ for Priority Phase immediate deployment implementation.



ENERGY EFFICIENT SOLUTIONS CONFIDENTIAL CIVIL HUB

SINGAPORE

PROJECT AREA

22.24 Acres

CLIENT

Confidential

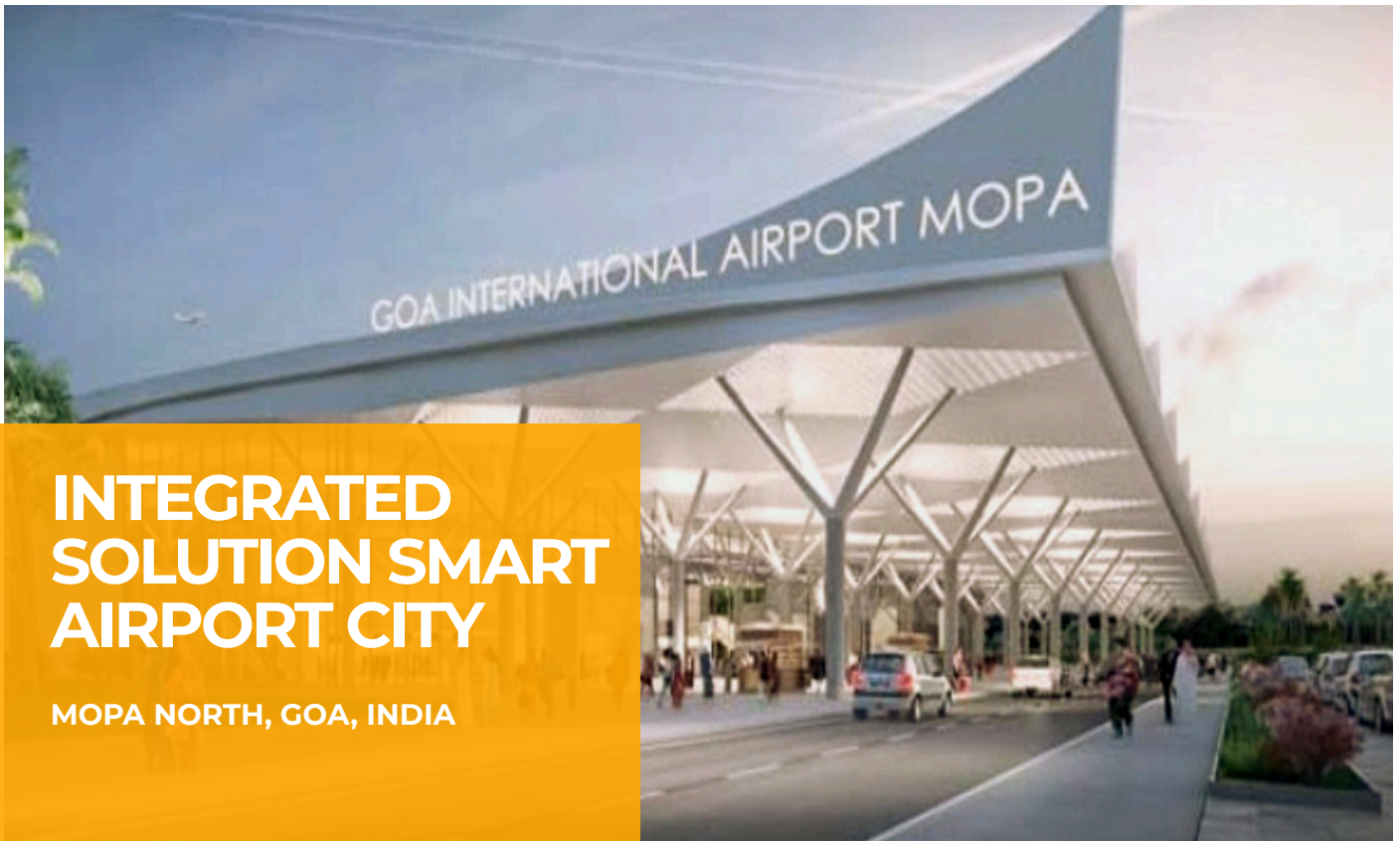
COMPLETION STATUS

On-Going 2023

Meinhardt provided Civil, Structural, Geotechnical and MEP Engineering.

The confidential civil hub, occupying a land area of about nine hectares, will centralise various services, such as registration and administration, medical services, recruitment, and fitness test facilities, in an easily accessible location opposite Cashew MRT station.

The confidential civil hub will adopt the use of renewable energy and energy-efficient solutions, such as shading devices and solar panels, to reduce energy consumption, utility costs and carbon footprint. The confidential civil hub aims to attain the Building and Construction Authority (BCA)'s Green Mark Platinum (Super Low Energy) Award and to be among the top 10% of energy-efficient buildings in Singapore.



INTEGRATED SOLUTION SMART AIRPORT CITY

MOPA NORTH, GOA, INDIA

PROJECT AREA

2093 Acres

CLIENT

Confidential

COMPLETION STATUS

On-Going

Meinhardt provided Site Assessment and Benchmarking, Infrastructure Masterplan assessment, Project Visioning and Goals Setting, Formulating Digital Blueprint and KPIs, Tender Support across 5 pillars: ICT, Integrated Airport Operations, Transportation and Mobility, Security and Surveillance, Integrated Infrastructure (Water, Waste Water, Waste Management, Energy and Sustainability).

Client is developing the greenfield airport at Mopa in North Goa. This project is based on the PPP model, on DBFOT basis. The concession to develop, operate and manage the airport. The concession agreement was signed between airport management and the Goa Government on November 8, 2016. The concession period is for 40 years and it will be a full-service airport catering to domestic and international passenger besides freight services. In the Phase 1 the expected traffic forecast is 4.4 MPPA ramping up to 13.1 by Phase 4 and planned for an ultimate capacity of 40 MPPA.

Project focus is to outline a Digital Blueprint to transform Goa airport into a future, smart, secure, and sustainable airport by leveraging the power of data and emerging technology.

Meinhardt's scope of work for smart airport city in Goa will focus on following comprises of offices, retail, commercial development with hotels and exhibition centre. The total built up area is around 30 million sq.ft. with an expected workforce of 0.4 million. The scope includes conceptual master planning and schematic design for the following services:

- Integrated Communications Technology
- Integrated Airport Operations,
- Transportation and Mobility,
- Security and Surveillance,
- Integrated Infrastructure (Water, Waste Water, Waste Management, Energy and Sustainability)

Also, the strategy for the Airport focuses on the Smart Terminal and Airside Operations and a long term robust smart city strategy for infrastructure and real estate management at the landside.



HAMAD INTERNATIONAL AIRPORT EXPANSION

DOHA, QATAR

PROJECT AREA

133 Acres

CLIENT

Hamad International Airport
Expansion Project Steering
Committee (HIAEPSC)

COMPLETION STATUS

On-Going

Meinhardt provided Lead Consultancy, Architecture, Civil, Structural, MEP, Façade and other specialist engineering, PM/CM

The new Doha International Airport's Passenger Terminal Expansion Project (PTCE) will bring this annual capacity from 24 million to 53 million passengers per year. Meinhardt is providing engineering design services for 3-storey terminal building expansion, concourse D&E, expansion of baggage handling, terminal metro station, substructure for future connection to satellite terminal, underground services tunnel and utilities. Total area of 537,259 sqm.



PETRONAS LEADERSHIP CENTRE (NEW CAMPUS)

SELANGOR,
MALAYSIA

PROJECT AREA

34.08 acres

CLIENT

PETRONAS Malaysia

COMPLETION STATUS

Completed in 2020

Meinhardt provided Peer review of lake system and associated water treatment facilities.

The Petronas Leadership Centre (PLC) is designed as a new Learning Facility for PETRONAS, aligned with the latest international practices and standards. It is designed as a 'decompression zone' for participants, providing a very welcoming and conducive environment for future-thinking and learning.

Bounded by a large water feature, the Learning Center includes facilities for Classrooms, Cooking Classrooms, Conference Hall, Religious Space, Fitness Room, Residential Facilities and covered parking. This building is designed with a target of LEED Platinum rating. The Petronas Leadership Centre (PLC) will create a serene peaceful ambiance within the new campus for the occupants through a clean and clear flowing lake that spreads through the building and within the compound.

Meinhardt has been engaged on the prestigious project of Petronas New Campus development for Peer Review of Lake System and associated water treatment systems.

The main objective of this study is to review the concept design and provide the recommendations in terms of design & operational optimization. The project has been planned and designed by Minconsult SDN. BHD., and the project review covers the following two aspects:

- Lake system; and
- Water filtration system.



JANWADA ONE INFRASTRUCTURE MASTER PLAN

HYDERABAD, INDIA

PROJECT AREA

154.44 Acres

CLIENT

FHD Group

COMPLETION STATUS

On-Going

Meinhardt provided Road Network Design, Power & Energy, Water, Wastewater & Drainage, ICT & Telecom, Security & Surveillance, Solid Waste Management.

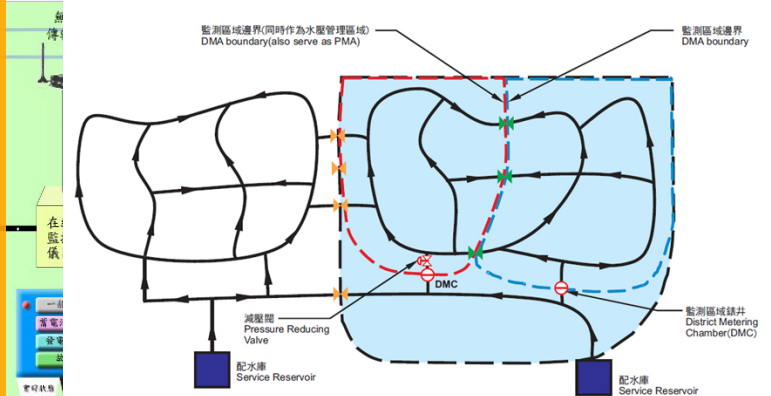
The Janwada One Concept Infrastructure Masterplan aims to establish a durable and self-sustained farming oriented residential community in Janwada, Hyderabad province, India. The integrated proposed infrastructure solutions for Janwada feature both water sensitive urban design, common service utility tunnel combined with enhanced pedestrian sidewalks, and public realm including smart furnitures (smart poles, smart bins, kinetic energy footpath, eco-friendly urban furniture, solar powered street lighting, smart wayfinding, etc.)

The Concept Infrastructure Materplan promotes both active pedestrian realm comprising an inclusive set smart and sustainable components enhancing users' experience (both residents and visitors) at Janwada One.



IMPLEMENTATION OF WATER INTELLIGENT NETWORK (WIN)

YUEN LONG AND SHEUNG SHUI HONG KONG



CLIENT

Water Supplies Department (WSD)

COMPLETION STATUS

On-Going 2024

Meinhardt provided Lead Consultant & The Engineer, Civil & Traffic, Geotechnical, Contract Strategy, Environmental, Systematic Risk Management

Meinhardt is commissioned by WSD in December 2016 to implement the water intelligent network which will facilitate WSD to strategically implement condition survey and rehabilitation works of existing WSD's assets in Yuen Long and Sheung Shui & Fanling Major Supply Zones upon completion of the District Metering Areas and Pressure Management Areas in the districts. The project commenced in December 2016 for completion in July 2024.



NUR SULTAN FAMILY ENTERTAINMENT DISTRICT

KAZAKHSTAN

PROJECT AREA

914.29 Acres

CLIENT

Ellington Group Kaz Ltd.

COMPLETION STATUS

Completed 2020

Meinhardt provided Pre-concept, Concept, and Detailed Master Planning

Meinhardt has been commissioned by Ellington Properties to undertake conceptual infrastructural planning for a 370 Ha. site in capital city Nur Sultan, Kazakhstan.

The land is owned by Ellington Properties, who is the main client. CRTKL has been appointed by Ellington Properties as chief master planners of this project and will be working in close conjunction with Meinhardt for infrastructure inputs.

The infrastructure planning has been carried out in close liaison with CRTKL by taking into consideration current international practices and sustainability.

Scope of Works:

- Transportation and traffic planning
- Potable and firefighting water system
- Hydrology and drainage system
- Storm water drainage system
- Power distribution and supply system
- Street lighting system
- Gas supply
- District heating plan
- Solid waste management



AUTOMATED PEOPLE MOVER SYSTEM FOR DELHI AIRPORT

DELHI, INDIA

PROJECT AREA

1730 Acres

CLIENT

Delhi International
Airport Limited (DIAL)

COMPLETION STATUS

Completed May 2020

Meinhardt provided Technical Feasibility Study for T1 – T3, Traffic demand forecast, Alignment planning, Technology Evaluation, System/rolling stock, Operation planning, Depot and station location and planning

The Indira Gandhi International Airport (IGIA), is the largest airport in India. It is the busiest airport in India with 15% CAGR in past 5 years and is expected to reach 100 million total PAX in the next 5 years. With increasing passenger demand, the inter-terminal transfer traffic has also been increasing by 20% CAGR and is expected to cross the 20 million mark by 2024. To cater to this growing demand at IGI Airport, the current expansion project is underway to augment the required airport infrastructural capacity to handle forecasted passengers. The two main terminals – International and Domestic – are approximately 7 km away from each other. APM, part of the airport expansion, is planned as an inter-terminal transportation system connecting the different Terminals - International (T3), Domestic (T1 and T4) and Cargo Terminal – with the following key objectives:

- Contribute to the improvement of connectivity between the airport terminals.
- Provide smooth passenger transfer between international and domestic flights operating from different terminals.
- Improvement of the level of service of the airport; and Alleviate traffic congestion around the airport



BINTAN BEACH INTERNATIONAL RESORT

BINTAN, INDONESIA

PROJECT AREA

56834 Acres

CLIENT

Bintan Resort
Management Pte Ltd

COMPLETION STATUS

Completed in 1997

Meinhardt provided Infrastructure (Investigation, detailed design and principal consultancy for stormwater, hydraulics and hydrology.)

The 23,000 Ha Bintan Beach International Resort is a “mega-resort”, about 1/3 the size of Singapore is tailored as a ‘Tax Free Zone (TFZ)’ for resort and resort related industries. The aim is to attract tourism investors and promote tourism to this largely untouched island. This will also help generate economic activity to the island. Some international renowned tourism players already operating on the island includes Club Med, Sofitel, Banyan Tree Resort and Sedona.

Meinhardt (Singapore) were the Infrastructure Consultants for the 23,000 Ha Bintan Beach International Resort. The infrastructure includes earthworks, transportation, roads, water supply (potable & non-potable), sewerage, stormwater, power and telecommunications. Our scope includes audit of existing site capability and constraints, infrastructure demand projection and proposals, technical and financial feasibility review of options, phasing requirements and recommendations.

Our scope also included the management of all survey (photogrammetry, GPS and tidal) and geotechnical works on site. Construction for the Phase I Infrastructure comprising of roadworks, dam and water supply network, power & telecommunication distribution network had been completed. As part of the development requirement, individual investors are required to provide sewerage and sewage treatment facility within the site.

Key Features:

- 1st development in Indonesia using Singapore First Class Infrastructure Standard
- 35KM roads, dam, water reservoirs, WTP, STPs, 24 MW power plant
- Recycled effluent is put to use for irrigation Low impact development



FORT BONIFACIO GLOBAL CITY

MANILA, PHILIPPINES

PROJECT AREA:

593.1 acres

CLIENT

Fort Bonifacio
Development
Corporation

COMPLETION STATUS

Completed in 2021

Meinhardt provided Infrastructure Masterplanning

Meinhardt is responsible for the coordination of all civil engineering, infrastructure and utilities for the Fort Bonifacio Global City. This service includes the design and contract management of significant engineering packages and advising on construction and staging strategies to suit the overall city development. Also within our scope is the development and maintenance of a state of the art Geographic Information System to facilitate detailed design coordination and ultimately city operations and asset management.



PROJECT X AI DATA CENTRE

SOUTH-EAST ASIA

CLIENT

Confidential

COMPLETION STATUS

Completed in 2021

Meinhardt provided Lead Consultancy

The Facility will be one of the AI Supercomputing nodes in the Region.

The Facility is designed to be energy efficient with sustainable features for operation and maintenance over its lifecycle.

Smart data analytic components together with

artificial intelligence models are deployed with a developed Digital Twin in the Facility.



TELIN DATA CENTRE

SINGAPORE

CLIENT

Telekomunikasi
Indonesia International
Pte Ltd (Telin Singapore)

COMPLETION STATUS

Completed in 2016

AWARDS:

BCA Green Mark –
Platinum 2017

Meinhardt provided Lead Consultancy, C&S, MEP Engineering, ESD, Security & TVRA, Blast Effect, Standard OPS and Emergency Procedure, Tier III and IV Design Consultant

A new build single tenant data centre with a gross floor area of 20,000 sqm. The 5-storey data centre was designed and built to meet Uptime Institute's Tier 3 and Tier 4 standards incorporating a multi-tier design with the flexibility to meet the desired operational requirements.

KEY ATTRIBUTES

- PUE: 1.5
- IT Power: 15.75 MW
- Sustainability Rating: Green Mark Platinum
- UTI Rating: Tier III & Tier IV Co-Certified

KEY SYSTEMS DESIGN

- Concurrently maintainable at Tier III and Tier IV (fault tolerant)
- Cooling systems: N+1 and 2N cooling towers with dual make-up water supply, Extensive chilled water and fuel leakage detection systems
- Electrical Systems: N+1 and 2N active supply paths to critical load, 2N active supply paths to all IT racks



NTT JKT3 DATA CENTRE

INDONESIA

CLIENT

NTT Communications Corporation

COMPLETION STATUS

Completed in 2021

Meinhardt provided MEP Engineering

NTT Communications Corporation (NTT Com) announced recently it would develop a new data centre campus at Bekasi, Indonesia. The new campus will be known as “Indonesia Jakarta 3 Data Centre” (JKT3) and is capable of up to 18,000 sqm (7,800 racks) IT space and 45MW IT load once fully developed. This is the first project of NTT Global Data Centres (GDC), established to strengthen data centre business.

Phase 1 GFA 27,500 sqm to cover Phase 1 Data Hall, Offices, Utility space and amenities.

This four storey Data Centre campus will offer customers reliability through full redundancy for power facilities for data centres, power supplies for air conditioning and security as well as communications and served from 2 power sources.

All systems are monitored 24/7/365 for complete customer peace of mind. When completed this will be the largest Data Centre Campus in Indonesia.



SPACE DC JAK 1 & JAK 2 DATA CENTRE

JAKARTA, INDONESIA

CLIENT

Space DC

COMPLETION STATUS

On-Going 2022 (JAK 1) &
2021 (JAK 2)

Meinhardt provided C&S Engineering

JAK 1 is 26,000 sqm data centre facility in Jakarta with a 24MW IT load and network rich connectivity, is ideal for companies looking for a secure and resilient hyperscale facility in Jakarta. With the option for customized data

halls, customers have the flexibility to create an ecosystem that suits their business needs. Designed to meet energy performance and sustainability objectives, JAK1 aims to be the first LEED platinum rated data centre of its kind in the country.

JAK 2 is located in Daan Mogot , Jakarta with a 1.45MW III Facility. With N+N redundancy and eight layers of physical security, JAK2 is the perfect data centre for colocation and wholesale customers looking to grow their Indonesian data footprint.

KEY ATTRIBUTES

Annualized PUE: 1.3

IT Power: 24 MW (JAK 1) & 1.45 (JAK 2)

Sustainability Rating: LEED Platinum

UTI Rating: Tier III



GLOBAL SWITCH DATA CENTRE

HONG KONG

CLIENT

Global Switch

COMPLETION STATUS

Completed in 2019

Meinhardt provided C&S and Geotech Engineering

Meinhardt is provided civil, structural and geotechnical consultancy services for a design and build Tier 4 data centre in Hong Kong.

The centre has a GFA approx. 55,000m² on 5 levels plus a roof. The building will be built in three phases.

RSE services for superstructure works and also substructure and associated ELS works for provision of 7 nos. 60000L underground fuel storage tanks in form of RC structures underneath the EVA.



GREENWICH PENINSULA

LONDON, UNITED KINGDOM

PROJECT AREA

150 acres

CLIENT

Knight Dragon

COMPLETION STATUS

On-Going 2030

Meinhardt provided Civil, Structural, Building Services, Facade

The Greenwich Peninsula is undergoing a major redevelopment and is the largest planning application submitted in Europe.

The project will expand over 25 years and will provide a mix of residential, commercial, retail, leisure,

entertainment, casino, hotels, parks & green space areas. Some Key Features include:

- New transport interchange with a hub building, built above the largest underground station in Europe
- 5 districts of tall buildings up to 41 storeys in height
- Incorporation of new Silvertown crossing
- Sitewide energy strategy
- Fast track approvals from government agencies

We helped to reduce the project's carbon footprint by more than 35%.

DIGITAL INFRASTRUCTURE SERVICES

SMART ENERGY MANAGEMENT

- Smart Grid
- Micro Grid
- Renewable Energy Integration
- EV Infrastructure & Grid Integration
- Smart Charging
- Smart Buildings

SMART SECURITY & SURVEILLANCE

- Security Management
- Emergency/ VIP Security management
- Perimeter & property & asset security management
- Cyber Security

REVENUE & FINANCIAL OPPORTUNITIES

- Revenue Potentials
- Return on Investments
- Business Case
- Sewage Treatment System

INTELLIGENT INFRASTRUCTURE

- Roads Network Design
- Water Demand & Network Design
- Wastewater Generation & Network Design
- Electrical Demand & Network
- ICT & Telecom Network Design
- Common Utility Ducts
- Solid Waste Management
- Airports - Airfield Planning
- Airfield & Road Networks 2D/3D Geometry, Grading, Markings & Signage
- Apron Design & Simulations

INTELLIGENT TRANSPORT & TRANSPORT PLANNING

- Realtime Information Management Platform
- Accessibility & Mobility
- Multi-Modal Solutions /Traffic Management Systems
- Electronic Road pricing & revenue generation
- Car Park management
- Transit Oriented Developments & Traffic Impact Studies
- Transportation Modelling, Simulation & Forecasting
- Travel Demand Forecasting & Management
- Pedestrian Movement Analysis, Crowd Control Management, Way-finding

ICT & COMMUNICATION SECURITY

- Infrastructure & Heterogeneous Sensor Networks
- Central Command & Control Platform
- Data Computing Capabilities

SMART WATER MANAGEMENT

- Water Treatment System
- Water Distribution System
- Drainage & Irrigation System
- Sewage Collection System
- Sewage Treatment System

SMART & SUSTAINABLE INITIATIVES

- Smart Environment
- Integrated Smart Waste Management
- Sustainable Water Management
- Wastewater reuse strategies
- Rainwater Harvesting
- Renewable Energy Integration
- Green Buildings & Neighborhoods

INTEGRATED OPERATIONS

- Integrated Data Management
- Crowd Management
- Asset management
- Facility Management
- Security Management
- Unified Communications
- Emergency Contingencies & Response

ORGANISATION RESTRUCTURING & BRANDING

- Organizational restructuring for digital transformation
- Strengths and Weaknesses in the current organizational structure
- Understanding business requirements & developing branding strategies
- Design human experience - Spaces, services, & the systems

HOW WE CAN HELP

At Meinhardt Planners Singapore, we offer global customised expertise for various scales of master-plan projects. Our proposition is to provide the best practice advice in urban development to ensure cities become successful, vibrant and sustainable.

SMART INTEGRATED URBAN & INFRASTRUCTURE PLANNING

- City Visioning And Branding – Regional Concepts & Structure
- Positioning – Strategy For Townships & Industrial Developments
- Strategic Urban Planning Studies & Review Audits
- Demographics, Socio & Economic Analysis
- Zoning & Land-use Design Programming
- Transit Oriented Planning & Urban Design
- Development Control Parameters & UD Guidelines
- Smart Governance – Built-In Resilience
- Digital Transformation – Data Interface
- Architecture & Design
- Preparation Of Infrastructure, ICT & Water Sensitive Developments
- Community Consultation, Capacity Building & Engagement, Project Showcasing
- Technical Planning & Design for Smart Cities Implementation
- Sustainable Infrastructure & Transportation Planning
- Leadership In Energy Planning/ Resource Reduction



168 Jalan Bukit Merah
#09-01, Connection One
Singapore 150168

+65 6274 3373
+65 6274 3320

info@meinhardtgroup.com

MEINHARDTGROUP.COM