

Project Shamal – Sustainable Infrastructure Initiatives



Setting the Stage



 **Setting the Stage**
Net Zero



UAE leadership announces Net Zero by 2050



Setting the Stage

United Nations Sustainable Development Goals



Setting the Stage Environmental, Social and Governance

Abu Dhabi Ports Group is now mandated to report to ADQ on ESG performance

ESG performance attracts investors



Environmental



Social



Governance





Setting the Stage

Environmental, Social and Governance

2021 ADQ ESG ROADMAP

ADQ

ESG Information Gathering – Consolidated Templates

DECEMBER 2021

C. GHG Emissions

6. Commitment

6.1. Does the company follow carbon management policies? Please explain.

7. Measured Deployed

7.1. Describe significant initiatives implemented to control/ reduce the carbon footprint of the company.

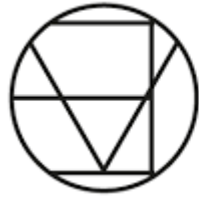
8. Key Performance Indicators (KPIs) and targets.

8.1. Please fill in the table below and define the scope of coverage for the figures provided. Please include targets, if any. If this data is not readily available, then we will calculate it for you). If it is available, **please clarify and provide the calculation sources for the figures.**

Key Performance Indicators (KPIs)	2018	2019	2020	Target
Direct GHG emissions (Scope 1) (tons of CO ₂ eq)				
Indirect GHG emissions (Scope 2) (tons of CO ₂ eq)				
Other indirect GHG emissions (Scope 3) resulting from business travel (tons of CO ₂ eq)				
Total GHG emissions (tons of CO ₂ eq)				
GHG emissions intensity (tons of CO ₂ eq/employee)				
Comments:				



Decarbonisation Design Tools



cove.tool

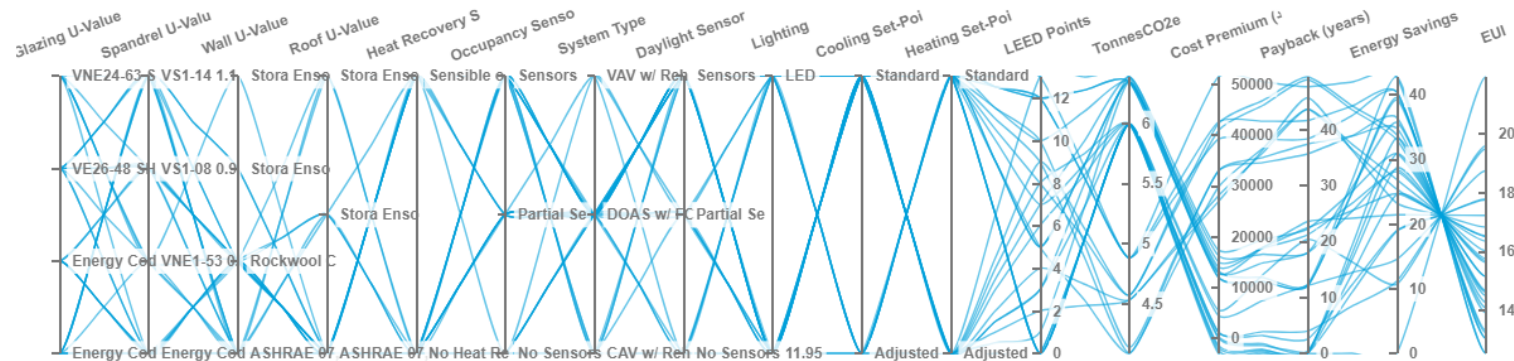
One Click LCA



Projects Users About Contact Us Project - Office

Role - Developer Help

Office Education



Bundles Envelope Roof HVAC Lights Equipment Loads Set Points + Schedules Renewable Interior Finishes Structure

Recalculate



Cost vs Energy Optimized Bundle

13,252}.	12.26	Cooling Set-Point	Standard	Occupancy Sensors	Sensors
COST PREMIUM	Payback (years)	Daylight Sensors	Partial Sensors	Roof U-Value	ASHRAE 07, 10, 13, 16...
126	43%	Glazing U-Value	VNE24-63 SHGC-0.27/U...	Spandrel U-Value	VS1-08 0.95
EUI	Energy Savings	Heat Recovery System	Sensible or enthalpy ...	System Type	DOAS w/ FCU, with Ele...
13	6.38	Heating Set-Point	Adjusted	Wall U-Value	Rockwool COMFORTBATT ...
LEED	CO2e (Tonnes)	Lighting	LED		

Baseline

Whole Building Baseline

31,613}.
 COST FOR SELECTED OPTIONS
254 kWh/m²/yr
 EUI

Whole Building Optimized

45,323}.



LCA Data– Compliance and Verification



Department of Thermal Physic, Sanitary Systems and Environment
02-656 Warszawa, Ksawerów 21

DECLARATION № 031/2015

ITB hereby confirms that the software:

360optimi® and One Click LCA™ developed by Bionova Ltd

has been audited and verified to be compliant with the following standards:

- EN 15978 Sustainability of construction works - Assessment of environmental performance of buildings Calculation method
- ISO 21931-1 Sustainability in building construction · Framework for methods of assessment of the environmental performance of construction works - Part 1: Buildings
- ISO 21929-1 Sustainability in building construction - Sustainability indicators Part 1: Framework for the development of indicators and a core set of indicators for buildings

Conformity with the above standards was verified in consideration of the data quality requirements of the following standards:

- ISO 14040 Environmental management - Life cycle assessment Principles and framework
- EN 15804 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products

The software was found to be in conformance with the provisions and requirements of listed international standards

This declaration is valid from the date of issue for the year in which it is signed and 5 full calendar years after that

Head of the Department of Thermal Physic, Sanitary Systems and Environment

Robert Gerylo, PhD



Deputy Director for Research and Development

Michał Wojtcwicz, PhD

Sustainability Measures

Project Shamal – Topside Works

Drivers for Sustainability

CMA CGM GROUP

إستدامة
estidama

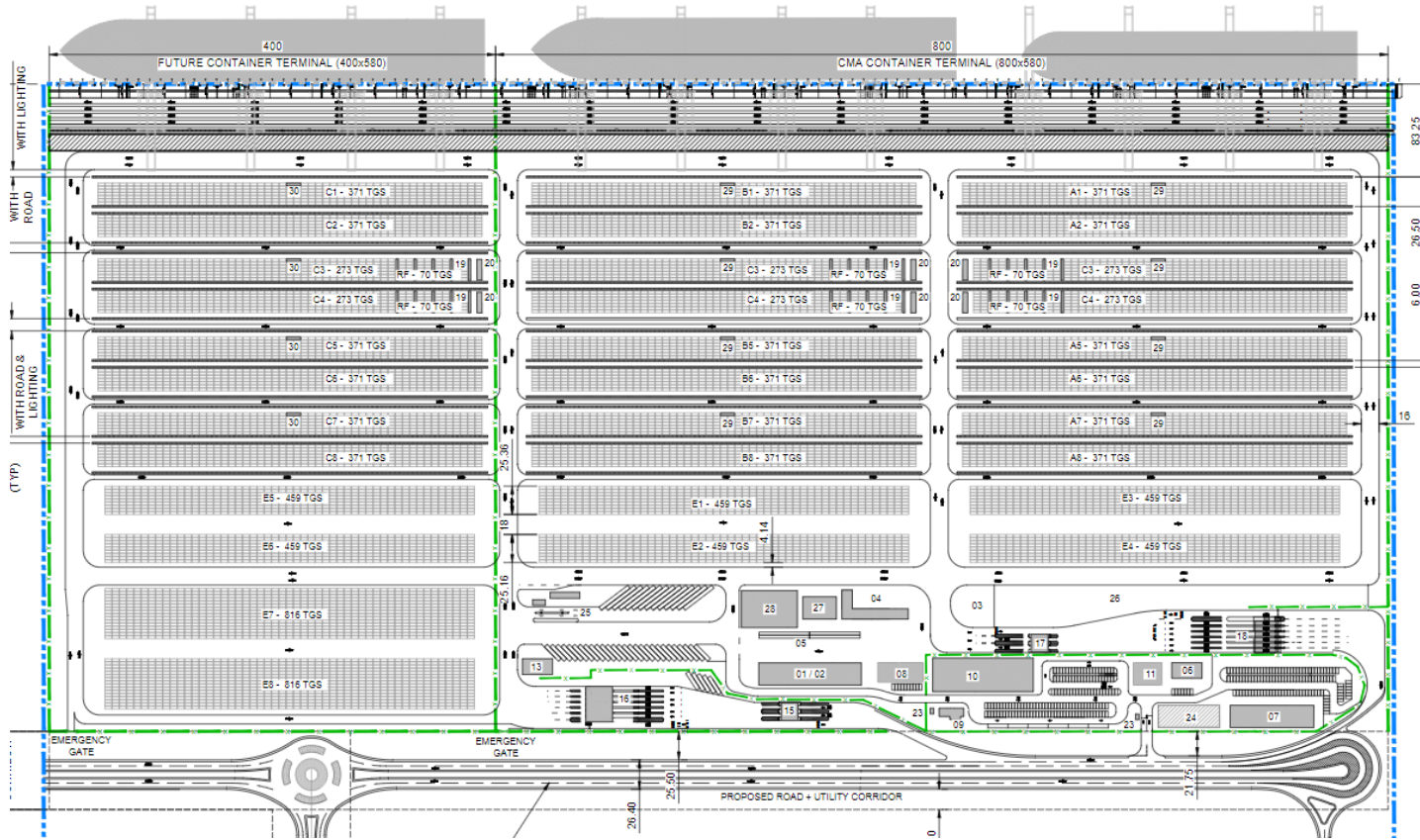


3D Project Image





Overall Masterplan

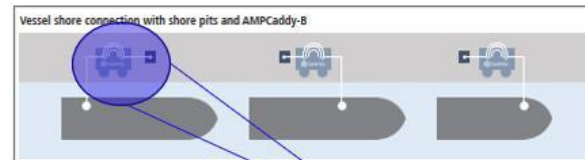


Sustainability Measures

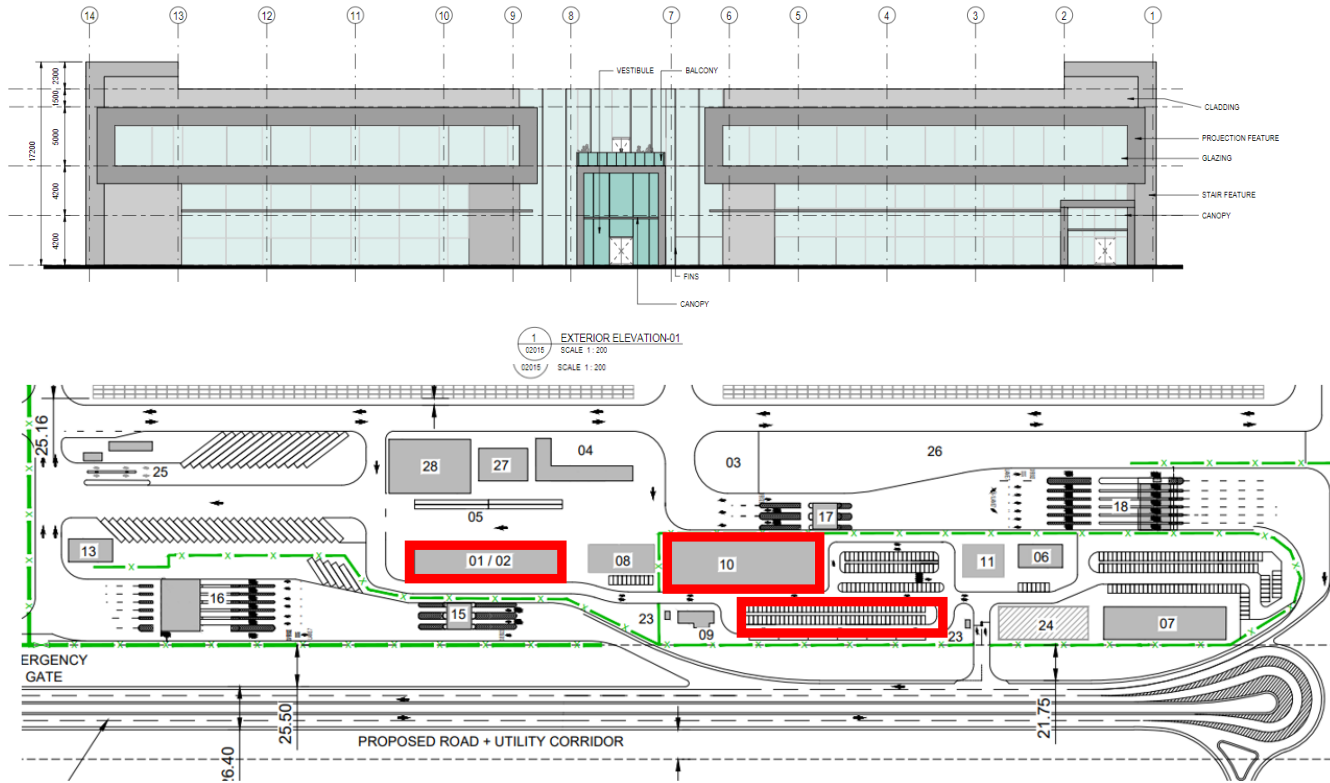


Biggest opportunity to reduce GHG emissions was from the following:

- Solar PV onsite.
- Cement replacement of concrete.
- Shore to Ship Power (Cold Ironing)



Solar PV – Rooftop and Carport Systems



1. Roof Solar PV for Workshop Building and Admin Building
2. Solar carport system for parking area

	PV System	
	Power Output (kW)	Energy Produced (kWh)
Admin Building	272.00	415,738.00
Workshop Building	90.00	137,560.39
Carport	450.00	716,216.00
Total	812.00	1,269,514.39
Emission Savings	15,996 Metric Tons CO2e over 30 Years	



3,447



264,495



3,112



Passenger vehicles driven for one year

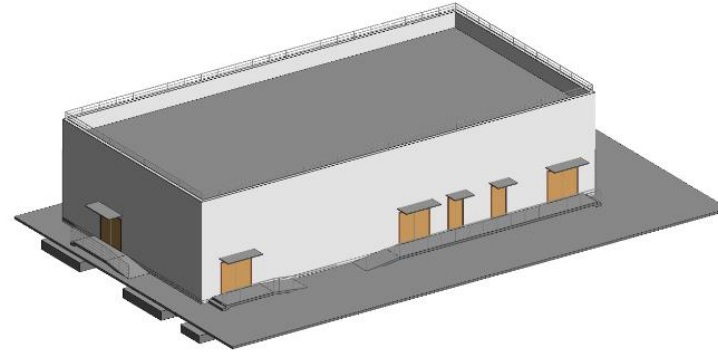


tree seedlings grown for 10 years

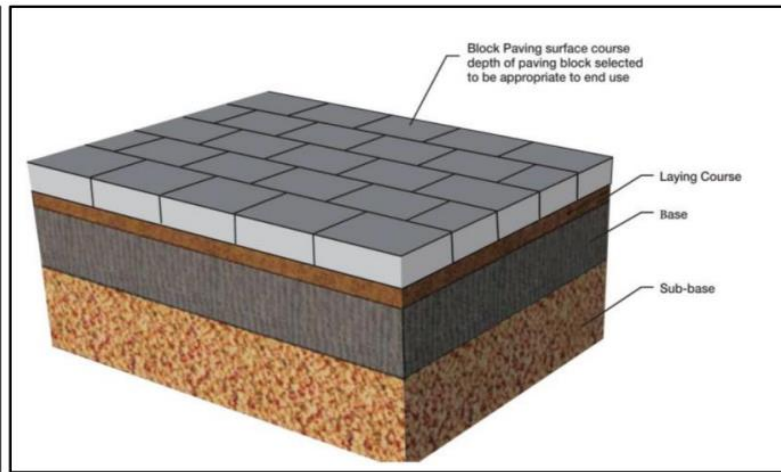
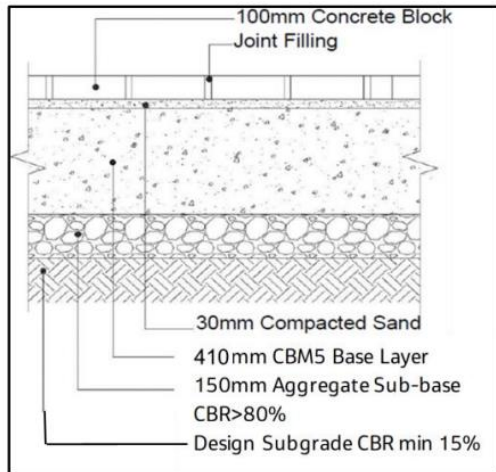


homes' electricity use for one year

Concrete Block – Interlock Paving and Blockwork



1. GGBS Concrete for Substation Hollow Block
2. GGBS Concrete for Interlock Paving



Concrete Block	
	Volume (m3)
Interlock Paving	70,000
Concrete Blockwork	30,000
Total	100,000 (m3)
Emission Savings	3,325 Metric Tons CO2e



716



54,979



647



Passenger vehicles driven for one year



tree seedlings grown for 10 years



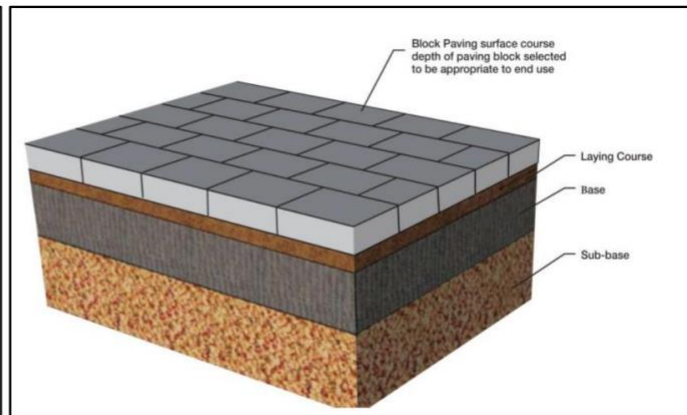
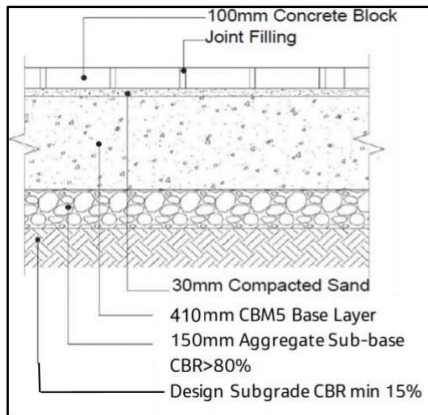
homes' electricity use for one year



Building Structural Elements and Pavement Structure



1. GGBS Concrete for CBM5 Layer
2. GGBS Concrete for Concrete Structural Elements



CBM5 for pavement and Concrete Structural Elements	
	Volume (m3)
CBM5	270,000
Concrete for Buildings, Beams, and Miscellaneous Structures	80,000
Total	350,000 (m3)
Emission Savings	12,000 Metric Tons CO2e



2,586



Passenger
vehicles driven
for one year



198,421



tree seedlings
grown for 10
years



2,335



homes'
electricity use
for one year

Shore to Ship Power (Cold Ironing)



Calculation:

1) Energy: $1200\text{KW} \times 24\text{Hrs} \times 365\text{ Days} \times 3\text{ barges} \times 0.6\text{ Factor} = 18,921,600\text{ KWh}$

2) GHG Emissions from Grid: $18,921,600\text{ KWh} \times 0.42\text{ KG CO}_2/\text{KWh} = 7,947\text{ MT CO}_2\text{e/year}$

Savings: $13,198 - 7,947 = 5,251\text{ MT CO}_2/\text{Year}$

Savings: $157,530\text{ MT CO}_2\text{ over 30 Years}$



Summary of Carbon Savings

Summary	
	GHG Savings (Metric Tons CO2e) over 30 Years
Solar PV	15,996
Concrete Block – Interlock Paving and Blockwork	3,325
Building Structural Elements and Pavement Structure	12,000
Shore to Ship Power (Cold Ironing)	157,530
Total GHG Savings	188,851



42,025



Passenger vehicles driven for one year



3,122,668



tree seedlings grown for 10 years



36,746



homes' electricity use for one year



1,041



railcars' worth of coal burned

Benefits Overview

1. First Net-Zero Energy Building for AD Ports (less than 500 net zero commercial buildings worldwide)
2. First Estidama 3-Pearl Project (188 3-Pearl projects in the UAE)
3. First project to use significant amounts of concrete with recycled content (30% for project)



3 Pearl



**ZERO
CARBON**

Thank you

adportsgroup.ae

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