C-QUEST

Project Development & Cost Consultants

Pre-Concept Cost Estimate

Jubail Island

November 2022

LEAD SASAKI

C-QUEST

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EXECUTIVE SUMMARY

Marinas to Mangroves

Introduction

The Marina to Mangroves option totals 7.71m m/2 overall area and is located in the South Parcel of the Project Site. This option utilizes the existing habitats, meaning that there is less of a requirement for marine works than the Green Heart option.

Infrastructure & Landscaping

Marina to Mangroves Option- **AED 4,567,797,320 (AED 592/m2),** this includes the inter tidal habitat development and bridges 'below the line' item.

Marina to Mangrove Option- **AED 4,339,865,000 (AED 563/m2),** this excludes the below line items.

Residential Components

Marina to Mangroves Option- **AED 19,082,251,170,** total GFA considered is **2,657,796 m2**

Combined Total

Marina to Mangroves Option- **AED 23,650,048,490** this includes the inter tidal habitat development and bridges 'below the line' item.

Marina to Mangrove Option- **AED 23,422,116,170** this excludes this excludes the below line items.

Blue Green Heart

Introduction

The Blue Green Heart option totals 7.71m m/2 overall area and is located in the South Parcel of the Project Site. This option enforces more marine works as part of the scope and includes costs for bridges serving the Infrastructure with the aesthetics of a 'heart shaped' road network.

Infrastructure & Landscaping

Blue Green Heart Option- AED **4,894,127,680 (AED 635/m2),** this includes the inter tidal habitat development 'below the line' item and bridges.

Blue Green Heart Option- **AED 4,546,408,000 (AED 590/m2),** this excludes the inter tidal habitat development 'below the line' item.

Residential Components

Blue Green Heart Option- **AED 22,043,163,799**, total GFA considered is **2,629,334 m2**.

Combined Total

Blue Green Heart Option- **AED 26,937,291,479** this includes the inter tidal habitat development 'below the line' item.

Blue Green Heart Option- **AED 26,589,571,799** this excludes the inter tidal habitat development 'below the line' item.

Necklace

Introduction

The Necklace option totals 1.001m m/2 overall area and is located in the North Parcel of the Project Site. This option utilizes the existing habitats, meaning that there is less of a requirement for marine works than the Piers option.

Infrastructure & Landscaping

Necklace Option- **AED 593,942,000 (AED 593/m2)**

Residential Components

Necklace Option- **AED 2,437,392,193**, total GFA considered is **344,960 m2**

Combined Total

Necklace Option- **AED 3,031,334,193**

Necklace

Introduction

The Piers option totals 1.001m m/2 overall area and is located in the North Parcel of the Project Site. This option enforces more marine works part of the scope, similar to the Green Heart option.

Infrastructure & Landscaping

Piers Option- **AED 657,534,000 (AED 657/m2)**

Residential Components

Piers Option- **AED 2,484,217,515**, total GFA considered is **335,244 m2**

Combined Total

Piers Option- **AED 3,141,751,515**

Non-Residential Verticals

Non - Residential			
Units Type	GFA (m2)	Avg. Rate Rate/m2	Cost (AED)
Mosques	35,201	9,500	334,409,500
Communities Facilities	62,075	9,997	620,563,775
Schools	54,801	6,481	355,165,281
Commercial	50,423	9,967	502,566,041
Hospitality	22,500	12,397	278,932,500
Total Cost (AED)	**225,000**		**2,091,637,097**

Note: We have used benchmarked rates per GFA/m2 for the above typologies within the UAE region. Inflation beyond 4th Quarter 2022 has been excluded. The above costs are inclusive of preliminaries and contingency.

KEY VARIANCES/DELTA

Infra/ Landscaping Comparison (South Parcel)

Main Delta (Including Below Line Items) – AED 264m with respect to increase in cost Blue Green Heart due to the following considerations ***Note: following amount excludes preliminaries and contingency***

- Marine Works- Circa **AED 53m** due to Blue Green Heart increase Marine Infra Requirements.
- Infra Works Circa **AED 104m** due to Blue Green Road network requirements.
- Landscaping/ Earthworks Circa **AED 10m**
- Bridges AED Circa **AED 90m** due to Blue Green Heart road network aesthetics.
- Outside Inter-tidal habitat development AED Circa **AED 7m**

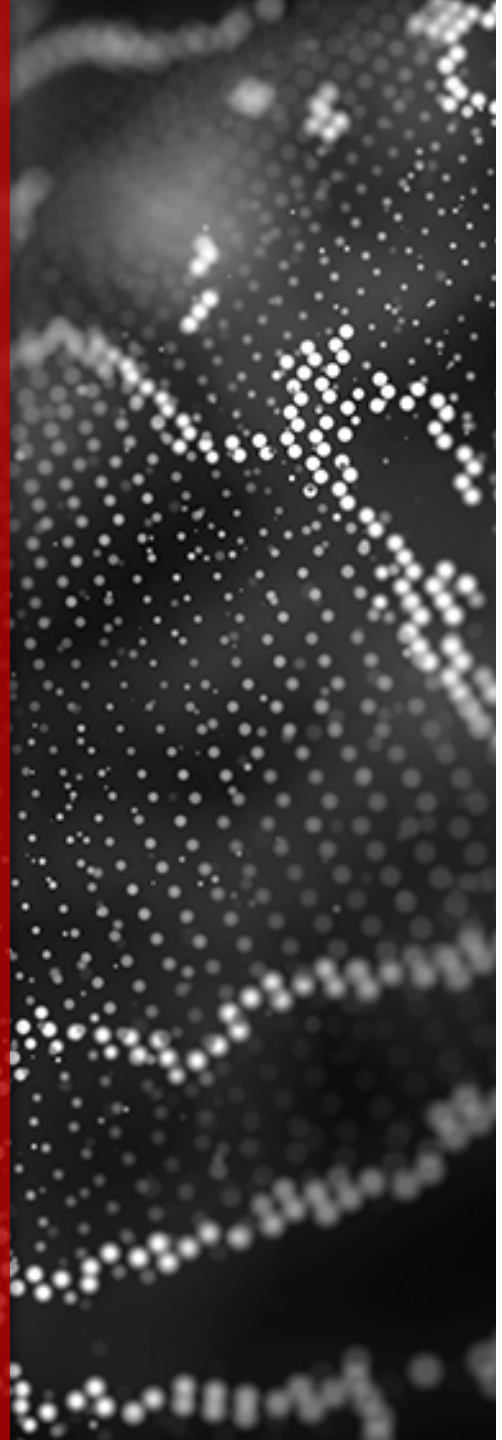
Infra/ Landscaping Comparison (North Parcel)

Main Delta – AED 52m – change wording as above

Note: This amount excludes preliminaries and contingency

- Marine Works- Circa **AED 87m**.
- Infra Works Circa - **AED 13m**.
- Landscaping/ Earthworks Circa - **AED 22m**

ASSUMPTIONS AND METHODOLOGY



Earthworks

- All earthworks are undertaken on existing land masses and there is no requirement to reclaim any new land, or form new islands as directed by Sasaki. The earthworks scope has solely been priced on the premise of making up levels (filling) on top of existing landmasses that are already formed using standard grading equipment and increasing the existing ground levels on the already present site land mass area.

- Assumed that all site won (cut) material has been obtained through excavating channels within the existing land mass using conventional excavating equipment (with openings to the existing water bodies being undertaken at the end of the excavation works).

- Assumed that excavated cut material will have insufficient geotechnical properties for the purpose of filling / raising existing land levels. Assumed that cut material will need to be mixed with engineered fill to meet soil bearing capacity requirements.

- Additional provisional allowance has been considered to account for soil improved works within the existing land mass on account that some existing areas may have insufficient soil bearing capacity for the purpose of proposed construction scope (approximately … % of total bulk earthwork costs).
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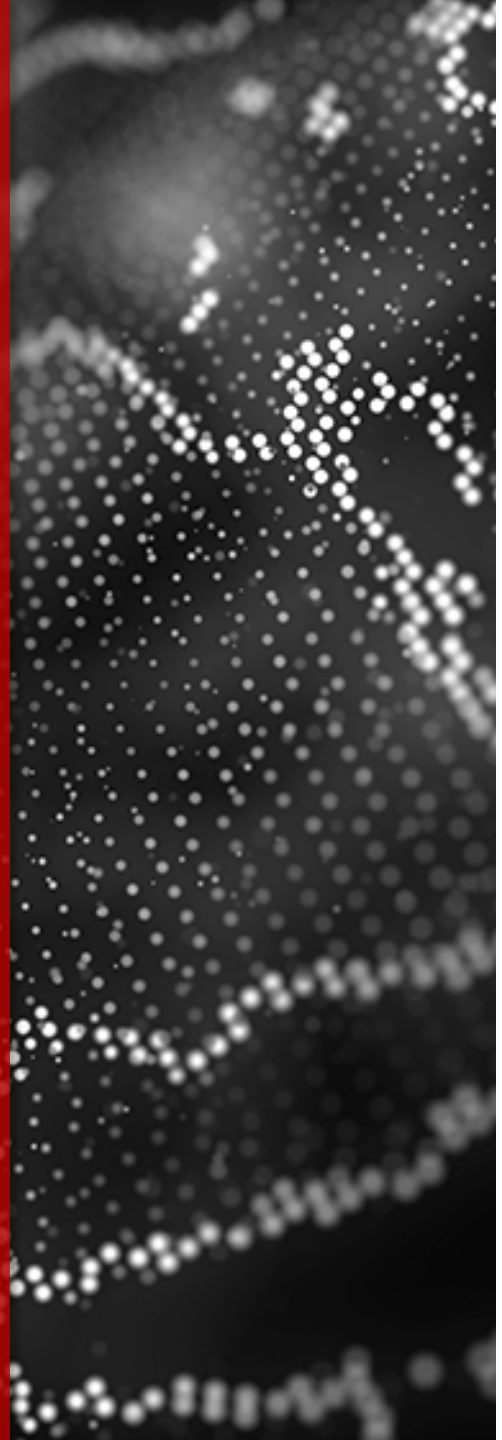
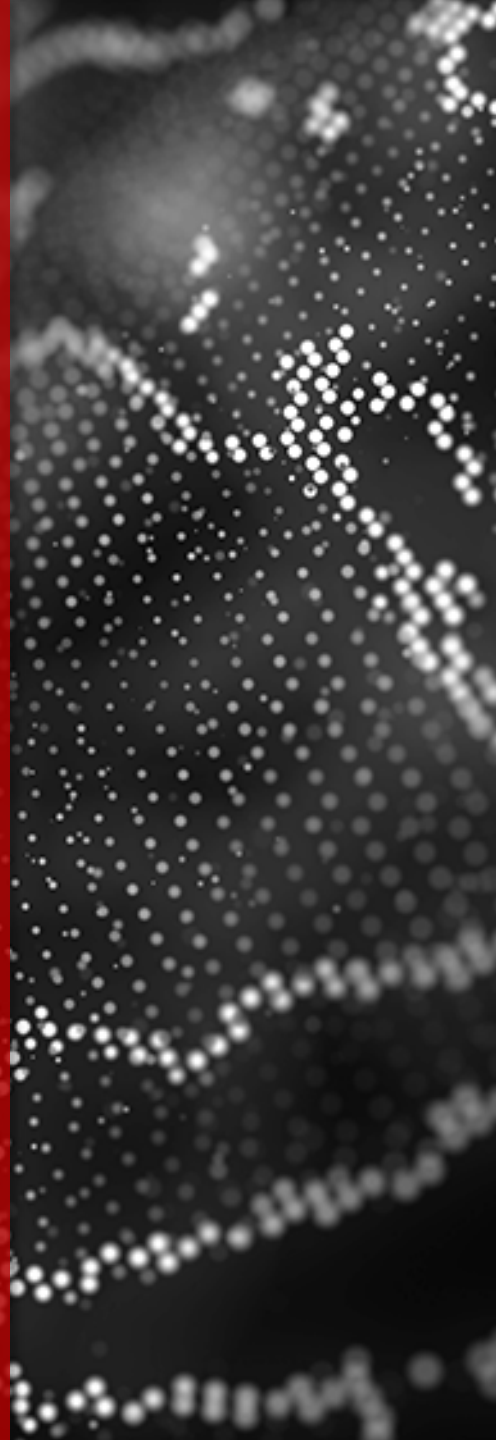
- Assumed quantification for cut and fill quantities is based upon initial indicative grading takeoff using Civil 3D modeling software account for existing site levels as assumed preposed levels.



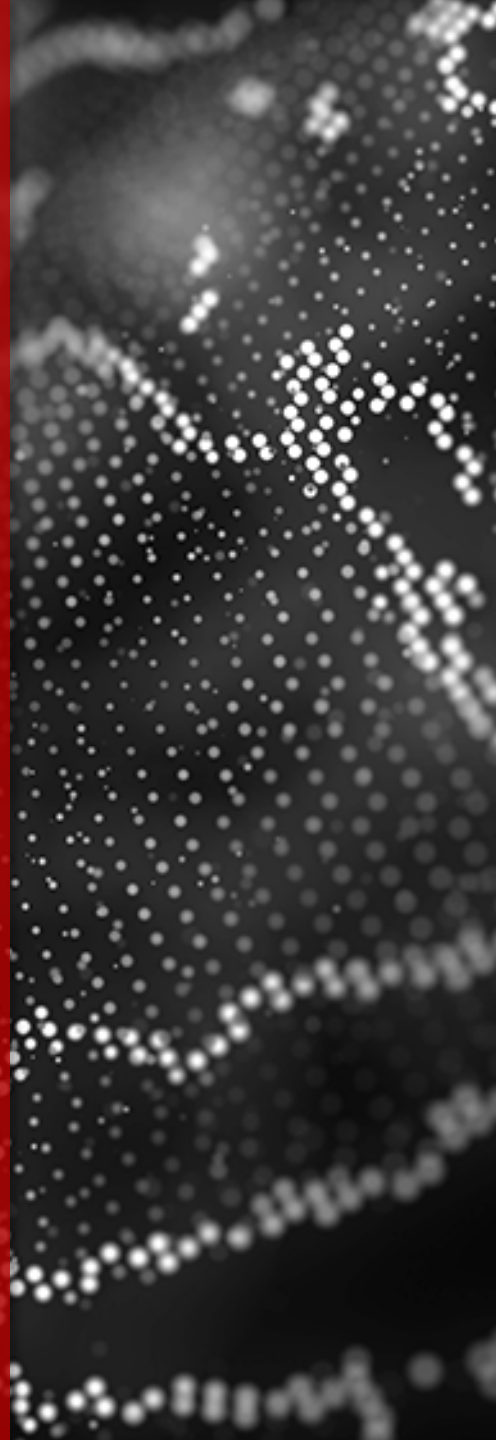
Soft Landscaping

- Plaza (50% Softscape+50% Hardscape); Softscape for Plaza (Shrubs-50%, Ground Covers-50%)
- Greenway (60% Softscape+40% Hardscape); Softscape for Greenway Park (Shrubs-40%, Ground Covers-40%. Natural Surface-20%)
- Neighborhood Park (60% Softscape+40% Hardscape); Softscape for Neighborhood Park (Shrubs-33.33%, Ground Covers-33.33%. Natural Surface-33.33%)
- Promenade (20% Softscape+80% Hardscape); Softscape for Promenade (Shrubs-50%, Ground Covers-50%)



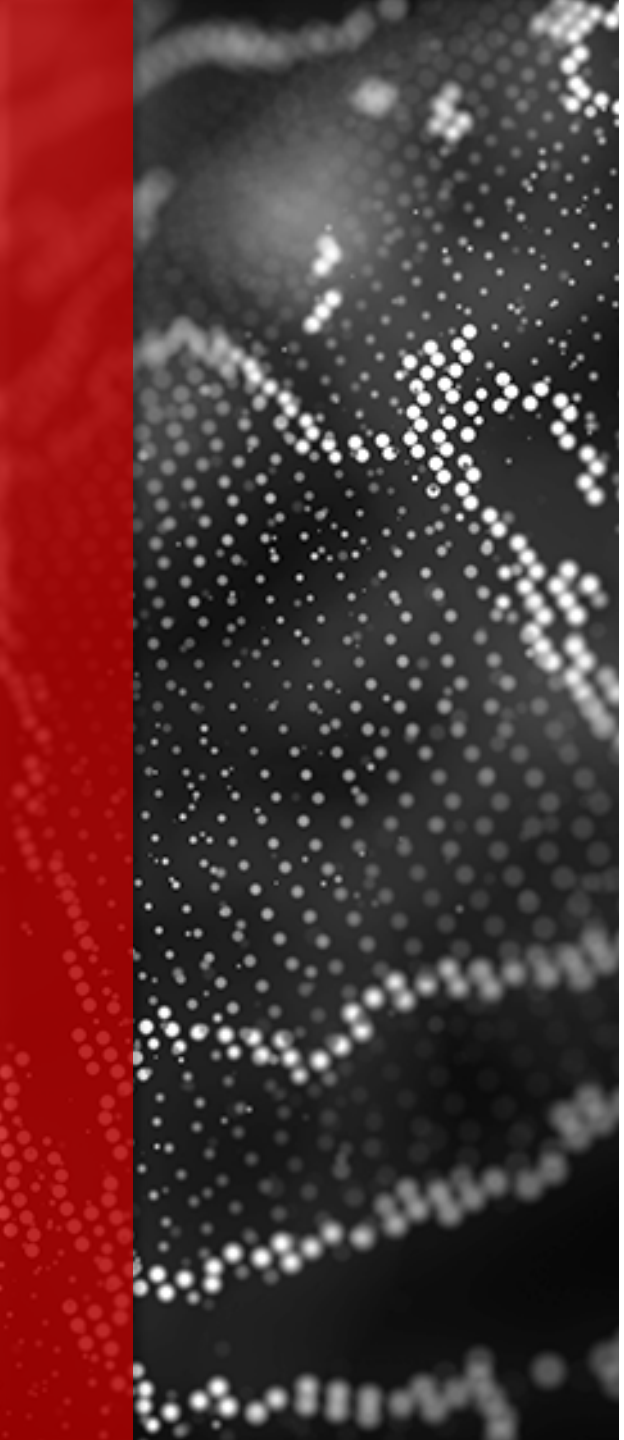
Hard Landscaping/Park Elements

- Plaza (50% Softscape+50% Hardscape); Hardscape for Plaza (PC Con stepping Paver-40%, PC Paver- 50%, Water Features-10%)
- Greenway (60% Softscape+40% Hardscape); Hardscape for Greenway Park (PC Con Paving-50%, insitu concrete- 9%, Gravel-20%, EPDM-20%, compacted sand- 1%)
- Neighborhood Park (60% Softscape+40% Hardscape); Hardscape for Neighborhood Park (PC Con Paving-50%, insitu concrete- 4%, Gravel-30%, compacted sand- 16%)
- Promenade (20% Softscape+80% Hardscape); Hardscape for Promenade (PC Con stepping Paver-50%, PC Paver- 50%)
- Hard Streetscaping to 20m ROW (PC Con Paving-70%+Gravel 30%) -should be no gravel, Lal should have changed this
- Hard Streetscaping to 40m ROW (PC Con Paving-70%+Gravel 30%)
- Hard Streetscaping to 46m ROW (PC Con Paving-70%+Gravel 30%)
- For Dedicated Parking (PC Con Paving-100%)
- For Signage and Wayfinding- nr/m2 calculated from latest detail design for similar project in middle east
- Park elements nr/m2 calculated from latest detail design for similar project in Middle East



Roads & Bridges

- Quantities based on ROW lengths and cross sections provided by Sasaki.
- Pavement details based on similar project in UAE
- Assumed 30m wide precast concrete girder bridge with RC piled foundation. Assumed bridge is required at each water crossing at this stage and included as a separate cost.



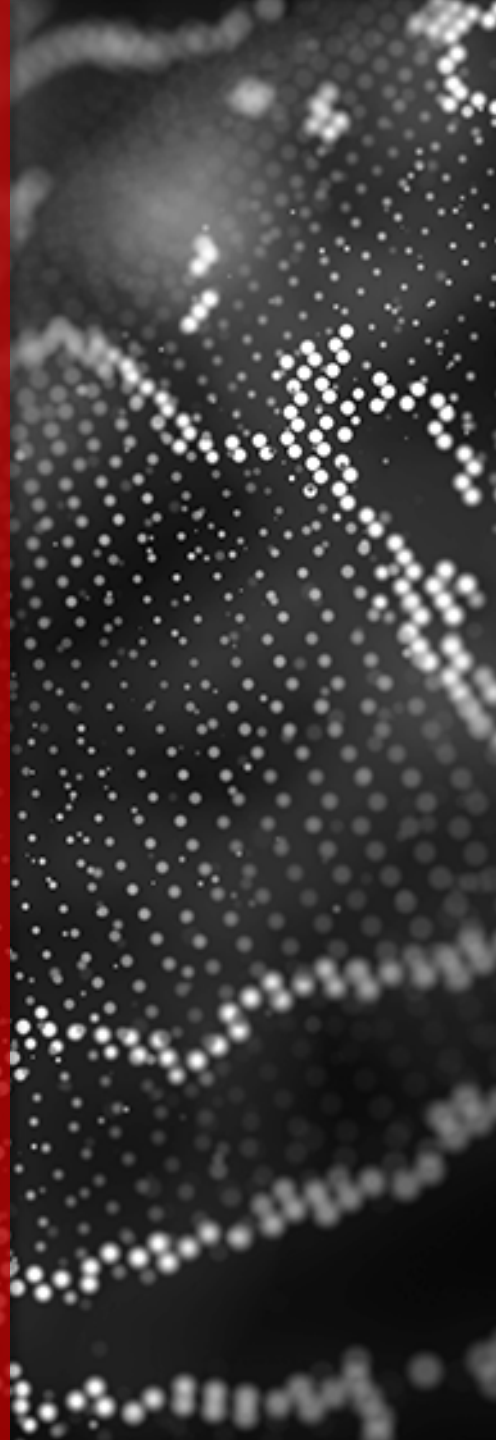
Potable Water & Irrigation

Potable water & Fire Water Network (Quantities based on ROW Lengths)

- 90mm, 110mm, 180mm, 300mm HDPE Pipe work
- 450mm DI transmission pipe
- Less than 300mm diameter isolation/ gate valve is directly buried
- Buried Gate / Isolation Valves (1nr/180m)
- Gate / Isolation Valves in Chamber(1nr/200m)
- Air Release Valves (1nr/1000m)
- Washout valve(1nr/1000m)

Irrigation Network (Quantities based on ROW Lengths)

- TSE Water Storage tank and pumping station- For Marinas to Mangroves; Size 25 x 20 x 7m, For Green Heart; Size 25 x 20 x 7m, For Necklace & Piers; 15 x 10 x 4m
- Less than 300mm diameter isolation/ gate valve is directly buried
- Buried Gate / Isolation Valves (1nr/230m)
- Gate / Isolation Valves in Chamber(1nr/230m)
- Air Release Valves (1nr/1800m)
- Washout valve(1nr/2000m)



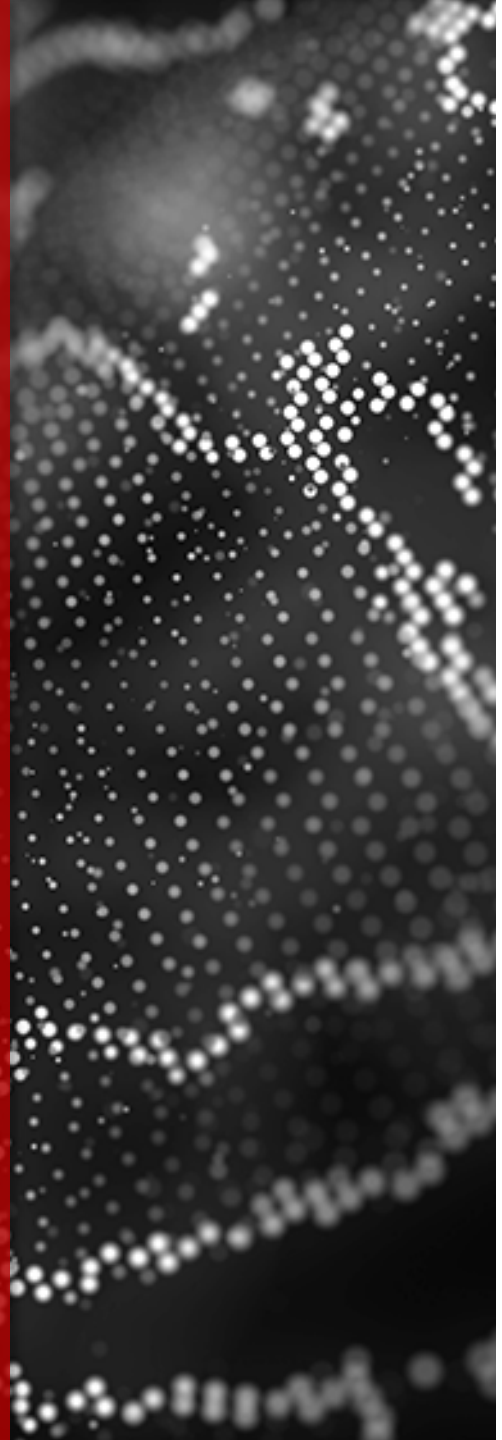
Drainage

Sewerage Network (Quantities based on ROW Lengths)

- MNR process- Sewerage Treatment Plant
- 160mm uPVC dia house connection pipe for sewerafe
- GRP pipe works from 200mm to 1000mm diameter
- Rising Main; 800mm diameter
- House Connection Chambers In-situ concrete; 600 x 900 mm internal size, Depth not exceeding 1.5m 1nr/ 5nr Residential units
- Lifting station required

Drainage Network (Quantities based on ROW Lengths)

- 315mm to 450mm uPVC pipe and 700mm diameter concrete pipe
- Stormwater gully Gullies- 1nr/ 30m length of road
- Gully connection pie 300mm diameter
- Oil Interceptors for Parking areas



Dry Utilities

Electrical Works (LV & MV) (Lengths based on ROW's provided)

- Road crossing Ductwork- 20% of road length
- Road Crossing duct bank- 4-way uPVC duct, 200mm dia; 1400 x 500mm

Street lighting (LV & MV) (Lengths based on ROW's provided)

- Street lighting spacing 1nr/25m length of road
- Road crossing Ductwork- 10% of road length
- Road Crossing duct bank- 4-way uPVC duct, 200mm dia; 1400 x 500mm
- Streetlight - Single arm 1 x 28w LED on 6m pole
- Streetlight - Single arm 1 x 144w LED on 8m pole
- Streetlight - Single arm 1 x 28w LED on 6m pole; to Parking area
- Street Light Cabinet (1nr/50light)

Communication & Security Network (LV & MV) (Lengths based on ROW's provided)

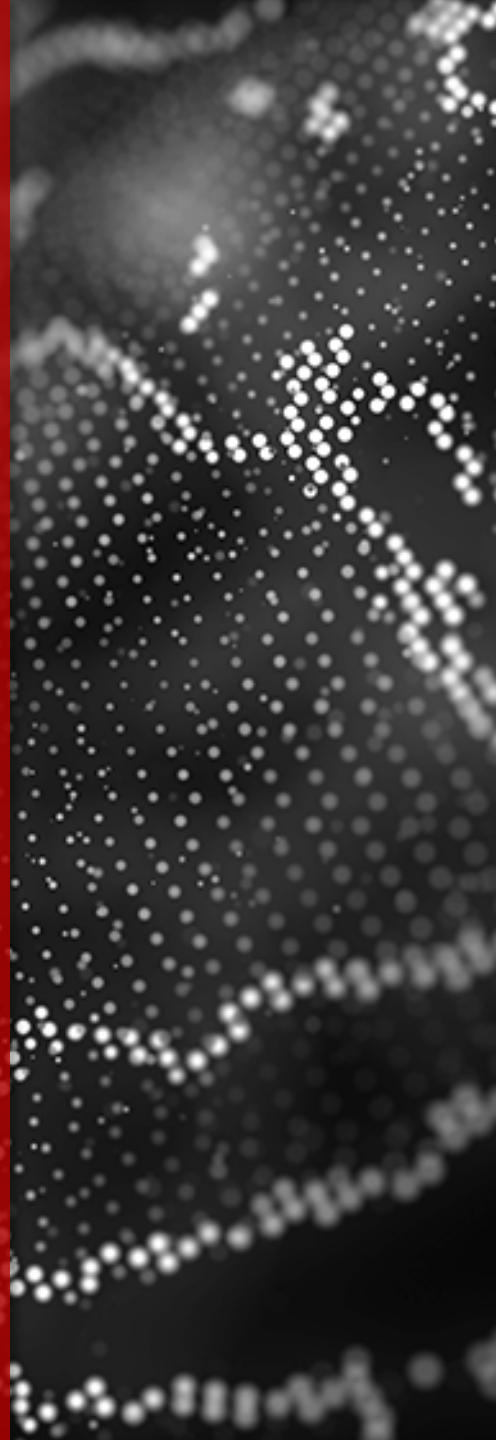
- JRC-14 Manhole (complete) (1nr/800m)
- JRC-12 Manhole (complete) (1nr/200m)
- Proposed 4-way D54 Ducts - Lead in for 20m ROW
- Proposed 4-way D54 Ducts - Main Route for 40m ROW
- Proposed 8-way D54 Ducts - Main Route for 46m ROW

CCTV Network (LV & MV) (Lengths based on ROW's provided)

- nr/m2 calculated based on latest detail design for similar project in middle east

Gas Supply Network (LV & MV) (Lengths based on ROW's provided)

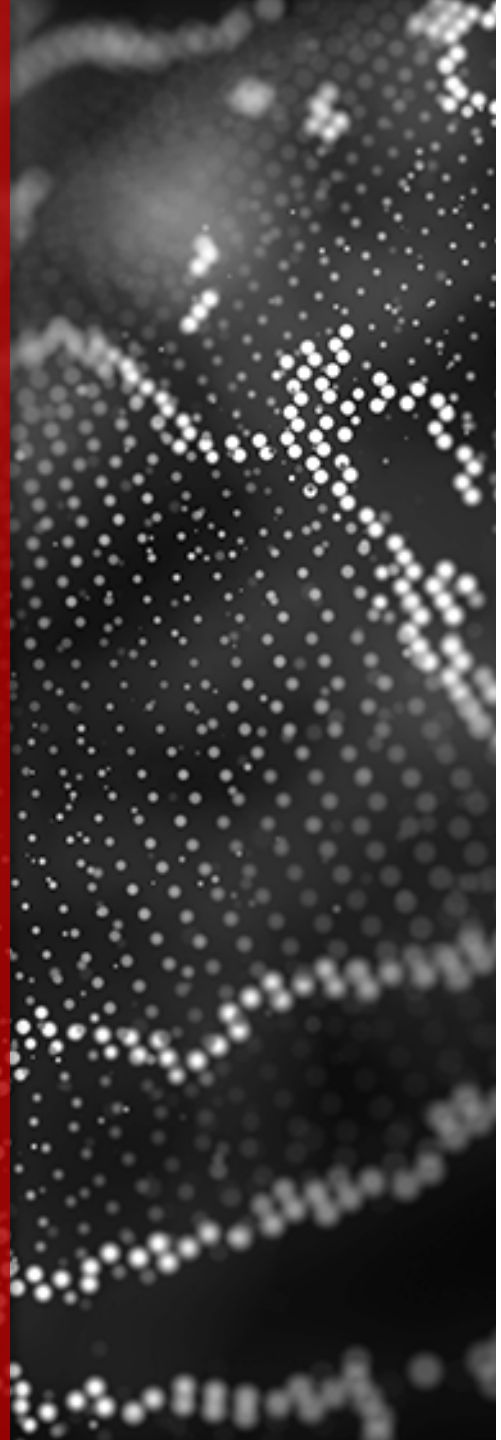
- Average 180mm diameter HDPE pipe work
- Valves-1nr/ 200m pipe work



Marine Works

Pricing has been carried out using quantities provided by C-Quest:

- Riprap; 1:3 slope, 13.5m of boulder
- Bulkhead Wall vertical assumed avg. height 6m (MSC Wall)
- Living Shore; Riprap; 1:10 slope, 10m wide, Mudflats/no planting, 10m wide, Mangrove; 8m wide (3m from the center of each shrub), Saltmarsh; 17m wide planting with reduced irrigation.
- Flexible (50%Living shore/ 50% riprap)
- Beach; 1:20 slope, 90m of sand
- Boardwalk (6m wide, in mangrove)
- Mangrove planting (1nr/3m2)
- Saltmarsh planting (2nr/m2)
- Boat ramps and pontoons included



Residential Verticals

Pricing has been carried out using quantities provided by C-Quest:

Substructures

- Utilizing piling foundations/strip found with stitch slab for all typologies.

Superstructures

- Cast in situ - Framing Structure (Wall, columns, Slab & Beams) for all typologies.

Stairs

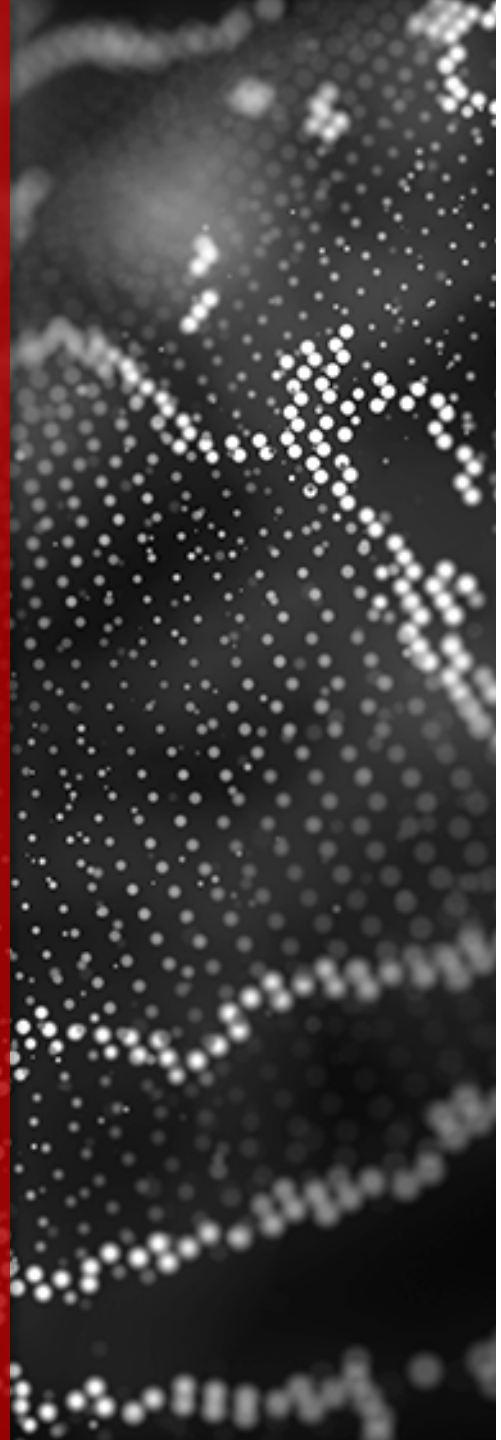
- Utilizing internal staircase-CIS, granite marble finishes and glass railings with polished wooden handrails for all typologies.

Roof

- Cementitious decorative waterproof coating for high end standard villas, townhouses and apartments.
- Composite Roofing system with high grade insulation, porcelain tiling and aluminum glazed lighting for luxury villas.

Internal Walls and Partitions

- Block work and shower partitions high end villas, townhouses and apartments.
- Dry wall partitions, double glazed partitions and fire rates solid block work to wet areas for luxury villas.



Residential Verticals

External Walls

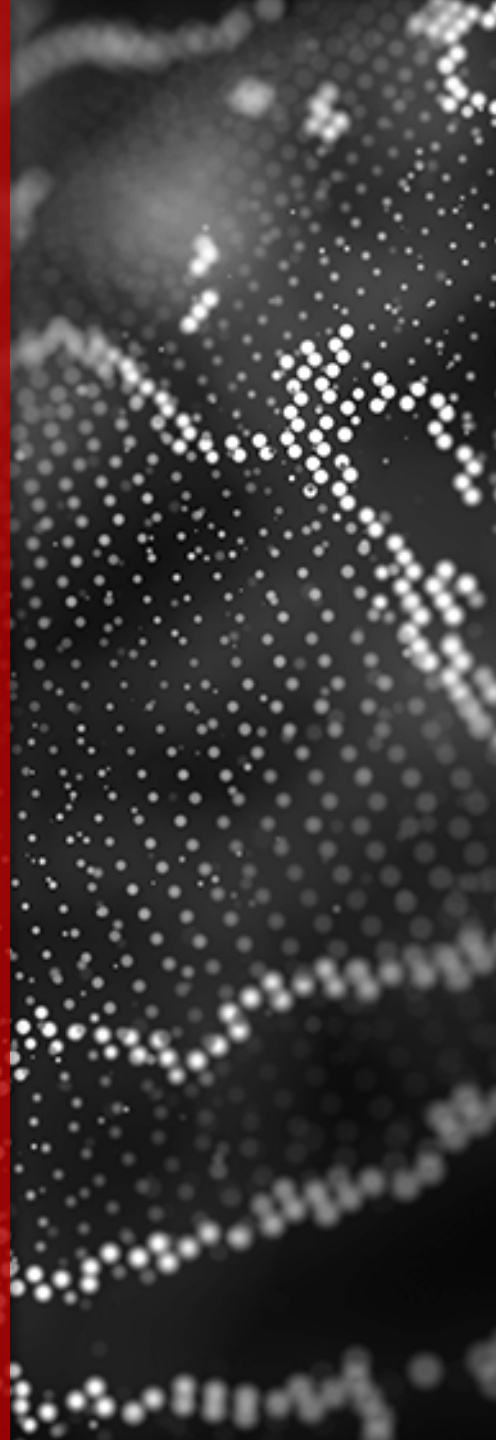
- High end Villas, Apartments and Townhouses- Combination of Blockwork, plaster paint, double glazed CW doors/windows and aluminum cladding.

- Luxury Villas- Combination of Blockwork, plaster paint, stone cladding, double glazed CW doors/windows, aluminum cladding and canopy.

Internal Finishes

- High End Villas, Townhouses and Apartments- Porcelain floor tiles, high quality paint (general) & Porcelain tiles in wet areas for wall finishes, drop ceilings to bathrooms and kitchen areas (and required distribution through corridors / lobbies, etc. Bulk heads to other areas, incorporating plater / paint soffit).

- Luxury Villas- Marble Porcelain floor tiles, high quality paint (general) & Porcelain tiles in wet areas for wall finishes, drop ceilings to bathrooms and kitchen areas (and required distribution through corridors / lobbies, etc. Bulk heads to other areas, incorporating plater / paint soffit, Feature drop ceiling to Living room and master bedroom including shadow gaps.



Residential Verticals

Services

- High end Villas- Standard Sanitary fittings with Insite bathtubs, audio intercom, HVAC system cooling only and standard lighting fixtures.

- Luxury Villas- High end sanitary fittings with Insite bathtubs, home automation system with video intercom, heating and cooling both in HVAC system and high-end lighting and fixtures including downlights and pendants, standby chillers and generators.

- Townhouses-Standard sanitary fittings, HVAC cooling system only and standard lighting fixtures.

- Apartments- High-end sanitary fittings, HVAC cooling system only and standard lighting fixtures.

External Works

- High End Villas, Apartments and Townhouses- Standard landscape lighting, high grade hardscape spec (Paving), high grade soft scape spec, blockwork boundary walls with texture paint finishes.

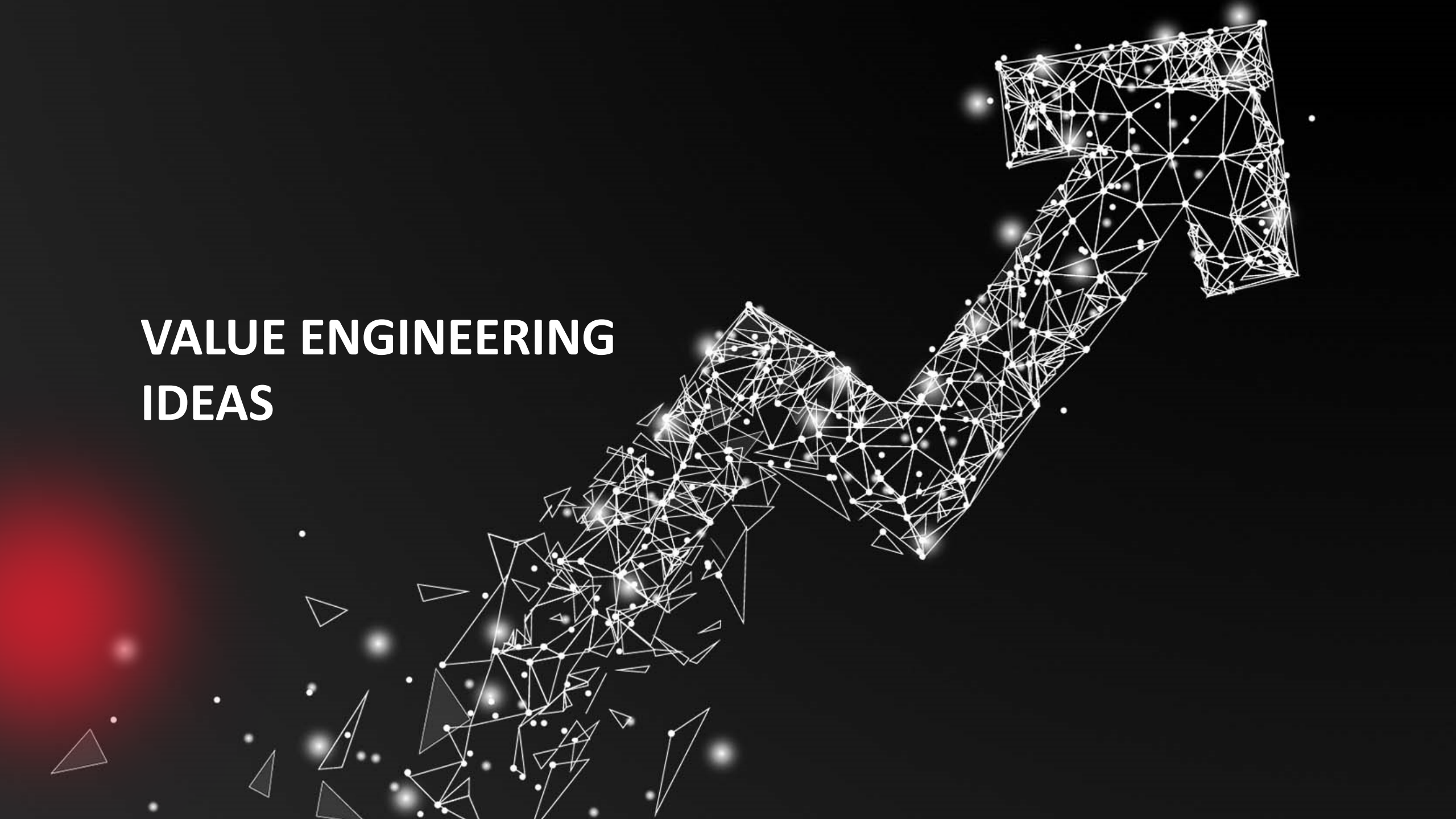
- Luxury Villas- High end landscape lighting, high grade hardscape spec (Granite and marble paving), high grade soft scape spec, approx. 100-200m2 swimming pools and precast boundary walls with high grade finishes.

EXCLUSIONS

Exclusions

1. Land acquisition fees
2. Any works located outside of the project site.
3. Professional/legal fees; site surveys; monitoring costs; environmental audits; wind studies; other third-party fees/costs.
4. Project insurances (third party and works insurance will be provided by the appointed Main Contractor).
5. Value Added Tax (VAT) or other taxes not related to direct construction works.
6. Site/unit acquisition fees/costs along with any third-party compensation settlements, sale or letting fees/costs.
7. Statutory fees permits and other municipal charges.
8. Capital contributions to third parties or authorities.
9. Marketing and PR costs.
10. Costs associated with provision of a project collaboration tool.
11. Client finance costs and insurances.
12. Independent commissioning management fees (assumed to be included in the separate budget for professional fees).
13. Cost of renting adjacent unit/land to act as storage, lay-down or site establishment areas.
14. Cost Escalation
15. Disposal of contaminated material
16. Soft Costs and Consultants Fees
17. Smart City Technologies
18. Upgrading of existing trunk roads.
19. Waste Management System
20. Artworks
21. Bus stands
22. Grid Substation and connection.
23. District cooling plant and network
24. Desalination plant
25. Structured cabling for telecommunications
26. Any works associated to land reclamation.
27. Phasing of works has been excluded from pricing. Assumed single phasing for each option.

VALUE ENGINEERING IDEAS



Value Engineering Options

- Explore design of culverts in lieu of structural bridges for water crossings.
- Refined causeway designs for water crossings.
- Use MSE walls in lieu of traditional bulkhead walls for marine works.
- Review Hardscape finishes and park element requirements.
- Review Softscape finishes.
- Small Package Type STP for each island in lieu of a centralized STP.
- Small Potable Water storage tank for each island in lieu of a centralized tank.
- Small SW Attenuation tank for each island in lieu of a centralized tank.
- Refinement of Residential Vertical Typologies Scope Assumptions
- Refinement of Non-Residential Vertical Typologies Scope Assumptions

NEXT STEPS

Next Steps…

1. Develop further assumptions and exclusions at Concept Masterplan Stage
2. Alignment of qualifications and assumptions with LEAD's budget.
3. Explore further value engineering ideas and strategies
4. Review phasing strategies in greater detail with the Sasaki team and segregate costings for each phase at Concept Masterplan Stage.
5. Review Masterplan Concept with design team, providing feedback on feasibility, value engineering and cost.
6. Continue to support the design team through design development in providing comments in relation to cost and budget.

Questions & Answers

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