

ALTİD PRESENTATION · SEPTEMBER 2026

Alanya Coastal Comfort Project

Beach and wave improvement with geotubes

PREPARED BY

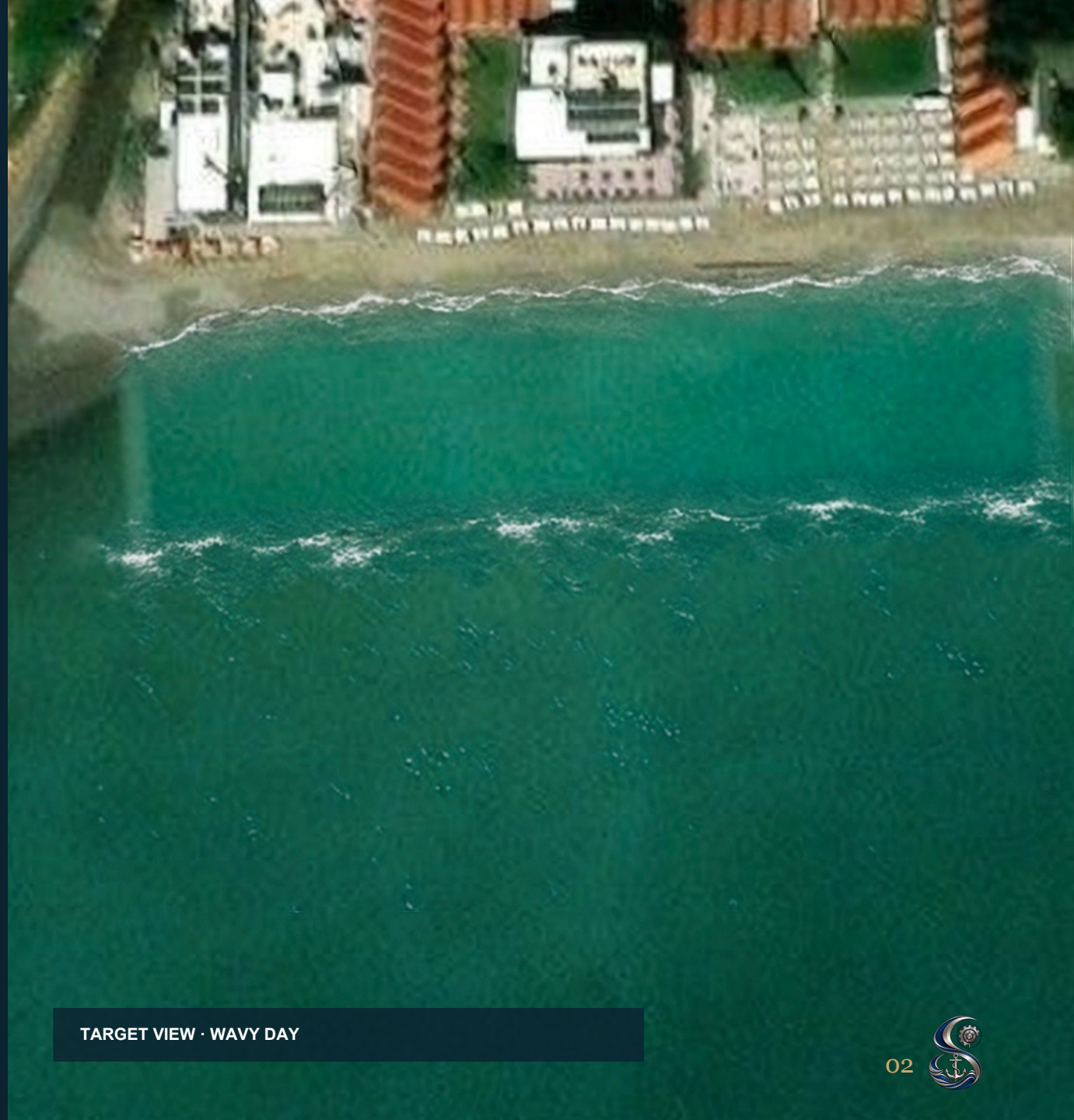
Kaptan-ı Derya Denizcilik

OVERVIEW

Calmer waters for Alanya’s beach

A submerged geotube line 40 m offshore, with sand pumped behind it, creates calm, sandy and safe waters even on wavy days.

Calm waters	35-60% less wave energy
Sandy entry	Shallow sandy area extends ~20 m
Open horizon	Submerged structure preserves the view



TARGET VIEW · WAVY DAY



Gold Island project · actual site footage

01 · WHAT IS A GEOTUBE?

A structure of sand, beneath the sea

A large tube made from high-strength geotextile fabric and filled with sand on site. Once filled, it forms a heavy, flexible and durable sand structure.

01 **Filled with sand**

Water filters through the fabric; sand stays inside.

02 **No concrete or rock**

Sand and geotextile suited to the coastal setting.

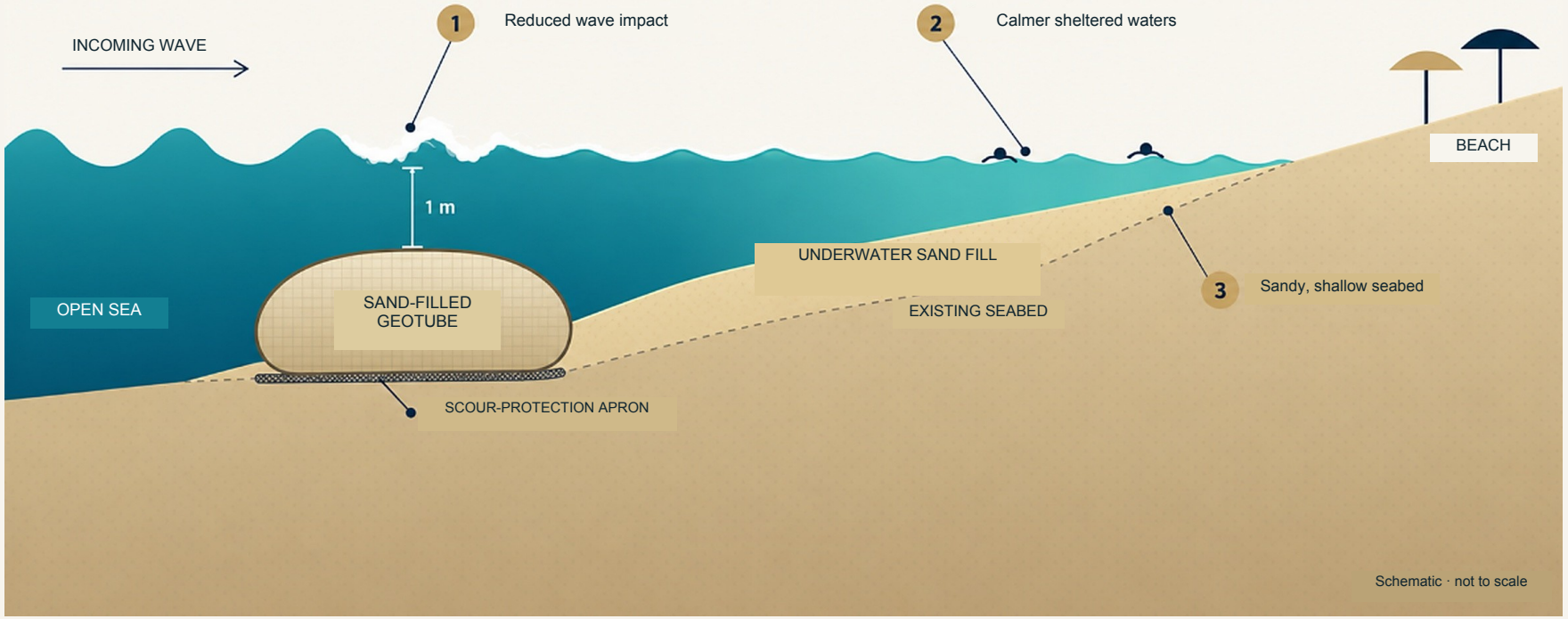
03 **Stays underwater**

The view and horizon remain unchanged.

04 **Adaptable**

Can be extended, reshaped or removed.

Waves break offshore, the shoreline calms



Offshore line

40 m from shore, with the crest 1 m below the surface. Waves meet the structure here.

Side arms

Start 10 m from shore and connect to the main line, forming a continuous U-shaped layout.

Underwater sand fill

Sand taken from the sea is pumped underwater to raise the seabed on a gentle slope. No imported sand is needed.

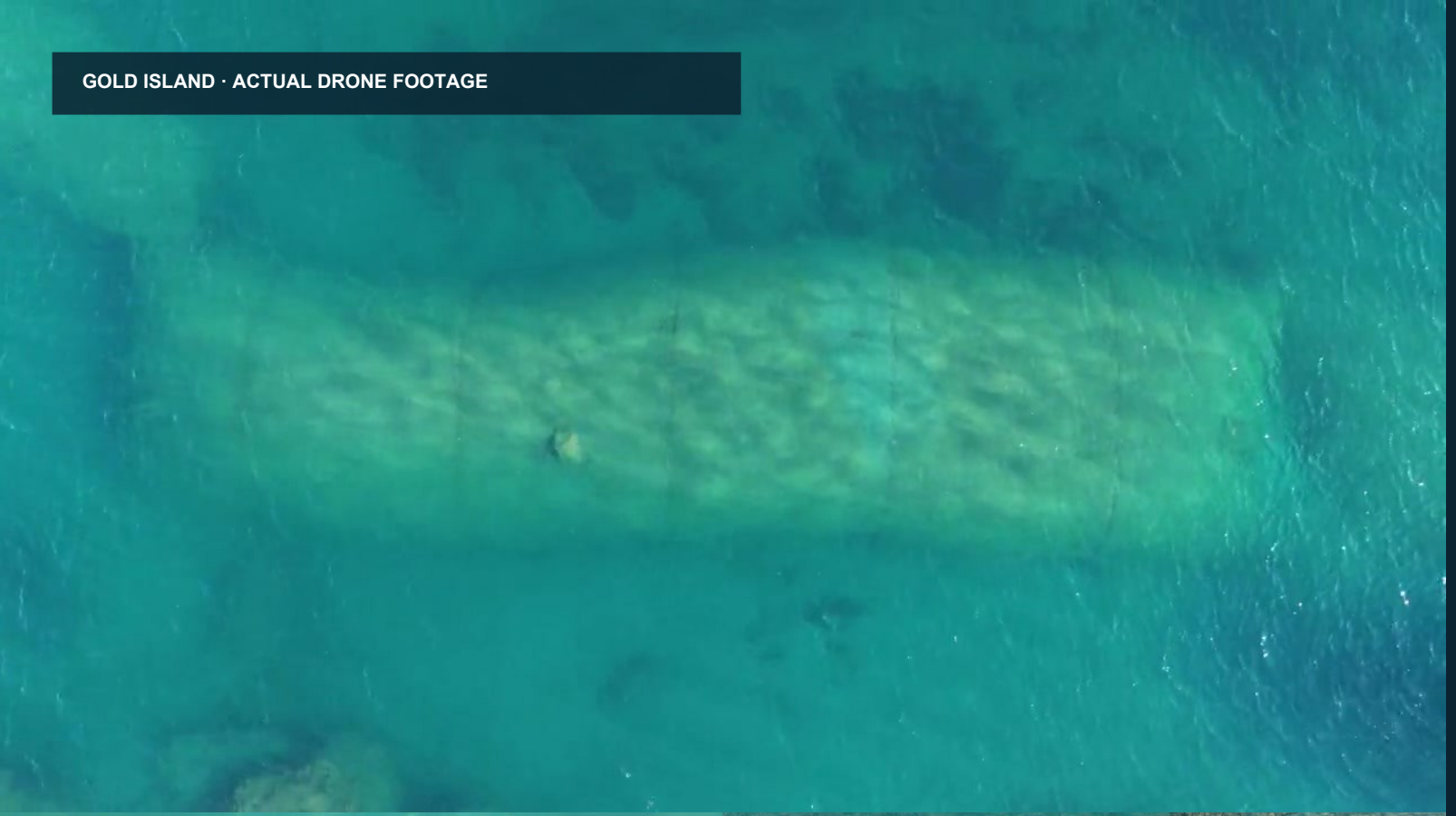
Wave energy is proportional to wave height squared. A 30% lower wave leaves half its energy offshore.

A proven method on the world's leading coastlines

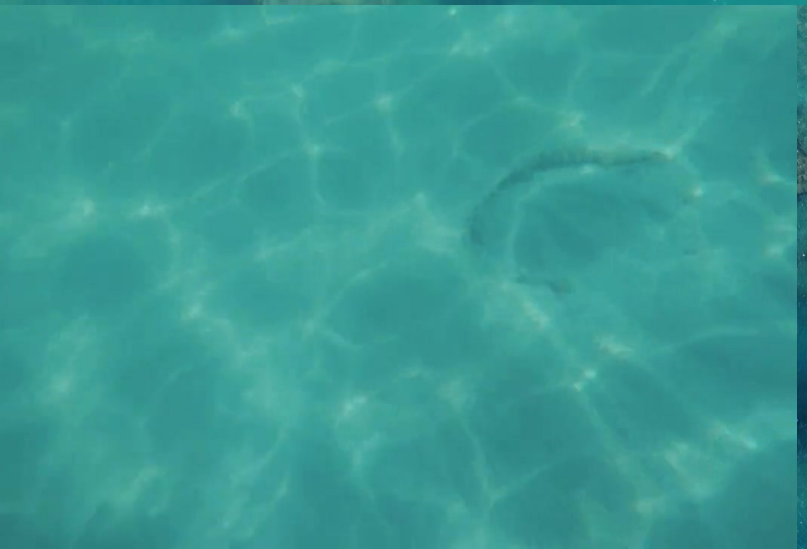


1999-2000	**Gold Coast, Australia** ~70,000 m³ sand-filled structure
2001-2005	**Yucatán, Mexico** ~4.5 km of submerged geotubes
2017	**Halkidiki, Greece** Hotel beach · 28 geotubes
2024-2025	**Cannes · Saint-Tropez** French Riviera
2022-2026	**Kerala, India** 5 × ~100 m submerged lines

The common thread: Correct placement + site-specific design + regular monitoring = a lasting, comfortable beach. More than half a century of engineering experience.



GOLD ISLAND · ACTUAL DRONE FOOTAGE





04 · LOCAL EXPERIENCE IN ALANYA

Gold Island: Results in Alanya’s coastal waters

Implemented in collaboration with Middle East Technical University (METU), this project demonstrates the method in Alanya’s sea, sand and wave conditions.

- Applied in local sea conditions
- Academic collaboration (METU)
- Documented by air and underwater

05 · EN VIE BEACH TODAY

A generous beach, an exposed shore

At the western end of Keykubat Beach, the shore faces the open sea. On wavy days, the surf breaks directly at the shoreline.

70 days

Summer days with daytime waves above 0.5 m (annual average, 2021-2025)

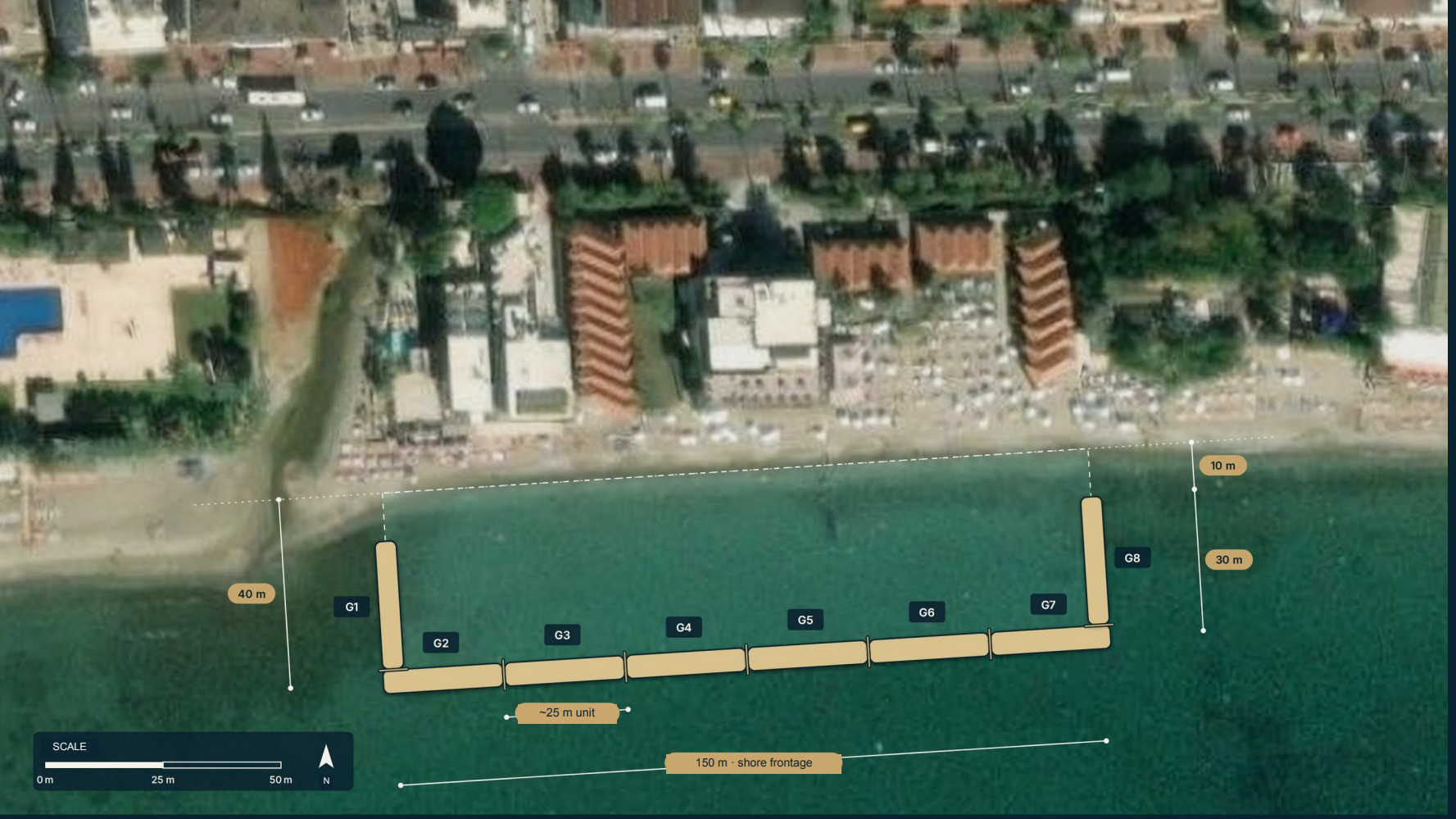
~65%

Share of high waves arriving from the southwest to west



ACTUAL SATELLITE IMAGE · FEBRUARY 2024

Site plan

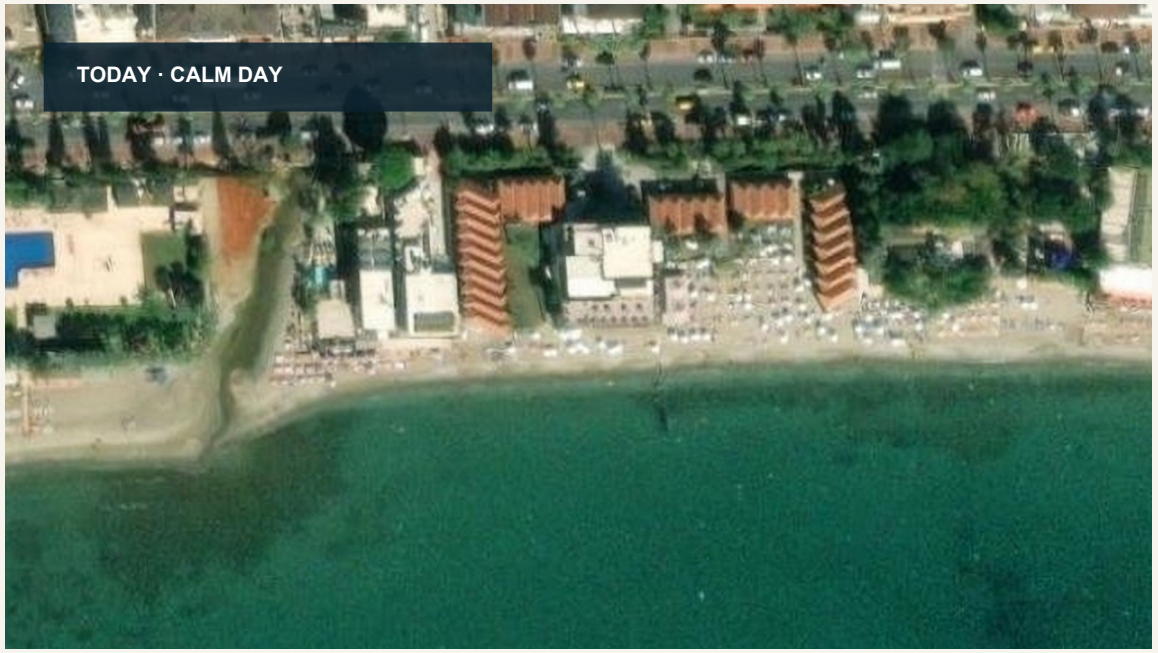


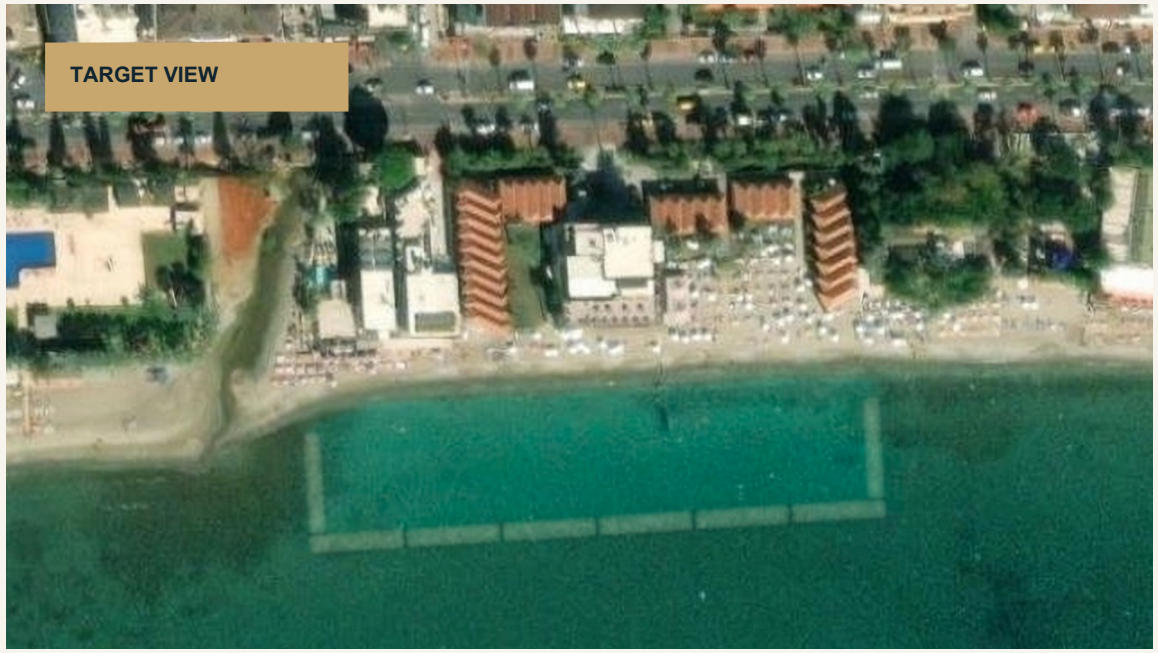
150 m	40 m
Shore frontage	Offshore line
8	10 m
End-to-end units	Start of side arms
-1.00 m	9,600 m³
Crest elevation	Total sand

G1-G8 geotube units · offshore units: 5 m base width, average height 4 m · side arms start 10 m from shore · sand fill behind the line raises the seabed by ~1.5 m

Satellite base: Esri World Imagery, March 2023

The same shore, a new experience





Turquoise, sandy swimming area

Underwater sand fill raises the seabed.

Shallow, sandy entry

The sandy area extends ~20 m farther.

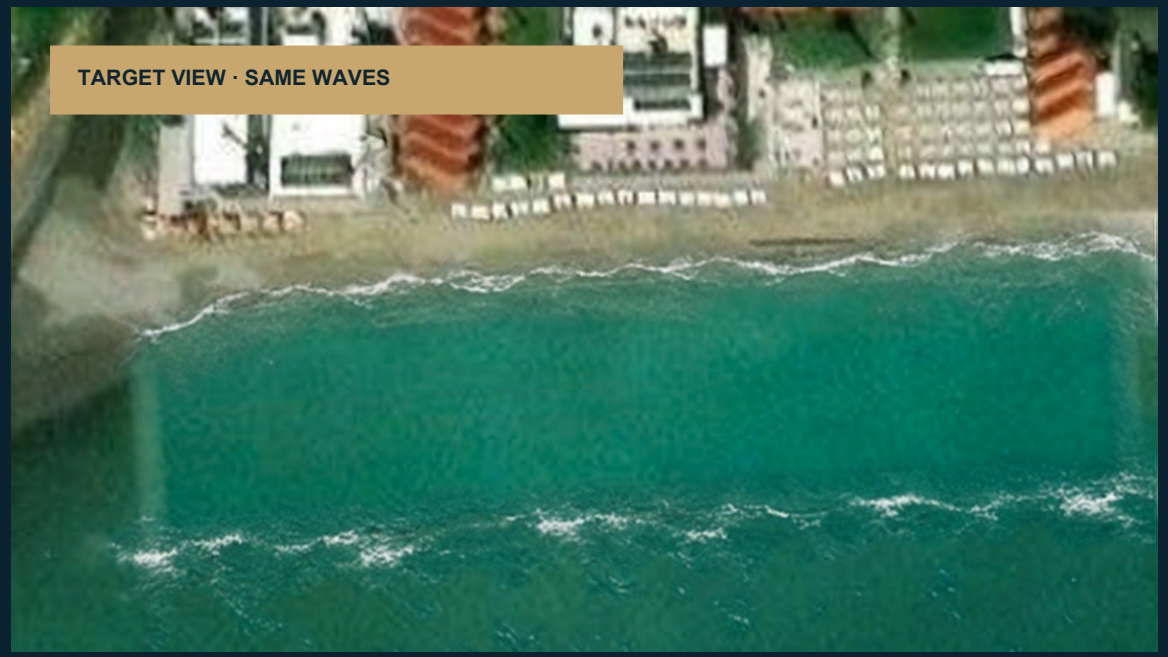
Invisible protection

The geotube line remains underwater.

Left: actual satellite image (March 2023). Right: an illustrative target view created from the same image.

The difference on a wavy day



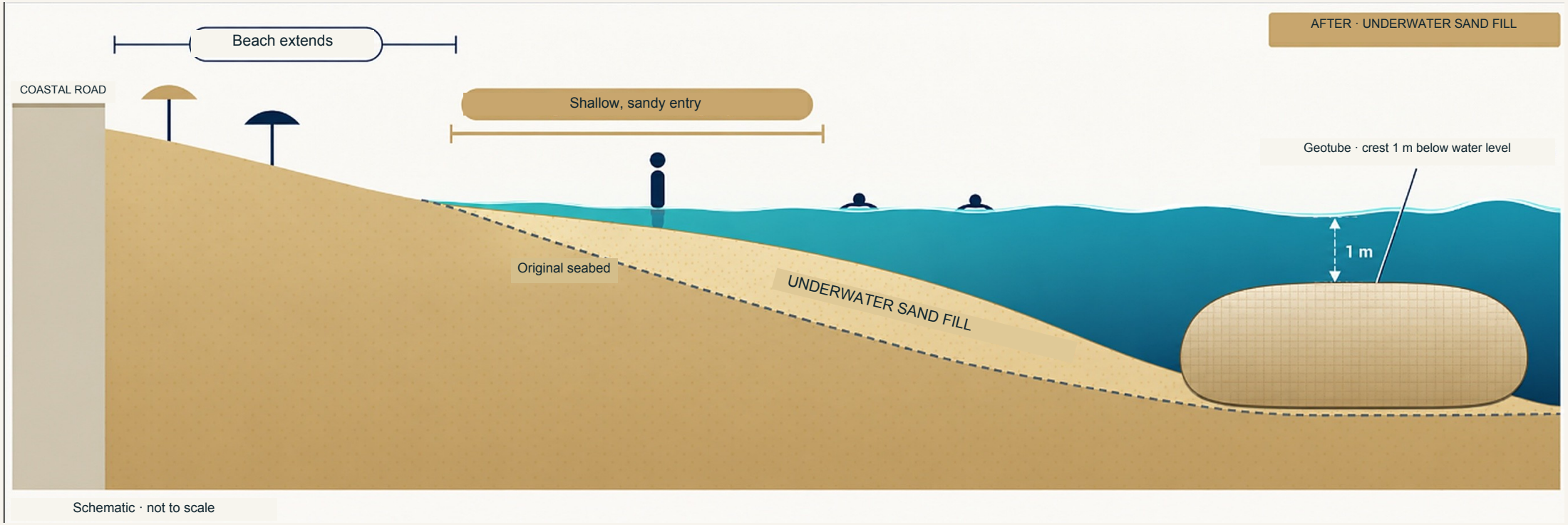


Waves now break at the geotube line, away from the shore.

The surf line moves 40 m offshore, leaving calm, swimmable waters inside the enclosure.

Left: actual satellite image (February 2024). Right: an illustrative target view created from the same image.

Sand below the surface, shallow and safe waters



+20 m

Shallow sandy entry · beach extends

2.0 to 0.9 m

Depth 40 m from the coastal road

3.2 to 1.5 m

Depth 50 m from the coastal road

No imported sand needed.

The geotubes and sheltered area are filled with sand from the sea.

A calm, clear and sandy entry to the sea



ILLUSTRATIVE IMAGE

07 · UNDERWATER VIEW

Sandy, clear and calm beneath the surface

The geotube line rests on the seabed, with 1 m of water above its crest. Underwater sand fill creates a soft, light-coloured seabed in the swimming area.

- Sandy, stone-free entry
- Shallow, safe swimming area
- Clearer, calmer water



ILLUSTRATIVE IMAGE

Calmer waters in numbers

20-35%

Lower waves

35-60%

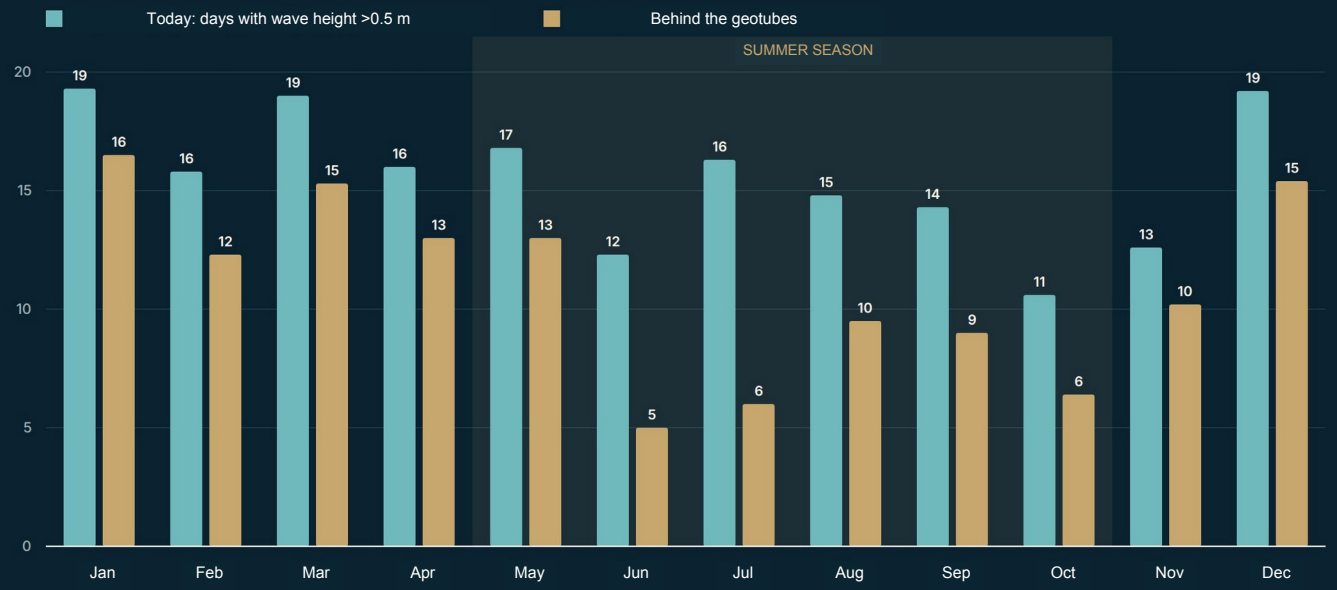
Less wave energy

70 to 40

Wavy days per season (daytime)

+20 m

Shallow, sandy entry



Daytime (08:00-19:00), monthly average days · 2021-2025

Calculated for the En Vie cross-section using 2021-2025 hourly wave data offshore of Alanya and internationally accepted wave transmission relationships.

The effect is greatest in high waves; the shallow sandy seabed further supports calmer nearshore waters.

For guests, operators and the city

01 **Comfortable sea entry**

Shallow, sandy, stone-free and calm.

02 **More days in the sea**

Enjoy swimming even on wavy days.

03 **A lasting beach**

No imported sand is needed.

04 **Open horizon**

Views and sunsets stay unchanged.

05 **A longer season**

A beach used in spring and autumn too.

06 **Property protection**

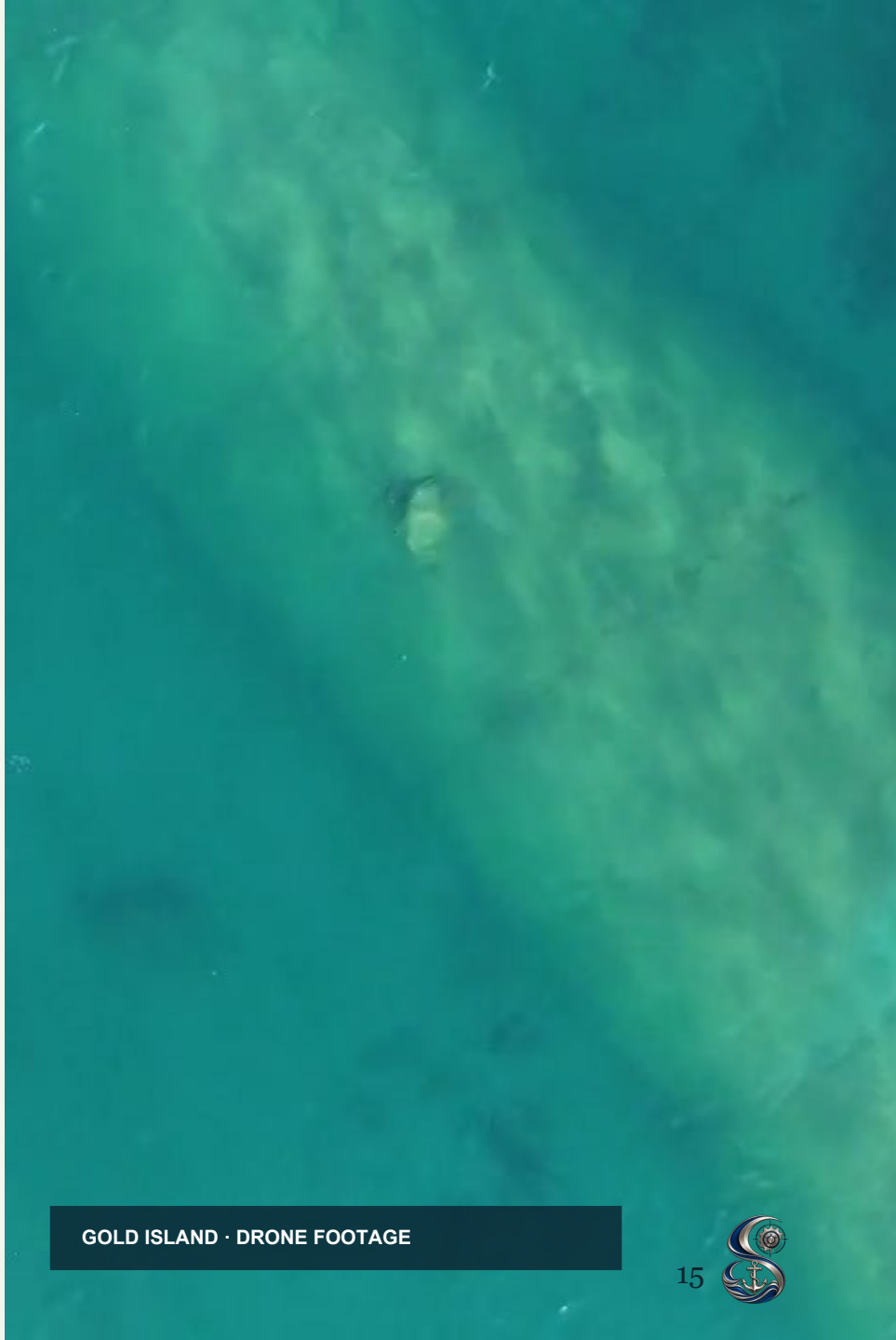
Wave energy is dissipated offshore.

07 **Natural material**

The sea’s own sand and geotextile.

08 **Value for the city’s brand**

Calm waters set a new quality standard.



GOLD ISLAND · DRONE FOOTAGE

A planned, measured and monitored approach

01

Detailed design data

Bathymetry and site surveys optimise cross-sections and elevations.

02

Seabed and scour

Scour-protection aprons keep the units stable and in place.

03

Sand and material quality

Marine sand grain size is measured; marine-grade, UV-resistant geotextile is used.

04

Post-storm maintenance

Inspections before the season and after storms; sand replenishment if needed.

05

Swimming safety

Buoys mark the line, and swimming-area rules are established.

06

Fit with adjacent shores

Openings maintain circulation; monitoring also covers neighbouring shores.



ALANYA COASTAL COMFORT PROJECT

Calmer waters for Alanya’s shores.

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