

CAPABILITY STATEMENT · 2026

Outdoor cooling

Comfort you can measure, in the open air.

A Gulf terrace is closed for five months of the year unless someone engineers the air. We model it, build it under the paving, and prove it with a thermometer at seated height.

Green Square Gulf Contracting Co.

CFD-MODELLED · BUILT UNDER THE PAVING · PROVEN AT
SEATED HEIGHT



Cool the people, not the sky.

Outdoor cooling is the discipline of holding a pool of cool, dry air exactly where people sit, while the air a few metres above them is in the forties. Green Square has delivered it for hotel terraces, a retail boulevard, a mall courtyard, and a paddle court, each one modelled in computational fluid dynamics before a duct was laid and balanced on site against the model.

38°C

design ambient in the CFD studies

1.2m

where comfort is measured: seated height

R-10

insulation value of the buried duct

5

Four Seasons dining terraces cooled

WHAT WE SUPPLY

- Air handling units with indirect evaporative cooling
- Pre-insulated HDPE underground duct, R-10
- Polycarbonate and stainless steel grilles
- Windbreakers and screens
- Controls, sensors, and seasonal scheduling

WHERE IT WORKS

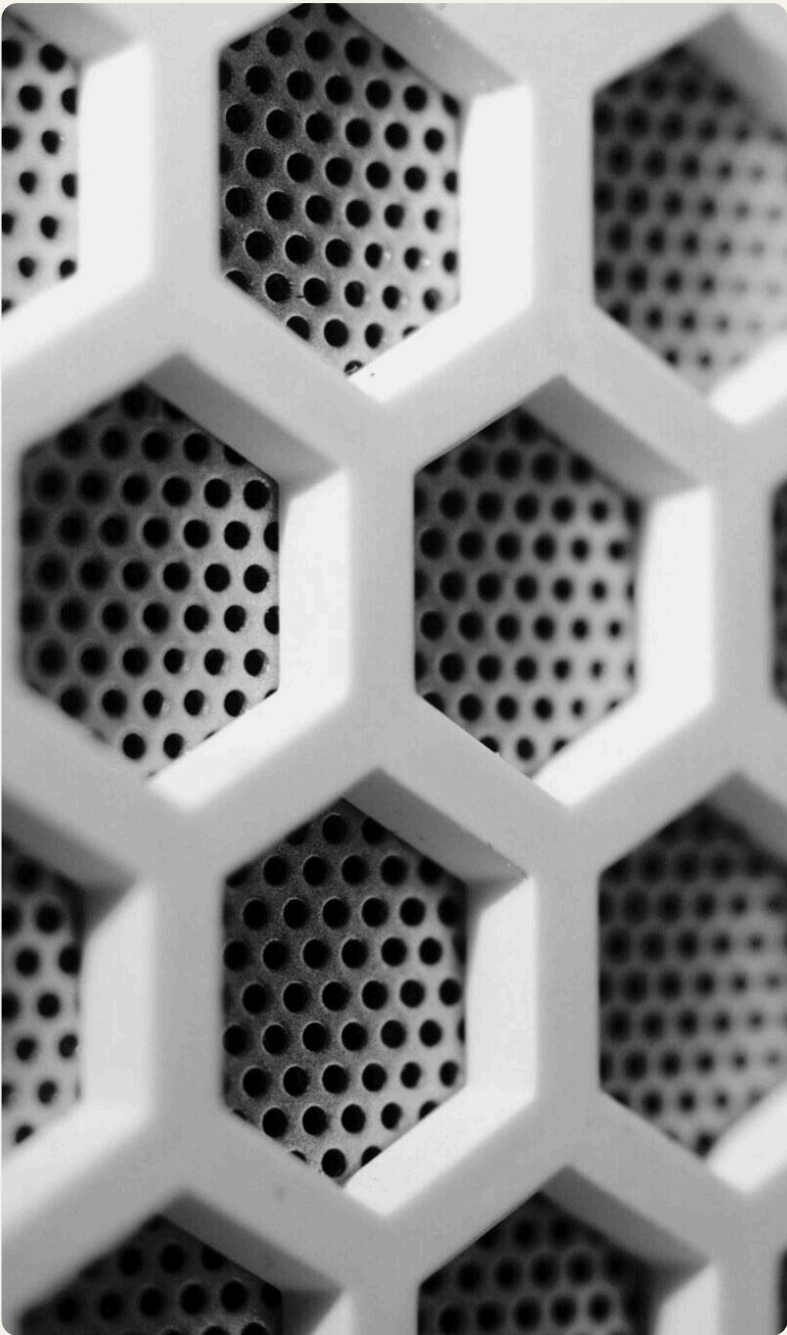
- Hotel terraces and pool decks
- Open-air restaurants
- Retail boulevards and promenades
- Mall courtyards and atria
- Stadium concourses and open galleries
- Paddle and tennis courts

HOW WE PROVE IT

- CFD at the design ambient
- Grilles placed by the model
- Plant sized for the real load
- Balanced to a seated-height target

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COM

01 · WHY OUTDOOR COOLING

A Gulf terrace is closed for five months of the year unless someone engineers the air.

Shade alone does not do it: at forty degrees, shaded air is still forty degrees. Misting wets the guests and the stone. What works is a pool of cool, dry air held at the height people sit, replenished faster than the afternoon can warm it. That is a mechanical system, and it is one we have built for hotels, a boulevard, a mall, and a court.



FORT

01 A longer season

Terraces, courtyards, and walkways that trade for the whole year rather than the cool half of it.

03 Nothing on show

The plant sits out of sight, the ducts run under the paving, and the grilles are designed into the floor and the planters.

02 Dry comfort, not mist

The cooling is indirect, so nothing is sprayed onto guests, furniture, or stone. The air arrives cool and dry.

04 A result you can verify

The design target is a temperature at seated height. The CFD predicts it, the balance report proves it.



SYSTEM

Cool it without wetting it, carry it underground, release it at the floor, and keep it where the people are.

Four stages, from the plant to the guest. The first two happen out of sight; the last two are designed into the floor and the planting.



01 Cool the air without wetting it

An indirect evaporative cooler uses evaporation on one side of a heat exchanger to cool the supply air on the other, so the air gets colder without picking up moisture. A conventional cooling coil then trims it to the target.

02 Carry it underground, insulated

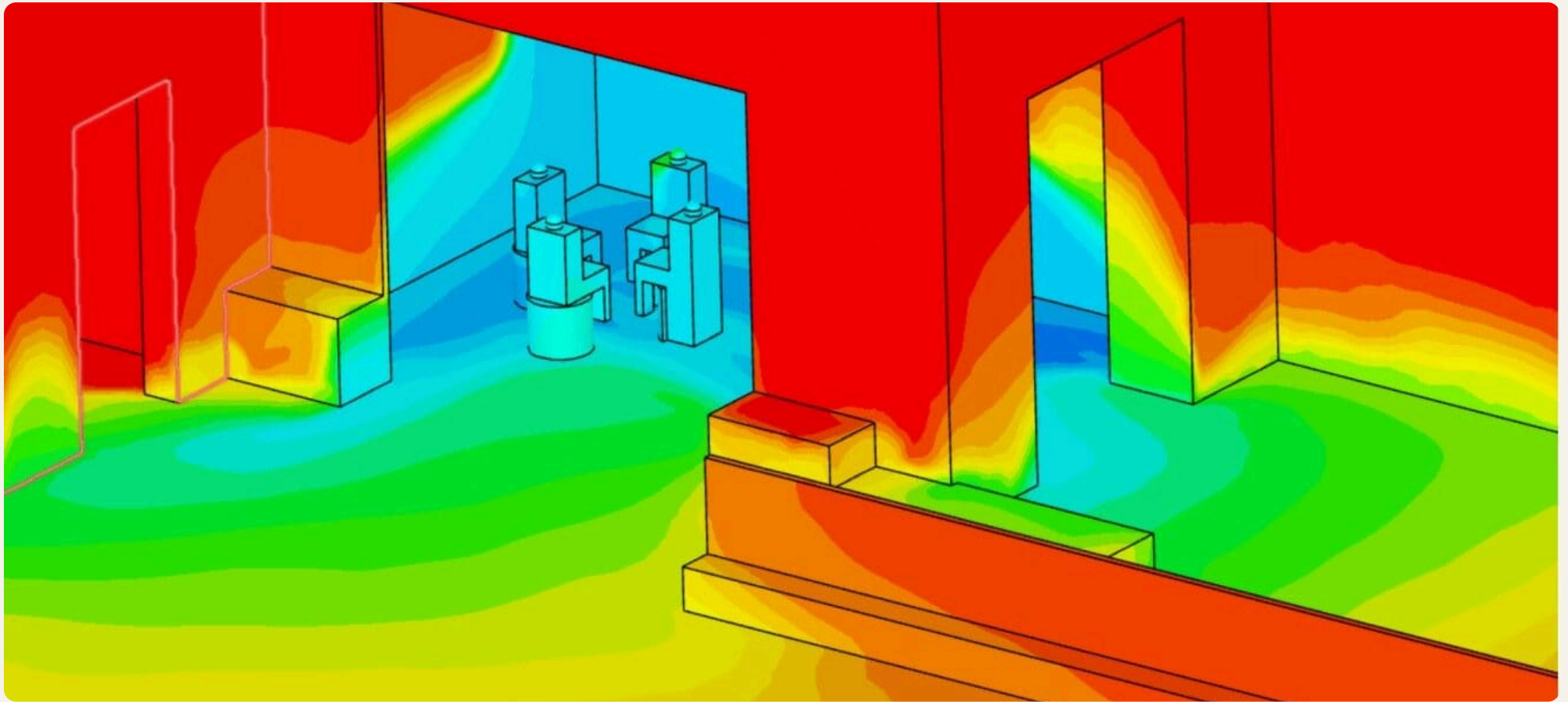
The cold air travels through HDPE ducts buried under the terrace. They are insulated to R-10, so the air arrives as cold as it left, and they cannot rust in wet ground.

03 Release it slowly at floor level

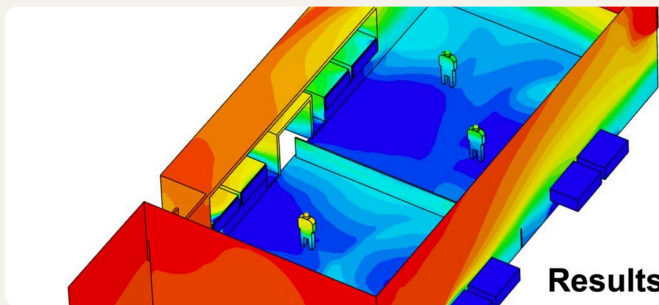
Floor and low-wall grilles let the air out gently. Cold air is heavier than hot air, so it settles and pools around the seating rather than rising away.

04 Keep it where the people are

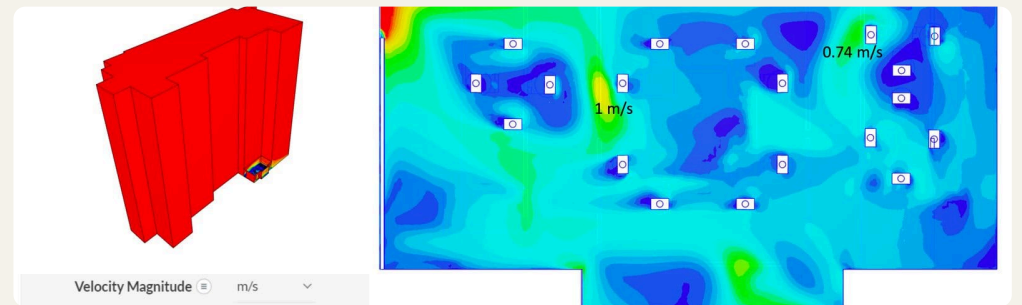
Glass screens and planting break the wind so the pool of cool air is not blown off the terrace. The result is measured at 1.2 metres, where a seated guest's head is.



Temperature contour, Tea Lounge terrace, Four Seasons Doha



Paddle court, Mamoura, Doha, at 38 °C ambient



Air velocity at 1.2 m, Le Deli Robuchon terrace, Four Seasons Doha

MODELLED

Every terrace is simulated at its design ambient before a duct is laid.

Computational fluid dynamics is a simulation of the air itself: where it goes, how fast, and how warm it is at every point in the space. We model the terrace with its furniture, its screens, and the hottest afternoon it will see, and move the grilles and the windbreaks on screen until every seat sits in the cool zone. Only then is the design fixed.



WHAT THE MODEL GIVES THE PROJECT

- Predicts the temperature and air speed at every seat before anything is bought
- Finds the hot spots and the dead air, so the grilles go where they are needed
- Sizes the plant for the real load, not a rule of thumb
- Gives the commissioning team a target to balance to



TURNKEY

One scope from the first survey to the maintenance plan, carried by our own engineers and crews.

The terrace is coordinated with the landscape, the interiors, and the structure, so it opens once. The handover record is the temperature at seated height, measured under the ambient the system was designed for.



01 Survey and brief

The space, the furniture plan, the operating hours, and the comfort target the operator will sign.

03 Detailed engineering

Plant selection, duct routes under the paving, structural and drainage coordination, and the controls.

05 Grilles and windbreakers

Polycarbonate and stainless grilles set into the floor and planters; screens placed from the velocity study.

07 Testing and balancing

Every outlet balanced, the temperature at seated height recorded against the model.

02 CFD modelling

The terrace simulated at its design ambient; grilles, screens, and plant positioned on the model.

04 Plant and duct

Air handling units with indirect evaporative cooling, and R-10 HDPE duct laid before the finishes.

06 Installation

Our own crews, coordinated with the landscape and interiors trades, so the terrace opens once.

08 Handover and care

Operating guidance, seasonal scheduling, and a maintenance plan for the evaporative media and filters.



Four Seasons Hotel

The Pearl, Doha

Five open-air dining areas of a five-star hotel, each modelled and balanced on its own: the all-day dining terrace, Le Deli Robuchon, Chicago Rare Steakhouse, La Méditerranée Robuchon, and the tea lounges.

- Five restaurants and lounges, each with its own CFD study
- Grilles designed into the stone and the planters
- Balanced to a seated-height temperature under a 38 °C ambient



LOCATION

The Pearl, Doha

SECTOR

Hospitality & Leisure

SCOPE

Outdoor cooling for five dining terraces



05 · PROVEN ON SITE

Commercial Boulevard

Lusail, Qatar

Pedestrian walkways, restaurant frontages, and outdoor retail along Lusail's boulevard, cooled so the street trades through the summer.

- Walkways, restaurants, and shopfronts on one engineered system
- Plant hidden in the buildings, air delivered under the pavement
- Longer trading hours and more foot traffic for the tenants

LOCATION

Lusail, Qatar

SECTOR

Retail & Malls

SCOPE

Outdoor cooling for the boulevard's key buildings

04 Mall

The Pearl, Doha

A premium courtyard cooled through buried HDPE BlueDuct at R-10: lightweight, corrosion-free, and invisible once the stone went down.

- Central courtyard cooled from floor level
- HDPE BlueDuct at R-10 under the paving
- No plant or ductwork visible in the courtyard

LOCATION

The Pearl, Doha

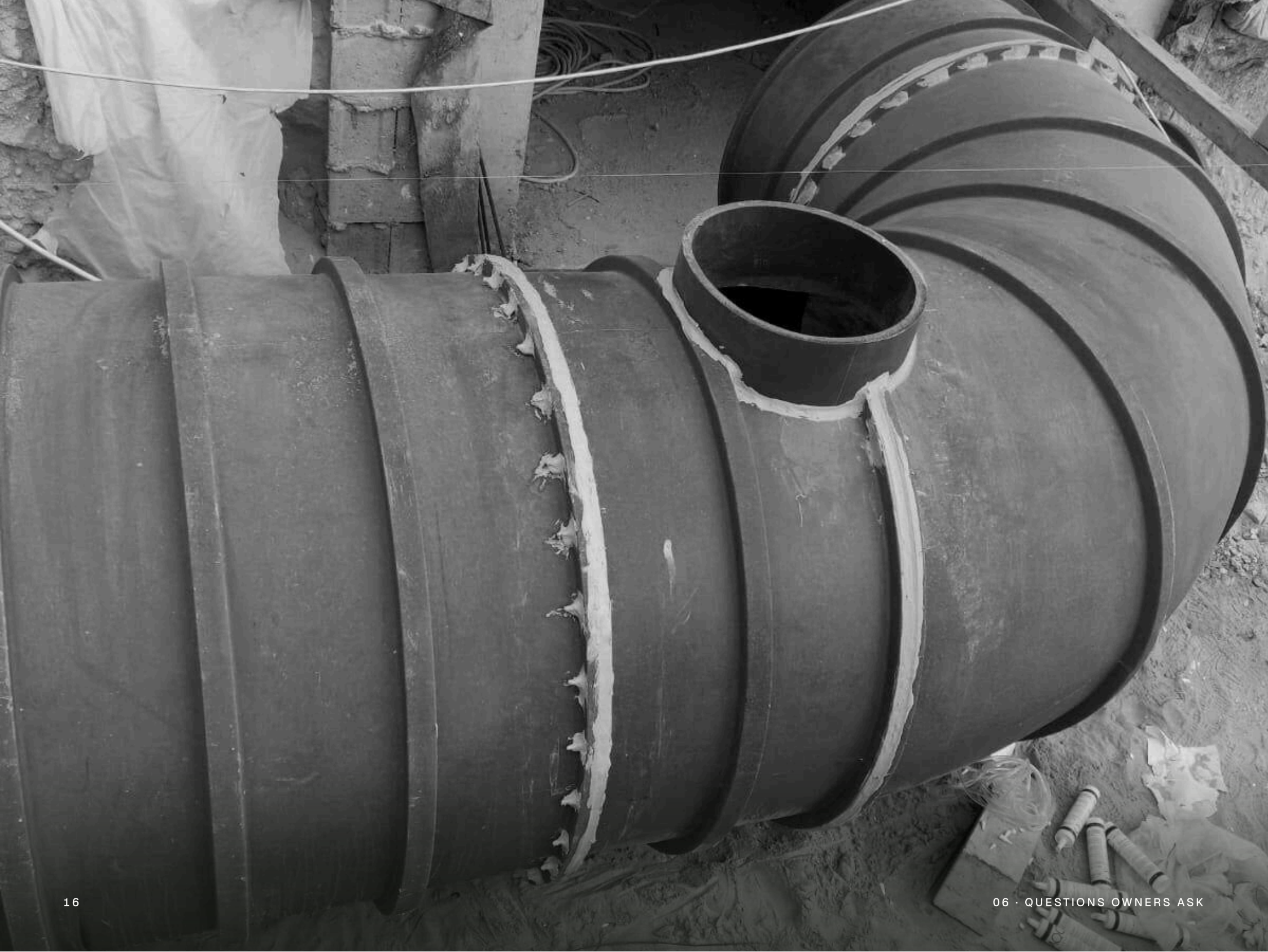
SECTOR

Retail & Malls

SCOPE

Outdoor cooling for the central courtyard





The first meeting, answered in advance.

Does it really work on a forty-degree afternoon?

Yes, because the target is not the air above the terrace but the air around the seat. The CFD studies are run at the design ambient, and the balance report records the temperature at 1.2 metres under it. The seated zone holds in the low-to-mid twenties while the ambient is in the high thirties.

How much energy does it use?

Less than refrigerating the same air from scratch. The indirect evaporative stage does most of the cooling on fan power and water, and the coil only trims the last few degrees. Controls run the plant to the booking pattern, not around the clock.

What about sand and dust?

The intake filtration is sized for a Gulf site, the underground duct is sealed, and the grilles are low-velocity so they do not lift dust. Maintenance is a filter and media schedule we set at handover.

Is it misting?

No. High-pressure misting sprays water into the air and onto people; it is a different, lighter tool. Our systems cool the air indirectly inside the plant and deliver it dry, so furniture, stone, and guests stay dry.

What does the terrace look like afterwards?

Like the terrace. The plant is in a plant room or on a roof, the ducts are under the paving, and the grilles are designed into the floor or the planters in polycarbonate or stainless steel to match the finishes.

Can an existing terrace be retrofitted?

Usually. The duct needs a trench under the paving and the plant needs a home nearby. We survey, model, and tell you what the terrace can take before you commit.

Anywhere people are asked to sit outside in a Gulf summer.

The same four stages scale from a single restaurant terrace to a boulevard. What changes is the plant size and where the duct can run; what does not change is the target at seated height.

- | | |
|------------------------------------|--|
| ■ Hotel terraces and pool decks | ■ Stadium concourses and open galleries |
| ■ Open-air restaurants | ■ Paddle and tennis courts |
| ■ Retail boulevards and promenades | ■ Palaces and private estates |
| ■ Mall courtyards and atria | ■ Transit and high-footfall public realm |

WHAT WE SUPPLY

Air handling units with indirect evaporative cooling

Pre-insulated HDPE underground duct, R-10

Polycarbonate and stainless steel grilles

Windbreakers and screens

Controls, sensors, and seasonal scheduling





LET'S TALK

Bring the terrace plan and the opening date. We come back with a model, a plant list, and a programme.

OFFICE

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Al Khobar, Kingdom of Saudi Arabia

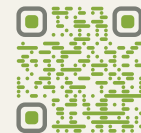
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