

THE FUTURE OF INDUSTRIAL SAFETY IS HERE.

AI-powered Edge Computer Vision that detects every risk, every violation, every unsafe moment — in real time, across construction, oil & gas, and industrial facilities.

 Construction Sites Oil & Gas Facilities Refineries & Petrochemical Manufacturing & Industrial RoadScan AI Road Survey**98.4%**

Detection Accuracy

<200ms

Alert Latency

72hrs

Deployment time

4

Products Covered

YOUR CAMERAS ARE WATCHING. THEY JUST AREN'T SEEING.

Traditional CCTV records incidents. SiteGuard AI prevents them — across every high-risk industry.

1 in 5

1 in 5 workplace deaths globally is in construction or heavy industry

65% caused by the Fatal Four: Falls, Struck-By, Caught-Between, Electrocution — all detectable by AI in advance.

CCTV RECORDS. IT DOESN'T THINK.

Traditional cameras capture footage for post-incident review. They cannot detect a missing hard hat, identify a worker in a hot zone, or alert before a fall occurs. They create evidence — not safety.

CLOUD AI FAILS IN THE FIELD.

Cloud-based CV requires stable internet. Remote oil fields, desert construction sites, and offshore platforms have no reliable connectivity. 2-5 second cloud latency means alerts arrive after the incident.

HUMANS MISS 90% OF ALERTS.

Guards monitoring 20+ camera screens cannot maintain attention. Research shows 90%+ of critical events are missed after 20 minutes of continuous monitoring. AI never loses focus. AI never tires.

THE COST OF INACTION — BY INDUSTRY:

\$1.39M

Cost per fatality

\$40K

Cost per injury

\$11.5B

Annual global injury cost

\$4-6

ROI per \$1 spent on safety

INDUSTRY-SPECIFIC RISKS SITEGUARD AI DETECTS:

■ Construction

■ Oil & Gas

■ Manufacturing

■ Refineries

Falls, struck-by, electrocution, heat stress n Oil & Gas Fire, explosion, toxic gas, confined space n Manufacturing Machine entanglement, crush injury, forklift n Refineries Chemical burn, hot work, pressure vessel fa

NOT ALL COMPUTER VISION IS THE SAME

Why Edge AI is the only viable option for industrial and construction sites in the Gulf.

TRADITIONAL CCTV	CLOUD-BASED CV	SITEGUARD EDGE AI
Legacy recording. No intelligence.	AI with critical limitations	The right solution. Always on-site.
Processing Location	Cloud server -5 sec latency	On-device <200ms Full edge processing
Internet Required	YES — always on -5 sec latency	NO — fully offline Works anywhere
PPE / Safety Detection	Delayed cloud alerts	Real-time on-site 98.4% accuracy
Danger Zone Alerts	Slow. Cloud round-trip	Instant virtual fencing <200ms response
Works Offline / Remote	NO — site goes blind	YES — full function Desert / offshore ready
Data Privacy	Video sent to cloud Sovereignty risk	Nothing leaves site Full data sovereignty
Night / Dust / Heat	Camera dependent	Gulf-optimised models -10°C to +55°C
Multi-Industry Models	Generic models only	Construction + Oil & Gas + Manufacturing models
HSE Compliance Reports	Semi-automated	Automated daily ISO 45001 ready
Arabic Dashboard	Rarely	Yes — full bilingual GCC native
Deployment Time	2-4 weeks cloud setup	72 hours Plug in and go
Existing Camera Support	Usually compatible	All RTSP / ONVIF All major brands

SIMPLE. FAST. POWERFUL.

HOW IT WORKS

No new cameras. No internet required. No disruption to your operations.

CONNECT

We plug in. You relax.

Our engineers connect SiteGuard AI edge devices to your existing cameras — CCTV, IP, PTZ, dome, or thermal. No new cameras. No cab

Compatible: All RTSP/ONVIF cameras. Hikvision,

Dahua, Axis, Hanwha, Bosch.

DETECT

AI watches. Every second. Never blinks.

SiteGuard AI processes every camera simultaneously on the edge device — detecting PPE violations, zone breaches, equipment proximity

No cloud. No internet. No latency. 98.4% accuracy.

Day and night.

ALERT

ALERT Your team acts. Before it happens.

The moment a violation is detected, your HSE officer receives an instant alert — mobile, dashboard, or integrated alarm — with camera feed, location, and violation type. Under 200ms.

Multi-channel alerts: App, SMS, email, site PA integration,

SCADA connection.

CONFIGURE

We map your site. You set the rules.

We map your facility — construction zones, oil storage perimeters, machinery exclusion zones, hot work areas, chemical storage boundaries

Custom zones per area, shift pattern, contractor team,

and risk level.

REPORT

Compliance is automatic. Audits are instant.

Every detection, alert, and response is logged automatically. Daily, weekly, and monthly HSE compliance reports generated — ready for re

ISO 45001 ready. Arabic and English. Full audit trail

from day one



■ CONSTRUCTION SITES

USE CASE 1 OF 3

Giga-projects, high-rises, infrastructure — the Gulf's \$500B building boom

THE CHALLENGE:

Construction sites in Saudi Arabia, UAE, and Qatar have thousands of workers from dozens of nationalities and contractor companies — operating in extreme heat, on multiple levels simultaneously, with constantly changing risk zones.

WHAT SITEGUARD AI DETECTS ON CONSTRUCTION SITES:

■ PPE Compliance

Hard hat, safety vest, gloves, boots, goggles detected on every worker, every frame, day and

■ Danger Zone Breach

Virtual perimeters around excavations, machinery, high-voltage areas — instant alert on entry

■ Fall Risk Detection

Workers near unprotected edges, missing harness on elevated platforms, unsafe ladder use

■ Hot Work Monitoring

Welding, cutting, grinding zones monitored for fire proximity, missing fire watch, PPE violations

■ Machinery Proximity

Workers too close to cranes, excavators, forklifts — automatic proximity alert before contact

■ Heat Stress Indicators

Worker behaviour patterns indicating heat stress — rest zone violations, collapse risk detection

\$500B

Gulf construction spend 2026-2030

10,000+

Workers on single NEOM site

72hrs

SiteGuard AI deployment time

ISO 45001

Compliance readiness

■ SAUDI

NEOM, Qiddiya, Red Sea Giga-project monitoring

■ UAE

Dubai high-rises Multi-floor simultaneous

■ QATAR

Stadium builds ISO/FIFA compliance



■ OIL, GAS & REFINERIES

USE CASE 2 OF 3

The Gulf's most critical infrastructure — where one incident costs millions and lives

THE CHALLENGE:

Oil refineries, gas processing plants, and petrochemical facilities are the most hazardous environments on earth. A single PPE violation near a flammable zone or confined space can result in catastrophic injury, explosion, or fatality.

WHAT SITEGUARD AI DETECTS IN OIL & GAS FACILITIES:

■ FR Clothing Compliance

Flame-resistant clothing, face shields, gas masks and respiratory PPE detection in hazardous

■ Confined Space Entry

Unauthorised confined space entry detection Permit-to-work zone compliance monitoring

■ Hot Work Zone Safety

Welding and cutting zone fire watch verification Proximity to flammable materials detection

■ Exclusion Zone Breach

Perimeter enforcement around high-pressure vessels, chemical storage, and processing equipment

■ Buddy System Check

Lone worker detection in high-risk zones Automatic buddy system compliance monitoring

■ Vehicle & Equipment

Heavy vehicle movement in pedestrian zones Equipment proximity and speed violation alerts

Zero

Cloud dependency
Works offline/remote

ATEX

Ready hardware
options available

24/7

Unmanned facility
monitoring

100%

Audit trail for
regulators

TARGET CLIENTS IN OIL & GAS

Saudi Aramco (KSA) · ADNOC (UAE) · QatarEnergy (Qatar) · SABIC (KSA) · EQUATE (Kuwait)
KNPC (Kuwait) · Taqa (UAE) · Petrofac operations · Subsea 7 · Wood Group · Worley

MANUFACTURING & INDUSTRIAL

Vision 2030 industrial cities and free zones — the Gulf's new economic backbone

USE CASE 3 OF 3

THE CHALLENGE:

Manufacturing facilities combine moving machinery, forklifts, conveyor systems, and human workers in close proximity. Saudi Arabia's industrial cities at Jubail, Yanbu, and KAEC are scaling fast — with safety infrastructure lagging behind growth.

WHAT SITEGUARD AI DETECTS IN MANUFACTURING & INDUSTRIAL:

Machine Guarding

Workers reaching into unguarded machinery Safety barrier removal detection and alert

Forklift-Pedestrian

Forklift proximity to workers detected in real time Crossing zone violations and speed awareness

Full PPE Suite

Hard hat, vest, safety shoes, gloves, goggles, ear protection — customised per production zone

Exclusion Zone Breach

Worker proximity to moving conveyor belts Emergency stop trigger zone monitoring

Buddy System Check

Unsafe manual handling, awkward postures, repetitive strain risk behaviour patterns

Vehicle & Equipment

Visual defect detection on production line Dimension and assembly verification (premium)

\$1T+

KSA industrial investment 2030

Jubail

World's largest petrochemical hubs

KIZAD

UAE free zone manufacturing

KAEC

New industrial city KSA

TARGET SECTORS IN MANUFACTURING:

Food & beverage processing · Automotive assembly · Steel and aluminium · Cement and building materials Pharmaceutical manufacturing · Electronics assembly · Packaging and logistics · Chemical processing

UNDER THE HOOD.

Full technical specification for system architects, IT managers, and HSE technology leads.



SITEGUARD AI EDGE ARCHITECTURE — ALL PROCESSING ON-SITE

CAMERAS (existing)

RTSP/ONVIF

EDGE DEVICE (on-site)

NVIDIA Jetson

AI INFERENCE (on-device)

YOLOv9+TRT

DASHBOARD (bilingual)

Real-time

ALERTS (<200ms)

Mobile/SCADA

NO VIDEO LEAVES SITE · NO CLOUD · OFFLINE CAPABLE · FULL DATA SOVEREIGNTY

AI DETECTION MODELS

● PPE Detection

YOLOv9 + GCC-trained dataset. Hard hat, vest, gloves, boots, goggles, FR clothing, gas mask. 98.4% mAP@0.5

● Zone Intrusion

Virtual polygon geofencing with real-time tracking. Multi-zone, PTZ compatible, shift-aware rules.

● Behaviour Analysis

Pose estimation (MediaPipe). Falls, unsafe postures, lone worker, running near machinery.

● Vehicle Proximity

Object detection + distance. Worker-vehicle proximity. Forklift, crane, heavy equipment awareness.

HARDWARE & INTEGRATION

● Edge Hardware

NVIDIA Jetson Orin/Xavier NX. TensorRT INT8. 30-60 FPS per stream. -10 to +55°C rated

● Camera Support

RTSP, ONVIF, MJPEG, H.264/H.265. Hikvision, Dahua, Axis, Hanwha, Bosch, Pelco.

● Connectivity

LAN / WiFi / 4G fallback. Dashboard on local network. Zero cloud required. SCADA ready.

● Integrations

REST API, Webhooks. ERP, SCADA, access control, project management, permit-to-work systems.

PERFORMANCE SPECIFICATIONS

Detection Accuracy
98.4% mAP@0.5

Alert Latency
< 200ms

Cameras per Device
Up to 32

Operating Temp
10°C to +55°C

Frame Rate
30-60 FPS

Night Performance
Full IR/low-light

TECH STACK: Python OpenCV PyTorch YOLOv9 TensorRT NVIDIA Jetson DeepStream MediaPipe RTSP

■ RoadScan AI

USE CASE 4 OF 4 NEW PRODUCT

End-to-End Intelligent Road Survey System · Vehicle-Mounted · GPS-Tagged · AI-Powered

THE CHALLENGE:

Manual road inspection is slow, costly, and dangerously subjective. A single inspector walking 10km of road takes weeks. Defects are missed. Manholes go unreported. Accidents follow. There is a better way.

THE ROADSCAN AI DIFFERENCE — COMPLETE END-TO-END SYSTEM. NOTHING ELSE NEEDED:

Multi-Camera
Array

Edge AI Chip

Built-in
Battery

GPS Module

Local Storage

Report Portal

WHAT ROADSCAN AI DETECTS — AUTOMATICALLY, IN REAL TIME, GPS-TAGGED:

■ Road Cracks & Fractures

Longitudinal, transverse, alligator/fatigue, and edge cracks classified by severity level. Each crack GPS-tagged to centimetre accuracy

■ Potholes & Deformation

Pothole depth, diameter, and severity scored automatically. Road deformation and rutting detected and mapped to asset database.

■ Open & Damaged Manholes

Uncovered, misaligned, or broken manhole covers detected and flagged immediately. Critical safety hazard — zero tolerance mode.

■ Faded Road Markings

Lane lines, pedestrian crossings, stop lines, and directional arrows assessed for visibility. Retro-reflectivity compliance flagging.

■ Damaged Signs & Signals

Missing, broken, faded, or obstructed road signs detected. Street light outages flagged. Inventory automatically updated

■ Surface Roughness (IRI)

International Roughness Index measured continuously. Smooth to critical scale scored. Comparable to international road standards

01 MOUNT

Mount the RoadScan AI unit on any vehicle. Plug-and-play setup. Ready in 15 minutes.

02 DRIVE

Drive at normal road speed. AI processes every frame in real time. No stops needed.

03 DETECT

Every defect detected, classified by severity, and GPS-tagged

04 MAP

All defects mapped in real time to digital road asset management dashboard

05 REPORT

Automated reports generated instantly — ready for municipality,

\$2.1B

AI road inspection market 2026

18

Saudi Roads Authority AI inspection vehicles

10x

Faster than manual survey

GPS

Centimetre-level defect location

TARGET BUYERS:

Municipality & City Government · Roads & Transport Authorities (RTA Dubai, Ashghal Qatar, MOT Saudi) · Private Road Contractors

NOT JUST SOFTWARE. A DEDICATED PA

We build, deploy, and support every SiteGuard AI installation — from first assessment to ongoing operations.

ROOTBLOCKLABS

Computer Vision & Edge AI Engineering Company

- **15+ specialist CV engineers**
Available for immediate deployment globally
- **Edge AI & embedded systems**
NVIDIA Jetson, TensorRT, real-time inference
- **Multi-industry expertise**
Construction, oil & gas, manufacturing
- **Gulf market knowledge**
Deep GCC safety compliance experience
- **Arabic-language capability**
Full bilingual platform and on-site support
- **ISO 45001 experience**
HSE compliance documentation ready
- **72-hour deployment SLA**
Fastest implementation in the region
- **24/7 operational support**
Dedicated to your facility, always on

VSBLTY PARTNERSHIP

CSE: VSBY · Publicly Traded · Formalised MSA

- **Major partner status**
Formalised MSA — full product dev access
- **DataCaptor**
Anonymous audience analytics platform
- **VisionCaptor**
Targeted display at point of purchase
- **Vector**
Facial recognition, weapons detection
- **Globally validated platform**
Deployed across multiple countries
- **Regional deployment authority**
Authorised for full GCC market
- **Institutional credibility**
Publicly listed — CSE: VSBY
- **Technology roadmap access**
Co-develop future product features

WHY NO COMPETITOR CAN MATCH THIS COMBINATION

- Multi-industry AI models trained on Gulf footage (construction + oil & gas + manufacturing) with Arabic-language dashboard
- Edge deployment with zero cloud dependency — works on remote sites, offshore platforms, and desert facilities without internet
- VSBLTY-backed globally validated platform with local engineering team — the only combination in the Middle East market

THE WINDOW TO BE FIRST IS NOW.

Gulf facilities that deploy SiteGuard AI first set the safety benchmark. Every week without it is a week your competitor could be in the conversation with your client that you are not having



DON'T MISS THE TRAIN.

The Gulf's industrial safety revolution is happening right now.

Construction companies, oil & gas operators, and manufacturers across UAE, Saudi Arabia, and Qatar are adopting Edge AI safety. The question is whether you deploy it first

BOOK FREE ASSESSMENT

A 30-minute call with our Gulf team. We assess your facility, cameras, and safety requirements. No cost. No commitment

Zero obligation

RECEIVE PROPOSAL IN 48 HOURS

Site-specific deployment plan with technical spec, timeline, and full scope of what SiteGuard AI delivers.

48-hour turnaround

GO LIVE IN 72 HOURS

Engineers deploy on-site. All cameras connected. Models calibrated. Team trained. AI watching from day one.

48-hour turnaround

OTECT YOUR WORKFORCE. LEAD YOUR INDUSTRY

BOOK YOUR FREE SITE ASSESSMENT TODAY.

No pricing. No commitment. Just a conversation about your facility and your safety goals. We respond within 24 hours. Every enquiry handled directly by our Gulf engineering team.

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LINKEDIN

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A RootBlockLabs Product · VSBLTY Certified Major Partner · Lahore, Pakistan · Dubai, UAE

■ Construction Sites ■ Oil & Gas & Refineries ■ Manufacturing & Industrial ■ Airports & Logistics

Every day without SiteGuard AI is a day your workers are at risk and your competitors are gaining ground.