

Logistics Cluster

Area: approx. 5.0 ha

A modern logistics, storage and transportation backbone for the ADS ECO Eco-Industrial Complex – designed for controlled material movement, temporary storage, cargo handling, internal distribution and outbound dispatch.



5.0 ha

Planned land envelope



24/7

Controlled platform circulation



WMS/TMS

Digital logistics layer



Multi-flow

Inbound, storage & dispatch



PURPOSE

Ensure smooth operations and efficient supply-chain coordination across reception, storage, processing and product dispatch.



Logistics campus concept



Executive Overview

The Logistics, Storage and Transportation Zone is the operational backbone of the ADS ECO Eco-Industrial Complex. It organizes material flows, cargo movement, temporary storage and internal circulation across the platform while supporting inbound waste streams, recyclable materials, finished products and outbound industrial shipments.

The cluster is planned as an active management system rather than a passive yard. It combines truck routing, gate control, loading and unloading docks, structured storage, warehouse operations, handling equipment, fleet support and digital logistics monitoring into one integrated 5.0 ha logistics envelope.



Automated storage, dock handling and inventory visibility



Bright, clean and investor-ready logistics environment with no dark background: warehouses, racks, docks, equipment and digital visibility.



Platform connector

Links reception, sorting, recycling, energy, bio-industrial and dispatch areas into one controlled movement system.



Supply-chain reliability

Reduces congestion, delays and fragmented handling by using defined lanes, staging areas and warehouse rules.



Material visibility

Supports inventory tracking, batch labeling, product location and operational traceability through digital systems.



Scalable growth

Allows the complex to increase throughput and product families without losing operational control.

5.0 ha land-use logic



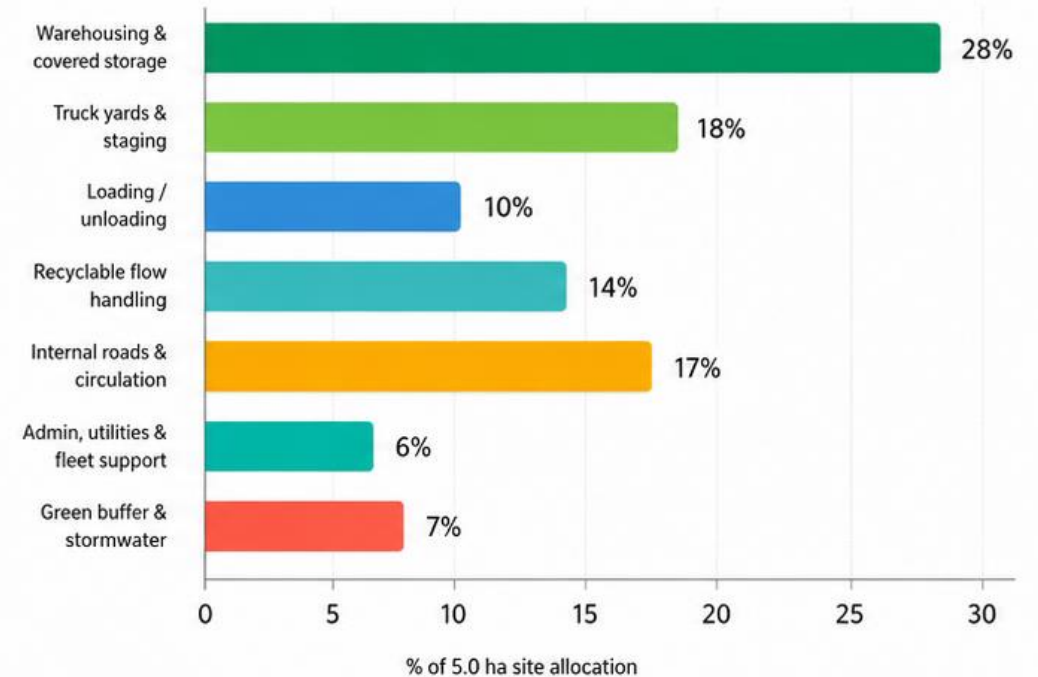
Indicative area envelope: 5.0 ha / 50,000 m².

Design reserves are included for roads, emergency access, truck turning, landscaping, drainage and future modular expansion.



Conceptual site diagram: warehouses, docks, staging, recyclable flow handling and controlled circulation.

SITE AREA ALLOCATION (% OF 5.0 HA)



From arrival to dispatch

The zone is structured to support a clear logistics sequence. Vehicles enter through controlled access points, materials are checked and routed, cargo is staged or stored, internal distribution connects process zones, and finished products are dispatched to external markets.



01



Gate access

ANPR/RFID entry,
weighbridge link,
security and routing

02



Cargo staging

Short-term consolidation,
inspection and dock
assignment

03



Storage control

Warehouse, bale, pallet,
container and bulk storage

04



Internal transfer

Movement to recycling,
energy, bio-industrial or
manufacturing zones

05



Outbound dispatch

Finished products prepared,
documented and shipped



Operational sequence: controlled entry - routing - cargo consolidation - loading/unloading - temporary storage - warehouse inventory - internal distribution - quality documentation - outbound scheduling - dispatch reporting.

Design focus: minimize vehicle conflicts, reduce material dwell time, protect product quality, provide reliable data, and keep every movement visible for managers, operators and investors.

Core infrastructure architecture

The cluster is designed as a practical logistics architecture that combines physical infrastructure, material-handling equipment and digital control. The following components form the operational backbone.

Component	Main function and technology content
 Gate entry and dispatch control	Controls truck entry, security, routing, vehicle identification, weighbridge interface and dispatch scheduling.
 Truck lanes and internal roads	Organized circulation with one-way loops, turning radius, emergency access and separation of heavy vehicles from pedestrian areas.
 Loading and unloading bays	Dock levelers, shelters, staging lanes, forklift approach zones and safe loading/unloading procedures.
 Temporary material storage	Controlled pads and covered areas for incoming materials, recyclable streams, containers and transfer buffers.
 Finished goods warehousing	Pallet, bale and packaged product storage with inventory tracking, product segregation and fire-zone planning.
 Recyclable flow handling areas	Dedicated zones for sorted fractions, bales, containers, transfer bins, balers, compactors and outbound material prep.
 Operational equipment and fleet support	Forklifts, electric pallet trucks, telehandlers, yard tractors, mobile conveyors, charging, maintenance and parking.
 Digital logistics and monitoring systems	WMS/TMS, IoT sensors, CCTV, RFID/QR, ANPR, dock scheduling, inventory dashboards and ESG traceability.



Digital control tower

The logistics cluster is supported by a digital layer that gives managers real-time visibility over vehicles, docks, storage locations, material batches and outbound shipments. The objective is not only automation, but transparent decision-making.

Key digital functions

- ✓ Vehicle pre-registration and entry validation
- ✓ Weighbridge and material ticket integration
- ✓ Dock scheduling and queue control
- ✓ Batch / pallet / bale traceability
- ✓ Inventory status and warehouse location logic
- ✓ KPI reporting for performance and ESG metrics



1. Field devices

ANPR cameras, RFID/QR readers, weighbridge signals, dock sensors, GPS trackers, CCTV, environmental sensors and handheld scanners.



2. Core systems

Warehouse Management System, Transport Management System, dock scheduling, inventory database, maintenance logs and product traceability records.



3. Dashboards

Operations dashboard, truck queue view, storage utilization, dispatch status, ESG flow data and exception alerts for managers.

Structured storage, product readiness and material protection

Warehouse design should support multiple product families and material types: recyclable bales, pallets, finished products, packaged outputs, spare parts, containers and time-sensitive cargo. The cluster therefore combines covered warehouse storage, semi-open canopies, container pads and controlled handling routes.

Automated storage, dock handling and inventory visibility



Finished goods

Palletized and packaged outputs ready for shipment; barcode/QR traceability and dispatch staging.



Recyclable streams

Baled plastics, paper/cardboard, metals and sorted fractions with segregation and moisture control.



Operational materials

Consumables, spare parts, pallets, containers, bins, maintenance tools and safety stock.



Temporary buffers

Short-term staging zones to absorb inbound peaks and synchronize downstream processing.



Indicative technical specifications



Modular racking or floor-stack zones



Dock levelers for standard vehicles



Fire separation and hydrant access



Dust and moisture control



LED lighting and natural light



Battery charging areas for electric forklifts



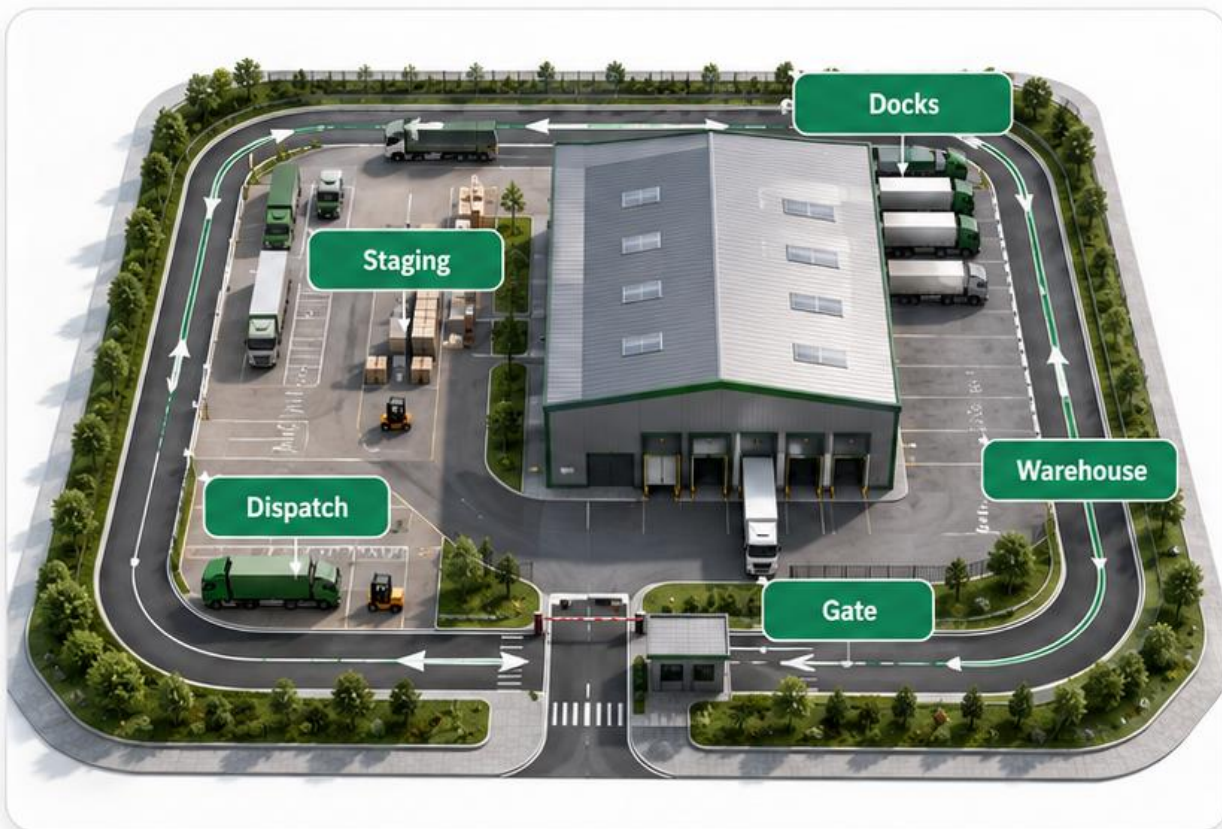
Floor load capacity aligned with product weight



Digital location codes and marked routes

Circulation designed for safety and speed

The transport design separates inbound traffic, outbound dispatch, internal transfer movements and service/fleet support wherever possible. The aim is to reduce cross-traffic, protect workers, keep emergency access open and maintain predictable vehicle turnaround.



Road standards

6–8 m heavy-vehicle lanes, marked pedestrian crossings, emergency lanes and turning geometry for articulated trucks.



Loading bays

Dock shelters, dock levelers, anti-slip surfaces, queue buffers and safe forklift approach zones.



Fleet support

Parking, charging, battery rooms, maintenance bay, washing/wheel-cleaning and operator facilities.



Traffic control

Speed limits, digital signs, access permissions, CCTV monitoring and incident response protocols.

Equipment ecosystem

The cluster uses a flexible set of mobile and fixed equipment to move, consolidate, store and dispatch material streams. Equipment selection should prioritize safety, maintainability, electric or low-emission operation where practical, and compatibility with digital tracking.

01 

Forklifts / electric forklifts

Pallet movement, container loading, dock handling and internal warehouse circulation.



02 

Telehandlers

Heavy or irregular loads, bulk bags, external yard handling and flexible material movement.



03 

Yard tractors / tug units

Trailer repositioning, dock-to-yard movement and short internal transfers.



04 

Conveyors / mobile conveyors

Assisted transfer between storage points, compactors, balers or loading systems.



05 

Balers and compactors

Volume reduction for cardboard, plastics and selected recyclable streams prior to storage or shipment.



06 

Palletizers / wrapping

Finished product packaging, stabilization and shipment readiness.



07 

Scanners / handheld devices

Batch confirmation, inventory updates, product labeling and dispatch validation.



08 

EV charging / battery rooms

Energy supply for electric handling fleet and safer battery-management practices.



Technology principle: standardize movement units, reduce unnecessary touches, digitize every transfer, protect products from contamination, and connect equipment utilization to the operations dashboard.

Safe, clean and ESG-aligned logistics

The cluster must be designed to reduce operational risk and environmental burden. Logistics zones often determine whether an industrial complex feels clean, organized and investable. ADS ECO therefore requires a high standard of safety, drainage, dust control, traffic discipline and digital traceability.



Traffic safety

One-way circulation, speed control, barriers, markings, pedestrian segregation, lighting and emergency access.



Fire protection

Hydrants, extinguishers, fire compartments, combustible storage rules, battery charging controls and alarm interfaces.



Environmental control

Stormwater management, runoff separation, dust suppression, noise reduction, housekeeping and green buffers.



Low-emission operations

Electric forklifts, PV-ready warehouse roofs, energy-efficient lighting, route optimization and reduced idling time.



ESG traceability

Documented material movement, inventory records, dispatch reports, waste/recyclable flow data and KPI dashboards.



Business continuity

Spare capacity, alternative routing, resilient storage strategy, maintenance planning and incident-response procedures.



ESG logic: logistics is the visible discipline of the platform. Clean movement, controlled storage, documented dispatch and safe vehicle behavior strengthen investor confidence and help ADS ECO demonstrate measurable circular-economy performance.

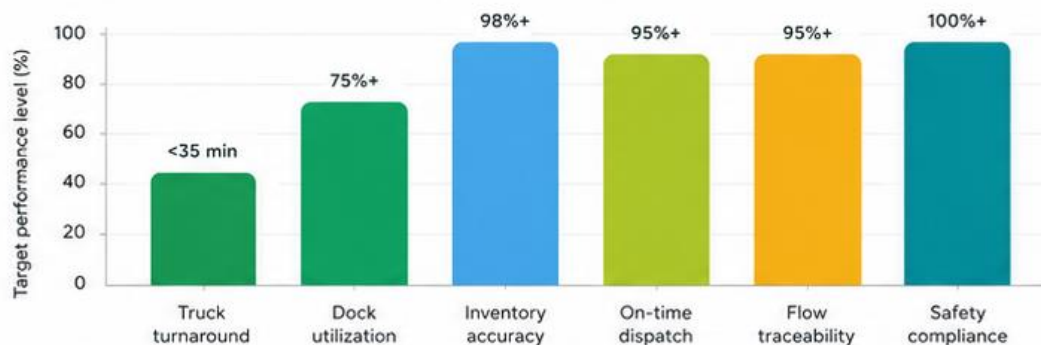


Performance indicators

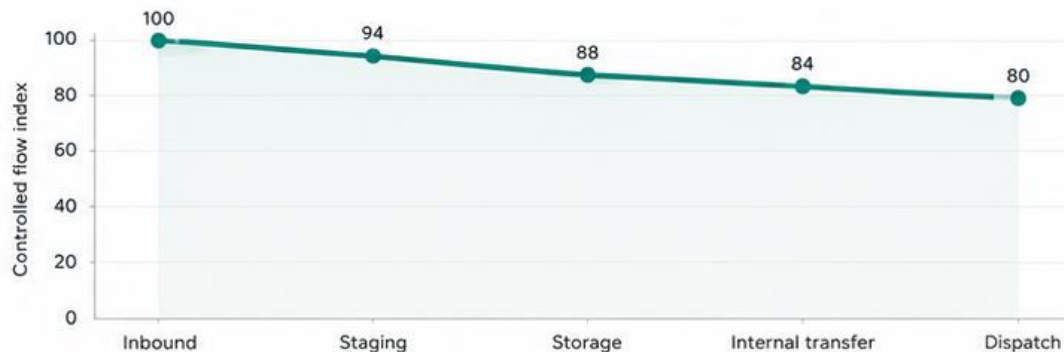
The logistics cluster should be managed through measurable KPIs. The dashboard below presents indicative targets for operating discipline, dispatch quality, visibility and safety. Final values should be confirmed during detailed design and operating-model development.



KPI TARGETS – PERFORMANCE LEVEL



CONTROLLED FLOW INDEX ACROSS OPERATIONS



Truck turnaround
<35 min
Target for standard processed vehicles



Inventory accuracy
98%+
Target through scans and WMS records



On-time dispatch
95%+
Target through scheduling and readiness control



Traceability
End-to-end
Batch and material-flow visibility



Data-driven operations. Safer flows. Measurable results.
These KPIs support operational excellence, investor confidence and continuous improvement.



Implementation roadmap

The logistics cluster can be developed in phases so that infrastructure, digital systems and warehouse capacity grow together with throughput and business activity across ADS ECO.



Key Takeaway. The Logistics Cluster is the operational backbone that organizes material flows, warehousing, transport and dispatch across ADS ECO, improving efficiency, resilience, supply-chain visibility and platform-wide performance.