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KARPATHIOS

DEVELOPMENT

LOGISTICS ILLUMINATED

**A PATH TO INDUSTRY
EXCELLENCE**

Contents

- 01** Message from the CEO
- 02** Executive summary
- 03** Design principles
 - A Successful roadmap
 - Embracing tomorrow: AR technology
- 04** Development standards
 - The Warehouse Floor
 - The Frame And Envelope
 - Dock Area
 - Mechanical And Electrical Installations
 - Office Area
 - External Areas
 - Utilities
 - The Handover
 - After-sales Support

Strategic location

05

Sustainability

- A sustainable future
 - Leed certified

Solutions

- Built-to-suit
- Strategic parks
- Development
 - Consulting
- Facility management

Talk To An Expert

08

Disclaimer

09



01

Message from the CEO



Message from the CEO

Welcome to “Logistics Illuminated:
A Path to Industry Excellence.”

Dear valued reader,

It brings me immense pride and joy to present this ebook to you, a culmination of **Karpathios Development’s** years of expertise and dedication in the field of logistics.

Navigating the intricacies of the logistics industry can often seem like venturing into a maze. Our goal with this ebook is to shed light on those dark corners, illuminating the path forward for both newcomers and seasoned professionals. By diving into the design principles, development standards, and the very architecture that underpins logistics excellence, we aim to provide a comprehensive guide for those seeking to elevate their operations.

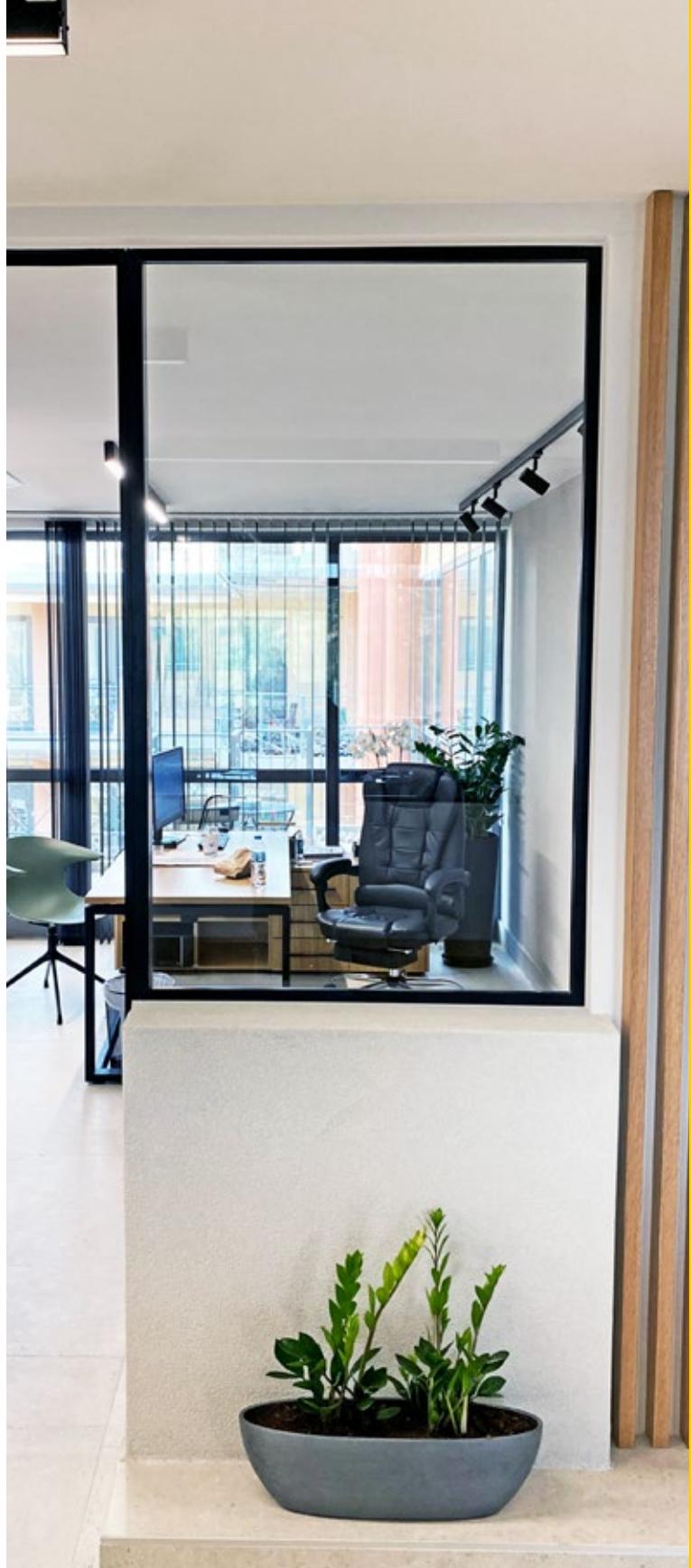
The added value of this ebook lies not just in the information it imparts but in the vision it represents. A vision of a logistics industry that is innovative, efficient, and above all, responsive to the changing needs of our times. As the CEO of **Karpathios Development**, I can assure you that the insights shared here are borne out of real-world experience and a deep commitment to pushing the boundaries of what’s possible.

**Together, let's illuminate
the future of logistics.**

Thank you for choosing to embark
on this journey with us.

Warm regards,

Panos Karpathios
CEO, Karpathios Development



A black and white photograph of a modern building's steel frame and glass panels against a cloudy sky. The building's structure is composed of large, dark, angled steel beams and glass panels that reflect the sky. The perspective is from below, looking up at the building's facade. The sky is filled with scattered clouds.

02

Executive summary





Executive summary

The realm of logistics is in a constant state of flux, shaped by evolving technologies, market demands, and global dynamics.

“Logistics Illuminated: A Path to Industry Excellence”

offers a deep dive into the core of this ever-changing industry, providing readers with a holistic understanding of the elements that constitute a successful logistics operation.

In this ebook, we unravel the design principles that serve as the bedrock of efficient logistics systems. We chart out a roadmap that delineates the steps needed to attain success in this domain. From the intricacies of the warehouse floor to the nuances of dock areas, and from the importance of mechanical and electrical installations to the significance of strategic location, every facet of logistics is explored in depth.

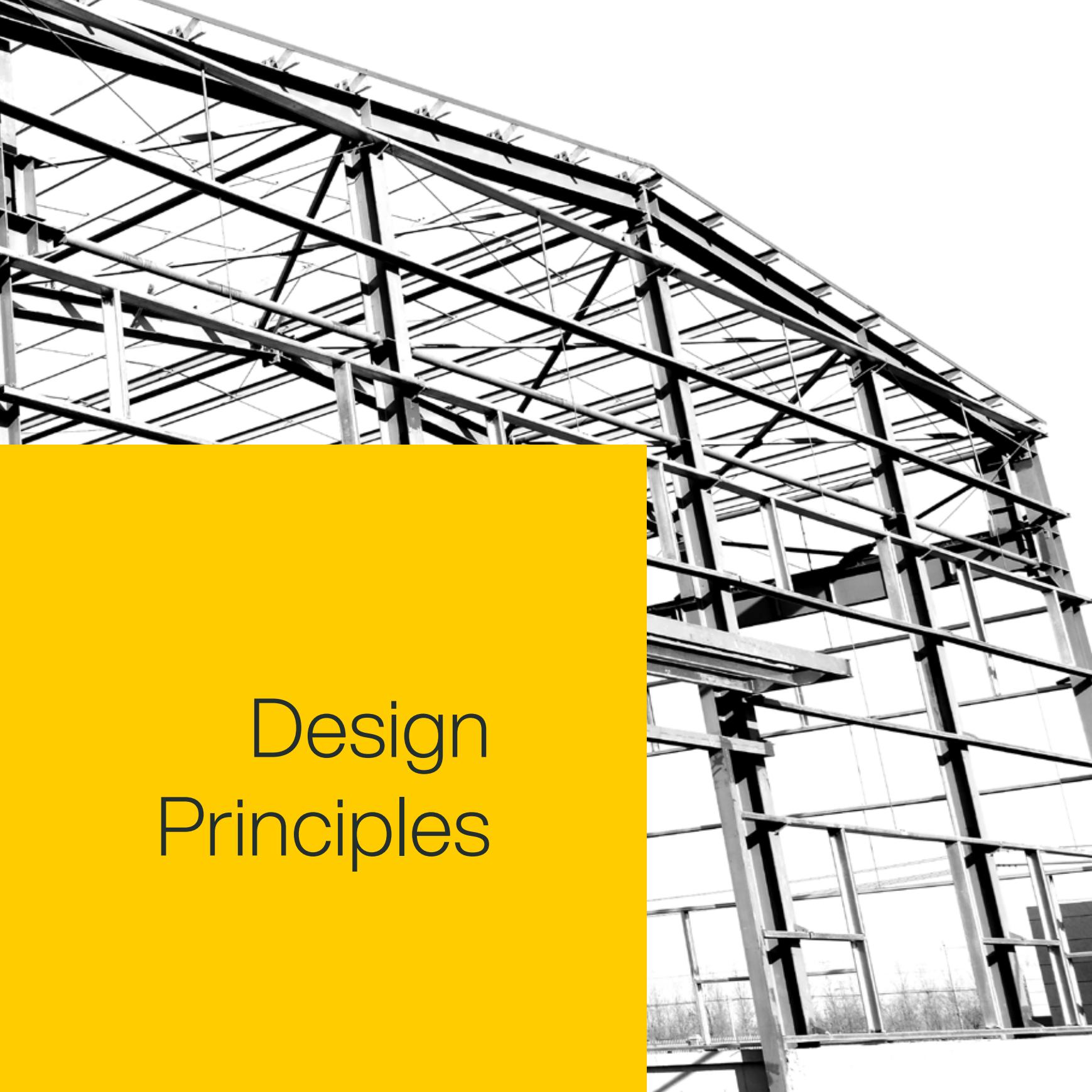
Furthermore, we delve into the future, exploring the potential of Augmented Reality (AR) technology in reshaping the logistics landscape. We also elucidate the standards that guide development, ensuring that logistics operations are not just effective but also sustainable and in line with global best practices.

In essence, “Logistics Illuminated” is more than just an informational guide—it is a beacon for industry professionals, entrepreneurs, and enthusiasts. It encapsulates Karpathios Development’s vision for a brighter, more efficient, and innovative logistics industry.



03

Design Principles





Design Principles

A Successful Roadmap

Scoping and designing a logistics warehouse is a complex and critical process that involves careful planning and consideration of various factors. Below, a step-by-step analysis of the entire process that we engage with project stakeholders.

▪ **Assessment and Goal Setting**

We begin by identifying the specific needs of your business. We consider factors like the volume of goods to be stored, the types of products, order fulfillment requirements, and future growth projections.

We set clear goals and objectives for the warehouse design process, such as reducing operating costs, improving efficiency, or increasing storage capacity.

▪ **Site Selection**

We usually consult over the selection of an appropriate location for the warehouse. Factors to consider include proximity to suppliers and customers, transportation access, labor availability, and local regulations.

▪ **Space Planning**

We determine the required square footage and layout of the warehouse. We consider factors like storage density, flow of goods, and the need for specialized areas (e.g., temperature-controlled zones, hazardous materials storage).

- **Technology and Automation**

We are always taking into consideration the use of technology and automation solutions, such as warehouse management systems (WMS), conveyor systems, and robotics, when designing a warehouse, to help you optimize operations and reduce labor costs.

- **Racking and Storage Systems**

We always consult on the appropriate racking and storage systems based on the type and volume of products to be stored. This includes pallet racks, shelving, mezzanines, and automated storage and retrieval systems (AS/RS).



▪ **Material Handling Equipment**

Our design process calculates factors regarding the right material handling equipment, such as forklifts, pallet jacks, and order pickers, to efficiently move goods within the warehouse.

▪ **Infrastructure and Utilities**

We design and plan for the necessary infrastructure, including lighting, HVAC systems, and electrical capacity, to support warehouse operations. efficiency, or increasing storage capacity.

▪ **Security Measures**

We consult over security measures like access control, surveillance cameras, and alarm systems to help you protect inventory and assets.

▪ **Sustainability Considerations**

We incorporate sustainable practices into the warehouse design, such as energy-efficient lighting, recycling programs, and eco-friendly packaging materials.



▪ **Project Management**

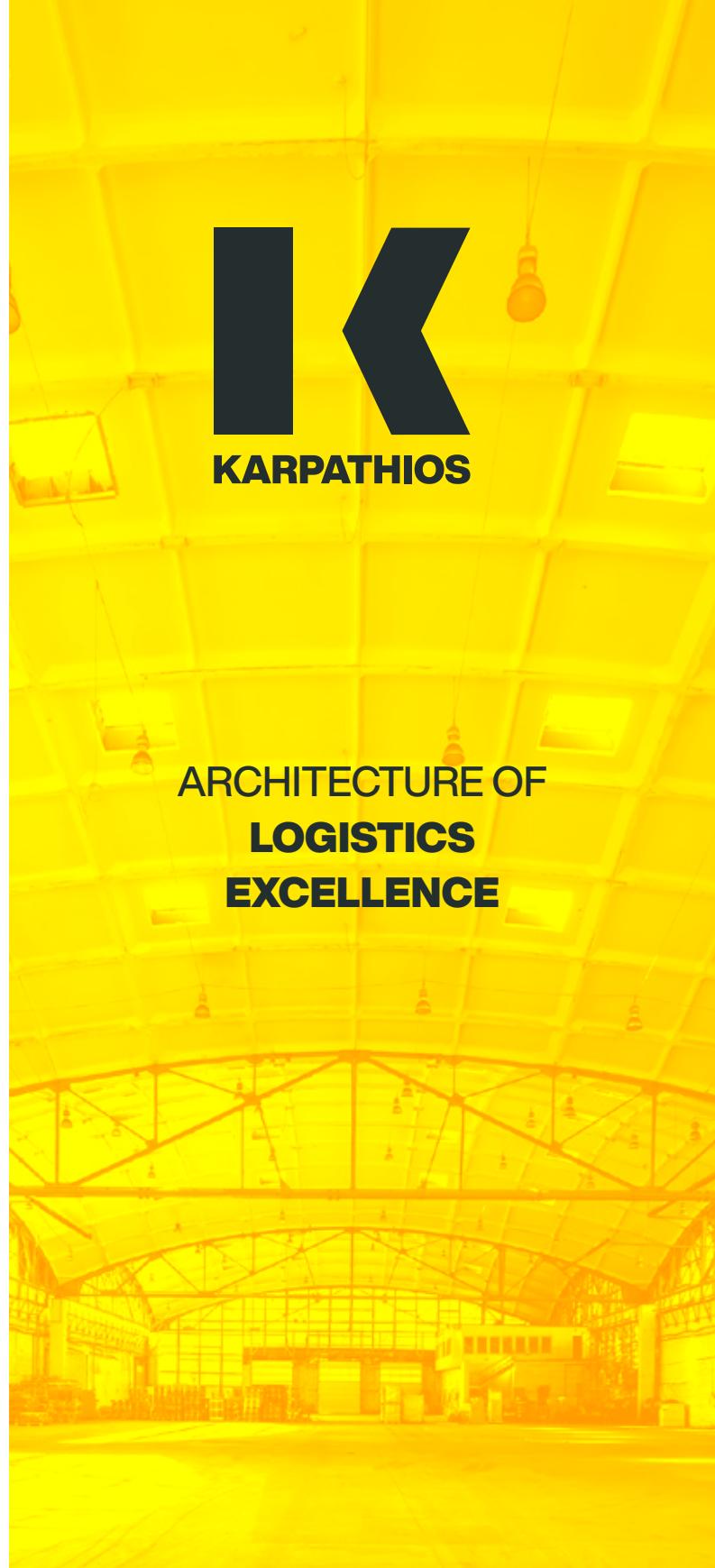
We assign a project manager or team to oversee the construction and setup of the warehouse. We also develop a timeline and monitor progress closely.

▪ **Relevant Documentation**

We produce and deliver thorough documentation of all aspects of the warehouse design for reference and compliance purposes.



The scoping and design of a logistics warehouse is a multifaceted process that requires collaboration among various stakeholders, including logistics experts, architects, engineers, and project managers. Success in this endeavor is crucial for the efficient and cost-effective management of goods and the overall competitiveness of your business.



Embracing Tomorrow: AR Technology

At **Karpathios Development**, we are at the forefront of innovation in logistics warehouse design. Embracing Augmented Reality (AR) technologies within our warehouse design process has become a cornerstone of our commitment to excellence in facility planning, construction, and management. Thank you for choosing to embark on this journey with us.

Karpathios Development is committed to pushing the boundaries of innovation in logistics warehouse design, and our integration of AR technologies is a testament to our dedication to delivering the best solutions for our clients.



As we continue to embrace cutting-edge technology, **AR is poised to become a vital tool in shaping the future of logistics warehousing.**





04

Development Standards





Development Standards

The Warehouse Floor

An efficiently planned warehouse floor layout plays a pivotal role in attaining the highest levels of productivity and making the most out of available space. At the core of our approach is a commitment to crafting tailored layout designs that align precisely with individual requirements, all while ensuring professional oversight during the installation process.

Our industrial floors are engineered to handle substantial loads, boasting an impressive load capacity of 6 tons per square meter, in adherence to flatness standards as per DIN 18202: 2005-10.

To elevate the performance of our industrial floors, we employ a combination of steel fiber-reinforced concrete and a layer of plastic foil, strategically positioned between the sub-base and the industrial floor. This innovative construction technique significantly enhances the floor's durability and functionality.



The Frame And Envelope

The frame and exterior of the structure play a pivotal role in delineating internal operations from external environmental factors. Drawing from decades of experience, we have honed our design expertise and meticulously selected appropriate materials. Each project we undertake is custom-tailored to precisely match the distinct needs of various warehouse types.

▪ **Concrete and Steel Reinforcement**

We leverage a strategic combination of concrete and steel, chosen for their exceptional strength, resilience, and long-term cost-effectiveness. These materials provide the essential structural integrity required to ensure the warehouse can withstand heavy loads and meet operational demands.

▪ **Wall Cladding and PC Elements**

The utilization of high-quality cladding is instrumental in fortifying the building against external elements such as weather, fire, and moisture. The selection of materials is contingent upon the specific warehouse type.



▪ **Roof Systems**

Warehouses typically employ flat or low-slope roofs to shield the interior from environmental impacts. We opt for enduring, low-maintenance materials for the roof structure, complemented by efficient drainage systems. Additionally, we integrate skylights and solar panels as required to curtail energy consumption.

▪ **Windows and Doors**

Premium-grade windows and doors serve the dual purpose of safeguarding assets against external disruptions while permitting natural light to filter in, all without compromising the integrity of temperature control systems or product quality. An abundance of windows is strategically incorporated to minimize energy consumption and ensure proper ventilation.

Dock Area

Efficiency of workflow and safety are our paramount concerns when it comes to planning and constructing the dock area. The specific machinery installations and features incorporated in this section are contingent upon the warehouse type and its unique operational needs.

In order to streamline the loading and unloading processes seamlessly, we adhere to a loading dock ratio of one per every 800-1,000 square meters. We also integrate top-tier loading doors for superior performance. Additionally, hydraulic ramps are included in our designs, capitalizing on their efficiency and long-term reliability.

Our integration of high-caliber loading doors and hydraulic ramps within our warehouse designs results in a well-functioning and secure environment that fosters smooth operations, reduces downtime, and amplifies overall productivity.

NOTE

A key point to emphasize is that our team conducts a thorough evaluation of each project's distinct requirements and operational demands. This assessment guides us in selecting the most suitable loading door and ramp solutions, taking into account variables such as warehouse type, goods handling procedures, and compliance with safety regulations. This meticulous approach ensures that the systems we implement not only bolster operational efficiency and safety but also align seamlessly with the specific and individualized needs of our clients.

Mechanical and Electrical Installations

These installations play a significant part in enhancing daily operational efficiency and safeguarding the quality of goods housed within the warehouse.

Our commitment to excellence is reflected in our preference for top-tier electrical panels, coupled with the use of dependable materials and the inclusion of expert consultation at every stage. This meticulous approach ensures that each component not only adheres to industry standards but also complies with safety regulations.

In sectors like pharmaceuticals and food industries, where stringent environmen-

tal conditions are imperative, climate control systems are indispensable. These systems are designed to uphold precise temperature, humidity, and air quality parameters, thus preventing any adverse effects on sensitive goods.

We also prioritize seamless vertical connectivity between basements, ground floors, and mezzanine levels, facilitated through the installation of elevators.

NOTE

The specifications of our mechanical and electrical installations are adaptable to accommodate the specific facility type and cater to the unique requirements of our clients.

Office Area

Our office design embraces cutting-edge technologies and smart building principles to establish a workspace that fosters productivity, environmental sustainability, and prioritizes the well-being of our employees. We offer a comprehensive turnkey delivery service to bring this vision to life.

Our design concept emphasizes open spaces generously adorned with greenery, promoting both employee well-being and collaborative interactions. Moreover, we've implemented state-of-the-art systems for air conditioning, ventilation, and security, ensuring a workplace that is not only comfortable but also secure.

In our commitment to energy efficiency, we have integrated several features, including LED lighting, intelligent sensors, and UV-protected glass walls and windows. These elements collectively work to minimize energy consumption throughout our buildings.



External Areas

External areas are significant in augmenting business safety, productivity, and environmental sustainability. We meticulously craft and construct these outdoor spaces to align precisely with our clients' unique requirements.

▪ **Service Yard**

To guarantee durability and minimize maintenance demands, we opt for concrete or asphalt construction for our service yards. Our truck yards span at least 30 meters in width.

▪ **Cycle Parking**

Our cycle parking area is thoughtfully segmented into sections, encompassing a docking station, spaces designated for both employees and visitors, and provisions for future expansion to accommodate EV charging stations.





▪ **Security Measures**

Security is paramount within our yards, featuring robust industrial fencing, fortified gates, vigilant door guards, and state-of-the-art access control systems.

▪ **Environmental Considerations**

We prioritize the incorporation of native flora, including trees, shrubs, and ground cover plants, to enhance the natural environment and rehabilitate any previously damaged land fields surrounding our facilities.

▪ **Efficient Drainage Systems**

Our outdoor areas benefit from efficient drainage systems and rainwater collection mechanisms, reducing the need for irrigation and promoting water conservation.

▪ **Recycled Materials**

Whenever feasible, we integrate recycled materials into our outdoor spaces, contributing to waste reduction and actively supporting the principles of a circular economy.



Utilities

Our dedicated team of experts is fully committed to overseeing utility installations, guaranteeing that our facilities deliver all essential supplies with the utmost security and efficiency.

These utility installations are meticulously customized to meet the precise needs of each individual facility. Crucial utilities encompass the substation, electrical transformer, water meter, and telecommunications infrastructure.

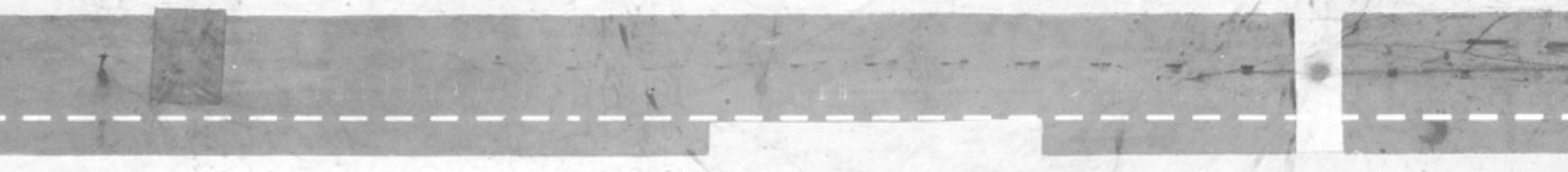


The Handover

Our top priority is to execute a seamless and all-encompassing handover process, guaranteeing that our clients receive precise and vital information once the project is successfully concluded.

The documentation package consists of various elements, such as building drawings and data, permits and certificates, a 3D BIM model, a comprehensive building logbook, and an overview of the maintenance needs of the structure.

Through the provision of these documents and resources, our objective is to streamline the transition process and equip our clients with the crucial information and tools required to efficiently manage and maintain their newly acquired facility.



05

Strategic Location





Strategic Location



Our locations are strategically chosen to facilitate the smooth movement and distribution of goods, ultimately reducing transit durations and enhancing the efficiency of our supply chain operations. Our close proximity to major transportation networks and key markets allows for quicker response times, reduced shipping expenses, and an overall enhancement of customer service.

Situated near the Attiki Odos highway, accessible from multiple points across Greece, we streamline the transportation and distribution processes. Additionally, our easy connectivity to the commercial port of Piraeus via a nearby train network further enhances logistical convenience.



06

Sustainability





A Sustainable Future

Over the past decade, one of our foremost commitments has been to actively contribute to a more sustainable and energy-efficient future for the genera-

tions to come. This unwavering dedication drives us to continuously enhance our buildings, aligning them with the latest technological advancements,

and thereby reducing our environmental impact. Our ultimate goal is to establish sustainable structures that leave a positive mark on our planet.

To achieve this, we have made substantial investments in innovative craftsmanship, forging partnerships with top-tier contractors from diverse industries to ensure our projects adhere to rigorous sustainability standards, thus meeting the highest industry benchmarks.

Daring to lead the way, we are currently in the process of constructing Greece's inaugural 100% green warehouse, setting a precedent for future eco-conscious investments. Our commitment to embracing eco-friendly practices isn't merely a slogan; it's a sincere commitment to sustainable practices.

In essence, our vision extends beyond the physical structures themselves. We aim to create resilient spaces that offer enduring, positive, and sustainable benefits to our valued customers.



**SHAPING
TOMORROW'S
LOGISTICS**

LEED Certified

Certification of our buildings plays a paramount role in affirming our dedication to sustainability and environmental stewardship. KARPATHIOS stands out as a trailblazing developer in Greece, boasting a portfolio of 170,000 square meters of ongoing projects with LEED Certification for warehouses.

This certification framework champions energy efficiency, carbon emission reduction, and the prudent use of resources, aligning seamlessly with the industry's burgeoning emphasis on sustainability and environmental responsibility.

LEED-certified logistics facilities not only make meaningful contributions to a healthier and more sustainable environment but also reap the rewards of reduced operating expenses, an enhanced work environment that bolsters employee well-being, and a competitive edge in the market.





THE TETIS LOGISTICS PARK



07



Solutions

Solutions



Built-To-Suit

Tailor made for your business

The concept of “built-to-suit” in real estate development involves the construction of a property explicitly designed to cater to the requirements of a tenant. This approach has been gaining popularity because it empowers businesses and organizations to have a significant say in shaping the design and layout of their new facilities. This, in turn, can lead to increased productivity, heightened employee satisfaction, and ultimately, a boost in revenue.

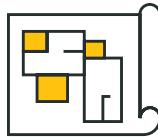
Built-to-suit projects provide tenants with the opportunity to customize their buildings, optimizing space usage, enhancing energy efficiency, and incorporating environmentally-friendly designs—all of which contribute to reduced operational costs.



On a broader scale, the built-to-suit approach **serves as a catalyst for economic growth and job creation.**

It has the potential to attract new businesses to a community, generating fresh employment opportunities. Additionally, it ensures that new developments align with the specific needs and priorities of the local community, rather than contributing to a landscape of generic, standardized structures.

In summary, the built-to-suit model offers an efficient and cost-effective means for businesses and organizations to acquire purpose-built facilities tailored to their unique needs. Simultaneously, it delivers significant benefits to the broader community by fostering economic development and job growth.



Strategic Parks

We speculate. We project. We construct

Strategic Parks are integral to modern supply chain management, ensuring efficient goods and services movement. These large-scale facilities are tailored for logistics and distribution, featuring warehousing, offices, and loading areas.

We employ speculative development, constructing or renovating properties
without specific tenants in mind

This approach is gaining popularity as it capitalizes on market trends and allows for versatile, valuable, and sustainable buildings that can be leased or sold to various tenants.

Strategic Parks streamline goods movement by centralizing storage, distribution, and delivery, reducing transit times, enhancing efficiency, and incorporating advanced technologies. These parks also contribute significantly to economic development, creating jobs, supporting local businesses, and generating tax revenue, while mitigating road congestion, improving air quality, and reducing carbon emissions through centralized logistics operations.



THE TETIS LOGISTICS PARK





Development

We develop. Period.

Our core focus is real estate development, encompassing property acquisition, design, construction, and management across residential, commercial, and industrial sectors. We have a strong commitment to sustainable and eco-friendly practices, evident in our development of energy-efficient buildings that have a minimal environmental footprint, promoting cleaner air and reduced carbon emissions.

In the realm of logistics development, our specialization lies in strategic planning, design, and implementation of infrastructure and systems that optimize the movement of goods and services. Our expertise aids businesses in streamlining supply chain operations, reducing costs, and enhancing efficiency, while simultaneously fostering economic growth by creating job opportunities and attracting new enterprises to the region.

Our dedication to sustainable and environmentally-conscious development remains a cornerstone of our approach, ensuring that our projects have a positive impact on the environment, bolstering air quality and curbing carbon emissions.

To achieve this, we have made substantial investments in innovative craftsmanship, forging partnerships with top-tier contractors from diverse industries to ensure our projects adhere to rigorous sustainability standards, thus meeting the highest industry benchmarks.

Daring to lead the way, we are currently in the process of constructing Greece's inaugural 100% green warehouse, setting a precedent for future eco-conscious investments. Our commitment to embracing eco-friendly practices isn't merely a slogan; it's a sincere commitment to sustainable practices.

In essence, our vision extends beyond the physical structures themselves. We aim to create resilient spaces that offer enduring, positive, and sustainable benefits to our valued customers.



Consulting

Experience and expertise

Our Development Consulting services are instrumental in guiding businesses through the intricate processes of real estate and logistics development. This role is paramount, as it offers expert guidance and support to developers, investors, as well as public and private sector entities.

We empower clients to make informed decisions through **our provision of objective, data-driven analysis and advice.**

This encompasses services such as market research, feasibility studies, and project management, all aimed at helping clients identify opportunities, manage risks, and ensure timely and budget-conscious project completion.



A BLUEPRINT
FOR SUCCESS



Facility Management

One stop to serve them all

Our Facility Management services encompass the coordination and oversight of a property's physical environment and support services. This role is pivotal in upholding the well-being, safety, and productivity of building occupants, all while ensuring that buildings operate efficiently, sustainably, and economically.

We prioritize the safety and comfort of building occupants through vigilant maintenance, timely repairs, and necessary upgrades. This involves tasks like inspecting and maintaining HVAC systems, plumbing, and electrical systems, as well as managing fire safety, security, and cleaning services.

Our Facility Management services also drive cost reduction through the implementation of energy-efficient practices

and technologies, waste minimization, and a reduced environmental footprint. This includes initiatives such as energy-efficient lighting, HVAC system optimization, and the introduction of recycling and composting programs.

We view Facility Management as a pivotal contributor to organizational productivity. Well-maintained, comfortable buildings have a positive impact on an organization's performance.

By providing a safe, comfortable environment, we enable employees to stay focused and motivated in their work.



08



A black and white photograph of two construction workers in hard hats and high-visibility vests standing at a construction site. One worker is in the foreground, facing right, and the other is slightly behind and to the left. In the background, there are vertical rebar rods and a piece of construction equipment. A large yellow rectangular overlay covers the left side of the image, containing the text.

Talk to an
Expert



Talk to an Expert

Are you inspired by what you've read? Do you have questions, or are you seeking guidance on how to implement these principles within your own logistics operation? Look no further.

At **Karpathios Development**, our team of seasoned experts is ready to assist you. Connect with a Karpathios Development Expert today and initiate a conversation with a specialist tailored to your specific needs.



Connect with a **Karpathios Expert**



DHL



**LET'S SHAPE
THE FUTURE
TOGETHER**

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KARPATHIOS

DEVELOPMENT

15 Persefonis str Elefsina 192 00 Greece
info@karpathios.com | +30 210 55 40 100 | karpathios.com