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Logistics real estate: Past performance is no guarantee of future results

**Numerous developers are finally daring to take the risk of constructing new logistics real estate once more. Now that the economy is growing again and the need for storage space is rising rapidly, property developers are initiating new-build warehouse projects without necessarily having a tenant lined up. That was less of a problem in the past since there was general agreement on the definition of a 'market-conforming' building, but the growth of e-commerce is increasingly muddying the waters when it comes to this definition. As a result, the logistics real estate market faces some important decisions.**

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If back in 2005 you had asked ten logistics real estate specialists to describe a market-conforming building, you would have received nine identical answers. There was little variation in people's views in terms of the requirements for floor loading, storage heights, column grid and the ratio of warehouse space to office space. That paved the way for property developers to construct new buildings on a large scale at their own risk. In logistics hotspots throughout Europe, huge market-conforming buildings started appearing before tenants had been found. This approach was successful; hardly any of the buildings stood empty for more than a couple of months. Logistics service providers in particular welcomed these flexible opportunities for rapid expansion.

Now that the economic crisis of 2009-2012 is behind us, developers are once again prepared to shoulder the risk of new construction projects in 2018. According to the global real estate services firm Jones Lang Lasalle, 2.3 million square meters of new logistics real estate are being developed this year, and 36 percent of that space does not yet have a tenant. The question is whether it is wise for so many projects to be exposed to this risk. Today, unlike 15 years ago, there is much less agreement on what constitutes a 'market-conforming' building, and the key reason for this is the success of e-commerce. So what exactly is going on?

### **Identical operations**

Real-estate investors love market-conforming buildings. Even if they have a tenant in their sights, the initial contract is usually only for ten years at the most, and a building is expected to last for much more than a decade. Moreover, it takes longer than ten years to earn a return on all the construction costs. In other words, the building must be leased out again in the future in order for it to be an interesting investment. A market-

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conforming building has a higher chance of securing a second tenant for another five, seven or ten years. Market conformity increases the pool of potentially suitable tenants, reducing the risk of it standing empty. General agreement on the definition of a market-conforming building mainly lasted so long due to the uniformity of the logistics activities that took place in the buildings; virtually all operations were done in line with the same principles. The inbound goods flow comprised full or mixed pallets that were put away in conventional pallet locations. The goods were shipped to shops or other distribution centers, mainly also as full or mixed pallets. Since this was the norm for virtually all logistics operations a decade ago, often the only real difference between logistics buildings was their size.



## Parcels

No one disputes the fact that e-commerce has had an impact on logistics real estate, but it is often difficult to get real estate companies to be more specific. They will make general remarks, such as that e-commerce operations need more space which means that mezzanine floors have to be added, or that they employ more people which necessitates a bigger car park and more space for facilities such as changing rooms and canteens. That is only half the story, however, and the less relevant half at that, since it does not explain why there is less agreement on the definition of market-conforming buildings nowadays.

To get the whole story, we have to zoom in on the logistics processes, because they lie at the heart of this evolution. The most important change is that goods are no longer shipped as full or mixed pallets, but rather as parcels. Instead of being sent as large consignments to shops or other distribution centers, the shipments are boxes often containing just one or a few products. That means that many more order pickers and packers are required, and the large number of parcels also creates a need for sorting. All this makes the operation more labor-intensive, which has consequences at several levels.

### **Mezzanines**

The first consequence relates to the warehouse design. In an e-commerce operation, many of the pallet locations in a conventional warehouse have been replaced by shelf racking. Shelf racks can work fine in a building with a clear height of 12 meters, but they have to be spread over several mezzanine levels. That has a significant impact on the ground floor.

Due to the labor-intensive nature of the operation, it can be interesting to mechanize and automate logistics processes such as order picking, packing and sorting. Opting for an automated tote-based storage system will also have consequences for the building. In that case, the clear height of 12 meters becomes less relevant, and a storage system based on a height of 16 or 20 meters may well be a much more interesting logistics solution from a financial perspective.

### **Cross-docking**

Another thing that characterizes e-commerce operations is the large number of value-added services (VAS), such as the personalization of products by

#### **Floor loading and clear height**

What exactly are the consequences of e-commerce in terms of the design and layout of logistics buildings? This can be illustrated by two examples. The first example relates to floor loading. A minimum imposed loading of 30 or 40 kN per square meter is often required in a traditional DC. This is usually sufficient for the normal weight of pallet locations in the case of a clear height of 12 meters. In an e-commerce operation with three, four or sometimes even five mezzanines, the specific type of mezzanine affects whether a floor with 40 kN/m<sup>2</sup> can suitably bear the weight. If the mezzanines are installed on the racking-system supports, there is a finely meshed grid of columns on the ground floor. The downside of this method is its lack of flexibility; there is little – if any – freedom to change the layout of the racking on the mezzanine levels.

An alternative solution is to install structural or free-standing mezzanines in the building, based on columns. This approach requires fewer columns and increases the flexibility of the racking layout, but it also creates much greater point loads on the floor where the columns are located. So when a DC is being constructed for an e-commerce operation, it is important to think about the preferred option: a building with free-standing mezzanines or a building with rack-supported mezzanines. Whichever option is chosen will affect the likelihood of finding a tenant.

printing logos on them or the gift-wrapping of products. Such activities require extra floor space, as well as the flexibility to change the layout as and when necessary. After all, the nature of the VAS activities changes regularly. Needless to say, the activities do not necessarily all have to be done on the ground floor.

The goods-received department also places different demands on the building. The diversity of incoming goods is increasing, especially in e-commerce operations with large long-tail inventories. Products are no longer delivered as full or mixed pallets only, but also arrive in other formats and in delivery vans rather than just trucks. Furthermore, because often not all the items are in stock in the building itself, the number of cross-dock shipments is increasing – i.e. the goods are first picked in the supplier's warehouse and then shipped to the distribution center where they must be combined with the rest of the order – so the building has to offer space for that too.

### **Lots of returns**

The other way in which an e-commerce operation differs from traditional operations is its huge number of returns. Especially in fashion and clothing, consumers tend to order the same items in several sizes and colors and, after trying them on, simply return the ones they don't want. The goods that arrive back at the distribution center have to be checked and sometimes repaired, repackaged or reconditioned for resale.

All of these examples are leading to a shift in the definition of a market-conforming building. Besides the traditional DCs required to replenish stores and other distribution centers, there is a growing need for a new type of DC

### **Sprinkler system**

Another example relates to the clear height. The reason that the standard clear height is 12 meters is because of the sprinkler solution. Many users prefer a ceiling-mounted (ESFR) system since this minimizes the risk of water damage in the case of a faulty sprinkler head. The alternative is an in-rack solution, which presents a higher risk of the sprinkler heads becoming damaged by forklifts or reach trucks. The downside of the ESFR system is that it limits the clear height to 12.2 meters. Up until now that has not been a problem in view of the maximum lifting height of reach trucks.

But the clear height of 12.2 meters does pose a problem if an automated storage system is installed in an e-commerce DC. In most tote-based storage systems, more height equates to more profit, which makes a building with a clear height of 16, 18 or 20 meters more interesting from a financial perspective. Additionally, the vulnerability of in-rack sprinklers is much less of an issue, because a high degree of automation virtually eliminates the risk of sprinkler heads becoming damaged. In other words, a building with extra height will usually be the preferred option for an e-commerce DC with mechanized storage.

to fulfill consumer orders, and different criteria clearly apply for such a DC.

### **Business-to-business impact too**

Today's e-commerce DCs are mainly designed for the business-to-consumer market, but more and more companies are also noticing the effect of e-commerce in the business-to-business market. People who order consumer products on the internet from the comfort of their own homes expect the same level of service when they arrive at the office the next morning and place a work-related online order.

Hence, e-commerce is leading to a higher order frequency, smaller orders and shorter delivery times in the business market too. As a result, the issue of market-conforming logistics buildings will soon be relevant for the entire supply chain.

### **Deciding in advance**

What does all this mean for the logistics real estate sector? First of all, it means that constructing a building without having a tenant lined up is more risky than 15 years ago. Developers that work with the 15-year-old definition of a market-conforming building, including a storage height of 12.2 meters and a floor loading of 40 kN per square meter, will end up constructing a building that is less suitable for e-commerce operations.

In fact, property investors will need to make many more decisions in advance than 15 years ago. Is the building intended for a traditional logistics operation or an e-commerce one? Which storage height do we need? And what should be the floor loading? Each choice that the property investors make will affect the building's appeal for potential tenants in the future.

### **Seven years or five?**

This issue will become even more important in the years ahead. Lease periods are decreasing in the market, which puts property investors under even greater pressure to make clear choices in advance. Whereas a ten-year lease used to be the norm, more and more lease agreements are being signed for seven or sometimes even just five years nowadays, so it is increasingly likely that investors will need to look for tenants for a second, third and even fourth lease period.

At the same time, rapid advancements in terms of mechanization and

Page: 6/6  
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robotization mean that the specifications for a market-conforming building are changing all the time. So while there is a growing need for a market-conforming building, it is becoming less and less clear what a market-conforming logistics building actually looks like. Therefore, the logistics real estate market will increasingly need to be decisive, and making clear choices in advance about what type of building to construct would seem to be the best strategy for investors and property developers alike.

### **Authors**

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