Refurbishment of rooftop car parks
Using the removable Pardak® system
35 years of international experience with more than 2 million m² of rooftop car park installed
Pardak® flexible and adaptive system

In the process of modernisation and improving sustainability, many buildings and shopping centres in Europe are currently being refurbished. By opting for modular materials and systems that can be deployed flexibly, the continuity of the business is guaranteed, as far as possible. Shop owners and customers experience minimum nuisance during the refurbishment work. Pardak® is a system that, thanks to its remarkable characteristics, offers advantages for the refurbishment of rooftop car parks. When it comes to refurbishment, ever growing numbers of consultants and real estate managers are opting for the Pardak® rooftop car park from Zoontjens.

The Pardak® system

Pardak® is a removable modular system for rooftop car parks. It is also a flexible and adaptive system when it comes to changing the roof layout and/or installations. The system consists of high-quality precast concrete roof slabs, corner sections, tensioning elements and pressure distributor pads made from compressed high-quality rubber granulate. This specially developed patented system helps guarantee the stability of the rooftop car park. The design of the corner sections, tensioning elements and pressure distributor pads combined with a large format slab, ensures there are fewer joints, driving noise is reduced, and rainwater is rapidly and efficiently guided to rainwater discharge points on the roof. These advantages mean that over the past few years, many large national and international rooftop car parks have been renovated using the Pardak® systems from Zoontjens. Our clients include Newcastle City, Karstadt-Redevco, Corio, ECE, Galeries Lafayette and Unibail-SNCS.
Minimal loss of parking spaces during refurbishment
Retention of parking facilities during refurbishment
During the refurbishment of a project, it is essential to minimise inconvenience to users and owners alike. The Pardak® system from Zoontjens meets these requirements perfectly. The laying of precast roof slabs can be carried out much faster than the in situ concrete or asphalt. The Pardak slabs can be driven on immediately following laying. The system can be laid in phases, so that part of the rooftop car park remains accessible, at all times. In other words, it is not necessary to close down the entire car park during refurbishment.

Independent of weather conditions
The method for laying a Pardak® rooftop car park is also entirely independent of weather conditions. This reduces overall execution time and prevents production overruns. Working irrespective of the weather offers the additional advantage of saving time and money.
Refurbishment for all roof types
Is the existing roof seriously damaged? Are there problems in the underlying structure? Or are there technical limitations or design constraints? No two roof refurbishment projects are the same and every project requires a systematic but bespoke approach. With our many years of expertise, we would be pleased to offer any assistance you require, to ensure the success of the complete refurbishment process. The Pardak® system comes in three different types: for light, normal or heavy traffic.

- **Pardak® 60** for office buildings and low traffic intensity applications
- **Pardak® 110** for businesses and shopping centres with high user intensity and regular traffic movements
- **Pardak® XL** for businesses and shopping centres with heavy traffic flows

From design through to maintenance
Together, we will achieve the ideal solution for your rooftop car park application that is both technically sound and aesthetically pleasing. If required, we can take responsibility for every aspect of the refurbishment project. As well as designing and installing the new rooftop car park, we will also take responsibility for demolition work and site clearance.

Greater return thanks to 30 year plus lifecycle
The Pardak® system has been developed through close cooperation since 1977 with Dutch and German experts in the field of rooftop car parks, including BDA.
Dakadvies, TNO and the Universities of Munich and MPA Braunschweig. With our state art production plants, all Pardak® concrete slabs, tested by Güteschutz Beton NRW, are guaranteed to comply with the highest concrete quality and strict construction and quality requirements, including the European DIN EN 1339 standard.

BDA recently completed a durability study in the framework of 35 years of Pardak. In its report, BDA concluded that Pardak® very successfully fulfils its primary function, namely parking with all normal parking movements. In addition, subject to correct maintenance, the lifecycle of rooftop car parks using Pardak® is estimated at more than 30 years. For both new building and refurbishment projects, this long lifecycle phase guarantees a high return on investment.

Sustainable system
As a result of ever higher building density and growing inner city traffic volumes, project developers and real estate managers are becoming increasingly aware of the added value of rooftop facilities. Rooftops are no longer simply the final item in the budget, with the sole purpose of keeping a building watertight. Instead, they are becoming ever more valuable areas, not only for parking but also for their potential contribution to the sustainability of the building. Zoontjens has been responding to this trend for years, with its Pardak® system, by developing greener concrete, using recycled materials and ensuring that all its business processes are rendered more sustainable in accordance with the ISO 14001 and 26000 standards. A Life Cycle Analysis (LCA) report was recently produced by the NIBE, the Netherlands Institute for Building Biology and Ecology. More information is available in our Technical report ‘Sustainable Rooftop car parks’.

As part of the international building materials conglomerate, Zoontjens is committed to establishing sustainable manufacturing and sourcing processes. In consultation with sustainability experts at the CRH Sustainable Concrete Center, Zoontjens is working towards a 25% CO2 reduction in the entire delivery chain by 2015, and 50% by 2020. Depending on the requirements of the customer, a Pardak® rooftop car park can be made even more sustainable in combination with green roof design.
These specifications, constructions and details were prepared according to the latest technological developments and with the greatest possible care. Zoontjens Beton B.V. accepts no liability whatsoever for any errors or inaccuracies or their consequences. In the interests of innovation and improvements, we reserve the right to make any necessary changes to the products and systems.

Our testimonials include:

- Eldon square, Newcastle, United Kingdom
- Mariahoeve, The Hague, Netherlands
- Piazza shopping centre, Corinchem, Netherlands
- Neringpassage, Lelystad, Netherlands
- De Tuinen shopping centre, Naaldwijk, Netherlands
- Bloemendal shopping centre, Gouda, Netherlands
- Rijnkade, Utrecht, Netherlands
- Shopping 1 Genk, Belgium
- Parking Mediamarkt, Zwijnaarde, Belgium
- Westland shopping centre, Anderlecht, Belgium
- Centre Commercial, Chelles, France
- Parking Infernet, Nice, France
- Galeries Lafayette, Lyon, France
- Garage Jaguar Luxembourg, Luxembourg
- Reeperbahn, Hamburg, Germany
- Postbank, Hamburg, Germany
- Stadthaus, Bad Hersfeld, Germany
- Am Pfarrer, Nuremberg, Germany
- Garagenhof, Würzburg, Germany
- Hotel Meridian, Munich, Germany
- Karstadt, Neugraben/Duisburg/Kaiserslautern/Wiesbaden/Eschweiler, Germany

Established in 1905 and with more than 40 years’ experience in rooftop solutions, Zoontjens has built up a wealth of knowledge and experience. Continuous research and innovation have resulted in high-quality rooftop paving systems. As a consequence, Zoontjens has become an international frontrunner in the field of roof design. Unique systems for roof terraces, podium decks, walkways right through to roof recreation areas and promenades. Removable rooftop car park systems specially for large rooftop car parks. In every project, Zoontjens provides supervision, installation and maintenance. This full-service approach makes Zoontjens Europe’s leading expert for rooftop projects large and small.

At Zoontjens, sustainability is a key spearhead. With that in mind, Zoontjens is constantly working towards more sustainable processes and systems.