

Parken³



Urban mobility: Densification

Kjøita Secret Garden, Kristiansand 8
ARK.NET, Kristiansand

Palais Coburg, Wien 16
POK Pühringer Private Foundation, Vienna

Gran Vía 48, Madrid 22
Rafael de La-Hoz Arquitectos, Madrid

03

**English
Version**



Bauwelt

03

“Despite higher initial investments, parking systems are pathbreaking. Many local authorities, such as the municipal government of Madrid, are striving to reduce traffic. The public sphere is to be returned to pedestrians and flaneurs.”

Rafael de La-Hoz, Madrid

Parken³
A cooperation between
Otto Wöhr GmbH and Bauwelt

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Open space despite densification

“The car is losing its significance in the city,” that is a common prediction for the future of individual mobility. But in reality a completely different picture is revealed: the number of cars is steadily growing, and their size is increasing. The car continues to play an important role in people’s lives, resulting in a chronic shortage of parking spaces in the world’s metropolitan areas. The densification of city centres has resulted in a lack of open space, and insufficient new parking spaces are being created in the course of building construction and conversion. This is also a concern for city planners, since at the same time they are expected to provide a maximum amount of attractive public space, with the aim of enhancing the amenity value of the city. In combination, the two tasks present a major challenge to many local authorities. Wöhr can offer diverse parking system solutions: many times the number of parking spaces of a conventional multi-storey car park can be accommodated within a minimum space. In addition to parking systems for cars, Otto Wöhr GmbH has for some time been engaged with storage facilities for bicycles. As a result, more space can be made available for public open space and landscaping.

In three projects in this issue we present examples of compact inner cities. In the planning of the Kjøita Secret Garden housing project in Kristiansand (Norway) ARK.NET Architects placed a premium on comfort. Daylighting, terrace sizes and views were maximized, and an underground parking system was installed. Because almost every Norwegian owns a second car, additional parking spaces are particularly important here.

In the centre of Vienna the POK Pühringer Private Foundation has refurbished the 19th century Palais Coburg after a long period of vacancy and converted it into a first-rate hotel. Due to the lack of space in the building and its central location, a compact parking system was called for. As a new building with an austere glass and granite façade, due to its careful design Gran Vía 48 in Madrid harmonizes well with its historic surroundings. Here in the centre of Madrid the few available parking spaces are fiercely contested. Due to space restrictions on the site, Rafael de La-Hoz Arquitectos decided to install a clever parking system. Madrid City Council is systematically promoting the compact parking spaces in the basement, providing an example for other major cities.

Take advantage of the open spaces of your city! Boris Schade-Bünsow, Chefredakteur Bauwelt

Making of: Bikesafe

Author **Franziska Weinz**
Photos **Otto Wöhr GmbH**

Safe, user-friendly and fully automatic: the Wöhr Bikesafe

The multi-storey bicycle park is available as a tower or pit version.

MAKING OF



Parken³ 03 Bauwelt 37.16

Cycling today is rather more a lifestyle activity than a means of locomotion. The bicycle itself is increasingly becoming a lifestyle product that must be carefully selected. It promises independence, closeness to nature and freedom. This is also reflected in the proportion of bicycles in overall traffic that has continued to grow throughout Germany in the last few years.

For many people, secure and convenient parking for bicycles close to their destination is an important criterion for the use of a bicycle.

But if adequate and secure storage facilities are not available for one's two-wheeler, it is destined to spend more time in the garage than on the street. In Germany, parking provision is governed by the building codes of the federal states. Essentially, the necessary vehicle and bicycle parking for traffic-generating structures must be provided on the premises or a nearby site. The number of parking spaces is stipulated by the respective building department. In some German states (e.g. Berlin and Brandenburg) car parking space regulations have been suspended in part or even completely, whereas the provision of bicycle parking is being increasingly promoted.

However, parking space regulations frequently do not contain adequate quality guidelines for the provision of bicycle stands. Often only front wheel holders are installed, although they do not ensure secure bicycle parking – and more often than not, the facilities lack the necessary roof.

The location of bicycle stands is seldom specified in the building regulations. They are often located far from the entrance, in poorly accessible spaces or at the rear of buildings. Randomly parked bicycles block entry zones, footpaths and escape routes, and are a reliable indicator for much needed bicycle stands. If facilities for bicycle parking are integrated only as an afterthought into the open space planning, the result is often of poor design and less practical.

BIKESAFE

5

Particularly larger cities should develop bicycle parking concepts and support them with funding and implementation time frames, in order to ensure comprehensive, demand-oriented provision. The concepts should include specifications regarding the location and quality of the facilities.

Bicycle parking must be quickly and safely accessible without the need to walk. Access routes must be geared to the capacity and use of the facility. Standardized demand figures and times for parking facilities can be developed for buildings that are open to the public: shopping centres, schools, leisure facilities, larger businesses, stations and residential buildings.

A parking facility should be located as close as possible to the origin and destination of cyclists. The right location depends on the direction of approach, entry, spatial conditions, possibility of supervision and surrounding area. Several decentralized facilities will be necessary at expansive locations. In the case of new facilities, space should be reserved for possible extensions. Public space must be made available if there is a shortage on private property. To prevent theft and vandalism, the locations must be visible, in full view of passers-by or businesses, under permanent surveillance and well-lit at night. In summary, the facilities must be easy to find, simple and quick to use, safe and secure in every sense – away from busy traffic flows, illuminated to deter theft and vandalism and weather-protected for long-term parkers.

The German Bicycle Club (ADFC) also calls for the preparation of bicycle parking concepts, creation of adequate, differentiated and area-wide facilities, conversion of car parking spaces for bicycles, increased efficiency of bicycle stands and the avoidance of dangerous or obstructive parking.

Depending on the arrangement (e.g. perpendicular or angle parking) the spatial requirement is 1–1.5 m² per bicycle without an aisle and 2–3 m² with an aisle. The lateral distance between parked bicycles should be at least 70 cm (perpendicular parking).



The tower version of the Wöhr Bikesafe accommodates 122 bicycles in the smallest of spaces.

Spacing of less than 70 cm results in the soiling of clothing and entanglement of cables. The facility should also be able to accommodate bicycles of different sizes and handlebar shapes, such as bicycles with baskets, children's seats and panniers as well as children's bikes.

Depending on the quality of their bicycle, length of stay, willingness to pay and need for security, cyclists place differing requirements on parking facilities. For example, the owners of expensive bicycles are prepared to make small detours and

take costs into account for a longer parking time if the bicycle is protected by a roof. Short-term parkers hardly let the bicycle out of their sight. They would prefer to chain it directly to the shop and load it up quickly with groceries. Long-term parkers leave their bicycle unsupervised over longer periods close to their home, place of work, school or station, and thus make greater demands on theft protection.

A solution that reconciles the interests of many is the Bikesafe designed and manufactured by Otto Wöhr GmbH. Presented



The customer can retrieve his bicycle in approx. 16 seconds.

for the first time at the BAU 2015 trade fair in Munich, it offers optimum conditions for parking bicycles within a small space. As a tower version, the automatic multi-storey park can accommodate 122 bicycles on a site of only approx. 37 m². All standard bicycle types, including pedelecs, with a maximum weight of 30 kg can be parked. Stored behind a locked gate, bicycles are optimally protected in the Bikesafe from theft and vandalism. Neither the user himself, nor unauthorized third parties have access to the rack system. In principle, different operating concepts are possible: the standard version is operated with a

form of access card, the so-called RFID chip. This is most suitable for regular use in residential or office buildings. At public facilities reservations and payment can be effected, for example, through a Wöhr Internet platform. The procedure is particularly straightforward and user-friendly. The bicycle must be set on a rail at the transfer area. Beneath the rail are weight sensors, by which the system recognizes the bicycle and checks its weight. This triggers the storage process: the sliding gate opens so that the bicycle can be moved in and secured. On the operating terminal the user now confirms the storage process, e.g. using a RFID chip, and the vertical lift with a gripper, the centrepiece of the system, lifts the bicycle into the rack system. The gate closes and the bicycle is conveyed to a free rail by means of a vertical lift. The storage process is dynamic, i.e. the vacant space nearest the gate is selected. The retrieval process is the same in reverse. By means of the RFID chip the user requests his bicycle at the transfer area. On average, the retrieval process takes only approx. 16 seconds. This makes the Bikesafe suitable for short-term parking – a good and safe alternative to the nearest street lamp.



The Kjøita Secret Garden consists of four- to six-storey buildings with a total of 140 apartments. Right-hand side (from left to right): Janicke Jebsen Vinje, Ole Dolva, Jan Løvdahl and Erik Asbjørnsen.

Project report with ARK.NET, Kristiansand



Hidden away on the Skagerrak

Author **Michael Kasiske**

Photos **Jon Petter Thorsen, Otto Wöhr GmbH**

On the east side of Kristiansand, capital of the Norwegian Sørlandet, a new residential and office complex has been under development for the past twenty years. A neighbourhood with a high recreational value, yet only a short walk from the lively city centre, is being built on the site of a former sawmill on the River Otra. With the “Kjøita Secret Garden” project the construction is now complete. ARK.NET Architects derived its name from a type of outdoor space from the Renaissance, and the project unexpectedly acquired a famous godfather.

Every Norwegian is familiar with Rolf Løvland. In the music scene the composer and lyricist is famous beyond the borders of his country. Understandably: with his works he won the Eurovision Song Contest in 1985 and 1996, most recently with the band “Secret Garden”, which he formed together with violinist Fionnuala Sherry. When Løvland heard of the project of the same name in Kristiansand he was so enthralled that he

dedicated an appearance in the local concert hall Kilden to Kjøita Secret Garden. It was spectacular advertising that generated a great deal of interest.

“Kjøita Park” was initially the title of an entry submitted by ARK.NET to a competition in 2011. At that time Veidekke, the country’s biggest building contractor and project developer, wanted to give a new direction to urban development. During the years of conversion from an industrial area to an urban neighbourhood, the demand had shifted from office space to living accommodation. That may also be due to the attractiveness of the Otra, which – like the entire fjord – was freed from the contamination of former industry, so that today the salmon could be seen jumping again. The water has bathing quality, vitally important for a residential neighbourhood surrounded by a canal.

A higher density was to be achieved for the “island” – the original three-storey buildings did not appear to be sufficiently

“For the residents of the lower floors the courtyard area screened off from the outside – the secret garden – will be their own open space.”

urban. But the first design failed to convince, because it was modelled on inner-city development – the compactly organized apartments with small balconies made no impression on the local market. The development proposal that won the subsequent competition called for differentiated structures, some four to six storeys, others divided into four differently configured rows which together form a block.

The 140 apartments in the so-called bridge, canal and parking structures have open layouts without hallways. Oriented to two sides, their generously-sized windows and two bathrooms are



An approx. 8,000 m² underground car park with 250 parking spaces is located beneath the courtyard.



Top: The platforms in the underground car park are visible through glass panels.

Right: Cross-section through the landscaped courtyard.



The Kjøita Secret Garden project is situated on an island in Kristiansand. The apartments on the upper floors offer impressive views of the nearby River Otra.

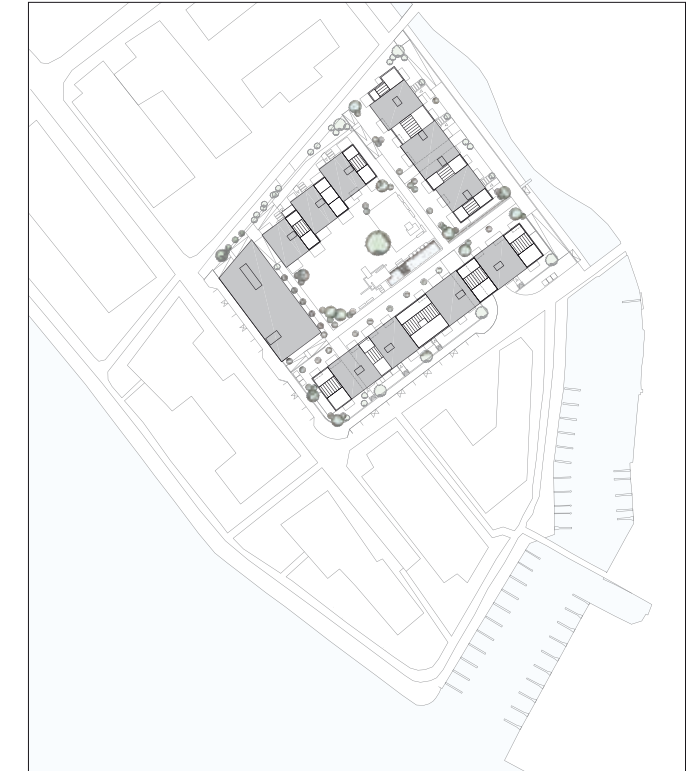
We have been working on the island on the Otra since we won the competition in 2011. First of all we placed the apartment building Kjøita Zenit directly on the banks; then came the Kjøita Secret Garden. As an office based in Kristiansand and working almost exclusively in the region, we are very familiar with what the local residents expect of their homes and were able to make the appropriate suggestions to the developer, such as open plan apartments with balconies on each side. The people of southern Norway want to let as much light as possible into their private living space. For this very reason we analysed the daily course of the sun and designed the building layout accordingly. Of course, the new residents also expect convenient parking for their cars, and a spacious underground car park was provided for the purpose. Marketing success has meanwhile proven that we were right on target with our concept for comfortable contemporary living.

Erik Asbjørnsen, Kristiansand

further comfort features. With two spacious balconies to the outside and courtyard the architects created a compelling relationship between living and open space, whereby special attention was paid to the configuration of the exterior spaces to ensure privacy. The expansive terraces of the apartments on the sixth floor not only offer a spectacular view over the Otra and Skagerrak; they are surrounded by landscaped roofs which also have the effect of delaying percolation after heavy rainfall.

A separate courtyard area screened off from the outside has been created for the residents of the lower floors who do not have a view of the river – their own secret garden. Although it is accessible to the public, it is subdivided by hedges, intimate arbours for sitting and areas for boccia and chess. This design is a tribute to the buyers, who are typically between 50 and 60 years old and have sold the family home after the children became independent. They want to free themselves of the burden of their own house and garden, and travel more instead.

Even before completion, the complex was completely sold out except for two units, making Kjøita Secret Garden one of the most popular projects in Kristiansand. One of the contributory



Site plan of the Kjøita Secret Garden.

factors was undoubtedly the abundant parking. Due to government subsidies for eco-friendly electric cars – these being exempt from VAT and motor vehicle tax, allowed to park free and use the bus lanes in the city – the demand for parking spaces has increased considerably.

Today, many Norwegians own two cars: one conventionally powered vehicle for long distances and transporting goods, and an electric vehicle for urban traffic. For this reason, an approx. 8,000 m² underground car park was constructed beneath the garden, providing 250 parking spaces for the residents and employees in the office building.



In the parking system the platforms are equipped with charging stations for electric cars, commonly used in Norway.

Because of the high groundwater level next to the river, the construction of a second level would have been very expensive. It was therefore decided to create only a rectangular concrete basin in the middle and operate it efficiently with a parking system. Many of the platforms are equipped with charging stations and dimensioned so that heavy electric cars, such as the Tesla – very popular in Norway – can be parked in the system. The platforms in the underground car park are visible through glass plates. Additionally, conventional parking spaces are also available.

With this mixed form of construction the neighbourhood will soon reach completion. As a grand finale on 2 September, when

the first apartments are occupied, Rolf Løvland plans to give a concert in the garden. This form of house-warming party will be truly unrivalled, not only in Kristiansand.

“In the parking system numerous platforms are equipped with charging stations, so that electric cars can also be parked in the system.”



The Wöhr app enables the smartphone to be used as a remote control for the parking system: the parking space is selected and the gate opens automatically.

Arkitekten

ARK.NET, Kristiansand

Project partners: Erik Asbjørnsen and Janicke Jebsen Vinje

Project architect Kjøita Secret Garden: Maren Spilling

www.ark-net.no, www.eark.no, www.jebesen-vinje.no

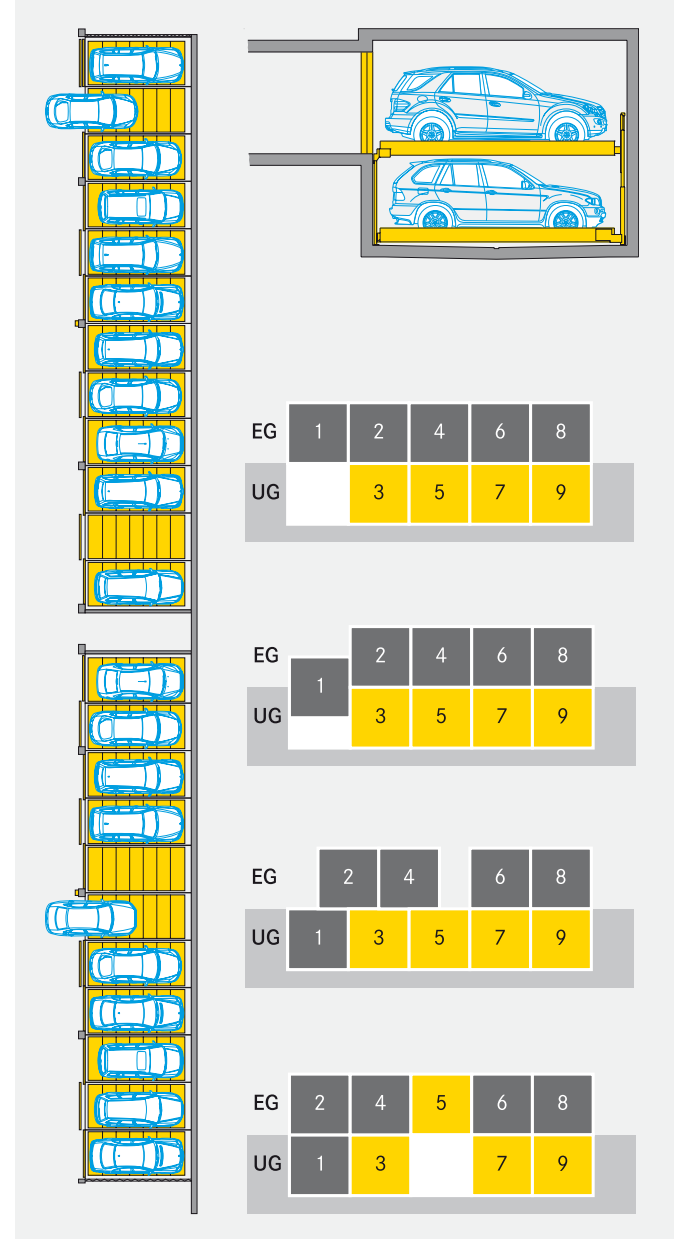
Projects (selected)

2015	Kvartal 2, 180 apartments
2012	Kjøita Zenit, 32 apartments
2011	Secret Garden, 140 apartments and office building
2009	Jaktoddveien, 40 apartments
2008	Aquarama, public swimming pool, sports facilities, hotel

Product information

Wöhr Combilift 542-200/220 with 44 parking spaces;

Comfort type for 2.6 t vehicles; electric glass sliding gates; new control element per RFID chip and radio remote control; optional operation by smartphone app; even aluminium platform surface; electric charging station.





Originally built in 1845, Palais Coburg stood vacant for many years before opening as a hotel in 2003 following extensive reconstruction work.

Right: Peter Pühringer, Karin Pühringer.

Palais Coburg: Imperial residence with high-tech parking

Author **Helga Kusolitsch**

Photos **Otto Wöhr GmbH, Palais Coburg Residenz**

Project report with **Peter Pühringer,**
POK Pühringer Private Foundation,
Vienna





Most of the suites on the two upper floors were constructed as galleries.

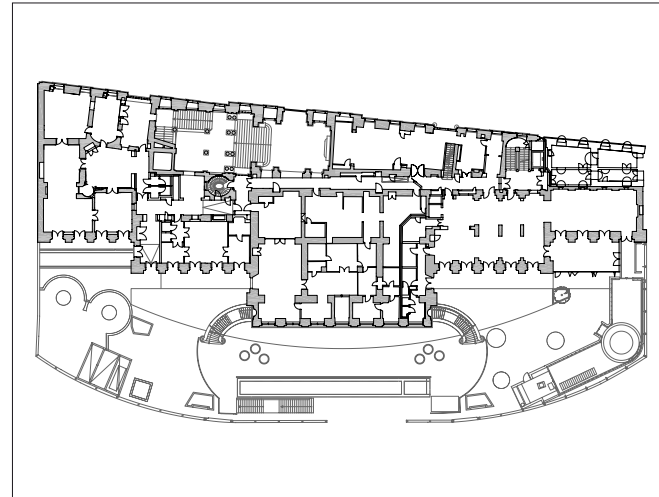
The imperial charm of Vienna's city centre attracts countless visitors from all over the world. But some historic doors are open only to a selected few, in the form of accommodation at the highest level of hospitality. One example is the Palais Coburg, a 5star superior establishment and an exquisite combination of splendid ambience and high-tech, from the stately rooms of the bel étage to the parking system at casemate level. The palace, which dates back to 1845 and is now a listed building, underwent a long period of deep sleep before it was opened as a hotel in 2003 following an extensive period of reconstruction and renovation.

When Peter Pühringer, with the private foundation established by him, decided to buy the property in 1997, the Palais Coburg had already been on the market for several years. The Palais, a listed building designed in Neorenaissance style, was in a dilapidated state. Up until then the 20 virtually non-terminable existing residential lease agreements had deterred potential buyers. It was a bold undertaking that incurred a total investment of € 80 million and paved the way into the league of "Leading Hotels of the World".

In Viennese vernacular the palace was known as the "Spargelburg" (Asparagus Castle) on account of the free-standing columns at the centre of the façade. It was completed according to the plans of Architect Karl Schleps in 1845, but it was only after the revolutionary years that August von Sachsen-Coburg and Gotha took up residence in the palace together with his wife Clementine d'Orléans. The period of the aspiring bourgeoisie gave rise to the "Zinspalais" (tenement palace) when the Coburgers relinquished part of the palace as luxurious rental apartments.

The 20th century brought bomb destruction and the Russian occupation. From 1955 onwards two floors were rented to Austrian Railways (ÖBB) while the silk wallpaper and stucco ornaments yellowed behind the covering panels. After the sale in 1978 the last aristocratic occupant had secured a lifetime right of residence. In 1994 this era came to an end.

Today, in the hotel age the Coburgers again reside in their ornate staterooms, albeit only as namesakes and decorative



The mezzanine floor of the Palais Coburg.

Diverse and unique measures were necessary to restore the dilapidated staterooms to their former pomp and splendour, without foregoing the amenities expected by today's clientele. Cabinet-makers, gilders, painters, stucco plasterers, ornamental metalworkers, marbling artists, mosaic and terrazzo layers, metalworkers, stone sculptors, manufacturers of leather wallpapers, artistic glaziers, painting, textile and metal restorers and many other highly-motivated craftsmen hardly to be found in the conventional property business had an opportunity to apply their skills and expertise to this property.

Ernst Sklenitzka, POK Pühringer Private Foundation, Vienna

objects for suites and a restaurant. The decision to convert the building to a hotel came very late. Parallel with the gradual termination of rental contracts and the start of renovation work, the proposed use changed from a residential and office building to individual apartments, and finally a hotel. Today the building accommodates private apartments and foundation offices, as well as a residence with 35 suites, function rooms and restaurants.

A distinctive element of the foundation's motto "Preserve the past – shape the future" is the glass front in the plinth area of the main façade, which draws attention to the hotel entrance. Behind the historic garden wall an airy entrance zone with a glass construction was created by excavating the garden. In the foyer, broad openings provide visual axes from the exposed mediaeval city walls and historic carriage entranceway to the contemporary steel and glass construction of the lobby, where old meets new.

A stairway leads down to the subterranean casemates, which have turned out to be a showpiece of the building. The huge brick vaulting, constructed in the Renaissance period as part of the bastions, today houses the function rooms equipped with state-of-the-art technology and exquisite wine cellars, in which oenological treasures from all over the world are stored.



The entrance to the Wöhr Parksafes was integrated into the former garden wall.

The staterooms on the upper floor are likewise stylish and elegant, with expensive reproductions of French tapestries and restored inlaid parquet floors. Splendour and extravagance are evident everywhere, paired with the latest technology and discretion of an aristocratic residence that lends itself to use as a venue for exclusive events. This is where the year-long UN negotiations on Iran's nuclear programme found a happy end on 14 July 2015.

The suites on the two upper floors were for the main part constructed as galleries with two window axes each. Projecting balconies and floor-to-ceiling casement windows at a room height of six metres allow daylight to penetrate the living quarters on two levels. These feature a new interior design in which Karin Pühringer was instrumental, created at considerable expense and with loving attention to detail. Antique furniture was sought worldwide, then meticulously restored and reproduced according to historic designs.

The suites in the converted attic space, where the roof timbers were replaced by a reinforced concrete folded plate structure, in contrast, have a classical-modern design free of historic constraints. A generously-sized spa area with an outside terrace offering views of the nearby municipal park is also to be found here.

The hotel service is rounded off by bars and restaurants offering both international star cuisine and everyday fair to tempt customers from the surrounding area. Behind the glass pavilion, designed according to historic plans but incorporating state-of-the-art climate technology, one may discover a "secret" garden which develops a special charm through selected architectural features. Further architectural features are attributable to the owner's weakness for technical finesse. The establishment thus has a 24-hour self-service vault system to the highest security classification.



Two independent seven-storey Parksafe systems are located beneath the Palais.

The decision to inject new life into the Palais Coburg certainly may not have appeared to be rational... and perhaps not even prudent. But intuitively I knew that I would be able to make a long-standing dream come true, to preserve the past and shape the future. Despite their dilapidated condition, the historic underground of the casemates, the exposed city walls of 1555 and the staterooms presented a unique opportunity for an architectural concept that brings to life the six centuries of building history in this complex.

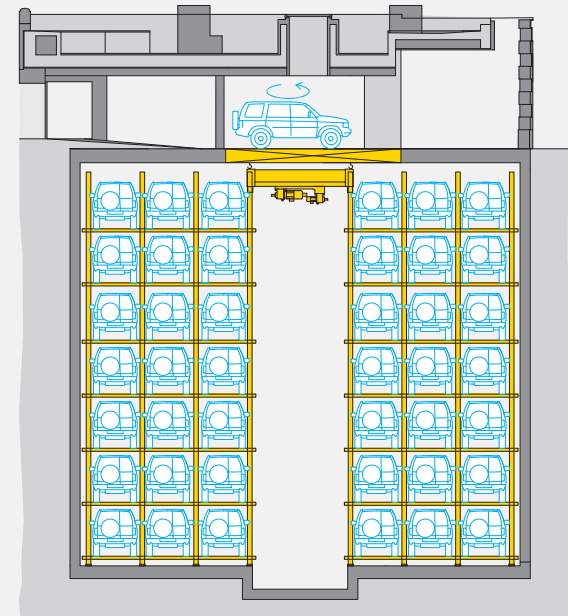
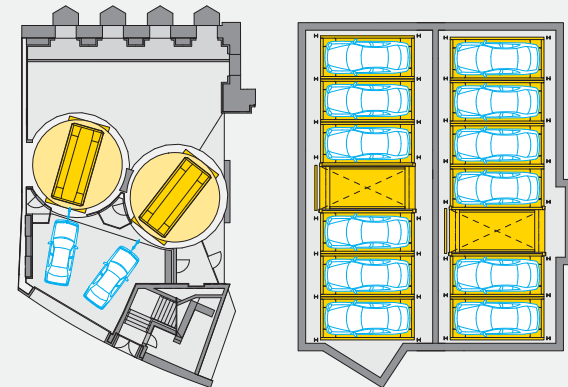
Peter Pühringer, Vienna

But cars are also kept in a safe. Impetus for the installation of a parking system was provided by the Vienna parking regulations, as specified in the garage law of 2008. It stipulates one parking space per 100 m² of living space for new buildings, extensions, subdivisions or change of use. POK decided to invest the originally planned sum in lieu of parking spaces in its own parking facility. Due to the restricted space available, it opted for an automatic parking system, although it only plays a marginal role in hotel operations.

The valet parking customary in establishments of this class ensures that guests are not burdened with the parking procedure. They stop in the traffic-reduced forecourt and hands in the car keys at the hotel lobby. The hotel staff takes care of the rest. Moreover, only a small proportion of guests arrive in their own car. The Parksafe largely serves as a business model to generate rental income. Extensive short-term parking zones subject to a charge, permits for residents and special provisions for shopping streets make parking spaces a much sought-after commodity.

The recently completed Wöhr Parksafe replaces the parking system of another manufacturer which was originally constructed as part of the renovation work, at that time Austria's first. The underground car park configured as a white tank incorporates two independent seven-storey conveyor systems

with a total of 79 parking spaces. A brand new feature of the Coburg Parksafe is the newly-developed video instructions for individual operation. And, of course, the restaurant goodies offered by the hotel to waiting customers via touchscreen have helped to acquire new customers.



Architects

Peter Pühringer, POK Pühringer Private Foundation, Vienna
www.palais-coburg.com

History (selected)

2013	Formation of POK as a non-profit foundation in Switzerland
2003	Opening of Palais Coburg
2000	Start of reconstruction of Palais Coburg
1997	Acquisition of Palais Coburg
1995	Formation of POK Pühringer Private Foundation

Product information

Wöhr Parksafe 582 with 79 parking spaces

Year of construction 2016; total parking area: approx. 212 m²; area per space: approx. 2.7 m²; parking volume: approx. 530 m³; volume per space: approx. 6.7 m³; access time: min. approx. 108 sec, max. approx. 289 sec, Ø approx. 186 sec.



Space-saver in the base- ment

Author **Julia Macher**

Photos **Otto Wöhr GmbH, Rafael de La-Hoz Arquitectos**



**Project report with Rafael de LaHoz
Arquitectos, Madrid**

Behind the imposing façade of Gran Vía 48 one can reside in luxury with a fabulous view over the city. Even the substructure has something to offer – a fully automatic parking system with space for more than 300 cars in Madrid's crowded city centre.

Luxury is commonplace in Madrid's Gran Vía. In the heart of the Spanish capital the majestic buildings are lined up one after the other, vying for attention with their ornamental façades and superstructures. The Metrópolis Building, on whose dome is balanced a winged Ganymede, has become an emblem. In the first three decades of the 20th century many banks, press clubs and cultural associations became established on the street laid out in the era of King Alfons XIII. Cinema and theatre owners built palaces of pleasure here, soon earning it the nickname "Spanish Broadway".

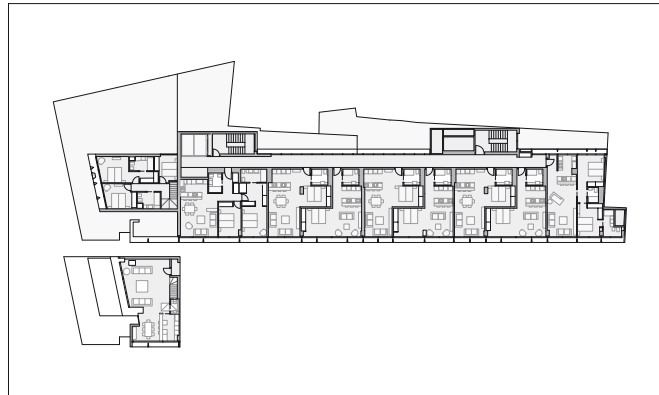
Constructing a new building in this illustrious neighbourhood is a challenge for any architect, particularly when the future residents expect comfort in every respect. Conceived as a short-term residence for business travellers, frequent flyers or tourists, the centrally located building – named after its street address Gran Vía 48 – was to fulfil all demands on a

luxurious lifestyle. The Madrid office of Rafael de La-Hoz Arquitectos mastered this task with vision and understanding.

In architectural terms, Gran Vía 48 harmonized with the historic neighbourhood without denying its present-day origin. Rafael de La-Hoz Arquitectos have designed an imposing structure with an austere glass and granite façade and striking superstructure that deftly takes up the references from its surroundings. The adjoining press palace, a brick building

“My design mirrors the proportions of my neighbours, but the characteristic ornamentation of Gran Vía has no place in today's architecture.”

modelled on the American modern era, has characteristic corner towers on the upper floors that give it an unmistakable face. De la Hoz crowned his design in the same manner: the cuboid projects like a crow's nest from the upper floors of the side wing. The vertical struts on the façade, indicating double ceiling heights, are likewise to be found on the neighbouring building. De la Hoz pays tribute to Art Deco all around, without being ingratiating. With its austere glass-and-granite façade, its design remains consistently contemporary and makes no secret of the fact that it is the only structure from the 21st century in a street that indulges like no other in early 20th century nostalgia. “Although my design takes up the rhythms, proportions and heights of its neighbours,” explains Rafael de La-Hoz, “cornucopias, scrolls, meanders and the characteristic ornamentation of Gran Vía simply have no place in today's architecture.” In his design the architect allowed himself to be guided only by conceptual considerations; no regard had to be taken for the existing buildings. There had been a gap on the site after the original building, the representative office of a bank from the 1970s, was demolished in 2011.



10th floor of Gran Vía 48.



View over the Madrid's landscape of red roofs from the top floor.

“The automatic parking system was right from the beginning an integral part of the planning; a conventional underground car park would not have made sense on the narrow, trapeze-shaped site.”



The trapeze-shaped floor plan was a challenge for the parking system: the priorities were efficient use of space and convenience.



The rigidly gridded glass-and-granite facade is unmistakably modern.

Its inner workings are also characterized by a clear and restrained formal vocabulary. On twelve floors there are 97 apartments for differing requirements: from the 50 m² single loft to the representative duplex or four-room family apartment. With marble clad showers, specially-designed door handles, walnut parquet and extras such as the 24-hour concierge, solarium and fitness studio they satisfy all demands placed on high-priced living accommodation. The biggest luxury, however, is the location, which could not be more urban, in the very heart of the Spanish capital. Through the floor-to-ceiling windows in the north-west one looks out over a red roof landscape, in the south-east to the street life and light play of the neon signs.

The traffic thundering along the six-lane street remains a – not only an acoustic – anecdote.

In the building's basement there are five Wohn Parksafes. 320 spaces can be created instead of the 120 parking spaces in a conventional parking facility.

The parking problem with which the inhabitants of the three million inhabitant metropolis are regularly plagued has been solved by the architects in the form of a fully automatic Wöhr parking system. In the building's basement there are five Type 582/583 Parksafes in which the cars are parked fully automatically by a robot in a kind of rack system. The user drives his car down a central ramp into one of five cabins of the Parksafe, onto a parking pallet. The car is then conveyed on the pallet by vertical lift to one of the seven parking levels and shifted onto a vacant space to the right or left.

To retrieve his car the driver holds his chip against the scanner and waits until the Parksafe conveys the car from the rack back to the transfer cabin. The automatic parking system was an integral element of the planning right from the outset. A conventional underground car park would not have made sense on the narrow, trapeze-shaped site. "The access ramps alone would have taken up the lion's share," says de La-Hoz. "In this way we made optimum use of the space." There is thus room for 320 cars on an area in

"A conventional car park on such a narrow site would have been impossible. Alone the access ramps would have taken up the lion's share. The fully automatic parking system solves this problem in an elegant and efficient manner. The pit was precisely tailored to the requirements of the site. A significant increase in parking capacity was possible, satisfying not only the needs of the residents of the luxury apartments at Gran Vía 48, but also of other residents in the neighbourhood. For me superfluity is a fundamental quality of luxury. At Gran Vía 48 we now have parking spaces in abundance!"

Rafael de La-Hoz, Madrid

which only 120 cars could otherwise be accommodated in a conventional system. "In a city like Madrid, where parking spaces in the centre can cost up to € 100,000 this investment pays off in any case," adds Ignacio Viñas, project manager of manufacturer Wöhr.

The integration of the parking system was an engineering masterpiece that consumed over half of the four-year construction period. First of all, the site had to be excavated to a depth of 26 metres – not an easy task in a densely built city centre location. Then the five Parksafes were installed. "The trapeze-shaped floor plan caused us some headaches," recalls Viñas. "We had to use the space efficiently while ensuring user convenience." Four of the cabins have turntables on which the car is automatically positioned in the right direction to avoid awkward manoeuvring. The system is adaptive: those who use their car frequently are allocated a space close to the transfer cabin. But even occasional users will not have to wait longer than two minutes for their car; the five cabins enable fast operation and retrieval. At 26 euros per space/month, maintenance costs are only slightly higher than those of a conventional parking space. Despite the higher initial investments, these system are pathbreaking.

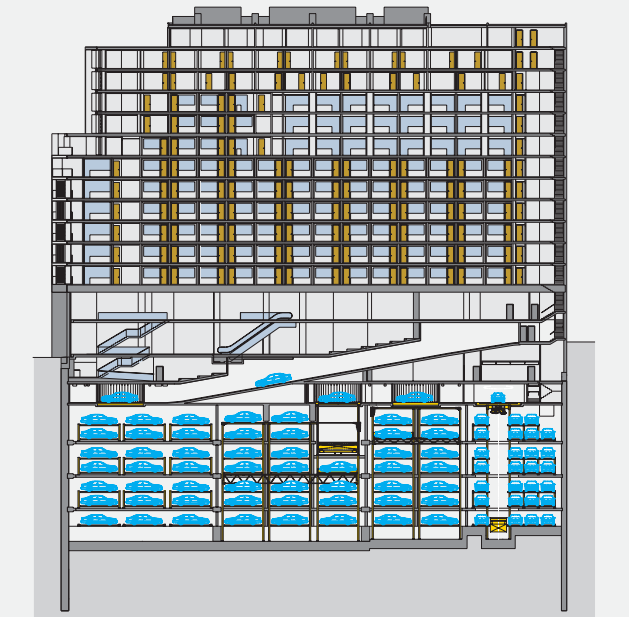
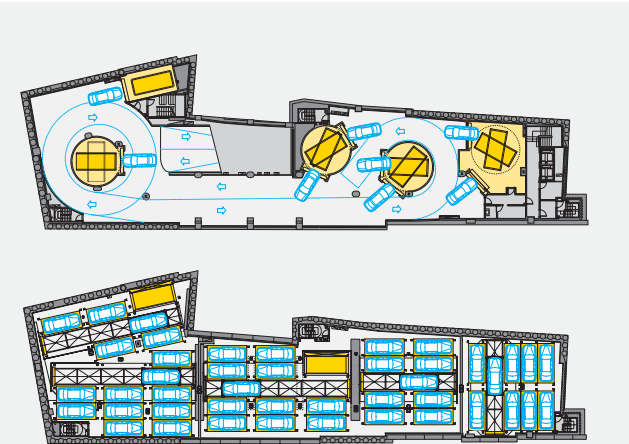
Like many local authorities, the municipal government of Madrid is striving to reduce traffic." says Rafael de La Hoz. "The public sphere is to be returned to pedestrians and flaneurs. It concluded



The system is adaptive: those who use their car frequently are allocated a space close to the drop-off and retrieval point.

that if more parking spaces are accommodated on the small footprint of the basement of residential buildings, not only will more inner city sites be freed up for other uses, but the irksome search for a parking space will be eliminated. And drivers and local residents win back some quality of life. In a densely built-up area such as the centre of the Spanish capital it was logical that the parking system should also be made available to local residents. The entrance to the multi-storey car park is thus not located directly in the building itself, but in the pre-hall between the main entrance and foyer.

Local residents and neighbours can rent an underground parking space for € 220 per month – and share in the luxury of Gran Vía 48.



Architects

Rafael de La-Hoz Arquitectos, Madrid
www.rafaeldelahoz.com
www.granviacapital.es

Projects (selected)

2015–2017 Bogotá Oncological Clinic, Columbia
 2015 Miguel Delibes Cultural Centre, Alcobendas, Madrid
 2014 Daoíz y Velarde Cultural Centre, Madrid
 2013 Head office of Campus Repsol, Madrid
 2013 University Hospital Rey Carlos de Móstoles, Madrid

Product information

Wöhr Parksafe 582/583 for 320 cars

Parking area: approx. 912 m², size of parking space: approx. 2.9 m²; parking volume: approx. 15,000 m³; volume per space: approx. 47 m³; retrieval time min. approx. 111 sec, max. 322 sec, Ø approx. 168 sec.; parking capacity: approx. 93 cars per hour.

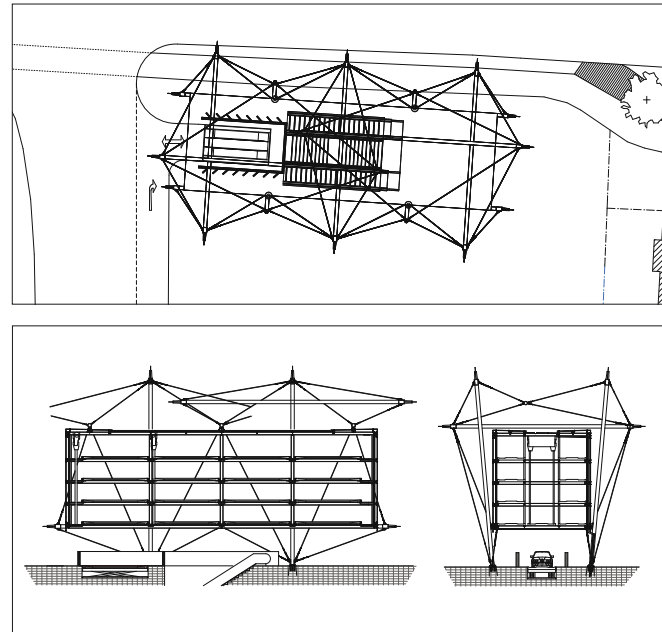
AUTO-MAT

Student project

Author **Franziska Weinz**
Photo **Kim Ronowski**

Inspiring designs for multi-storey parking systems were prepared in the summer term 2015 in the “Complex supporting structures and constructions” module at the Beuth Technical College in Berlin.

Prof. Peter L. Arnke of Arnke Häntsch and Mattmüller (AHM) Architects posed the following task in collaboration with Dipl.-Ing. Hans Zieger and Wöhr as part of the student exercise “AUTO-MAT”. The students were to design a display case for approx. 30–40 select cars in a transparent enclosure. The location was to be the underpass to Gate 17 at Volkswagen AG (VW) in Wolfsburg. Its dilapidated roof was to be replaced and enhanced with the display case. The existing staircase of the underpass should be retained. The aim was to make the structure a landmark on the through road. Upon completion, employees of VW and car lovers from all over the region would



The design “A Kind of Tensegrity” by Christian Kaul and Detlev Kerkow.

Design of a display case for cars in Wolfsburg

be able to exhibit their cars in the display case or offer them for sale. At the press of a button, the automatic parking system would permit passers-by to convey a car of their choice to street level in order to view it prior to purchase.

“The aim was to make the structure a landmark on the through road.”

The students designed the bridge over the stairway and a static concept for the parking system. The façade was to provide protection from the weather. A kiosk (10–15 m²) and 15–20 bicycle stands were also to be integrated into the design. The task was tackled in groups of up to four persons. The evaluation criteria were the design and urban planning concept, together with a floor plan, cross-section, elevation and model. To help the students get started, Wöhr held a lecture on the subject of automatic parking systems containing practical examples to show exactly how parking systems function. Among the best entries was the design “A Kind of Tensegrity” by Christian Kaul and Detlev



Gate 17 of Volkswagen AG in Wolfsburg served as a site for the design.

Kerkow. The word “tensegrity” is a combination of the English words “tension” and “integrity”. Tensegrity structures comprise a system of tension elements and a sub-system of pressure elements. The advantage of these difficult-to-calculate structures is their extremely high load carrying capacity and broad span with low dead weight. The supporting structure stands at the forefront of the design and at the same time constitutes the formative element. Eleven round timber struts are connected by tension rods. The rack structure of the Parksafe is clad with frameless glass panels.

Several results of the seminar were submitted to the student idea competition “Wolfsburg Award for Urban Visions”. Each year the City of Wolfsburg awards a university prize in acknowledgement of innovative projects for Wolfsburg on the theme of “City Space History”. Eligible are students of architecture, city planning, landscape architecture, historic preservation and free art. Wolfsburg is one of the few cities founded in the 20th century (in 1938 to be precise). The city grew as the domicile of the Volkswagen factory, particularly in the course of the economic miracle after World War II. Shaped by these factors, city planning principles of the last decade were consistently implemented in Wolfsburg and additional architectural landmarks created. The competition promotes creative ideas and planning approaches to enhance the qualities of this “modern city”. Winner of the competition in 2015 was Nicole Sandt of Braunschweig Technical University.

ARK.NET comprises the offices of Erik Asbjørnsen, Janicke Jebsen Vinje, Ole Dolva and Jan Løvdahl. The four partners founded the architectural firm for the purpose of undertaking complex planning tasks, with a focus on residential construction. In their individual offices they take on straightforward commissions such as single-family or holiday homes. While Asbjørnsen studied at the University of Strathclyde in Glasgow and Dolva at the University of Portsmouth, Vinje and Løvdahl attended the Arkitektøyskolen in Oslo. The four partners cover the entire range of city planning services from the initial design to the detailed planning stage.

Peter Pühringer – POK Pühringer Private Foundation. Peter Pühringer, graduate structural engineer from eastern Germany, ranks among the 40 richest Austrians. He started his career in the construction industry when he laid the basis for his subsequent fortune in the 1970s with concrete business in the Saudi Arabian region and property investments in Berlin. Thereafter, Pühringer worked successfully as an asset and fund manager. From 1996 until his retirement from operational activities he was managing director of ZZ Vermögensverwaltung, a subsidiary of his Pühringer Private Foundation, founded in 1995. In 1997 the POK acquired the Palais Coburg and converted it to a hotel.

Founded in 1920, the architectural office **Rafael de LaHoz Arquitectos** is regarded as one of the pioneers of the modern age in Spain. It is among the country's most famous and traditional establishments. For over twenty years the studio has been managed by Rafael de La-Hoz Castanys, grandson of the founder. With over 500 projects in 20 countries, the office operates at an international level. Its focus is on public buildings for the private and public sphere. Rafael de La-Hoz Arquitectos have received numerous international awards for their work, including the US Architectural prize Chicago Athenaeum. They were also nominated for the Brick Award and Mies-vander-Rohe Prize.

Publisher

Otto Wöhr GmbH
Ölgrabenstr. 14
71292 Friezheim
www.woehr.de

Concept

Bauverlag BV GmbH
Avenwedderstr. 55
33311 Gütersloh
www.bauverlag.de

Editor's Office

Bauwelt
Schlüterstraße 42
10707 Berlin
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Design and Layout

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Wrangelstraße 66a
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