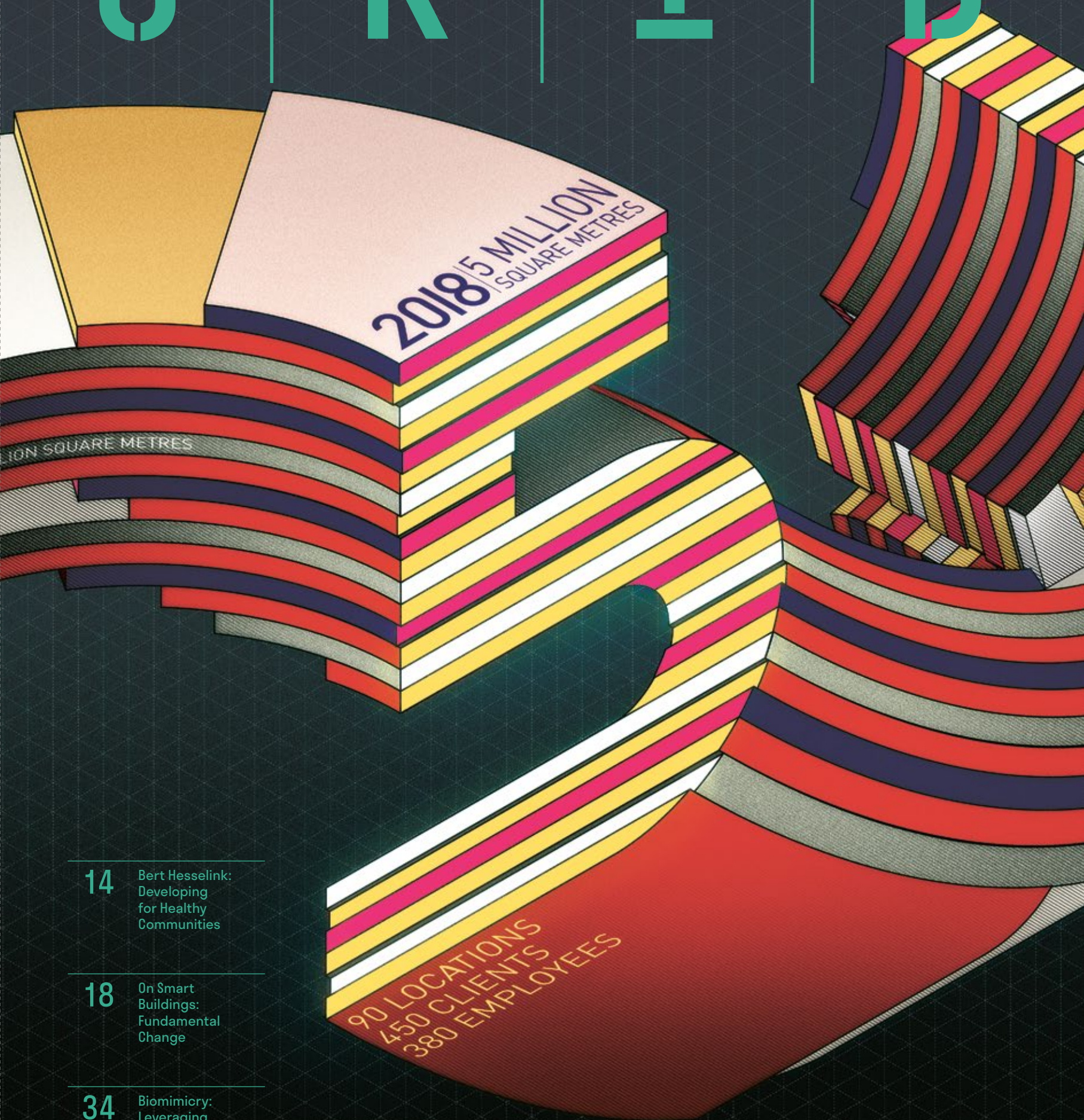


# G R I D

03



2018 5 MILLION  
SQUARE METRES

ION SQUARE METRES

90 LOCATIONS  
450 CLIENTS  
380 EMPLOYEES

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Communities

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G R I D 0 3

Spring 2019

Company Magazine of the year 2018  
Now in 3 exciting flavours!

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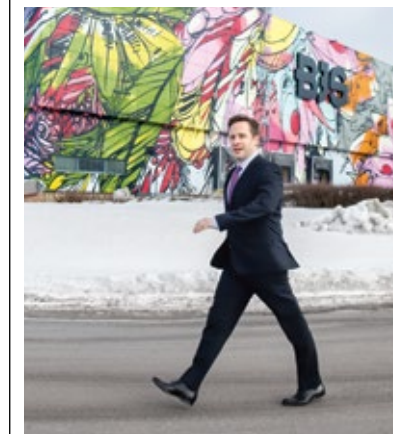


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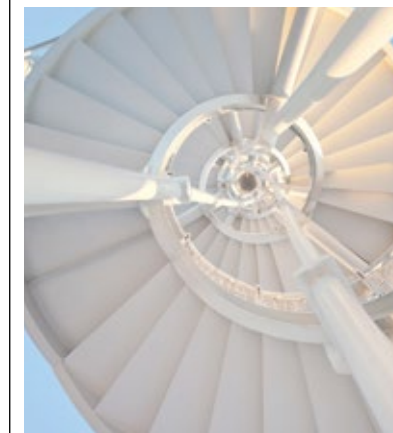
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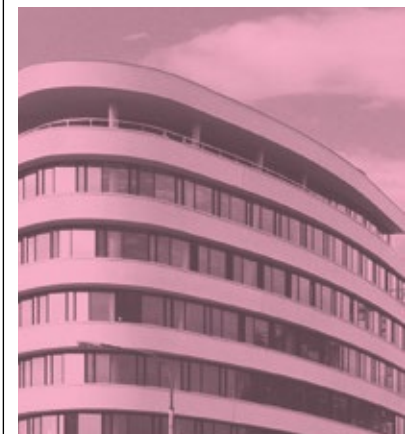


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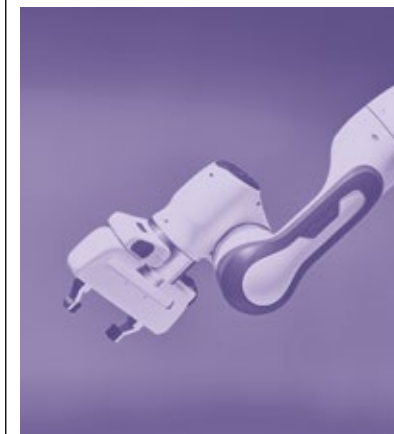
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From a pair of arms that can  
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"I said a hip hop, a hippy to the hop,  
Like what we see, with no rent free.  
5 million under the roof, make us groove.  
CTP full speed is what we need  
Beat don't stop till the break of dawn."

*It's time to*

*celebrate!*

The Surprise of the Christmas Gala, Richard and Remon mark the transition from 2018 to 2019 with the inside scoop on some of the big changes and the game plan going into summer and beyond in a HipHop Rap



We grew the team over 20 % to 380 people by the end of the year. And it's not like these 380 sit in one big, shiny office somewhere in downtown Prague. CTP is very different. We have smaller teams located throughout the region based on site where the action is. They're there to look after our clients, of course. They ensure progress while constructing new property, but also to make sure the parks are well maintained and always in excellent condition. People like David Chládek, Miroslav Pekník, Valentin Rosu but also Štěpán Morkes, Zdeněk Apeltauer are a few examples. Then there is support to these teams. In particular legal, accounting, funding, and other specialised teams, with close cooperation amongst them all. Overall, we are well balanced. 50/50 male/female and an average age of 35.5 years.

As for the tools, I must admit that it took us more time, but we now have new IT systems up and running and this creates more efficiency and helps us to increase productivity.

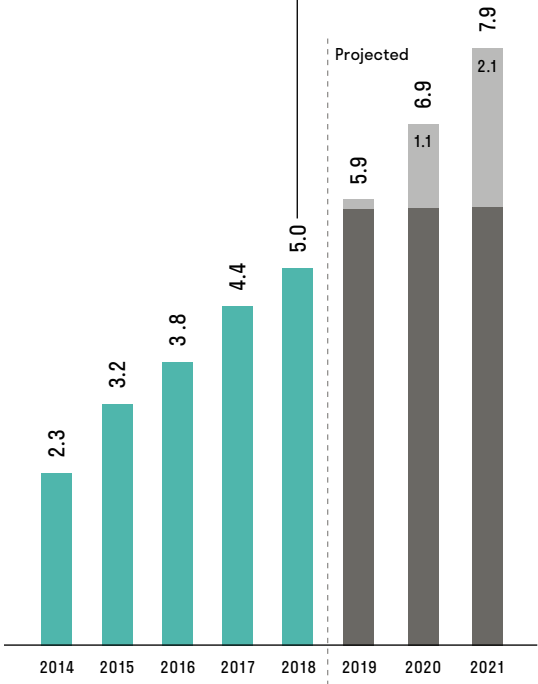
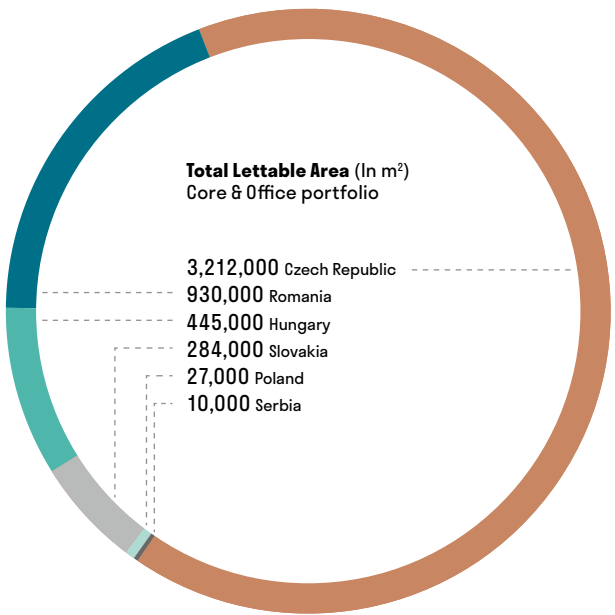
We doubled the size of our portfolio since 2014. With 5 million m<sup>2</sup> under roof and a landbank to develop another 3 million, CTP is on the way to grow to 10 million m<sup>2</sup>. Over the past few years we have been working hard on buying strategically located land in the five capitals of the countries we operate in, Prague, Belgrade, Bucharest, Bratislava and Budapest. I'm excited about the latest acquisitions in Budapest which now allow us to offer warehouse property all around the city. CTP is the market leader in Romania. We are strong in Bucharest and recently acquired a site just north of the city which will offer greater choice to our tenants.

We're looking forward to meeting our business partners at MIPIM in March of this year, and at other business events in the upcoming months. In addition, we will be making a splash at this year's running events in Prague and getting together our runners from around the region for these races. We continue our support for the CTP Doksy and CTP Palava triathlons and we will of course be racing in both this summer. Get your teams together and see if you can compete with the full-speed CTP dream team!

  
Remon L. Vos, Fries  
CEO

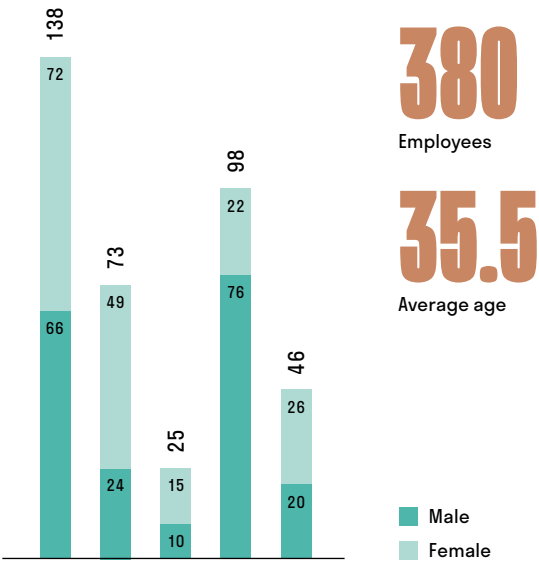


“CTP people are dynamic, energetic, experienced and at the same time, good on the dance floor, sportive, happy to take on a challenge and go the extra mile. Great people.”

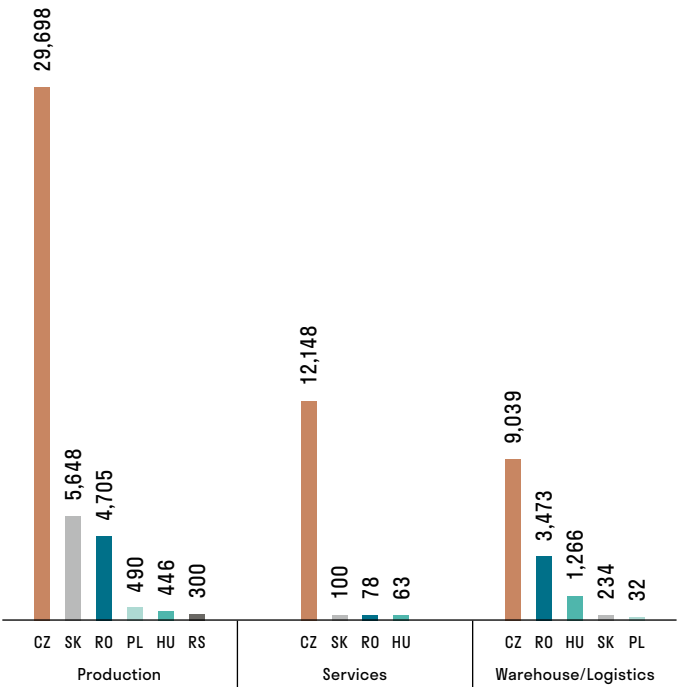


**Lettable Area Development** (In million m<sup>2</sup>)  
CTP's plan is to grow our portfolio by up to 1 million m<sup>2</sup> yearly, primarily through organic growth of our current clients.

Actual  
Standing & Under Construction  
Future Plan



**CTP Employees, Dec. 2018**  
In order to maintain high quality service and accommodate our clients, we increased staffing in all markets by over 20%.



**Employment in our Parks, by Country**  
The stability of the CTP business model is underlined by the diversity of our clients, many of which operate high-tech production and value added services throughout CEE. These investors have a positive impact on the surrounding communities, providing directly 70,000 jobs—and many more indirectly—to local communities.



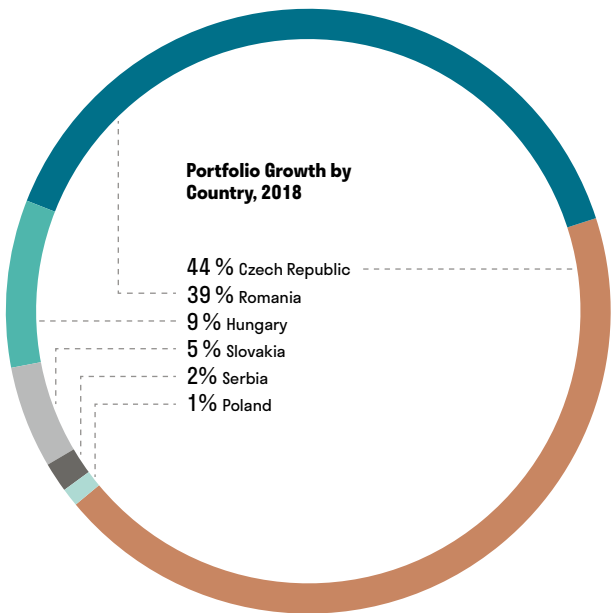
Conditions in 2018 continued the trends of 2017 with clients increasingly seeking new, built-to-suit premises, as well as more energy-efficient buildings. Demand came mostly from companies involved in added-value manufacturing processes as well as from companies operating e-commerce operations. Despite ongoing concerns about low unemployment, companies continued to grow or move new operations to the region. As a result, CTP was able to take advantage of these trends, and as we grew our portfolio to 5 million m<sup>2</sup>, we also saw both revenues, profits and asset values grow. In 2018 we expect to report total asset value growing over 7% to EUR 4.7 billion. In 2018, overall rental income, including from hotels, is estimated to grow 11% to over EUR 254 million.

In 2019, we plan on carrying out the largest refinancing in our history, accounting for our complete Czech industrial portfolio. We expect this transaction to become a unique opportunity to deepen our relationship with our core banking partners. We will continue working on divesting from non-core assets, allowing us to focus on our core industrial development business. We expect growth to continue in all markets, and we continue to seek appropriate opportunities throughout the region, particularly in Romania, Poland and Serbia. In addition to organic growth, CTP expects to grow the portfolio by appx 165,000 m<sup>2</sup> through acquisitions in the coming year. In the coming 2 years, CTP plans to invest over 70 mil EUR on land acquisitions which will be used for Group’s further development. CTP’s cash flow is generating sufficient resources to keep the land bank on a stable level in order to offset part of the land bank which is used for development. At end 2019, with current growth plans, we expect revenues to increase to over EUR 280 million. In addition, we plan to supplement our cash flow through specific divestments, which we expect to generate nearly EUR 48 million, which we intend to reinvest and further expand our core portfolio.

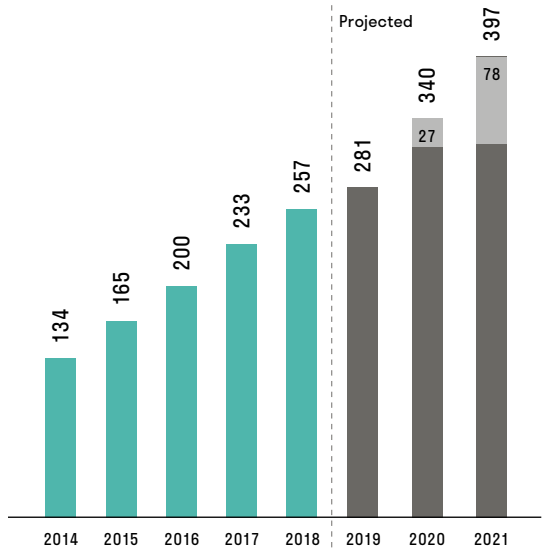
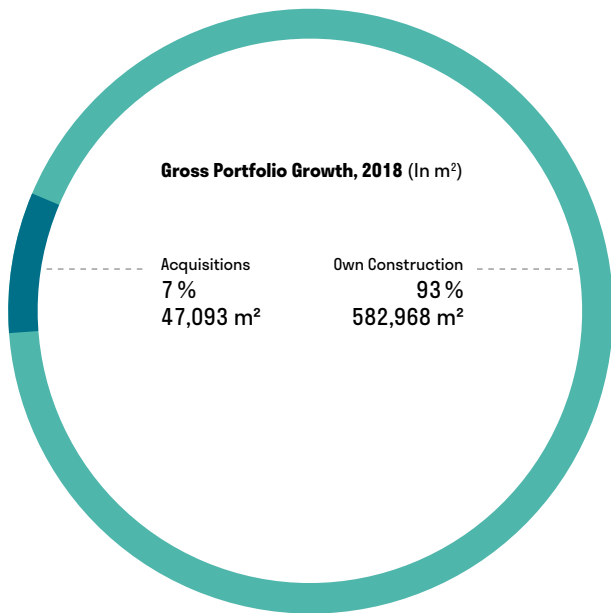


“In 2019, we plan on carrying out the largest refinancing in our history, accounting for our complete Czech industrial portfolio.”

Richard Wilkinson  
CFO

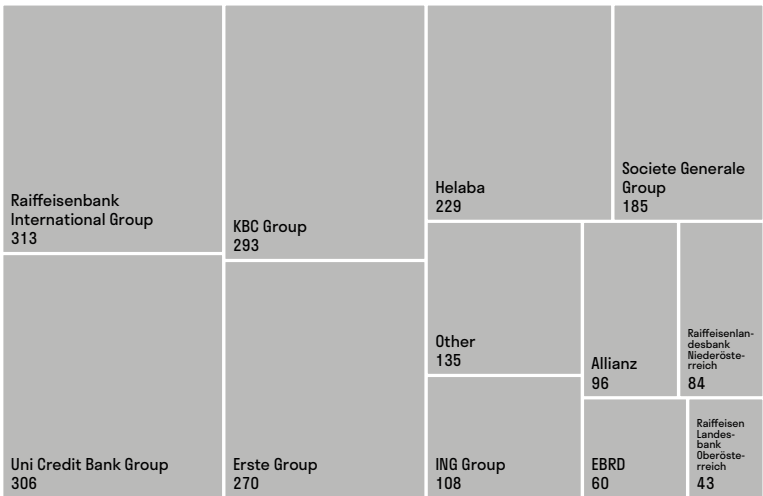


**Portfolio Growth**  
As in previous years, expansion by current clients was the main driver of organic growth, although 7% of overall growth came through strategic acquisitions. During 2018, our portfolio grew more outside of the Czech Republic, and we expect this trend to continue in coming years.



**Gross Rental Income (EUR million)**  
Rental income grew in line with portfolio expansion.

■ Actual  
■ Standing & Under Construction  
■ Future Plan

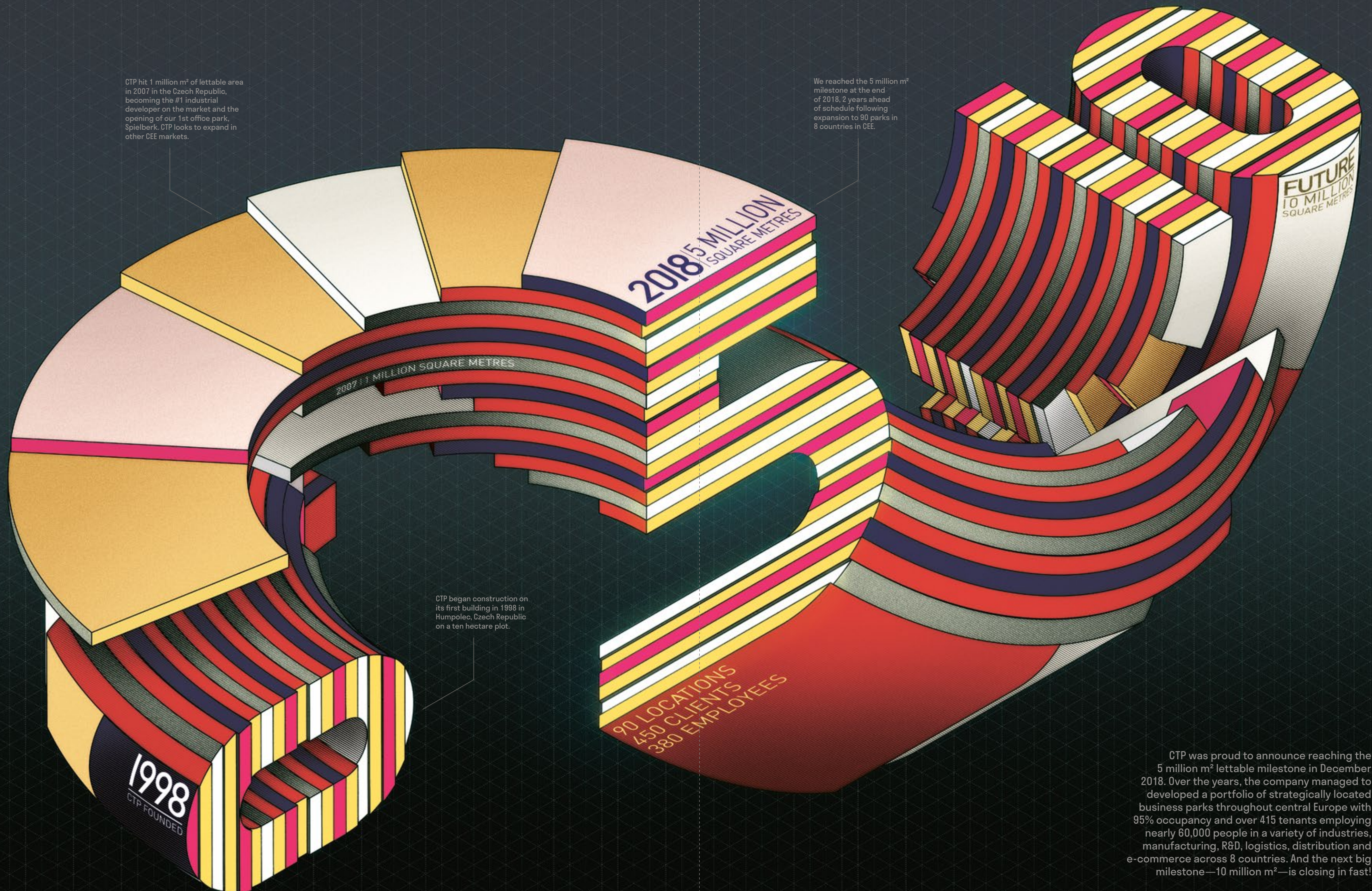


**Financing**  
At end 2018, we maintained strong relationships with over 11 major financial institutions. In 2019, we plan to to refinance the entirety of our Czech industrial portfolio, providing an excellent opportunities for our banking partners.



CTP hit 1 million m<sup>2</sup> of lettable area in 2007 in the Czech Republic, becoming the #1 industrial developer on the market and the opening of our 1st office park, Spielberg. CTP looks to expand in other CEE markets.

We reached the 5 million m<sup>2</sup> milestone at the end of 2018, 2 years ahead of schedule following expansion to 90 parks in 8 countries in CEE.



CTP began construction on its first building in 1998 in Humpolec, Czech Republic on a ten hectare plot.

CTP was proud to announce reaching the 5 million m<sup>2</sup> lettable milestone in December 2018. Over the years, the company managed to develop a portfolio of strategically located business parks throughout central Europe with 95% occupancy and over 415 tenants employing nearly 60,000 people in a variety of industries, manufacturing, R&D, logistics, distribution and e-commerce across 8 countries. And the next big milestone—10 million m<sup>2</sup>—is closing in fast!



# WHAT THE HELL DOES LEGAL IN REAL ESTATE DO?

CTP’s business plan requires providing fast, professional development services. And developing buildings necessitates legal assistance at many levels: with local permitting authorities, in lease negotiations with clients, in negotiations with financing banks; in due diligence when acquiring or divesting of assets. As CTP has grown, ensuring a strong legal team in-house was a key ingredient to that growth strategy. The new CTP Group Head of Legal, Eugen Sonnleithner, speaks about the challenges his legal team faces, and how an in-house legal team is important for the company’s success.

**GRID: What is the role of the Legal Department in CTP?**

**ES:** At first glance, our role is to provide fast, top-quality, reliable legal support to the business.

But that role can be more differentiated: (1) as facilitator: making deals happen; understanding the needs of stakeholders and balancing them to CTP’s advantage; and (2) risk management: not exposing CTP to unnecessary risk for the benefit of making a deal.

Legal needs to balance both requirements. It Requires thinking in alternatives; providing solutions which lead to the realization of our goals without exposing CTP to unnecessary risk.

**How do you deal with operations across the region?**

In the Czech Republic, we have 5 or 6 clusters/regions, each of which have their project managers and technical support staff, but also dedicated accountants for instance. In order to support this organizational structure, we have also assigned small teams of lawyers to specific regions like Bohemia, Moravia and Offices for example. Conse-

quently, each Project Manager knows his contact in the legal department well, and the lawyers know the issues and particularities of each business park better, which should provide for better communication and results.

Because CTP is now a major international player, legal has had to adapt to enable this expansion and position itself as a service provider to the whole region. We have different structures in each country and we needed to find a balance between doing things locally and providing central support from CZ. For instance, we have a legal team in Romania for leases, construction, & corporate housekeeping services, while we support these areas with group standards and processes centrally. But the bulk of the daily work is done locally. On the other hand when it comes to M&A and financing, for example, the majority of the work will be handled centrally with support from local colleagues, since the volume of this work would not warrant employing experts locally.

In CZ, we have a fully-fledged legal department: in RO & HU we already have in-house legal advisors but in PL & RS we don’t yet have in-house legal staff but will as we grow.

**What are the biggest challenges you need to tackle on the group/CEE level?**

CTP has many informal processes which were established when CTP was a smaller company. Top management recognized the need for certain processes to be formalized to take account of considerable international growth and complexity of CTP. My job is to create and formalize these new processes with the caveat that any new process should only regulate to the extent absolutely necessary – any regulation reduces flexibility – and thus not burden the organization. CTP must remain a fast-moving, flexible organization, a primary reason for its success over the last 20 years. On the other hand, we do need some standards processes, which if missing, create frustration across the company.

Another are of focus is ensuring g we are using our IT to the greatest extent possible for support. For example, preparing reports for business partners and management and generating the first rough draft of contracts from the system.

**What are the advantages of having legal counsel in-house for an industrial real estate developer?**

Having a legal team in-house means better understanding of the business, processes, and “language” of CTP. Our team is easily approachable by everyone in the organization meaning many issues do not arise or are quickly settled. External advisory services would cost time and money. Plus, our team has is more business-focused compared to external companies; who also need to be managed, adding administrative time.



**Eugen Sonnleithner**  
Group Head of Legal  
Eugen joined CTP in November 2018 after working more than a decade at Erste Group in Vienna, where he headed the legal department dealing with real estate matters all over our region. Prior to Erste, he worked more than five years with various law firms. He earned a PhD in law at the University of Vienna and holds a Master’s degree from the University of Economics in Vienna. Eugen is responsible for all legal matters of the CTP Group.



**Michal Földes**  
Corporate Lawyer  
*Why do you like working as an in-house lawyer?*  
Working as an in-house lawyer combines the best of working in an international law firm with the support of a great team of professionals. Plus, you have only one client: your employer, and you are more often challenged to make entrepreneurial decisions.

**Ferenc Gondi**  
Legal Director, CTP Hungary  
*What’s the most challenging part of your job?*  
I believe that developing and leading an in-house legal team from square one is a lawyer’s dream job. Finding solutions to everyday tasks while managing those tasks creates a nice balance between the creative and analytical.



**Mihai Buciuman**  
Senior In-house Lawyer  
*How does IT affect legal?*  
Legal should both support and rely on Information systems. Legal is in the best position to check that information is correctly summarised and databases reflect exactly what is agreed. And IT systems are often our best resource when it comes to cross referencing actions with delineated rights and responsibilities.



**Květa Vojtová**  
Corporate and Financing Lawyer  
*What’s the most challenging part of your job?*  
In the M&A and Corporate Finance team, we mostly buy and sell companies, spin them off, merge and restructure them. Although we enjoy MS word (not excel) and playing with words (not numbers), we are people just like everybody else in the company! The biggest challenge for me is to prove that we are not here to complicate things, but can actually make lives easier.

**Oliver Oros**  
Senior Counsel for Leasing and Land Issues  
*What was the most challenging project you have worked on for CTP, and why?*  
The most challenging project I’ve worked on so far is the drafting of a new lease agreement template, as this is the document that impacts and connects all the various departments of the company, and further, is the basis of CTP income.



# CTP Supporting Communities Across CEE

**CzechITas**  
CzechITas organizes courses for girls and women on programing, web development, graphic design and data analytics. CTP recently decided to support CzechITas by providing them with the space they need to create an environment, where girls do not have to feel ashamed for raising their hand and where they can improve their skills. CzechITas focus is on correcting imbalances in education and encouraging women's greater participation in STEM careers. In IT, there are very few women, and as the modern world requiries a high degree of digital literacy, companies will need to hire more women into these careers,

and can benefit from greater diversity in their teams. CTP is a big supporter of education programs, and works to promote women in the company. Because CzechITas works to correct gender and other imbalances, whether they be financial or societal, CTP is proud to be involved in support for CzechITas. In December, CTP hosted the CzechITas Gala event at hotel Marriott Courtyard, launching the cooperation which will continue in a new office building at Ponávka. The CzechITas organisation will help support education, and will bring additional life and young talent to the Ponávka community.



**The CzechITas House at Ponávka** will be the very first place that provides complex IT support to women and youth at one place in the Czech Republic, composed of education, motivation, tools, coaching, camps and career development and change. The House will contain:

- CzechITas offices
- Classrooms for courses
- Facilities for lecturers
- Open study room & multipurpose room
- Presentation hall
- Playroom & kids corner
- Café with a presentation area for community events, lectures for the public, partner companies events

*"I truly believe that the future lies in technology and diversity. It unlocks individual potential and is a great talent source for companies. CzechITas's mission is to inspire and empower women and youth to pursue STEM careers, complementing the Czech educational system. It will be a long-distance run, and we are excited about building and maintaining long-term partnerships with leading companies like CTP."*

Dita Přikrylová  
CEO & Founder of CzechITas



**YourChance**  
At the end of 2018, CTP became the general partner of YourChance, which runs a program aimed at Czech young adults who will soon be old enough to move out of the children's homes. The program uses 'mentors' to assist the teens with financial literacy, entrepreneurship, and life outside the home. CTP supports this activity on a financial level and promotes its employees to take on roles as active mentors. Plus, there are additional regional aid foundations set up to help children from threatened families. Currently CTP is looking into a new project aimed at children endangered by domestic violence.



**Tereza Maxová Foundation**  
CTP is one of the largest long-term sponsors of the Tereza Maxová Foundation whose aim is to provide effective assistance to abandoned and underprivileged young children at both the national and regional level. CTP's support focuses on their education from early childhood till maturity, giving them more of a chance on the labor market.



**Úsmev ako dar (Smile as a Gift)**  
CTP recently became a partner, in Slovakia, helping children from children's homes in their real-life struggles. The NGO provides support and coaching to families who accept these children into their own homes, in addition to assisting socially weaker families with everyday worries.

CTP takes prides in its efforts to act as a "Good Neighbour" to the communities where it is active. As part of this, CTP promotes socially responsible behavior wherever it operates and supports a wide range of community-based organizations, mainly focused on children and adolescents.



**Casa Sperantei hospice**  
In Romania, CTP provides financial aid to hospices for palliative care. Casa Sperantei hospice in Bucharest, Brasov and Fagaras offer free care to more than 4,000 patients a year. The joy on their faces says it all.



**Kids learn about real world skills**  
In late January, CTP hosted 23 young students from the nearby Montessori Primary School to take part in an excursion at CTPark Humpolec. As part of a project in which children learn their parent's jobs, CTP taught them what property development means and of the various roles in the company such as lawyer and project manager. The students then got to visit one of the tenants, BJS, to see the manufacturing process of IKEA furniture pieces. The children played roles of Purchaser and Seller and had a fun and educational day.





BERT HESSELINK:  
**DEVELOPING  
FOR HEALTHY  
COMMUNITIES**

“I am happy to move from being an advisor to being hands-on in CTP”, says Bert Hesselink, new Group Business Development Director. “There is no better place to make a meaningful impact on the quality of the built-up environment than by working for the largest developer and private owner of integrated, high-tech business parks in CEE. And, I am both excited and honoured to make a direct contribution to creating better spaces for businesses and people in the Czech Republic and CEE.”

**BERT HESSELINK**  
GROUP BUSINESS  
DEVELOPMENT DIRECTOR

- Born and raised in Tubbergen in The Netherlands
- Graduated in 2001 with a masters degree in Economic Geography with a specialization in real estate from the University of Groningen, NL
- Started his career at CBRE Amsterdam
- Held top management positions at CBRE and DTZ
- In Prague since 2004, married, 2 kids

**GRID: Can you introduce yourself and tell us why you joined CTP?**

**BH:** In my role as Group Business Development Director it is my key responsibility to drive business and to grow the portfolio. My focus is on continuously adjusting and fine-tuning the commercial strategy and to build out the organisation to achieve this.

I am spending a lot of time with marketing, the business development managers, property management and customer service to ensure the integrated commercial success of CTP.

I am extremely grateful that at CTP I can put my 18 years experience as real estate advisory in the industrial, logistics and office markets as well as operational and business development roles at CBRE to good use.

I’ve been living in the Czech Republic for the last 14 years and have learned to appreciate the complex history of the individual countries and regions whilst staying connected to Western Europe for inspiration on the latest trends and innovations.

Joining CTP was for me the opportunity of a lifetime: combining all my interests, work experience and deeper life purpose into one role and place. CTP is for me a company where I can be an active partner in creating better places and healthier communities across Central and Eastern Europe. I am intrigued by the positive impact that real estate development can have on companies, economies and people.

I was always very much interested in human geography and regional differences as a child, and this continued into my early adulthood when I graduated with a master degree in Economic Geography with a specialization in real estate from the University of Groningen in The Netherlands. Central and Eastern Europe is probably the most alive and diverse region in Europe and perhaps the world. I consider myself an extremely lucky man to have lived here for almost 15 years already and to be in a position in which I can apply my interests into my job and make a real impact on the built-up environment and the lives of people in the region.

Deep in my heart it was an easy decision for me to join CTP. What I love about the company is that it is privately owned and that it typically keeps its properties under long-term ownership. Also, I am impressed by how entrepreneurial, innovative, no-nonsense and fast-moving the organization continues to be despite its size now. At the same time, it is a developer that truly cares about and has a long-term vested interest in the success of their clients, the region and local communities across Central and Eastern Europe. This is what really puts CTP in a different league and this is why I love working for CTP.

**What are some of the trends you mentioned earlier which you see impacting the countries where CTP operates?**

Interestingly, this is also fully aligned with my personal interests and side activity of lecturing on the topic of Innovations and Real Estate as part of the first MBA in real estate program in the Czech Republic at the University of Economics in Prague (VŠE). If we look at CEE, the Czech Republic and Slovakia are favoured spots for production and warehousing because of their being adjacent to the developed economies of Germany and Austria. Aside from this, there is an inherent focus on innovation, which derives from CTP’s long-term view. I am always looking for the next big trend that will have an impact on the demand for and supply of real estate. There is no doubt that innovations in sustainability, the internet of things, digitization, artificial intelligence, autonomous driving, 3D-printing, automation, cybernetics and innovations in many other areas will have a huge impact on the type and location of real estate that is needed and how it will be provided for and managed by developers, investors and occupiers in the future. I will be sharing my knowledge and hands-on experience with the students of the MBA program. At the same time, it motivates me to stay on top of the latest trends and to apply these in my role at CTP which invests heavily into sustainability, intelligent buildings, etc.

**Is CTP the developer and owner of choice for tenants and communities?**

Taking everything into consideration, CTP’s long-term investment into their properties, its ability to adjust its offering of properties to changing demand, as well as the priority it places on innovation – it is obvious that CTP is the developer of choice both for tenants and communities. The fact that this is not the case (yet) convinced me that there is still a lot of space to improve with regards to business development at CTP. This is why I accepted the challenge wholeheartedly.

**With all you do in the community it seems your goals are as much about caring as being innovative?**

It’s probably true. Prior to joining CTP, I was motivated every morning when I woke up to give my everything to “Making the Czech Republic a better place”. CTP then offered me the opportunity to continue doing this and to play an active role in creating and developing buildings and communities and to expand it to all the countries that CTP operates in: “Developing healthy communities across Central & Eastern Europe”.



# FULL SERVICE PROPERTY DEVELOPMENT

CTP’s unique business model provides the full spectrum of property development in-house. This allows for faster decision making, better coordination during the whole development process, resulting in time and cost savings for our clients. Because CTP is the owner and long-term manager of our properties, we have an interest in their longevity and how they perform over time. We continually invest into and upgrade our facilities to ensure lasting value to our clients. CTP sees itself as a long-term business partner to our clients, and after move-in, we ensure sufficient resources to manage our properties and parks to make our clients and their employees comfortable.

- 1

**CLIENT REQUIREMENTS**  
Clients often look to CEE markets to locate a new manufacturing facility for the benefits of location within Europe and skilled local labour. CTP helps clients narrow down locations during the search process, and our in-house legal team works with the client to agree initial plans, facility size, and use needs.
- 2

**PERMITS**  
Speed-to-market is often a key requirement, and CTP works ahead of time to permit landplots within the network, with adjacent land for later expansion to reduce lead time. With the plot pre-zoned and fully permitted, construction can begin as soon details are agreed.
- 3

**DESIGN**  
CTP’s design and engineering team work closely with the client to agree detailed building specifications, from floor loading, ceiling height, temperature requirements, and sufficient office & sanitary space. A floorplan is agreed, and construction schedules are put in place. Because CTP has unique building types designed for specific business operations, CTP’s design team works with the client to assist in technology installation so clients can simply plug and play.
- 4

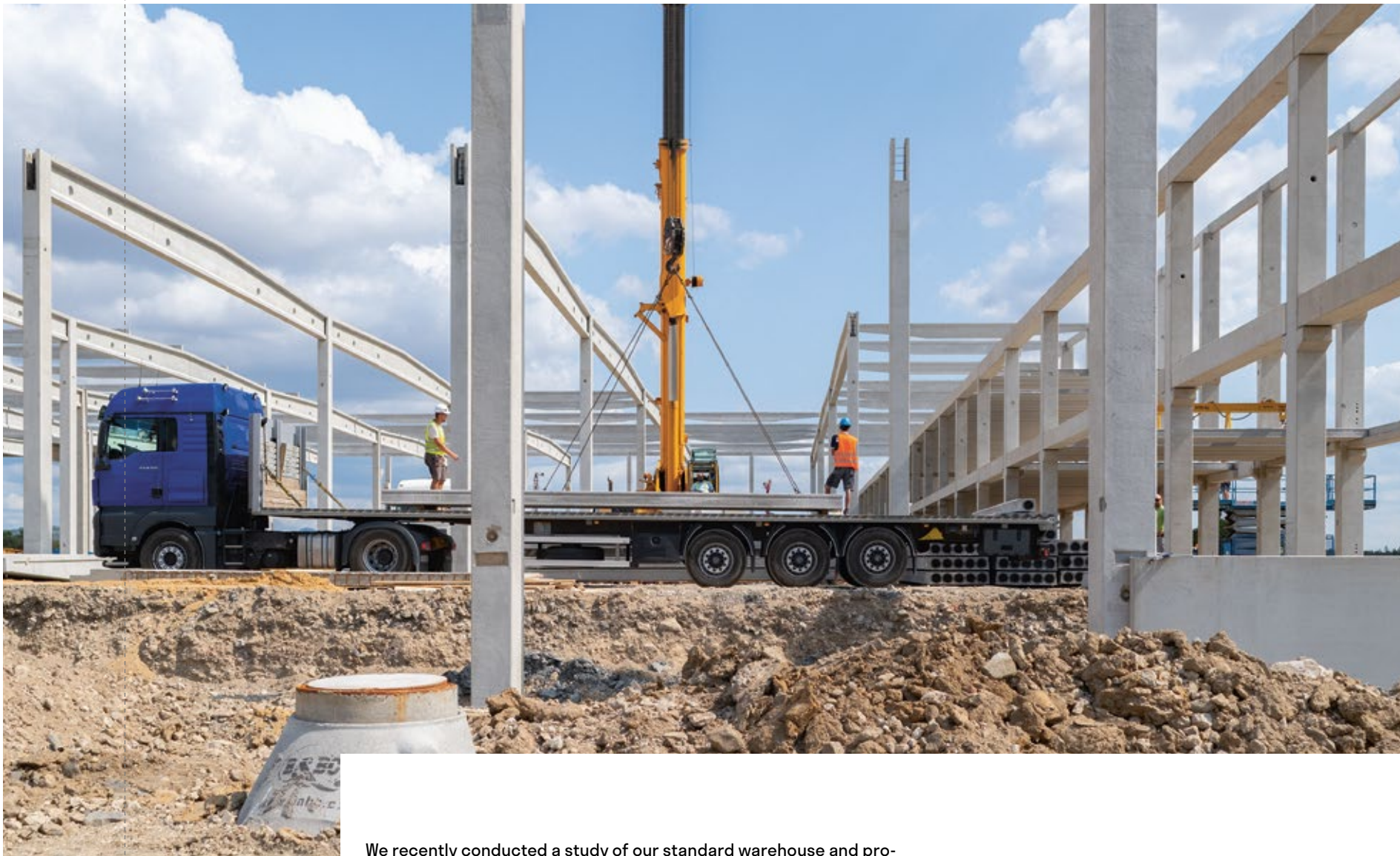
**CONSTRUCTION**  
CTP acts as general contractor to construct the building, outsourcing to reliable, high-quality suppliers, after open tenders are awarded, which meet budget, quality and environmental standards.
- 5

**FACILITY IN OPERATION**  
After move-in, CTPark facility managers keep in close contact with the client to ensure all systems operate efficiently and they are comfortable in their new premises.  
  
**CLIENT SERVICES**  
CTP can provide yearly contracts for on-going service, freeing the client to concentrate on their core business. CTP works with local fire and security councils to ensure safety norms, and creates monthly schedules for outdoor cleaning, snow blowing, groundskeeping and general building maintenance.
- 6

**EXPANSION**  
As the client’s business continues to grow, CTP facilitates their expansion plans based on the client’s new requirements. Expansions can be an extension to their current facility, or a new facility at a different location.  
  
**BUILDING UPGRADES**  
After some years of operation, CTP invests into its buildings, often installing new atmosphere control systems, reducing the overall energy consumption, thereby reducing operating costs.

## SUSTAINABILITY IN PRACTICE

CTP standards set our properties apart from the competition. From floor to ceiling, our technical specifications exceed industry standards. We continuously upgrade our standards to incorporate the latest technologies and materials. We also look to include materials that help reduce the overall carbon footprint of our buildings, considering how much energy is used in the production of a material, and how easily it can be recycled at the end of life. By ‘greening’ our standards, we aim to contribute to the long-term health of our communities. As the basis for all our construction projects, the CTP standard specifications ensure a consistent build quality of our buildings, in every country where we operate.



We recently conducted a study of our standard warehouse and production facilities compared to other new buildings on the market. The study shows that our latest CTP-built buildings lead the market. (Cost savings per individual countries can be found on pages 22-29)

BUILDING TYPE	MAIN SPACE TEMPERATURE (°C)	HEAT GAINS FROM TECHNOLOGY (W/m²)	EMPLOYEES PER SHIFT	GATE OPENING FREQUENCY	OPERATION TIME	AVERAGE LIGHTING REQUIREMENTS (LUX)	SPECIFIC ENERGY COSTS (EUR/m²/mo)
WAREHOUSE 10,000 m²	15	1	50	medium	2 shift Mo–Fri (333 hr/mo)	200	0.27
PRODUCTION 10,000 m²	18	10	200	medium	3 shift Mo–Sat (333 hr/mo)	300	0.44

This table shows the standard parameters used to compare the real world energy expenditure of a New CTP Building to that of our competitors’





# On Smart Buildings

Digitalization is fundamentally changing the way buildings are planned, constructed, used and managed.

The business of Smart Buildings—with sensory capabilities carried out through IoT is expected to become a \$51.44 Billion globally by 2023. Currently, more than 80% of new construction involves at least one facet of IoT and/or related Smart Building technologies. The anticipated massive growth of IoT smart building systems also creates a substantial market opportunity for asset tracking systems and real time analytics, especially regarding smart workplace solutions by allocating resources to optimize workflows.

We have asked some industry experts to share their views on Smart Buildings, IoT and their benefits and potential impact.





Paul Deverell  
Managing Director, Compro Solutions

## On Smart Technologly in New and Existing Buildings

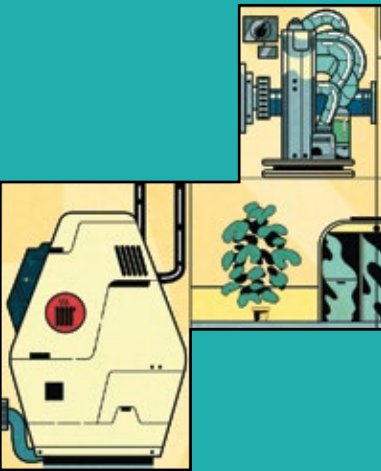
It's best to look at new and existing buildings separately, as both will benefit greatly, but in slightly different ways.

### New Buildings

From a new build perspective we can begin with it's design. The 'Digital Twin,' refers to an architect's 3D digital design of the property. This precise model of the exact dimensions of the building in digital form prevents many complications that can arise during construction. This digital building plan is thereafter, connected to the IoT sensors in and around the building, combining both real time and historical data and is the source from which building management and automation systems operate.

Imagine a building that can analyse the meaning and implications of data streaming in from different sources (sensors, equipment, etc.) and adjust the appropriate building systems or equipment accordingly with no manual inputs required. This is nothing new in itself; take a temperature thermostat, sprinkler/fire system or lighting sensors. However, until recently this was performed at a fairly basic and unintegrated level. Modern sensors and systems connected to the Internet of Things (IoT) allow seamless communication between key equipment and systems within buildings.

There are major inefficiencies with systems that do not support such interconnectivity. A building needs to function as a single interconnected brain in order to reach optimum efficiency levels and ultimately eradicate downtimes across the board. There are myriad examples where technology can dramatically improve the current status quo; let's take the optimisation of energy consumption and air quality in buildings for instance. Non-domestic buildings produce between 10% and 15% of total carbon emissions. Smart buildings can reduce those emissions by 15% to 25%. This is a clear cost-saving benefit for buildings owners, their shareholders, public-sector property portfolios and taxpayers.



### Smart buildings can tap into many information sources including:

- weather satellites (to read weather data).
- externally mounted weather stations (that read wind, temperature, sun, rain, snow and humidity levels).
- externally located sensors that read dust, Volatile Organic Compounds (VOC's) and smog levels.
- internally mounted sensors that read temperature, humidity, CO2 levels (ppm) etc.
- historical data (to determine the typical temperature and weather patterns for the time of year).
- real time building occupancy data
- natural air recuperation from the shadow side of the building

These things alone can make a huge difference to consumption figures whilst creating a healthier and more comfortable internal environment. Building owners, occupiers and tenants are increasingly demanding energy consumption data to hand. In this regard utilities suppliers (gas, electricity, water) have been replacing older meters with 'smart meters.' This data can be sent directly to energy management software that can automatically compare precise consumption figures to those of the invoiced amounts from the suppliers themselves. Such low-cost software systems enable detailed views (via laptop, smartphone, etc.) and provide complete control over energy monitoring and management. Furthermore, for building owners and facility managers, precise re-invoicing of consumption to tenants can be automated, giving the tenant access to the software so they can view the data themselves.

Software systems that monitor the status of equipment (including HVAC, elevators, valves, pumps, bearings, hydraulic components, boilers, fire systems, cranes, etc.) can support preventative or pre-emptive maintenance and inform building managers in advance when servicing, repairs or replacement parts are required. This will play a huge role in reducing equipment and system down times.

### Existing Buildings

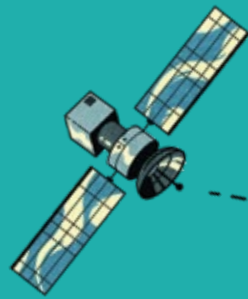
With existing buildings that are perhaps falling behind from a technology standpoint, many of the latest systems can be retrofitted and offer some of the same types of control, monitoring and comfort as new buildings. Within industrial properties we are able to upgrade existing technologies to enable benefits in terms of energy monitoring and building control systems. Furthermore, we are able to perform thermal studies and carry out improvements to the building envelope. An example of this is the Schenker warehouse building located at CTPark Bor. We installed sensors throughout the building at different heights to monitor the temperature

differential at various locations and also to measure the stratification of warm air that typically gets trapped in the upper part of the building. The building ceiling fans can then be automatically controlled according to this data and redistribute warm air downwards where workers can benefit. The same can be performed in a production building where machinery emits heat that can be redistributed around the building. The heating system in turn requires less energy.

We installed energy monitoring systems including sensors on the main meters and also the sub meters (electricity, gas, water). The incoming data from these sensors is uploaded to the central software. The data is so granular we can view the consumption of individual circuits and suggest improvements. The final phase is to install a Building Management System that then connects to energy management software and can optimize and control the building using the data received from the sensors and monitoring equipment.

IoT sensors can communicate over very long distances using low energy and bit rates. What does this really mean though? For one it means equipment and sensors can communicate with Building Management Systems in ways that were previously impossible. It can even go as deep as monitoring how long a truck was docked, and how the open dock door affected the temperature in the warehouse, etc. At busy warehouses truck dock availability can be automated through communication with drivers'smartphones. The historical data can then be used to improve operational efficiencies.

Compro Solutions provides complete installation of technologies for existing and new commercial buildings; including industrial, hotels, offices and retail buildings. We specialise in next-generation building control and monitoring systems.  
[www.compro.tech](http://www.compro.tech)



Stefan de Goeij  
Head of Property Management, CTP

## On IoT and Operating Costs

For office buildings, there is still the problem of retrofitting management systems—converting a regular office building into a smart building costs about EUR 2.00/m², but as adoption of smart building technology continues to gain momentum it will affect an increase in affordability and accessibility which will benefit all.

The numbers vary, but energy consumption and building operations are typically 20-30% of costs for real estate developers and managers, which is a lot of money out the door and a significant hit to the environment. It's also loaded with waste, waste that can be partially eliminated with the help of relatively cheap technologies. So, for us and our clients, as we're both developers and managers, ensuring our buildings are on the leading edge of IoT is without question. The cost savings, in both energy and space utilisation are huge.

# \$51.44 Billion

Smart Buildings market by 2023

Do Thu Trang  
Communications and PR, Spaceti

## On Smart Buildings in Everyday Use

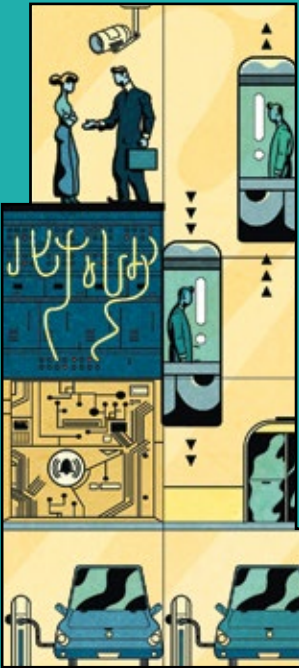
Workplaces have shifted towards being people-centric and flexible while increasing the productivity and wellbeing of their inhabitants. Companies are seeing greater value and potential by implementing 'proptech' solutions. For example, smart solutions can help with fast-growing headcounts and related parking problems. Building administrators now have a precise overview of how the parking lot is used and employees can be navigated to open spots. That can save employees precious minutes each day.

The impact of smart technologies on the building environment is only at the beginning and the scale of what can be achieved in the next few years is enormous. It's obvious why: The technologies allow owners and operators to make data-based decisions that provide real financial benefits. It's not hype. Plus, proptech offers a jumping-off point for the addition of other technologies, such as artificial intelligence and blockchain.

Spaceti is a PropTech leader with an all-in-one solution that combines sensors, data analytics, and a mobile app that saves owners and tenants building management costs and enhances the satisfaction, productivity, and wellbeing of the people inside. Founded 2016 in Prague with offices in London, Stockholm, Berlin, and New York.  
[spaceti.com](http://spaceti.com)

# 80%

of new construction involves at least one facet of IoT and/or related Smart Building technologies



Josef Šachta  
CEO, Sharry Europe

## On Popular PropTech

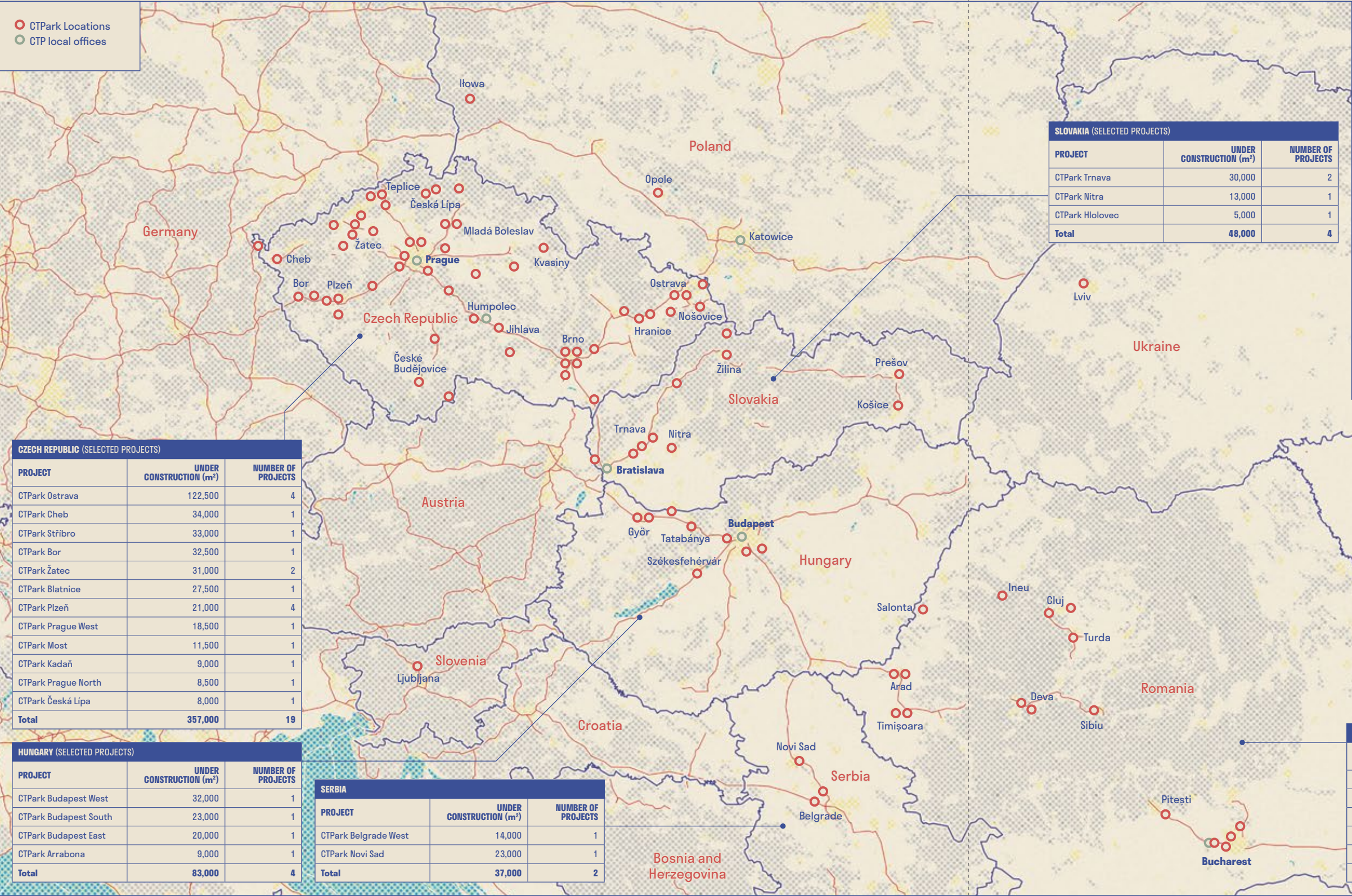
'Smart buildings' are still considered a young technology, but the industry is expected to grow to be a USD50+ billions industry by 2023. So, for sure, smart technologies is a big trend right now, some features have a real value, others are more a marketing attraction bringing a "wow" effect and some are both.

Augmented reality brings great value for facility managers, for example they can see all pipes inside the walls. Blockchain technology can be used in the process of construction and subsequent maintenance. All these areas are interesting and pose a challenge for both start-ups and traditional companies. The buildings themselves are more attractive for a new generation of professionals and can be operated in a much more flexible way.

Sometimes, even the simplest features bring a great benefit, for example, does filling in a paper form belong at the reception of a 21st century office? One of our most popular apps is our parking tech: with this app, people can check how many parking spots are available on their mobile phones. Opening the turnstiles by phone is popular, as well as reporting malfunctions and checking the lunch specials. Currently even temperature management is still a big issue in most buildings so, I am convinced that huge developments are still ahead of us.

Sharry Europe is a PropTech company providing comprehensive software solutions for premium office buildings. They have a mission to make buildings more friendly and property operation more flexible.  
[sharryeurope.com](http://sharryeurope.com)





# WITH 680,000 M<sup>2</sup> CURRENTLY UNDER CONSTRUCTION, THE CTPARK NETWORK

continues to grow with the success of our clients in the region. With over 90 locations, and a sufficient land bank to accomodate client extensions and new investors, the CTPark Network enables our clients to grow anywhere in the region. CEE is a cost-effective growth region with excellent access to the major markets in the west. All projects are developed with the latest in sustainability technology and principals for the benefit of both clients and local communities. Contact our representative in the region you're interested in to find out what specific locations best fit your business needs.

- Czech Republic**

Aš  
Blatnice  
Blučina  
Bor  
Brno  
Brno South  
Čerhovice  
České Budějovice  
Česká Lipa  
České Velenice  
Cheb  
Divišov  
Hlubočky  
Holubice  
Hradec Králové  
Hranice  
Hrušky  
Humpolec  
Humpolec II  
Jihlava  
Kadaň  
Karviná  
Kralupy nad Vltavou  
Kutná Hora  
Kvasiny  
Liberec  
Lipník nad Bečvou  
Loupy  
Lysá nad Labem  
Mladá Boleslav  
Mladá Boleslav II  
Modřice  
Most  
Nošovice  
Nový Jičín  
Okříšky  
Ostrava  
Ostrava Poruba  
Pardubice II  
Planá nad Lužnicí  
Plzeň  
Podbořany  
Pohodčice  
Prague Airport  
Prague East  
Prague North  
Prague West  
Přestice  
Stříbro  
Teplice  
Teplice II  
Ústí nad Labem  
Zákupy  
Žatec  
Žatec II
- Romania**

Arad  
Arad II  
Bucharest  
Bucharest Chitila  
Bucharest West  
Bucharest North  
Cluj  
Deva  
Deva II  
Ineu  
Pitești  
Salonta  
Sibiu  
Timișoara  
Timișoara II  
Turda
- Hungary**

Arrabona  
Budapest East  
Budapest South  
Budapest West  
Győr  
Kecskemét  
Komárom  
Székesfehérvár  
Tatabánya
- Slovakia**

Bratislava  
Hlohovec  
Košice  
Krásno nad Kysucou  
Nitra  
Nové Mesto nad Váhom  
Prešov  
Trnava  
Voderady  
Žilina
- Poland**

Iława  
Opole
- Slovenia**

Ljubljana Airport
- Ukraine**

Lviv
- Serbia**

Belgrade West  
Belgrade North  
Novi Sad

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The Czech Republic continues to attract foreign investors due to its strategic location within Europe, highly skilled labour, as well as the diversity and resilience of its economy.



**Zdeněk Apeltauer**  
Regional Development  
Director, Bohemia  
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Over the past 6 months, we continued handing over completed projects and began construction on a number of new ones due to continued demand across the country. In Prague, we handed over new facilities at CTPark Prague North and began construction at CTPark Prague East. The park is strategically located at the junction of the major North-South D1 (E55) highway and the Prague ring road making the airport a short 20 minute drive away as well as the city centre.

CTP is in the process of a significant redesign of the site, with a goal for the park to become the best place for high-tech industries, R&D and retail companies in the wider Prague area.

We are currently constructing over 25,000 m² of new space in 3 buildings, while at the same time improving the surrounding infrastructure to enable high visibility from the highway as well as improved accessibility. The site is also linked by public transportation to the

city of Prague and includes a restaurant and a gas station on-site. Outside of Prague, North Bohemia, due to its location on the border with Germany, has also been a focus for clients. We have completed nearly 30,000 m² of space which will be handed over in Q1 2019, and we have another 115,000 m² in the pipeline for development over the next year.

In North Moravia, we have been busy completing space at Nový Jičín, and at CTPark Lipník nad Bečovou we designed a built-to-suit building for specialised food producer, Well Well Potraviny.

Due to increased interest in the Ostrava area we have secured new land for a second park supporting the development of the city, CTPark Ostrava Poruba, which is just off the major D1 highway connecting Ostrava to points west, and will offer an additional 90,000 m² of development potential.

Projects in Slovakia continue at an excellent pace due to ongoing market stability and a positive outlook for 2019.



**Stanislav Pagáč**  
Regional Director, SK  
stanislav.pagac@ctp.eu

In Slovakia, we have developments under way in Žilina, Trnava, Hlohovec and Nové Mesto nad Váhom.

CTP is glad to extend cooperation with our valued client TI Automotive, who will extend its production facilities in CTPark Krásno nad Kysucou. The development of the 8,700 m² production facility is set to start in the first quarter of 2019 with another extension of 2,300 m² in sight. Amongst CTP's Slovak activities there are many of the projects prepared for completion during Q1 2019. For Constellium 10,000 m² are in development in CTPark Žilina. Expansion of the production facility for Gefco in CTPark Trnava

will enlarge its operations by more than 7,000 m². In CTPark Hlohovec we plan to finish a 5,000 m² extension for Faurecia as well as a 4,000 m² extension for another automotive industry leader, TRW Automotive in CTPark Nové Mesto nad Váhom. And in Trnava, we have agreed with a large retail client for 30,000 m² of built-to-suit space which will incorporate 3 mezzanine levels, 2,000 m² of green roof area as well as a specialised 7t/m² floor load capacity. Expected completion in Q4 2019.

# CZECH REPUBLIC THE CORE OF THE PORTFOLIO REMAINS STRONG



**CIJ Awards Czech Republic 2018**  
Best Warehouse  
Development & Developer:  
Raben building at CTPark  
Prague East

SUSTAINABILITY			
LED			
New		446,000 m²	
Refurb		192,000 m²	
BREEAM			
1 bldg	Outstanding	Certified	
6 bldgs	Excellent	Certified	
5 bldgs	Very Good	Certified	
3 bldgs	Good	Certified	
3 bldgs	Excellent	In progress	
6 bldgs	Very Good	In progress	
ISO		14001, 50001	

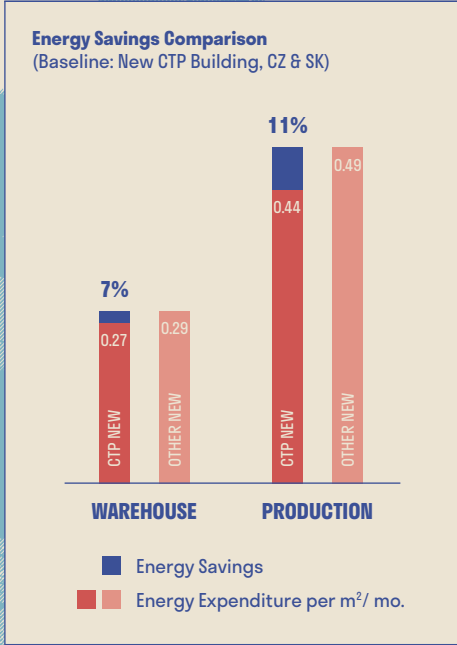


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# IN SLOVAKIA, TI AUTOMOTIVE SIGNED FOR A NEW FACTORY IN KRÁSNO, EXTENDING OUR COOPERATION





With three parks strategically located around Budapest, CTP can fulfill the needs for any client looking to access the capital.



Rudolf Nemes  
Country Head, HU  
rudolf.nemes@ctp.eu

In CTPark Budapest West, CTP is building the next phase of the park: a 32,000 m<sup>2</sup> building with approximately 19,000 m<sup>2</sup> already booked by new tenants. Due to a dearth of new, A-class facilities on the market, CTP believes we can find tenants for the remaining space prior to construction finishing. In CTPark Budapest South we are moving forward with the construction of our first building in this location, a 22,000 m<sup>2</sup> building.

Due to tenant relocations in CTPark Budapest East we have approximately 23,500 m<sup>2</sup> which became vacant at year end but we have new deals agreed for 14,000 m<sup>2</sup> and are expecting to sign the remaining vacant space shortly. In Q1 2019, we plan to start developments of new space in CTPark Budapest East. In Phase I, we plan on building 20,000 m<sup>2</sup>, with a total of 80,000 m<sup>2</sup> of build opportunity in the future.

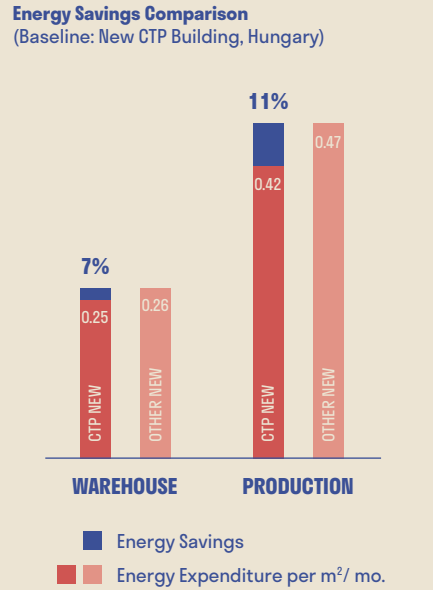
Dana Hungary (major Audi supplier) have requested a 9,000 m<sup>2</sup> extension to their 15,000 m<sup>2</sup> facility which we recently built in CTPark Arrabona in Győr.

# MULTIPLE DEVELOPMENTS UNDER CONSTRUCTION IN HUNGARY

SUSTAINABILITY			
ENERGY UPGRADES		20,000 m² 84,000 EUR	
LED REFURB		58,000 m²	
BREEAM	1 bldg	Very Good	Certified

**CiJ Awards Hungary 2018**  
Best Land Transaction:  
CTPark Budapest West  
Best Warehouse Lease:  
CTPark Székesfehérvár

**Hungarian & Balkans Real Estate Awards 2018**  
Warehouse Developer of the year



**Budapest** and the surrounding area, with a population of over 1.74 million, is the country's industrial and intellectual powerhouse. 85% of modern logistics and warehouse facilities are located in Budapest and its agglomeration.  
**Key Investors:** Continental, Ibsiden, ThyssenKrupp

**CTPARK BUDAPEST WEST**

Total built up (m <sup>2</sup> )	142,000
Total build opportunity (m <sup>2</sup> )	94,300
Total land bank (ha)	56

**CTPARK BUDAPEST SOUTH**

Total built up (m <sup>2</sup> )	N/A
Total build opportunity (m <sup>2</sup> )	58,700
Total land bank (ha)	13.5

**CTPARK BUDAPEST EAST**

Total built up (m <sup>2</sup> )	92,300
Total build opportunity (m <sup>2</sup> )	78,500
Total land bank (ha)	38.5



Projects in Romania continued to grow, and with the return of Ana Dumitrache as Country Head, they have been taken on with even greater vigour.

Since last September, we have completed two large buildings with a cumulative area of 77,000 m². Currently, we have nearly 170,000 m² under construction, at five parks around the country, including specialty cross-dock facilities in Bucharest West. All eight of the buildings will be delivered by the end of 2019.



Ana Dumitrache  
Country Head, RO  
ana.dumitrache@ctp.eu

We also recently acquired a new property in the coveted northern area of Bucharest, where we have the opportunity to build over 100,000 m² of premium industrial space. With this new location, we can now offer our services at almost every entry point to the capital.

Looking ahead, the prospects for continued growth in Romania remain positive, particularly following a year when the Romanian real estate market set investment records. While there is some expectation that investment and business confidence may wane owing to global macro-economic pressures, on a positive note, Romania still remains an investment destination due to the cost effectiveness of the Romanian work force and investor friendly policies.



**CIJ Awards Romania 2018**  
Best Warehouse Development:  
CTPark Bucharest West  
Developer of the Year

**Euro-Constructii Gala 2018**  
Excellence in Business & Development

**Europa Property SEE Real Estate Awards 2018**  
Industrial Project of the Year  
Warehouse Developer of the Year

**Romanian Real Estate Awards 2018**  
Developer of the Year

In Serbia, we have launched our first development projects, and are soon to launch our 3<sup>rd</sup> park in the country.

For CTPark Belgrade West, we recently obtained a building permit for our first 14,000 m² facility, half of which is pre-leased, and there is high demand for the rest of the warehouse space already. We expect to start construction in Q1 2019, with handover planned in Q3 2019.



Vlatko Djuricek  
Country Head, RS  
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The development of the first phase of 25,600 m² in CTPark Belgrade North is in progress. Eventually the park will offer over 64,000 m² in the 15.3 hectare site. The permitting process is in progress with a goal to obtain permits in mid 2019 so we can start offering the industrial spaces to the market as soon as possible. Currently we plan to start construction of phase one in Q3 2019, with possible hand over to clients in Q4 2019. Next year, in phase II we expect to develop another 39,000 m².

At CTPark Novi Sad, we expect building permits in February 2019, which would allow us to increase the total leasable area to over 24,000 m². Due to the park's strategic location, we are in negotiations already with several potential clients and expect start construction of the new production facility and warehouse in Q2 2019, with hand over to tenants in Q4 2019.

Among the several acquisitions in progress, CTP is in the midst of serious negotiations in central Serbia, where we intend to purchase 5ha. of land. The acquisition is in the finalization phase together with the permitting process and client negotiation. Total surface of the new Serbian park is expected to be 21,500 m². The target for CTP Serbia is to reach more than 70,000 m² of GLA at the end of 2019 and to secure more land for new development in 2020.

LOOKING AHEAD, THE PROSPECTS FOR CONTINUED GROWTH IN ROMANIA REMAIN POSITIVE

**Energy Savings Comparison**  
(Baseline: New CTP Building, Romania)

Category	CTP New	Other New	Savings
Warehouse	0.25	0.27	7%
Production	0.39	0.44	12%

■ Energy Savings  
■ Energy Expenditure per m²/ mo.

**SUSTAINABILITY**

LED	
New	250,000 m²
Refurb	96,000 m²
BREEAM	4 bldgs In progress
ISO	14001, 50001

**Valentin Rosu**  
Regional Development Director  
valentin.rosu@ctp.eu

CTP SERBIA TO REACH MORE THAN 70,000 M² GLA IN 2019

**CIJ Awards SEE & Serbia 2018**  
Best Land Transaction:  
CTPark Novi Sad (2nd place)  
Best Warehouse/Logistics Developer

**Energy Savings Comparison**  
(Baseline: New CTP Building, Serbia)

Category	CTP New	Other New	Savings
Warehouse	0.25	0.27	8%
Production	0.37	0.43	12%

■ Energy Savings  
■ Energy Expenditure per m²/ mo.





The dominant building at Vlněna anchors the site and acts as the gateway to the park. Oracle made this their new home in Brno with 7,300 m² of new office space in Q3 2018

Another IT giant, Avast, took up residence at Vlněna, taking appx. 8,000 m² and moving into their fully customised offices in Q3 2018

We are currently building the first three of our successful IQ Buildings and will offer over 24,000 m² of flexible office space, with large floorplates and opportunities to vertically connect distinct business operations

On the premises of a former textile factory in downtown Brno, CTP is realising our ambitious Vlněna project. After completion of the project, which is scheduled for 2020, Vlněna will offer a total area of 90,000 m².

Vlněna is the most modern office project on the Brno market, and is being built to achieve BREEAM “Excellent” certification —a guarantee that workers there will not only feel good, but will work in a healthy and creative environment. The entire project is designed for sustainability, and suitably complements the surrounding city environment. The first buildings to be finished, near the main train station, has been occupied by Avast, the global leader in the digital security segment.

“OurBrno premises are comparable to our other locations, such as in Prague or San Francisco,” said Vince Steckler, Avast CEO. Other tenants include leading technology companies such as Moravia IT, STRV and Oracle.

“Overwhelmingly, the majority of clients attracted to Vlněna are companies operating in IT and modern technology. The office park suits their needs, particularly in terms of site design, office layout options and location,” says Jiří Kostečka, Senior Business Development Manager at CTP. “We believe that timeless products, with worldwide impact, will be developed in this location and we’ve created a space conducive to a sort of renaissance of European engineering and inventiveness here in Brno.”



Jiří Kostečka  
Business Development  
Manager  
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On Brno

Brno’s easy accessibility and cosmopolitan nature stem from its unique location: Prague, Vienna and Bratislava are at a maximum of 200 km away, and Brno itself is the bustling metropolis of Moravia. International companies appreciate what Brno has become, as do students and young professionals from all over the world. In 2017, there were 29,171 foreigners – from over 150 countries – living in the city district Brno. Many of these attend the 13 universities located in the city, such as Masaryk University (one of the most renowned universities in CEE) & Brno University of Technology and

Mendel University, which are known for the quality of preparation particularly when it comes to technology and research. Brno includes companies like Honeywell, Avast, IBM, Microsoft, Google and Skype. These big players search for the brightest minds of today. Beyond the great career opportunities, the city is known for its vibrant student life, rich night life thanks to bars ranked as the best in CEE, cafe’s run by the world’s best coffee brewers (across from Ponávka), and modern architecture, such as the world famous Vila Tugendhat.

AT VLNĚNA, A MAJORITY OF CLIENTS  
ARE COMPANIES OPERATING IN  
**IT AND MODERN TECHNOLOGY**



At Ponávka, we recently unveiled plans to enlarge the park, and we plan to build two more ‘Domeq’ accomodation facilities, a new high-rise office and extended areas for parking and recreation.



Mia Šťastná  
Junior Leasing Manager  
mia.stastna@ctp.eu

**Ponávka**

Operating at full occupancy since it opened in 2017, DOMEQ represents the latest in modern student housing & community living. “DOMEQ II will inspire users and become a center of creativity. Inspired by the success of our first project, Domeq II will be designed to an even higher level,” notes Mia Šťastná, Ponávka leasing manager. Both are part of the growing Ponávka, which prides itself on its excellent location and plentiful facilities. The Domeq accomodation facilities serve the surrounding universities in Brno (MUNI, VUT etc.) and are ideal for multinational companies located in Brno who often need appropriate accomodation for visiting employees.

The unique Ponávka development combines a mix of properties, including showrooms, A-class offices, as well as light industrial buildings, intermixed with well-preserved, refurbished industrial buildings from the 19th century. Offering 8,000 m² of modern space, the architecture of the new offices reflects the surrounding historical buildings, but with modern twists. “Ponávka is one of the fastest growing parks in our portfolio offering opportunities for a diverse range of businesses. The newest, and 3rd office building on the site, provides superior office space along with various amenities such as restaurants, cafes and an extended recreation area,” adds Šťastná.

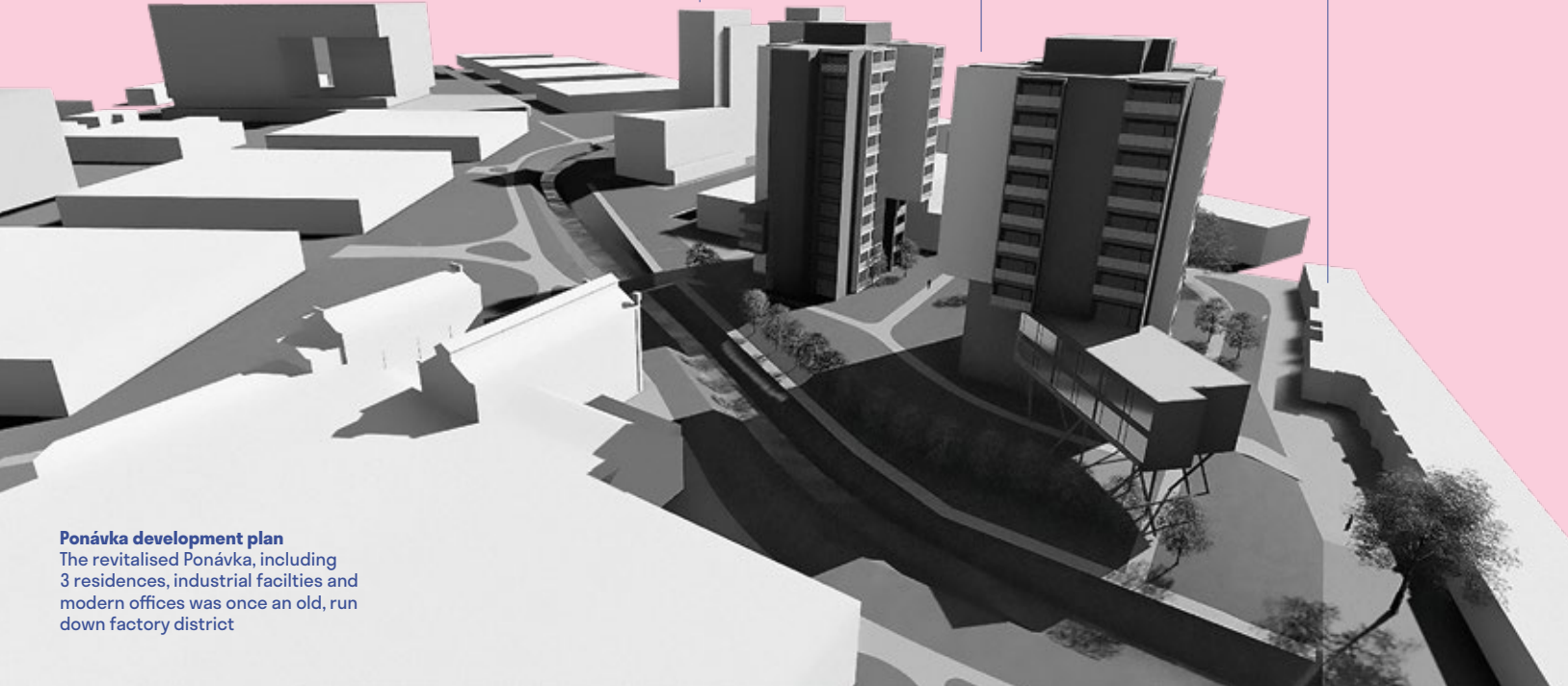
A RENAISSANCE OF EUROPEAN ENGINEERING AND INNOVATION

A new high-rise office building with flexible large floor plates, modern eateries, co-working areas, underground parking and a large, green rooftop terrace will organically extend the sites amenities

Domeq, opened in 2017, offers modern housing for students and young professionals from all over the world

The smart-living concept we established in the first Domeq has evolved to fit the needs of people who often travel and are accustomed to full hotel service. This luxurious and updated version of the original Domeq will offer the comfort of a hotel, while the variety of apartment styles and sizes differentiate it from the uniformity of a hotel, making it feel more like home

The low-rise building directly adjoining the residences will be repurposed to provide a wide range of services catering to visitors, employees and residents of this new trendy urban district



**Ponávka development plan**  
The revitalised Ponávka, including 3 residences, industrial facilities and modern offices was once an old, run down factory district



THE COURTYARD BY MARRIOTT WITH ITS FOCUS ON EVENTS TURNS THE LOCATION INTO A DESTINATION

**Spielberk**

Spielberk’s Courtyard Hotel by Marriott (pictured) is just across the walking bridge to the centre of Brno. The hotel, known for its luxurious rooms, above standard service and artsy interiors, is in a prime location to host guests attending events and conferences at the Brno Trade Fair grounds or the Autodrom Brno interntional race track, as well as for your friend’s wedding plans.

**Upcoming events for 2019 include:**  
Alexandrovci choir, Kabát, Manowar, Sting crew and others.

The Courtyard by Marriott in Brno is more than just the premium hotel, it is now a destination to drop in for regular family brunch days, weekly live music at the piano bar, as well as for events taking place in the surrounding Spielberk office park and the greater Brno community.



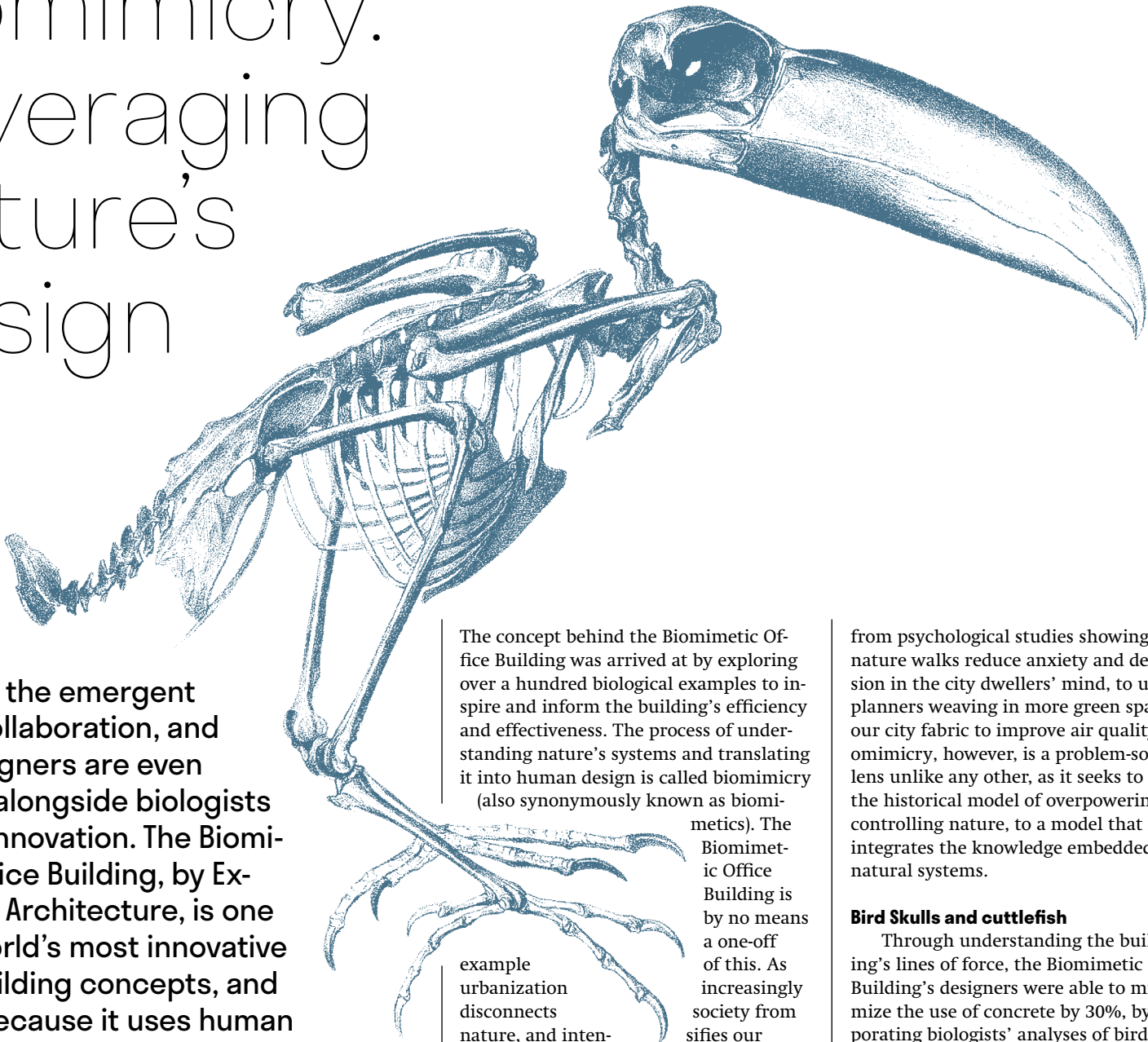
Miroslav Pekník  
Project Manager & Head of Property Management, Brno  
miroslav.peknik@ctp.eu

**CTP opens first community library at Spielberk in Brno**  
CTP opened a new library offering over 1,000 titles. The library, which is available to all employees working at Spielberk works on the principle of “Leave a book, Take a book”—exchange one book for another. There are roughly 500 English titles—some of the best in modern literature—and 500 Czech titles partially donated by local booksellers. Over time and through the sharing process, the library will transform, and eventually, represent the favourites of the Spielberk community itself. The library features book readings and signings by various authors both local and international.



# Biomimicry: Leveraging Nature's Design

We live in the emergent age of collaboration, and now designers are even working alongside biologists to push innovation. The Biomimetic Office Building, by Exploration Architecture, is one of the world's most innovative office building concepts, and it's not because it uses human design. Rather, because it weaves in multiple systems and solutions derived from nature to deliver its two primary objectives: to create a sustainable building, and to create the optimal place for its inhabitants to work.



The concept behind the Biomimetic Office Building was arrived at by exploring over a hundred biological examples to inspire and inform the building's efficiency and effectiveness. The process of understanding nature's systems and translating it into human design is called biomimicry (also synonymously known as biomimetics).

The Biomimetic Office Building is by no means a one-off of this. As increasingly society from sifies our and demand for innovation, designers are leveraging biomimicry for new solutions. After all, nature has steadfastly been designing and redesigning itself and intricate networks of life for 3.8 billions years. This opens an entire realm of knowledge that can be incorporated into our built environment, allowing human design to enter a new paradigm of being more ecologically responsive and creating more with less, through smart design.

Today, in the wake of the Paris Climate Agreement, frequent headlines in the media proclaiming the dangers of rising ocean levels, and the 'greenwashing' used to leverage our consumption, we are all well-versed in the importance of our natural environment. There is a wide spectrum of specialists informing us the pros of living a 'more natural life',

from psychological studies showing how nature walks reduce anxiety and depression in the city dwellers' mind, to urban planners weaving in more green space in our city fabric to improve air quality. Biomimicry, however, is a problem-solving lens unlike any other, as it seeks to shift the historical model of overpowering and controlling nature, to a model that rather integrates the knowledge embedded in natural systems.

### Bird Skulls and cuttlefish

Through understanding the building's lines of force, the Biomimetic Office Building's designers were able to minimize the use of concrete by 30%, by incorporating biologists' analyses of bird skulls and cuttlefish to optimise where material was best used. This resulted in a curved columnar silhouette, with hollow pockets inside, while the floors' mass was reduced by lacing in a series of bubbles.

To reduce energy use and engender a creative and interactive flow among workers in the building, natural light was the primary driver of the building's form. For inspiration they studied the spook fishes' mirror-like eye structure, which allows it to live in the darkest depths of the ocean. They also used a structure that resembled the light funnel system used by southern Africa's Stone Plant. Mostly of hte plant lies underground, but is lit by its smaller above-ground structure to maximise the building's natural light. They reduced the use of glass by half by studying and replicating curved leaf shapes and shell forms. The building facilitates its own

passive heating and cooling system which is emulate processes in termite hives. However, the Biomimetic Office Building is by no means the first time nature has prompted human innovation as it already has periodically throughout much of humankind's history. One of the first examples dates back to 4000 BC when the Chinese looked to the silkworm to learn about fabric production. At the dawn of the 16th century, Leonardo da Vinci looked to birds when he designed his "flying machine". The somber tree like columns that reach up to the ceiling of the Antoni Gaudi's Sagrada Familia were designed to mimic that of a forest canopy to help support the church's vault. Even London's infamous Gherkin Tower wears a steel exoskeleton inspired by a hexactinellid euplectella aspergillum (also more commonly known as a sea sponge) with its round shape and lattice-like structure to disperse the stress caused from deep ocean currents.

### Popularization

It has not been until more recent history that humans have explicitly dileniated this process, and attempted to incorporate natural structure into human designs. In 1977, biomimicry became popularised with the publication of Janine Benyus's Biomimicry: Innovation Inspired by Nature. In this book, Benyus outlines 'Life's Principles', a pattern of six functions which all living things adhere to. Today, Benyus helps oversee the Biomimicry Institute whose library has over 1,800 examples of biomimetic applications.

These principles can take root beyond the built environment and design, and into more abstract processes like social innovation and organizational behavior. Take for example, the simple example of a beehive. There is no centralization of command and control, but rather simple job descriptions that all its members adhere to harmoniously. This phenomenon is not rare in the animal kingdom, and is referred to as eusocial societies which are considered to be the highest level of organization of animal sociality. The following characteristics define these classification of animal societies: cooperative brood care, overlapping generations within a colony of adults, and a division of labor into reproductive and nonreproductive groups. Sure, it sounds a bit like an episode of Handmaid's Tale or any other political dystopia, but there are lessons that can be learned. Many insect

30%

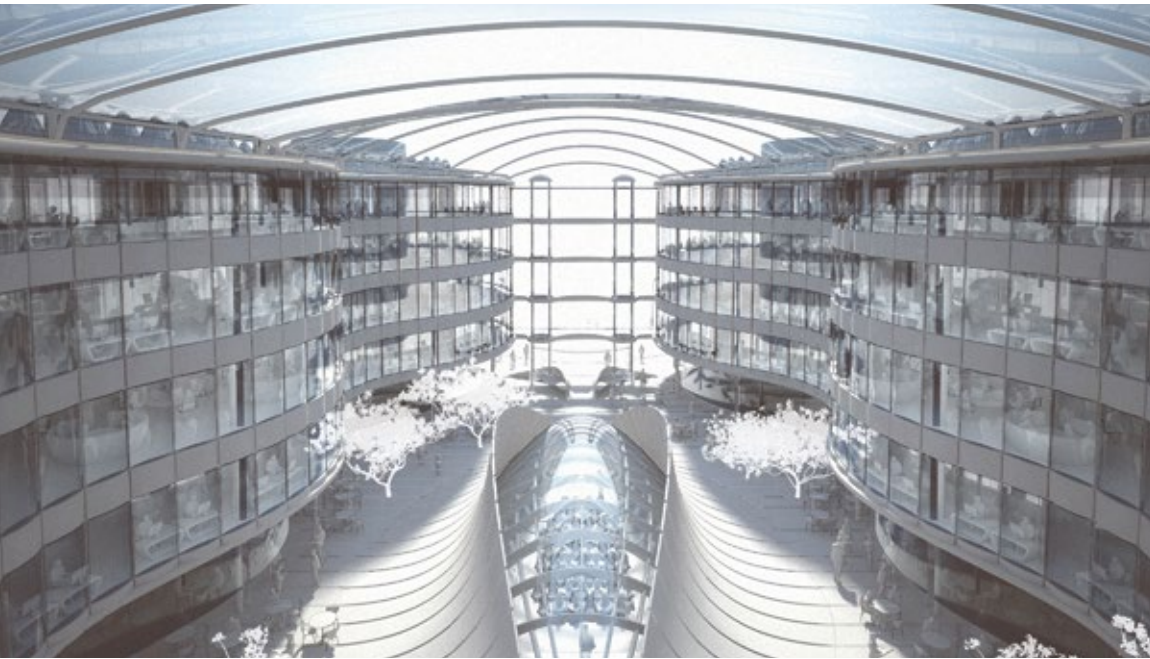
The Biomimetic Office Building's designers were able to minimize concrete use by 30%, incorporating biologists' analyses of bird skulls and cuttlefish to optimise where the material was best used

eusocial societies are not based on direct physical communication, but rather on a process where an insect will modify the environment to induce a behavior of others. The rise of open source software, like Wikipedia, is an example of how information processes can be applied to human solutions. It has its own problematic externalities, but it is the most efficient and effective way of evolving information through mass direct human influence without bogging it down through bureaucratic processes and human biases. Inspiration can also be drawn from ecosystems which induce various community members to share information and nutrients to collectively thrive. We can see this in company cultures which shift from purely heirarchical to more horizontal and collaborative styles of organisation and productivity.

### Insects for Innovation

Even though the Biomimetic Office Building looks like something out of *The Jetsons*, and it may seem odd to look to insects to learn about social innovation, it actually is combining ancient natural principles with a new framework of thought.

Picture: Biomimetic Office Building by Exploration Architecture Architects



### 6 Functions all living things adhere to:

- Integrate development with growth
- Be resource efficient
- Evolve to survive
- Use life-friendly chemistry
- Be locally attuned and responsive
- Adapt to changing conditions



Lookout Tower on Fajt's Hill (pictured) utilizes the structure of DNA's double helix with elegant twists and turns between its stairways and support columns

## Václav Hlaváček: Tuning the Tension Between Nature and Architecture

Thanks to constant technological development, we can design more free and natural forms of architecture. Our main aim will always be the achievement of harmony, but we are increasingly interested in the influence of the users of our buildings.

A specific example of where we can see this is the interior work environment, in which we expect frequent redesigns. And we are talking not just about the shape itself, but rather about the feeling—free creation, uncompressed by the right angles of the traditional orthogonal system, is able to react more flexibly, and allows us to create user-friendly places.

Nowadays, we do not plan “monument” houses, but thanks to the adaptability of the building for future conversion and use of natural materials we can prevent expensive refurbishments later on.

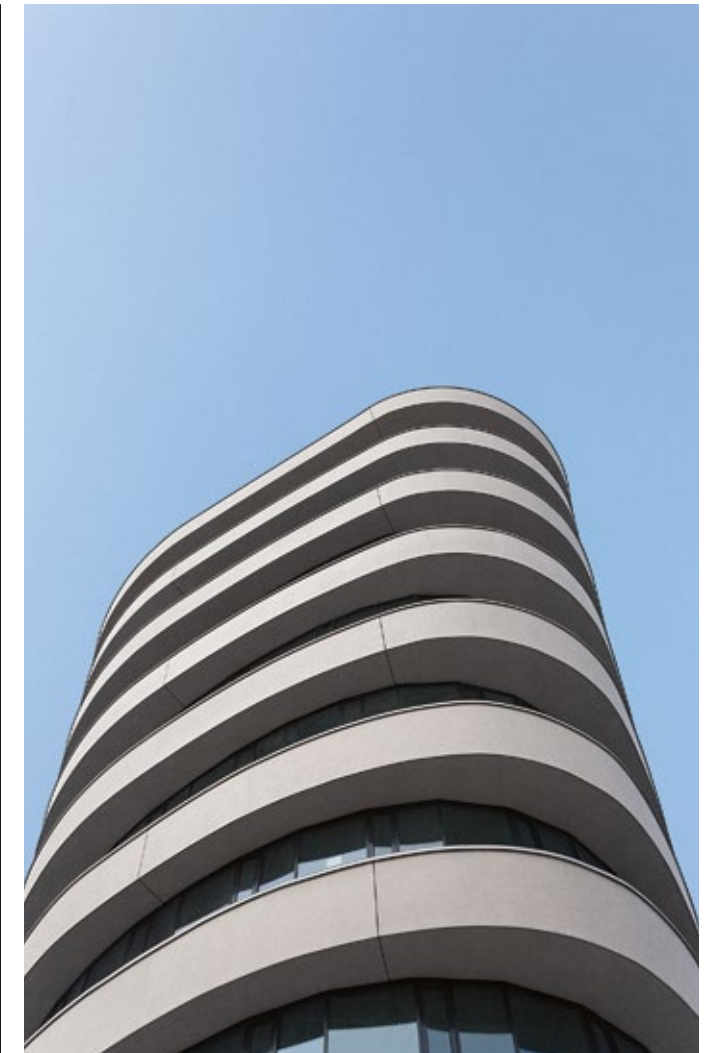
Our work also responds to today's dynamically changing housing requirements—for example, in Domeq 2 and 3 we designed a natural, clean and smart way of living for young people from around the world. There is not a washing machine in each apartment, but a common laundry room. Car-sharing and other shared services contribute to an environmentally friendly way of living, and respect the needs of the inhabitants.

The architecture of Studio acht has always sought to derive from the natural forms and logic and poetics of natural

arrangements. This means the reconciliation of construction and design as seen in the Lookout Tower on Fajt's Hill, or the bridge over the Svratka river in Brno. This approach is also reflected, in a broader scope and scale, in the creation of natural urban concepts and master plans, such as those of the Vlněna and Ponávka developments.

In Vlněna, the unconventional organic shape of the H building, the white “flagship” of the entire complex, reacts to the prominent building location within the area. Individual anomalies are then caused by the arrangement of internal spaces, mass modelling and the specific shape of the building site. The building is located in the main entrance corner of the site, and welcomes visitors into the new square in the middle, and also neighbours the diagonally led main street. It is in this locality that a large number of people are expected to move around and “wash” the building from three directions.

A pebble was the inspiration, whose curved shape is determined by the flow of water. For our physical stream of people,



In Vlněna, the unconventional organic shape of the H building, the white “flagship” of the entire site, reacts to the prominent building location within the area

the building must not be a barrier, but an object that welcomes one to enter the newly emerging urban block that is designed to smoothly, almost organically, connect with the surroundings. The visually exposed building is meant to always look a little different depending on the viewer's position. This optical changeability naturally fits into the chosen concept of intermingling organic streams.

As you can see, I absolutely agree that biomimicry is of growing importance for design and architecture. Thanks to current technical and technological improvements, we can adapt more quickly and efficiently the internal form of architecture, taking into account the natural needs of the user as it is in the applied arts and industry. At the same time, the use of biomimicry should not only be “design for design's sake”, but a real response to the needs of the building's users.



Václav Hlaváček  
Architect, Studio acht



### Revolutionary Robotic Arm

This “Panda” may not be as cute as a real one but it does more than eats shoots and leaves: easy to use and cheap, it can build circuit boards and help conduct science experiments. If you buy two of them, they can build another pair. Will the planet end up covered in robotic arms? We are not sure, but the Panda could eventually lend a hand at home, disciplining unruly children, chopping onions, or assisting those who require it.



### 3-D Printed Homes

Texas startup ICON built a 350m² home in less than 48 hours by literally lifting a single finger (The Panda was not involved in this case). The Vulcan 3-D printer can erect homes fast by extruding concrete layer by layer, virtually eliminating labor costs. ICON is also working with a housing nonprofit focused on Latin America and the Caribbean to bring Vulcan to regions in need of cheap, durable housing solutions.



### Edible Electronics

Electronics, the lifeblood of the modern world, could soon be part of our daily diet. Scientists report that they have developed a way to write graphene patterns onto virtually any surface including food. They say the new technique could lay the groundwork for edible electronics capable of tracing the progression of foods from farm to table, as well as detecting harmful organisms that can cause gastric distress.



### Clothes for Every Body

In the future, clothes will adapt to people—not the other way around. At least, that’s the promise of ZOTOSUIT. The stretchy black bodysuits are covered in white dots, which enables consumers to make a “3-D scan” of their bodies in the comfort of their own home, via a companion mobile app. Users can then order custom-fit clothes such as jeans and T-shirts based on a set of super-specific measurements.

### Remote Eyes for the Blind

What if the blind could “borrow” the eyes of someone who could see? That’s the thinking behind Aira, a new subscription service that enables its thousands of users to stream live video of their surroundings to an on-demand agent, using either a smartphone or Aira’s proprietary glasses. The agents, who are available 24/7, can then answer questions, describe objects or guide users through a location.



### Electricity Generating Boots

These boots are made for Watting. Each step in these boots squeezes streams of mercury back and forth through a device embedded in the heel, generating enough Wattage to power small communication devices. Every step you take, every move you make, these insoles will be harvesting your energy.



# 10

## MOST AMAZING INVENTIONS OF 2018

From a pair of arms that can build another pair of arms, to electronics that you can eat!

### Seeing Through Walls Using Wi-Fi

Are you curious about what your neighbors are doing at 2AM that makes it sound like a herd of buffalo are stampeding across your ceiling? Well, one day you may be able to find out, thanks to researchers at MIT’s computer science and artificial intelligence lab, who’ve developed a way to look through walls using wifi.



### Programmable Pills

A new kind of reactive pill will do much for prevention because it only releases the medicine when it detects the right signal. Built-in DNA circuitry can decode the complex chemical impulses that cells use to signal they’re damaged or under attack, which then triggers the release of a predefined pharmaceutical payload.



### Self-Unpacking Suitcase

Packing, unpacking, repacking, can be back breaking business but the Carry-on Closet from Solgaard Design aims to alleviate this annoying aspect of travel. From the outside it looks like your average rolling suitcase, but when you open it, you’re met with a flexible set of shelves that keep clothes organized and compressed during travel and ready to hang when you reach your destination.



### Artificial Synapses

They created an electronic version of the synapses in our brain—the ends of brain cells which transmit signals to other brain cells, and which underpin our entire nervous system’s functioning. The electronic synapse fires millions of times faster than the ones in your brain, and were designed for use in artificial neural networks.



# Jan Gemrot: CTPark as Art

The director Wes Anderson's films are noted for their distinct colour palette, the wide, stark flatness of the shots some of which are inspired by the Magical Realistic paintings of Alex Colville. CTP was interested in exploring the hidden beauty of its vast industrial parks, and chose painter Jan Gemrot, due to his affinity for exploring similar themes.

## GRID: Why paint these giant buildings?

JG: They are a significant manifestation of life on earth: they are defined by a system that determines the functioning of society and are part of everyday life. Pure functionality is of interest to me visually.

## What was most surprising about the industrial park when you visited it?

It was all surprising because I knew nothing about the function of such a place. Perhaps I was most interested in the work environment. I was expecting some impersonal industrial dystopia and in fact it was rather nice and clean.

## Where are your collectors in the world?

The Czech National Gallery, Felix Jenewein Gallery in Kutná Hora, Chrudim City Collection, Fait Gallery in Brno and also some private galleries – the most famous is Lettenmayer. Then also in Germany, France, Switzerland and England.

## How much time do you spend in the art business as opposed to the art studio?

My "nonart" job – or business "things" – take about 30 percent of my time

## What other media would you like to be doing?

I would like make films in the future, but painting always remains first.

## Are there art genes in your blood?

My parents are artists and my uncle is a composer. My great-grand-father František Roscher was a famous Czech graphic designer and illustrator.

## What is the strangest thing you've ever painted?

Recently I painted a figure in a coat, but instead of the head, there was only another figure in a coat.

## Jan Gemrot

(\*1983, Czech Republic)

After only three years at the Václav Hollar Art School, Jan Gemrot was admitted to the Academy of Fine Arts in Prague because of his unique talent. He graduated in 2008 with his painting cycle "Kidnapping", which was later sold to a prestigious collection of art called Collet Prague/Munich. Since then he has been active in group- as well as individual exhibitions at home and abroad, and his work is currently represented in a number of private and public collections. Jan lives and works in Prague.



# The Newcomers

This issue's playlist of new releases  
curated especially for you!

OVERVIEWPODCASTSCHARTSGENRES & MOODSNEW RELEASESDISCOVERCONCERTS

## New albums & singles



Diana Pana  
Financial Controller, RO



Karolína Ostržířková  
Lease Portfolio Manager, CZ



Iveta Kovařířková  
Legal Assistant, CZ



Radka Kodetová  
Team Accountant, CZ



Irena Gajdořová  
Office & Business Development Support Manager, CZ



Andrea Kriszt  
Funding Manager, HU



Dániel Szélesi  
Project Manager, HU



Gábor Reichart  
Accountant, HU



Monika Sameřová  
Legal M&A and Financing Asistant, CZ



Katalin Fejős  
Accountant, HU



Radka Pánřková  
Receptionist & Assistant, CZ



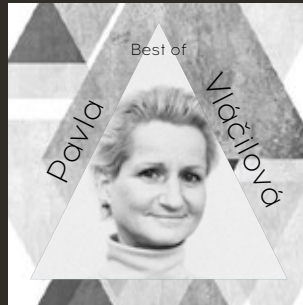
Jan Tesař  
Junior Lawyer, CZ



Tim Addison  
Head of Marketing



Vojtěch Peřka  
Junior Business Developer for Moravian region, CZ



Pavla Vláčilová  
Executive Assistant to Group CFO, CZ



Lajos Hardi  
Project Manager, HU



Constantin Serban  
Accountant, RO



Martin Fenda  
Project Manager, CZ



Simona Savescu  
Accountant, RO



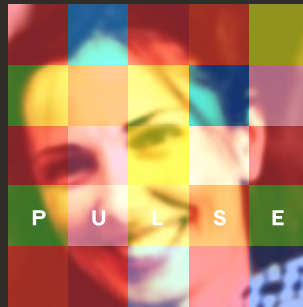
Lucie Nečinová  
Business Layout Development Designer, CZ



Cosmina Nastase  
Permitting and Administrative Assistant, RO



Jiří Kudělka  
Senior Project Manager, CZ



Nicoleta Pavel  
Marketing & PR Specialist, RO



Adrian Stama  
Park Manager, RO

## The Best of 2018



Chart of projects and people awarded at the annual CTP Awards 2018

Park of the Year  
CTPark Bucharest West  
Valentin Rosu

Project of the Year  
Vlněna Phase I  
Miroslav Pekník

Deal of the Year  
Industrial Portfolio Refinancing  
Zdeněk Raus

Department of the Year  
Construction Department  
Hana Lhotská

Acquisition of the Year  
CTPark Székesfehérvár  
David Huszlicska

Personality of the Year  
Zdeněk Raus  
Financial Project Manager

New-comer of the Year  
Richard Wilkinson  
CFO



**READY  
SET  
GOOOOOO!**



CTP supports the healthy life styles of its employees by providing tickets—including travel and accommodation for those outside the country—for employee who wants to participate in Prague's running events. These are the big 4 that CTP is sweating in this year.

## THE PRAGUE RUNS 2019

The four main races through Prague are notable, not only for the beauty of the city, but also because they are amongst the flattest official races on the world running calendar. If you want to break your personal record in style, this is the place to do it. The Marathon being fast, and having been voted the most beautiful in the world, it is also the world's most international, with two-thirds of runners coming from 55 different countries.

**6. 4. SPORTISIMO HALF MARATHON**

**5. 5. VOLKSWAGEN MARATHON WEEKEND**

**25. 6. O<sub>2</sub> RELAY**

**7. 9. BIRELL GRAND PRIX**



# JOIN THE CTP RACES!

CTP is more than just a participant. In 2018 the company ensured the two main ½ triathlons in the Czech Republic, Pálava and Doksy Race, would continue to be the premier events of their kind in the region. CTP is sponsoring both races and is looking to compete against its partners in the real estate world, head to head. So, get a relay-team together and get in touch. We'll announce more about the competition in coming months. Find out more:

[www.trirace.cz](http://www.trirace.cz)



**17. 8. 2019**

## CTP PÁLAVA RACE

The CTP Pálava Race is a wonderful race at the massive man-made lakes in this cyclist's paradise in the South, known for its vineyards and nearby the home of one of archaeology's greatest finds, Venus of Věstonice—a 30,000 year old ceramic statuette of a nude female figure.

**8. 9. 2019**

## CTP DOKSY RACE

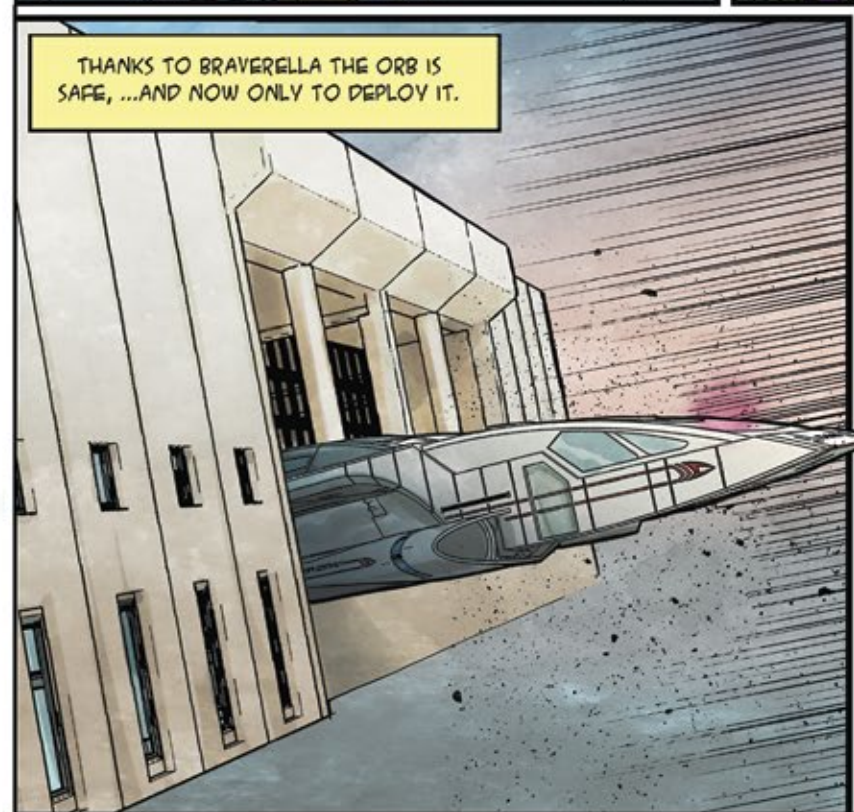
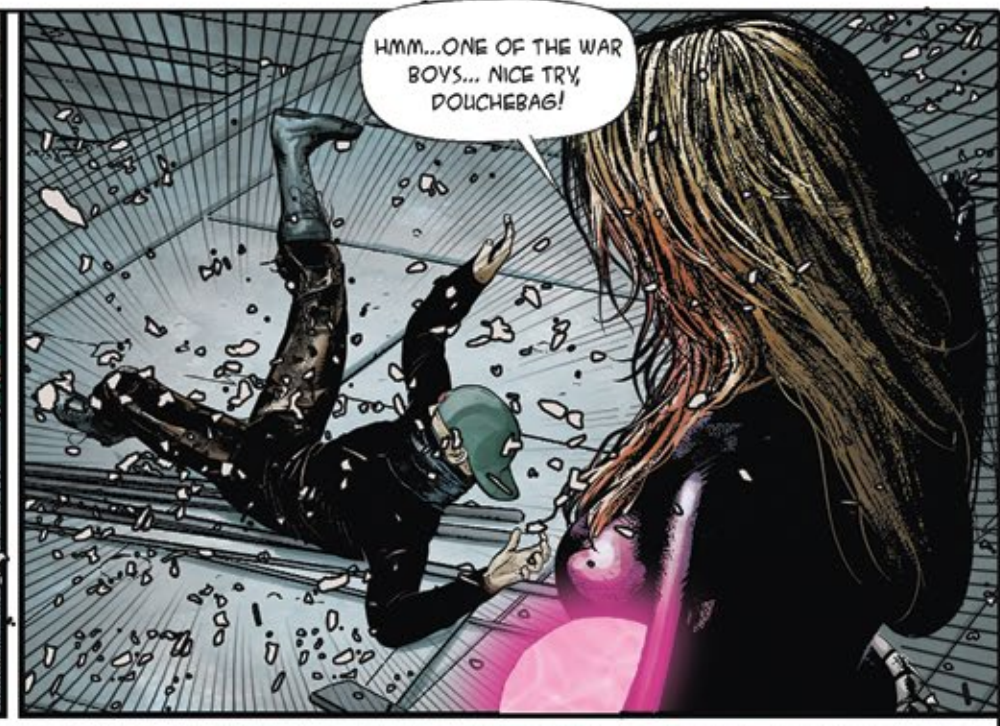
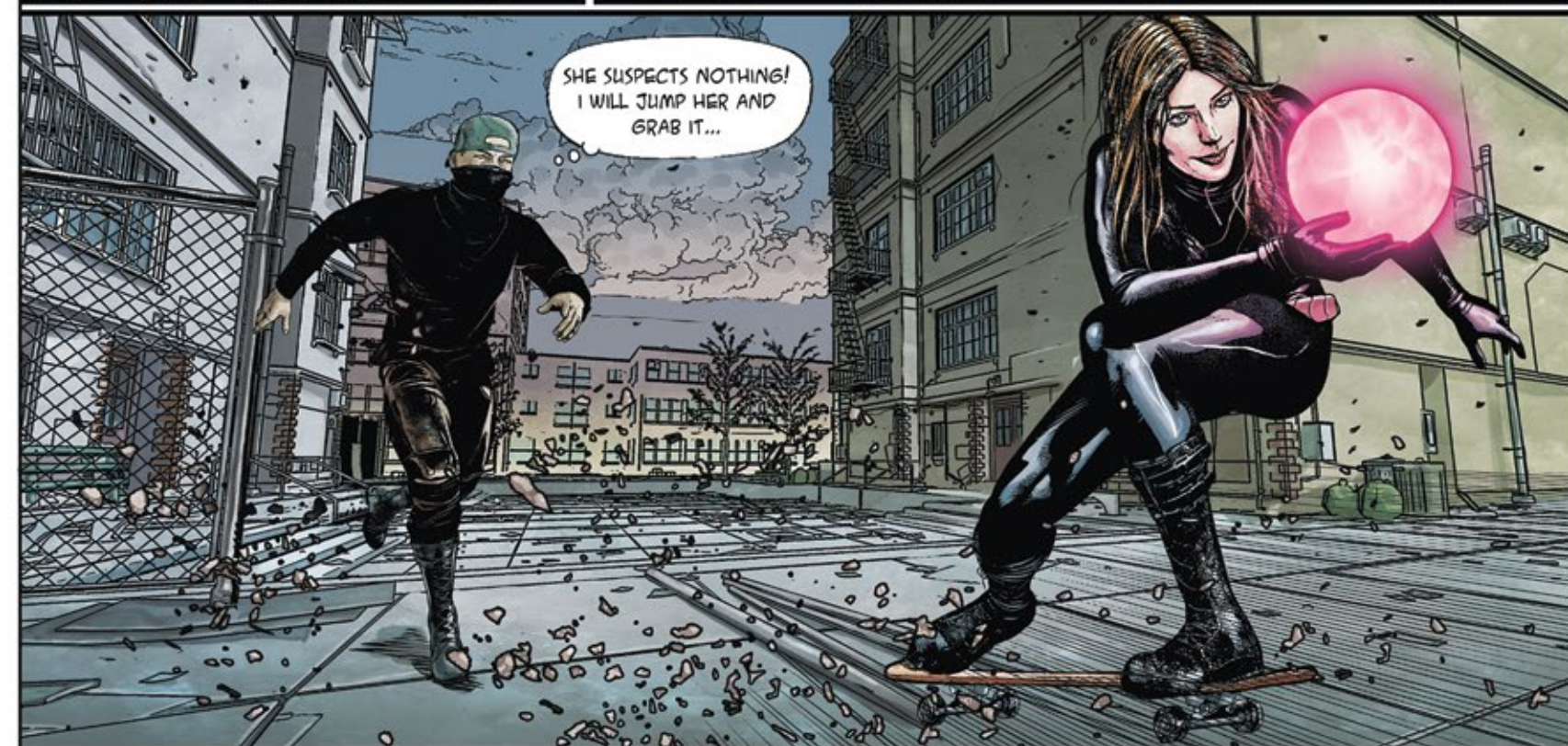
The CTP Doksy race in the Northern "Český Ráj" (Czech Paradise) at picturesque Máchovo Lake, continues to expand and inspires families and children in this highly tourist-friendly region.





# THE WONDERFUL STORIES OF BRAVERELLA

## EPISODE 1





*“This experience will always stay in my heart. Being a part of something huge, with a professional crew, hearing the words “Action!” or “Camera...” it all made me truly feel like a Hollywood stars shooting a blockbuster.”*

CTP shot a 2 minute corporate video unlike any other. It was released just before Christmas 2018 and immediately went viral, getting over 100,000 views in its first 24 hours. The video stars Martina Bravencová, world Jetsurfing champion, who on top of doing all her own stunts, plays the role of a hyper-intelligent CTP representative, who together with CTP clients and scientists, designs a mysterious pod with as yet unknown powers.

With CTP’s own Marketing Head, Tim Addison, directing, Martina and the film crew shot the film over the course of 4 days on location in Brno. Martina recalls the first day, “Saturday shooting took place outside Honeywell’s main office, with me first Jetsurfing across their lake, followed by skating though Raben’s warehouse and then cycling to Acer’s repair office. Sunday we shot the whole day at Thermo Fisher Scientific’s laboratories including inside their clean-room! Needless to say, that made a great impression on all of us. Monday, I parachuted on to the parking garage, and Tuesday skated from Heidleberg Cement’s high-tech office to AG Foods for the final scene. It was intense, and at times almost as exciting as competing in a Jetsurfing race.”

It was an experience, indeed worth sharing so here is the link. Enjoy!

[www.tiny.cc/CTPmovie](http://www.tiny.cc/CTPmovie)

Martina Bravencová

# JET SURFING ON A LUCKY WAVE



Martina jetsurfs on the lake in front of Honeywell building at CTPark Brno during filming.

### THE JETSURFER

(\*2008 Brno, Czech Republic)  
Founded by Martin Šula with the intention of pushing the boundaries of water sports. Designed and produced by cutting-edge engine designers, who turned their years of experience in designing racing engines for Formula 1 into the latest watersport revolution. The JetSurf is an ultra lightweight motorized surfboard with competitions around the world.



### MARTINA BRAVENCOVÁ

(\*1993, Czech Republic)  
From the third largest city in the Czech Republic, Ostrava, Martina studied at the Metropolitan University Prague. Her interests include— but are not limited to— snowboarding, flying, driving, jetsurfing (top 3 in the world for the past 3 years), skate boarding, acting, adventure hunting, extreme sports, tennis, golf, and baking cakes.

### Upcoming Business Events

Meet CTP at these events:

**Mipim 2019**  
12.—15. 3. Cannes  
Hall: Riviera 7  
Stand: R7.E66

**Budapest PropTech Forum**  
6. 3. Budapest

**SEE Property Forum**  
20.—21. 3. Bucharest

**Log-In**  
11. 4. Bratislava

**Czech Logistics Day**  
11. 4. Prague

**Eastlog**  
15.—16. 5. Prague

**Speedchain SK**  
16.—17. 5. Ski Chalet Zochova, SK

**Prague Property Forum**  
4. 6. Prague

**CEE Manufacturing**  
13. 6. Warsaw

## GRID 03

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Alexandra Timpau, pgs. 30, 36, 37  
Courtyard Marriott; pg. 33  
Other photography: own archive and Internet

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Gilles Warmoes (behance.net/R\_G\_Gomina), pgs. 18–21  
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## CTP Christmas Gala 2018

During the Gala Team Brno disappeared from the dinner only to show up a few minutes later on the big screen via live feed from atop the tower of the Marriott Courtyard—they braved the cold and these tech-obsessed freaks streamed their love back into the room for the rest of their 250 colleagues. Thanks guys!

