In collaboration with:



Real Estate Innovations Overview

KPMG Real Estate Advisory

5th Annual Edition - July 2020







Introduction

We are pleased to introduce the fifth annual edition of the Real Estate Innovations Overview (REIO). Throughout the years the attention and interest for innovation in the Real Estate and Construction sector has further grown. KPMG recognizes this and wants to facilitate the emergence and development of these innovations that will shape the Real Estate and Construction market of the future. Due to the success of our first global edition last year we have further extended the list of companies and added an interactive online dashboard! Please refer to the next page for more information.

Over the passed months we have crossed borders and connected to our colleagues all over the world to extend this global edition. We have discovered different trends in innovations that serve different needs, making it even more interesting. With a record of nearly 600 innovations, this overview underlines the bright future of Real Estate. Moreover, through innovation a broader group of stakeholders could be served more adequately. All in all, it underlines the fact that innovation is essential, and the need for the industry to embrace innovation in their long term strategy is inevitable.

The aim of this document is to provide its readers insight into the current innovative developments in the Real Estate and Construction industry; what is out there globally. In the first section of this overview we elaborate on the key success factors for leveraging innovation and how KPMG could support Real Estate and Construction companies and society in doing so. Subsequently, we describe innovations with key company information, and additionally this year's edition provides characteristics such as the positioning in the Real Estate value chain and the respective field of expertise of a company, to provide even more content. In the final section, we provide insights into several PropTech Ecosystems around the globe that support innovations in the industry. These PropTech Ecosystems are valuable to the market and provide innovations with a platform to thrive, connect and succeed.

Please note that this overview can never be complete due to the nature of its existence, as new innovations will continue to change the sector every day. In our attempt to keep up with market developments and trends, please feel encouraged to reach out and inform us about new innovations or additional information about the listed companies. Please find our contact details on the right bottom corner.

We hope this overview will be a valuable read for you,

Sander Grünewald

KPMG Netherlands - Global Lead of Real Estate Consulting

Disclaimer: KPMG has no business interests in the innovations and start-ups that are included in this document and is not liable for the actions of these companies. KPMG did not assess their (financial) continuity, quality and credibility. The fact that they are included in this document does not imply recommendation by KPMG. This document is based on publicly available information only and as a result not exhaustive. All companies included in this publication have been requested for permission (opt-out).

LAST UPDATE: JULY 2020

If you would like to add or update a listed innovation, please send an e-mail to NL-FMKPMGRealEstateAdvisory@kpmg.nl





Find our interactive innovation dashboard online!

KPMG would like to provide relevant insights into the Real Estate & Construction sector. Our scope and vision is to shed light on a variety of innovations and inform all stakeholders in the market about relevant developments that (may) drive the future of Real Estate.

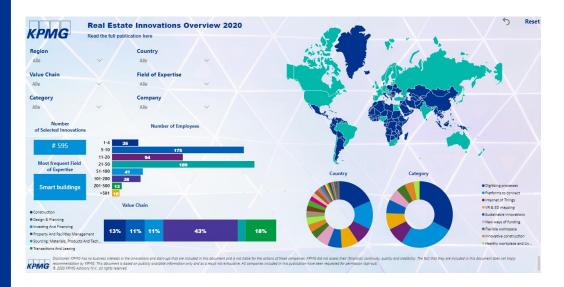
Besides this annual publication presenting hundreds of pages, this year, we have developed the first interactive Real Estate & Construction innovation dashboard, which is innovative in itself!

This dashboard provides accessible insights in key statistics of all innovations listed in the fifth edition of the Real Estate Innovations Overview. Hence, you'll be able to create personalized insights on a selection of individually adjustable parameters.

We encourage you to have a look and try it out yourself!

Enjoy!

A preview of the interactive innovation dashboard!





Please scan or click the QR-code and discover the first interactive Real Estate & Construction innovation dashboard powered by KPMG

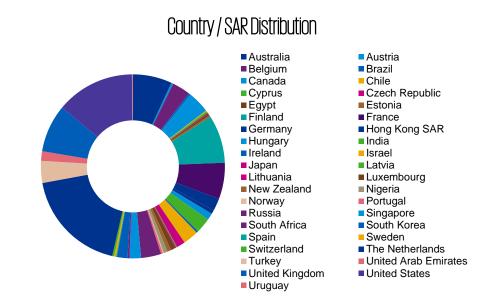


Executive Summary (1/2)

Digital transformation of industries is more present than ever in this year's overview. We recognize that especially developments in the digitizing field are becoming the cornerstone of many innovations globally. We foresee that an acceleration of adoption is facilitated due to unforeseen changes, including the global pandemic. Moreover, it has become evident that innovation differentiates per region across the globe and that Real Estate and Construction innovations serve the needs of the specific markets and societies. Hence, we see a trend in which innovations are becoming an integrated part of the sector globally while having its unique characteristics locally!

Last year's edition has been the starting point for a global list of innovations and this year the scope has been broadened even further including companies from **42 Countries/Special Administrative Region (SAR)**. The amount of innovations listed has more than doubled in comparison to last year's edition and its diversity is visualized in the graph on the right. Despite a high presence of European countries this year's edition gives a good glimpse of what's out there in other regions.

For this extended capture, additional characteristics have been added to each company consisting of a variety of **44 Fields of Expertise** (FoE). These aim for describing a company's core competence. Next to the FoE this year's edition identifies a company's position within the **Real Estate Value Chain** consisting of 6 phases: Sourcing, Design & Planning, Construction, Property and Facility Management, Transaction and Leasing and Investing and Financing. Besides our Wheel of Logos, a visualization of the category distribution, we have designed a Value Chain Cascade that shows all companies listed in their respective value chain position, please refer to page 192.



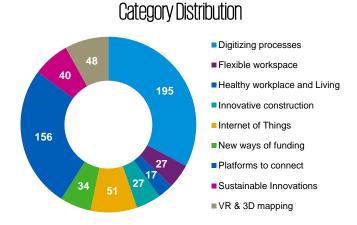
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While having further extended the list of countries / SARs in this year's edition the local differences on innovation become more apparent. This may be attributed to different markets having different needs and the respective maturity of Real Estate innovations in regional markets. Fields of Expertise may illustrate these differences. FoE may provide us information and insights in the local market focus. For example 'energy efficiency' (26 companies) tops in European countries, 'co-working spaces' (22 companies) seem to be accelerating in Asian countries / SARs, while 'Mobility' (19 companies) is spread out globally. By leveraging KPMG's global network of local branches, our global colleagues have been able to provide us with insights in local trends, which are included in the REIO 2020. Overall, we may conclude that globalization is driven locally!

Executive Summary (2/2)

To classify the innovations, we have used nine categories:

- ❖ The first category, <u>digitizing processes</u> consists of innovations that digitize traditional processes. This enables the processes to analyse more data, be accessible online and real-time while making them more efficient and user friendly.
- ❖ Flexible workspaces entails innovations that create the option for Real Estate to be flexible in time, location and environment. Workplaces can be allocated 'anywhere' and 'anytime'.
- Innovations in <u>healthy workplace and living</u> focus on the internal working environments, ranging from air purity to office treadmills for walking meetings, to optimize employee satisfaction, health or productivity.
- Innovative constructions contribute to new ways of constructing Real Estate. This may include architectural benefits or enhancements in construction materials and processes (e.g. 3D printing and wooden skyscrapers).
- ❖ Internet of Things (IoT) applies to innovations that connect multiple devices, systems and/or buildings with the aim of making Real Estate more efficient, sustainable or user-friendly.
- New ways of funding are innovations that aim for making funding less complicated, more accessible and/or increase liquidity for both the demand and supply side.
- ❖ Platforms to connect allow users to connect and interact with stakeholders (e.g. buyers/sellers, owners/tenants, or construction parties and maintenance). These could essentially result in optimized communication, collaborations, knowledge-sharing and/or synergies.
- ❖ <u>Sustainable innovations</u> focus on aspects such as energy-savings, water-efficiency and circular economy in order to sustain our natural resources. These can be needed due to regulatory changes, sustainability agenda or cost reductions. Please also have a look at page <u>15</u>.
- ❖ <u>Virtual reality and 3D mapping</u> replicates an environment using computer and/or drone Technology or allows users to create an alternative reality.





Have a look at page 191, 192, 193 and 194 to find the Wheel of Logos that visualizes the diversity of categories per region.

PropTech is an actual topic and KPMG is pleased to provide an insight into the dynamic scene of Real Estate and Construction innovations that are transforming the sector's landscape, and touching diverse businesses and markets.

Please find the set up of this booklet on page 21 to discover the elements captured and how to read through this publication.

We hope that you will enjoy the insights that this overview provides.



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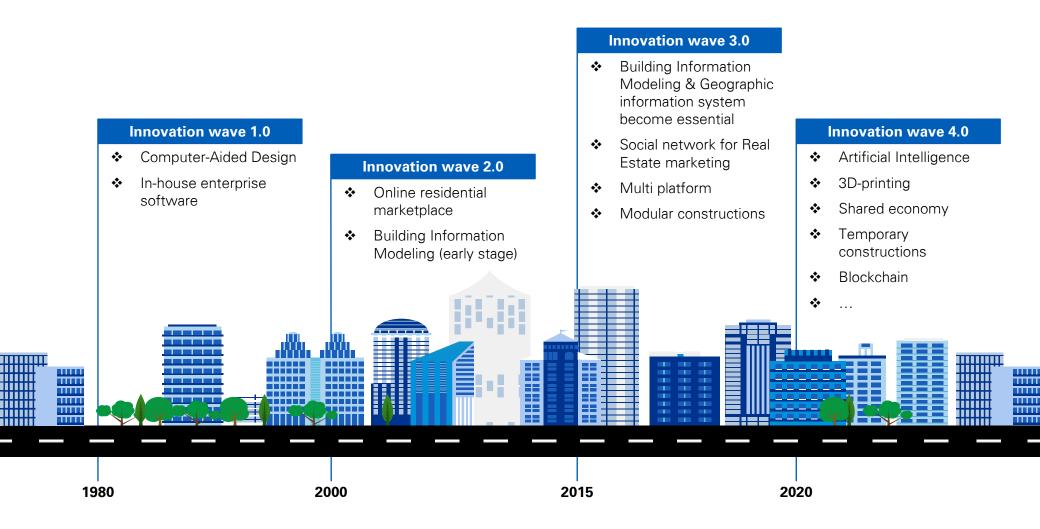


Innovation Trends

The Real Estate sector is mostly characterized as conservative, but even here innovation plays its part by gradually changing existing business models. However, due to the recent interference of COVID-19, innovation may have gained even more momentum.



The development of innovation in Real Estate





Innovation in the Real Estate sector

Key statistics

\$2,600 million

Of investment capital was poured into PropTech companies in 2019.¹



During the period 2014-2019 funding in PropTech has grown by



766%

and this growth is expected to continue.1

Investment in digital, IT and PropTech collaboration is driven by a need for:²





Improved efficiencies Cost-reduction

Enhanced tion decisionmaking

Innovation vision 2020

- 1. Investment in innovation culture may become crucial for required change
- 2. Strategies for customer centricity will become the norm
- 3. Artificial Intelligence may become more important in Real Estate innovations
- 4. Real Estate innovations may become less geographically centralized
- 5. Sustainability related technology solutions may grow
- 6. Non-conventional (sustainable) construction will gain importance
- 7. COVID-19 may (forcibly) boost innovation and change



¹ KPMG. (2019). Pulse of FinTech H2 2019.
² KPMG. (2019). Global PropTech Survey – Is your digital future in the right hands?

COVID-19

At the moment of compiling this booklet investments in innovations within the Real Estate and Construction sector have not been negatively influenced by COVID-19 so far.

Does this mean no consequences?

Similar to financial consequences, innovative effects are hard to predict. However, great innovations have arisen in times of need.

1. More investments in digitizing processes and platforms to connect as doing things digitally has become the 'new normal'





2. As a safe and healthy (work)place will become more important, innovations in healthy, smart and sustainable buildings will increase



Sustainable, Smart & Green buildings

Sustainability

Remember this?

This is 'Il Bosco Verticale' (The Vertical Forest), a 112 meter tall green apartment building in Milan built in 2014 with over 750 trees, 5000 bushes and 11,000 plants.

A literal example of a 'Green Building'.



The Real Estate sector is responsible for:

40%

energy consumption



world's



of all greenhouse gas emissions.

Hence, the need for sustainable innovations is **essential** to improve the carbon footprint and achieve international climate goals.

Green buildings – Benefits

Sustainable innovations in Real Estate

Although the Real Estate sector has seen investments in sustainable materials increase during the past few years, a real shift to green buildings is still on its way. Investing in sustainability however, does have significant benefits, please find a selection below:

Sustainable materials



The use of sustainable materials results in a **premium price** compared to 'normally' constructed properties.²

Sustainability awareness



Environmentally certified buildings are absorbed by the market **in less than half the time** compared to those which are not.²

Circular buildings



5% of total EU CO_2 comes from construction of new buildings, this can be significantly reduced by reusing materials.³

COVID-19



The need for sustainability in the Real Estate sector has long been evident. However, incentives were missing and/or it was no prerequisite for key stakeholders.

What

COVID-19 might change the cyclical demand for healthy and safe Real Estate and drive permanent investment.

Why

Consumers are now aware of the environmental conditions (and the larger ESG spectrum) and demanding evidence of hygiene and safety of the places they live, visit and work.

How

By investing in a.o. ventilation systems, hygiene, (new) circular materials, communication, data collection and analytics. Thus, changing entire business models.

After years of talking about sustainability, external forces may now accelerate the process to act sustainable.

¹ World Economic Forum. (2020). Here's why real estate finance needs to build in sustainability.

² IUAV. (2018). Does Sustainability Affect Real Estate Market Values? Empirical Evidence from the Office Buildings Market in Milan (Italy).
³ ING (2017). Circular construction Most opportunities for demolishers an wholesalers





KPMG & Innovation

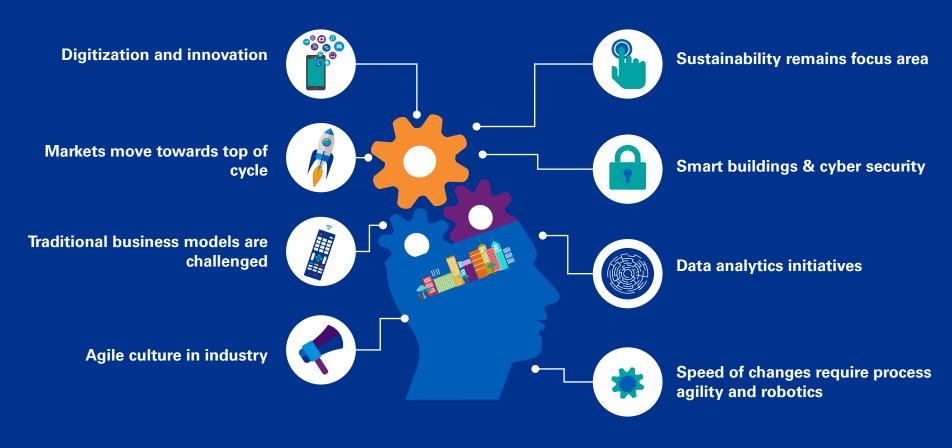
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KPMG understands the importance of innovation. KPMG is actively involved in supporting their Real Estate clients in all aspects of the innovation process. To stay on top of trends in the Real Estate and construction industry, KPMG is a founding member of Global PropTech.



KPMG's view of the developments in the industry

KPMG understands the industry. We have identified a set of key industry trends, for which we believe innovation may be critical in order to adapt and become future proof. On the next page, we show how we help our clients to stay relevant.



Innovation Maturity Assessment

Why do you innovate and how do you do it? With whom do you innovate and how do you use the results of innovation?

Those questions and their answers are central to the innovation capability model, which covers all the aspects of innovation necessary to enable successful and efficient innovation. This empirically tested model forms the basis of the innovation maturity assessment, focusing on the six enablers of innovation:

- Vision & Strategy
- Value Network
- Process & Governance
- Results & Feedback
- Culture
- Resources

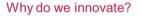
These give you insight into your organization's innovation strengths and opportunities for further development. This will assist you in structuring, focusing and/or redefining your innovation strategy, process, ecosystem and culture.



... of Real Estate companies have some form of Property as a Service across their portfolio.1



... of Real Estate companies have someone responsible for leading digital transformation and innovation.1 ... of respondents have a digital strategy in place, up from 52% in both 2018 and 2017.1





How do we do it?

The innovation maturity assessment focuses on the six enablers of innovation: vision & strategy, value network, process & governance, results & feedback, culture, and resources. You and your employees are actively encouraged to share their perspective and think about the different innovation aspects, their maturity and priority. This rich feedback can be collected online or in a collaborative workshop and is presented to you in an organized and structured way, serving as valuable input for innovation decision-making and determining next steps. This allows you to structure the dialogue about innovation and focus on optimizing the key enablers guickly and iteratively.

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¹ KPMG. (2019). Global PropTech Survey – Is your digital future in the right hands?

Interventions to enhance your innovation capability

Organize Innovation

Based on the KPMG Innovation Maturity Assessment results, take the appropriate actions to enhance innovation within your organization

- Anticipate on the latest trends and reinvigorate your innovation strategy
- Create a transparent innovation portfolio and focus ideation efforts on underexposed themes
- Design a tailored innovation funnel with easy to follow steps for your innovation project managers and/or innovation enthusiasts
- Share results of innovation experiments even if considered a 'failure'



Accelerate Innovation

Stimulate new and creative ideas or proven solutions from within your organization or within your partner network with the KPMG Innovation Factory platform

- Enhance your employee engagement and improve your everyday operations by challenging the entire organization to come up with (and enrich) creative ideas
- Host an external innovation challenge to collect proven solutions from startups and alike and adopt these collaboratively with your in-house experts
- Connect to your entire supply chain by jointly realizing specific innovations to collectively benefit from improvements on safety, sustainability and/or efficiency



Execute Innovation

Follow a tailored program of proven innovation methodologies to bring new ideas to reality with individual coaching by our innovation experts

- Host collaborative (online) sessions to advance multiple ideas simultaneously and grow innovation experience and awareness more effectively
- Apply Design Thinking, Lean Startup and Agile/Scrum best practices to efficiently advance innovations continuously
- Consider the full scale implementation within the industry from the start, but work in short sprints testing small iterations



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Eager to learn more? Get in touch for an innovation maturity assessment for your organization or to participate in our three-day innovation bootcamp!



Our environmental-friendly reads

Scan or click the QR-code!



Global PropTech Survey – Is your digital future in the right hands?

An annual review of the Real Estate industry's journey into the digital age. The Real Estate industry is still making progress with its digital transformation. Challenges remain, however, with full-scale adoption of digital technology still some way off.







Real Estate technology trends

KPMG surveyed more than 60 Real Estate funds, property owners and operators, public REITs, and developers to gauge their use of financial-accounting software and other technology.



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Reader's guide for this overview

Since our overview is an elaborate and extensive guide of Real Estate Innovations worldwide, the below overviews provide you with some information on the structure of the book overall, and some background on key statistics that are *new* in this year's edition.

Structure of overview

- 1. First the overview is structured along the well-known categories (our chapters);
- 2. Within these chapters, the sequence of innovations is per region from West to East. I.e. (i) Americas; (ii) EMEA; and (iii) Asia Pacific;
- 3. Thereafter, alphabetical order is followed for (i) Founding Country / SAR; and (ii) Name of Innovation.

Key statistics



Field of Expertise (FoE) – aims to describe a company's core competency in a single phrase and gives more in-depth insights into the market focus.

(Geo)Location analytics	Data-driven pricing & valuation tools	Plumbing	Smart buildings
3D printing	Drones	Predictive maintenance	Smart cities and infrastructure
Agent matching	Energy efficiency	Prefabricated components	Supply chain management
Air quality	Fire protection	Property information platforms	Tech-enabled brokers
BIM and Digital Twin	HVAC	Property portfolio management tools	Technical planning
Building automation	Indoor mapping	Real estate investment platforms	Tenant services
Building design	Mobility	Recycling solutions	Tenant wellbeing solutions
Collaboration software	New materials	Rental and sales platforms	Virtual viewing
Co-living spaces	Mortgage search & comparison	Remote monitoring	Transaction administration
Co-working spaces	Off-site construction	Robotics & automation	Water efficiency
Crowdfunding platforms	Online direct lenders	Safety & security	Other



Value Chain Segment (VCS) – aims to describe the segment in the Real Estate value chain that an innovation focuses and hence, gives insight into the strategic activities that the innovation and what market needs they act upon.

Sourcing:
materials, products
and technology

Design & Planning
Construction
Construction
Froperty and
facilities
management

Transaction and
leasing
Investing and
financing

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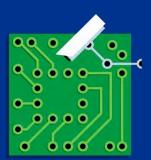
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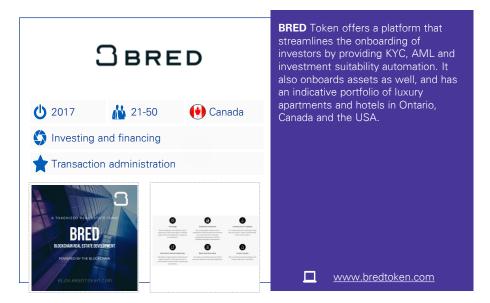


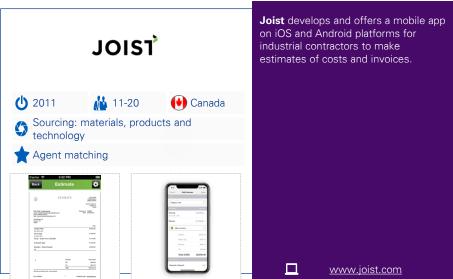
 $\bigcup_{i=1}^{n}$

In our everyday life, more and more tasks get digitized. Most of us embrace the opportunity to manage certain tasks digitally by having all relevant materials at hand within seconds. While the underlying processes are getting increasingly more efficient and user friendly, the digitization of processes also allows for an increasing amount of data collection, storage and analysis. Consequently, this results in higher quality, costs savings and improved customer satisfaction, applicable in all parts of the Real Estate industry.











paperless technologies in real estate. The company offers several solutions: transaction management software and an app version thereof, an e-signature service, an online form system, an online file review and compliance system, document digitization.

Instanet Solutions is a provider of



<u>www.instanetsolutions.com</u>



Operto Guest Technologies offers a platform for managing short-term vacation rentals, hotels, and other types of guest accommodation. The platform utilizes data from smart home devices to offer property managers real-time visibility and control over their units. The platform's functionalities include integrated keyless entry, energy savings, noise and occupancy monitoring and personalized in-suite technology.

REBCA Solution is a real estate technology start-up offering an app that aims to help real estate agents streamline the home buying process for their buyers. The app assists with scheduling, creating digital feature sheets, tour reports and travel tracking.

www.rebca.com



1build uses machine intelligence to convert building blueprints into material shopping lists and cost estimates. The company aims to create a data-driven approach for humans and algorithms to collaborate on building design and construction.

www.operto.com

www.1build.com



Zoocasa is a provider of online real estate brokerage services. The company operates a real estate website where the user has the ability to search for home or rental listings across the MLS database by neighbourhood or on an updated map. The user can search for housing with the help of an in-house real estate agent.

www.zoocasa.com

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Actuate builds firearm detection systems using computer vision software and artificial intelligence, which turns security cameras into gundetecting smart cameras. The company aims to accelerate security response time and improve safety outcomes during active shooter situations. The company's software solution features integration with existing security camera systems without on-site installation or other physical considerations.

www.actuate.ai



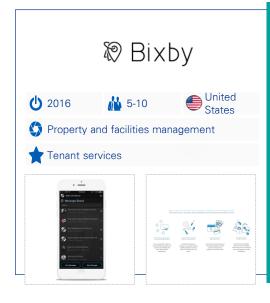
AirWorks' software helps land developers and engineers evaluate job sites within their critical planning and acquisition schedules. AirWorks' software features autonomously converting aerial datasets into CAD site plans, a centralized database and a detailed aerial site inspection.

www.airworks.io



Cobalt Robotics merges hardware, software, people, and data to transform enterprise security and facility management. They create autonomous indoor robots, that are managed by highly-trained remote Specialists, to offer an innovative solution to address important operational issues—consistently and accurately.

www.cobaltrobotics.com



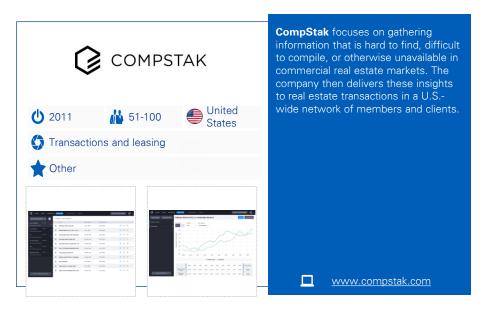
Bixby offers a building amenity platform for property owners and managers. The company offers software enabling operations automation and organization, focused on the processes of overseeing repairs, communicating with tenants, and collecting payments. Additionally, the platform offers tenants on-demand services, weekly discounts and promotions, and an interface with smart-home devices.

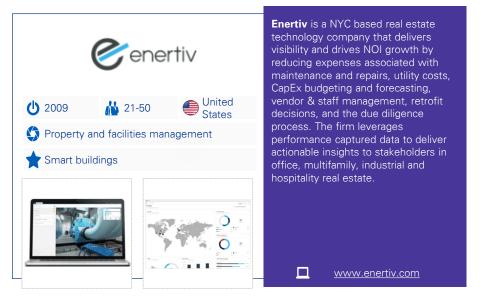
www.livebixbv.co

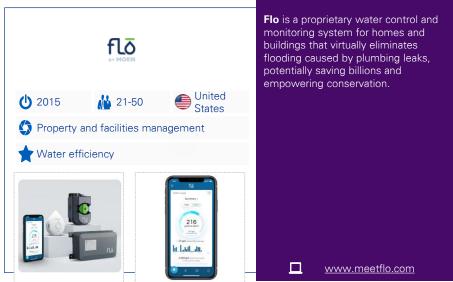
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Honest Buildings offers a project management and procurement platform built for commercial real estate owners and managers. The company aims to ensure that capital and construction projects are delivered on time and on budget. The platform's features include centralizing project data, increasing transparency, automating bid management, and standardizing reporting.

United States

↑ Transactions and leasing

↑ Tenant services

Tenant services

Dynasty offers artificial intelligence (AI) solutions for the real estate market. Founded in 2016 by a team of AI experts, Dynasty uses innovative technology and machine learning to automate manual leasing tasks and empower real estate customers to elevate their service and grow their portfolios.

www.dynasty.com



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Property and facilities management

Remote monitoring

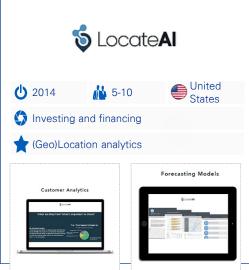




LogCheck builds software that helps operations & maintenance teams anticipate and prevent problems before they happen; saving time, money, and frustration for building operators and property managers. LogCheck, is a mobile and web application that streamlines routine inspections, maintenance tasks, and meter readings in hospitals, data centers, power plants, schools, universities, museums, commercial, and residential buildings.

www.honestbuildings.com

www.logcheck.com



LocateAI is enabling machine learning in the commercial real estate industry. It has created the first location intelligence platform that is powered by artificial intelligence (AI). LocateAI's proprietary artificial intelligence enables clients to uncover hidden insights about their business and identify prime growth opportunities.

www.locate.ai

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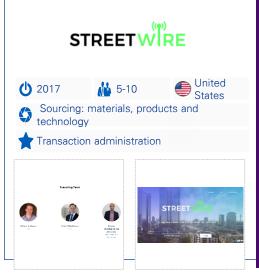
Optii Solutions provides housekeeping software solutions for the hotel industry. Optii recognized he need for technology in the hotel housekeeping market, and specifically the necessity for an improved approach to the management of this vital function. Optii's patented software technology revolutionizes housekeeping functions across global hotels and resort delivering greater profitability and enhanced guest experience.

www.optiisolutions.com



Ravti tracks, manages, and procures HVAC for large property owners. Specifically, Ravti manages all your HVAC maintenance programs, emergent repairs, scheduled repairs, capital replacement, capex management, and all the associated headaches that come along with that – multiple bids, procurement, HVAC inventory, warranties.

www.ravti.com



StreetWire provides oracle data services to support and promote blockchain adoption in the real estate industry. StreetWire's decentralized network offers two services for professional industries operating in the real estate ecosystem.

www.streetwire.net



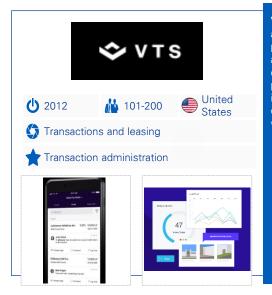
Skyline AI offers a real estate investment technology platform using artificial intelligence. The platform mines data from different sources and applies artificial intelligence architectures. It's features include detecting market anomalies, identifying risk-reward investments, and discovering value creation opportunities.

www.skyline.ai

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VTS offers a cloud-based leasing and asset management platform. The platform enables tracking and analytics across live, active deal flow and centralizes the data and workflows of properties. It's features include identifying trends, highlighting opportunities and raising red flags when necessary.

<u>www.vts.com</u>



WiredScore owns and operates Wired Certification, a digital connectivity rating scheme for commercial real estate that leverages technology by providing certification for rating the infrastructure, connectivity and technological capacity of commercial buildings. It aims to help landlords understand, improve, and promote their buildings' digital infrastructure and to provide transparency for tenants looking for office space.

www.wiredscore.com



PlanRadar offers a cloud based SaaS solution for construction documentation and defect management in real estate projects and tries to minimize the average 1-2 defects per 10m² in real estate projects. The company's solution with web access and native apps for smartphones and tablets supports the user in recording, documentation, communication and tracking of tasks and defects.

<u>www.planradar.com</u>



Indoo.rs is a technology development company that creates indoor mapping, localization, and routing technology, as well as SDK for application developers and device manufacturers. The company's solutions are developed by signal processing and navigation experts to offer accuracy and availability for both iOS and Android.

www.indoo.rs

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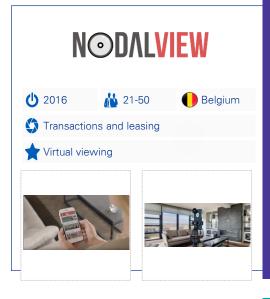






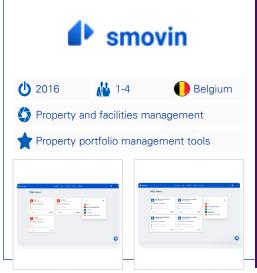
Chapps offers an app that can be used for locational descriptions and/or rental inspections on a tablet. Due to the optimization of workflows and the simple user-interface, productivity gains may be reached. Currently, there are versions available for Belgium, The Netherlands and France.

<u>www.chapps.com</u>



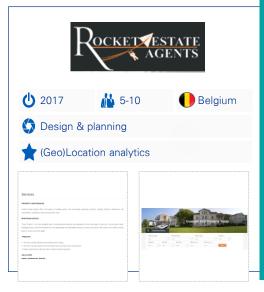
Nodalview is the European mobilebased photography solution that leverages smartphone technology, Al and cloud computing to produce instantly available high-quality visuals for real estate properties. Nodalview's all-in-one digital solution enables real estate agencies to easily create perfectly exposed HDR photos, 360° immersive virtual tours and full HD videos.

www.nodalview.com



Smovin is a company that aims to ease property portfolio management. The company delivers a property management tool on which documents can be managed, rent payments can be followed up and expiring contracts can be managed.

www.smovin.be



Rockestate is a data science start-up founded in 2017 in Brussels, Belgium. The company builds products that help mortgage lenders and property insurers improve their risk management and the customer journey of their products. The company's starting point for this is open geo-data, which is used to calculate 3D models and build features for each and every house in Belgium.

www.rockestate.be







SweepBright empowers real estate agencies to deliver better customer experiences and become significantly more efficient. SweepBright aims to help save time and costs by reducing manual data input and by making the entire sales process manageable on the go. It's product was designed from the onset with mobile usage in mind and integrates with third-party applications. This enables agencies to transform their sales flow into a fully digital journey and to deliver better customer experiences.

www.sweepbright.com



Nozol offers customer relationship management software that contains a set of tools that aims to allow users to achieve optimal performance in selling, managing and marketing real estate assets. Data is gathered from various sources and analysed through a set of performance dashboards regarding the sales pipeline and KPIs.

www.nozol.com



Assetti is a company developing and marketing a collaboration tool for property asset managers and investors, allowing them to develop a portfolio strategy, control property financials, and secure rent rolls, all in one application.

<u>www.assetti.pro</u>

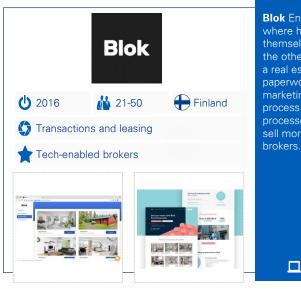


Aiforsite offers an all-in-one solution for moving from closed construction projects to a fully transparent industrial process production model. This is achieved by digitizing the construction with the use of cameras and AI, to be able to see progress in real-time remotely.

www.bliot.io







Blok Enterprises offers a service where homeowners manage viewings themselves, while Blok takes care of the other processes involved in selling a real estate property, such as paperwork, photographs, classifieds, marketing, and managing the tendering process. By automating these processes, Blok's brokers are able to sell more properties than conventional brokers.

CHAOS 11-20 Finland (1) 2016 Investing and financing (Geo)Location analytics

Cityfier

1-4

Investing and financing

CHAOS Architects is an urban forecasting company for real estate investors and city developers. The company's Al platform processes urban data and crowd insights to forecast investment and development opportunities for creating liveable cities.

www.chaosarchitects.com



Cubicasa is a company offering a mobile app for scanning and branding real estate floor plans. The application works by scanning the indoor space by using the mobile device's camera.

www.cubi.casa

www.blok.ai

(1) 2016

Data-driven pricing & valuation tools

Finland

Cityfier offers a digital analysis service for visualizing city development and forecasting the future value of urban districts and properties. The tool combines city master plans, property data and housing market data with urban research and analyses how different urban components can affect the future value of a location.

www.cityfier.com

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Datacubist designs and develops construction software that addresses the business, process, and technology aspects of using Building Information Modelling (BIM) in real projects. Additionally, the company provides consulting on building information models.

<u>www.datacubist.com</u>



Delta Cygni Labs develops a remote video collaboration solution named POINTR. It is powered by augmented reality and a proprietary, secure telecommunication protocol, that enables deployment for mission critical field service applications in energy, machine building, and maritime sectors. The software allows users to point their mobile devices at objects and have a AR overlay identifying what issues to address.

www.deltacygnilabs.com



Exquance Software offers predictive models process automation for commercial real estate assessment and investment portfolio management purposes. The company aims to increase efficiency and bring full transparency to real estate portfolio management and valuation.

<u>www.exquance.com</u>



Easoft offers a software application for installation and project management in the construction industry. The application's features cover sales, customer acquisition, tendering, construction sites/projects, margin calculations, reporting, and monitoring of working hours.

www.easoft.fi









hyper[in]

Finland

11-20

Property and facilities management

Property information platforms



KPMG

IISY, short for Infrastructure
Information Systems, offers indoor air
quality measurement and management
as a service for a variety of users. Real
estate managers, for example, can
manage the indoor air quality of their
entire portfolio using IISY's cloud
platform. Other users include
investors, residents, and construction
firms.

www.iisy.fi

(1) 2008

Hyperin offers an integrated tool for shopping malls to administrate all tenant and consumer information and communication, as well as reporting, contracts, marketing, and footfall in one place. The software also enables the selling of advertising and promotional space online through the same platform.

www.hyperin.com

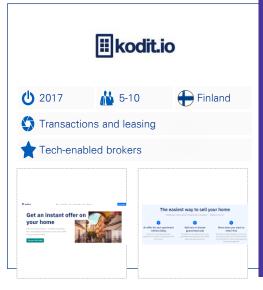
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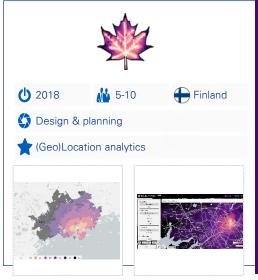
IndoorAtlas enables indoor navigation, by employing technology that uses natural anomalies in the geomagnetic field to pinpoint locations indoors. Customers include developers who want to build indoor location-based applications, such as search, wayfinding, and proximity marketing.

<u>www.indooratlas.com</u>



Kodit.io offers a direct purchase model (i.e. iBuyer). The company buys the property from homeowners with instant cash offers based on their proprietary data-based market price, renovates it and resells it on their marketplace, reducing the time and expense homeowners normally allocate to switching homes. They also offer home sellers the opportunity to lease back their old home in order to avoid temporary housing arrangements.

<u>www.kodit.io</u>



Mapple analytics offers urban intelligence software that combines, enhances and analyses multiple streams of location data on the fly, to provide insights on people, infrastructure, and mobility for real estate and cities. The software is based on algorithms for accessibility and mobility modelling, providing users with easy to understand, visual insights to support decision making.

www.mapple.io



Lukoton is a company that offers modern access management solutions that enable housing real estate locks to be opened via a mobile device application.

www.lukoton.com

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Mirasys is a provider of open platform Video Management Systems (VMS) for IP and analog camera surveillance applications and systems. They develop and supply solutions that help organizations manage and utilize information captured by digital video and CCTV cameras. Mirasys surveillance systems are used for perimeter protection, building management, loss prevention, and enhancement of operational efficiency.



▲ Mount Kelvin

Mount Kelvin manufactures and distributes remotely updateable cloud-based room controls for hotel rooms. The company engineers room controls that enhance the hotel ambience and guest experience, to ensure a better stay from check-in to check-out and everything that happens in between.

www.mountkelvin.com



Proximi.io enables software developers to kick start their location-aware application projects and helps them to deliver context-aware content to their customers. The solution combines existing location technologies (e.g., iBeacons, Wi-Fi, IndoorAtlas, cellular, GPS, and custom IoT devices) under one platform, making it possible for users to reach out to clients wherever they are.

www.mirasys.com

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www.proximi.io



Platform of Trust harmonizes incompatible data coming from various sources, enabling it to be merged and utilized. The company also provides, for example, services for digital signing and document storing, and an API engine that automates API documentation.

www.platformoftrust.net

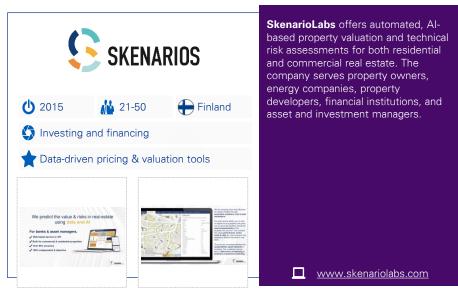
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Steerpath offers indoor maps, navigation, and positioning technology to mobile application vendors, across industries and venue types. The company offers several solutions, including 'Smart office', 'Smart university', 'Smart hospital', and occupancy analytics.

<u>www.steerpath.com</u>



VimAI provides a computer vision based indoor positioning system that does not require any infrastructure, this way buildings of any size can be converted to shared Augmented Reality experiences. The solution allows multi-user wide-area AR services like navigation, data visualization and entertainment to be provided in environments like industrial plants, shopping malls, museums, conference centers, hotels and airports.

www.vim.ai



Habiteo offers a collaborative platform that simultaneously manages sales and marketing activities to build a tailored customer relationship through their 3D solutions and CRM system. Habiteo does so by building a link between 3D visualizations of properties, customer relationships, and sales.

www.habiteo.com



FINALCAD aims to change the way of building. The company offers a construction management app & software. The company helps contractors, architects and owners to perform in synchronicity, build quality projects and manage risk through solutions providing progress reports, defect management, quality controls and analytics.

www.finalcad.com











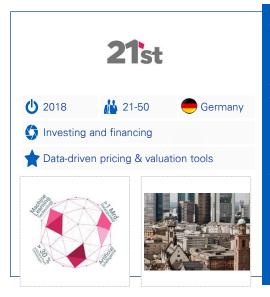
MaSmartHome creates applications for real estate professionals and retailers to assist them in the creation, sale, deployment, enhancement and maintenance of connected and smart homes.

www.masmarthome.com









21st Real Estate offers an innovative platform that digitizes the investment process of real estate. 21st Real Estate provides a market place that is connected to a database-matching tool, which helps finding properties that match customers' investing strategy. Next, the user can transfer properties to a Shaping Tool, in which investments can be calculated and analyzed using market data. Lastly, investors can finish the buying process within the platform and optimize existing and new deals.

www.21re.de



Capmo is a cloud-based SaaS solution for the construction industry. It equips construction workers with digital tools automating repetitive and error-prone tasks to construct buildings at an improved pace. Digital construction plans on mobile devices are the base of Capmo to innovate processes such as auto-construction documentation, punch listing or sheet comparisons. Capmo is used across Europe.

www.capmo.de



Korasoft aims at operating real estate with maximum efficiency. Korasoft offers the complete implementation of the relevant processes with SAP 3D Visual Enterprise for the Real Estate Management. This gives their customers product support by supporting the new SAP standard and by integrating it firmly into their established solutions

www.korasoft.net



Eucon digitalizes the invoice workflow for real estate companies. The solution uses Artificial Intelligence and reads, recognizes and classifies invoices and records them into the respective ERP system ready for account assignment. Historical data from individual objects or service providers is incorporated into the process, enabling the system to learn with every run.

www.eucon.com

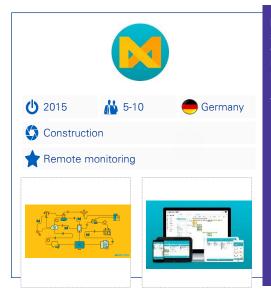






LEVERTON's smart platform has evolved into a system to manage data and documents, while also providing insights into key data. LEVERTON provides global organizations with a 'core' of structured company data and enables them to make better and more efficient decisions. For the real estate industry this includes lease contracts, tenants details and financial details.

www.leverton.ai



Molteo is a digital tool, using cloud software to help construction companies have real-time data, statistics and analyses of the building process. This is helpful to optimize the usage of resources and manage daily working processes faster, while reducing paperwork.

www.molteo.de



Synapplix helps to secure your investment strategies by determining the opportunities and risks of your assets. Different participation structures and financing of an inventory of assets, real estate, aviation and renewable energies can be predicted.

www.synapplix.de



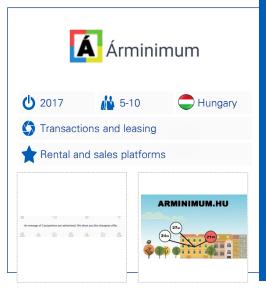
REOS provides technology for smart buildings and asset management purposes. The Real Estate Operating System (REOS) supports landlords and asset managers in managing and operating their facilities and rental processes digitally and in real time. The company can help clients fast track to digital leadership by transforming their real estate management into a simplified, affordable and efficient digital process. The software offered is flexible and could be integrated with existing IoT and smart buildings.

www.reos-software.com

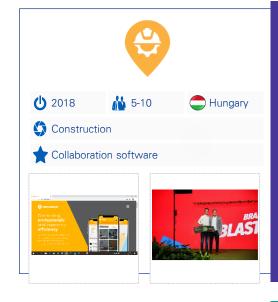
41







Arminimum crawls and processes property advertisements on the web on an hourly basis, analyses the mass of ads, and recognizes which advertisements advertise the same properties. Arminimum shows the best offer for a given property and shows available information. Moreover, Arminimum provides a supply index showing how the supply changes on daily, weekly, monthly basis, as well as a demand index showing how long it takes to sell a property.



Lokcheck accelerates the digitalization of construction implementation. The company does this by enabling construction workers to document and communicate progress and blockers in a quick and understandable way.

www.lokcheck.hu



Parkl is a digital platform which integrates parking and e-mobility services in a single system. They install state of the art parking solution, which can be easily integrated with existing parking systems. Using Parkl app, motorists can manage parking and EV charging related processes conveniently and in a cashless way. Parkl also offers a solution for office buildings, which optimizes the management and utilization of their parking capacities.

www.arminimum.hu

www.parkl.net



OrthoGraph provides digital twins of buildings for facility and maintenance management. Its mobile technology controls the data quality with strict workflows and live graphic feedback. A fast learning curve, simplicity and the used rugged tools let BIM become part of the everyday operations, workflows and third-party systems.

www.orthograph.com

42







Genda provides a waste reducing solution in the construction process. The construction site is complex and full of wasteful processes, leading to significant overruns in budget and schedule. Genda uses multiple sensors and computer visions to automatically generate real-time data regarding project resources, eliminating waste in the process and improving site safety whilst enhancing site managers certainty about their project status.

www.gendatech.com





Skyline Robotics' artificial intelligence platform enables the control and automation of any lift, crane and boom platform previously controlled by people. The first application of this platform was an autonomous window cleaning robot.

www.skylinerobotics.com



SecondLook is an international 3D visualizations studio that focuses on digitizing the marketing processes of real estate. The company has developed HOP, a desktop application that allows brokers to sell properties in visualized and centralized way.

<u>www.seclook.com</u>

43







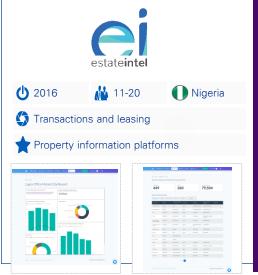
The robotic WTG maintenance system of **Aerones** is a method of delivering various tools to the blade for inspection, cleaning and maintenance of wind mills. WTG maintenance using robotic technology to reduce downtime and increase AEP. In addition, this robotic blade care system is similar to drones and ensures safety and efficiency.

<u>www.aerones.com</u>



Symvio works with building owners and operators to increase efficiency of technical building operations. Symvio develops machine learning based solutions for automated anomaly detection and diagnostics in technical building equipment such as HVAC systems to support facility managers in their tasks. Symvio increases quality assurance of operations yielding faster response times and utility cost reductions.

www.symv.io



Estate Intel is a real estate and construction information portal aiming to aid industry professionals in finding leads for their product sales, secure new tenants for their properties and understand trends, rents or sale prices to help them make the best decisions. EstateIntel seeks to have a strong profile in data analytics and organizational performance monitoring.

<u>www.estateintel.com</u>



Tokeny Solutions provides investment banks, funds, mid-cap companies and distributors with the technology required for firms to digitize their processes, so they can enforce global compliance obligations, enable automation and drive efficiency.

www.tokeny.com

44







Mapidea is an Enterprise Location Analytics solution that integrates internal and external datasets using geography, allowing business users to take advantage of location data without GIS expertise. The company's aim is to spread the usage of Location Analytics in big companies. Mapidea supports better business decisions and uncovers hidden spatial patterns that would go unnoticed on spreadsheets.



Fincase has developed a service that allows users to estimate the value of a residential, commercial property and land in a few seconds. This instantaneous assessment of the value of the underlying real estate assets allows decision-makers - potential investors or other users - to gain an initial cost-efficient and quick insight into the value of a property, to enable further decision-making.

Ksuto aims to be an all-in-one system of managing technical maintenance of movable and immovable assets, thus facilitating Facility & Asset Management. The system thus allows the control and oversight on technical personnel, process streamlining and ultimately aims to allow the reduction of maintenance and repair costs of real estate assets. Client groups include asset management companies, owners of commercial real estate (shopping/business centres, warehouses, manufacturing organizations), universities, healthcare organizations and other public institutions.

www.ksuto.ru

www.mapidea.com

FTS Property Solution

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© 51-100

Russia

Property portfolio management tools

From the state of the s

FTS is an IT solution for real estate management companies, developers and investors. This solution is used for real estate income/cost planning and accounting purposes; for managing relationships and effecting settlements with customers, lessees and contractors; keeping record of contracts and other documents related to real estate; planning and documenting technical operation of real estate properties; analysing big data and retrieving information for management decision-making purposes.

www.f-case.ru

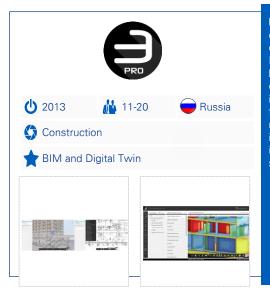
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www.fts-eu.com



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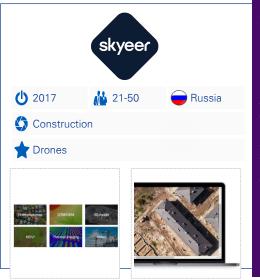


Lement Pro is a platform designer for object-oriented management of a company and real estate properties. Each element of the company's business – instructions, documents, equipment, premises, structures, etc. – is described and assigned the status of the platform item that may be created, modified, archived, or linked to other items and elements of the BIM model in accordance with business processes setups.



Mobile Solutions for Construction has developed a service offering of a Cloud software for building quality management throughout the construction phase. This application allows users to instantly upload photo's of focus points during the construction of properties and interact with internal and external stakeholders on the development.

www.mrspro.ru



SKYEER platform is a cloud platform used to control and manage construction sites by the usage of drones. The solution provides for remote, direct and objective control over the process, schedules and budgets of construction projects through the use of drones to monitor facilities and 2D/3D alignment of aerial photography results with project data; and for automated determination of the amount of work completed and factplan gaps, and forecasting of project timelines.

www.lement.pro

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<u>www.skyeermap.com</u>



NPO Analitica aims to deliver data insights on visitor behaviour based on the signals of mobile phones when present in real estate assets (shopping & leisure centres, for instance). These audiences can be further targeted by telephone operators for advertising purposes, upon which the efficiency is measured.

www.npoanalitika.ru

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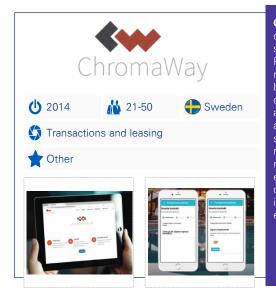






Propertyfox offers proprietary software and systems that help to coordinate the tasks of marketing and selling property as quickly as possible while saving sellers on transaction fees. A special feature of the company's business model is that all the information is actively shared with the seller and Propertyfox handles all the logistics, scheduling and security vetting.

www.propertyfox.co



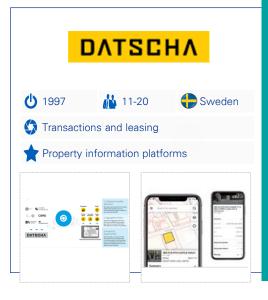
ChromaWay is a relational blockchain company. ChromaWay provides opensource blockchain technology including Postchain, a technology rooted in relational databases that utilizes blockchain protocols to synchronize data across multiple organizations and a smart contract/secure workflow application. The company offers solutions for land administration and real estate and launched its public network offering, Chromia, which enables the development of scalable dapps across multiple industries including the tokenization of real estate.

www.chromaway.com



Archilyse makes architecture and real estate quality digitally and objectively measurable, comparable and understandable. Based on data analytics the company provides qualitative KPIs to empower decisions and optimize processes along the entire real estate value chain.

www.archilyse.com



Datscha is a company that offers several web-based solutions offering access to data of registered commercial properties, as well as analytics. The company buys and collects data that is property-related from information providers. The company then structures, matches and aggregates the data, to make it available in their interface afterwards. An additional feature is that clients can upload their own data in Datscha, enabling new analyses, insights, and business opportunities.

www.datscha.co.uk

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3DUniversum offers 3D scanning, recognition and analysis solutions for the real estate industry by using consumer level mobile devices. The solution is powered by artificial intelligence and deep learning technology. It provides users a platform to create, share and interact with the content, including 360 panoramas, virtual tours, measurement reports, videos, VR and high quality images of the property. The aim is to simplify and digitize the listing process and make room for flexibility.

www.3duniversum.com



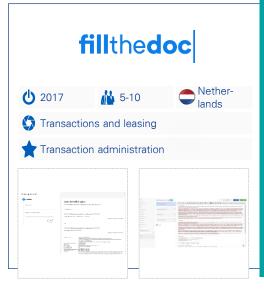
Calcasa is a technology company providing automated valuation models (AVM). Calcasa's AVM provides an estimation of the current open market and foreclosure value of a given residential property based on comparable sales and hedonic regression techniques. Valuations of homes and portfolios are accessible via a variety of sources. Additionally, Calcasa has developed tools for real estate analytics, supporting real estate professionals in reviews and decision making processes.

www.calcasa.nl



Flamingo combines a wide variety of data sources to help clients get informed about specific neighbourhoods or homes. By mapping data sources with geolocations and running data analytics the company offers insights to various sectors of the real estate market. Services include providing risk analysis, predictions of future property developments, aid in picking store locations and assisting in investment opportunity decisions based on pricing and valuations analyses.

www.flamingo.report



Fillthedoc is a tool, which is easy to integrate and enables organizations to create digital documents in their (legacy) systems to support tenant services. The company offers its solution to property and facility managers.

www.fillthedoc.com

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FundStar offers insights into real estate returns through performance reporting for investors and allows for internal and external benchmarking of returns, including pre-set budgets to pinpoint expectations. Performance data can be visualized through interactive graphs that include key industry KPIs. Next to the software, the company offers the possibility to run scenario testing.

<u>www.fundstar.nl</u>



GateSoft developes automation solutions for the property management market. It is a cloud platform which enables property owners and associations of owners to manage their assets in a user-friendly manner and offers CRM, integrated accounting software and solutions for service providers and individual real estate owners.

www.gatesoft.nl



Go Gary offers a way to present your assets and real estate portfolios. The company creates digital brochures for clients, which can then be uploaded into their own app or website, entirely in the client's own branding or corporate identity. Each object is given its own (.com) domain and finished assets are available to the larger public and are automatically linked to Google Maps for directions.

www.gogary.com



Geophy sources, links, and cleanses traditional and unconventional data, then applies algorithms (supervised machine learning) to provide a unique perspective on commercial property values. This approach enables Geophy to provide objective property valuations and tools that enable users to develop a deeper understanding of the factors influencing property values.

<u>www.geophy.com</u>

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Hero Balancer offers solutions to optimize heating systems by connecting their software system to the heating systems of schools, offices and houses. Hero Balancer's software balances the water levels in radiators to ensure an optimal division of heat throughout a property. This results in more comfort for the users of the building and lower electricity bills.

www.herobalancer.com



homeDNA offers an online software system for new construction and renovation projects. The company offers a digital solution as an integral package from preparation up to and including the service phase for customer contact and build quality. An as-built home file with the details per property/customer and a personal housing file for the buyer/occupant are the system's core. Furthermore, the company is developing BIM integration.

www.homedna.nl



Jumba offers home owners a central place to find information about their property and what relates to it; the neighbourhood, the pricing development, the bigger market. The company gathers information from various online resources and combines it into one central place. Through their solutions, home owners are supported in decisions about their property like selling, buying or redesigning.

<u>wwwjumba.nl</u>



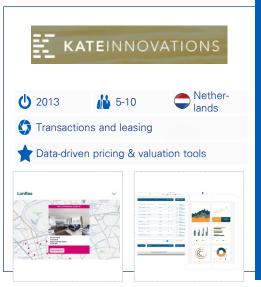
Ingy develops innovative solutions for smart and energy efficient buildings. The company uses lighting as the backbone of a smart building, enabling applications such as asset tracking, indoor navigation and occupancy analytics. All is done through integrating sensors into lightning and connecting groups of luminaires within a property to gather data.

www.ingv.n

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KATE Innovations provides advisors with digital solutions which organize the whole valuation process of commercial real estate. In this way, the property market is able to structure data, optimize work processes and develop new and future proof business models. In addition, KATE offers IT solutions that enhance the collaborating of advisors, banks, and real estate owners within the ecosystem of the commercial real estate sector.



KYP

FLOW

KYP FLOW offers software that gives people the possibility to optimally participate in a process. This is achieved by having information digital and up-to-date on mobile devices for stakeholders. KYP Facilitates LEAN planning on the construction site and communicates about the progress of projects.

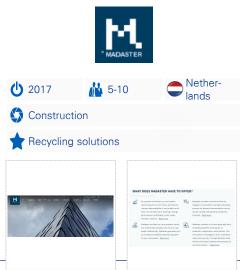
www.kyp.nl



Mapiq provides a smart office platform that enables full and flexible use of workspaces, and aims to offer employees a more collaborative, efficient, and frictionless workday. Mapiq offers user-centric hard-and-software that combines technical expertise and integrations with clean, functional design. The platform matches users with spaces, facilities and other colleagues.

www.kateinnovations.com

www.mapiq.com



Madaster acknowledges the planet as a closed system in which resources should not be wasted. By giving materials an identity through a Material Passport, Madaster developed a tool that gives the real estate sector the opportunity to eliminate waste and create performance based business models. The offers the possibility to increase re-usage of materials and save costs.

www.madaster.com

51







Matrixian links online coordinates to physical coordinates and provides a matrix of data points that connect online and offline data to each other. This way, Matrixian Group supports its clients in making decisions surrounding marketing, customer communication and credit management in order to improve their operating result. Examples include property valuations based on big data.

www.matrixiangroup.com



Movin's technology allows users to navigate through buildings or find assets (via apps). The technology allows users to highlight important Points of Interest, show nearest bathrooms, check out the restaurant's daily special, search through destinations and more. This indoor technology makes it possible to create smart buildings. These smart buildings feature optimized processes, reduced costs and increased safety.

www.movin.io



Office App offers an experience platform for professionals in office buildings. Office App brings together functionalities and services clients have, or would like, in an office building onto one mobile platform. Office App currently offers 58 different functionalities and services ranging from access control, facility management services, room booking and visitor registration to community, events management and retail services.

www.getofficeapp.com



OCTO enables real-estate inspections through sensors and image recognition of photos acquired from satellites, airplanes, drones, street view or inspectors. It's solution allows for predictive maintenance, making precise offers, enhancing compliance, reducing site visits and making smart maintenance plans.

www.octo.nu

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Officelynq aims to help make offices LEAN, where people can enjoy working together in a sustainable flexible way, whilst saving cost. Officelynq can be used for data-driven experiments with office users and their behavior and scaling up what works. The offering is plug & play and outside client's IT systems.

www.officelynq.com



OmgevingsAlert Pro aims to make the environment management processes for the owners of real estate portfolios more efficient and real estate management more effective. Users have insights into what is happening near their properties, such as building permits, zoning plans or other government announcements that could affect the value of properties. OmgevingsAlert Pro is meant for property managers, asset managers, appraisers and professionals in development, risk analysis and government functions.

<u>www.omgevingsalert.nl</u>



OSRE WoningDossier aims to make selling or renting real estate more efficient. The company automates real estate transactions, ranging from finding and managing candidates, to signing the contract. OSRE WoningDossier consists of one system where the involved parties can work together.

www.osrewoningdossier.nl



OMRT builds parametric software applications for real estate developers to speed up the design process, decrease the complexity of design, and provide insights from an early phase and onwards. OMRT's tools contain smart algorithms that consist of technical - or commercial analyses.

<u>www.omrt.tech</u>

53







Perfect Place analyses data to determine the attractiveness of locations for different target groups. It offers up-to-date and nationwide data on one platform. The company's product enables companies to make better investments by reducing risk and increasing (social) return. Perfect Place serves companies involved in the development of residential and commercial real estate.

www.perfectplace.nl



Provadie

5-10

Transactions and leasing

Tech-enabled brokers

Planon offers software for streamlining business processes surrounding real estate, people and the workplace. The company's product called Accelerator provides preconfigured processes, including workflows, catalogues, reports, dashboards, templates, roles, authorizations, data import facilities and configuration descriptions.

www.planonsoftware.com



KPMG

Qii offers multiple services to brokers to respond to the needs of tenants and landlords. It does so through knowledge and advice provision, practical services and an online application that automates rental processes.

www.gii.nl

Provode

(1) 2019

Provadie is a real estate assessment app that uses smart algorithms and many external data sources. This makes assessments faster and more accurate. Provadie started for appraisers, they save an average of one hour per assessment and their clients experience higher quality. Due to the high degree of flexibility, the app can be used for any type of real estate.

www.provadie.nl





Readar provides datasets and maps from aerial imagery and LiDAR data containing detailed information about real estate. Information is given about solar panels, volumes, roof type, changes and more. To do so, remote sensing and machine learning are utilized.

<u>www.readar.com</u>



Realtech focusses on reducing risks, optimizing margins and increasing efficiency for property developers. The company does so by forecasting demand per lot number prior to sales opening, which allows pricing to be adjusted based on demand. After sales open Realtech offers solutions that digitalize the real estate sales. Wwft and financials are checked, and assignments of lot numbers are optimized.

www.real-tech.nl



Veneficus turns numbers into visuals, abstraction into ideas and code into business plans. Through combining data about assets, the market, demographics, the neighborhood and benchmark objects the company's software helps estimating current and future valuations of real estate and future cash flows, all modeled automatically.

www.veneficus.nl



S1MONE is a unique communication tool for efficient management of malfunction reports and repair requests, whereby the entire chain is kept informed of the status and all involved people and companies are in contact with each other.

www.s1monegroup.com

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Volgjewoning.nl offers buyers and tenants a personal building file. This contains important documents and information such as offers, quotations and order confirmations. The software is linked to multiple platforms. Users of the software are automatically alerted to upcoming deadlines and updates regarding their projects. Consequently, the supervisor of the project can track progress and involved parties are aware of relevant information.

www.site.volgjewoning.nl



WELBO helps customers with highquality robotics solutions. They improve their customers' business processes and guarantee the privacy of their guests and the security of the data at every stage. WELBO is ISO27001-certified and execution is in the hands of experts with years of robotics experience.

www.welbo.eu



Bagaj is a locker service that can be used via a mobile phone application. Individuals can use their lockers as luggage storage and leave their personal belongings in the lockers. Their service is available on locations with high footfall like city centers, large venues, concert halls and beaches. In addition, clients can pick up their packages from and send cargo to the lockers.

<u>www.bagaj.co</u>



Apsiyon is a cloud-based online platform that serves as a digital assistant for property managers servicing residential and commercial buildings, gated communities and mixed-use developments. The firm enables personalized solutions on all their platforms spanning the whole property management business cycle, from finance to CRM. Apsiyon has been developing solution since 2009 and aims to unite people and technology to simplify property management activities.

<u>www.apsiyon.com</u>

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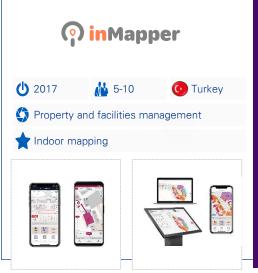
Boni Global is a location based platform for mobile devices to interact with the physical world. The firm provides indoor navigation, analytics and engagement for publicly available buildings to improve indoor wayfinding and accessibility solutions for people who need more assistance and independence allowing them to easily navigate inside complex buildings.

<u>www.boniglobal.com</u>



Endeksa is a predictive real estate data analytics and insights platform. In addition to price indices, Endeksa provides users with information about the location of their houses. Users can also request an appraiser to visit their house to get the exact value. The company's real estate appraisers are located all over Turkey.

www.endeksa.com



inMapper is an indoor maps, navigation and search platform for large buildings such as malls, museums, airports. With real-time indoor positioning, navigation and location-based services, clients can enhance your customers' experience inside their venue.

www.inmapper.com



Indoora provides high-accuracy positioning service for smartphones within indoor spaces where GPS does not work. Its patent pending positioning technology helps users find their way in complex buildings such as shopping malls, airports and exhibition centers. Indoora also offers navigation, location-based information/advertisement services via push notifications, and customer behavior analytics. The technology is available as a SDK and can be easily integrated to 3rd party apps.

www.indoora.cor

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Key Yazilim is a software company that provides real estate appraisals. Their solutions include: real estate appraisal and Archiving Software for Investment Banks and Real Estate companies (Invex); Tracing and Archiving software for Investment Banks (Hyporex); CRM & ERP software designed for Chambers of Turkish Engineers and Architects (Inforex); and Data Mining for Statistical Appraisal. Currently they are working on Statistical algorithms which affects real estate values in Turkey.

www.keyyazilim.com



PoiLabs offers locations based services including indoor analytics, proximity marketing, and indoor navigation by using a large network of lbeacon. The company focusses on location-based technologies to enrich mobile moments and provides customizable and flexible solutions from beacon to SDK, platform to operation and installation. PoiLabs also provides easy, safe indoor navigation for people living with some form of vision impairment.

www.poilabs.com



Udentify is a business intelligence solution that enables collecting all the data that can be collected in the electronic environment, in a physical environment. This includes facial recognition and image processing techniques, offering a set of solutions to be used in actions such as user scenarios, promotion campaigns, and shop designs. Ultimately it helps companies optimize customer experience and increase profits by providing information such as square meter efficiency, product conversion rate and staff performance.

www.udentify.co



Seyisco provides municipalities and governmental parties with high-tech solutions to help them with smart city concepts. Seyisco is working on a SaaS platform called "GovernOs" for Smart City applications that include spatial analytics with advance geographical information systems know-how. Their first product "Roan (Road Analytics)" is a hardware solution that is integrated on governmental vehicles and finds road problems in real time. This includes potholes, irregular bumps and cracks on any asphalt road it covers.

www.seyis.com

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V-Count provides visitor analytics solutions. They offer global organizations the latest in people counting, heat map, queue management, staff exclusion and business intelligence platforms. Solutions are backed by a secure cloud-based business intelligence platform that leverages best-in-class Al and machine learning tools to analyze collected data. Moreover, they provide clients with actionable reports and software-based recommendations on how customers behave in their physical locations.

<u>www.v-count.com</u>



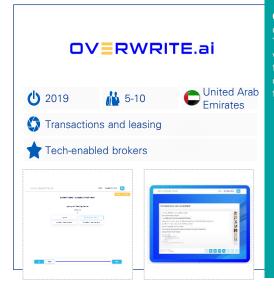
Masterkey is a SaaS-provider for the real estate industry in the Middle East. For over twelve years, they create specialized software for real estate marketing, listing syndication, property management and CRM, as well as provide tailored consultancy services for regional businesses.

www.gomasterkey.com



PropSpace provides SaaS for the real estate industry. PropSpace is CRM software for the UAE real estate industry that contains a portfolio of three separate software: PropSpace Brokerage; PropSpace Property Management; and PropSpace Developer Sales

<u>www.propspace.com</u>



OVERWRITE uses Al to instantly create property marketing content. They employ a user-friendly web-app where Al is applied, creating content that real estate agents, landlords and copywriters can use, and thus save time to focus on other activities.

<u>www.overwrite.ai</u>

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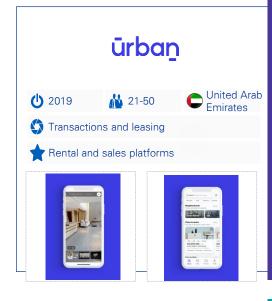






ProTenders is a platform for construction companies. Developers using ProTenders potentially increase their efficiency by streamlining their tendering activities such as shortlisting bidders, centralizing all tender documents, managing RFIs and receiving and comparing bids online. Architects, Engineers, Contractors and Suppliers can use the platform to generate more business by building their online profiles and get detailed updates of ongoing projects. ProTender is available to over 29,000 businesses of all sizes from 105 countries.

www.protenders.com



Urban is an app-based solution that makes renting easy, honest and empowering by bringing the entire rental journey online. With Urban, renters can discover inspected homes, visit on their own with digital locks and pay rent online with flexible payment plans. For landlords, the company cleans and lists their property in its best light with professional photography and virtual tours, hosts live auctions, leases properties out with paperless contracts, and collects rent – all online.

www.gourban.com



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Biosite Systems is a company developing biometric security and access control systems for construction sites, as well as integrating other safety and security systems such as CCTV, fire alarms, guards, and document management.

www.biositesystems.com



BaseStone offers a digital platform built for construction teams to access, capture, share and communicate information during the delivery of construction projects. Throughout the project, BaseStone digitizes and streamlines processes for project delivery. BaseStone is currently deployed in projects across the UK and beyond.

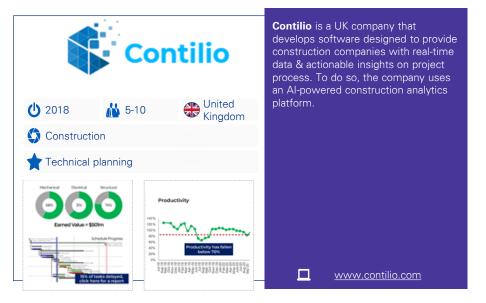
www.basestone.io

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software transforming the way real estate businesses buy and manage assets. Coyote aims to make it faster to buy assets & portfolios, and then more efficient to manage them. Clients range from small investment managers and nationwide property managers to global property companies.

www.coyotesoftware.co.uk

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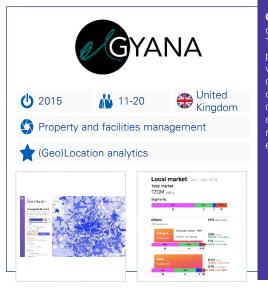






Goodlord is a company developing an online system to simplify the house letting process. It allows the creation of tenancy agreements, collection of holding deposits and online signing of contract and streamlines these processes online for agents, landlords and tenants.

www.goodlord.co



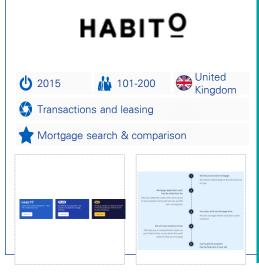
Gyana offers a tool that provides ondemand insights in people and places. The company's platform empowers people to ask – 'What kind of people visit this area?', 'Where else do my customers shop?', 'How is this street changing over the last year?', and get a quick answer. Gyana aims to make data analytics accessible to everyone, regardless of their level of technical expertise.

www.gyana.co.uk



Houst is a company that offers property management services for short-term rental properties. Services provided include cleaning, guest communications, running the listings, supporting maintenance, advising on pricing and helping maximize occupancy.

www.houst.com



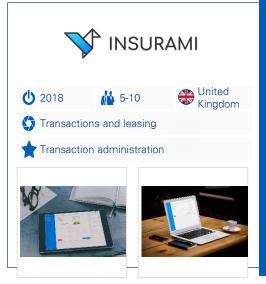
Habito is a website that allows consumers to compare and apply for mortgages. The company offers several services in comparing mortgages that entail different service levels, as well as offering their own mortgage.

<u>www.habito.com</u>

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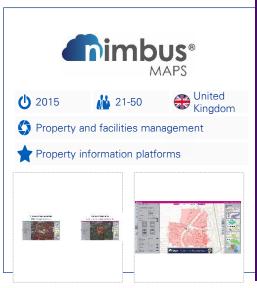
Insurami provides a deposit guarantee platform for commercial real estate landlords. The company removes friction from the on-boarding process by allowing landlords to vet the financial health of tenants up-front, and then offers prospective tenants the opportunity to purchase a Deposit Guarantee, replacing the traditional deposit. This allows tenants to save on their traditional upfront office costs and reduces landlord's on-boarding costs, process times and default rates.

www.insurami.com



Intellect Automation offers an Albased mobile app called Dashflow that enables investment appraisals of commercial real estate assets.

Property data can be imported from an Excel rent roll and DCF profitability parameters can be manipulated, generating scenarios. It is both an underwriting tool and a business tool contributing to the institutional investment process. Features include generating investment highlights, PowerPoint presentations and Excel financial models that make it an auditable DCF appraisal tool.



Nimbus offers the property information platform called Nimbus Maps which gives users access to a data set of property intelligence and invests in training the users on how to get the most from the information. The company offers a free to use entry level version, as well as a more advanced version aimed at the property professional and aficionado to access data and intelligence available.

www.nimbusmaps.co.uk



LandTech has built a web-based tool that allows users to gather information on land ownership in the UK and assess risks associated with the valuation of land, such as planning permissions.

www.intellect-automation.com

www.land.tech

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Proprli is a portfolio management and procurement platform for landlords and technical managers. Proprli enables landlords to track projects and budgets and make data-driven procurement decisions. The platform provides real-time insights into all expenditure and technical management throughout your portfolio. Proprli centralizes all building related data and workflows, increasing efficiency and control for landlords and technical managers.

www.proprli.com



REalyse uses data science to bring together and verify property datasets, and make them available to lending, investment and development professionals – whether via API or through a user-friendly web analytics platform. This includes prices, rents and yields, to ownership information, new development projects, and demographics. The platform helps real estate companies to gather the information they need to make investment and development decisions.

www.realyse.com



Shieldpay is a regulated payments institution providing secure payments and digital escrow solutions. Shieldpay helps professionals make the home buying and selling process more secure, transparent and stress free for their clients by collecting the funds from the buyers and lenders and making payments to sellers, land registries, tax authorities and others directly. Shieldpay will be further leveraging the opportunities that open banking brings for both identity and payments and has recently been involved in two block chain based projects.

www.shieldpay.com



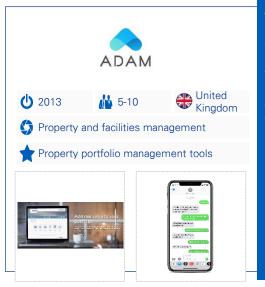
Rialto offers a leasing software to institutional landlords and office operators, to streamline their leasing. From sharing vacant units with the market to sourcing new tenants, Rialto provides tools to manage the leasing of commercial property portfolios and flexible office locations. Features include automated marketing of offices, transparent communication to leasing channels, organized tenant candidate profiles, a structured leasing flow and a leasing reporting suite. Rialto is available on desktop, tablet and mobile.

<u>www.getrialto.com</u>

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Travtus is a company focused on using data & machine learning to automate property management. This research is given commercial form as ADAM. ADAM is an Al property manager who can take calls, texts and respond to queries and trigger work flows without any human intervention for the domain of residential real estate.

www.Travtus.com



Architicket offers a web and mobile application designed to help manage construction processes. It's features include transferring projects to a digital platform, providing process management, simultaneous management of multiple projects and digital reporting.

www.architicket.com



Insight Data Solutions aims to enable governments, corporates and consumers to meet their property valuation needs. The company offers several solutions, like valuing a single property via its Automated Valuation Models ('AVMs'), or multiple parcels via its Computer Assisted Mass Appraisal ('CAMA') platform.

www.ids.io



BindiMaps offers a mobile application which provides indoor navigation. The aim is to help users find their way around indoor spaces such as shopping centers, transport hubs, educational institutions, hospitals, and other large complex buildings. The application features a voice over solution for people who are blind or vision impaired.

www.bindimaps.com

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MadeComfy is an Australian shortterm rental brand. Properties managed are listed on booking platforms under the company's brand, and also via a direct reservations channel. The company offers services including consultation, styling, property marketing, listing and price management, cleaning and guest communication.

www.madecomfy.com.au



Neighborlytics technology synthesizes data from digital sources to help governments, town planners, property developers and asset managers deliver better economic and social value in communities. The company provides a standardized tool to analyze data trends and patterns, to better understand social wellbeing based on local activities and lifestyle choices.

www.neighbourlytics.com



Realtair aims to provide end-to-end technology solutions for the real estate transaction process and thereby empower agents. To this end, the company provides a digital platform and offers several solutions including an administrative system, digital document signing and a CRM dashboard.

www.realtair.com



OpenAgent brings together real estate agents and vendors using personalized recommendations based on past sales expertise and customer reviews. The company aims to bring more information, better insights and an independent voice to property transactions.

www.openagent.com.au

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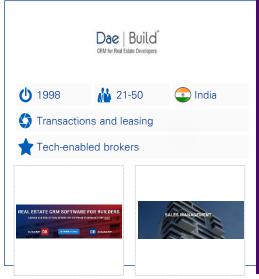
SurePact is designed to manage all Grants, Projects and Contracts through to Asset Realization in one place. SurePact is an Enterprise SaaS designed to support project, contract and grant managers to identify, mitigate and manage risks of deliveries for an entire project lifecycle. The suite of modules also provides a strong emphasis on visibility, transparency and accountability featuring clear, real-time analytics allowing for more confident business intelligence decisions and compliance assurances.

www.surepact.com



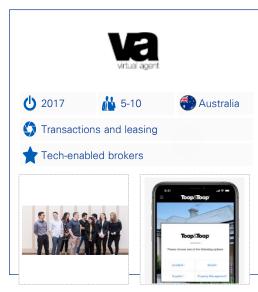
Takeoffs offers an app that automates material take-off and cost estimates from construction plans for General Contractors and Subcontractors using Artificial Intelligence. It requires the user to upload plans, choose the type of takeoff needed and will e-mail back a completed takeoff (bill of quantities) in Excel and a set of marked up plans. The takeoffs follow the International Standard Method of Measurement published by the Institute of Quantity Surveyors.

www.takeoffs.io



platform to capture and process leads from voice, property portals, social media and corporate websites. The post booking processes like Auto Invoicing/Demands, 3 Tier Payment Reminders and Customer Interactions automate the core workflow. The platform's features include capturing leads, tracking follow ups, gaining access to a real time inventory status and blocking units.

www.daebuild.com



Virtual Agent offers data & CRM tools for real estate agents in South Africa. The company offers data about sellers, company data and past and current ownership of a property. This enables brokers to find new listings and get in contact with sellers, whilst already having required information. The company thereby aims to make brokers more efficient and productive.

www.thevirtualagent.co.za







From designing, building, and presenting, **Foyr** supports and empowers real estate professionals in the design process to experience an immersive visualization. Foyr's solutions are cloud-based and mobile friendly, utilizing Al-enabled visualizations to ensure that real estate professionals can design, collaborate, and present their ideas and plans to their prospects and customers.

Livspace is a brand for complete home interior design for homeowners. The company provides its customers with interior designers to design homes using space planning, 3D Design, Modular Solutions with all services, complete with online status updates, furniture and décor.

www.livspace.com



Propstack Services offers a real estate data, analytics and workflow solutions platform. Propstack provides predictive and prescriptive analytics based on deep data. The company's suite of online services enables clients to analyze, interpret and gain insight on commercial property values, market conditions and current availabilities.

www.foyr.com

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<u>www.propstack.com</u>



Props(AMC) offers a real estate insights and asset monitoring platform organizing the real estate portfolio through a single, integrated interface. The company offers two products: (1) Zone provides asset information like Government rates, Online listing, Registered Transactions and Title records (2) Real Estate is a real estate management suite for asset owners of multiple properties and asset managers of multiple clients' financial assets.

www.propsamc.com

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REALX offers a platform to buy, hold and sell real estate. REALX allows people to purchase fractional ownership rights in properties sold by sellers on the platform. REALX enables its customers to buy property through smaller investment, hold as they want and sell when they want, earn rentals (or part rentals) from properties they hold, create a portfolio of various property investments – across locations, builders and property types.



Sell.Do provides automation technology to the real estate industry that allows for streamlining marketing campaign performances and sales team productivity. Sell.Do has two products: Sell.do Sales provides a Smart Call Center solution, managing and gaining intelligence on leads, an indepth pre-sales report to know the top and low performers, and automate complete pre-sales per business process. Next to that, Sell.do Marketing tracks all campaigns at one place and manages and executes marketing campaigns.



The **iYell** Mortgage Platform consists of three pillars, "Media" that can be used for marketing, "Technology" to make the procedure more efficient, to provide a remote support, to forecast interest rate and more, "Professional team" which is a face-to-face consultation with the consumer and performs the examination procedure.

www.iyell.co.jp

www.realx.in

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Softtech Engineers offers a building plan scrutiny and approval system. The system reads CAD drawings and maps them to the development control regulations for approval by municipal corporations and approving authorities. The software is designed to bring greater efficiency and effectiveness in compliance through collaboration between the organization and the approving authorities.

www.sell.do

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<u>www.softtech-engr.com</u>











KPMG

Uxtrata is a late-stage SaaS solution company targeting the real estate sector. The company's cloud-based, full featured strata management and rental management solutions enable managers and operators take complete control of every aspect of their businesses, save costs and increase efficiency especially in compliance, accounting/finance and payment.

www.go.uxtrata.com



(1) 2012

Re-Leased provides property management via the mobile through the use of multiple different cloud technology and applications to create a central hub to automate workflows and never miss a key task. This enables the user with management control, cost savings and new service offerings and have real-time insights from this cloud based solution.



Zealand

Re-Leased

51-100

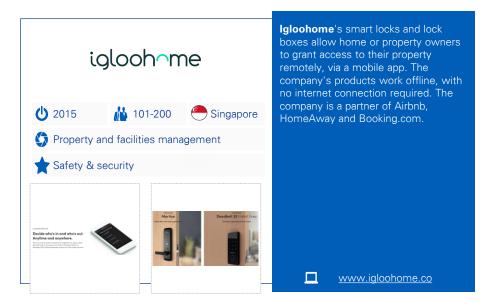
Property and facilities management

Property portfolio management tools

www.re-leased.com

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BIGVALUE offers an A.I. and Big Data solution providing accurate housing prices in Korea to investors and finance companies. Through cross checking big data of properties in the neighborhood, government data and public and private sector data the accuracy of housing prices is improved. The B2C service LOBIG provides a similar service to house owners.

www.bigvalue.co

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Flexible Workspace

4

While the traditional view of Real Estate is one of immobility, the new workplace is quite the opposite; it's both flexible and on demand. Real Estate is transformed from being a fixed asset into a flexible service. Office spaces are available in any given district, city or country / SAR and can be booked for an hour, a week, 10 years or anything in between, while all necessary services are included.





Breather offers space—as—a–service, with a network of private workspaces built for productivity, targeted towards those who require office, meeting/conference rooms, presentation spaces on demand. It enables businesses to access flexible workspace and is operational in 10 major cities across the globe including Montreal, Toronto, New York, San Francisco, Los Angeles and London.

www.breather.com



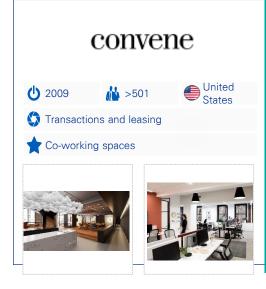
GoSpaces offers a Mobile App that seeks to "gamify" workplaces, incentivizing employees to work towards corporate challenges (e.g. going Paperless for a week). The app also allows users to report workplace issues, locate available space and produce analytics for metrics such as occupancy and utilization.

www.gospacesmobile.com



Knotel aims to cater to the office market with its Agile HQ™ Platform. Knotel designs, builds, and operates branded spaces for established and growing brands, such that the brands can outsource this activity and aim to focus on core business for themselves.

www.knotel.com



Convene designs and services premium places to work, meet, and host events. Through strategic partnerships with commercial real estate landlords, Convene operates a network of hospitality-driven locations in office buildings across major U.S. cities, with imminent plans to expand globally.

www.convene.com

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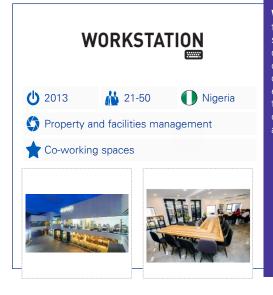






WeWork offers various working spaces varying from a desk in a common area, a desk in a shared space or a fully furnished space for all kinds of businesses. WeWork is a worldwide network of workspaces (27 countries) and the company aims to transforms buildings into dynamic environments for creativity, focus and linkage. WeWork offers businesses the possibility to have flexible workdays, with innovative office designs, and a numerous community of entrepreneurs.





Workstation aims to bring people together through shared workspaces, special events, social spaces and our digital member network. Next to their co-working space, they provide corporate solutions that accommodate every company size. Workstation has the proposition of decreasing operating costs, increasing employee satisfaction and enabling flexibility for clients.

www.workstationng.com



Tractr offers an adaptive marketplace for shared space resources, operating with a space-as-a-service logic. For example, when a company needs a working space ad-hoc during daytime, the service allows them to find a suitable space within the neighboring properties.

www.tractr.ai



Cohabs is a startup that provides flexible, fully furnished accommodations through a network of sustainable & community-driven shared homes. Currently primarily active in Belgium, the company has began intercontinental expansion with locations in New York, and is aiming to bring its concept in other, cosmopolitan locations as well.

<u>www.cohabs.com</u>







COMET Meetings creates and operates meeting rooms by combining an inspiring environment and a service designed in every detail to enable participants to evolve in a setting that stimulates their productivity, creativity and welfare. All these locations are in the center of Paris in buildings dedicated to meetings and seminars.

www.comet-meetings.com



SpacePass is an enterprise-based platform intended to manage office space, Flex offices and Co-workings. SpacePass is integrated with services that allow users to engage accounting activities, customer-relationship management systems, pass-entry systems, printer management, and more.

www.SpacePass.global



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HNK is an office provider that offers different workspace ranging from flexible workspaces to full-service offices. HNK offers a multitude of workspaces and amenities, such as meeting rooms and catering for tenants of every size, from start-ups to multinationals. The concept of HNK challenges traditional long-term office rental contracts and offers tenants the flexibility to work at multiple locations across The Netherlands.

www.hnk.nl



Deskbookers offers a trusted platform where people around Europe can find and book unique and inspiring working spaces, online, via a mobile device or telephonically; whether it is a meeting room for an hour, a flex working space for a day or a coaching room for a fixed period of time. The locations on the Deskbookers website are available in several price categories, in more than 1,500 cities in 4 countries.

www.deskbookers.com

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MyPup places lockers in offices, buildings or other locations where post and other delivery items can be received and stored temporarily, before a recipient can come pick it up when he/she has time to do so. In doing so, MyPup aims to provide convenience to recipients rather than having to be present at home, for instance, to receive a delivery. The company also claims that it is a sustainable solution, given this construction allowing for less couriers on the roads.

ZIPPERWALL[®]

Ritswand offer - by selling (with buy-back option) or leasing - flexible and free standing partition walls and cubicles. The walls or cubicles consist of frames that are joined using industrial zippers. The product aims to meet all requirements that would normally be asked from partition walls and/or cubicles in terms of acoustics, lighting, ventilation and electrification.

www.zipperwall.com

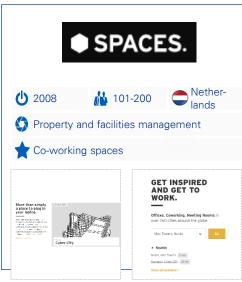


Superlofts combine modular design with prefabrication methods in a diverse mix of loft types and flexible programs. Offered as a trendy, sustainable and modern concept, this system also aims to cater to property managers by reducing maintenance costs and increasing the building's life span.

www.mypup.nl

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Www.superlofts.co



Spaces offers flexible working, office spaces, offices, networking, meeting rooms, hot desks, conference rooms and meeting location. The company offers offices for companies of all sizes, ranging from large corporates to starting entrepreneurs. All contract terms are based on flexibility, whether a customer needs a 25 square meter office or 700 square meters for a studio. The flexible offices aim to create an atmosphere where social and creative activities are both stimulated.

www.spacesworks.com

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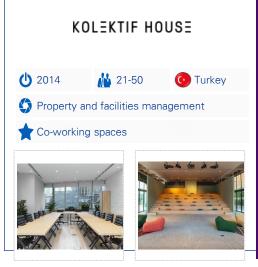
Tribes offers flexible office spaces as a service. Customers are able to choose from several membership options, varying from a membership for one Tribes office to access to all Tribes. Currently, Tribes has 23 locations spread over Belgium and the Netherlands. The company is expanding to new countries, like Germany this year. Tribes offers high level material finishing, performance IT facilities, amenities which simplify tenants' lifes such as dry-cleaning, shoe repair service, high level fitness and restaurants.

www.tribes.nl



eOfis provides flexible workspaces at 37 Locations worldwide. With Flexible Lease Model, members can use the meeting rooms, seminar rooms, flexible offices or work desks in shared offices at all eOfis locations with a prebooking. Hourly, daily, weekly, monthly bookings are possible.

www.eofis.com



Kolektif House provides space and services ideally designed for startups, corporates, freelancers and all other creators. They apply multiple memberships to their customers to be fully customizable and improve the feeling and creativity my matching the customer's needs and wants.

www.kolektifhouse.co

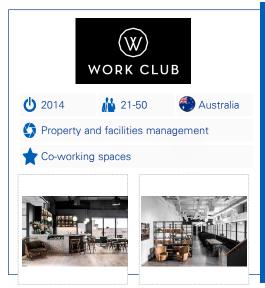


Inohom provides services in the smart home and building management systems sector with its inohom registered trademark. It creates flexible solutions that have a wireless communication infrastructure, which is free from infrastructure dependency, hybrid solutions, and which phase of the project. Inohom smart home systems, makes users control lighting, curtains-blinds, heating, security with special keys or via a smart phone connection, including voice control.

www.inohom.com







Work Club provides flexible workspace solutions and access to a diverse network of discerning professionals, with the intention to foster innovative thinking and encourage new ideas. Work Club aims to create a community of people, by offering a stimulating environment in which to engage in flexible working.

www.workclubglobal.com



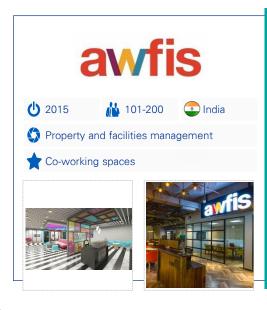
Weave Co-Living creates and manages residential communities for millennials and young professionals in major cities. The company provides residents with designed places to live at affordable, all-inclusive rents. The company also aims to cultivate a strong sense of community by creating social events for their young residents.

www.weavecoliving.com



Skootr is a chain of managed offices, co-working spaces, private and custom offices. Serving a variety of customers such as freelancers or entrepreneurs, Skootr offers co-working office space to meet individual needs of a dedicated plug & play work space. Skootr provides fully-furnished and ready-to-move private offices, flexible to meet expansion needs for agencies. It also includes custom designed office Spaces in any size, with full flexibility to scale up or down as per business needs.

www.skootr.in



Awfis innovated the concept of Pro-WorkingTM that focuses on People, Proximity and Performance. Its aim is to bring workspaces closer and make them more accessible to people. They aim to create an ecosystem to facilitate community based working advantage and facilitate performance through strong operations, well defined training processes and consistent service quality.

www.awfis.com

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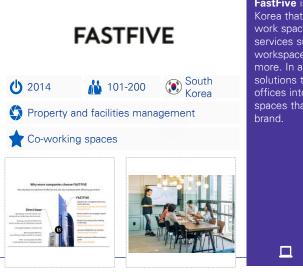






Able House is cooperating with various organizations to create customized living space, usually located within university's dormitories for international students. The company is expanding their houses around university campuses and transport hubs, and aims to create a sense of community among its tenants.

www.ablehouse.kr



FastFive is a co-working space in Korea that offers its tenants flexible work spaces, and a range of office services such as IT support, healthy workspace solutions, catering and more. In addition, FastFive offer solutions to businesses to turn client's offices into fully service flexilbe work spaces that suit the identity of the brand.

www.fastfive.co

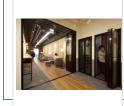
SPARKPLUS

() 2016 **(**) 21-50

South Korea

Property and facilities management

Co-working spaces





Sparkplus is a Korean co-working space that currently has 12 locations throughout the country. The company offers flexible work space to start-ups including office and business services. Sparkplus also facilitate start-up training and incubating programs to further accelerate their clients businesses.

www.sparkplus.co







5

'A workplace which is cost efficient, sustainable and healthy', a description of the ideal future workplace, but this may become the standard very soon. Indoor climate of Real Estate is was gaining more importance and attention by tenants when considering new Real Estate locations but COVID-19 may very well make a healthy and clean indoor climate a prerequisite for future Real Estate. Besides health and safety reasons, smart technology innovations like air sensors and smart lightning improve the work floor environment and employee satisfaction and productivity may rise. Real Estate owners should be aware of the opportunities a healthy (work)place can offer for their own portfolio.





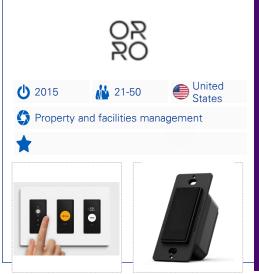
Awair's product identifies five factors that determine air quality. Namely, chemicals, temperature, humidity, fine dust and CO2. The Awair display and app show air quality, as well as track improvements over time. Additionally, personalized recommendations are provided to improve air quality

<u>www.getawair.com</u>



Intenseye uses artificial Intelligence, powered by video analytics, to prevent workplace incidents. By automating inspections, it can provide instant notifications, and potentially prevent damages.

www.intenseye.com



Orro aims to go beyond smart lighting. Orro integrates with your favorite smart home systems by implementing one system that integrates lighting, intercom and home control. An easy-to-install lighting system that unifies your smart home and creates perfect lighting, automatically.

www.getorro.com



Keen Home develops proactive hardware and software products to protect and enhance a home's core systems, providing homeowners with increased comfort, improved efficiency, and a better maintained home.

Smart Vent controls individual room temperature by regulating airflow, providing a cost effective and efficient zoning solution for homeowners. The software platform serves as a proactive home health dashboard while offering partners data for lead generation, actuarial price risk data, and peak load management control.

www.keenhome.i







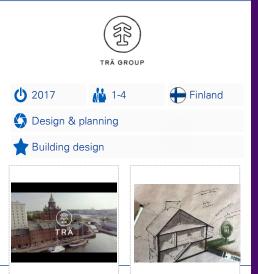
SageGreenlife designs, manufactures and installs living green walls that can be scaled for any size project, as well as interior design products that rethink the way people engage with nature. Utilizing patented hydroponic technology, Sagegreenlife is committed to designing healthy, sustainable and aesthetically captivating spaces

www.sagegreenlife.com



720 Degrees offers a cloud and Al based analytics solution for monitoring the quality of indoor environments, by tracking - for example - air quality. 720 Degrees aims to target property managers, also with the proposition that indoor environmental quality has a direct impact on real-estate valuation.

<u>www.720.io</u>



Trä Group has a modern and trendy proposition that offers the design of and the construction of sustainable buildings and residential environments. More specifically, the company offers renovation and maintenance services, restoration, as well as construction of future-proof concepts.

www.tragroup.fi



Naava manufactures and distributes naturally green walls for offices and learning spaces, due to their ability to stimulate improved environmental air quality, cognitive and creative performance, and be aesthetically pleasing. Naava has the vision of improving employees' satisfaction by making workplaces more radiant.

www.naava.io





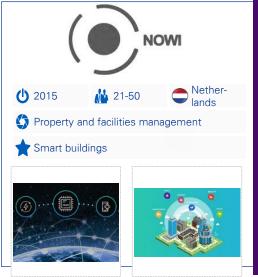


Atmotrack is developing a network of sensors allowing to measure the air quality in a given environment and enable decision-making accordingly. Based in Nantes, it positions itself within cities primarily and is aiming to expand geographically as well.



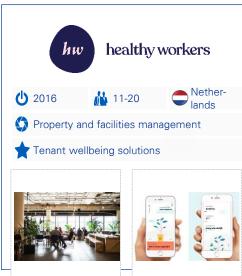
RightHear develops a spatial orientation solution for people who are blind or visually impaired. Focusing strongly on accessibility and inclusion, RightHear's solution is used by retailers to make their venues more accessibility compliant and accommodating for those with visual impairments by the use of audio descriptions, smart and self-powered sensors and an application.

www.right-hear.com



The **Nowi** climate sensors are able to use the energy available in WiFi, 4G and GSM signals to power themselves. They are focusing on climate sensors such as temperature, humidity and light. Thousand of these are needed per building and changes the batteries of such sensors every year is simply not feasible and too expensive. Nowi aims to change the paradigm from the old 'plug and play' to something that fits better with the Internet of things, 'plug and forget'.

www.nowi-energy.com



Healthy Workers helps companies improve Employee Wellbeing by providing deep insights into all aspects of wellbeing to facilitate smart choices in a healthy lifestyle. In the office by combining sensor data with employee feedback and at home with Anywhere, where they give employees hands on tips and valuable insights, based on their home situation. Based on these findings they present companies with insights and propose targeted interventions that are designed with employee needs in mind. This way they help companies create the best possible work environment for their employees, so they can thrive and feel happy and healthy.

www.healthyworkers.nl







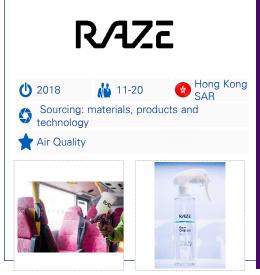
Agora is developed by **Quest Life** and it is a prototype specifically aimed at the Future of Work - namely it is a 35 square meter treadmill which can handle up to 15 people to walk, work, meet, collaborate and even present to colleagues and clients. Quest Life by Agora is delivered with fully equipped work- and health stations, safety and sensor environment.

www.questlife.io



Airlite provides for a simple, effective and economic means to measure and improve air pollution. Airlite offers an air purification technology embedded within a paint, turning walls into natural air purifiers. By doing so, the company claims to be able to significantly reduce air pollution within its environments.

www.airlite.com



Raze Technology is a material science company that developed a light-activated disinfectant coating that provides continuous protection from general pollutants while improving air quality. Raze launched a consumer sanitizing spray series and a B2B coating service. The company has invented a paint integrating their nanoparticles that removes air pollution and an air purifier that does not require filter replacement.

www.nanoraze.com



Centric Lab is a neuroscience lab delivering data driven solutions to urban health challenges. Using a smart cities geospatial tool the company analyses environmental and urban data through a neuroscience health lens to help real estate developers, urban planning policy makers, and third sector organizations create area specific and research driven health codes. Their neuroscience research underpins climate change related scenario modelling and targets the reduction in mental and metabolic disorders such as depression and diabetes.

www.thecentriclab.com











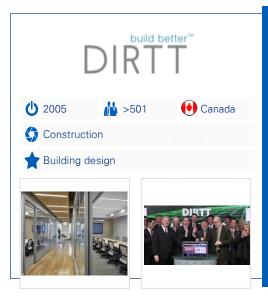
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Constructions technology (ConTech) has evolved over the last years and is expected to expand even more. New building methods, 3D printing, special barriers, specialized gadgets and multifunctional paints are just a few examples of new innovation being applied to construction. With these innovations, construction has become less complex while offering cost savings due to efficiency and/or sustainability reasons at the same time.





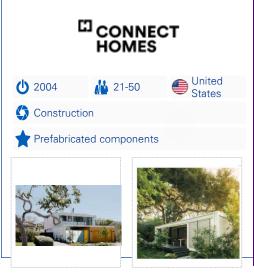
DIRTT creates customizable, sustainable prefabricated interior wall and millwork systems. It supports reconfiguration, levels of customization, and distributed manufacturing. Enabled by its proprietary software platform, its solutions include various DIRTT wall solutions, along with ICE® technology, and ICEberg®, a modular vs. traditional construction cost—comparison tool. It has over 100 North American Distribution partner locations, 233 patents and 3 manufacturing plants

www.dirtt.com



Studio Solarix aims to integrate sustainable solar energy panels within the aesthetic architecture of a building, seamlessly. In doing so, Solarix aims to make solar panels more mainstream and appealing by eliminating solar panels' less appealing design.

www.studio-solarix.nl



Connect Homes is a prefab home builder based in Los Angeles. The Connect Homes housing system has emerged from a decade of research on making high-modern, green architecture affordable to the massmarket. The results are low-cost modular prefab homes that mimic the spatial and aesthetic qualities of midcentury modern California residential architecture. These homes can be shipped anywhere, adapted to any environment, and are move-in ready a few weeks later.

www.connect-homes.com



Branch Technology is a prefabrication and technology company that specializes in large-scale 3D printing. Branch Technology offers a patented 3D printing process called Cellular Fabrication, C-Fab™. This printing method allows material to solidify in open space, creating a matrix of polymer in virtually any shape. This brings large design freedom and resource stewardship to next-generation wall systems.

www.branch.technology







ECOR is a sustainable building and design material designed to be 100% recycled and recyclable. It is non-toxic, 100% certified bio-based and can be used as an alternative for i.e. traditional wood, plywood and plastics. ECOR is replacing traditional wood-based and plastic materials in several applications including graphics/signage, packaging, construction, architecture and design, furniture, fixtures and consumer products.

United States

Sourcing: materials, products and technology

↑ Tenant services

United States

Tenant services

imageSurge*_

ImageSurge develops digital interactive hardware and software applications for the real estate industry. Their flagship product is the Interactive Real Estate Storefront - which includes features like: through-window interactive; sunlight-readable displays; multiple listing services; and usermetrics and leap capture.

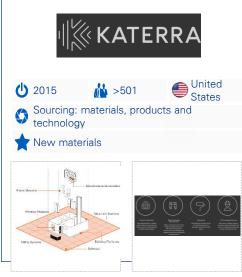
www.imagesurge.com



Kisi develops cloud technology to build secure access control systems that use a combination of sensors and mobile devices to grant facility access to authorized personnel. Designed for commercial and enterprise applications, the system software streamlines access management for operations teams while generating sophisticated data visualizations and personnel tracking for advanced IT departments.

www.ecorglobal.com

www.getkisi.com



Katerra exists to help transform construction with the use of material technology. Katerra is developing a broad portfolio of products – including structural systems, utility systems, finish materials, and more – that will improve building performance and lower carbon footprint. Recently Katerra has launched new types of cross-laminated timber to build wooden skeletons for properties.

www.katerra.com

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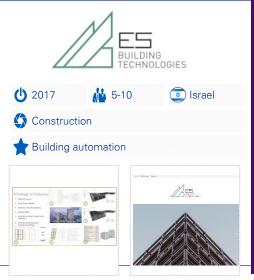
Lucid Drone Technologies build drones that clean buildings, anything from washing windows to roofs and nearly every surface in between.
Rather than needing lifts, ladders, and scaffolds, we lease our technology to cleaning companies, allowing them to safely relocate their workers to the ground.

www.lucidddronetech.com



View offers large-scale commercialization of dynamic glass. The company manufactures View Dynamic Glass, a new generation of architectural glass that intelligently transitions through multiple tint states to control the sun's energy, aiming to provide an enhanced occupant experience and optimum natural light and thermal comfort.

www.viewglass.com



ES Buiding Technologies developed a patent-registered process to construct a mid-rise concrete building in an efficient way where all the component are prefabricated offsite (using ESCAD Al software that translate building plans to Prefab production 4D plans). The assembly & process onsite is efficient as it requires less labor, allows parallel trades and reduce the RFI/submittals to zero - the results is up to 40% saving in time and labor cost!

<u>www.estech-ltd.com</u>



Civdrone is an autonomous land surveying marking drone. Civdrone physically inserts stakes into the soil with high level of accuracy. Each stake includes a smart readable tag (NFC) which is coded in real time with clear task instructions for construction. Digitalizing and automating this process allows for improved construction productivity while also lowering its cost.

www.civdrone.com

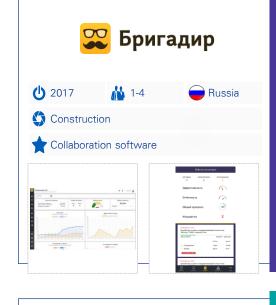
89







Okibo is developing autonomous robots for construction sites, with a focus on the application of finishing materials on surfaces. The company's first product is a wall and ceiling plastering robot. The robot is designed to work in the harsh conditions of a construction site, as it has 3D scanning capabilities, computer vision, floor to ceiling reach, autonomous movement and an agile industrial robotic arm.



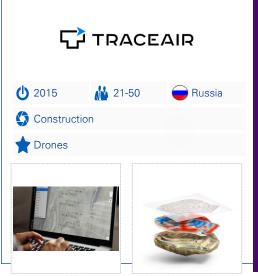
GEOSCAN

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Russia

BrigadierApp helps developers and construction contractors to manage their field operations and run highly effective communication between construction site and the office. The company provides a platform with a set of applications to control the construction site and get insights into the field operations and productivity with tools such as daily reports, procurement management, field operations analytics and mobile apps for workers.

www.brigadier.app



KPMG

TraceAir is a construction acceleration solution for the site development phase. Their turnkey service captures high-resolution aerial images, overlays project documents, and allows teams to collaborate in the cloud. The easy-touse software helps owners, contractors, and consultants keep projects on schedule, maintain site balance, minimize waste, and track progress remotely using a mobilefriendly platform. TraceAir allows the entire team to plan, execute, and communicate more efficiently, creating a transparent and collaborative project experience.

www.traceair.net

www.okibo.com

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(1) 2007

Construction

Drones

Geoscan is involved in the design and manufacturing of drone aircraft systems and software that could be used to create 3D models of cities, 3D mapping of construction sites predevelopment and thermal imaging.

www.geoscan.aero

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The **BetonBallon** building technique allows vaulted structures for houses and tunnels to be made in an innovative, affordable and sustainable manner. With this technique, construction time and CO2 emission are significantly reduced. Cost savings of up to 50% and 70% can be realized for concrete and steel respectively. This is all possible thanks to form, process and materials being optimally aligned. The BetonBallon building methodology is applicable in the different construction industries, being home, infrastructure and utility

www.betonballon.nl



Chess Wise is committed to a transition to sustainable, smart lighting systems for buildings, public lighting and industrial lighting. Chess Wise develops and manufactures products, software and services using the wireless, full mesh network protocol Mymesh for Smart Building, Smart City and Smart Industry applications. Mymesh offers a wide variety of possibilities to connect, manage and control thousands of devices simultaneously and make any property smart.

www.chess.nl



Fiction Factory offers micro homes made of layered cardboard with a long life span. The Wikkelhouse is made out of durable corrugated cardboard glued together with an eco-friendly adhesive. The cardboard is topped with a waterproof, breathable film called Miotex and finished with an open facade cladding system of pine slats. It is up to three times more sustainable than traditional construction technology. The Wikkelhouse building technology can be used for home, recreational or offices construction.

www.fictionfactory.nl



CyBe has developed a innovative 3D printing technology using concrete. The startup's ultimate dream is to change the building industry by shifting from conventional construction methods to 3D concrete printing. This will deliver a faster and more effective construction process, with many other advantages such as sustainability, free form construction, lower cost of construction and ownership. CyBe's concrete printing technology is applicable for architectural, structural, industrial and design construction.

www.CyBe.eu







Flexotels offers Short Stay Solutions and is an innovative manufacturing and rental company of temporary accommodation solutions. Flexotels mainly service temporarily events like music festivals and business events all over Europe through their foldable accommodations solutions. The company aims to develop a variety of flexible accommodation facilities that can be placed at any location, at any time

www.flexotels.com



Karbonik produces thin (<0.5mm) innovative carbon based foil that can be applied to floors, walls and ceilings to provide warmth. The infrared radiation coming from the foil heats up spaces. The foil is 100% recyclable and environmentally friendly. Furthermore, the foil can be easily placed underneath carpets or tiles. Karbonik operates on electricity and is therefore often more sustainable. The system can easily be controlled from inside a property or from a distant location.

www.karbonik.nl



The online parametric platform **Packhunt.io** enables real estate and construction companies to digitize and automate processes ranging from design, engineering and sales to construction and manufacturing.

Packhunt.io makes it easy to reach customers and provide product configuration, personalization and customization options.

www.packhunt.io



Novito provides a building system that makes it possible to adapt homes to the specific needs of homeowners. This can be done in several ways, from domestics to care facilities. Novito provides buildings that can be built within one day, and it takes another two weeks to make them ready to use. Novito's buildings can be taken apart easily and rebuilt in a different location, making them a sustainable solution.

www.novito.n

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Skelex designs, produces and markets custom exoskeleton solutions for large scale manufacturing companies. The firm's products allow workers in industries like aerospace manufacturing, shipbuilding and heavy manufacturing to be more productive while minimizing the risk of ergonomic injuries by offering upper body and neck support through their exoskeletons

www.skelex.com





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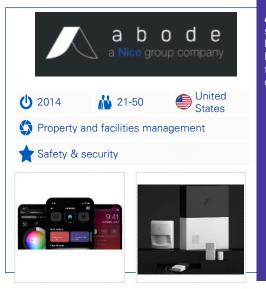
The rise of Internet of Things (IoT) is changing Real Estate from being a stand alone asset to an interconnected product which offers endless possibilities for owners of Real Estate. IoT innovations lead to more efficient, sustainable and user friendly buildings. These technologically advanced electronic products enable tenants and commercial property managers to control in-house traditional devices in an easy and centralized way. The list of traditional devices made smart is non-exhaustive, but current applications are often aimed at smart heating systems, security systems and lightning control.





Relogix uses advanced IoT sensors to monitor workspace movements, workplace design effectiveness and employee engagement with a high level of accuracy. The sensors, which can be attached to desks or ceilings using adhesive strips, are in their 5th generation, and can be paired with a Workspace Analytics Platform to optimize workspace utilization.

<u>www.relogix.com</u>



Abode offers a DIY smart security solution, which combines a no-contract home security platform with a smart home functionality. On-demand short-term monitoring and most smart home devices on the market are supported.

www.goabode.com



Cohesion is a real estate software company that creates smarter buildings and improves experiences by unifying systems and people in a single platform. Their secure, converged, Internet of Things-enabled solution unites core building workflows, optimizes portfolio management, and generates actionable insights resulting in increased profitability and improved tenant experiences.

www.cohesionib.com



Aquicore's cloud-based platform tracks, analyzes and predicts building performance factors in real time to create actionable insights. With self-installable IoT sensors, the company additionally offers an asset operations solution.

www.aguicore.com

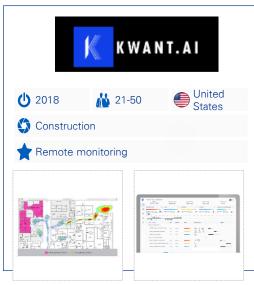






Enlighted is an Internet of Things solutions company that delivers a technology platform for smart buildings. With its sensor technology, scalable network to real-time data collection and high-value applications, Enlighted helps its customers to reach long-range sustainability goals while saving money and increasing efficiency. Enlighted provides smart energy solutions for commercial environments, saving customers up to 90% in energy costs while improving the comfort of workspaces and the efficiency of the people who work in them.

www.enlightedinc.com



Kwant.ai uses proprietary low powered sensors network to automate construction site data collection to improve safety and productivity. Using Al, Kwant .ai provides analytics like schedule and cost risk, early warning signals to optimize workforce and predict/prevent safety incidents. Kwant collects real-time location, time, identification and activity data of craftworkers and assets using minimal infrastructure and visualizes in 3D heat map. Their platform empowers owners, real estate developers, builders and insurance companies measure and mitigates risks



Notion is a smart security system that empowers home and property owners to be proactive in protecting their spaces, people, and most valued possessions. Powered by a multifunctional sensor and app, Notion is committed to reducing risk and increasing protection of a property with the ultimate goal of becoming a requirement for insurance.

www.getnotion.com



With **Latch**, you can open and manage every door in an apartment building—all from your smartphone. A fully integrated system of both hardware and software, Latch is expanding smart access through thoughtful and intuitive design made for modern living.

www.kwant.ai

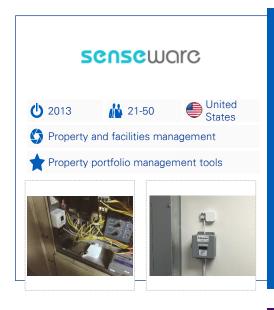
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www.latch.com

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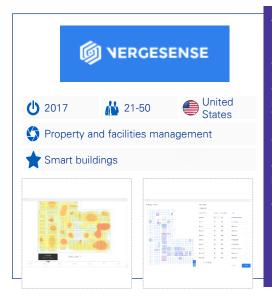






Senseware offers facility monitoring and controls platform for the commercial and industrial building market. It developed into a universally connected IoT ecosystem capable of connecting any device, system, or piece of equipment. The wireless platform delivers building owners, operators, and facility managers a way to integrate, monitor, and control all of their systems. The cloud-hosted platform's combination of hardware and software enables a wide range of applications from energy management, equipment-level monitoring, HVAC control solutions.

www.senseware.co



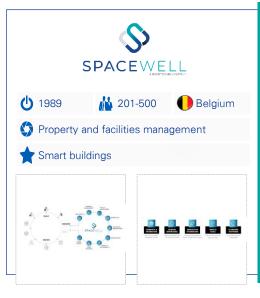
VergeSense is a provider of an Al-Powered SaaS platform for commercial real estate. The VergeSense platform creates a sphere of intelligence within properties to unlock the data-driven office and provide real estate investors, property managers, and workplace tenants increased asset value and a more productive workplace. Costeffective VergeSense sensors can be installed in minutes and the platform gives actionable insights and Alpowered recommendations to building managers through an easy to use dashboard.

www.vergesense.com



Spaceti is an enterprise software system that provides space and time efficiency through data gathering and analytics with the use of sensors and their own designed dash boarding. Their solution gives insights in user experience, air quality, temperature and space usage efficiency. It saves costs by optimizing space in your workplace while setting standards for people's comfort and wellbeing, leading to greater productivity.

www.spaceti.com



Spacewell, a Nemetschek Group company, is a technology and consulting firm, supporting its clients across the globe to improve the performance of their building portfolios. Their core purpose is to make buildings work harder for their occupants through unlocking the power of building data. By making this data actionable Spacewell provides smart solutions in the field of cleaning, technical maintenance, space efficiency, financial performance, tenant services and occupant experience.

<u>www.spacewell.com</u>

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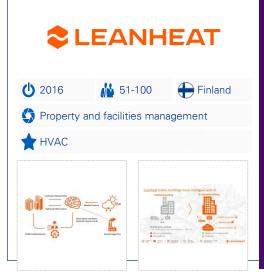
Cozify offers a wireless smart home hub that connects smart devices from different manufacturers into one seamlessly working entity. The hub is controlled by a mobile application.

<u>www.cozify.com</u>



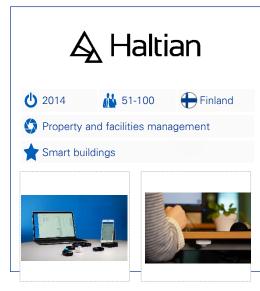
eGate offers an IoT/SaaS service that enables wireless, transparent, and real-time measuring of conditions from structures and air during the entire life cycle of a building. Multiple reports can be generated from measurement results and the collected data can be utilized to develop processes and building quality.

www.e-gate.com



Leanheat provides a turnkey IoT solution that upgrades HVAC systems for the digital age. Fully automated and self-learning, Leanheat's solution provides real-time optimization for apartment buildings – while at the same time giving the opportunity for district heating companies to serve their customers more efficiently and with a smaller carbon footprint. Climate sensors are installed in apartments, that are then governed by an Al software to maintain optimal indoor climates and reduce energy waste.

www.leanheat.com



Haltian created an IoT device platform solution for selected segments to help companies digitalize their services, add business value and optimize operations. Through the usage of scalable and secure sensors, gateways, connectivity, and device management solution on a single SLA their clients get insight in the usage of their washrooms, employee wellbeing, productivity, air quality and occupancy rates.

www.haltian.com

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Smartvatten is a water consumption monitoring service that helps monitor water consumption, catch plumbing leaks, and increase the operational efficiency of property businesses. With a camera to keep track of the main water regulator and a cloud-based service to analyse consumption patterns around the clock, clients analyse their consumption and be alerted immediately if it a leak is detected. Smartvatten stores water consumption data stored in existing property management systems and the reports are created automatically.

www.smartvatten.com



Wiiste manufactures and distributes technology that allows the humidity and temperature of concrete to be measured remotely via IoT sensors.

www.wiiste.com



SmartHab is a connected apartment operator for owners of residential real estate, mainly developers. SmartHab provides them with a fully integrated platform: equipment, information system, advice and services.

Customers can thus enhance the connected home by equipping all the lots of their programs. Native integration in the rack reduces costs and provides better service.

<u>www.smarthab.fr</u>



360SmartConnect has developed a "connected concrete" system. In other words, a construction equipment which is capable of communicating with connected devices using NFC contactless technology. In fact, this type of material allow to include connectivity into the building. Finally, the building is able to keep in memory the different works, to send information according to different scenarios and more.

www.360sc.io

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Ween specialized in real-time predictive planning for all living spaces. Ween.ai is an Al-based solution that makes smart devices autonomous. Ween's Al-based solution predicts in real-time the arrival of the occupant in order to constantly adapt the behavior of a place to its use. Therefore, the solutions can be applied to homes, mobility, facilities, cities and marketing purposes. They provide for (a.o.) privacy by design, low energy consumption, multi-user and multi-location options.

www.ween.ai



nxtBase develops an Industrial IoT platform for mobile workflows that combines augmented reality (AR), artificial intelligence, computer vision and pattern recognition. Their smart glass solution is providing digital assistance to facility manager, service technicians, as well as caretakers, and support them with voice-controlled applications on corresponding smart glasses in their tasks.

www.nxtbase.io



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Rollet is a new payment service that enables drive-through payments with any car. With Rollet's car recognition cameras, the vehicle becomes a payment token, therefore no manual cash or card payments and no queuing is needed in parking lots. Rollet also deals with the development of traffic management systems to control and manage vehicle traffic at industrial areas and office campuses.

<u>www.rolletpay.com</u>



OOT Technologies provides smart home solutions for home security, energy efficiency, cost saving and comfort for new and used properties. The multi frequency/protocol OOTT HUB smart home hub offers compatibility to most existing and future smart home accessories. Their system enables users to control everything with their mobile phones, installing cost efficient smart home systems without wall drilling, rewiring, or mess, compatibly with customers' already existing appliances, such as heating, climate, shutters, garage and door control.

www.oott.hu

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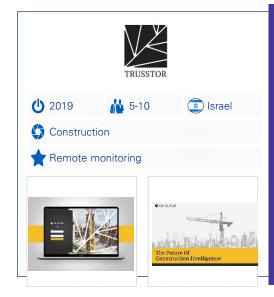






Robeau is a start-up company which offers connected solution for water management. It allows to measure direct water consumption in all buildings and properties, including leaks and over consumption, allowing to reduce up to 40% of water consumption.

www.robeau.com



Trusstor is a solution targeting the construction workforce and aims to enable control over the working environment, both on- and off-site. Trusstor aims to address productivity and safety by combining a real-time location system (RTLS), smart equipment (IoT) and artificial intelligence abilities. Trusstor also aims to focus on collecting quality data and utilize it to support decision-making processes.

www.trusstor.com



Disruptive Technologies has developed a simple and secure wireless sensor solution that delivers useful insights to customers, enabling more sustainable, safe and efficient operations within substations, buildings and offices. Examples of usage include remote monitoring, predictive maintenance, smart cleaning, legionella prevention and cold monitoring using temperature, humidity, proximity and touch sensors. The sensors are tiny, have a battery life of up to 15 years and can be installed anywhere, literally.

www.disruptive-technologies.com

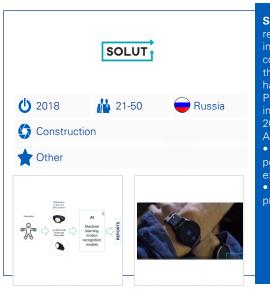


Polaar Energy offer businesses and individuals efficient digital building management tools to monitor and optimize their water and electricity consumption. The monitoring of the digital data collected using "BREEAM & HΩΕ" certified probes allows visualizing the consumption via a web dashboard or SMS, to prevent and control a number of disasters, such as water damage and losses of energy.

www.polaarenergy.com







SOLUT is B2B, Al-powered motion recognition SaaS company. We increase labor productivity of bluecollar workers by creating Al models that recognize any human activity by hands and body movements. Pilot projects identified a possibility of increasing the output by more than 20%.

Added focus:

- best practices: identify high performers and scale up their experience
- quality: control over the operations processing
 - www.solut.ai



Athom has produced 'Homey', a device which connects with all your devices, and makes them approachable at one central place. Devices can subsequently be voice-controlled, controlled by smartphone, or can be programmed to automatically follow specific rules. As a result, users have a home without remote controls, that listens and does exactly what the owner wants. As a result, users can play their music and save energy from just one device. The connected devices can be a combination of different brands and technologies.

www.athom.com



Blockbax helps real estate companies with owning the Smart Building opportunity. The availability of sensors will quickly become a commodity and offer the ability to translate the data coming from the sensors into operational cost savings and increased user experience. Blockbax provides a platform that will easily integrate with whatever sensors their clients are using, offer self-service dashboards for the data and apply easily configurable business rules in real-time to the incoming data. By taming this complexity they allow the conversation to fast-forward to business value.

<u>www.blockbax.com</u>



bGrid is an IoT PropTech company delivering hardware and algorithms which act as the backbone of smart buildings. Their solution consists of multifunctional bGrid® Nodes which measure everything in a building as well providing a wireless Bluetooth positioning network. The bGrid Nodes connect to the lighting system, building management system and more. This allows for controlling light, climate and blinds among others.

www.bgridsolutions.com

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Lone Rooftop offers enterprises and their trusted partners with actionable space utilization insights. These insights, generated by their scalable data technology platform PIE, can serve as a core data component for apps and building systems. This allows for saving space, optimizing costs and improve employee experiences.

www.lonerooftop.com



Niles is a smart home service which enables customers to operate an entire home with an app, transforming it into a smart home. The service connects smart lighting, heating, alarm systems to provide as much comfort and automation as requested by the customer. The system consists of a computer installed in the house, that connects existing smart home solutions into one integrated customized pack, allowing for expansion when needed.

www.hello-niles.com



Shifft is a software developer for the new energy world. Shifft developed an IT-(data)platform on which we are able to deliver different kinds of software solutions. Varying from consumer portals for gamified energy insights to intelligent energy monitoring and billing solutions. All based on collecting data from many different sources, like smart meters (based on their own ODA-status), multi commodity submetering or other certified metering companies. The company works for different types of clients, ranging from energy start-/scale-ups (PV-supply) to large companies in residential real-estate.

www.shifft.com



Openr offers an intercom that wirelessly communicates with mobile devices. Openr aims to make the central reception and wiring in a building redundant. Openr provides a dashboard that gives the administrator a structured overview and the rights to add or remove digital keys.

www.openr.com

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Buildings have installations controlling the indoor climate, their data is stored in a Building Management System (GBS). Simaxx translates this data into information usable for controlling maintenance, comfort and sustainability. The platform's features include 70 scripts in its Smartbridge, algorithms converting data into information and a user-friendly interface. Dashboards, reports and event lists are generated based on these analyses, making clear how the building functions. The platform aids in preventing malfunctions and complaints.

www.simaxx.com



SWYCS offers a universal, interoperable and vendor-neutral Internet of Things (IoT) platform. The SWYCS technology contains hardware and software and is based on open standards that are compliant with relevant international IoT-protocols. The system is API-driven to integrate with third party software. SWYCS connects devices and installations to make buildings and home environments smart. The integrated infrastructure offers a plug&play-platform controlled by a single app or web-portal.

www.swycs.com



Parxlab collects the data generated in the car parks with its own production hardware systems and optimizes personnel and parking for the enterprise. Thus, it offers insights into workload and to monitor all the data generated. It also minimizes the problem of finding a parking space by showing empty parking spots within the drivers on platforms such as mobile applications and screens.

www.parxlab.co



TryLikes aims to enhance the experience of customers through accessible, easy-to-use technology. Using its IoT solutions, algorithms and customer profiles, the company aims to know the preferences of visitors. The company's platform turns data insights into turnover boosters via automated Proximity Marketing Campaigns. More recurring footfall and the increase of time and money spend may benefit involved stakeholders.

www.trvlikes.com

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IOT Plus Middle East provides Internet of Things (IoT) solutions, System Integration, Technical Support & Maintenance & Turnkey Solutions. IOT Plus solutions can be used to remotely monitor a variety of "Things" (i.e. temperature, motion, humidity, energy use, etc.), alerting users by text and by email when user-defined conditions are met.

www.iotplus.ae



Converge develops wireless IoT systems for construction with the aim of collecting physical data from sites and combining this with digital models to drive a step change in productivity across the industry. Converge wants to increase efficiency to keep the world thriving on a planet with finite resources by driving sustainability and efficiency in the world's largest industries.

www.converge.io



Calumino have developed an A.I. computer vision enabled thermal sensor. The Calumino Thermal Sensor (CTS) extracts data from the heat signatures of humans and objects, providing unseen insights for healthcare, security, smart building, fire safety and automotive industries. If an elderly resident is to fall, the Eve Care algorithms recognize this and the care givers are alerted immediately. In addition, behavioral data analysis using the Eve Care system (e.g. sleeping patterns and activity monitoring) provides revolutionary insight into a resident's health and wellbeing.

www.calumino.com



Hoxton Analytics' foot traffic technology counts people based on footsteps going past a low-level camera. It collects no personal data, so the company can continually audit its accuracy. The technology provides additional insights such as gender, occupancy and average dwell times. It can be installed both indoors and outdoors, only needing a power socket. The data is presented back to clients in a real-time cloud data platform.

www.hoxtonanalytics.com







Switch Automation is a global software company that helps commercial real estate reduce operating costs, improve energy efficiency and deliver strong occupant satisfaction. Switch Automation have developed a comprehensive smart building platform that integrates with traditional building systems and Internet of Things (IoT) technologies to analyze, automate and control assets in real-time.

<u>www.switchautomation.com</u>



Ynomia leverages a proprietary, shortand long-range, Bluetooth-enabled IoT network to actively capture real time resource insights in order to increase productivity, visibility, safety and enable dynamic construction program management. Ynomia aims to reduce total cost of construction, and improve safety on projects by providing a realtime view of construction projects to users.

www.ynomia.io



WEGoT's VenAqua, a sensor based IoT solution, is an end to end water management system that captures information in a multi-inlet plumbing layout and provides the end user with real time information. The information includes minute-by-minute consumption details; alerts (overusage, leak detection, open taps and predictions) based on historical data and consumption patterns of other residents on the campus. Additionally, VenAqua also provides the option to remotely shut off the supply of water in case of any alerts.

www.wegot.in



Cosine Labs is an IoT company that builds hardware and software products for the rental real estate market like Coliving and Student/Dorm Living segment. The company provides the tech to transform existing/new buildingsIn to IoT enabled Assets To optimise operations, create seamless access controls and a sustainableenergy efficient property. Their solutions include IoT Hardware system applications like their smart digital door locks that support pin codes and real time information. In addition the firm provides smart energy meters and facial recognition with thermal sensing.

www.cosinelabs.com







Photosynth focuses on rediscovering new values for daily supplies through technology, aiming to enhance userexperiences. The company's latest product is a smart lock called 'Akerun', which enables people to use smart phones, PCs and wearable devices to open doors. Based on this product, the company also provides an online key management system for business owners with 'Akerun remote' and 'Akerun manager'.

www.photosynth.com



Trakomatic enables data driven decisions by making physical locations smarter. It tracks shopper behavior at different touch points, like image and video interaction, across the online and offline space, empowering business owners to make data driven decisions and transforming the overall shopper experience. Trakomatic enables businesses and organizations to discover the ways people interact in a physical environment using video and sensor technology. The data is transformed into actionable insights that drives optimization and improvement of clients' core business

www.trakomatic.com



Vital Xense offers industrial design sensor hub solutions. Through their solution, deploying a sensor or a string of wired sensors takes little time and system configuration. Their solutions are re-usable, plug and play and allow fro quick modification and adaption of the sensors. This way, users benefit from customization flexibility, time and cost saving, scalability and easy adaptation of IoT.







New Ways of Funding

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Traditionally, Real Estate was financed through specific funds with a minimum investment of several thousands of euros. Alternative funding methods result in a more accessible financing of (inter)national Real Estate projects. Although alternative funding has been coined frequently in the context of banking, it can also be applied to Real Estate. Next to institutional investors, individuals are now able to invest in Real Estate projects with small amounts of funding, thereby opening up the market to everyone.





Finneo offers a cloud-based SaaS debt management and placement software solution designed for Property owners, developers, REITS and pension plans. In a nut shell, Finneo is an End to End technology platform for CRE Debt Placement and Management.

<u>www.finneotech.com</u>



NexusCrowd operates as an online investment platform in Canada to offer investors the opportunity to co–invest a minimum of \$10,000 alongside venture capital and private equity partners on the same terms. Every investment opportunity is sourced, vetted, structured, reported on and managed by institutional partners.

www.nexuscrowd.com



Cadre offers a technology-enabled investment platform that connects qualified individuals and institutions to fully vetted real estate investment opportunities. Cadre wants to transform the investing market by building the world's first digital exchange for alternative assets. The company combines their institutional experience with differentiated technology in order to empower their investors, aiming to offer direct access, low fees, and transparency. The company's technology is meant to drive efficiency and power insights for clients.

www.cadre.com



AlphaFlow is a tech-driven investment manager, providing professionally managed portfolios of real estate loans to institutional investors. The company partners with non-bank real estate lenders around the USA who provide 6-12 month bridge loans on singlefamily and small multifamily properties, to buy their loans and help them grow their businesses. The company uses software to streamline and automate today's manual workflow and strive for simple and sufficient solutions at every step.

<u>www.alphaflow.com</u>







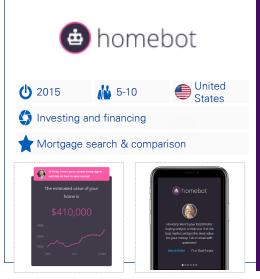
With smart pipeline tracking, collaborative workflows, and reporting, **Dealpath** enables real estate investment teams to focus on value-add work that delivers optimal risk-adjusted returns. Investment teams use Dealpath as their virtual command centre for buy-side principals deploying capital in the acquisition, development, and financing of real property.

www.dealpath.com



Fundrise offers a diversified real estate investment available directly to anyone online. The company aims to make the process of investing in commercial real estate from around the country simple, efficient, and transparent. By combining technology with new federal regulations, Fundrise brings the world of private investments closer to customers. The platforms allows its customers to invest directly in a real estate portfolio that its team identifies, acquirers, and manages on behalf of the customers.

www.fundrise.com



Homebot is a high performance client engagement tool for the mortgage and real estate industries. Homebot is a dynamic financial dashboard designed to empower homeowners to build wealth with their home.

www.homebot.ai



Harbor is a digital investment management platform for alternative assets that streamlines onboarding and subscription processing, simplifies investor communications, and unlocks enhanced liquidity options through branded private marketplaces. Harbor's easy-to-use software enables issuers and broker-dealers to remove friction and inefficiencies from the fundraising process and ongoing investor and placement agent management.

www.harbor.com

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RealtyShares offers an online investment platform that gives accredited investors the ability to purchase shares in private real estate investments for a minimum of \$5,000. RealtyShares screens each investment and offers opportunities including both loans secured by single family homes and equity investments in commercial assets. The company connects its network of individual and institutional investors with pre-vetted real estate operators looking to raise capital for commercial and residential projects.

www.realtyshares.com



SolidBlock utilizes real estate asset tokenization – the convergence of real estate investing and blockchain technology – to transform real estate into a tradable financial product. This gives investors the opportunity to buy shares in a property and trade them on an exchange or ATS.

www.solidblock.co



EstateGuru is a European marketplace for short-term, property-backed loans. EstateGuru offers its services to entrepreneurs in the property development business who do not fit in the standardized offers by banks and major financial institutions. The company connects diverse investors and borrowers, and offers borrowers their own terms, while investors can access pre-vetted and diversified, cross-border investment opportunities with total transparency.

www.estateguru.co

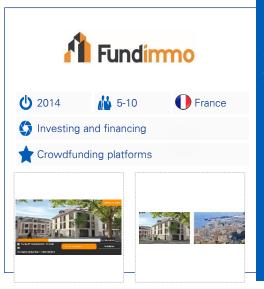


BeeBonds is an alternative financing platform that can resort to public offerings and allows investors to directly finance corporate projects by subscribing to bonds issued by these companies. Beebonds aims to give people the possibility to invest in building development projects at no cost.

www.beebonds.com







Fundimmo offers a platform specializing in real estate crowdfunding. The company was founded in 2014 and is registered as Advisor for Participatory Investments with the Autorité des Marchés Financiers. Fundimmo allows its investors to invest from EUR 1,000 in a range of real estate projects (residential, commercial, office, development, real estate renovation, etc.), selected by an advisory committee made up of real estate professionals.

www.fundimmo.com

homunity

© 2014

© 11-20

France

Investing and financing

Crowdfunding platforms

Crowdfunding platforms

iEstate

Germany

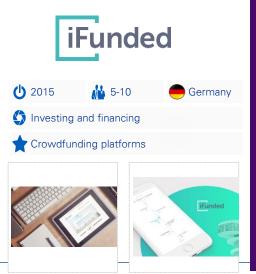
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Real estate investment platforms

Investing and financing

Homunity offers a crowdfund platform that is available for private investors from 1000 Euros to invest in short-term real estate projects that last for 12 to 24 months. The platform aims on providing transparency, detailed project information and internal audited projects.

www.homunity.com



KPMG

iFunded accompanies users as an investor throughout the equity crowdfunding process. The services include selecting real estate projects, choosing investment strategies and providing continuous information on current investments. iFunded cooperates with national and international building contractors and project developers, providing users with a variety of real estate projects. The private investor dashboard supplies users with current market data and reports.

www.ifunded.de

Volume location species strategy

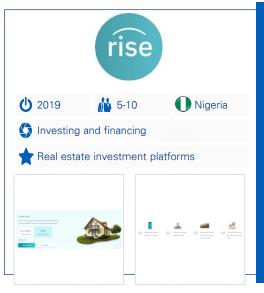
(1) 2015

iEstate offers a fully compliant blockchain based crypto-security investment platform that aims to ensure an efficient and liquid real estate investment market, iEstate creates and tokenises a residential and commercial real estate portfolio through a compliant Security Token Offering ("STO"). For real estate developers and asset managers the company provides full-service asset tokenisation, covering technology, legal, tax and marketing topics, opening up access to a larger investor market and promoting projects on an international level.

<u>www.iestate.de</u>

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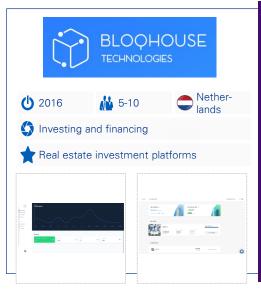
Rise Vest is an investment app that lets anyone put their money in automated safe dollar investments around the world. Rise users can invest in three asset classes - US Real Estate, US Stocks, and Fixed Income (Eurobonds). Next to being a wealth management app, Rise also includes a community that offers financial guidance.

www.rise.capital



Housers aims to enable investors to invest in a simple manner in real estate. Housers allows investors to invest in buy-to-let opportunities, in buy-to-sell renovation or construction of properties, or in project developer loans through an online platform. Houser is established in three countries and offers a combination of expertise in finance and technology.

www.housers.com



Bloqhouse Technologies applies tech and engineering capabilities to empower clients to unleash their full potential. The company has created a software solution for fund managers and investment firms in need of an online syndication or funding platform for equity and debt offerings. By utilizing the customizable, responsive and flexible software platform fund managers can (1) Tap into a novel network of international investors, (2) Manage investors and funds efficiently and (3) Automate deal flow administration.

www.bloqhouse.com



Blandlord enables clients to take partial ownership of a real estate object. By dividing ownership, investing in properties becomes feasible for people who normally don't have the resources to invest, because of the size, risk or complexity associated with the investment. Starting from EUR 100,- people can buy a ownership in an object. The economic ownership of the properties is administrated in blockchain technology to provide openness to all parties involved.

www.blandlord.com

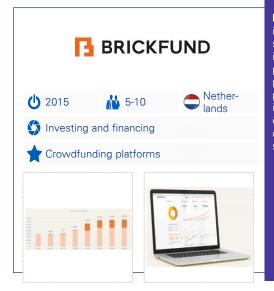






Bouwaandeel uses crowdfunding as a basis for financing real estate projects. The Bouwaandeel platform offers project developers and real estate investors access to funds of private investors and private companies. A key distinguishing factor of the platform compared to traditional real estate funds is that investments are possible starting from EUR 200,-. Propositions up to EUR 300.000,- can be placed on the platform and the to be financed object always serves as collateral.

www.bouwaandeel.nl



Brickfund offers a new method of investing in real estate. The company selects appealing properties for investments and offers a transparent platform. Investors receive personalized online access, which provides detailed information regarding investments. Users are furthermore empowered to make their own decisions and can make investments starting at EUR 5,000.-.

www.brickfund.com



De Windcentrale facilitates households and companies to become joined owners of a large wind turbine. All electricity produced by the wind turbine is deducted from the energy use of the individual owners which leads to a lower energy bill. De Windcentrale offers a simpler and cheaper alternative for solar panels. Currently 15.000 households and companies are producing their own green electricity with their own wind turbine. With De Windcentrale App users can check the production of their turbine real time.

www.windcentrale.nl



Crowdestate is a crowdfunding platform for real estate linking project developers and investors. Prior to a project being published, screening is performed to ensure that the quality is up to par and the project is feasible. Crowdestate offers Dutch and international projects to allow investors to build a diversified real estate portfolio. Crowdestate selects multiple projects from which its customers can choose to invest in. The customers of Crowdestate can follow the developments of their investment portfolio easily.

www.crowdestate.n







SamenIngeld offers its clients the opportunity to invest in various real estate projects through investments starting from € 250, -. Investors pay 0.5% of the invested capital to SamenInGeld in the first year and a lower percentage thereafter. Furthermore, investors acquire their mortgage right by the foundation Investeerders SamenInGeld, increasing the certainty of their investment.

SmartCrowd is real estate investment platform that uses a crowdfunding model. It provides the opportunity to access real estate through beneficial fractional ownership. The online platform enables the average investor to build a personalized investment property portfolio with a minimum investment of \$1,500.

www.smartcrowd.ae



Proportunity uses technology to remove the biggest barrier to homeownership: large down payments. They lend the down payment gap that would take buyers years to save, in exchange for equity in these homes, helping people with their home ownership. Because Proportunity models future home prices and spot low-risk homes, they can offer these loans at lower interest rates. Proportunity has helped customers buy homes, secured debt funding from a pension fund and is an FCA-authorised mortgage lender.

www.sameningeld.nl

www.Proportunity.co



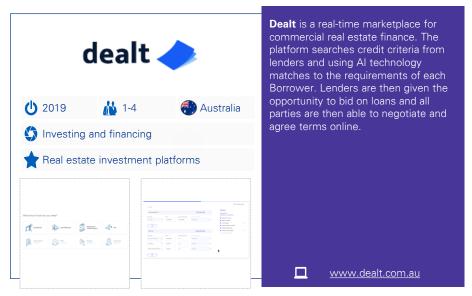
Bricklane provides people with a way to receive the financial benefits of owning UK residential property, without the inflexibility, hassle and taxinefficiency of direct investment. From £100, customers can invest in geographically targeted residential property portfolios, and earn returns from rental income and price changes, using an innovative take on the REIT structure. Compass, their proprietary data analytics platform, supports their expert property team in selecting properties for each of the portfolios, and shaping their overall strategy.

www.bricklane.com











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Liquefy is a platform which enables the issuance and distribution of tokenised securities backed by commercial real estate. Tokenisation leverages blockchain technology to enhance operational efficiencies and reduce the time and economic costs associated with trading previously illiquid assets, bringing asset owners and investors alike the benefit of unlocked liquidity.

www.liquefy.com



(1) 2018

Australia's home equity marketplace

1-4

Real estate investment platforms

Investing and financing

ifetime payment. Payments are guaranteed by institutional investors such as super funds & insurance companies who use the equity investments to duration match their long-term liabilities. Equikey is a debtfree way to unlock the wealth tied up in a primary residence.

www.equikey.com.au

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EquiKey aims to enable homeowners

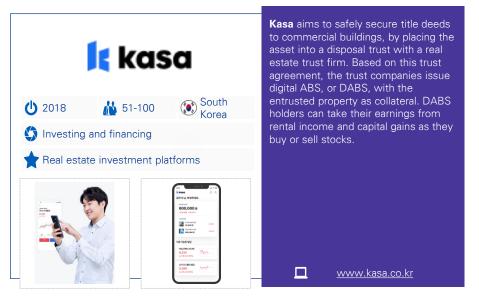
aged 65 and over to supplement their

retirement income by trading a share of the future value of their home

(equity) for a lump sum, fixed-term or







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The rise of social media made it possible for people around the world to easily connect with each other. Thanks to multiple innovations the connectivity between stakeholders in the Real Estate industry has improved as well. Different platforms link buyers and sellers of both private as commercial Real Estate or property owners and construction/ maintenance workforce. Furthermore communities are connected to each other either for retail purposes or for storage rental. All these inventions lead to more digital visibility of Real Estate and speeds up transactions between tenants and owners.





BIM Track offers a cloud-based communication platform allowing users to centralize project coordination information and access it through various platforms. The functionalities focus on project management and include coordination automation, custom analytics, issue resolution, reporting and templates.

<u>www.bimtrack.co</u>

Casalova is a real estate marketplace that algorithmically matches prospective renters to nearby agents who are live and ready to take on new clients. After a renter enters their requirements (such as price, location), the company a variety of condo, home and apartment listings.

www.casalova.com



Homicity is a real estate marketplace where customers can find mortgages, insurance and properties. The customers can use the company's Al powered search engine to find the property which suits their needs.

www.homicity.com

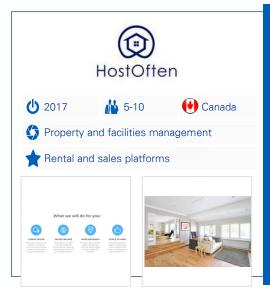


Dozr offers a platform that facilitates short– and long–term rental of heavy equipment by acting as a middleman between business owners looking to rent out heavy equipment and contractors looking to rent. Dozr offers a fleet of heavy equipment such as excavators, loaders, skid steers, tractors, vehicles, rock trucks, and lifts.

www.dozr.com







HostOften is a vacation rental property management company that allows owner's property to be listed as a vacation rental, executive rental and long–term rental. It also offers full service property management and online Airbnb management. All services are covered from creating a listing with professional photography to 24/7 guest communication and support to cleaning/restocking services.



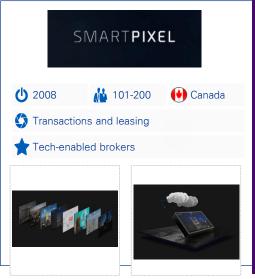
Lane offers a platform for property owners, which focuses on digitizing and automating office portfolios. The platform's functionalities include managing employee handbooks, tenant directories, guest registration, maintenance updates, and communication, amongst others. Lane aims on changing the way people interact with the places they work and the people they work with.

PROPERLY

U 2018 21-50 Canada
Transactions and leasing
Rental and sales platforms

Properly had developed a product that uses machine learning to offer homeowners a market price for their home. The owner can choose to list it on their market, or sell it to Properly

www.joinlane.com



SmartPixel.tv offers interactive, digital presentation tools, focused on graphics and interactive strategy. The application's features includes solutions for real estate like finding units based on search criteria, comparing plans, viewing panoramas, capturing ambient light according to time of day, visiting and customizing interiors, and exploring common areas and the project's surroundings.

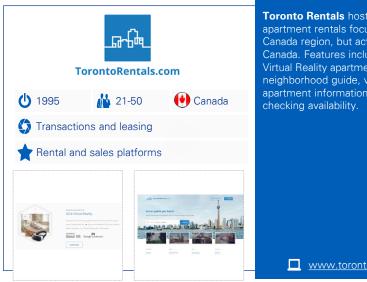
www.hostoften.com

www.properly.ca









Toronto Rentals hosts a website for apartment rentals focused Greater Canada region, but active throughout Canada. Features include 3D and Virtual Reality apartment tours, a neighborhood guide, viewing apartment information and price, and

www.torontorentals.com



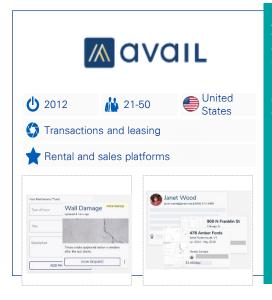
Arcbazar is a crowdsourcing platform for architectural design services. Services such as remodeling jobs, additions, retail, office spaces, landscape, or any other architectural project. The client describes the project, uploads images and basic info. Arcbazar distributes the financial awards, and hands the project to the client.

www.arcbazar.com



Avvir is a software platform aiming to bring transparency to construction and building management. The company continuously updates its digital replicas of buildings, offering up-to-date asbuilts and other information. This allows for tracking building progress and catching mistakes before major rework is required.

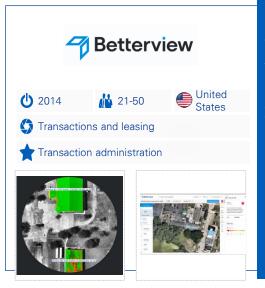
> 口 www.avvir.io



Avail is an online, end-to-end platform for DIY landlords and their tenants, offering tools for landlords owning a smaller amount of units. Its features include advertising vacant units, requesting rental applications and credit reports, signing leases, and collecting rent.

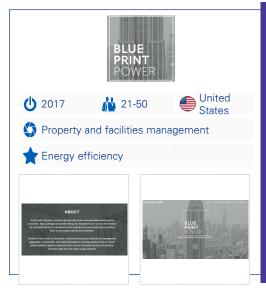






Betterview offers a property data platform offering insights in transactions concerning buildings and properties to real estate practitioners. The platform's features focus on capturing, organizing, and analyzing data for buildings and properties, aimed at reducing risk, costs and waste.

www.betterview.com



Blueprint Power has the mission is to accelerate the growth and financial sustainability of distributed, intelligent clean energy by helping regional groups of real estate companies transform their portfolios into power plants. More specifically, they manage these power plants to generate excess supply that they can then sell to markets and customers who increasingly need a more and higher quality supply of electricity.

<u>www.blueprintpower.com</u>



BuildingConnected is a preconstruction platform to streamline the bid and risk management process, thereby enabling real estate owners and general contractors to hire qualified contractors for their projects. BuildingConnected's platform is used by over 2,500 general contractors and owners, and more than \$100 billion in new construction is enabled through the BuildingConnected platform every month. Previous projects range from the new Golden State Warriors stadium to local schools and hospitals.

www.buildingconnected.com



Brivo combines access control and video surveillance to manage facilities from anywhere. Remote management lets security administrators add users, edit permissions, create access schedules and user groups, and open doors without having to be onsite.

www.brivo.com

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Compass is a real estate technology company with an end-to-end platform that supports the real estate buying and selling workflow. The company aims to deliver an efficient experience to both agents and their clients and is active across the U.S..

<u>www.compass.com</u>



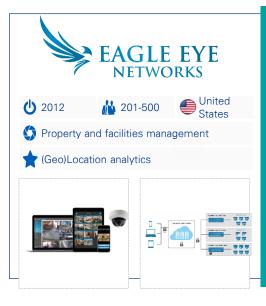
coUrbanize gives real estate and planning teams a suite of online tools to manage information and communication for a project. Their technology and services are engineered to help project teams increase engagement from a broader audience while saving time and money. The customized project plan can be launched in minutes.

www.courbanize.com



EasyKnock offers a solutions to unlock the value of real estate. Sell and Stay is a commercialized residential sale leaseback program that allows homeowners to sell their home, and thereafter lease it back. MoveAbility is a sale-leaseback product designed for homeowners planning on moving. MoveAbility enables homeowners to access their home equity before it hits the market. It enables homeowners to access the money and time to find (and fund) their home, without losing out on their current home's market value.

www.easyknock.com



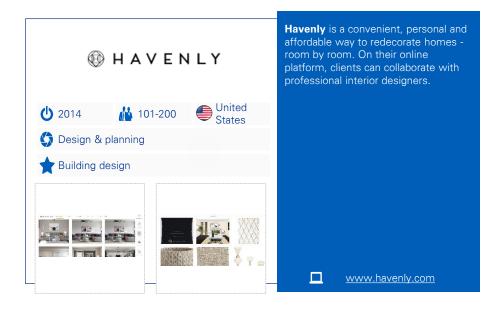
Eagle Eye Networks' cloud managed solutions provides cloud and on premise recording, security and encryption, and broad analog and digital camera support - all accessible via the web or mobile applications. The company provides RESTful API platform and Big Data FrameworkTM, which allows indexing, search, retrieval, and analysis of live and archived video. Examples include warnings if unauthorized areas are entered, the amount of people in a retail store and display analytics.

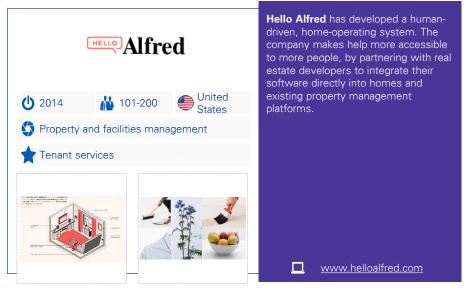
www.een.com

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the US the services of selling, buying or trading in their own home. The company improves the process of the buying, selling and trading of homes by ensuring safety and the transactions.

www.opendoor.com



Mall IQ is a Location Intelligence Platform, bridging offline & online for payment/banking, retailer, loyalty, ecommerce and telecom companies. Mall IQ applies data analytics by measuring purchasing intent of customers in shopping malls and high streets in real-time and making it actionable & insightful with no hardware indoor location technology by integrating SDK into payment/banking, retail, loyalty, e-commerce and telecom







Reasi is an automated real estate closing platform for vacant land buyers, sellers, and brokers. Geared for realtors, Reasi is a digital clearinghouse for money that provides a secure and seamless home closing experience, eliminating escrow costs. Powered by blockchain technology, Reasi empowers real estate agents to be the convenient one-stop-shop home buyers and sellers.

SNAPPT (1) 2016 5-10 Transactions and leasing Transaction administration

Snappt offers a tenant screening service. This service aims to spot fraudulent documentation in the tenant screening process.

www.snappt.com



Workwell creates a mobile platform that centralizes the access to all services made available to tenants in an office building. Workwell is built as an open platform and comes with a software development kit ("SDK") that enables third-parties to integrate themselves. Workwell offers features, and the ability for both building owners and tenants to make their services available.

www.reasi.com

www.workwell.io



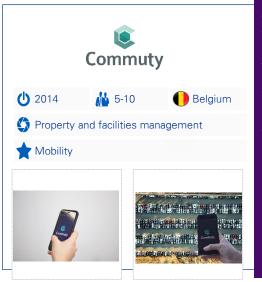
Spaceflow helps landlords to attract and retain top tenants by combining the tenant experience platform and community management. Spaceflo allows landlords and space operators to customize services and improve tenant satisfaction. Occupants have amenities, services and community life in the mobile app and community managers provide content, events and personal communication.











Commuty is a web and mobile application, which is designed for a better parking and mobility management within companies. Through it application it is possible to determine rules for parking spots and the usage is reported and its data shared with their clients to further increase efficiency of their parking facilities.

www.commuty.net



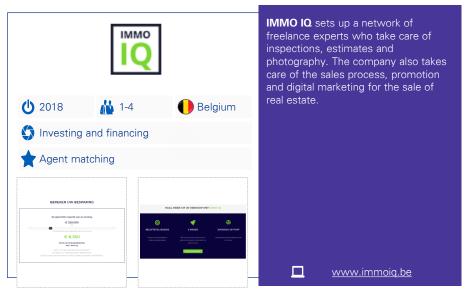
The **BuildEye** digital platform allows construction companies and architects to compile information about their projects such as project planning and contact details of all stakeholders on a central location, the BuildEye website. Both customer and workforce can consult the latest information and communicate about the project via the BuildEye mobile app.

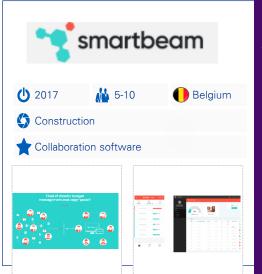
www.build-eye.com











Smartbeam offers a collaboration platform on which all stakeholders of a construction project can cooperate. The platform can be used for budget management, process automation and bid management.

www.smartbeam.com

BIM and Digital Twin

(1) 2014

Design & planning

= neanex

21-50

think as many - work as one

Belgium

Neanex provides collaboration software for AECO professionals (architects, engineers, contractors and owners) in construction to improve project information, communication and workflow management throughout the project cycle. The company developed an open BIM integration platform, based on data instead of documents and files, that communicates with any design software. The cloud-based software solution aims to significantly reduce failure costs by enabling zero-email and first-time-right projects.

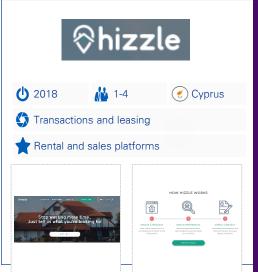
www.neanex.com



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Hizzle built a platform where home seekers and home sellers can communicate in a transparent and trustworthy way. Both parties are supported within the platform, which speeds up the process and the deals can be signed online.

www.thehizzle.com



platform which is for property developers. On this platform, the developers can engage with their customers and automate tasks, which is to support the customer follow-up and therefore satisfaction.

Ziggu offers a customer follow-up

www.ziggu.co







Qobrix was built to assist property developers and agents capture more opportunities for growth and profitability by focusing on customer acquisition and service. With a robust, multi-featured CRM System and truly innovative portals, the company provides the platform for increasing operational efficiencies and maximizing customer exposure through a variety of digital channels.

(1) 2013 **1** 21-50 Construction Safety & security www.gobrix.com **BAZIMO**

CONGRID

Finland

France

Congrid develops and markets a software platform in which all quality and safety management issues of construction projects can be managed, with the aim of improving safety and quality, maximizing site productivity, and reducing costs for customers.

www.congrid.com



CAD.42 solution functions like a software-based platform for Production Operations Management. CAD.42 Production Execution System (PES) offers a service to manage people, processes and resources of production operations at a plant. CAD.42 PES product offering is a global solution to manage production, safety, quality, maintenance and labor tracking processes across all locations.

www.cad42.com

(1) 2016

5-10

Property and facilities management

Property information platforms

Bazimo offers a web solution that adapts to the landlords. The application collects and synthesizes all the information and facilitates decisionmaking by extracting customized analysis. The exchange of information and documents with tenants is



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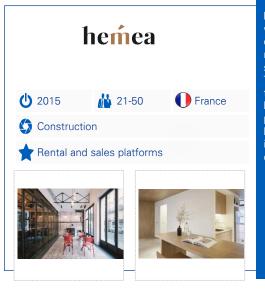


HABX offers a crowdbuilding solution that relies on three digital tools: localize, price and optimize. Localize is an algorithm of geographical recommendation, offering clients a place of life according to their displacements, his work, his hobbies. Price offers clients to configure their home, from the interior design to the exhibition or places shared with neighbours, measures the related financial impact. Optimize allows the production of plans considering inhabitants' desires.

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Hemea assists and advises individuals who want to renovate their apartment or house by offering services from reliable companies and in doing so simplify and offer secure relationships. The startup is positioned as a trusted third party to rebalance the relationship between the individual and professionals. It certifies its companies by checking their solvency and their insurance, and questions their previous customers before their integration.

www.hemea.com



Hostnfly provides Airbnb rental management. The owner can choose the dates, receive an income proposal and the website takes care of the logistics related to seasonal hiring. Other services as cleaning, reception and maintenance is taken care of.

www.hostnfly.com



Leavy is a community that provides services to improve the management of renting an apartment. It will take care of everything, such as reception, cleaning and more. When the owner is back, the company will take care of the apartment by welcoming and cleaning. This allows for additional income without any hassle for home owners.

www.leavy.co



Immodvisor assists real estate professionals in the management of their e-reputation. The company offers a community platform to provide controlled customer opinions on real estate and housing professionals as well as advice, testimonials and tips. The company aims on creating transparency in the real estate sector and has integrated Block technology to authenticate the reviews.

www.immodvisor.com

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Syment is a digital hub for residential property managers to connect stakeholders. Syment aggregates real estate data to help residential property managers to manage their portfolio. Moreover, by involving users they create the opportunity to communicate with all real estate departments, which in turn increases the ability to rent.

www.syment.com



Smiile works alongside lessors, real estate developers, syndicates and communities to invite them to use its platform to create a link between their customers. The solution developed by Smiile aims to integrate, as a place of exchange between the various stakeholders. The goal is to recreate the social bond within the residence as well as to facilitate communication between the resident and his managers.





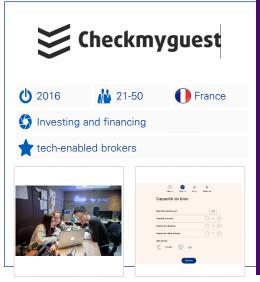


Take a desk rethinks and revives vacant spaces while creating an accessible, consistent and comprehensive hosting offering for talented young businesses. It offers innovative co-working and office spaces or desks across France.

www.takeadesk.com



Unlatch takes care of time-consuming tasks revolving around the sale of properties. It offers simple, userfriendly design suitable for all (mobile) devices. Their property development software will help streamline transactions. Services and options include CRM, sales agents space, digitized documentation(including esignature and eIDAS-accredited electronic registered delivery) and automation of manual processes (like alerts and reminders). In addition it hosts a customer portal and a collaborative workspace for cooperation between stakeholders like property developer, seller, financial adviser, sales agent and solicitors.



Checkmyguest is a company specialized in turning commercial premises into short term rentals. Checkmyguest enables real estate owners to maximize profitability for short term rentals with an optimized listing of these properties on platforms like Airbnb, Booking.com, Expedia, Abritel or HomeAway. It is a complete solution integrating all the skills required to manage property rentals, from feasibility study to running operation.

www.checkmyguest.fr



WeMaintain is a platform that connects technicians and customers. The customer gets responsiveness and quality of service thanks to a dedicated technician, empowered and motivated financially. Digital brings the necessary transparency on operations and visibility on prices.

www.getunlatch.com

www.wemaintain.com

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By creating a Common Data Model, in conjunction with machine learning and artificial intelligence, **BuildingMinds** enables building owners and investors to handle future challenges and sustainably manage their portfolios. Owners can more effectively manage their assets through real-time transparency on compliance, usage optimization, reduced energy and service costs, and increased tenant satisfaction.

www.buildingminds.com



Casavi offers a cloud-based service and communication platform for property management companies. By connecting these companies with property owners, tenants and relevant service providers as well as automating routine tasks, Casavi acts as a central hub for all key stakeholders. The company aims at increasing costeffective business processes and increasing customer satisfaction.

www.casavi.de



GlobalCRE is a Software as a Service solution for commercial real estate brokers, enabling them to collaborate with other brokers, share deals and gain exposure to global business opportunities and clientele such that the revenue can be increased.

www.globalcre.net



BidX1 is a digital property company, using technology to enhance the experience of buying and selling property. The company aims to become an international property trading platform, allowing buyers and sellers across the globe to complete transactions digitally.

www.bidx1.com

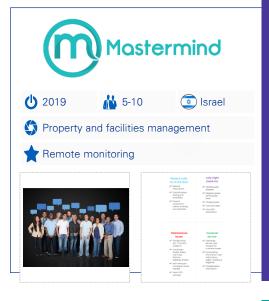
134







HomeHero develops and operates end-to-end technological platforms designed to optimize the sale process of residential real estate. The company utilizes machine learning and Al technologies to match between property buyers and sellers; to provide important information on the property and the surroundings; and to easily run effective marketing of the agent's inventory.



Mastermind connects hotels with online receptions via video technology. This allows hospitality and other commercial real estate to welcome guests at late hours, provide customer service digitally and eventually reduce operational costs while improving customer satisfaction.

www.master-mind.co



C2 Community Services offers a digital platform that assists, guides and enhances every aspect of the residency experience. The platform does so by providing information, community and social tools, communication and support tools, and payment and commerce mechanisms. The platform aims to revolve around the tenant's needs, whilst also catering to management companies and property owners.

www.homehero.co.il

www.c2communities.com



Younity is a communication platform reinventing WiFi experience in commercial and residential RE. Younity empowers property managers to offer instant, property-wide internet, with proactive service while leveraging our platform to power and monitor all systems and technology within the building. Younity's SaaS platform sits on top of the wireless hardware and provides maintenance automation, data collection and analysis, and a hub used as a crossroads for connected devices while maintaining and securing the wireless infrastructure.

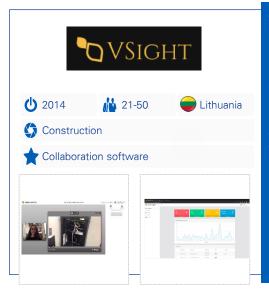
www.vounity.ic

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(1) 2018

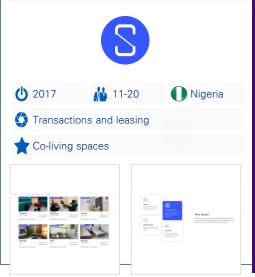


VSight is an industrial augmented reality software platform that helps enterprises transform workforce into intelligent workforce and increase productivity by integrating wearable and mobile software into the enterprise workflow. Through smart glasses they offer the expertise of others remotely, hands free and real-time. This enables construction workers to leverage on the knowledge of (external) colleagues.

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Smartagent is real estate platform to sell properties for a fixed agent fee. The company does so in five steps. Smartagent is active in Luxembourg.

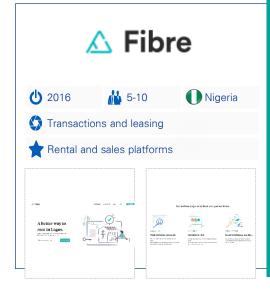
www.smartagent.lu



SPLEET is an online platform that provides subscription-based access to fully furnished living spaces, with flexible payment options. SPLEET essentially creates easier living solutions, via co-shared & entire space bookings with all bills included. By using the SPLEET platform homeowners are able to list their property and renters are able to find and book premium living spaces across Africa.

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www.spleet.africa



smartagent

1-4

Transactions and leasing

Rental and sales platforms

Fibre is building a convenient way for consumers to get a home. Whether clients are starting a career, starting a family, or buying their first home Fibre offers services to find housing options, offer flexible payment plans and lease terms. Next to this they have optimized the process of finding tenants for landlords, guarantee payments and verify tenant backgrounds.

www.fibre.ng

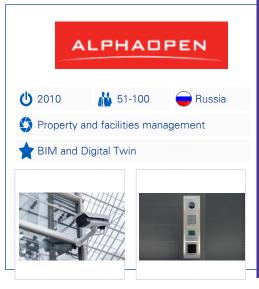




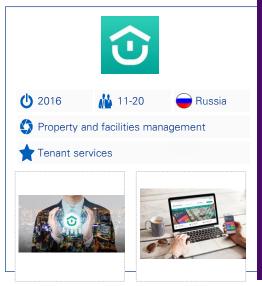


Infraspeak is a smart maintenance and facility management tool for every day usage. It is a technical operations platform that completely adapts to companies' needs. It includes support for services such as corrective maintenance, audits, stock management and reporting. Among others, it makes use of NFC technology for maintenance.

<u>www.infraspeak.com</u>



Alphaopen created a software platform for Intelligent Building solutions, called Alphalogic. It unites technologies (such as artificial intelligence and BIM) and management of the entire engineering and technical infrastructure of buildings (security, remote access control, interphone, and engineering systems, IT infrastructure, multimedia) into a single integrated solution that provides for end-to-end infrastructure and information digital services to residents, lessees, all functions of a management company, as well as for the automation of dispatching processes and incident management.



Domopult is an online platform which automates communication between tenants and property management companies where tenants can raise issues and file requests. The platform enables people to track property and utility bills, get visibility of property issues solving and get an access to ondemand services of property management company and local third-party service providers.

www.domopult.ru



Brainsoft serves as a marketing and loyalty programs platform for shopping centers, which includes online & offline visitor identification, analysis and segmenting modules and all available channels of personal communications. Through dashboarding, Brainsoft aims to visualize organizational performance.

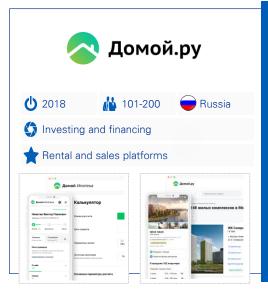
www.alphaopen.com

www.brain-soft.ru

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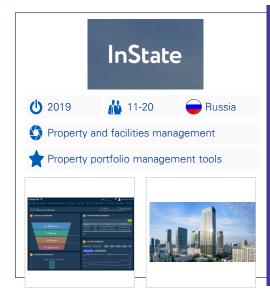




Domoy.ru is a platform for real estate transactions that combines the services of selecting and buying an apartment, optimizes processes and services for both individuals and partners, real estate agents.

Services that are available to customers and partners include: classified real estate; digital RE mortgage platform; on-line registration service; online calculations; real estate insurance; legal services; property valuation; repairs; design; moving; and cleaning.

www.domoy.ru



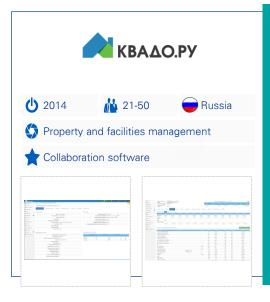
InState are a property management low-code platform with integrated property, facility and incident management solutions for all real estate sectors allowing owners, managers, investors and other stakeholders access to information specific to their queries.

www.instate-pm.com



Odin is an industry cloud platform designed to automate the operation and management of commercial real estate properties. Odin makes use of a client mobile app, a single web portal for employees and lessees, and a mobile app for operating personnel. All issues, from access authorization requests to lease agreements and lifting mechanisms maintenance plans, are dealt with on a one-stop shop basis.

www.o-din.ru



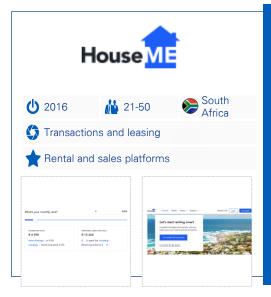
Kvado is a SAAS-based service providing for the automation of business processes of housing and public utility sector management companies and the organization of interactions between market players and owners, lessees and residents.

www.kvado.ru

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HouseME is an online platform that aims to take the hassle, cost, and risks out of managing long-term residential rentals. Located in South Africa, HouseME provides a rental process by connecting landlords and tenants alike in a free and less stressful way.

www.house.me



Allthings offers one single platform that connects tenants, property owners and service providers, thereby optimizing the tenant experience and increasing operational efficiency. The company offers a solid foundation for the long-term digitization strategy of operational process landscapes.

www.allthings.me

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AssetLog is an online platform that supports real estate managers in managing their assets. All stakeholders are able to work together in one online environment that is always up-to-date. Through unique QR codes the AssesLog App registers relevant information such as maintenance activities for every asset. All documents such as certificates, renderings and notes are online available and users are notified in case any of these documents expire.

www.assetlog.nl



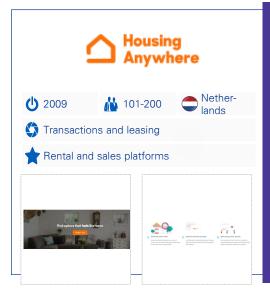






Chainels provides a pocket-sized community tool offering a full-service property management portal & comms platform for retail-led, mixed-use destinations& placemaking communities. The company serves over 250 communities and 35,000 users consisting of strong, engaging, safe and sustainable communities for mixed-use areas, shopping destinations, multi-tenant office buildings and residential schemes. For investors, owners, developers, operators, local authorities, public officials, occupiers and other stakeholders.

www.chainels.com



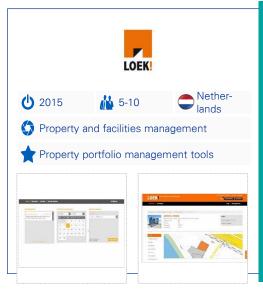
HousingAnywhere is Europe's leading booking platform for student accommodation. Working closely together with over 120 universities worldwide, Housing Anywhere helps their students to easily find and securely book accommodation abroad and connects students with trusted landlords on its platform. Housing Anywhere offers students, private landlords and commercial housing operator a platform to advertise their rooms to — and get them booked by — a global audience of over 3 million students annually.

www.housinganywhere.com



Mobypark offers a parking management system that provides a solution for parking issues by registering all users, providing real-time availability of parking spots, and allowing different means of access (easy integration with existing access systems). Additionally, Mobypark's system opens up the unoccupied spots for third parties to rent through its online reservation platform, generating additional revenue for the building owners and solving parking problems in city centers.

www.mobypark.com

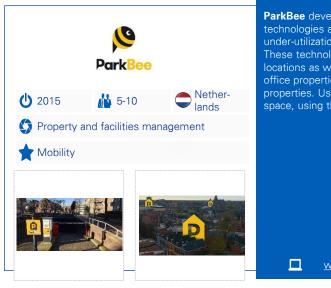


LOEK! is an online platform for managing and maintaining buildings, which brings together all stakeholders involved in one place. All the information is stored and accessible through one online file provided by a blockchain network of computers. The platform enables property managers, maintenance companies and tenants to cooperate and interact in an easy manner. This way, property maintenance is made more efficient, smarter and easier for all users.

www.loekonline.nl

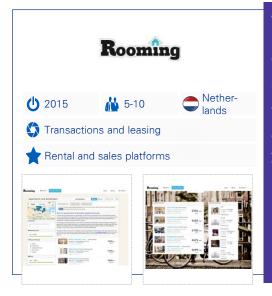






ParkBee develops smart parking technologies aimed at reducing the under-utilization of parking locations. These technologies integrate public locations as well as parking lots of office properties and residential properties. Users can reserve a parking space, using the ParkBee-app.

<u>www.parkbee.com</u>



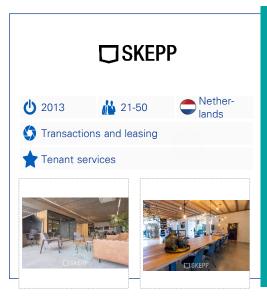
Via **Rooming**'s platform users can message potential roommates and landlords. Rooming shows users any connections they might have to people renting a room, making the search process more trustworthy. As a result, landlords and tenants know exactly who they are dealing with. Thanks to its dashboard landlords and tensts can manage their messages through just one place instead of multiple emails.

www.rooming.nl



Storage Share is a marketplace where real estate owners can list their vacant space and rent it out to individuals or businesses looking for storage. Whether it be a garage, a vacant office or a warehouse, Storage Share provides an alternative to the expensive self-storage market.

<u>www.storage-share.nl</u>



SKEPP serves 3 products: Officelisting, Officeplanner, and Officekit. Officelisting brings supply and demand for office space together, while Officeplanner serves as a one-stop-shop for your interior design. Additionally, Officekit offers various hospitality-facilities and tech-solutions for property owners.

www.skepp.com







Transformcity is an online platform for collaborative urban development, aimed at growing a sustainable and inclusive local community of coowners. This platform brings together stakeholders and the local government to directly share and discuss data, plans, ideas and resources and collaborate on local projects. Furthermore, Transformcity helps to build a local community and empower it to structurally self-organise through crowdfund capital. Transformcity is currently being implemented in two of Amsterdam's largest transformation areas

www.transformcity.com



Ziezodan is a service provider and digital partner in the real estate & maintenance domain. They bring tenants, property managers and maintenance companies together on a user-friendly platform. Ziezodan increases the insight into (and the efficiency of) non-planned repair maintenance. They simplify the process and communication regarding reporting, planning and repair on an automated platform.

www.ziezodan.nl



Armut is a marketplace for local services like cleaning and maintenance in Turkey and uses proprietary matching and pricing algorithms. Customer satisfaction is in the heart of its business model. Armut's marketplace makes purchasing professional services as easy as shopping for any other product online. With a fully automated site that matches customers with local professionals, Armut has simplified and streamlined an otherwise daunting process.

www.armut.com

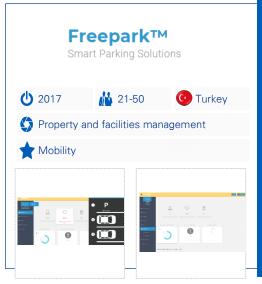


Zig Websoftware offers a digital solution for housing corporations, allowing them to collaborate more efficiently online, both with tenants and people searching for a house. The online platform allows tenants to upload repari requests, pay their rent online or change personal details through one central system. Another solution the company offers is a platform connecting people looking for a house or office with housing corporations.

www.zig.nl







Freepark is a hardware and software solution that creates reservable parking spaces. OKB Technology company producing smart parking barriers that allows remote authorization by smartphones, web panel or Bluetooth. Freepark Smart Parking Lock enables you to authorize anyone you want to park in your reserved parking spot by using a smartphone or a web panel, it can be integrated by using Rest API and can work together with your firm's existing software and management system.

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Tenant services

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Tenant services

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Property and facilities management

Kiraplus offers tenant scoring solutions to landlords, realtors and property managers so they can instantly identify whether tenants are financially responsible and reliable.

www.kiraplus.com



KPMG

ParkKolay is a mobile application that on the one hand directs people looking for a car park to suitable car parks, while on the other hand provides digital returns for companies that operate car parks within a global network, especially by e-invoice, online collection, performance and inventory management.

www.parkkolay.com

www.freepark.co

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Agent matching

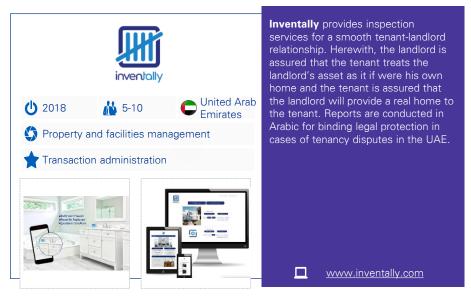
Mutlubiev is a marketplace for online cleaning services. With technology and precise processes, they want to provide house cleaning services, at any time through trusted professionals Currentlym Mutlubiev operates in 4 different cities and 2 different countries

www.mutlubiev.com

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Property Monitor is UAE's real estate data platform offered by RICS accredited property professionals. Their data and intelligence service is aimed at increasing transparency in the UAE marketplace - Dubai and Abu Dhabi. Agencies, developers, consultancies and banks can access real-time data and expert intelligence in order to make more informed decisions, based on actual transactions, values and trends.

www.propertymonitor.ae



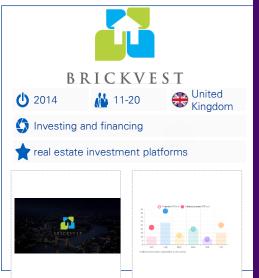




Aphex's Planner provides construction developers with a lean, collaborative, short-term planning platform to help them work smarter. This entails that plans can be made in a very short period of time, progress can be monitored, new insights and/or reports can be submitted in real-tme for up-to-date information handling. Also, the planner provides the users with analyses to break down the data.

 Appear Here has developed a website for booking international short-term commercial spaces to be used for a broad diversity of business activities like promotional sales, testing new products, roadshows and many more. For landlords it forms an opportunity to rent out commercial space per week, month or quarter and increase average renting prices.

www.appearhere.co.uk



Brickvest is a global real estate solution platform for investors and deal sponsors. With Brickvest, investors can access real estate investment & debt financing opportunities in global markets from 850+ institutional quality sponsors around the globe and build their own real estate portfolio.

www.aphex.co

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www.brickvest.com



Arthur Online is a cloud-based property management solution supported by a suite of dedicated apps. It gives property managers control over their portfolios from anywhere; by bringing agents, tenants, owners and contractors together on one platform. Arthur Online gives users access to online property management tools in one integrated bundle. Through automation and systemization, Arthur Online saves time for its clients daily.

www.arthuronline.co.uk

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Built-ID reduces the barriers to community engagement with visually engaging consultation tools, enabling the community to feel a sense of ownership and positive investment in a development scheme. They educate and guide local residents via clear timelines and digestible fact and give the community the opportunity to vote, with their input having an actionable impact on the decision-making process.

www.built-id.com



As a multi-sided marketplace, **Canopy** aims to address aligning incentives across the rental value chain through its core solution, RentPassportTM. This is an online passport to improve credit, which will lay the foundations to a data driven platform aimed at helping millions of tenants achieve their financial goals.

www.canopy.rent



Flatsnapp is an Al-powered, datadriven platform that delivers faster, more price friendly rental transactions with a high focus on customer service for busy landlords and tenants. Their solution allows its clients to find and rent properties in a customer friendly manner.

www.flatsnapp.com



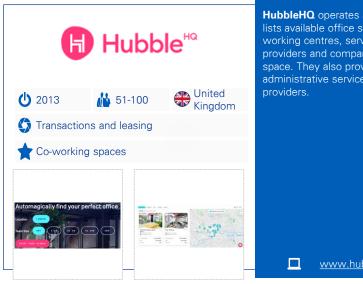
Flatfair is a London-based payment technology startup solving an affordability problem for tenants. Flatfair maintains an innovative payment technology, in which landlords can offer tenants the option to pay an affordable membership fee instead of an expensive deposit and then charge them directly for any lawful claims at the end of their tenancy. After partnering with some of the largest property firms, Flatfair has become a fast-growing deposit alternative.

www.flatfair.co.uk

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HubbleHQ operates a website that lists available office space from coworking centres, serviced office providers and companies with spare space. They also provide payment and administrative services to the

www.hubblehq.com



Infabode aims to reduce the amount of time people spent trying to access key information from the real estate industry. They work with a network of content partners to provide a one-stop shop for real estate industry research and insights. Infabode provides a platform that enables their users to analyse global industry sectors, while also increasing the reach of their content providers' information to a highly targeted audience.

www.infabode.com



JustPark operates an online and mobile booking service through which drivers are able to book to park in empty private parking spaces.

www.justpark.com



IPSX operates a stock exchange dedicated to trading stakes in companies which own single commercial property assets. The company operates two markets. IPSX Prime admits to trading issuers owning underlying single commercial real estate assets or multiple assets which are, or proposed to be, securitized and traded on the Exchange. IPSX Wholesale is for professional investors and designed to provide real estate owners with a UK market capable of accepting different corporate

> www.ipsx.com

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Locale provides technology that connects buildings, and creates healthier and more efficient places to live & work. Locale's property management software facilitates successful building management by instant communication and visibility over everything, from facilities booking and building maintenance, to deliveries and signing in visitors. It also helps occupiers stay in the loop with their local community through lifestyle services, wellbeing incentives, sustainability workshops and offers & promotions that support local businesses.

www.locale.co.uk



Native Finance is a digital brokerage for Real Estate finance operating across the capital stack. Native finance supports clients to structure, and negotiate funding for acquisition and development. The business provides clients access to an extensive network spanning 300+ institutional funders, rigorous analysis based on proprietary data and processes, and an execution team with extensive experience.

www.nativefinance.co.uk



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OneDome is a technology company that aims to change the way people search for and buy and sell their homes, by making the process straightforward, streamlined and transparent. OneDome is changing the process offering to an end to end digital property transactional platform. OneDome's technology enables customers to search for properties, connect and communicate with property professionals, and transact on a secure digital platform.

www.onedome.com

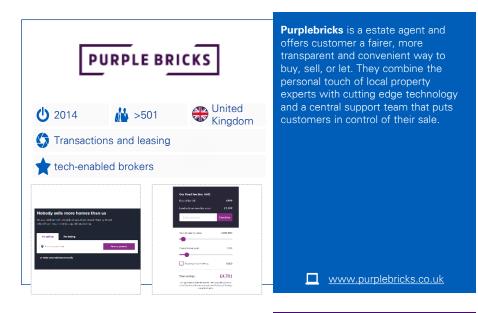


Nested operates an online estate agency that specializes in minimizing the exchange time and the number of offers falling through. The company aims to give home sellers the freedom to move on their own timeline, support from trusted agents and technology that makes the industry transparent.

www.nested.com











The **Plum Guide** develops a website that allows users to book holiday homes, from a selection of homes tested and approved by the company's in-house hospitality experts. Founded in 2015, the company primarily offers UK-based holiday homes, at the moment.

www.plumguide.com



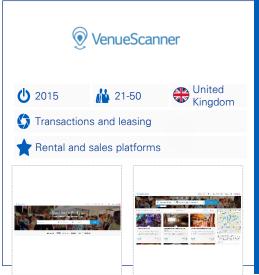
StrideUp operates an online platform through which prospective homeowners can reduce the initial cost of buying a property by sharing it with selected investors. With StrideUp, customers buy the portion of the home they can afford today and when they are ready, they can buy the rest.

www.strideup.co

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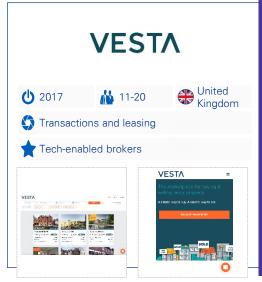






VenueScanner creates a simple and smart self-service for hosts and organizers. Event organizers search their venues ranging from churches and warehouses to hotels and meeting centres. Customers then enquire and book online. Venue hosts use the software to market their space to event organizers and to manage enquiries.

<u>www.venuescanner.com</u>



Vesta is an online marketplace for buying and selling investment property. They support sellers (individuals, developers, landlords, institutions and more) to sell properties with tenants in place to an investor audience who value income. Properties can be anything from individual units (homes, apartments) as well as blocks (broken or unbroken), health maintenance organizations ("HMOs"), portfolios, purpose built student accommodation ("PBSA"), rental retirement homes and off-plan properties with a rent guarantee.

www.vestaproperty.com



Archistar.ai helps property professionals grow using property technology. The company brings together local government planning information, property market data, and a design generator powered by Al. The Archistar Platform helps property professionals complete timeconsuming research, assessment and design work within a short time span by using artificial intelligence.

www.archistar.ai



ActivePipe is a nurturing and conversion platform built for the real estate and mortgage broker industries. ActivePipe combines marketing automation and predictive algorithms so agents and brokers know who to call, when to call and why.

www.activepipe.com

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Bricks + Agent offers a platform that assists property and facility managers in dealing with maintenance and inspection related tasks. The platform connects stakeholders for maintenance and inspections to the same ecosystem to ensure tasks are handled with the principles of mobility, transparency and visibility. Users can include the property or facility manager, the contractor, as well as the owner and tenants if applicable.

www.bricksandagent.com



Syncromesh, by Cognian
Technologies, is a wireless canopy
that enables building owners to quickly
and cost-effectively add a range of
building management solutions that
improve the comfort of its occupancy,
lowers a building's carbon footprint and
reduce energy costs – regardless of
the buildings size, location or age.

www.cognian.com



Equiem works with property owners and managers in the global real estate industry to improve their buildings and experiences by transforming them from brick & mortar structures into vibrant, connected and engaged communities with services.

www.getequiem.com



ConnectaJob is a B2B Facilities
Service Marketplace and Full Job
Management Platform. The company
connects owners and occupiers of real
estate with local service providers.
They have developed intelligent
workflows that combine procurement,
field service management and facilities
management.

www.connectaiob.com

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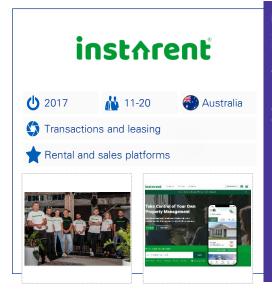






FMClarity is developing a platform to improve the management of facilities, assets communication and everything in between. The platform harnesses industry principles which becomes a single source of truth for transparency and engagement across organizations.

<u>www.fmclarity.com</u>



Instarent has developed a technology solution for end to end self-managing properties by offering tools for landlords and tenants. The online/mobile platform captures, manages and facilitates the entire rental management ecosystem by offering access to tenants, landlords, tradesmen, and agents.

www.instarent.com.au



Local Measure is a platform for the hospitality, tourism, retail and entertainment industries. The software platform allows businesses to receive real-time customer intelligence whenever customers are on premise, helping them to identify, understand and retain customers.

www.localmeasure.com



Liftango powers on-demand shared transport systems across the world. By guiding global organizations on how to plan, launch and scale their share mobility programs, Liftango reduces the spend on unnecessary parking infrastructure and help provide a path to a sustainable and climate-positive future.

www.liftango.com







Openn Negotiation is an online auction and property sales platform in Australia. The company's technology facilitates real estate transactions and generates market data that has previously been uncaptured. One key feature is that buyers and sellers can see the value of a property set by the market in real time.

www.openn.com.au



PAM is providing smarter navigation for iconic venues and destinations around the globe. Their software uses real-time centralized smart navigation to transform large venues into smart precincts that become more pleasurable, productive and profitable. PAM is a cloud based platform that scales to suit the needs of any complex environment and can be accessed on any device at any time through a secure network.

www.pam.co



Select Residential Property delivers research applications and insights focused of the prediction of future capital growth on the back of our proprietary technologies measuring the demand and supply. Offering direct consumer application and business application solutions, the company is focused on product solutions for multiple markets and targeted channels down to suburb level insights by house or unit markets.

www.selectresidentialproperty.com.au



The **SafetyCulture** iauditor app and platform is being used to ensure quality assurance and mitigate safety risks. iAuditor simplifies the auditing process by making it easy for anyone to effectively manage safety and quality from a mobile device. Frontline workers are able to report issues quickly to prevent an incident due to inefficiency and limited visibility.

www.safetyculture.com







Share with Oscar is a P2P platform for sharing private parking spaces such as driveways and garages. The platform updates in real time and the parking spaces are available to those who need it in hours these aren't used.

www.sharewithoscar.com



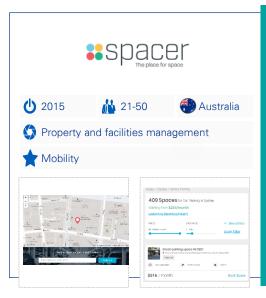
Sorted Services is a platform to source and manage household services. The company simplifies property management and provides ongoing analysis of rent, electricity, broadband and more in a central application. This allows for optimization of spending and have all data smart, simple and sorted.

www.sortedservices.com



TCPinpoint is a cloud based collaboration and management tool for the property industry. TCPinpoint simplifies the process and reduces costs for the property industry through collaboration and connection. The platform creates access to project documents and tasks to support projects and the delivery in retail and commercial property industry

www.tcpinpoint.com



Spacer is a web and phone based app connecting consumers to thousands of available storage and parking options across Australia and USA. As an open marketplace, the platform enables property managers and real estate owners to list unutilized storage and carparks for free, and generate incremental revenue from otherwise idle or latent assets.

www.spacer.com.au

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Property Share is an online marketplace that allows users to directly own completed real estate with other like-minded owners. It provides to own a specific fraction of a property while earning returns similar to purchasing the entire property through a simple process to view curated property offerings and providing customers the option to buy and sell fractions.



supports the enabling of standardization of services, amenities and in-room experience. Through the use of its proprietary apps for the inventory management, room-service, revenue management and customer relationship management.

OYO is a hospitality company which

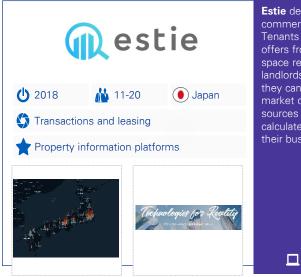
<u>www.oyorooms.com</u>

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Estie develops and provides commercial office information platform. Tenants can find office spaces by offers from agents, that are assisted by space recommend Al algorithm. For landlords, asset managers and brokers, they can gain access to exhaustive market data collected from numerous sources supported by rent estimation calculated via ML technology to scale their business.

www.estie.co.jp



Conqa aims to simplify the process of quality assurance (QA) for construction contractors. They connect the site worker to an engaging QA process, and the entire project team to its live outputs. In doing so, the process can be streamlined as well as made more engaging for both parties involved.

www.congahg.com



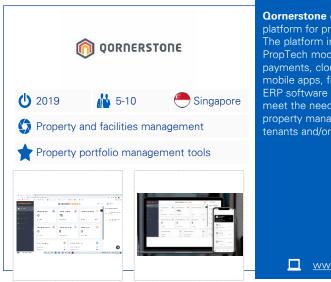
Zweispace has launched various solutions like the AutoCalc, an Al Architect for residential property developer that calculates the building plan revenue of a plot of land. Namazu is a big-data based Al Earthquake PML Measurer for property investors and home owners and an Integrated blockchain-based app utility token platform with various financial instruments for property stakeholders.

www.en.zweispace.co.jp

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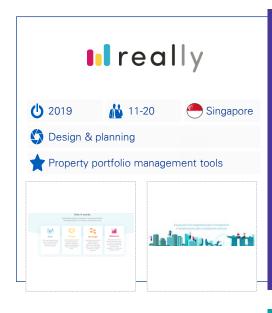






Qornerstone offers a cloud-based platform for property management. The platform integrates various PropTech modules like digital payments, cloud-hosted databases, mobile apps, financial accounting and ERP software to comprehensively meet the needs of building owners, property managers and individual tenants and/or residents.

www.qornerstone.com



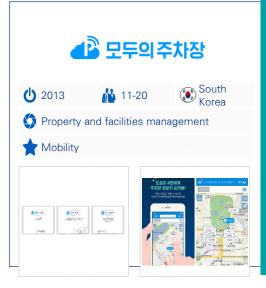
Really provides property management software that combines project management, E-tendering and a just and fair open marketplace solution. The integrated tool bridges the gap between real estate project management approaches and new technological innovation by support real estate professionals

<u>www.really.sg</u>



With the **ParkingFriends** shared parking service app, parking space users get access to easy and fast parking search, real-time parking reservation and a convenient payment method. At the core of the system is an IoT Parking Sensor, where Acconeer's A111 radar sensor is used to detect whether a parking space is occupied or not. This optimizes parking lot occupancy and user convenience.

www.parkingfriends.net



ModuParking offers a mobile phone application that matches idle parking spaces with temporary visitors. On the app, residents can register their priority parking spaces during chosen hours of the day, allowing visitors to book available spots near them.

www.moduparking.com

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Sustainable innovations have gained importance the last couple of years as consumers and hence, investors are increasingly prioritizing sustainability, something which is expected to increase more the coming years. Sustainable innovations are not limited to only sustainable construction but also include intelligence systems through collection and usage of data and IoT, all reducing or giving insight in how to reduce, one's footprint and costs.





Newatt is an application that strives to reduce its customers' energy consumption. The system is based on an integration of Internet of Things (IoT) technologies that measure the consumption of stores and/or equipment in real-time. Using Newatt will give users insight into their energy consumption and the possibilities to estimate costs of energy, as well as to implement predictive maintenance of equipment.



Aquanta develops innovative products that help combat climate change, with specific focus on the energy usage and inefficiencies inherent in our water heating and plumbing systems. The company has invented a new and sustainable approach to solar water heating. The Aquanta system leverages technology that was developed for their Ohm solar hot water monitoring system.

www.aguanta.io



Energetika NL is specialized in energy efficiency solutions. The company combines the newest sustainable technologies with an IoT platform in order to achieve energy savings and at the same time obtain exact analytics of people, machinery, products and processes. Their objective is to deliver real-time and actionable insights while reducing energy costs for enterprise business, so-called 'Energy Intelligence'. With their specialized solutions, Energetika's clients can achieve improved operational efficiency and productivity.

www.energetika..com

www.newatt.com.br



Aurora Solar offers a cloud-based software. This software enables solar PV engineering design, provides a workflow management functionality and a utility rate database, and facilitates sales and customer acquisition for solar installers and financiers.

www.aurorasolar.com

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Radiator Labs addresses two critical problems in steam heated buildings: energy waste and tenant comfort. The Radiator Labs system features the CozyTM, a wireless, low-cost, and easily installed retrofit that drops on top of radiators. The CozyTM provides room-level temperature control for management and tenants via web and mobile apps and offers savings of up to 45% in heating costs.

11-20

Property and facilities management

Estonia

WeSmart is a platform which helps to achieve more efficient energy management. The platform connects to sensors which collect data. Thereby, customers can get real time access to their consumption. Smart alerts and energy managers help to optimize energy usage.

www.wesmart.com



KPMG

Enermix offers software, design, professional services, and SCADA (Supervisory Control And Data Acquisition) services to control and monitor apartment, commercial, and industrial buildings. The software and professional services are mainly related to building automation, energy management, energy efficiency improvement, renewal energy, and hybrid heating systems.

www.talotohtori.fi

www.radiatorlabs.com

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Energy efficiency

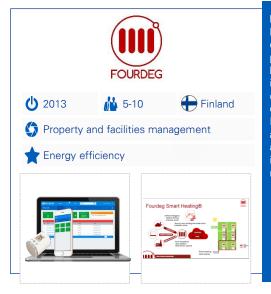
(1) 2017

R8 Technologies is a company that's focused on decreasing energy consumption in commercial properties whilst keeping a comfortable indoor climate for every room and area simultaneously adding significant savings for both the building owners and managers. R8tech's Al based R8 digital operator takes care of commercial buildings' indoor climate while saving energy and reducing CO2

www.r8tech.ic

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Fourdeg offers a B2B SaaS service of heating optimization for construction, energy, energy service companies, property management companies and building owners. The service improves indoor comfort and saves in heating costs through lower heating energy consumptio and Demand-side Management. The technology works automatically at room-level accuracy in any size of old and new buildings, including commercial, public, and residential premises.

www.fourdeg.com



Nuuka Solutions offers a platform to centrally monitor and manage energy efficiency, indoor air quality, and HVAC processes in commercial and public buildings, visible at the entire real estate portfolio level. The Nuuka SaaS device is independent of manufacturers, which helps to automate data collection directly from energy meters, building automation systems, IoT systems, and utility companies.

www.nuukasolutions.com



QHeat is developing geothermal heat wells that are dug much deeper (up to 3km) than traditional ground heat to attain higher temperatures and thus more energy. The heat well technology is also envisioned to bring energy down the well during periods of excess capacity to re-heat the bedrock and compensate for the energy gap created during the heating phase.

www.qheat.fi



OptiWatti offers a smart software solution that analyzes outside temperature, weather forecasts, electricity prices and how each room reacts to temperature changes. This way, the company helps minimize heating and cooling costs for residential real estate.

www.optiwatti.com

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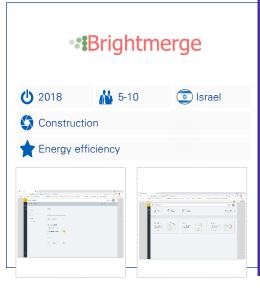






The technology of **Solen** calculates and detects the natural luminosity and direct sunlight of a property, for each day of the year, at any time. Today, Solen supports its customers in the choice of their future housing, whether existing or new.

www.solen.co



Brightmerge offers a Software as a service Enterprise platform coupled with an IoT operating system for optimizing renewable energy microgrids during the design, procurement, and operational phases of a project. The company's software uses proprietary machine learning and big data decision-making that automates the design, development and operations of renewable energy microgrid systems. The platform incorporates Transactive Economic Dispatch algorithms to optimize system performance.

www.brightmerge.com



Amber provides a service that will make eco-friendly driving attractive and easy. Amber's service uses the concept of the sharing-economy, while only utilizing 100% electric cars. The goal is to minimize unnecessary usage of parking spaces and/or unnecessary stand-still of cars. All of this is achieved by using the app to order, unlock, start and park the car. They make sure that the cars get regular maintenance as well.

<u>www.driveamber.com</u>



3M has created the Thinsulat Climate Control Window Film that helps to keep the warmth in during the winter and the cool conditioned air in during the summer. It helps reduce cold/hot spots, improving overall comfort throughout your space. The foil is transparent and let's natural light come through well increasing efficiency, single pane windows become nearly as insulating as double pane ones.

www.3m.com







Cittamap provides easy access to data and insights on the built environment for energy transition, climate risks, and urban livability for the real estate and infrastructure sector. The data platform brings together more than 135 different information points that saves time, and allows data driven decisions towards climate neutrality. Supporting the user with the right information at the right time using satellite data, and social data along with open data processed and analysed using automated data pipelines will ensure up-to date data.

www.cittamap.com



Finch Buildings envisions a world in which buildings contribute to solving the climate problem. With Finch Buildings, sustainable living should become available to everyone. Reducing the amount of CO2 in our atmosphere, thereby contributing to the restoration of the planet's balance. Only then will we be able to make the greatest possible impact.

www.finchbuildings.com



GreenHome (formerly Bleeve) helps homeowners on a weekly basis to make their homes more sustainable. GreenHome helps customers step by step with energy saving advice, an overview of subsidies and finding a reliable construction company. GreenHome aims to build the biggest independent platform to make homes more sustainable. The company also offers warranties on top of the constructor's warranty of the constructor if the renovation is booked via GreenHome.

www.greenhome.nl



FlexSol is a high-tech company with expertise in curved solar technology. The innovative technology is applied in smart & sustainable products such as roof tiles and Soluxio solar pole products. This results in products that are practical and offer design flexibility. These features make FlexSol innovative in the off-grid solar market.

www.flexsolsolutions.com







Hello energy is an energy management tool that visualizes energy and sustainability and activates users of buildings to deal with them smartly. This tool makes the sustainable achievements of real estate visible for everyone on any device; laptop, mobile or a screen in the lobby. Consequently, people are more aware of energy reductions. Hello energy also offers its services to hotels and offices.

www.hello-energy.com



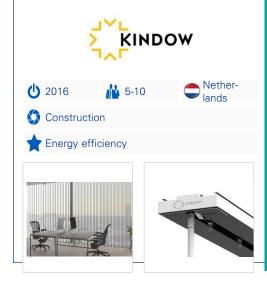
IBIS Power provides innovative renewable energy solutions. Their flagship product "PowerNEST" is their solution to generate six times more energy on the limited roof space of high-rise buildings than current solar applications.

www.ibispower.eu



The **Kite Robotics** window cleaning robot is a safe, sustainable and cost saving solution for cleaning windows, window frames and panelling. It can be installed on existing or new buildings. Customers save up to 90% cleaning costs and 20% on the initial investment costs, depending on the building type. The robot cleans 5-10x faster and cleans windows and panelling. Due to its sustainability, BREEAM credits can be earned.

www.kiterobotics.com



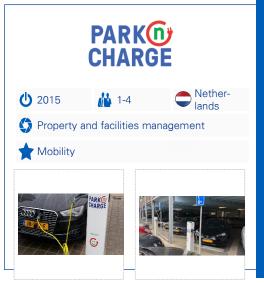
Kindow provides intelligent sun- and daylight control for office and utility buildings. Kindow provides motorized exterior shading to improve comfort and energy efficiency and offers direct integration with other smart building applications.

www.kindowblinds.com

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ParknCharge invests in the charging infrastructure for electric cars. The company places charging stations to meet the current demand. Besides investing, ParknCharge takes care of installation, management and maintenance, customer services and invoicing.

www.parkncharge.nl



PHYSEE has created SmartSkin – a smart, sustainable and connected facade, consisting of electricity and data generating windows (SmartWindows) and a intelligent grid connection (EESY). Their SmartWindows have BIPV panels integrated solar cells and smart sensors, simultaneously generating clean electricity and gathering climate data. The end result is a facade of connected SmartWindows and facade elements, saving up to 25% energy for heating and cooling and increasing the comfort experience of users.

<u>www.physee.eu</u>



StoneCycling produces

"WastedBasedBricks" which are bricks that give a building a unique and sustainable look and feel by composing them of different waste components. Waste material is collected in a 150 kilometer radius of the factory. Combining various waste materials opens up a range of new possibilities for these bricks. The bricks can be used for the exterior and interior of buildings.

www.stonecycling.com



Renolution provides a method transforming existing houses into energy neutral houses by making use of roof and facade elements that will be consolidated with a light steel frame. Residents do not have to leave their home during renovations. Renolution gives advice on cost reduction and renovates houses into energy neutral houses. This method makes sustainable building easier for housing corporations, municipalities and other construction partners. Renolution's methods is applicable to all sorts of buildings.

 ☐ www.renolution.nl

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Studio Solarix designs and develops sustainable design facade panels that generate solar energy through integrated solar panels. The solar panels become tactile and can communicate with their environment through integrated LED lighting.

www.studio-solarix.com



Sustainable Buildings provides an innovative IoT-based energy management system to make buildings smart and sustainable. The company offers tools to its customers to help them with the transition to energy-neutral real estate. Sustainable Buildings provides multiple services: building diagnostics, consumption monitoring, production monitoring, environment monitoring, manual control and automated control. The management dashboard shows realtime information about electricity and gas consumption, occupancy rate and humidity. Moreover, it offers features such as savings planning, occupancy optimization and savings potential discovery.

www.sustainablebuildings.nl



The Urban Jungle Project enables the positioning of green flora in locations where they are not expected and usually not possible. It is a 'plug-and-play' innovation, whereby the tree is not dependent on roots and by its lightweight construction it can be placed below roofs, on streets etc. Trees will absorb CO2 and cool down the livable space. Potentially, a tree on a pendulum could be a source of energy creation in the future.

www.theurbanjungleproject.com



Sustainer Homes has developed a building system that allows architects and clients to design their own customized, radically sustainable home. Thanks to the circular, modular and completely digitalized design and production process, the company has made the realization of a customizable dream house easy.

www.sustainerhomes.nl

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Tvilight's mission is to contribute to the creation of sustainable and connected cities. The company supports this mission by offering sensor lighting solutions that allow cutting down the energy costs and creating a livable and safe environment for urban citizens. Through a combination of physical products and control/management software, Tvilight offers end-to-end solutions for the control and management of street lighting, thereby reducing energy and maintenance costs as well as significantly reducing CO2 emissions.



Wellsun has developed the Lumiduct, a dynamic, multi-functional solar shading system. It generates energy and improves the indoor climate of the building. In this way, the energy demand of glass architecture can be cut in half. Through the implementation of LEDs in the solar panels, the façade can also be used as a media screen.

United Kingdom

Design & planning

BIM and Digital Twin

IES supports resource-efficient, healthy and cost-effective built-environments. The company simulates and analyses data to give those involved in their creation and management the information needed to make smarter, more sustainable decisions with confidence. Products include virtual environments and BIM software.

www.iesve.com

www.tvilight.com

Reengen tracks the real time condition of energy assets, monitors energy performance of facilities and obtains data driven notifications from anywhere and anytime. With their expertise in industrial IoT, cloud technologies and big data analytics, Reengen saves energy, reduces carbon footprint and enhances operational efficiency.

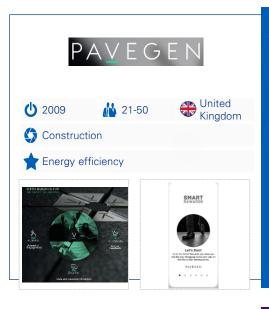
www.wellsun.nl

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www.reengen.con



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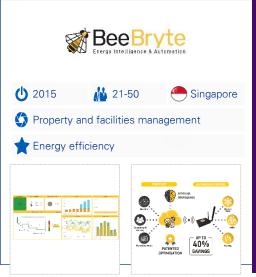
Pavegen has developed a flooring tile that converts the wasted kinetic energy from footsteps into renewable electricity. Each tile is equipped with a wireless application program interface (API) that transmits real-time movement data analytics, whilst directly producing power when and where it is needed. Pavegen is also able to connect to a range of mobile devices and building management systems. The company is shifting to become a permanent and commercial smart-flooring solution.



Vividtechnology

Vivid Technology is an innovation that delivers up to 90% energy reductions and operational efficiencies through intelligent connected IoT technology. Vivid's MATRIXX® is a cloudconnected, IoT light system and analytics platform that creates industrial Smart Buildings and IoT connected spaces. It is a site-wide communication infrastructure that creates a building nervous system, connecting sensors, external inputs and other systems on site. MATRIXX® captures and converts site specific data to deliver deep insight to drive efficiencies.

www.vividtechnology.com.au



BeeBryte is leveraging artificial intelligence to get commercial buildings, factories to consume electricity in a more efficient way while reducing carbon footprint. Their software-as-a-service minimizes utility bills with automatic control of heating-cooling equipment (HVAC) while maintaining temperature within an operating range set by the customer. Based on weather forecast, occupancy and energy price signals, we generate up to 40% savings.

www.pavegen.com

www.beebryte.com



Anvita Engineering provides energy optimisation and clean technology solutions to customers in the Asia-Pacific region, in particular related to air-conditioning, refrigeration, solar and food-waste-to-energy solutions. Having years of pan-Asia experience, they provide value-added support to customers in this fast-growing region of the world.

www.anvitaengineering.com









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Virtual reality and 3D mapping replicates an environment using computer and/ or drone technology. The ultimate goal of virtual reality is to create a user experience as real as possible. In the Real Estate sector, virtual reality and 3D mapping opportunities arise in the field of brokerage for example. Designers and developers can also benefit from virtual reality and 3D mapping because it assists them with translating design into reality. And with current restrictions on or fear of physical meetings, VR might be the perfect solution. In addition, drones can map existing Real Estate and its environment which is then translated into 3D virtual reality or into valuable data about the property.





Invent Dev is a tech company that enables house builders to showcase the floor plans for the building virtually with the help of 3D picture renderings, flythrough videos 360 degree tours and virtual reality, enabling them to sell homes faster. The firm also offers those services to those looking to improve their homes through Invent Showrooms.

<u>www.inventdev.com</u>



Stambol Studios offers a virtual/augmented reality (VR/AR) studio that specializes in hyper–realistic immersive experiences. The company provides architectural visualization services, allowing potential clients to judge their homes before construction.

www.stambol.com



Cityzenith has developed the Smart World Pro platform, which was created for the people responsible for designing, construction, and management of complex and large-scale building projects, properties and real estate portfolios or cities. Users leverage our digital twin solutions to easily aggregate, query, visualize and analyze all their data in a single 3D dashboard uniquely crafted to suit their needs.

www.cityzenith.com



Archisketch automates all the laborious works from measuring, modeling to planning so customers can start interior designing their own space on Archisketch's platform. Designed to bring interior-design-game up a notch, Archisketch allows anybody to interior design without breaking the bank. Paired with their free cloud-based proprietary software, Archisketch measures and generate professional 2D & 3D floor plans and 3D visualizations, VR, of your space.

www.archisketch.com

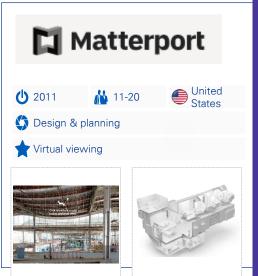






GeoCV captures spaces in 3D using a phone. GeoCV Virtual Open Hous is a cutting-edge 3D+360° virtual tour for existing spaces. Users understand layout from a realistic 3D scan, smoothly walk through the space via high-quality 360° panoramas, and see a floor plan with accurate dimensions extracted from the scan.

www.geocv.com



Matterport has developed an end-toend 3D media platform that allows anyone to create, edit, and share 3D models of real-world spaces. Users include professionals in a variety of sectors, including real estate, hospitality, architecture, engineering, construction and location scouting. Matterport spaces are easy to share as anyone with a computer or mobile device can have the open house experience from anywhere.

<u>www.matterport.com</u>



OpenSpace is a construction tech company using artificial intelligence to create 360° photo representations of job sites. Builders attach an off-the-shelf 360° camera to their hardhat and walk the site as normal. The company's 'Vision Engine' automatically maps the images to the drawings.

www.openspace.ai

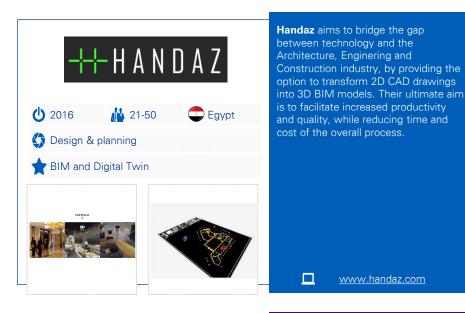


OnSitel Ω is a visual documentation service for construction projects. It enables clients to explore 360-degree imagery — from any device — to monitor building progress, pinpoint issues, and collaborate with teammates.

www.onsiteig.jo









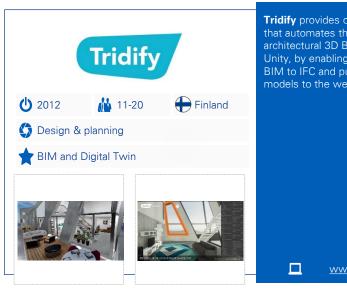




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Tridify provides computer software that automates the delivery of architectural 3D BIM & CAD models to Unity, by enabling users to process BIM to IFC and publish their BIM models to the web.

www.tridify.com



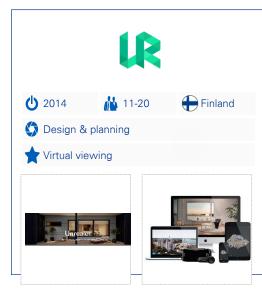
Umbra empowers 3D graphics designers and engineers to create, optimize, share, and view their designs in real-time on virtually any device. As the established gaming industry standard in graphics optimization, Umbra is now redefining rapid visualization for all industry ecosystems utilizing complex 3D models.

www.umbra3d.com



Bloc in Bloc is developing an Open BIM application based on Augmented Reality dedicated to the preparation, site monitoring and maintenance of buildings and infrastructure. Supported by a cloud platform, Bloc in Bloc is positioned over the entire life cycle of a building

www.blocinbloc.com



Unrealer is a creative agency for real estate, which aims to provide premium marketing materials at a competitive cost level, by utilizing latest available technologies and agile practices. Unrealer builds immersive marketing solutions for the real estate industry.

www.unrealer.com

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Exalt3D is a company specializing in 3D for real estate. The company will offer solutions for virtual visits, homestaging or digital models and BIM. In short, the services of the start-up will encompass all services of 3D representation that we find in real estate. The start-up relies notably on the cloud to facilitate the transfer and sharing of documents.

www.exalt3d.com



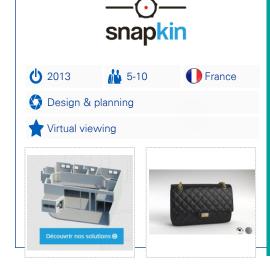
REALIZ3D is an expert in the creation of real-time 3D models for residential, commercial real estate programs and for the development of territories. From CAD plans and BIM models, our teams create interactive, immersive and aesthetic 3D software for the design, promotion and management of real estate assets.

www.realiz3d.fr



Syslor provides augmented reality solutions for networks, this allows construction workers to see buried networks while digging. The software is available on smartphones and tablets and offers both 2D and 3D solutions aimed on improving workers safety and increase time efficiency.

<u>www.syslor.net</u>

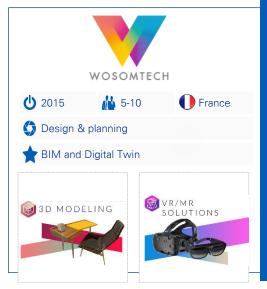


The tool developed by **Snapkin** allows real estate professionals with a 3D scanner to automatically create a 3D and / or 2D representation based on a scanned point cloud. The solution will retrieve the information from the scanner and make a 3D model that the professional will be able to reuse on most software sector.

www.snapkin.fr







WosomTech is a real estate startup that has positioned itself on the issues of BIM, 3D models and augmented reality in the construction and sales process. Specifically, the startup has developed tools that can instantly generate 3D and 2D plans from your phone. It has also implemented an augmented reality tool available as a white label to help brands market their goods.

www.wosom.tech



Beyond Visual enhances client experience by creating photo-realistic 3D contents. They deliver a presentation tool to premium property developers to showcase and sell new build properties at the pre-completion stage. Clients can explore and experience the development and its surrounding area, such as a balcony view, without having to actually go there. Moreover, database integration enables live, up-to-date searching and filtering of available units based on price, size, floor plan etc.

www.beyond-visual.com



BIM-Y has developed a web platform to assess the quality of as-built documentation for existing buildings and during the construction phase to simplify the hand-over process. To this end, BIM-Y uses 3D point clouds technology to offer a digital twin solution for clients' buildings.

www.bim-y.com



Renovai is an Al based, virtual interior designer for e-retailers. It provides a full interior design experience and abilities, from staging every given space to designing and choosing the perfect furniture based on the customer's taste, needs and existing furniture. It will enable a free and immediate professional interior design service, making interior design accessible and affordable for all.

www.renovai.com

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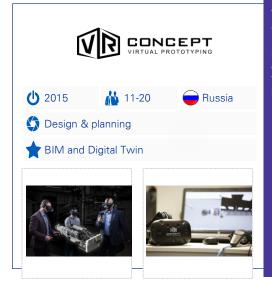






Ninsar develops various products in AR and PropTech, including indoor navigation in AR, personal AR-guide for autonomous interactive and personalized tours, 360degrees 3D tours, digital twin for buildings and property management tools. Their goal is to make customer's experience more fun, interactive yet at the same time giving new opportunities for offline retailers to attract customers utilizing benefits of digitalization.

www.ninsar.pro



VR Concept develops software for VR environment applications to solve industrial challenges. The company provides users with the easy VR application for collaboration and visualization of CAD models, which can be scalable by big manufacturers.

www.vrconcept.net



FIMBLE organizes property information and makes it usable, accessible and future-proof. This is performed by digitalizing and/or 3D-scanning properties. Moreover, FIMBLE supports the usage of a 3D information model (BIM). Utilizing the newly acquired information, the real estate portfolio is better understood. This offers a chance to adapt maintenance plans, NEN, escape routes and rental-drawings.

www.fimble.nl



Crozzroads is specialized in virtual reality, augmented reality and mixed reality. Furthermore, they can also create 360 real photo/videos, artist's impressions, presentation tools, artistic projects, 3D projects, animations, games and online gaming. Crozzroads separates things, checks under the hood, and reassemble them in exciting new ways to build amazing new things. Crozzroads enhances your digital experience and to help you visualize your unique ideas and bring your dreams to life.

www.crozzroads.com







Innobrix is an online communication and configuration platform for the residential construction sector and consumers alike, transforming BIM designs into interactive virtual homes and allowing residential construction professionals to optimally integrate the consumer in a newly improved digital construction process. This way, Innobrix creates an optimal 'what you see is really what you get' customer experience which reduces communication errors, failure factors, costs and constructional waste.

Design & planning

BIM and Digital Twin

Leap3D provides an as-built 3D BIM model. The company measures and models the existing situation in 3D so that you have an as-built 3D model of your building, factory, installation, ship or environment. Leap3D's strength lies in 3D laser scanning and modelling of existing situations (scan to BIM or scan2BIM) for the benefit of projects. With this clients realize a reduction in failure costs, reliable starting points and a shorter construction time.

www.leap3d.eu



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VERO Visuals is a one-stop agency for real estate developers and architects providing branding, visual and digital data-driven solutions. The company provides a full range of visualization, marketing and IT services for real estate companies. From still images for all project stakeholders to sophisticated digital strategies designed to capture and convert wider audiences.

www.innobrix.nl

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www.vero.digital



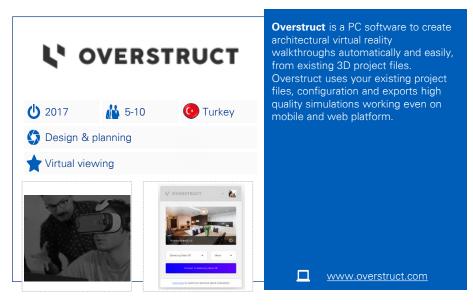
Smart2VR is a CMS platform to publish and distribute your Virtual Reality content quick and easy in your own branded VR app (iOS and Android), on your website and on the Samsung Gear VR. Upload and manage your VR content (images and videos), personalize your VR app easily and quickly by adding your own logo, color scheme and contact information and share your VR experience with your customers and relations.

www.smart2vr.com

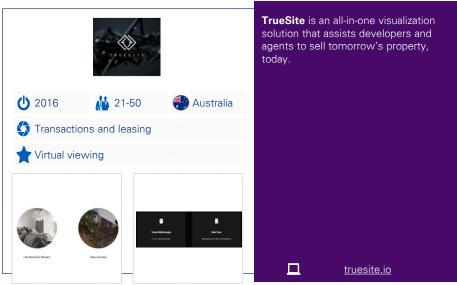
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Propeller is an innovation specialized in 3D mapping and data analytics solutions that give worksites the power to measure and manage themselves. With visual tools that everyone can use, Propeller is helping teams on thousands of worksites, to track, inspect, and report on-the-job progress and productivity safely and accurately. Propeller serves construction, aggregates, mining, and waste management industries globally.

<u>www.propelleraero.com</u>





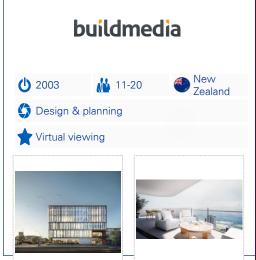


Skylark Drones' aims to plan and monitor infrastructure construction, by generating high resolution survey maps for accurate land acquisition analyses and detailed project reporting using 4-K videography for near real-time project monitoring. Examples of projects include large scale road infrastructure changes that require accurate planning and monitoring. Their drone solutions address this need by offering authentic real time information.

www.skylarkdrones.com

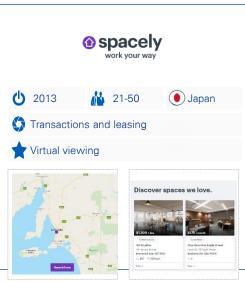


Snaptrude is an Al-enabled rapid modelling platform for real estate. Snaptrude is a solution by Skylark Technologies which solves the design problem by automating digital designing with its intelligence enabled modelling and design platform. This platform applies an architects' Building Information Modelling (BIM) approach from the concept design stage onwards. Snaptrude automatically transforms hand sketches into an accurate 2D drawing and provides the technical support for conversion of 2D drawings to a 3D model.



Buildmedia is an interactive digital display suite that showcases and sells unbuilt real estate, developed by Buildmedia. Realspace brings off-theplan sales & marketing in-line with the needs of today's home buyer by changing the show suite experience, providing real estate agents with powerful 3d visualisation tools to emotionally engage with buyers. Realspace drives emotional connections between homebuvers & property developers by showing every future option, developing trust & understanding of the unbuilt development.

www.buildmedia.com



Spacely offers cloud software that allows customers to easily create, edit and manage VR web contents using photos taken with a 360 degree camera. The company's solution is frequently used within the real estate industry for advertisement purposes of sale and rental of properties.

www.snaptrude.com

www.spacelv.co.ip

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VR & 3D Mapping



Elementals Studio has developed a Property Showroom platform to connect property buyers, sellers and designers using augmented reality and 3D. This allows for optimization in every interaction with prospective clients, with the capability to provide limitless information about property features. Accessible through any mobile device, its features include viewing of the entire real estate, augmenting the design of actual physical properties using AR and touring in 3D.

<u>www.elementalsweb.com</u>



Graffiquo offers a real 3D digital representation of physical assets on large expanses of land using photogrammetry, feature recognition (or machine learning), business applications and virtual reality engine technologies for data capture, mining and physical representation.

Graffiquo's solution collects data from the internet of things (IoT) sensors, equipment, and business systems, and show them on this virtual replica in real time, providing stakeholders on-the-run easy access for visualization and analytics.

www.graffiquo.com



Silver Wings provides end-to-end solutions for virtual reality, augmented reality and mixed reality. Silver Wings is hardware-agnostic and delivers turnkey solutions for the industries of real estate, gaming, automobile, and more, taking care of every aspect of the project and working with partners where needed.

www.silverwingspremedia.com



Picture Perfect Productions create digital content and 360 virtual and augmented reality conceptualization. They create immersive and interactive solutions in the areas of safety, military, construction, travel and tourism.

www.pictureperfectproductions.asia





VR & 3D Mapping



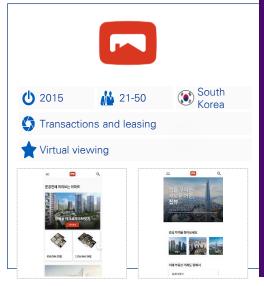
ChangSoft converts 2D drawings into data set which serves as a base to generate 3D information models. The company has a special feature that automatically places every rebar with a high level of details and precision. Also, other essential information such as error reports, timeline, and quantity take-offs containing information of concrete volumes, rebars and formwork is automatically generated in the form of visuals or documents with few clicks.

www.chang-soft.com



Cupix has developed a 3D virtual tour solution that gives users an easy way to capture an indoor scene and create a true-to-life virtual experience. By uploading 360 degree photos or videos the company's software automatically maps the captured images into a 3D space. Thereafter they offer a solution for 3D tours through properties.

www.cupix.com



Zipview offers a VR real estate marketplace that help its clients to find a home. By offering real estate VR tours including detailed information about the property like price trends, the company aims to support clients select properties for physical viewing. Thereafter the company guides clients in the process of purchasing property and takes care of transparent and quick payments, as well as post-migration defects.

www.zipview.kr



Urbanbase offers an AR solution for mobile devices to make virtual reality available for interior planning and design. Urbanbase owns a spatial data platform with patented technology that reproduces the floor plan of the building in 3D. The company's service is mainly used by real estate and furniture companies to provide floor plans.

www.urbanbase.com

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VR & 3D Mapping





KPMG Global Real Estate Network

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Our KPMG Global Real Estate Network has provided a vision on critical topics that should be on the Real Estate agenda by answering the following questions for the readers of this publication:

- PropTech remains a hot topic Why is this so relevant?
- How do you see the current status of PropTech development in your specific country / region?
- What do you think is the impact of COVID-19 on the adaptation of innovation and digitalization in the Real Estate and Construction market?
- How do you think that innovation in Real Estate and Construction sector can and will contribute to a sustainable society (ESG)?





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"As most sectors, also the Real Estate and construction sector is in the middle of a great transformation. A transformation driven by the abilities digital innovations offer, but also by the demands of critical stakeholders. Understanding innovative capabilities, preparing your organisation to (culturally) embrace innovation and re-design strategy and business models should be priority on board agenda's"



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"For me, PropTech is part of a much broader trend, that of the digitalization and modernization of the Real Estate sector. PropTech companies, by challenging the status quo, help the Real Estate industry to become more innovative, digital and customer-focused, all of which are essential in the 21st century."



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"There will be more new developments in PropTech once 5G is rolled out in different geographies, and those with the ability to harness this new speed to their IoT, our lives will evolve, resulting in a different way of how we see property and embrace technology in Real Estate."



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"With the social distancing required by the current sanitary crisis, technology will bring for sure new solutions. It will be very important in flexible offices and the new ways of working, to maintain human relationships in companies. It will be also very important in the retail business with what we call the *phygital industry*."



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COVID-19 itself can be considered as a sensitivity test for the developed societies and highlighted several weaknesses of the social and economic structures we live in. [...] The Real Estate sector is an industry itself, producing buildings to work and live in. The role for PropTech is to only to help saving energy, materials, labor used for the production, but PropTech is also responsible to participate in creating the built environment more human and less "expensive" in global terms.



Sarah Sipilä Director, KPMG Finland GSG Advisory +35 82 07 67 20 42 Sarah.Sipila@kpmg.fi "Construction and Real Estate are among the last sectors to be transformed by technology. I think industry leaders have finally recognized the imperative and are beginning to take significant action. Global investors and corporations are definitely also seeing the potential, given recent peak investment levels in sector firms."



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"Israel is a well-known front line hi-tech country, in the last year it seems that the PropTech sector has accelerated significantly. A lot of new and creative solutions were created, and it looks like to sector heads to a more accelerating growth in the coming years."



Frederic Hoo
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"Singapore has increased the commitment towards sustainability with broader and deeper policies for the future of the nation. The Real Estate and Construction sector contributes to this through decarbonisation efforts throughout the lifecycle, labour policies and the building of a digitally talented workforce. The demand from the users has also shifted with greater awareness and shall bring about a seismic change to the landscape in the coming years."



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"The Proptech hype in Germany has changed into a more stable relationship between real estate companies and vendors. The major requirements for projects have changed from short-term MVPs and prototype projects to long-term partnerships, which make them more reliable and also more complex. PropTech now have to prove their ability to integrate complex portfolios and assets in their systems."



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"Technology and sustainability are an excellent combination to address ESG concerns, resulting in a win-win outcome for real estate participants, consumers and other key stakeholders. Key innovations, including the virtualization of building design/site visits, digitization of transactions, more sustainable building materials and the sharing of equipment and services, will all decrease real estate's environmental footprint."



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"Times of crisis will always be a major instigator for quick and rapid innovation. In the aftermath of COVID-19, we expect many CEOs in the industry to seek a leaner business model, without compromising on their core attributes. Particularly in Australian construction, tech-enabled services and an efficient data-led approach will prove to be major differentiators on the road back to profitability."



Svetlana Fonareva
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"PropTech can be used in every sector of Real Estate, from construction to financing. And as technology and ideas continue to expand, Proptech combines concepts and innovative thinking. It provides products that assist on both sides of the sale, builds a business case for market newcomers, supports distribution channels, and raises awareness among users surrounding the market."



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"Real Estate companies have been on a slow journey to identify more efficient ways to capture, analyze and leverage data to improve business operations and gain competitive advantage. However, most recently PropTech has become a main focal point for Real Estate in all sectors as the need for remote, and back and front office efficiencies become more of a necessity than a luxury due to the recent impact of COVID-19."



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"Today, more than ever we are more conscious of what we consume, what we do or where we live. People, planet and profit will challenge new innovations in the Real Estate sector. The companies that are not taking those crucial topics into account all together, do not have the potential for sustainable growth and contribution to our society. I am positive that innovation within our industry could tremendously help us move forward to a sustainable future."



Pierre Kreemer
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"There is a growing interest in Luxem-bourg for PropTech solutions and different initiatives are underway. We expect an acceleration of PropTech solutions following the COVID-19 crisis. Furthermore, Luxem-bourg being a Fund environment could benefit from alternative financing models powered by technology, such as tokenization."



Christophoros Anayiotos
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"The current events around COVID-19, have changed our way of thinking for a number of different things and certainly, in the aftermaths of the pandemic, technological advancement in Real Estate will be enhanced to address topics like, asset management, space management, health and safety, efficient flows and more."

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Editor's Perspective



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"Technologies are adapting and advancing at a rapid pace, and our global connectivity is ever-increasing, leading to disruptions and transformations in many aspects of our lives.

In my opinion, this gives us incredible flexibility and adaptability to learn from each other and contribute to business, but also societal needs. Hence, I believe that being on top of these innovations, evaluating the challenges and opportunities, and eventually integrating them in strategy, will be (and should be) key to success of Real Estate businesses in the long-run.

It remains exciting to see that this wave of innovations within the sector is happening worldwide, and we're pleased to capture a share in this overview and hopefully spread for better!"



Olivier van der Koelen Consultant, KPMG Netherlands Real Estate Advisory +31 6 12 00 17 19 vanderkoelen.olivier@kpmg.nl

"Innovation has become the cornerstone of the Real Estate and Construction sector globally, while being driven by the needs of local markets. This year's edition underpins the broad diversity of innovations and I expect this to further accelerate through the use of (new) technologies.

We are only at the start of a technological innovation wave in the Real Estate sector and the future of Real Estate seems to be a bright one. We commit to keeping you informed!"





Visuals & Appendix

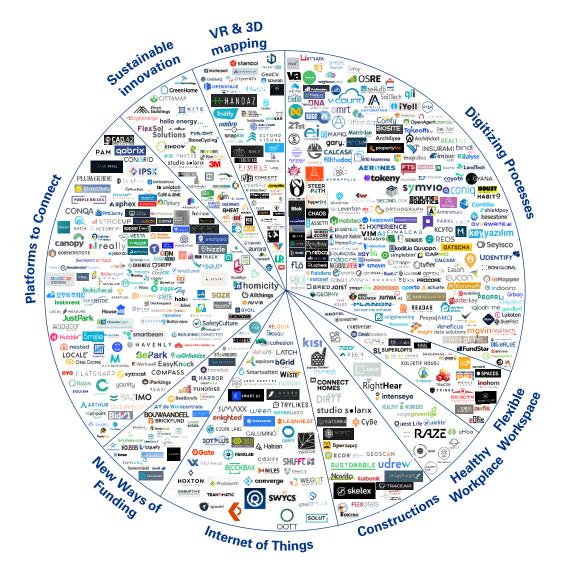
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REIO 2020 - Global







REIO 2020 - Americas







RFIO 2020 - FMFA



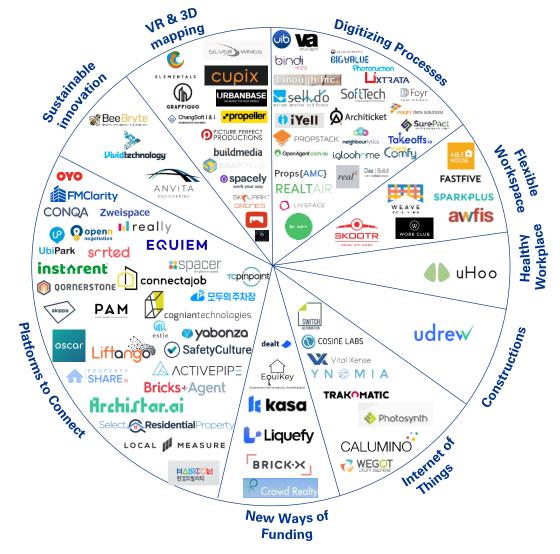




REIO 2020 - Asia Pacific







REIO 2020 - Value Chain Cascade

















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Global PropTech



Introduction Global PropTech

Global PropTech is the first global innovation platform for the construction and Real Estate sector. The platform includes Global PropTech Online, Global PropTech Leaders and Global PropTech Channel. Global PropTech was founded by Wouter Truffino in 2018.

What does Global PropTech do?

Global PropTech brings together innovative corporate Real Estate and the very best PropTech companies on a global scale to facilitate joining forces and cooperation in creating a better built environment by embracing technology. The platform focuses on developing insights, sharing knowledge between different countries / SARs and matchmaking through three key formats:

- Global PropTech Online: a quarterly online conference offering cutting edge PropTech innovation insights, products, and services. From behind their computer, Real Estate professionals from all over the globe can attend top keynotes and interactive round tables. PropTech thought leaders and influencers share insides and the best start-ups and scale-ups get a chance to promote their product or solution to a global market.
- Global PropTech Leaders: a highly exclusive network for corporate Real Estate leaders to share knowledge on how the Real Estate industry is being renewed through PropTech. The first Global PropTech Leaders event took place on 13 March 2019 at the MIPIM in Cannes.
- Global PropTech Channel: a video streaming channel aiming to inspire global Real Estate professionals through content created at Online and Leaders events such as keynotes.

Partners and members: KPMG (founding partner), Spacewell, WeWork, VTS, Disruptive Technologies, Spaceti, Physee, CubiCasa, PlanRadar, BuildingMinds, Smartpixel.tv and EstateGuru.

Real Estate Futureproof:

Global PropTech is exhibitor during this online fair. Please click on the banner for more information.









www.globalproptech.online







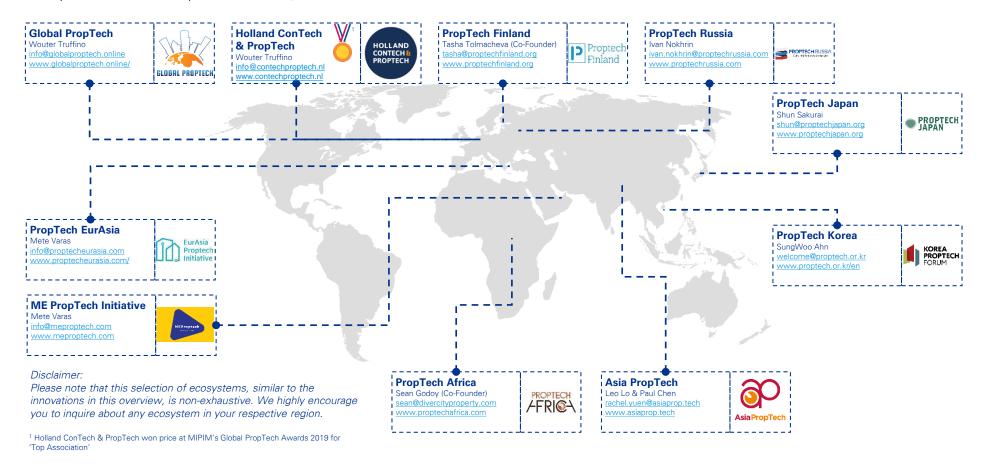






PropTech Ecosystems around the globe

This overview gives an in-depth insight into relevant innovations worldwide in the Real Estate and Construction market. What should be noted however, is that there are many PropTech Ecosystems around the globe that support these innovations. These PropTech Ecosystems are valuable to the market and provide innovations a platform to thrive, connect and succeed.







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