



IN PARTNERSHIP WITH
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THRIVE YOUR FUTURE

Future Leaders

2018 Innovation Yearbook



Welcome to Future Leaders



"Future Leaders are key to UKGBC's mission and the future of our built environment. By nominating high potential employees, our member organisations show their commitment to sustainable business, innovation, and

leadership, playing a crucial part in futureproofing the talent in buildings and infrastructure.

Far from a traditional leadership programme, we nurture our sector's brightest talent and show how to lead in a rapidly changing world. We see first-hand how innovation can thrive where people work truly collaboratively and with the time and space to innovate and co-create. The ideas they generate can work as a huge inspiration to us all as we imagine a world where people, profit and planet can thrive."

Cat Hirst

Director of Learning & Innovation

SWITCH ON

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The Future Leaders programme has been developed in collaboration with our delivery partner Switch On. Switch On is leadership consultancy - born from a disruptive innovation agency - dedicated to equipping leaders with everything they need to find and seize opportunities for continuous business breakthroughs that create value and drive impact within the Volatile, Uncertain, Complex, Ambiguous, Networked and Stressed (VUCANS) world.



The Future Leaders programme would not be possible without the continued support of UKGBC's Leadership Programme Strategic Partners:





Contents

	PAGE
Introduction	4
Meet the Future Leaders	6
Introducing the business models	12
BUSINESS MODEL ONE: Cube Housing	12
Ciaran Garrick , Allies and Morrison; Steven Kellett , Argent; Hero Bennett , Max Fordham; Tom Roberts , Sir Robert McAlpine; Richard Twinn , UKGBC	
BUSINESS MODEL TWO: Hotspot	14
Michael Karling , Banyards; James Spears , Cundall; Lucy Puddle , Grosvenor; Mina Hasman , Skidmore Owings and Merrill	
BUSINESS MODEL THREE: Keystone	16
Ajay Shah , Atelier Ten; Kanav Gupta , Barr Gazetas; Katerina Mercury , The Crown Estate; Mathewe Bennett , Willmott Dixon	
BUSINESS MODEL FOUR: LivIn London	18
Charlotte Hardy , BRE; Kieran Hedges , Eminence Development; Tom Byrne , Landsec; Ewan Cross , Rolton	
BUSINESS MODEL FIVE: #TrackMyPack	20
Lauren Williams , AECOM; Simon Waters , Canary Wharf Group; Niall Robertson , JLL; Heidi Barnard , Saint-Gobain; Tom Larsson , Stanhope	
BUSINESS MODEL SIX: AirInfo	22
Mark Poulter , ChapmanBDSP; Paolo Vimercati , Grimshaw; Avni Mehta , Lendlease; Rachael Graham , Solagrow; Simon Tranter , Willmott Dixon	

Introduction

The UK Green Building Council (UKGBC) is a charity and an industry-led network with a mission to radically improve the sustainability of the built environment.

With over 400 member organisations spanning the entire value chain, we represent the voice of the industry's current and future leaders striving for transformational change. We inspire, challenge and empower our members, helping them to identify and adopt the most sustainable, viable solutions.

The Future Leaders programme brings together the sector's most talented individuals to take part in a unique programme of leadership and innovation. It is a powerful programme, unlike any other, that gives tomorrow's leaders the chance to grapple with the most critical issues facing the sector, challenges participants to work collaboratively to address them, and equips them to drive innovation and lead sustainable businesses of the future.

This document introduces the 27 Future Leaders from the 2018 programme; shares the insights of the journey they have been on; and summarises the business model concepts they have developed since the beginning of the nine-month programme.

The Programme

Over the course of the nine-month programme, Future Leaders:



develop a personal leadership plan, define their purpose, and embark upon their own journey of leadership breakthrough.



are paired and, through a peer coaching experience, build powerful relationships which long outlast the programme.



have a unique opportunity to try their hand at entrepreneurship as part of a close-knit innovation team, and develop a new and sustainable business model before finally working to hone their storytelling techniques to inspire others.

In the last year through our growing alumni network, we have empowered Future Leaders to champion UKGBC's mission more widely, building their own profile, but also working to engage and inspire others. Two Future Leaders have joined the UKGBC Board of Trustees, ensuring the perspective of emerging leaders contributes to the strategic direction of UKGBC.

With regular get-togethers, mentoring opportunities, and knowledge sharing, the network ensures the learning and support continues, giving every Future Leader the opportunity to make the biggest impact possible in their own lives, their business, and the built environment.

The programme and resulting network is supporting our vision of futureproofing leadership in the sector, ensuring that going forward sustainability is central to business leadership.



Meet the Future Leaders



Lauren Williams, Associate Director, Infrastructure & Sustainability, Buildings & Places, AECOM

- Lauren is an Associate Director in AECOM's Sustainable Development Group. Lauren has 10 years' experience undertaking building environmental rating schemes and providing sustainability and energy efficiency advice on projects throughout London and Europe. As an experienced BREEAM AP, LEED

AP and WELL AP, Lauren guides project teams to achieving their environmental goals and has successfully delivered a number of landmark and award winning sustainability projects in the UK. She is passionate about health and wellbeing led design and is part of an AECOM multidisciplinary team researching the link in the perceived benefits of this to occupant satisfaction and productivity.



Ciaran Garrick, Architect, Allies and Morrison - Ciaran graduated with a BSc (2008) and MArch (2009) in Architecture from the Scott Sutherland School of Architecture, Aberdeen, Scotland. In 2015 he gained accreditation as a Certified Passive House Designer. After graduation, Ciaran worked on a number of high density mixed-use projects in China and Hong Kong, before returning to the UK in 2012 to obtain his ARB

registration as an Architect. Since joining Allies and Morrison in 2015, Ciaran has worked primarily on the development of Allies and Morrison's BIM management services on large scale projects and the integration of Passivhaus design principles within their projects.

Participating in the Future Leaders 2018 programme has been a profound experience in self-reflection. The programme has helped to identify my strengths and weaknesses, provided tools and regular support through feedbacks, group work and buddy system to overcome personal barriers and become a breakthrough innovation leader. In addition, it offers a fantastic opportunity for networking with like-minded individuals in the construction industry over the course of nine months. - Ajay

Future Leaders has been great at teaching me new ways to tackling problems and equipping me to take a new approach to engendering innovation. It has given me a rare opportunity to work with a strong network of multi-disciplinary professionals from across the industry to work together and out of our comfort zone on tackling some of the biggest issues the built environment faces. Additionally, through a strong line-up of speakers and topics the programme has re-enforced the importance of having a sense of purpose in my work. - Steve



Steven Kellett, Sustainability Manager, Argent - Following a degree in Civil & Environmental Engineering, Steve has had 5 years' experience working in sustainability within the built environment sector. During this period he has completed the industry-leading Mace graduate programme and worked as part of the CBRE sustainability consultancy team. Steve's current role is working in property development as

Argent's Sustainability Manager, having responsibility for driving environmental sustainability across their activities at a corporate and project level – including the highly regarded regeneration of King's Cross. This variety of roles has given Steve the opportunity to develop his skills throughout the property lifecycle from pre-planning through to asset management.



Ajay Shah, Principal Environmental Designer, Atelier Ten - Since 2006, Ajay has successfully led a range of projects at Atelier Ten from master planning, institutional, mixed-used developments to single family residences, providing sustainable design inputs focusing on the holistic integration of sustainability principles from initial architectural concepts through to construction and implementation. Ajay's work often includes

achieving simple and effective practical solutions through close collaboration with key stakeholders and project team, integrating big picture thinking with robust understanding of construction practises, planning and regulatory requirements. Ajay has a background in architecture, teaches environmental design at the undergraduate architecture course at Central Saint Martins, London and sits on the Brent Design Review Panel.



This programme has been a fantastic experience in which I have met some inspiring people, gained genuine professional and personal insight and developed a new way of thinking and problem solving. I will take the lessons learned from the programme forward into my future career confident that I can make a positive impact on projects, relationships and the built environment as a whole. - Michael



Michael Karling, Project Engineer, Banyards - Michael is a BREEAM Associate and Low Carbon Consultant providing efficient Mechanical Design for projects across the UK. Since completing his Masters in Sustainable Engineering at the University of Strathclyde, Michael has been a sustainability champion both at Banyards and from his position on the board of the Construction and Building Services Division at the IMechE.

Michael is currently working on a number of Education, Higher Education and Commercial projects and enjoys working closely with project architects on developing an integrated sustainable building design that promotes natural ventilation and cooling and maximises daylighting to minimise the energy requirements of the MEP services.



Kanav Gupta, Architect, Barr Gazetas - Kanav Gupta joined Barr Gazetas in 2016 as an Architect and is currently working on a series of historic buildings for Greenwich Hospital, as well as a large retail scheme on Regent Street for The Crown Estate. He has previously worked on large-scale commercial projects whilst at Buckley Gray Yeoman, and multiple bespoke houses in South West London earlier in his architectural career.

He also assisted in the extension of a school for a children's charity in Rio de Janeiro, Brazil. Kanav has co-founded a foundation that supports children's education projects in the favelas of Brazil.

The Future Leaders programme helps you to look beyond the surface of a problem, to really get to the 'pain point' of the issue. We learnt that until you truly understand the issue (and its root causes), you will never find an innovative solution to fix it. We listened to countless real life examples of businesses that had failed because they had not truly understood the market and the pain point for their customers. This insight has helped me change the way I think through problems, both at work and in my personal life. - Charlotte



Charlotte Hardy, BREEAM UK New Construction Scheme Manager, BRE - Charlotte has worked at BRE for 10 years, in several areas of the business, developing a broad knowledge of the construction industry and sustainability.

She has worked on a number of Government contracts, more recently with Department of Health and devolved healthcare administrations on BREEAM Healthcare. Through a

secondment to UKGBC in 2014/5, Charlotte led an industry report on Green Infrastructure. In her current role, Charlotte manages the UK New Construction team, responsible for the continued development and operation of the scheme. She is passionate about the sustainable built environment and enjoys keeping abreast of innovation and best practice.



Simon Waters, Project Manager, Canary Wharf Contractors - Simon

is a Project Manager working for Canary Wharf Contractors and is currently working on the construction and delivery of their new district, Wood Wharf. Simon is responsible for the main infrastructure corridor feeding the site and is moving on to the delivery and execution of the public realm spaces. He is also working on becoming a chartered

engineer with the ICE and is aiming to complete this by the end of 2018.





The programme content alone is reason to participate; with speakers, activities and tasks clearly planned to give the most to the attendees. Add into the mix the fact that you are part of a 30-strong intake of built environment professionals, that all want to be there, and it's a good recipe for gaining insight from outside your area of expertise. With the wider network UKGBC have created it's easy to understand and buy into their vision to drive change right through the industry. I've immensely enjoyed being part of the 2018 intake and intend to continue my involvement with UKGBC as part of the alumni group. - Mark



Mark Poulter, Associate (Mechanical), ChapmanBDSP - Mark is an Associate Engineer with a passion for services engineering within the Built Environment. At ChapmanBDSP, he is involved in all aspects of building services design from concept and planning submission stages, through to completion on site and beyond into operation and maintenance/end-of-life replacement. Mark applies himself to projects across all market sectors and clients. Coming from a background with experience in environmental modelling, Mark is fully aware of environmental engineering requirements alongside traditional MEP services design and positively drives integrated sustainability in every aspect of his work.

The programme has not only helped me learn how to be a better leader, but it has helped me understand myself better, both inside and outside the work environment. It's been a huge help in letting me have a real impact within my company and the built environment. - James



James Spears, Principal Engineer, Cundall - James joined the multi-disciplinary consulting engineers Cundall in 2013 and is part of their Geotechnical team, working out of their Edinburgh office and providing technical support and design input across the company. Prior to his time at Cundall he worked for a specialist ground engineering contractor which gives him an appreciation of the practicalities of completing a project, as well as the up-front design work. James also sits on Cundall's recently formed Sustainability Committee which is formulating their new corporate sustainability strategy. He spends his free time mountain biking in the Scottish Borders or renovating his old house.

It's been a soul searching and mind opening experience! Sharing this journey with very talented group of people only enhanced the enjoyment of learning how to be a better version of oneself. Focusing our attention to a very topical issue of our time has also been a challenge which focused our minds. The group dynamic has been challenging and rewarding in equal measures. - Paolo



Paolo Vimercati, Associate Principal, Grimshaw - Paolo joined Grimshaw in November 2006 and he is now a valued member of the senior team. Paolo has an established talent for delivering exemplary master plans, and he has also worked extensively in the infrastructure, commercial and education sectors, gaining skills on a range of projects. Paolo has a leading role within the Urban Research Unit at Grimshaw based on his academic research into sustainable urban development in rural and suburban environments. This research is ongoing and has influenced many projects within the practice, such as the Cambridge University Master Plan and the Norwich Generation Park Master Plan. He also coordinates the London Studio Sustainability Group. Paolo is a Professional Studies Lecturer at the University of East London, and a Design Tutor at the London School of Architecture. In the last few years Paolo has been presenting seminars in Italy, France, China and the UK.



Lucy Puddle, Senior Development Manager, Grosvenor - Lucy is a Senior Development Manager at Grosvenor in the Major Projects Team. Lucy started her career in 2010 at Ernst & Young where she qualified as an accountant before moving to join the Grosvenor Finance team in 2010. Her focus was supporting the development team reporting and launching a new forecasting software into the business. In 2014 she transferred into the Development business where she managed retail and residential refurbishment projects including 124 Mount Street Mews, Sophia Webster, 18/22 Weighhouse Street, Mae Deli and Comptoir and 2 Bourdon Street, Hussein Chalayan. More recently Lucy delivered Eccleston Yards in South Belgravia. This will be open to the public in January and will play host to restaurateurs, retailers, a gym and a co-working space around a central, landscaped courtyard.

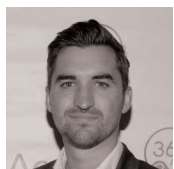




The Future Leaders Programme has been a great experience where I have had the opportunity to meet and work with some inspiring people. The programme has challenged me to think differently and has changed my perception on leadership and innovation, in a positive way. It has been an empowering journey both personally and professionally as well as a reminder that I am part of a wider industry, with an ability to positively change and impact the built environment. - Avni



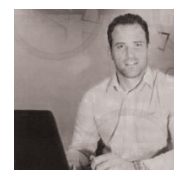
Niall Robertson, Director - Building Surveying, JLL - Niall is a Chartered Building Surveyor and Project Manager based in Glasgow with over 20 years' experience in the construction industry. A member of JLL's Building Consultancy Board and UK Sustainability Lead, he embeds environmental best practice into everything that we do through JLL's 'Building a Better Tomorrow' campaign. A Certified LEED® Green Associate and RICS Ska Ratings Assessor for sustainable fit out, he has acted on a number of award winning projects. Named as a 'Star of Sustainability' by the influential 'Building' Magazine, Niall uses his knowledge of sustainable design to improve employee wellbeing and productivity.



Tom Byrne, Energy Manager, Landsec - In December 2013, Tom joined Landsec from the Energy Saving Trust. Beginning initially in an analyst role, he worked across numerous functions including energy and carbon reporting and managing various sustainability benchmarks. In 2015, he was given the opportunity of developing the company's new energy and carbon targets and managed the process of setting the industry's first ever "science-based" carbon target. Since this project, Tom has redirected his efforts into identifying and implementing energy reduction projects in the company's Retail portfolio, working with well-known shopping destinations such as Bluewater, Gunwharf Quays and Trinity Leeds.



Avni Mehta, Commercial Manager, Development, Lendlease - Avni is a Senior Commercial & Finance Manager at Lendlease. She works in the Development team, on a large mixed-use urban regeneration scheme in Haringey, set to deliver c.2,500 homes alongside retail, commercial and community space. Before working on this project, Avni has spent the last two years working in the Development bid team, focusing on securing these large, complex urban regeneration projects and responsible for all commercial, finance and legal aspects of the deal. Before joining the Development team, Avni worked in the Investment Management business at Lendlease. Avni gained her Chartered Accountancy (ACA) qualification at BDO LLP, where she spent three years working within the real estate sector. Avni earned a Bachelor of Science Honours degree in economics at the University of Warwick.



Kieran Hedges, Owner, Eminence Development - Kieran is a Business Developer and owner with experience at all levels of company growth. He has 10 years experience in growing client bases for clients and 5 years experience in Real Estate. He specialises in new business development, site sourcing process engineering and project management. He has built a portfolio with an average net yield of 7.8%. Kieran is passionate about the built environment and its ability to enhance the quality of life for all. Implementing technology has been a cornerstone at each organisation he has represented and he closely follows advancements in PropTech and is the founder of one such product currently in development.



Hero Bennett, Senior Sustainability Consultant, Max Fordham - Hero is a Senior Consultant and Partner in Max Fordham's Sustainability Team. She has 10 years experience as an engineer and later sustainability consultant, helping clients explore, define and achieve their sustainability aspirations. Her project experience is wide ranging from schools to masterplans and includes Agar Grove, at the time the largest Passivhaus scheme in the UK. In 2010 Hero developed the sustainability matrix (a communication tool) for publication in the AJ. Hero has recently joined CIOB's newly formed Sustainability & Environment Special Interest Group. Prior to Max Fordham Hero worked as a Fuel Cell Development Scientist.





The Programme has been a fantastic opportunity for me and exceeded my expectations in terms of leadership learning, often diving deep into the human psychology of leadership for dealing with challenges and identifying opportunities. It is this approach that has enabled me to really consider the kind of leader I am, what I need to change, the kind of leader I want to be, and how I get there. The Programme has also accelerated my learning and understanding of the processes required for starting and running a successful, forward thinking business, as well as being an immensely enjoyable experience, and a great chance to meet and work with some of the built environment's undoubted Future Leaders. - Ewan



Ewan Cross, Senior Renewables Engineer, Rolton - Ewan provides strategic advice on energy and related subjects to businesses and organizations of varying sizes, from small mixed use developers through to large automotive manufacturers, supporting their decision making and the delivery of business and operational growth now and in the future. His broad range of knowledge and skills means he can provide valuable strategic advice on a range of interrelated subjects including, energy generation and storage, transmission and distribution systems, energy management and efficiency, electric and autonomous vehicles, carbon emissions, and climate change. He continually seeks to expand his knowledge and skills to be able to offer more to the businesses and organizations that he support.



Heidi Barnard, Head of Environment & Compliance, Saint-Gobain - Heidi's role is to champion sustainability - she is here to promote, influence and achieve sustainability values and results across the business by developing and embedding underlying management processes. Heidi has been working in this field since 2006, and has the privilege that her work is also her broader passion. Her main hobbies are cycling (somewhat obsessively) and spending time outdoors in woods and forests, up mountains and on glaciers. Heidi loves planning the next adventure, and is a sucker for a charity-related challenge, which has seen her shave a moustache into the back of her head for Movember, and cycle 12'000 miles in the last year alone.



Thomas Roberts, Project Manager, Sir Robert McAlpine - Since starting out in the Construction Industry as an apprentice joiner at the age of 16, Thomas has progressed rapidly, attaining both practical and academic qualifications as well as extensive and varied experience including stints as both a tradesperson and an engineer, preceding the senior management role he holds currently. With a real passion for the industry and its modernisation and evolution, underpinned by a strong desire to continually learn and improve, it is Thomas' ambition to not only be a key figure within the business where he is currently employed, but also within the industry as a whole.

The programme has enabled me to discover my leadership identity by cultivating innovative ideas through continuous engagement and development, whilst building the foundations to foster change within my organisation and the wider building industry. I look forward to passing my experience onto my colleagues, to empower them to inspire others. - Mina



Mina Hasman, Associate, Skidmore Owings and Merrill - Mina Hasman leads Skidmore Owings and Merrill (Europe) LLP's sustainability and wellness daily operations and long-term vision. She challenges existing best-practices by developing new systematic and design-based approaches applied and tested in complex, international projects. Mina has worked on a wide variety of projects in the UK, Europe, the Middle East and Asia, bringing a greater understanding of the implications for sustainable design in different climatic and regulatory contexts. As a recognised expert in her field, Mina has been elected to RIBA's Ethics and Sustainable Development Commission, the CIBSE Intelligent Buildings Group, and the international AIA 2030 Commitment Committee. She regularly contributes to the wider sustainability and wellness debate in her role as tutor at various academic institutions as well as regular speaking appearances at international events and symposiums.



Tom Larsson, Development Executive, Stanhope - Tom joined Stanhope in 2013 with post qualification experience at Jamie Fobert Architects where his projects included central London commercial/office projects, high end residential and cultural projects such as Tate St Ives. Since joining Stanhope, Tom's project experience has included the full range of pre-development activities on Television Centre, White City, two 150 unit residential scheme sites under the Hammersmith and Fulham PPP Housing JV, office scheme in Staines and various new business project bids.



The UKGBC Future Leaders Programme has been an extremely fun yet rewarding programme to take part in. The course has allowed me to assess the way I think about a situation or problem and try and understand it from different perspectives. I have specifically enjoyed applying the learnings to my real life and work, directly seeing how the application of the techniques can help me to influence others and bring about change. I have also met fantastic and interesting people, and enjoyed working together to discuss and plan the best ways to achieve a more sustainable future for the built environment. - Rachael



Rachael Graham, Founder, SolaGrow - Rachael started up SolaGrow, a renewable energy powered vertical farm system for both urban and rural environments, a year and a half ago. Rachael is passionate and driven to improve the use of renewable energy and smart energy solutions in all aspects of the built environment from transport and buildings to food production and everyday living. With a Masters in mechanical engineering

Rachael has worked across all aspects of renewable energy over the past 6 years, delivering projects from the largest roof mounted PV system in the UK, to large scale biomass and taking buildings completely off-grid. Rachael is extremely experienced in project analysis, management and delivery; and is enjoying developing a sustainable business to help future proof farming in the UK. Rachael is looking to encourage all future developments to have smart solutions for food, energy and water, especially in the built environment and is looking to take SolaGrow to a global market in the near future.



Katerina Mercury, Senior Asset Manager - Central London Retail, The Crown Estate - Originally from Melbourne, Katerina joined the Crown Estate in July 2013 as Retail Asset Manager for the Regent Street portfolio. She was responsible for implementing the retail strategy and improving the financial performance of the retail portfolio. In 2018 year Katerina will take on the new role of Senior Retail Asset Manager for Central London,

which comprises both the Regent Street and St James's portfolios. Her role will require helping to redefine our retail strategy and driving it forward to help The Crown Estate be a progressive landlord of retail property and get ahead of future retail trends to continue to deliver a world class shopping destination.



Richard Twinn, Senior Policy Advisor, UKGBC - Richard works across UKGBC's policy priorities and public affairs activities on low carbon buildings and energy efficiency. He leads on domestic retrofit policy in particular and has been closely involved in recent policy development including the Energy Company Obligation and Minimum Energy Efficiency Standards for rented properties. Richard frequently represents the

organisation discussing policy issues in the trade press and the national media. He studied a joint honours in history and politics at Sussex University.



Mathewe Bennett, Strategic Advisor, Willmott Dixon Construction -

After entering the industry as a graduate site manager, Mathewe moved into design and bid management when he joined Willmott Dixon in 2008. As he moved up through the business to the position of preconstruction manager, Mathewe became more interested in business strategy and the state of the construction industry as a whole. Since the middle of 2016 he has been advising the business on opportunities for growth and developing strategies to position Willmott Dixon accordingly. Mathewe is particularly interested in developing Willmott Dixon's position from simply being seen as a contractor to becoming a facilitator of sustainable social infrastructure development.

The built environment sector is ripe for disruption. Many people in our industry understand 'what' needs changing, but fewer people understand 'how' things need changing. The Future Leaders programme deals with the 'how' by blending innovation theory with practical-based learning. It gives practitioners, like myself, the skills and confidence to methodically test, challenge and now solve (!) some of the smallest and biggest challenges facing our industry. A highly valuable programme for any individual or business that would rather disrupt, than be disrupted! - Simon



Simon Tranter, Head of Sustainability, Willmott Dixon Interiors

- Simon had been Principal Sustainability Manager at Willmott Dixon Interiors since March 2015 before becoming Head of Sustainability. His main role is to influence leaders to move beyond theory to the practical (and authentic) implementation of sustainable development principles. He designs and implements strategies to drive business improvement and cultural change, and has specific interests in supply chain management, innovation and workplace productivity. Simon is a member of the Institute of Environmental Management and Assessment and holds an MBA from Surrey University. His professional motivation is to help WDI adopt a long-term approach to sustainable development and in doing so generate real competitive advantage and value for the business.



The Innovation Process

Prior to the formal programme launch in January 2018, UKGBC hosted a workshop where the six challenges were identified. The Future Leaders' task was to respond to these challenges through the creation of new sustainable business models.

The six challenges were identified at the workshop which was attended by senior business leaders from the organisations that were represented on the programme. The process began with a review of future operating conditions for the built environment sector, and then detailed discussion led to a long list of challenges, which were then filtered down to the following six:

- 1 How can we build a workforce with the digital and technological skills to deliver a sustainable built environment?
- 2 How can the built environment industry avoid a public crisis around air quality?
- 3 How can we ensure our building stock is ready for the future (tougher sustainability standards and a warming climate)?
- 4 How can we ensure diversity at senior levels in organisations operating in the built environment?
- 5 How can we deliver a built environment that reduces loneliness and promotes community?
- 6 How can we create a more effective development process which promotes sustainability, productivity and quality?

Working in teams, the Future Leaders worked through a structured process of innovation to understand how to rigourously define a problem and challenge existing assumptions to develop a new, innovative and sustainable business model.

This process enabled each team to devise sustainable business models, which challenge current operating conditions, and ensure the environmental and social aspects were fully integrated alongside the revenue generating potential. The challenge was then to communicate the business model in an interesting and compelling way, so storytelling skills proved to be a major area of focus for participants.

This document showcases the six business models, developed using these processes and tools, in summary form.

Although the six ideas were developed as part of a learning experience, we have shared them as they provide a positive vision for the future, and can inspire more action for sustainability in our built environment.

A framework for innovation

The Switch On framework for innovation was used by the Future Leaders to address the challenges they were set:

- 1 Problem definition
 - Global challenges
 - Understanding who's affected, why it's a problem and why it hasn't been solved yet
- 2 Breakthrough innovation
 - Proposition
 - Assumptions
 - Breakthrough insight
 - Breakthrough proposition
 - Breakthrough vision
- 3 Concept development
 - Concept definition
 - Market insights
 - Competitor review
- 4 Business model development
 - Brand and scale strategies
 - Value proposition
 - Assumptions and risks
 - Cost structure and revenue streams
- 5 Storytelling
 - Creating a connection
 - Communicating the purpose and vision

To find out more about the innovation process, please download a copy of the [Sustainable Innovation Manual](#) from the UKGBC website.

01. Cube Housing

Turning modular construction into modular design

Ciaran Garrick, Allies and Morrison
Steven Kellett, Argent
Hero Bennett, Max Fordham
Tom Roberts, Sir Robert McAlpine
Richard Twinn, UKGBC

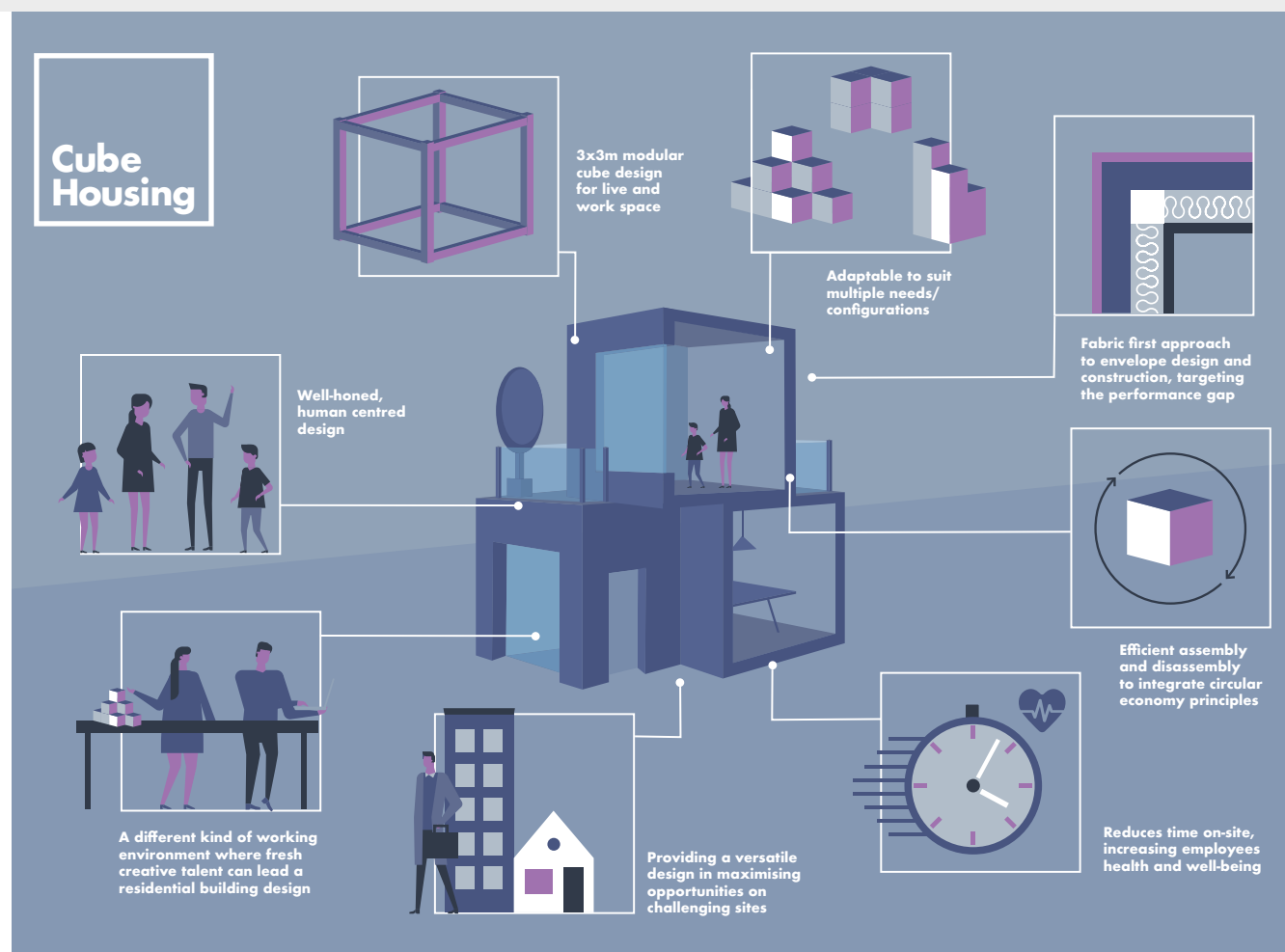
The Elevator Pitch

Do you think it's strange that we've been building houses for thousands of years, but the methods haven't changed much at all? We've been wasting resources by delivering one-off designs time and again. New technology such as offsite manufacture and digital design has the potential to transform the housing industry, driving standardisation, improving quality, reducing waste and increasing delivery rates. But currently the industry doesn't make the most of these opportunities.

Cube Housing has developed an innovative new approach to construction by designing and building homes using our standard 3m Cube unit. Creating and refining a standard solution reduces the need for project-specific engineering, enables economies of scale and allows design optimisation through ongoing user feedback.

Our approach is to promote young creative talent to design buildings using the Cube unit, and to allow customers to adapt the building once they've moved in. Standard interchangeable components also offer more flexibility for recovery and re-use at the end of the building lifecycle.

Cube Housing takes a product-led approach providing end-to-end delivery of modular off-site manufactured properties, working with developers to bring cutting-edge design and custom build housing to the mainstream. We offer developers certainty in product quality allowing them to focus on placemaking.



Cube Housing

Assumptions

The model has been developed around the following assumptions:

- The Cube modularised design and construction can deliver on its promise of being less resource (construction time, and materials) intensive than traditional construction methods or competitor modular housing providers.
- A product can be developed that simplifies the architecture and engineering design sufficiently to reduce design time to allow younger creatives to lead the design in a way they wouldn't otherwise get a chance.
- Cube Housing will partner with other offsite housing suppliers to minimise upfront investment
- Cube Housing relies on offering a sufficiently different approach to branding and fresh working culture to attract new talent and capital investment. An aspirational product brand is also key to attracting customers.

Costs & Revenue

Up-front investment will be needed to set-up a design practice to deliver a Cube prototype to generate interest in the proposition. Costs will be avoided through utilising third party manufacturing facilities to produce the 'Cubes' from the in-house designs.

Revenue will be generated through securing payment for the delivery of a fully packaged designed, built and constructed housing solution with the client focusing on planning permission and providing infrastructure requirements.

Margins will be made through having pre-designed, repeatable Cube modules which will avoid the procurement of a large supply chain of contractors, consultants and designers.

Environmental & Social Benefits

According to research by Shelter more than half of buyers of new homes have experienced major problems with their properties. This is partly because every building is a prototype with poor onsite construction and poor feedback loops. Cube housing will deliver fabric first energy efficient homes in use by ensuring quality through developing a refined offsite housing product. End users will be able to feedback directly to Cube through the Cube Housing app. Each product version will incorporate refinements relating directly to user experience.

Cube housing will have a working environment more like a tech company for employees with fewer steps to creative control in comparison to a traditional company, putting creativity and flexible working at the heart of the business.

Of course, Cube brings all the benefits of standard offsite construction in reduction of construction times and reducing nuisance to neighbours. In addition the concept is a fabric first design, prioritising good insulation and no internal wall framing system to minimise thermal bridging. The modules will be all electric, designed to run off the UK's decarbonising grid, and roofs have been designed to come with (or be retrofitted with) a photovoltaic panel option.

Just as Cube Housing will be designed to be slotted together, it will also be intended to be slotted apart - designed for adaptable upgrades, with minimal waste, and for deconstruction and reuse.

Risks

The risks to the success of the model are as follows:

- **Planning approval:** The Cube Housing aesthetic is intentionally different than traditional housing and will not fit the character of all locations.
- **Competitors:** Larger firms might be able to replicate the Cube Housing model quickly and have the scale/infrastructure in place to rapidly deploy a marketable product.
- **Developer trust:** Clients will be aware that with Cube they are tying delivery risk with one provider. Sufficient capital and demonstration projects early on will be essential.
- **Quality:** As quality and efficiency is fundamental to the company's proposition, quality must never be compromised, particularly in the first iteration.

Market Conditions

There are a number of organisations that offer off-the-shelf housing to varying degrees of quality, but their emphasis is generally on construction efficiency and often tries to match traditional aesthetic. Offsite housing is rarely recognisable by the end user at present and offers them no advantages; these are all focused on developers / contractors.

The Cube Housing model actively looks to entice the buyer through the unique characteristics of the product coupled with a number of technical advantages offered by our interpretation of offsite construction.

The target market and building size for Cube will be mid-rise apartment blocks chosen based on current UK demand and the cost efficiencies achieved through the product.

Taking the Idea Further

As well as providing a platform for young creatives to take charge of residential building design Cube housing foresees inviting high profile architects to use their components to create signature buildings which will help to drive the Brand. Beyond the target market of mid-rise apartment blocks this product has a lot of potential for growth into other types of housing - private dwellings or international markets. It could even serve as easily installable units or blocks for disaster relief to be dismantled and redeployed when needed.

02. Hotspot

Constant care in a changing climate

Michael Karling, Banyards
James Spears, Cundall
Lucy Puddle, Grosvenor
Mina Hasman, Skidmore Owings and Merrill

The Elevator Pitch

In 2015, Jimmy - an 85-year-old war veteran - died of heat stroke in his care home room, soaked in sweat and hardly able to breathe. His caregivers were unaware of the rising temperatures in his room, and the suffering he was going through.

At present, there are 40,000 excess deaths in the UK due to extreme-temperature related issues, and this is set to increase by 250% by 2050 thanks to climate change and our aging population. Moreover, the strain on our health services is severe and will only get worse as temperatures increase.

That is why we have created Hotspot – an app that links to sensors which monitor a person's real-time health and property conditions. By bringing together key data about the property, the patient's real-time health and medical history - we can identify any person's health risk in relation to extreme temperatures. When the health risk is high, a notification is sent through the app to the caregivers to take an action. Ultimately, building owners can use their Hotspot data to make informed decisions about their property to adapt it to our changing climate.

We invite you to join the movement for a simple solution to make a significant difference to the lives of the most vulnerable within our society.

Hotspot

40,000+

deaths a year are due to unmonitored extreme temperature variables



Monitoring systems for rooms and individuals



Multi-location based system, providing a greater outlook and visibility



Data reporting enables future change and improvement



Hotspot

Assumptions

The model has been developed around the assumption that climate change will result in more extreme weather, whilst the population continues to age. This will bring its own problems, especially on the healthcare sector, which already has staff shortages in front-line elderly care. Therefore, extreme-temperature related deaths and hospital admissions (and resultant bed use) will grow every year.

Hotspot assumes that care home owners and operators will identify temperature issues as important. There is a gap in the market for products to monitor vulnerable people's environments and their real-time health condition (body temperature and heart rate) to assist healthcare workers to prevent a range of related issues from heat stroke to hypothermia.

Costs & Revenue

Hotspot will use existing hardware with the main start-up costs centring around development of the app/dashboard and an automated alarm system. Relatively simple, low-cost space monitors (measuring temperature and humidity) will be used, and initial wearable devices will measure skin/body temperature and heart rate.

An installation and training service will need to be set-up, and ongoing updates, support and data storage (and security) costs for the app/dashboard will be required.

The main revenue stream will be from a subscription to the app/dashboard providing data analysis and automated alarm service, with the installation costs kept at a low-level.

Environmental & Social Benefits

Simply, Hotspot will save lives. With increasingly ominous predictions about the extent and impact of climate change and aging populations in many countries around the world, more people are at risk of extreme temperatures. The alert system and app/dashboard is a preventative measure that will help reduce some of the strain on medical services especially the pressure on A&E admissions, long aftercare period and bed use during patient recovery. It will empower health care workers and carers to take immediate and easy mitigation steps to protect those in their care.

The data points generated can be analysed (through the app/dashboard) to inform regulators of buildings' performance to help shape policy and protocol in the future on adapting buildings for climate change.

With published data, building occupiers can begin to make more informed decisions on what space they let/buy. Much like the air quality agenda, which is front of mind, the risk of extreme temperatures will become a more prominent issue. Hotspot and the data it generates will provide greater transparency and accountability, and ultimately individuals can take more ownership of their personal environments to protect their health and wellbeing.

Risks

The biggest risk is that the cost of the equipment and installation will be too high in the care industry, which is under considerable financial strain. We mitigate this by providing the set-up of a Hotspot system at the lowest possible cost, earning revenue from the app/dashboard subscription service.

The importance of an easy interface and an integrated experience with the care home's normal activity is vital to avoid additional staffing/training costs that could deter owners.

Finally, Hotspot must take extreme care with the data it collects to anonymise it before sharing it with third parties for analysis as well as having fail-safe systems in place in case of device malfunction or disconnection.

Market Conditions

A large number of existing monitoring systems are currently available that we will utilise to reduce development costs. The use of these devices is typically for internal workplace and high-end residential monitoring, whilst in the healthcare sector it is generally post-admission (e.g. internal conditions in hospital wards).

There is also very little linkage between internal space monitoring and personal health monitoring, so this provides a gap in the market to supply a solution using existing technology.

Furthermore, there is a need in the built environment for existing buildings' operational performance data which Hotspot will provide to improve future designs.

Taking the Idea Further

Hotspot will seek to raise the public profile of extreme temperatures and their risks by promoting the model to the healthcare industry in the first instance. There are significant parallels with educational buildings and residential schemes that we may target in due course.

A greater analysis is required of the existing data as well as the market products that can be adapted for Hotspot purposes. This may significantly reduce set-up costs.

In time, Hotspot would explore whether it could monitor other data points such as CO₂ levels, and whether we could extend the personal monitoring to be broader, further reducing the strain on healthcare services.

Once established in the U.K. market, Hotspot would explore overseas markets.

03. Keystone

Enabling workplace fulfilment for the diverse future

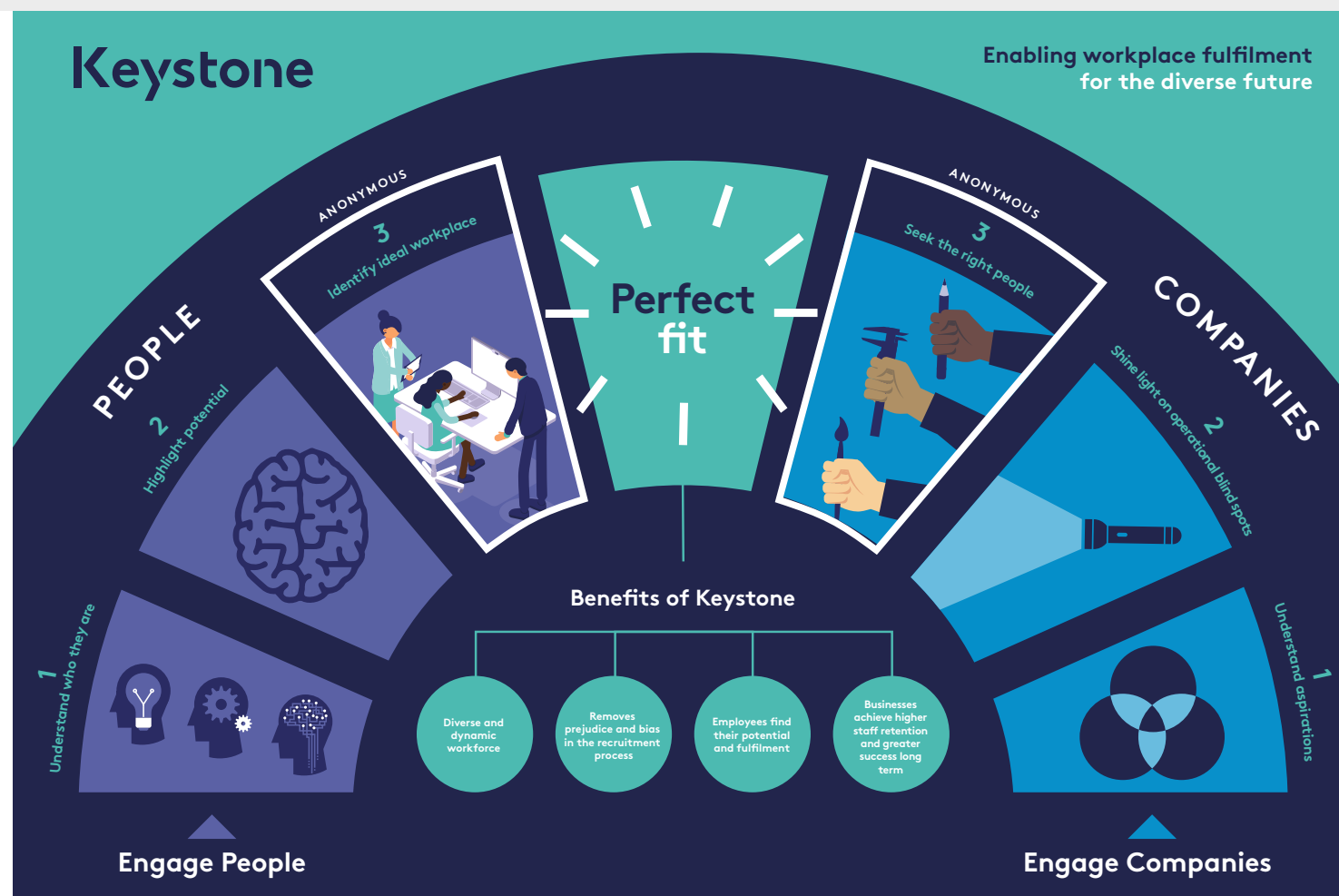
Ajay Shah, Atelier Ten
Kanav Gupta, Barr Gazetas
Katerina Mercury, The Crown Estate
Mathewe Bennett, Willmott Dixon

The Elevator Pitch

Conventional recruitment methods offer applicants job matches based on their past experience alone, rather than the person's potential and what that might mean for the future of the prospective employer.

Businesses are being asked to be more strategically agile, and so there is an increasing requirement to recruit people from unconventional backgrounds with unconventional sets of skills, in order to create dynamism and diversity in their organisations.

Keystone delivers the right applicants to businesses anonymously, based on the skills and qualities they bring. Uniquely, it offers a matchmaking system that links businesses with operational blind-spots to applicants with the skills and mind-sets most needed by a business, and therefore create a truly meritocratic recruitment process.



Keystone

Assumptions

The model has been developed around the assumption that people want to find fulfilment in their careers but aren't always sure what options are available to them, what they are naturally good at or are not given a fair chance to grow and stretch.

On the other hand, new jobs are being created all the time, other jobs are becoming redundant and businesses are starting to panic over their lack of diversity and gender pay gap. The current recruitment process does very little to address this issue as recruitment agencies don't make a concerted effort to identify strategic business needs or to truly understand the people they are placing in jobs. The process generally adopts a short term plugging the gap and reactive approach without setting businesses up for long term success.

Costs & Revenue

The business will raise funding to meet costs associated with design and maintenance of the online platform, legal advice, marketing and business development, cloud hosting, office accommodation and other overheads, accountant, licensing psychometric tests and staff salaries.

Once the platform is live, revenue will be generated through applicant fees for online psychometric tests and brokerage fees from employers. As more traffic gets attracted to Keystone, it will host targeted adverts from service providers that could offer training, or alternative career progression routes, etc. After a while we would be able to build a database that could sell insights on market trends. We will look for partners to join us through joint ventures and equity sales.

Environmental & Social Benefits

Keystone's mission is to put the right people in the right jobs. To create a world where everyone is given a shot irrespective of race or gender creating a more equitable society as Keystone focuses on people's personalities and strengths.

By ensuring everyone finds their fulfillment in their career they become happier, more empowered and successful. In return businesses find a strategic balance & become more dynamic & agile and well equipped to respond to a rapidly changing world.

Risks

With any new system that is new and untested it will take time to build momentum and gain people's trust. Initially there is a risk of opposition by the recruitment sector which could jeopardise integrity of the Keystone platform. Users may not feel compelled to pay for the service initially and hence the business may run at a loss initially. The strength of the platform will lie in the scale of the database and larger players that already have a global database may choose to adapt their platforms to compete with Keystone before the business has a chance to scale up.

Market Conditions

Diversity in the workforce is a hotly debated topic with a definite lack of diversity in senior leadership roles. Most systems either poorly address the issue or instill positive discrimination.

Current competitors still allow a lot of room for decisions based on bias and prejudice to be made by the employer and largely don't seek to truly understand the individual or understand their potential. Additionally there is no platform that helps younger generations understand what sort of roles are best suited to them to set them up to have a fulfilling career. Whilst other competitors may have scale they don't have the depth to operate in the same space as Keystone.

Taking the Idea Further

Keystone will require a range of partners and collaborators to create a highly sophisticated platform unlike any other. Integrity and accuracy together with a human touch will help attract and retain users so partnering with experts in the people and technology fields will be vital.

To deliver the vision the business would look to carry out the following next steps before launching:

Secure funding, protect the IP, appoint consultants and/ or psychologists that specialise in organisational behaviour, work with organisational experts to agree service arrangements with employers, appoint partners to carry out and create bespoke personality profiles for Keystone users, build technology platform, carry out pilot tests and build an exhaustive database.

04. LivIn London

Life shared, life simplified

Charlotte Hardy, BRE
Kieran Hedges, Eminence Development
Tom Byrne, Landsec
Ewan Cross, Rolton

The Elevator Pitch

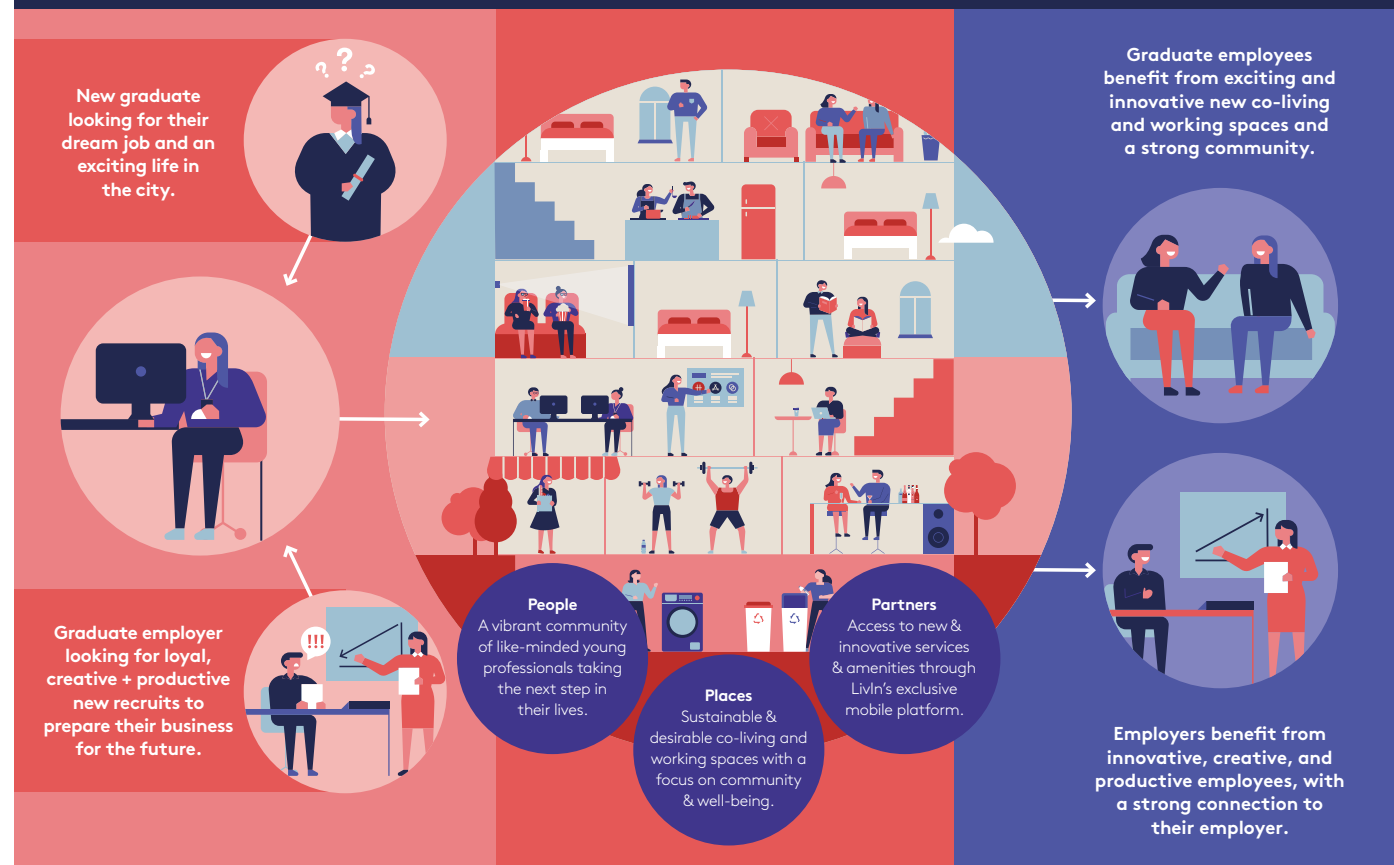
It has been proven that socially active and emotionally healthy people are more engaged, innovative, and productive in the workplace. We have realised that graduate employers are in a unique position to instil and nurture these positive traits in new recruits, supporting them through the transition from university to working life. They could be offering graduates access to accommodation that is affordable, desirable, supporting mental and social wellbeing. This in turn gives them a unique offering as an employer whilst also addressing a growing epidemic, youth loneliness.

This is why we have created LivIn, a concept designed to enable graduate employers to offer access to exciting, desirable, and affordable accommodation for their new recruits. LivIn is a shared living concept uniquely designed to spark social interaction, nurture wellbeing, and inspire innovation among its residents, therefore creating and developing employees who are more engaged, more connected and more productive.

The LivIn location will be leased to leading graduate employers who offer its access to their new recruits as part of their wider benefits package. The live. in environment provides residents with a desirable, affordable co-living space which supports social interaction and wellbeing. This in turn produces inspired and dedicated employees for live.in partners who benefit from increased productivity and creativity.

LivIn London

Life shared, life simplified



Assumptions

- The model has been developed around the following assumptions:
- Graduates will want to live in affordable, desirable and innovative accommodation with like-minded individuals from their work place.
 - Innovatively designed co-living spaces will create the right environment to reduce loneliness in young people.
 - Graduates will respect the accommodation provided to them by their employer.
 - We will be able to raise funding to support the fit-out of the first project from investors.
 - Graduate employers want to provide unique benefits packages to their graduates to entice the best talent.
 - Salary sacrifice is tax efficient.

Costs & Revenue

Assumptions for model: 50 graduates, 1 building (South London), £1100 license fee per graduate, 200 sq ft living space and 175 sq ft workspace per graduate. Remaining 55 sq ft includes amenities and leisure space.

LivIn have considered two aspects for their first building, a PropCo to design/build and lease the building and an OpCo to manage and run the building and stakeholder relationships. Revenue from PropCo will come in the form of leases and an increased value post refurbishment. OpCo costs will be wages, building management and a proprietary App that will engage all stakeholders.

Graduate employers will fund leases through a salary sacrifice programme which may have additional tax benefits.

Environmental & Social Benefits

Reduce loneliness: loneliness is a growing issue among young people. LivIn creates a community for young graduates with a focus on their mental and emotional wellbeing. Our experts will advise on the best way to design spaces to create communities and spaces to spark innovation.

Sustainability: each building will be fitted-out with quality and sustainability in mind. Using sustainability certification schemes, the buildings will consider a holistic range of issues including:

- Health and wellbeing of the occupants,
- Energy efficiency and correctly commissioned equipment,
- Water efficiency,
- Waste reduction during construction and in-use,
- Sustainable transport to and from the building,
- The use of low impact and sustainably sourced materials,
- Ecological impacts and enhancements,
- Impacts on the local community.

The buildings will also be built flexibly to allow for future adaptations to de-risk the investment.

Reduce living costs: communal living will enable graduates to pull joint resources creating greater efficiencies, reducing living costs for young graduates, therefore enabling them to save money for their own homes.

Community regeneration: recycling spaces by refurbishing existing buildings in areas in need of regeneration, LivIn will increase the value of these areas creating new communities.

Risks

Employer buy-in – LivIn represents a significant shift in the involvement of employers in their employees' personal lives and, therefore, will need to reassure employers that they can do this economically, without negatively affecting the relationship between them and their employees, and with the desired wellbeing and productivity benefits.

Legal responsibility – The complex partnership structure of LivIn, with residents, employers, property companies, maintenance-companies, and service providers, will require a clear legal structure identifying rolls and responsibilities for each element of the business model and for each partner.

Ethical responsibility – The active encouragement of community and mental wellbeing, supported by professional input, will need to ensure that it remains ethically appropriate by ensuring that all active measures deployed are proven, fully developed, and supported by industry.

Market Conditions

The Private Rental Sector (PRS) is one of London's fastest growing industries but it's siloed, inefficient model continues to provide challenges for independent, young professionals (economic and social). Developments by The Collective and GradPad attempt to offer community-centric accommodation to young Londoners but have been criticised as being too expensive and lacking real social cohesiveness. Business models which have proved to work are both WeWork, who transform previously undesirable real estate into buzzing, working space and the Cadbury's Bourneville. In the late 1800s Cadbury relocated its facilities in Birmingham and constructed Bournville, a model village designed to provide its workforce with dedicated healthy, modern accommodation.

Taking the Idea Further

The next steps are to develop a minimum viable product (MVP); source a building and engage with employers to gauge interest; look into seed funding to develop the brand and concept; and identify technology partners for shared services, amazon/Netflix/zipcar etc developing partnership strategies.

LivIn London will be the flagship building, with the aim of opening in various locations across the capital. Initially leasing existing buildings, where ownership is retained by the landowner, with a move into purchasing and wholly owning the buildings as capital increases.

The aim will be to open LivIn in all major graduate employer locations across the country, e.g. Manchester / Birmingham, to develop the LivIn brand. Once a base of buildings has been established we will decide whether to diversify which could include:

- Taking the concept globally, opening LivIn NewYork, LivIn Tokyo etc.
- Partnership with major PRS/BTR providers to widen LivIn's reach

05. #TrackMyPack

Lauren Williams, AECOM
Simon Waters, Canary Wharf Group
Niall Robertson, JLL
Heidi Barnard, Saint-Gobain
Tom Larsson, Stanhope

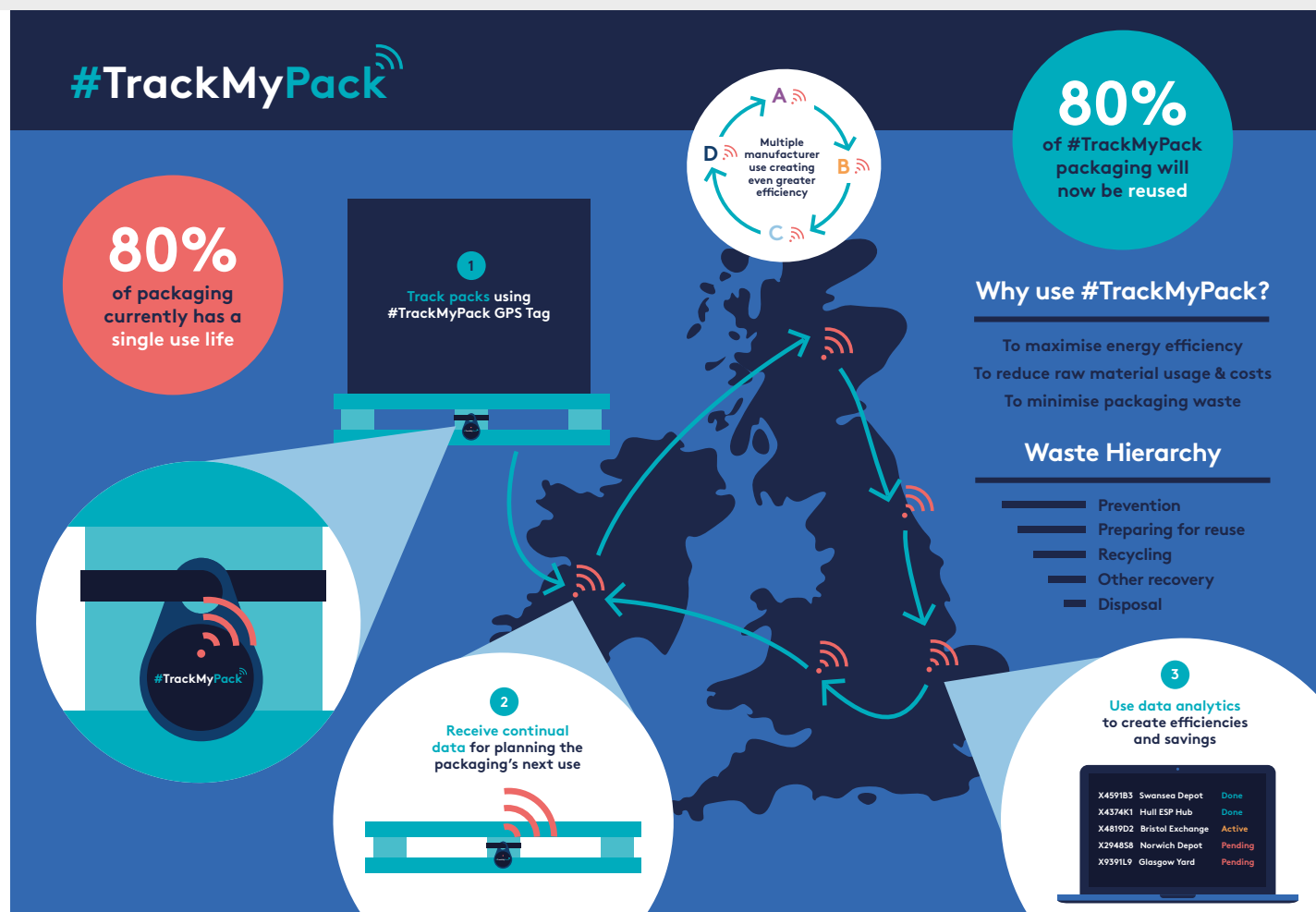
The Elevator Pitch

As the market evolves at an ever increasing pace, with developments in technology as well as resource cost increases we believe that the old take make dispose model is no longer economically viable for packaging.

We realised that we need a lower cost, hassle free, reusable, low impact packaging solution; we have also realized that technology is available to deliver differently. So we have created “#trackmypack” which ultimately will offer a reusable traceable packaging service creating an intelligent industry solution which no longer relies on single use materials.

So what’s this going to look like? Imagine a pallet, now imagine it has a GPS tag on it, which enables it to be traced, collected and bought back to be reused for a second, a third and fourth life.

This is an active data point applied to existing mainstream transit, allowing understanding of the flows of packaging and building a case to design better, more robust packaging destined for multiple uses, with the guarantee and proven track record of getting that material back. Imagine no longer having to send shrink wrap, bearers and other disposable materials onto your customer’s site, giving them a waste to dispose of.



Assumptions

The model has been developed around the assumption that customers want/need a low cost, low hassle, ethical, reusable, zero impact packaging but currently there is a lack of options and flexibility to allow this. Unlike Manufacturers and their supply base we have realised that there is a solution and there is technology available to enable this, rather than single use packaging with no alternatives that they offer because they think it meets customers' needs. We have created "Where's my box" which delivers a series of trackable multiuse packaging options that will meet the customers growing needs. Uniquely it offers a reusable traceable packaging service and therefore will create an intelligent industry solution which doesn't rely on single use.

Costs & Revenue

- Saving for the packaging maker, reusing the same material over and over again
- Saving for those using the packaging, reducing the number of virgin products to be made, and the cost of disposing of these
- Saving in packaging recovery notes, as the reuse will offset virgin use
- Recycled material over virgin material
- Lease based model, rent for a trip (license fees for hire)
- Partnering between companies (distributors, suppliers, packaging suppliers, waste management company's).
- Traceability, tracking software, licensing, barcoding, QR codes, smartphone applications
- Application of data (diverting from landfill, efficient transportation models)

Risks

- Risks to the model include:
- Tracking doesn't work
 - Materials lost to down cycling
 - Cost model doesn't work
 - Transport flows are overly complicated
 - Complexity of Construction supply routes to market
 - Competition in the market introducing additional options complicating the market and universality.
 - The Packaging Industry could resist the market disruption, see it as a threat rather than an opportunity
 - Lack of clarity about who would be responsible for the condition checks /refurbishment if damaged

Environmental & Social Benefits

- Environmental and social benefits associated with the model include:
- Help meet national policy, such as Government Waste Policy and waste prevention programme;
 - reduce demands on finite natural resources and the associated environmental impacts of the extraction, harvesting and processing of those resources;
 - minimise greenhouse gas emissions associated with waste collection, transportation and treatment;
 - reduce local authority waste management budget due to decreased quantities of waste;
 - encourage social inclusion and economic development through creating jobs, volunteer schemes and training opportunities as well as improving access to reduced price goods for lower income families; and,
 - free up consumers' financial resources for potentially more economically productive endeavors - consuming less will use fewer financial resources to purchase products that become waste.

Market Conditions

- There are no known direct competitors in construction market
- Similar model seen in the retail sector with plastic crates and cages
- Established markets and brands in the packaging distribution sector – would want to work with them, rather than in direct competition as there is an opportunity for them in the model
- Would also want to work with the Waste management industry and Logistics partners to make the concept work

Taking the Idea Further

Phase 1: Tracker applied to existing Transit Packaging

Phase 2: Data collection to map material flows

Phase 3: Redesign of existing Packaging Materials to increase the life span

Phase 4: Moving into logistics and Material flow mapping

Moving from the tracker on a piece of packaging to supplying packaging to trading on the data and selling the knowledge of where the materials are and leveraging value from the trend data, understanding material flows.

06. AirInfo

Health. Wellbeing. Insights. Empowering business and the people who drive it

Mark Poulter, ChapmanBDSP
Paolo Vimercati, Grimshaw
Avni Mehta, Lendlease
Rachael Graham, Solagrow
Simon Tranter, Willmott Dixon

The Elevator Pitch

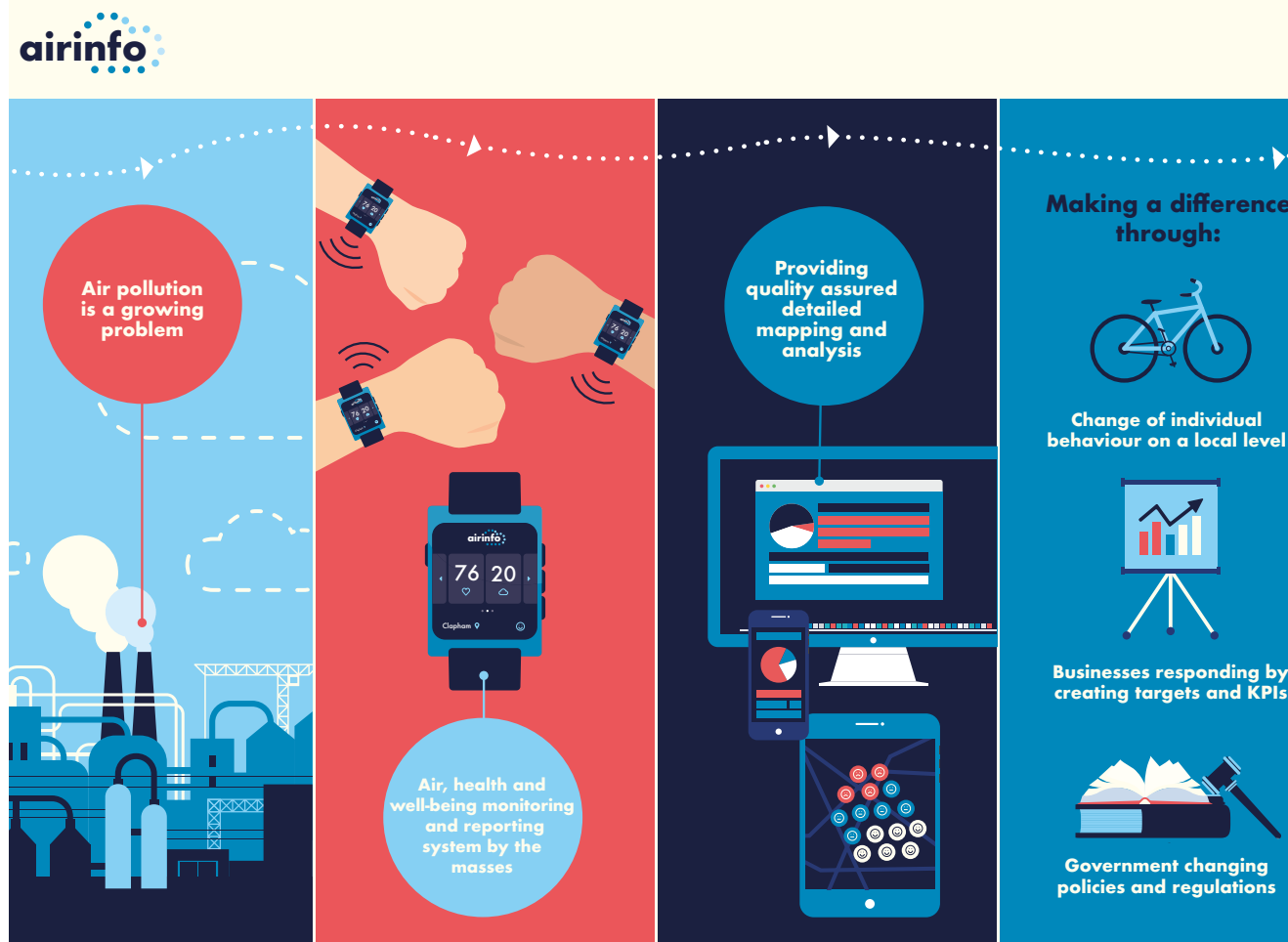
Imagine a world where everyone has access to personal health information. Imagine if people could take proactive steps to improve their working environment and reduce their impact on the natural environment, or if people could reduce their exposure to harmful pollutants.

We aim to do that through our wearable device and online platform, AirInfo. We have an ambitious vision to provide personal and corporate insights that help individuals to alter their lifestyle or activities anywhere, anytime, using our real-time, customisable health and wellbeing data.

Air pollution alone is responsible for over 40,000 premature deaths each year. The regulatory landscape is changing, with the transportation, agricultural and construction industries finding themselves under increasing pressure to reduce the impacts of their activities.

AirInfo is the first company to provide a wearable device that enables users to limit harmful exposures to poor air quality and other wellbeing parameters. Using the online platform, employers will also gain clarity on the pertinent health issues affecting their employees. Our certified dataset helps employers to respond more effectively whilst staying one step ahead of regulatory intervention. Publicly available data will also support academic research and policy development.

We want to empower communities and drive positive change, supporting a healthier, happier planet, both now, and for future generations to come.



Assumptions

- The model has been developed around the following assumptions:
- Individuals perceive the health, wellbeing and air quality issue to be significant enough to warrant personalised data, insights / analysis and alerts to help them modify behaviour
 - End-users believe wearing a physical device is both necessary, attractive and a responsibility they should take personally
 - Organisations will justify the investment in hardware and / or the data platform, and recognise how insights can provide competitive advantage and reduce risk
 - The technology complies with data quality standards and provides a level of robustness required for academic scrutiny or analysis

Costs & Revenue

Our technology will retail directly to individuals, employers and research institutions. Options are available to rent the technology provided the minimum number / durations are met. Subscriptions to the online data platform provide secondary revenues. Users of the technology have basic database access unless a full subscription service is purchased, granting access to advanced analytics and industry benchmarks. Options exist to subscribe to the database only.

Research and development demand a significant proportion of the upfront investment cost, along with salaries, marketing and production. Distribution costs are factored into the recommended retail price. Initially, we will limit costs by adopting existing sensor technologies.

Risks

- **Data:** out-of-date, poor quality or inaccurate data could tarnish the business' reputation and dilute any long-term value
- **Incentivisation:** we are reliant on construction companies changing their mind-sets and adopting preferences for advanced air quality impact monitoring
- **Devices:** ensuring our devices are robust and durable whilst being at a price point where individuals and companies are willing to invest
- **Remaining competitive:** this product can be easily replicated. Diversification to different user types will be key in mitigating this risk
- **Apathy:** the industry may just accept the situation and see no benefits in change
- **Claims:** our data stands up to robust, industry standards to help prevent bogus insurance claims

Environmental & Social Benefits

- Through raising awareness of the levels of air pollution in particular areas or work sites, individuals will be able to reduce their exposure and therefore prevent long term illnesses or conditions. This could overall have an enormous impact on reducing the strain on health services
- Our devices could create greater corporate social responsibility from construction companies. New performance measures and indicators could vastly reduce the impact the built environment has on air pollution, as it could lead to investment in new technology and innovations, to allow construction companies to operate machinery that has a much lower impact on air quality and pollution
- The current lack of information causes doubt and speculation on the real impact of poor air quality. We can see a situation where information collected through our platform can provide a detailed dataset for use by research bodies and institutions contributing to better understanding of the impacts – benefitting society as a whole
- AirInfo allows society to take control. Individuals can moderate their behaviour or exposure to impacts that adversely affect their personal lives or professional working environment.

Market Conditions

We have identified a number of players in this space. Although they do not focus on our chosen market, they do provide some clear benchmarking for our proposed technology:

1. **Plume & ATMO:** Focus on individuals, health and wellbeing and offer portable standalone sensors and customised data through an app. Pollutants sensor for: PM2.5 PM10, VOC (Volatile Organic Compounds), NO2, Temperature, Relative Humidity.
2. **SPRIMO:** An app and iPhone integrated sensor offering a very small solution focused on elaborate VOC analysis
3. **CLEANSAPCE:** iPhone sleeve with integrated sensor, integrated app with community focus on personal health and wellbeing.
4. **CLARITY:** New generation smart city standalone and solar powered sensor to improve data gathering in open space. Focused on public data gathering

Taking the Idea Further

As health and wellbeing issues move up the agenda, organisations responsible for individuals will gain greater benefit from access to solution. The vision for AirInfo:

- Government bodies use it to measure performance and demonstrate the achievement of targets
- Companies use it to protect their workforce, demonstrate responsibility and measure the effectiveness of mitigation measures
- We expand into new and emerging markets and grow the number of subscribers who use it to make positive, informed, decisions about personal health and wellbeing
- Research bodies increasingly benefit from improved real-time, big data sets, and use it to inform policy development and innovation



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Together for a better built environment