design interventions have been shown to maximise positive outcomes, do we build anything. Once built, these new environments are also embedded with sensors, which allow us to validate the models and predictions used to test them to begin with. This information is used to fine tune our models and assumptions, so that over time they get increasingly better at understanding what works and what doesn’t. In doing so, we build a feedback loop between the forces that shape our built environment and the outcomes that environment has on people.

While this transformation won’t happen overnight, architects and designers need to start rethinking their methods and approach to their work. There have been some early movers, such as Space Syntax, but we’re now seeing a new wave of innovation ranging from the in-house design team at WeWork, to experiments such as Google’s Space for Being, paving the way into the future. As we move into this new world of data driven design, we need to remain aware of its many pitfalls. We need to ensure the tools we build are interrogable, the data we collect is open, and the knowledge we collect is shared. As the African proverb goes “If you want to go fast, go alone, if you want to go far go together”.

Smart Places

A curated series of invited thought pieces, bespoke illustrations and online events, inviting discussion about how we might improve the places of the future.

www.edinburghlivinglab.org/projects/smart-places
What is ‘Smart Places’?

‘Smart Places’ is an initiative developed in partnership between the Edinburgh Futures Institute (EFI), the Data-Driven Innovation programme (DDI) and Edinburgh Living Lab. ‘Smart Places’ is a broad theme that generally aligns to the concept of placemaking and emphasises active citizen engagement and participation alongside new uses of data and technology to improve places for people. During May and June 2020 we delivered a series of articles, illustrations and conversations on this topic, contributed to by a diverse range of experts across academia, industry and the public sector.

This featured the following curated series of 7 thought pieces, each authored by a different leader in this field and available as blogs via Medium. Each article draws on the author’s insight and experience to highlight a contemporary place-based challenge, and set out opportunities and a future vision to improve the places of tomorrow. A bespoke illustration created for each article by a range of local illustrators communicates the future vision described.

A series of public online conversations complemented the articles. These included weekly one-hour Twitter discussions attended by industry and public sector professionals, academics and other interested organisations and individuals. View the full discussion from our online events by looking for #SmartPlaces on Twitter.

The Smart Places series culminated in all 7 article authors coming together for a panel discussion on 26 June 2020. View the panel discussion recording here.

04 ‘Design with Data’ by Euan Mills, formerly Connected Places Catapult
08 ‘Shaping a Resilient Future for Edinburgh’ by Daisy Narayanan, Sustrans
12 ‘Digital and Face to Face’ by Sarah Frood, Icecream Architecture
16 ‘Having Your Voice Heard in an Online World’ by Niamh Webster, Scottish Government
20 ‘Digital Placemaking for More Inclusive and Accessible Cities’ by Dr Jo Morrison, Calvium
24 ‘Housing to 2040 — Present Voices Future Lives exhibition’ by Dr Kate Carter, University of Edinburgh
28 ‘Why Local Data is the key to Successful Placemaking’ by Sally Kerr, Digital Innovation consultant
32 Panel discussion summary: challenges, opportunities, action.
Most design professions today rely heavily on data to inform their work. From product designers to service designers, data is collected through numerous rounds of user research, focus groups and user testing. Technology is employed to track eye movements, attention, and undertake thousands of ‘A/B tests’, all before committing to any single design solution. This data-driven approach is so well established that the award-winning Government Digital Services have adopted a principle in their manifesto that explicitly sets out the need to ‘Design with Data’, emphasizing the importance of “data-driven decision-making, not hunches or guesswork.”

When it comes to the design of our built environment, be it buildings, streets or public spaces, the process is a lot less robust. Most architects and urban designers might analyse and collect data such as building heights, development constraints or community assets, but when compared to other design professions, our decisions are mostly done through ‘gut feeling’ or ‘professional expertise’. Compared to other designers, we pay nothing but lip-service to the idea of evidence based design.

One could argue that the design of the built environment is too complex to be understood through data alone. Jan Gehl famously set out how we “know more about good habitats for mountain gorillas, Siberian tigers, or panda bears than we do know about a good urban habitat for Homo sapiens”. But in truth we have been living and designing cities for millenia, and in that time we have learnt a huge amount. We have learnt from Jane Jacobs the importance of mixing land-uses, small blocks, density and diversity; from William Whyte the impact of sunlight in the public realm; and from Alice Coleman the importance of territory and sense of ownership. And we continue to learn today. For example, neuroscientists such as Collin Ellard have shown us how street-level frontage impacts on people’s dwell time, and Nobel Prize winner John O’Keeffe have given us a neurological understanding of how the human brain navigates through space, giving us a robust understanding of what works well for humans and what doesn’t. There is a lot of data about what works and what doesn’t when it comes to designing places.

Yet, built environment professionals today still resist adopting a more evidence and data driven approach to design, for both cultural and economic reasons. But we are now at a turning point where these approaches are becoming inexcusable. The availability of technology and data, combined with the urgent need to design our cities to adapt to complex challenges from climate change, pandemics, inequality and mental wellbeing, makes data driven design not only desirable, but essential.

It’s time we purposefully move into a future where our understanding of places are derived from reams of data collected by sensors embedded in our streets and buildings. Where this data is aggregated and synthesised, giving us information on everything from footfall and dwell time, to emotional well being, productivity and health. Where we can test and prototype designs virtually, before approving or investing significant time or resources. Only when
design interventions have been shown to maximise positive outcomes, do we build anything. Once built, these new environments are also embedded with sensors, which allow us to validate the models and predictions used to test them to begin with. This information is used to fine tune our models and assumptions, so that over time they get increasingly better at understanding what works and what doesn’t. In doing so, we build a feedback loop between the forces that shape our built environment and the outcomes that environment has on people.

While this transformation won’t happen overnight, architects and designers need to start rethinking their methods and approach to their work. There have been some early movers, such as Space Syntax, but we’re now seeing a new wave of innovation ranging from the in-house design team at WeWork, to experiments such as Google’s Space for Being, paving the way into the future. As we move into this new world of data driven design, we need to remain aware of its many pitfalls. We need to ensure the tools we build are interrogable, the data we collect is open, and the knowledge we collect is shared. As the African proverb goes “If you want to go fast, go alone, if you want to go far go together”.

Illustration by Victoria Rose Ball
I really enjoyed the challenge of creating an illustration to go alongside Euan’s article focusing on data, and how I would come up with a design to show something that isn’t a ‘physical’ thing.

Usually my work focuses on what is in front of me. I create illustrations of my surroundings, trying to convey how I view the city — my work is often very playful with unusual perspectives and exaggerated colour schemes. However, for this project and with the focus being on data and building planning, I wanted to keep an emphasis on the illustration being true to life, while remaining true to my way of working. I came up with the idea of a blueprint style illustration in response to Euan talking about how architects and urban designers collect data before they begin plans for constructing buildings. To create an illustration that felt a bit out of my comfort zone at first, I tried to think like an architect — what elements would be important in constructing buildings, how would they use data to gather this information which would effect the finished architectural design?

Combining my style with a blueprint type plan came quite naturally — I often start drawings with line work before adding colour, which worked well for the creative choices I’d made for how I wanted the finished piece to look. It was how to convey data within the illustration that was more of a challenge!
Live Twitter #SmartPlaces discussion
Hosted by Euan Mills, 3-4pm Friday 29 May 2020, on the topic of his article ‘Design With Data’

Host Euan Mills posed 6 questions using hashtag #SmartPlaces during the one hour event (one question every ten minutes). This prompted responses and discussion on themes of:

- The ways built environment professionals can use data to inform their decisions at the building or city-wide scale.
- Existing barriers to using data to inform decisions e.g. having correct, standardized, agreed-upon, holistic, integrate-able, and available data.

Online discussion questions:
1. What are the barriers to moving toward more evidence-based decision-making in design of the built environment?
2. I mention in my article that there are probably cultural and economic reasons we don’t want to use data to inform our design, what could they be?
3. What data would be the most useful in informing built environment design decision?
4. What are the biggest challenges with using data in the built environment profession?
5. Is there anything that won’t be able to someday be translated into machine-readable data?
6. What are the risks of using data to inform the design of the built environment?

Challenges
- Lack of holistic, consistent open spatial data to inform urban planning/design.
- No consensus or consistency in how data is collected, coordinated, or disseminated to provide an evidence base for built environment decisions.
- Different agendas and ideas around what data should be gathered, focused on, or used, and how this is interpreted.
- Finding and sourcing the right data. Data is often not widely available / open access. Hard to know what data is out there.
- High costs of obtaining and standardising data. Often no common formats.
- Having the right data at the right time. Time delays.

Opportunities
- Making place data widely available, including to communities, non-specialist built environment professionals.
- Use data to inform and support rather than direct. Find a balance that draws benefits of data-driven decision-making whilst not over-relying on data.
- Setting up data-driven feedback loops and conversations that lead to improved place outcomes through iterative learning.
- Agreement about what data needs to be collected, how it should be collected and by who. To help achieve goals of 1) holistic and consistent data, 2) interpolation between formats and standards.
- Ensure social and participatory data (often qualitative) is adequately incorporated in decisions.

‘Design With Data’

•  Making place data widely available, including to communities, non-specialist built environment professionals.
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•  Ensure social and participatory data (often qualitative) is adequately incorporated in decisions.
‘Shaping a Resilient Future for Edinburgh’

5 June 2020 | by Daisy Narayanan

“Although the world is full of suffering, it is also full of the overcoming of it.” Helen Keller

Over the past few weeks, I have found myself reflecting on resilience. Resilience that you find within yourself, within communities and within our neighbourhoods, towns and cities. Resilience that we see all around us through our individual and collective response to the COVID19 crisis.

At work we continue to learn new ways of moving forward whilst ensuring that we don’t lose our sense of togetherness and empathy. At home, I have watched in admiration as my children and their friends have adapted to their strange circumstances, finding new ways to communicate and stay connected to one another. And last week I lost someone I loved dearly. Like many others, I have had to find a new way to grieve from a distance.

Our relationship with each other as well as our connections with the built and natural environment around us are being completely redefined by this public health crisis.

I read somewhere that ‘Moments of crisis can provide a heightened insight into the problems of everyday life pre-crisis’. Looking at the uncertain future ahead, we need to acknowledge that many parts of the ‘normal’ that we long for were broken. And now we have an opportunity to take a proactive approach in shaping the evolving life after lockdown, ensuring it can eventually lead to the fairer, healthier and happier world we want to see.

Exactly one year ago, I was on secondment to the City of Edinburgh Council, leading a 10 year project to transform the city centre: changing how we live, work and play in the city by making it better for people on foot and bike and public transport, reducing vehicular dominance and giving the city centre streets back to people.

One year on, the need to create more people-friendly streets and neighbourhoods has not changed. If anything, there is a much stronger sense of urgency and an imperative to do so.

The challenge

As we look ahead to the next few months, Edinburgh’s citizens will need to build individual and collective resilience to deal with significant challenges. How we continue to maintain our human connections whilst staying physically distant will be one of the most significant issues we need to address.

We need a public discourse on the connection between better public spaces and economic recovery, and the recognition that making space on our streets for walking, cycling and wheeling is central to getting the city reconnected and back on its feet.

As the lockdown loosens – new travel patterns and mode choices will emerge. Without action now, there is a real risk that the car will become the default mode of socially-distanced transport.
The vision

Sustainable, low carbon and active transport will be at the heart of the recovery as we face an uncertain future. Positive change will happen through real collaboration, with people shaping the places that they live, play and work in. The discussions and decision-making will be truly inclusive. By ensuring that voices of underrepresented groups are integrated in policy and planning, through meaningful community engagement and participation, we will truly understand and address the specific needs of Edinburgh’s citizens.

Because a city that works for the young and the old, for the most vulnerable on our streets, is a city that works for everyone.

This pandemic has highlighted the crossovers between the quality of our places, public health, economy, transport, education, air quality and social justice. We already have evidence of the positive impact of active transport on Edinburgh’s economy, environment and public health. For example, the Sustrans Bike Life Edinburgh report showed that 24% of Edinburgh residents cycle at least once a week, leading to 27.1 million trips made by bicycle in the past year. The direct benefits have included a saving of 14,000 tonnes of greenhouse gas, £1.6 million saving to the NHS and prevention of 251 long-term health conditions.

Charles Darwin said “It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”

We can only respond to the unprecedented scale of change we face today by harnessing our individual and collective strength and help shape a future for Edinburgh that is fairer, healthier and truly resilient.
My task when making this illustration for Daisy’s article was to represent a range of themes including human connections, sustainability and collaboration within the design. A lot of my work involves making data comics, where I have the opportunity to create detailed characters and environments to tell stories about things such as health and community. For this project I needed to use a different process to include different stories within one illustration, which I hope I have achieved!

‘Resilience’ was the first word I wrote down after reading Daisy’s piece; and in the design I’ve tried to reflect the idea of the citizens of Edinburgh collaborating to find a way forward after lockdown. From making the first pencil drafts of the illustration I focused on people, streets, transport and conversation. In this completed design, the characters within the buildings and on the street are having a conversation despite being physically distant from each other. I’ve represented as many modes of transport as possible and have given the most space to active travel and public transport to match Daisy’s vision for a healthy and resilient future. The motif of the arm / countryside that is wrapped around the city is a means of showing the togetherness and empathy that is needed for us as individuals as well as our physical surroundings.

Though it was tempting to develop the individual characters, in the end I chose not to add too much detail to them, as the illustration needs to be readable both as a smaller/ on-screen image as well as a larger print. As always, I used the bright colours and solid lines that are recognisable throughout my work. I hope that my concept successfully compliments the themes of community, collaboration and positive change within Daisy’s article.

Daisy Narayanan is the Director of Urbanism for Sustrans, where her role involves interweaving policy, public realm design and a broad integration of key place principles to help create liveable towns and cities. Daisy is on the Board of Architecture & Design Scotland and a member of the Edinburgh Climate Commission. She was on the Active Travel Task Force set up by the Minister for Transport and the Islands and will join the Scottish Transport Awards judging panel from 2020.

Drawing on her previous experience working as an architect and urban designer in India, Singapore, England and Scotland, Daisy believes passionately in the importance of creating places for people: places that reflect and complement the communities that live in them.
Live Twitter #SmartPlaces discussion
Hosted by Daisy Narayanan, 3-4pm Friday 5 June 2020, on the topic of her article ‘Shaping a resilient future for Edinburgh’.

Host Daisy Narayanan posed 6 questions using hashtag #SmartPlaces during the one hour event (one question every ten minutes). This prompted responses and discussion on themes of:

- Resilience, inequality, community, inclusion, space to move, and optimism about change.
- How cities are shaped, designed and organized, and can foster connection.
- A lack of viable outdoor space in cities to accommodate increased and more diverse uses due to Covid-19.
- The issues arising and lack of alternative options when public transport is disincentivised.

Online discussion questions:

1. Please introduce yourself. What does resilience mean to you? What role does the design of our cities play in helping individuals be more resilient during the crisis?
2. How do cities need to change to support us to be able to stay connected to each other and our local communities whilst maintaining physical distance?
3. I write in my article how the pandemic has highlighted underlying inequalities and problems with the old ‘normal’ – which longstanding issues do you think have been most emphasised by the current crisis?
4. What are the barriers to making the policy and planning process more agile, collaborative, and inclusive?
5. How should we quickly create more space on our streets for people to walk, cycle, and wheel safely?
6. What has made you most optimistic that from this crisis we may be able to create a healthier, happier, and fairer society?

Challenges

- The Covid-19 pandemic highlights our cities' structural issues. How do we cope and adjust when our methods of travel, transport, and moving are no longer viable?
- Without attractive alternative private (Covid-safe) transport options to cars, those without cars lose freedom to move (compounding inequalities), and danger of behaviour shift toward increased car use for those with.
- How can cities support both social distancing and connection? Current lack of sufficient walking, cycling and play space, and appropriate outdoor spaces enjoyable in all kinds of weather.
- Lack of inclusivity, open conversation, and transparency in decision-making. Perceived/actual inability for the average person to include themselves in policy-making and complex planning systems.

Opportunities

- How can we adjust the processes and systems which shape how we interact with the built environment?
- Additional/improved community hubs, civic space, and greenspaces within walking or cycling distance.
- A more flexible and adaptive built environment and urban spaces.
- The pandemic has highlighted structural and unsustainable issues within cities – how do we plan for different spatial needs and priorities?
- How can policy and planning processes be made more collaborative, agile, and inclusive? Including, informing, and giving people a sense of ownership.
- How can space for walking, cycling, and wheeling be created quickly and safely? Empowering communities, residents, and businesses, trying and testing new things (e.g. parklets), get access to pedestrian and cycle counter data to identify hotspots.

Shaping a resilient future for Edinburgh

Online discussion questions:

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In a world where digital tools are becoming the norm, from interacting with each other to paying bills and insuring your car, the ease of undertaking an action is more and more at your fingertips. We need to establish a balance where digital tools alleviate current social or business challenges, but do not overcome the need or desire for face to face communication.

Digital is synonymous with data, and the best application of data. This is where we see digital tools playing the largest role in placemaking. By placing information at the fingertips of the community and those working within it, we can create time, space and resources for people to interact more effectively face to face.

By placing the baseline in full and accessible view we can aid people to make more informed and grounded decisions and undertake actions in their place.

Having a live snapshot of the social connection and resources in the area can allow those working in the community to quickly grasp how best to implement their role. Be that in creating a new park or delivering a new service.

Challenges

Some consistent challenges we have noticed in our ten years working as consultants within communities are:

1. People are unaware of the resources in their area and databases of this information are often out of date and inaccessible.
2. People do not know how to find ways to work together on projects.
3. The impact of community-led work is often overlooked or undervalued.

To address these challenges and more we have developed SCOOP; a digital platform that is a bundle of tools to support digital placemaking. It is designed for any publicly-oriented organisation seeking innovative approaches to community development and environmental harm reduction, including local authorities, health boards, housing associations or development trusts. We see this as a blend of technology, process and approach ensuring that each digital solution is bespoke for the place and is closely met with a face to face engagement process. By implementing a tool like this the information gleaned by a consultant developing a project is not lost but becomes the property and foundation for future decisions of that community. It creates efficiency and knowledge that allow more action.
By displaying metrics publicly and tailoring the site to each community, SCOOP aims to generate a collective consciousness within communities about the cumulative power of small actions, the value of the assets they possess and their capacity to effect real change. Metadata generated by user interactions is automatically collected and analysed to produce robust, real-time metrics of environmental savings - carbon emissions, water and landfill waste - and social capital indicators for the community.

Future Vision

We would like to see a future where we can blend the best aspects of digital technology with the ability to apply more resources to face to face, and where the foundation and knowledge of the community is readily to hand. We have to make choices about the correct position for digital and it is not about making everyone’s job easier but it is about utilising time more effectively to make change in communities.
Sarah Frood is one of the founding directors of icecream architecture and has been delivering place based projects ranging from development of the cultural economy to place specific public art and digital place making tools for the past 10 years. People are at the heart of what Sarah and the icecream team deliver and this has in the past 3 years expanded into the creation of SCOOP a set of digital tools to aid community based development. Their approaches are not discipline specific but solely a response to the needs of the community they work with.

The key message I identified in Sarah’s article was the potential that digital tools have to drive collaborative work. I was struck by the contrasts between physical placemaking and digital placemaking, and how each could potentially inform and interact with the other. In my illustration, I aimed to mirror the parallels of physical and virtual worlds, using the contrasting visual motifs of the inside and outside, warm and cold colours, windows and screens. To me, the theory of being connected while apart seems especially relevant today, as we’re forced to discover new ways to collaborate and make the best use of our digital spaces, while limited in access to physical spaces. I tried to create a sense of our new found confinement — whether it be the walls of rooms or the edges of screens — while also creating a hopeful scene of the beauty of places and the always present closeness of community, even while we’re physically distant.

I wanted to subtly reference some of the specific tools that Sarah wrote about, including community feedback, resource and data sharing and volunteering. I was also interested in the idea of the cumulative power of small actions — and the importance of adding your own voice to the conversation. Digital tools can make participation more accessible, so by putting the viewpoint in the active position of being in the room, behind the screen, I aimed to create a sense of involvement, rather than viewing the scene from afar as a passive bystander. I hope my response helps to communicate Sarah’s vision of the potential that individuals have to positively change the places they call home.

www.cargocollective.com/mirandasmith
Live Twitter #SmartPlaces discussion

Hosted by Sarah Frood, 3-4pm Friday 12 June 2020, on the topic of her article ‘Digital and Face to Face’.

Host Sarah Frood posed 6 questions using hashtag #SmartPlaces during the one hour event (one question every ten minutes). This prompted responses and discussion on themes of:

- How digital engagement and data shapes placemaking and city design.
- Transparency and making data accessible to community members on a variety of levels – both available and presented so non-specialists can understand.
- How communities have become more connected during lockdown.
- That placemaking is not just about spaces but about the layers of meaning embedded in them.

Online discussion questions:

1. Introduce yourself. What does digital engagement mean to the future of participation in place based development?
2. How do you see the professionals’ role changing as we have to maintain more distance practice? Is there a bigger role for community members to take the reigns?
3. How is it possible to strike a balance between positive digital engagement and isolation? How do you ensure that those that are not digitally connected are not more isolated?
4. How can data be put at the fingertips of communities, making it live and accessible to aid decision making?
5. If one thing was to change through this transition in placemaking what would it be for you and have you seen it starting in places around you, what role does digital play?
6. What is the most exciting blend of digital and face to face engagement you have come across?

Challenges:

- Including community members in the planning and decision-making processes of their cities – they are the experts of their place.
- What is the professional’s role? Taking the lead, or supporting the community?
- How to create digital spaces and interactions that ensure people feel able/welcome to participate. Inclusion of those not digitally connected. On-street elements, providing phone numbers?
- A disconnect between the quality of engagement vs implementation. Quality should be high throughout the process.
- How to create a healthy and functioning balance between digital and face-to-face engagement in communities.

Opportunities:

- Establish which bodies should be in charge of data generation and making it available to communities.
- Generate publicly available, live (up-to-date) and understandable data.
- Use digital engagement to include a more diverse range of people, including those not traditionally involved in decisions (e.g. younger groups).
- Use data to communities’ advantage. Make data and information available to the general public. Citizens have a stake in their city’s development with potential to be actors actively catalysing change.
- Training, testing, help, reflection, conversations, assistance in the accessing of data by communities.
Digital engagement could help us out of lockdown and into the new future; and where a Smart Places approach and a collaborative effort could make this possible.

Coronavirus and lockdown has left us in a very different world. Overnight, workplaces and friendships moved online. But did our democracy get left behind? Hearing citizens’ voice in times of crisis is more important than ever before. Finding ways for people to have their say in this new world becomes our biggest challenge.

Where we used to have community engagement, workshops and face-to-face events in the community, we now need something new to replace and replicate this online. It will not be the same as creating in-person connections, but it might still give people a meaningful say in shaping the world around them. We need this online version now and most likely, we will need it for our new future.

This is where a Smart Places approach could help. Digital democracy as a fast emerging field is creating new ways for people to be involved in political decision-making using technology. Digital options can make it quick and easy for people to take part. They can also broaden the range of people involved and increase the transparency of government decision making.

A whole range of products have been developed to make this possible — known as civic technology — they are designed specifically with a democratic function in mind. These differ from social media platforms because they promote ideas and considered debate, beyond simple ‘likes’. They’re often moderated by officials to prevent abusive language and ensure the conversation stays on topic. But most importantly, they’re linked to power. It’s an offer from governments for people to influence a policy or decision, with the promise that they will be listened to.

Our team at the Scottish Government led an online public conversation on how to ease lockdown restrictions only a few weeks ago. It received over 4,000 ideas and 18,000 comments from people across the country voicing their ideas and concerns. This public response informed the thinking in government around the route map out of lockdown.

Initiatives like this make brave new use of technology to get public input at crucial times and on complex issues. Similar technology has been used across the globe — local decision-making in Madrid, legislation drafting in Taiwan, funding allocation in Portugal and supporting citizen assemblies in France. These pioneering examples have been replicated time and time again in other countries, reaping the benefits of digital engagement.

When people can’t meet together physically, the Smart Places approach could make use of digital tools designed for civic purposes to hear ideas and concerns from people. But going further, they could be used to share information, evidence, and give people
opportunity to discuss key issues in their environments and communities. There is even opportunity to give people a chance to weigh up pros and cons and make informed decisions as a collective. This could be done through the presentation of balanced evidence, available data and making full use of the expertise and information available, all online.

The technology and skills to create these exist; there's no shortage of tools and platforms for your every wish. The tricky part is figuring out exactly what purpose it has — what's the incentive for people to get involved and will it make any difference? Once you know what you’re going to do and what you want to achieve, you need to figure out how. Thankfully skills to facilitate and manage a process like this exist already — but they are in different sectors and networks. It will require a collaborative effort, beyond the current structures we have now. In this sense, Smart Places presents a unique opportunity to cut across these boundaries.

Imagining what our new life might be like in the new normal is hard to do. The possibilities sketched out in this blog might be hard to picture too. But what is slowly becoming clear, is digital engagement might be one of our best options. Let’s not let our democracy get left behind.
Niamh leads on public engagement using digital technology in her role as Digital Engagement manager at the Scottish Government. She joined in 2018 to coordinate the government’s role in the international Open Government Partnership. Previously, as Scotland manager at the non-profit Democratic Society, she worked internationally with governments, the EU, and organisations including UN Development Programme. Her past experience includes communications at the Scottish Parliament supporting elected representatives. She has a degree in Law and Politics from Glasgow University and Uppsala University, Sweden. Spending a number of years with the European Youth Parliament initially sparked her enthusiasm for getting people involved in politics.

In her article, the Scottish Government’s Niamh Webster sets out a vision for the future of engagement between Scotland’s citizens and its government through digital engagement and a “Smart Places” approach, and as an illustrator, I found the article replete with opportunity for visual interpretation. The nature of the subject: political discourse, social engagement and digital technology, are inherently intangible and non-visual concepts. This presents an exciting challenge in creating fresh visual concepts that are clear for the reader, but original enough to avoid any existing clichés in the ever-evolving world of editorial illustration. The illustration must also be broad enough to encompass the breadth of approaches that Webster sets out in her text, but specific enough to refer solely to the text and not become a generic “tech” illustration.

As people are at the heart of government and social engagement, I felt it was important that people were at the heart of the composition. The figures we see aren’t just generic archetypes, but have been developed from my own observational sketchbook drawings of real people in the streets of Edinburgh and Glasgow. Although the Smart Places approach demands the cutting edge of technological networking, the visual approach I took in representing these concepts was inspired by visionaries of the mid-20th century, and the design of concentric circles around which the illustration is based is influenced by the works of M.C. Escher and Frantisek Kupka. After a series of sketched experiments with different designs, compositions and colour schemes, the final illustration shows us the people of Scotland coming together in using technology to make their voices heard.

www.jamesalbon.com
At the time of writing the UK is in lockdown, an NHS Covid-19 contact-tracing app is being tested on the Isle of Wight, Sidewalk Labs (Google affiliate) has announced that it is pulling out of its Toronto ‘smart city’ project and Naomi Klein has published an article highlighting the potential for a rapidly accelerating technical future absent from democratic engagement or public oversight. Together, these act as a kind of contextual time stamp for this article, they also serve to direct attention to the rapidly evolving relationships between people, places, technology and data.

Drawing on Churchill’s words when approving the reinstatement of the Commons Chamber, “We shape our buildings and afterwards our buildings shape us”, Sherry Turkle said “We make our technologies, and they, in turn, shape us”. When these technologies dovetail with the built environment in ways that can influence our behaviours, shift our identities and provide structures through which we understand the world and one other, it is important that public debate and oversight help to shape our future smart places. However, to date, there has been a paucity of such democratic engagement — but it doesn’t have to be this way. By taking creative collective action we can establish approaches and methods that encourage all citizens to participate in the design of our future ‘physical+digital’ neighbourhoods.

How can we do this?

Through the lenses of climate change and biodiversity loss, we use the inclusive practice of digital placemaking to explore how the integration of people, place, technology and data can help communities to prosper, and identify the kinds of technology and society citizens want.

We connect with and through our local city farms, such as the fabulous Windmill Hill City Farm in Bristol. Why? Because these established places of mutuality are often deeply rooted in their neighbourhood communities. They provide sanctuary for some and education for others, they are trusted places to experience nature, socialise and eat cake, and they attract a wide range of people with different experiences and voices. Plus, we are gifted the project name ‘Smart City Farm’!

At the same time we nourish our curious natures. We ask questions about the technology-driven transformations that society has experienced already and the ways in which citizens may have had agency in such changes, or been supported to influence or assess such changes. We gather examples of the ways in which digital technologies are enabling us to connect with nature and access our cities — and we plunder the imaginations of futurists. This will allow us to gather a shared sense of the initiatives that have gone before, and be inspired by and build upon stellar ideas and practices.

Whilst philosopher Toby Ord recommends that the pace of technological development should slow to allow our understanding of it to catch-up, this is unlikely to happen. We have powerful new technologies, such as artificial intelligence, robotics and big data; how
might they be integrated into our public realm in ways that mitigate climate change and support biodiversity? How do we ensure that these same technologies do not cause social harm, exacerbate discrimination or reinforce inequalities? How might we bring biological systems into our future smart places?

It’s a no-brainer that public spaces are places where all members of society should feel welcome. At the moment, regrettably, many places have designed people out, sometimes intentionally but often unintentionally. ‘Smart City Farm’ offers us the chance to bring together diverse communities to start to address some of the questions above — and many more. The model can be rolled out across the country and beyond to form a powerful network of communities who are adopting digital placemaking practices to provide insight and stewardship for their smart neighbourhoods.
I operate at the intersection of research, design and enterprise. Improving the social, cultural, economic and environmental prosperity of towns and cities through digital innovation is a core area of my work. In particular, discovering the opportunities and value that bespoke digital placemaking affords clients involved in place management, urban developments and regeneration — with the aim of creating more pleasurable, sustainable and citizen-centred future urban spaces.

On first reading Jo’s brilliant article, regrettably, my ignorant impression was somewhat lacking in inspiration for the concept of a “Smart City Farm”. I struggled to imagine how tech could engage with a place so steeped in history, labour and earthiness. But, after re-reading the article several times over, there was one bit that stood out to me: Cake. Call it what you want, lockdown brain, lockdown stomach, but reading the line “they (farms) are trusted places to experience nature, socialise and eat cake” made me pine for the community we’ve all been missing and reminded me of a fond memory from a month prior to the lockdown. Yes, it involved eating cake on a farm... This past Valentine’s Day in the practically deserted National Museum of Rural Life in East Kilbride. Remembering that day out at the fairly modern museum and looking further into the aforementioned Windmill Hill Farm in Bristol, I realised that when I think of the word ‘farm’ the image in my head is incredibly dated. More on the Old McDonald side of things than the spirited place of sanctuary that Jo describes. Joining the dots; if my city dweller view is a common one, possibly proven by the lack of visitors at the museum that day, then there is a definite need for these spaces to be updated. I came round to the idea that technology is at hand to creatively enhance the resources and experiences the humble farm is built upon.

Putting scissors to paper, I designed a scene based on the Bristol farm shop centering around the idea that a visit to this ‘Smart City Farm’ would educate a family on where the fresh, local ingredients that come together to make a good slice of carrot cake come from. Through using our five senses to bring the joy of farming alive and amplifying this with projections, child-friendly apps and further infusions of tech inspired by Calvium’s portfolio of projects, the farm becomes a place to educate children on the origins of their dairy, fruit and vegetables. Through hand cutting all the different elements of this illustration and carefully piecing them together, the result is a concept for a vibrant Smart Space with community (and cake) at its heart.

Dr Jo Morrison
About the author

Laura Sayers
Illustrator’s response

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Live Twitter #SmartPlaces discussion
Hosted by Dr Jo Morrison, 3-4pm Friday 19 June 2020, on the topic of her article ‘Digital placemaking for more inclusive and accessible cities’.

Host Dr Jo Morrison posed 6 questions using hashtag #SmartPlaces during the one hour event (one question every ten minutes). This prompted responses and discussion on themes of:

- The ways in which technology and online communities can help facilitate in-person and real-time communities and connections.
- Spaces / areas / farms in cities in which people can get together.
- Technology, AI and big data being used for good: for the mitigation of global issues such as climate change.
- How can data and technology be used safely and equally?

Online discussion questions:
1. Introduce yourself and tell us about any project from anywhere in the world (at any scale) that has enabled communities to explore their future physical + digital neighbourhoods.
2. I’ve proposed the Smart City Farm project as a place for people to gather and participate. Tell us about the city farm in your neighbourhood and the types of activities that go on there.
3. Digital tech is often seen as being at odds with nature. How are digital technologies enabling us to connect with nature, from people in parks to scientists in savannahs?
4. We have powerful new technologies, eg. AI, robotics, big data. How might they be integrated into our public realm to mitigate climate change and support biodiversity?
5. What policies, principles, regs or laws exist to prevent new powerful tech from causing social harm, exacerbating discrimination or reinforcing inequalities?
6. How can we get the Smart City Farm project off the ground? Who are the innovative city farms like Windmill Hill City Farm in Bristol, who needs to be involved and how can we make it happen?

Challenges
- How can technology be used to create connections, both online and in-person, rather than disconnecting people from one another?
- Can technology make us feel connected to nature and the environment?
- How do we create new / open / accessible spaces in cities?
- Who should be in charge of making and building community projects and spaces?

Opportunities
- The creation and adaptation of cities to incorporate communal spaces (e.g. Smart City Farms) – physical places people can get together and make connections, supported by data and technology.
- Use of technology for positive social or environmental good.
- The creation of laws, regulated by police, for the use and administration of technologies and powerful data to ensure it protects people.
‘Present Voices Future Lives’ — It’s an exhibition, workshop, and a series of films all about ‘Housing to 2040’. We (ESALA, Collective Architecture and Peak 15) designed the exhibition to capture voices of people around Scotland talking about the future of housing and communities, which will feed into the Scottish Government ‘Housing to 2040’ vision. The exhibition was commissioned to get ‘the public’ talking about how they want to live in the future, and ultimately help shape this vision. It was taken to 12 communities around Scotland during winter 2019. ‘Present Voices Future Lives’ presents broad challenges facing our homes and communities, and how we live. These explore the impact housing has on the environment; how our lives of work, learning and home are interdependent; and the realities of an ageing population. It also includes the concepts of sharing resources and building communities, and the link with biodiversity and healthy places.

What are the Challenges for Housing?

People were asked to rank the most important challenges for housing. ‘Environment’, ‘Well-Being’, ‘Work’ and ‘Healthy Places’ all ranked highly in communities around Scotland. A group of young people at Craigmillar High School took part in the exhibition workshops in December. Talking with them about what their homes and communities should be like by 2040, the three most important issues to them are ‘Resources’, followed by ‘Healthy Places’ and ‘Environment’. ‘Resources’ refers to recycled and reused building materials, new digital technologies and access to renewable energy.

This is all within the context of the local area. They were happy with where they lived, saying they liked ‘neighbours’ and ‘location’ but were concerned with ‘crime’ and that their homes were ‘unsustainable’. It is important that peoples’ voices are heard when working to improve a place.

The ‘Present Voices Future Lives’ experience has shown us that young people are deeply invested in their futures — with a balance of optimism and deep concern. Getting young people involved in developing their (future) homes and communities is vital.

A Vision for the Future

My vision for a ‘smart’ place is to get young folk involved. It does not need to be complicated. The exhibition demonstrated that they are able to understand the challenges facing our communities from a very early age. They will be the ‘grown-ups’ by 2040 and deserve to have a role in shaping where they will live.

So, how does this connect with the idea of a ‘smart’ place, and how can this make a difference to the lives of young people in Edinburgh? Where better to start than in school. Getting young people using data from their own communities seems obvious — developing digital skills while using data from where they live allows young people to learn while bringing the data
to life. There are lots of simple ways that data can help us know more about the places people live.

For the young people in Craigmillar, ‘Resources’ (e.g. renewables, building materials, energy) and ‘Environment’ are priorities for the future of housing and communities. They are intrinsically linked.

Building Information Models (BIM) commonly used by architects and builders can provide data on the materials used to build our homes. Sensors in homes can collect data on energy use, carbon emissions and how a building is performing.

‘Healthy Places’ another priority to the young folk. It is linked to places for growing food; good quality outdoor spaces; air quality; and access to active travel. Digital approaches connecting people to services in their communities could emerge from schools, giving young people an active role in improving the place where they live.

Young folk can get involved or even lead community projects using data and digital innovations. Raising this from being a school ‘confined’ approach to one that involves them in the place where they live. Providing real-world insight to where young people live and an ability to be empowered by the knowledge that this brings is central to a ‘smart’ place. Who knows where this could lead? Finding ways that data can reduce social inequality and environmental pollution? Creating healthier, safer communities?

Some communities are facing deeply rooted and complex challenges that will take generations to unpick. Ultimately will a ‘smart’ place-based approach improve things in a tangible way for individuals living there? Involving young people using digital innovation and technology offers real potential to speed up change, leading to better places to live.
These illustrations began life as a sprawling A3 sketch of all the themes and visuals that had sprung to mind as I read Kate’s article. Initially, I divided the page into boxes, and then decided to keep those boxes in the final artwork. A more cleaned up illustration was also an option. I wasn’t able to choose a favourite, so I sent in both.

When I first read Kate’s article, I thought of the Craigmillar High School students now and how they will be running things in 2040. It was great to read that the young people in Craigmillar were most keen to see renewables, active travel, new digital technology and healthy places. It immediately conjured up images of growing vegetables, biking to work and using the data we get from sensors to improve our local area. Getting young people involved and working in schools will be one of the best ways to permeate the community organically. Giving school pupils a voice, and the knowledge to analyse data will empower them to create a better future for us all.

Dr Kate Carter is a researcher in housing, architecture and sustainability. Kate is a Senior Lecturer in Architecture, Technology and Environment at ESALA (Edinburgh School of Architecture and Landscape Architecture) within the University of Edinburgh.

The ‘Present Voices Future Lives’ exhibition was commissioned by the Scottish Government, to engage people across Scotland in the Housing to 2040 vision. Young people and community members took part in workshops and contributed to a series of films produced as part of the work.

Kate worked with colleague Iain Scott, Collective Architecture, Peak-15, Gaia Research and Chris Leslie Productions.

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The COVID emergency has brought many challenges that were unimaginable a few months ago. The first priorities were safety and health, but when lockdown started one of the early issues was accessing and sharing local data to help everyone deal with and live through the emergency. Communities grappled with the scarcity of local data, finding it difficult to source for some services, food deliveries and goods. This was not a new issue, but the pandemic brought it into sharp relief.

Local data use covers a broad spectrum. People moving to a new area want information about the environment — schools, amenities, transport, crime rates and local health. For residents, continuing knowledge of business opening hours, events, local issues, council plans and roadworks remains important, not only for everyday living but to help understand issues and future plans that will change their environment. Really local data (hyperlocal data) is either fragmented or unavailable, making it difficult for local people to stay informed, whilst larger data sets about an area (e.g. population, school performance) are not always easy to understand or use. They sit in silos owned by different sectors, on disparate websites, usually collated for professional or research use.

Third sector organisations in a community will gather data relevant to their work such as contacts and event numbers but may not source wider data sets about the area, such as demographics, to improve their work. Using this data could strengthen future grant applications by validating their work. For Government or Health bodies carrying out place making community projects, there is a reliance on their own or national data sources supplemented with qualitative data snapshots. Their dependence on tried and tested sources is due to time and resource pressures but means there is no time to gather that rich seam of local data that profiles individual needs.

Imagine a future community where local data is collected and managed together for both official organisations and the community itself. Where there are shared aims and varied use. Current and relevant data would be accessible and easy to understand, provided in formats that suit the user — from data scientist to school child. A curated data hub would help citizens learn data skills and carry out collaborative projects on anything from air quality to local biodiversity, managing the data and offering increased insight and useful validation for wider decision making. Costs would be reduced with duplication and effort reduced. How could this happen and how might it operate?

A data trust is one method. It is a legal structure that provides independent stewardship of some data for the benefit of a group of organisations or people. It could provide an opportunity for local people to directly participate in local decision making by creating and maintaining accurate and valuable data that provides a rich insight into the needs of the area.

The local library could be the data hub for the trust, curating and managing data as it does with other
deposited items relevant to the local area. Use of the data would be managed appropriately and ‘lent’ to users according access rights and data licence. Trusted users, acting as data stewards, with other members, would identify gaps and duplication in the collection, supporting projects to improve the data available. The hub could offer additional guidance from partners, provide equipment and offer training. Locally sourced data would be accessible to researchers as well as planners, architects, health workers and strategists. Technology would play a key role, both in terms of infrastructure but also innovation, using emerging tech such as personal sensors for data collection and use. Taking advantage of different technologies would expand data gathering opportunities through joint projects with businesses and Universities.

Creating a data hub is a way to improve place making in the round by bringing together data that covers hidden or unknown aspects of a community with a range of official data, (e.g. National statistics, council local area plans, land ownership and use), and would encourage collaboration on the challenges to be addressed. It boosts genuine democratic participation by empowering citizens to be active partners and supporters for their community and themselves. This shared resource could help both locals and officials to carry out open, shared and co-designed decision making. By having richer sources of data in one place the community could inform and influence strategies that will impact them directly. Crucially, for organisations working to improve the area, it could drive better place making outcomes by building a shared understanding of the community.
My goal with any editorial illustration is to capture the primary theme of the article and convey it unexpectedly, often with the use of a visual metaphor. I find the challenge when it comes to creating an illustration about ‘data’ is to avoid the final piece feeling like a sterile infographic, with charts and graphs, etc. So that’s something I was mindful of.

In terms of my process, I normally begin all editorial illustration projects the same way; by reading the article twice, once to get a general understanding of the subject, then a second time to find specific phrases or quotes which I think could provide interesting visuals cues for the illustration.

The primary theme I took from Sally’s article, was the idea of local people coming together to collect and manage data for the betterment of their community. One description which I felt summed up the essence of this beautifully was “Locally sourced data”. The idea of “locally sourced” has so many lovely, positive connotations and was something I thought worth exploring. My initial thinking was around some sort of community farmers market, where fresh produce was somehow used as a metaphor for data. My main reservation was that a market setting could suggest data being sold, which isn’t a great image! So, thinking a little more, it evolved into the idea of a local ‘data allotment’.

Allotments are virtually synonymous with ‘local’. It also provided an opportunity for the visual language of data, such as charts and graphs, to be subtly and playfully weaved into the landscape. Add people working together, carefully looking after that data in the heart of their community and it hopefully compliments the content of Sally’s article.

www.behance.net/jackdaly
Live Twitter #SmartPlaces discussion

Hosted by Sally Kerr, 3-4pm Thursday 25 June 2020, on the topic of her article ‘Why Local Data is the Key to Successful Placemaking’.

Host Sally Kerr posed 6 questions using hashtag #SmartPlaces during the one hour event (one question every ten minutes). This prompted responses and discussion on themes of:

- The value of access to local data both during an emergency, and for everyday services, food deliveries, goods.
- Local data is often unavailable, inaccessible, confusing or not understandable.
- Various stakeholders in a city or local area working together to make decisions about living spaces and places.
- Covid-19 has highlighted various issues in the governing and design of our local areas and communities. The unavailability of data for citizens is a pertinent example.

Online discussion questions:

1. My article discusses how local data might improve placemaking. Introduce yourself and tell us what local data means to you?
2. What initiatives do you know about that create or use local data to empower communities, residents, and neighbourhoods? Area any of these working directly with communities or community-led?
3. How has COVID19 highlighted a need for local data to support communities more effectively?
4. What could help to catalyse local data initiatives? I’ve suggested data trusts and public libraries. What might be other models?
5. How could local data initiatives bring benefit to communities and civic organisations? What might be some of the challenges to enable them to get started and be sustainable?
6. A joint approach to collecting and managing data for reuse could be beneficial to placemaking but also for other purposes. Who should lead this, and what topics should be top priorities?

Challenges:
- How to collect large amounts of data about local places (schools, amenities, transport, crime rates, local health, events, local issues, council plans, etc)
- A need for citizens’ data skills training to help local people curate and understand data, and a means of connecting citizens in collective efforts. How do citizens and community members find out about projects and data?
- Agreeing what local data means and what is included within it.
- What does a local data initiative look like in practice? What barriers are there to creating them and putting them to use?
- How can communities monitor and become a part of decision-making processes?

Opportunities:
- Can communities, official organisations, and governments work together to collect and make available large amounts of data and information about the local area?
- Saving time, money, and effort through collaboration.
- Creation of a data trust - legal structure providing independent stewardship of data. Kept at a local library and given access/rights to.
- With the availability and understanding of local data, enabling local people to directly participate in decision making processes.
- Funding and creating services which coordinate data.
- Allow citizens and communities to become a part of local-level change and initiatives.
Panel Discussion: Challenges, Opportunities, Action.

The Smart Places series concluded with an insightful panel discussion between the seven authors. This began with the following question:

“Your articles all discuss different place-based challenges and visions for how we might address these in the future. What do you think are the most pressing challenges for the built environment and place-making that we should together be trying to address? In other words, what’s the problem and what should we be focusing on?”

The panellists highlighted these challenges:

• How are we going to live in the future? What might it look like to improve place-making? We need to know what we want to achieve.

• What would we like hybrid physical and digital places to be like? How can public debate shape our future hybrid cities as part of creative, collective action? How can we use digital placemaking approaches and methods to invite more inclusive and accessible participation in the design of future places? How can we work with citizens to establish what digitally enabled experiences they would welcome or not?

• How will we create healthy places that support well-being? How can data help us do this? We need to integrate data that reflects people’s experience of the places they live. We also need to account for the changing nature of place and the complexity that this brings into planning.

• How will we mitigate and adapt to climate change and biodiversity loss? We need to create stronger connections between people and nature. We need to engage citizens in creating impact. We need to care for and prioritise the natural environment.

• The relationship between the built environment, digital environment, nature and humanity is evolving - how do we harness its potential? How do we ensure this is done with public oversight and engagement, and in the direction we want our future places to take?

• How will we make sure people’s voices are heard? People need to be able to speak and feel heard. We need to share knowledge and learn from each other about how to improve community engagement.

• How can we use digital tools to collate a consistent, up-to-date open database of place information that ensures the starting point for community consultations about a place are a little bit further along each time? This means engagement can be more in-depth and meaningful.

• How can we connect decision-making processes from start to finish? We collect data and we engage people at different points in different decision-making processes that all relate to the place where they live. But the information they share isn’t used to its best capacity, and people often get ‘lost’ along the way. We need to connect data and people all the way through place-based decision-making processes.

• How will we make sure people feel safe and maintain human connection while we’re physically distant? We need to make sure that coming out of lockdown doesn’t lead to gridlock. We need to keep the gains of safe space that we’ve created. How can we make our streets inclusive in the short- and long-term?
Each panelist brought their unique insight and perspectives:  

- **How can we collect more data to do good?** In the age of big data, there is some ‘techlash’. But there are still many sectors, for example the built environment, where we don’t have enough good data collected properly. A lot of data is still in manual and analog formats – for example PDF drawings for planning applications. We need to encourage openness with data, make sure that data isn’t locked up in big corporations and use data to do good.

Our second question to the panel focused on how we can turn ‘Smart Places’ opportunities into action:

“There’s an overarching theme of ‘Smart Places’ across all the articles, which we are defining as a mix of active citizen engagement and use of data or technology to improve places. Each of you has interpreted this in a different way depending on your specialism and expertise. What do you think needs to happen in practice to enable these futures to become reality?”

Each panelist brought their unique insight and perspectives:

- **We need more collaboration, innovation and openness at a local level.** Can we ensure local communities own and receive back the summary data they provide and any resultant PDF reports? This would help build openly accessible place data that can be built upon and used by the community or built environment professionals, instead of repetitive consultation.

- **Can we advocate for ‘working in the open’?** Communicating the behind-the-scenes workings of built environment engagement, design, planning or policy processes affecting local places. Honestly showing learnings, failures and successes, similar to the sharing of open-source software code in tech professions.

- **We need to go beyond community engagement and ensure there is also community impact.** It’s not enough to hear participants’ voices, their input needs to genuinely shape and inform decisions. How can we demonstrate and communicate this?

- **How can we communicate where and how community input is held, responded to, or informing the decision-making process?** How can stakeholders continue to be involved and engaged in the process, from start to finish? How their input be best utilised throughout the chain of decisions leading to on-the-ground change in places?

- **How can we reconceptualise places to recognise the increased hybrid digital-physical nature of place?** Digital as a tool to support conversation about a place, as layers on top of physical space, or enmeshed in the physical materiality. We need a nation-wide conversation about what we want these hybrid spaces to look like, and the means to deliver them.

- **We need to engage the enthusiasm and energy of young people.** We need to help them gather data and show them how to use it to take action to create change. We need to demonstrate how they can influence the places they live. It’s not enough to just have data, it needs a means to result in action and change.

- **We need to give more power to people on a community level.** We need to rethink the digital-physical divide in relation to space. We can reimagine how we experience the world and understand it through technology. We can think together and collaborate as a collective to imagine what our new and developing Smart Places might be like.

- **We need a new role for digital that supports more inclusive online participation.** Digital has the power to turn things that we couldn’t even have imagined into reality. How can we use this power to change the world and our places?

- **We need to understand each other’s roles and lose our professional boundaries.** We need to come together across sectors – architects, engineers, engagement specialists, developers and more – to address place-based challenges. We also need to work with communities to build and grow the data that they have, to carry out their own consultations and to take more control in planning and development processes.

- **We need to make sure everyone is part of the conversation.** We need to reach people who don’t have access to digital tools. We need to connect listening to people’s voices with relevant action.

- **We need to respond to uncertainty with experimentation.** We need to boldly embrace the tools of the digital age. We need to iterate, learn what works, what doesn’t and share what we find. We can use lo-fi temporary experiments to help stakeholders forget their preconceptions and together start to understand the potential of the places around them.

- **We need to use bold public awareness campaigns to demonstrate the potential of ‘smart places’**. As both a general concept and for specific place projects. Partner with media partners e.g. the BBC.

- **We need more openly accessible, standardised data about the built environment.** Much current data is held by large corporations (e.g. Google) rather than local authorities. How can we open up this data for use by built environment professionals in their design, planning or decision-making? How can we structure governance and the role of public sector to open up closed data sets, and coordinate and integrate data about the places they govern?

As the conversation drew to a close, some key summary points were drawn out.

We need to **collaborate and make better links between data and lived experience** so that they are not separated from each other. We need to think more carefully and long-term about how we use the data and information that we gather – we need to make sure it can be **shared and re-used** so that people’s voices stay alive across decision-making processes. And we need to engage people in the process of decision-making that **links data to action** and ultimately to the changes that people want to see and experience in the places where they live.