



Architects and Engineers: Making Infrastructure Beautiful

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25th April 2023

Today I want to talk about two things – beauty and longevity. I want to talk about the different definitions of beauty, and the importance of considering those definitions at many scales. I believe Beauty should be at the heart of all development, a key ingredient in ensuring design excellence in our built environment. But what makes design good or bad, and what makes it beautiful or not? What makes a project beautiful, whether it's a single building or a large-scale infrastructural project?

Building beauty into places involves more than improving the way things look – Indeed the word 'beauty' when associated with the built environment has become an emotive subject. Reduced all too often to a battle of aesthetics modern v's traditional, we need to work harder to understand what really matters to people, place and of course, the challenge of the climate crisis. For me this means that beauty has to also be defined by longevity, which is shaped by the power of design to make things work better. Today I want to look at how beauty can be derived from listening directly to what people want and need – how it truly gains meaning when it adds value to people's lived experience and does so for the longterm.

My research into beauty and design excellence comes in the form of my own lived experience. In a career that covers over 25 years of working across design, advocacy, policy making, advisory, knowledge-sharing and generally spreading the message around the power of design to enact positive change. To date, my career has been shaped by several different roles, the constant has been a personal agenda to build greater awareness on the importance of excellence in design – from the scale of individual buildings to national infrastructure projects.

This slide helps to demonstrate the interconnectedness of my work in the role of design – how it touches on each tier of industry and practice. It's also about revealing the power of collaboration. Building beauty into the world takes more than just good design thinking. It's about holistic learning, reflection and action. Let's start by freeing ourselves from any preconceptions of what beauty is and try to unpack what it means in the context of building places and strengthening our urban lives. To do this I want to go through six mini-chapters around what I have learnt around building beauty and longevity into place-making.

The first is about people. People must be kept at the core of our design thinking, especially if we are to develop a built environment that is sustained by stewardship. The second is about defining what good means, what quality means, and who can help shape that definition. Thirdly, social equity is what our future must be built on and is the ongoing challenge that our urban systems have so far struggled to achieve. We'll talk about how we can get to the heart of what it means. I'll then talk about progress that grows incrementally in my forth chapter, about designing beyond the red line and thinking in terms of what will bring value in the long-term. This brings me to look at longevity, and how design can ensure it is achieved in the penultimate chapter. Finally, we'll talk about the foundational aspects of beauty – about the importance of the lived experience and dignity of the everyday.

Over twenty-five years ago I founded an architecture practice with Alex de Rijke and Philip Marsh, we placed what we termed 'social usefulness' at the heart of anything we designed. For us what that meant was putting people and their needs first no matter the brief or project we were tackling. This ethos was exemplified in a project that went on to win the RIBA Stirling Prize in 2017 – the only project to win that can't really be classified as a building, but more as a community space, a piece of living infrastructure, and a long- term venture built

on the power of people and their stewardship. But my first exposure to what it means for urban spaces to prioritise people came much earlier than Hastings Pier. As a child, I grew up in an apartment in a community set up by my grandfather beginning in the late 1940's, three families collected the equivalent cost of one home, and with the combined money were able to buy a large house – many of which were sold cheaply after the war. The original agreement had one room per person, families would have apartments but moved around as they increased or decreased in size. Single residents shared bathrooms and kitchens, a nursery was set up to allow single mothers to work; and after some time, dedicated offices were built so occupants could work from home.

Living communally taught me many things, from the value of sharing, to the worth of both the older and younger generations, as well as the importance of looking after others. As demographics are changing rapidly, we too need to be prepared to embrace alternative housing models and be smarter about the way that we live. We have to rethink our stereotypes, the way in which we live and interact with each other, and the messages that this sends out. Reaching beyond the nuclear family meant providing a support structure that gave more independence to children and parents alike (particularly mothers who wanted to go out to work). Once again, this is about putting people first, understanding what distinct needs have to be met, and servicing those needs even if it means breaking precedent and creating something that redefines what value has conventionally meant. This was how we went about designing Hastings Pier, which was perhaps the project that best exemplified putting people at the heart of the design process.

This project was stalled several times by incidents and parameters beyond our control – budgetary problems, fires, more funding problems and so on. But through the years-long journey that it took to build it, we made our conversation with the Hastings community the most important aspect to the design. Our approach was to develop the project with the people of Hastings through a series of participation events and workshops. We discovered a community that was individualistic and eclectic but with a proud shared identity embodied in the pier. Through this co creative process we realised that what the Hastings Community wanted out of a pier, was simply a platform for several different uses – a flexible space that would reflect the diversity of Hastings. We took that as a cue to build a space that gave importance to rebuilding structure and making a well serviced deck as opposed to making a grand architectural statement.

As such, the majority of the grant from the Heritage Lottery Fund that the project had been bestowed for its regeneration went towards funding below deck repairs and replacing the deck and balustrades. We also worked with Hastings & Bexhill Wood Recycling as part of a local employment initiative to create reclaimed timber deck furniture, giving the community control over the actual production of the pier's new design. Whenever I visit the Pier, I am struck by how you can almost feel the spirit and passion of the community that helped to rebuild it. Hastings Pier felt like the culmination of a principle dRMM have stuck to throughout its existence: to prioritise environment and people when making places, rather than a personal or vanity-driven architectural desire.

And this brings us full circle to the idea of having a people-first approach to building beauty into the built environment. At Hastings, like many of our projects we weren't working just as architects but as orchestrators, helping to consult on needs, define a brief, create a vision that helps communities and clients to achieve often what seems like an impossible dream.

The second point I want to discuss is the notion of defining what 'good' is; what 'value' is; and how do we make sure we continually test those definitions and be prepared to adapt our thinking as we learn more. I've always fervently believed in the power of collective and collaborative. Bringing together the right people to put their skills, talents, and passion to making things better can't be beaten in when it comes to generating holistic value.

At the beginning of my design career, I never imagined that I'd be advising on the value of design excellence at government policy level. As a commissioner on the National Infrastructure Commission I have been given a voice that articulates a different perspective, one that has helped to change the way design is perceived in national development. Meaning – it's no longer considered a bolt-on benefit, but part of what will make large-scale projects stand the test of time and remain fit for purpose.

For my part I hope to bring imagination and a human perspective to the heart of governments thinking. To play my part in helping our industry move towards a healthier, happier, more compassionate and greener

philosophy. Within infrastructure – an industry that has historically prioritised time and programme – understanding what is meant by good design is still challenging. There are still deep-seated preconceptions among clients, planners, and developers around the subject of design – mainly that it's expensive and jeopardises timely and cost-efficient delivery.

The NIC was established in 2017, to provide impartial expert advice on major long term infrastructure challenges. We carry out in-depth studies into the UK's major infrastructure needs and make recommendations to the government. Our work covers all sectors of economic infrastructure. I am personally proud that during my time on the commission, the NIC also set up a dedicated Design Group, which exists to inspire, promote and champion design excellence in all nationally significant projects. Moreover, in April 2018 the Commission established a 16-strong Young Professionals Panel to provide the perspective of infrastructure industry professionals at an earlier stage in their careers. Three years later, we achieved consensus at government level that design integrity needs to be at the heart of all national infrastructure. This is a clear example of 'defining good', and the effort it takes to rally the right people to do so.

In short, we have been able to move design up the agenda for infrastructure projects including it within the first National Infrastructure Assessment as a cross cutting theme – the response from government was backing for our recommendation that all major national infrastructure projects should have a board-level design champion supported by a design panel. We also have developed Design Principles for all national infrastructure that very simply prioritise the right things: climate, people, place, and value.

But it doesn't stop there, since publishing the principles we have worked hard to understand how best to embed them into major projects and organisations. Through identifying and collaborating with others we have brought together professional institutions to help spread the word, identify the barriers and dig out the opportunities. I truly believe that the design process is about collaboration. Excellent design doesn't just come from designers. It's only possible when everyone working on a project sees design as part of their role, and it has to be continuous – not something that happens at the beginning, in the middle or at the end. Design thinking needs to be centre stage from day one and at every step throughout delivery. It's about people with different talents getting together and finding creative solutions. Understanding the importance of involving those people who understand the value of our infrastructure projects in human terms, caring for the climate, people and the places they effect. Only then will we truly be able to design for the longterm.

But it's not just about the physical fabric and infrastructure of places that we must consider beauty and longevity. It's also in the cultural, economic, creative, technological and civic life of places that we need to ensure we are understanding what defines 'good', and how we can build strategies to ensure it is manifested.

Earlier this year I was made chair of the NLA Sounding Board, which is part of a network that helps drive the work of the NLA's London Centre, to inform policy, and produce thought leadership. As such, the board is responsible for helping to shape the New London Agenda, a multi-year project that sets a vision for the future of London and its built environment, presenting the top issues that need to be tackled over the next London political term, and the best new ideas and solutions that will deliver New London of the future. To do this, the New London Agenda is being composed by a panel of 29 members, each of whom embody the talent, fortitude, and vision that London as a city so wholly represents. Together we have identified three main pillars that the agenda will need to rest on if it is to steer London's future in the direction of what we define as 'good'. These are Collective Responsibility, Clarity, and Trust.

Collective Responsibility links to how the built environment and the people who shape it has a critical role to play in shaping Londoners lives and how that formation should be structured around a common purpose and defining 'place' as catalyst to improved living. Clarity is about transparency and agreement on how the city needs to grow going forward, highlighting the true scale and shape of the challenge. This means outlining that it needs to be about creating equity, both economically and socially. And while doing that ensuring we can have planetary justice and stimulate reinvention. Finally, trust is about becoming experts on what people need, and with that making people feel ownership over London's investment and development.

In order to reach these pillars and carve out the detailed agenda for London, the NLA Sounding Board has and will work to a set of focus areas that each support the building of a more beautiful and robust life for the city. This is about being specific in our definition of what 'good' is. Again, coming back to how people experience urban living, and what brings value and quality to their lives.

So far, the experience chairing the NLA Sounding Boards have revealed a clear focus on equity. In the case of the NLA Agenda, it's about understanding how the capital, those who shape it can continue to define what equity looks like for the city. As place-makers, our priorities to decarbonise, digitalise and respond to profound inequalities in health and equity disparities have brought up a new challenge – how do we find out what a balanced, fair, and nurturing built environment looks and feels like?

In 2018 with the support of the late Tony Pidgley of the Berkeley Group, we set up the Quality of Life Foundation. Our aim to understand how peoples lived experience of their built environment could improve their quality of life. The foundation does this by helping to make wellbeing central to the way we create and care for our homes and communities. Active, participatory and people-led research is a big part of how we implement our goal – so going back to chapter one, People First. When we first launched, we began by using our nationwide research to publish a framework of quality-of-life principals that could be applied to all scales of place-making. The principles are a practical guide to help ensure that both urban and rural living is defined by wellbeing.

The foundation maintains that excellence in design is achieved not just through aesthetic or physical interventions, but when designers and place-makers find solutions that respond to both universal problems that affect people indiscriminately, and distinct problems – such as accessibility. The key to our research is knowing where to look and who to ask to find out what these prevailing problems are. In a snapshot, this is our remit. Aside from drawing knowledge from experts to define what's good and what will promote wellbeing in the built environment, we also conduct ongoing research and people-facing surveys around what that means to communities. The foundation then builds and shares our evidence base to show why and how the housing system should focus on people's long term health and wellbeing. We also support local authorities, developers and housing associations to implement best practice.

Again, these are the principles of our quality-of-life framework. The framework brings together all of the Foundation's work to date into six overriding themes; Control, Health, Nature, Wonder, Movement and Belonging.

Because the future of cities and towns is all about the future of people, the foundation believes that every strategic, design or planning decision made in urban places must be made with people's progression, autonomy, and wellbeing in mind. We have steered processes of 'neighbourhood by design', where communities have an active hand in the ways their environment is shaped.

Perhaps our biggest effort to date in interrogating how we can achieve social equity in the way we build places has been our work on the Community Consultation for Quality of Life (CCQoL) research project. CCQoL aims at developing a new, map-based model of community consultation that takes place both online and face-to-face in community spaces. This means it brings about a tangible way to derive knowledge from end-users, from people, to better define what makes places good, beautiful and what makes them so for the long run.

One of our studies centred around Harlow and Gilston, a garden town which has been earmarked to deliver 16,000 new homes by 2033, with a further 7,000 planned for the Gilston area to be built from 2033 onwards. We've worked with Harlow & Gilston Garden Town to map what local people value and need in their local area through a public digital consultation. The study was comprehensive and detailed, revealing exactly what equity looks like to this distinct city, and helping to build a routemap towards how it can be achieved. By overlaying socio-economic data we are able to map the social value outcomes of any built environment intervention overtime. A rich source of intelligence that will help better shape cities order to maximise wider benefits for the communities they serve.

The experience of our built environment speaks to our national identity, it say's something about who we are and what we are good at. Those of us who are responsible for designing our built environment the places in which we live, work and play, and how our national infrastructure supports that, have a huge responsibility to think about the legacy we are leaving behind. Legacy building at national levels is essential if people are to be emotionally invested in place and it applies to development on a country-wide scale.

One of my roles is as the chair of the independent design panel of HS2. For over the past 7 years the panel have acted as a critical friend to the project helping to make sure that the designs adhere to the design vision.

There have been many good examples of how positive challenge can improve the outcome, one of which has been a cultural shift around thinking 'beyond the red line'. Manifest in the setting up of an urban integration team who's work on both the urban and rural integration has helped to encourage the use of diverse teams and more strategic thinking that looks to have long term impact rather than short term quick fix solutions.

By focusing on the surrounding environment there is more opportunity to design beauty and longevity into infrastructure beyond its primary or central function. An example is the Old Oak Common Station, which will be a new transport super-hub in West London and which will play an important role in the regeneration of the area around it. A key part of the proposals is a new public park, a green space which will welcome visitors and provide a new focal point for the growing community.

The multidisciplinary design team of the Colne Valley Western Slopes, will transform what is now an HS2 construction site into one of the largest areas (90 hectares) of new chalk grassland in the Chiltern hills. This grassland habitat is of international conservation importance and will be created using nutrient poor subsoils on the site, mixing these with chalk from tunnelling, recycled concrete and aggregates from the construction works. The outcome of a rigorous design process that included architects, engineers, landscape designers, specialists in biodiversity and agronomists.

Finally, HS2's Maple Cross is a prime example of legacy building. An artist-designed play area at Maple Cross school was created from soil excavated from HS2's Chilterns Tunnel. HS2's Arts and Culture team commissioned artist and landscape designer, Emily Cropton, to work with the pupils and develop a design for the new play area that not only helped them to connect with their area's natural history but also how they could have a role in shaping it.

And if we want to look at an infrastructure / urban design project that truly had impact in regeneration and building beauty beyond its 'red line', we just need to travel to King's Cross London, where the new station has become a fulcrum for radiating phases of improvement in the King's Cross area. Within the region of the station, King's Cross Central has become a significant residential development, and the home base of one of the largest urban regeneration projects in Europe. Its design fosters neighbourliness and maximises personal space inside and public space outside.

dRMM's building, Arthouse, became one of the Phase One housing blocks within this regeneration. Our design put forward apartments that are principally dual aspect with big view across Kings Cross, The Regents Canal and its environs. We made sure all apartments had full- height glazed façades, which maximise the views and the feeling of space and light. The for sale the exact same specification as the affordable for rent, all with a sense of identity and a canal side address.

An example of how the power of design excellence both at macro and micro levels has led to an exemplar regeneration projects in the UK. The scale of this regeneration has since expanded throughout Somers Town in the form of Camden's ambitious Community Investment Programme (CIP). The programme will deliver affordable housing, community facilities, a primary school and private housing within a redefined public open space.

dRMM has designed Brill Place, a human-scaled tower that will provide affordable housing through the delivery and sale of private ownership apartments. This ambitious brief demanded the smallest possible building footprint whilst maximising value within a highly constrained Central London location. Helping to find ways to build equity, and at the same time ensure the city can survive in the long term.

It's all very well insisting on 'good design' but ensuring that is embedded within the project from the outset and fed through the procurement of the supply chain. Part of the process of ensuring design quality and beauty is to make sure expectations are clearly set out from the conception through to delivery. This can be hard when you are doing so through written specifications – open to interpretation and lowest common denominator mentality. The question of how we can better articulate our design expectations in a way that is inspirational yet affordable was something that we tackled early on in the design review process.

Building on the importance of what it takes to define what's good, what can promote beauty in function, and what can harbour longevity, we chose to describe what we believed to be good design by way of a process

of testing and demonstration. So instead of just saying “we want good design” and transferring that responsibility to contractors without unpacking what it means, the HS2 project for the Colne Valley Viaduct looked for a way to develop a language of demonstration.

We employed an architect to design the Colne Valley Viaduct to a given budget, working closely with the local community to envision a solution that was led by high-quality, representative design. We called it a ‘Specimen Design’, an exercise to showcase the art of the possible and to lead stakeholder consultation between HS2 and the multiple statutory and public bodies with interests in the project. To ensure that the lowest common denominator as shown here was not the outcome achieved. And the proof is in the proverbial pudding with the Colne Valley now under construction. Hailed as an ‘extraordinary feat of engineering and architecture’ designed to enable views across a beautiful part of our British Countryside’. In other words, it was about breaking down the language of the design and ‘showing’ how it could work to create places with identity, without spending more money than meeting the status quo.

HS2 Ltd’s Urban Design and Integration work – including the range of urban and context integrations studies – is a great way of helping to identify and unlock the wider benefits of the project, supporting collaborative conversations with planning authorities, stakeholders and communities, providing context to decisions, and helping secure a positive legacy for HS2.

I want to end this talk on a note of positivity – the kind of positivity that’s brought about through hope, humanity, and finding beauty in places where it might feel hard to find. The philosophy of the Maggie’s Centres really brings together all of the points we went through today. It’s about starting with people, understanding what’s good and what’s valuable to them, and then using design to make sure that value lasts in the long-term. It’s also about legacy, about carving out an approach and a worldview that some may have found radical to begin with, but which has proven to bring about joy and grace to people’s lives.

Maggie’s offer free practical and emotional support for people affected by cancer and when they approached dRMM to design a centre in Oldham, it was a real honour, a commission that felt totally in step with the way we worked and in tune with our ethos and beliefs. We made sure we knew everything we needed to know about the history of the centres, going beyond peripheral research to make sure we understood the philosophy behind the ‘Architecture of Hope’.

Expressing that philosophy through a building meant combining our pioneering research into timber architecture with the ideas of a people centred, healing environment. For us, the use of structural timber was an obvious choice for all its environmental, tactile and construction benefits. So, we went about designing what beauty and hope would look like as a timber building. The brief from Maggie’s was for us to design a safe and welcoming space; an un-institutional building more akin to a house. Visitors were to feel encouraged and not daunted. Supported on slender columns, the building floats above a garden framed by pine, birch and tulip poplar trees. On entering, the visitor is met with a space, light and unexpected views down to the garden below, up to the sky, and out to the Pennines. The building is arranged with the Pennine horizon view to the north and kitchen with terrace to the south. From a central oasis, a tree grows up through the building, bringing nature inside. A conversation between landscape and architecture. A space for gathering strength and celebrating being alive for however long that may be. The plan is free-flowing but articulated to give privacy for each of the many overlapping uses and activities that patients undergo throughout the day and as part of their care. Maggie’s Oldham is the first permanent building constructed from tulipwood cross laminated timber.

Timber has proven health benefits, but it’s not the only reason it works here. It works because of its straightforward, familiar, recognisable beauty. There is nothing confusing about whether timber is beautiful or not.

So, in conclusion, building beauty and longevity into places is about turning to solutions that work, that are proven and are based on clarity and simplicity. It’s about holistic learning, reflection and action. To do this we must ensure we are listening, collaborating meaningfully and always considering the world’s depleting resources. I believe beauty comes from within; that there is beauty in simplicity at all scales, and there is simplicity in the formula for good design – it’s just about responding to people’s needs, desires and the aspirations that unite us.