



COMMUNICATION FUTURES

[MAKESPACE]

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Sustainable Development Goals

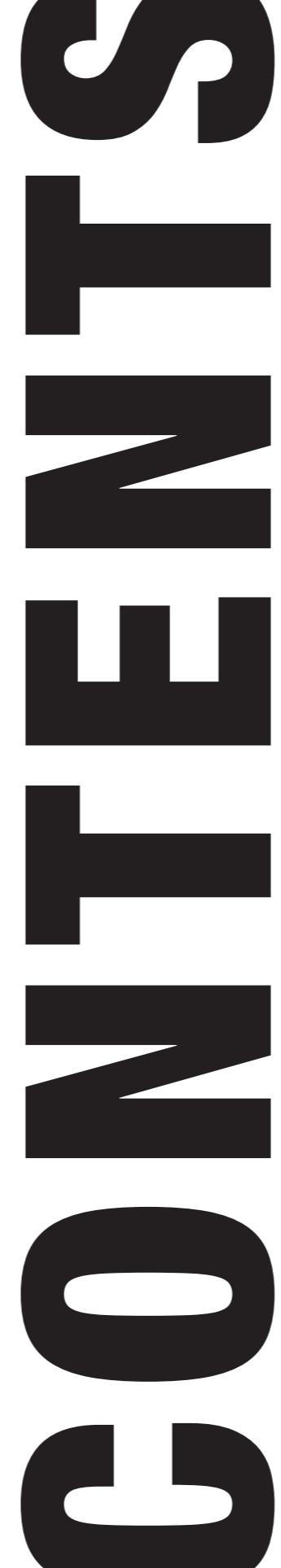
The 17 Sustainable Development Goals represent a call to action for all countries around the globe to create a sustainable and fair global society, set in a protected and healthy environment where everyone has the opportunity to thrive.

Source: <https://sdgs.un.org/goals>

- 01: No Poverty
- 02: Zero Hunger
- 03: Good Health and Well-being
- 04: Quality Education
- 05: Gender Equality
- 06: Clean Water and Sanitation
- 07: Affordable and Clean Energy
- 08: Decent Work and Economic Growth
- 09: Industry, Innovation and Infrastructure
- 10: Reduced Inequality
- 11: Sustainable Cities and Communities
- 12: Responsible Consumption and Production
- 13: Climate Action
- 14: Life Below Water
- 15: Life on Land
- 16: Peace and Justice Strong Institutions
- 17: Partnerships to achieve the Goal



ISSUE: ONE
FOUNDATIONS
Cover image:
*Stockyard of
recycled building
materials waiting
for reuse.*



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FROM THE EDITOR

Florence Allen

If the events of the past few years have proved anything, it's that when faced with devastation, humans have a remarkable ability to rapidly adapt their behaviour and respond quickly to adverse situations.

With this in mind, this issue of Foundations explores a fresh new way of approaching construction, infrastructure and the way we occupy space, looking to the role of the designer to examine how these changes can be made.

Instead of unnecessarily wasting resources and overlooking neglected spaces, let's start seeing the potential in what we already have.

florence allen

how can we add value to urban spaces, whilst adopting more sustainable building practices; and as we look to the future, how will the role of the designer adapt?



StoneCycling's 'Waste Based Bricks'

As climate change gradually creeps up the public agenda as we develop a more in-depth understanding, so too does government legislation. Most notably, the commitment by Theresa May's government to achieve net-zero carbon by 2050. Some industries seem to be on the front line of these discussions, repeatedly targeted and, in some cases, singled out. Others industries, that are equally as damaging, but less high-profile, slip through the cracks. One in particular is the construction industry.

The detrimental environmental impact of this £110 billion per annum industry is no secret. A simple internet search will provide you with pages of information backed by up research. When you dig deeper, uncovering the rates of consumption, waste and emissions, the lack of media coverage is shocking. The methods and materials associated with the construction industry create a toxic cycle, accounting for 10% of the country's carbon dioxide emissions. According to the UK Green Building Council, this jumps to a staggering 45% when we acknowledge the built environment sector as a whole. Materials alone make up 49% of the overall carbon emissions over the lifetime of a building.

If you break this down, wasteful and damaging practices occur at each stage of the construction process. Low-cost materials are bought in bulk, in the belief that this will enable cheaper labour expenditure and a quicker build time. At the same time, buildings are often constructed in a way that requires more materials and labour than is necessary, and materials are often wasted throughout the process or not used to their full advantage. As a result of these building practices, it's no surprise that the average life span of most modern buildings is 40 years before they're torn down, scrapped and replaced. Research from the Local Government Association, which represents 415 local authorities, suggests that every

“Materials alone make up 49% of the overall carbon emissions over the lifetime of a building.”

house in existence would need to last for the next two millennia if there was not an upturn in delivery of housing.

The long-term effects of using poor quality materials to save money, actually has the opposite result. The same research by the LGA found spending on maintenance and repair of existing homes was £27bn in 2016, just short of the £35bn spent on new housing stock. ▶

Stockyard of recycled building materials waiting for reuse



So, is there a meaningful solution? And what can we learn from others? No two industries face the same issues across the board, and therefore the solutions and methods to overcome them will need to be different. However, there are real opportunities here. We can look to other industries to open up the possibilities and examine how they approach similar problems.

Perhaps one of the most infamous industries, known for its damaging environmental impact, is the fashion industry, accounting for roughly 10% of global carbon emissions and requiring more energy than shipping and aviation combined. In the face of these statistics, growing trends in consumer consciousness are emerging that suggest a shift in attitude towards how and what we buy, shaping the industry as a whole.

Online marketplace apps such as Depop allow people to run their own online shop and essentially create their own small business, buying and selling second-hand clothing and forming global communities. Among its 30 million active users, spanning 150 countries, 90% are under 26. Sustainable shopping has never been marketed this way, but clearly it's working as research conducted by the firm GlobalData and the consignment company ThredUp found that the retail resale market is growing 11 times faster than traditional retail.

This trend doesn't look to be slowing down any time soon. Market analysts expect the global second-hand market to more than double from \$28 billion in 2019, to \$64 billion by 2024. By buying second-hand, the pressure on

manufacturers is significantly reduced along with an overall reduction in consumer demand. In addition, extending the average life of clothing by just three months leads to an impressive 5-10% reduction in the footprint of carbon, water, and waste.

Although these small changes represent a drop in the ocean when looking at the climate crisis as a whole, they are nonetheless a step in the right direction. They demonstrate a real drive from consumers to get involved, and a willingness to change their habits given the right opportunities and information.

These apps seem to have become a gold mine in the second-hand shopping arena, so why can't the same principles be applied to other industries?

“

Finding what we want, from what others no longer need is a trend not limited to clothes.”

Aisling Byrne



Aisling Byrne, founder and CEO of Nuw

Aisling Byrne, founder and CEO of the virtual clothes swap app 'Nuw', suggests that "finding what we want, from what others no longer need is a trend not limited to clothes."

One of the first things to consider when tackling the construction industry's environmental issues is materiality. More specifically, what we use, where it comes from and where it will end up after a building is no longer needed.

When cheaper materials are used in bulk, they are not always held with the same value, level of care or consideration, which is then, in turn, passed on to the building. In an article published by Architect magazine, Architect and materials researcher Blaine Brownell discusses the growing trend of taking waste from construction and demolition projects and using it to create new materials and products. Describing the process, he states, "The decision to permit medical professionals to harvest our body parts after our death is an existential moment. We are reminded not only of our mortality but also of the potential for our bodies to give life to someone else.

Architects and building owners do not have a similar donation check box for buildings, and yet a similar phenomenon occurs." Like humans, all buildings have a lifespan.

Yet why is there such disparity between these two processes that in many ways are very similar? ▶

“ The decision to permit medical professionals to harvest our body parts after our death is an existential moment. We are reminded not only of our mortality but also of the potential for our bodies to give life to someone else.”

Blaine Brownell



Vacant Building, San Francisco



Left: Pile of Bricks Right: Raw Materials



Architects and designers tend to focus solely on the life of buildings, curating every aspect to function flawlessly during their daily use, rarely considering the entire lifespan. Once its function has been met, what could become of a building after, doesn't seem to impact the design process to any significant effect. Yet it does pose another question. Who decides when a building is no longer needed and must be demolished? Is it simply a case of it no longer performing its designated function, or does this factor alone limit the possibility for reuse?

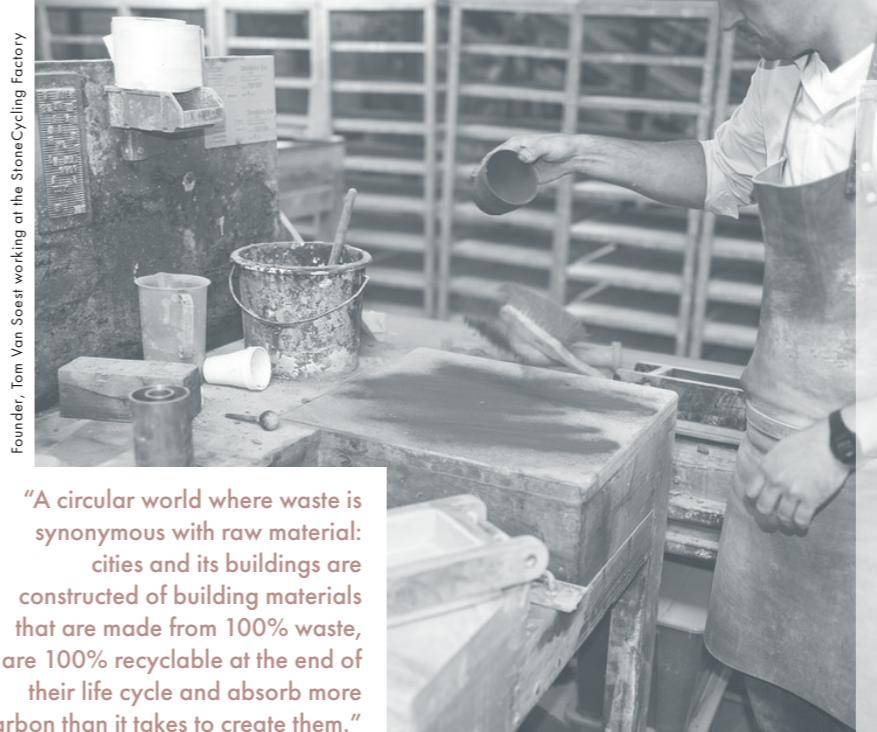
Engineer Michael Ashby breaks down the six main reasons why buildings become redundant and reach the end of their life span. Starting with the most indisputable factor, physical condition, and then considering functionality, technical, economic and legal considerations and desirability. Yet only one of these

factors represents a physical barrier against reusing materials; physical condition. With more thought and an open mind, all of the other aspects could be worked around. In some ways, they are only a barrier because of rules we have set ourselves.

In his 1994 book 'How Buildings Learn: What Happens After They're Built', Stewart Brand accuses architects of being in the fashion game, which is "deadly for building users". He argues that "time becomes a problem for buildings. Fashion can only advance by punishing the no-longer-fashionable." Just because a building is no longer seen to be desirable in its current form does not mean it never will be.

With a growing understanding and awareness of the sheer volume of demolition waste and its environmental impact, things can, and are slowly beginning to change. The vast quantities of waste provide ample opportunity and massive potential for reuse. A concept that companies and designers are starting to recognise.

Amsterdam based 'StoneCycling' harvests construction and demolition waste, also known as 'mineral demolition debris', and creates their patented product 'WasteBasedBricks'. Founded by student Tom van Soest in 2009, one of their main goals is to reduce waste streams without compromising on aesthetics or functionality.



Founder, Tom Van Soest working at the StoneCycling Factory

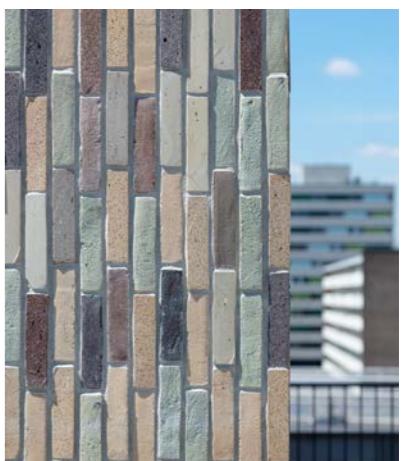
"A circular world where waste is synonymous with raw material: cities and its buildings are constructed of building materials that are made from 100% waste, are 100% recyclable at the end of their life cycle and absorb more carbon than it takes to create them."

StoneCycling

WasteBasedBricks



WasteBased Brick wall



As the company is still in its early stages of development and due to their innovative working methods, they are unable to take donations of waste material, stating that they "only work with larger, very specific and well-separated quantities of waste". They are, however, currently running a pilot project in Amsterdam where they will be testing the process of directly returning waste from what they call a 'donor' building back to the project. ♦

Starting out modestly, van Soest was interested in gathering and up-cycling waste found in vacant buildings awaiting demolition. Although it took until 2015 before the StoneCycling team officially sold their first brick, the growth has been exponential. Since winning the 2016 Young Designer Award at the Dutch Design Week, demand has unsurprisingly grown rapidly. Their bricks are beginning to appear in projects worldwide, most recently a residential development on 11th Avenue in New York City, representing the reuse of over 250 tonnes of debris.

take up space.

How we can add value to unused, neglected and abandoned areas of a city and occupy these spaces in a meaningful way?

In his book 'How Buildings Learn: What Happens After They're Built' (1994) Stewart Brand illustrates the life-cycle of buildings. Following the transitory stages they pass through over time, he explores how, if given the opportunity, they can evolve to match our changing requirements.

First coined by architect Frank Duffy, and later revisited by Brand, 'Shearing Layers' is a concept that examines this notion in more detail. In principal, Duffy splits a building into five components, each acting as a different layer with its own independent rate of change.

Brand extended this list to include six different layers; site, structure, skin, services, space plan and stuff.

Starting with the most enduring lifespan, 'site' refers to the geographical setting of a building, described by Duffy as 'eternal'. The foundations of a building make up the 'structure' layer, lasting thirty to three hundred years, although few make it past sixty. Changing every 20 years to contend with changes in style, 'skin' encompasses the exterior façades. 'Services' is comprised of the fixtures in a building as well as any mechanical moving parts like lifts or escalators. ►

Granby Four Streets Site





Granby Four Streets Site Map

These elements need to be upgraded every seven to fifteen years and are often the reason why buildings are demolished as the services tend to be too rigidly integrated. The interior arrangement is referred to as the 'space plan', the position of walls, doors and floors, and can be modified every three years. Finally, the most turbulent layer 'stuff', can be re-adjusted daily to monthly and includes furniture, appliances and lighting.

Arranging these layers to create a building with the ability to adapt in the most efficient way possible has resulted in an architectural design principle named 'pace-layering', first introduced by Brand in 1999.

“It's crucial in the current climate to start seeing the value and importance of unused spaces within cities, recognising their capacity to adapt to meet our demands.”

It is crucial in the current climate to start seeing the value and importance of unused spaces within cities, recognising their capacity to adapt and meet our demands. This is key to avoiding their unnecessary demolition. Typically, new build developments require more time, labour and resources, and as a repercussion, more waste is generated.

Shifting the negative attitudes surrounding uninhabited environments that can act as a barrier to redevelopment and injecting a sense of energy is crucial. We need more space in cities, so why not use this demand to unlock hidden spaces.

Contemporary architecture is equally important, reflecting our changing needs and priorities as a society, as well as architectural and technological advancements. The issues we face, like housing shortages and overcrowding, are perhaps best approached with innovative design solutions and cutting edge technology as we look towards the future. However, there are also valid reasons to focus on creating more of a balance between modern and historical buildings. There are cultural benefits to preserving buildings and the people that occupy them in addition to the obvious environmental benefits.



Abandoned Street, Granby



Row of vacant houses, Granby

If we don't value these older buildings, whole communities risk being torn apart and their rich cultural history, totally lost.

When considering vacant buildings, creating a sense of ownership over a space can be the key factor that determines its value. Community ownership schemes can empower local groups of people to take control over buildings, plots of land or organisations.

Liverpool is known for its high rates of vacant homes, with over 4,500 empty properties, more than any other council area in the North West. Community-led project 'Granby Four Streets' was established when a group of residents reclaimed their local neighbourhood, encompassing the four remaining streets of Victorian terraces in the Granby area. After years of failed attempts at redevelopment, the homes had become increasingly run down and the Granby area had a reputation for

crime and violence. A once vibrant community had been destroyed and as residents left, more and more homes became abandoned and boarded up. Seeing the impact the loss of this community had on the wider environment, the ambitious group of residents decided to take a stand and save these homes from inevitable demolition. Over the course of two decades they steadily cleaned, repaired and campaigned to reclaim their local environment. ►



One of the '10 Houses on Cairns Street' with fireplace made in Granby Workshop

In 2011, after catching the attention of the multi-disciplinary design collective 'Assemble', the Granby residents became part of an industrious community land ownership scheme, with a plan to restore the empty properties into affordable housing.

Supporting the locals, Assemble helped outline plans for housing and green spaces, whilst establishing jobs and business opportunities. The result was the restoration of the first ten houses on Cairns Street, a shared indoor garden on the site of two derelict terraced houses and the creation of the Granby ceramics workshop which specialises in creating products from architectural waste.

These sustainable products were initially used in the renovation of the Granby homes. The unique local partnership and involvement with Assemble throughout this project has no doubt made it stand out, gaining media attention and being awarded the 2015 Turner Prize. It demonstrates that by taking ownership of a space and recognising its cultural value, no matter its state – vibrant and exciting communities can be re-established.

Also in the Granby Four Streets area of Liverpool, a pilot scheme launched in 2013, saw more than 2,500 people apply to be part of the 'Homes for a Pound' project. This initiative invited residents to buy an uninhabited property for



Vibrant Street in Granby area

Boarded up houses in Granby area of Liverpool



less than the price of a coffee. Homes for a Pound is part of a scope of measures introduced by Liverpool City Council aiming to salvage 6,000 empty properties, with the majority of the renovation carried out by the inhabitants themselves.

Faced with thousands of empty homes but no funds to refurbish or even demolish them, the council devised this resourceful scheme which requires new home

owners to stay in the properties for a minimum of five years after purchase. This ingenious solution to the housing crisis sweeping across the UK, allows people to get onto the property ladder and also reduces rates of depopulation in desolate areas.

Hearing the impressive statistics and various success stories that have come as a result of these, and similar projects is all very well, but behind this facade is real life. ♦

"The overarching positive was the ability to own a property I could never afford on my own."



Victoria Brennan

Victoria Brennan, Resident

Often, the areas that tend to be selected for these schemes are known for their anti-social behaviour and economic disadvantages – a source of concern for the residents and wider communities. Theft, vandalism and violence tend to attract an unwanted spotlight, provoking scepticism and debate. Most notably after the release of Channel 4's documentary series, 'The £1 Houses: Britain's Cheapest Street', which put Liverpool's Homes for a Pound scheme under intense criticism.

Sometimes seen as a last-ditch strategy to the housing crisis, the Homes for a Pound Scheme has been adopted by countries across Europe, most recently in Italy. Without projects like these and the open-minded participants they attract, thousands of houses across the UK would lie vacant.

Over a quarter of a million properties in the UK are currently empty. It does therefore seem logical to approach this issue with more of an open mind, starting by opening our eyes to the possibilities and potential of the current housing stock. ♦

MEANWHILE...

There has been a massive rise in vacant spaces across cities, in areas that had previously been busy or populated, especially in the aftermath of the last two years. Whether it's office blocks no longer occupied as more and more people see the benefits of working from home; shops on local high streets that have been forced to close down; sites awaiting demolition or developments that have been put on pause. A steep rise in online shopping is also, without doubt, an additional factor.

It's no surprise that the recent pandemic has accelerated this decline, but the future of the high street has been the subject of many deliberations as we tackle the spread of empty spaces across the country.

The rise of uninhabited buildings comes at a time when the rapid growth of cities forces its inhabitants to move further and further into the outskirts. In September 2019, there were 617,527 empty buildings across the UK. From these, 445,310 were residential dwellings and 172,217 commercial buildings. For residential properties, this number is a stark 75% increase from 2012. So, during a time

where planners are desperately trying to find new ways to keep local high streets alive and there are increasing numbers of people commuting, it poses one obvious question: Why is this space not being occupied in other ways, and what makes it unvalued and overlooked?

Enter the 'Meanwhile Space' – the use of tenancy contracts set up on a temporary basis, allowing individuals or small businesses to occupy otherwise vacant sites. The aim is to create a short-term or 'pop-up' activity, adding a burst of energy and vibrancy to sleepy high streets where rows of empty shop fronts are a far too familiar and increasingly common sight.

“Why is this space not being occupied in other ways, and what makes it unvalued and overlooked?”

In the wake of the pandemic where more than 17,500 chain stores were forced to close down, 'meanwhile spaces' are springing up all over the UK. These sites seem to have a particular appeal with creatives, who often have limited budgets for high rent, but a real need for a studio-like space where they can develop, showcase and sell their work. Typically, these sites are used as working spaces, pop-up shops and exhibitions, as well as outdoor community gardens and markets. And they're appearing all across the UK and Europe.

So, what's not to like? Landlords, developers or authorities keep their properties occupied during quieter periods or in between more long-term tenants. Streets become more vibrant and dynamic, giving the community

a chance to support local enterprises. Individuals, small businesses and charities have the opportunity to set-up shop and connect with a broader client base without tying themselves to one location or having to worry about paying extortionate or escalating rent.

However, matching up landlords with suitable tenants in a short time frame is more challenging than it may seem. Generally speaking, landlords tend to be risk-averse, preferring long-term, more stable tenants over more experimental, temporary occupiers, even though they may benefit from the rent. In fact, this unconventional arrangement throws up risks and logistical obstacles for both the landlord and tenant. Pop-ups are designed to be temporary, so even looking

from an aesthetic point of view, the spaces or events held there could be ill-fitting with the rest of the environment.

The Royal Institute of British Architects outlines a couple of potential factors to consider with these proposals. One difficulty they acknowledge occurs when occupiers seek out vacant spaces, in the early stages of the process. RIBA highlights how difficult it can be to determine precisely which spaces are empty or are due to become vacant in their local area, even though this data already exists and is held by local authorities. This could

be relatively easy to resolve, by requiring local authorities to collate and publish information about current or upcoming empty plots as well as listing a record of interested occupiers. Including a more in-depth analysis of the space itself, amenities, available dates and typical demographic, could make it significantly easier to match landlord with potential tenant.

As with any experimental initiative, there are risks and a lack of security for those involved, so it can be tempting to concentrate on the profitable elements. RIBA warns that this can be a dangerous approach. ▶

“In the wake of the pandemic where more than 17,500 chain stores were forced to close down, 'meanwhile spaces' are springing up all over the UK.”

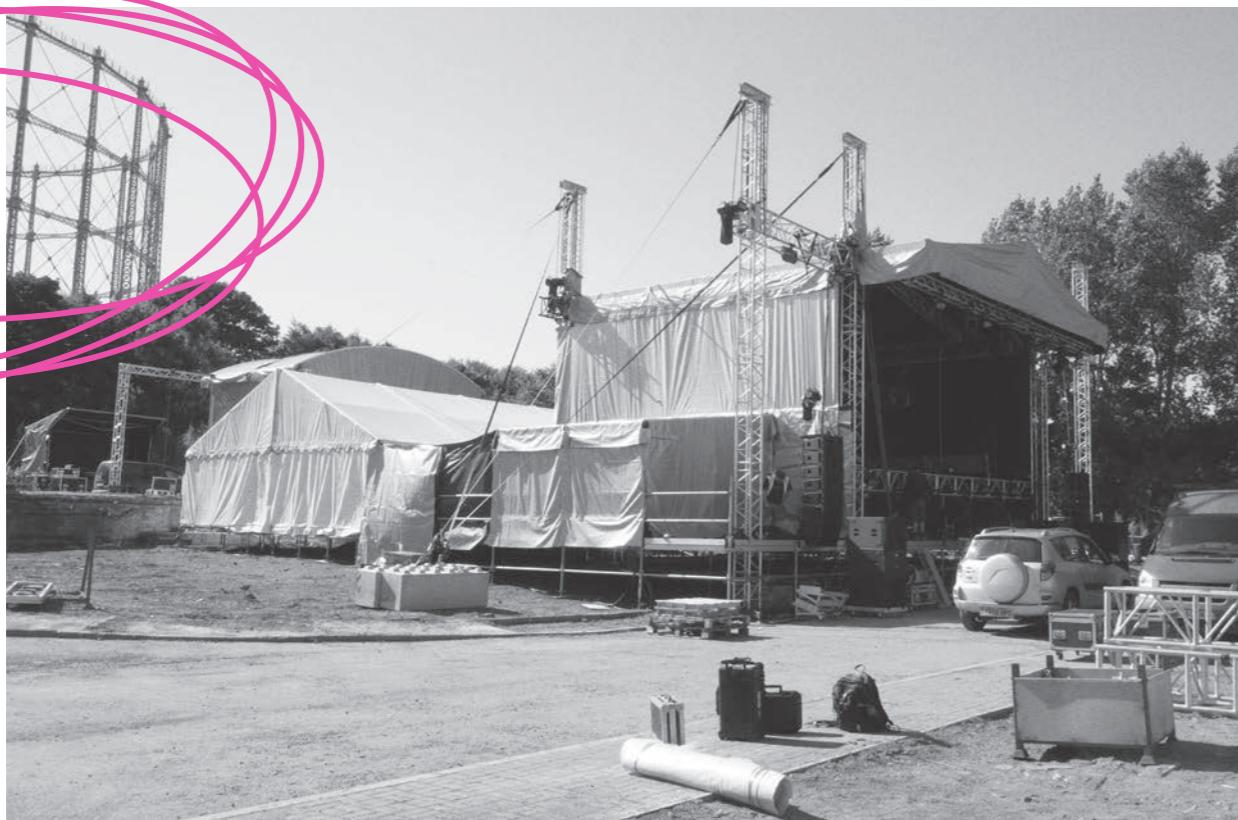
Instead, meanwhile sites should be seen more as an opportunity for experimentation, free from the usual constraints – an investment in the community rather than a solely economic one. At first, the social value may dominate any financial gain, but developers will have the unique opportunity to use these spaces as a way to trial new occupants.

Another hurdle of this temporary setup is how to hold onto the value that is created in these spaces. Like the shops themselves, the burst of vibrancy and community spirit is fleeting, and so finding ways of ensuring a space can harness some of this is crucial for these schemes to be a successful addition to local communities.

Without opportunities like this, many areas could be completely out of reach for these occupants, some of whom may choose to stay in these areas after their tenancy ends. Additionally, professional meanwhile use operators, such as Meanwhile Space CIC based in London have, over time, built up an extensive catalogue of sites, making it much easier to find new tenants to occupy a space to a shorter time scale. ►



A shuttered shop with a 'closing down' sign



Construction on the 2021 Hidden Door Festival with Granton Gasworks in the background

“

The goal for us is to help as many people as possible, and obviously the quality of the work that the trainees are producing will hopefully really encourage people to take a chance on them.”

In Edinburgh, the recent completion of a meanwhile space on the site of a derelict tram depot in Leith has created a bustling community hub with six shipping containers housing studios for artists and other creative entrepreneurs, as well as community gardens, market stalls and a skate ramp.

The development of the site itself, run by arts and education trust ‘Out of The Blue’, created the opportunity for trainees to learn a variety of construction techniques alongside ‘Rebuild’ founder, Paul Hunter. A social enterprise based in Edinburgh giving people from vulnerable backgrounds the chance to gain experience and training

in construction through live projects. ‘Rebuild’ specialises in the up-cycling of shipping containers for a multitude of different uses. “The goal for us is to help as many people as possible. The quality of the work that the trainees are producing will hopefully really encourage people to take a chance on them and give them the opportunity to take the right steps down a proper pathway.”

Although this site is temporary and awaiting plans from the council for future development, the community is strengthened and their involvement with the development of this space creates more chance of influencing future developments.



Hidden Door volunteers 2018



Hazel Johnson
Photo: Agatha Albert

“

The idea for Hidden Door first came about from a desire to give emerging artists opportunities to perform and exhibit that we felt Edinburgh wasn’t truly providing them with at the time.”

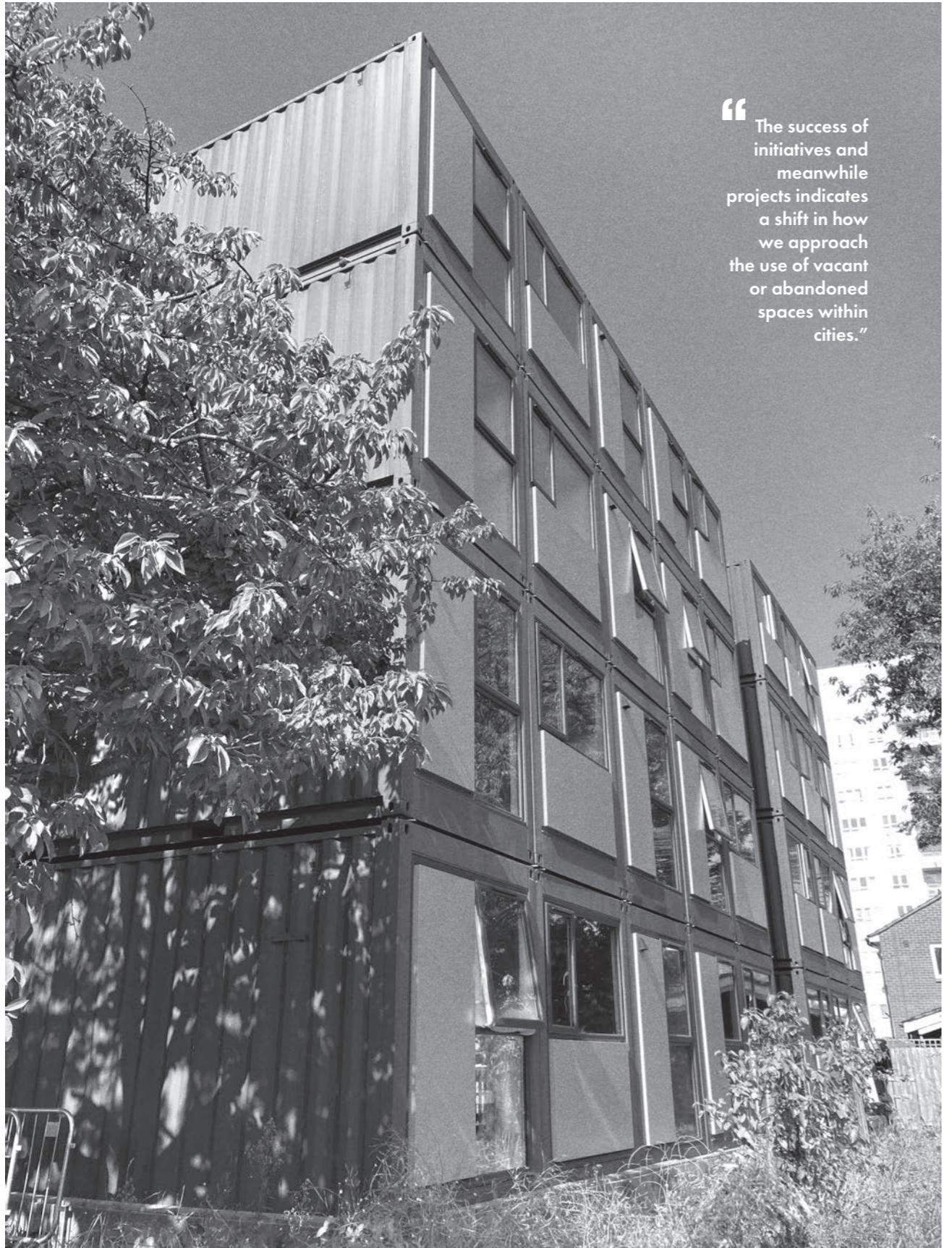
Hazel Johnson - Hidden Door

the origins of the festival. “The first Hidden Door events were held in 2010, at the Roxy in Edinburgh, and were organised by a small group of friends, most of whom were artists themselves. After that, we began to explore the idea of using disused or under-utilised sites, and that led to us using the Market Street Vaults for the first full Hidden Door Festival, in 2014.”

Since 2014, volunteer run charity ‘Hidden Door’ has occupied vacant spaces around Edinburgh for a week-long festival showcasing music, theatre, art, poetry and more recently, work from local graduates whose degree shows were cancelled. Over the past eight years, the festival has grown in size with sites ranging from the historic Market Street vaults in Edinburgh’s old town, a courtyard behind Kings’ Stables Road, the old Leith Theatre, and the derelict State Cinema in Leith.

During a site visit to Granton Gasworks amidst construction of the 2021 Hidden Door Arts Festival, it was hard to imagine that in a matter of days, thousands of visitors would descend on this derelict industrial site for a week of vibrant events, and that ten days later, the temporary structure would be seamlessly packed away, leaving the abandoned site as if untouched.

Speaking with Hazel Johnson, Venue and Place Manager for Hidden Door, she explains



The stacked container ship homes, Meath Court Hope Gardens, Ealing



Meath Court Hope Gardens Mural

The rise of vacant buildings in the UK doesn't just affect the retail sector. Empty homes are also at an all-time high, causing housing issues at a time when we are facing a nationwide homelessness crisis. Reports suggest that there are 288,539 empty homes in the UK as of 2021, a figure that appears to be consistently rising.

At the same time, luxury, high-rise superstructures seem to emerge in cities at an ever-increasing rate, many of which remain half-empty. We're also seeing the impact of a lack of government-funded social housing, which hasn't been built in any significant way since the 1980s.

UN projections anticipate that by 2050, 68% or two-thirds of the world's population, will live in urban environments. This raises the stakes for designers and creates a real need to find clever solutions to the issues associated with urban living. It may mean accepting that the future of the home isn't always permanent.

One initiative with this ideology at its core is Meath Court, Hope Gardens in Acton, London. Meath Court provides temporary housing for people in vulnerable situations and in need of emergency accommodation. The 60-apartment complex, with a capacity to house 288 people, was constructed using shipping containers whose modularity allowed the units to be quickly

assembled and efficiently moved, repaired or re-purposed. These homes are built on a temporary basis, and the reuse of these structures is a fundamental element of the design. The units, that can house between 1-6 people, will be inhabited for seven years in their current site before being dismantled and moved elsewhere when the land they are built on will be used for its predetermined function.

The success of initiatives and projects like these indicates a shift in how we approach the use of vacant or abandoned spaces within cities. Permanent solutions no longer are the default option. Innovative schemes show that these can be occupied in more flexible, temporary, adaptable and ever-evolving ways. Some critics take issue with these kind of emergency housing projects on 'meanwhile sites', describing them as a symptom of a broken system. Although this is a valid concern, surely it's better to provide accommodation on a temporary basis than not at all?

Our future environments will likely be developed, nurtured and tested in meanwhile spaces as we emerge from lockdown. Through proper management, these spaces can help diminish the impact of the economic recession caused by coronavirus and foster a sense of community participation in creating places for people to come together and form meaningful connections. ♦

**“**

As the default option, we need to cherish the buildings that we have and apply our ingenuity and imagination to giving them new life, reconfiguring them to serve our evolving requirements.”

The Gentle Author

Every year in the UK, 50,000 buildings are demolished. With this, huge amounts of CO₂ are released into the atmosphere, and thousands of tons of waste materials are sent to landfill. Materials that haven't reached the end of their lifespan and have the potential for reuse in many cases.

However, due to the construction methods that have become the norm, the ability to extract raw materials from this waste is seen as minimal. To put an end to this cycle, there has to be a complete shift in the ethos surrounding the construction industry. Amazingly the UK tax system rewards more wasteful practices, whilst reusing buildings is made more costly.

To break this down, the more wasteful practice of demolition and rebuild projects receive a VAT rate of 0%. While a 20% VAT rate is applied to refurbishment and retrofit work, the more sustainable alternative. These tax discrepancies play a massive role in dictating the value we place on these older structures too. Although some people may view these figures as arbitrary, they act as a clear disincentive for contractors to undertake restoration or retrofit projects. How can we begin to tackle this problem if these rates actively discourage



Façadism on Caledonian Road, Islington



Fruit & Wool exchange, Brushfield St

a more conscious approach to construction? On average, the cost of restoring a vacant home to a fit to live in state is roughly £6,000 to £12,000 – over ten times cheaper than the average price to construct a new-build development.

Renovation to refurbish an empty house can take just six months, whilst new housing is often more extensive, requiring a minimum of 12-18 months to complete. This quick turnaround could be one way out of a potentially catastrophic housing crisis in the wake of a post-pandemic society.

In his book, “The Creeping Plague of Ghastly Façadism”, The Gentle Author, as he is referred to on his online blog, explores the growing trend of façadism in London. A way of preserving the exterior, often front-facing wall, of a building while the rest is demolished and replaced with a modern structure. For architects, this can be seen as a way of honouring the previous building, carrying forward its characteristic style and form. However, The Gentle Author disagrees, stating that

“The real question that should be asked is ‘What is the point of keeping just the facade, why not simply keep the whole building?’” He later goes on to argue that “As resources grow scarce, the practice of sacrificing good quality buildings for cheap-jack disposable replacements cannot be justified because of the wastage and pollution generated by such redevelopment. It is not responsible or sustainable. As the default option, we need to cherish the buildings that we have and apply our ingenuity and imagination to giving them new life, reconfiguring them to serve our evolving requirements.” Looking at this cynically, façadism is solely a way to avoid the hefty VAT rates applied to refurbishment whilst superficially appearing to integrate old and new building styles.

In reference to the unequal tax policies favouring new builds over retrofit, The Gentle Author points out that façadism is simply a way for architects to outwardly demonstrate their integrity to buildings, both historically and sustainably. ▶

"This irresponsible policy is directly in opposition to environmental concerns and reflects a preference for short-term economic gain regardless of long-term consequences."

Shockingly, the act of destroying historic buildings, many of which represent the rich cultural heritage of the city in which they have been built, is financially favoured by government policy. Since 1973, when VAT was introduced in the UK, this disparity has existed. However, it's beginning to get the attention within this industry that is so desperately needed.

A new campaign created by architectural magazine 'Architects Journal' and supported by over 200 architecture practices, organisations and individuals, has been set up to raise awareness of this stark VAT inequality in a bid to encourage retrofit over demolition and rebuild. 'RetroFirst' sets out three main demands to the government in an attempt to curb the wasteful construction practices that contribute to the climate crisis we're facing.

The first call to government is that the VAT rate that rewards wasteful demolition and rebuild needs to be cut from 20% to a maximum of 5%. Only recently do we have the opportunity to revisit and simplify the VAT system that's standing in the way of eco-refitting, as a result of leaving the EU.



Gun Street Façadism London



Demolition of an old building with floors

The second call is to amend policies to promote the reuse of buildings. And the third looks to see action from publicly funded projects with strong encouragement to seek out retrofit solutions before opting for rebuild.

"Waste is simply material without an identity."

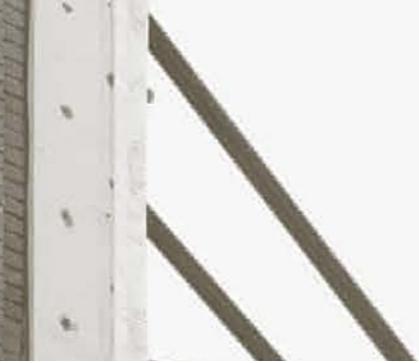
Thomas Rau is well known for his forward-thinking approach to Architecture, what is needed for the future and how best to get there. In particular, his constant drive to create a more circular model for construction. Recognising the locked-up potential of buildings, Rau predicts that in the future, they will be seen as transitory structures, part of a service rather than owning them the way we do currently. "Ownership blocks innovation," he says. "Treating building elements as a service would remove planned obsolescence and increase transparency and responsibility." Teaming up with author, speaker and co-founder of 'Turntoo', Sabine Oberhuber, the pair has developed an innovative perspective on how we approach buildings, viewing them as temporary stores of material.

“Treating building elements as a service would remove planned obsolescence and increase transparency and responsibility.”

Thomas Rau

The 'material passport' was created with this principle at its core. A way of registering every single component and material of a product, or in this case construction, which can then be documented and saved. Acting as a recipe for the building, the material passports can then be used in conjunction with a 'Building Information Model', a digital depiction of these components, to give an incredibly detailed picture of the structure as a whole. To make it easy to document this information, 'Madaster' was created as a platform. This process represents a revolutionary method of data collection that's never been explored in the context of construction.

Rau and Oberhuber, outline the three main methods that material passports can be implemented, revealing hidden value in the buildings that surround us. The first occurs when we generate passports for existing buildings, a process they've coined 'Buildings as Material Mines'. They see it as a way of highlighting the locked-up potential sitting around, most interestingly, in buildings that have otherwise been overlooked. Usually, when a building is due to be demolished, the person or company overseeing the project will have to shell out a sizable portion of money for the demolition to take place. ▶



Karen Crooks
Interior Designer - RPP Architects Ltd



Yet, when a material passport has been created, the value of the materials can be extracted, and the building suddenly gains value. In some cases, it can end up paying for the demolition itself.

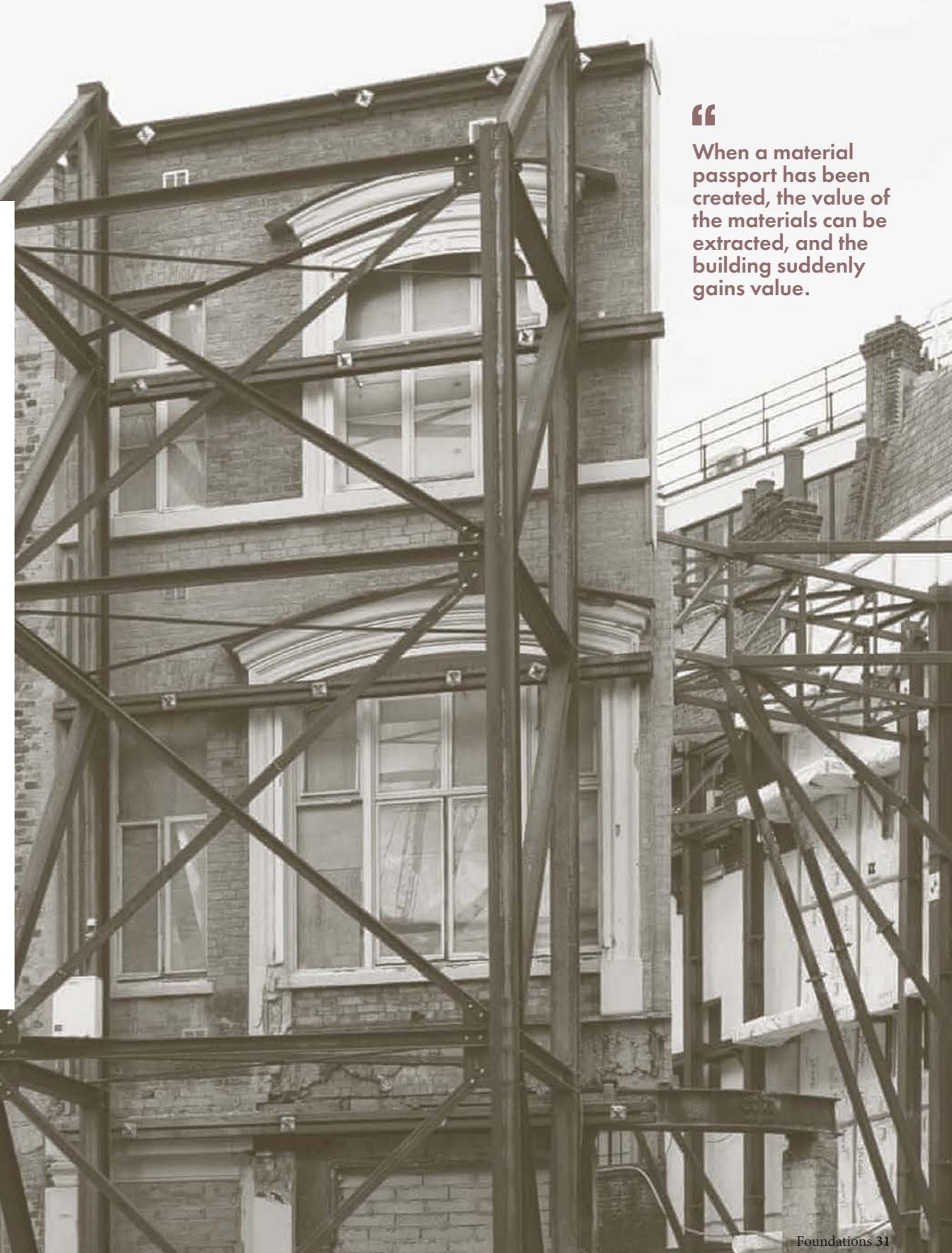
Buildings built with disassembly in mind are categorised as 'Buildings as Material Depots'. This is an extension of the principle of Material Mines, but instead of the passports being applied as more of an afterthought, depots are buildings specifically designed to be de-constructed and reused. By acknowledging that a building won't last forever in just one state, the market of reusable products and technologies will expand exponentially. 'Buildings as material banks' makes up the final method of implementation. By categorising not only the

materials and their location but rather extending this data to encapsulate the building as a whole, a financial incentive is formed. This is particularly significant as the overall value of the extracted materials can account for roughly fifteen to twenty per cent of the total cost. Buildings must still be designed with deconstruction in mind for this to be successful, but if developers can see this economic value from the offset, it might be enough to change how they view the reuse of these constructions.

Karen Crooks, Interior Designer at RPP Architects, explains the rapidly growing awareness of 'green credentials' within the industry. Methods of assessing the sustainability of their projects encourages more conscious ways of working.

"As a commercial interior designer, I have to decide what the building is going to achieve when we're designing it, and 'BREEAM' is the standard points rating we have to try and work towards. So there's 'very good' to 'excellent', and depending on how you design it, what materials you use in both the construction and finishes, and how much of that can be recycled, gives you different point ratings."

This mindset is beginning to shift to suppliers and clients too, as they recognise the value of adopting more environmentally conscious ways of working. "A company that's very good at this is 'Interface' they have learnt how to recycle every aspect down to the carpet tiles. This happens more and more with every product that we're using here." ▶



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When a material passport has been created, the value of the materials can be extracted, and the building suddenly gains value.

'Unsustainable Structures 7', Grosvenor St, Mayfair



The Dutch government seems to have picked up on similar principles, recognising the long-term value of material passports. These have been introduced with tax incentives for developers who register their buildings and materiality. Implementing this kind of simple legislation highlights just how easy it can be to increase the uptake and spread of schemes like this.

Multinational conglomerate business Phillips has shown their support for a more circular economy by providing 'lighting, as a service' to Schiphol airport. When refurbishing their Lounge 2 area, they saw the possibility of using a circular lighting system, meaning they don't own the lighting but rather use it and return it to the manufacturer when it is no longer required. The manufacturer, in this case Phillips, can then either reuse, repair or recycle the luminaries, preventing more waste entering landfill.



Resource Rows Material Extraction



Stacks of the old Brewery facade, ready for transportation

Looking at other companies tackling the environmentally destructive nature of the construction industry, the Lendager Group stand out for their innovative approach. Founded by architect Anders Lendager in 2011, they're known for their sustainable values and belief that sustainability should appreciate the value of a project rather than add extra costs. "We enhance sustainability in the built environment by ensuring that materials are circulated and kept at their highest possible value at all times, benefiting both the individual project, people and planet."

One of their projects, 'Resource Rows', has recently been nominated for the EU Prize for Contemporary Architecture – Mies van der Rohe Award. Their construction method represents a CO₂ reduction of 29% and saves 463 tonnes of architectural waste from entering landfill.



Resource Rows housing complex with Balconies

"

Rarely can buildings be taken apart for direct reuse," explains Lendager, "designing architecture with accessible joints so that they can be disassembled—we've kind of forgotten that was possible."

Anders Lendager

This is because the housing project is constructed predominantly from recycled materials, specifically the bricks from historical breweries around Copenhagen, as well as other old industrial buildings and schools awaiting demolition. This process wasn't as straightforward as it may seem. Anything built after the 1960s uses mortar that is stronger than the bricks themselves, making it near impossible to extract the bricks as raw building materials. To combat this, the Lendager Group fragmented the walls into one-metre square modular blocks, stacked them together and transported them, finally rearranging them to create a patchwork like facade, unlike any other building in the city.

Although dealing with time constraints and facing scepticism from both the client and contractors, the new homes were snapped up quicker than any other housing scheme in the city. This development isn't the only project with sustainability at its core gaining recognition from prestigious architecture prizes. A recent shift in mindset has resulted in radical retrofit projects winning the acclaimed Mies van der Rohe Award for the past two years running. As Carl Elefante, former president of the American Institute of Architects, puts it simply, "the greenest building is the one that already exists." Faced with a more conscious awareness of their environmental impact, it's clear that consumers are open to the idea of finding ways to lower their carbon footprint through more sustainable and innovative methods of construction, materials and reuses. ♦

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