

# The role of lighting in supporting town centre regeneration and economic recovery



# CONTENTS

## INTRO

## 1

## 2

## 3

## 4

## 5

Seizing the opportunity to use lighting to generate greater change

Economic value and impact of lighting

Towns are changing: how does that affect the after dark night time?

Nine challenges at the heart of town centre regeneration

Demonstrating the impact: a selection of case studies

Next Steps and Recommended Reading

# INTRO

## A renewed focus on town centres

A town centre can be defined<sup>1</sup> by the following characteristics:

- Being a **retailing centre** that serves the needs of the local community;
- Having **leisure, entertainment and cultural facilities**;
- Having **access to public and private sector services**;
- Being an **employment and business sector**;
- Having **accessibility** by a number of transport options; and
- Being **perceived by the local community** as their town centre.

This document uses the term 'town centre' to cover the following scales of centres:

- Neighbourhood centres
- Suburban centres
- Local centres

Town centres can range in size, from a single high-street to a couple blocks or even a small district.

We have purposefully selected town centres as the focus of this report, to move away from the regular focus on capital city centres and emphasise on the renewed and increasingly important role that town centres are having in the recovery of national and local economies in a post-pandemic world.

The significant increase of people working from home has made suburban and smaller town centres more attractive places for people to spend their time and money. While footfall on central locations has been heavily affected by the pandemic, suburban high-streets and centres have seen an increase in activity as people are showing a preference for amenities and services located closer to home. This can make a great contribution to a local centre's vitality and to the prosperity of local businesses.

Additionally, the increased acceptability of working from home instead of going into an office is making people consider moving to second-tier cities and smaller towns permanently. Residents are trying to get jobs outside main city centres in the search for a better quality of life. People want to enjoy their daily activities safely, and smaller towns bring opportunities due to their lower densities and proximity to nature.

This renewed focus on town centres requires rethinking them as places for more than just day-to-day convenience, they need to provide culture, leisure and other activities that will make them vibrant and will embrace this growing interest to make them complete.

The research collated and presented in this report aims to help guide towns in their investment planning towards facilitating and encouraging economic activity, as well as bringing back people into the streets and public spaces in a safe manner using lighting as a key resource.



[1] The Association of Town and City Management, 2013



# INTRO

## Seizing the opportunity to use lighting to generate greater change

The COVID-19 pandemic has brought unprecedented challenges both for people and society. Many cities and towns across the world have been implementing strategies to address these challenges, for example, some streets have been closed to enable social distancing. With the public reaction being generally positive, towns and cities are now looking at permanent solutions to transform the urban environment into places for people.

The change in urban streets with more people walking and cycling is also coinciding with the northern hemisphere heading towards winter. As the evenings draw in, lighting will be essential in enabling these spaces to continue functioning through the winter. Similarly, capitalising on an increased desire to walk and cycle in lieu of public transport requires improved perception of safety after dark on these routes to encourage their use.

As the UK continues to grapple with the implications of the current pandemic, the damage to the economy is slowly materialising as we emerge out of national lockdown. There is a continued risk that local restrictions will increase and decrease in a cyclical manner. Local councils must now decide how their towns can emerge out of the current recession, balancing lockdown easing and enforcement measures across the country. Even prior to the pandemic, visits to town centres and high streets were already in decline as they struggled to compete with shifting consumer spending patterns and online shopping.

Lighting can contribute in many ways to easing pre and post-covid challenges that town centres are facing, for example:

- Lighting can be crucial to support a transition from functional interventions focused on public safety, such as temporary wider walkways and bike lanes, into something that is part of a longer term recovery plan that supports the night-time

economies by unlocking outdoor social spaces for night-time use and events, improving night-time journeys, etc.

- Lighting can play a pivotal role in revitalising high streets and town centres by enhancing the attractiveness of the environment, improving perceptions of safety, and ultimately increasing footfall, dwell time and spend.
- Lighting interventions can be 'meanwhile' to quickly create performance space, for community and professional use; facilitating the human connections that build community resilience. In the long term, they can develop through considered design into permanent facilities promoting sustained economic and social benefits in the daytime and after dusk.
- Lighting is also an area of intervention that provides cost-effective solutions that can ensure a quick win for authorities and developers looking to make improvements.
- Over the years, more and more local governments have hosted light festivals to support the local economy, particularly during seasonal 'slumps' and the winter periods, promoting the night-time economy on a temporary basis. These events are particularly relevant in towns with a developed or developing tourist industry. Evidence has shown light festivals are a cost-effective mechanism (relative to the return on investment) to attract significant increase in visitors, particularly out-of-town visitors, and increase revenue generated for local businesses.

As we enter the post-covid phase where restrictions might be eased but measures should be kept in place to avoid a new wave of infections, it is the town's responsibility to embrace the right approaches and tools to adapt to this 'new normal'.

# INTRO

## The role of lighting in supporting urban life and the night-time economy

Light has the power to change the way we perceive a place; to make it safer, more attractive, and more inviting. However, our urban areas are not always optimised for human activity after dark and are often more focused on illumination targets and the needs of vehicular traffic, than our visual needs to fully interpret the scene. Yet, half of the year is in darkness and in the northern hemisphere this is more keenly felt in the winter months. Lighting design needs to consciously consider all types of social movement at night, as well as during the daytime.

Light plays a vital role in our daily lives. It is fundamental to our existence, linking cultural, economic, social and political aspects of our global society. Simply put, lighting can cut form out of darkness and enhance our personal perception of safety. So much of our culture is founded in light, from Christmas to Hanukah and Diwali. Lighting imagines, creates, integrates and infuses areas to serve and advance human action. It enhances both the everyday, and the exceptional. It is so much more than a utility or a purely functional requirement.

As we emerge from the COVID-19 pandemic, our night-time trends will likely change; perhaps altering our habitual social timings as businesses increase flexible working practices, or home workers join colleagues later in the evening to socialise. We may need incentivising to leave our homes and spend money after dusk. People will need to perceive a safe journey into town and feel welcome and secure when they arrive. Then, they will feel comfortable to dwell and support night-time economies.

Lighting is a highly effective tool when combined with urban policy and benefits diverse stakeholders, but it is often overlooked. Once shops and offices close for the evening, levels of activity in urban centres drop. However, 50% of modern life takes place after dark. We must rethink the value of urban lighting beyond just a functional add-on for safety or beautification and recognise it as an opportunity and fundamental solution to improve town revenues and the quality of life for our citizens.

### Why lighting?

Lighting plays a large role in enabling healthy, inclusive and sustainable urban lifestyles. It focuses on the human factor and ways to enhance the experience and use of public space during the hours of darkness.

### Why now?

Many towns and businesses already understand the economic implications of a flourishing night-time economy. Habitual night-time trends are changing as a result of the pandemic and lighting must adapt according to our social needs and to secure economic benefits.

### Night-time economy facts

<b>£66bn</b> Annual turnover	<b>2.2%</b> Economy growth per annum
<b>5th</b> Biggest UK industry	<b>19%</b> UK's working population performing between 10pm-6am
<b>21%</b> Relative reduction in crime for improved street lighting	

## Lighting Framework

### ECONOMIC DEVELOPMENT

- Socio-economic activities
- Tourism
- Culture

### SUSTAINABILITY

- Energy
- Environment
- Health

### LIVEABILITY

- Safety and security
- Accessibility and wayfinding
- Health and wellbeing



# 01

## The economic value and impact of improved lighting

There is limited guidance/studies on placing a direct monetary value on improved lighting, however there is some guidance on how to quantitatively measure lighting benefits. A potential multiplier effect and the associated benefits should also be considered when thinking about using lighting as a resource for creating economic benefits, such as jobs or revenue.

'Valuing Walking: Evaluating Improvements to the Public Realm' (2005, Heuman, Buchanan et al)

This paper attempts to derive willingness-to-pay values of various improvements associated with walking via a stated preference survey, one attribute tested includes improvements to street lighting.

Attribute	Value (p/person)
Stop or shelter well lit	<b>4.91</b>
Walkway between underground station and bus stop well lit throughout	<b>4.00</b>
Carriage brightly lit	<b>7.81</b>

Business Case Development Manual (BCDM), 2013, TfL

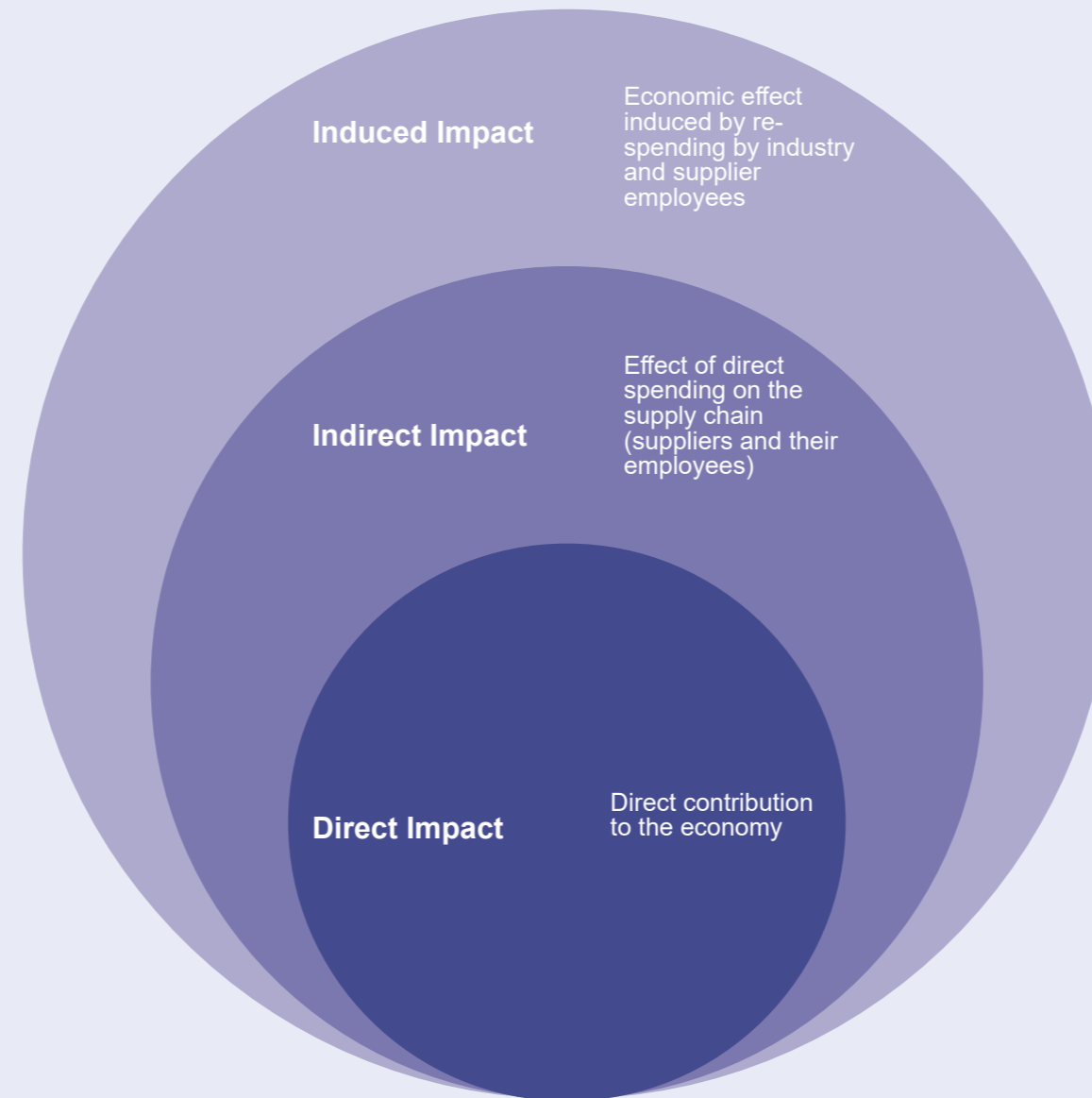
Transport for London undertook a preference survey, with the aim to place a monetary value on improved lighting across different types of transport and public realm improvements.

Scheme type	Value, p/km (2020 prices)
<b>Street Lighting</b>	<b>5.0</b>

Extracts from documents. For full tables please visit the original sources.

### 'Multiplier Effect' of visitor spend

This diagram explains how an initial injection into the economy leads to a much greater final increase in GDP.



### Case study - Riverside Festival of Lights

The below figures demonstrate the multiplier effect seen for the Riverside Festival of Lights 2017/18 in California, USA.



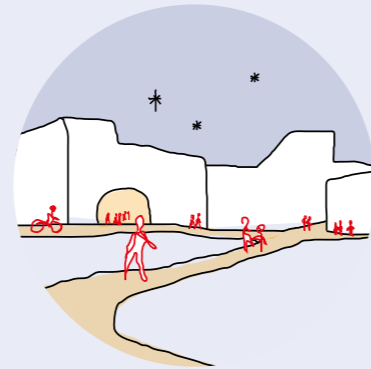
## Nine challenges at the heart of town centre regeneration

Our experience as practitioners of the built environment has taught us that there are some challenges that are common to all town centres, and that should be at the heart of their spatial transformation.

At the same time, our experts in city economics have helped us detail the best strategies for enabling town centre economic recovery in a complex context such as COVID-19 (refer to our list of recommended reading at the end of this document).

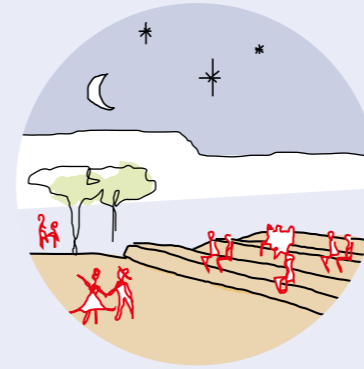
Using our collective experience, we have identified nine challenges that are at the heart of town centre transformation and economic recovery.

Authorities should make these challenges a priority when thinking about re-starting the economy, to make sure they build better places that bring benefits to the people and the planet.



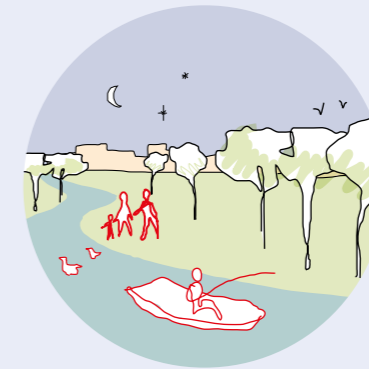
### Attracting people sustainably and safely

Bringing people back to the town centre in a safe manner, while encouraging sustainable modes of movement (cycling, walking and public transport) and improving last mile travel.



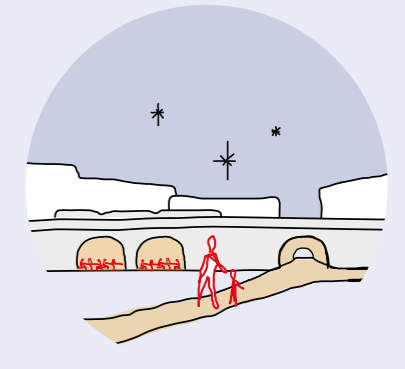
### Providing spaces for people to dwell

Providing attractive outdoor spaces for people to dwell, participate in and enjoy a variety of activities, such as cultural events, art exhibitions, food and beverage.



### Bringing people closer to nature

Reconnecting people with the natural assets within and at a walkable distance from the town centre. Creating and improving links, encouraging waterfront activation and the use of water for sports and other activities.



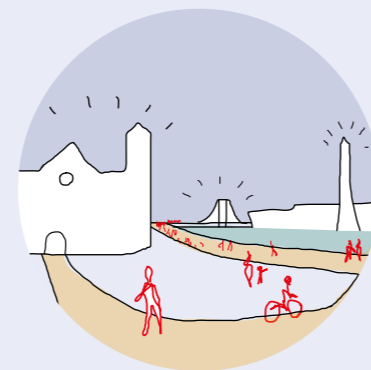
### Removing barriers

Removing barriers both physical and psychological by activating frontages along infrastructure barriers, improving key crossings such as underpasses and improving wayfinding and signalling within and around the town centre.



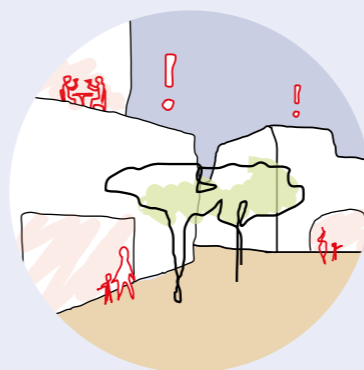
### Offering a range of uses and activities

Expanding beyond retail, food and beverage, to include uses such as residential, commercial including flexible and multi-purpose spaces for co-working and leisure.



### Enhancing heritage

Celebrating and improving accessibility to a town's unique heritage assets, which contribute to making a town centre a destination, they can accommodate new uses and are a reflection of a town's identity, traditions and history.



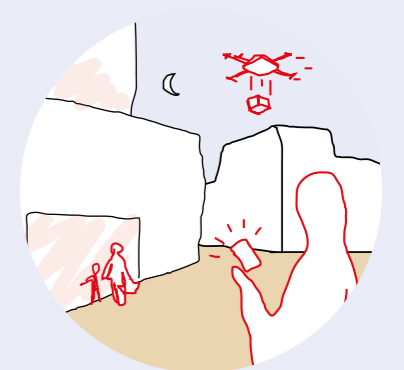
### Re-purposing underused assets

Bringing new life into vacant and underused spaces and buildings, such as shopping malls and old industrial structures, and activating façades and ground floors to bring vibrancy to the town's streets.



### Encouraging a sense of community

Providing spaces and places that encourage community participation, build a strong sense of ownership and make people proud of their town centre and what it has to offer.



### Adapting to the changing nature of retail

Being flexible and able to accommodate the rapidly changing dynamics of retail, including the accelerated embracing of online retail due to the pandemic. A decrease in retail activities in town centres will make room for other complementary uses to happen.

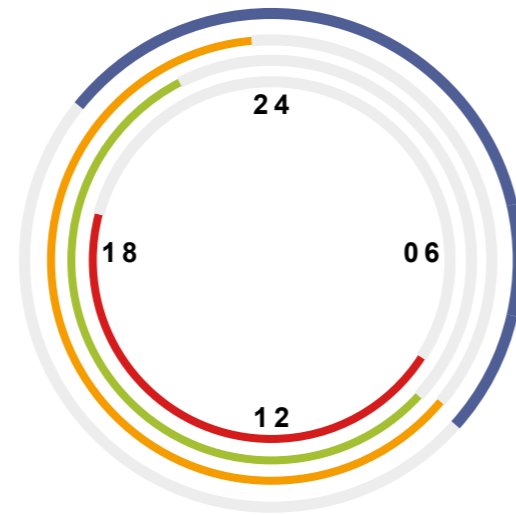
## Our interactions are changing after dark; what is the impact on towns?

A town's structural and environmental diversity is further complicated by an increasing diversity of citizens; children, young adults, shop-workers, the elderly, tourists and commuters. The demographics of town centre users have rapidly changed with COVID-19. Now, a larger proportion are working from home, but need access to the town's facilities in new timescales.

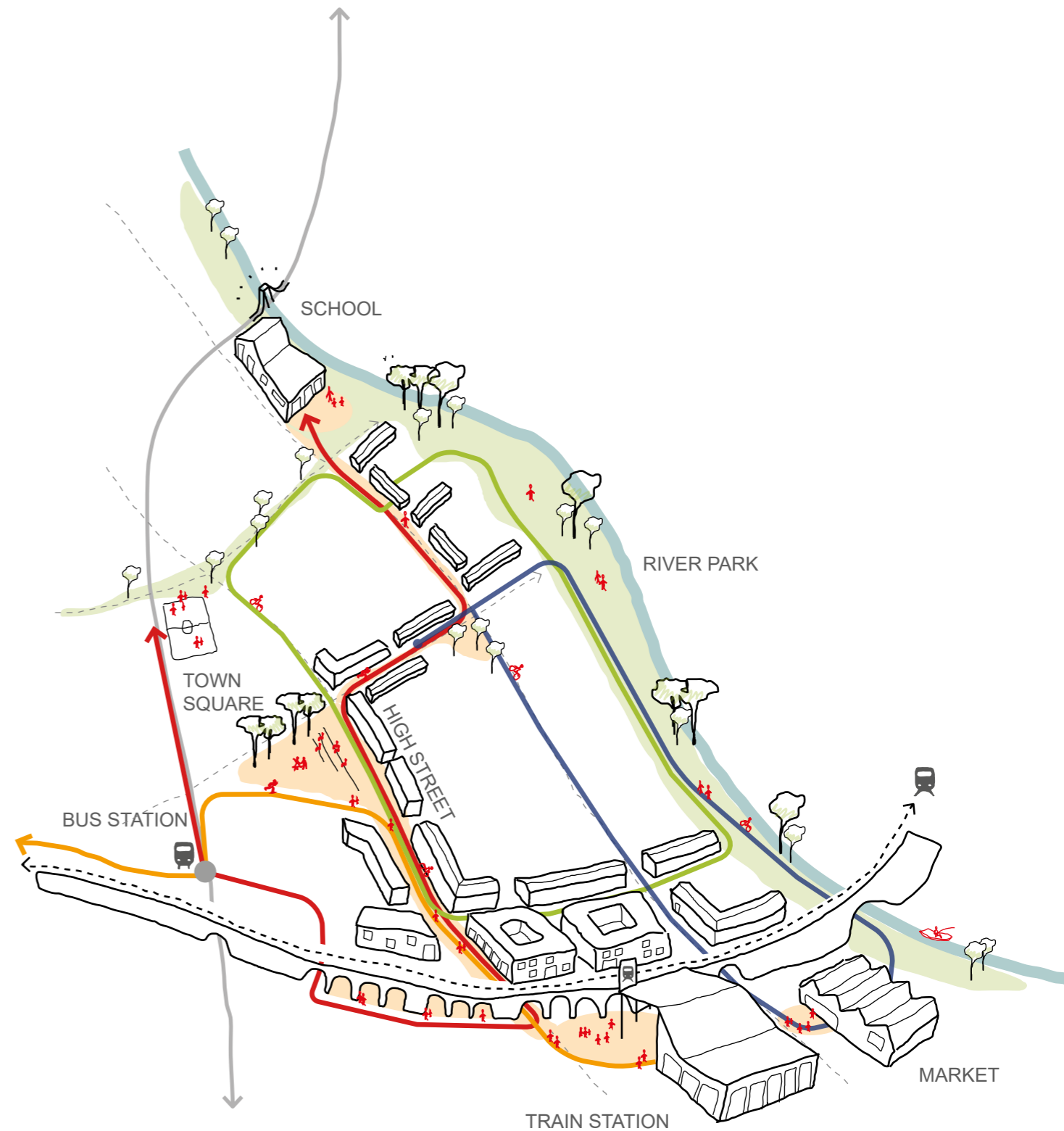
Designers are responding to this diversity through a greater focus on human-centred design, where people and their needs sit at the heart of their thinking.

The concept of a 24hr city is widely known, however a growing percentage of social and economic life now takes place in towns after dark, and this can start early in the evening during winter. 24hr thinking also applies to our towns which have a wide demographic requiring lighting to respond to their needs, and this may vary in the same location at different times.

These pages highlight four personas, typical of any town. They may live in the centre, or travel in to use the facilities. They will leave home at different times and use different transport modes or hubs to access leisure and retail. Most importantly, they will need lighting which responds to their needs, offering wayfinding, orientation, comfort and security in hours of darkness.



Time spent travelling or participating in social and/or economic activities



A day in the life of four different town centre users



Thomas

- 3.30pm finish school
- 4.00pm skate into town centre
- 4.30pm shopping in town with friends
- 6.00pm walk to bus station
- 6.30pm bus home



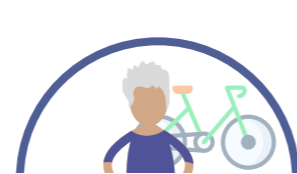
Omar

- 6.45pm finish day working from home
- 7.00pm long stroll through the park
- 8.00pm meet colleagues for mid-week drink by the station
- 10.00pm walk home



Sheila and Dan

- 6.00pm arrive in town after a day of work
- 7.00pm meet husband, who was working from home, in local bar
- 7.30pm watch outdoor theatre in the town square
- 10pm late bus home



Nadia

- 10.00pm town centre maintenance shift starts
- 4.30am set up market stalls in town centre
- 5.30am shift ends, buy breakfast from market stall
- 6.00am cycle home



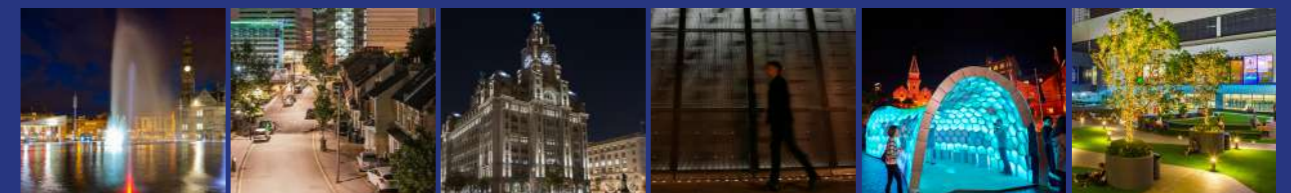
## Demonstrating the impact - a selection of case studies

Towns that work for people are understood as complex adaptive systems. Urban lighting is a means by which we can deliver improved community and economic outcomes. Properly considered lighting can positively impact our towns' 'total architecture', reinforcing urban design principles, enhancing cultural experiences and encouraging social interaction.

Our selection of case studies focuses on the human factor and ways to enhance the experience and use of town centres and public space during the hours of darkness. Sophisticated night-time lighting strategies are a cost-effective way to improve a wide range of urban aspects such as security, health and the environment.

The selected case studies expanded upon over the following pages contribute in various ways to the three main dimensions of urban life: **liveability**, **sustainability** and **economic development**; and range from small interventions through to large scale festivals and lighting masterplanning.

Examples of **light festivals** are provided with the case studies. These interventions have good 'meanwhile' potential and can be an effective mechanism for change, renewing interest in a town and celebrating community and inclusivity. Some festivals have become a great success in their own right, however even a modest light-art intervention can help create interest, restore civic pride, improve footfall, promote dwell and increase revenue.



# B-Lit NYC

Engaging a community with simple lighting interventions can be used to build resilience, create safer places and reduce antisocial behaviour while building a sense of community.

The Center for Court Innovation and the Brownsville Houses Neighbourhood STAT (street action team) were looking to address the public safety and quality of life issues at the Dr Green Playground, Brooklyn, NYC. They wanted lighting installations which would “illuminate dark corridors where visibility is challenged to provide a safe, yet festive passageway that reflects the community’s culture and creativity.”

### The challenge

The Brownsville Houses are located in the heart of Brooklyn, New York. Home to over 18 public housing buildings; the nation’s largest concentration of public housing. It has one of the highest crime rates in the city and 37% of the neighbourhood’s residents live in poverty as of 2015.

A lighting intervention was seen as a way to reduce crime and incarceration, and strengthen community trust in justice in central Brooklyn.

### Key outcomes

The B-Lit event showcased three low-cost interventions for lighting around the playground to the broader community for their feedback. Engaging the community in this way promoted ownership and pride in the lighting intervention.

The concept was to choose one lighting solution and install it for an entire summer; ultimately leading to a semi-permanent solution which created an attractive and vibrant focus to the green space.

As well as presentation of the lighting concepts, community engagement events were staged, including a ‘lantern decorating’ workshop with a view to involving the younger generations and around 500 local people attended.

A final scheme was chosen by the public and implemented, giving them ownership and collaboration of the space.

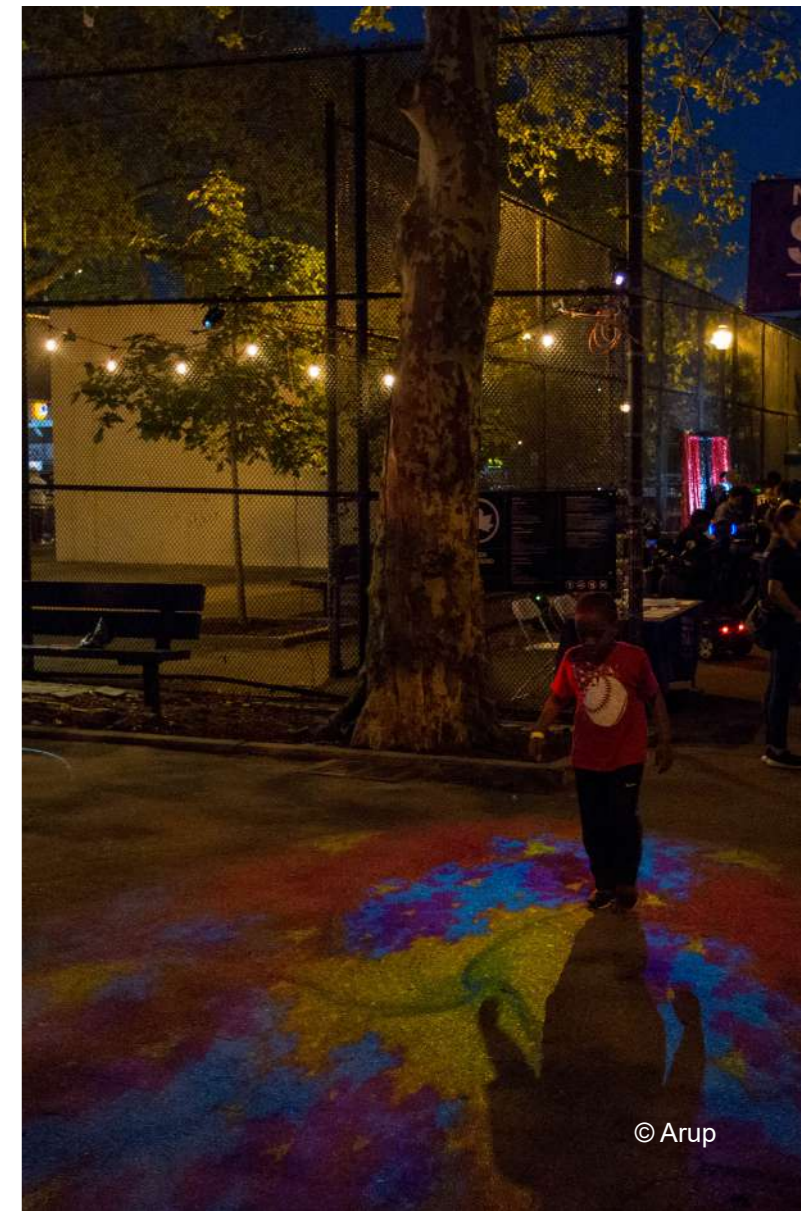
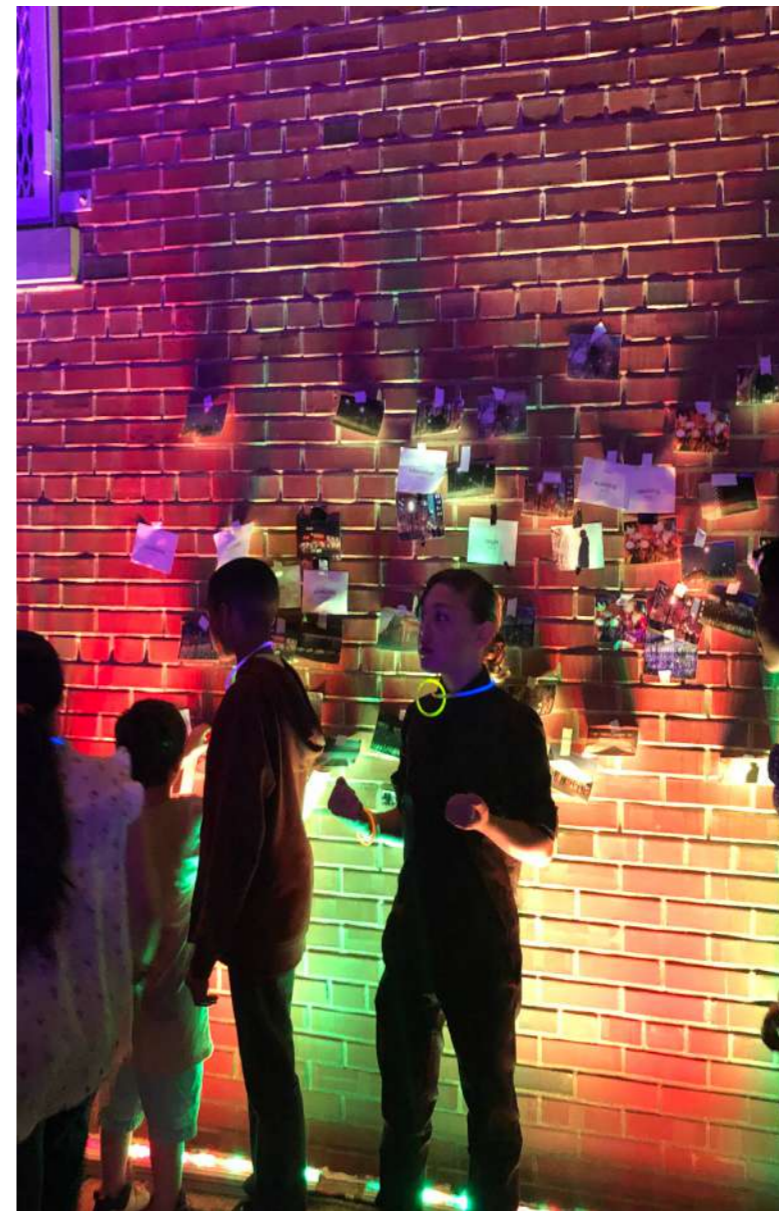
**500**  
people attended the lighting workshop

**3**  
amenity lighting concepts pitched

**11.2%**  
reduction in violent crime



Area walkround with residents to highlight key lighting concerns © Arup



# University of Sheffield Concourse

Lighting re-engages people with the unloved parts of a town and can turn underused areas into new outdoor social spaces which are safe, attractive and inclusive.

The heart of the University of Sheffield is unusual as it is bisected by the busy A57 road; four lanes of traffic elevated above ground level. Completed in 1970, the viaduct was originally constructed to raise the road and remove the barrier to free pedestrian movement of students. However, it had become a tired and forgotten place, undervalued and mainly used to store bicycles.

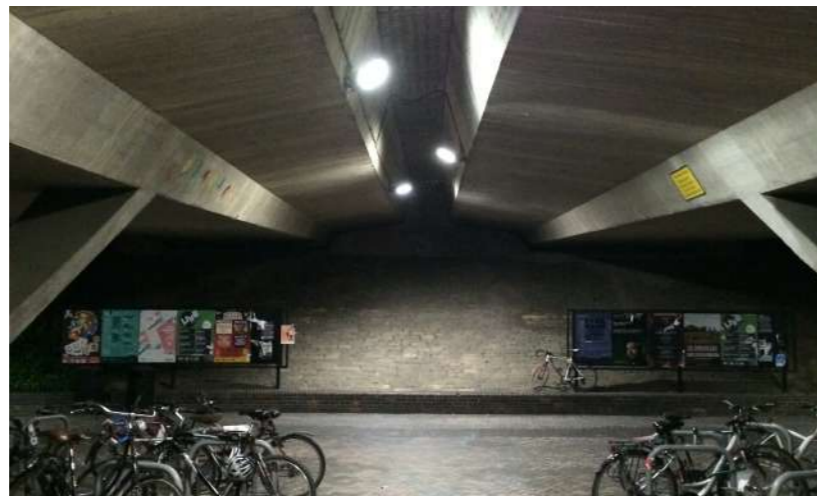
## The challenge

Originally a 1960s Arup design, the University of Sheffield was aware that the concourse was underutilised and did not present an appropriate first impression for new or prospective students. It has recently been revitalised as part of the modern campus. To celebrate the 1960s brutalist architecture, an uncomplicated lighting approach was taken.

## Key outcomes

Often as busy at 4am as it is at 4pm, the Concourse is at the heart of campus life. Used for events as an extension to the adjacent Students' Union, the viaduct has now been used to host external events including music gigs, launch events and external 'pop-up' bars to great success. Coloured lighting scenes have been developed in response to the music playing in the Student's Union that day, varying in colour and tempo.

The space can be connected to visiting production equipment making the concourse viaduct become an external venue in its own right; something now considered an essential facility in the COVID-19 era. It is now a really active space, enjoyed and appreciated by all staff and students.



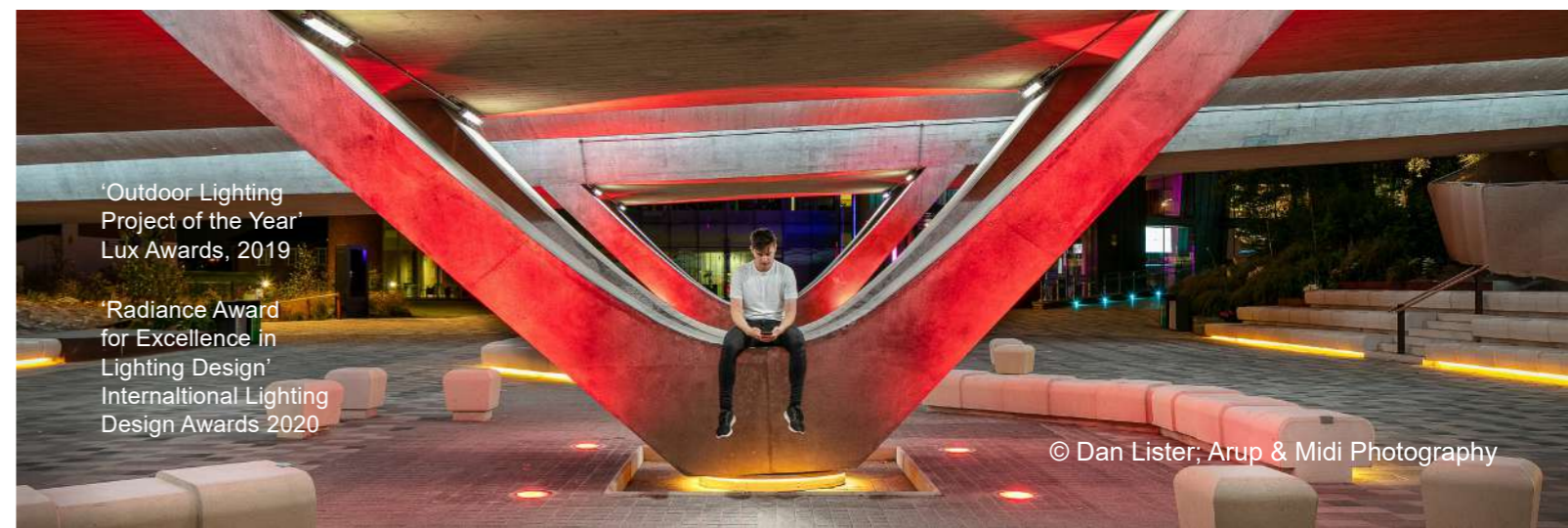
1990's scheme before intervention

140m  
linear luminaires

27,947  
enrolled students

3,000m<sup>2</sup>  
new paving  
implemented

£575M  
annual turnover



'Outdoor Lighting  
Project of the Year'  
Lux Awards, 2019

'Radiance Award  
for Excellence in  
Lighting Design'  
International Lighting  
Design Awards 2020

# Croydon and Lewisham Street Lighting PFI

Community regeneration can be fostered by refurbishing street lighting systems. This requires a human centric and functional response embracing modern technology to create a truly sustainable solution.

In 2011, the Croydon & Lewisham Street Lighting project was developed to replace the aging street stock of both London Boroughs. The scope of the project included the replacement of approximately 46,000 street light and traffic signs over an initial 5-year Core Investment Programme.

## The challenge

Prior to the intervention, the area suffered from poor street lighting levels, as well as outdated and inefficient lighting infrastructure. The proposed project replaced the existing street lighting, illuminated signs and out-dated yellow/orange lighting with the greater rendition of white lighting, and generally improved street lighting levels. More significantly, the project moved away from the single 'brighter-is-better' objective of the current lighting practice to an installation that improves illumination in the boroughs, but that also provided a more flexible and sustainable solution. This will be achieved by introducing a central management capability that provides the ability to control illumination levels and optimise energy consumption.

## Key outcomes

Both London Boroughs of Croydon and Lewisham recognised the importance of providing adequate and reliable street lighting, anticipating the benefits this would provide to the night-time economy, in reducing residents' fear of crime, and by improving road safety. The upgraded lighting infrastructure delivered significant efficient savings in capital replacement and maintenance terms. The more centralised and controllable installation allowed for service management objectives to include sustainability goals for the first time.

Finally, improved street lighting provides better access to local services and transport, allowing for greater public interaction that in turn has a positive influence on town centres and fosters community regeneration.

**46,000**

lights and traffic signs replaced

**£470M**

crime reduction benefits (NPV)

**25yr**

maintenance programme of 50,000

**£64M**

road safety benefits (NPV)

**£85M**

full replacement cost

**7.36**

Benefit Cost Ratio

*For every £1 invested, an economic benefit equivalent to £7.36 is realised.*



# Light Neville Street

Lighting can enable connections between different parts of a town by improving the perception of safety in foreboding spaces, such as underpasses.

The vision was to create a gateway to the city and uses thousands of LEDs to bring to life Hans Peter Kuhn's installation: 'A Sound and Light Transit'. The scheme features luminaires which disperse light, cold white in colour, from anodised aluminium wall panels. The lighting effects change continually and creates dynamic moiré effects, encouraging pedestrian flow.

### Key outcomes

Neville Street in Leeds was the response of a need to enliven and better illuminate an otherwise dark passageway in the city for both safety and amenity reasons. This art installation changes its display every day of the year and has greatly improved the look and feel of Neville Street by creating a comfortable environment adjacent to the busy road serving as the main connection between the city centre and suburban communities.

**24h**  
lighting scene

**£646,000**  
The Northern Way  
& Arts Council  
England funding

**£4.6M**  
project value

**50,000**  
daily footfall



Photo of the previous scenario © Ian Kirk



*"The tunnel looks better, feels safer and sounds incredible."*

Andrew Carter  
Leader, City Council

© Kippa Matthews

# Woking Market Walk

Lighting has the potential to transform forgotten passageways and unused spaces into bustling environments for commercial activity.

Market Walk is a purpose-built state-of-the-art covered market in the heart of Woking Town Centre and is conveniently located between Wolsey Place and The Peacocks shopping centres, which together, form Woking Shopping. It was originally a dark underpass between the two centres, with minimal footfall.

### Key outcomes

In 2014, the underpass was redesigned into the covered market. The ground floor walkway beneath has been repaved and 15 lockup kiosks provided, ranging from 750 to 1800 sq ft. An uplifting lighting scheme lifted the space, creating a light and airy environment for trade. Lighting design has been focused beyond simply compliance for safety and function, and it enhances the visual perception of quality in the market stalls.

**67,000**  
shoppers per week

**183**  
social media posts  
#wokingmarketwalk

**£4M**  
part of wider town  
improvement scheme



© Quarterbridge

# The Park, Las Vegas

In car-dominated environments, encouraging dwell can be challenging. Lighting paired with simple sculptural interventions can create a point of focus and encourage social gathering.

Throughout the world, beautiful and engaging public spaces have become a trademark of the finest cities and Las Vegas is no exception. MGM Resorts has re-imagined the traditional pedestrian experience by creating a dynamic destination located just off the famed Las Vegas Strip. Curated spaces for people to dwell in a city as vibrant and busy as Las Vegas requires a unique space.

## Key outcomes

To build anticipation and incentivise visits to the park, the coloured light echoes a monumental cactus blossom every 15 minutes on the hour. The colours are visible through the leaves of the park's trees all the way to 'The Strip', creating a social gathering space that offers a novel experience in Las Vegas.

**16**  
illuminated shade structures

**1,822**  
social media posts  
#theparklasvegas

**8%**  
increase in food sales

**2%**  
direct increase in revenues in the park



Las Vegas strip environment © Julie Jacobson

# Dilworth Plaza

A permanent artistic intervention that integrates lighting can catalyse regeneration and revenues, and have a direct impact on tourism and visitor numbers.

Walking through central Philadelphia at dusk used to bring an edge of uneasiness to the every-day pedestrian. This public plaza once teeming with life and activity, fell underutilised by a lack of design provocation and public programming. In 2014, the city decided it was time for a change.

## Key outcomes

Dilworth Plaza was transformed into Dilworth Park, a lustrous green space featuring a splash fountain, ice skating ring, new lighting and outdoor dining. In addition to the redesign of the square, Studio Echelman was commissioned to design and implement a first of its kind public art piece called 'Pulse'. In September of 2018, phase one of Pulse was revealed, featuring a dynamic line of fog and light that live traces the path of the subway below.

**10.8M**  
visitors in 2018

**225**  
planned events

**92%**  
planned events are free to enter

**\$2.67M**  
annual income to City Centre District



Original Dilworth Plaza by Vincent Kling © Paul Levy



© Hanns Joosten



© Sean O'Neill

# Leicester Square

When informed by pedestrian traffic analysis, lighting interventions can reinforce alternative walking routes to unlock bottlenecks and make places more pleasant.

Leicester Square is the home of British cinema, staging over 50 film premières every year as well as other large scale events throughout the year. It attracts approximately two million visitors each week. The square accommodates 250 servicing deliveries every morning, over 35 al-fresco dining pitches, the largest cinemas and casinos in the UK and five hotels. The addition of M&M flagship store through a £10m investment from Mars Inc, makes Leicester Square a multi-layered urban environment.

## The challenge

Leicester Square was a space with two identities. By day it was a focal point of urban life, welcoming tourists, theatregoers and urban flaneurs. By night, it was observed that the dark, central space was almost deserted, with many people actively avoiding it as a transit route.

## Key outcomes

Now occupancy is more evenly spread throughout the square itself. Bench lighting creates a unique visual experience, but also welcomes pedestrians to sit, dwell and stay later into the evening. Movement patterns are much more evenly spread throughout the square and crossing through the garden itself. The original, uneven balance of light has been radically altered to allow more even illumination in all spaces, increasing the feeling of safety and inclusivity throughout.

**250,000**  
tourists daily

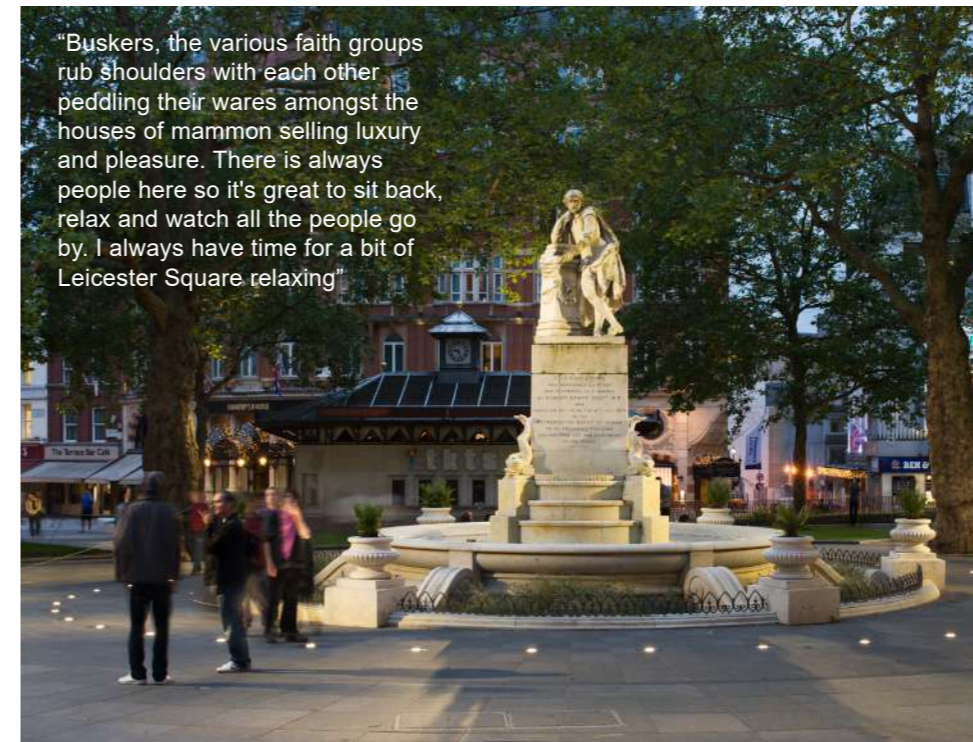
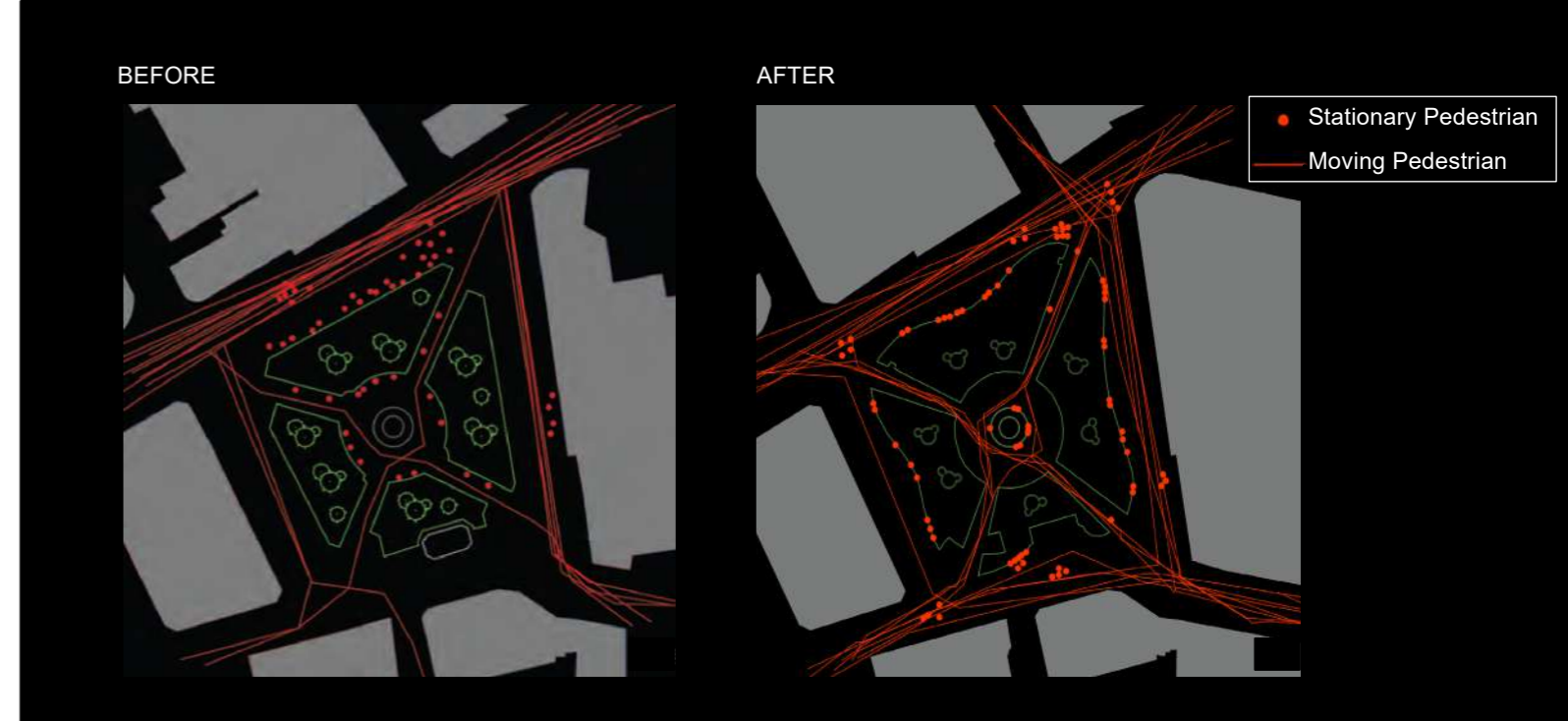
**£15M**  
project value

**200m**  
white ribbon seating  
around the garden

**251,382**  
social media  
posts using  
#leicestersquare



Leicester Square during the day © tripadvisor



"Buskers, the various faith groups rub shoulders with each other peddling their wares amongst the houses of mammon selling luxury and pleasure. There is always people here so it's great to sit back, relax and watch all the people go by. I always have time for a bit of Leicester Square relaxing"



"A place to chill with friends 'specially during night times"



© James Newton

# Royal Liver Building

Façade lighting schemes can revitalise landmarks on iconic heritage locations, turning areas into destination for locals and visitors during the hours of darkness.

The Grade I Royal Liver Building is an iconic building in Liverpool. It is one of the Three Graces and is part of Liverpool's UNESCO World Heritage Maritime Mercantile City.

### Key outcomes

Primarily a static white-light presentation on the facade, colourful daily light shows have been narrated, programmed and commissioned to interpret local events, calendar events and different seasons with light. By using the façade as a story-telling canvas, this has linked the original time-piece purpose of the clock towers into a 21st century digital format with a new dynamic visitor experience.

An annual program of 20 light shows, as well as seasonal variations, is promoted and each night there are people gathering to see the light show.

**400**  
façade luminaires

**11,229**  
social media posts  
#royalliverbuilding

**20**  
annual light shows

**£500,000**  
project value



Photo of previous condition © Dave Wood

# HK Metroplaza

Lighting can facilitate a change programme and encourage economic activity, bringing spaces back to life that have lost their original function.

Metroplaza is a shopping centre located in Kwai Fong, Hong Kong and opened in 1993. Since then, retail has seen a massive change and shopping trends have shifted towards more towards the experiential. The plaza was renovated to create an 'airport lounge' type environment with an enlarged outdoor green space. The space enables people to take a break, relax and make the shopping trip more of an event during the day and into the night.

### Key outcomes

In 2017 a renovation enlarged the outdoor green space, enhanced visitors' circulation and provided more shopfronts in conspicuous areas to raise its rental value. The renovations included a 'starlight corridor' decorated with LED lights to encourage 'selfies'. This has encouraged longer stays in the mall and resulted in average spend exceeding double-digit growth since its re-opening.

**230**  
retailers

**3,710m<sup>2</sup>**  
external public space

**5**  
new external relaxation facilities

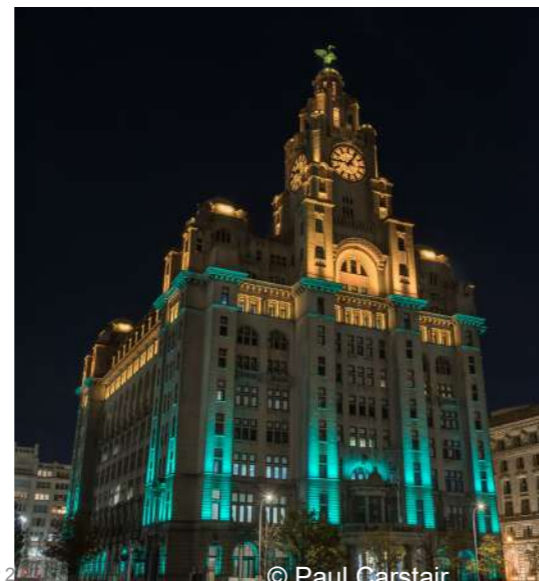
**45%**  
retailers new to the mall



Photo of previous condition © Arup

"We know from the huge numbers of visitors we've had to RLB360 that people from all over the world love the Royal Liver Building. The new light show will add to this affection and give this magnificent building a new lease of life. It will strengthen its presence as a landmark building."

Chris Devaney, RLB360



© Paul Carstair



© Arup



# Bradford City Park

Lighting can positively affect the user experience in many event scenarios, focusing on the visual scene to create successful, flexible and highly attractive urban spaces.

City Park was developed as part of Bradford's city centre masterplan with the aim of transforming Bradford into a vibrant, modern city with an exciting future. The £24.5m scheme delivered a superb landmark public space comprising water features, attractive green spaces and office/retail space. It hosts the UK's largest city centre water feature, a 3600m<sup>2</sup> 'Mirror Pool' which boasts more than 100 fountains. This unique feature reflects and showcases the 19th century Grade I listed City Hall and includes fountains, fog machines, geysers and the 30m high 'Bradford blast'.

## The challenge

Bradford is often used to denote a segregated city. Creating a new destination and revitalising links between its different character areas (the retail heart, the National Media Museum, Bradford theatres, Railway Stations and the University) aimed to alter perception of the area.

## Key outcomes

Since opening Bradford's City Park has welcomed millions of visitors, with a monthly average steadily increasing each year to exceed 491,000pa. The park brought significant spend into Bradford during the first years, and artists and event organisers now use City Park to stage shows, bringing their own funding to the area.

**£1.94M**  
spent in 2013

**24,000m<sup>2</sup>**  
public outdoor space

**15.6M**  
visitors in the last four years

**89%**  
local resources employed

**£1.3M**  
spent in the first six months since opening



Bradford City Hall in 2010 © Linda Spashett



*It's definitely drawn us back into Bradford because there was quite a long period where we felt there was just nothing, just a few shops, not really much to come in for, but now that this is here. It's brought a lot more people into Bradford.'*

*(White British, Male, 36-45)*

# Hull City

A new urban lighting strategy has the potential to attract millions of visitors to a town centre, create jobs and enable the streetscape to respond flexibly to the needs of night-time economies.

Prior to regeneration, the city was struggling to attract investment, in part due to the tired condition and disjointed nature of its public spaces. When Hull was awarded UK City of Culture 2017, Arup developed the urban lighting strategy to enrich the heritage and culture of Hull across 2.2km of city centre streets and public realm.

### Key outcomes

Hull's new public realm enhances connectivity across the city, allowing people to move easily from the railway station to the retail quarter, the historic Old Town and the artistic Fruit Market area. This has increased visitor numbers and encouraged new business start-ups. The lighting can respond to these activities, providing scene-setting in its truest form on a city scale, and transitioning visitors' attention from one district to the next.

**6M**  
visitors in 2018

**14**  
new streets and four new squares created

**1,455**  
city centre jobs created

**£14M**  
lighting scheme



Photo of previous condition © Yorkshire Times



© Arup

# River of Light Festival

Lighting festivals can be scaled to suit different urban settings, such as a town centre's waterfront, where visually attractive installations are able to improve the relation between people and water.

River of Light is a nine-night festival of light, colour and spectacle, bringing together large-scale art commissions, created by artists from around the world, to Liverpool waterfront. It includes many installations located close to the River Mersey, which helps create a stronger relation between residents and the waterfront.

### Key outcomes

2018 saw 50,000 people walk through the installations. One night features the hugely popular mid-river fireworks display wowing people on both sides of the river. Figures from 2016 show around 200,000 people watched the display, and over half the attendees were from outside of Liverpool. The event is believed to have brought in £4.5 million to the local economy, boosting the night-time economy by more than £750k.

**£4.5M**  
to the economy

**490K**  
reached via the Facebook event

**9,772**  
social media posts  
#riveroflight

**200K**  
visitors



Pier Head in its usual scenario © David Millington



© Liverpool Echo

# Illuminating York

Modern lighting and projection technologies can be used to celebrate heritage, increase visitors and bring footfall and income to a city.

50,000  
visits each year

50  
commissioned  
artworks in 10 years

Illuminating York Festival is an annual high profile light based festival. Since 2005, the festival has attracted more than 1 million people. The 2012 festival marked a significant celebration for the city of York, celebrating the 800 year anniversary of the signing of the city's charter.

£20,300  
profit generated of  
illuminations

Top 10  
European Lighting  
Festivals - Guardian

£500,000  
scheme

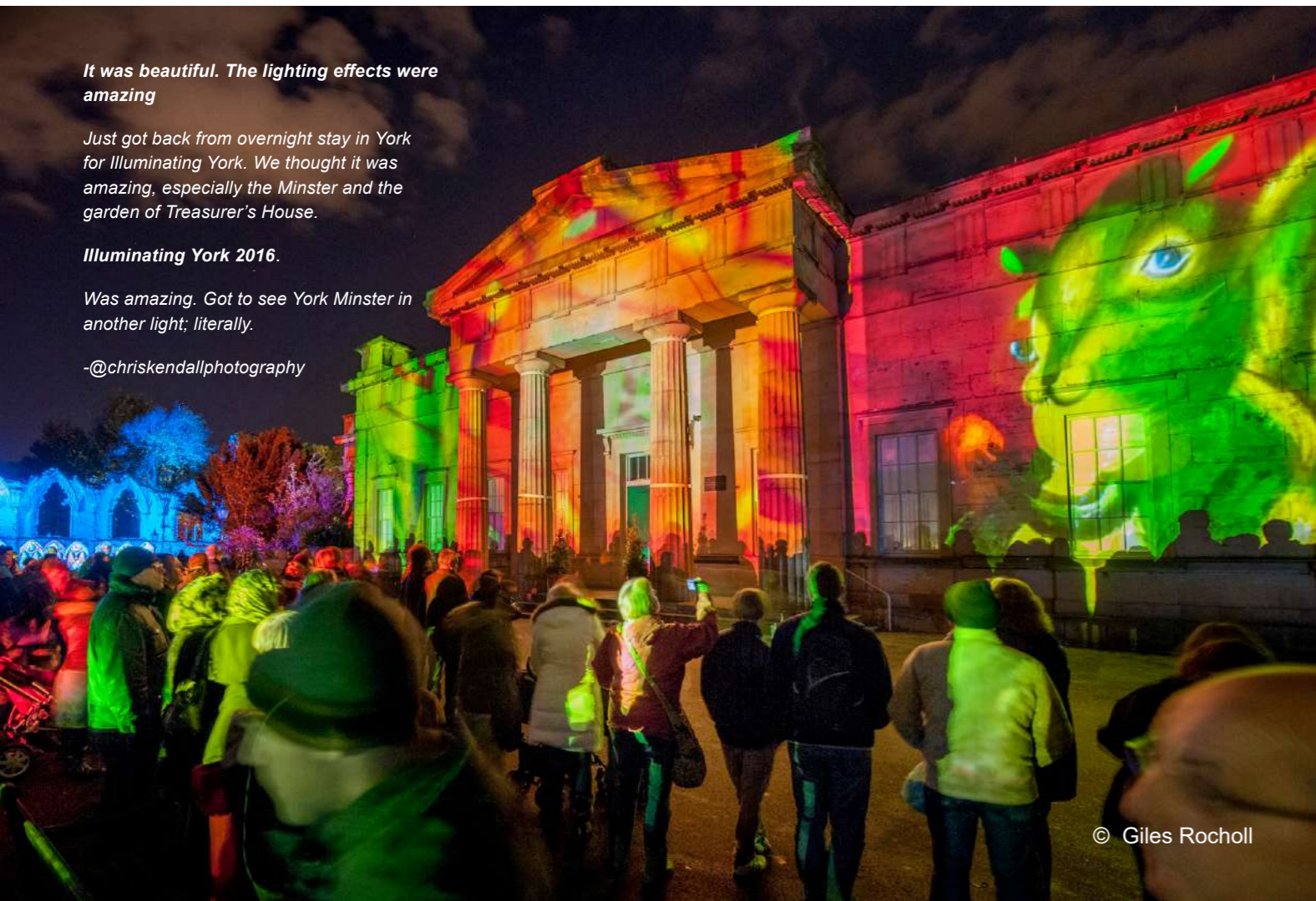
### The challenge

Illuminating York celebrates the heritage of the city, with lighting installations at all the major heritage sites; York St John University, the Shambles, King's Square, National Railway Museum and York Minster. One significant challenge is to stage the event without charging visitors a fee.

### Key outcomes

The initiative has opened up the city and night-time economies by encouraging exploration of after dark, with key venues hosting newly commissioned artworks. Fringe events are also staged at venues across the city, with venues opening late and on specific nights with illumination-themed events and activities.

The event celebrates the city's unique architecture and history with a brilliant light and sound show. The event organisers anticipate over 60,000 visitors to York Museum gardens and the many other fringe sites, bringing footfall and income to the city.



*It was beautiful. The lighting effects were amazing*

*Just got back from overnight stay in York for Illuminating York. We thought it was amazing, especially the Minster and the garden of Treasurer's House.*

**Illuminating York 2016.**

*Was amazing. Got to see York Minster in another light; literally.*

*-@chriskendallphotography*



York Cathedral during the rest of the year © York Press



**A Magnificent Show of Lights**

*Vivid Sydney never ceases to amaze me and my family. It was just amazing to wallow in the multitude of lights beamed from the Opera House to the Museum of Contemporary Arts and all the hotels around Circular Quay and even the boats that traverse the waters of the quay. It was a spectacular sight.*

*- Trip Advisor 15th June 2019*

Attracting People | Dwell | Nature | Heritage

# Vivid Sydney

Periodic lighting festivals can give international acclaim to a location, increase tourist attendance and maximise revenues year after year.

Vivid Sydney is an annual, twenty-three-day winter festival which showcases light, music, and ideas. The festival is where art, technology, and commerce collide, creating a free exhibition which features outdoor lighting sculptures and installations, with a contemporary music program all throughout Sydney.

**The challenge**

Destination NSW recognised the need to increase Sydney's tourism along with its reputation and created a project that added immense value and revenue to Sydney. Vivid was an initiative of Tourism NSW (now Destination NSW) to bring in foreign tourists who had lost interest in Sydney since the Olympics and to bump up winter visitor numbers.

**Key outcomes**

Vivid Sydney is now an annual event in it's 11th year and is the largest festival of light, music and ideas in the Southern Hemisphere, lighting up Sydney and its surrounds at 6pm each night for 23 days, with 95% of the festival being free to visitors. The unique project showcases the creative industries like never before and has been invaluable to the city's night time economy.

**\$173M**  
tourism related spending

**\$7M**  
project investment

**2.25M**  
attendees over 23 days

**184,000**  
visitors travelled specifically for the festival

**75%**  
increased income on previous years



Opera House Sydney during the rest of the year © pixabay

© CNN; Arup; James Horan / Destination NSW; Brett Hemmings; Lawrence Furzey

# Lumiere Festival Durham

Lighting festivals can help activate outdoor spaces and encourage economic activity, especially during winter times when footfall presents a challenge for most towns.

The Lumiere Festival in Durham is a four-day festival which incorporates a total of 29 light installations featured largely outdoors and mainly located in the city centre, free to access for all visitors. The festival is part of the town's portfolio of arts and culture, and part of an agreement with Arts Council England.

The Lumiere Festival proved to be a huge success in Durham both culturally and financially, that led to the festival also being launched in London.

## The challenge

The month of November usually generates lower footfall compared to the summer months, in the lead up to Christmas, which results in reduced retail and food and beverage revenues.

## Key outcomes

Over the four-days, the festival managed to attract 200,000 visitors, 38% of which were from out-of-town, and generated a total economic impact of £9.6m.

Furthermore, the festival organisers, Artichoke, organised a number of longer-term community, educational and outreach projects. Linking with local Area Action Partnerships, these drew in almost 1,400 people of all ages, from a range of locations and socio-economic backgrounds.



Durham Cathedral during the day © Durham Cathedral

<b>26</b> lighting installations/ displays	<b>£5.9M</b> visitor spend
<b>200,000</b> visitors	<b>£9.6M</b> total economic impact
<b>83%</b> increase in footfall (on the Friday compared to pre- Lumiere levels)	<b>1,375%</b> net return on investment
<b>£1.7M</b> cost of staging the event	<b>5.65</b> benefit cost ratio

*For every £1 invested, an economic benefit equivalent to £5.65 is realised.*



## Demonstrating the impact

Lighting can be a powerful resource to contribute to achieving sustainable development goals. The UNSDGs<sup>2</sup> and associated targets differ in their level of impact and value added, which will be variable for different stakeholders. In the context of town centre regeneration, lighting relates to many UNSDGs and the diagram below shows the varying extent of impact and influence resultant from lighting interventions.

The graphic on the right shows how the lighting interventions in the case studies can help resolve a town's most pressing challenges, while contributing to the achievement of specific UNSDGs

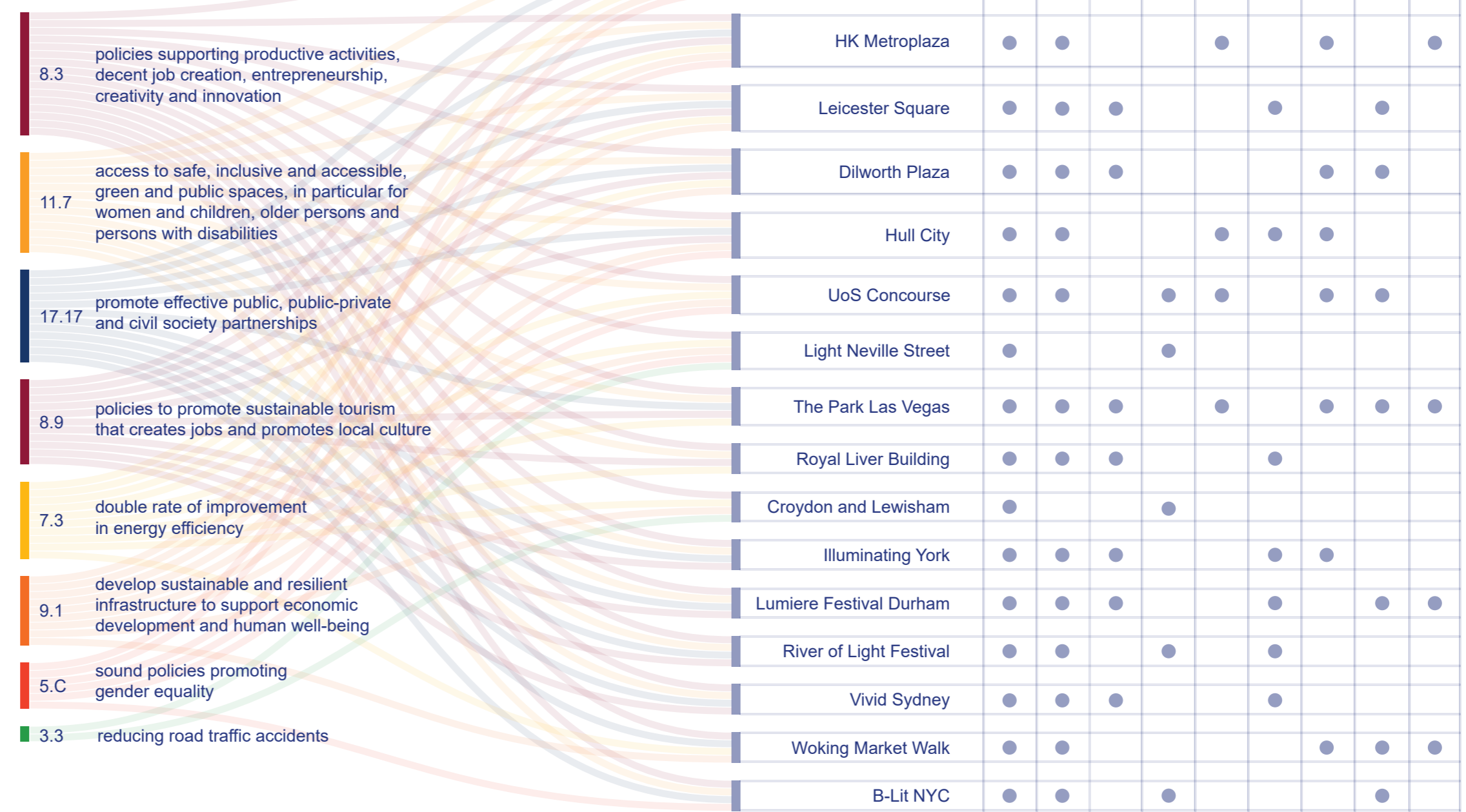
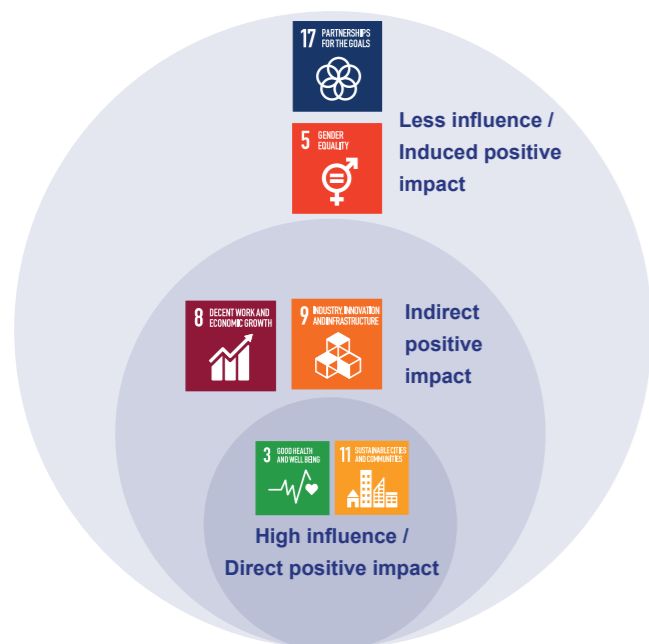
While this report has demonstrated that small and 'meanwhile' interventions can generate great impact, it is the permanent interventions that integrate multiple components (planning, landscape, etc.) that have the greatest potential to resolve town centre challenges in both the short and long terms.

It is important to highlight that lighting can be a powerful tool integrated into projects of various scales and typologies, and it allows for a town to maximise

benefits for its inhabitants and get on the right track towards regeneration and recovery.

The case studies vary widely in their ambitions and objectives. The likelihood is that all these interventions were intended to attract people and increase dwell, however it can be seen that all interventions will have multiple outcomes with a positive impact on economic development, either directly, indirectly or induced.

### UNSDGs where lighting has...



[2] United Nations Sustainable Development Goals (for full details refer to [www.un.org/sustainabledevelopment](http://www.un.org/sustainabledevelopment)).

# 05 NEXT STEPS

Here we present four steps towards using lighting to achieve a town's regeneration objectives. The main aims are to understand the importance and value of lighting as a key element in a masterplan and embrace it as a sustainable asset for economic recovery.

## 1

### Scoping

**Prioritise/Identify which of the nine challenges are most applicable to your town, and understand why.**

Consider which town centre challenges are your policy goals

- Attracting people?
- Spaces to dwell?
- Connection to Nature?
- Adapting to Changing Retail?
- Removing Barriers?
- Spatial Flexibility?
- Enhanced Heritage?
- Re-purposing assets?
- Sense of community?

## 2

### Context Appraisal

**Knowledge gathering stage to identify the parameters which will inform the interventions. Engage with third parties and use tools (e.g. [SPeAR](#)) to focus the appraisal.**

#### Key Activities/Workshops

Hold collaborative thinking sessions to understand the town centre

- Understand site scale and scope of the intervention
- Human perspectives: arrival, impression and orientation
- Include cross-gender consultation
- Site character and heritage
- Existing perception of safety
- Experience: night walks, learn about the area and invite feedback
- Appraise your assets and know your strengths
- Learn about night-time design

#### Outcomes

Finally, you should know the following about your town:

- Ambitions
- Available sites
- What Works/Doesn't Work
- Appetite for Change
- Night demographics
- People movement trends
- Available underused assets
- Landlords/Land ownership
- Visitors/Tourism Potential
- Existing Revenue Streams
- Heritage Assets

**Third Party Engagement**

These people will bring valuable user experience to the conversations:

- Heritage
- Retail
- Night economy
- Community
- Arts / Theatre
- Maintenance Contractors
- Asset Managers
- Funders
- Education
- Accessibility

## 3

### Conceptualisation

**Now the parameters are known, identify the possible interventions, appraise options and prioritise them functionally, physically and financially. Integrate them into the masterplan.**

#### Key Elements

The following are essential elements to consider and respond to in your night-time concept:

- Identify and respond to your town centre challenges
- Measures responding to the pandemic in the short, medium and long term
- Manage the day to night and seasonal transitions
- Express and communicate the role/identity of night-time in your town.
- Integrate UNSDGs and social value with measurable targets
- Improved accessibility and inclusivity after dusk
- Address fundamental principles of your town centre in the night-time design
- Review the masterplan; is a Lighting Designer engaged? Does it include findings of cross-gender public engagement, night-time mapping and the 'Brightness Journey', Lighting Vulnerability Assessments?

#### Outcomes:

This step will inform your town's lighting masterplan

- Prioritised interventions
- Known scale/scope
- Budgeted interventions
- Identified the unknowns
- Night-time design is integrated into your town masterplan
- Masterplan aligns with your town policy
- Includes sustainable development goals
- Includes a pandemic response
- Short, medium and long term goals are defined and measurable

## 4

### Business Case

**Now you have selected and understood your project, back it up with fiscal evidence using existing guidance to support your concept. The business strategy for interventions must ensure benefits are achieved, from meanwhile interventions to a long-term masterplan.**

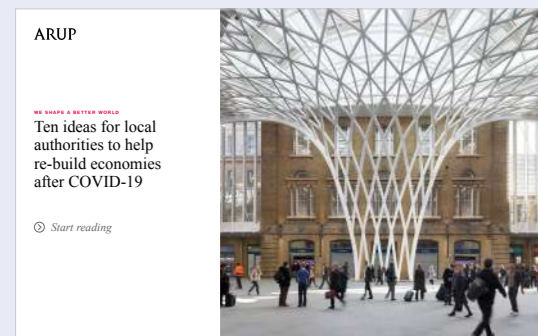
#### Key Elements

The following are essential elements to consider and respond to in your night-time concept

- Assess the value key interventions will bring to your town centre.
- What phasing might be necessary and over what timescale?
- Consider meanwhile use and other catalysts as part of the business case; 'low hanging fruit'
- Use logic maps to understand what will be required by an intervention and what it will bring?
- Understand the timescales, for procurement, installation and return on investment?

# RECOMMENDED READING

Arup has developed relevant research on post-covid cities transformation and economic recovery. On this page we present a list of additional reading which can support your town on the path towards regeneration and recovery:



1

## Ten ideas for local authorities to help rebuild economies after COVID-19

A major challenge for councils is to mitigate the impact of COVID-19 on their local economies, so that businesses can once again thrive and provide employment opportunities and vibrancy to local communities.

These 'Ten Ideas' are intended to provide some practical solutions that might be helpful to local government during these unprecedented times.

Our suggestions take into account that a substantial proportion of the national government's support for businesses will have positive implications locally. We propose building on that platform to create locally-tailored solutions that will deliver more economic support, social benefits and resilience if they are tailored to the local context.

[Read the full report](#)



2

## Beyond the curve: a visual journey into our post-pandemic future

The COVID-19 pandemic has caused disruption across the world, creating unprecedented challenges to our society and fundamentally changing life as we knew it. As we navigate this changing landscape, we explore the impact of COVID-19 across the built environment and how it might change our homes, neighbourhoods, transit, offices and retail.

As we start to consider a post-pandemic world, we look at how COVID-19 will change many aspects of everyday life – from mixed-use neighbourhoods and access to green space to reconfigurable work environments. This report considers emerging themes and insights from around the world informed by practitioners across the built environment.

[Read the full report](#)



3

## Towards superbia

With COVID-19, cities are changing, but now so too, must our suburbs.

As we've been working from home, we've been meeting more neighbours, discovering new green spaces, finding new coffee spots etc., but it has also revealed their limitations.

We look at four types of suburbs, their existing conditions and how recent events have challenged how we live in them. How might they adapt to meet our changing needs, now and in the future?

We make five recommendations for change, to help us move from suburbia to superbia

[Read the full report](#)



4

## Lighting in the Urban Age

This paper investigates and proposes an integrated approach for sustainable lighting masterplanning in urban environments. With more than half of the world's population currently living in cities, it is expected that this figure will be 75% by 2050. The life of our cities after dark is one element of the urbanism challenge, but one that needs addressing in a wider social, economic and environmental context.

[Read the full report](#)



*For more information, please contact:*

*Florence Lam*

Arup Fellow

Global Lighting Design Leader

t +44 20 7755 2708

[florence.lam@arup.com](mailto:florence.lam@arup.com)

*Richard Morris*

Lighting Associate - Manchester

t +44 161 602 9366

[richard.morris@arup.com](mailto:richard.morris@arup.com)

*Sowmya Parthasarathy*

London Masterplanning Leader

t +44 20 7755 2714

[sowmya.parthasarathy@arup.com](mailto:sowmya.parthasarathy@arup.com)

*Bettisabel Lamelo*

Senior Urban Designer - London

t +44 20 7755 6098

[bettisabel.lamelo@arup.com](mailto:bettisabel.lamelo@arup.com)



**ARUP**

*We shape a better world | [arup.com](http://arup.com)*