CITY OF LIGHT ACTION PLAN

09/05/2016

PERTH & KINROSS COUNCIL

lightfolio

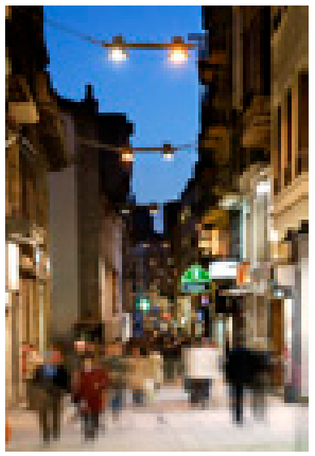
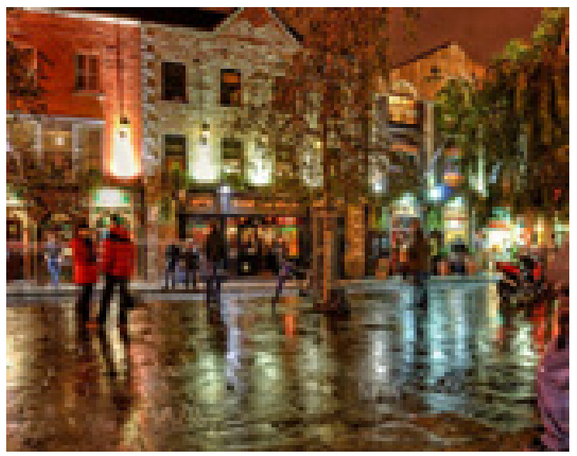
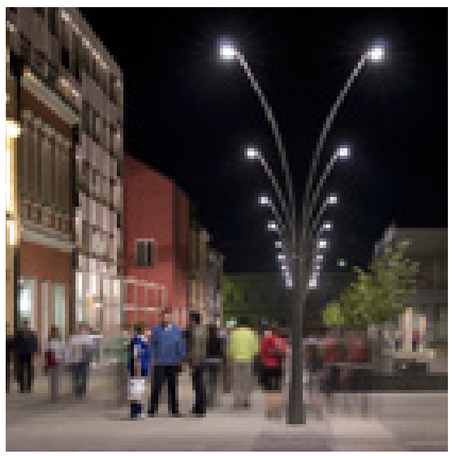
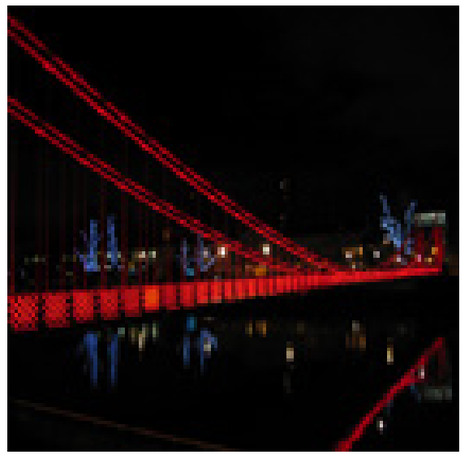
Contents

Introduction

The purpose of this action plan is to dramatically enhance perceptions of quality, vitality, vibrancy, animation and safety after dark within the city centre, encouraging increased use and extended dwell time, leading to a sustainable evening economy. This is to be realised through the delivery of an overarching vision for lighting that is both legible and cohesive.

A survey of the city at night was undertaken to allow a comprehensive approach to lighting of building and spaces to be developed in tandem with environmental improvements and investment in businesses. This has informed the proposed delivery of lighting initiatives that will create a truly unique, vibrant and attractive evening scene within the city, which over time will build into an enviable display of the very best that Perth has to offer for both resident and visitor alike. This will allow the city to meet its ambition to take its place amongst the very best exemplars of other compact European cities.

The conceptual designs outlined in this action plan utilise the very latest in equipment, technology and design creativity to reduce energy use and subsequent carbon footprint, keeping Perth at the forefront of sustainability.

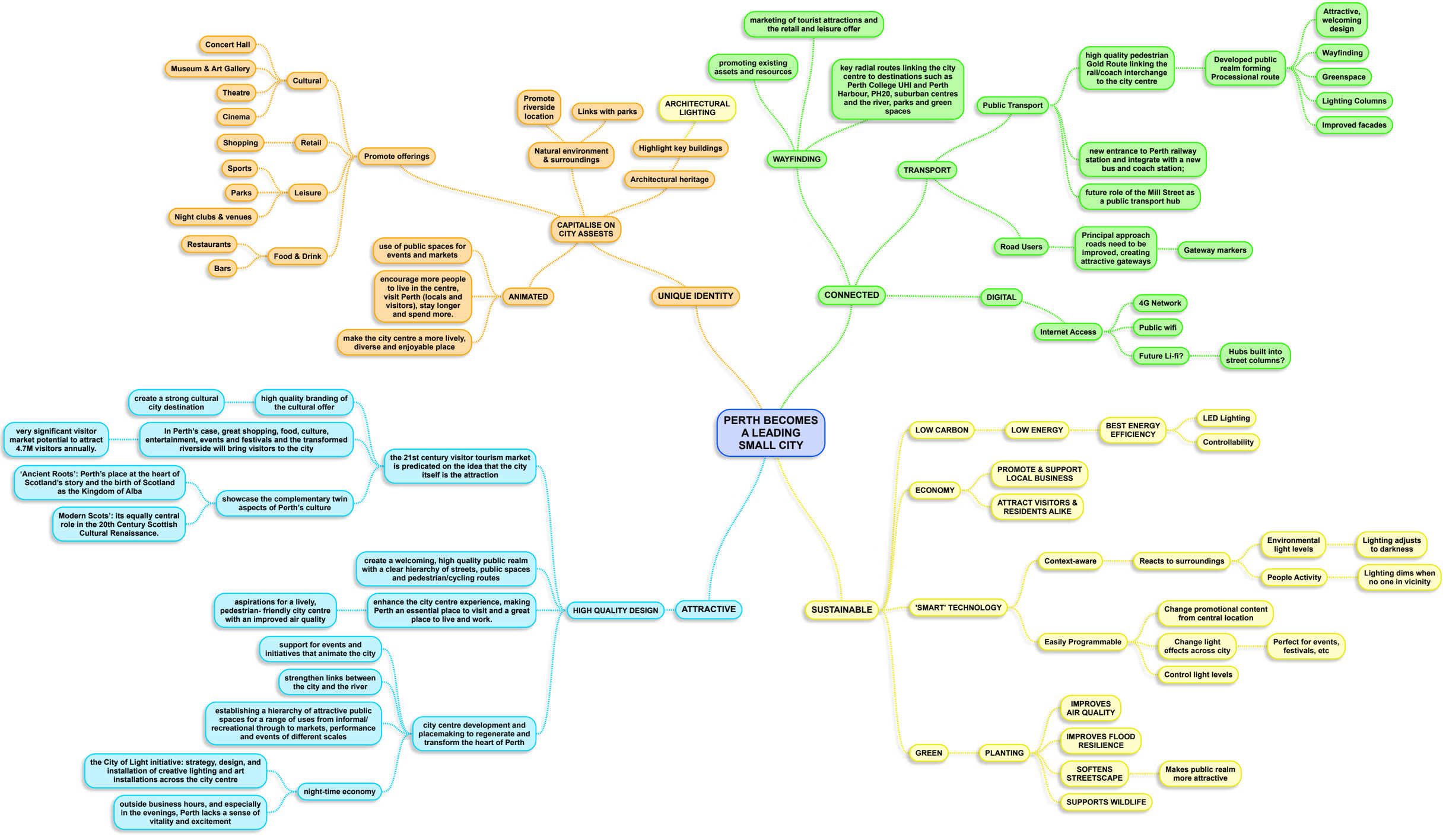
Overview

The City of Light action plan should sit within the context of the guidelines set out in the Perth City Plan and Perth & Kinross Sustainable Lighting Strategy. Not all of the City Plan is relevant to this action plan but the key areas which have been identified, outline proposals will help solve problems and assist in delivering Perth's ambitions of becoming a leading European small city. The PKC sustainable lighting strategy sets out the parameters by which new schemes for streets, spaces and structures will be assessed to ensure a cohesive, energy efficient and dynamic approach is delivered over time befitting of a 'smart' city.

At the heart of the Perth City Plan lies a desire to create a unique and distinctive identity for the city. The proposals set out in this document have great power to enhance the existing physical characteristics, celebrating what is best about Perth, whilst also helping deliver a new forward-looking city brand that raises Perth's standing on the national and international stage. In conjunction with streetscape improvement strategies, the lighting action plan will radically improve the attractiveness of the public realm and in turn the resident and visitor experience, thereby encouraging more people to live, work and visit the city, stay longer in the city centre and spend more.

Furthermore, the proposals will help deliver a more sustainable and connected Perth, encouraging wayfinding, exploration of the city, promoting links with transport, using smart and intelligent technologies, improving air quality and making large carbon and financial savings.

The following page explores these points in more detail and serves as a useful overview to inform the lighting action plan.


PERTH BECOMES A LEADING SMALL CITY
UNIQUE IDENTITY
CAPITALISE ON CITY ASSESTS
Promote offerings
Cultural
Concert Hall
Museum & Art Gallery
Theatre
Cinema
Retail
Shopping
Leisure
Sports
Parks
Night clubs & venues
Food & Drink
Restaurants
Bars
Natural environment & surroundings
Promote riverside location
Links with parks
Highlight key buildings
ARCHITECTURAL LIGHTING
Architectural heritage
ANIMATED
use of public spaces for events and markets
encourage more people to live in the centre, visit Perth (locals and visitors), stay longer and spend more.
make the city centre a more lively, diverse and enjoyable place
CONNECTED
WAYFINDING
marketing of tourist attractions and the retail and leisure offer
promoting existing assets and resources
key radial routes linking the city centre to destinations such as Perth College UHI and Perth Harbour, PH20, suburban centres and the river, parks and green spaces
TRANSPORT
Public Transport
high quality pedestrian Gold Route linking the rail/coach interchange to the city centre
Developed public realm forming Processional route
Attractive, welcoming design
Wayfinding
Greenspace
Lighting Columns
Improved facades
new entrance to Perth railway station and integrate with a new bus and coach station;
future role of the Mill Street as a public transport hub
Road Users
Principal approach roads need to be improved, creating attractive gateways
Gateway markers
DIGITAL
Internet Access
4G Network
Public wifi
Future Li-fi?
Hubs built into street columns?
ATTRACTIVE
HIGH QUALITY DESIGN
create a welcoming, high quality public realm with a clear hierarchy of streets, public spaces and pedestrian/cycling routes
enhance the city centre experience, making Perth an essential place to visit and a great place to live and work.
aspirations for a lively, pedestrian- friendly city centre with an improved air quality
city centre development and placemaking to regenerate and transform the heart of Perth
support for events and initiatives that animate the city
strengthen links between the city and the river
establishing a hierarchy of attractive public spaces for a range of uses from informal/ recreational through to markets, performance and events of different scales
night-time economy
the City of Light initiative: strategy, design, and installation of creative lighting and art installations across the city centre
outside business hours, and especially in the evenings, Perth lacks a sense of vitality and excitement
the 21st century visitor tourism market is predicated on the idea that the city itself is the attraction
high quality branding of the cultural offer
create a strong cultural city destination
In Perth's case, great shopping, food, culture, entertainment, events and festivals and the transformed riverside will bring visitors to the city
very significant visitor market potential to attract 4.7M visitors annually.
showcase the complementary twin aspects of Perth's culture
'Ancient Roots': Perth's place at the heart of Scotland's story and the birth of Scotland as the Kingdom of Alba
Modern Scots': its equally central role in the 20th Century Scottish Cultural Renaissance.
SUSTAINABLE
ECONOMY
PROMOTE & SUPPORT LOCAL BUSINESS
ATTRACT VISITORS & RESIDENTS ALIKE
'SMART' TECHNOLOGY
Context-aware
Reacts to surroundings
Environmental light levels
Lighting adjusts to darkness
People Activity
Lighting dims when no one in vicinity
Easily Programmable
Change promotional content from central location
Change light effects across city
Perfect for events, festivals, etc
Control light levels
GREEN
PLANTING
IMPROVES AIR QUALITY
IMPROVES FLOOD RESILIENCE
SOFTENS STREETSCAPE
Makes public realm more attractive
SUPPORTS WILDLIFE
LOW CARBON
LOW ENERGY
BEST ENERGY EFFICIENCY
LED Lighting
Controllability

Objectives

The purpose of the City of Light Action Plan is to respond to the Perth and Kinross Sustainable Lighting Strategy, taking into account the key parameters which are set out below;

Overview

- The strategy recognises that lighting can significantly enhance the attractiveness of the city for the residential, tourism and visitor economies.
- The strategy recognises that lighting can impact on human health and comfort.
- A strategic approach can result in greater value for money in lighting across the city.
- Other cities across the UK and Europe (see Appendix 1 for examples), have developed lighting strategies specifically to promote their city, improving safety and highlighting key landmarks as well as adding focus to regeneration projects and light as an art form.
- LED and Intelligent street lighting can significantly reduce energy consumption and carbon emissions which is a key driver for the city and its ambitions to be a sustainable smart city and the lowest carbon city in Scotland.
- The overall aim of the strategy is to reinforce the attractiveness and ambience within the city, improve the balance between light and dark and provide a safe environment through coherent lighting schemes that are well conceived, designed and maintained.
- Government policy recognises general urban design and geometry can be influenced by design issues such as lighting. Greater consideration should be given to conservation areas in this regard.

Objectives

- Support development of the evening economy.
- Provide opportunities for businesses to benefit from enhanced turnover through increased visitation.
- Develop Innovative approaches to lighting design which deliver safety and assists with orientation for both pedestrians and road users.
- Prioritise lighting designs that will reduce energy use, cost and minimise light pollution.
- Develop and augment Perth’s character.

Achieving Objectives

- Promote economic and business benefits to secure public and private funding to assist implementation.
- Lighting must provide a safe and comfortable environment for pedestrians and road users. This should be delivered predominantly by street lighting and supplemented as appropriate with building or special effect lighting.
- Detailed criteria governing all aspects of lighting will be used to assess the appropriateness of every lighting scheme brought forward to ensure that it fits with the strategic vision both statutory and best practice.
- Innovation will be encouraged within this context.
- An efficient management and delivery process is essential to delivery on a city wide basis. This is best achieved through close collaboration between council departments in roads, events, planning, lighting etc.

General Lighting Principles

- Functional road lighting enhanced by decorative lighting should be considered alongside all other aspects of new developments to help establish local identity.
- There should be distinction between different parts of the city, conservation areas, listed buildings, parks, green spaces, landmarks, routes etc.
- Prominent cultural buildings that reinforce the structure and skyline of the city are important.
- Priority will be focused on lighting the lower portions of the street to establish a natural effect that will reveal the skyline against the dark sky.
- Lighting of buildings, monuments etc should be white unless a robust case can be made for the use of coloured light.
- Coloured lighting should be reserved for art installations, special celebrations and events.
- Street lighting should meet the approved standards for vehicular and pedestrian safety.
- Emphasis should be placed on lighting cultural buildings not individual buildings and terraces.
- Formally sited statues and monuments could be lit to emphasise their location.
- Building lighting should be used to bring out architectural form, carved masonry, structure etc and avoid general floodlighting.
- Shop front and retail lighting should be considered in the context of its effect on the overall theme for the street.
- City dressing and special events lighting should be carefully programmed and by its very nature, be temporary.

- Coherent lighting of key spaces, Tay Street for example, should highlight focal points and entrances to the city centre.
- Creative opportunities to highlight other features in public spaces such as archaeology, trees and public information will be considered.
- All lighting should conform to specific technical requirements set out by the Council. The Street Lighting Policy will set out these requirements.
- Consideration will be given to lighting equipment and design in relation to energy consumption and how easily it can be maintained.
- Lighting innovation should be linked with other smart city networks; communications, renewable energy, building and traffic management systems.
- Lighting of buildings or providing feature lighting effects for special events such as the Winter Festival will help reinforce the built heritage and natural qualities of the city.
- Lighting can be used to support development of an area engendering confidence and support in initiatives.

Lighting for conservation areas

- The effects of lighting outside the built up areas should generally be minimised.
- Where appropriate, heritage/character should be reinforced through use of traditional lighting columns and by lighting key public buildings.

Lighting for residential areas

- Street lighting will be the main light source and should ensure pedestrian safety as well as vehicular circulation.

Lighting the river corridors

- Rural or non-urbanised sections of the river should not normally be lit with the exception of well-used sections that may be of benefit to both the community and character of the area. Lighting should normally be restricted to sections where the urban areas interface with the water space.
- Opportunities exist for using lighting as an art form in key locations.

Parks and green space

- Lighting should be kept to a minimum and priority given to pedestrian level lighting.
- Lighting design should take account of wildlife (particularly bats) and reduce light spill, siting of equipment and minimise siting particularly close to water and along woodlands and tree lines.

Lighting for key public and cultural buildings

- Lighting should be used to highlight the identity of these buildings within the city structure. Such buildings would include museums, galleries, theatres, libraries and churches.

Highlighting approaches and views to Perth

- Lighting can be used to highlight cultural buildings, bridges and landscaping, for example at key gateways and entry points on the approaches to Perth.
- The prominent public/ cultural buildings/ spires within the views of Perth as seen from the principal approaches should be revealed with light.

Skyline, prominent buildings and landmarks

- The groups of towers, domes and spires on the city skyline should be lit for their distant views to create a dramatic night-time sky line. Key buildings also have a role in views at a local level.
- The towers, domes spires and roofs that could be lit include the following (of which many are already lit to varying degrees):

- St Johns Kirk
- St Matthew's Church
- St Ninian's Church
- St Leonard's Church
- Sheriff Court
- Kinnoull Hill Tower
- Perth Museum
- AK BEll Library

Lighting of buildings and monuments

- The lighting of buildings and monuments needs to be structured to ensure coherence.
- Permanent floodlighting should be avoided where possible.
- The effects of light emitted from shop fronts and glass façades will be considered where appropriate in relation to setting.

Areas of darkness

- Use should be made of both light and dark, contrast is important to create legibility and reinforce hierarchy.

City dressing

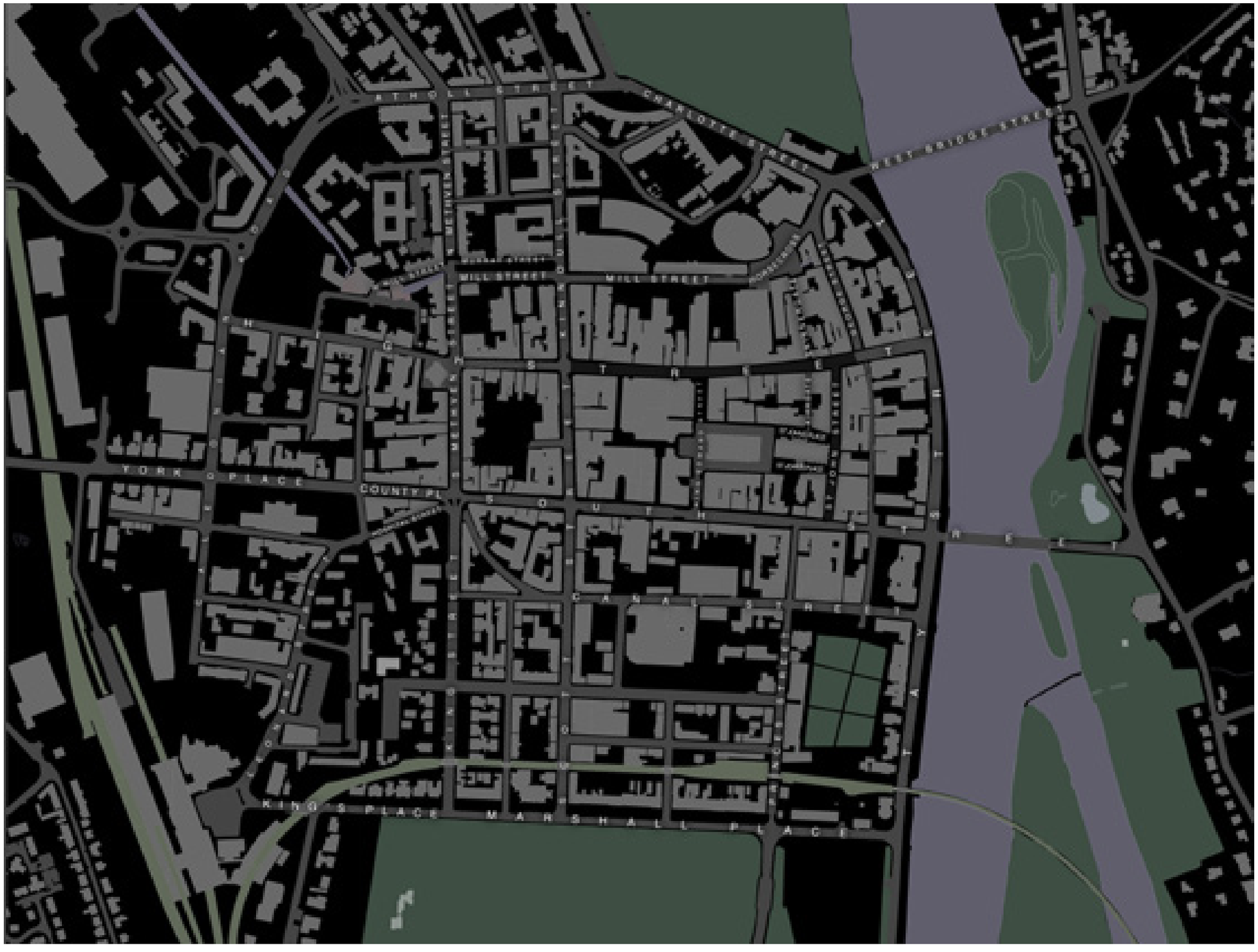
- Temporary enhancement of the public realm including projection, building lighting and Christmas lighting are seen as key to city dressing.
- Lighting should be an integral part of the city events programme.
- Targeting key gateways into the city centre is desirable in this context.

Development areas

- New street and feature lighting are an important aspect of development, creating renewed confidence through investment.

Setting

Perth benefits from an exquisite setting, with the river Tay to the East and the wide open green space of the Inches to the North and South. Within the city centre there are many fine buildings of differing style and period. In addition to the predominantly low rise nature of the built environment, the defining feature of the city centre is its compact nature, which makes it easily traversable on foot or by bicycle. There is an enviable array of independent retailers and a large number of high quality restaurants, bars and cafés. The Concert Hall and Perth Theatre form the hub of the cultural offering which is focussed around Mill Street.



Street Map

This map illustrates the key streets as identified within the lighting action plan and should be used as reference for the subsequent action plan maps and descriptions.

Current Evening Scene - Lighting Survey

Perth like many other towns and cities across the United Kingdom and needs to further develop a coordinated lighting strategy. The latest advances in lighting allow for the delivery of a huge step change in perceptions and the delivery of a setting conducive for the evening economy to thrive.

The following text refers to the images found in Appendix 1.

In stark contrast to the bustling hive of activity during the day, the city centre by evening is at best subdued, and lacks a sense of welcome at night time. It is revealed predominantly by a mix of relatively low colour rendering high pressure sodium street lighting and more recently LED. The scene generally is devoid of accent or highlight with the odd exceptions such as the Concert Hall (images 1 & 2) and to a lesser extent, St John's Kirk (3).

The main shopping street, the High Street, has the feeling that it is lit for security purposes, which tends to result in the opposite effect of making one feel safe. The bright, overhead LED lamps mounted high overhead on the buildings give off glare, dazzling users, whilst the low colour temperature does little to entice pedestrians down the street - they have a functional feel to them rather than a welcoming, characterful quality. The lighting scheme has effectively been left at a base level, but it is lacking the additional layers of feature and decorative lighting that would make it a more vibrant, inviting promenade (4). One of the city's best assets, the amazing array of independent wares on offer from a host of diverse retailers is lost almost entirely as the vast majority of shop window displays and premises are in darkness (5 & 6).

The street lacks architectural lighting to reveal the details of buildings, whilst any decorative or feature lighting is limited to a modicum of blue fairy lights wrapped around a small percentage of the trees lining the street (7). These decorative lights have a temporary aesthetic and do not match the scale of the street. A properly embedded scheme of lasting quality that will deliver vitality to the street is required.

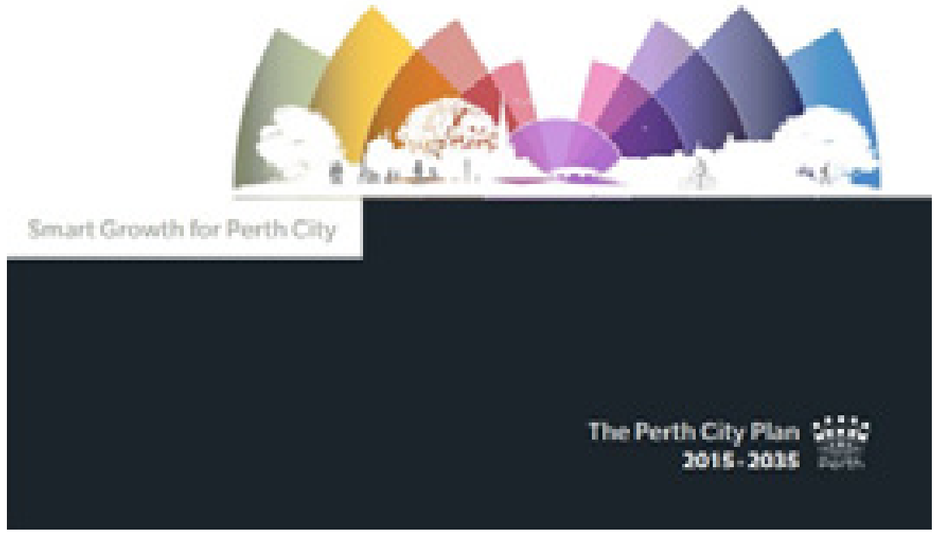
Other key streets and areas also only have a basic level of illumination with little or no feature lighting. For example, Tay Street - arguably one of the best showcase routes in the city with its magnificent riverside frontage and line of heritage buildings - is lit only to a very limited degree. The street light sources give a relatively even wash of white light of moderate colour rendition that illuminates the pavement and road to a reasonable level (8). However, there is so much room for improvement. Many of the buildings are in darkness, where they are not next to a street lamp, especially as they step back from the road (9 & 10), and have no lighting to pick out the architectural details on them. The decorative lighting scheme that is there is pleasant (11), but requires investment and improvement (12 & 13). The trees often obscure the light from the lamp posts leading to dark patches on the pavement and the failed up-lighters mean that the trees themselves are also in darkness (14), when they could easily be made into beautiful assets to be highlighted and celebrated. Whilst the pavement is lit in a warmer white hue, the road is lit with a cooler hue, which leads to the buildings looking cold and unwelcoming (16 & 17).

Architectural lighting for key and strategically important buildings and structures could generally be improved. For example the Cathedral (18 & 19) has no lighting whatsoever and is only dimly lit by street lights. The same could be said for many important city assets - The Sheriff Courthouse (20), The Fergusson Gallery (21), The Council Buildings (22), The Station Hotel (23), Burns & Co Auction House (24), Queens Bridge (25), the rail bridges on Tay St and King's Place (26 & 27); none of these exemplary buildings and structures have individual illumination.

Some buildings are partially lit for example, the Museum and Art Gallery (28) has some up-lighters embedded in the pavement (some of which are broken) lighting part of the wall, yet the main portico and magnificent dome are left in darkness. The A.K. Bell Library (29) is left completely unlit, except for some green coloured lighting in the entrance porch, which at best reveals only a tiny portion of such an important building, at worst looks inappropriate and garish. The Perth Bridge/West Bridge St (30 &, 31) has linear strip lighting across it, however it requires repair, whilst the lantern lighting on posts has poor colour rendition, emitting a flat, dim, orange glow, lacking sparkle and vitality.

There are also a number of lighting installations on private buildings that need to be addressed as they are either inappropriate in context to their setting or require upgrade and maintenance. (e.g. 32- 35)

Unfortunately, the whole picture conspires against promoting the city centre as a destination after dark. The good news however, is that there is a great and exciting opportunity to completely transform the perceived quality, character and vibrancy of Perth from this point onwards. The issues which have been identified must be addressed in a coordinated manner where installations and initiatives are delivered by the Council and private businesses. A robust and affordable maintenance regime must also be developed, ensuring that a new vision of Perth is delivered and perceptions and the fortunes of the evening economy in the city centre are changed forever. Above all, the delivery of any schemes must be of sufficient quality to be taken seriously and to make a marked step change as part of the identified Big Moves (Big Moves 5 & 6) in the Perth City Plan.

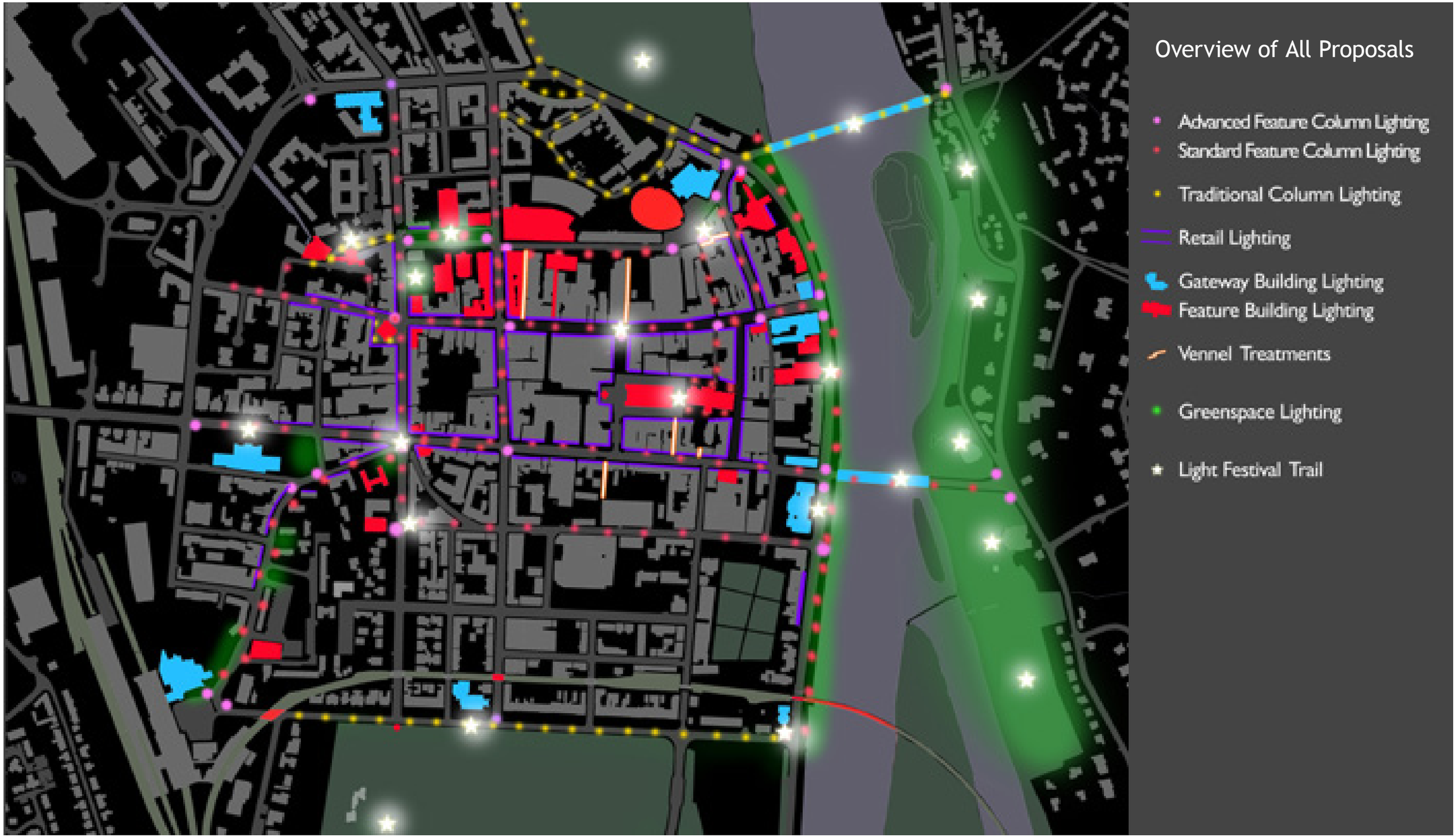


Key Initiatives

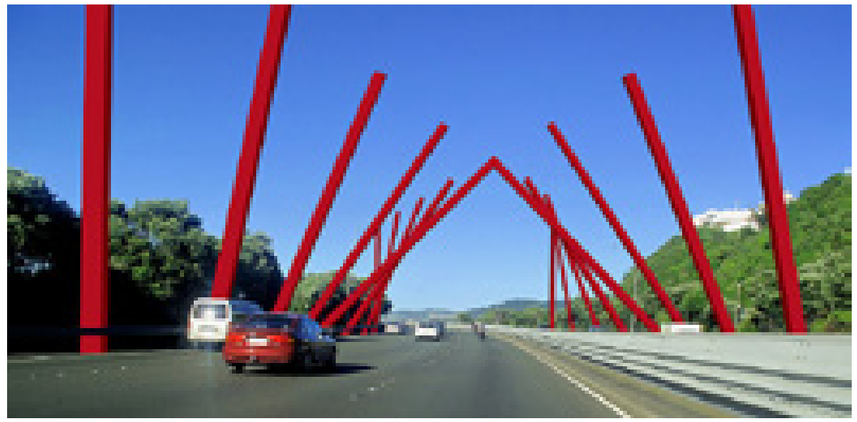
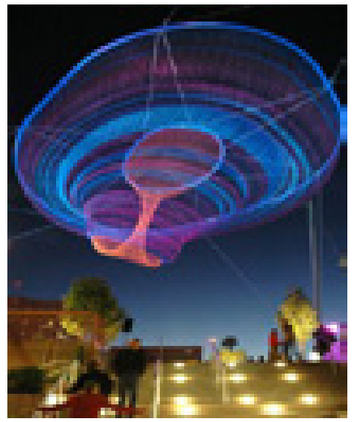
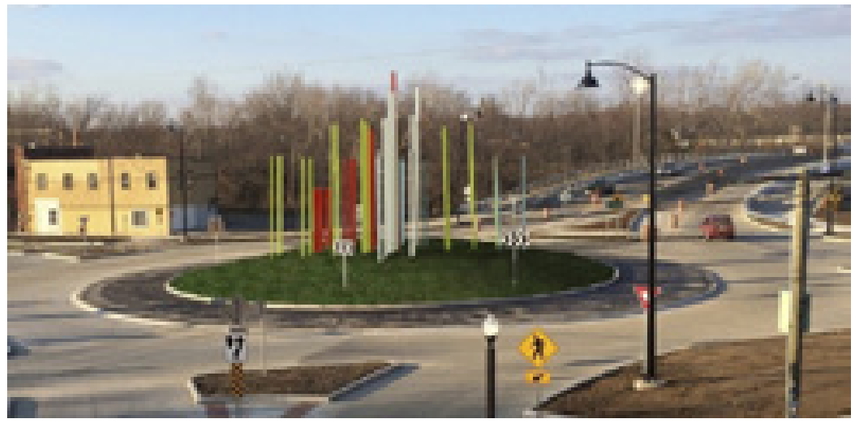
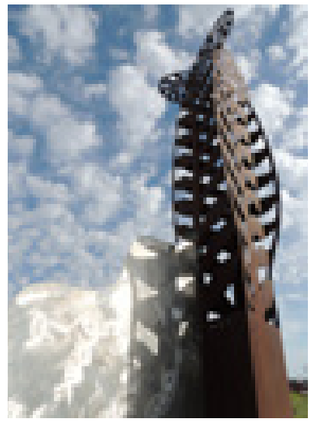
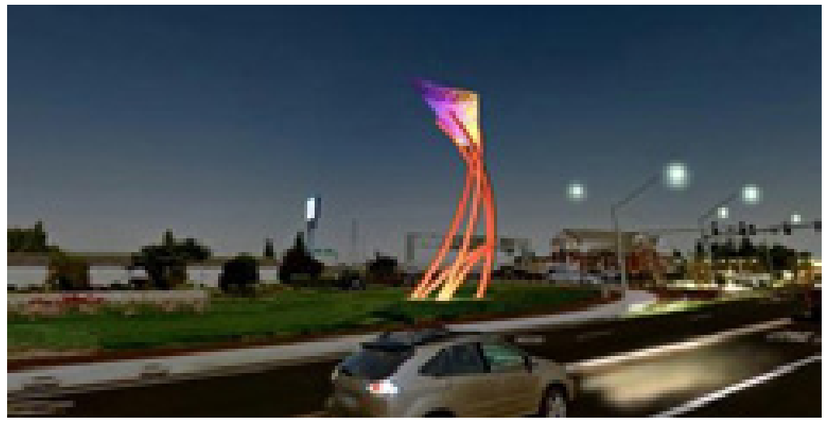
In developing this vision for a reinvigorated evening scene we have spent a lot of time in the city centre by day and by night on various different days to get a real sense of how the city works and how people use the various streets and spaces both by day and by night.

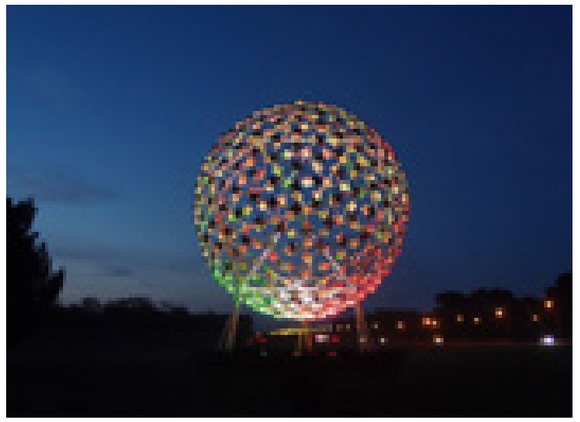
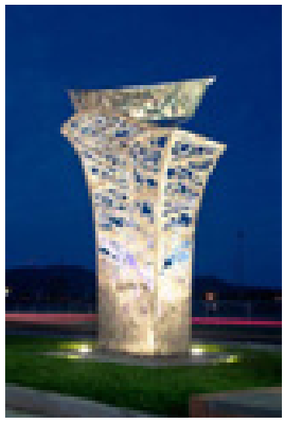
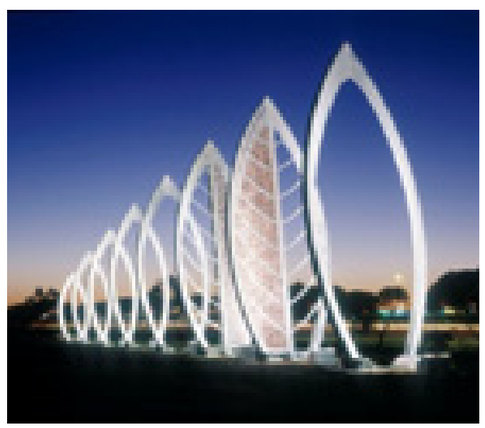
To deliver a vibrant and dynamic city there is a requirement for a number of key initiatives, from which will flow a range of individual projects of varied scale, which when combined, will deliver a cohesive vision. These key initiatives are as follows:

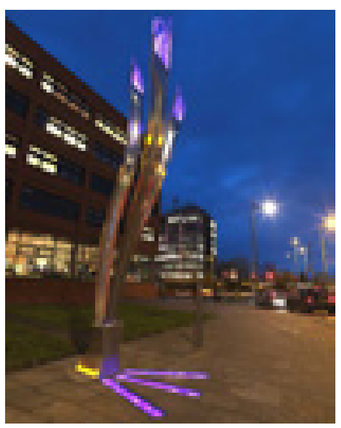
1. The marking of key gateway entries to the city
2. Street lighting
3. Feature and orientation lighting
4. Lighting for Retail
5. Architectural lighting
6. Lighting for greenspace
7. Light Art
8. Events Lighting
9. Maintenance


Overview of All Proposals
Advanced Feature Column Lighting
Standard Feature Column Lighting
Traditional Column Lighting
Retail Lighting
Gateway Building Lighting
Feature Building Lighting
Vennel Treatments
Greenspace Lighting
Light Festival Trail

1. Key gateway entries & markers




Key gateway entries & markers

At present, during the night time, there is little to denote the key gateway entry points to the city with the exception of the odd “Welcome” sign and perhaps some banners on standard lighting columns, which due to the limited colour rendering of the light sources, becomes all but illegible after dark. Examination of the key entry points and subsequent vehicular routes into the city centre, has concluded the length of these routes make it impractical to mark these out directly. What is required is a bold gateway statement followed by the illumination of key buildings, landscapes and structures along key routes towards the city centre, which combine and add to positive impressions of the city and demonstrate what Perth has to offer to both resident and visitor alike.

The key gateways and markers are:

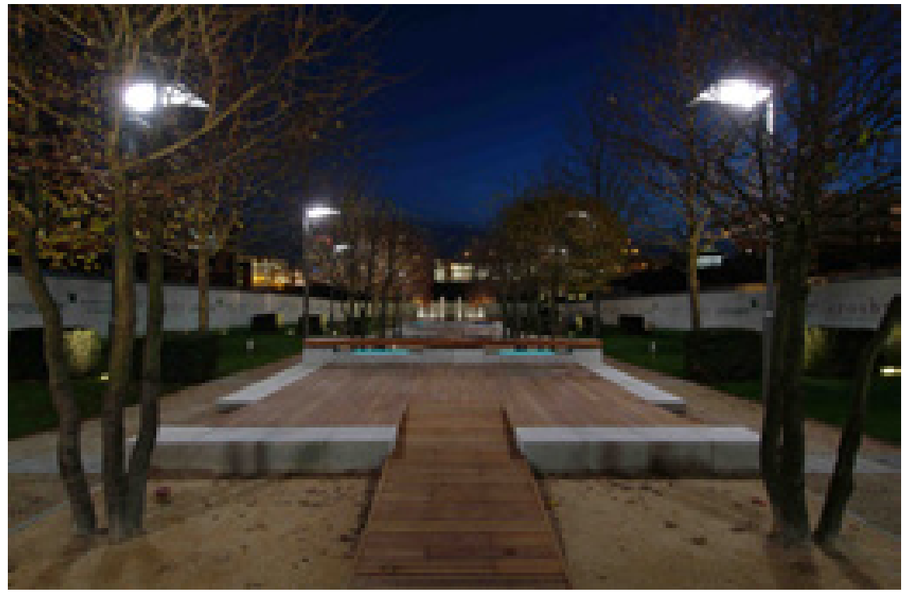
G1 - A9 Broxden Roundabout leading to A93 Glasgow Rd
G2 - A9 Inveralmond roundabout leading to A912 Dunkeld Rd
G3 - A85 Dundee Road at Friarton Bridge
G4 - A85 Crieff Rd at Newhouse Rd roundabout
M1 - Kinnoull Hill Tower

See Appendix 1 for more details

G1 - A9 Broxden Roundabout leading to A93 Glasgow Rd

M1 - Kinnoull Hill

2. Street lighting



Street lighting

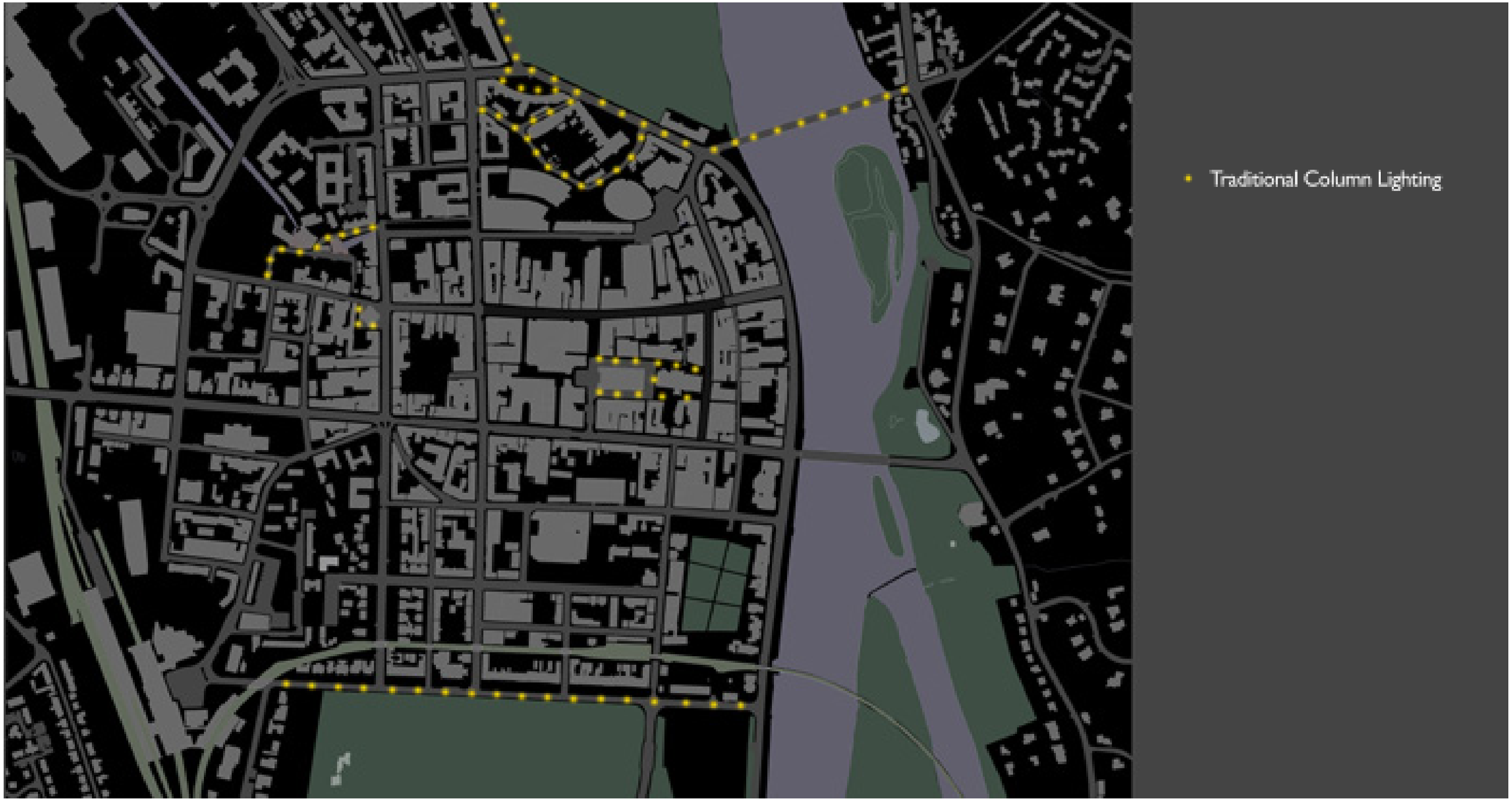
Street lighting, a key component of evening illumination is, by the very nature of its deployment, a blanket of light. Uniformity and brightness are calculated according to the setting and occupation and it is ideal for delivering legibility, safety and general circulation lighting, but it cannot provide accent or highlight.

Another equally important aspect of street lighting is its ability to render and reveal the built form. Colour rendition is everything when it comes to delivering a high quality vision for lighting, even from street lighting, as feature lighting (which is generally better at colour rendering) is often grouped in certain locations, or interspersed with street lighting. Both should always work together to reveal the very best picture possible.

White light sources should have a minimum colour rendering capability of Cri90 for key routes and circulation spaces within the city centre as well as key entry routes to the city. Use should be made also of cool and warm white sources to further delineate traffic and pedestrian routes.

Other routes, such as the ring road, can have lower colour rendering light sources, but again it is desirable if these were at least Cri80 as a minimum. For key gateway vehicular routes, the higher Cri90 should apply.

Traditional period column lighting should be considered in order to compliment and enhance the historic nature of certain areas and streets, a map of which follows.


Traditional Column Lighting

3. Feature and orientation lighting

Feature and orientation lighting

Perth has a predominantly low rise and compact city centre. Many buildings, although historically important, are of relatively low architectural value in the construction of a high quality cohesive evening scene. Indeed, as with all cities, there are buildings that we would wish to draw attention away from.

The key buildings where architectural lighting could be deployed are scattered sporadically across many streets and lighting these alone would have little impact in presenting a cohesive vision or revealing appropriately the inherent character of the city's built form. To this end we have drawn up an indicative design for a feature light column (+ complimentary wall bracket), which would be utilised on key streets, routes and spaces to create a bold, unique and unifying lighting intervention that will radically alter the vibrancy and vitality at the lower portion of the street, as demanded by the lighting strategy.

Furthermore, there is a great opportunity to deliver many of the additional ambitions of the City Plan and: help to create a unique and distinctive identity for the city by way of attractive design; to create a more connected and vibrant city using wayfinding strategies and promoting the offering of Perth; and create a more sustainable and intelligent city by using smart technology for energy-saving, adaptability, control and communication.

By developing a holistic view to the streetscape, it is possible to consolidate different functions and thereby improve value, de-clutter, simplify and strengthen Perth's public realm identity. Creating a coordinated suite of street designs allows lighting, wayfinding, promotion, seating, planting, decoration, city dressing, special events, and more to act in harmony with one another.

On this basis we have devised indicative concepts for a range of pieces that complement the feature lighting columns and wall bracket including a wayfinding totem, media portal, seating and planting that are highly flexible, modular, scalable, future-proof and suited to different scenarios and locations throughout the city.

For the lighting column, the main body will have an open slot with a diffuse panel infill backlit with concealed LED's designed to bathe the street and adjacent buildings in a soft glow of white or coloured light as appropriate that will gently and cohesively reveal the built form, allowing it to be read after dark without additional physical intervention. The addition of individual lighting schemes to key buildings would in turn add to the overall scene but would not be imperative which is good as there is no guarantee that individual private building owners would wish to undertake architectural lighting of their building.

The design for the column is unique but extremely simple, to keep costs down and would ultimately deliver a suite of options; designed to be flexible in height, scale and complexity. Robustness and low-maintenance are also key design features. At its most basic it will simply be a lighting column with additional colour change LED lighting to the diffused panel which will afford the ability to distinguish between streets, or key routes between attractions and events. The control systems for the colour change lighting would work in sequence wirelessly with adjacent columns and streets allowing the creation of infinitely variable options for colour coding and effects to suit future initiatives and events within the city centre.

At its most complex, primarily at key locations and junctions, it is envisaged that the columns will incorporate a range of plug and play mounting points at high level for the addition of feature lighting in the form of gobo projectors, colour change floods and possibly speakers, as well as signage and perhaps video screens which could be used for on going revenue generation.

It is envisaged that the columns would have a sizeable base compartment to allow for the expansion and incorporation of new technologies as they are adopted by PKC such as Li-Fi, microphones for sound detection, intelligent street lighting control modules and will house power points to support temporal events.

The addition of fretwork to the diffused feature lighting panels within the body of the column would afford the opportunity to create further distinction and quality at street level which is of particular value in places such as Riverside or the cultural quarter. This will significantly boost vibrancy at street level. The fretwork can be used for decoration only, or perhaps more valuably, it can be used to assist wayfinding throughout the city, assisting navigation to transport links, marking routes, encouraging exploration and highlighting key attractions.

The columns should allow for the incorporation of multiple heads, banner attachments etc. The column will be capable of carrying a diverse array of fittings although they will all be LED based and will utilise a unified plug and play system and the same protocol for colour and dimming control.

The columns and wall brackets should also be capable of carrying LED street lanterns if required.

Each head on the column and wall brackets should be individually controlled and the whole network would be controlled remotely from a central command point for ease. Entire streets could be controlled as one for specific initiatives and events or every decorative fitting on every column could do something different, the possibilities are endless due to the very nature of LED lighting, especially colour change lighting. The control system should be expandable allowing for delivery over a protracted period as would be the case.

Utilising LED light sources and tight scene control guarantees that energy use is minimised and proportionate at all times. In addition it is envisaged that the feature lighting will be switched off out with set hours and only the central diffused panel lighting and street lighting components would be retained.

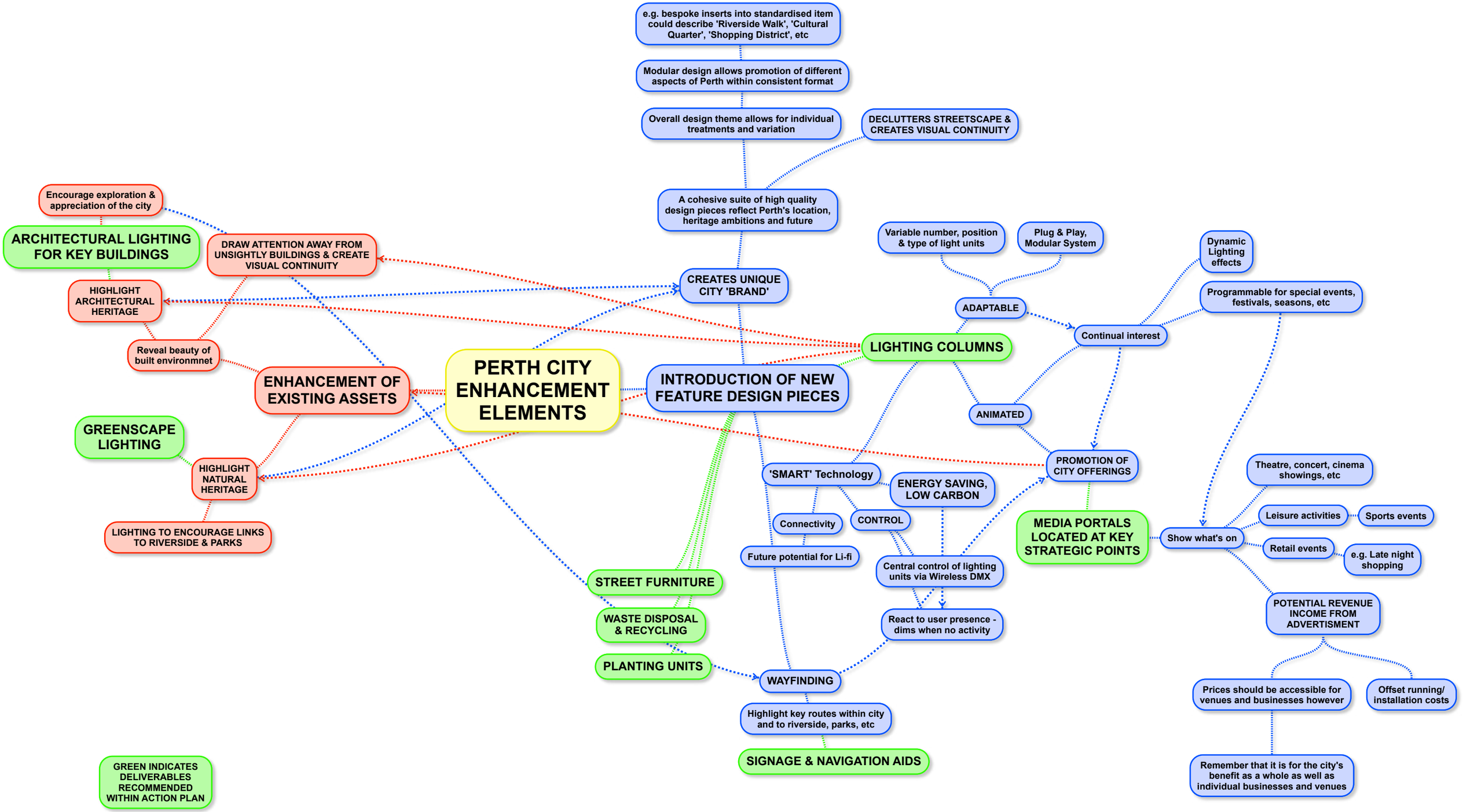
Maintenance on all of the columns should be minimal, LED should be used for all lighting elements and the illuminated panels that may be used would be lit by a simple semi rigid waterproof LED strip mounted within the polycarbonate insert in a routered channel.

Replacement would be through the removal of a simple cover plate, the units unplugged from a waterproof inline connector.

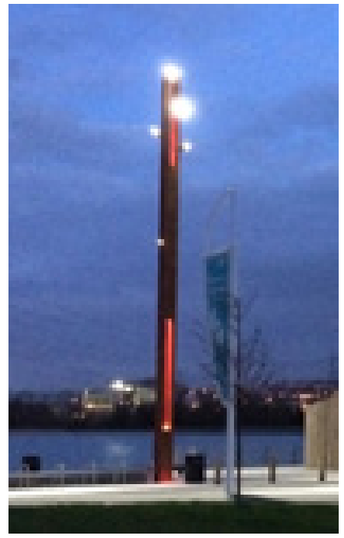
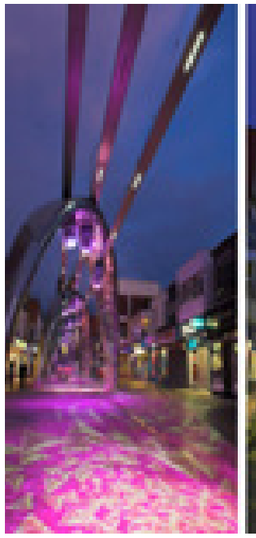
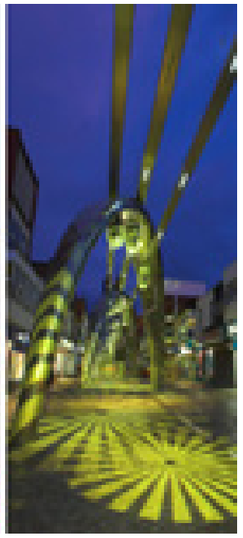
Allowing for an illuminated slot of 6 metres, six LED floods in full colour change, two gobo projectors and a street light, we anticipate a column would consume no more than 0.5Kwph. We would expect any maintenance (outwith wilful damage) to be restricted to cleaning periodically with replacement of the vertical strips every 5 years at an approximate cost for the strip in total of £120.00.

Floodlights at the top of the column and the street light element would be removed from site for servicing should they become faulty and be of a type where individual components can be replaced rather than entire fittings, their replacements installed quickly and easily through the plug and play arrangement proposed.

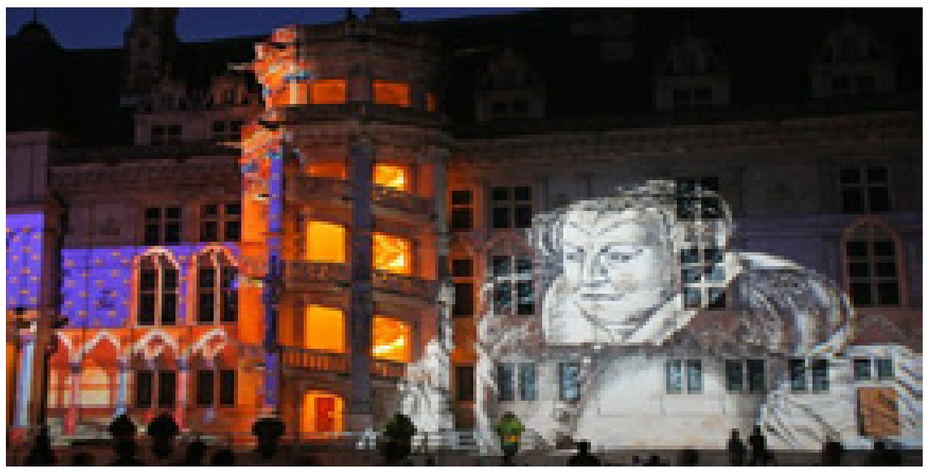
The single most important thing, delivered by an intervention such as this, is that it helps retains interest and through being bold and ambitious in its form, creates a unique statement unique to Perth that will celebrate the city, help draw and retain residents and visitors alike, and in turn help Perth reach its vision of becoming a leading small city, which in essence is the key to this entire exercise.


PERTH CITY ENHANCEMENT ELEMENTS
ENHANCEMENT OF EXISTING ASSETS
ARCHITECTURAL LIGHTING FOR KEY BUILDINGS
Encourage exploration & appreciation of the city
DRAW ATTENTION AWAY FROM UNSIGHTLY BUILDINGS & CREATE VISUAL CONTINUITY
HIGHLIGHT ARCHITECTURAL HERITAGE
Reveal beauty of built environmnet
GREENSCAPE LIGHTING
HIGHLIGHT NATURAL HERITAGE
LIGHTING TO ENCOURAGE LINKS TO RIVERSIDE & PARKS
CREATES UNIQUE CITY 'BRAND'
e.g. bespoke inserts into standardised item could describe 'Riverside Walk', 'Cultural Quarter', 'Shopping District', etc
Modular design allows promotion of different aspects of Perth within consistent format
Overall design theme allows for individual treatments and variation
DECLUTTERS STREETSCAPE & CREATES VISUAL CONTINUITY
A cohesive suite of high quality design pieces reflect Perth's location, heritage ambitions and future
INTRODUCTION OF NEW FEATURE DESIGN PIECES
LIGHTING COLUMNS
Variable number, position & type of light units
Plug & Play, Modular System
ADAPTABLE
Dynamic Lighting effects
Programmable for special events, festivals, seasons, etc
Continual interest
ANIMATED
PROMOTION OF CITY OFFERINGS
'SMART' Technology
ENERGY SAVING, LOW CARBON
Connectivity
CONTROL
Future potential for Li-fi
Central control of lighting units via Wireless DMX
React to user presence - dims when no activity
MEDIA PORTALS LOCATED AT KEY STRATEGIC POINTS
Show what's on
Theatre, concert, cinema showings, etc
Leisure activities
Sports events
Retail events
e.g. Late night shopping
POTENTIAL REVENUE INCOME FROM ADVERTISMENT
Prices should be accessible for venues and businesses however
Offset running/ installation costs
Remember that it is for the city's benefit as a whole as well as individual businesses and venues
STREET FURNITURE
WASTE DISPOSAL & RECYCLING
PLANTING UNITS
WAYFINDING
Highlight key routes within city and to riverside, parks, etc
SIGNAGE & NAVIGATION AIDS
GREEN INDICATES DELIVERABLES RECOMMENDED WITHIN ACTION PLAN

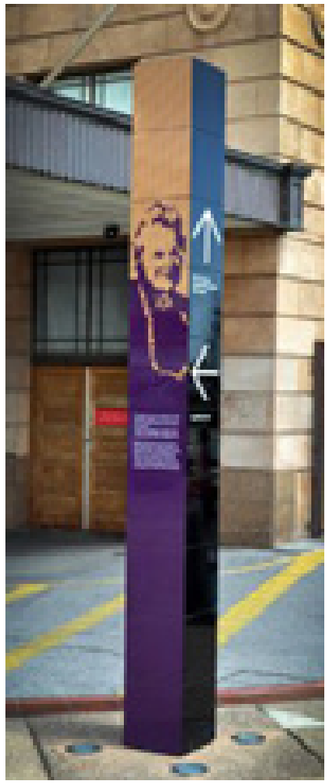







MERCHANT CITY

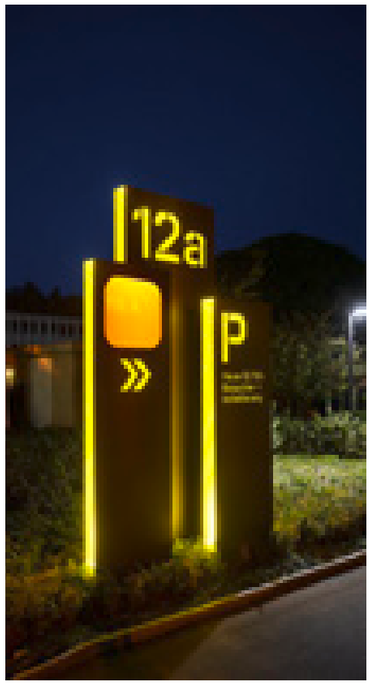



Canal Street & Mott Street


EEXTERVELD
DRENTSCHE


R 5


114
William Street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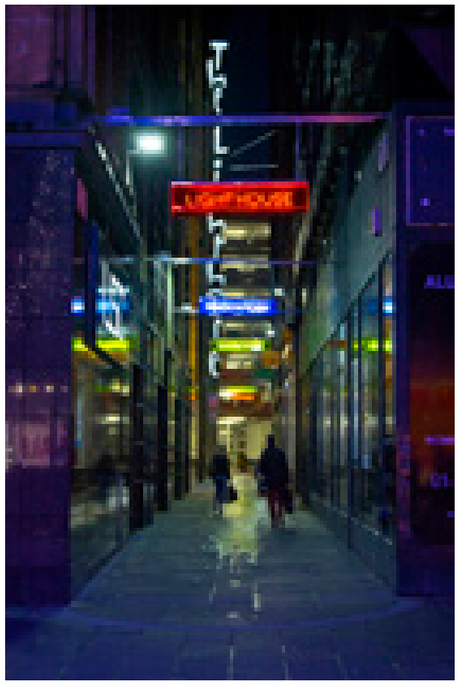
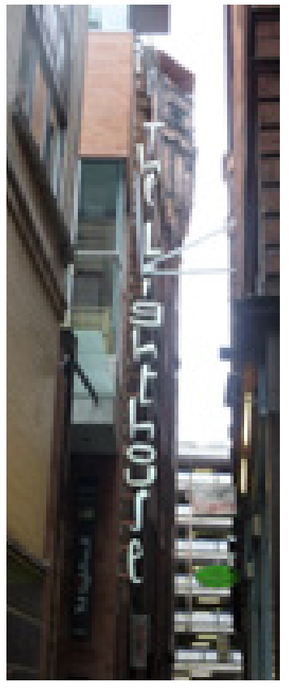
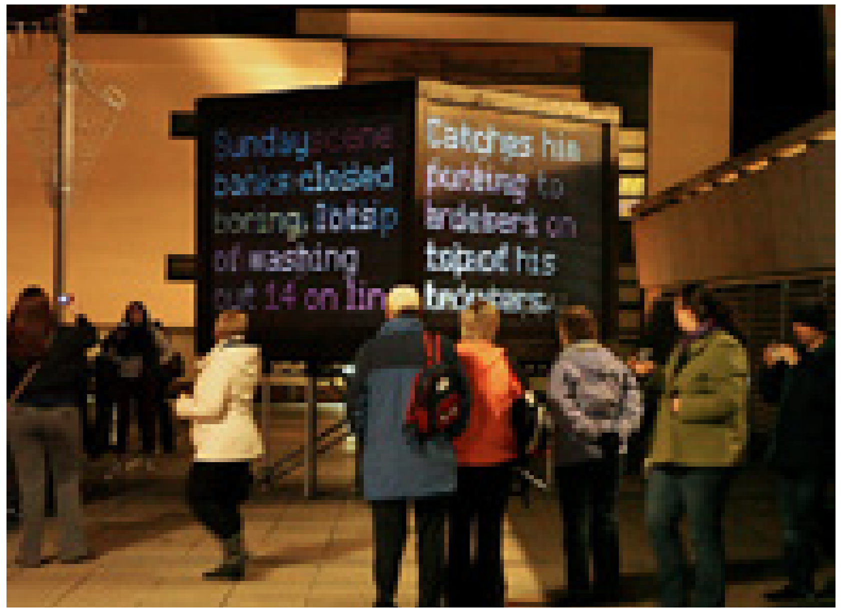
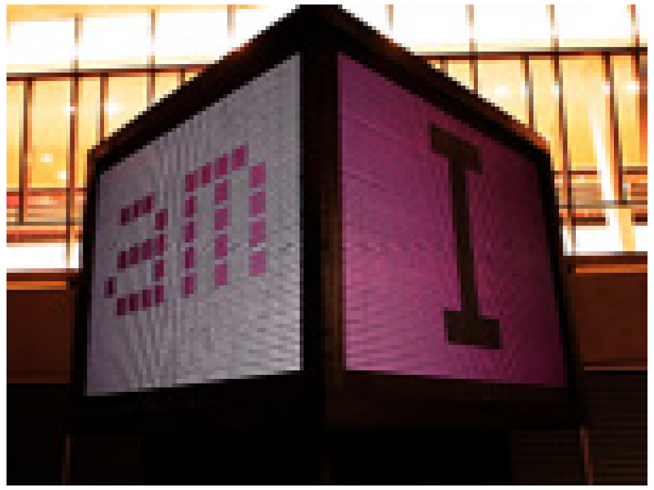
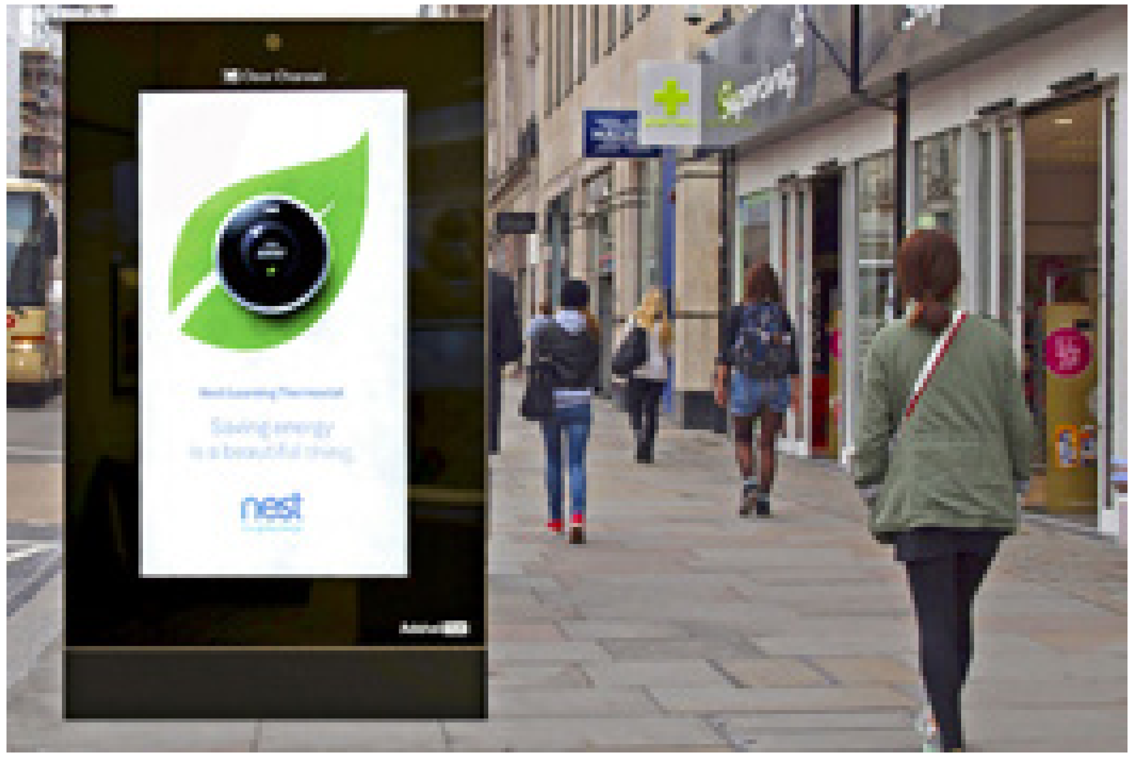

LIGHTHOUSE

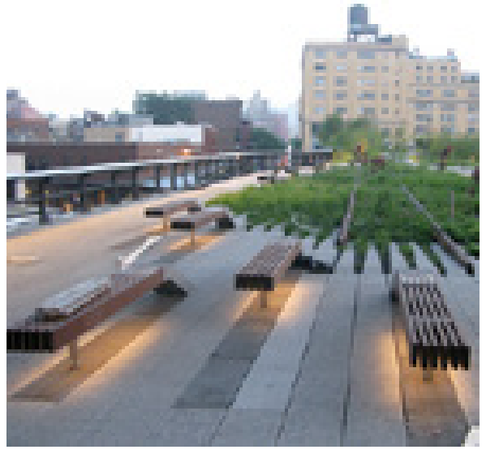




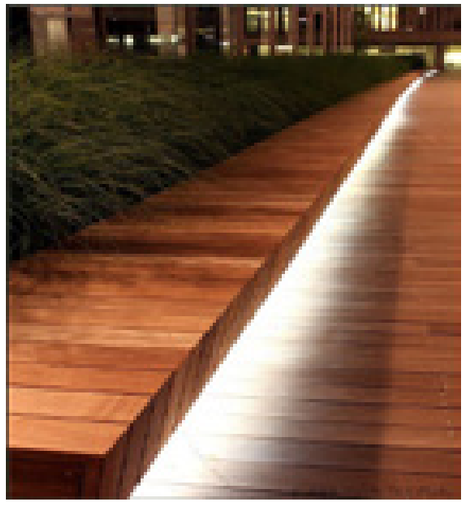


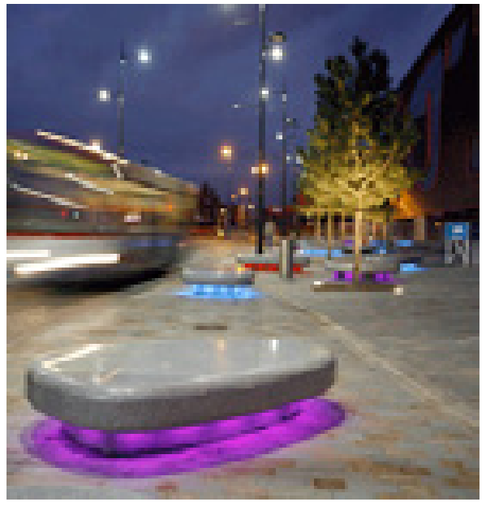


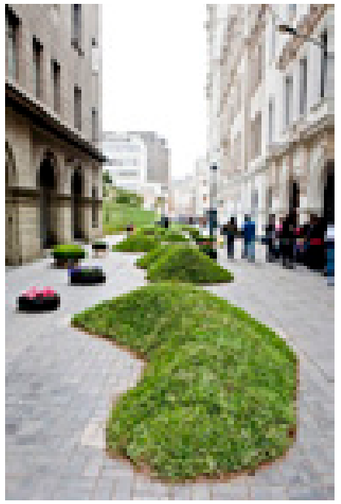
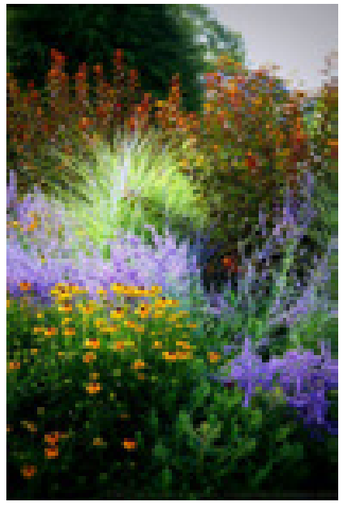
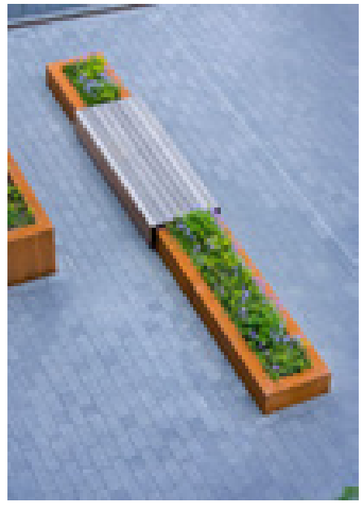
Information, Media and Promotion

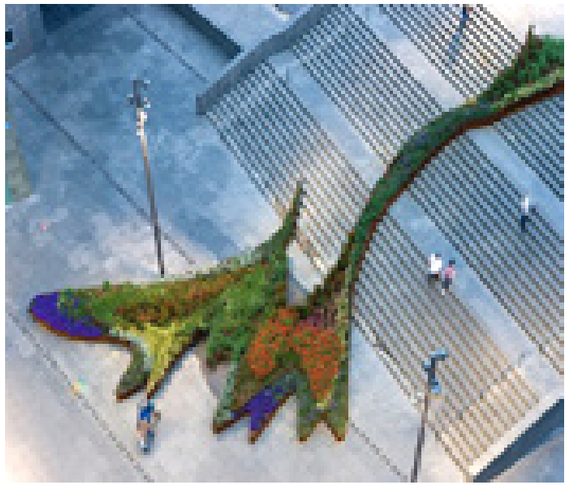



STOP








The overall concept design features a minimal, streamlined form that contains dynamically illuminated LED panels (with the option of colour change and animation), serving as gentle street lighting, eye-catching decoration and the inclusion of interchangeable fretwork designs in front of the diffusers can be used for wayfinding and signage, encouraging exploration of the city and enhancing Perth's unique identity.

At the top of the lighting columns are a series of ports that can be used for 'plug and play' light fittings such as flood lights and gobo projectors that bring excitement and a dynamic atmosphere to the street. The modular, interchangeable nature of the design, means that where there are existing attractive features, the columns can be used to up-light buildings, or enhance greenspace such as tree and plant lighting.

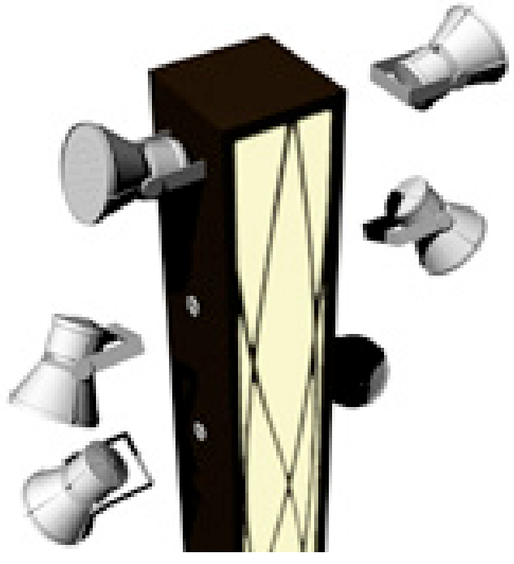
The ports give the ultimate in flexibility and can also provide power for specific events such as markets and festivals, city dressing and even cater for a range of other technology such as audio speakers, Li-fi (as and when it becomes available) and high speed public Wi-fi, ensuring future relevance and long lifespan.

The columns would be part of a smart network and can all be controlled from a central location, so entire streets can for example have their colour altered, or programmed for special events and seasons.

Sitting alongside the feature light columns would be a suite of different street treatments that complimented the column design. These would include media units that can highlight Perth's offerings and events, wayfinding units, seating, planting and recycling/ bins, etc. Together, it all completes a strong united and adaptable public realm for Perth.

Adaptable 'Plug and Play' fittings for flood lighting, gobo projection, special events, audio, etc.

Give ultimate flexibility for different lighting needs in different areas.

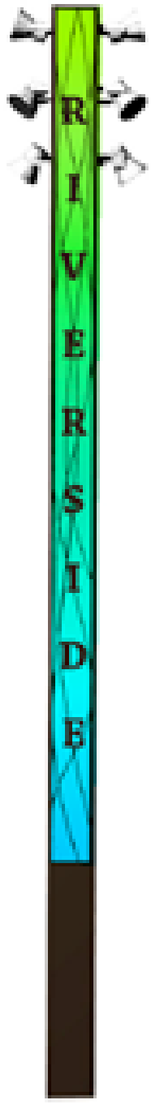


Column Light Overview

The uncomplicated form works on a variety of scales and can be used to create street hierarchies, and to suit multiple lighting applications throughout the city.

The modular aspect enables the column to take different street lighting heads, as well as a variety of feature flood, decorative and gobo lighting.

Street light, feature & decorative lighting, wayfinding



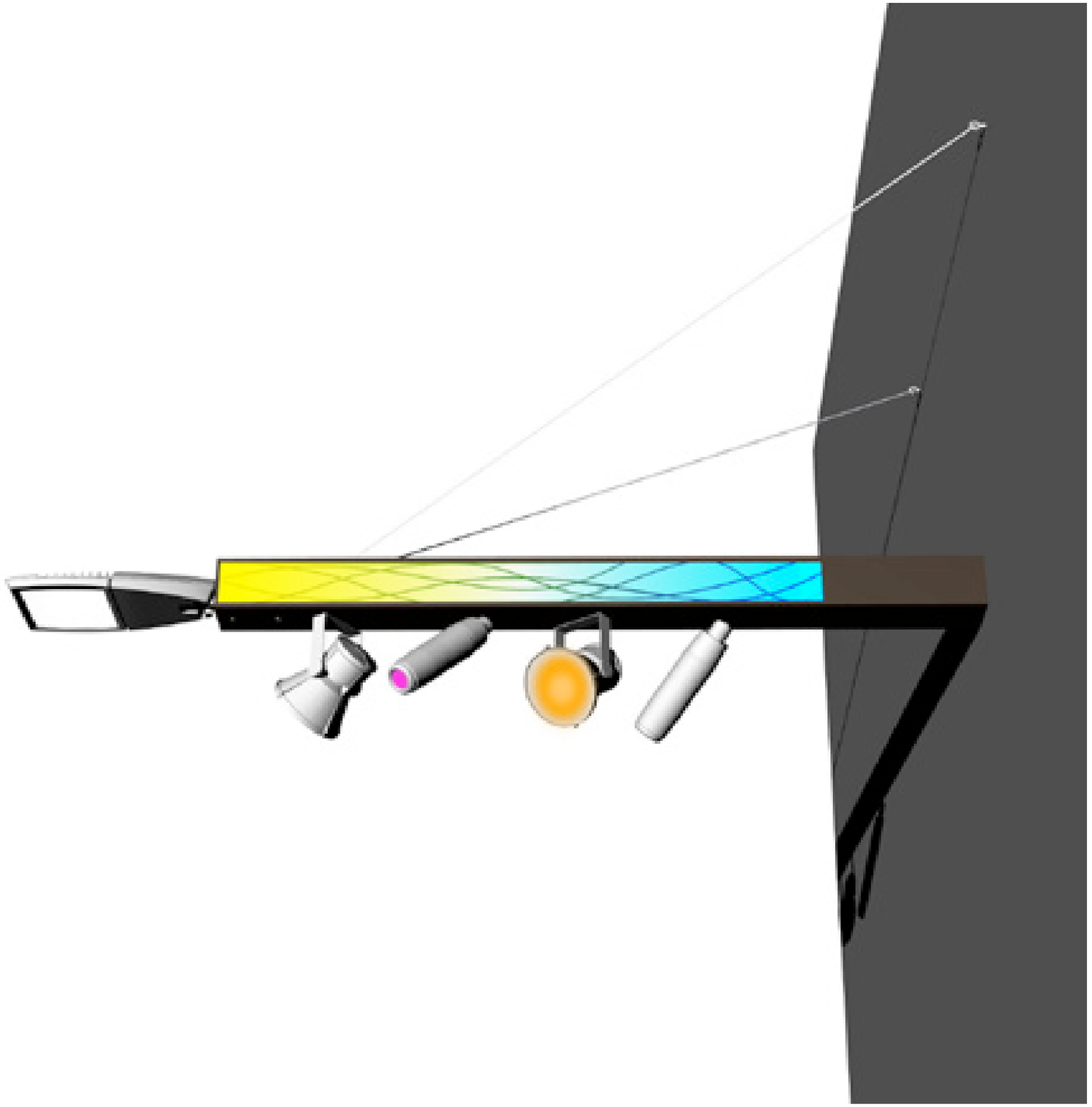
Feature & decorative lighting, wayfinding

‘Advanced’ Feature Columns

Street light

Feature street light

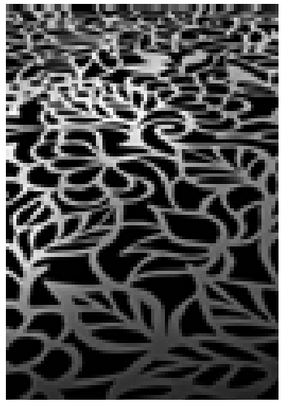
‘Standard’ Feature Columns

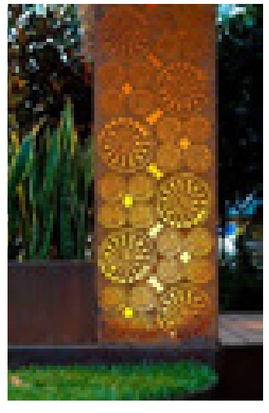


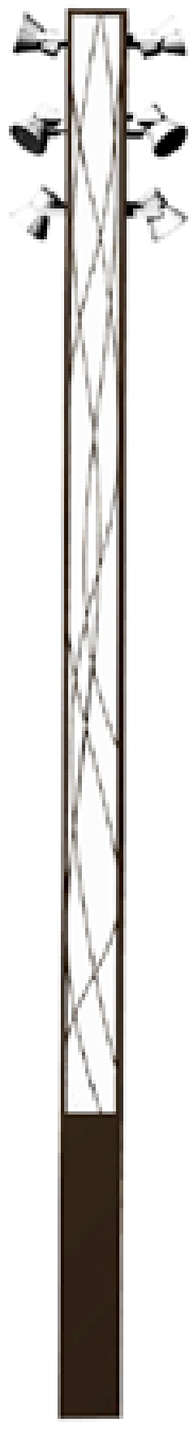
Interchangeable fretwork designs combine decoration, wayfinding, identity, place-making, as well as structural protection of the lighting, giving the ability to theme different streets or areas and create a unique feel within a cohesive aesthetic language.

The panels can be changed in future, as and when the city develops, enabling the design to evolve and stay current - future-proofing the columns for many years to come.

Strong graphic design would produce exciting and vibrant imagery, helping to tell the story of Perth as a unique and leading small city, whilst encouraging exploration of Perth's fantastic offering.

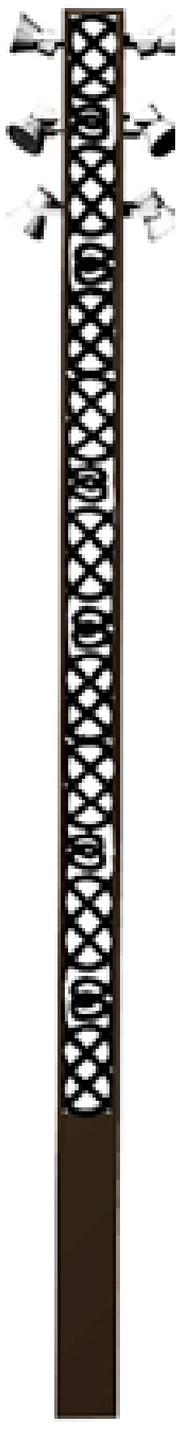




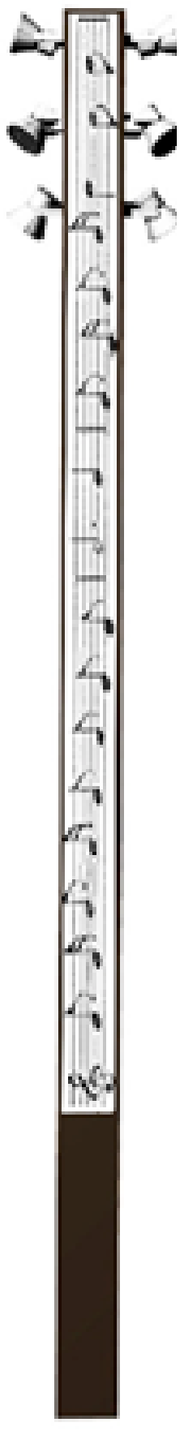


Riverside / parks themes

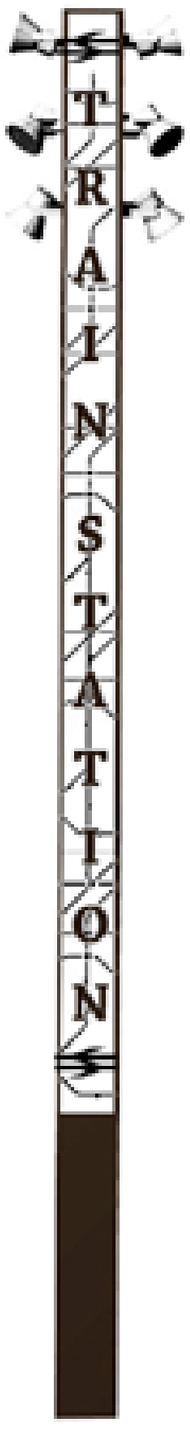
Retail & leisure

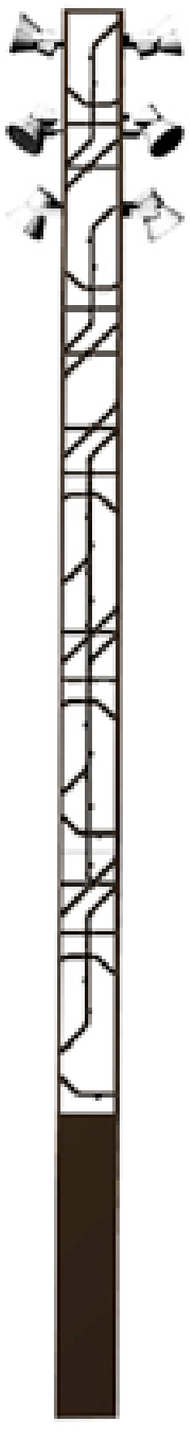


Historical, museum themes



Music, Concert Hall





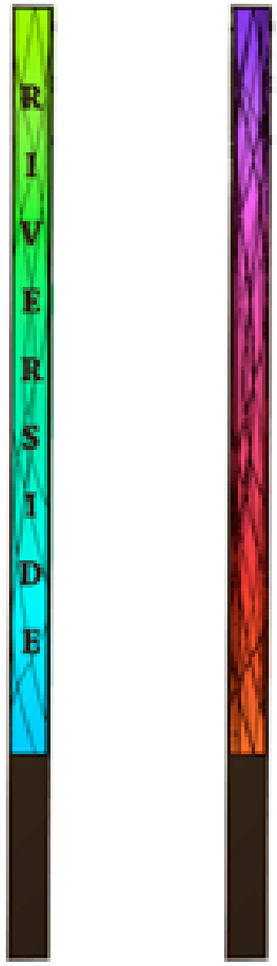
Train Station / Transport Hubs

Wayfinding pieces and media ‘portals’ encourage exploration of the city and the ease and pleasure of visiting Perth.

The media portals, located at key strategic points, could be part of a smart network, whereby current events and attractions could be promoted, featuring a revolving ‘what’s on’ show reel, that could be updated regularly and digitally from a central location.

Promoting Perth’s offering will help increase visitor stay, encourage repeat visits and in turn improve the economy. It may even be possible to subsidise the installation of the media portals with listing fees, or even interspersing with advertising.

Of course, traditional forms of banner and posters may also be used, but lack the advantages of



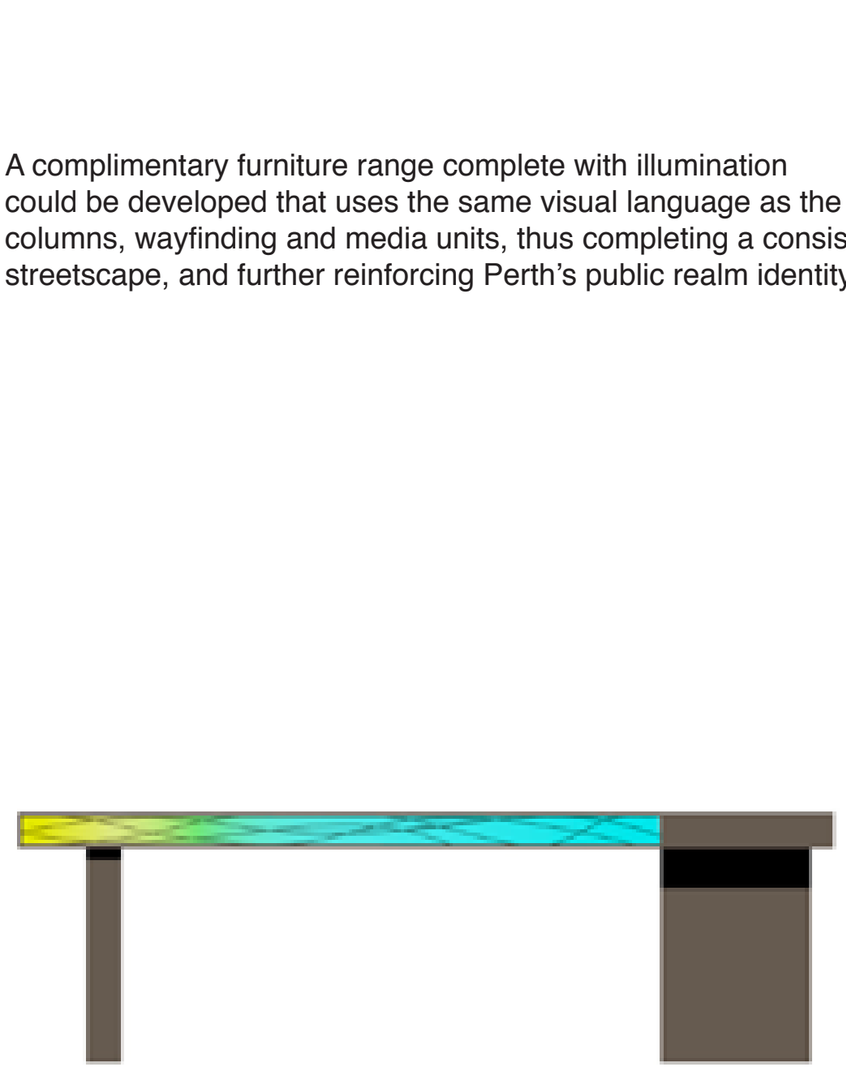
Wayfinding & decorative totems

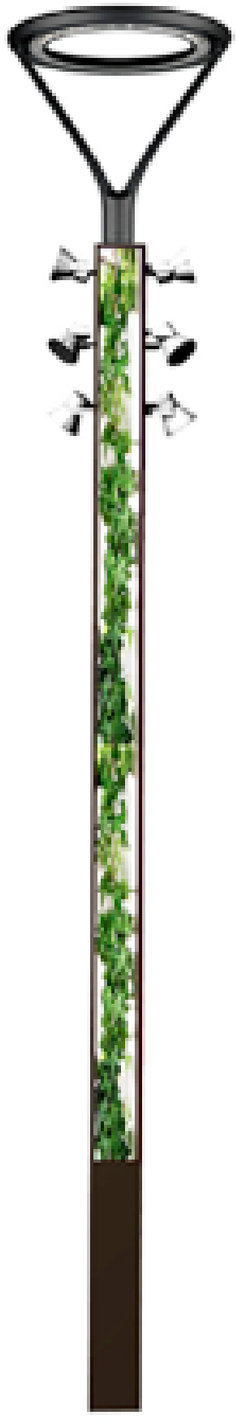
Wayfinding Unit

Stand-alone Media Unit

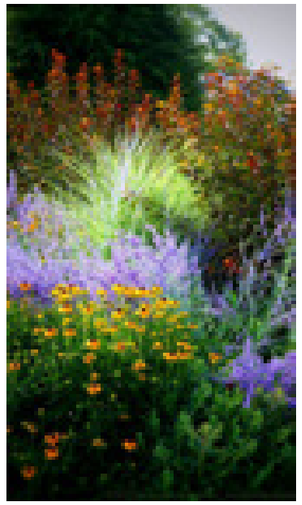
Incorporated Media Unit

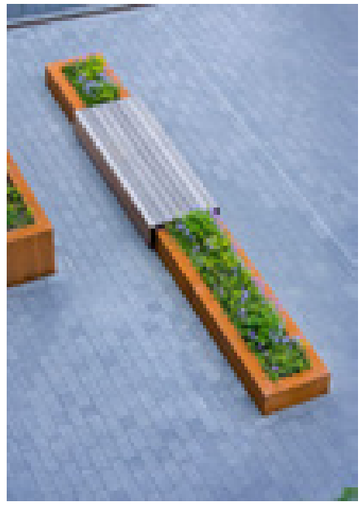
A complimentary furniture range complete with illumination could be developed that uses the same visual language as the columns, wayfinding and media units, thus completing a consistent streetscape, and further reinforcing Perth's public realm identity.

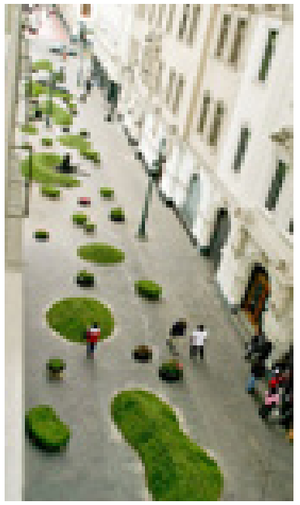


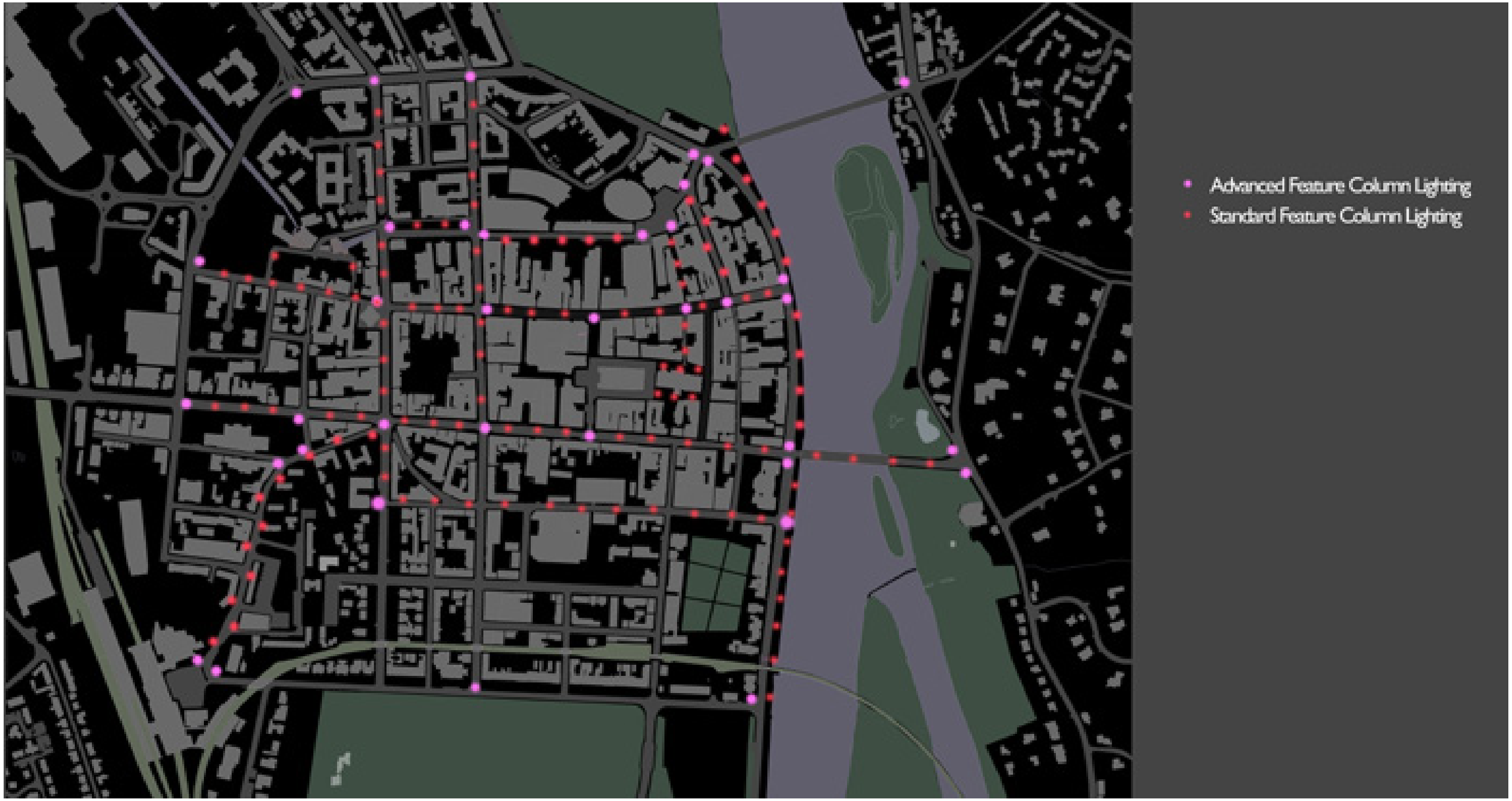


Incorporating planting into the designs would soften the streetscape of Perth and bring attractiveness to the public realm. Furthermore, it has numerous additional benefits such as improving air quality, capturing carbon and can help to alleviate flooding, thus improving Perth's reputation as a leading sustainable small city.









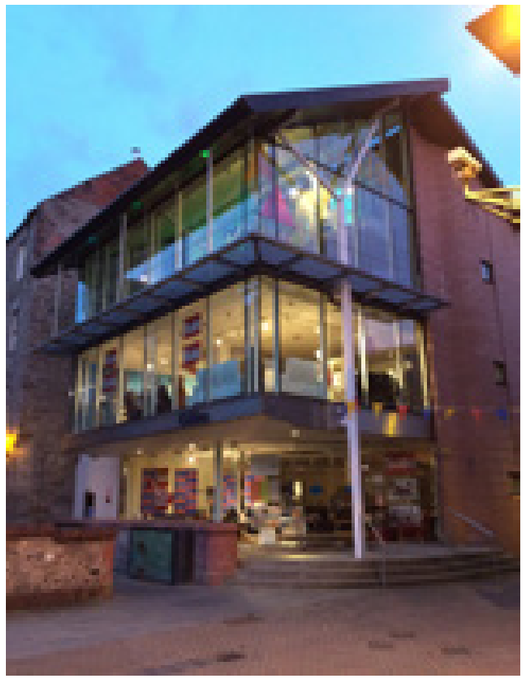
Over time, in line with priorities, the deployment of feature lighting columns will build and deliver an animated, dynamic and legible public realm along key streets within the city centre.

Theatre & Mill Street

Tay Street

Museum & Mill Street

4. Lighting for retail



Lighting for retail

Perth is renowned for its thriving and diverse array of retailers within the city centre. Almost every conceivable need is catered for and there is a good balance between major chain stores and independents. Unfortunately after dark this picture alters radically and has a negative effect on perceptions of the city centre as a whole.

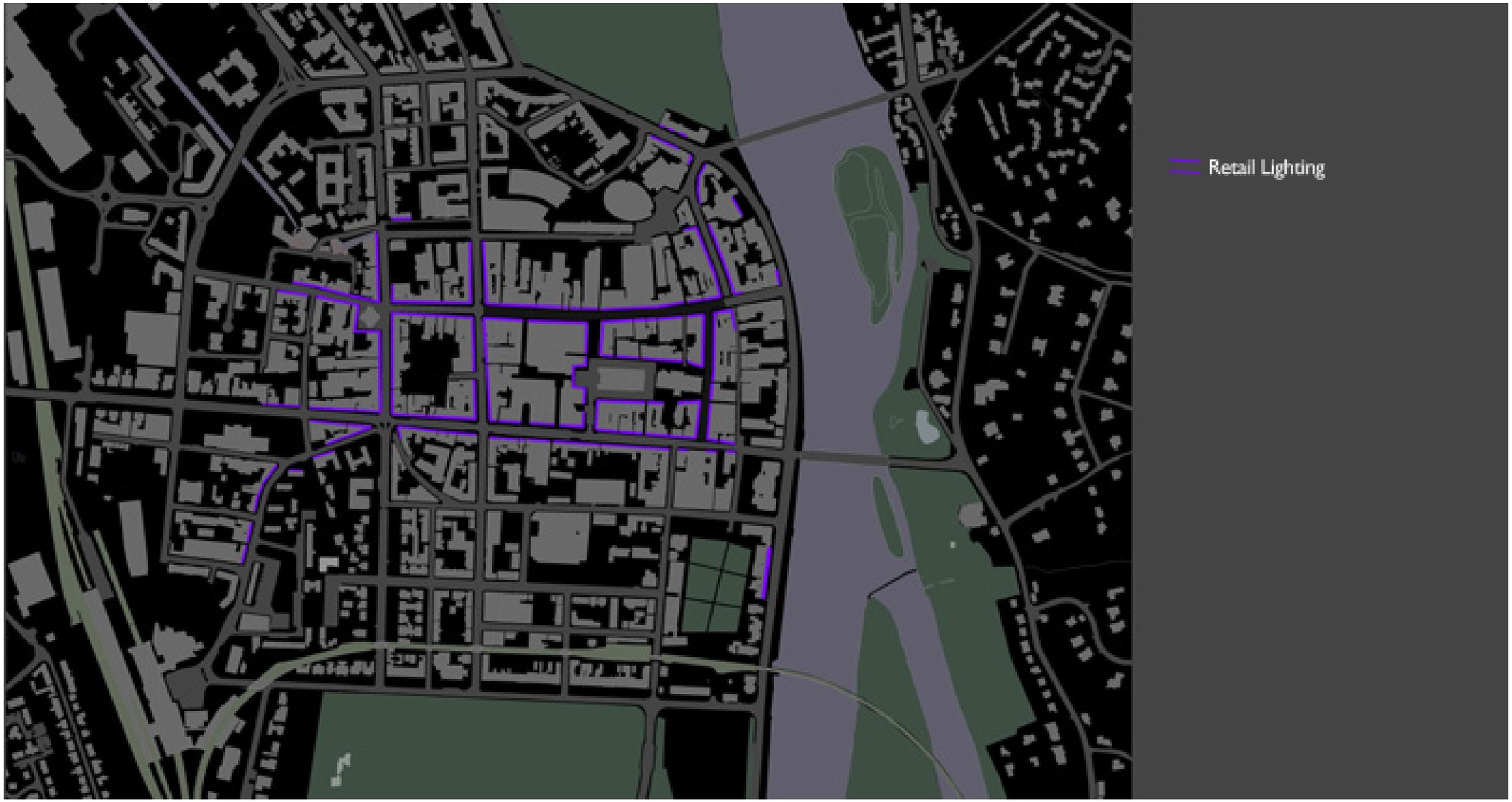
Almost without exception shop lighting is switched off, both in windows and internally. There is little in the way of illuminated signage and in broad terms there are issues with the quality of shop fronts, signage, window displays and interior lighting generally. As Perth is a great venue for shopping and this is one of the city's key assets, a shop front and signage action plan should be put in place quickly to reverse the negative impact of this and set a positive and vibrant foundation upon which to roll out other initiatives and projects. The major bonus of doing this would be that at pedestrian and vehicular level along key routes you would have a cohesive lighting intervention which the strategy calls for.

Each retail outlet along all key routes within the action plan would require a bespoke solution, as they are all different. All window displays should be lit with LED spots, in varying shades of white to create contrast, relying upon the colours within the merchandise to make the window display stand out. As mentioned previously all LED's should be Cri90 and above to maximise colour rendering. Spots should be controlled automatically to provide a day and evening setting to minimise energy use and astronomical time clocks should be used to control agreed switching periods.

It is suggested grant assistance (or other funding mechanisms) should be offered to retailers in return for an agreement from them to run and maintain the system for at least a set period conducive with the technology deployed. In the case of LED lighting, it is suggested a period of ten years from completion of installation is the minimum length required. Access to a lighting consultant, a window dressing expert and an electrician of their choosing will be essential to help maximise the potential for both the Council and the retailer.

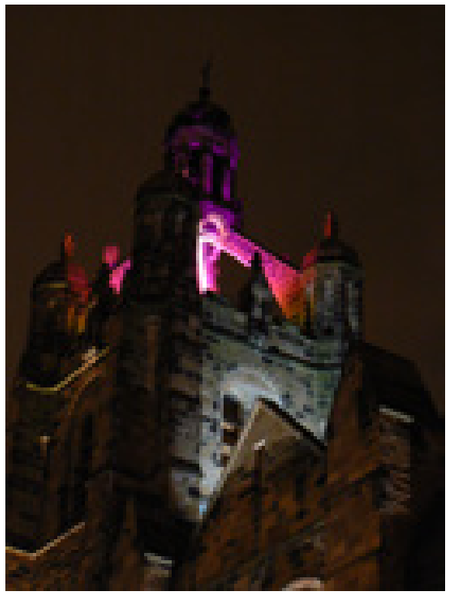
It is envisaged that any revenue and maintenance cost associated with implementing this would be offset against increased trade generated from higher footfall and extended opening hours. It may be appropriate to carry out a number of pilot projects to ascertain the actual uplift in trade in order to sell this idea to other retailers.

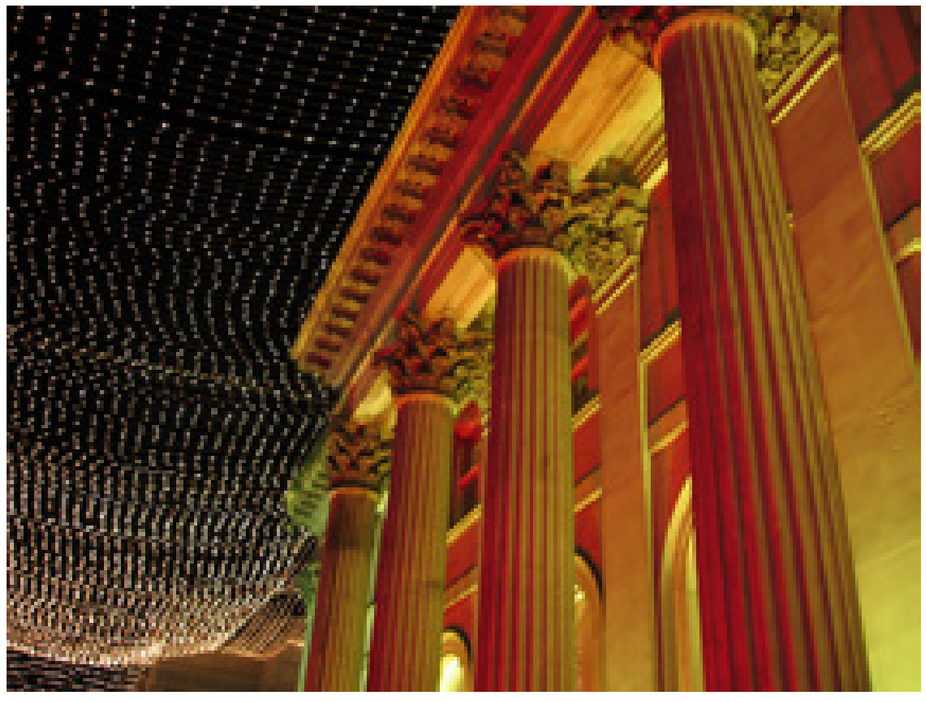
Over and above this recommendation, it is suggested a similar exercise take place to look at improving shop frontages and illuminated signage where necessary, to alter perceptions of the quality of offer associated with shopping in Perth.


Retail Lighting

5. Architectural lighting






Architectural lighting

As part of this plan, a number of key buildings and structures have been identified which require illumination for legibility or orientation in support of the overall action plan. They are in large part set along key routes and will benefit from some coloured of diffuse wash light from feature light columns adjacent.,In addition, they will be lit with luminaires mounted discreetly to the fabric of the building and where possible, within the interior, to pick out and reinforce the architectural form and perhaps roofscape where appropriate. It is envisaged that all luminaires would be LED, warm white or cool white according to the building fabric and that luminaires should be colour matched to the building fabric where required to minimise any view of these by day. The use of colour and colour change lighting should be used sparingly within the context of architectural lighting, except when there is a good business case for this, as demanded by the PKC Sustainable Lighting Strategy.

This rationale would apply to both public and private buildings and through careful selection of equipment it should be possible to incorporate remote monitoring technology to monitor energy use and any maintenance required. The key buildings and structures are broken down into two categories, as follows:

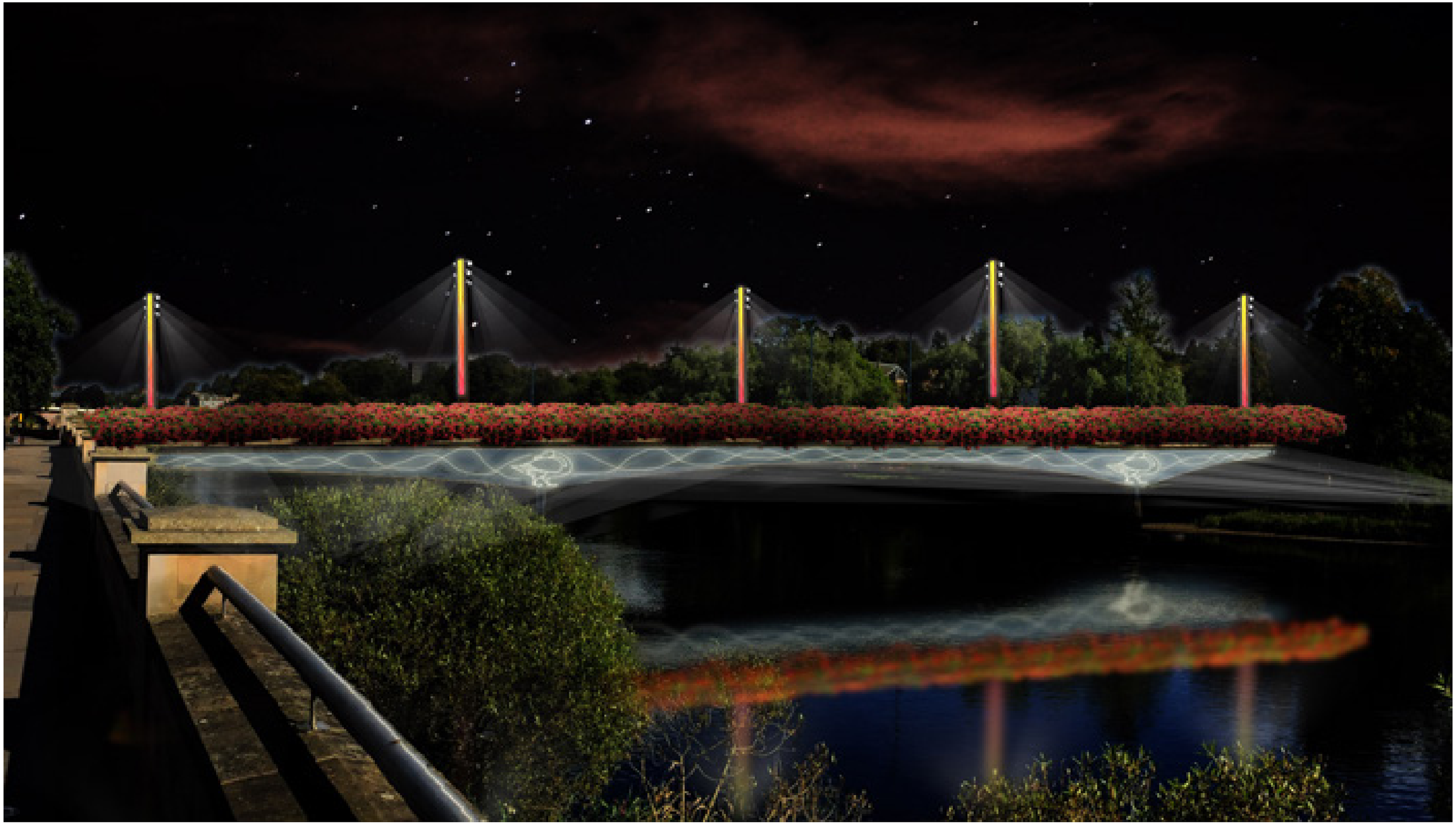
A: Buildings and structures located at key entry points to the city centre

B: Strategically Important buildings and structures

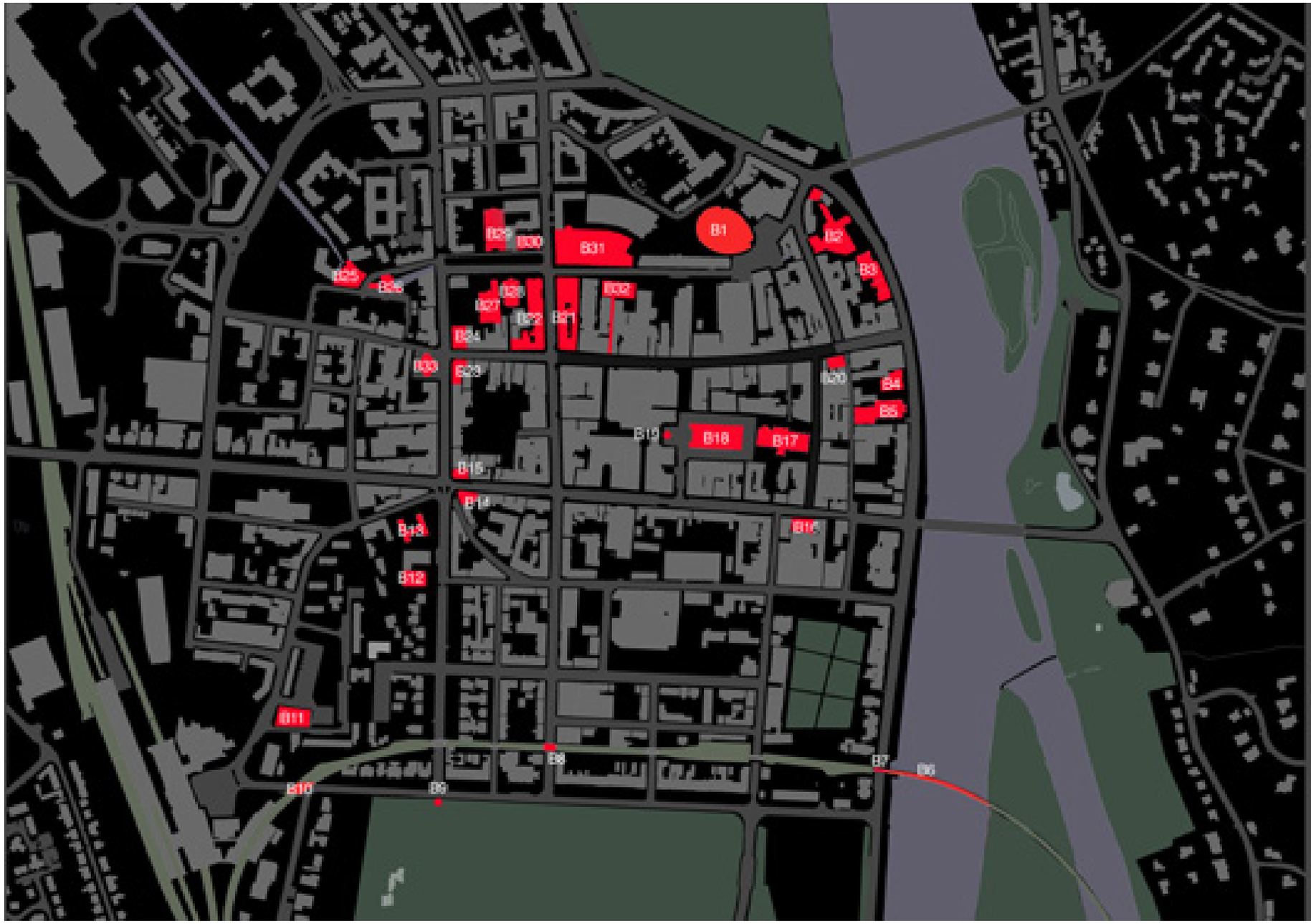
Buildings and structures located at key entry points to the city centre

A1. Perth Museum and Art Gallery, Bridge Lane
A2. Registrars, Tay Street/High Street
A3. Council Building, Tay Street/High Street
A4. Fiscal House, 1 South Street
A5. Sheriff Courthouse, Tay Street
A6. The Fergusson gallery, Marshall Place
A7. St Leonard's in the fields, Marshall Place
A8. Station Hotel, Leonard Street
A9. AK Bell Library, York Place
A10. Perth Cathedral, North Methven Street
A11. Perth Bridge, West Bridge Street
A12. Queens Bridge, South Street

Perth Cathedral



Queen’s Bridge



Strategically Important buildings and structures

B1. Perth Concert Hall, Mill Street
B2. Blackadders, 2 Tay Street
B3. Royal George Hotel, Tay Street
B4. The Capital Asset, Tay Street
B5. St Matthew's Church, Tay Street
B6. Pedestrian walkway over rail bridge, Tay Street
B7. Rail Bridge, Tay Street
B8. Rail Bridge, Scott Street
B9. Scott Monument, South Inch
B10. Rail Bridge, King's Place
B11. Queens Hotel, Leonard Street
B12. Burns and Co, 6 King Street
B13. King James VI Hospital, Hospital Street
B14. Bank of Scotland, 222 South Street
B15. Dickens Bar, 189 South Street
B16. Salutation Hotel, South Street
B17. St John's Kirk, St John's Place
B18. City Hall, King Edward Street
B19. King Edward VII Monument, King Edward Street
B20. Cafe Breizh, 28 High Street
B21. Specsavers, 195 High Street
- The Bothy, 33 Kinnoull Street
B22. Barclays, 197 High Street
- The Sandeman, 16 Kinnoull Street
B23. ML Clothing, 226-232 High Street
B24. Pizza Express, 16 South Methven Street
B25. Mercure Hotel, West Mill Street
B26. Lower City Mills, West Mill Street
B27. Harry's, South Methven Street
B28. Perth North Church, Mill Street
B29. Perth Playhouse, 6 Murray Street
B30. Perth Congregational Church, Kinnoull Street
B31. Pullar House, 35 Kinnoul Street
B32. Perth Theatre
B.33. St Paul's Church

2 High Street

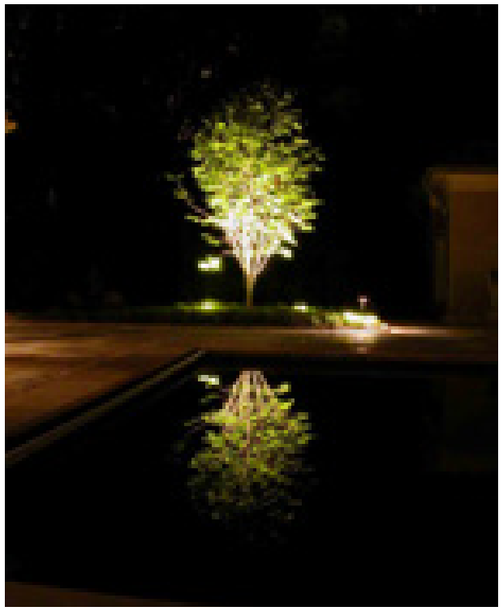
The Fergusson Gallery

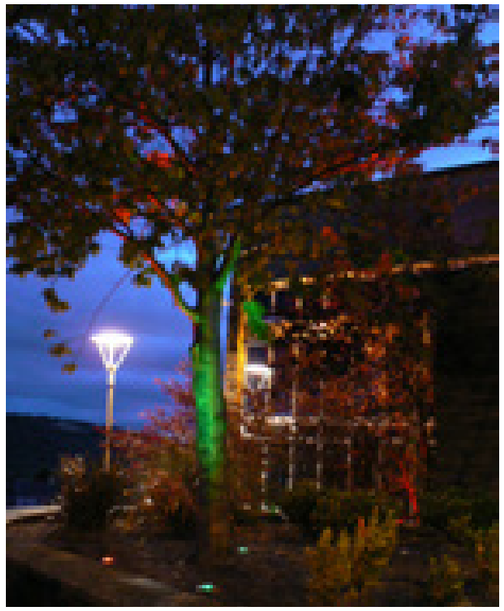
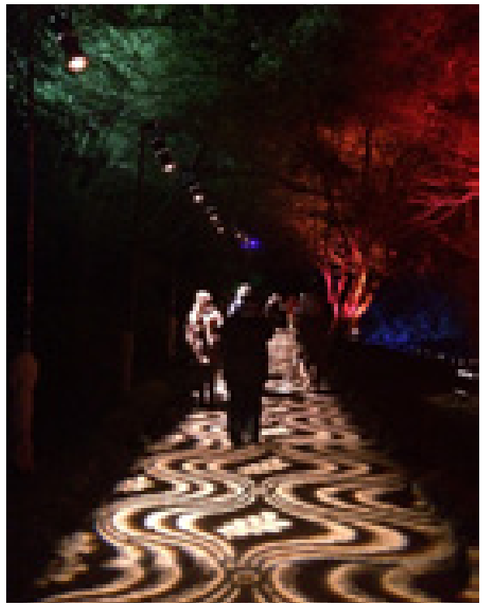
Burns & Co

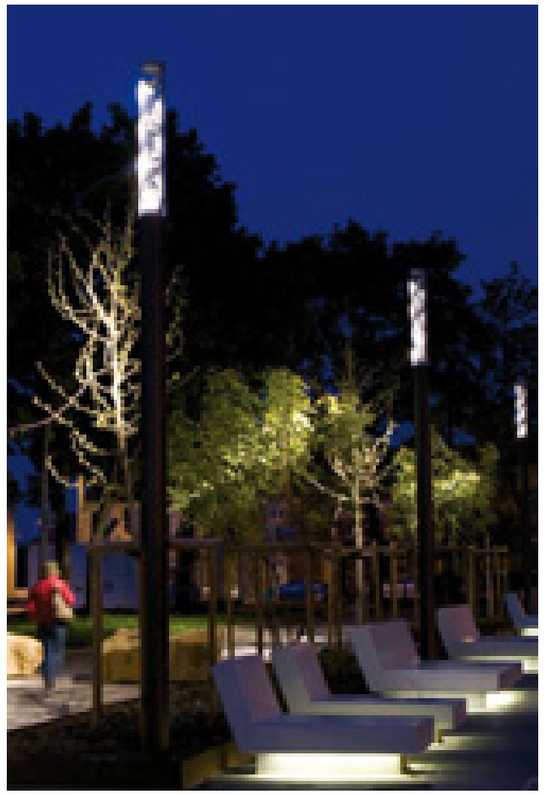
Sheriff Courthouse

Lower City Mills

6. Lighting for Greenspace



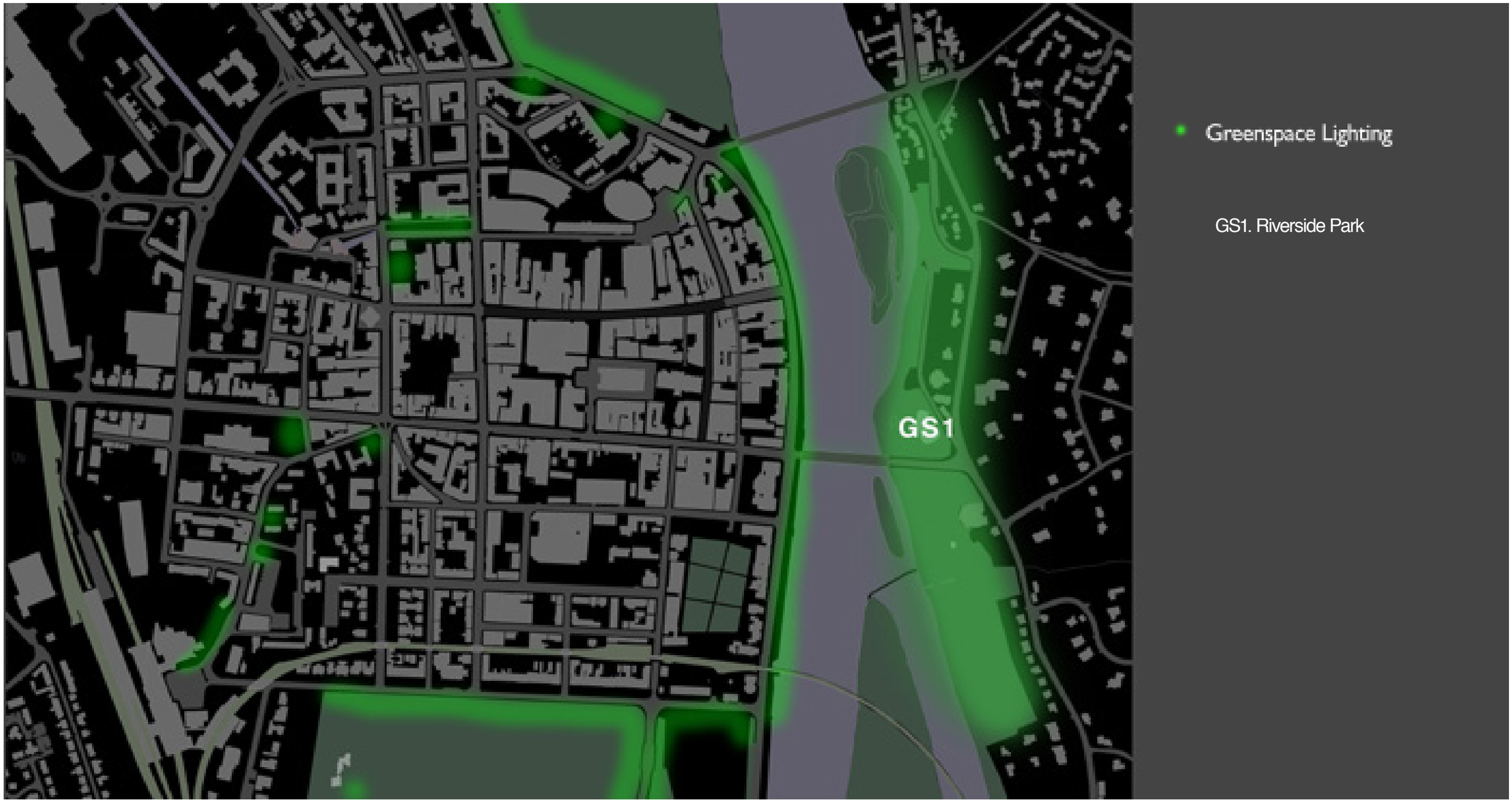
Lighting for Greenspace

Green space is a fundamental part of Perth. The city has an enviable location with green space touching the very heart of the city centre on three sides. These spaces are well used during the day, but by night they are unlit and largely empty. There are fantastic opportunities to include lighting within these green spaces in order to extend their period of use, increase amenity, make them safer and more attractive.

Development work at Riverside Park (GS1) will see this key city space revitalised, with new planting, seating, as well as the upgrading of the existing fabric. Lighting should form part of this makeover for the paths, spaces and pedestrian tunnels. In addition, the park presents a unique opportunity for the development of a temporary lighting festival akin to the hugely successful Enchanted Forest at Pitlochry and the Electric Glen festival in Glasgow's South side. These lighting events typically provide a significant boost to the local economy and this would create a sustainable model for future events that perhaps grow in complexity year on year.

Although not part of this action plan, the North and South Inches also offer huge opportunities for potential lighting schemes. Much could be made of retaining some of the key tree lined avenues as part of the evening scene with lighting both up onto trees from underneath and from within the tree canopy itself. This coupled with improved colour rendering street lighting would do much to help retain these key assets after dark. Similarly, illuminating key routes through the parks may be desirable in encouraging footfall to and from the city centre. All light sources should be concealed with no upward light spill and colour rendering should be excellent to afford pedestrians the greatest sense of safety whilst traversing these open spaces after dark. In a further effort to reduce energy consumption, the adoption of intelligent street lighting luminaires that automatically dim up and down according to presence, could be utilised along with solar powered units which offers the same flexibility without the expense or detrimental impact of laying cabling through an established park.

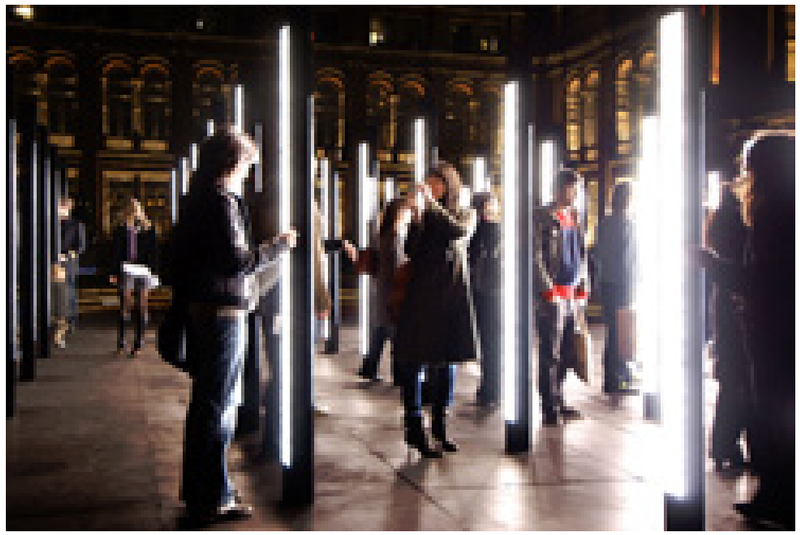
Riverside Park by day and by night (currently)

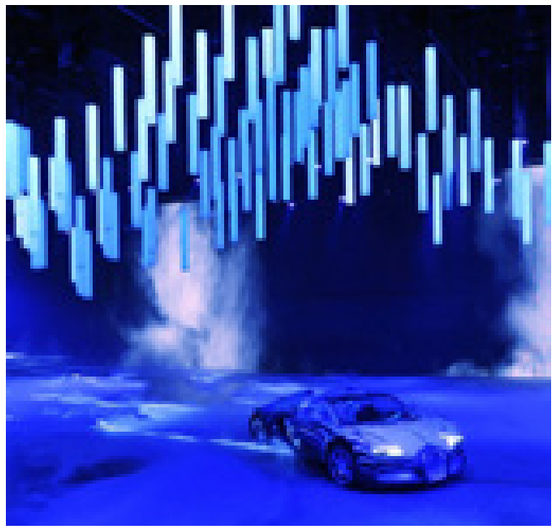


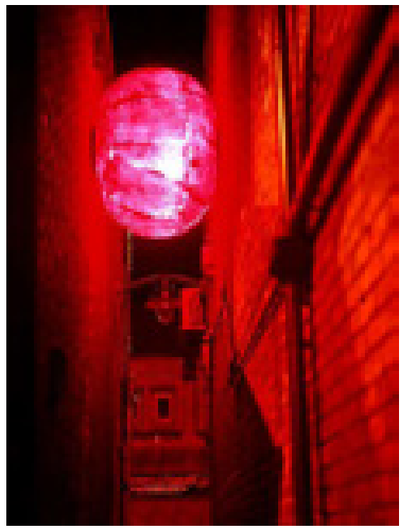
- Greenspace Lighting

GS1. Riverside Park

7. Light Art







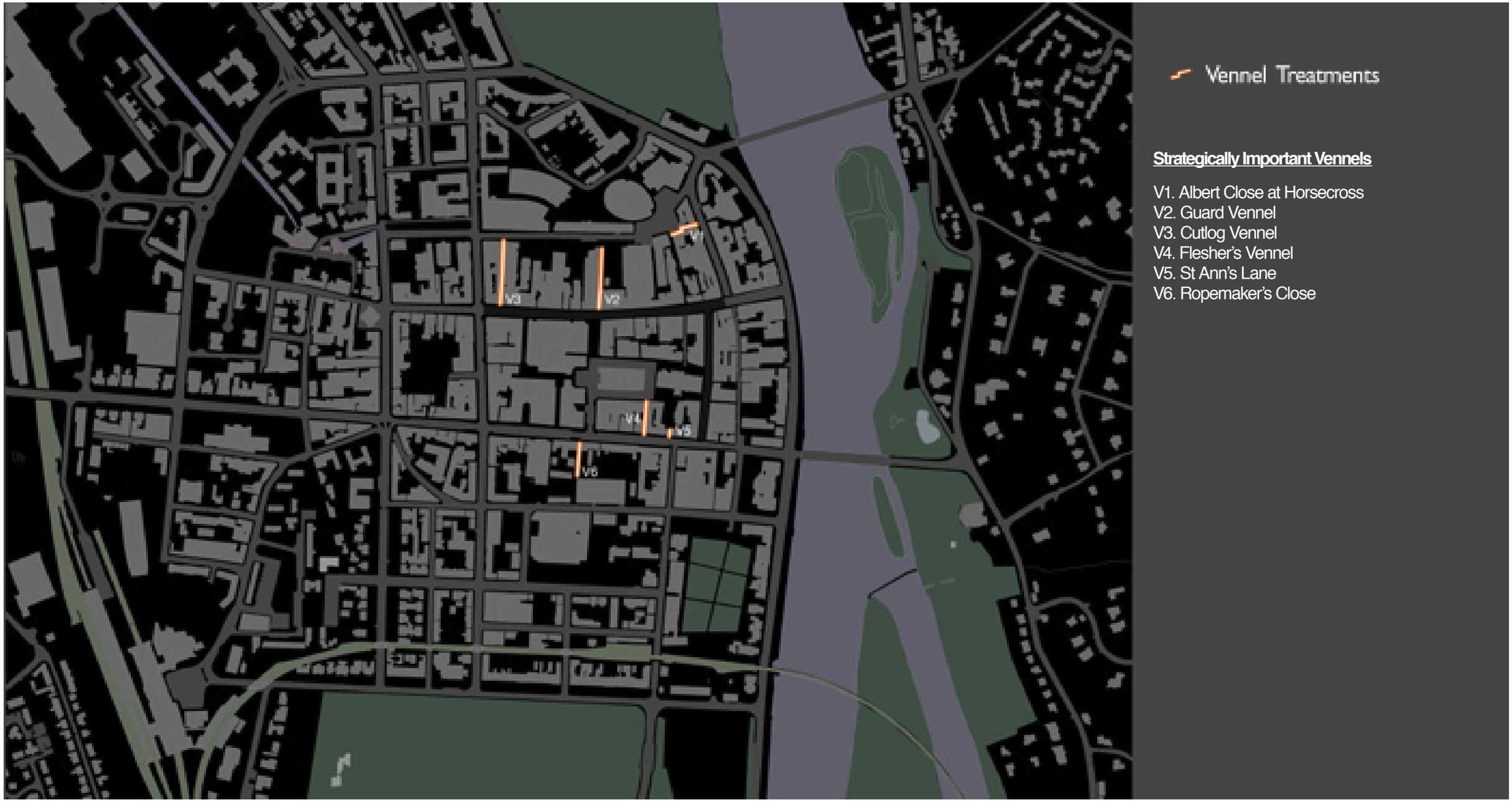
Light Art

The Vennels within the city centre provide an opportunity to surprise and delight. The biggest impact can often be delivered when thought and attention is given to a secondary route or location and the scope for artistic intervention within these spaces is exceptional, as outlined in the preceding images.

Close examination of Albert Close - a small link passage between George Street and the foot of Skinnergate - has been identified as a pilot project to exhibit what improvements can be achieved. Light projection from on high onto the ground will create a carpet of light to walk along and the projection of images onto the ground, .

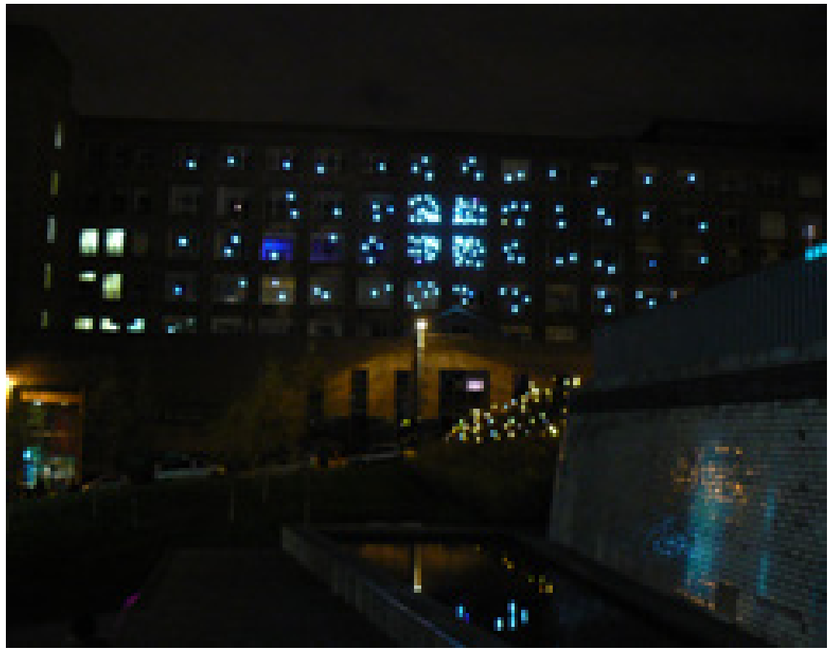
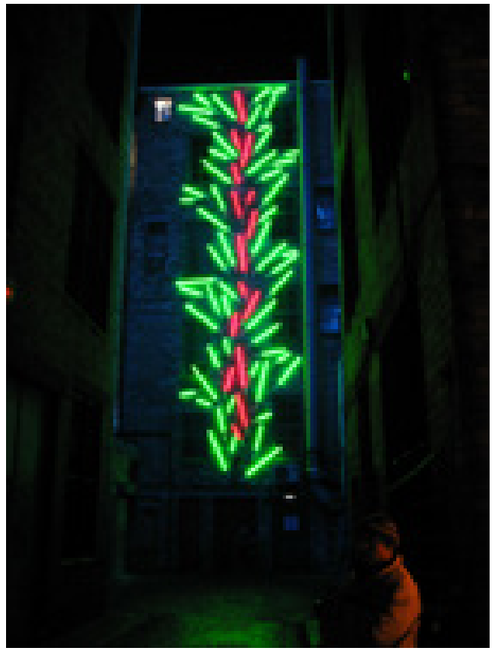
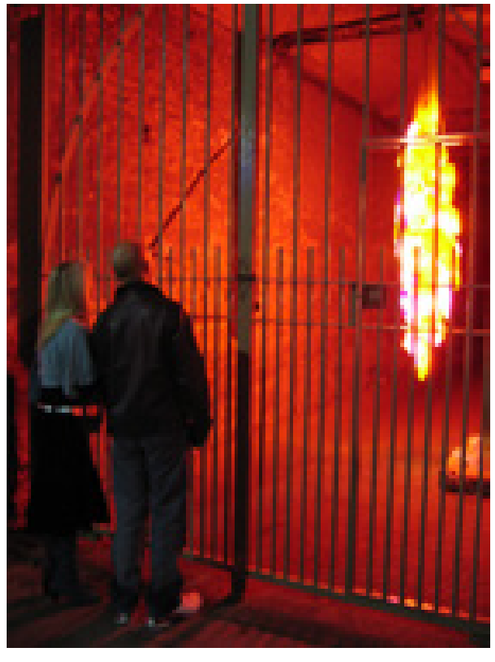
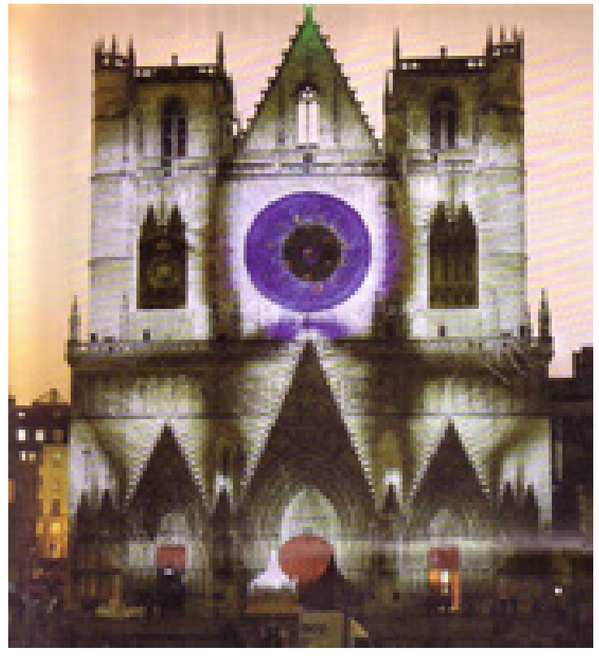
The close itself would be bathed in a warm, colour changing glow from several wall bracket lights in the style of the feature lighting columns proposed, encouraging people to venture along this historic route. Part of the old city wall is also visible and this will be lit with projectors too, the imagery used here possibly abstract in appearance due to foreshortening and only legible as you walk by at close quarters.

The King's Lade lies adjacent and there is scope to illuminate this as well as the two trees that stand adjacent. The buildings that flank the close will receive a soft wash of colourful light, matching that of the close itself to draw people towards the location and encourage them to explore.


Vennel Treatments
Strategically Important Vennels
V1. Albert Close at Horsecross
V2. Guard Vennel
V3. Cutlog Vennel
V4. Flesher's Vennel
V5. St Ann's Lane
V6. Ropemaker's Close
V1
V2
V3
V4
V5
V6

Albert Close

8. Events


Events

The use of feature lighting within the public realm for celebrations and events, is a growing trend, especially during the winter months when it gets dark sooner, allowing families to venture out together.

There are many lumiere festivals in the UK and Europe including Lyons, Berlin, Helsinki and closer to home in Durham, Glasgow and York. These events are usually held over two or three nights and the additional footfall and uplift to the economy can be significant.

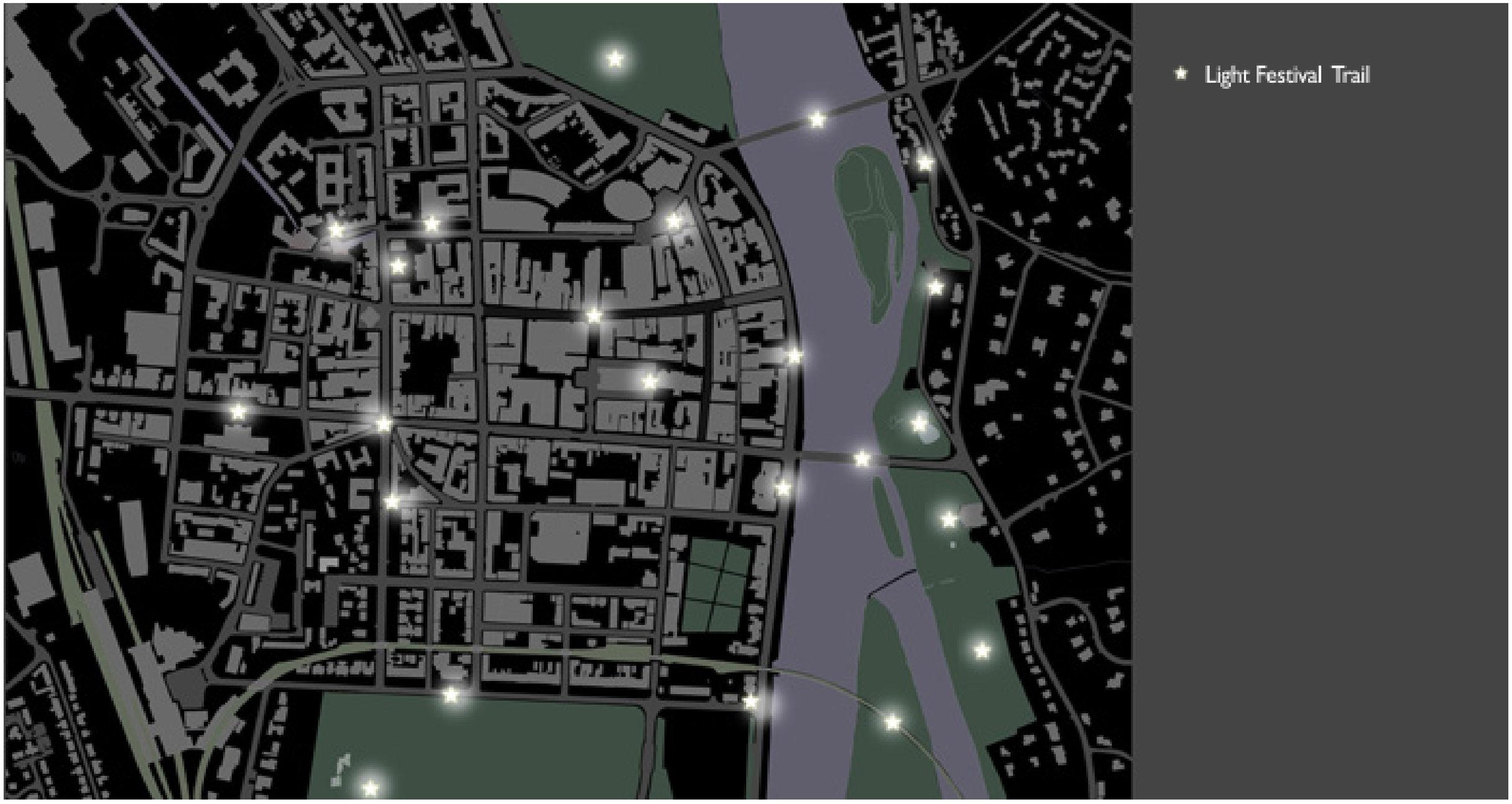
There is an excellent opportunity to create a lighting trail/festival that encompasses every possible setting. From greenspace to City Street, to the narrow vennels and riverside setting to bridges and monuments; all provide an excellent way to showcase the very best of the city and encourage people to return.

The feature light columns and brackets proposed within this document will afford the opportunity to theme streets and add colour and projection as required, through the mounting of temporary light sources which simply plug into the correct infrastructure.

The delivery of large scale lighting events such as digital mapping, which requires sound etc. will require power at key locations and this will be facilitated through the current provision of power pillars or plug sockets, along with future feature lighting columns at key locations.

Key locations for the introduction of feature lighting columns are marked on the plan, and represent appropriate lighting installations which will best showcase Perth as part of a light festival. The list below sets out specific key priority locations for the early inclusion of feature lighting and power provision.

- **King Edward Street**
- **Mill Street**
- **Concert Hall**
- **St John's**
- **Tay Street**
- **High Street**


Light Festival Trail

9. Implementation

This Action Plan has set out a number of initiatives to help improve the vibrancy and performance of the evening economy. Evidence from retail capacity assessments and consumer & visitor surveys suggest that there remains untapped potential to increase retail and commercial leisure turnover within the city centre. This could partly be derived from enhanced footfall and expenditure in the evening, supported by lighting, events and longer opening hours of both businesses and cultural attractions.

Even though Perth & Kinross Council has developed the Action Plan, it is not realistic to expect the Council to deliver each initiative. The challenge to deliver this ambitious lighting masterplan is to secure support for its implementation across both the public and private sectors through promotion of economic and business benefits via engagement with all parties to bring additional ideas, skills, knowledge and resources to assist implementation.

Whilst the Action Plan outlines a number of proposals for each initiative, these are only at the concept stage. Perth & Kinross Council Officers will use the initial treatment proposals as the basis for dialogue with third parties and the development of lighting briefs. It will be the responsibility of the end user to ensure appropriate design and engineering input is sought and a suitable maintenance schedule is adopted before any lighting scheme is implemented. In terms of a framework for delivery, each lighting design will need to adhere to the lighting principles outlined in this document and the Perth Sustainable Lighting Strategy, along with the lighting standards outlined in the Street Lighting Policy.

Public Buildings and spaces
Capital programme investment in the Councils assets (buildings and public realm) will be supported by reinvestment of savings from energy and maintenance on the back of the LED replacement programme and concession models associated with smart infrastructure investment and national and European grant funding. Future potential income may be derived from linked investment in local renewable energy sources and carbon reduction/offset

Commercial sponsorship
There is the potential commercial sponsorship in relation to specific business associations with areas of the city and its environment such as the river (hydro power, whisky and manufacturing) which could be linked with promotion of business activity. Funding from Trust's with historic trading connections/other charitable Trust's in the area will also be sought.

Lighting for properties
National and European grant funding linked with a focus on promoting the historic environment and built heritage as part of broader investment in the city will also be sought to support implementation by businesses and property owners.

Breakdown of estimated costs for lighting initiatives

						Funding		
Initiatives	Perth & Kinross Council	Private Sector	Public Sector (Civil Services etc.)	Joint Venture	Total	Capital	Revenue (Inc. 15% maintenance)	Funding sources
Key Gateways	477,825.00	0.00	0.00	477,825.00	955,650.00	335,000.00	620,650.00	PKC, Private Sector, Commercial Sponsorship
Street Lighting								*
Feature & Orientation Lighting	5,513,100.00	0.00	0.00	0.00	5,513,100.00	3,124,000.00	2,389,100.00	PKC, Commercial Sponsorship, External Funding Partners (HES, PKHT etc.)
Lighting for Retail								**
Architectural Lighting	1,253,500.00	2,965,045.00	429,525.00	0.00	4,648,070.00	1,522,000.00	3,126,070.00	PKC, Private Sector, Commercial Sponsorship, External Funding Partners (HES, PKHT etc.)
Lighting for greenspace	221,375.00	0.00	0.00	221,375.00	442,750.00	200,000.00	242,750.00	PKC, Commercial Sponsorship
Light Art (vennel's)	255,300.00	0.00	0.00	255,300.00	510,600.00	210,000.00	300,600.00	PKC, External Funding Partners (HES, PKHT etc.)
Events Lighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	PKC, Private Sector, Commercial Sponsorship, External Funding Partners (HES, PKHT etc.) ***
Total	7,721,100.00	2,965,045.00	429,525.00	954,500.00	12,070,170.00	5,391,000.00	6,679,170.00	

* Street Lighting is covered by the Street Lighting Partnership, which covers Dundee City and Perth & Kinross Council
** Proposals for retail lighting have not been drawn up, but it is expected the costs will be covered by the private sector
*** Events lighting will be on a ad-hoc basis and consist of a mixture of PKC revenue funding and commercial/external funding

10. Maintenance

Maintenance

Regular maintenance of all aspects of lighting is imperative if this revised vision of Perth after dark is to be realised and deliver the maximum impact and benefit for all stakeholders and the general public. The detrimental messages delivered by poorly maintained or vandalised equipment left unattended is exponentially counterproductive to the purpose of the vision proposed and all parties must regard maintenance as important a part of the process as the initial implementation of projects.

To this end, it is essential that every scheme minimises maintenance and wherever possible tie in with initiatives such as remote monitoring and fault reporting to facilitate prudent maintenance. All detailed designs should be developed in collaboration with Property/Street Lighting Partnership to ensure proper integration. Certain techniques such as embedding fittings within the ground should be avoided and alternatives such as plinth up stands, bollard uplighters and lighting mounted remotely from the building should be considered first.

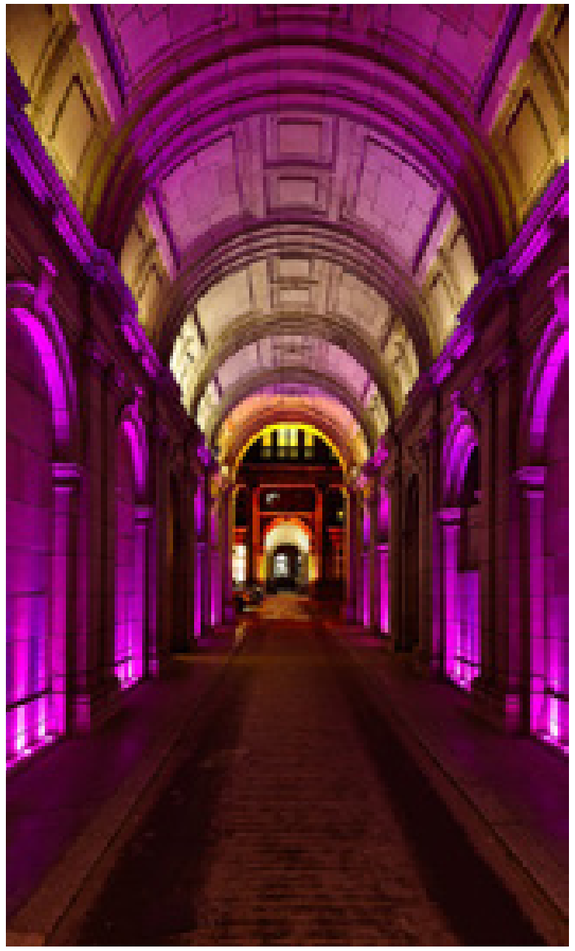
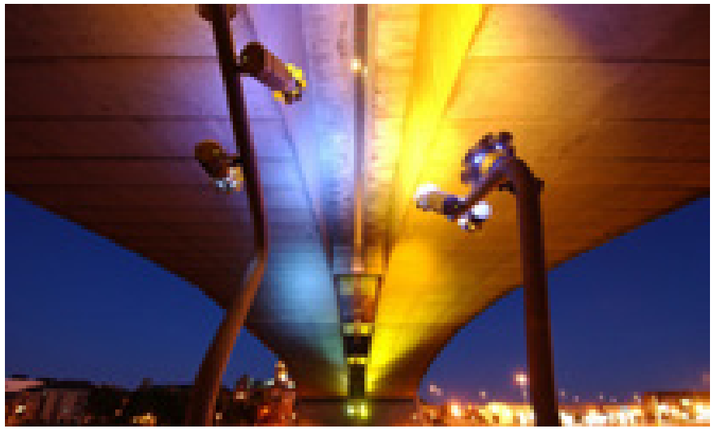
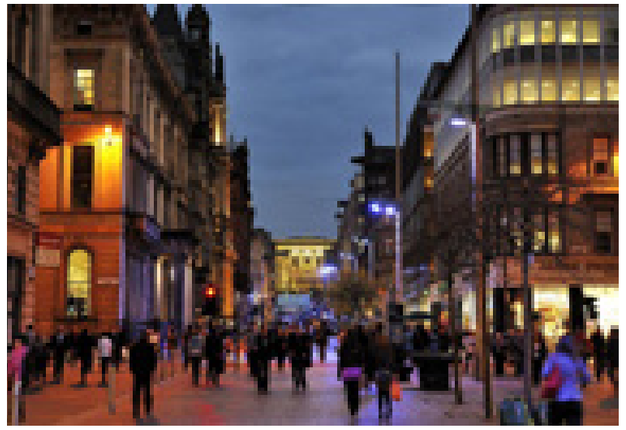
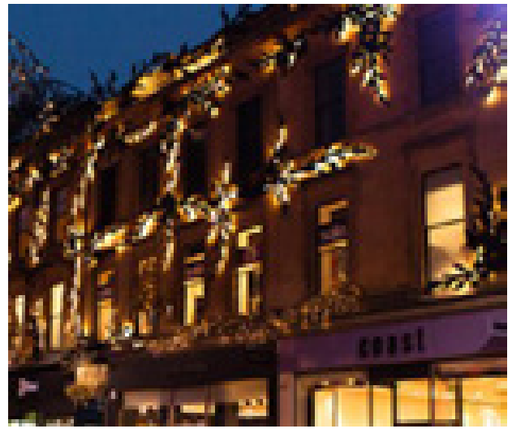
Every project should have a designed service life, established prior to the undertaking of the detailed design stage and all aspects of the design should be assessed against this backdrop to establish realistic costings on replacement of perishable items, regular maintenance requirements and energy use. Warranty on proposed equipment should be no less than five years and where possible with parts and labour cover for the first two years and parts only for the following three years.

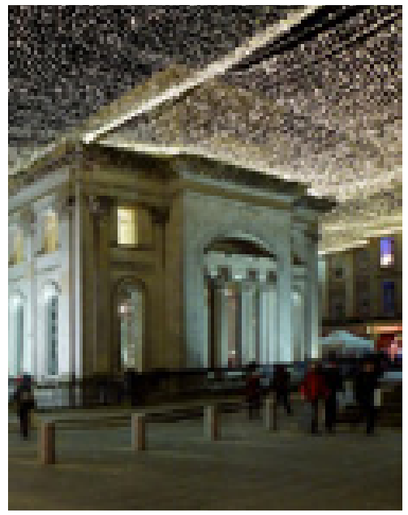
Maintenance for street lighting is already well established and a capital LED replacement programme has been completed for Perth City Centre. Intelligent street lighting systems which aim to minimise energy use and maintenance have been identified for certain areas in the city centre and the future installation of feature light columns will ensure they are compatible with the required technology. Comprehensive documentation is available from the Street Lighting Partnership regarding the criteria that must be achieved by luminaires and equipment to be acceptable for use within Perth and Kinross, should this be required as part of a lighting project.

Appendix 1. Exemplar Cities, Festivals and Projects

The development of lighting strategies as part of a regeneration palate is now common place and the socio economic benefits are well understood from the many Cities around the world that have adopted this approach. The LUCI Association (Lighting Urban Communities International exists for this very purpose “bringing together Cities and lighting professionals in using light as a major tool for sustainable urban, social and economic development”. LUCi boasts some 100 member including 70 cities all across the globe as well as a number of designers, architects, universities and independent lighting professionals.

Over the following pages are a selection of projects both temporary and permanent from around the world that offer good comparison with Perth and what could be achieved.

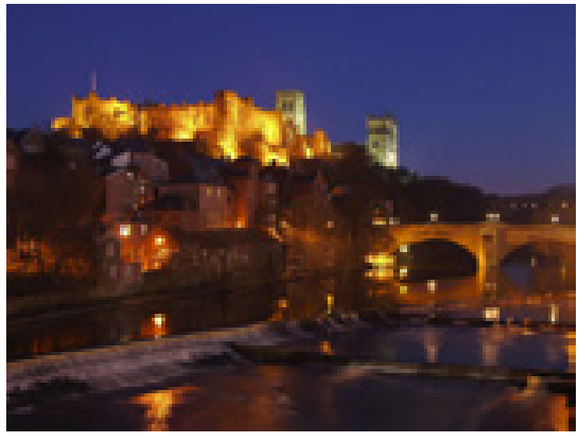
Glasgow, Scotland:

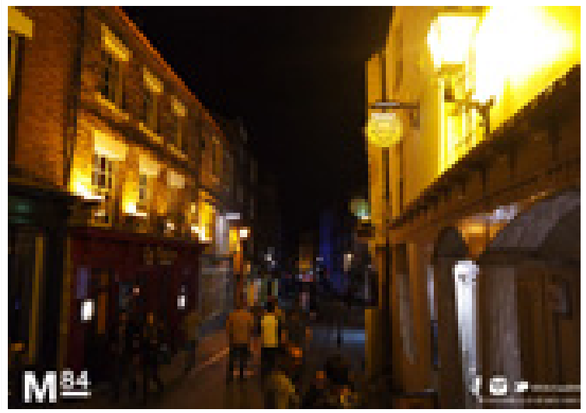
Glasgow sees innovative use of light as a key influence on how people perceive the city, and as a catalyst for regeneration to transform its image. Glasgow, City of Light, which was launched in 2002, had the aim of taking a strategic approach to lighting the City. A Lighting Strategy was subsequently approved, and a considerable number of projects have been completed in an ongoing programme. Over 100 projects were delivered in the first phase, a mix of public and private schemes that ranges from detailed architectural lighting to light art and the very popular Radiance festival that saw 150,000 descend upon the city for this spectacle.

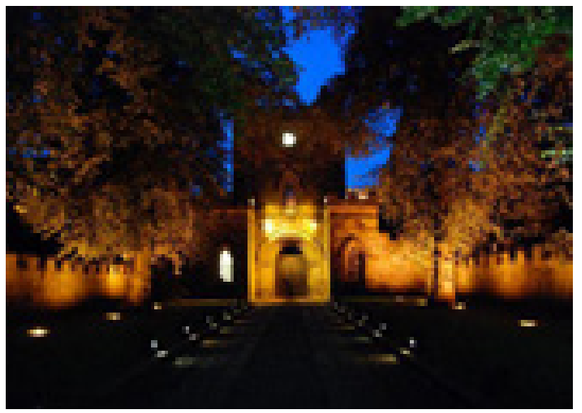
Ghent, Belgium:

Ghent is internationally known for its lighting master plan. Ghent began developing a comprehensive lighting strategy for its city centre in 1999. As from 2007, a new lighting master plan was created for the entire city, and in 2012 a light strategy for the Port of Ghent was developed in cooperation with several partners. The amount of light is balanced so as to obtain an austere, durable, focused and structural effect.

Large urban routes, residential streets, shopping streets, monuments, remarkable buildings, squares, water surfaces, parks and even vegetation are integrated into a single overall lighting approach. The illumination of architectural heritage and public urban spaces, as well as festive lighting, are always considered as an inextricable whole. Environmental objectives such as saving energy, sustainable production and recycling of lighting equipment and reduction of light pollution are important.



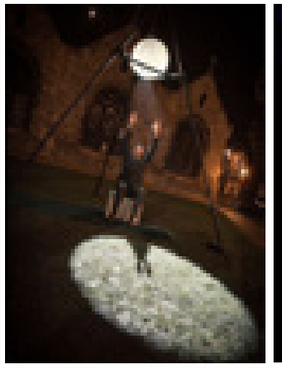
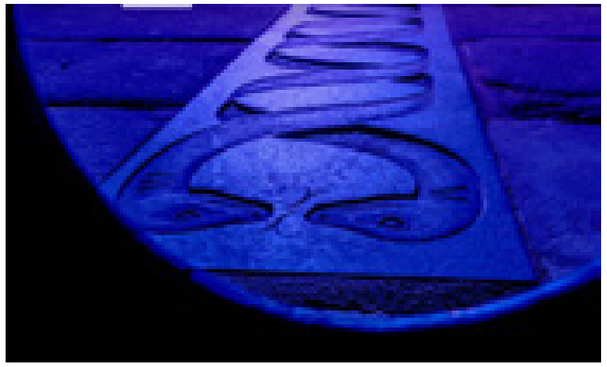
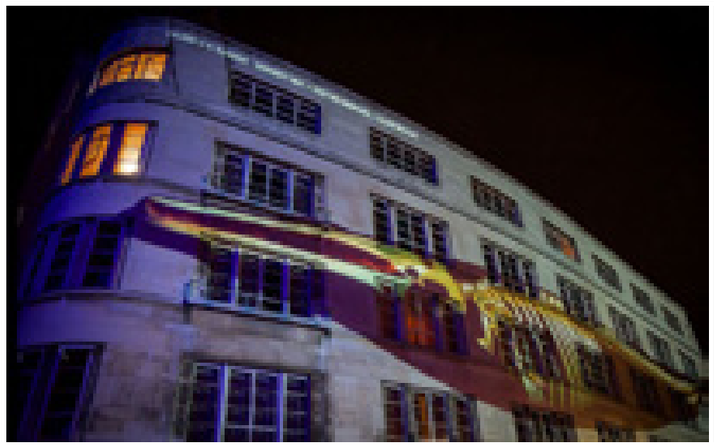




Durham, England:

Through its lighting strategy, Durham aims to maximise the use of low energy solutions to reduce carbon emissions and to generate financial savings. The city is also renowned for its “Lumiere” light festival which attracted 175 000 visitors over four days in 2013. The city also won the Auroralia award in 2013 for the lighting renovation of the castle and cathedral using low energy solutions.

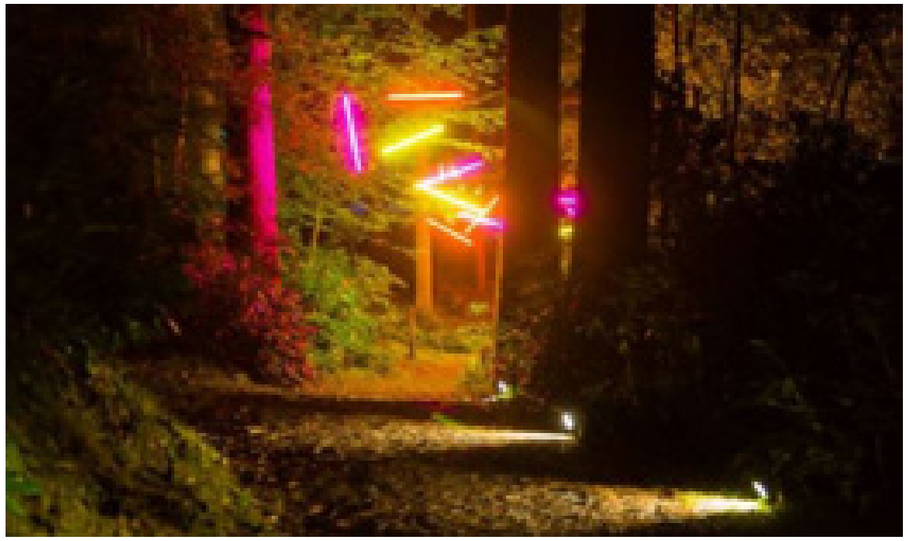



e-luminate, Cambridge, England:

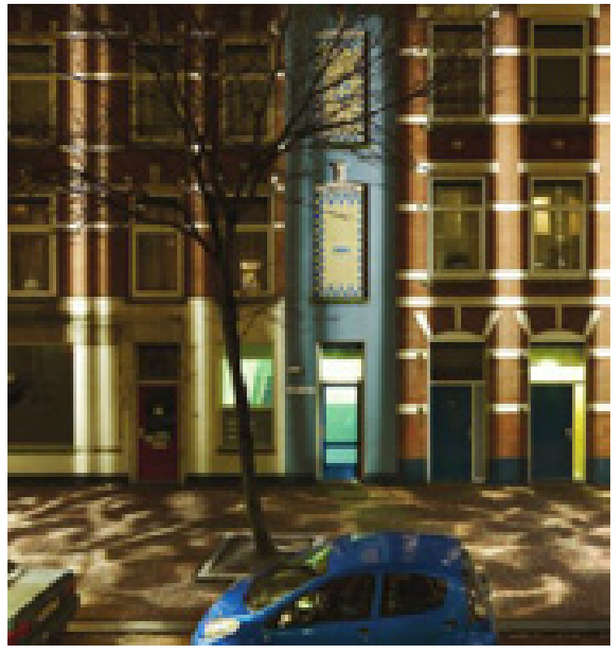
The e-Luminate Cambridge Festival is a modern arts festival for a city at the forefront of technology and research. It was in 2012 when Co-Founders Alessandra Caggiano and Hugh Parnell came up with the idea of a Light festival …with a twist!

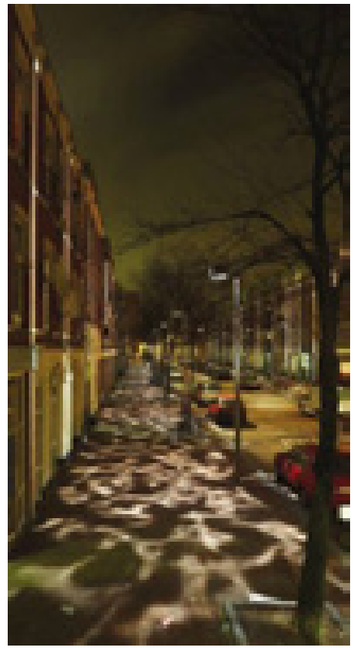
Their innovative concept relies on creating a dialogue between the two souls of the city: the technology/scientific spirit on one hand and the cultural/artistic vivacity on the other. This dialogue is centred on Light as the connecting link between the two disciplines and the pretext to newly involve the community in their own environment.

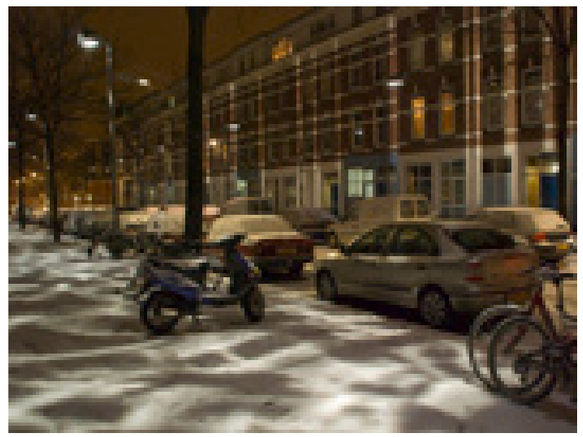


The Enchanted Forest, Pitlochry, Scotland:

Winning multiple awards year on year, this temporary sound and light spectacular experience takes place in September each year at Faskally Wood near Pitlochry. Last year it attracted some 62,000 visitors and continues to go from strength to strength.

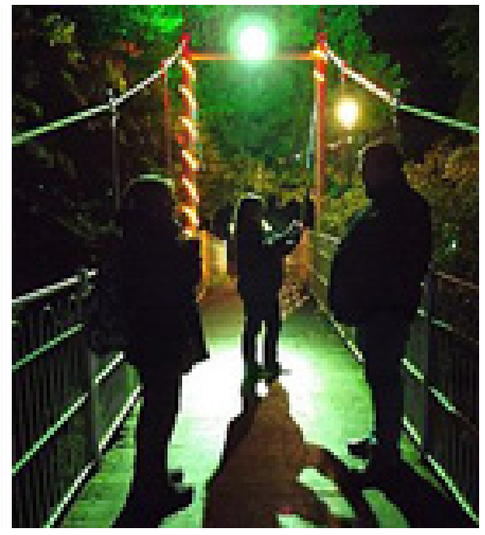


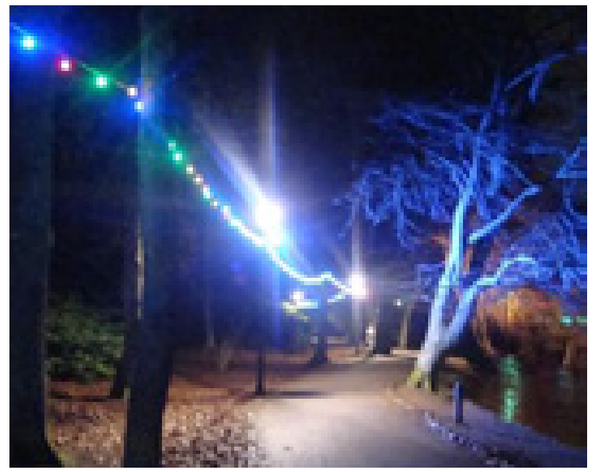




Broken Light, Rotterdam, Netherlands:

Transforming this once troublesome and neglected area at night, the Broken Light project covers the pavements in a wavy, underwater-like pattern of soft light, while adorning the façades of apartments in strips of light that look like pilasters. The overall effect is to create an atmosphere of peace and tranquillity and it exists as a ‘social sculpture’ for the street’s residents, who literally and figuratively have welcomed a little light into the neighbourhood.





River Ness Walkways Project, Inverness, Scotland:

With a particular focus on Ness Island, this lighting scheme has radically altered the use and perceptions of this once dark and dingy space, renowned for not being very safe at night. With a mixture of upgraded traditional column lighting, colourful flood lighting for the trees and charming festoon lighting on the bridges and pathways the park now feels welcoming and inspiring. The level of use has gone up exponentially and special events are held with excellent attendance rising year on year. The Halloween celebrations are drawing approximately 10,000 people per night for 2 nights and the Winter Festival about 7,500 people per night. The Highland Council are not charging for this, and feel it is important to be seen to be giving something back to the people of Inverness. As a result the evening economy is flourishing from the extra income that these events bring in.

Appendix 2. Audit of current lighting provision in Perth City Centre

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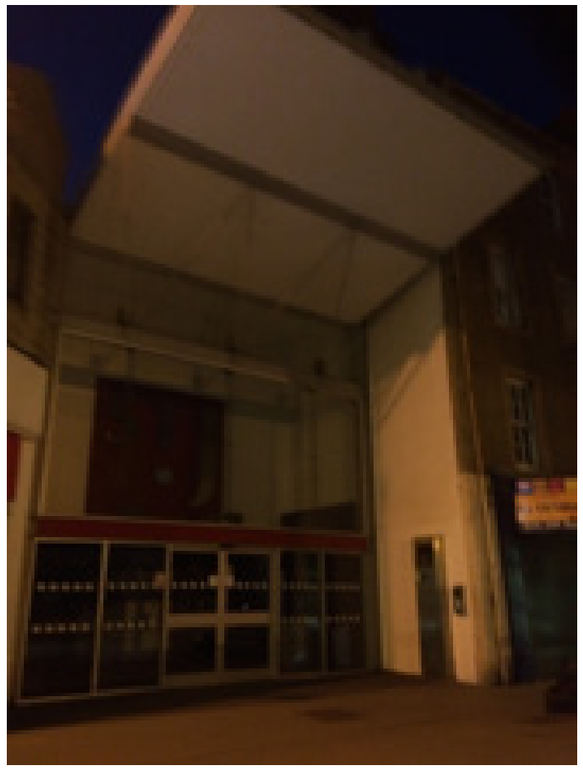

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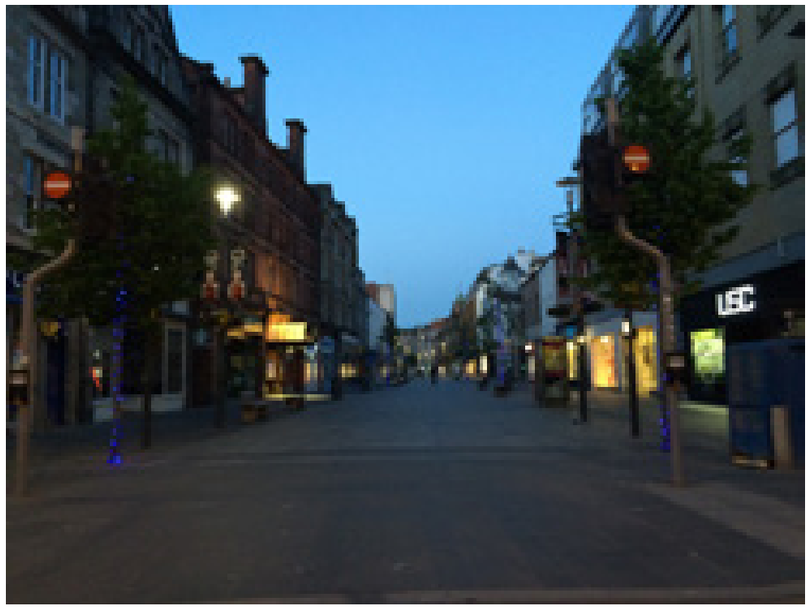

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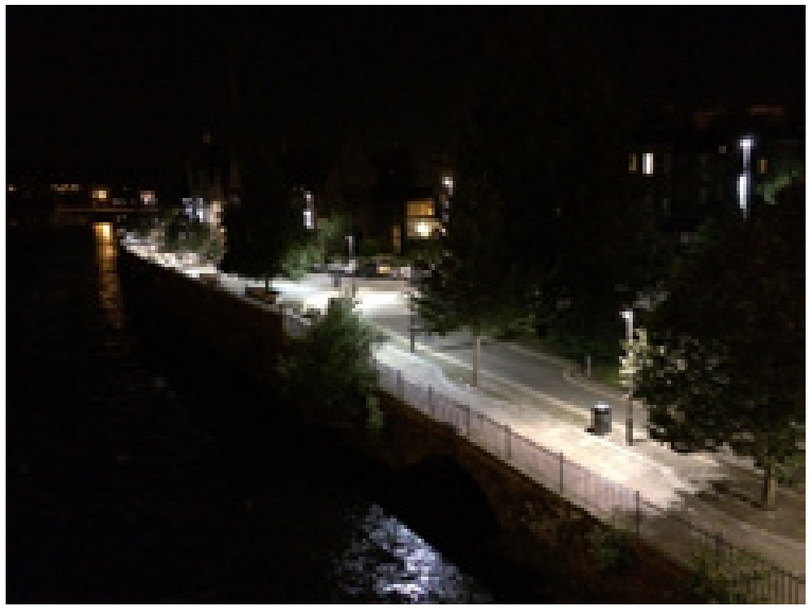

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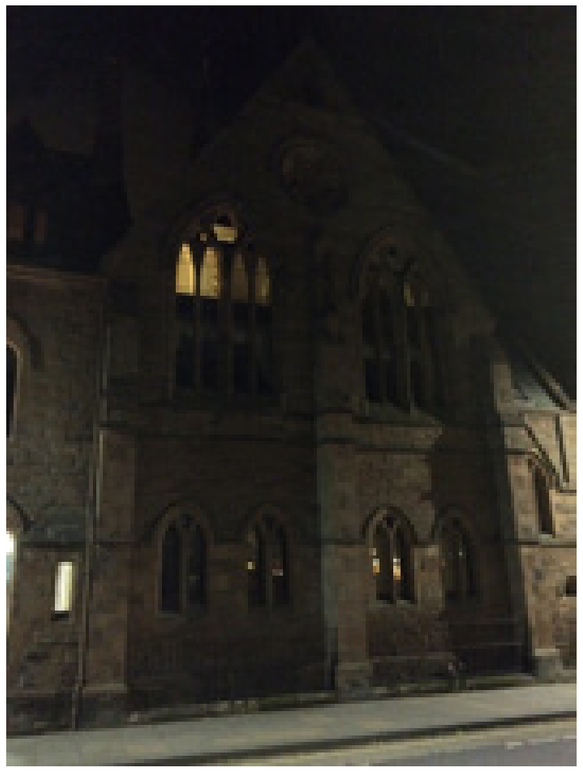

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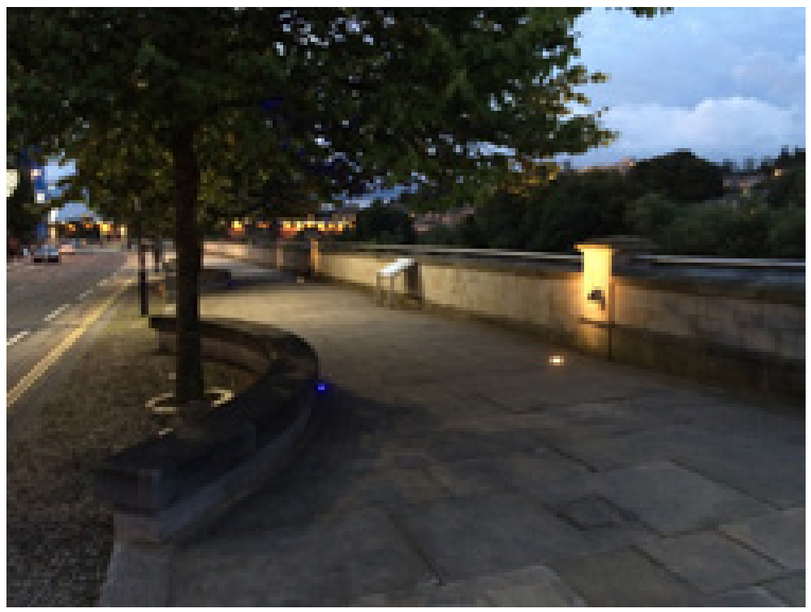

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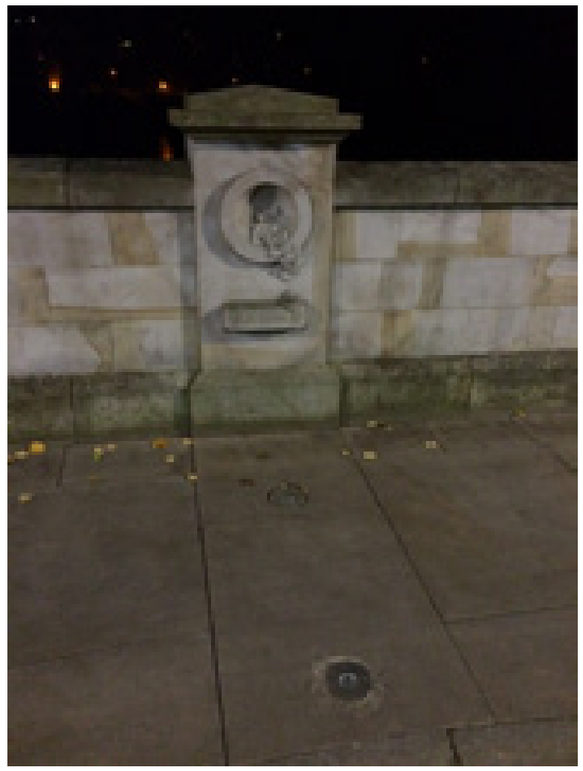

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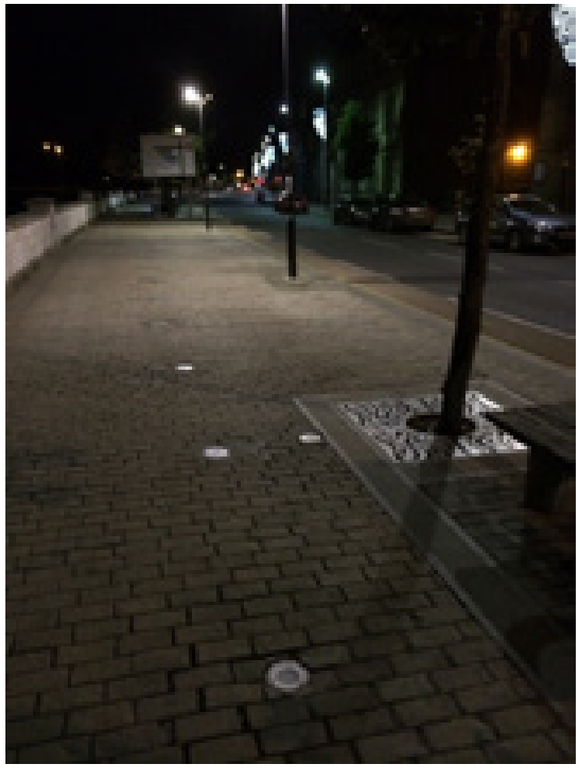

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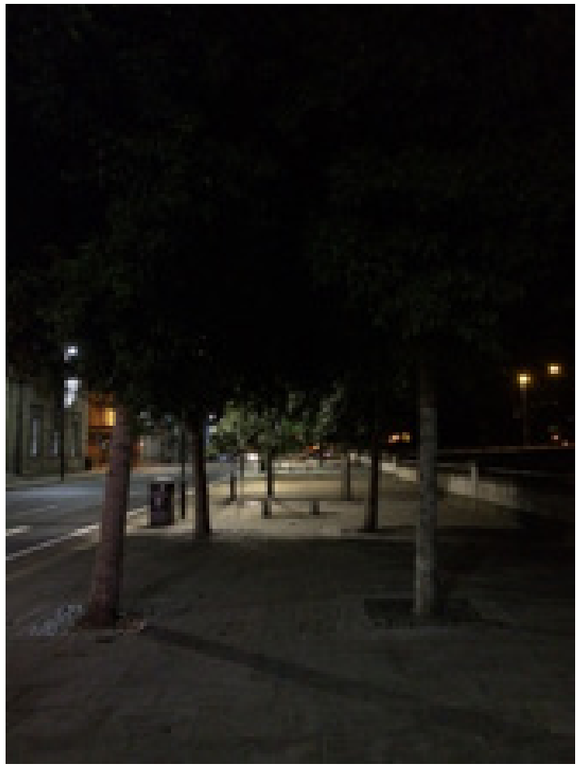

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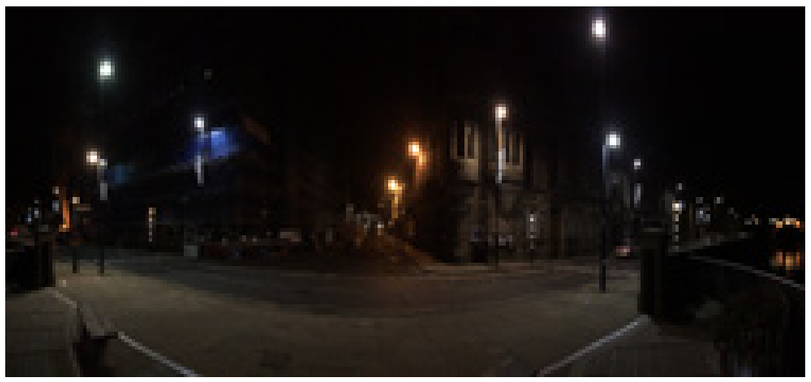

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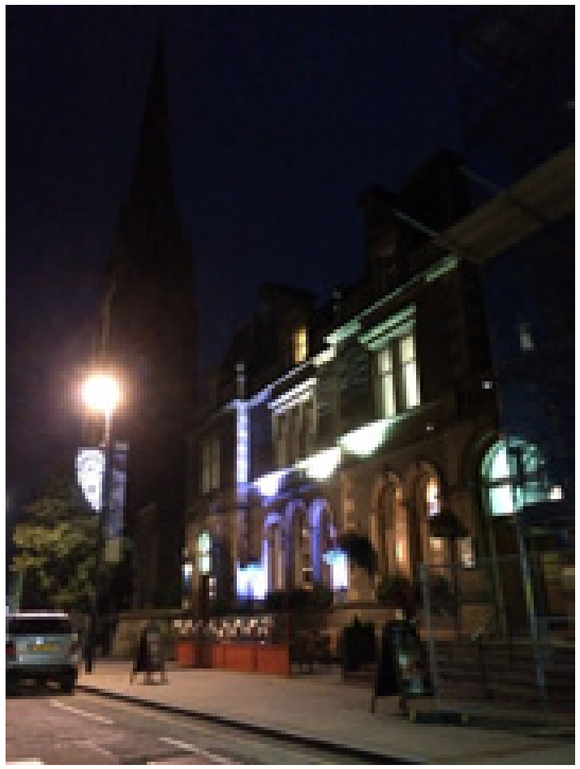

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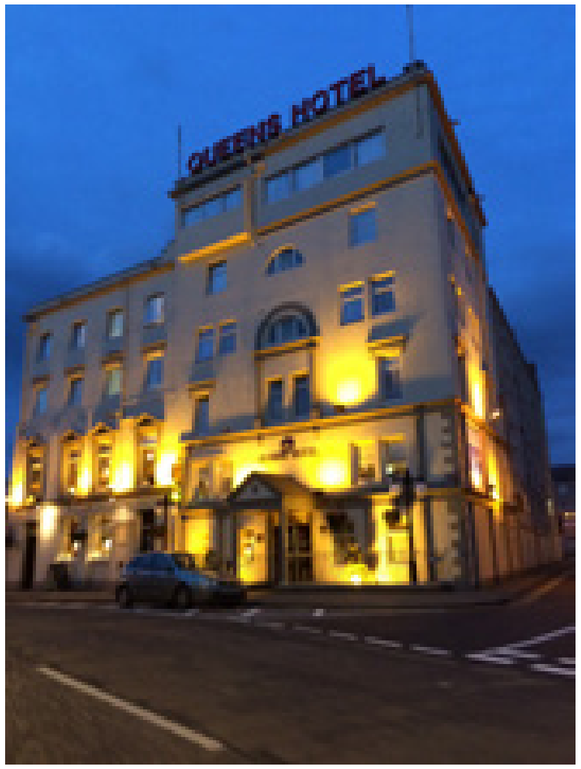

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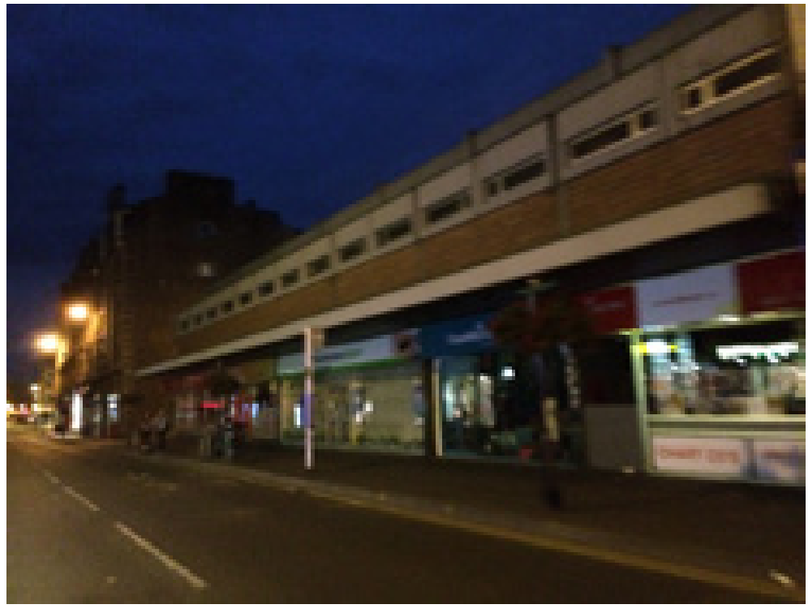

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Appendix 3. Lighting treatments for key gateways & markers

A9 Broxden Roundabout leading to A93 Glasgow Rd (Equipment cost - £80K Install - £70K – Fees £25K)

The Broxden Roundabout currently has an existing Grouse sculpture that acts as a roundabout decoration. Illuminated at night, it is certainly pretty, however, arguably it actually does little to illustrate the entrance to Perth. Furthermore, it is now becoming obscured by the trees that surround it. For a new visitor, it appears simply as a nice sculpture, but it does not act as a way mark for Perth per se and does not lead the visitor into the city road. At such a busy intersection with such large volumes of fast-moving traffic, and multiple road lanes, a much clearer way mark is needed that really highlights which exit to take for the centre. Upon this Perth exit/ entrance there is an attractive stone wall, but the message is simply not clear enough. In order to give visitors a taste of what they will experience if they choose to come to Perth, we would propose treating this gateway in a similar vein as the city centre feature lighting developments. Clusters of the feature light columns that have been developed would line the entrance road, beckoning people to come in. These would be a simplified version (approx £8k each) of the city centre columns and a rather beautiful (and practical) metaphor could be used here, whereby the coloured, diffused ‘flower heads’ could be ‘closed’ in this scenario and act as a series of decorative illuminated buds (as flood lighting is not particularly needed in this location. As one approaches the city centre and upon entry the ‘flower heads’ become open and reveal their full beauty and purpose. Attractive and companion signage that is more inspirational than the standard ‘Welcome to Perth’ road sign would further enhance the clarity and deliver a strong, beautiful entrance to the city.

A9 Inveralmond roundabout leading to A912 Dunkeld Rd (Equipment cost - £80K Install - £70K – Fees £25K)

This roundabout would be treated in a very similar way to the Broxden Roundabout above. It is interesting to note the SSE building that currently lines the entrance to the in-road here inadvertently acts as a way marker and really illustrates the effectiveness that a proper installation would have in showcasing the route to Perth from this key strategic point.

A85 Dundee Road at Friarton Bridge (Equipment cost - £75K Install - £55K – Fees £16K)

The Friarton Bridge marks a key gateway leading to Perth. At present it is unlit and therefore makes no entrance statement or welcome to the city as one passes, after dark, or even during the day, representing only a bland concrete surface. Whilst it would be inappropriate to light the whole of the bridge, there is a great opportunity to transform this into a more inspiring feature and we would propose a large scale sculptural sign and illuminated installation (located at the point the road crosses underneath the bridge) that both acts as signage and tells the story of what is yet to come when one visits Perth.

The sculptural sign should be of an inspiring, imaginative quality that transcends the typical road sign and becomes a welcoming beacon, an emblem of the city. The style would tie in with the work developed for the city centre and use similar visual cues, complementing the style and motifs used in the feature light columns, in order that there is an excellent level of continuity and strong city- wide 'brand'. The installation can include a welcome statement with a motto developed in tandem with the Council and other stakeholders, perhaps improving on the current 'Welcome to Perth' offering. Asides from feature lighting on the sculptural sign itself, LED colour wash lighting, with optional gobo projections onto the surrounding bridge form would really mark this as a gateway feature and welcome point onto the city road. This would be achieved from 2-3 light columns as before. Again this would tie in with the same colours and effects used in the city centre to deliver a strong message of high quality and consistency.

As with the other key gateways, this is the first point of contact for many travellers to Perth and should be seen as the start of their visitor experience that grabs their attention and crescendos as they arrive into the beautiful city centre.

A85 Crieff Rd at Newhouse Rd roundabout (Equipment cost - £40K Install - £35K – Fees £10K)

A slightly less busy route, this roundabout still marks an important gateway into the city. The treatment would be slightly different again, yet still stylistically consistent, and in this location it would be appropriate to have a smaller cluster of 3-4 columns in the centre of the roundabout as this is at a fork in the road between two in-city routes. The columns would be a slightly more elaborate version than those used on the other roundabouts.

Kinnoull Hill (Equipment cost - £60K - Install - £170K - Fees £20K)

Kinnoull Hill is a real icon within the Perth area and there is good potential for lighting here, in particular the folly on top of the hill. There are a number of challenges that exist however. In the first instance getting a power supply to the location would be a challenge however there is a network of hardcore paths that may be easier to excavate and reinstate than trying to dig through adjacent soft ground which may be desirable given the sites classification as an SSSI.

If a power supply can be brought to the folly, then opportunities exist to light the folly itself externally and internally with coloured or colour change lighting and to possibly introduce a multi head sky beamer unit to be housed within the open tower structure. The sky beamer unit (which would be used intermittently) would help augment the lighting installation as the folly is quite small when viewed from below on the M90, although it is more imposing when travelling Southbound. Investigations have revealed that illuminating the cliffs is totally impractical in terms of installation and maintenance and we would not recommend this.

Appendix 4. Lighting Treatments for Key Streets and Spaces

High Street - £555K (Equipment cost - £350K, Install = £175K, Fees - £30K)

High Street by day is a bustling, busy place with an enviable retail line up. By night however, it is a quiet, empty thoroughfare with little to offer the public by way of amenity. This is entirely due to the fact that the shops close in the early evening. The introduction of the new LED street lighting and the existing low key decorative lighting to the trees makes this feel safe and pleasant and could be considered adequate for the simple thoroughfare that it becomes after dark.

The introduction of gobo projectors with changing slides, coloured floodlighting and spotlighting for artworks and seating areas would be a simple way of livening up the space, making it more vibrant, attractive and versatile. This in turn, may act as a catalyst for other activities such as street performance, market stalls etc. The lighting would be mounted on simple armatures that make maintenance and cleaning easy. Vandalism would be minimised due to the remote location and costs associated with installation would be minimised, as would disruption to this key city street.

Each end of High Street and key crossing and orientation points should be marked by feature lighting columns carrying orientation signage, video display etc. Limiting the locations of these (8 No max) will help minimise disruption to the public and keep costs down. Feature light columns would be themed specifically to High Street to differentiate them from others to assist with orientation and legibility.

George Street – £188K (Equipment cost - £96K, Install, £80K, Fees £12K)

George Street is full of character and life and is an excellent example of all that Perth has to offer the resident and visitor. From the eclectic mix of shops, restaurants and café’s to the varied architectural styles to be found there and the vista to the museum and art gallery beyond. The street has a high quality and relatively intimate feel to it and as such the general street illumination should reflect this through quality and quantity of light.

Currently, the ambient street lighting is provided by large wall mounted sodium lights which do little to invigorate or enhance the street, or reinforce the scale. The impending move to white light LED wall mounted units will be a significant improvement and over time, the introduction of feature lighting columns arranged at strategic intervals along the street which combine ambient and feature lighting, way finding etc will help further to enliven the street at pedestrian level. It is anticipated that these columns would provide diffused coloured lighting as well as an element of wash light to adjacent façades to highlight the best of the architectural form to be found here. This approach will provide a cohesive look to the lighting within George Street generally; leaving room for individual property owners to put forward additional architectural lighting plans for their buildings should they wish which would complement the overall scene.

For now though, focus should be kept on the shop frontages as these are the greatest asset. Through a dedicated shop front strategy, work could be done to help shopkeepers produce even more exciting shop front illuminated signage as well as window and internal displays. It is evident that some window displays, in particular estate agents are lit inappropriately to a very high level which detracts from the feel of the street and this should be addressed through the shop front strategy.

Tay Street £1.2M (Equipment cost - £900K, Install - £200K, Fees £100K)

Tay Street is a prime city asset and despite having previously received enhanced public realm treatments, feature lighting, artworks, planting, and civic style lighting columns to the roadway and promenade it looks lifeless and bland after dark and lacks the sort of visual appeal that would appeal to the public and encourage them to use this space more.

This is due in part to the age of the technologies deployed, namely the basic colour rendering light sources within the column lighting as well as a degree of disrepair in the other feature lighting elements which conspires to deliver a very monotonous lit scene devoid of any hierarchy or legibility.

To address this we propose that new feature column lighting be introduced to both the roadway and the promenade which will provide combined ambient lighting and feature lighting as well as the ability to highlight key elements such as architecture, trees, planting and artwork. In addition we would propose that feature

lighting is reinstated for specific artworks such as the niches in the parapet wall and uplighters with excellent colour rendering should be considered for trees and the underside of seating along the length of Tay Street to make the promenade look as attractive as possible and create the catalyst for greater use.

Colour rendition for ambient lighting and white feature lighting would be lifted to above CRi90 on the promenade in contrast to a lower Cri for the road lighting to create enhanced contrast and hierarchy within the ambient lighting ensuring a very high quality feel. To further improve legibility and appeal, the promenade would be lit with a warmer colour temperature of white light than the roadway.

As with all schemes within the city, it is envisaged that feature lighting and highlighting would take the form of LED light sources, both colour change and white light and that these would be controlled separately from the base ambient street light luminaires and that smart technologies would be used to control both aspects separately, ensuring ultimate flexibility and energy conservation.

South Street - £560K (Equipment cost - £350K, Install - £175K, Fees £35K)

South Street is a key vehicular route within the city and has an enviable eclectic mix of retail and leisure premises. Unfortunately there is great diversity within the built form In terms of style and period meaning that the street generally looks quite disparate and lacking in any kind of cohesion or appeal. Attempts have been made previously to address this in the form of hanging baskets, arranged on poles and wall brackets which do help to an extent but after dark these are largely lost from view due to poor rendering street light sources and they have no additional lighting that might help with this.

To address this we recommend that efforts are made to engage with a shopkeepers etc to make improvement to their shop fronts, including the introduction of illuminated signage, improved window displays and internal displays in order to improve perceptions of quality and appeal of the street. This would have the added advantage of creating a more cohesive look to the street at pedestrian level and detract from the disparate architectural styles within the street.

To further enhance the street, we would recommend that feature lighting columns are introduced the length of South Street providing a greatly improved quality and uniformity of street lighting at a set height, something which is lacking at present due to the current building mounted solution.

Initially though, as part of a prioritised plan we envisage these feature columns being introduced solely between the junction with Methven St and Scott Street in order to create a legible extension from the gold route through to the cultural quarter area. The remaining columns would differ slightly to distinguish them from the gold route columns to assist with legibility.

It is envisaged that these columns would carry both ambient street lighting and feature lighting elements including mountings for planters such as the hanging baskets and have additional LED light sources that would ensure the quality and colour of the planting is retained after dark as a feature, significantly improving perceptions of this street generally.

The lighting columns would provide an element of diffused LED lighting capable of colour change which could be used to create dynamic scenes for events and celebrations and have the added advantage of providing some gentle illumination to the architectural form adjacent without allowing this to dominate within the hierarchical lighting arrangement, ensuring that legibility and focus is kept upon the retail and leisure offer, the real strengths of this street.

Canal Street - £0K (Currently non-priority, for future development)

At present Canal Street presents little in the way of delight with the exception of the upper end towards Charterhouse Loan and the view beyond to the auctioneers which are a lovely bookend to the street. Immediate improvements could be made to the quality of the street lighting as part of the replacement and upgrade programme to help with legibility and perceptions of quality and safety although there is little to reveal of any interest along this route currently.

In time, as the aspirations are met for the development of a digital quarter in line with the city plan, lighting should be considered in tandem with development proposals in order that the new built form provides some sense of vibrancy and appeal.

As this develops it may become appropriate then to look at the introduction of feature lighting columns from a developed suite that could be deployed and themed accordingly to this area.

Marshall Place £485K (Equipment cost - £300K, Install - £150K, Fees £35K)

Marshall Place is a beautiful street housing some of the best domestic architecture within the city centre. Bounded to the South by South Inch, there is a fantastic opportunity to take a more heritage based approach to street lighting, reinforce this 'green edge' through the illumination of the trees flanking the road and to encourage building owners to illuminate their buildings, even simply with a soft warm wash of white light to deliver overall an exquisite characterful evening scene. The Metcraft Raleigh luminaire would be appropriate for this area, the use of very warm white LED with the appropriate optics for street lighting is desirable, colour rendition is very important.

Illumination of the trees should be considered not through up-lighting but by lighting from within the canopies of the trees pushing light down to the ground, creating islands of light and illuminating the internal volume of the canopy and trunks of the trees which can be enjoyed by both pedestrian and vehicular traffic traversing this route. This will also help alleviate the harsh dark edge that exists at present along this route.

Tree luminaires with the appropriate belt mountings etc are available from iGuzzini lighting, coloured filters could be considered for the winter months when the trees have shed their leaves. Appropriate glare control will be required for this.

Leonard Street / Hospital Street - £390K (Equipment - £220K, Install £130K, Fees £40K)

Forming the gold route proposed in the city plan, these key streets require special treatment as they are potentially the first contact that people arriving at the train station will have with a revitalised and legible public realm. At present there is little in the way of architecture to distinguish the route so this must be done with feature lighting columns to provide legibility and orientation. All feature columns will have a day and night presence to ensure they are both practical and versatile. Columns will carry signage, lighting, fretwork pattern cut outs themed to each street or route and mountings for planting to help with greening the city and adding to the quality of the environment.

In addition there are several green spaces along this route that, depending upon development opportunities could be made into very high quality pocket park spaces which incorporated lighting to ensure that the quality and presence of these is retained after dark.

Methven Street - £170K (Equipment cost - £120K, Install - £40K, Fees £10K)

Methven Street as a whole requires upgraded street lighting to replace the tired high pressure sodium units that do little to reveal the colour and form of the street itself. There is again a significant retail offer, particularly on South Methven Street and this should be the subject of a shop front improvement strategy which as in South Street, would deflect attention from the differing architectural qualities and scale found within the street. We would recommend that feature lighting columns are deployed at key junctions such as the entries and exits from Methven St and also at the cross over at High Street to help with orientation. These columns should incorporate way finding information.

Lighting for the Cathedral at the top end of North Methven St as well as lighting to St Paul's church is covered separately within this document.

West Mill Street/Mill Wynd - £0K (Currently non-priority, for future development)

These streets form an excellent juxtaposition to the bustling and vibrant town centre, transporting you back in time hundreds of years in an instant with the historic Lade and Mill buildings. The street lighting for this area needs to be more sympathetic in intensity and style. This is something that should be considered as part of the street light replacement programme in due course. Mock gas lanterns, similar in style to those originally found in Perth would be appropriate housing modern LED sources to save on energy.

Kinnoull Street / Scott Street - £202K (Equipment cost - £140K, Install - £50K, Fees £12K)

Kinnoull Street and Scott Street, between South Street and Mill Street form a natural extension to the gold route leading to the cultural quarter and require to be treated the same in terms of lighting to ensure legibility. Emphasis should also be placed upon shop front and display improvements to add further quality to this route. Out with the area detailed above, lighting improvements would be restricted to upgrading as part of the street lighting programme currently under way and shop front improvements.

Murray Street (Mill Street) - £230K (Equipment cost - £160K, Install - £50K, Fees £20K)

Murray Street/Mill Street is an extension of the cultural quarter housing Perth Playhouse and a number of excellent pubs, cafés and restaurants. It is also the bus transport hub. There are several buildings identified as worthy of illumination in Murray Street which will form the majority of the visual interest once completed but the central bus stances are very tired and outdated and require modernisation including the introduction of new lighting.

Again it would make sense to make use of the feature light columns at this location to aid in orientation and legibility. As with other areas these columns should carry signage, lighting and planting and possibly even video screen technology showing what is on in Perth etc. The columns should be of a scale commensurate with the refurbishment of the stances and provide adequate ambient lighting as well as feature lighting for safety purposes.

Mill Street /Bridge Lane - £355K (Equipment cost - £220K, Install - £100K, Fees £35K)

Mill Street forms the spine of the cultural quarter and as such requires to be marked out as such. The introduction of feature lighting columns at strategic locations and enhanced street light columns which complement these will serve to highlight and define this route, provide vibrancy and interest and distract the eye from the lesser quality areas of public realm such as the car parks and rear entrances of buildings facing on to High Street. The feature light columns will allow for synchronised colour change, projection and possibly video screen technology for advertising, allowing for the creation of bespoke light sequences specific to events and performances in the

area. Additional feature lighting should be considered for trees planted along this route to assist with softening the edges of the space and retaining colour and qualities of the public realm after dark.

Blackfriars Wynd / Port Place £0K (Currently non-priority, for future development)

These streets again require the careful selection of luminaires to fit with the historic architecture to be found here. As with West Mill Street, this is something that should be undertaken as part of the street lighting replacement programme. Careful consideration should be given to colour temperature of light, very warm white would be appropriate. In addition, column based flood lighting should be considered for the lighting of the Fair Maid's House museum.

Atholl Place / Atholl Crescent / Rose Terrace £6.5K (Equipment cost - £3K, Install - £2K, Fees £1.5K)

All three of these streets is an excellent example of the quality of the built form in Perth and should be highlighted as part of the lighting plan. At present there is no lighting within Atholl Place save for a couple of flood lights to the trees in the garden area. Luminaires should be of a suitable period with translucent panels to the top and rear to give some wash light to the adjacent buildings. Colour temperature of light should be warm white with excellent colour rendering. The flood lighting to the tree area should be upgraded to create more of a focal point.

St John Street - £22.5K (Equipment cost - £15K, Install - £5K, Fees £2.5K)

St John Street has already benefits from bespoke lighting columns incorporating artwork which looks superb. It could benefit from upgrading however to give a better quality of ambient light from the head unit and also some simple LED feature lighting to make the artwork stand out more after dark. This would be a simple operation and could be undertaken by the Street Lighting Partnership team.

St John's Place - £210K (Equipment cost - £120K, Install - £70K, Fees £20K)

Introducing either wall armatures or feature lighting columns to both sides of St John's Place combining both street lighting and feature lighting, comprising coloured floods and gobo projection would really help lift this area. The Kirk forms the centre piece of the street and separate treatments exist to bring this up to scratch as part of this plan which will help enliven the space generally but the edges of the space can feel a bit lacking and this will help overcome this problem and provide an excellent way of animating the space which should draw people to this area and provide a boost for local businesses.

Skinnergate / Kirkgate -£220K (Equipment cost - £130K, Install - £65K, Fees £25K

Skinnergate and Kirkgate provide excellent connectivity with the café quarter and St John's Kirk and the cultural quarter. For legibility it would be good if these lanes received similar, complimentary treatments. We would suggest either feature lighting columns with signage, projection and street lighting all combined or alternatively where appropriate, wall mounted armatures that match the columns. Individual control of street lighting and feature lighting would help increase flexibility, save energy and ultimately reduce maintenance.

Key Vennels

The following vennels are considered of prime importance in terms of this plan and should receive treatment as and when adjacent streets are tackled to ensure legibility is maintained. These quirky spaces demand quirky treatments which are hard to cost until details are known but a total budget estimate has been allowed above to act as a guide at this stage.

V1 - Albert Close £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)
V2 - Guard Vennel £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)
V3 - Cutlog Vennel £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)
V4 - Fleshers Vennel £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)
V5 - St Anne's Lane £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)
V6 - Rope makers Close £74K (Equipment cost - £35K, Installation - £25K, Fees (£14,000)

Appendix 5. Individual building and structure lighting treatments

Buildings and structures located at key entry points to the city centre:

A1 - Museum and Art Gallery £152K (Equipment cost - £50K, Install - £75K, Fees £12K)

This key city asset should receive special treatment. There is a great opportunity to perhaps use projection onto the white frontage from a lighting columns situated across the street. The portico itself offers the opportunity to introduce a bit of colour from concealed floods at high or low level, mixing colours such as red and gold LED with a simple warm white wash to the outside can look spectacular, the lower sandstone faced should also be uplit with warm white LED as should the signage on the building to help with orientation. The dome requires to be lit from concealed positions on the parapet roof, a cool white 4000K LED light source with a Cri of 90 or above would be appropriate for this to create contrast with the rest of the building.

Moving around the building into the public space adjacent to the Concert Hall, there is a fantastic opportunity to introduce both architectural lighting at ground level to wash the sandstone walls (in keeping with the side elevation to George Street and also to project onto the building with static gobo images from pole mounted projectors sited within the public space. This projection could be both artistic in nature and informative.

A2 – Registrars – 1-5 High Street £150K (Equipment cost - £45K, Install - £85 K, Fees £20K)

In conjunction with Ref A3 these buildings act as bookend entry points to the foot of the High Street. Both have façades significant architectural detailing and demand to be lit architecturally and the detail picked out through luminaires mounted discreetly on the buildings themselves. Naturally, it may be appropriate to paint any luminaires the same colour as the fabric of the building. Appropriate luminaires can be found in the iGuzzini lighting architectural range in particular Linealuce LED fittings which can be mounted very discreetly. Both buildings although of differing stone would respond well to simple warm white illumination. All LED’s used should be Cri90 or above to maximise the quality of this light and particular emphasis should be paid to the tower and dome on each building as these can be seen at distance.

There is also an excellent opportunity to illuminate the extensive areas of stained glass facing into High Street. Highlighting this would bring a real air of quality to the scene after dark. Alterations to existing internal lighting should be investigated.

A3 – Council Buildings, 2 High Street - £105K (Equipment cost - £45K, Install - £50K – Fees £10K)

See above. Also note that there is a decorative façade at the entrance to Watergate which should be included as part of any scheme for this building and it should follow the approach taken on High Street and Tay Street. The simpler infill section within High Street could be illuminated in a much more simple way reflective of the change in architectural style. As with Ref A2, any coloured lighting should be confined to the dome Internal and rear of balustrades. Lighting control for colour change on any building requiring it should be flexible and allow for remote control over 4G GPRS modem link and also allow for possible localized control from a building network through a suitable connection. Although these are standalone systems on each building, through remote IP control buildings all over the City can be synchronized and controlled together to suit. This can be done through pre-programming of the calendar and time function built in to the DMX control system or by immediate temporary intervention to suit one off events.

A4 – Fiscal House, 1 South Street £119K (Equipment cost - £40K, Install, £65K, Fees £14K)

Like Ref's A2 and A3 Fiscal House along with the Courthouse create a bookend and gateway at the foot of South Street. The architecture of this building is well worth highlighting and again this should be through mounting of fittings on the building rather than general floodlighting. The colour temperature of light chosen should be warm white with the opportunity to perhaps subtly pick out the roof tiles in cool white 4000K. iGuzzini Linelauce range would be appropriate for this. In ground uplighters should be considered to ensure that the building is revealed in full after dark and not disconnected from street level. LED units, warm white 3000K would be appropriate for this and either iGuzzini, Louis Poulsen or Hydrel units would be appropriate.

A3 – Council Buildings,
2 High Street

A5 – The Sheriff Courthouse, Tay Street - £163K (Equipment cost - £60K, Install - £85K, Fees £18K)

This magnificent building should be lit on both elevations. The simple form dictates that the illumination should be discreet and in ground uplighters would be appropriate for this. Again the light source should be of Cri90 and the light should be warm white. This will pick out the delicate details that are found across the façades. There is scope to perhaps introduce a little colour within the portico, a strong gold or orange would be appropriate and it would also be desirable if the existing lanterns within the portico were re-lamped with light sources offering little sparkle.

As part of the wider lighting scheme for Tay Street the plain entablature above the entrance offers an excellent opportunity for gobo image projection from an adjacent lighting column. Static images can be projected in black and white through the use of steel gobos, coloured glass gobo's made up to specific shapes and designs are available for companies such as Lee Filters. Suitable gobo projectors with masking can be sourced from Enliten lighting.

A6 –The Fergusson Gallery - £141K (Equipment cost - £50K, Install - £75K, Fees £16K)

The original purpose of the building and the plaque over the door which reads "I draw water by Fire and Steam" offers up an opportunity to create a more artistic lighting intervention. An example of how this might be approached is contained within the lighting plan at appendix 3. The treatment in principle uses static gobo projection onto the surfaces of the building. It is possible that additional projection could be utilised to project work by Fergusson onto the blank panels at higher level, reinforcing its current use as an art gallery. All projection equipment and gobo masks could be sourced from Enliten lighting. The bold use of colour here is intentional. It is intended to surprise, to be unexpected and as such further raise impressions of the vibrancy of the city.

A6 –The Fergusson Gallery

A7 – St Leonards in the Fields - £138K (Equipment cost - £50K, Install - £70K, Fees £18K)

This magnificent building occupies a very prominent location within Marshall Place Its crown visible from many vantage points around the city. Any lighting solution must include the crown of the building and like other domes and towers visible on the skyline the appropriate and measured use of colour should be considered. All elevations should also be illuminated, the most appropriate approach would be to light the building at close quarters, drawing out the colour and texture within the stonework.

The crown should be lit from the roof itself, as should the west side of the tower, the clerestory should be lit from the lower roof. It is important not to over light this building, care should be taken to balance light and shade to retain dimension and the critical clues to its construction. All lighting should be discreet, concealed or indeed in-ground mounted as appropriate. In order to create further dimension, particularly to the South and West façades the use of internal lighting should be considered. Equipment for this project could be sourced from iGuzzini, Thorn, Louis Poulsen and Crouch visual solutions. Control should be by simple astronomical time clock.

A8 – Station Hotel - £153K (Equipment cost - £50K, Install - £85K, Fees £18K)

Station Hotel marks a key travel Interchange and as such needs to be illuminated to ensure legibility after dark. The simple form of the building demands a light touch and a concealed wash of warm white light up the façades from ground level that is allowed to fade out as it rises would be appropriate. This can be achieved by in –ground illumination from high power LED wall wash luminaires available from companies mentioned already within this appraisal. Keeping the illumination behind bushes and trees will throw these landscape features into relief and add a depth to the scene. In addition, delicate revealing of the architectural embellishments at the top of the building should be considered as should illuminating the roofscape and tower tops in contrasting cool white LED.

The entrance with its balconied façade offers up a great opportunity for enhanced architectural illumination which will assist with orientation for arriving visitors. Consideration should be given to uplighting the trees that border the site, especially as the hotel itself is set back from the road and this will help keep the hotel linked to the public realm. Tree uplighting should be from concealed floods mounted at ground level. These floods should be LED colour change and consist of RGBW LED’s to allow colours to be dialled up in winter when the trees lose their leaves.

A9 – A.K. Bell Library - £140K (Equipment cost - £50K, Install - £75K, Fees £15K)

The Library lies on a key route into the city centre. Its setback position and extensive ground offers up the opportunity to implement a simple symmetrical architectural lighting scheme using concealed ground and building mounted luminaires in warm white designed to pick out and reveal the form and embellishments.

In addition, there is a fantastic opportunity to include targeted gobo projection from concealed positions that could deliver some amazing effects. These effects could easily be changed at relatively low cost on a rotating basis affording an excellent opportunity to retain visual interest over a protracted period. Suitable projectors could be sourced from Derksen lighting or Enliten UK. Architectural lighting could be sourced from manufacturers already identified in this section.

A10 – Perth Cathedral - £143K (Equipment cost - £50K, Install - £75K, Fees £18K)

This is a key building signalling your arrival on the edge of the city centre and your first encounter with feature lighting since arrival through the gateway entries at the Inveralmond roundabout and the converging of the A912/A85.

The lighting treatment for this building should be white light only, from concealed and in ground positions at close quarters with colour being provided from the back lighting of stained glass where possible. To reinforce the mass and height of the Cathedral, the roofscape should be lit subtly in cool white, particular attention should be paid to the delicate filigree tower. Static colour internally within the filigree tower may be appropriate to highlight this feature and to create synergy with other landmarks around the city which form part of this lighting plan.

A11 - Perth Bridge £120K (Equipment cost - £50K, Install - £60K, Fees £10K)

The existing column lighting along the length of the bridge should be replaced with more historically accurate luminaires such as those found in old photographs. The top section of the lanterns should be white or opal, the light source should be cool white 4000K LED with a ribbed clear glass refractor and road lighting optic to create a sparkle that can be viewed from distance. See Metcraft Lighting “Raleigh” range.

The external fluorescent lighting and sodium discharge floodlighting should be replaced with either LED replacement fluorescent units in warm white or for a more attractive and dynamic look, an LED RGBW colour change digital ribbon light that has sensors at each end of the bridge that create a colour change based upon either traffic or pedestrian movement. The use of this dynamic effect could be limited to weekends and holidays with the digital strip being run on white at other times. The floods currently washing down the stone structure are well placed and should simply be replaced with very warm white or static amber LED fittings (See iGuzzini Platea) that would pick out the warmth in the stonework. Again this could be restricted to holidays and weekends. Colour change washing should be avoided as this is not appropriate.

A12 - Queens Bridge £140K (Equipment cost - £65K, Install - £60K, Fees £15K)

This key entry point provides an opportunity to create a bold opening statement, raise interest levels and create excitement of what lies beyond. At present the bridge is relatively plain being adorned in part by floral displays in baskets mounted to the railings. Year round planting along the entire length of the balustrade would create far more impact by day and if the lighting columns were changed for more decorative and exciting versions worthy of a key entry with a high quality of light and colour rendering, then the floral displays could play their part after dark too.

The bespoke lighting columns detailed in this document would also be sited along the length of Tay Street and you would be aware of the multi-coloured decorative panels sprinkled along the street on these columns as you traverse the bridge. This BIG statement will leave nobody in doubt that they have arrived in the City.

Looking back to the bridge from the promenade along Tay Street you will see that it is also lit with projections onto the fine supporting structure underneath.

Strategically Important buildings and structures

B1 - Perth concert Hall, Mill Street - £31K (Equipment cost - £15K, Install - £10K, Fees £6K)

The concert hall already has a dynamic presence after dark thanks to a great internal lighting system the outside is simply lit but this is effective where operational. Some maintenance is required to repair the in-ground fittings that have become defective and the opportunity should be taken to work with the manufacturer to ensure that the fittings are installed correctly. These fittings should be re-lamped with cool white light sources (4000K) to create a strong contrast both with the Interior of the building and Museum adjacent.

Mill Street itself requires a unifying treatment that fits with the public realm upgrades and draws attention away from the surrounding built form which is predominantly service yards and car parking, although the extension to the Perth Theatre will alter a section of the street. The proposal is to site the bespoke feature light columns along the length of Mill Street in order to create a subliminal route to follow to the concert hall and beyond. These columns will carry street lighting, colour change LED illumination and static gobo projection.

B2 – 2 Tay Street – Blackadders - £65K (Equipment cost - £25K) Install - £30K – Fees £10K

This building acts as a bookend to Tay Street and also in conjunction with the illumination of the Museum and Art Gallery, a gateway of sorts to the cultural quarter area housing the Concert Hall. A simple lighting intervention is appropriate and should consist of up and down lighting of the building from behind the signage strip running around the building at present. This would require to be revised in order to accommodate the uplighters and down-lighters but this could be achieved with minimal disruption. iGuzzini Linealuce mini luminaires containing warm white LED lamps with Cri 90 lamps would be appropriate. To create even more impact and vibrancy, the internal spaces of the building could be illuminated in static colour LED. Blackadders already use coordinated blinds in all windows to maximise impact and this simple unobtrusive addition would add vitality to the scene.

B3 – Royal George Hotel – George Street £6.8K (Equipment cost - £2.5K, Install - £2.5K, Fees £1.8K)

This hotel has an existing lighting scheme which is of good quality and requires only some maintenance and updating in places. Often though the building is not illuminated and it would be nice to see it lit on a regular basis.

B4 – The Capital Asset – Tay Street £43.5K (Equipment cost - £20K, Install - £15K, Fees £8.5K)

This popular public house has an existing decorative lighting scheme which is not terribly effective or discreet. This needs to be altered to create a more appropriate scheme. There is scope to back light the decorative balustrades on the building, perhaps in a subtle colour and to illuminate the roofscape from concealed positions and this should be investigated. It would be preferable to see the building lit from the ground upwards with in ground luminaires with additional light at the entrances in the form of downlighting from existing positions but with revised fittings more in keeping with the building style. Architectural luminaires such as iGuzzini's mini Linealuce would be appropriate for the façade and the roofscape could be lit with simple concealed waterproof plug and play LED strips such as those available from Crouch Visual solutions. Additional illumination including colour washing and gobo projection to the pavement seating area would come from proposed new bespoke feature lighting columns proposed for Tay Street.

B5 – St Matthew's Church, Tay Street - £115K (Equipment cost - £35K, Install - £70K, Fees £10K)

This building is probably the most prominent on the skyline of Tay Street and can be seen at great distance and as such we propose that this is treated like a beacon. The building itself would be illuminated at close quarters on its corners by powerful Metal Halide uplighters recessed into the pavement. The lower flanking façades would also be uplit but by LED luminaires such as those available from iGuzzini. The façades of the tower could be down lit from the level with the open tracery windows and uplit from the same location to catch the magnificent detailing at this level.

The open void space would be illuminated as well, in colour, to tie in with colour used architecturally on other key buildings in the city and we envisage also the very top level spire being lit from concealed positions at the

balcony level from behind the parapet walls providing access is safe. All fittings should be painted to match the stonework where suitable. Suitable equipment could be purchased from iGuzzini, Thorn lighting etc. All fittings should be LED where possible and warm white light with a Cri 90 and above.

B6 – Pedestrian walkway at rail bridge, Tay Street - £100K (Equipment cost £70K, Install - £20K, Fees £10K)

The pedestrian walkway at high level over the Tay affords is currently purely functional and is not very attractive. A simple change to a derivation of the feature light column would provide a more exciting and engaging experience for all.

B7 – Rail Bridge –Tay Street - £72K (Equipment cost - £30K, Install, £30K, Fees £12K)

This is not an attractive feature within Tay Street, we would propose that a lightweight perforated and backlit cladding was applied to make this look more attractive The cladding could depict a mural relevant to the city which would be attractive by day and at night due to the backlighting from simple LED waterproof strips. This treatment could be applied to both sides of the bridge and the warning signage retained as part of the design. Colour change lighting may be used as part of this scheme in keeping with colour schemes elsewhere in the city. It would be possible also to mount a sensor that sensed vibration and operated the colour change sequence in response to passing trains.

B8/B10 – Rail Bridge, Scott Street - £72K (Equipment cost - £30K, Install, £30K, Fees £12K)

See treatment above at B7.

B9 – Scott Monument, South Inch - £14K (Equipment cost - £2K, Install - £6K, Fees £6K)

This wonderful statue at the foot of King Street just within South Inch should be illuminated with in-ground uplighters. Available from iGuzzini. LED Warm white only.

B11 – Queens Hotel, Leonard Street - £86K (Equipment cost - £25K, Install - £50K, Fees £11K)

This hotel requires a simple revised architectural lighting scheme of higher quality, better colour rendering and better execution. Existing positions and cable routes offer good scope for improvement. Particular attention should be paid to the entrance where the period light columns with opal plastic shades do little to entice.

B12 – Burns and Co, 6 King Street - £36K (Equipment cost - £7.5K, Install - £20K, Fees £8.5K)

This elegant building makes a great candidate for lighting both architecturally and perhaps as a canvas for a projection based artwork as part of a lighting festival. In terms of architectural lighting the focus should be in discreet uplighting at the foot of the pillars adjacent to the doors. This will catch all the architectural embellishments on the façade. Attention should also be paid to the ornamental tower on the roof. All lighting should be concealed or discreetly mounted, be LED and of Cri90 quality. Luminaires are available from iGuzzini, Thorn etc. Colour could be used behind the fan lights in the vestibules beyond the doors. The use of colour should marry with colour elsewhere.

Colour washing to the building could be achieved by LED floods mounted on either feature lighting columns. These have not been costed for at this stage but will form part of a costing for feature light columns as part of the action plan.

B13 – King James VI Hospital, Hospital Street - £73.5K (Equipment cost - £30K, Install - £35K, Fees £8.5K)

The form and age of this building requires that an altogether different approach is taken to lighting here. Rather than close architectural illumination, a gentle soft wash with some appropriate colour mix would be appropriate for this building. The soft wash should invoke the essence of candlelight, the trees around the building seen in relief against the illuminated building. The wash should be allowed to drift out as it rises up the building. Equipment is available from Thorn, iGuzzini etc.

B14 – Bank of Scotland, 222 South Street - £73K (Equipment cost - £22K, Install - £42K – Fees £9K)

In conjunction with B15 this building acts as a sort of gateway en route to the city centre along South Street. A simple intervention is required, focussed primarily upon the corner elevation and tower top. A similar approach should be taken at B15 and emphasis should also be placed upon the illumination of the retail premises on the ground floor f both buildings. Retaining good lighting from within these premises after dark will help to reinforce the gateway. Luminaires should be building mounted, painted to suit the fabric where appropriate, colour rendering of light sources should be Cri90 and above. Luminaires available as previous.

B15 – Dickens Bar 189 South Street - £78.5K (Equipment cost - £30K, Install - £40K – Fees £8.5K)

See B14 for description of approach.

B16 – Salutation Hotel South Street - £74K (Equipment cost - £20K, Install - £45K, Fees £9K

This famous Perth Institution is currently undergoing a renovation externally and new illumination should form part of that package. A delicate touch is needed with this building with the focus for lighting being the ornamental section of the façade and the piper figurines along with the period lanterns at ground level which need some renovation. There is an opportunity to illuminate the balustrade at high level from behind, perhaps in a colour to match with the other key buildings within the city but the rest of the illumination should be warm white only (3000K) with excellent colour rendering to deliver a real feeling of quality.

B17 – St John's Kirk, St John's Place - (Equipment cost - £80K) Install - £30K – Fees £10K

St John's benefits from having an exterior lighting scheme in place that requires merely to be upgraded to take advantage of the latest technologies available to reduce running costs and maintenance to a minimum. At present the scheme is in a state of disrepair, most notably at street level and at the spire which if sorted would make a great deal of difference to the street generally after dark particularly if some way could be found to backlight the stained glass at night, even if just for a few hours whilst the bars and restaurants are in full flow around the perimeter of the square.

B18 – City Hall, King Edward Street - £0K (Equipment cost - £0K)

Under review.

B19 – King Edward VII Monument, King Edward St - £20K (Equipment cost - £6K, Install - £8K, Fees £6K)

B20 – Café Breizh, 28 High Street - £80.5K (Equipment cost - £22K, Install - £48K, Fees £10.5K)

Café Breizh occupies the ground floor of a magnificent delicately decorative building which sits like an end-stop at the foot of George Street, visible over a good distance as you walk down from the Museum. The building requires little more that a regular layout of luminaires to draw out the architectural detail in relief. The use of linear LED luminaires is recommended. Light sources should be warm white (3000K) and be of a high rendering quality. Luminaires from iGuzzini such as Linealuce are particularly appropriate.

B21 – Specsavers/The Bothy, High St - Kinnoull St - £38.5K (Equipment cost - £15K, Install - £15K – Fees £8.5K)

In conjunction with the next building B22, The Bothy and The Sandeman, make up another gateway like entry to the heart of the city centre at the top of Scott Street. These fine sandstone building are worthy of architectural illumination although The Sandeman is by far the more impressive. At pedestrian level, the view into the Bothy through the large arched windows is warm and inviting which more than makes up for the lesser architectural merit of the building. All luminaires should be painted to match the fabric of the building as per the existing but the luminaires should be much more discreet and offer a far better quality of colour rendition. The use of colour could be considered within the high level corner detail, again to match other key buildings throughout the city. Equipment available from iGuzzini, Thorn etc.

B22 – Barclays/The Sandeman – High St - Kinnoull St – £112K (Equipment cost - £35K, Install - £65K – Fees £12K)

This magnificent building truly deserves an architectural lighting scheme that draws out its character and myriad of details. Without doubt the key feature is the tower on the corner at high level but there are balustrades and pillars that need to be accentuated too. This building should be lit predominantly in warm white, high colour rendering again luminaires such as iGuzzini Linealuce and radius are appropriate. As with The Bothy, fittings should be painted to match the buildings where appropriate and the use of colour behind the balustrades at high level may be appropriate, providing it is in keeping with the city's other key buildings.

B23 – ML Clothing, 226-232 High Street - £106K (Equipment cost - £40K, Install - £55K, Fees £11K)

Yet another fine example of the quality of architecture to be found in Perth, this building, along with B24, make up another gateway, this time to busiest part of the High Street. A similar gateway entry has been advocated at the opposite end of High Street at Tay Street. The lighting for this building should once again be simple and discreet. Warm white light only, the overall treatment should be delicate and of a high quality colour rendering. Suitable equipment would again be iGuzzini Linealuce, iPro with balustrade lighting strips in LED from Crouch Visual Solutions.

B24 – Pizza Express, 16 South Methven Street - £82K (Equipment cost - £30K, Install - £40K – Fees £12K)

Occupying the adjacent corner, this fine red sandstone building has a simple elegance, particularly at ground level which requires to be accentuated through lighting. Building mounted architectural lighting is appropriate, with luminaires painted to match the fabric of the building warm white LED light sources, with cool white being deployed at high level if possible to highlight the lead covered dome. Appropriate equipment as detailed above at B24.

B25 – Mercure Hotel and West Mill Street - £130K (Equipment cost - £60K, Install - £60K, Fees £10K)

The Mercure hotel currently has rather out of character flood lights tucked under the guttering shining down to the ground below and also some rather crude signage. This street general is a real glimpse into the past heritage of the city which could be improved dramatically after dark with the introduction of more sympathetic and atmospheric lighting to the buildings and the Lade. There is a lack of period street lighting which would sit well in this street in particular location rather than the standard utilitarian sodium streetlight on wall bracket that is there at present.

This could be a real draw after dark for visitors and in sharp contrast to the lighting of Murray Street. A combination of architectural illumination of the historic buildings from concealed sources coupled with more dramatic washing of the Mill buildings and Lade would be appropriate here. Lighting equipment from iGuzzini would be appropriate here; also historic lanterns from Sugg or Metcraft mimicking gas lights may be appropriate. For illumination of the Lade, look at underwater fittings as an option or mounting fittings on walls and throwing reflections off the water onto adjacent surfaces to give more animation to this unique part of the city after dark. The use of colour on the water could be appropriate and could match up with colour proposed for the far end of the Lade at the red brig at the foot of Skinnergate.

B26 – Lower City Mills, West Mill Street - £87K (Equipment cost - £25K, Install - £50K, Fees £12K)

As described within B25, there is an opportunity to create something really special in Mill Street that is unlike other adjacent streets after dark simply through lighting. See description above.

B27 – Harry's, South Methven Street - £87K (Equipment cost - £25K, Install - £50K, Fees £12K)

The entrance to the car park of this building on South Methven Street is flanked by large trees that largely obscure the building behind, which is s pity but a scheme that lit both trees and building would create a good level of impact. The building should be lit simply with fixtures mounted on the building. Emphasis should be placed on the central tower with the wings being allowed to recede somewhat. Warm white light with a high Cri should be used.

The elevation to Murray Street has a similar architecture and there is lighting installed for patrons who choose to sit outside. Unfortunately the glare from the lighting is so great that it is impossible to sit under them and more often than not the beer garden is empty. This needs to be addressed.

B28 – Perth North Church, Mill Street - £62K (Equipment cost - £28K, Install - £25K, Fees £9K)

Simple delicate illumination from ground mounted sources is all that is required to pick out the fine detail in the façades of this beautiful church. The stained glass is exquisite and should if at all possible, play its part in the illuminated scene. Only warm white light, 3000K Cri90 is appropriate for this building. The lighting must be delicately balanced against the street lighting. Equipment is available from Hydrel, iGuzzini etc.

B29 – Perth Playhouse, Murray Street - £117K (Equipment cost - £40K, Install - £65K, Fees £12K

The Perth Playhouse needs to be brought back to life. Doing this will increase dramatically, the energy and vibrancy within the street generally and for cinema goers in particular. The canopy requires new downlighting to be installed that creates a bit of sparkle. Signage needs to be updated and it would be good to put in some LED Neon, possibly colour change to produce some kinetic effects. Another thought would be to backlight some of the windows across the façade. A simple window treatment that still allows a view out and a simple colour change LED light source on a timer could make for an interesting outcome. LED Neon is available from Crouch Visual Solutions (Elite range) downlights etc available from illuma lighting, signage available from SNL solutions of Edinburgh.

B30 – Perth Congregational Church, Kinnoull Street - £44K (Equipment cost - £15K, Install - £20K, Fees £9K)

A simple uplighting scheme is required for this church. Like many others it has some fantastic stained glass and it should be investigated how to include the backlighting of this as part of the scheme. The lanterns at the front door should have clear light sources in them to produce a bit of sparkle, the lighting scheme should extend around the 3 façades visible from Kinnoull Street and Murray Street. All lighting should be war white 3000K, high colour rendering and be recessed into the pavement rather than fixed to the building.

B31 – Pullar House, Kinnoull Street - £95K (Equipment cost - £35K, Install - £50K, Fees £10K)

This large building did at one time have some lighting externally which needs to be reinstated and augmented. Internal LED lighting possibly in colour should be deployed behind the P&K window graphics to make them stand out and it would be nice if the building wash washed in light, perhaps from the eve's under the guttering in between the joist ends. Luminaires could be sited at high level as suggested without glare, greatly reinforcing the location of this key local asset. The building wash should be extended round into Mill Street to help with guiding pedestrians down towards the concert hall. Equipment available from iGuzzini, Crouch Visual Solutions and ACDC lighting.

B32 – Perth Theatre –Mill Street/High Street- £134K (Equipment cost - £75K, Install - £45K, Fees £14K)

The renovation and alteration works planned for Perth Theatre will ensure that this is a much enhanced and key local attraction once complete with fantastic street side presence to Mill Street The bold architectural styling presents an opportunity for a dynamic and kinetic lighting scheme, incorporating colour and possibly colour change as well as gobo projection to suit events and shows. The plaza area directly outside the theatre should receive a similar treatment, opening up possibilities perhaps for impromptu performances and gatherings which could further serve to enliven this end of Mill Street.

B33 – St Paul's Church – St Paul's Square – £141K (Equipment cost - £50K, Install - £75K, Fees £16K)

This beautiful church, with its unusual octagonal footprint could be a real landmark again. Many churches have found new uses over the years none more so than Oran Mor in the heart of Glasgow's West End. The venue, made famous for its "A play, a pie and a pint" offering in particular, has seen the popularity of the venue rise and rise.

In terms of lighting, Oran Mor has a contemporary lighting scheme, which incorporates an artwork in the form of a glowing neon hoop, draped over the steeple. This unusual and very simple light intervention in itself is a landmark after dark, both marking the building's location and speaking of its new life. The visibility of the spire at St Paul's from many vantage points offers up the opportunity to do something similar and when a new use has been found for the church a lighting scheme appropriate to that use should be devised.

Exemplar images
(Oran Mor Left)

Appendix 6. Funding, timescales and maintenance

The following budget information is indicative only and is based upon the delivery of schemes as described within Appendices 1-3. The equipment cost includes for all lighting equipment, lamps, mountings and control equipment envisaged, including colour change controllers and wireless signalling as required. An allowance has also been made for commissioning of control systems for individual projects where envisaged.
Installation costs include for electrical installation only, civil's work including trenching and ducting has been allowed for where foreseeable as has the likely cost of scaffolding where appropriate. Assumptions have been made about the use of temporary high access equipment rather than permanent scaffolding.
Fee estimates include for lighting and electrical design but do not include for statutory consent costs or additional structural engineering which may be required infrequently on occasion.

Ref	*Key Gateways and Markers*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
G1	A9 Broxden Roundabout/A93 Glasgow Road	£80,000.00	£70,000.00	£25,000.00	£175,000.00	24
G2	A9 Inveralmond Roundabout/A912 Dunkeld Road	£80,000.00	£70,000.00	£25,000.00	£175,000.00	24
G3	A85 Dundee Road at Friarton Bridge	£75,000.00	£55,000.00	£16,000.00	£146,000.00	24
G4	A85 Crieff Road at Newhouse Road roundabout	£40,000.00	£35,000.00	£10,000.00	£85,000.00	24
M1	Kinnoull Hill Tower	£60,000.00	£170,000.00	£20,000.00	£250,000.00	24
				OVERALL TOTAL	**£831,000.00**	

Ref	*Key Streets and Spaces*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
S1	High Street	£350,000.00	£175,000.00	£30,000.00	£555,000.00	24
S2	George Street	£96,000.00	£80,000.00	£12,000.00	£188,000.00	16-20
S3	Tay Street	£900,000.00	£200,000.00	£100,000.00	£1,200,000.00	36
S4	South Street	£350,000.00	£175,000.00	£35,000.00	£560,000.00	24
S5	Canal Street	£0.00	£0.00	£0.00	£0.00	
S6	Marshall Place	£300,000.00	£150,000.00	£35,000.00	£485,000.00	12-16
S7	Leonard Street/Hospital Street	£220,000.00	£130,000.00	£40,000.00	£390,000.00	12-16
S8	Methven Street	£120,000.00	£40,000.00	£10,000.00	£170,000.00	16
S9	West Mill Street/ Mill Wynd	£0.00	£0.00	£0.00	£0.00	12
S10	Kinnoull Street/Scott Street	£140,000.00	£50,000.00	£12,000.00	£202,000.00	12-16
S11	Murray Street	£160,000.00	£50,000.00	£20,000.00	£230,000.00	16
S12	Mill Street/Bridge Lane	£220,000.00	£100,000.00	£35,000.00	£355,000.00	24
S13	Blackfriars Wynd/Port Place	£0.00	£0.00	£0.00	£0.00	12
S14	Atholl Place/Atholl Crescent/Rose Terrace	£3,000.00	£2,000.00	£1,500.00	£6,500.00	12
S15	St John Street	£15,000.00	£5,000.00	£2,500.00	£22,500.00	8
S16	St John's Place	£120,000.00	£70,000.00	£20,000.00	£210,000.00	12
S17	Skinnergate/Kirkgate	£130,000.00	£65,000.00	£25,000.00	£220,000.00	16
				OVERALL TOTAL	**£4,794,000.00**	

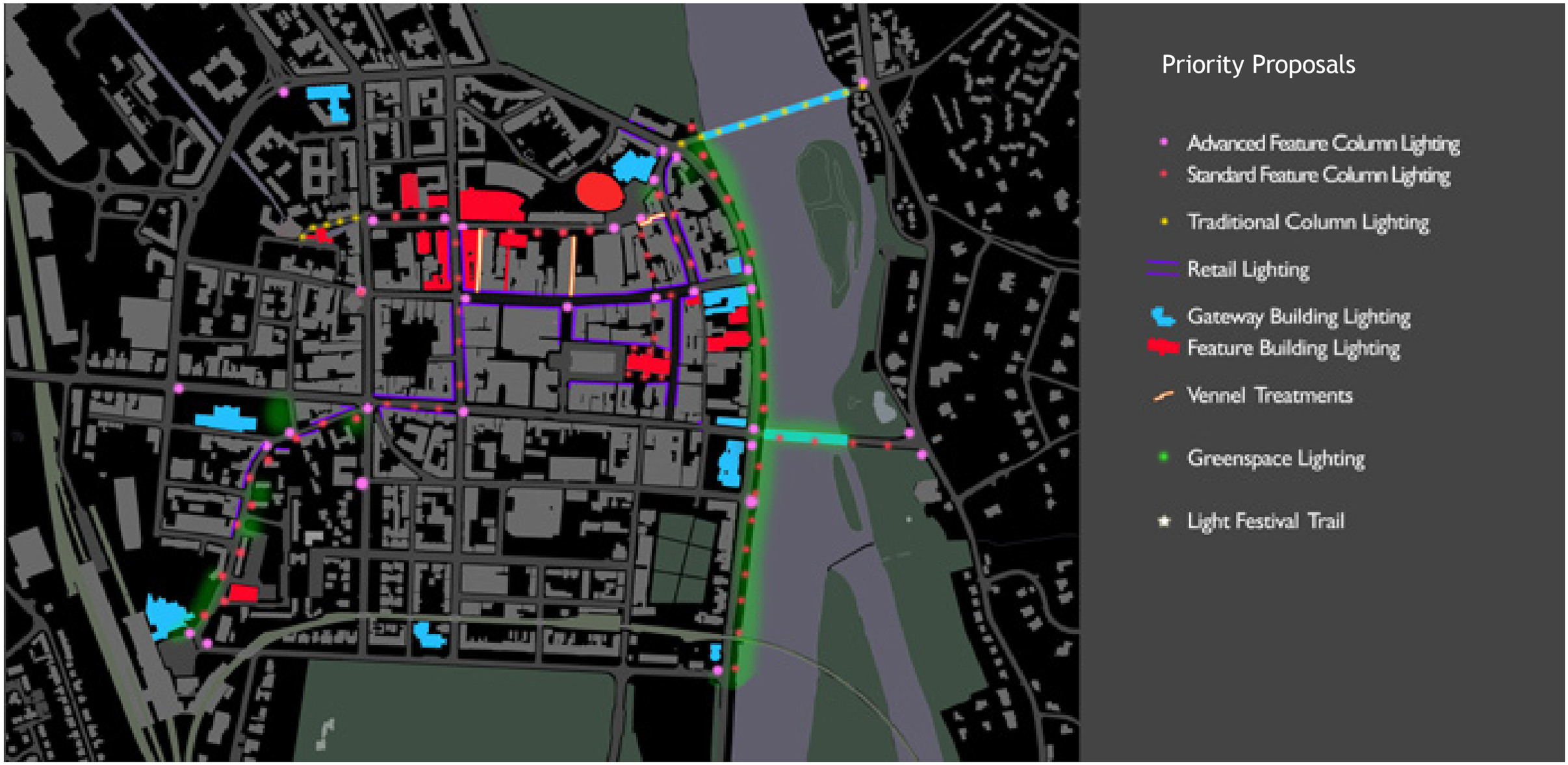
Ref	*Buildings and Structures at Key entry points*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
A1	Museum and Art Gallery, Bridge Lane	£50,000.00	£75,000.00	£12,000.00	£152,000.00	16
A2	1-5 High Street	£45,000.00	£85,000.00	£20,000.00	£150,000.00	12
A3	2 High Street	£45,000.00	£50,000.00	£10,000.00	£105,000.00	12
A4	Fiscal House, 1 South Street	£40,000.00	£65,000.00	£14,000.00	£119,000.00	12
A5	The Sheriff Courthouse, Tay Street	£60,000.00	£85,000.00	£18,000.00	£163,000.00	12
A6	The Fergusson Gallery, Marshall Place	£50,000.00	£75,000.00	£16,000.00	£141,000.00	12
A7	St Leonard's in the Fields, Marshall Place	£50,000.00	£70,000.00	£18,000.00	£138,000.00	16
A8	Station Hotel, leonard Street	£50,000.00	£85,000.00	£18,000.00	£153,000.00	16
A9	A.K. Bell Library, York Place	£50,000.00	£75,000.00	£15,000.00	£140,000.00	12
A10	Perth Cathedral, North Methven Street	£50,000.00	£75,000.00	£18,000.00	£143,000.00	16
A11	Perth Bridge, West Bridge Street	£50,000.00	£60,000.00	£10,000.00	£120,000.00	20
A12	Queens Bridge, South Street	£65,000.00	£60,000.00	£15,000.00	£140,000.00	16
				OVERALL TOTAL	**£1,664,000.00**	

Ref	*Strategically important Buildings and Structures*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
B1	Perth Concert Hall, Mill Street	£15,000.00	£10,000.00	£6,000.00	£31,000.00	4
B2	Blackadder's, 2 Tay Street	£25,000.00	£30,000.00	£10,000.00	£65,000.00	12
B3	Royal George Hotel, George Street	£2,500.00	£2,500.00	£1,800.00	£6,800.00	4
B4	The Capital Asset, Tay Street	£20,000.00	£15,000.00	£8,500.00	£43,500.00	3
B5	St Matthew's Church, Tay Street	£35,000.00	£70,000.00	£10,000.00	£115,000.00	12
B6	Pedestrian Walkway over rail bridge, Tay Street	£70,000.00	£20,000.00	£10,000.00	£100,000.00	8
B7	Rail Bridge, Tay Street	£30,000.00	£30,000.00	£12,000.00	£72,000.00	12
B8	Rail Bridge, Scott Street	£30,000.00	£30,000.00	£12,000.00	£72,000.00	12
B9	Scott Monument, South Inch	£2,000.00	£6,000.00	£6,000.00	£14,000.00	6
B10	Rail Bridge, King's Place	£30,000.00	£30,000.00	£12,000.00	£72,000.00	12
B11	Queens Hotel, Leonard Street	£25,000.00	£50,000.00	£11,000.00	£86,000.00	16
B12	Burns and Co, 6 King Street	£7,500.00	£20,000.00	£8,500.00	£36,000.00	12
B13	King James VI Hospital, Hospital Street	£30,000.00	£35,000.00	£8,500.00	£73,500.00	12
B14	Bank of Scotland, 222 South Street	£22,000.00	£42,000.00	£9,000.00	£73,000.00	12
B15	Dickens Bar, 189 South Street	£30,000.00	£40,000.00	£8,500.00	£78,500.00	12
B16	Salutation Hotel, South Street	£20,000.00	£45,000.00	£9,000.00	£74,000.00	12
B17	St John's Kirk, St John's Place	£80,000.00	£30,000.00	£10,000.00	£120,000.00	8
B18	City Hall, King Edward Street	£0.00	£0.00	£0.00	£0.00	
B19	King Edward VII Monument, King Edward Street	£6,000.00	£8,000.00	£6,000.00	£20,000.00	8
B20	Café Breizh, 28 High Street	£22,000.00	£48,000.00	£10,500.00	£80,500.00	12
B21	Specsavers/The Bothy, High St - Kinnoull St	£15,000.00	£15,000.00	£8,500.00	£38,500.00	16
B22	Barclays/The Sandeman, High St - Kinnoull St	£35,000.00	£65,000.00	£12,000.00	£112,000.00	16
B23	ML Clothing, 226-232 High Street	£40,000.00	£55,000.00	£11,000.00	£106,000.00	12
B24	Pizza Express, 16 South Methven Street	£30,000.00	£40,000.00	£12,000.00	£82,000.00	6
B25	Mercure Hotel, West Mill Street	£60,000.00	£60,000.00	£10,000.00	£130,000.00	6
B26	Lower City Mills, West Mill Street	£25,000.00	£50,000.00	£12,000.00	£87,000.00	16
B27	Harry's, South Methven Street	£25,000.00	£50,000.00	£12,000.00	£87,000.00	12
B28	Perth North Church, Mill Street	£28,000.00	£25,000.00	£9,000.00	£62,000.00	12
B29	Perth Playhouse, 6 Murray Street	£40,000.00	£65,000.00	£12,000.00	£117,000.00	16
B30	Perth Congregational Church, Kinnoull Street	£15,000.00	£20,000.00	£9,000.00	£44,000.00	8
B31	Pullar House, 35 Kinnoull Street	£35,000.00	£50,000.00	£10,000.00	£95,000.00	12
B32	Perth Theatre, Mill Street/High Street	£75,000.00	£45,000.00	£14,000.00	£134,000.00	16
B33	St Paul's Church, St Paul's Square	£50,000.00	£75,000.00	£16,000.00	£141,000.00	16
				OVERALL TOTAL	**£2,468,300.00**	

Ref	*Key Vennels*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
V1	Albert Close	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V2	Guard Vennel	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V3	Cutlog Vennel	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V4	Flesher's vennel	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V5	St Anne's Lane	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V6	Ropemakers Close	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
				OVERALL TOTAL	**£444,000.00**	

Ref	*Greenspace*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
GS1	Riverside Park	£200,000.00	£150,000.00	£35,000.00	£385,000.00	24
				OVERALL TOTAL	**£385,000.00**	

Appendix 7. Priority treatments



Ref	*Key Priorities*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
G1	A9 Broxden Roundabout/A93 Glasgow Road	£80,000.00	£70,000.00	£25,000.00	£175,000.00	16-20
G2	A9 Inveralmond Roundabout/A912 Dunkeld Road	£80,000.00	£70,000.00	£25,000.00	£175,000.00	16-20
G3	A85 Dundee Road at Friarton Bridge	£75,000.00	£55,000.00	£16,000.00	£146,000.00	16-20
G4	A85 Crieff Road at Newhouse Road roundabout	£40,000.00	£35,000.00	£10,000.00	£85,000.00	16-20
S12	Mill Street/Bridge Lane	£220,000.00	£100,000.00	£35,000.00	£355,000.00	24
S11	Murray Street	£160,000.00	£50,000.00	£20,000.00	£230,000.00	16
S3	Tay Street	£900,000.00	£200,000.00	£100,000.00	£1,200,000.00	24
S2	George Street	£96,000.00	£80,000.00	£12,000.00	£188,000.00	16
S17	Skinnergate/Kirkgate	£130,000.00	£65,000.00	£25,000.00	£220,000.00	16
S16	St John's Place	£120,000.00	£70,000.00	£20,000.00	£210,000.00	12
S9	West Mill Street/ Mill Wynd	£0.00	£0.00	£0.00	£0.00	20
S7	Leonard Street/Hospital Street	£220,000.00	£130,000.00	£40,000.00	£390,000.00	12-16
S10	Kinnoull Street/Scott Street	£140,000.00	£50,000.00	£12,000.00	£202,000.00	12-16
A1	Museum and Art Gallery, Bridge Lane	£50,000.00	£75,000.00	£12,000.00	£152,000.00	16
A2	1-5 High Street	£45,000.00	£85,000.00	£20,000.00	£150,000.00	12
A3	2 High Street	£45,000.00	£50,000.00	£10,000.00	£105,000.00	12
A4	Fiscal House, 1 South Street	£40,000.00	£65,000.00	£14,000.00	£119,000.00	12
A5	The Sheriff Courthouse, Tay Street	£60,000.00	£85,000.00	£18,000.00	£163,000.00	12
A6	The Fergusson Gallery, Marshall Place	£50,000.00	£75,000.00	£16,000.00	£141,000.00	12
A7	St Leonard's in the Fields, Marshall Place	£50,000.00	£70,000.00	£18,000.00	£138,000.00	16
A8	Station Hotel, leonard Street	£50,000.00	£85,000.00	£18,000.00	£153,000.00	16
A9	A.K. Bell Library, York Place	£50,000.00	£75,000.00	£15,000.00	£140,000.00	12
A10	Perth Cathedral, North Methven Street	£50,000.00	£75,000.00	£18,000.00	£143,000.00	16
A11	Perth Bridge, West Bridge Street	£50,000.00	£60,000.00	£10,000.00	£120,000.00	20
A12	Queens Bridge, South Street	£65,000.00	£60,000.00	£15,000.00	£140,000.00	16

Continued Overleaf

Ref	*Key Priorities*	*Equiptment/Controls*	*Installation*	*Fees*	*Total*	*Delivery timescale (Weeks)*
B1	Perth Concert Hall, Mill Street	£15,000.00	£10,000.00	£6,000.00	£31,000.00	4
B4	The Capital Asset, Tay Street	£20,000.00	£15,000.00	£8,500.00	£43,500.00	3
B5	St Matthew's Church, Tay Street	£35,000.00	£70,000.00	£10,000.00	£115,000.00	12
B11	Queens Hotel, Leonard Street	£25,000.00	£50,000.00	£11,000.00	£86,000.00	16
B17	St John's Kirk, St John's Place	£22,000.00	£15,000.00	£7,500.00	£44,500.00	8
B20	Café Breizh, 28 High Street	£22,000.00	£48,000.00	£10,500.00	£80,500.00	12
B21	Specsavers/The Bothy, High St - Kinnoull St	£15,000.00	£15,000.00	£8,500.00	£38,500.00	16
B22	Barclays/The Sandeman, High St - Kinnoull St	£35,000.00	£65,000.00	£12,000.00	£112,000.00	16
B26	Lower City Mills, West Mill Street	£25,000.00	£50,000.00	£12,000.00	£87,000.00	16
B28	Perth North Church, Mill Street	£28,000.00	£25,000.00	£9,000.00	£62,000.00	12
B29	Perth Playhouse, 6 Murray Street	£40,000.00	£65,000.00	£12,000.00	£117,000.00	16
B30	Perth Congregational Church, Kinnoull Street	£15,000.00	£20,000.00	£9,000.00	£44,000.00	8
B31	Pullar House, 35 Kinnoull Street	£35,000.00	£50,000.00	£10,000.00	£95,000.00	12
B32	Perth Theatre, Mill Street/High Street	£75,000.00	£45,000.00	£14,000.00	£134,000.00	16
V1	Albert Close	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V2	Guard Vennel	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
V3	Cutlog Vennel	£35,000.00	£25,000.00	£14,000.00	£74,000.00	20
				OVERALL TOTAL	£6,552,000.00	

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