



10.0 APPEARANCE



10.01 CONCEPT

Material and appearance consideration

The apartment block and the house types are fixed in terms of layout, mass, and scale due to the modular construction, but there is an opportunity to develop a material palette that is unique to the development and the local context, and Littlehampton.

The existing developments to the immediate north and east of the site are both educational buildings and uses, a school to the north and a nursery to the east.

To the south is Rosemead Park and to the west is Fitzalan Road and the new roundabout leading north to the A27. Further to the east and west is a mixture of 1 and 2 storey suburban development, and in terms of architectural language are different from the modern BoKlok apartments, houses and the BoKlok philosophy of development.

The concept for this site was clear from the start, the development did not necessarily need to match the existing context with red, brown, buff brickwork, tones, and colours, synonymous with suburban housing, but complement it.

The development needed to create its architectural language with a modern interpretation of low-cost good quality housing providing an architectural backdrop to the proposed BoKlok landscaping strategy.

The BoKlok apartments are designed in a simple restrained aesthetic which is reflective of both its Scandinavian heritage and of contemporary domestic architecture in the UK. The choice of cladding materials varies but needs to compliment the modular scheme that can deliver truly affordable housing which should suit a cladding system over a more traditional material and construction method.

The tones and materials of the BoKlok buildings should also create a neutral/ muted backdrop to the proposed landscape design, existing/proposed trees, and soft landscaping.

The 3d visuals produced clearly show the green trees and soft landscaping complement the grey, buff, and brown tones of the building, lifted by the coloured feature panels and the white coloured balconies provided on the apartment block.



Colourful cladding to Littlehampton dwellings



Littlehampton Beach Huts



Sovereign Harbour - Eastbourne - Designed by ECE Architecture



The Littlehampton Academy building



Playful colour in the longest bench, Littlehampton

10.02 APPEARANCE

Apartment Block

The appearance and design of the block create apartments with a mono-pitch roof, two entrances - primary and secondary, with each apartment having its own private balcony space, in addition to the large amount of communal amenity.

The parrapet side is on the main entrance side (primary) and the lower eaves edge is on the secondary entrance. The gables have been designed with a step in the middle to help break up the scale and mass of the buildings.

The construction of the block and the technical detail of the modular system means the finished floor level is approximately 575 mm about external ground level, therefore the entrances both have ramped and stepped approaches built into the design.

The apartment block comprises 32 apartments with 8 per floor. Bins and cycle stores are located close to the block and are housed in timber and mesh enclosures with grass roofs.

The parrapet side of the block will comprise lighter-toned materials, and when viewed from Fizalan Road will complement the tree lined boundary to the south.

The lower eaves edge addresses the proposed dwellings with the intention that the lower eaves will reduce the scale and mass of the block when viewed from the dwellings on-site. This side utilises cladding materials toned to match the bricks' colours used for the proposed house dwellings.

The apartment and house materials also compliment the brick and cladding tones used on the Littehampton Academy to the north of the site.

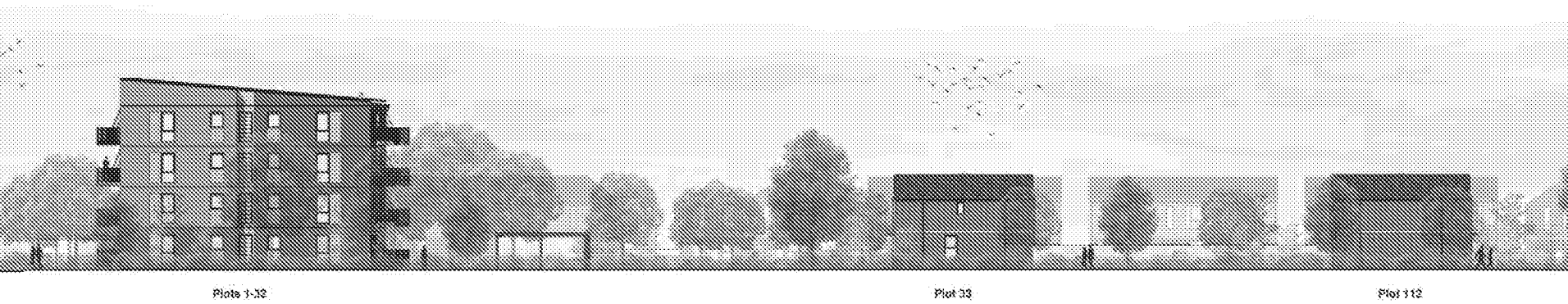
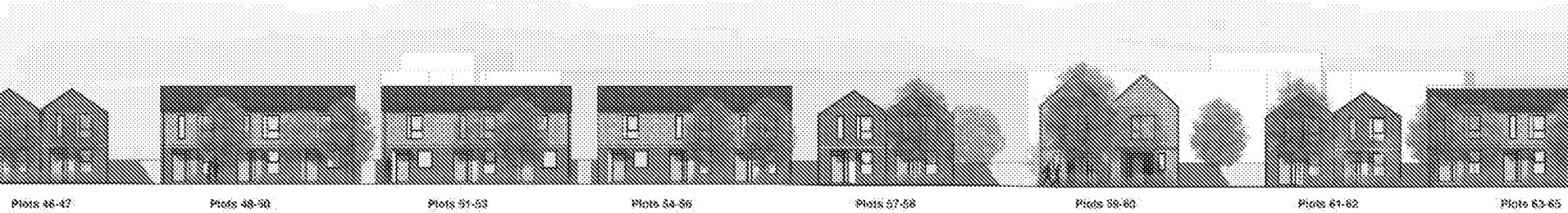
On all elevations, the cantilevered balconies are finished in black and white painted aluminium and are staggered in colour to add interest to the elevation, contrasting the darker tones of the main cladding, and to break the mass and scale of the elevations.

The main entrance recesses and the gable recesses also help to break the scale and mass of the elevations when viewed from the public realm.

Dwellings

The development comprises a mixture of semi-detached and terraced houses.

The semi-detached houses will have a gable frontage featuring one brick colour with a contrasting colour brick soldier course. The terraced houses will have an eave frontage featuring brown-grey bricks at ground level, buff brick at 1st floor level and a buff brick soldier course in between.



Street scenes

10.03 MATERIALS - APARTEMENT BLOCK

WALLS:

- Equitone Tectiva TE20 Pebble cladding

One of the two primary cladding materials that is applied to the parapet side of the building and the higher parapet sides on the gables from the 1st floor upwards.

- Equitone Natura Charcoal N073 cladding

The second of the two primary cladding materials and is applied to the ground floor level on the parapet side of the building and the lower parapet sides on the gables. Also applied to both recess entrance areas

- Equitone Tectiva TE60 Hessian cladding

These are the secondary cladding materials and picks up on the tones of the brick work on the adjacent proposed houses. This material is used predominantly on the rear elevation and adjacent to windows on all other elevations.

- Equitone Pictura PG442 Sky Blue cladding

This will be applied to recessed element of the side elevations and between the windows within the recessed element of the front and rear elevations, providing a feature colour to the development.

- Buff Brick Plinth

- Powder Coated Aluminium Balconies - Signal Black and White

ROOFS:

- Single ply membrane - Grey

- Grey Flashing

RAINWATER GOODS:

- UPVC in anthracite grey finish

WINDOWS & DOOR DETAILS:

- UPVC in anthracite grey finish

- Glazed UPVC entrance door in anthracite grey finish

- Dark metal door to rear elevation

DETAILS, PORCHES AND GUARDING

- Galvanised Steel Balcony Tiles -- colour to match balconies

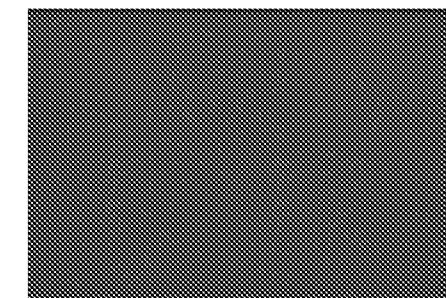
- Powder Coated Aluminium Porch

- Galvanized Steel Ties to Porch

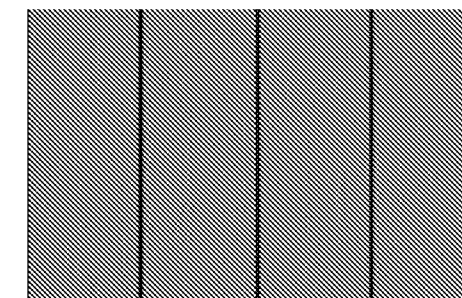


view of apartment block from Fitzalan Road

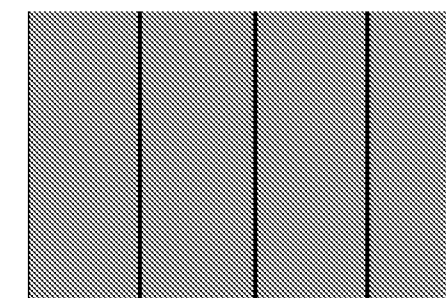
WALLS:



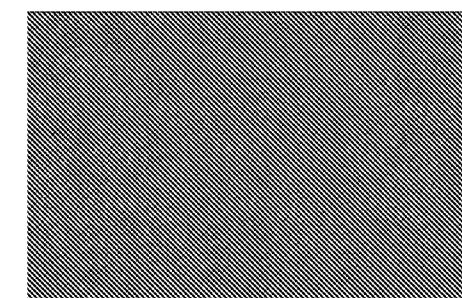
Equitone Tectiva TE20 Pebble



Equitone Tectiva TE60 Hessian



Equitone Pictura PG442 Sky Blue

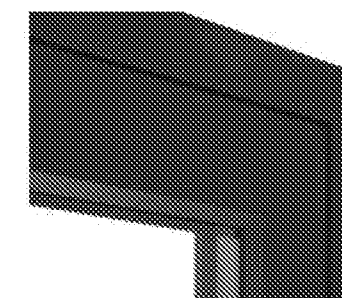


Equitone Natura Charcoal N073



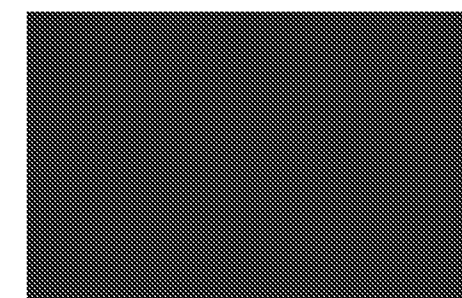
Buff Brick Plinth

WINDOWS & DOORS:



Aluminium/Timber composite
windows/door - anthracite grey

ROOF FINISH



Single ply membrane - grey

10.04 MATERIALS - HOUSES

WALLS:

- Buff Brick
- Brown/Grey Brick

ROOFS:

- Ceramic Slate

RAINWATER GOODS:

- UPVC in anthracite grey finish

WINDOWS & DOOR DETAILS:

- UPVC in anthracite grey finish
- UPVC front doors in anthracite grey finish
- Feature colour aluminium cladding front door side panel
- UPVC patio doors in anthracite grey finish

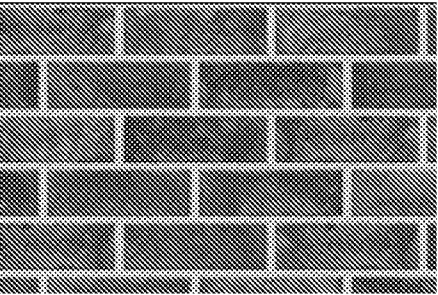
DETAILS & PORCHES:

- PPC anthracite grey finished aluminium cantilevered canopy
- Full surround PPC anthracite grey finished aluminium canopy with timber screen
- Brown/grey and buff soldier brick course

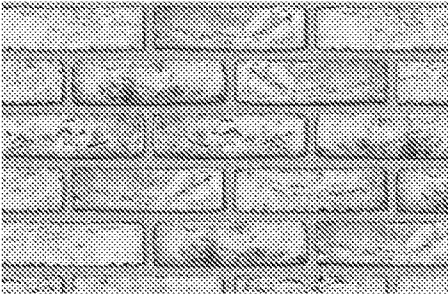


view from the central green

WALLS:

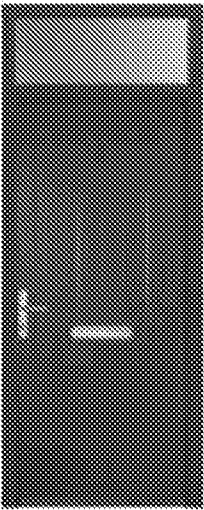


Brown/Grey Brick

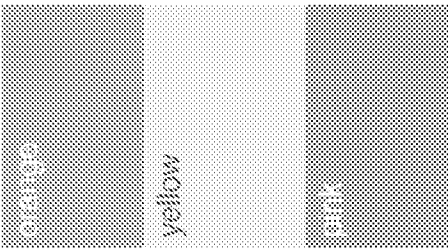
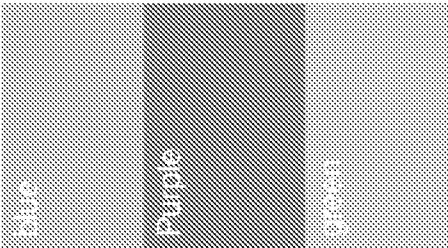


Buff Brick

DOORS & SIDE PANELS:

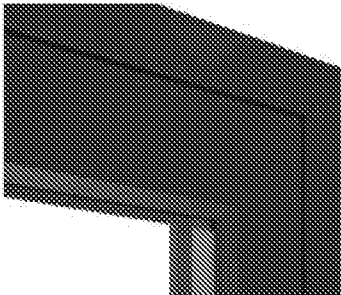


Timber front door in anthracite grey finish



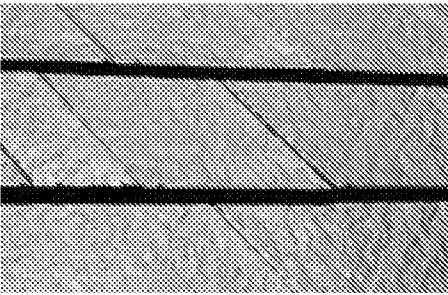
Feature colour aluminium cladding front door side panel

WINDOWS & DOORS:



Aluminium/Timber composite windows/door - anthracite grey

ROOF FINISH



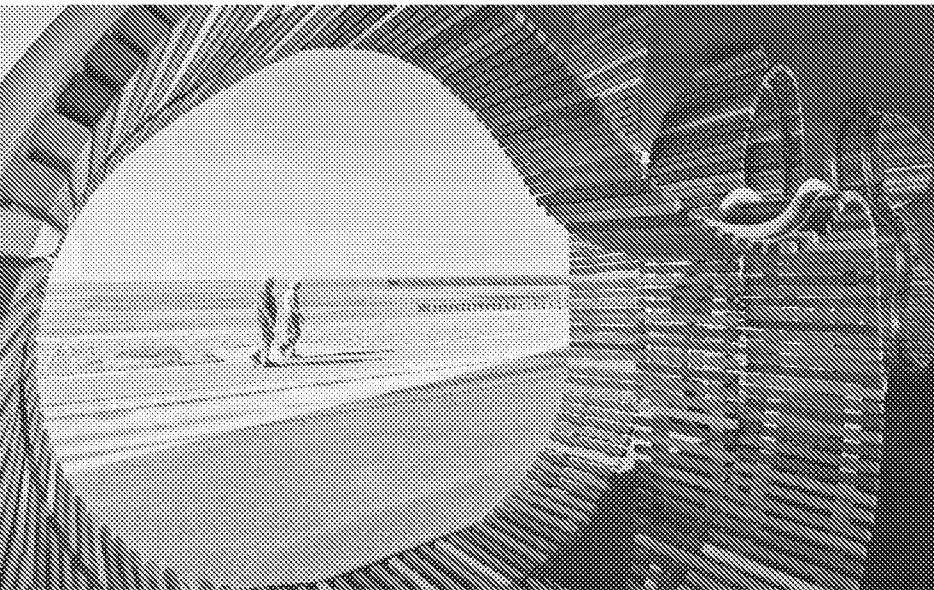
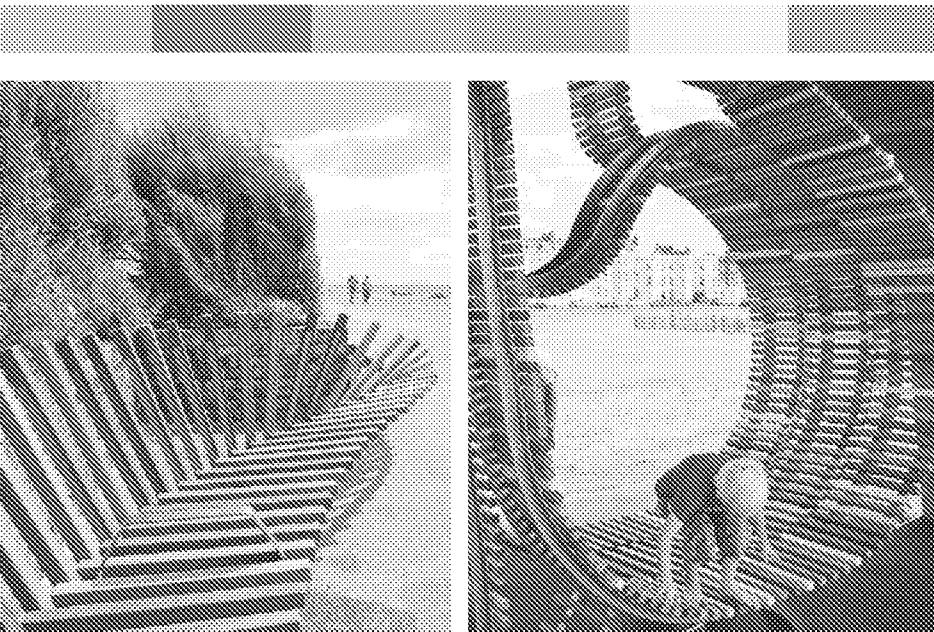
Ceramic slates

10.05 MATERIALS - FEATURE COLOURS

Feature Colours

The feature colours used through out the site have been inspired by the iconic 'The Long Bench' project along the seafront in Littlehampton.

The colour template used for 'The Long Bench' is vibrant and comprises of six colours blue, purple, green, orange, yellow and pink.



'The Long Bench', Littlehampton (photographs from www.studioweave.com)

Feature Colours on site

The feature colours have been arranged in a repetitive pattern across the site starting with blue and ending with pink as shown on the site layout below. The feature colour on the apartment block will be applied to the recessed element of each side elevation and between the windows within the recessed element of the front and rear elevations.

The feature colours on the dwellings will be applied to the front door's side panel

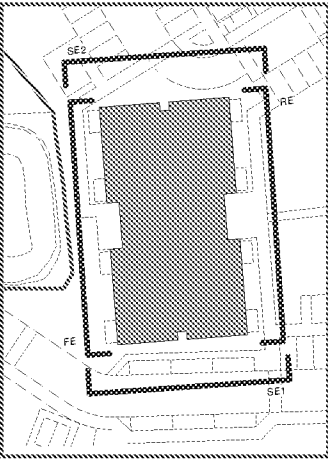
These colours will add interest to the street scenes and will blend well with the surrounding landscape.



site layout showing the future colour used on the apartment block and dwellings

10.06 PROPOSED ELEVATIONS - BLOCK

Key Diagram



Block Elevations (NTS)



Front Elevation



Side Elevation 01



Rear Elevation

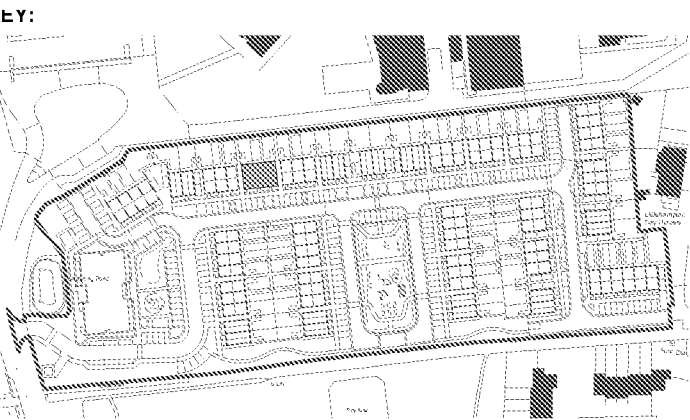


Side Elevation 02

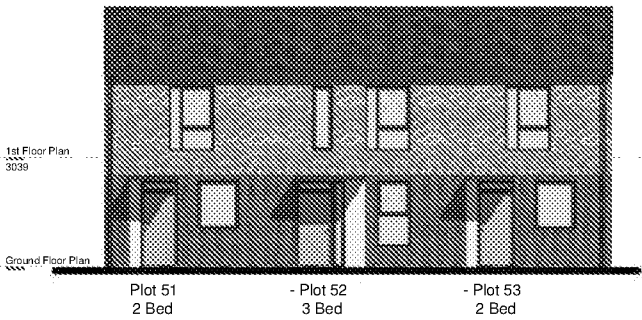
Material Schedule:			
WALLS	ROOFS, EAVES, SOFFIT & RAINWATER GOODS	WINDOWS & DOORS DETAIL	DETAILS, PORCHES AND GUARDING
1. Dark grey horizontal cladding 2. Light grey horizontal cladding 3. Feature colour, vertical cladding 4. Pebble colour textured vertical cladding 5. Hessian colour textured vertical cladding 6. Buff Brick Plinth 7. Powder Coated Aluminum Balconies - Signal Black 8. White painted Aluminum Balconies	10. Single ply membrane - grey 11. Powder Coated Aluminum Gutters - Signal Black 12. Grey Flashing	20. Signal Black PPC Aluminum Window/door 21. Glazed Entrance Door with Black Metal Frame 22. Dark Metal Door	30. Galvanized Steel Balcony Tiles 31. Glazed Powder Coated Aluminum Porch 32. Galvanized Steel Ties to Porch

10.07 PROPOSED ELEVATIONS - HOUSES

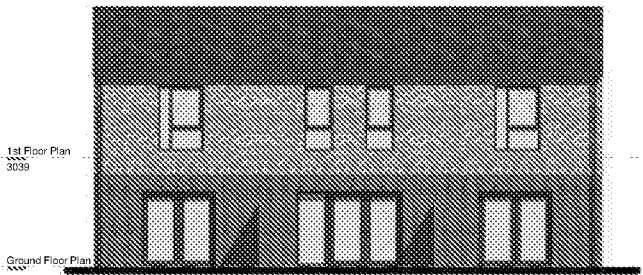
Key Diagram



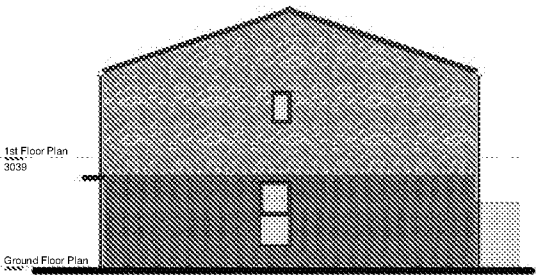
Terraced Houses Elevations (NTS) - Terrace Type T02



Front Elevation
1 : 100

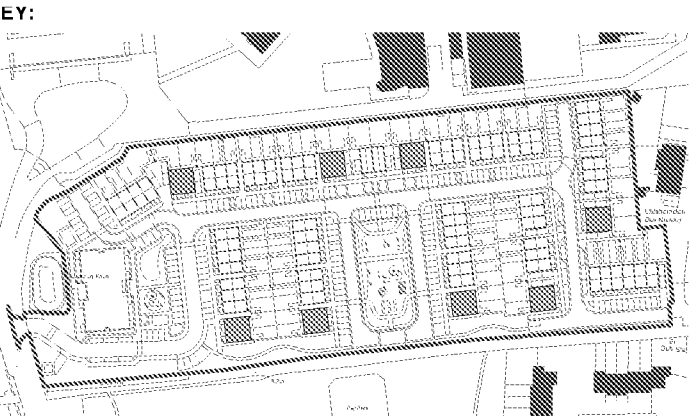


Rear Elevation
1 : 100

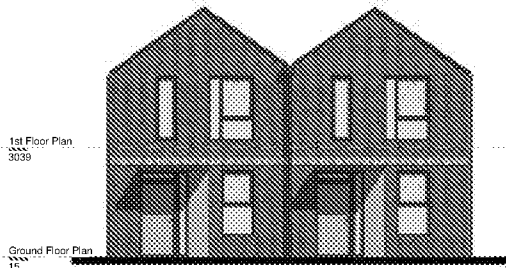


Side Elevation 01
1 : 100

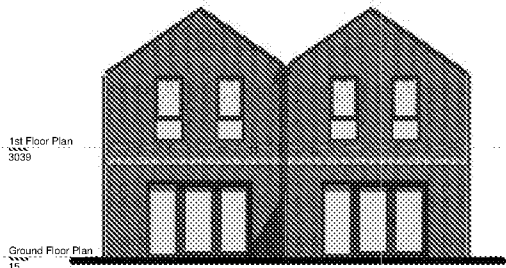
Key Diagram



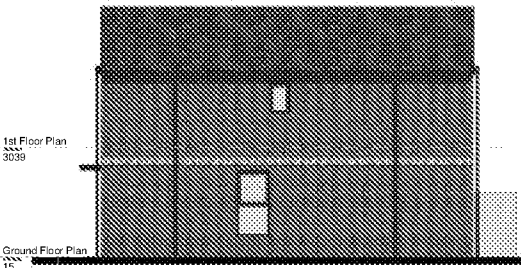
Semi-detached Houses Elevations (NTS) - House Type HC302



Front Elevation
1 : 100



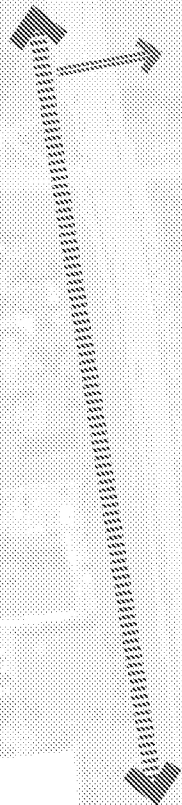
Rear Elevation
1 : 100



Side Elevation 01
1 : 100

Material Schedule:
Walls: Buff Brick and Brown/Grey Brick
Soldier course: Buff Brick
Roof: Ceramic Slate
Rainwater goods: UPVC in anthracite grey finish
Porch: PPC anthracite grey finished aluminium cantilevered canopy
Windows: UPVC in anthracite grey finish
Front doors: UPVC in anthracite grey finish
Patio doors: UPVC in anthracite grey finish
Front door side panel: Feature colour aluminium cladding *
* for 'feature colour' refer to 'Front Door Panel Colour Plan' sheet in the DAS

11.0 ACCESS



11.01 MOVEMENT DIAGRAM

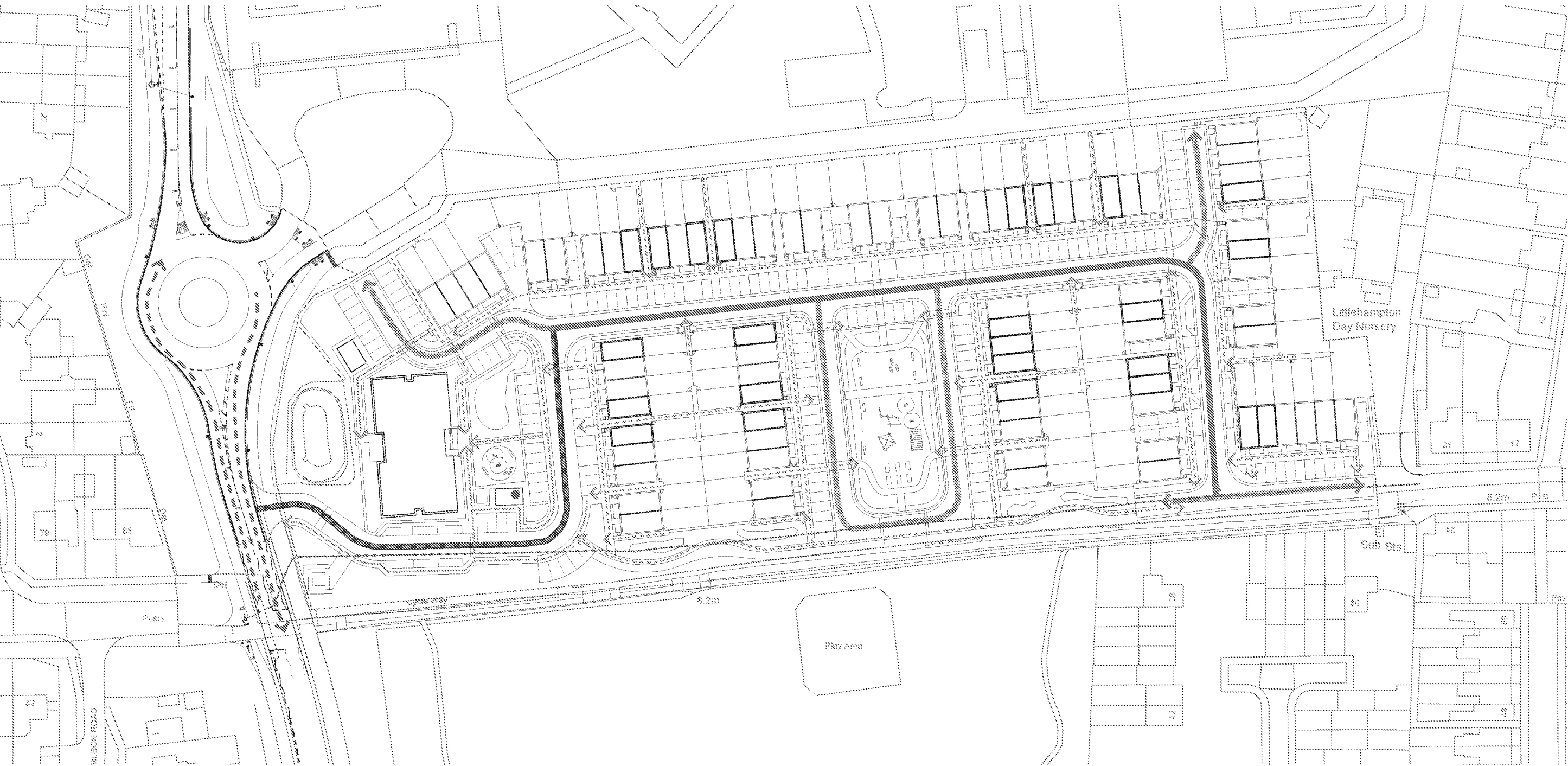


Diagram Key:

- Primary Road
- Secondary Road
- Tertiary Road
- Pedestrian Access
- Vehicular Access
- Bin Collection Points

11.02 ACCESS

Site Location & Accessibility Credentials

The site is located on the eastern side of Fitzalan Road. The site's immediate context is largely residential. However in the wider area there is a mix of building uses that include education, healthcare, police services with Littlehampton town centre a 15 minute walking.

- EDUCATIONAL -
SERVICES -
COMMERCIAL -
RESIDENTIAL -
- River Beach Primary School
The Littlehampton Academy
Littlehampton Day Nursery

Littlehampton Police Station
National Probation Service

Cuff Miller Ford Littlehampton
Off license
Arun Windows & Supplies

Flats above retail and commercial uses
Terraced and detached houses

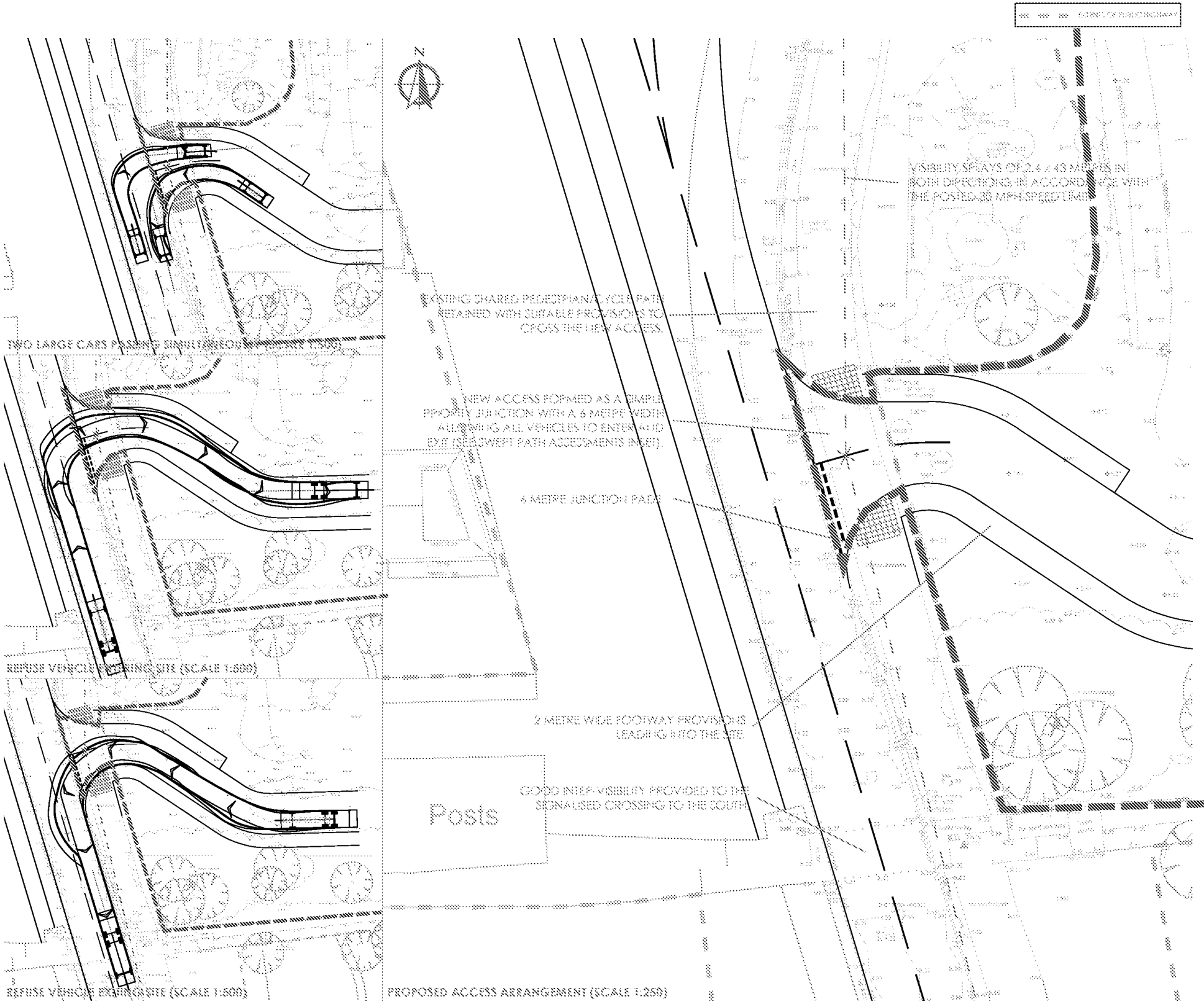
The development proposals would seek to provide a number of sustainable travel initiatives, most notably the execution of a Residential Travel Plan, with incentives to encourage non-car travel.

More detail can be found in the Highway consultants drawings and documentation submitted with this application.

Access Arrangements

The proposals would be accessed from one access point at the sites south west corner via Fitzalan Road as included within the previously approved access arrangement through planning application LU/55/15/OUT.

Pedestrian movements between the site and the local amenities would be encouraged through provision of footway connections through the site and links to existing pedestrian infrastructure on Fitzalan Road.



Proposed Access Arrangements

11.02 ACCESS



Internal Layout & Servicing

The internal site layout would ensure that the largest anticipated vehicles can access and turn on-site. This is likely to constitute a refuse vehicle, although there would also be a need to demonstrate that rigid delivery vehicles and fire tenders can suitably access and turn on-site to service the properties.

The main access road through the site would be designed with a minimum of 5.5m width, suitable to accommodate all traffic, with a traffic-calming/home zone approach to the internal design to ensure reduced speeds. Secondary streets serving some parking areas would be formed as shared surfaces, suitable for use by vehicles, cyclists and pedestrians.

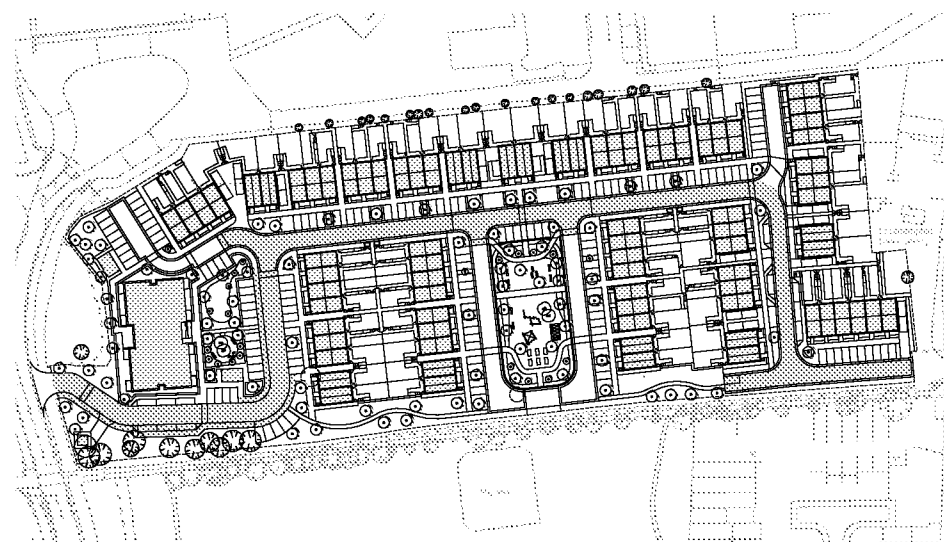
Parking Strategy

The proposed dwellings would be provided with car parking in line with West Sussex County Council's (WSCC) requirements and reflective of the car ownership levels in the Borough.

The proposals provides 1 space per apartment unit and 2-bed house, 2 spaces per 3-bed house. In addition, the proposals would provide 10 visitor park spaces and 2 Car Club spaces (providing 178 spaces in total).

The proposals would promote the use of electric vehicles to all residents through the implementation of Electric Vehicle Charging Points in designated areas.

All dwellings would be provided with sheltered and secure cycle parking, in accordance with relevant parking standards.



Highway adoption plan

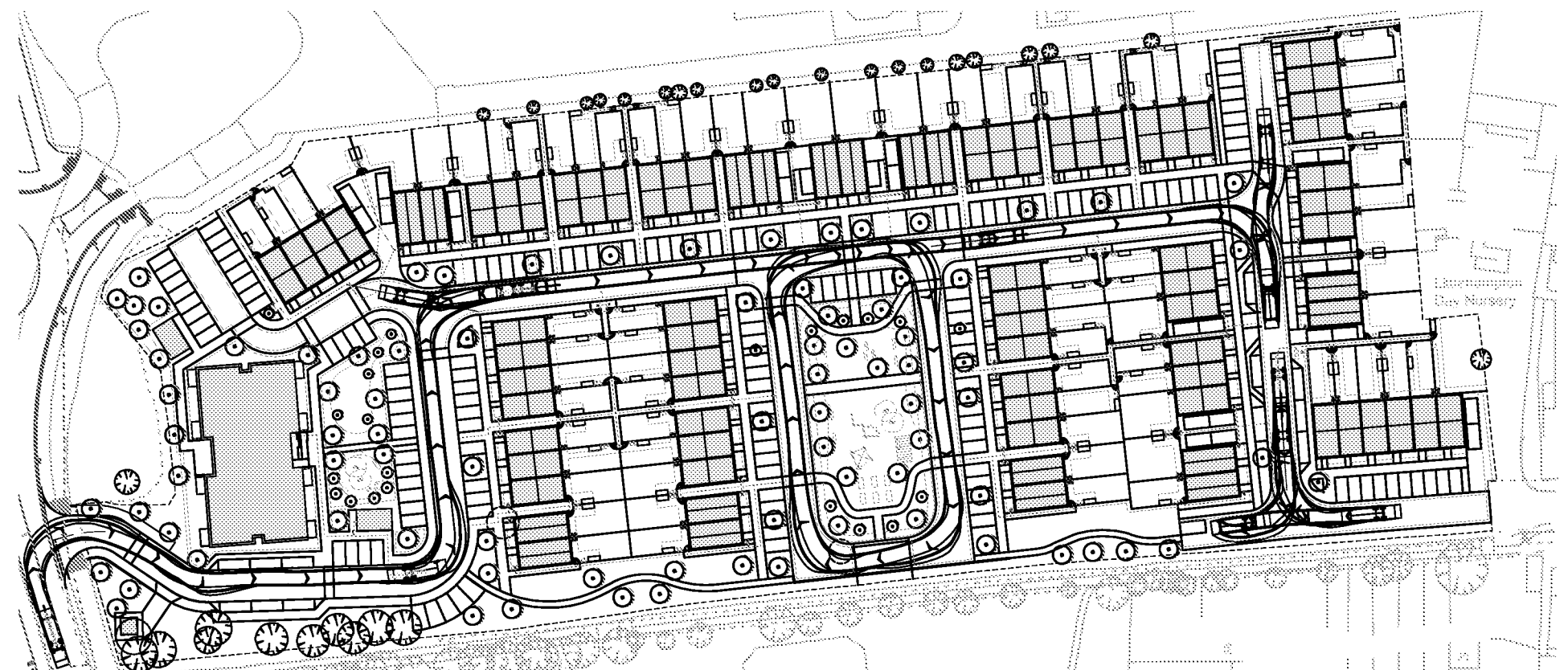
Travel Planning

A Travel Plan (TP) would support the proposals, with measures relating to sustainable travel choices, bus ticket/travel vouchers, reduced travel by private car and details of enforcement should the TP not be successful. A summary of the likely measures to be required are as follows:

- Travel Vouchers (per household) to the value of £150, for use on public transport or purchase of bicycle, plus £150 more in future.
- Electric Vehicle Charging Points.
- Provision of car club spaces located close to the entrance to the site, accessible to residents of the development and the wider local area. Provision of membership for all new residents for a 3-year period;
- Negotiation of discounts for residents with local retailers (cycle shops etc.);

- Travel Plan Coordinator to be employed with responsibility to implement all measures, including offering details of a car share database to residents, with links to the scheme run by WSCC;
- Inclusion of the 'cycle journey planning tool' – link to WSCC website and promotion through Welcome Packs.

An outline Travel Plan would be prepared to support the planning application stage, to agree these key initiatives with WSCC. A full Travel Plan would be secured by planning condition and implemented prior to occupation of the dwellings.



Refuse vehicle swept path

12.0 SUSTAINABILITY



12.01 SUSTAINABILITY

Arun District Design Guide SPD

The Supplementary Planning Document from Arun District Council emphasises the importance of sustainability in new developments. Sustainable location, materials, construction methods as well as renewable energy are crucial to reducing the energy demand and carbon emissions in line with national and local standards including the Arun Local Plan.

BoKlok Apartments and Houses provide comfortable, innovative, and attractive modular homes with sustainability at the core of their vision.

BoKlok Sustainability Statement

BoKlok's approach using off-site and modern methods of construction benefits from reduced time on site, reduced risk of delays and greater certainty in the construction programme.

Offsite construction can influence the effect that a project has on the natural and social environment, with environmental aspects during construction and the disruption to the local community, as well as reduced environmental impacts during operation, such as production of carbon, which is closely linked to energy efficiency.

A low carbon footprint and reduced energy costs, BoKlok homes are designed to Nordic levels of thermal insulation and airtightness along 'fabric first' principles, resulting in low CO2 emissions and reduced running costs for residents.

The use of timber frame as the primary construction material for the apartments and houses (where all timber is sourced from responsibly managed forests in Scandinavia) lowers the embodied energy in a BoKlok building compared to traditional UK brick and block construction.

BoKlok purposefully design homes that require less energy to manufacture and less energy to run. Zero carbon standards are also an option in their modular systems, but all their homes offer great energy performance to make them more efficient to heat and simple to cool, 30% above current Part L U values.

Industry benchmarks are BoKlok's starting point not their target. They deliver outstanding energy performance as standard.

Design:- BoKlok take great care over the choice of materials to ensure the highest levels of sustainability.

Manufacturing :- 32% of the UK's landfill is construction waste! BoKlok's precise manufacturing processes and precision cutting machinery not only save time and energy, but also minimise material usage and waste.

Living :- BoKlok's exacting quality standards and air tightness detailing reduce drafts which, combined with high levels of insulation, dramatically reduce heat loss and the energy required to heat our homes.

Energy and water

Both the Houses and the flats adopt a fabric first approach exceeding the current building regulations Part L. The primary heating system for all the houses will be electric with a combination of gas and electric to the apartment blocks, with electric boilers throughout both the houses and the flats.

New developments will seek to reduce flood risk through incorporation of Sustainable Drainage Systems (SuDS), including permeable hard surfacing and soakaways. They will be integrated into the overall Landscaping Strategy and existing natural features on site, seeking to provide additional recreational and wildlife habitat benefits where possible, while reducing impermeable surface cover.

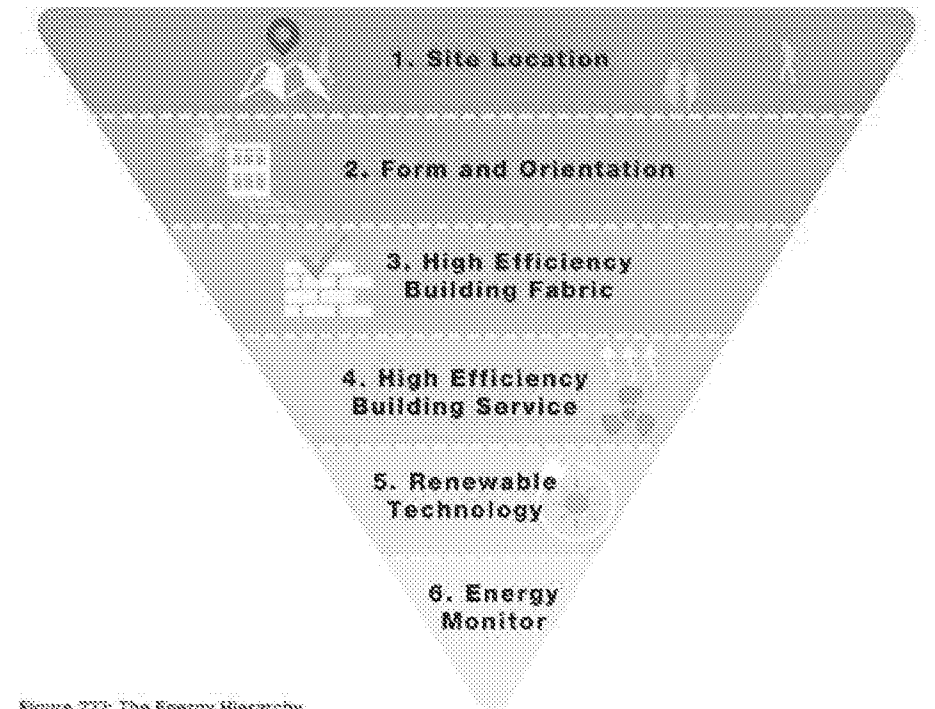


Figure 233: The Energy Hierarchy



12.01 SUSTAINABILITY

Sustainability Design and Construction

The use of timber-framed modular construction manufactured within a controlled environment is one of the most sustainable ways to build. BoKlok uses sustainable sources of timber for the main superstructure, built within a factory which can reduce construction/build waste by 90%.

Compared to an equivalent, traditionally built project, up to 67% less energy is required to produce a modular building. Offsite construction also impacts on the carbon footprint of a building, as it allows for a reduction of the total number of deliveries to sites by 90%.

Design & Access

The site has been designed to be accessible and safe for all users and types of transport uses. The parking strategy is to minimise the use of cars where possible and use EV spaces, Car Club spaces as well as visitor spaces. New residents will be actively encouraged to use other forms of transport over cars, with each dwelling receiving a minimum of 1 cycle space.

Material Selection

BoKlok looks to specify materials which have been produced with minimal impact on the environment in line with good-practice methodology.

Security

The site development and buildings have been designed to minimise the risk of criminal activity. The orientation of the apartment block and each dwelling allows for passive surveillance over entrances, car parking and community amenity spaces.

Biodiversity

The site has been assessed by Lizard Landscape ecology team who provided an Ecological Impact Assessment and Ground-Level Bat Roost Assessment of the site. The findings have informed the site plan layout as well as the landscape architect's final design.

The suggested compensation and enhancement measures will be incorporated

into the scheme to minimise losses of biodiversity in line with local and national planning guidance.

Once avoidance, mitigation and enhancement measures have been considered, the impacts of the buildings and the new landscape design upon biodiversity will be minor adverse in the short term with a potential biodiverse net gain impact in the longer-term once the vegetation has established on-site.

Water (supply)

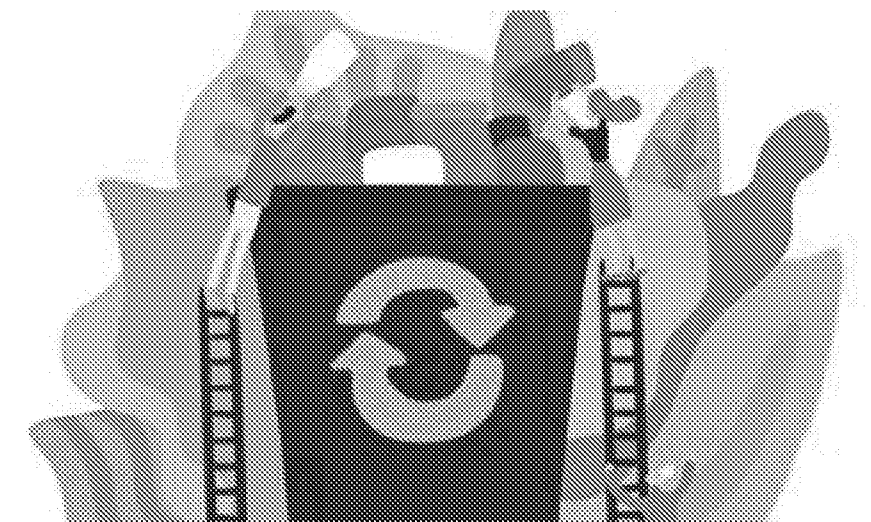
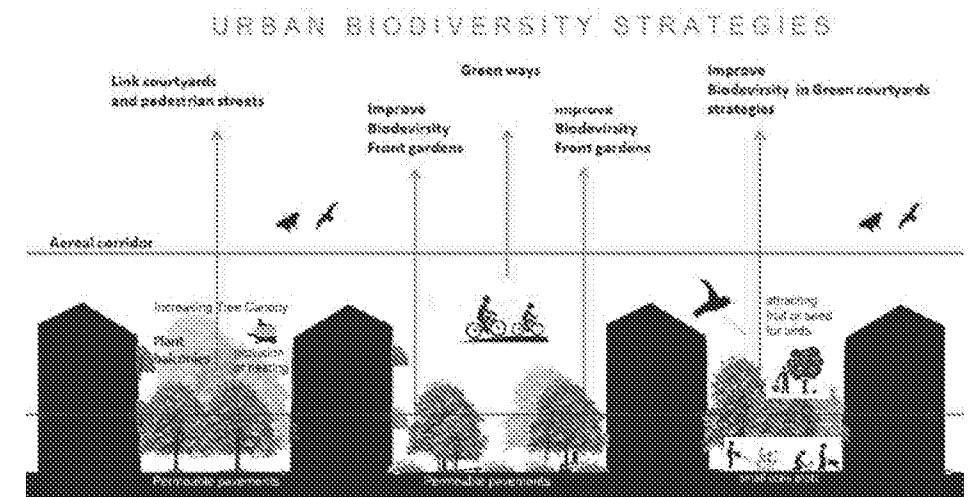
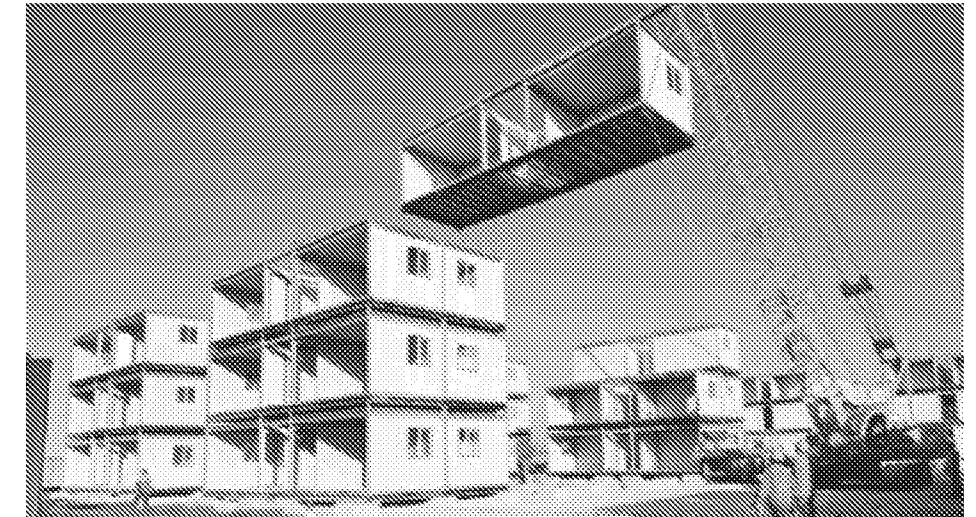
To reduce the consumption of potable water, efficient sanitary ware and water-saving features will be specified within the buildings, to include:-

- Low and dual flush WCs - Dual flush cisterns with low effective flush volume will be specified;
- Taps - Wash hand basins and sinks will be water efficient.
- Showers - Aerated or low flow shower heads will be included to help reduce water consumption.
- Kitchen appliances - Low water consuming equipment to be considered.
- All external planting will rely on manual watering or precipitation only.

Waste

BoKlok will look to minimise waste through the construction phase of the project as well as during the life of the building by providing appropriate facilities, in accordance with good-practice principles.

Waste will be minimised throughout the demolition and construction phase through the implementation of the waste hierarchy. As discussed, the modular construction, delivery and installation of the apartments block minimise onsite wastage.



12.01 SUSTAINABILITY

Transport

The proposals would seek to provide a number of sustainable travel initiatives with incentives to encourage non-car travel.

The likely measures to be required are as follows:

- Travel Vouchers (per household) to the value of £150, for use on public transport or purchase of a bicycle, plus £150 more in future.
- Electric Vehicle Charging Points to encourage the use of electric vehicles.
- Provision of car club spaces, accessible to residents and the wider local area. Provision of memberships for all new residents.
- Secondary streets serving the main car parking areas, formed as shared surfaces, suitable for use by vehicles, cyclists and pedestrians.
- Sheltered and secure cycle parking.
- Negotiation of discounts for residents with local retailers (cycle shops etc.)
- Travel Plan Coordinator to be employed with a responsibility to implement all measures, including offering details of a car share database to residents, with links to the scheme run by WSCC.
- Inclusion of the 'cycle journey planning tool' – link to WSCC website and promotion through Welcome Packs.

Pollution

Pollution during the construction phase of a project can have a harmful impact on both the natural environment and the local residents. With the modular system, construction time is reduced on-site, deliveries and vehicle traffic are minimised, and on-site dust production usually associated with a traditional build is kept to a minimum.

This method of construction will also drastically reduce the potential negative impacts on water, air and the surrounding residents.

Light

All external lighting for the site will be designed in line with current British Standards and ILP Guidelines. Where possible directional lighting which eliminates direct upward lighting will be used and instead only illuminates the pathways or areas that need lighting.

Renewable Energy

A number of site-wide energy generation technologies could be given initial consideration:

- Solar Thermal Hot Water
- Wind turbines
- Photovoltaics; Combined Heat and Power
- Combined Heat and Power
- Air Source Heat Pumps (ASHP)

More details on the preferred options are covered within the sustainable report.

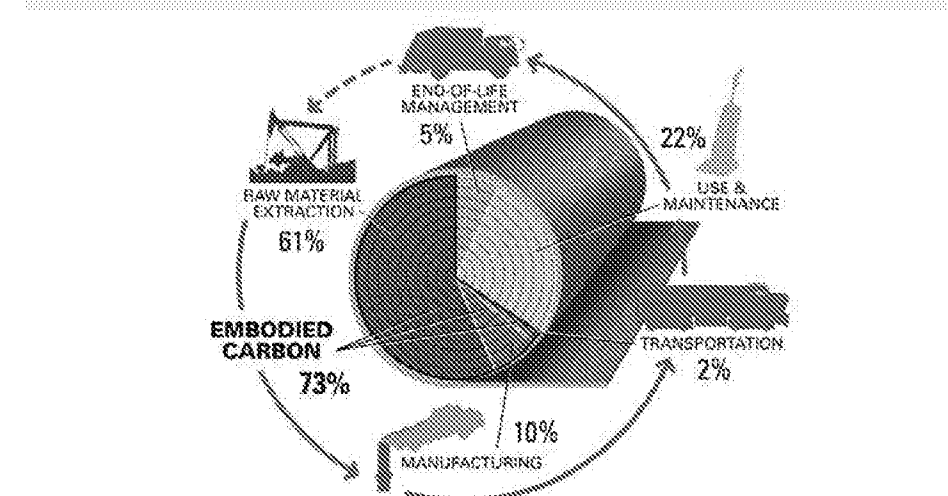
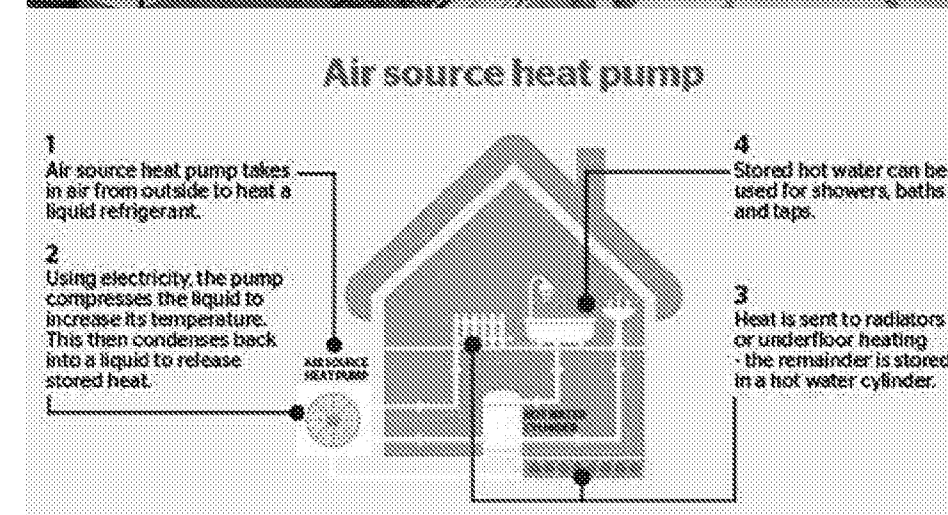
After analysis of anticipating CO2 emissions under Building Regulations Part L1A using SAP, and having undergone a lean design process to reduce the demand for energy, it is proposed that the development will utilise a community boiler/ASHP system to provide heating and hot water to each apartment, providing 30% reduction on Part L. The houses will use ASHP systems and electric boilers only.

Embodied Carbon

Embodied carbon refers to the carbon footprint of a material, it considers the number of greenhouse gases (GHGs) that are released during the manufacture, transport and construction of a building as well as its life cycle and decommissioning at the end of its life.

Traditional New Build low-rise developments can have a range of embodied carbon from 540 to 1100 kgCO2em2 – figures taken from RICS.

The embodied carbon analysis for the BoKlok development figures equates to a total of 230.15 kgCO2em2 which is approximately a reduction of 55%. This gain has largely come from the pre-fabrication of the BoKlok product which is assembled off-site based on a standardised set of key construction details, which utilise low embodied carbon materials and reduce the amount of waste from the construction process.



12.02 KEY DESIGN PRINCIPLES

Key Design Principles

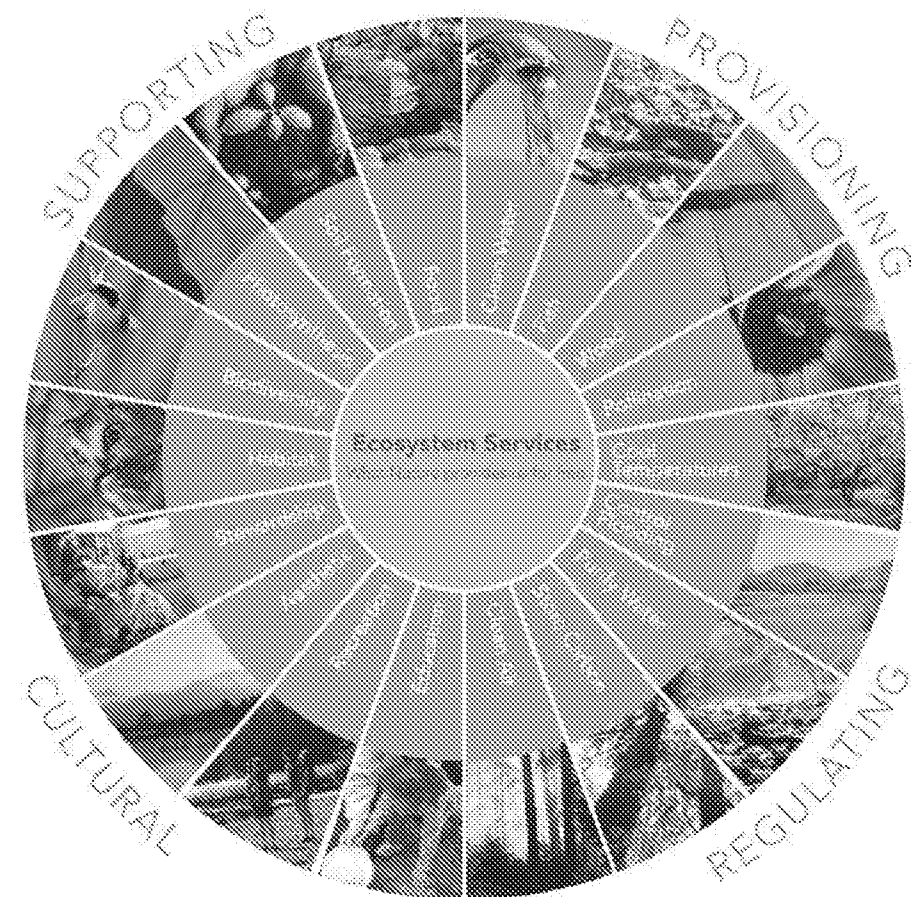
The overall Masterplan design philosophy will act as a set of achievable goals for the development with development principles including:

- Provision of 112 dwellings (1-bedroom and 2-bedroom apartments as well as 2-bedroom and 3-bedroom houses) as a sustainable addition to the built-up area;
- Delivery of 30% affordable housing provision in accordance with the required planning policy, containing a mixture of rented and apartments and houses;
- Creation of a safe main access into and out of the site from Fitzalan Road;
- Provision for open spaces suitable for the whole community;
- Provision of a large amount of general public open space, including landscaped recreational space, informal open space and boundary planting;
- Provision of a Sustainable Drainage System;
- The provision of appropriate contributions to improve facilities and amenities within Littlehampton.

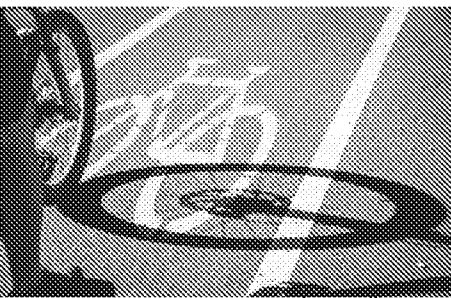
The proposed development encapsulates the key principles of sustainability – in social, economic and environmental terms – through the process of good design that has been considered with reference to location.

The proposal will:

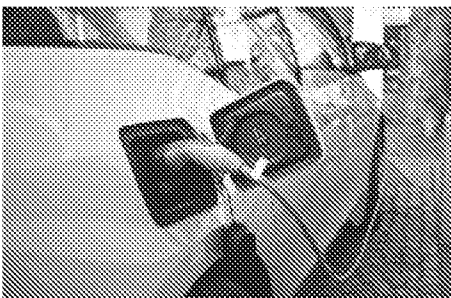
- consider the need to address climate change, ensuring lower water use and efficiency, creating energy efficient design and layouts, providing for renewable energy, reducing waste, meeting ecological issues and creating appropriate landscaping;
- create a place where a real sense of community can be developed and where a safe and attractive environment can be created;
- deliver a sustainable affordable development is also about providing a place where people want to live and where they can prosper over the long term.



Site Opportunities



Cycle Routes



Electric charging points



Open Spaces



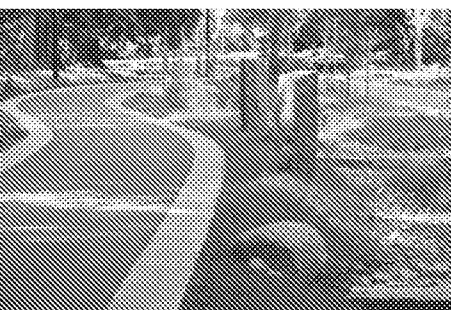
Enhanced existing features



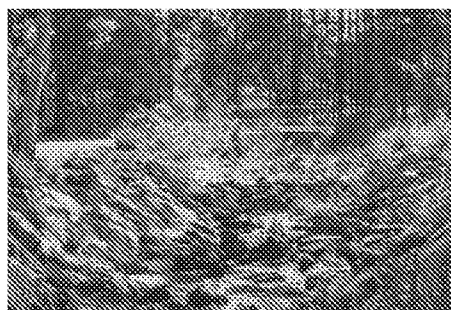
Green Routes



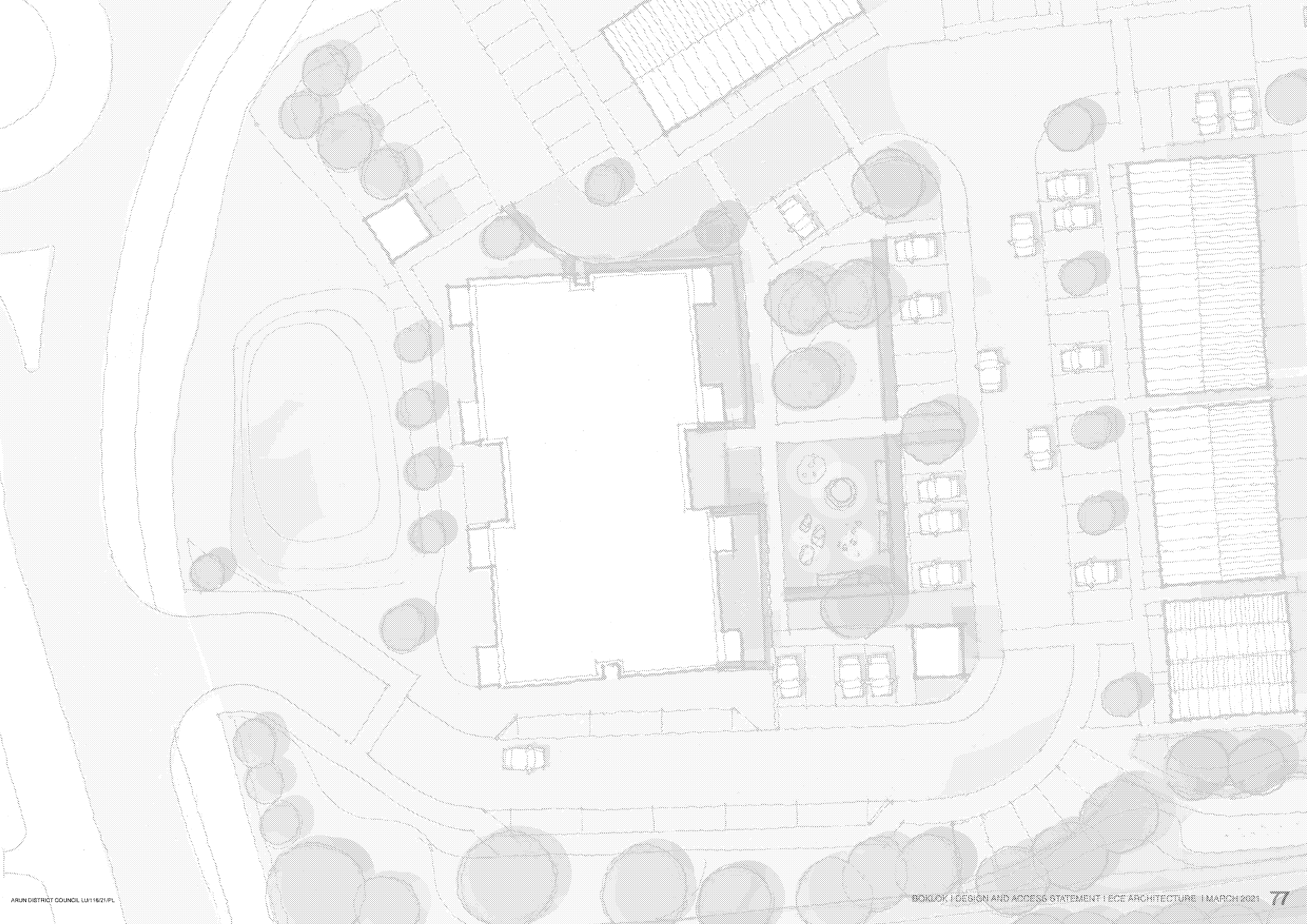
Bio-diverse net gains



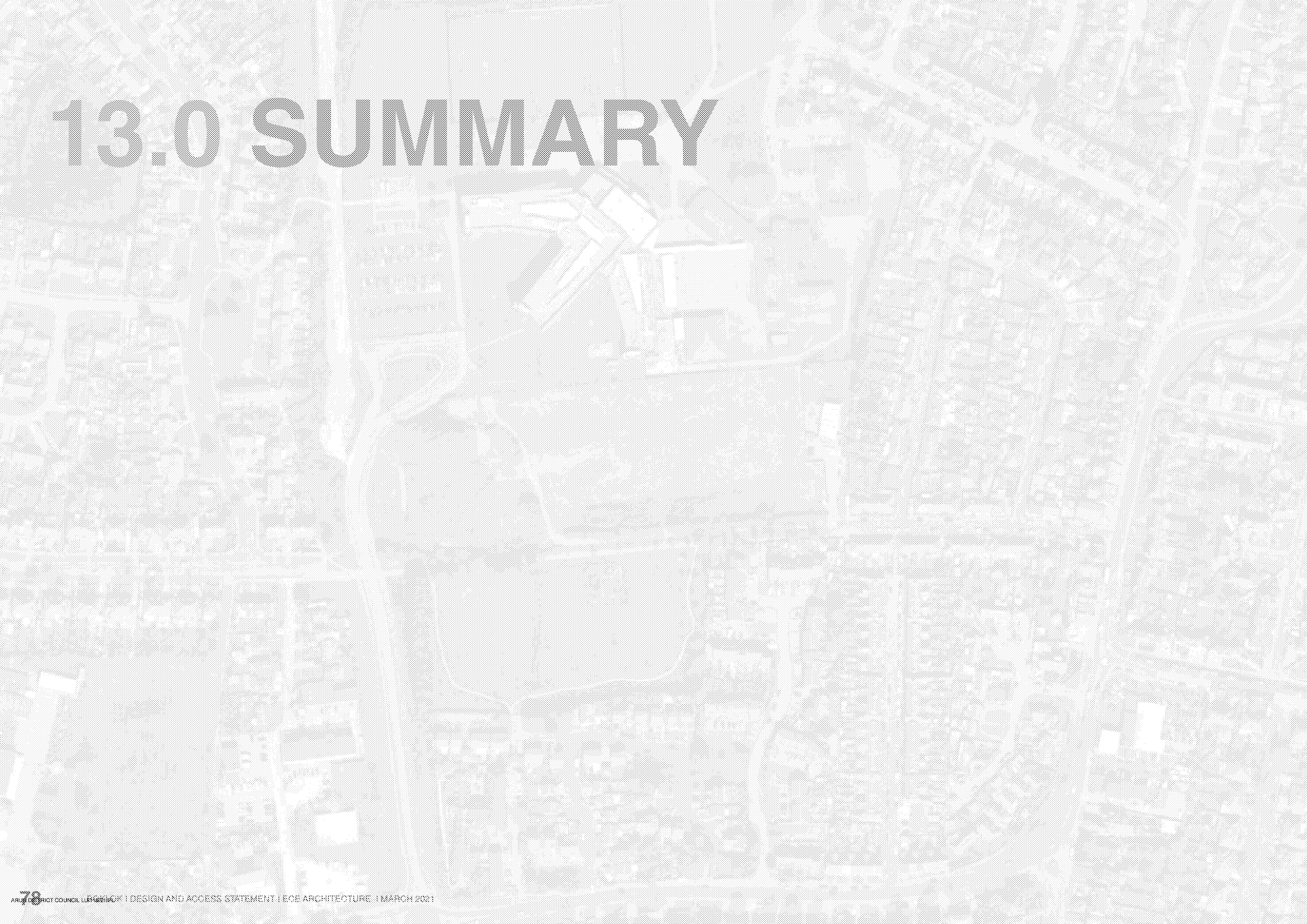
Public Routes



Surface water drainage can become a landscape feature of informal open spaces.



13.0 SUMMARY



13.01 SUMMARY OF KEY POINTS AND OBJECTIVES

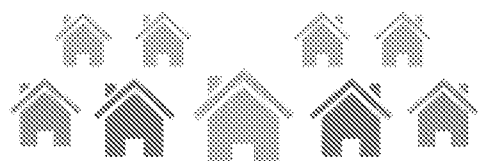
Summary of Key Points

The aim of the BoKlok scheme is to comprehensively redevelop the site and deliver a scheme that offers the following benefits to the community:

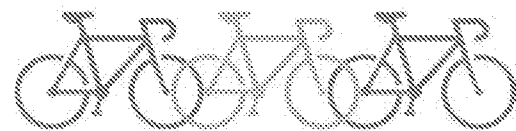
- Circa 112 new high quality homes.



- 30% Affordable provision equating to circa 34 affordable units;
- A development of exceptional design quality;
- Private sale to be based on affordability ratio (Average incomes in Littlehampton).

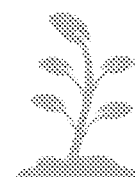
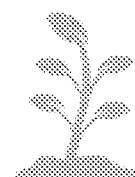


- Car parking zones creating approximately 178 parking spaces for residents and visitors;
- Promoting green travel routes by providing electric charging points and a Car Club scheme;
- Cycle parking providing spaces for residents and visitors;
- Modular system reduces construction time, environmental impact and construction traffic during build period.



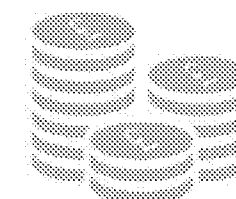
Deliver a landscaping scheme that offers environmental benefits such as:

- Community access to nature;
- Biodiversity enhanced landscape;
- "Green Heart" landscape centrepiece to the development;
- Approximately 20% of total site area is building footprint and about 80% will be soft and hard landscape.



Local infrastructure
- Provision CIL payment of CIRCA £TBA

- Social (education, health, libraries etc)
- Environmental (green infrastructure, habitat creation);
- Physical infrastructure improvements (transport infrastructure, flood risk measures).
- New homes bonus, Financial benefit to the Arun District Council.



ECE Architecture



