

# CASE STUDY

## GLASGOW COMMONWEALTH GAMES VILLAGE

### Name of development

Glasgow Commonwealth Games Athletes' Village

### Date completed

2014 (Commonwealth Games)/2015 (public occupation)

### Development type

Residential (including a care home)

### Location

Dalmarnock, City of Glasgow

### Architect/others designers

RMJM / AECOM, Turleys and Brindley Associates (landscape design)

### Full engineering design service

WSP

### Client

Glasgow City Council (GCC)

### Developer

City Legacy Homes (consortium of CCG Homes Ltd, Cruden, Mactaggart & Mickel and the Malcolm Group)

### Background

This site by the river Clyde is at the heart of one of Europe's largest regeneration areas, approximately 5km southeast of Glasgow City Centre. During the mid-2000s Glasgow City Council (GCC) organised a design-led bid for the Commonwealth Games that included using this mostly unoccupied brownfield land. So when the bid was successful in 2007 there were already strong urban design principles in place for proposals to integrate new streets with drainage infrastructure.

The National Planning Framework (NPF2 2009) designated the village as a National Development enabling the development phase to proceed within a supportive overview of certainty on investment for all stakeholders. A successful four and half year partnership between public (GCC) and private (City Legacy) sectors ensured project delivery within budget and by the deadline demanded by the Games Organising Committee.

This first phase was 700 purpose-built units and a 120-bed care home to house 6500 athletes and officials. During late 2014 it is being refitted into mixed-tenure housing.

### Design, planning, maintenance and adoption

The north part of the site is sloping but the south part shown in the plan (overleaf) is fairly flat. Suitably treated and attenuated surface water and wholly separated foul water is collected then discharged to either the River Clyde or Scottish Water's drainage network respectively, within agreed flow rates. Removing surface water that falls on the masterplanned area from entering the existing combined sewer network releases capacity in the local wastewater treatment works, providing a more ecologically sustainable site solution.

Run-off from impermeable areas including roofs is routed either to porous paved lightly-trafficked areas or directly into below ground SUDS features such as bio-retention cells for treatment and attenuation.

Foul and surface water sewers comply with 'Sewers for Scotland 2nd Edition' with capacity to serve future development and align with the Metropolitan Glasgow Drainage Partnership vision.

The vesting and adoption of the surface water drainage/ SUDS facilities will be shared between Scottish Water and GCC.

With thanks to DPT Urban Design, WSP, CCG Homes and City Legacy for images



Looking northeast along London Avenue, May 2014

This case study is part of a programme of work to implement Designing Streets via an online TOOLBOX



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designing  
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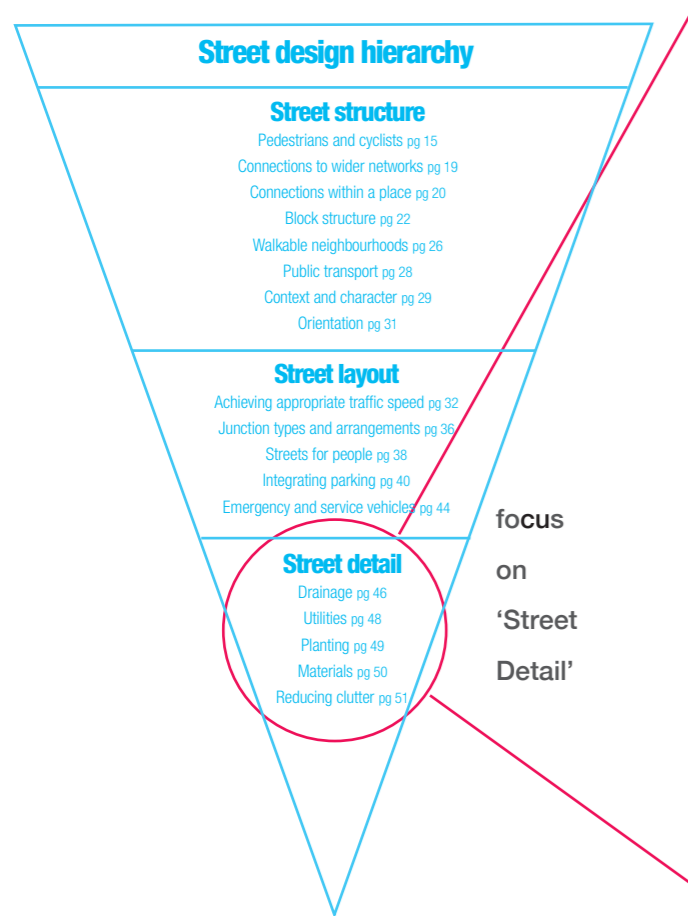
## CASE STUDY STREET DETAIL GLASGOW COMMONWEALTH GAMES ATHLETES' VILLAGE



CITY LEGACY HOMES

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**DRAINAGE/SUDS** (sustainable urban drainage systems) Surface water run-off is conveyed into carrier drains or landscape features. These include swales the 'canal' (a new linear wetland) and retention pond. Detention ponds are also defined.

After passing through two levels of treatment (firstly permeable paving in lightly trafficked areas), surface water can ultimately discharge into the river. Outfalls between the new 'canal' and the Clyde are designed to keep levels consistent within the new SUDS facilities.

**UTILITIES**

District heating from an onsite energy centre including a combined heat and power (CHP) engine is piped underground to all homes (and to sports facilities). It is integrated within a combined utilities trench.

**PLANTING**

The cover image shows the planting around the central canal as anticipated when it reaches maturity. It will be a pleasant amenity that should add value to the whole built environment as well as a vital part of the SUDS strategy.

**MATERIALS**

A mixed surface palette of block paving, low kerbs, asphalt and contained planted areas connect well in tone and colour with the built form of the houses and flats. Gabions are filled with crushed sandstone recovered from demolition of buildings that used to be here.

**SUMMARY:**

**Suds solution provides a distinct identity and focus to the place – it should become a positive amenity for all residents.**

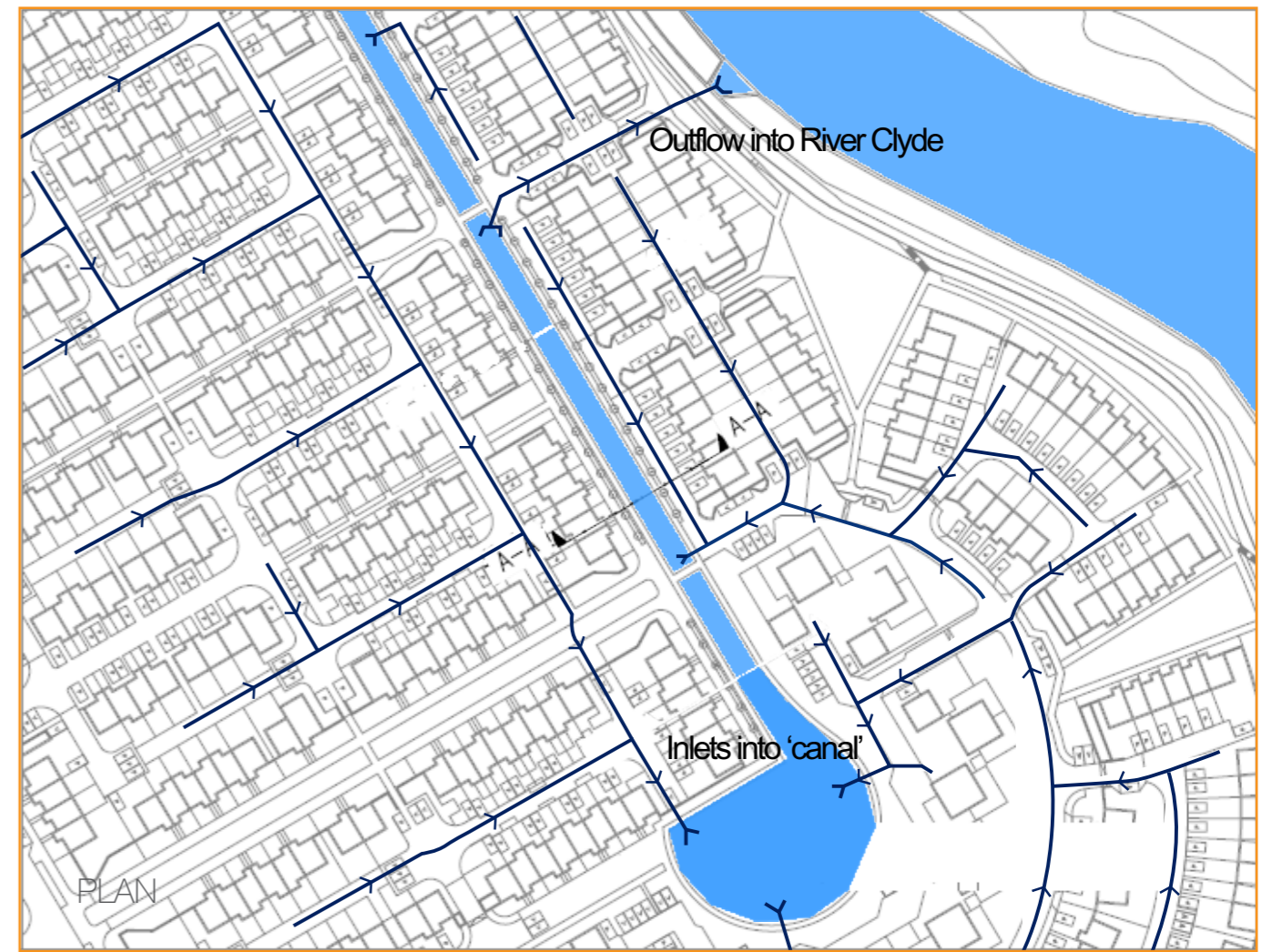
**Design mimics natural drainage routes to allow run-off into the river.**

**Physical investment in regeneration has been consistently design-led right down to detail.**

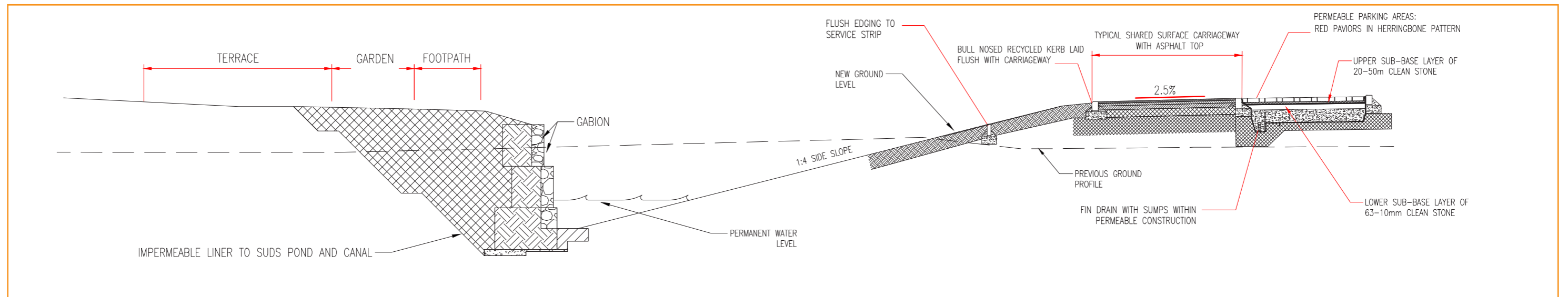
**Following occupation by residents in 2015, the performance of design aspects such as the porous paved areas can be reviewed.**



Looking northwest along Auckland Wynd, May 2014



Part of the southern end of the development showing surface water drains flowing into central canal and pond, then links to the River Clyde (lines are indicative only).



Section AA through central canal

# CASE STUDY WAUCHOPE SQUARE, CRAIGMILLAR

## Name of development

Wauchope Square, Edinburgh.

## Date completed

Phase 1 – 2008 and Phase 7 – 2009 (Also since, Phase 8 and part of Phase 2)

## Development type

Mixed-tenure housing plus primary schools

## Location

Craigmillar, City of Edinburgh

## Masterplanners

Primarily Page/Park (for Wauchope Square) with Ian White Associates, Llewellyn Davies (UDF stage)

## Architect

Page/Park Architects. Elder and Cannon Architects

## Engineering design

W A Fairhurst and URS

## Landscape architect

Ian White Associates

## Client

PARC Craigmillar

With thanks to HarrisonStevens and Ian White Associates for images.



Sign explaining permeable surface to public

## Background

The Craigmillar Urban Design Framework (UDF) sets out co-ordinated development to regenerate the area. Wauchope Square sits to the north of the area, adjacent to Craigmillar's town centre.

Each masterplan consists of blocks with perimeter streets consisting of a mixture of apartments, terraces and townhouses. A hierarchy of 'connector' and local streets is defined with priority given to movement on foot. Spatial enclosure is achieved by challenging street widths and driver speeds should also be influenced by the proximity of front doors, the use of contained planting, street furniture and on-street parking.

The arrangement of homes and streetscape pioneers shared surface design and implementation in Scotland.

## Design, planning, maintenance and adoption

For this large regeneration project, the client worked with the local authority to take forward planning and roads consent (RCC) at the same time. These discussions involved: the actual design of the streets; considering routes to school within a safe street environment for all users; and extensive negotiation to determine the extents of SUDS/surface water adoption

The project was one of Scotland's first adopted porous block paved surfaces. A sign post was erected to inform the public on the different surfaces used on site.

Some materials have not been as durable as intended. There have been steel rails edging the planted areas which have not withstood impacts from vehicles (although young trees have been protected) and the street features that these form part of have sometimes been too low to sufficiently limit driver forward visibility.

This project features as a detailed worked example within the **SUDS for Roads Guidance Manual** (produced by the SUDS Working Party, SCOTS\* and WSP). It describes the scoping stage that evaluated technical factors such as topography and geology as well as social factors such as the location at the centre of a new community with primary schools. Bioretention and permeable block paving were proposed as the most appropriate SUDS measures.

\*Society of Chief Officers of Transportation in Scotland

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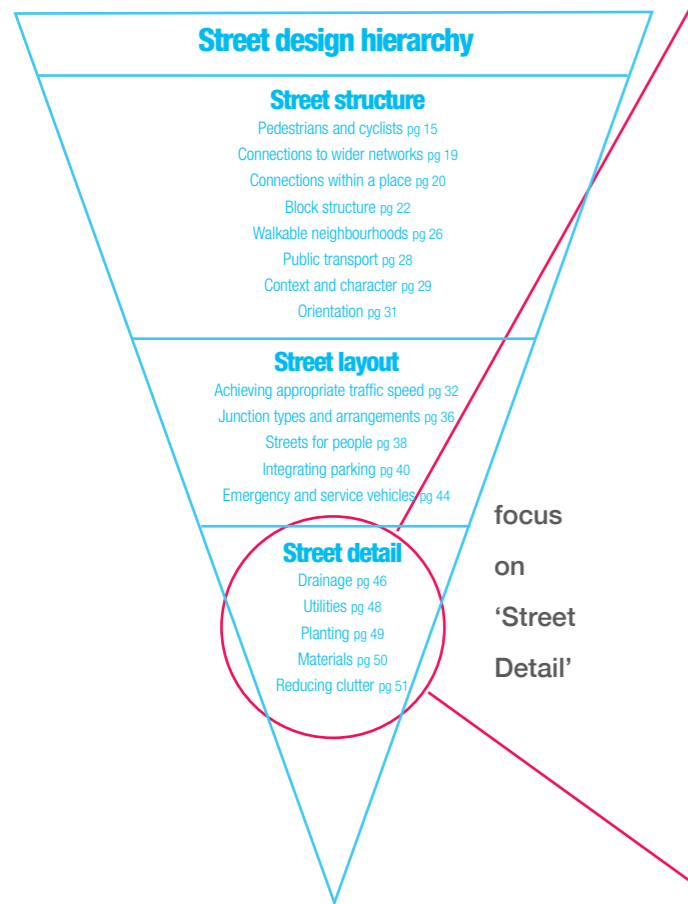
# CASE STUDY STREET DETAIL WAUCHOPE SQUARE, CRAIGMILLAR



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**DRAINAGE/ SUDS** (sustainable urban drainage systems)  
 Run-off is directed to permeable parts of the surface. Therefore diffused flow forms the first level of water treatment. A sub-base of graded clean stone then provides storage (contributing further to attenuation of flow) and filtering action as a second level of treatment.

Excess discharges into the Scottish Water sewer at the edge of the masterplanned area.

**UTILITIES**

It was vital that service strips were designated due to use of permeable paving. This means that any remedial work should be confined to dedicated routes.

The shared space principles of the street design means that pavements or sidewalks do not so obviously define utility routes.

**PLANTING**

Trees are specified to thrive under the constrained narrow urban streets. Low shrubs and hedging contained in small 'blocks' of landscape soften the edges of the chicane or narrowing elements of streets, intended to influence driver behaviour towards slower speeds.

**MATERIALS**

Block paving throughout creates a domestic feel and scale to all streets. Different types of block paving are used to emphasise function such as areas for pedestrians only or for parked vehicles.

**REDUCING CLUTTER**

Changes in material, patterns of laying and flush kerbs emphasise changes in street priorities. Painted line markings are avoided.

**SUMMARY:**

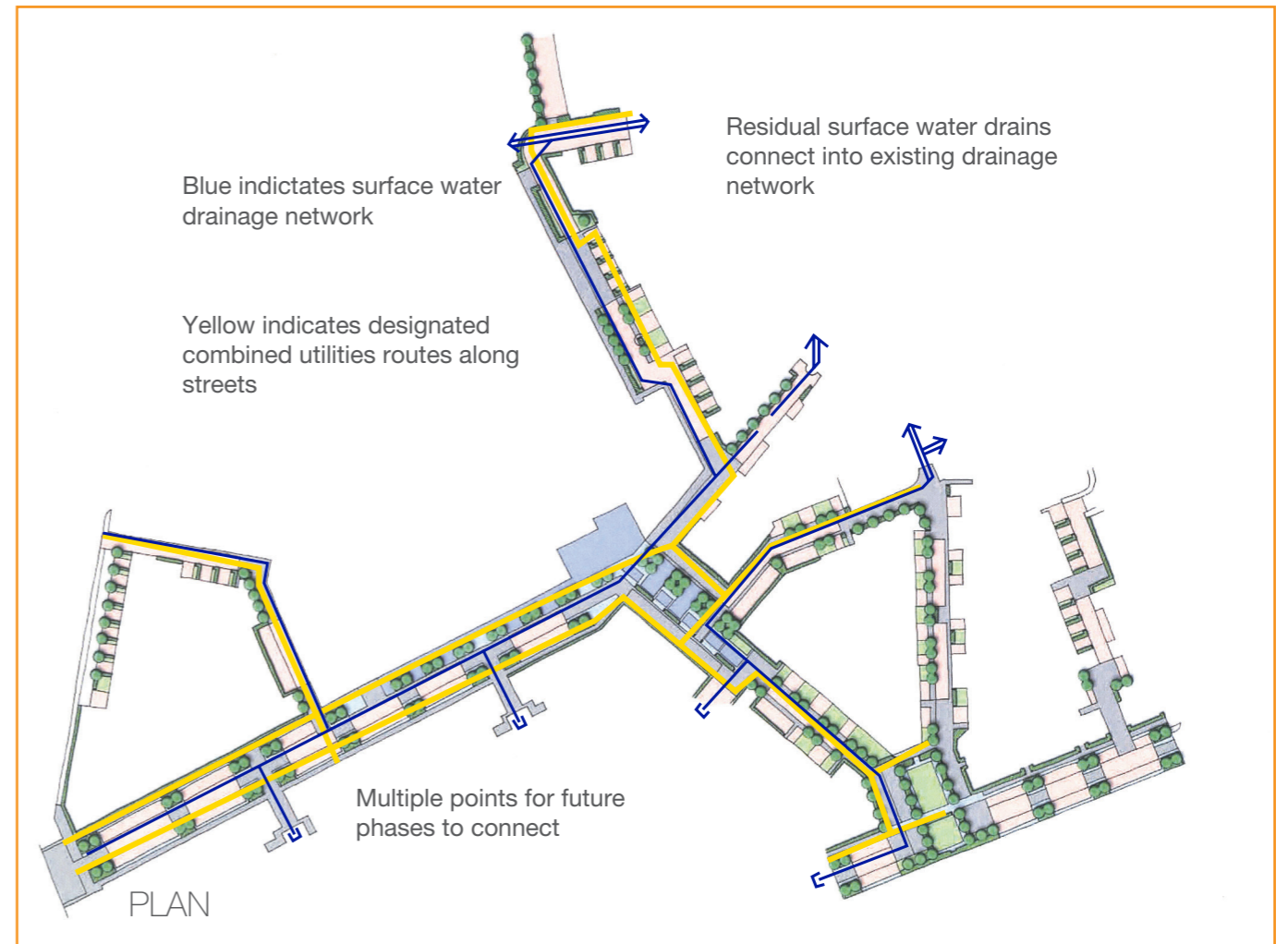
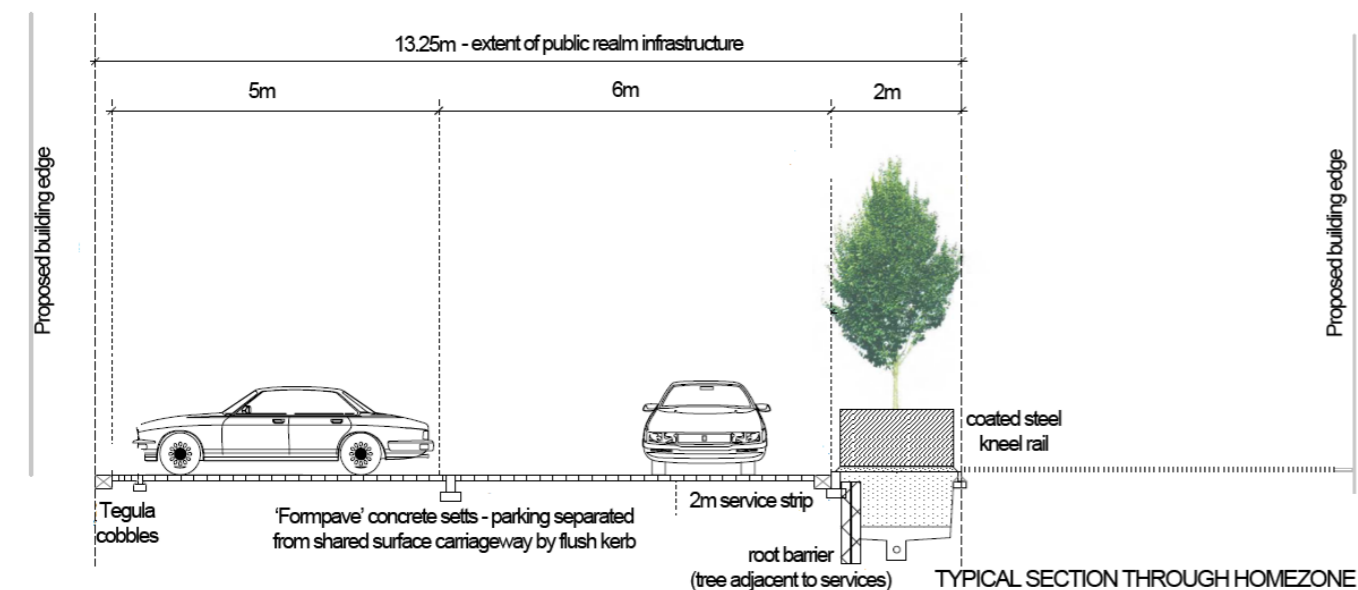
**Integrated utilities are below level shared surfaces and connections are allowed into future phases.**

**Varied street materials with some areas of permeable paving support safe streets for people to walk and play.**

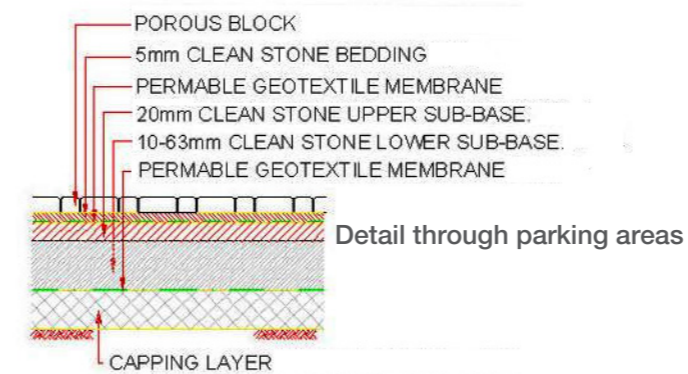
**There has been some lack of material durability and difficulty in establishing maintenance regimes with local authority.**



Typical edge between parking and residential boundary



Plan of part of development showing surface water drain runs and combined utilities routes (lines are indicative only).



Hard edge to street Timber panels screen and protect wheelie bins

