

- 
- Award-winning design
  - New urban communities
  - Master-planning and design codes
  - Permeable and conventional paving
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# CAMBRIDGE SOUTHERN FRINGE

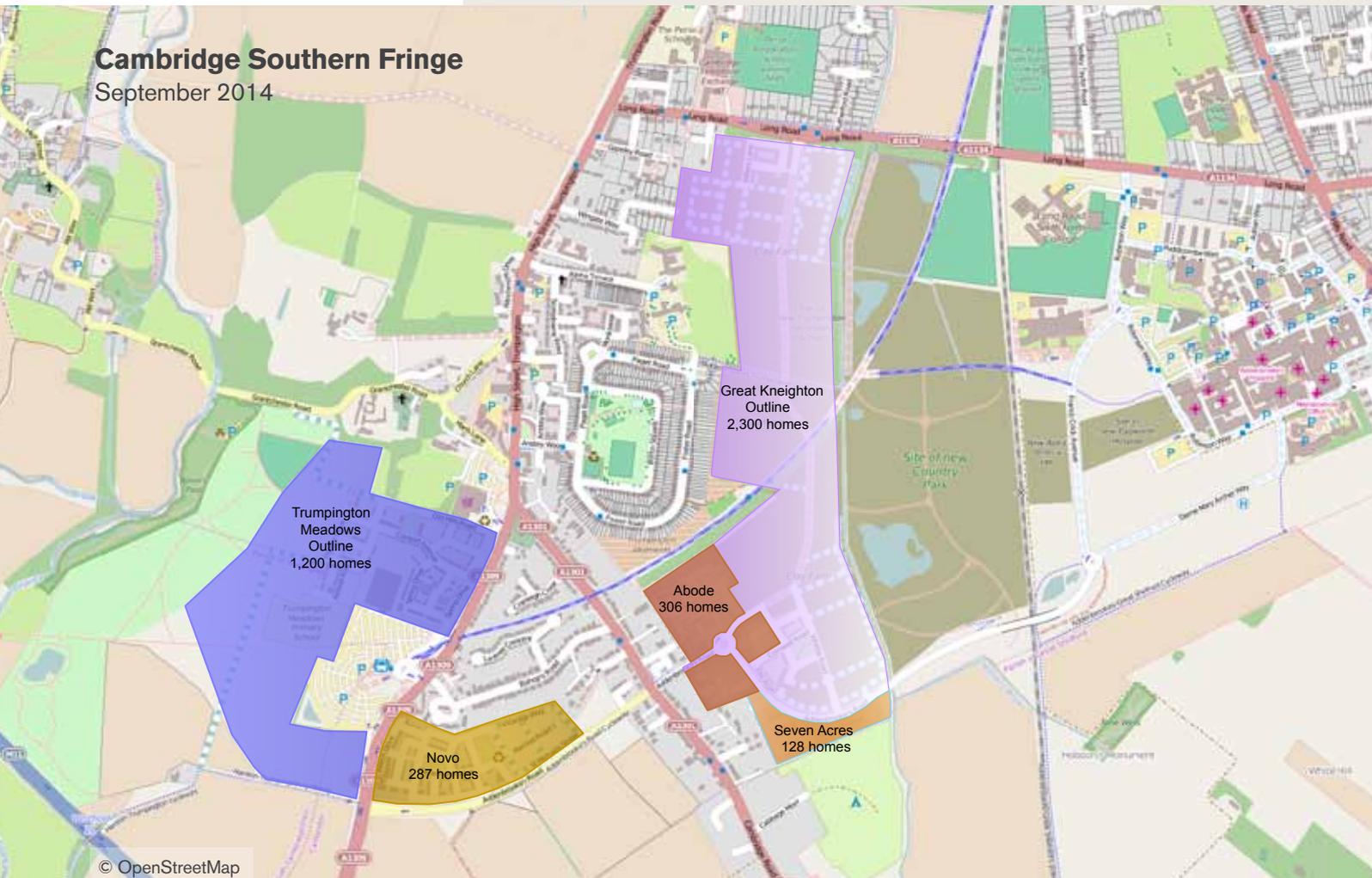


# Introduction

This case study provides a pictorial tour around the early phases of several linked developments to the south of Cambridge. It focuses on the role of precast concrete paving – including permeable pavements – in helping to define each area's character, integrated with architectural design and master-planning.

The Cambridge Southern Fringe is a growth area identified in response to the high demand for housing in the region. Located at the edge of the city, close to M11 junction 11, it constitutes a band of development linking Trumpington Meadows with the Cambridge Biomedical Campus at Addenbrooke's, to which Papworth Hospital

will be relocating. Trumpington Park and Ride is close by and is the southern terminus of the Cambridgeshire Guided Busway passing through the development, with a 10-minute service to Cambridge City centre and cycle/pedestrian path alongside.



Around 4,500 new homes are planned, of which some 40% will be affordable, plus student accommodation, a range of community facilities including primary and secondary schools, play areas, shops, allotments, and a country park. Cambridge Southern Fringe consists of a series of distinctive developments including:

- Great Kneighton (previously called Clay Farm and including Abode and Seven Acres) with 2,300 homes, 2 schools and a neighbourhood centre
- Novo (previously called Glebe Farm)
- Trumpington Meadows
- Bell School.

### Design Quality and Consistency

An earlier, iconic development in Cambridge - the 2008 Sterling-prize winning Accordia (subject of another Interpave case study) offers important lessons. It demonstrates how master-planning, applied through the planning system, ensures ongoing and consistent application of good design, detailing and implementation of hard landscape as an integral part of architectural design – irrespective of changes in developer, designer or contractor.

For Cambridge Southern Fringe, a hierarchy of planning initiatives took a similar approach, including an Area Action Plan providing detailed planning policy guidance for specific sites and Cambridge City Council's Area Development Framework

of non-statutory guidance. Local residents were also involved with helping to develop a vision for the Southern Fringe. As part of Outline Planning conditions, Design Codes were required for each major site providing a framework for the City Council to assess Reserved Matters Applications.

The Design Codes consider appropriate architecture, scale, massing and materials – including hard landscape and street design, where recommendations for concrete block paving, flags and kerbs are covered. Similar recommendations can also be found in Cambridgeshire County Council's Street Design Guide, which pre-dates the Manual for Streets although sharing similar approaches, highlighting that: *“places should be legible with a clear sense of hierarchy.”* Here, preferred paving materials include the varying sized rustic finish concrete blocks, granite finish blocks and enhanced finish concrete kerbs and flags seen at the Cambridge Southern Fringe developments.

### SuDS and Permeable Paving

The Cambridge Local Plan and the associated Sustainable Construction SPD require implementation of sustainable drainage systems (SuDS) on major growth

sites. The Council has published a SuDS Design and Adoption Guide that recognises the role of concrete block permeable paving.

Water quality was as important a consideration as flood risk in the overall approach to the SuDS design. Flow rates are restricted to 2 l/s/ha and a series of hybrid SuDS systems are used on the Southern Fringe developments incorporating green roofs, district rainwater harvesting, swales, rain gardens, rills, infiltration trenches, attenuation tanks, hydrodynamic separators, wildlife ponds and wetlands - together with extensive areas of concrete block permeable paving - which provide a series of features than 'clean' the water prior to it discharging into a chalk stream know as Hobson's Brook.

Permeable paving is seen as the most important element of source control for the development. Opportunities for infiltration are taken where ground conditions allow, facilitating local ground water recharge, as part of the aim of mimicking the natural drainage characteristics of the site.

Concrete block permeable paving (foreground) infiltrates directly to the ground while matching conventional block paving drains between concrete kerbs onto a rain garden.

Photo: Simon Bunn

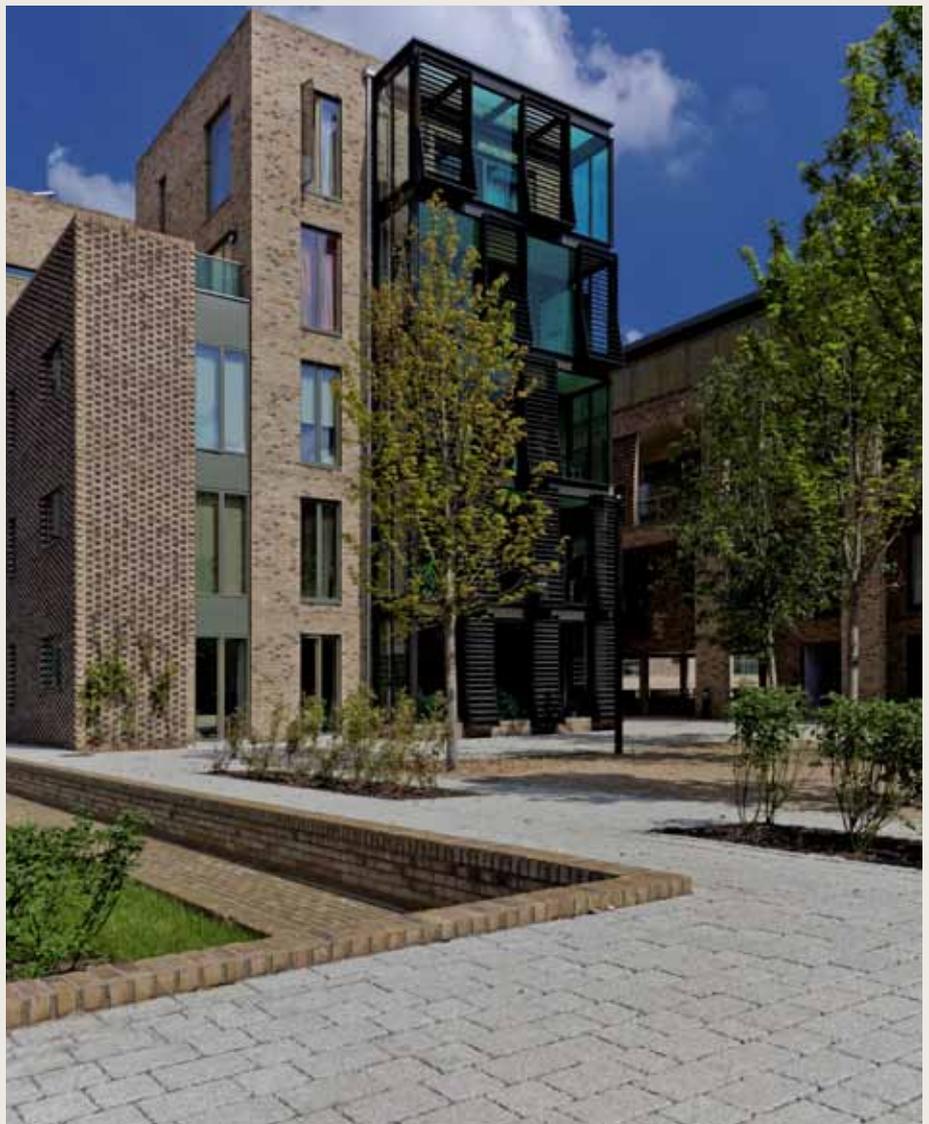


# Abode

Architects Proctor and Matthews' strategy for this project – the Supreme Winner of the 2014 Housing Design Awards - involves a hierarchy of spaces and housing types.

A 'Great Court' – referencing the city's colleges – is formed by a series of three storey buildings that help to define the western, northern and eastern sides of the space with two marker buildings set within to terminate key views into the site. Beyond, a grid of regular mews streets is enclosed by three-storey terraced housing, becoming

less formal and more rural in character, changing to loose clusters of smaller houses, as it approaches open countryside. The character of the streetscape is one of shared spaces, although not rigidly defined. High quality hard and soft landscape, integrating with the contemporary vernacular architecture, is key to the success of the overall design.



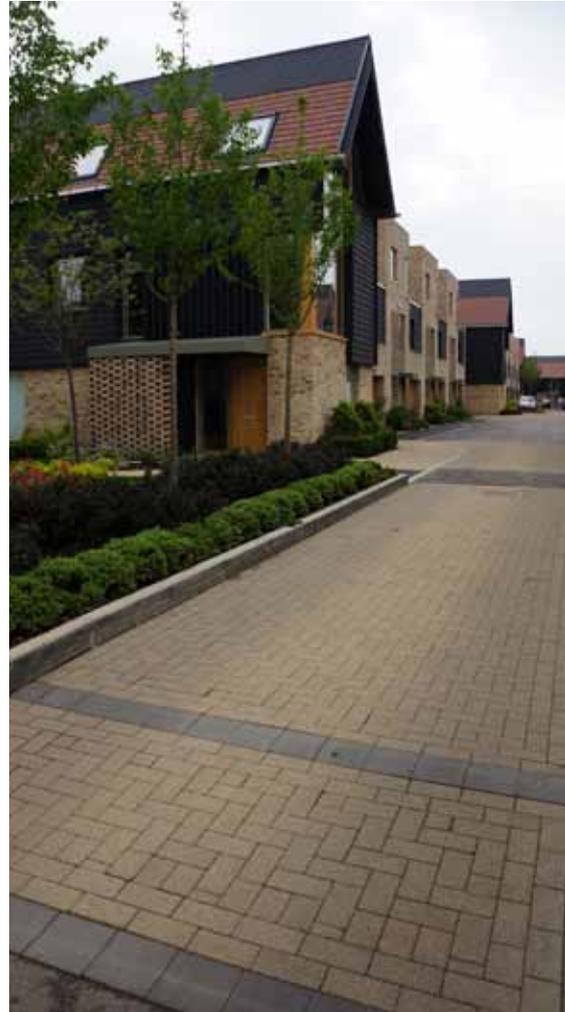
Sparkling granite finish concrete block permeable paving helps to characterise the 'Great Court'

Photo: Simon Bunn

# Abode



Photo: Simon Bonn



A restrained palette of concrete paving blocks, kerbs and other elements define different hard landscaped areas throughout the scheme.



# Abode

## Restrained Palette

Both permeable and conventional concrete block paving, in a restrained palette of yellow or granite finishes, are used widely with enhanced finish concrete kerb delineation. Larger spaces demonstrate conventional block paving draining onto matching permeable paving. Distinctive 'green lanes' – concrete block pedestrian routes with planting – run perpendicular to the streets linking the Great Court to the rural perimeter.

'Green lanes', in concrete block permeable paving contained by enhanced finish concrete kerbs set flush, provide pedestrian links.



Photo: Simon Bunn



Photo: Simon Bunn

# Trumpington Meadows

Eventually providing 1,200 homes once complete, Trumpington Meadows is already an established community with its own school and was winner of the Evening Standard's New Homes Award 2014 for Best Large Development.

It follows a more conventional housing scheme layout than Abode, largely with two-storey housing interspersed with three-storey apartment blocks - most prominently at the perimeter of the development.

The streetscape is characterised by shared-surface streets, consistently well executed in concrete block paving – including rustic blocks of differing sizes and regular rectangular units - in a variety of neutral colour mixes.

Concrete block paved shared surfaces, with flush concrete kerb delineation, define the streetscape character.



# Trumpington Meadows

## Delineating Areas

Enhanced finish concrete kerbs of different sizes and set flush with the paving delineate areas without compromising accessibility. Grey concrete block permeable paving serves car parking areas and accesses, notably fronting blocks of flats, as well as pedestrian lanes, providing sustenance for trees.



# Trumpington Meadows



# Novo



Formerly known as Glebe Farm, Novo is a distinct development of 280 homes, mostly apartments, linking Trumpington Meadows and Great Kneighton.

Again, the hard landscape is defined by both conventional and permeable concrete block paving – here largely in warm buff colour mixes. Block paving runs from building to building across mews streets with planting areas contained by concrete kerbs. The development opens out onto an open park area, also with concrete block paving – this time in grey.

Grey concrete block paving for this informal play area and park contrasts with the warmer tones of shared surface paving serving mews houses.



# Novo



# Seven Acres

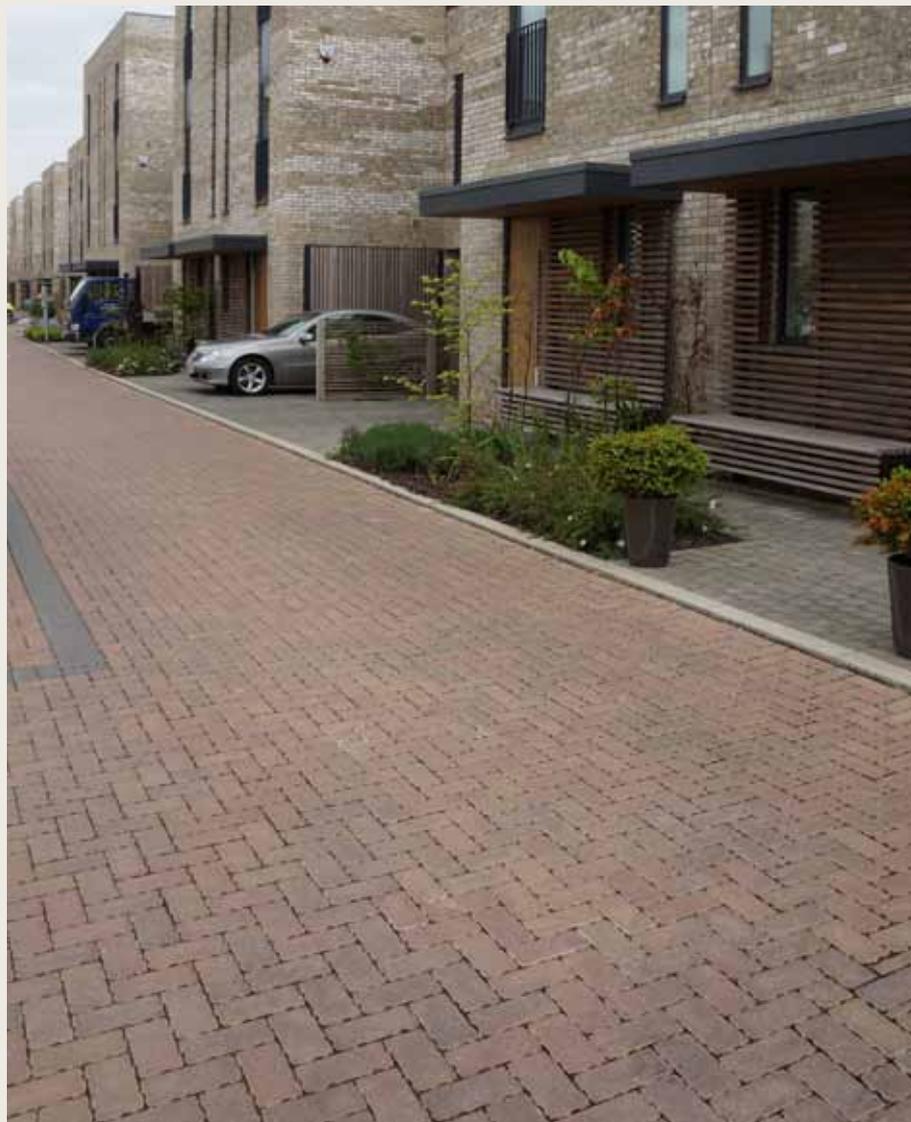
Developed by Skanska and designed by Formation Architects, this is an award-winning scheme (including a 'Built for Life' award) of 128 homes.

With its cool, contemporary design it celebrates the developer's Scandinavian heritage. Although contained by the gradual curve of the adjacent Addenbrooke's road, the project rigorously applies an orthogonal street grid and spacious, formal central square.

Throughout the design, a clear palette of concrete block paving colours has been applied. Shared surfaces are in a warm red/yellow mix with black block courses marking car spaces, while more private forecourt areas to houses are in grey.



Photo: Simon Bunn



The division between public and private is signalled with enhanced finish concrete kerbs set flush, a change in block paving colour and planting, while retaining the openness of the main square.

# Seven Acres

## Conventional and Permeable

The colour scheme continues seamlessly from conventional to permeable paved areas and concrete kerbs set flush highlight delineation. The square contains a central landscaped area with seating, served by enhanced finish concrete paving flags, also used for footpaths elsewhere in the scheme.

Consistent use of colours for block paving – whether permeable or conventional – to delineate areas is applied rigorously throughout the scheme.

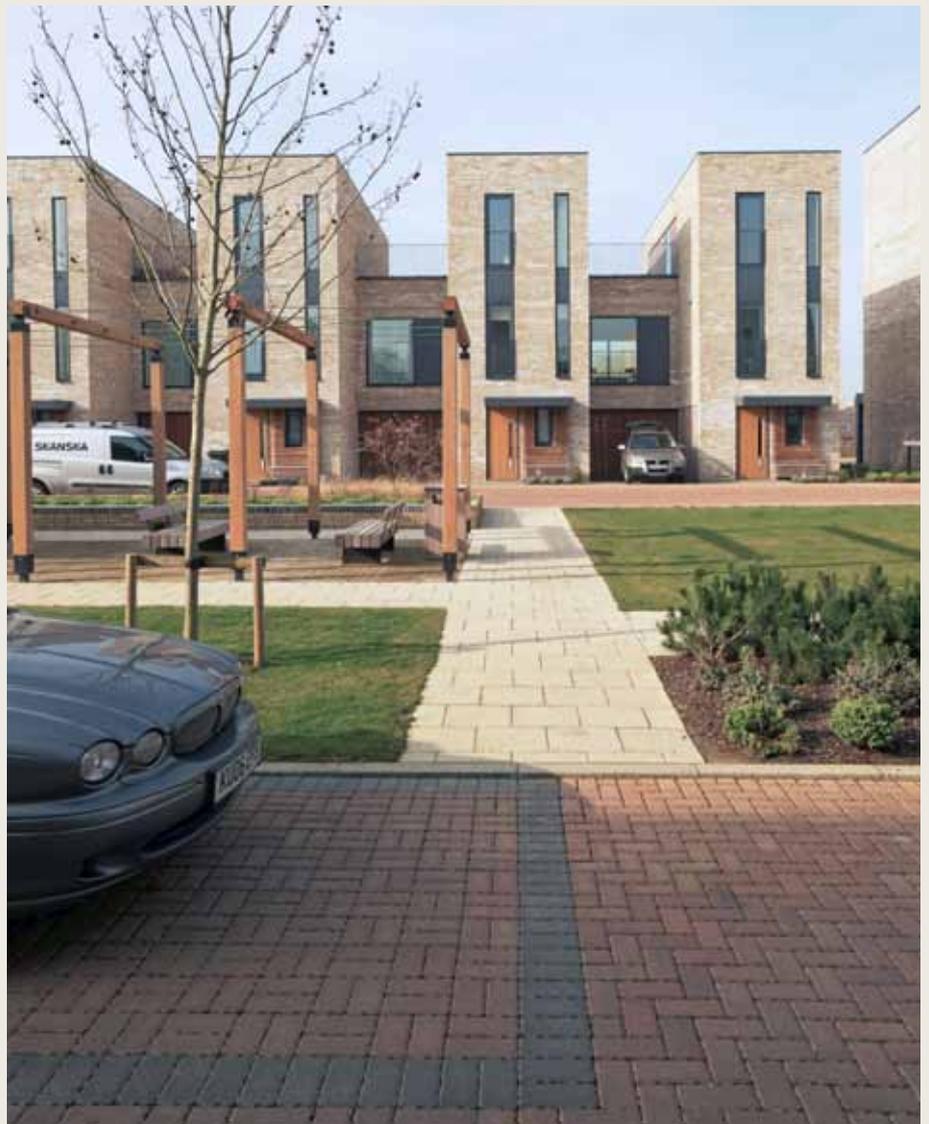


Photo: Simon Bunn

# Seven Acres



Photo: Simon Bunn



Photo: Simon Bunn



# Urban Design with Precast Concrete Paving

## Acknowledgements

Interpave acknowledges with thanks the contributions from Simon Bunn and Cambridge City Council.

Photos: Chris Hodson  
(except where indicated otherwise)

Case study by Hodsons.  
[www.hodsons.com](http://www.hodsons.com)

With precast concrete paving and kerbs, distinct, modular units and designed variations in colour, texture and shape can break up areas giving visual interest and a human scale not possible with monotonous, formless materials such as asphalt.

In recent years, Interpave manufacturers have transformed this concept, moving away from simple, regular patterns and colours to expand an extensive palette of styles, shapes, colours and textures to meet current demands in urban design, matching – and often exceeding – the visual qualities of materials such as stone.

This is a valid and sustainable interpretation of the requirement for 'local materials' in adopted guidelines. It is generally unrealistic on cost, availability and accessibility grounds to specify locally extracted stone which may have been used in the past, while imported stone fails to meet sustainability criteria.

Essential requirements for paving materials, from Manual for Streets and other guidelines, can be summarised as follows:

- visually attractive able to deliver distinctive local character
- capability for visual or tactile differentiation between distinct areas
- durable and maintainable with reliable product supply
- accessible to all with consistent slip and skid resistance
- well drained permeable paving avoiding standing water and compatible with SuDS
- sustainable – in the widest sense

More information on how precast concrete paving is uniquely placed to satisfy all these requirements can be found in Planning with Paving and other Interpave guidance, via: [www.paving.org.uk](http://www.paving.org.uk).

# Interpave

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