

# master-planning with **paving**



REVISIT & CASE STUDY  
WAUCHOPE SQUARE  
CRAIGMILLAR  
EDINBURGH

**Interpave**

THE PRECAST CONCRETE PAVING  
AND KERB ASSOCIATION



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# Introduction

This case study is part of a series exploring the application of current approaches to masterplanning, urban design and 'place shaping', focusing on external surfaces. It looks at how precast concrete paving, including permeable pavements, along with other high quality surfacing materials define the character of a major regeneration project in Edinburgh. Masterplanning and careful detailing ensure that these materials are successfully and consistently applied on the ground. These topics are discussed in more detail in Interpave's *Planning with Paving* document, available via [www.paving.org.uk](http://www.paving.org.uk).

Interpave's initial 2009 case study is expanded here with a summary of a paper on the project presented at the 2010 Interpave Summit (pages 7 – 9). Additional photography of the completed phases of the project, largely taken during Autumn 2012, is also included.

## Project Overview

Masterplanning plays an essential role in a 15-year vision to breathe new life into the Craigmillar area of Edinburgh – previously the fourth most deprived area in Scotland. To achieve this, the EDI Group is working in joint venture with

the City of Edinburgh Council as the Urban Regeneration Company (PARC) responsible for revitalising Craigmillar. Architects Page\Park and Landscape Architects Ian White Associates, along with Transportation Engineers Colin Buchanan, were appointed to develop Master Plan proposals for Wauchope Square in 2003. The resulting proposals were informed by extensive consultations with the community, local churches and the City of Edinburgh Council Planning and Transportation Departments.



## Development Strategy

The Wauchope Square area had contained poor quality inter-war, rented social housing which was demolished, allowing some 400 new homes together with a Primary Schools campus, containing both denominational and non-denominational schools. Strategically, 80% of the new homes will be offered for sale (and the remaining 20% let) with sale profits contributing to high quality external areas and community facilities. The central aim is to reverse the trend of residents leaving and build on the historically strong community, with a right to return for existing residents. The quality, maintenance and 'ownership' of external spaces had been a fundamental issue in the area previously and all external spaces in the new masterplan now have clearly defined and obvious functions.



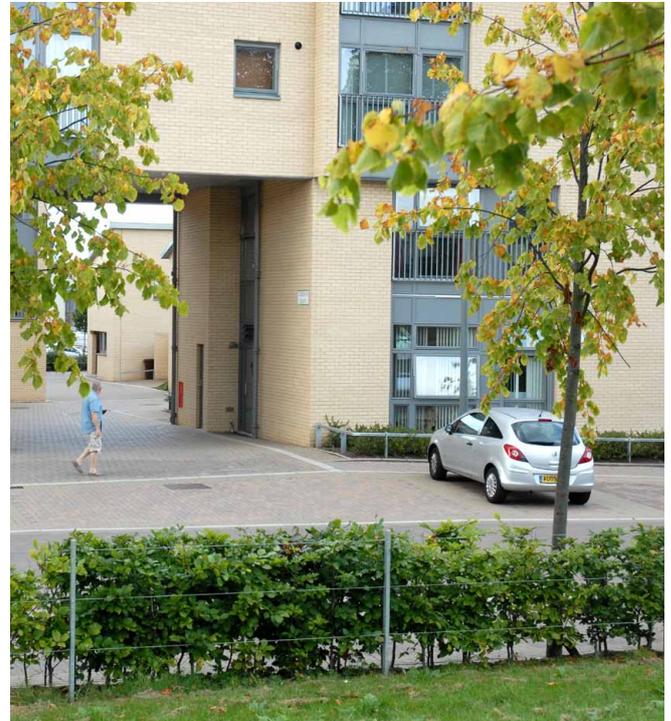
## The Masterplan

Existing main streets are retained where possible and junctions between key streets and important edges to the area marked with three focal points: an area of community gardens and two areas of public realm, adjacent to the Church and in front of the campus. Between the more formal main streets, the residential areas are broken up with small stretches of shared surface mews streets, which contain right angle bends to help slow traffic.

The combination of these three elements gives the area its distinctive identity, as Ian White Associates Director Sheena Raeburn explains: *“Craigmillar is a unique, almost rural location within the city enjoying special views. The masterplan develops existing features within a hierarchy from the main spinal road with strong 4-storey frontages to terraced housing with gardens, served by courtyard style streets or shared surfaces. The new schools campus is embedded within this framework encouraging walking to school and avoiding dropping off by car.”*

The shared spaces are designed to make the area welcoming with traffic speeds minimised through design. Public realm, open space and soft landscaping are all

integrated within the street design to promote maximum use and create opportunities for community engagement. This is an important principle, as one of the problems previously associated with Craigmillar was the lack of ownership of the extensive, yet undefined, open areas around buildings which often became the focus for anti-social activities.



## Detailed Design

The masterplan focuses on people-friendly external areas, not traffic dominated roads – although 100% car parking is provided, bearing in mind that most homes will be offered for sale. Sheena Raeburn says: *“the streets are designed to promote very low speeds without the clutter of signage or need for speed humps. For the shared surface streets, we travelled to the Netherlands with community representatives to see well-established ‘Woonerf’ shared area projects in use, and they had a definite influence on our designs.*

*“A language of surfacing materials was developed to delineate different areas such as parking bays without the need for road paint. The wide range of concrete block paving products available today proved invaluable to provide different textures and scales. We used a range of varying unit sizes, shapes and patterns. Group parking areas – generally surfaced with concrete block permeable paving – are punctuated with areas of planting, protected from vehicles with low steel railings.”*

All the paving and kerbing was carefully detailed, then constructed on site under a clerk of works’ supervision. Particular care was taken to integrate below-ground services with 2.5m wide service strips in roads, as well as inspection covers including recessed, block-laid covers for continuity.

## Sustainable Drainage

Permeable paving is used extensively in areas of car parking bays and carriageways to attenuate and store surface water runoff at source prior to discharge into the surface water sewer – although a comprehensive SuDS scheme is proposed for later phases. Sheena Raeburn adds: *“Concrete block permeable paving is an ideal SuDS technique for high density housing, retaining a good quality finish with minimal maintenance. There are concerns about maintaining other techniques such as swales and ponds to a high standard in this sort of environment.”* Craigmillar is the first permeable paving to be adopted by a local authority in Scotland.



## Materials

Surface materials were carefully selected to generate a sense of place and space for the shared surfaces, as well as other areas, keeping durability and fitness for purpose in mind. Varying the textures, block dimensions and laying patterns defines specific spaces and heightens the driver's sense of awareness without altering surface colours. Linking all the spaces and streets are strong lines of high quality precast concrete kerbs laid as wide channels.

In order to develop consistency throughout the development, even with different designers involved in future phases, the masterplan specified paving materials carefully and provided details of their use in conjunction with planting. The principles laid down are even carried over into private areas.



## Sustainability

The developer made use of a sustainability consultant and the implications of materials and design decisions analysed at 'sustainability workshops' for the project. As the scheme design was developed prior to publication of guidance such as the *BRE Green Guide*, sustainability on this project is driven by function, with durability, value for money and fitness for purpose particularly important. Precast concrete paving and kerbing, along with specific areas of UK-sourced sandstone, satisfy all these criteria. The capability of concrete block permeable paving to deliver sustainable drainage proved to be an added benefit.



## The Designer's Perspective

This case study concludes with a summary of a paper presented by Ian White Associates Director Sheena Raeburn at the 2010 Interpave Summit.



## Regeneration Revisited

*“Wauchope Square is a good example, I think, where applying a progressive design approach and a collective desire to raise the bar in quality – not only by the design team and client but, encouragingly, also by the roads and planning departments of the City of Edinburgh Council – can have a positive influence far beyond the reaches of the scheme itself. Craigmillar’s proximity to the centre of Edinburgh and the outlook to Arthur’s Seat to the North and Craigmillar Castle to the South, provide a magnificent setting. However, a Scottish Executive report defined it as the fourth most deprived area in Scotland. Dominated by poor quality inter-war social housing, the population has steadily declined, in part due to rising unemployment, and it has previously witnessed high levels of anti-social behaviour, crime and alcohol and drug abuse.*”

## Safe and Enjoyable

*The key aim is to make Craigmillar a safe and enjoyable place to live, work and visit. It has been subject to a major urban regeneration initiative, in which a Framework document set out a vision and planning principles for the*



Parking areas are delineated by colour and pattern, rather than painted markings or studs. Everyone understands the extent of an individual parking space and uses them efficiently, without the haphazard free-for-all that can sometimes happen with shared surfaces.

*area over a 15 year period: 2005-2020. In total, there will be 3,000 new homes – so doubling the population - a new town centre, new schools, commercial and community facilities and a greatly enhanced public realm. Wauchope Square was the first of the new neighbourhoods to be implemented and, when complete, will provide 400 new homes grouped around a new primary school campus for up to 700 children.*

*Successful place-making is at the heart of the vision for the regeneration. Design quality is seen as a way of encouraging investment into the area, in order that a sustainable community can be created. Shared surface streets were seen as integral to providing a high quality residential setting to this area. The new development was integrated into the existing estates, so that it helped to encourage their general use by the community, in particular children, in a safe and secure environment of which every part was overlooked by housing.*



*“The wide range of concrete block paving products available today proved invaluable.”*

## Defining Character with Paving

Traffic speed reduction was essential for the shared surfaces, so encouraging more people to occupy the spaces, whether on foot, on a bike or in play. This was achieved without resorting to typical 'negative' devices such as speed humps, road markings or intrusive signage, all of which irritate the driver and reduce the overall quality of the space with the invasion of street clutter. Instead we designed the site as a complete environment, treating the road as part of a consistent shared space between the various buildings.

The aim was to create a high quality, inclusive environment and public realm with superior paving, landscaping, gardens, squares and courtyards. Fully paved areas with varying textures and patterns helped to define the character of these spaces. So we didn't exclude cars but gently reminded drivers that they were occupying a space primarily designed for the benefit of play, social interaction and neighbourliness.

## Critical Material Choices

Critical to the success of the scheme was the choice and design of the hard landscape materials. This was an iterative process and a continuous dialogue with both client and the planning and roads departments of the Council. Various alternative designs were prepared that could be assessed on aesthetic qualities, performance and durability, cost and, critically, the likelihood of adoption by the local authorities.

Sample panels of precast concrete paving colours and patterns proved to be a really useful tool in persuading and eventually getting acceptance from the client and the



“Concrete block permeable paving is an ideal SuDS technique for high density housing, retaining a good quality finish with minimal maintenance.”

Council to proceed. Eventually, a hard landscape pallet was approved incorporating a range of warm colour tones for different scale paving elements and conservation kerbs, with a special case for some natural York stone in the relatively civic setting of the new school square.

## National Awards

Wauchope Square is featured as a case study in the new Designing Streets planning policy document for Scotland. It was chosen because: "it illustrates how many of the functions of streets can be integrated in both innovative street design and collaborative processes that result in streets with a distinctive and positive character and excellent functionality." Wauchope Square, has also been recognised nationally through a number of awards:

- Saltire Society 2010 Housing Award,
- Roses Design Awards (Place-making category) 2009,

- UK Street Design Awards – winner of best Home-zone category 2009,
- Master-planning winner, Homes for Scotland, Designing Places Award 2008,
- Scottish Sustainable Communities Initiative – Awarded recognition as 1 of 11 exemplar projects that are working towards 'Creating a Scottish Sustainable Community'.

On this scheme in particular, we recognised the importance of the role that materials played, in enabling us to create distinct spaces within an attractive environment. We certainly could not have begun to think about achieving this with traditional asphalt or blacktop. And there were budgetary constraints with using natural stone, and concerns about the appropriateness of these materials within non-civic, residential scheme. The variety and quality of precast concrete paving blocks and kerbs provided us with a rich palette to work with creatively."



## Precast Concrete Paving Principles

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 to avoid 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*, via [www.paving.org.uk](http://www.paving.org.uk).

Interpave acknowledges with thanks the contributions from Ian White Associates, including project illustrations. [www.iwastirling.co.uk](http://www.iwastirling.co.uk)

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

Photos: Sheena Raeburn (Ian White Associates), Chris Hodson



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