MAG Principles

Quality of Residential Space

MINISTERIAL ADVISORY GROUP
ARCHITECTURE AND THE BUILT ENVIRONMENT
FOR NORTHERN IRELAND

About this series

The Ministerial Advisory Group (MAG) is producing a series of short documents that examines our built environment and identifies important design issues that we need to address in making our cities, towns, villages and rural communities better places to live, work and play. How do we protect and create the best built environment? This document considers the role of housing in our built environment.

While opinions on style will vary, it is essential that we consider context in design decisions and how the resulting design contributes to our public spaces. Everyone needs to be involved in these decisions from home occupiers to developers, architects to engineers and planners to policy makers.

This document illustrates key principles that help create buildings and spaces that are sustainable, support the economy and improve our well-being. To do this, MAG has documented three completed projects considered successful by a broad range of design professionals. These projects are then used to illustrate practical design principles advocated by MAG.

Cover image: Goldsmith Street, Norwich
Mikhail Riches Architects

These documents are structured around three key themes:

Sustainability: Reducing the environmental impact and carbon output when designing, building, refurbishing, and maintaining our built environment.

Economy: Supporting wealth-generating activity that attracts investment, provides meaningful employment for everyone and makes goods accessible.

Well-being: Creating a built environment that supports human health and happiness.

Good design is not enough. Great places to live require stewardship, which means that everyone from home occupiers to property managers need to contribute positively to creating vibrant, safe, beautiful, and practical places to live. Great design should facilitate these characteristics.

Introduction

What do we want from a home and a neighbourhood?

Every person will have a different answer but there are some basic features that we should get right when designing new homes and refurbishing existing ones. It is the opinion of MAG that these should be of high quality, affordable and sustainable. Our homes should equally have plentiful natural light and fresh air, as well as sufficient space to live our lives.

It's not just about what is inside the home. How do our homes contribute to making a healthy, attractive and sustainable town or city? The way we build our homes should help create or sustain communities with local shops, shared spaces and amenities that are accessible on foot. These neighbourhoods should encourage social interaction, supporting people's connection to place and each other.

At a time of climate crisis, the longevity and energy performance of our housing stock is crucial in reducing carbon emissions and meeting global sustainability ambitions.

A well-designed home that supports the health and well-being of its inhabitants provides a positive influence on our communities, the economy and improves quality of life.

Principles

MAG has identified three completed projects in the UK and Ireland to define key design principles. In some instances these exceed NI statutory requirements, but are recommended by MAG because they reflect emerging best practice. The principles are divided into three themes.

Sustainability

New and refurbished buildings should exceed current minimum NI building regulations for thermal performance, airtightness and ventilation. Designs should implement measures that support low energy consumption and better building fabric performance from the early design stages. Buildings should be designed for longevity and adaptability. Refer to the LETI Climate Emergency Design Guide for more detailed information.

Build to high density levels where there is good access to public transport, services and amenity. Low density housing wastes land, our most limited resource.

Create car-free environments as a default position. Promote walking, cycling and the use of E-bikes to enhance health and wellbeing.

Green spaces, tree planting and a habitat-focused management of water should be integrated to reflect a site's context and best potential.

Connect to street grids and introduce new ones to avoid cul-de-sacs. This is land-efficient, creates integrated neighbourhoods and encourages better connectivity for walking and cycling.

Adopt green energy strategies that minimise reliance on fossil fuels.

Well-being

Consider solar orientation. Access to good natural light should be a fundamental design issue. Avoid flats that only face north. These should be limited to 10% in any one development.

Provide views from all habitable rooms and consider aspects that avoid overlooking as a necessity. Consider principles of Secured By Design, such as the requirement for passive surveillance.

Dwellings should be adequately ventilated, situated to maximise good air quality and away from areas of heavy traffic and noise.

Provide a range of amenity space that encourages interaction and opportunities for community gatherings. This is especially important in family-oriented developments.

Provide a range of home sizes and types to support people of all ages and abilities. This can encourage social engagement between generations and reduce chronic social isolation.

Use materials and features that build on local traditions to help create a sense of place. Using locally-sourced materials will also bring about environmental benefits.

Provide thresholds to homes to create a sense of ownership whether rented or owned. This could be through small private garden spaces, porches or paths.

Integrate spaces for bins, storage and bicycles. This helps people maintain their homes, invest in their neighbourhoods and encourages healthy modes of transport.

The Economy

Adopt building forms which are not wasteful of building materials. For example, terraced homes create more usable internal and external space while requiring less land and less building material.

Buildings designed integrally with biodiverse components are naturally climate-moderated and use less energy, reducing both heat and pollution emissions from fuel combustion.

Residential areas designed for active travel reduce construction costs, pollution emissions, and health implications, and enhance social interaction, benefitting local communities through greater footfall for local trade. Where necessary, car use should not dominate.

Building successful residential areas that create better neighbourhoods maintain value. This will likely bring greater density and footfall to areas and in turn support local businesses.

Increasing density within town centres will contribute to a night-time economy and promote walking through proximity to amenity and resources, such as local shops.

Consider a ‘fabric first’ approach as a baseline strategy for new and existing buildings, which in turn lead to lower energy bills for building users.

Promote heat networks, that maximise energy efficiency, particularly in larger developments. This reduces fossil fuel dependence and promotes low carbon technology.

Image: Goldsmith Street, Norwich Mikhail Riches

Case Study 1: Glandore Drive
Belfast, Northern Ireland

The private development proposal repairs and completes the existing urban block through a modern interpretation on the typical Belfast terrace house.

Vernacular window proportions have been reinterpreted, creating a modern adaptation greater suited to contemporary family living. Built in brick, the four new dwellings follow the rhythmic flow of the pitched forms reflecting the context of both the block and character of this particular part of the city.

Sustainability

The project maximises the natural daylight available to the site through the creation of open plan and double height space and the creation of a terrace on the first floor, allowing greater light penetration. Generous glazed areas allow for natural light, ventilation and views from each room that are arranged in a hierarchical manner reflecting the importance and functions of the spaces they serve.

Well-being

Consideration has been given to the streetscape and landscaping, with front doors to the street, mediated by small hedged gardens that reflect the character of the townscape. A rear yard faces onto a back alleyway with appropriate storage for bins and bicycles. These moves provide greater connections to the street and promote integration into the community.

Economy

The high quality design aspirations of the project add commercial value to the properties. The repetition of the terrace dwelling typology provides an economy of means as details and construction methods are consistent across the four dwellings.

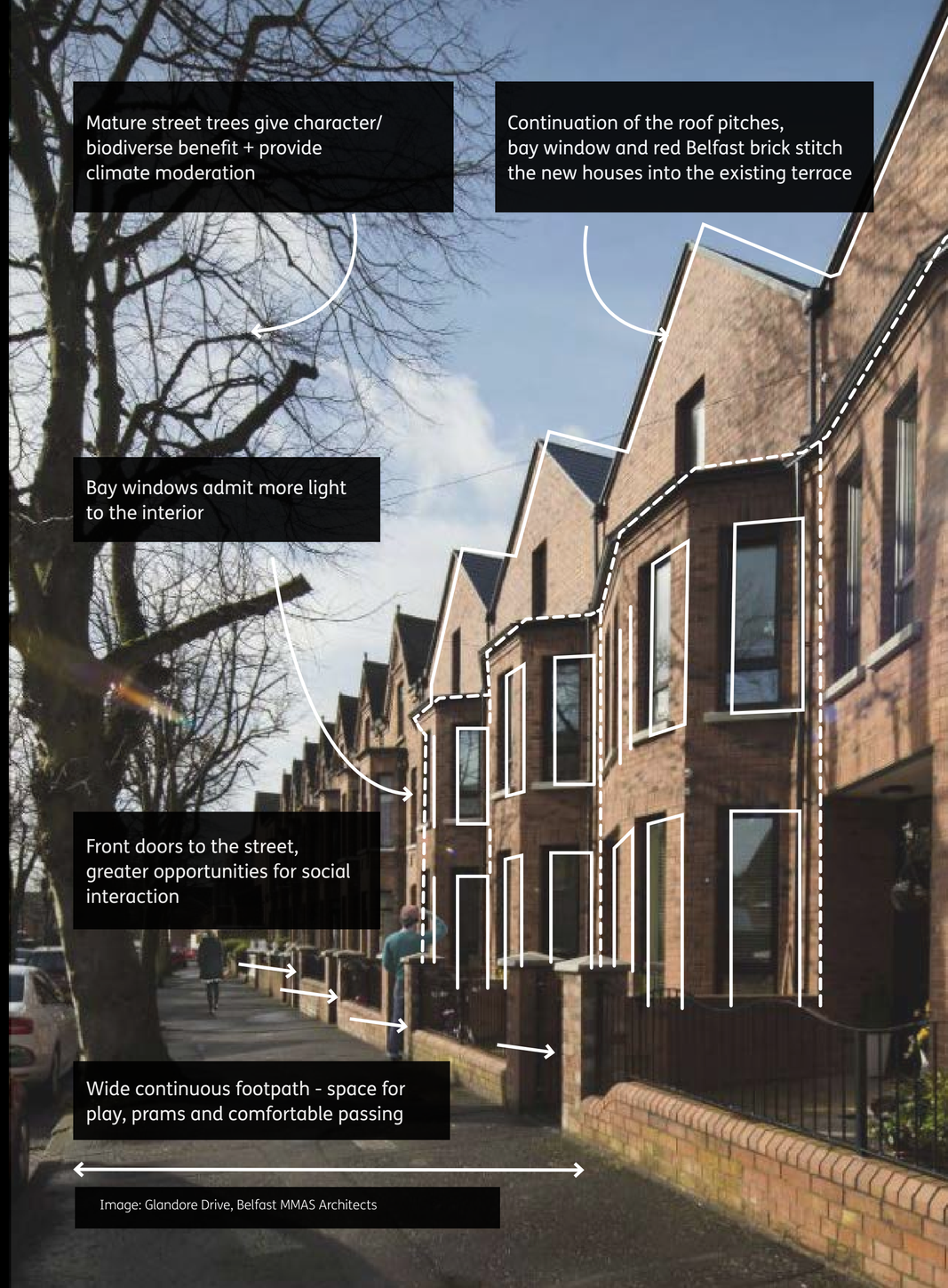


Image: Glandore Drive, Belfast MMAS Architects

Glandore Drive
Rethinking terraces

Glandore Drive
Daylighting

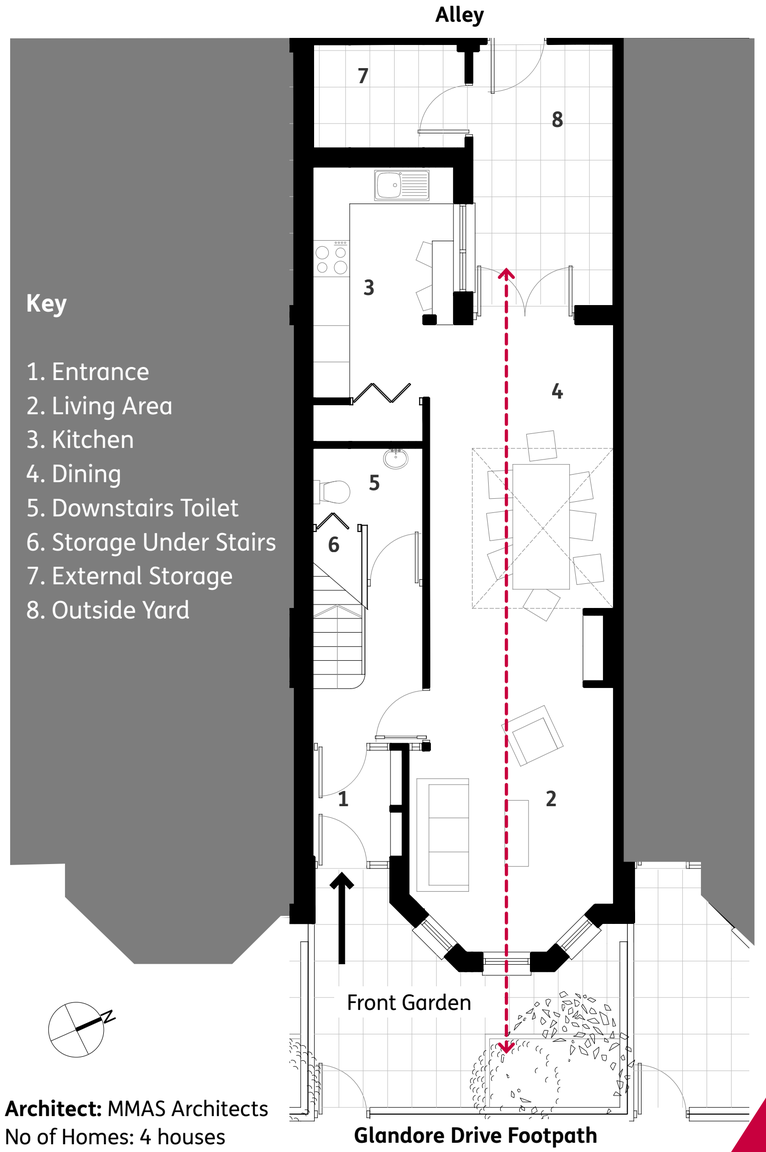
Large window brings natural light deep into the living spaces

Double height room provides greater quality of space through proportion

Upper level terrace

Long views provide visual connection between living space and the street

Image: Glandore Drive, Belfast MMAS Architects



Key

1. Entrance
2. Living Area
3. Kitchen
4. Dining
5. Downstairs Toilet
6. Storage Under Stairs
7. External Storage
8. Outside Yard

Architect: MMAS Architects
No of Homes: 4 houses

Case Study 2: Goldsmith Street
Norwich, England

The Goldsmith Street housing development in Norwich is a Local Authority housing project. The project utilises terraced housing in a 21st-century sustainable, community-living network of streets. Goldsmith Street is fully Passivhaus certified. The streets are laid out using passive solar design principles which enable the terraces to admit low-angle winter sun into each home and to exclude high-angle summer sun. The blocks are spaced 14m apart between fronts, as well as between backs, promoting a sense of community and increasing density.

Sustainability

Passive house certified (a highly energy efficient building standard). Timber frame structure with external brick-clad walls. On street car-parking with no cul-de-sacs or parking courts. The blocks are laid out along the east-west axis, utilising best orientation for each room.

Significant tree planting and soft landscaping.

Well-being

Range of outdoor spaces for all ages supports play and sense of community.

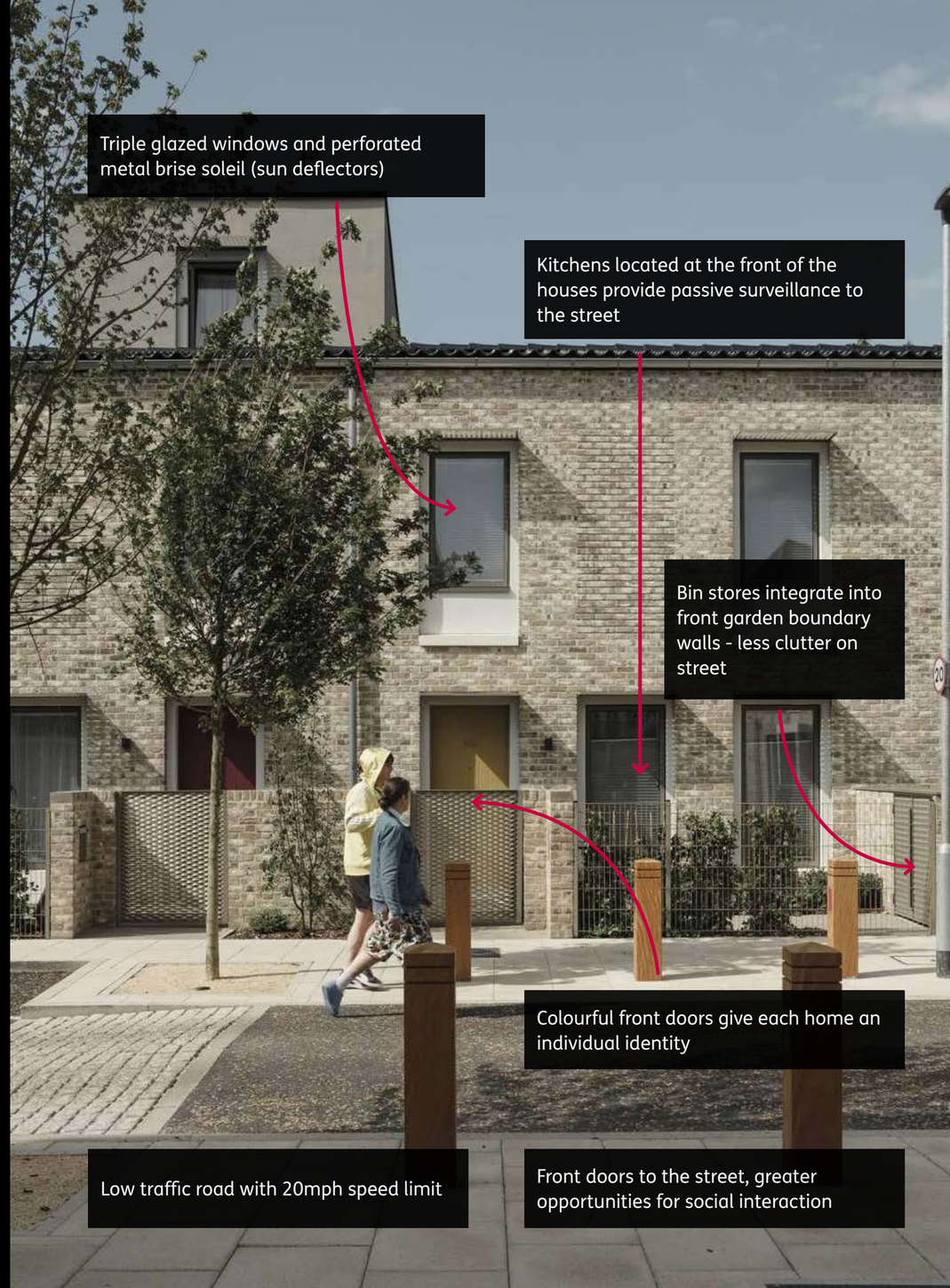
The development is integrated into the existing street network, connecting people to pedestrian and cycle routes.

Mixed typologies of houses and flats supports a community of different ages.

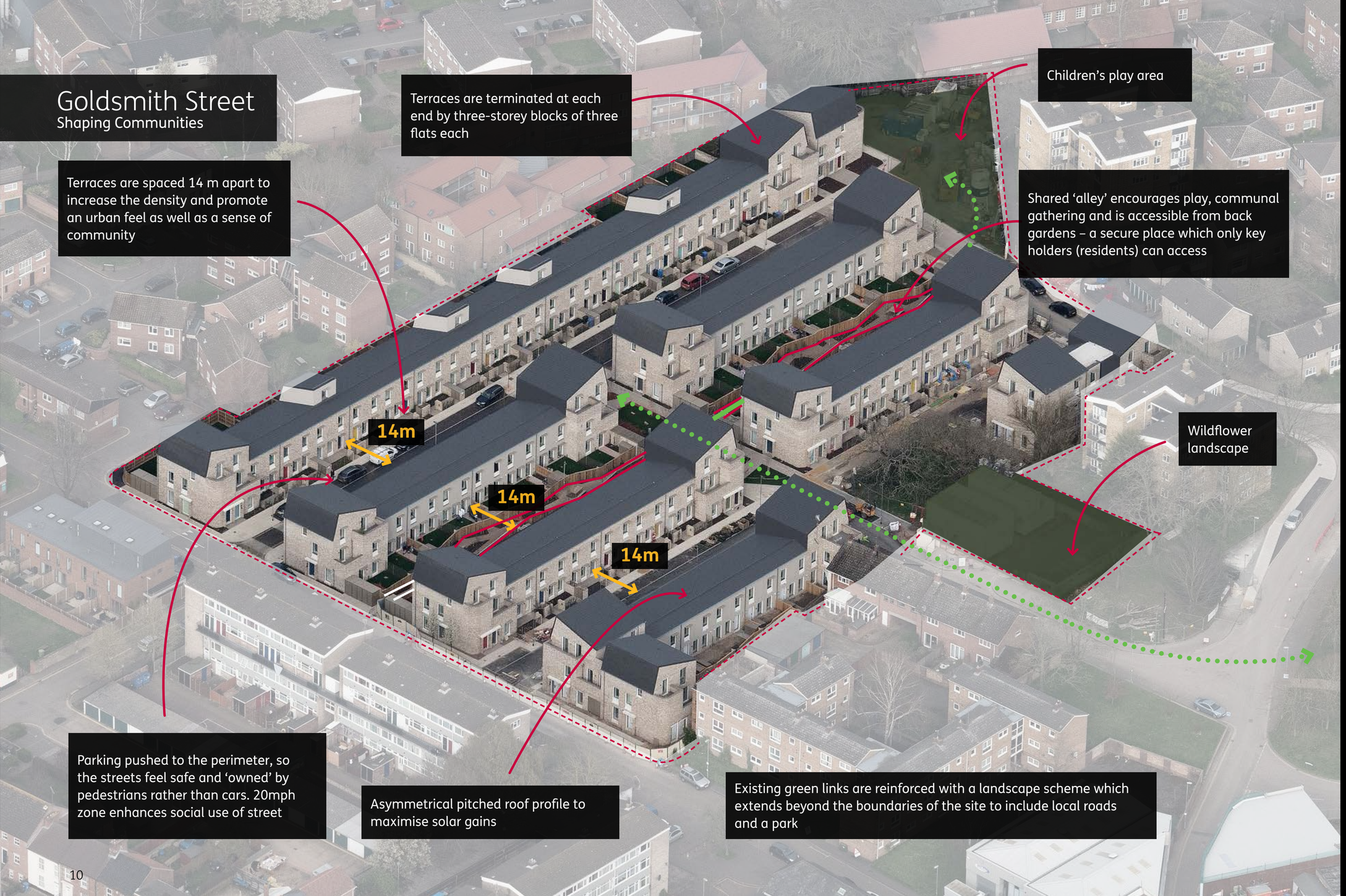
Economy

Annual energy bills minimized through building fabric performance. Efficient land use through terraced housing.

High-quality materials within low budget. £1,875 per m2 (excluding professional fees).
Source: Architects Journal, (published 27.02.2019)



Goldsmith Street
Shaping Communities



Terraces are terminated at each end by three-storey blocks of three flats each

Children's play area

Terraces are spaced 14 m apart to increase the density and promote an urban feel as well as a sense of community

Shared 'alley' encourages play, communal gathering and is accessible from back gardens – a secure place which only key holders (residents) can access

Wildflower landscape

Parking pushed to the perimeter, so the streets feel safe and 'owned' by pedestrians rather than cars. 20mph zone enhances social use of street

Asymmetrical pitched roof profile to maximise solar gains

Existing green links are reinforced with a landscape scheme which extends beyond the boundaries of the site to include local roads and a park

NORTH

Goldsmith Street
Amenity Spaces

A shared ‘alley’ encouraging small childrens play and communal gathering is accessible from back gardens – a secure place which only key holders (residents) can access.

Well lit open space feels safe and secure

Communal space is overlooked by homes providing security through passive surveillance

Comfortable seating for all of the residents to enjoy the outdoors

Safe place for children to play

Strip of green planting gives a buffer between homes and communal garden

Trees provide a habitat for birds, shade and connection to the seasons

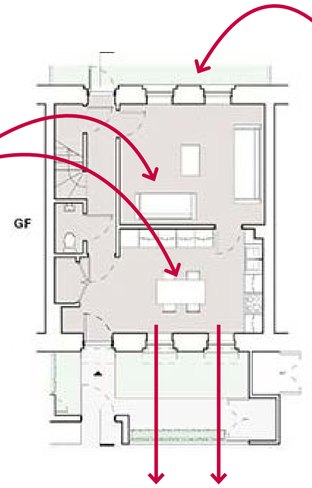
Goldsmith Street
Responding to Site

Architect: Mikhail Riches with Cathy Hawley
Site area: 1.2809 (hectares)
No of Homes: 105

Living room & kitchen are two distinct social spaces

Kitchens overlook street providing passive surveillance

4 Bed 6 Person House
Ground Floor



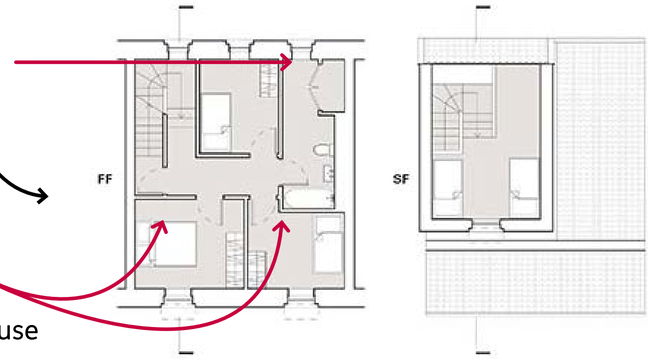
Thick walls 500-600mm

Low fuel bills of approximately £150 per year source: Greenguage

Natural light & ventilation to bathroom

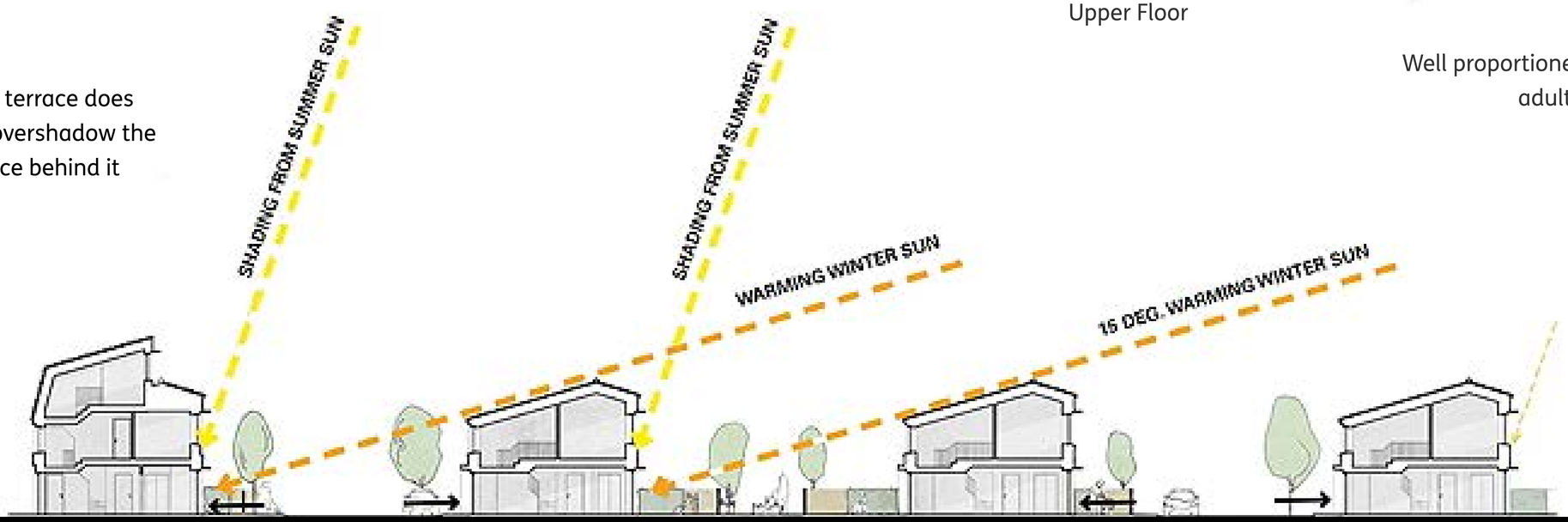
Well proportioned rooms for adults & children

4 Bed 6 Person House
Upper Floor



Well proportioned rooms for adults & children

Each terrace does not overshadow the terrace behind it



Case Study 3: Alto Vetro Tower
Dublin, Ireland

The 16 storey Alto Vetro residential tower occupies a small site next to the Grand Canal Dock in Dublin. The project builds densely on a site adjacent to lower buildings providing variation in heights, visual interest and great views for the building's residents. This is a zero car parking scheme with a very high level of density achieving over 5,000 habitable rooms per hectare. This density is only made possible by the specific character of this site.

Sustainability

High density development protects limited land resources. Zero car parking scheme is made possible by public transport network.

Shops, restaurants, health, social services and cultural buildings promote localised living and localised economies.

Density of development supports transport networks, shops, restaurants and the urban amenities.

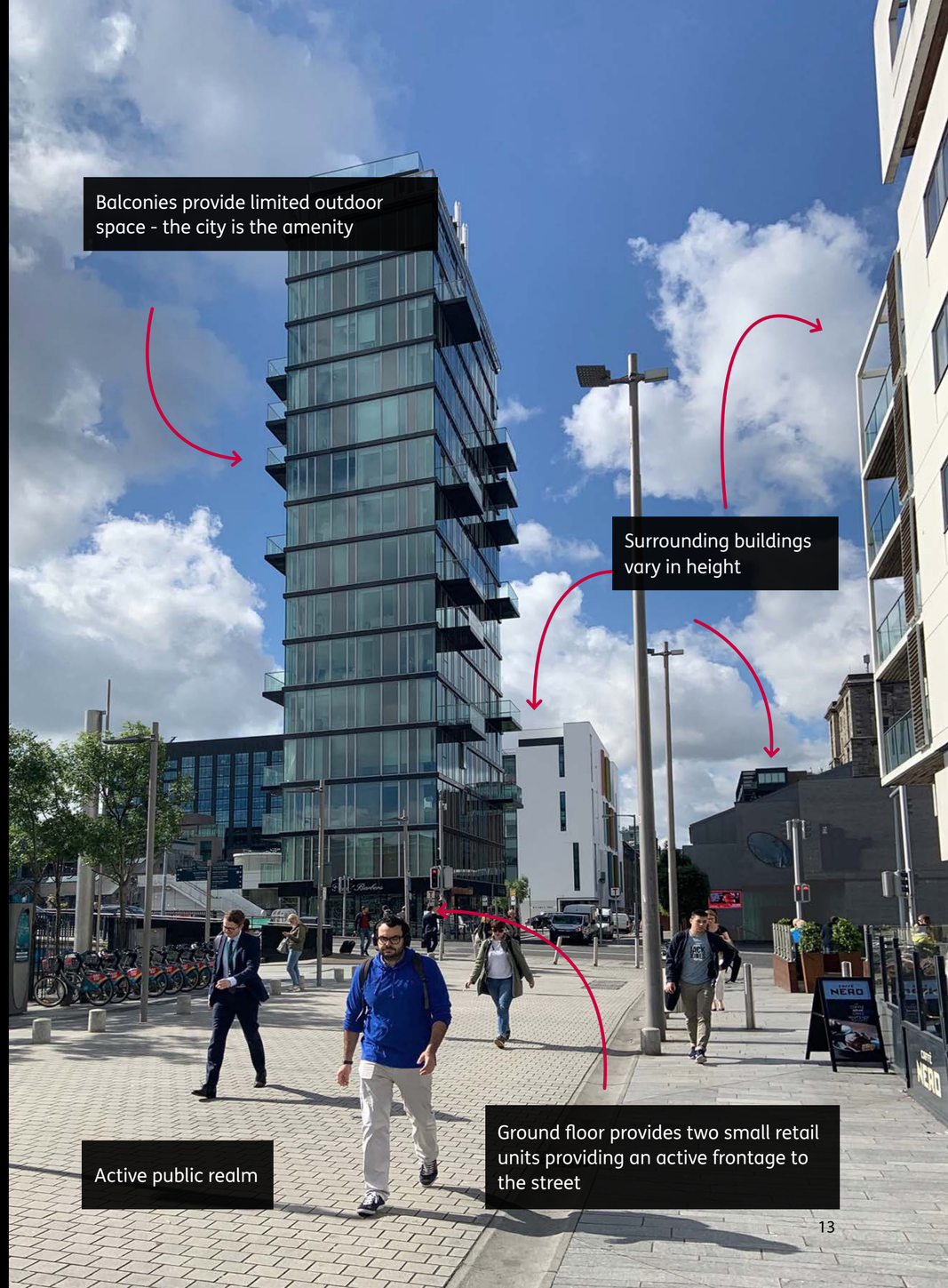
Well-being

Active ground floor frontage contributes to the city. Views provide connections to the city and great natural light. Naturally-ventilated apartments.

Location encourages active transport modes and is close to cycle networks and pedestrianised areas reducing pollution from cars.

Economy

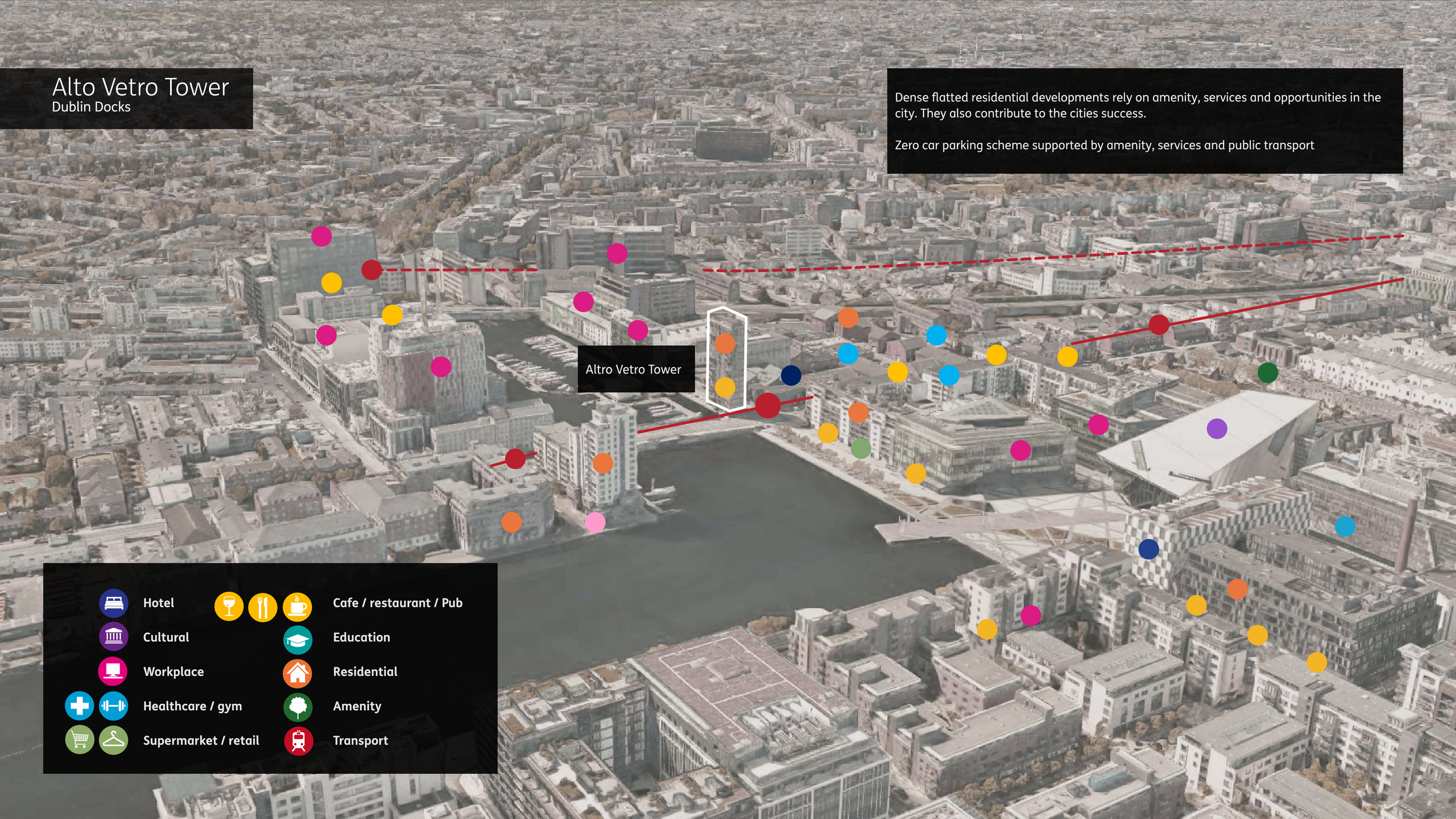
Residential development built next to employment opportunities, external spaces and cultural centres supports a thriving economy. The quality of design positively contributes to the appearance of the city encouraging further investment and tourism to the area.



Alto Vetro Tower
Dublin Docks

Dense flatted residential developments rely on amenity, services and opportunities in the city. They also contribute to the cities success.

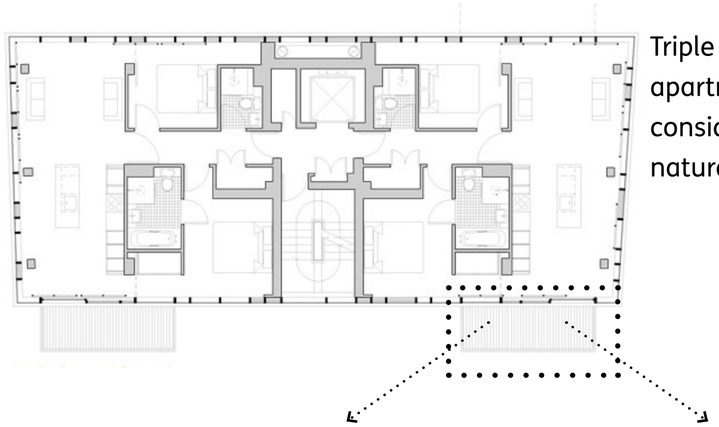
Zero car parking scheme supported by amenity, services and public transport



- Hotel
- Cafe / restaurant / Pub
- Cultural
- Education
- Workplace
- Residential
- Healthcare / gym
- Amenity
- Supermarket / retail
- Transport

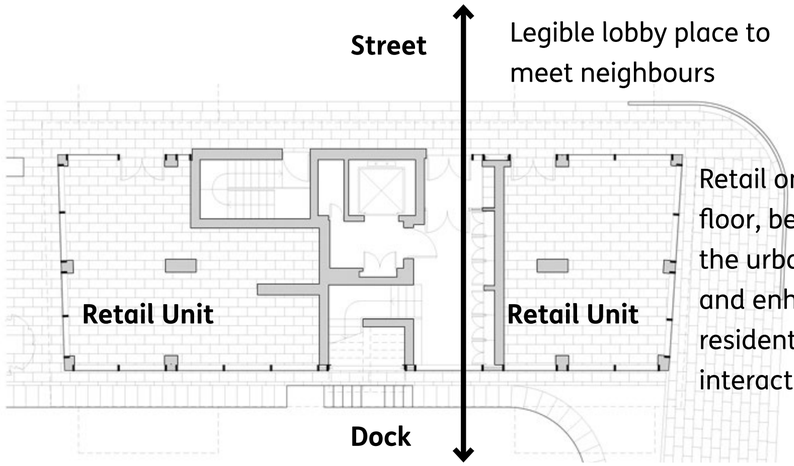
Alto Vetro Tower
City as Amenity

Alto Vetro Tower
City as Amenity



Triple aspect apartments offer considerable natural light

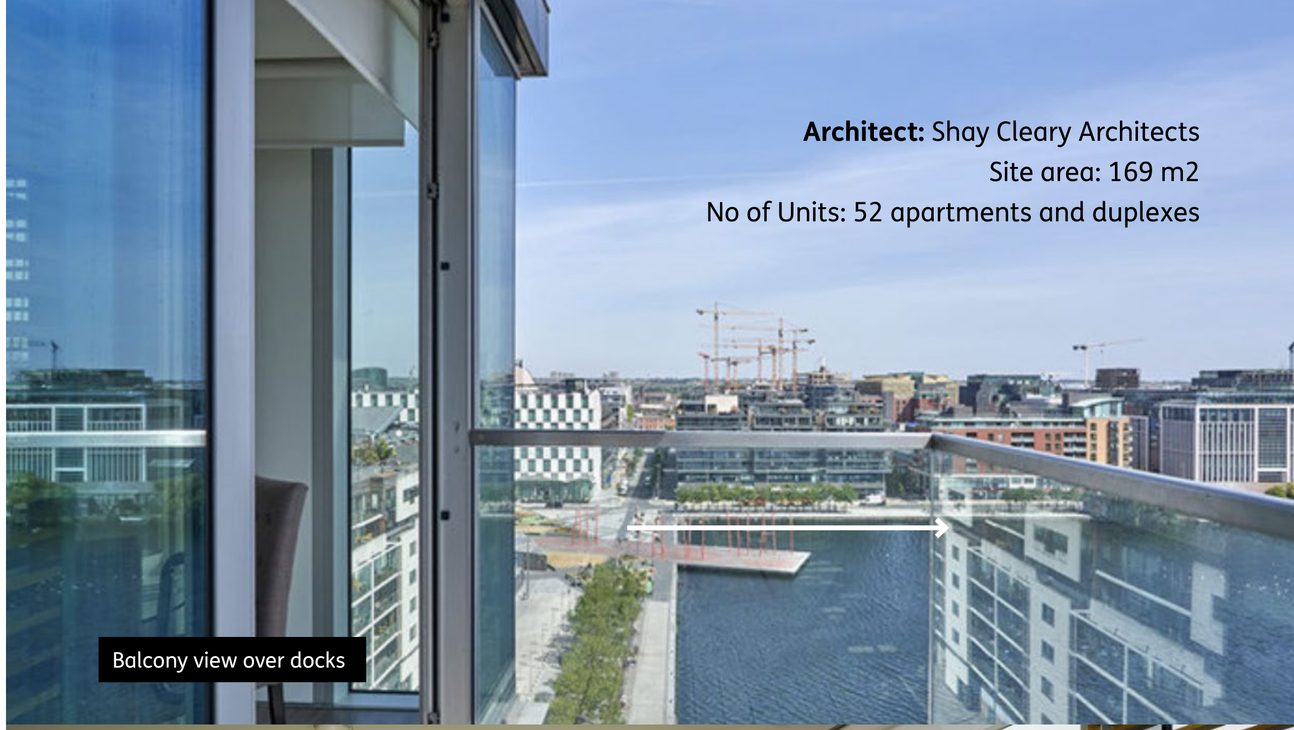
Upper Floor Plan



Legible lobby place to meet neighbours

Retail on ground floor, benefitting the urban realm and enhancing residential social interaction

Ground Floor Plan



Architect: Shay Cleary Architects
Site area: 169 m2
No of Units: 52 apartments and duplexes

Balcony view over docks

Image: Alto Vetro. Shay Cleary Architectsects

Appendices

- Space Standards
- Case Study Awards and Recognition
- Useful Guidance and References

Image: Goldsmith Street, Norwich Mikhail Riches

Space Standards

Housing is delivered through various procurement routes and by both the private and public sector. Adoption of a minimum space standard is important to ensure that the resultant residential development provides uplifting and dignified spaces for everyone.

Compliance with such standards enables usability benchmarks such as ‘Lifetime Homes’ to be achieved. These adhere to the spatial requirements for people with different needs, such as wheelchair access and use as set out in UK and NI Building Regulations.

The NI Department of Communities has specific guidance relating to social housing space standards, as found in ‘Department for Communities - Housing Association Guide – Design Standards’

At the time of publication, there are no statutory minimum space standards for new private dwellings in Northern Ireland. MAG sees the merit in consideration of applying the ‘Nationally Described Space Standards’ published by the UK Department for Levelling Up, Housing and Communities in 2015 to Northern Ireland.

Table 1 - Minimum gross internal floor areas and storage (m^2)

Number of Bedrooms (b)	Number of Bed spaces (persons)	1 Storey dwellings	2 Storey dwellings	3 Storey dwellings	Built in storage
1b	1p	39 (37)*			1.0
	2p	50	58		1.5
2b	3p	61	70		2.0
	4p	70	79		
3b	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4b	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5b	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6b	7p	116	123	129	4.0
	8p	125	132	138	

Case Study Awards and Recognition

Glandore Drive

- MMAS Architects identified as a best practice role model by the RIBA

Goldsmith Street

- RIBA Stirling Prize Winner 2019
- RIBA Neave Brown for Housing Winner 2019
- Housing Design Awards – Overall Winner 2019
- Housing Design Awards – Good Neighbour Award 2019
- RIBA National Award 2019
- RIBA East Award 2019
- RIBA East – Sustainability Award 2019
- Housing Design Award (Project) 2016
- RIBA Regional Award 2019

Altro Vetro

- RIAI Housing Silver Medal 2011
- Chicago Athenaeum Museum of Architecture and Design
- International Architecture Award 2009

Useful Guidance and References

- **Department for Communities - Housing Association Guide – Design Standards' (Accessed 2021)**
- **2018 Department of Housing, Planning and Local Government - Design Standards for New Apartments**
- **Department for Communities space standards**
- **2016 Nationally described Space Standards (England)**
- **2010 London Housing Design Guide (Draft)**
- **2016 Supplementary Planning Guidance for Housing (current)**
- 'Lifetime Homes Design Guide', Chris Goodman & Habinteg Housing Association and published by BRE Press in 2011.
- **2019 Living Places - An Urban Stewardship and Design Guide for Northern Ireland- Department for Infrastructure** (Accessed 2021)
- **2019 Creating Places: Achieving Quality in Residential Environments- Department for Infrastructure** (Accessed 2021)
- **2020 LETI Climate Emergency Design Guide** (Accessed 2021)
- **Criteria for Buildings, Passive House, EnerPHit and PHI Low Energy Building- Passivhaus Institute, Version 10c, January 2023**
- **Secured by Design- Homes 2023**
- **Department for Communities, Housing Association Guide, Development Guide, Design Standards for Wheelchair Housing – TCI Area/Cost Bands Applicable**

Key Contacts

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Policy

MAG is here to implement and develop the Architecture + Built Environment Policy. All input from MAG will be aligned to current policy and emerging best practice.

Well-being, Sustainability and the Economy

The built environment is fundamental to the way we live our lives. Northern Ireland must confront a series of challenges in our built environment to help address the well-being of our people, the climate emergency and support of the regional economy. These challenges are not mutually exclusive and will be important underlying issues in the design review process.

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