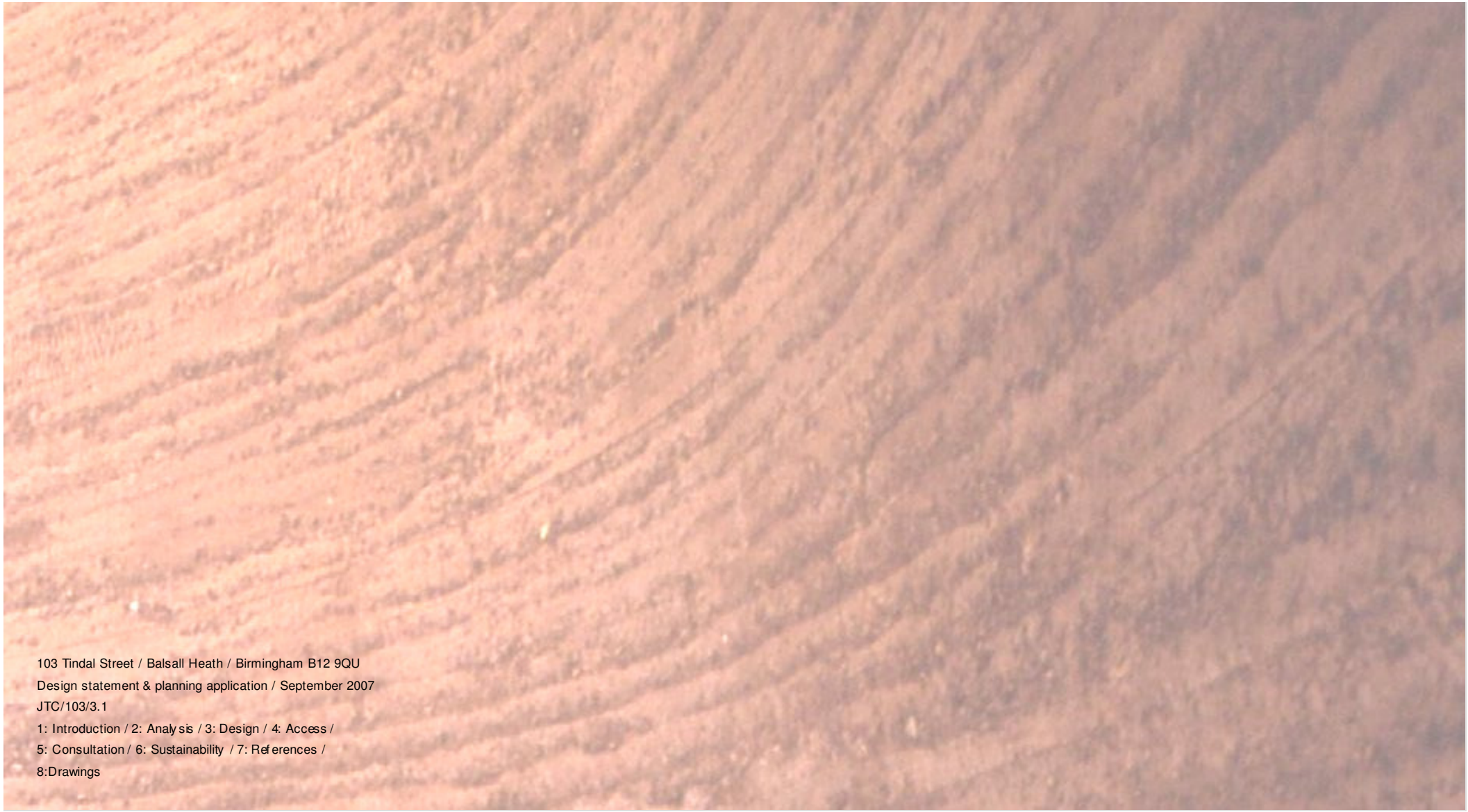
Associated Architects
103 Tindal Street



103 Tindal Street / Balsall Heath / Birmingham B12 9QU

Design statement & planning application / September 2007

JTC/103/3.1

1: Introduction / 2: Analysis / 3: Design / 4: Access /
5: Consultation / 6: Sustainability / 7: References /
8:Drawings

1: INTRODUCTION

The scheme redevelops a 2-bedroom Victorian house to give 4 bedrooms plus a studio loft space. The proposed work has three aims: to be an exemplar carbon neutral family house; to re-use an existing building; and to create high quality architecture.

1.1 Zero carbon

The proposals are designed to carbon neutral or "zero carbon" equivalent standard. This is the highest standard defined in the new Code for Sustainable Homes (DCLG 2007A), a world leading all-round measure of environmental sustainability, covering energy, CO^2 emissions, water and other key areas. The Code defines six levels of environmental sustainability. Level 1 is set just above current 2006 Building Regulations. Level 6 is "net Zero Carbon" for homes in use, requiring the generation of renewable energy to meet all the needs of the dwelling, including appliance and occupant energy use. To date only one house has been certified to this level in the UK.

1.2 Existing building

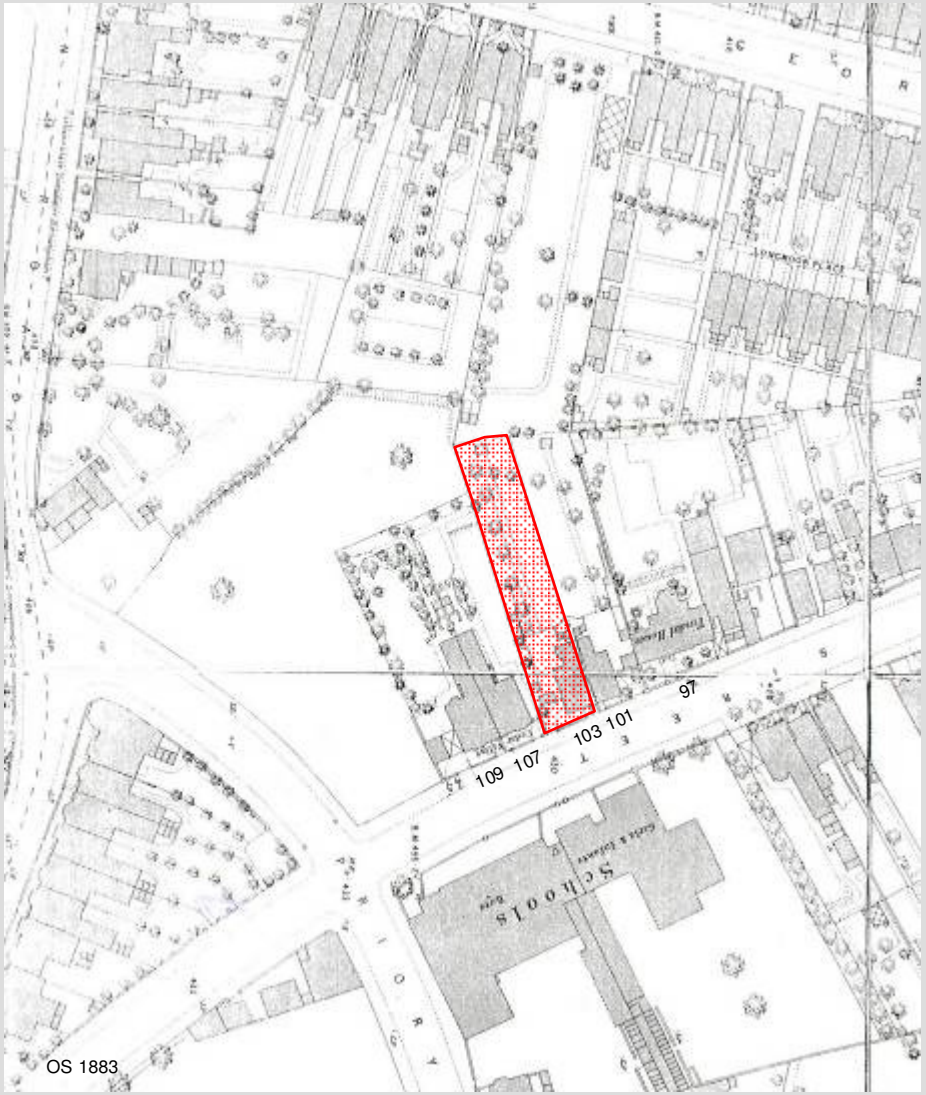
The proposals adapt and enlarge an existing Victorian house. As the technical challenges of existing buildings are formidable, pioneering UK sustainable houses have all been new. It is, however, inherently more sustainable to re-use rather build new because considerable energy is used in construction. Standards set for new housing will result in only modest overall CO2 reductions if existing housing is not simultaneously improved. A version of the Code for Sustainable Homes to cover existing buildings is expected in 3-4 years time.

1.3 Architecture

Ecological buildings in the UK have not often excelled architecturally. It is considered important to demonstrate that high quality modern architectural design – the use of space, light, materials - can co-exist happily with the highest standards of sustainability.

Associated Architects
103 Tindal Street

OS 1904



OS 1883


Tindal Street 103 & 101 blank gable wall

2: ANALYSIS

2.1 Neighbourhood

Over the last decades, the area has absorbed many different cultural, geographic and ethnic groups, so there is no dominant majority community. Local organisations such as Balsall Heath Forum, Metamorphosis at Martineau gardens, and St Paul's Project have become well established, and the success of local community integration has been widely acknowledged.

2.2 Local distinctiveness

The character of the local built environment is diverse. 101 and 103 Tindal Street (c.1840) are among the earlier houses in the area. They are therefore modest in scale with large gardens and were originally intended to form the centre of a terrace, hence the central rear passageway and vacant plots at both sides, still recognised in the street numbering (99 & 105). The blank rendered gable ends unfortunately deaden the street. To the front elevation the architecture is restrained with simple ornamentation

Tindal Street School was built in 1879 opposite the site to serve the enlarged population. It is designed by the architects Chamberlain & Martin in a confident Gothic style and its tower forms a landmark and vertical feature on the street.

By the end of the Nineteenth century a variety of different housing included both larger villas, alongside much more cramped housing with little garden space as shown on the 1904 OS plan.

Tindal St view north to city centre

Associated Architects
103 Tindal Street

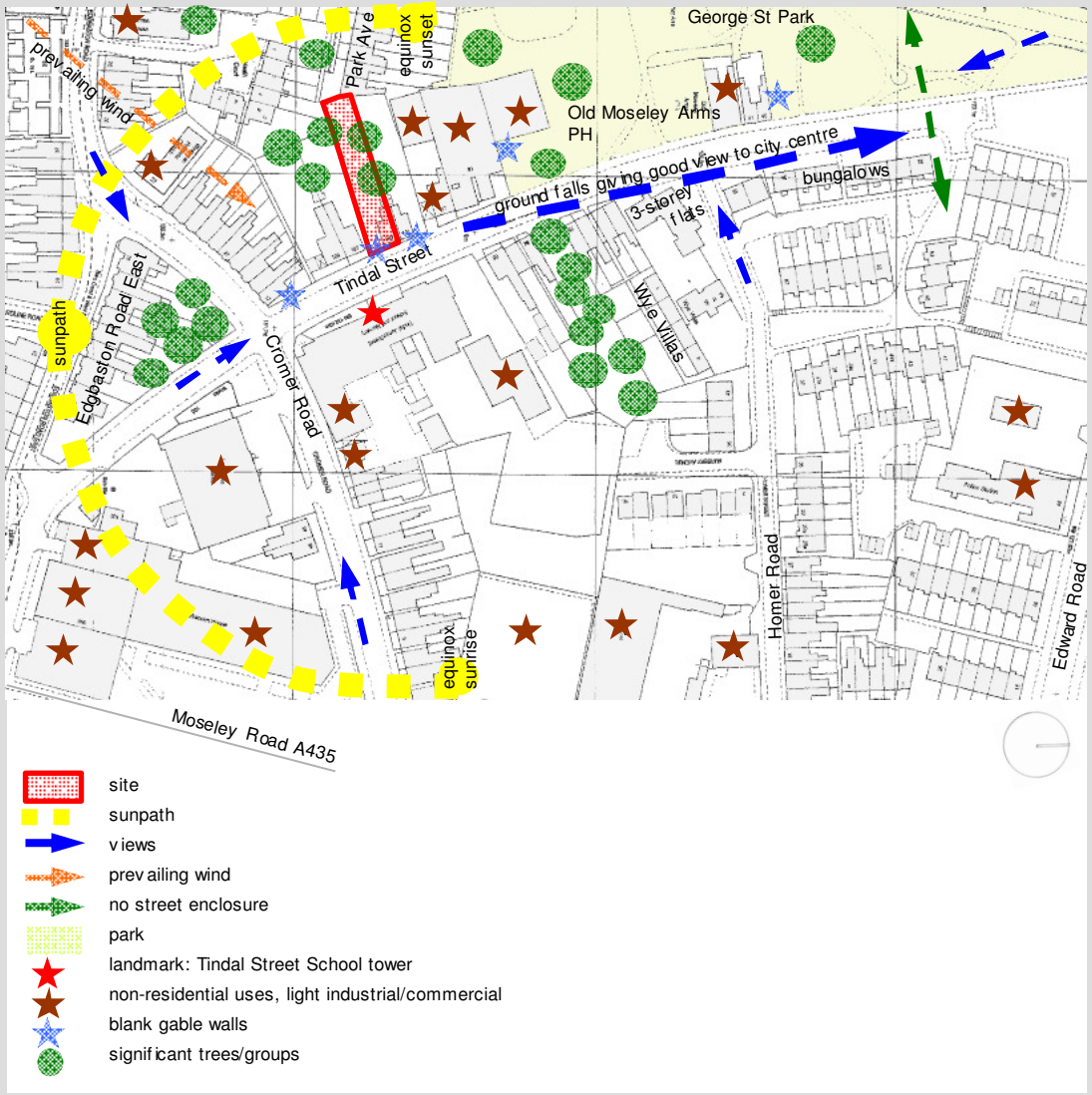
2.3 Older buildings

Older nineteenth and early twentieth century residential buildings are predominately two and three stories tall, in red brick and render with stone and brick details. 97 Tindal St (now "Crash Docta" car body workshop) is in rusticated stucco. Vertically proportioned windows predominate.

Frequent projecting bays and dormers have both pitched and flat roofs. Roofs are generally in blue-grey synthetic slates or occasionally red-brown plain clay tiles. All are at 30-40^{0} pitch, many with loft rooflights, and both eaves and gables face the streets.

2.4 Modern development

Many of the smaller houses were flattened in the 1970s; the north east part of Tindal Street is therefore now largely modern bungalows. The vehicular junction of Edward Road and Tindal Street was sealed at this time, although it remains a well-used pedestrian and cycle route, and George Street Park was created. An unintended consequence is the spatial isolation of the two retained public houses, The Clock and The Old Moseley Arms, where visual erosion of the street and problems of anti-social behaviour and security have resulted. Three-storey housing association flats on the corner of Tindal and Homer Street were built in 1991, helping re-establish street enclosure at a larger scale, and enjoying the good views north over the city centre.




103 Tindal St garden looking east with ash tree

Gates, 91 Tindal Street Regal Gates & Fencing

Gates, 91 Tindal St The Old Moseley Arms PH

2.5 Mixed uses

A wide range of light industrial uses form an intrinsic part of the neighbourhood identity: next to the car body work garage on Tindal Street are a metal fabrication workshop and a storage warehouse. On Cromer Road, George Street and Homer Street are further industrial, office and warehouse units. While these uses bring noise, pollution and other environmental health challenges, they also maintain a diverse mix of local activity and improve visual surveillance through the day.

Building materials here are more vigorously eclectic and robust: roofs and vertical cladding sheets, fences and gates in metal alongside timber and brickwork. Some of these buildings are single storey; others two to three, in varying states of repair.

2.6 Local green culture

Environmental issues form a significant part of the local culture. Balsall Heath Jungle was established in 1999 to promote local food production with ecological awareness. Local homes on Park Avenue were among the earliest in the city to install photovoltaic (PV) solar panels to generate renewable electricity. George Street Park has recently been re-landscaped by Groundwork UK and streets are regularly enlivened by Balsall Heath Forum planting. Balsall Heath Council of Faiths has committed itself to an "Environmental Moral statement" and a Balsall Heath Environmental Policy group was recently launched.

Tindal St view south with school left and light industrial uses right

Tindal Street 101-97 rear gardens view north

Associated Architects
103 Tindal Street

3: DESIGN

3.1 Design proposals

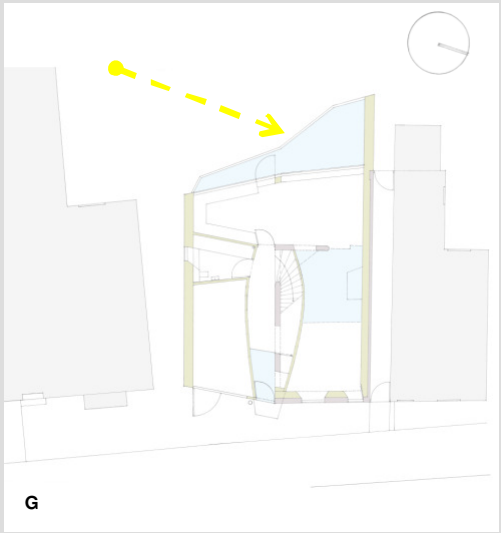
The design doubles the size of the existing house by extending onto the vacant plot (105) next door with a sympathetic modern design. The new addition rises two floors plus a studio loft beneath the solar roof. To achieve the zero carbon aim, this meets most of the house's energy needs with PV and hot water panels at the required height, pitch and orientation to avoid overshadowing.

The ground floor provides open-plan kitchen, living and dining areas which flow through the existing and new construction to give a variety of different spaces, including a tall top-lit living room. All these spaces are connected to the garden via an unheated glazed "sunspace". This is angled for useful winter solar gains, while a mature ash tree shades the glass in summer. An internal garage retains the secure off-road parking space.

A top-lit central stair is compressed between existing brickwork and new curved walls of textured earth construction. The first floor has a study and three bedrooms, two of which have shuttered openings overlooking the double height living area.

The top floor is a single top-lit studio space. A projecting dormer on the street frontage frames the wide view north to the city centre and forms a marker in the street scene. Its position visually anchors the curved stair enclosure and forms a bookend to the untouched slate roof of the existing house. On the street elevation, the dormer helps to bridge the step in existing roof height between 103 and 107.

Model viewed from above

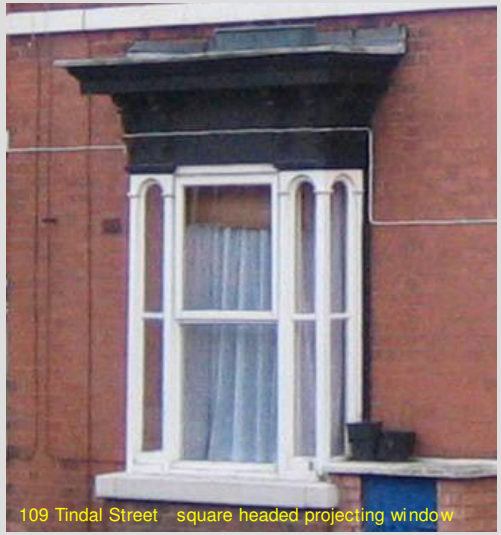


G

1 2

Associated Architects
103 Tindal Street

Tindal Street view south



109 Tindal Street square headed projecting window

Edgbaston Road East square chimneys and second floor dormers on the sky line

Cromer Road second floor dormers

3.2 Design response to local character

From the street, the existing house 103 is joined by a new side addition of sympathetic modern design:

Existing house 103 remains almost untouched at the front: one roof light is added and a window inserted within the existing door surround.

The new building line is angled back to link the different existing buildings and to avoid a blank end wall.

Modern addition forms a "book-end" to the existing house.

Eaves height of the new building mediates between the different eaves heights of its neighbours.

Projecting dormer provides a stop end to existing roof overhang, frames view to city centre, and helps form step in eaves heights.

The height and square head of the dormer and stair enclosure relate to existing chimney height.

New dormer and first floor bay window relate to local projecting bays and second floor dormers.

The new pitched solar roof is at the same scale and same 30^0 pitch as neighbouring roofs and chimneys, and is below the height of the school opposite and ash trees behind.

Solar panels are dark grey colour, matching the colour of existing slate roofs.

Climbing plants to the front elevation relate to local green front gardens and improve biodiversity.

Vertical window proportions, solid to void ratios, and timber frames all relate to the existing.

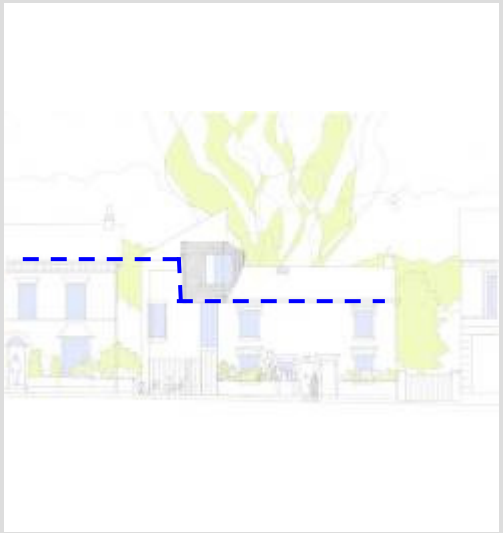
The two existing windows facing the street are replaced with seven windows, activating the frontage and improving natural surveillance.

Existing timber side gates are replaced with timber garage gates.

Brick framework to front and side elevations relates to the dominant local building material.

Mixed building materials reflect the locality.

Lime render to gables and return relate to existing materials and visually lighten the top of new building.



4: ACCESS

4.1 Transport

The scheme has considered how best to encourage the use of low or zero-carbon transport. Numerous shops, the Post Office, Health Centre, etc can easily be reached on foot. Dedicated secure storage for up to four bicycles will give every member of the household easy access to a bike. A ground floor shower is available for visiting cyclists; the National Cycle route and Birmingham City Council Rea Valley cycle route are two minutes cycle ride away. The site is four minutes walk from bus stops on the Mosley Road (A435) where a bus service operates every six minutes.

4.2 Garage

The present site has two car parking spaces, one on the street and one secure off-road space. It is considered important to retain the off-road space, and therefore an enclosed garage is proposed.

The normal requirement of a car-length space in front of the garage has not been possible. The alternative of an automatically-opening garage door would unfortunately run contrary to the zero-carbon aim. It is noted that the present arrangement with a smaller forecourt already exists (see photo bottom right); the footpath is generous at 2.7m wide; and as Tindal Street is a cul-de-sac no fast or through traffic is to be expected. Considering these points, any temporary disruption to foot or vehicular traffic while a car enters the garage is fairly minimal.

4.3 Inclusive access

The scheme is designed to "Lifetime Homes" standards, to meet the needs of potential disabled users. Examples include: level thresholds through-out; a ground floor wheelchair shower and wc; provision for a future stair lift and full lift; a route for a hoist between master bedroom and bathroom, etc.

Associated Architects Cobtun House, Worcester

103/105 Tindal Street existing garage forecourt

5: CONSULTATION

5.1 Birmingham City

Meetings have taken place with Stuart Morgans, Victoria Barnet, Zoe Langfield and Patricia Gomez from Birmingham City Council Department of Planning and Architecture. The scheme has been welcomed, both as an example of sustainability and as a contemporary design that complements the character and culture of the local area in line with policies.

Access to the garage has been discussed as 4.2 above, and various other points incorporated, including articulation of the junction between the new and existing house. Precedents for the scheme have been discussed, including houses by David Adjaye, David Mikail and Cobtun House by Associated Architects, winner of the 2005 RIBA Sustainability Award.

5.2 Local

The scheme has been discussed with Balsall Heath Forum, which has informally welcomed the proposal as a complement to its "Four Streets Ahead" green initiative. Discussions have been initiated with Tindal Street School chair of governors to explore the potential for the school to become a refurbished sustainable exemplar. Feedback at consultations with neighbours, other local residents and members of Balsall Heath Jungle has been positive and supportive.

David Adjaye, Elektra House, London

6: SUSTAINABILITY

An outline of proposed sustainability features is given below.

6.1 Energy

Thermal insulation: upgrading the existing and new structure, giving typical U-values of 0.13 W/sqm/C.

High thermal mass: retaining most of the existing brick house internally, with new solid floors throughout to stabilise temperature fluctuations.

Passive solar: glazed passive sunspace to the rear angled to 30 degrees west of south to provide useful winter solar gains and reduce heat loss.

Seasonal summer shading to the sunspace with planting including existing the existing ash tree.

Low-energy lighting and A (+) rated white goods throughout.

Solar roof: orientated 5 degrees west of south at 30 degree pitch includes photovoltaic panels rated at 4.9kWp.

Solar roof: also includes evacuated tube solar hot water panels linked to HW cylinder.

Mechanical ventilation: system with heat recovery serving all rooms; incoming air pre-heated in sunspace.

Supplementary heating: Wood-fired boiler and wood-burning stove for supplementary space and water heating.

6.2 Water

Low water use appliances.

Rainwater harvesting: tank stores and reuses rainwater.

Grey water system: allows bath and shower water to be used for WC flushing and garden.

6.3 Transport: see 4.1 above.

6.4 Materials

Highly ecological building materials throughout, including reclaimed and reprocessed materials. Earth construction using partly earth-based walls for high thermal mass and humidity modulation, with very low embodied energy.

Earth pavilion, Genesis Project

6.5 Waste & food

Full facilities for reusing composting and recycling household waste. An established orchard, soft fruit and vegetable garden, and local farmers' market, reduce food miles.

6.6 Health and well-being

High levels of natural day lighting from rooflights, sun pipes and windows.

High levels of acoustic separation.

"Lifetime Homes" standards to suit disabled users; 4.3 above.

Low or zero greenhouse gas pollutants from insulation, boiler, and other construction materials.

6.7 Management

"Considerate contractors" scheme; minimising environmental impact of construction.

"Secure by design" crime prevention standards.

6.8 Landscape & ecology

Drainage: The storm drainage load of the site is reduced through the rainwater holding tank which reduces peak storm flow rates.

Permeability: The area of the site which is impermeable, and therefore requires drainage, remains unchanged. New areas of hard paving are designed to be permeable.

Planting: Two significant ash trees on the north boundary of the site are retained, as are all other significant trees and planting. New planting includes a green façade on the east elevation.

Recreation: George Street park 50m north of the site provides public open space, children's' play facilities, cycle parking, etc and has recently been re-landscaped by Groundwork UK.

Ecology: an ecologist is advising on protection and enhancement of local ecology and new wildlife habitats to be created: bats, swallows, house martins, sparrows, newts, toads & hedgehogs.

Gary Breeze untitled slate panel inscribed with the dialect names of birds, 2005


Richard Long untitled earth installation, 2006

Associated Architects
103 Tindal Street

7: REFERENCES

Architects' Journal November 2004 Associated Architects' eco-house (AJ 2004)

Birmingham City Council Places for Living (BCC 2001A)

Birmingham City Council The 45 degree Code Guidelines for Household Extensions (BCC 2001B)

Birmingham City Council Extending your Home (BCC 2004)

Birmingham City Council Mature Suburbs Residential Development Guidelines SPG (BCC 2005)

CABE Housing audit: assessing the design quality of new housing in the East Midlands, West Midlands and the South West (CABE 2007A)

CABE Building for Life: Achieving great places to live (CABE 2007B)

Common Ground The Common Ground Rules for Local Distinctiveness (Common Ground 1991)

Department for Communities and Local Government Planning and Climate Change: Supplement to PPS 1 (DCLG 2006A)

Department for Communities and Local Government Building a Greener Future: Towards Zero Carbon Development (DCLG 2006B)

Department for Communities and Local Government Planning Policy Statement 3: Housing (DCLG 2006C)

Department for Communities and Local Government Code for Sustainable Homes (DCLG 2006D)

Department for Communities and Local Government Code for Sustainable Homes: Technical Guide (DCLG 2007A)

Department for Communities and Local Government Homes for the future: more affordable, more sustainable (DCLG 2007B)

Harris & Borer The Whole House Book CAT (Harris 2005)

Joseph Rowntree Foundation Lifetime Homes (Rowntree 1991)

Vale, Robert & Brenda The New Autonomous House (Vale 2000)

Walker, Keable, Martin & Maniatidis Rammed Earth BRE (Walker 2005)