



ISLINGTON

DATED

19 January

2011
2010

LONDON BOROUGH OF ISLINGTON

and

WORKSPACE 14 LIMITED

and

BAYERISCHE LANDESBANK

**AGREEMENT
PURSUANT TO SECTION 106 OF THE
TOWN AND COUNTRY PLANNING ACT
1990**

In respect of

**The Aberdeen Centre, located at 22-24
Highbury Grove, Aberdeen House,
Aberdeen Lodge and Aberdeen Studios.
London N5 2EA**

**PLANNING APPLICATION REFERENCE
P100557**

**Debra Norman
Director of Corporate Resources
Town Hall
Upper Street
London, N1 2UD**

DATE 19 January

2011
2010

PARTIES

- 1) **THE MAYOR AND BURGESSES OF THE LONDON BOROUGH OF ISLINGTON** of Town Hall Upper Street London N1 2UD ("**Council**");
- 2) **WORKSPACE 14 LIMITED** a company incorporated in England and Wales (Company No: 05834831) whose registered office is at Magenta House 85 Whitechapel Road London E1 1DU ("**Owner**");
- 3) **BAYERISCHE LANDESBANK** a company incorporated in Germany (UK Registration No: FC009267) of Bavaria House 13/14 Appold Street London EC2A 2NB ("**Mortgagee**")

and the Council the Owner and the Mortgagee shall be known together as the Parties

INTRODUCTION

- (A) The Council is the local planning authority for the purposes of the Act for the area in which the Site is situated
- (B) The Owner is the registered proprietor of the freehold of the Site with title absolute under title numbers NGL635748 and NGL300173
- (C) The Mortgagee is registered proprietor of the Charge
- (D) The Owner has submitted the Application to the Council and the Parties have agreed to enter into this Deed in order to secure the planning obligations contained in this Deed
- (E) At a meeting on 11 October 2010 the Council's Planning Committee resolved to grant the Planning Permission subject to the prior completion of this Deed

OPERATIVE PART

NOW THIS DEED WITNESSES AS FOLLOWS:

1. DEFINITIONS

For the purposes of this Deed the following expressions shall have the following meaning:

Affordable Housing	subsidised housing that will be available to persons who cannot afford to rent or buy houses generally available on the open market and for which the price is significantly lower than the prevailing market prices and which shall remain as affordable housing in perpetuity includes social rented and intermediate housing provided to specified eligible households whose needs are not met by the market
Affordable Housing Units	the Homes for Social Rent and Intermediate Housing shown coloured pink and blue on the plans numbered PL200 Rev HH PL201 Rev FF PL202 Rev EE PL203 Rev CC attached to this Deed and identified in the Affordable Housing Schedule annexed at Schedule 7 and which shall comprise no less than 35% of all Habitable Rooms at the Development
Application	the written planning application in respect of the Development validated by the Council on 15 March 2010 with reference P100557
Charge	means the debenture dated 2 July 2010 affecting the Site and also other properties
Contributions	means the Environmental Contribution the Public Transport Contribution and the Sustainable Transport Contribution
Development	demolition of existing buildings (with the exception of No 24 Highbury Grove) and redevelopment to provide 72 residential units

	and 8,297 square metres of commercial space pursuant to the Planning Permission
Draft Travel Plan Statement	the draft travel plan statement including a set of potential measures to be included in the Travel Plan prepared in consultation with the relevant Council officer. A separate plan to be produced for the residential development and the commercial development
Environmental Contribution	£250,000 (two hundred and fifty thousand pounds) to be spent on the Environmental Improvements
Environmental Improvements	environmental, community, streetscape and highways improvements within 500 metres of the Site which may include but not be limited to the provision of playspace in Highbury Fields
Habitable Room(s)	any room in a dwelling with the exception of the kitchen, bathroom and independent hallway and a kitchen will be counted as a habitable room if it includes a dining space and that dining space is more than 13 sq m including fittings
Highway Reinstatement Payment	the reasonable cost incurred by the Council in carrying out the Highway Reinstatement Works and any demand for such payment shall include suitable documentary evidence as to the sum thereof
Highway Reinstatement Works	the repair and reinstatement (if any) of any

damage caused by the Owner to the highway abutting the Site in the carrying out of the Development

Homes for Social Rent

means Affordable Housing which is not Intermediate Housing and are homes for rent provided by a Registered Provider at rent levels within the Regulator's Rent Restructuring Regime or such successor rent levels as may be set by the Regulator from time to time and shall comprise those dwellings coloured Pink on Plan 2

Implementation

the date on which any material operation (as defined by section 56(4) of the Act) forming part of the Development begins to be carried out save for any works of demolition site clearance service diversions soil investigation and archaeological testing decontamination the erection of temporary hoardings and fences or haul roads any temporary works or any works for access or to the highway and "Implement" and "Implemented" shall be construed accordingly

Index

the Retail Prices (All terms) Index as published by the Office for National Statistics or (if such index is at the relevant time no longer published) such other comparable index or basis for indexation as the Parties may agree

Index Linked

linked to movements in the Index between 30

March 2007 and the date of the payment so that the particular payment is adjusted in accordance with the following formula:

Amount Payable =

Relevant Amount x (A+B)

Where:

Relevant Amount =

the payment to be Index-Linked

A =

the figure for the Index which applied when the Index was last published prior to the date that the Relevant Amount is payable

B =

the figure for the Index which applied when the Index was last published prior to the 30 March 2007 PROVIDED THAT the Index Linked sum can never be less than the original sum payable

Interest

interest at two per cent above LIBOR from time to time

Intermediate Housing

shared equity and shared ownership housing and shall comprise those dwellings coloured blue on Plan 2

Market Housing

housing other than Affordable Housing comprised in the Development

Occupation and Occupied

occupation for the purposes permitted by the Planning Permission but not including

occupation by personnel engaged in construction, fitting out or decoration or occupation for marketing or display or occupation in relation to security operations

Old Planning Obligations

the unilateral undertaking given by Workspace 14 Limited with the consent of Bradford & Bingley plc to The Mayor and Burgesses of the London Borough of Islington dated 30 March 2007 in respect of planning permission P061268 and the planning obligation between The Mayor and Burgesses of the London Borough of Islington (1) Workspace 14 Limited (2) and Bradford & Bingley plc (3) dated 28 January 2008 in respect of planning permission P072654

Original Permission

the full planning permission subject to conditions granted on appeal under reference number P072654 dated 28 January 2008

Plan 1

the plan attached to this Deed and marked "plan 1"

Plan 2

the plans numbered PL200 Rev HH PL201 Rev FF PL202 Rev EE PL203 Rev CC attached to this Deed

Planning Permission

the planning permission to be granted by the Council pursuant to the Application

Public Transport Contribution

£3,000 (three thousand pounds) towards the upgrading of the bus stop on Highbury Grove

	or other public transport infrastructure improvements in the vicinity of the Site
Registered Provider	means a provider of Affordable Housing which is registered in a register maintained by the Regulator pursuant to Section 111 of the Housing and Regeneration Act 2008
Regulator	means the office for Tenants and Social Landlords (also known as the Tenant Services Authority or TSA) established pursuant to chapter 2 of part 2 of the Housing and Regeneration Act 2008 or such successors to its statutory function
Site	the land outlined red on the attached Plan 1
Sustainable Transport Contribution	a payment of £180 per residential unit towards the provision of sustainable transport measures including but not limited to car club membership electric charging points promotion of walking and cycling and accessibility
Travel Plan	a statement of package of practical measures tailored to the occupiers/users of the Development with the aim of reducing the impact of car travel on the environment and promoting a wider range of cleaner travel choices as per the relevant parts of the Council's Supplementary Planning Guidance on Green Travel Plans including a full travel survey and in consultation with the relevant

2 CONSTRUCTION OF THIS DEED

- 2.1 Where in this Deed reference is made to clause, paragraph, schedule or recital such reference (unless the context otherwise requires) is a reference to a clause paragraph schedule or recital in this Deed
- 2.2 Words importing the singular meaning where the context so admits include the plural meaning and vice versa
- 2.3 Headings appearing in this Deed are for ease of reference only and shall not affect the construction or interpretation of this Deed
- 2.4 Words importing one gender shall be construed as importing any other gender and words denoting actual persons include companies, corporations and firms and all such words shall be construed interchangeable in that manner
- 2.5 Wherever there is more than one person named as a party and where more than one party undertakes an obligation all their obligations can be enforced against all of them jointly and against each individually unless there is an express provision otherwise
- 2.6 Any reference to an Act of Parliament shall include any modification, extension or re-enactment of that Act for the time being in force and shall include all instruments, orders, plans regulations, permissions and directions for the time being made, issued or given under that Act or deriving validity from it
- 2.7 References to any party to this Deed shall include the successors in title to that party and to any deriving title through or under that party and in the case of the Council the successors to their respective statutory functions
- 2.8 Save in respect of the Planning Permission (which at all times shall prevail) in the event of any conflict between the terms, conditions and

provisions of this Deed and any document annexed hereto or referred to herein, the terms, conditions and provisions of this Deed will prevail.

2.9 The Interpretation Act 1978 shall apply to this Deed.

2.10 All Parts Schedules and Annexes attached to this Deed are to be read as if the same were incorporated into the main body of the Deed

3 LEGAL BASIS

3.1 This Deed is made pursuant to Section 106 of the Act Section 111 of the Local Government Act 1972 Section 2 of the Local Government Act 2000 Section 16 of the Greater London Council (General Powers) Act 1974 and Section 278 of the Highways Act 1980 and all other powers so enabling

3.2 The covenants, restrictions and requirements imposed upon the Owner under this Deed create planning obligations pursuant to Section 106 of the Act and are enforceable by the Council as local planning authority against the Owner without limit of time

3.3 On Implementation the Parties agree that the Old Planning Obligations shall cease to have effect subject to clause 3.4

3.4 The Council acknowledges that no contribution in respect of the Development ought to be paid twice and accordingly covenants that:

- (a) upon receipt of any contribution under this Deed, it will refund to the person who paid that contribution any sum received for the corresponding contribution under the Old Planning Obligations; and
- (b) upon receipt of any contributions under the Old Planning Obligations, it will refund to the person who paid the contribution any sum received for the corresponding contribution under this Deed

together with any Interest earned thereon

3.5 The Owner covenants with the Council by this Deed:

- (a) that it will not Implement the Development until it has given the Council notice of Implementation of the Permission in accordance with paragraph 1 of Schedule 1; and

- (b) that once notice of Implementation of the Permission has been given to the Council in accordance with paragraph 1 of Schedule 1 it will not thereafter implement the Original Permission.

4 CONDITIONALITY

This Deed is conditional upon:

- (a) the grant of the Planning Permission; and
- (b) Implementation

Save for clauses 8 9 10 11 12 and 13 and paragraph 1 of Schedule 1 which shall come into effect immediately upon completion of this Deed

5 THE OWNER'S COVENANTS

The Owner covenants with the Council as set out in Schedule 1

6 THE COUNCIL'S COVENANTS

The Council covenants with the Owner as set out in Schedule 2

7 MORTGAGEE

- 7.1 The Mortgagee acknowledges and declares that this Deed has been entered into by the Owner with its consent and that the Site shall be bound by the obligations contained in this Deed and that the security of the mortgage over the Site shall take effect subject to this Deed
- 7.2 Any mortgagee shall be liable only for any breach of the provisions hereof during such period as it is a mortgagee in possession of the Site and shall not be liable for any breach of the provisions hereof after it has parted with or released its interest in the Site

8 MISCELLANEOUS

- 8.1 No provision of this Deed shall be enforceable under the Contracts (Rights of Third Parties) Act 1999

- 8.2 This Deed whilst it remains in force shall be registrable as a local land charge by the Council
- 8.3 Insofar as any clause or clauses of this Deed are found (for whatever reason) to be invalid or unenforceable then such invalidity or unenforceability shall not affect the validity or enforceability of the remaining provisions of this Deed
- 8.4 This Deed shall cease to have effect (insofar only as it has not already been complied with) if the Planning Permission shall be quashed, revoked or otherwise withdrawn or (without the consent of the Owner) it is modified by any statutory procedure or expires prior to Implementation
- 8.5 No person shall be liable for any breach of any of the planning obligations or other provisions of this Deed after it shall have parted with its entire interest in the Site or that part of the Site in relation to which such breach occurs but without prejudice to liability for any subsisting breach arising prior to parting with such interest
- 8.6 Nothing in this Deed shall prohibit or limit the right to develop any part of the Site in accordance with a planning permission (other than the Planning Permission) granted (whether or not on appeal) after the date of this Deed
- 8.7 It is agreed and declared between the Parties that nothing contained or implied in this Deed shall prejudice fetter or otherwise affect the rights powers duties and obligations of the Council in the exercise by it of its statutory functions rights powers or obligations
- 8.8 Nothing in this Deed save clause 5 insofar as it applies to paragraph 8 of Schedule 1 shall be binding upon a purchaser or occupier of an individual Market Housing dwelling comprised in the Development or their mortgagee.
- 8.9 Nothing in this Deed save clause 5 insofar as it applies to paragraphs 8 and 9 of Schedule 1 shall be binding upon a purchaser or occupier of an individual Affordable Housing dwelling comprised in the Development or their mortgagee

9 WAIVER

No waiver (whether expressed or implied) by the Council of any breach or default in performing or observing any of the covenants terms or conditions of this Deed shall constitute a continuing waiver and no such waiver shall prevent the Council from enforcing any of the relevant terms or conditions or from acting upon any subsequent breach or default

10 CHANGE IN OWNERSHIP

The Owner agrees with the Council to give the Council immediate written notice of any change in ownership of any of its interests in the Site occurring before all the obligations under this Deed have been discharged. Such notice to give details of the transferee's full name and registered office (if a company or usual address if not) together with the area of the Site or unit of occupation purchased by reference to a plan

11 INDEXATION

The Contributions payable to the Council shall be Index-Linked

12 INTEREST

Any money payable to the Council under this Deed shall be paid in full without deduction or set-off and if not paid on the date due shall in every case bear Interest on so much thereof as shall from time to time be due and owing from the date the payment was due to actual payment

- 13 The Owner shall pay to the Council on completion of this Deed the reasonable legal costs of the Council incurred in the negotiation, preparation and execution of this Deed

IN WITNESS whereof the parties hereto have executed this Deed on the day and year first before written

SCHEDULE 1

THE OWNER'S COVENANTS

1 IMPLEMENTATION

- 1.1 The Owner shall give at least 14 days prior written notice to the Council of Implementation

2 ENVIRONMENTAL CONTRIBUTION

- 2.1 Prior to Implementation of the Development to pay the Environmental Contribution to the Council

3 HIGHWAY CONTRIBUTIONS

- 3.1 The Owner shall pay the Highway Reinstatement Payment to the Council in accordance with Schedule 6

4 EMPLOYMENT AND TRAINING CODE

- 4.1 The Owner shall cooperate with the Council and use reasonable endeavors to secure the objectives of the Code of Employment, Training Practice and Local Procurement (Construction) as set out in Schedule 3

5 CODE OF PRACTICE FOR CONSTRUCTION SITES

- 5.1 The Owner shall at all times during the construction of the Development comply and ensure compliance with the Code of Practice for Construction Sites as set out at Schedule 4
- 5.2 The Owner shall on Implementation pay £1,000 to the Council as a contribution towards the Council's costs of monitoring compliance with the Code of Practice for Construction Sites at the Site

6 SUSTAINABILITY

- 6.1 The Owner shall ensure that sustainability impacts of the construction of the Development and the use of an operation of the Development are carried out in accordance with the Sustainability Assessment and the Council's Supplementary Planning Guidance on Green Construction each as set out at Schedule 5

7 SUSTAINABLE TRANSPORT CONTRIBUTION

- 7.1 Prior to Implementation to pay the Sustainable Transport Contribution to the Council

8 CAR FREE HOUSING

- 8.1 Neither the Owner (nor any owner or occupier of any residence comprised in the Development) shall apply for or hold the benefit of a Resident's Parking Permit in respect of any dwelling comprised in the Development unless entitled to become a holder of a disabled person's badge (subject at all times to the Council's right to require proof of such entitlement) or to buy or hold a contract to park a car used by an occupier of any dwelling comprised in the Development in any car park spaces owned controlled or licensed by the Council (save for metered parking spaces and Car Club arrangements)
- 8.2 The Owner (including owners and occupiers of any individual dwelling comprised in the Development) hereby waives all right and entitlement to a Resident's Parking Permit unless they are or become a holder of a disabled person's badge
- 8.3 The Owner shall act in good faith and shall co-operate with the Council in facilitating the discharge and performance of the obligations herein inter alia by ensuring that all purchasers and residents of dwellings comprised in the Development are made aware as part of the relevant sale, lease or tenancy arrangements that they do not qualify for Resident's Parking Permits by reasons of the obligations herein, including by the provision of such information as part of the relevant sale, lease or tenancy agreements in respect of the disposal of any interest in one or more dwellings comprised in the Development

9 AFFORDABLE HOUSING

- 9.1 Prior to Implementation of the Development the Owner shall contract with a Registered Provider for the construction completion and subsequent transfer of the freehold or grant or assignment of a lease of the Affordable Housing Units
- 9.2 Prior to Occupation of the Market Housing constructed or to be constructed on the Site the Owner shall transfer the freehold or grant or assign a lease of the constructed and completed Affordable Housing Units to a Registered Provider
- 9.3 Any lease granted or assigned to the Registered Provider under this paragraph shall be of a term of no less than 125 years
- 9.4 Transfer grant or assignment under paragraph 9.2 shall be granted together with all necessary rights and easements required to enable the Affordable Housing Units to be Occupied for affordable housing purposes
- 9.5 The Intermediate Housing shall not be used or occupied let or sold for any purpose other than Intermediate Housing
- 9.6 The Homes for Social Rent shall not be used or Occupied for any purpose other than Homes for Social Rent PROVIDED THAT this paragraph may be superseded in respect of any one property by the exercise of a statutory right to buy in respect of the property

PROVIDED THAT the obligations in paragraph 9 shall not be binding upon nor enforceable against any person holding a 100% equity share in any Intermediate Housing or any mortgagee of a Registered Provider or a person holding an equity share in any Intermediate Housing or any receiver appointed by such mortgagee or any person deriving title through any such mortgagee or receiver or the Mortgagee PROVIDED THAT any such mortgagee shall have given the Council three months advance notice in writing of its intention to become a mortgagee in possession or its intention to exercise its power of sale and FURTHER PROVIDED THAT the mortgagee

or receiver appointed by any such mortgagee has first used all commercially prudent endeavours to effect a sale of the Affordable Housing to other Registered Provider

10 PUBLIC TRANSPORT CONTRIBUTION

- 10.1 Prior to Implementation of the Development to pay the Public Transport Contribution to the Council

11 TRAVEL PLANS

- 11.1 The Owner shall not Implement the Development until the Owner has submitted the Draft Travel Plan Statements to the Council for the Council's written approval.
- 11.2 The Owner shall submit the Travel Plan for the commercial development and/or the residential development to the Council for the Council's written approval SIX months after first of the Occupation of the commercial development and/or the residential development as the case may be unless otherwise agreed in writing with the Council.
- 11.3 The Owner shall not Occupy more than 90 percent of the commercial development and/or the residential development as the case may be until the Travel Plan(s) has been submitted to the Council and approved in writing by the Council.
- 11.4 The Owner shall submit to the Council the Update on Progress on the 3rd anniversary of first Occupation of the Development.
- 11.5 The Owner shall ensure that all owners and occupiers of the Development are made aware of the Travel Plan(s) and any revision in any promotional material and on written request by an occupier/user provided with a copy of the Travel Plan(s) at the Owner's expense.
- 11.6 The Owner shall use all reasonable endeavours to ensure that the owners and occupiers of the Development comply with the provisions of the Travel Plan(s) and any revisions thereto.

SCHEDULE 2

COUNCIL'S COVENANTS

1. The Council covenants with the Owner to use all sums received from the Owner under the terms of this Deed for purposes specified in this Deed for which they are to be paid or for such other purposes for the benefit of the Development as the Owner and the Council shall agree PROVIDED THAT the Council may in any event spend up to 5 (five) per cent of the sums on the costs of implementing and monitoring compliance with this Deed which sum shall not include the legal costs incurred in drawing up this Deed.
2. The Council will (so far as it is lawfully and reasonably able to so do) upon the written request of the Owner and payment of reasonable administrative costs at any time after each or all of the obligations of the Owner under this Deed have been performed or otherwise discharged issue written confirmation of such performance or discharge and will effect forthwith the cancellation of all entries in the Register of Local Land Charges or if such cancellation is for any reason impossible to secure thereon a note of such performance or discharge in respect of this Deed.
3. The Council covenants with the Owner that on written request by the Owner or the party that actually paid the sum it will pay to the Owner or the party that actually paid the sum such amount of any payment **excluding any sums paid by the Council to TfL** made by the Owner to the Council under this Deed which has not been spent or any part of them that remains unexpended or uncommitted to the Owner in accordance the provisions of this Deed within 5 years of the date of receipt by the Council of such payment together with any Interest accrued on the amount that has not been spent.
4. For the avoidance of doubt the sums or any part of them shall be deemed to have been committed if the Council has entered into any contract or given any undertaking (whether enforceable at law or otherwise) the performance

or fulfilment of which will require the Council to expend such sums in the future.

5. The Council shall **excluding any sums paid by the Council to TfL** on written request by the Owner or the party that actually paid the sum provide to the Owner such evidence as the Owner shall reasonably require in order to confirm the expenditure of the sums paid by the Owner under this Deed.

SCHEDULE 3
EMPLOYMENT AND TRAINING CODE

SCHEDULE 4
CODE OF PRACTICE FOR CONSTRUCTION SITES

SCHEDULE 5
SUSTAINABILITY ASSESSMENT
COUNCIL'S SUPPLEMENTARY PLANNING GUIDANCE ON
SUSTAINABILITY AND GREEN CONSTRUCTION
PROVISIONS



ISLINGTON

Green Construction

ISLINGTON COUNCIL
Planning Division

November 2003

ISLINGTON'S UNITARY DEVELOPMENT PLAN

supplementaryplanning**guidance**

Supplementary Planning Guidance for Consultation

Green Construction

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Appendix 1: Further Information

1 Introduction

1.1 This document is a non-statutory supplement to Islington's UDP 2002 - the technical name for this is 'supplementary planning guidance' (spg). The Council has prepared a wide range of spg, covering diverse topics such as parking standards and affordable housing. Some of the spg are particularly relevant to sustainability issues, including:

- Sustainability Assessments
- Green Travel Plans
- Car-Free Housing
- Use of Ground Water

1.2 The aim of supplementary planning guidance is to provide advice on how to implement the policies set out in the statutory UDP. The key UDP policy promoting the aims of sustainable development is Env 2, which states:

'The Council will examine all applications for development with a view to securing the objectives of sustainable development and will produce supplementary guidance to assist developers and others to assess all relevant design elements necessary to achieve sustainability'.

1.3 The supporting text to the policy explains that wherever possible buildings should be seen in a wide context that extends beyond the functional requirements of the immediate users, to include such matters as:

- the relationship with other buildings and uses;
- public accessibility;
- security and safety for users;
- energy efficiency;
- variety of uses and facilities;
- planting, landscaping and nature conservation;
- impact in terms of noise, traffic, wind turbulence and air pollution;
- use of environmentally friendly building materials.

1.4 Policy Env 3 and its supporting text are concerned with mechanisms to assess the impact, which a development might have on the environment. In some cases a formal Environmental Impact Statement may be required, but given the built-up nature of Islington, schemes where a formal EIA is required are likely to be few and far between. Instead the Council has promoted the concept of sustainability assessments. These will provide slightly more limited information and less technical information than an EIA, but will be extremely helpful to the Council, the public and indeed the applicant in assessing the environmental, social and economic aspects of a scheme. The spg on sustainability assessments includes a checklist of issues to be taken into account in preparing the assessment.

1.5 This spg on green construction is intended to provide more detailed advice to applicants on how to ensure greater environmental sustainability in developments, refurbishments and alterations to existing buildings. The intention is to use it in tandem with the spg on sustainability assessments. It looks initially at overall design, and then provides further details on five key aspects: materials, energy, waste, water and biodiversity. It then looks briefly at the operational phase of the building's life including environmental management systems and benchmarking. There is also an appendix giving sources of further information.

1.6 Anticipated outcomes from implementation of the guidance are better environmental performance *and* business efficiency for developers and construction firms operating in Islington - since reducing waste and improving resource use go hand-in-hand with reducing costs and increasing profits¹.

1.7 For example, in constructing the average development around 10% of the materials brought onto site are wasted. Average profit margins are 5%, so ample opportunity exists for improving profits *and* environmental performance².

1.8 In producing this spg on green construction, we aim to provide a framework for developers and construction firms so that they can then apply their creativity, technical knowledge, good-practice and innovation in developing better environmental solutions to the issues.

1.9 The contents page sets out the scope of the spg. It will *not* cover:

- Site appraisal;
- There will be general reference to some technological solutions to green construction, but these are limited as dynamic changes in technology will soon date the spg - and also for the reasons given in section 1.6 above.
- Many issues set out in the Spg are inter-linked. For example, waste minimisation has links with green procurement and specification. The spg recognises these links and cross-references where appropriate. However to make the guidance user-friendly, it adopts, with a couple of exceptions, an environmentally themed approach.
- This spg excludes those areas regulated by statutory agencies such as the Environment Agency. It is assumed that developers and construction companies are aware of these and are complying with the relevant statutes e.g. the Duty of Care to dispose of waste and their responsibilities under legislation affecting effluent.

1.10 According to 'Building a Better Quality of Life'³, the UK development and construction industry, via its environmental impacts, accounts for:

- the extraction of 90% of minerals in the UK;
- use of 360 million tonnes of construction materials in the UK every year;

¹ Building a better quality of life: a strategy for more sustainable construction, DETR April 2000, p.8

² The Construction Industry, Entec newsletter, 2001

³ See reference 1, p.10

- 70 million tonnes of demolition waste each year – 17% of total UK waste.

1.11 The environmental impacts of construction and development impact on our local and global environment in a number of ways. Resource use affects other parts of the UK and the world, through extraction and depletion of resources. Construction waste, like most waste, is disposed of in landfill sites. Inefficient and excessive use of energy increases our emissions of greenhouse gases, affecting climate change. Air quality is affected by emissions from transport during the construction and operational phases of developments.

1.12 Central government has introduced a number of market instruments relevant to the development and construction industry:

- Landfill Tax 1996 - waste disposed of in landfill costs £15 per tonne (as at 2004⁴);
- Climate Change Levy - applying from April 2001, this is a tax on energy that comes from carbon sources⁵. The levy is payable on the use of energy by all industrial, commercial and public sector customers throughout the UK. The rate for electricity is 0.43p/kWh. In 1999, 50% of the 556 million tonnes of carbon dioxide (the major greenhouse gas causing climate change) emitted in the UK came from energy use in buildings.
- Aggregates Levy - from April 2002 this tax addresses the environmental costs of aggregates extraction. It aims to encourage materials⁶ re-use and recycling.

1.13 Key business drivers to better environmental performance include⁷:

- Costs savings from efficient resource use, less waste and efficient practices;
- Competitive advantage;
- Regulatory control;
- Risk and liability management;
- Increasing client demand;
- Public relations.

2 Design

2.1 The design stage is crucial for considering the environmental impacts of the development. It is also the key stage for considering 'long life-loose fit' in new developments, to enable the later conversion of buildings to new uses (without necessarily requiring demolition and re-build – see also Section 5: Waste).

2.2 Since the operational phase of the building will last many years, so will its ongoing environmental impacts. These impacts will last for far longer than those during the construction phase (see figure 4 in section 7). Therefore, consideration

⁴ Treasury pre-budget speech, November 2001

⁵ Climate Change: The UK Programme, DETR 2000

⁶ Finance Act 2001

⁷ Construction Industry Environmental Forum

of better environmental processes, techniques and green materials specification should take place at the outset. For example, the design stage should consider the storage space for recycling bins and / or the integration of recycling facilities into new developments or re-developments. (See UDP policies Env 36 and Env 37).

2.3 Development projects should be designed so that passive design elements (daylighting, natural ventilation and avoiding overheating), insulation, heating and ventilation systems and lighting all work together. Integrated design ensures that comfort and conditions are optimised at minimum cost and minimum energy consumption⁸.

2.4 When designing a development it is important to think about the management and maintenance of the finished building from the start. Usage patterns should be fully considered and consideration should be given to the ability to control services independently in different zones⁹.

2.5 The energy implications of the building site, location, form and orientation should all be considered at the planning stage. When selecting a site consider:

- Access to daylight
- Protection from winds
- Orientation for solar gain¹⁰.

2.6 A number of design considerations can be integrated into site layout, the internal layouts of buildings and material specification in order to improve the environmental performance of the development. These include thermal mass heat absorption and passive solar gain.

Passive solar gain

2.7 Passive solar design¹¹ has been dubbed the 'best buy renewable',¹² since designing buildings for comfortable internal heating, lighting and air conditioning can reduce running costs without increasing construction costs.

The Queen's Building at De Montfort University Leicester has halved its energy costs by employing passive solar design methods¹³.

2.8 Passive solar gain techniques have the potential to reduce the energy requirements of the building, which in turn reduces carbon dioxide emissions (CO₂) that cause climate change. For example:

⁸ Good Practice Guide 192 Designing Energy Efficient Multi-Residential Buildings, Energy Efficiency Best Practice Programme, Action Energy, March 2003

⁹ ditto

¹⁰ ditto

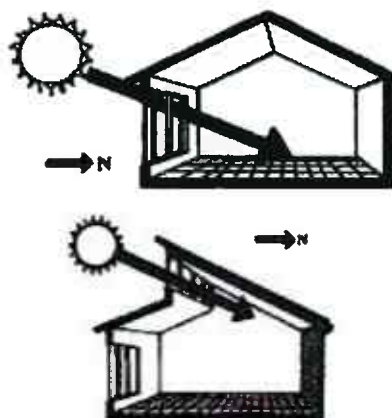
¹¹ i.e. design and orientation of buildings (in relation to the angle and direction of the sun, to other buildings, trees etc.) to optimise the use of natural sunlight and warmth.

¹² Renewable Energy in London: An Overview of Current Projects and Future Prospects, London Research Associates / David Bartholomew Associates, March 2000.

¹³ Planning for Passive Solar Design, Terence O'Rourke / BRESCU, undated.

- designing with microclimate in mind can enhance solar gain, and therefore reduce energy use for lighting and heating;
- orienting the building within 30 degrees of the south can ensure passive solar gain;
- buildings that are designed facing south will benefit from passive solar gain, which can reduce heating requirements by 10%¹⁴;
- using atria, glass and skylights brings light and warmth into buildings;
- designing with perimeter walls or other adjacent buildings in mind can bring light and warmth into buildings;
- employing passive solar design measures can reduce the CO₂ emissions of commercial buildings by 20-50%¹⁵.

Figure 1: Alternative internal design can affect the amount of passive solar gain:



Reducing excessive passive solar gain

2.9 A balance needs to be struck between the benefits of passive solar gain, and excessive solar gain that can lead to over-heating in buildings. If a building becomes overheated, it will not be a comfortable environment and may require a cooling system. This balance can be achieved by:

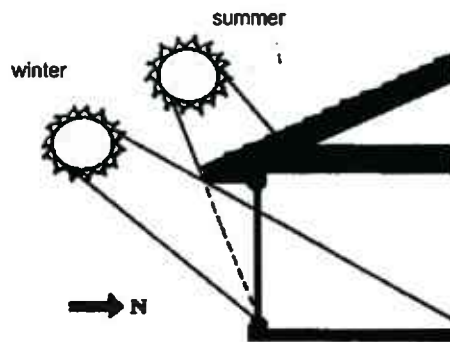
- specifying high quality glazing to reduce unwanted solar gain;
- using solar glass;
- designing to make use of overshadowing from other buildings;
- shading / screening by trees which can reduce excessive solar gain and overheating, and reduce energy use on air conditioning (planting can also increasing the year round usability of outdoor spaces by providing wind breaks).¹⁶

¹⁴ BedZED - a New Model for Sustainable Urban Living? Environmental Waste Management, Vol 3, pp 48-51, 2000

¹⁵ See reference 1

¹⁶ Good Practice Guidance note 192: Designing Energy Efficiency multi-residential buildings: Energy Efficiency Best Practice Programme, Action Energy, 2001.

Figure 2: Roof overhangs designed to influence solar gain.



2.10 Overhangs shade a house from excessive solar gain in the summer, and allow sufficient sunlight to enter the building during winter months when the sun is lower.

2.11 Building Form - Design first for minimal heat loss and then consider solar improvements. A long thin room with short exterior wall minimises heat loss, but a shallow plan room with wide external walls can enjoy more daylight. A compromise solution is to use the former shape - and locate areas requiring daylight, such as desk space, adjacent to the window.¹⁷

Thermal mass heat absorption

2.12 This is achieved via use of building materials that absorb and store heat. Concrete, brick and other masonry materials passively absorb heat during the day and then release it slowly at night. This technique also keeps buildings cooler in the summer, reducing the need for active cooling systems (which will become essential to combat the effects of climate change i.e. hotter, drier summers¹⁸). These are commonly and easily integrated into building design.

Saving energy: reducing costs at BedZED (Beddington Zero Emissions Development)

'By combining passive solar gain, thermal mass and super insulation, ZED design eliminates the need for a central heating system. Heating requirements of ZED homes are around 10% of that for a typical home of the same size. Residents' fuel bills reflect this saving.¹⁹ In other words, it is possible to reduce heating requirement by 90%. The design alone has reduced overall energy needs by 60%.

¹⁷ General Information Report 53, Building a Sustainable Future, Energy Efficiency Best Practice Programme, Action Energy, 2000

¹⁸ Climate Change and local communities: how prepared are you?: UK Climate Impacts Programme, 2003.

¹⁹ www.bedzed.org.uk

Location and Land Use

2.13 See Islington's UDP for policies to encourage mixed use, to encourage development at accessible locations, to reduce the need for travel and to limit car-parking in commercial and residential schemes.

3 Materials

Aims

- 3.1 The aim of this section is to encourage developers and builders to:
- re-use existing elements of buildings and materials where possible;
 - avoid environmentally damaging materials;
 - purchase materials that have the best environmental performance i.e. the greenest products.

Re-using existing materials

3.2 Where possible existing materials should be salvaged and re-used. Section 5: Waste has details on undertaking waste audits and materials salvage in order to identify, collect and re-use materials.

Green purchasing

- 3.3 A green purchasing plan should be developed at the materials specification stage so that materials and installations used in the development are:
- the least quantity required to undertake the development, without compromising its quality;
 - have the lowest environmental impact in terms of how they are constructed, through their operational phase to disposal (cradle to grave). An ambitious green purchasing plan could include life cycle assessment of materials;
 - designed for low and easy maintenance that will mean, for example, lower maintenance costs, and therefore lower environmental impacts for the building (for example in the form of reduced quantities of cleaning agents in the future);
 - are specified in terms of the actual performance requirements, rather than restrictive or default specifications, thereby giving suppliers / sub-contractors an incentive to reduce waste²⁰;
 - sourced locally to minimise transport requirements, and reduce local air pollution and road congestion.

Developing a Green Purchasing Plan

²⁰ Reduction, Re-use and Recycling of Construction and Demolition Waste, Gallagher and Needham, Waste Management, July 2002, pp17-18.

3.4 Put simply, the aim of the green materials purchasing plan will be to select materials that are produced in the most environmentally friendly way. For example, products should be selected that are:

- made from recycled or recyclable components;
- that have low embodied energy values or resource intensities i.e. they were not produced using excessive amounts of energy or other resources;
- are not made from environmentally damaging materials or processes.

This can be difficult to achieve in practice. Looking out for materials that are environmentally rated with, for example, an eco-label will help.

Eco-Labels

3.5 Where possible choose materials from sustainable sources, local sources and / or locally produced. For example, select timber that is sourced from sustainably managed forests - look out for timber that carries the FSC (Forestry Stewardship Council) logo.



3.6 Use materials with an 'A' rating under the BRE (Building Research Establishment) Green Guide to Specification. See Appendix 1 for further information.

Avoiding environmentally damaging materials

3.7 Where possible:

- select non-toxic, water based building products e.g. paints, linseed oil based paints, sealants and flame retardants that do not contain VOCs (volatile organic compounds) or hazardous chemicals;
- minimise the use of chemical treatments for timber, for example, or use environmentally friendly alternatives (see the Appendix for information on ;
- avoid the use of products containing chemicals that have a damaging effect on the ozone layer e.g. CFCs and any other ozone depleting chemicals proscribed under the Montreal Protocol²¹.

Contractors and suppliers

3.8 Through the contract tendering process, green purchasing principles can also be applied to the selection of contractors and suppliers. For example, do they have?

- an environmental policy;
- proven environmental performance on similar developments;
- an accredited environmental management system, or a commitment to working towards one;
- an informal environmental management system;

²¹ Montreal Protocol 1996, an international framework addressing use of ozone depleting chemicals

- in the absence of a comprehensive environmental management system, have taken action on single-issues such as energy, waste etc?

Integrating the Green Purchasing Plan and Waste Audit

3.9 The Green Purchasing Plan should be developed in tandem with a 'Waste Audit' for the development (see section 5). Some demolition waste may be re-usable elsewhere in the scheme - e.g. for lower grade uses such as paths and access roads. Re-using waste in this way will result in fewer requirements for materials in the Green Purchasing Plan.

4 Energy

Aims

4.1 The aims of this section are to encourage developers and builders to:

- reduce energy use in developments (construction and operational phases);
- increase energy efficiency in buildings;
- reduce CO₂ emissions from developments;
- increase the use of renewable energy technologies in developments.

These aims relate directly to section 3.6 of the UDP which includes policies to encourage energy efficiency, the use of renewable energy and combined heat and power (policies Env 30 - 32).

Fifty percent of the UK's CO₂ emissions, a major climate change gas, come from buildings²².

4.2 In addition to design considerations (section 2, above), there are two other ways in which energy issues for buildings and developments can be addressed:

- energy efficiency
- renewable energy.

Energy Efficiency

4.3 The aim here is to make more use of less energy, by undertaking an energy efficient design.

Energy efficient design

4.4 New developments must meet the relevant standards set out in Parts L1 and L2 of the Building Regulations²³. These cover:

²² Sustainable Construction: opportunities for change, DETR 1999

²³ Building (Amendment) Regulations 2001, DTLR

- General matters - such as improved thermal performance, U-values and energy / CO₂ conversion rates;
- Design - including limiting over-heating due to excessive solar gain, heating systems, carbon efficiencies for CHP (combined heat and power systems), lighting efficiency, and insulation;
- Construction - such as building fabric and insulation;
- Information - e.g. energy meters.

(See Appendix 1 for further Information).

Designs should go beyond what is required under these minimum standards.

4.5 Other relevant established best-practice design guidance documents include BREEAM (Building Research Establishment) guides (New Offices and Solar Shading of Buildings) and Chartered Institution of Building Services Engineers (CIBSE) guides (Guide F: Energy Efficiency in Buildings) - see Appendix 1 for details.

4.6 Other measures to increase energy efficiency include making use of natural ventilation and incorporating 'smart' controls such as:

- daylight sensors
- movement sensors.

Heating and boilers

4.7 Using energy efficient heating systems and boilers will improve energy efficiency and reduce the building's emissions of CO₂. Communal heating systems should be considered wherever possible, even for small-scale developments.

Central heating

4.8 Best practice specifications for the components for domestic water-based central heating systems have been prepared by the EST (Energy Saving Trust) and BRESCU (See Appendix 1 for contact details).

4.9 'CHeSS (Central Heating System Specifications): Best Practice Energy Efficiency Programme Number 59 (2002 Edition)' details good and best practice models for domestic water-based central heating systems and provides data on savings in fuel and costs. More information is available on the EST (Energy Savings Trust) website - see Appendix 1 for details.

Boilers

4.10 Condensing boilers operate at 85% efficiency compared to 65-72% for normal boilers. Grants may be available from the Energy Saving Trust (again, see Appendix 1 for contact details).

Renewable energy

4.11 Renewable energy sources such as solar power and wind power emit no climate change gases in generating electricity. Renewable energy generation is exempt from the Climate Change Levy. In an urban area like Islington, the most appropriate renewable energy technologies are solar.

Active solar

4.12 Active solar systems, compared to passive solar systems (as described in section 2), collect solar energy and transfer it in the form of heat to air, water or possibly another fluid. The technology does not require strong sunlight to work (i.e. they will work on cloudy days), and has been applied in many developments in the UK²⁴. To work effectively solar panels should not be obstructed by adjacent buildings etc.

4.13 The two main applications of active solar systems of relevance to Islington are solar thermal systems and photovoltaic (PV).

Solar Thermal Systems

4.14 These solar energy systems are technically proven and can be used to provide hot water for domestic properties.

4.15 Solar energy is absorbed by the collector, usually placed on the roof, and the heated fluid is then piped to the pre-heat tank, which in turn is connected to the normal household hot water tank. Generally solar water heating systems are sized to provide approximately 50% of the users annual water heating requirements²⁵.

4.16 Collectors are usually located on the roof of the building at an angle of 30-35° to the horizontal and facing between southeast and southwest. A collector of 3-5 sq. metres in size is adequate for a typical domestic heat load. This would collect approximately 1000 - 2000 kWh of useful heat per year.

**Solar water heating collectors in a Leicester swimming pool save
7,500 kg CO₂ a year, as well as saving money.**

²⁴ 'The Guide to Renewable Energy Centres in the UK', Energy 21 / DTI, July 2002 – see Appendix 1 for details

²⁵ Renewable Energy for Islington Council Office Buildings, Feasibility Study: Future Energy Solutions, August 2002

Photo-voltaic (PV)

4.17 PV cells use light energy from the sun to create electricity. PV cells can be integrated into the southerly facing, unshaded roofs and facades of buildings - generally at an angle of 30° to the horizontal axis²⁶. Shadows from buildings, trees etc. will affect the efficiency of the PV array. These systems can supply power for appliances and lighting.

At Northumbria University, solar panels are integrated into conventional rain-screen over-cladding - creating one of the largest pv systems in Europe, saving 1,000 tonnes of CO₂ p.a.

Sainsbury's North Greenwich peninsula store has a PV panel that powers its neon store sign²⁷.

4.18 PV systems are technically proven, operate silently, require little maintenance and can last up to 25 years²⁸. Over a year, a 1m² panel will produce 800kWh of energy²⁹.

4.19 Solar energy can also be used in small-scale applications in development site infrastructure, such as external lighting for access roads.

Planning permission

4.20 PV roofs may sometimes require planning permission unless the building is listed or is in a conservation area. However you should always check with Islington Council's Planning Service first. For further advice see the section on 'Planning Implications of Photovoltaics' in the annex to 'PPG22: Renewable Energy', DTLR, March 2002.

Grants

4.21 The DTI (Department of Trade and Industry) Major Photovoltaics Demonstration Programme supports the application of photovoltaic technologies for buildings. The first tranche of £20m dispenses 50% grants (average) to individuals and organisations wishing to install solar electric (PV) systems on homes and other buildings over the next 3 years. See Appendix 1: Department of Trade and Industry for more details.

²⁶ Photovoltaics - Annex to PPG22: Renewable Energy, DTLR, March 2002

²⁷ Renewable Energy in London: An Overview of Current Projects and Future Prospects, London Research Associates / David Bartholomew Associates, March 2000

²⁸ See reference 3

²⁹ See above reference

Combined heat and power

4.22 A CHP plant is an installation where there is simultaneous generation of usable heat and power (usually electricity) for local use³⁰. CHP plants use natural gas to generate energy at overall efficiencies of 80% (compared to combined cycle gas turbine stations at 45%)³¹.

4.23 CHP can be utilised in both individually heated and communally heated (CH) developments, where there is an all year round constant heat demand (e.g. hospitals, swimming pools, residential homes). In CH developments, there is considerable advantage in linking buildings so that aggregate loads are met by a centralised plant. Individual-heating requirements can be met using Micro-CHP. Tenants benefit from CH and also CHP by:

- Affordability through bulk purchase and efficiency
- Controllability
- Abundant hot water
- Metered heat (pay what you use)
- Low cost electricity if sold directly to tenants.

Landlords will benefit through:

- Lower maintenance and management costs
- Attracting higher rents
- Reduced life cycle costs³².

4.24 CHP can lead to substantial savings in total energy costs and reduced emissions of carbon dioxide (the main global warming gas)³³. CHP plant comes in a wide range of sizes, from below 50 kW to many MW's of electrical output.

4.25 Good quality CHP is exempt from the Climate Change Levy. The government has established a CHP Quality Assurance Programme under which CHP can be assessed and certified. Exemptions to the Climate Change Levy and details of financial assistance for businesses such as enhanced capital allowances are highlighted³⁴. See Action Energy and DTI entries in Appendix 1 for further information.

4.26 CHP plants can also use alternative fuels such as wood chips and biomass, which are, theoretically, carbon neutral. Where sources of alternative fuel can be found, they should be used.

³⁰ www.chpa.co.uk - Combined Heat and Power Association

³¹ www.chp.bre.co.uk - Building Research Establishment

³² Good Practice Guide 240 Community Heating: Energy Efficiency Best Practice Programme, Action Energy, Feb. 1999

³³ See reference 6

³⁴ Enhanced Capital Allowances provide 100% first year capital allowances for approved energy saving investments for businesses.

Lighting

4.27 Lighting - as outlined in Section 2: Design, the design should incorporate as much scope for natural daylight as possible. Where lighting is installed however, the following should be provided:

- Energy efficient lamps (compact or tubular florescent) and control gear electronic).
- Reflectors enhancing light output and direction
- Sensors - passive infra red (PIR) or motion.
- Independent switching for areas and zones³⁵.

Ventilation

4.28 Ventilation - ventilation is necessary to maintain a healthy and comfortable internal environment for occupants, to rapidly remove any airborne pollutants and moisture, and to provide an air supply to open flue appliances. Design and installation of natural ventilation may reduce the need for air-conditioning, which will also save energy and reduce electricity bills. Paragraph 3.6.4 of the UDP discourages the installation of air conditioning systems.

4.29 When installing an energy efficient ventilation system the following should be considered:

- Passive Stack Ventilation (PSV)
- Assisted Passive Stack Ventilation (aPSV)
- Heat Recovery Ventilation (HRV)³⁶.

Energy efficiency standards

4.30 Two relevant energy efficiency standards exist:

- Standard Assessment Procedure (SAP) – scale from 1-120 - looks at the fixed elements of the home. All homes built to the same design, irrespective of where the property is located in the UK, should have exactly the same SAP. Building Regulation Amendments require calculation of a SAP rating for all new dwellings, and those converted through material change of use.
- National Home Energy Rating (NHER) - scale from 0 to 10. NHER includes various location-specific elements (including whether the home is South facing or sheltered from wind by other buildings) and so reflects actual running costs. If two homes have the same floor area but different NHERs, then the home with the better (higher) NHER should cost less to run. The standard's methodology also includes a carbon index and SAP rating. Homes should meet the NHER rating of 7-10.

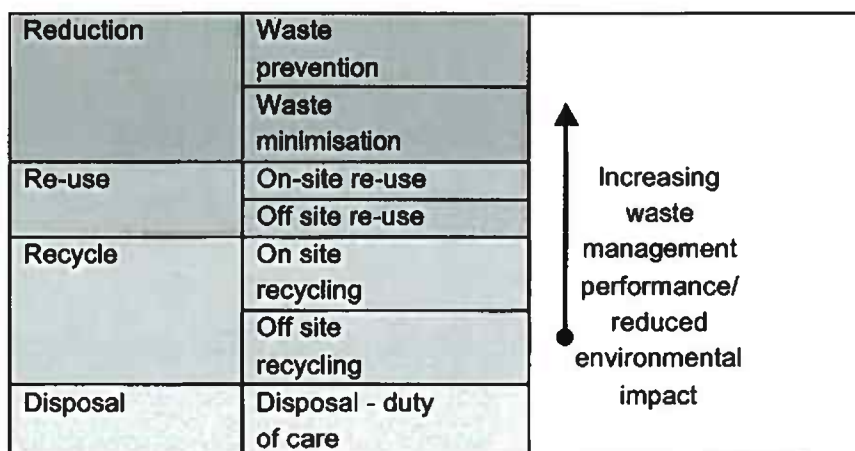
³⁵ Good Practice Guide 287 Design Team Guide to environmentally smart buildings: Energy Efficiency Best Practice Programme, Action Energy, Feb. 2000.

³⁶ General Information Leaflet 72 Energy Efficiency Standards: Energy Efficiency Best Practice Programme, Action Energy, Sep. 2000.

5 Waste

5.1 Re-using buildings, by refurbishment, repair and conversion, is obviously the ideal solution to reducing waste in construction. In many cases, this will not be possible. Where this does not happen, the aim is to tackle the quantity of waste produced during developments - from the demolition phase to the construction phase. The Council's planning policies on waste are set out in section 3.7 of the UDP, and are based on the principle of the waste hierarchy shown below.

Figure 3: The waste hierarchy



Re-use of buildings

5.2 Re-using, refurbishing, repairing and converting buildings, rather than wholesale demolition, will help reduce construction waste. As well as reducing waste and reducing environmental impacts, this approach may also be required in Conservation Areas. Implementing non-destructive works can preserve buildings and reduce the need for environmentally damaging chemical treatments³⁷. Advice can be sought from the Council's Conservation Team and English Heritage.

Tackling demolition waste

5.3 The aim here is for the re-use of existing buildings, and / or maximum re-use and recycling of demolition materials.

Deconstruction

5.4 Buildings should be designed with deconstruction in mind, so that components can be easily removed and re-used - see also section 2 on design.

³⁷ A guide to alterations and extensions, London Terrace Houses 1660-1880: English Heritage 1996

5.5 A 'Demolition Waste Audit' of the development site should be undertaken *before* demolition (there are methodologies for doing this, such as the BRE SMART Waste methodology - see Appendix 1 for contact details).

5.6 Employing off-site fabrication techniques can substantially reduce on-site waste, as well as reducing other environmental impacts such as transport use.

5.7 Demolition should incorporate a 'materials salvage phase', whereby construction and surplus materials are recovered from the site, including:

- brick, concrete, hardcore;
- subsoil, topsoil;
- timber, metal, steel frames, plastics;
- infrastructure e.g. granite kerbs, signs.

Some of these materials may be suitable for re-using for other similar uses.

5.8 Demolition wastes can be re-used for lower quality uses e.g. access roads and footpaths, or as a concrete aggregate. Around 30% of such wastes are currently re-used in this way as fill³⁸. Excavating unnecessary spoil that can be left in-situ should be avoided. BS (British Standard) 8500 now permits the use of recycled concrete aggregate in certain applications including foundations, paving and concrete³⁹.

5.9 Demolition techniques should follow the Council's Code of Practice for Construction Sites 2002.

Tackling construction waste

5.10 A Construction Waste Management Plan will identify wastes arising from the construction process, find ways of minimising it and ways of re-using and recycling different waste streams. Wastes should be segregated into separate waste streams, e.g. timber waste, metal waste, concrete waste and general waste.

It is estimated that over 3,000 tonnes of reusable wood is thrown away or burnt from the demolition of old buildings in the UK every working day. Source: Good Wood Guide, Friends of the Earth.

5.11 Markets should be identified for sale/donation of materials, such as the BRE Materials Information Exchange and Waste Alert North London's Waste Exchange Service. Islington Council is a member of the latter scheme which is locally available - see Appendix 1.

³⁸ Reduction, Re-use and Recycling of Construction and Demolition Waste, Gallagher and Needham: Waste Management July 2002 pp17-18

³⁹ Supply and Demand, Annual Report 2002/03, London ReMaDe

5.12 Sustainable working practices should be employed during the construction phase such that potential pollutants are contained so that they do not spill or leak and contaminate watercourse. Mitigation measures and emergency procedures should be drawn up to deal with any on-site environmental accidents. See also L.B. Islington's Code of Practice for Construction Sites, pages 9 and 12.

6 Water

6.1 The aim of this section is to highlight green construction methods that will:

- reduce the amount of water used in developments in their operational phases;
- re-use water that is usually wasted in the operational phase of developments; and
- avoid environmental damage from water that must be wasted.

6.2 UDP policy Env 31 is concerned with the use of ground water, as well as the need to reduce water use. There is also a separate 'spg' on the use of ground water. This can be downloaded free of charge from the Council's web-site.

Each person uses about 50 litres of water a day for flushing the wc (source: Environment Agency).

Reducing the amount of water used

6.3 Installing efficient appliances can reduce the amount of water used in developments once operational. For example:

- water flow reduction valves and shower roses;
- spray /aerated /push taps in basins. It is estimated that in an average office spray taps can save 1800 litres of water per year⁴⁰. Spray taps are not recommended where the system will not be used regularly as they can harbour bacteria e.g. legionella⁴¹;
- low flush toilets (low flush < 6 litres per flush⁴²) or dual-flush toilets (i.e. two flush settings according to use);
- auto shut off taps / tap controls / infra-red switches;
- supply restrictor valves;
- low flow showers (< 9 litres per minute) installed in all bathrooms;
- waterless urinals - a waterless urinal system does not use water due to its syphonic operation. Special fluid held in the trap of the waterless urinal allows urine to pass through but continuously seals the drainage from the

⁴⁰ Conserving Water in Buildings: Guidance Sheet 3: Greywater Recycling, Environment Agency

⁴¹ Ditto

⁴² See Water Supply (Fittings) Regulations 1999 for details.

atmosphere, preventing any odours from escaping. The absence of water flushing saves water while the design and lack of mechanical components cuts maintenance⁴³. The costs of the special fluid must be offset against the savings in water (see British Standard BS3943 for specifications for siphon traps);

- passive infra-red sensor controls, infra-red door beams or magnetic door switches for urinals and basins
- Installation of water meters may be considered (although it should be noted that the need to conserve water/ save money might have public health implications for low-income families⁴⁴).

Re-using water that is usually wasted in buildings

6.4 This requires the collection, storage and re-use of rain and grey water on site. Grey water is the water from washing hands, taking showers etc. and can be re-used for flushing toilets and other lower-grade uses. Grey water harvesting is mandatory for many types of buildings in Tokyo⁴⁵. It is best to avoid setting up a system that will re-use water from kitchen sinks, washing machines and dishwashers as they collect grease and oil which is difficult to filter⁴⁶.

6.5 Greywater recycling systems need⁴⁷:

- a mains back-up supply;
- a bypass system so that, if necessary, mains water only can be supplied to the toilet;
- a safety mechanism so that greywater is not stored for more than a day or two before use;
- a treatment system incorporating filtration or similar;
- a disinfectant or microbiological treatment - often chlorine or hypochlorite;
- pipe identification to indicate which water is not potable;
- an attachment so that stored water can be used for whatever purpose;
- an unrestricted overflow to prevent mains water contamination incorporating a type A air gap (25mm space) between the level of the lowest part of the inlet pipe and the spill-over level of the receiving vessel.

See Appendix 1 for details of the Environment Agency guide, which includes details of system suppliers.

6.6 Grey water can be re-used for watering any landscaped areas and gardens in the development. Similarly rainwater collected from roofs can be re-used for watering landscaped areas and gardens. Water re-used for these purposes should not need treatment, but for most other re-uses treatment will be needed. Using rainwater harvesting, a 110m² roof (the size of an average dwelling) can produce up to 1427 litres of water per week⁴⁸.

⁴³ www.ecoconstruct.com

⁴⁴ www.ofwat.gov.uk/watervoice

⁴⁵ Camden Green Buildings Guide, 2002

⁴⁶ Conserving Water in Buildings: Guidance Sheet 3: Greywater Recycling, Environment Agency

⁴⁷ Ditto

⁴⁸ www.freerain.co.uk

Avoiding environmental damage from water that must be wasted

6.7 Waste water from urban buildings causes environmental damage by running off hard surfaces and entering drainage systems. This may increase the risk of flooding to people and property.

6.8 A sustainable urban drainage system (SUDS) may be appropriate to the development subject to the existence of suitable geological conditions (see Appendix 1 for details of SUDS manuals and advice from the Environment Agency on SUDS).

A SUDS aims to reduce flooding by managing urban water run-off. It will look at minimising the quantity of water discharged from a building, e.g. by storage and slowing down run-off, and aims to improve the quality of water by treating or immobilising pollutants⁴⁹. The Environment Agency's standard criteria is that surface water discharge from developed sites should include a 1 in 100 critical storm duration event.

Other benefits of SUDS are that they can provide attractive landscapes such as ponds, and support wildlife.

6.9 SUDS consist of flexible ways of managing urban run-off by designing a system best suited to the development. It may consist of:

- permeable hard surfacing, instead of hard non-permeable paved areas, that allows water to gradually soak through into the ground, instead of overloading the drainage system;
- directing surface and roof run-off for watering of landscaped areas, or for another use;
- rainwater collection and re-use - see above;
- outlining opportunities for green roof options to slow urban run-off (this may also improve the ecology of the development and its energy efficiency);
- use of source control techniques that treat water close to the source and minimise the quantity of water collected at source, e.g. infiltration trenches or basins, porous pavements;
- use of permeable systems that store, filter and dispose of some run-off before the water is discharged, e.g. filters / French drains, grass swales;
- installation of passive treatment systems that use natural processes to remove pollutants, e.g. detention ponds or reed bed technology;
- maintenance of paved areas and access roads.

See Appendix for details of SUDS best practice manuals from CIRIA and the Environment Agency.

6.10 In instances where SUDS are not viable, other source control techniques such as 'storm cells' and 'oversized pipes' may be used.

⁴⁹ Flooding: The Surveyor, February 2002

7 Biodiversity

7.1 The built environment can represent a significant potential habitat if managed in the correct way. New developments can provide a real opportunity to enhance biodiversity in an area where little was present before. This can be achieved through three principal methods:

- use of green roofs
- greening vertical habitats
- use of artificial nesting sites.

Green roofs

7.2 Green roofs are those that are intentionally vegetated to some degree. These can vary from full-blown roof gardens, through to grassy swards or sedum roofs. They fall into three main categories:

- extensive - using a relatively thin, lightweight substrate, which will support hardy plants, which require a low maintenance regime and no irrigation.
- semi-intensive - using a lightweight shallow soil structure to support a wider variety of plants including herbs (requiring minimal maintenance).
- intensive - designed to support a wide variety of plants, shrubs and trees. These are often designed to be accessible for recreational use. They require irrigation and regular maintenance.

7.3 Although all green roofs will benefit biodiversity more than a traditional roof, certain roof types will provide greater benefits than others. These will generally be the 'extensive' and 'semi-intensive' systems using a range of suitable wildflowers and grasses. The use of Sedum matting is not recommended as it has too shallow a substrate to support it properly and does not provide a diversity of plants.

Selected roofs in Deptford have been left bare and allowed to colonize naturally, helping to recreate the lost 'brown field' habitat which provides feeding grounds for endangered black redstarts⁵⁰.

Other Benefits

7.4 Green roofs can provide a whole range of sustainability and economic benefits in addition to the biodiversity gains.

- sustainable urban drainage - green roofs can potentially retain up to 90% of the rainfall within the substrate. This reduces run off helping to reduce

⁵⁰ www.blackredstarts.org.uk

- flooding but also enables the outlets, down pipes, ground drains, sewer pipes etc. to be reduced in capacity, thereby reducing construction costs.
- reducing urban heat - green roofs act as 'mini air conditioners', cooling and humidifying the surrounding air with beneficial effects on the immediate area.
 - reducing air pollution - the vegetation on green roofs helps to filter out dust and smog particles. Nitrates and other airborne pollutants are absorbed out of the air and rainfall and bound in the soil.
 - protecting the roof – it is a common misconception that a green roof can damage the roof structure. In fact it can significantly increase the life span of the roof. Temperature ranges on a standard roof can be very wide with temperatures reaching 80°C, whereas on a green roof they will reach about 25°C⁵¹.
 - noise reduction - the sound insulation benefits of green roofs will vary depending on water levels, but they can reduce reflective sound by up to 3dB and improve sound insulation by up to 8dB.
 - thermal insulation - green roofs provide thermal mass, which reduces both heating and cooling costs.
 - recycling - it is possible to reuse demolition waste, crushed brick and concrete to provide the substrate base, reducing disposal costs and the cost of the roof.

Design and Construction

7.5 When considering the incorporation of a green roof into a building a number of layers need to be included and specified to ensure that the selected vegetation is given the appropriate conditions to thrive.

- root barrier - this is essential to protect the waterproof membrane from being pierced. The type and thickness will depend on the vegetation being grown.
- moisture mat - this will retain water and help prevent the roof drying out; it will also provide mechanical protection to the root barrier and waterproof membrane.
- drainage element - a plastic 'egg box' layer that retains some water and allows the excess to drain away, preventing water logging.
- filter membrane - to prevent soil particles being washed into the drainage layer and reducing its efficiency.
- growing medium - needs to have a well-balanced structure and low weight, it will usually be formed of a mix of crushed brick and fines.

Green Walls

7.6 There is potential to create significant habitat through the careful and appropriate use of climbing plants to green walls. These can serve to enhance

⁵¹ www.alumasc-exterior-building-products.co.uk

good design and also to hide unattractive features. Green walls also provide a number of benefits:

- amenity benefits - plants provide significant visual enhancement to the built environment and they can also provide natural scents. Greening walls can also help to prevent graffiti, which can significantly detract from the visual environment.
- energy conservation - vegetation on walls will provide buildings with extra insulation in the winter and cooling in the summer.
- health - the leaves of climbing plants will help to filter out dust and pollutants. Larger areas of vegetation will also provide a cooling effect in the immediate environment reducing humidity levels.
- wildlife - green walls will provide resting, feeding and nesting places for birds, invertebrates and even small mammals. Wrens, blackbirds, sparrows and robins are some of the bird species that might use such habitat.
- protection - it is a common misconception that plants damage walls, in most cases the opposite is true⁵². Climbing plants will protect the wall from the elements and can extend its life.

Technical Considerations

7.7 Some plant species such as Ivy, Boston Ivy and Ivy-leaved Toadflax will root directly into the wall and will self-cling. Other species will require some sort of support structure to allow them to clamber up the wall. Growing the plants up a structure also has the added benefit of creating an extra thermal layer of insulation. Support structures can include timber batons, trellis-work, mesh grids, steel cables, or plastic ropes. They need to be secure enough to support what can be a considerable weight.

7.8 Plants should be planted in a suitable prepared planting pit and positioned at least 40cm away from the wall to reduce the rain shadow effect. Consideration should also be given to the species selected and the aspect of the wall in order to achieve the best effects. In some cases it would be appropriate to consider irrigation systems to ensure good growth, particularly for plants growing on a south facing aspect.

Artificial Nesting Sites

7.9 Nest boxes have been extensively used to provide nesting sites for a wide range of birds and bats. These can be retrofitted onto existing buildings but new buildings provide an excellent opportunity to incorporate a range of specially designed artificial nest sites. Buildings imitate the natural environment of cliffs and a number of birds can exploit this habitat if provided with some suitable sites. House martins, swifts, swallows, house sparrows and bats can all exploit spaces

⁵² Building Green – J. Johnston and J. Newton.

provided by buildings. Other species such as kestrels and even peregrine falcons are now starting to nest on tall buildings in London.

Fig. 4: Alternative Nesting Sites

<ul style="list-style-type: none"> • Open fronted boxes (flycatchers, robins, wagtails, blackbirds) 	- design in by replacing bricks with wooden boxes.
<ul style="list-style-type: none"> • Hole-entrance boxes (tits) 	- design in.
<ul style="list-style-type: none"> • Quarter sphere (House martins) 	- place under eaves.
<ul style="list-style-type: none"> • Small cavities (flycatchers, robins, wagtails, blackbirds) 	- create suitable gap by removing brick from façade.
<ul style="list-style-type: none"> • Gaps between roof (swifts, bats) 	- leave small gap or insert special roof tiles.
<ul style="list-style-type: none"> • Purpose made bricks (bats) 	- replace ordinary brick.
<ul style="list-style-type: none"> • Ledges (kestrels, peregrines) 	- design in at high level.

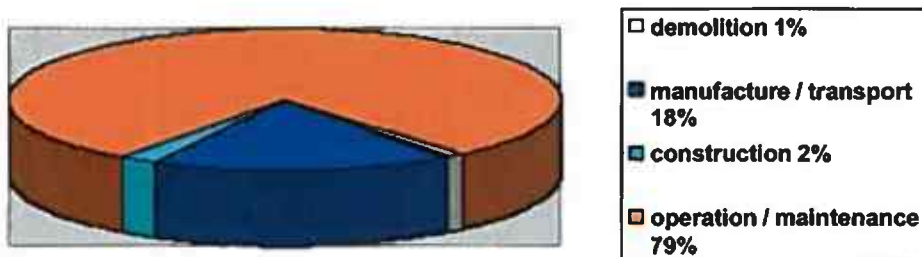
8 Operational Phase

8.1 Once the development phase has been completed, and the new buildings have been erected or re-furbished, the building is ready for its operational use.

Energy

8.2 As figure 5 (overleaf) shows, the environmental impacts of energy use (such as carbon dioxide emissions which cause climate change), as well as running costs, are significant over the operational phase of a building.

Figure 5: Energy use over the life cycle of a typical commercial building



8.3 Opportunities to reduce the energy use of the building over its lifetime need to be taken at the design stage (see section 2: Design). In addition to designing for passive solar gain, where possible the design should include an energy load profile for the operational phase of the development incorporating:

- use of natural, rather than mechanical, ventilation systems;
- specification of energy efficient light fittings (the latest energy saving compact fluorescent lights use 80% less electricity and last 15 times longer than conventional lights) especially for areas of high occupancy;
- specification of smart lighting and heating controls e.g. infra-red light switches or individual area switches e.g. use best practice fittings in accordance with BREEAM (see section 8: Environmental Management and Benchmarking, for more information);
- specification of effective energy metering systems;
- condensing boilers operate at 85% efficiency compared to 65-72% for normal boilers (see section 4: Energy).
- specification of appliances (where feasible) that are "A" rated according to the UK Energy Efficiency and EU Energy Efficiency labels⁵³:



- Where possible, procure electricity from a 'green' tariff, as LB Islington has done for its major buildings.

Waste

8.4 The design stage should incorporate waste minimisation principles and aim to integrate recycling practices into the operational phase of the development. This should include separation of waste and recyclables, and space for separate storage of recyclable materials e.g. for office premises BREEAM 98 have a standard of 2 - 10m² per 1000 m² of space. Islington UDP Policy Env 37 also requires provision in residential schemes.

8.5 Where appropriate a waste strategy can be devised for the operational phase of the building. This would include:

- provision of a full waste analysis of predicted waste streams;
- strategies for dealing with recycling;
- flexibility to account for changing waste practices in the future.

Water

8.6 Developers should seek to install water efficient kitchen appliances. E.g. washing machines that consume around 40-50 litres per cycle and dishwashers that consume around 15-20 litres per cycle⁵⁴.

9 Environmental Management and Benchmarking

9.1 Drawing up and implementing an environmental management system is one way of achieving better environmental performance through the life of a development - from construction to completion.

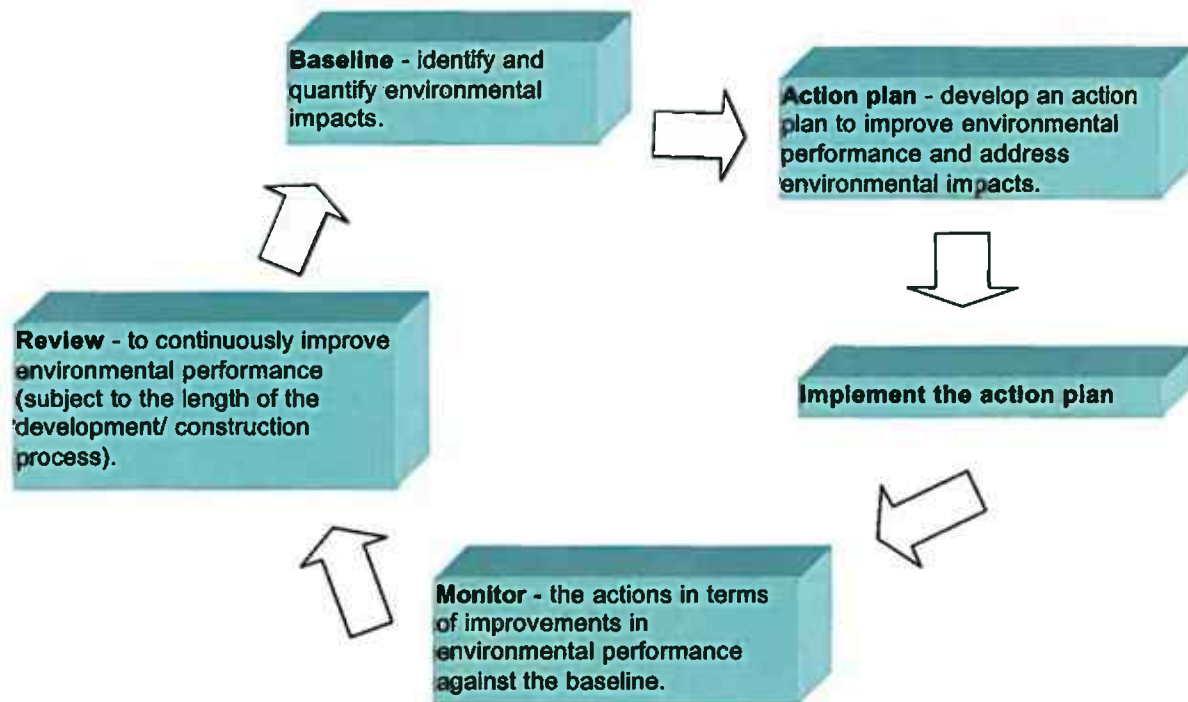
9.2 An environmental management system will formally identify, assess and manage the environmental impacts of a development. Formal systems such as ISO14001 (International Standards Organisation) and EMAS (Environmental Management and Audit Scheme) can be adopted, especially if the development process is likely to take a long time. Such systems may be more appropriate to larger firms that have existing management systems in place to act as a starting point.

9.3 An environmental management system can save money for the developer as well as reducing the environmental impacts of the development. An Environmental Management System should have the following stages:

⁵³ For more information see: Energy Labels: Helping you make the right choice (DEFRA, 2003).

⁵⁴ www.thames-water.com/waterwise

Figure 6



Single-issue approaches

9.4 For smaller construction firms working on smaller developments, an informal environmental management system could be devised to identify, assess and manage the environmental impacts of the scheme.

9.5 Alternatively, for smaller construction firms working on smaller developments, or as sub-contractors on larger developments, concentrating on single-issues such as waste or recycling can be an effective approach to better environmental performance. For example:

- undertaking a waste audit;
- adding pollution issues to the Health and Safety policy⁵⁶;
- developing and applying green procurement policies and checklists to the selection of materials, services and sub-contractors.

Benchmarking

BREEAM assessments

9.6 The BRE (Building Research Establishment, an independent non-profit organisation) produces BREEAM (Building Research Establishment Environmental Assessment and Management) ratings for buildings.

9.7 BREEAM is a tool that allows the designers, owners and users of buildings to comprehensively review and improve environmental performance throughout the life of a building. It sets a benchmark for environmental performance. Ratings are set out for developments according to an environmental assessment tool and accreditation scheme. Buildings are assessed independently by BRE assessors. Ratings are given as: Excellent, Very Good, Good, Pass and Fail.

Case study: Wessex Water Operations Centre, Bath - winner of the RICS building of the year 2001

"As one of the most energy efficient buildings in the country, the centre used some unusual materials and design features to achieve high energy saving levels, while at the same time creating a pleasant working environment for their staff. The building scored the highest ever BREEAM rating for a commercial building.

Old concrete railway sleepers, recycled materials and as much locally sourced material as possible went into the construction of the centre.

The construction includes much attention to detail, including the collection of rainwater for use in irrigation and waste management. Porous pavoids in the car park allow water to filter through to the ground instead of into the drains. Materials low in CO₂ emissions were specified in the construction and off-site fabrication reduced on-site waste to a minimum. Over 70% of waste material produced was recycled.

Locally sourced materials, from stone through to office furniture, were specified wherever possible to reduce transport emissions. This care for the environment extended to environmental awareness seminars for trade contractors."

Environment is the Winner in RICS Awards, CSM 3, 2002, p.12.

9.8 Different types of assessment are available for different types of building:

- BREEAM Offices - the assessment comprises three parts. A core assessment of the building fabric and services is carried out. Two optional parts deal with the quality of the design and procurement and management and operating procedures. In addition, the licensed assessors can provide pre-assessment design support.
- BREEAM 5-93 - for industrial units.

⁵⁵ Building a Better Quality of Life, p.23, DETR, April 2000

- BREEAM economies - is an environmental rating for new and renovated / converted homes. There are 7 categories⁵⁶:
 1. energy: operational energy and carbon dioxide;
 2. transport;
 3. pollution: air and water pollution;
 4. materials: green purchasing and recycling;
 5. water consumption;
 6. ecology and land use: ecological value of the site, greenfield and brownfield issues;
 7. health and well-being.

TP/02/400 Miles Duckworth
November 2003

⁵⁶ Green Class of Home, BRE in Green Futures, June 2000.

APPENDIX 1: Further Information

Green Construction Generally

Action Energy

Action Energy provides a range of products and services for business and public sector organisations to help them reduce energy consumption. Their publications list includes the documents that were developed under the government backed Energy Efficiency Best Practice programme. Action Energy has a free helpline number for energy-saving information, publications and advice.



0800 58 57 94



www.actionenergy.org.uk

Association of Environmentally Conscious Builders

The AECB is the leading independent environmental building trade organisation in the UK. It aims to encourage greater environmental awareness within the building construction industry. It produces publications such as the Green Building Press which provides information on environmentally conscious building. It also produces "The Green Building Book" which includes the full AECB membership for the UK.



01559 370 908



admin@aecb.net

www.aecb.net

BedZED

BedZED (Beddington Zero Energy Development) is widely recognised as a best-practice development of an environmentally friendly, energy-efficient mix of housing and work space. It is located in Beddington, Sutton.



www.bedzed.org.uk

Biodiversity

See:

- 'Building Green': Johnston J. and Newton J., London Ecology Unit (1995)
- Green Roofs - Existing Status and Potential for Conserving Biodiversity in Urban Areas: Grant G., Engleback L., Nicholson B., English Nature Research Report by Ecoschemes Ltd. (2002)

For information on green roofs contact:

Nature Conservation Team, Greenspace, LB Islington,



020 7354 5162



islingtonecologycentre@btopenworld.com

 www.cityoflondon.gov.uk/ourservices/development_planning/planning/pdf/A5_Green_roofs.pdf

 www.blackredstarts.org.uk

London Biodiversity Partnership

 020 7921 5479

 www.lbp.org.uk

London Wildlife Trust

 020 7261 0447


 www.wildlondon.org.uk

Bat Conservation Trust

 020 7261 0447

 www.bats.org.uk

English Nature

 020 7340 4870

 www.english-nature.org.uk

Royal Society for the Protection of Birds

 01767 680551

 www.rspb.org.uk

BRESCU - Building Research Establishment Sustainable Construction Unit

BRE is the UK's leading centre for construction, providing consultancy, testing, BREEAM accreditation and information services to customers worldwide.

BREEAM best-practice design guidance includes New Offices and Solar Shading of Buildings.

 01923 664 258

 brescuenq@bre.co.uk
designadvice@bre.co.uk
www.bre.co.uk/brescu

Building Regulations

Building (Amendment) Regulations 2001, DTLR (Department of Transport, Local Government and the Regions). These amendments to the Building Regulations are in effect from April 2002. Building Regulations ensure the health and safety of people in and around buildings by providing functional requirements for building design and construction. They also promote energy efficiency in buildings.

Approved Document L1 - Conservation of fuel and power in dwellings (2002 Edition)

Approved Document L2 - Conservation of fuel and power in buildings other than dwellings (2002 Edition).



www.odpm.gov.uk/buildingregulations

Building Control, L.B. Islington



020 7527 5999



buildingcontrol@islington.gov.uk

Chartered Institution of Building Services Engineers (CIBSE)

Best-practice design guidance includes:

Guide A: Environmental Design

Guide F: Energy Efficiency in Buildings

Guide H: Building Control Systems

Code for Interior Lighting

Application Manual AM10: Natural Ventilation in non-Domestic Buildings



020 8675 5211



enquiries@cibse.org

www.cibse.org

Construction Best Practice Programme

The Construction Best Practice Programme identifies, publicises and supports the use of improved business and management practices for the construction industry. It is funded by the Department of Trade and Industry and is steered by the Government and the Construction Industry.



0845 605 55 56



helpdesk@cbpp.org.uk

www.cbpp.org.uk

Construction Industry Research Information Association (CIRIA)

CIRIA is a UK-based research association concerned with improving the performance of all involved in construction and the environment. Publications include:

- Sustainable Urban Drainage Systems - design manual for England and Wales (2000) (CIRIA C522);
- CIRIA / DTLR Recycled Construction Materials Handbook 1999 - Waste Minimisation in Construction, a Site Guide.

For information on recycling building materials see www.ciria.org.uk/recycling



020 7222 8891



enquiries@ciria.org.uk

www.ciria.org.uk

Construction Resources Centre

Britain's first ecological builders' merchant and building centre promoting environmentally friendly design and materials is at 16 Great Guildford Street, London SE1 0HS.



020 7450 2211



info@ecoconstruct.com

www.ecoconstruct.com

Department of Trade and Industry (DTI)

The DTI has a renewable energy grant scheme aimed at supporting the implementation of photovoltaics. The Major Photovoltaic Demonstration Programme has two sets of Guidance Notes and Scheme Conditions for:

- Medium and Large scale Photovoltaic Grant Applications, and;
- Small Scale Photovoltaic Grant Applications.



www.dti.gov.uk/energy/renwables/support



www.est.co.uk (Energy Savings Trust currently administers the programme)



www.solarpvgrants.co.uk



freephone 0800 298 3978.

DEFRA

DEFRA, plus the Carbon Trust and the Inland Revenue, offer grants (*Enhanced Capital Allowances*) enabling developers to claim 100% first year capital allowances on investments in energy saving technologies. Good quality CHP, for example, is covered by this scheme. For details of ECAs see:



www.eca.gov.uk

Eco Solutions

Eco Solutions Ltd. develops water-based products for use in construction for example paint-strippers.



01934 844 484



info@ecosolutions.co.uk

Environment Agency

See:

- 'Conserving Water in Buildings: Guidance sheets 1 – 14'
- 'Sustainable Drainage Systems, a Guide for Developers, March 2003'.
- 'Control of Runoff from New Developments: Interim Regional Guidance', Environment Agency September (1997)



Environment Agency Helpdesk: 01903 832 073



paula.wood@environment-agency.gov.uk

Housing Forum

The Housing Forum aims to bring together parties involved in the house-building supply industry chain who are committed and ready to become part of a movement for change and innovation in the construction industry.



www.thehousingforum.org.uk

National Green Specification (NGS)

NGS specifies green products and methods of construction and is primarily for use by:

- Construction Industry's Design Professionals
- Architects, Interior and Furniture Designers
- Civil, Structural and Services Engineers
- Landscape Architects
- Manufacturers, Suppliers, Builder's Merchants, Factors, Agents, Importers
- Builders and Sub-contractors
- DIY home owners, Self-builders
- Building Commissioners, Owner/Financiers, Developers
- Owner/Occupiers, Facility Managers, Building Operators



webmaster@greenspec.org.uk

www.greenspec.org.uk

RIBA (Royal Institute of British Architects)

RIBA has a database of architectural practices that specialise in environmental design.



020 7307 3700



cs@inst.riba.org

RICS (Royal Institute of Chartered Surveyors)

RICS leaflets include:

- Supporting Sustainable Construction: Recycling through demolition
- Supporting Sustainable Construction: Minimising housing construction waste



0870 333 1600



customerservice@rics.org.uk

www.rics.org

Recycled materials

Using recycled building materials can add / maintain the character of a building, as well as minimising the need too use new materials. For a list of dealers and yards for reclaimed materials contact the Architectural Salvage Index on:



01483 203 221

 www.handr.co.uk

See also the CIRA details above.

SUDS

See - A Framework for Sustainable Drainage Systems (SUDS) in England and Wales: National SUDS Working Group, May 2003.

TRADA: Timber Research and Development Association

TRADA is the leading independent timber research, consultancy and information providers to the construction industry.

 01494 569600

 www.trada.co.uk

UK Rainwater Harvesting Association

C/o Gusto Homes.

 www.gustohomes.com

 ukrha@gusto-uk.com

Energy

Energy Savings Trust

The EST is a government-backed initiative promoting energy efficiency best practice in housing via information about appropriate technologies and techniques. Energy Efficiency Best Practice provides free best practice advice and publications.

 0845 120 7799

 www.est.org.uk/bestpractice

Future Energy Solutions - AEA Technology Environment

Future Energy Solutions have played a role in the growth of renewable energy technologies since the 1970s and have assisted in the development of national and regional strategies. Their knowledge extends across all types of renewable energy technologies.

 01235 433 302

 info@aeat.co.uk
www.future-energy-solutions.com

CHPA (Combined Heat and Power Association)

The Combined Heat and Power Association works to promote the wider use of combined heat and power and community heating.

 020 7828 4077

 info@chpa.co.uk
www.chpa.co.uk

www.chpqa.com – for details of the CHP quality assurance programme

Energy Saving Trust

'Practical Help' is a brand new initiative from the Energy Saving Trust. Though it is aimed at Local Authorities, it also provides practical help on sustainable energy and environmentally friendly transport policies that will be of use to a wider audience.



0870 241 2089



info@practicalhelp.org.uk

www.practicalhelp.org.uk

Islington Energy Centre

Islington Energy Centre can advise developers, architects and individual householders on energy issues.

Drop in to their office at: 159 Upper Street
London N1 1RE



0800 512 012



energyadvice@islington.gov.uk

Waste

Waste Alert North London

Waste Alert is a network of local waste minimisation clubs mainly for small and medium sized businesses, including construction firms and builders. The clubs provide ongoing support to help businesses to reduce costs and increase efficiency through improved waste management, exchange of materials, water and energy efficiency. Waste Alert Clubs demonstrate that improving business performance through environmental improvement goes hand in hand with regeneration and economic development.



020 7089 2118



info@wastewatch.org.uk

www.wastewatch.org.uk/waste alert

London Borough of Islington

Relevant strategies and policies include:

Islington's Unitary Development Plan, June 2002

Supplementary Planning Guidance Sustainability Assessments, February 2002

Islington Code of Practice for Construction Sites, 2002
LBI's green procurement guidance.

For information on the UDP, and to download free documentation, please go to the Council's website. (See Environment and Conservation / Planning / UDP)

 Planning policy: 020 7527 2291

 www.islington.gov.uk
udp@islington.gov.uk

Other Publications

Sustainable Housing Schemes in the UK: A guide, Hockerton Housing Project, 2002 - includes features on 31 case studies including BedZED.

 01636 816 902

 hhp@hockerton.demon.uk
www.hockerton.demon.co.uk

The Guide to Renewable Energy Centres in the UK, Energy 21 / DTI, July 2002 - guide to information about renewable energy in the UK and their applications in buildings etc.

 01453 752 277

 info@energy21.org.uk

SCHEDULE 6

HIGHWAY REINSTATEMENT PAYMENTS

- 1 The Planning Permission must not be Implemented unless the Owner has submitted an initial schedule of condition to the Council and such initial schedule of condition has been agreed in writing by the Council.
- 2 After the Owner has certified to the Council that such a stage of the Development has been reached that the Development will not adversely affect the highway reinstatement area but in any event no later than fourteen (14) days after practical completion of the whole of the Development the Owner must provide to the Council:
 - a) a further schedule of condition; and
 - b) a specification for the Highway Reinstatement Worksboth to be agreed in writing by the Council.
- 3 As soon as reasonably practicable after agreeing the further schedule of condition and the specification for the Highway Reinstatement Works submitted in accordance with paragraph 2 above the Council must:
 - a) calculate (taking into account any reasonable representations of the Owner) the Highway Reinstatement Payment; and
 - b) must subsequently issue a request for payment of the Highway Reinstatement Payment.
- 4 The Owner must pay the Highway Reinstatement Payment to the Council no later than 10 working days after receipt of the request to pay the Highway Reinstatement Payment in accordance with paragraph 3 above.

SCHEDULE 7
AFFORDABLE HOUSING SCHEDULE

REFERRED TO
 29 OCT 2007
 ISLINGTON AND REGISTRATION
 ENVIRONMENTAL

14741/Aberdeen Lane
 Residential Accommodation/Tenure Mix Schedule
 27 September 2007 (Draft 27)

Total Units	23
Total Private Units	23
Total Public Units	0
Total Mixed Units	0
Total Mixed Units (Units)	0
Total Mixed Units (Units)	0
Percentage Private	100%
Percentage Public	0%
Percentage Mixed	0%
% Affordable (by 1990)	33%

Floor	Flat No.	Type	Bedrooms	Habitable	Area/m	Area/m
1	101	1 Bed	1	45.0	45.0	45.0
	102	1 Bed	1	45.0	45.0	45.0
	103	1 Bed	1	45.0	45.0	45.0
	104	1 Bed	1	45.0	45.0	45.0
	105	1 Bed	1	45.0	45.0	45.0
	106	1 Bed	1	45.0	45.0	45.0
	107	1 Bed	1	45.0	45.0	45.0
	108	1 Bed	1	45.0	45.0	45.0
	109	1 Bed	1	45.0	45.0	45.0
	110	1 Bed	1	45.0	45.0	45.0
2	201	1 Bed	1	45.0	45.0	45.0
	202	1 Bed	1	45.0	45.0	45.0
	203	1 Bed	1	45.0	45.0	45.0
	204	1 Bed	1	45.0	45.0	45.0
	205	1 Bed	1	45.0	45.0	45.0
	206	1 Bed	1	45.0	45.0	45.0
	207	1 Bed	1	45.0	45.0	45.0
	208	1 Bed	1	45.0	45.0	45.0
	209	1 Bed	1	45.0	45.0	45.0
	210	1 Bed	1	45.0	45.0	45.0
3	301	1 Bed	1	45.0	45.0	45.0
	302	1 Bed	1	45.0	45.0	45.0
	303	1 Bed	1	45.0	45.0	45.0
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	309	1 Bed	1	45.0	45.0	45.0
	310	1 Bed	1	45.0	45.0	45.0
4	401	1 Bed	1	45.0	45.0	45.0
	402	1 Bed	1	45.0	45.0	45.0
	403	1 Bed	1	45.0	45.0	45.0
	404	1 Bed	1	45.0	45.0	45.0
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	410	1 Bed	1	45.0	45.0	45.0
5	501	1 Bed	1	45.0	45.0	45.0
	502	1 Bed	1	45.0	45.0	45.0
	503	1 Bed	1	45.0	45.0	45.0
	504	1 Bed	1	45.0	45.0	45.0
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	509	1 Bed	1	45.0	45.0	45.0
	510	1 Bed	1	45.0	45.0	45.0
6	601	1 Bed	1	45.0	45.0	45.0
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	603	1 Bed	1	45.0	45.0	45.0
	604	1 Bed	1	45.0	45.0	45.0
	605	1 Bed	1	45.0	45.0	45.0
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	608	1 Bed	1	45.0	45.0	45.0
	609	1 Bed	1	45.0	45.0	45.0
	610	1 Bed	1	45.0	45.0	45.0
7	701	1 Bed	1	45.0	45.0	45.0
	702	1 Bed	1	45.0	45.0	45.0
	703	1 Bed	1	45.0	45.0	45.0
	704	1 Bed	1	45.0	45.0	45.0
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	710	1 Bed	1	45.0	45.0	45.0
8	801	1 Bed	1	45.0	45.0	45.0
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	810	1 Bed	1	45.0	45.0	45.0
9	901	1 Bed	1	45.0	45.0	45.0
	902	1 Bed	1	45.0	45.0	45.0
	903	1 Bed	1	45.0	45.0	45.0
	904	1 Bed	1	45.0	45.0	45.0
	905	1 Bed	1	45.0	45.0	45.0
	906	1 Bed	1	45.0	45.0	45.0
	907	1 Bed	1	45.0	45.0	45.0
	908	1 Bed	1	45.0	45.0	45.0
	909	1 Bed	1	45.0	45.0	45.0
	910	1 Bed	1	45.0	45.0	45.0
10	1001	1 Bed	1	45.0	45.0	45.0
	1002	1 Bed	1	45.0	45.0	45.0
	1003	1 Bed	1	45.0	45.0	45.0
	1004	1 Bed	1	45.0	45.0	45.0
	1005	1 Bed	1	45.0	45.0	45.0
	1006	1 Bed	1	45.0	45.0	45.0
	1007	1 Bed	1	45.0	45.0	45.0
	1008	1 Bed	1	45.0	45.0	45.0
	1009	1 Bed	1	45.0	45.0	45.0
	1010	1 Bed	1	45.0	45.0	45.0
11	1101	1 Bed	1	45.0	45.0	45.0
	1102	1 Bed	1	45.0	45.0	45.0
	1103	1 Bed	1	45.0	45.0	45.0
	1104	1 Bed	1	45.0	45.0	45.0
	1105	1 Bed	1	45.0	45.0	45.0
	1106	1 Bed	1	45.0	45.0	45.0
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	1110	1 Bed	1	45.0	45.0	45.0
12	1201	1 Bed	1	45.0	45.0	45.0
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	1303	1 Bed	1	45.0	45.0	45.0
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	1310	1 Bed	1	45.0	45.0	45.0
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	1709	1 Bed	1	45.0	45.0	45.0
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PLAN 1

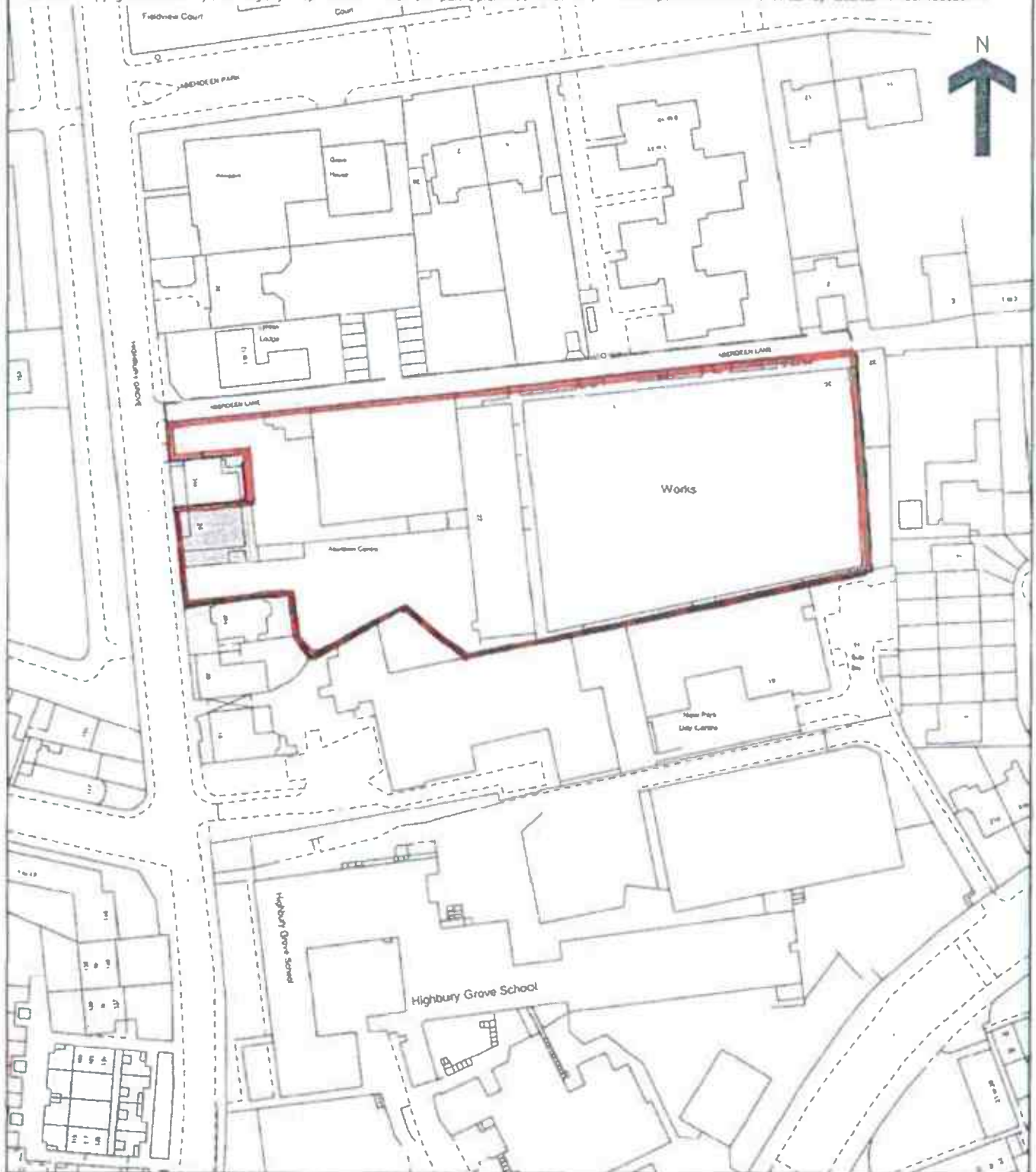
SITE PLAN

Land Registry Index map plan

Ordnance Survey map reference TQ3285SW
Scale 1:1250
Plan prepared on 15/03/2007 at 00:00:01



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This plan should be read in conjunction with result Z47CQGB.

This plan shows the general position, not the exact line, of the boundaries. It may be subject to distortions in scale. Measurements scaled from this plan may not match measurements between the same points on the ground. See Land Registry Public Guide 7 - Title Plans.



PLAN 2

AFFORDABLE HOUSING SOCIAL RENTED
INTERMEDIATE

The scaling of this drawing cannot be assured

Revision	Date	Initial
AA - New planning application	03.09.07	PS
BB - Revised private sales windows	19.09.07	PS



W. G. G.
AUTHORIZED OFFICER
 63205

Project
 MIXED USE DEVELOPMENT
 ABERDEEN LANE
Drawing Title
 Ground Floor Plan
 - Residential

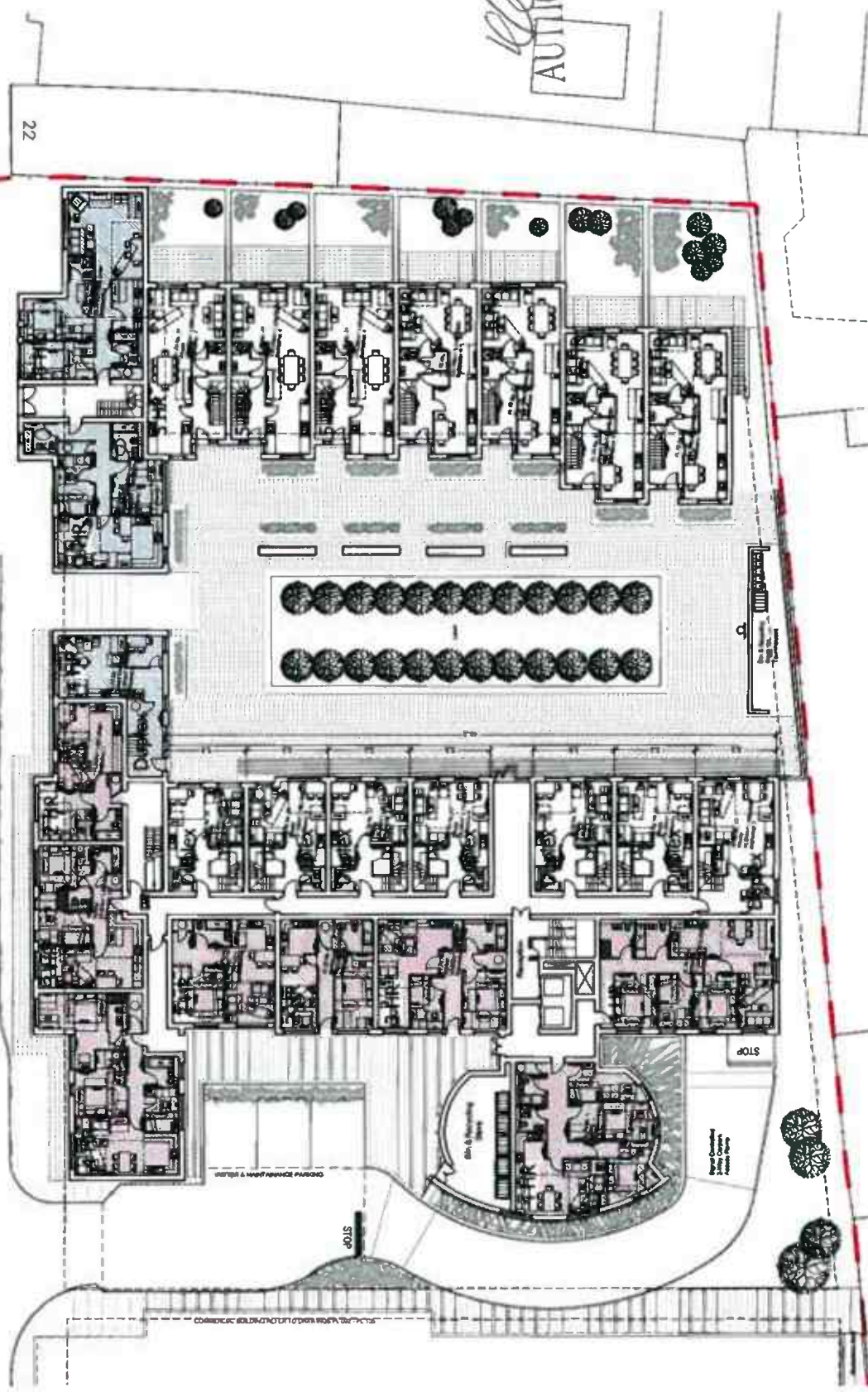
Date 19.09.2007	Scale 1:200 @ A2	Drawn by PS
Project No 14741	Drawing No PL 200	Revision HH

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Office of Planning, London School of Architecture, London School of Planning, London School of Planning



The scaling of this drawing cannot be assured

Decision	Data	Initial
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New clearing suggested 03 09 07 PS

[illegible]

- Reviewed privacy policy windows PS 19 00 07

22

Rented Units

Shared-Ownership Units

63205
AUTHORISED OFFICER
Alec G C

Project
MIXED USE DEVELOPMENT
ABERDEEN LANE

Drawing Title
First Floor Plan
- Residential

Step	Scale	Origin by
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2007 09 01 12:00:02
PS
Quantity

Order No	Ordering No	Revision
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Category	2004	2005
2004	2004	2004
2005	2005	2005

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10

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【例題】

(b)(7) Exemption from public release under Freedom of Information Act

100

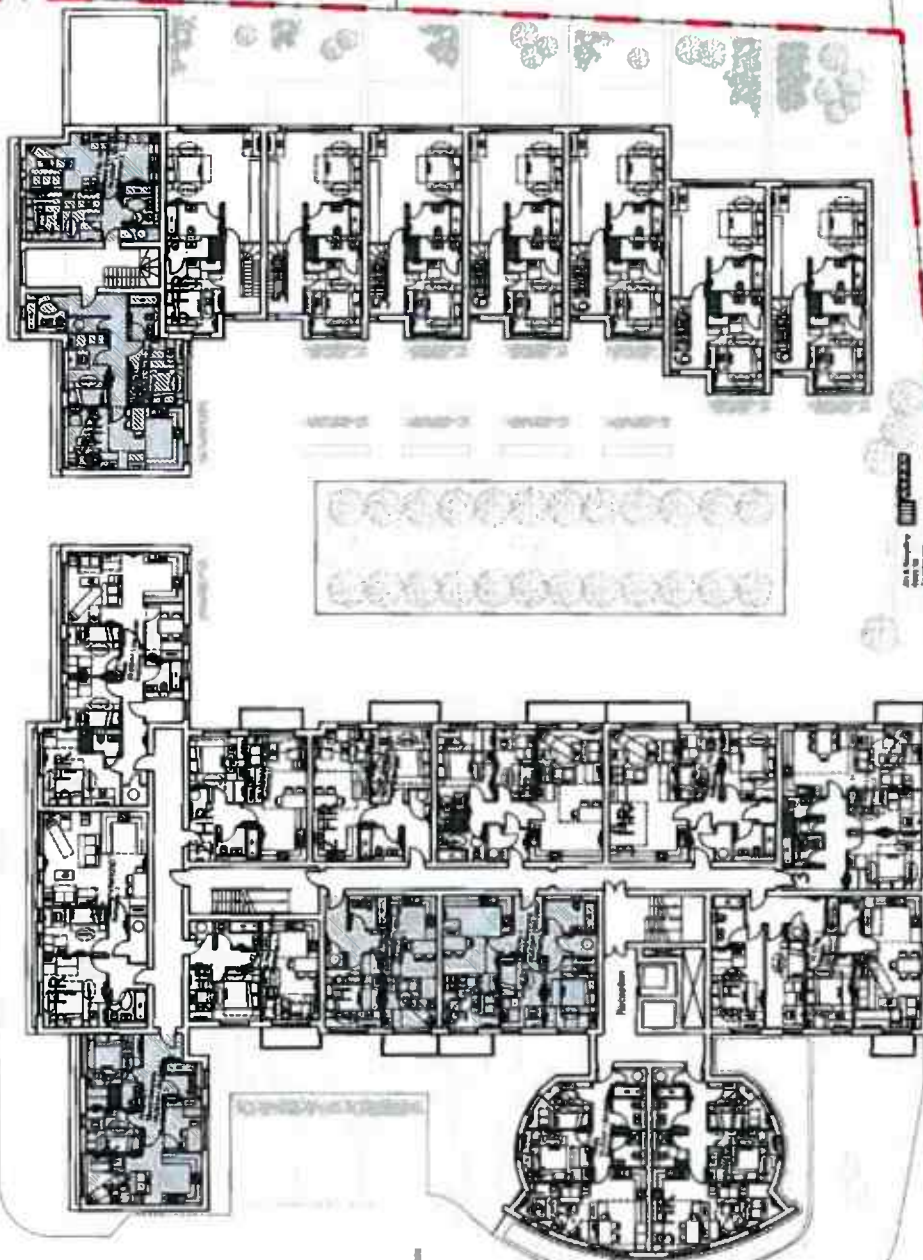
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The scaling of this drawing cannot be assumed

Revision	Date	Initial
AA - New planning application	03 08 07	PS
B/B - Revised private law windows	19 08 07	PS



22



Apple G K
 AUTHORITY OFFICE 63205

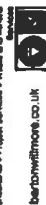
MIXED USE DEVELOPMENT
 ABERDEEN LANE

Second Floor Plan
 - Residential

Date	Scale	Drawn by
19 08 2007	1:200@A2	PS
Project No	Drawing No	Revision
14741	PL 202	EE

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The scaling of this drawing cannot be assured

Date	Initial

AA - New planning application	03 09 07	PS
BB - Revised private flats windows	19 09 07	AS

63205
AUTHORISED OFFICER

Project
MIXED USE DEVELOPMENT
ABERDEEN LANE

Drawing Title
Third Floor Plan
- Residential

Date	19 09 2007	Scale	1:200 @ A2	Drawn by	PS
Project No	14741	Drawing No	PL 203	Revision	00

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UVA-1480-14999\Q768-14799\1474 - Aberdeen Center, Highway Group\A\Current 2007 09 19\HUB_23_TN Case_Reopening

THE COMMON SEAL OF THE)
COUNCIL OF THE LONDON)
BOROUGH OF ISLINGTON)
was hereunto affixed BY ORDER)


Authorised Officer

63205

EXECUTED AS A DEED BY)
WORKSPACE 14 LIMITED)

Acting by)

Director



Director/Secretary

EXECUTED AND DELIVERED)
AS A DEED BY)

as duly authorised attorney)

for and on behalf of)

BAYERISCHE LANDESBANK)

acting through its London Branch)

in the presence of)

.....
Signature of Witness

Name

Address


ROBERT SANDERSON
 **Bayern Le**
Bayerische Landesbank
Bavaria Group
13/14 Appold Street
London EC2A 2NP