



KUT

**HEATH PARK DEVELOPMENT
HAMPSTEAD
LONDON NW3**

**STRATEGY FOR THE PROVISION OF
BUILDING SERVICES**

RFB/TB/MS/5299 (HP) : 16.01.2008

PLANNING STATEMENT

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1.0 INTRODUCTION

This report summarises the principal strategy for the building services installation to the Heath Park development.

The building services summarised within this report comprise the following:

- (a) Options for using sustainable energy technologies for the provision of energy.
- (b) Utility services such as Electricity, Gas, Drainage, Water and Communications (BT/Cable).
- (c) Drainage.
- (d) Heating systems.
- (e) Ventilation.
- (f) Cooling systems to specific areas.
- (g) Hot and Cold Water Services.
- (h) Power Supply/Distribution.
- (i) Lighting and Emergency Lighting.
- (j) Communications Services.
- (k) Security and Access Control.
- (l) CHP (Combined Heat and Power).
- (m) Pool Services.
- (n) Ventilation Transportation.

2.0 SUSTAINABILITY

Heath Park will be a newly constructed house on a site shared with the second existing house, Heath House.

Sustainability will be a key consideration in the redevelopment of the Heath Park site. Since the work will be carried out on existing building footprints and both sites have reasonable access to public transport, the sites begin with good environmental credentials. Improvements will be considered, including increased efficiency of the building fabric and services, reduction in water use and investigation into the use of low and/or zero carbon technologies, summarised as below, in accordance with the Code for Sustainable Homes.

- The potential for whole house ventilation with heat recovery will be assessed.
- Highly efficient as condensing boilers.
- Good heating control systems.
- Energy efficient lights and fittings throughout.
- Use of low flow water fittings to reduce internal water use.
- Rain water retention for irrigation
- Reduction of carbon emissions from the development, by adopting the London Mayor's Energy Hierarchy, 'Be Lean, Be Clean, Be Green'; i.e.



- (a) Consideration of shared, more efficient energy supplies such as CHP.
- (b) The provision of low and zero carbon energy such as solar hot water collectors, a ground source heat pump or biomass boiler.
- (c) The use of some sustainable technologies will be restricted by trees and the Northern Line underground train which passes some 30m below.

For further information, refer to Southfacing Report.

3.0 UTILITY SERVICES PROVIDERS

3.1 The Utility Services to be provided to serve the Heath Park development (Drainage, Water, Electricity, Gas, Telecommunications are summarised below);

3.2 Drainage

3.2.1 Sewer Connections

A new dedicated main sewer connection is required to serve the development. Its location will be determined in liaison with Thames Water and the Local Authority.

Main Drainage Collection

The internal drainage systems are likely to be part gravity fed and part pumped from suitable plant suited within the basement plat area.

Rainwater

Above ground rainwater collection will be determined by the design of the building fabric and in compliance with the Local Authority's requirements.

Piped rainwater systems will collect to be discharged directly to drain which may incorporate attenuation or in part be used in an appropriate manner for irrigation or grey water using a suitable proprietary rainwater harvesting system.

Local flood prevention measures will be taken using a proprietary collection and discharge system.

Above Ground Main Collection

A system of vertical soil stacks will be employed throughout the development to connect the services for each area to the main drainage plant.

3.3 Electricity Supply

Early indications suggest that the development will require a new 200 Amp 3 phase electricity supply and metering equipment. Consideration will be given to the possibility of export of electricity by CHP in periods of low load.

The base load of the electrical services could be served by the on-site CHP (Combined Heat and Power) plant and supplemented by the alternative LV supply from EDF.



3.4 Gas Supply

It is proposed that the heating and cooking to the house will be provided by Natural Gas with infrastructure provided by British Gas/Transco.

Transco (or equal) will provide the required gas mains and central gas meter into a proprietary gas meter chamber in the basement of the house. The meter room will require ventilation to atmosphere.

3.5 Heating Plant

The space heating and water heating is proposed as being provided by borehole type ground source heat pumps supplemented by high efficiency gas heating/boiler plant and distributed via highly insulated heating mains.

3.6 Water Supplies

It is proposed that the site will be served by a new metered incoming mains water connection provided by Thames Water.

3.7 Telecoms and Cable Communications

British Telecom and local Cable Communications providers will provide suitable digital and analogue communications to serve the house.

Cabled copper and fibre-optic communications services to be terminated within the dedicated communications room within the basement.

Cabled distribution will be provided to all required locations of the house.

The house will require BT Redcare monitored telephone line to provide remote monitoring of the security and like systems, e.g. CCTV, fire alarm, intruder alarms.

4.0 MAIN PLANT AND SERVICES

The main plant installations will be required for various services and those that are provided to serve the Heath Park development and are summarised below.

4.1 Heating and Hot Water

Borehole type ground source external in grounds, supplemented by high efficiency gas boiler plant located in the basement of the house would serve the whole development possibly supplemented by CHP plant. The plant would be located in the basement plant area and the boiler flue and CHP exhaust taken to the roof through an existing brick flue with liners to discharge safely to atmosphere.

Space heating and hot water distribution mains to be highly insulated. Heating energy meter to be connected to the central boiler plant to monitor usage and efficiency.

The hot water heating and pool could be the base heating load for the CHP plant.



4.2 Ventilation

Localised extract ventilation systems will be provided to comply with Building Regulations in accordance with CIBSE Codes or Practice.

External ventilation grilles and cowls will be positioned and designed so as not to be intrusive to the external appearance of the new house.

Heat recovery ventilation will be considered where appropriate, for example the specialist pool ventilation.

The kitchen extract will be ducted to a suitable high level discharge position, complete with necessary filters to limit smells.

4.3 Cooling

Energy efficient borehole type heat sink external in grounds, connected to heat pumps, supplemented by external cooling condenser plant.

4.4 Cold Water Services

The mains water services to the house will required to be boosted due to the height of the building and water pressure factors.

Suitable main break tanks and water booster pump sets will be required and these will be located at basement level of the house.

Harvested rainwater will be considered for the flushing of WC's.

4.5 Hot Water Services

Hot water storage cylinders to be provided in the basement plant room to suit the hot water requirement of the house.

Heating to be from ground source heat pump, consideration also to options for solar hot water collectors and CHP.

5.0 SERVICES SYSTEMS

5.1 Mechanical Services

Heating

Space heating to be provided by concealed UPVC pipework below the finished flooring complete with local thermostatically controlled heating zones distributed from accessible, concealed pipework manifolds.

Some areas to be served by local radiator heat emitters.

Local electric floor warming and towel radiators to be considered for bathroom areas so as to allow the central heating plant usage to be minimised in the warmer months.

Ventilation

Provision of local ventilation systems to Kitchen, Bathrooms, WC Areas, internal rooms, rooms of high occupancy and pool plant.



Hot Water Service

Recirculation type hot water service distribution pipework to terminate at local isolation valves and thermostatic blending valves at wash hand basins and showers.

Gas

Gas services pipework to be distributed to all points for cooking and ornamental fire place positions in accordance with Gas Regulations and CORGI.

Cooling

Cooling to be provided by concealed fan coil units to specific room and areas of the house.

Fan coil units to be low noise type.

5.2 Electrical Services

Lighting and Emergency Lighting

The illumination of Heath Park will require careful consideration with respect to the following factors.

- (a) The special character of the external envelope and internal room finishes.
- (b) Compliance with Document L Building Regulations being the provisions of low energy lighting, suitable for the character nature of the house.
- (c) Security lighting and limitation on the local night time neighbourhood.
- (d) Emergency lighting to comply with the work place regulations due to likelihood of employed staff on the premises, as BS 5266.

Lighting control systems will be considered to serve specific areas.

Power to Mechanical Services and Sub-Mains

Sub-main cables will be provided from the central main switchgear to all main plant including heat pumps, condensers, control panels, water booster set, passenger lift, dumb waiter, electric gates and to local MCB distribution boards and pool plant.

The cable routes will be concealed as far as practicable where in sensitive areas.

Local Small Power

All 13 Amp socket outlets to be protected by 30mA RCD (Residual Current Device).
13 amp connection units to be provided to serve local ventilation extract units, fan coil units, heated towel rails, electric floor heating mats, fire alarms, intruder alarms, access control system.

Connection units to be concealed where practicable.

Communications and Data

Provision of a Category 5E structured cable installation throughout the house to be used for Broadband data and voice communications.

A secure communications hub, equipment room to be established not in the basement area of the house.



Security

The house will require a variety of security systems and services.

- (a) Extensive and sophisticated intruder alarm system with off site monitoring by an authorised watching station service provider.
- (b) CCTV system with local and remote monitoring.
- (c) Access control system to operate the electric gates and at specific entrances to the house.
- (d) Audio Visual visitors door entry system to communicate between the house/security lodge and the main gates.

Fire Alarms

Provision of a comprehensive automatic fire alarm system to comply with the requirements of the local fire Officer, comprising an L2 conventional system recommended by BS 5839.

Remote relay contacts to be provided to control particular systems in the event of a fire, e.g. gas solenoid valves, grounding of the lift, isolation of the kitchen extract system, etc.

The fire alarm system to be connected to a remote security watching station for monitoring.

Home Entertainment/Media

Localised cabled home entertainment systems to be considered for specific areas/rooms of the house.

Speakers to be generally incorporated into the room finishes.

Terrestrial digital and Satellite reception systems to be provided with full interactive TV cable distribution to outlet positions.

Lightning Protection

Heath Park is located in a high ground position with a likelihood of a lightning strike (less than 1 in 25000).

It is proposed to protect the building structure with an air termination network so as to disperse a direct strike to ground in accordance with BS 6651.

Also, due to the installation of communications and media systems equipment, it is proposed to provide suitable electronic surge protection on incoming copper cabled services, electricity, BT, TV aerials/satellite dish etc.

6.0 POOL

The pool construction will be a specialist installation.

The heating and ventilation will be provided by a suitable heat recovery ventilation system or equivalent.

Supplementary heating could be provided by a ground source heat pump system, CHP or by the natural gas boiler plant.



7.0 VERTICAL TRANSPORTATION

Two systems are proposed to serve Heath Park.

A minimum 6 person passenger lift to serve lower ground, ground and 1st floor.

A dumb waiter lift to serve lower ground and ground floor catering and Laundry areas.

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