

## Birmingham Stechford

# New community heating system fed from leisure centre CHP



- heat supplied from CHP unit in adjacent leisure centre

- CO<sub>2</sub> emissions reduced by 1,900 tonnes a year

- £15-£16 per week typical reduction in heating costs for consumers

### *Estate profile*

Birmingham City Council was looking for alternatives to electric heating for some of its multi-storey homes and investigated a proposal to heat three 13-storey blocks of flats in the Stechford area of the City from new heating plant in an adjacent leisure centre.

Built in 1964 and together containing 150 one and two bedroom homes, the blocks were of concrete wall-frame construction with brick and block infill, and metal-framed single glazing. Individual flats were fitted with electric underfloor heating to the hall and lounge of each home, together with a 2 kW electric fire in the lounge.

The combination of the building construction and heating system meant that homes were impossible to heat adequately and residents suffered from very low winter temperatures despite paying high heating bills. The Council decided to refurbish both the buildings and heating systems, preferring to replace electric heating in the flats with conventional, radiator-based systems fed from a community heating system.

### *Adding community heating*

The heating system of the adjacent Stechford Cascades Leisure Centre was also in need of refurbishment and extension and it was decided to install extra plant at the Centre to serve the adjacent housing blocks. A combined heat and power (CHP) unit and two new boilers were installed in a new boilerhouse.

The CHP unit generates 180 kW of electricity to power the Leisure Centre, as well as 350 kW of heat, some of which is used to supply the homes. Underground heating mains were also installed, to run the 200m from the Centre to the three housing blocks.

A new heat exchanger was installed at the ground floor of each housing block. New heating and hot water systems were installed in each home, together with metering and control equipment, including a system of prepayment for heat using tokens.

The new energy plant at the leisure centre was installed (at no capital cost to the Council) and is now operated and maintained by an independent company under a ten year energy services contract.

The Council also improved the thermal performance of the homes by enclosing previously open balconies, increasing insulation to the three buildings and adding new double glazing. The work was partially funded by the Government's Green House programme.

Residents were consulted before work commenced, and all but one agreed to the programme, which commenced in 1992.

# Birmingham

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## Cost

The total capital cost of the CHP unit, two boilers and new boilerhouse was £345,000. The Council spent a further £1.86 million on new heating systems for the 150 homes and the refurbishment of the fabric of the three blocks.

## Savings

Typical energy costs for homes are now £4-5 per week, compared to around £20 a week prior to refurbishment. Heat is now available on demand around the clock and residents are able to heat their homes adequately for the first time. The scheme also reduces total emissions of carbon dioxide by around 1900 tonnes per year.

## Work programme

### Installation work

- new boilerhouse, containing a CHP unit and two boilers
- external and internal heating mains
- heat exchanger equipment at each block
- new radiator-based heating system in each flat
- consumer controls and meters
- insulation, new glazing and balcony enclosures

### Resident consultation

- discussions with residents over the proposed heating system and building fabric improvements

**£15-£16 per week typical reduction in heating costs for consumers**

**Reduction in CO<sub>2</sub> emissions**

**1,900 tonnes a year**

## For further information contact:

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