Report on Study of District Heating Networks in RBK - presented by Buro Happold on 19/02/19 at a meeting hosted by Kingston Council

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RBK has commissioned Buro Happold Engineering (BHE) to study the potential for district heating networks (DHN) in the borough. The concept of DHN's has been around for a long time; the main historical driver being the lower capital cost of a large single source of hot water compared to the total cost of lots of individual boilers. The principal technical disadvantage is the large network of insulated pipework, usually in the street.

RBK's particular brief to BHE was to explore the potential of DHN's for reduction in green-house-gas emissions. (Preliminary report can be seen here.)

BHE have identified seven clusters of buildings which could show benefits. None are in North Kingston, the particular interest of the North Kingston Forum.

The best project is probably the imminent total reconstruction of the Cambridge Estate. For this, the heat source is principally the warmish treated effluent from the sewage treatment works, just where it is discharged into the Hogs Mill. The extraction of energy would be by water source heat pump (running on electricity), and this can be supplemented by waste heat from the adjacent crematorium. This project is made easier by having one owner, RBK, new build from scratch and little pipework in busy urban streets which are already full of services. This looks a good use for a DHN.

The other projects get more difficult, with multiple owners (who have to cooperate), pipe-runs in the streets, use of Combined Heat & Power (CHP) which means burning fossil fuel in an internal combustion engine on site and the removal of choice of energy supplier for the end-user. All this is against the backdrop of new building regulations which reduce heat loss by improving insulation and air-tightness and so make space heating a less significant user of energy than it has been both in total energy and in months in the year needed.