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A Successful Data Centre Refurbishment Project

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Queen Mary University of London (QMUL) has recently finished refurbishing its data centre that house our computing cluster supporting the WLCG project. After 20 years of operation the original data centre had significant cooling issues and increases in energy prices have all driven the need for refurbishment amid growing awareness of climate change. In addition there is a need to increase the capacity (from 150KW) to cope with the expected increased needs to the high luminosity LHC and new astronomy projects such as the LSST and SKA observatories.

A summary of the project is presented covering the project time line and solutions implemented (in row cooling, hot aisle containment, heat pumps and dry air coolers). Experiences and lessons learnt in the design, building and use of the data centre (covering choices in power supply, rack density, storage space, floor type, lighting, monitoring, etc...) are discussed. Effects of budget constraints and project rescoping due to inflation are also discussed.

First data from the energy use and heat recovery are presented and estimates of the energy and carbon saving over time are given.

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