SPORT ENGLAND

Facility
Case Study

Creating a sporting habit for life

ABBEY STADIUM LEISURE CENTRE

REDDITCH, WORCESTERSHIRE

Status: Completed 2012
Client: Redditch Borough Council
Value: £6.0m

The Abbey Stadium Leisure Centre is a truly innovative project. The new wet side addition to the existing dry side sports centre is heated by the neighbouring crematorium. This is the first project of its type to be completed in the UK and it has shown other Local Authorities how innovative approaches to sustainability can result in real revenue benefits.

The new facilities consist of a 25 m x 6 lane competition swimming pool, learner pool, pool viewing for 300 spectators and a wet changing village. The existing dry side centre was refurbished to create two new fitness suites, an exercise studio, a refurbished 5 court sports hall and new changing areas. Extensive redevelopment has allowed the existing facility to be seamlessly linked to the new swimming pool building. A new full-height atrium provides a visual link between both the ground and first floors and the wet and dry sides of the facility.

The centre includes heat reclamation plant to use waste heat from the adjacent crematorium. This provides efficient heating of both the main pool and the learner pool.

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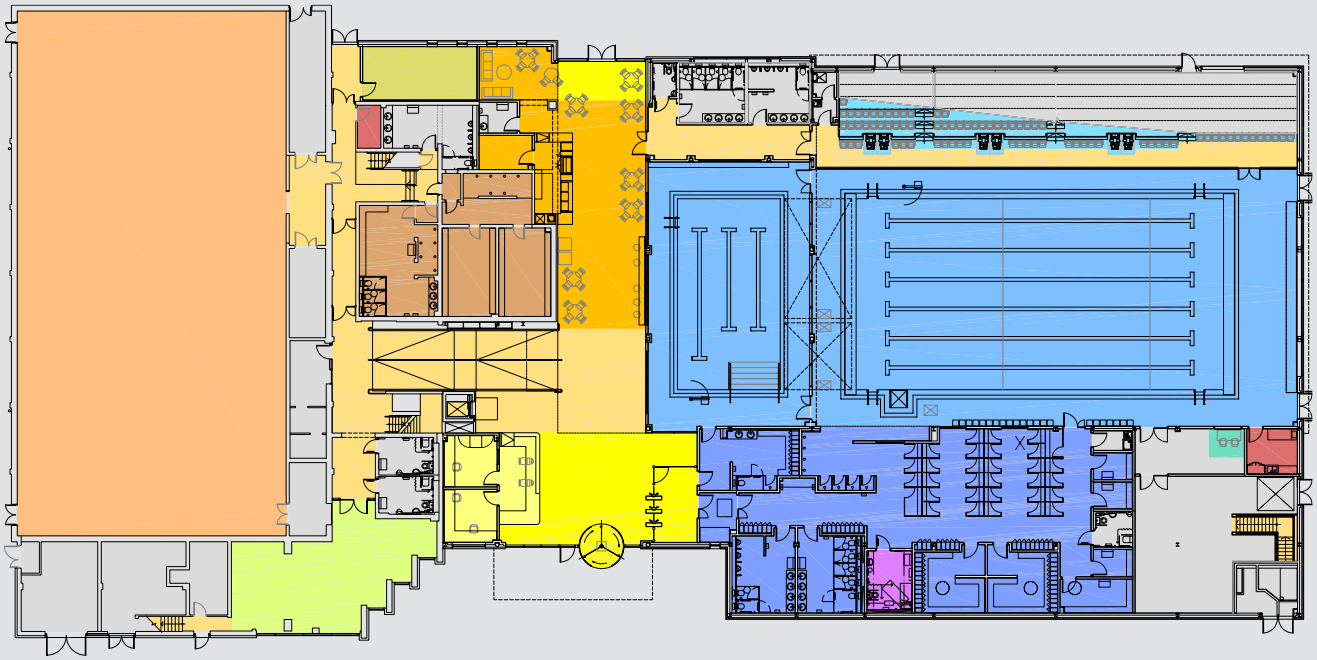
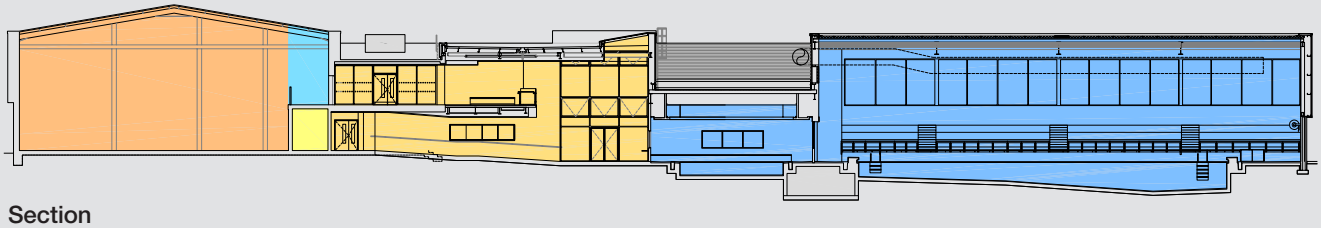
Reclaimed heat from the neighbouring crematorium heats the swimming pools, reducing the Client's operating costs considerably.



Ground plan

Key

Entrance	Cafe Area	Sports Hall	Dry-side Changing
Circulation	Changing Places Facility	Pool Hall	Wet-side Changing
Community Facilities	Meeting / Control Room	Fitness Suite	First Aid
Reception / Offices / Staff	Spectator Seating / Gallery	Minor Hall / Dance Studio	Plant / Stores / WCs



Section

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Heat Reclamation

An innovative plan to capture the waste heat from the adjacent crematorium and use it to heat the swimming pool was used at this facility and the centre has subsequently been recognised for its green credentials.

The scheme won a *Green Apple Award* as part of a national scheme to find Britain's greenest companies and organisations. The award was presented at a ceremony in London on June 20th 2011 and the project will be included in the *Green Book*, an international reference work on environmental best practice.

When the project – the first of its kind in the UK – was announced, a few negative comments received widespread publicity, but it also received widespread support from local residents and observers further afield with more than 80% of responses from local residents being supportive.

The opportunity arises out of a new EU directive that means councils must reduce the mercury emissions from their cremators by 50%. This requires them to install filters on cremator chimneys to treat the gases coming from the furnace. However, because the furnaces burn at about 800°C and the filters don't work at such high temperatures, the exhaust gases have to be cooled.

The scheme is an elegant solution to two problems – the need to cool the exhaust gas from the cremator and the need to heat a swimming pool – that becomes more attractive every time utility prices rise.

Using heat exchangers, the waste heat is transferred to heat the swimming pools at the leisure centre, creating one of the greenest leisure centres in the country – the heat provides 42% of the leisure centre's total heat demand – and reduces the entire council's CO_2 emissions by 4% a year.

There are no real planning implications to such schemes because the pipework is buried, although careful consideration of the route of the pipe was necessary to ensure that it did not disturb burial grounds.

Projects such as Redditch's demonstrate the importance of Local Authorities taking a holistic view of their operations and looking for opportunities to make savings across their estates.

Schedule of Areas

Gross Site Area	8,000 m^2
Building Footprint Area	3,300 m^2
Net Internal Floor Area (new build - all floors)	2,100 m^2
Circulation Area % of Building Footprint Area (inclusive of foyer and reception)	10 %

General Accommodation / Standards

'5-Court' sports hall (existing)	Basketball, netball, badminton, volleyball, gymnastics, goal-ball, short-mat bowls.
Dance studio	Full height mirrors to 50% of walls. Column free, timber sprung floor.
Fitness suite (2 no.)	A free weights fitness suite 100 m^2 and a cardio fitness suite at 250 m^2.
Swimming pool	Internal dimensions 25 x 13 m (6 no. competition lanes) with an accessible platform lift for disabled access. Users – general public, persons with disabilities, recreational, training & competitions. 300 spectator seats for regional swimming galas.
Vending area	Open plan to entrance area with seating and a small server for events.
Changing areas	Dedicated dry side and wet side to respective facilities.
Youth and community centre	A youth and community centre sub let to the Council for provision of youth services in the area.

Site plan

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General Description of Key Specifications and Materials

Frame	Steel	
Cladding	Composite metal cladding panels, brickwork and render	
Roofing	Composite panels and single ply membrane	
Internal walls and partitions	Blockwork	
Internal doors	Encapsulated for pool environments	
Wall finishes	Plasterboard and painted blockwork	
Floors	Vinyl, tiled and carpet	
Swimming pool	Tiled pool surround and walls, exposed acoustic soffit	
Lighting	Lux levels	Type
Sports hall	350	Surface mounted linear fluorescent
Pool zone	300	Metal halide floodlights
Fitness suite	400	Recessed linear fluorescent
Exercise studio	300	Recessed linear fluorescent
Changing spaces	200	Recessed fluorescent downlighters

Summary of Elemental Costs

	Element	Total Cost (£)	Cost (£) per m^2
1	Substructure	450,000	210
2	Superstructure	1,200,000	550
3	Finishes	400,000	180
4	Fittings and furnishings	200,000	95
5	Services	1,400,000	650
6	External works	1,450,000	280
7	Preliminaries	500,000	240
8	Contingencies	-	-
9	Design Fees	200,000	60
	TOTAL CONTRACT SUM	**5,800,000**	**1,750**

Notes:
1. Costs stated are rounded and based on 2nd Quarter 2010.

"The innovative approach used to heat the pools will hopefully encourage other Local Authorities to think of ways they can reduce running costs across their estates."

Peter Curtis

Director at Drivers Jonas Deloitte

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Environmental Sustainability

- Heat reclamation from adjacent crematorium
- Biodiversity nature pond
- Natural ventilation
- Solar hot water system
- Rainwater recycling.

Procurement / Programme

Tender	OJEU restricted procedure
Contract	Design and Build JCT '05
Duration	Approx 3 years from mobilisation to practical completion.

Specific Items of Interest

Element	Area (m^2)
Spectator seating	195
Dance studio	100
Fitness suites	350
Swimming pool - main	606
Swimming pool - learner	203
Atrium	225
Changing facilities	327

All photographs provided by Drivers Jonas Deloitte

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