TMC® Commercial

Low Energy Commercial Lighting System

AQUARAY CASE STUDY: University of Plymouth, Plymouth, UK

The Client

The University has well regarded faculties in Earth and Environmental sciences, and faculty staff and students were familiar with TMC's commercial lighting and filtration equipment, supplied in support of various post-graduate research projects. Consultation with the senior aquarium technician allowed us to demonstrate the flexibility of the range for use on some of the larger installations. Reduced energy consumption and equipment maintenance costs (bi-annual replacement of fluorescent tubes), together with non-mechanical control of nuisance algae, were additional considerations.

The Brief

Following a decision to refurbish and upgrade part of the research facility, the university confirmed an order to replace the fluorescent lighting over the research tanks. This called for a robust, modular and reliable, low-energy lighting platform, with full-photoperiod control across multiple tanks, and phased sunrise and sunset to mitigate environmental stress and its impact on the research trials being conducted.

The Solution

Given the arrangement and size of the tanks, it was decided that compact AquaBeam 600 Ultima strips would be used, utilising the system's integrated MMS mounting rail to position the units over the individual tanks. The Reef White variant from this range, with its optimised, blue-shifted colour temperature, provided the ideal spectral profile, both in terms of specimen observability and matching the photic environment required by research specimens. The system was linked to four AquaRay MultiControl units to deliver the photoperiod, intensity and L/D transition control demanded by the project.

> "Having the ability to change intensity and match photoperiod to seasonal variations at the touch of a button when introducing wild/commercial fish to our research facility, has been an extremely useful husbandry tool. The lighting system delivers uniformity, which cancels out one more variable within our world class research. We can only praise the versatility and flexibility of the AquaRay system - as an energy efficient, virtually maintenance-free platform, it's proved to be the perfect solution for our requirements."
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> *Ben Eynon - Senior Aquarium Technician (NACWO & NTCO), University of Plymouth, School of Biological Science*

Comparison of Savings in Electricity and CO_2 Emissions	
Savings per year (energy)	£187.58
Savings over projected minimum lifespan	£937.90
Percentage saving	59%
Reduced CO_2 emissions over projected minimum lifespan	4.47 tons
Total reduction in CO_2 emissions	31%

ROI	
AquaRay unit price	£41.24
Total investment in AquaRay lighting	£1195.96
Total savings per year	£466.58
Total savings over specified period	£2332.90
Payback period on initial investment	2.56 years

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