



**queensland  
theatre  
company**

## Electricity Efficiencies – Case Study

Queensland Theatre Company (QTC) is the state's flagship theatre company and continues its commitment of producing a wide variety of plays each year. The company operates from its base at 78 Montague Road South Brisbane and has its own performance space – Billie Brown Studio, though the Company's primary performance venues are QPAC at Southbank and Powerhouse in New Farm.

The Queensland Theatre Company resides in a building currently owned by the Queensland Government and managed by the Department of Public Works. With a floor area of 2,927 m<sup>2</sup> the building was constructed in the 1950's and consists of:

- Ground level car parking
- Ground level substation, two theatre studios, ticketing office, refreshments area and main entry / courtyard
- Level 1 has wardrobe and machining facilities (workshop)
- Level 2 is typically office space with conference rooms
- Roof level plant areas for condenser units and fresh air ventilation

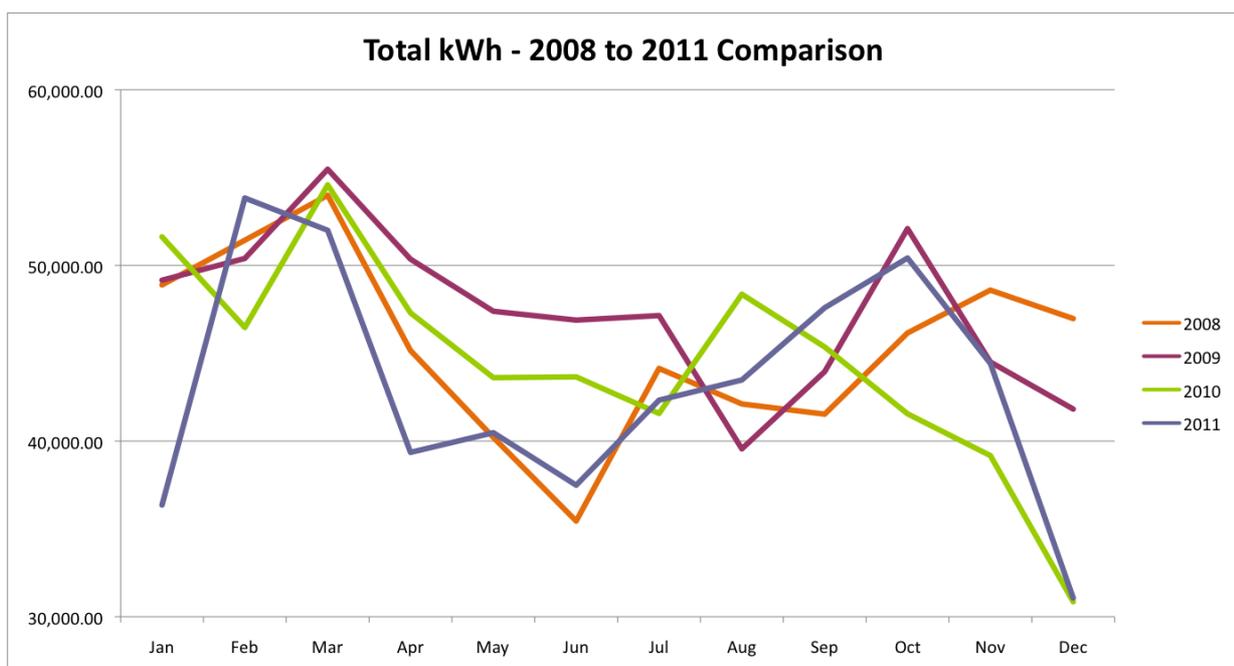
### Background

The Department of Public Works (DPW) commissioned an Energy Audit of the building with a view to achieving base building operational cost reductions and an improved sustainability profile.

QTC as the state theatre company supported the concept of an improved sustainability profile and embarked on engaging with DPW to ensure best possible outcomes were achieved.

Data was collected and the company's electricity profile for 2008 through to 2011 was developed.

Graph - kWh monthly consumption from 2008 to 2011





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## Operational Background

To understand production activities during the 2008 – 2011 period the following information was collated:

Year	No. of Shows	Production Weeks	Total kWh Consumption
2008	5	29	544,624
2009	5	44	568,730
2010	5	31	534,104
2011	7	41	518,813

Production weeks also included shows that rehearsed in QTC rehearsal rooms but performed at external performance venues.

It is important to note that whilst performance and rehearsal information has been collated and tabled, the Billie Brown Theatre space and associated rehearsal rooms are not sub-metered therefore the consumption information includes the impacts of base building operation, workshop facilities and wardrobe department.

Peak consumption months of February and March 2011 can be attributed to the unexpected January 2011 Flood Event. In the renovation of the QTC Building - Part of the work undertaken was to completely replace the floors in Bille Brown Studio [400 m<sup>2</sup>] and Studio 2 [162 m<sup>2</sup>] which involved ripping up the floor, drying, disinfecting, replacing the floor and then painting. Part of the drying process needed giant blowers, and the air conditioning on 24 hours a day to assist with the drying process.

## Achieved Improvements

QTC in partnership with DPW implemented a range of efficiencies including:

- Installation of general office lighting control including the extension of zone switching
- Replacement of electronic ballasts
- Installation of T5 luminaire
- Modification of boiling water controls
- Use of natural light is encouraged as much as possible
- Computers, monitors and printers are turned off overnight
- Air-conditioning is set a Government approved temperatures and turned off over holiday periods
- Staff are encouraged to dress appropriately for the season to reduce demand on heating and cooling systems

Note: 2010 consumption impacts include the following variables:

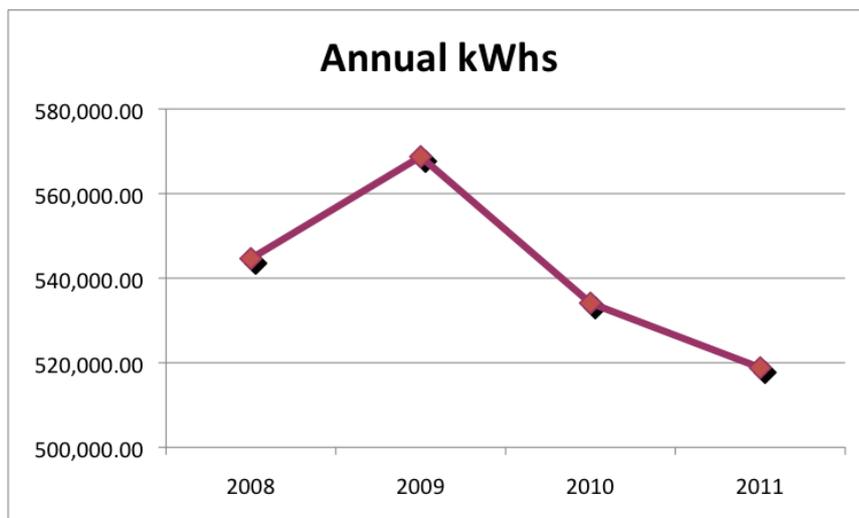
- Sets were built at QTC but performance held in external venue
- QTC hosted performances that didn't require sets built





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Graph - Annual kWh Consumption Comparison from 2008 to 2011



QTC electricity consumption peaked in 2009 with 568,730 kWh used for the year. In the two years following a number of energy efficiency strategies have been applied. The net savings for QTC are:

- 9.43% or 49,917 kWh reduction in consumption from 2009 to 2011
- Equates to \$2,281.24 in real financial savings (based on an average of 4.57 c/kWh)

### Proposed Strategies for 2012 onwards

The following strategies are proposed for further investigation and possible implementation in 2012 and beyond:

- Engage with landlord to replace identified building lighting with energy efficient models
- Investigate the opportunity of funding to support the installation of solar power generation
- Adopt green purchasing policy for office equipment
- Research opportunities to install sub-metering systems to better understand consumption in operational areas such as the workshop, wardrobe and studio
- Strengthen executive support with the implementation of QTC Sustainability Policy
- Formalise education program for internal and external stakeholders
- Learn how to manage daily peak electricity demand

### 2012 Reduction Target – cumulative total of 11% from 2009 peak consumption

