FINAL REPORT
Community Energy Efficiency Program
ENERGY SAVING INITIATIVES
Novita Children's Services
REGENCY PARK COMPLEX
JUNE 2014

This activity received funding from the Australian Government
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Attachment 1 – Project Energy Efficiency Improvement Table
1. Executive Summary

Novita Children’s Service provides a range of specialist services supporting more than 2000 children living with disabilities and special needs as well as support for their families and carers. Celebrating its 75th birthday in 2014 Novita has become a recognised and trusted provider of children’s disability and developmental services.

Novita’s Head Office is located in one of Adelaide’s inner North Western suburbs at 171 Days Road Regency Park. The complex comprising 15,500 sq. metres gross floor area was completed in 1976. Whilst the building and facilities are in good overall condition it was recognised that due to the age of the facility there were a number of opportunities to introduce a range of energy savings initiatives to reduce energy use, reduce Novita’s carbon footprint and improve the overall amenity of the facilities for clients and staff.

The Australian Government, through the Department of Industry, established the Community Energy Efficiency Program (the Project) that provided co-funding to local governing bodies and non-profit community organisations to implement projects that delivered a range of energy efficiency measures in selected facilities and sites particularly where they would benefit low socio-economic and other disadvantaged communities or support energy efficiency in regional and rural councils.

In May 2013 Novita Children’s Services were successful in obtaining grant funding from the Australian Government to carry out a number of energy savings projects and initiatives at its Regency Park Complex. The total funding allocated for the project was $512,000 (ex GST) jointly funded by the Australian Government and Novita Children’s Services.

Over the last twelve months the projects funded under the Australian Government Grant have been completed resulting in a number of proposed significant and positive outcomes. They include:

- reducing Novita’s overall energy consumption by up to 50 per cent against previous use with associated savings in energy costs;
- overall energy improvement per annum in the order of 2.5GJ;
- reducing Novita’s greenhouse gas emissions by approximately 711 tonnes of carbon dioxide per annum;
- projected cost savings per annum in the order of $92k;
- highlighting the benefits of the latest technology in energy efficient lighting and air-conditioning systems;
- improving the overall amenity of the complex;
- providing Novita Facilities Management Staff with training and experience in modern technology in energy efficient lighting and air-conditioning systems and current Building Management Systems;
- raising awareness to the grant funding from the Australian Government and the broader benefits of reduction in energy use within and external to the Novita operating environment; and
- enhancing improving client and staff working environments.

Specific energy savings projects that were delivered under the Project at the Regency Park Complex include:

1. removal of energy inefficient hot water services and the installation of time controls to 11 hot water systems and 10 time controls for supplementary air conditioning systems;
2. installation of time controls to the hydrotherapy pool heating and pumping system and the installation of a pool cover and associated equipment;
3. installation of 2,900 square metres of ceiling insulation;
4. Upgrade to the Theatre air conditioning system by replacing it with a system incorporating the latest compressor design and technology, energy efficient technology in system controls, air handling and comfort systems;
5. Installation of a Building Management System to control, manage and monitor the building's heating, ventilation and cooling systems (HVAC) leading to a significant reduction in energy use both gas and electricity; and
6. Upgrade to lighting and control systems in selected areas of the complex that include replacement of approximately 1000 inefficient and ageing light systems with the latest technology lights, incorporating LED technology and modern fluorescent lighting with the latest associated control systems supported by occupancy sensors in key areas.

The outcomes of the Project have been communicated to staff, clients and visitors though our various communications channels including: Our Weekly Updates, intranet site, terminal screen savers, internet site, Novita News and Nexus publications.

We continuously encourage staff and clients to access more energy savings information by visiting various websites including the South Australian Government website


*It should be noted that this Report and the views expressed herein are not necessarily the views of the Commonwealth of Australia and the Commonwealth does not accept responsibility for any information or advice contained herein.*

2. Introduction

2.1. Background

The Australian Government, through the Department of Industry, established the Community Energy Efficiency Program that provided co-funding to local governing bodies and non-profit community organisations to implement projects that delivered a range of energy efficiency measures in selected facilities and sites particularly where they would benefit low socio-economic and other disadvantaged communities or support energy efficiency in regional and rural councils.

Novita Children’s Services recognised that, because of the age of its head office facilities and with an approximate annual electrical energy consumption of 860,000 kWh and gas heating requirement of over 3,600,000 MJ, there were a significant potential to reduce its energy consumption and costs and its carbon footprint. Over 2012 Novita engaged a specialist consultant engineer to assist it to prepare and submit an application for grant funding from the Australian Government under the Community Energy Efficiency Program. The application was successful and the Funding Agreement was formally executed 13 May 2013.

2.2. Project Description and Objectives

Novita’s Head Office is located in one of Adelaide’s inner North Western suburbs at 171 Days Road Regency Park. The complex comprising 15,500 sq. metres gross floor area was completed in 1976. Whilst the building and facilities are in good overall condition it was recognised that due to the age of the facility there were a number of opportunities to introduce a range of energy savings initiatives to
reduce energy use, reduce Novita’s carbon footprint and improve the overall amenity of the facilities for clients and staff.

At the time of submission, prepared using specialist energy consultant (Sustainable Focus) a number of key objectives were identified and included:

- reducing Novita’s overall energy consumption by up to 50 per cent against previous use with associated savings in energy costs;
- reducing Novita’s greenhouse gas emissions by approximately 711 tonnes of carbon dioxide per annum;
- highlighting the benefits of using insulation in building and using the latest technology in energy efficient lighting and air-conditioning systems;
- improving the overall amenity of the complex;
- enhancing client and staff working environments

A number of specific energy savings projects were identified to be delivered under the Project at the Regency Park Complex. More information is set out below on each individual project.

3. Project Energy Efficiency Activities

There were seven (7) key activities delivered under the Project.

3.1. Hot Water Systems

The original project identified the removal of an energy inefficient hot water service and the installation of timer controls for up to 9 hot water service systems depending on final cost. Competitive procurement for the work resulted in cost savings enabling controls to be installed on two further hot water systems totaling 11 systems in all. The projected energy savings is approximately 8,000kWh/A or 28,800MJ/A with no adverse impact on clients or staff.

Typical HWS with Timer Control
Air conditioning Systems Controls

The heating, venting and cooling of the Novita’s Regency Park Facility is generally provided out of several central air-conditioning plant located strategically to service specific areas of the building. A number of areas have been retro-fitted with supplementary “split system” air conditioning units to provide improved comfort conditions in selected areas. These systems were “user controlled” in terms of running times. The Project has installed timer controls to 10 separate systems resulting in improved control of air conditioning system run times. The projected energy savings is approximately 9,300kWh/A or 33,480MJ/A with no adverse impact on clients or staff.

3.2. Hydrotherapy Pool

Novita has, as one of its key facilities, a hydrotherapy pool located in the central core of the building. The water in the hydrotherapy pool has to be maintained to 32 degrees C +/- 2 deg. The pool is heated by a natural gas fired system. Works carried out to the pool complex in the Project included installation of a specially made pool cover and associated equipment to facilitate removal and replacement of the cover and the installation of time controls to the hot water circulating pumps.

The installation of this equipment should result in overall savings in natural gas energy of some 783,870 MJ/A.

![Hydro Pool Cover and Roller](image)

3.3. Theatre Air-conditioning System

Prior to the Project the large Theatre space in the Regency Park Complex was air-conditioned by its energy inefficient, ageing and under capacity central plant. Heating in the space was provided by electric resistive heating which is extremely inefficient. Under the Project it was originally planned to install a replacement sized thermal plant (63kW) with a similar sized system incorporating the latest energy efficient technology in system controls, air handling and comfort systems.
Further analysis of the space, its heat loads and compliance issues determined a larger plant (84kW) would be required. Approval was sought and obtained through the Department of Industry to amend the project scope to allow for the larger system and associated controls to be installed. The air diffusion system was also upgraded to incorporate swirl diffusers complete with thermally actuated dampers providing improved air diffusion and space conditions. The completed work has resulted in overall projected savings in energy use of 24,500 kWh/A or 88,200MJ/A and significantly improved workplace amenity for clients and staff.

3.4. Building Insulation

Novita’s Regency Park Facility was originally supplied with "roof sarking" as its primary form of building insulation. The sarking is ageing, damaged, under capacity and not performing. Under the Project it was originally planned to install R3 rated ceiling insulation batts to the maximum area available under the budgeted amount in the Grant submission. It was considered that some 1200sqm would be able to be installed. Competitive procurement for the work resulted in being able to install an additional 1700sqm of ceiling insulation resulting in a total of 2900sqm being insulated with latest R3 ceiling insulation batts. The work has resulted in overall projected savings in energy use of 104,150 kWh/A or 374,940MJ/A.
3.5. Lighting Upgrades

Prior to the Project being delivered the lighting systems installed at the Regency Park Facility were ageing and under capacity with a number of work areas not meeting current Australian Standard workplace lighting requirements. In addition the lighting and systems were energy inefficient. The works to upgrade the lighting and controls under the Project replaced a total of 1,020 lights and fittings using the latest technology lights, incorporating LED technology and modern fluorescents with the latest associated control systems. This was further supported by occupancy sensors in key areas. This work has resulted in overall projected savings in energy use of 148,400kWh/A or 534,240MJ/A while greatly improving workplace amenity for clients and staff.

3.6. Building Management Systems

Prior to the to install a centralised Building Management System (BMS), approved under the grant funding from the Australian Government, the heating, ventilation and cooling systems (HVAC) in the Regency Park Facility were controlled at each plant using dated and inefficient analogue thermostatic controls providing limited control over air distribution systems and economy cycles, plant run times and temperature conditions in the conditioned spaces.

The Building Management System that has been installed as part of the Project now controls the 13 main air conditioning systems including 10 main exhaust fans for the complex. Key elements of the system include:

- Improved control of plant run times
- Improved control of conditions in conditioned spaces
- Modulating control of the economy cycle dampers on each system
- Remote monitoring and control of systems, plant and conditions
- Ability to load shed when Maximum Demand is being approached to manage energy cost
- Monitoring of key Server Room and Theatre air-conditioning plant
- Monitoring and reporting on energy use to assist with energy procurement processes
- carbon dioxide sensors to monitor the air quality and modulate the economy cycle dampers accordingly – a key safety and compliance feature
- methane sensors to detect any natural gas leaks in the 8 central plant rooms – a key safety feature
- automatic operation of the high/low gas fired heating plant on each AHU to provide greater control that was not previously available and which will result in reduction of gas use for the facility
- Ability to display energy use for all plant on 2 LCD screens strategically located in the main foyers

The installation of the Building Management System to control, manage and monitor the building’s heating, ventilation and cooling systems (HVAC) has resulted in significant reduction in energy use, both gas and electricity, and has contributed to the overall projected savings in energy use by 129,800 kWh/A or 467,280 MJ/A

![FM Staff using BMS](image)

**Summary Table of Project Energy Efficiency Improvement Estimates by Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Annual Savings (Tonnes CO2)</th>
<th>Annual Savings (kWh/A)</th>
<th>Annual Savings MJ/A</th>
<th>Annual Savings ($)</th>
<th>Capital Investment ($)</th>
<th>Payback (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Water Systems</td>
<td>6.5</td>
<td>8000</td>
<td>28,800</td>
<td>1,570</td>
<td>2,100</td>
<td>1.34</td>
</tr>
<tr>
<td>Supplementary A/C</td>
<td>7.5</td>
<td>9,300</td>
<td>33,480</td>
<td>1,650</td>
<td>7,760</td>
<td>4.70</td>
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<tr>
<td>Hydrotherapy Pool</td>
<td>131</td>
<td>n/a</td>
<td>783,870</td>
<td>13,481</td>
<td>7,982</td>
<td>1.01</td>
</tr>
<tr>
<td>Theatre A/C System</td>
<td>19.9</td>
<td>24,500</td>
<td>88,200</td>
<td>4,800</td>
<td>97,680</td>
<td>20.35</td>
</tr>
<tr>
<td>Building Insulation</td>
<td>84.3</td>
<td>104,150</td>
<td>374,940</td>
<td>18,360</td>
<td>59,000</td>
<td>3.21</td>
</tr>
<tr>
<td>Lighting Upgrades</td>
<td>95.9</td>
<td>148,400</td>
<td>534,240</td>
<td>26,300</td>
<td>218,458</td>
<td>8.31</td>
</tr>
<tr>
<td>BMS</td>
<td>105.1</td>
<td>129,800</td>
<td>467,280</td>
<td>24,980</td>
<td>101,040</td>
<td>4.04</td>
</tr>
</tbody>
</table>
4. Project Demonstration and Communications Activities

A key objective of the grant funding from the Australian Government was to raise staff, stakeholder and community awareness to the benefits of energy reduction and reducing our carbon footprint. Novita has, over the course of delivering the various projects, communicated with affected stakeholders regarding particular project works being undertaken in the various areas and the benefits that will result from the completed works.

Novita will continue to communicate with staff, clients, visitors and stakeholders through various communications channels on the benefits and outcomes of the Community Energy Efficiency Program. Communications channels include: Novita Weekly Updates, intranet site, terminal screen savers, LCD screens, internet site, Novita News and Nexus publications.

![Screen Saver Display](image1)

![LCD Screen Display in Main Foyer](image2)

The Novita Weekly Update is posted on the Novita intranet site and emailed to the 300 staff working for Novita at its main complex and ten satellite sites. Staff are also reminded of the Community Energy Efficiency Program via the screen saver displayed on all Novita computer terminals. The Novita intranet site is access by Novita Children’s Services 300 staff.

The LCD screens, located in the main foyers of the Regency Park Centre, display the energy use for all plant via the BMS Energy Management Module. We estimate that approximately 300 people per day access the main foyer and have the opportunity to observe the information displayed on the screens. These people include clients, staff, visitors, contractors, consultants and various media representatives.

The Novita News and Nexus publications are distributed to over 3000 people and the Novita website gets an average of 500 hits per day. Marketing research indicated that publication of the Project in the local council Port Side Messenger would be unproductive as this form of media was distributed to the same demographic group.

Technical staff, specialist consultants and contractors will also be made aware of the grant funding from the Australian Government after referring to the Building Management System information when undertaking works relating to the building infrastructure and associated facilities.

Novita encourage staff and clients to access more energy savings information by visiting various websites including the South Australian Government website.

5. Project Benefits and Outcomes

In addition to the benefits and outcomes outlined earlier in this Report the tables below provide specific information relating to the actual reductions in energy use resulting from the Project's new energy efficient installations.

The Project Energy Efficiency Improvement Table (refer Attachment 1) summaries the energy reductions to date in agreement with Schedule 4 of the Project Funding Agreement.

It should be noted that there is a difference between what the estimated reduction in energy use (both gas and electricity) and actual reduction in energy use. There are a number of reasons for this difference. They include:

- To date the full benefit of energy reductions were not able to be initially achieved due to increased plant and equipment running times associated with staff training, testing, commissioning and fine tuning of plant, equipment and building management system interfaces
- An extremely cold winter that has included days where the temperatures have been the coldest on record for 120 years
- There have been significantly increased numbers of staff, clients and visitors using the facilities for longer
5.1. **Reduction in Electrical Energy**

The table below shows the reduction in the use of electricity over the first 6 months of 2014 compared to the same period in 2013.

![NOVITA - USE OF ELECTRICITY Chart]

Electricity consumption over the first 6 months of 2014 show a reduction of 37,500kWh or 135,000MJ which can be projected to an estimated saving in electricity consumption of 270,000MJ/A. The projected electrical savings, concomitant with the Project, are not captured by the graph above due to the fact that the individual Activities, associated with the Project, were being completed incrementally over the same period (eg: the Lighting Upgrade and BMS were not completed until late June).
5.2. **Natural Gas**

The table below shows the reduction in the use of natural gas over the first 6 months of 2014 compared to the same period in 2013.

![NOVITA - USE OF GAS](chart)

Gas consumption over the first 6 months of 2014 show a reduction of 200,000MJ (based on 4mths figures) which equates to an estimated saving in gas consumption of 600,000MJ/A. The projected gas savings, concomitant with the Project, are not captured by the graph above due to the fact that the individual Activities, associated with the Project, were being completed incrementally over the same period (eg: BMS controls the gas fired heating systems for the air condition plant and was not completed until late June).

5.3. **Building Amenity**

The works carried out under the grant funding from the Australian Government to deliver a number of energy savings projects and initiatives at the Novita Children’s Services Regency Park Complex has resulted in improvements to the overall amenity of the facilities. These include:

- Significantly improved levels of lighting resulting in lighter and brighter client and staff working environments
- Improved temperature and humidity control of the hydro therapy pool complex
- Improved comfort conditions and air quality throughout the overall building complex
- Safer working environment associated with monitoring of gas fired equipment and air distribution systems

6. Project Budget

In May 2013 Novita Children’s Services were successful in obtaining grant funding from the Australian Government to carry out a number of energy savings projects and initiatives at its Regency Park Complex. The total funding for the overall project was **$512,000** (ex GST) jointly funded by the Australian Government and Novita Children’s Services.

The 7 key Activities delivered under the Project were delivered within budget at a total cost of **$508,314** (ex GST). The Final Financial Report is due 11 August 2014 and will provide more details as required.

The table below sets out the project actual cost against the budgeted cost for each Activity. It should be noted that, while the overall projects were delivered within the total budget, there were variations within certain project budget lines that were approved by the Department of Industry grant Fund Manager over the course of the project.

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Attached Budget Allocated to Schedule 1: Activity - Building Works</th>
<th>Funding Agreement</th>
<th>Completed Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/S - 1</td>
<td>Signing of funding agreement</td>
<td>CEEP 25,000</td>
<td>Novita 25,009</td>
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<tr>
<td>M/S - 2</td>
<td>1.1.1 a. b. - install time control on HWH units (2of)</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td></td>
<td>1.1.1 c. - install time control on HWH units (9of)</td>
<td>$ 490 $ 490</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.1.1 d. - install time control on split a/c units (10of)</td>
<td>$ 1,050 $ 1,050</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$ 3,880 $ 3,880</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>$ 5,420 $ 5,420</td>
<td></td>
</tr>
<tr>
<td>M/S - 3</td>
<td>1.1.2 - new Theatre a/c unit</td>
<td>$ 76,750 $ 76,750</td>
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<tr>
<td></td>
<td>1.1.3 a. - supply and install hydro pool cover</td>
<td>$ 48,840 $ 48,840</td>
<td></td>
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<tr>
<td></td>
<td>1.1.3 b. - install time control on pool pumps (3of)</td>
<td>$ 3,501 $ 3,501</td>
<td></td>
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<tr>
<td></td>
<td>1.1.4 - retrofit of ceiling insulation R3 batts 1580m2</td>
<td>$ 1,010 $ 1,010</td>
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<tr>
<td></td>
<td></td>
<td>$ 29,500 $ 29,500</td>
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<td></td>
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<td>$ 82,851 $ 82,851</td>
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<tr>
<td>M/S - 4</td>
<td>1.1.5 - installation, testing and commissioning of Building Management System (BMS) and Energy Management System (EMS)</td>
<td>$ 109,500 $ 109,500</td>
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<td></td>
<td>1.1.6 - installation on metering system and LCD signage (included in EMS works)</td>
<td>$ 49,900 $ 49,900</td>
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<td></td>
<td>1.1.7 - supply and delivery of lights, occupancy sensors and install voltage regulators</td>
<td>$ 81,485 $ 81,485</td>
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<td></td>
<td>1.2.1 - energy efficient workplace signage (PCs, W/lines)</td>
<td>$ - $ -</td>
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<td></td>
<td>1.2.2 a. - promote project outcomes (article in Corp Newsletter)</td>
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<tr>
<td></td>
<td>1.2.2 b. - promote project outcomes (article in Novita website)</td>
<td>$ - $ -</td>
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<td></td>
<td>1.2.2 c. - promote project outcomes (article in Client Newsletter)</td>
<td>$ - $ -</td>
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<td></td>
<td>1.3. - Monitoring - data logging</td>
<td>$ 131,385 $ 131,385</td>
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<td>M/S - 5</td>
<td>1.1.8 - replacement of lights, installation of occupancy sensors and installation of voltage regulators</td>
<td>$ 44,750 $ 44,750</td>
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<td></td>
<td></td>
<td>$ 84,501 $ 84,501</td>
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<td>M/S - 6</td>
<td>Final Report</td>
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<td>M/S - 7</td>
<td>Financial Report</td>
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<table>
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<th>FUNDING AGREEMENT TOTAL</th>
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<tbody>
<tr>
<td></td>
<td>$ 254,157</td>
<td>$ 254,157</td>
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</table>
7. Project Delivery

7.1. Resources and Support
Due to the nature and extent of the propose projects and the highly technical nature of some elements of the work, Novita engaged an engineering consultant to work with its “in house” Facilities Management Team to manage the procurement and delivery of the approved projects. Given the different nature of each activity the work was separately and competitively tendered to contractors specialising in the particular activity.

7.2. Project Management and Procurement Approach
For each of the 7 key Activities the engineering consultant working with Novita FM staff prepared a scope of work and detailed specification. Given the different nature of each activity the work was separately and competitively tendered to contractors specialising in the particular element of the work. Contractors and suppliers were selected to tender for the works based on track record, knowledge of the industry, availability and capacity. A minimum of three contractors were invited to submit tenders for all but the minor works. Tenders received were assessed by the engineering consultant and Novita FM staff against pre-determined assessment/selection criteria. Approvals to proceed with the works were obtained within Novita Children’s Services procurement and delegations policies and procedures. Engagement of contractors was by way of standard industry Agreements that were approved for use by the Company Secretary. Contractors were inducted and managed on site by Novita FM personnel.

All projects have reached “Practical Completion” and are now in the Defects Liability Period which is being actively managed by Novita FM personnel.

The consultants and contractors that Novita engaged to assist with the Project are:

- **Sustainable Focus** – Specialist Energy Consultants
- **SECON Consulting Engineers** – Project engineering and tendering of Project Activates
- **Alerton Australia** – Building Management and Energy Management Systems
- **Niramar Electrical** – Lighting Upgrade
- **Mega Pixels Security** – Hot Water Systems, supplementary air conditioning timer controls and Hydrotherapy Pool hot water circulation pump timers
- **Premier Insulation** – Building Insulation
- **Specialist Air Management** – Theatre Air Conditioning System Upgrade
- **Sunbather Pty Ltd** – Hydro Pool cover
7.3. **Technology and Training**

The installation of latest technology lighting systems, air conditioning equipment and controls combined with a “state of the art” Building Management System has required Novita’s “in House” and key contractors/consultants to undertake training on the new systems, plant and equipment and software packages. The training has been provided by the contractors and suppliers as part of the project installation works.

7.4. **Lessons Learnt**

Over the course of applying for the grant funding from the Australian Government, and being awarded the-funding, and delivering the Project approved Activities Novita Children’s Services FM staff learned a number of valuable lessons. These included the requirement:

- to more effectively communicate with the Department of Industry grant Fund Manager over the course of the project
- to continually and effectively manage the specialist consultants and contractors to deliver the projects within the tight timelines established by the funding Agreement
- to deliver projects “on time and on budget” in the core of the building while the building had to remain “operational”. Often work had to be carried out outside of normal working hours and over weekends while keeping project costs within budget
- to better understand the impact of introducing latest technology plant and systems into ageing facilities

8. **Conclusion**

The works carried out under the Community Energy Efficiency Program to deliver a number of energy savings projects and initiatives at the Novita Children’s Services Regency Park Complex has resulted in a number of significant and positive outcomes for Novita clients, staff and the broader community. All projects have been delivered within the total allocated budget and they are now in the Defect Liability Period. Energy consumption and costs are being monitored and, notwithstanding that the larger projects have only recently been completed, there are already early indications of significant reduction in energy use both in natural gas and electricity.

In addition to achieving the primary objectives of reductions in energy consumption and improved energy efficiency, the project has also achieved a number of other important objectives. They include:

- improving the overall amenity of the complex;
- enhancing client and staff working environments
- providing Novita Facilities Management Staff and key contractors with training and experience in modern technology in energy efficient lighting and air-conditioning systems and current Building Management Systems;
- raising awareness to the grant funding from the Australian Government and the broader benefits of reduction in energy use within and external to the Novita operating environment.
9. Declaration

The Authorised Officer of the organisation makes the following declarations:

☐ I declare that I am authorised to submit this Final Report (including any attachments) on behalf of Novita Children's Services.

☐ I declare that the information provided in this Final Report is true and accurate.

☐ I understand, and acknowledge that giving false or misleading information in this Final Report is an offence under the Criminal Code Act 1995.

☐ I understand that final payment will only be made in accordance with the Funding Agreement including on satisfactory completion of Milestones.

Authorised Officer Signature: ................................................................. Date: 15/10/14

Name: Steve Pocock

Position: Manager, Property & Procurement  Organisation: Novita Children's Services

Witness Signature: ................................................................. Date: 15/10/14

Name: Barry Michels

Position: Manager Infrastructure  Organisation: Novita Children's Services

The use and disclosure of information provided in this Final Report is regulated by the relevant provisions and penalties of the Public Service Act 1999, the Privacy Act 1988, the Freedom of Information Act 1982, the Crimes Act 1914 and the general laws of the Commonwealth of Australia.

Information contained in the Final Report may be disclosed by the Department for purposes such as promoting the program and reporting on its operation and policy development. This information may also be used in answering questions in Parliament and its committees. In addition, the selected project information will be made publicly available. Public announcements may include the name of the grant recipient and of any project partners; title and description of the project and its outcomes; and amount of funding awarded.
<table>
<thead>
<tr>
<th><strong>PROJECT TITLE</strong></th>
<th>Novita Community Energy Efficiency Program</th>
<th><strong>PROJECT ID</strong></th>
<th>1183</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FUNDING RECIPIENT</strong></td>
<td>Novita Children’s Services</td>
<td><strong>DATE</strong></td>
<td>17th July 2014</td>
</tr>
</tbody>
</table>

**Building, Facility or Site 1**

| **Name of Building, Facility or Site 1** | Novita Children’s Services Regency Park Offices |
| **Location (address)** | 171 Days Road, Regency Park SA 5010 |
| **Type of building, facility or site** | Office administration building |

| **Activity Type and Measure** | Upgrade of HVAC system, ceiling insulation, timer control to zip, HWU & wall split a/c, installation of BMS and EMS, installation of pool cover, timer control for hot water circulating pool pumps, replacement of existing lights with energy efficient lights |
| **Energy Efficiency Estimate Method** | The simulation used to provide the estimates is based on the 2011 Building Code of Australia from JV3. |
| **Baseline Electricity Usage** | 860,709 kWh per annum (3,098,552 MJ per annum) Based on the calendar year of 2013 |
| **Baseline Gas Usage** | 3,886,704 MJ per annum Based on calendar year of 2013 |
| **Baseline Energy Efficiency** | 1012 MJ per m2 annum |

<p>| <strong>Energy Efficiency Improvement</strong> | Post Project Usage Gas Usage 1st 4 months 2013 – 735,359 MJ 1st 4 months 2014 – 555,508 MJ 1st 4 months 2014 reduction of gas usage 179,851 MJ If this is extrapolated for 2014 we anticipate at least a saving of 539,553 MJ, but we anticipate a greater saving due to the BMS control of the gas heating. |</p>
<table>
<thead>
<tr>
<th>Electricity usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 6 months 2013 – 451,891 kWh</td>
</tr>
<tr>
<td>1st 6 months 2014 – 423,955 kWh</td>
</tr>
<tr>
<td>1st 6 months 2014 reduction of electricity usage 27,935 kWh.</td>
</tr>
</tbody>
</table>

Which captures the earlier tasks that are providing energy savings but the bulk of the energy savings will not be seen until the start of July 2014. As this was the first full month that all the energy saving measures had been commissioned and operating.

**REFER TO NOTE AND LIMITATIONS BELOW**

<table>
<thead>
<tr>
<th>Reporting Data (Measuring Energy Efficiency and Additional Data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A total area of 6900 m² and 200 occupants</td>
</tr>
<tr>
<td>75 per cent average operational occupancy level</td>
</tr>
<tr>
<td>Daily hours of operation: 8am to 6pm weekdays</td>
</tr>
<tr>
<td>Building construction date 1976</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$496,040</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas $3,632.85 over 4 months</td>
</tr>
<tr>
<td>Electricity $7,809.17 over 6 months</td>
</tr>
</tbody>
</table>

**REFER TO NOTE AND LIMITATIONS BELOW**

<table>
<thead>
<tr>
<th>Notes and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>There were a number of stages to this project with each provide energy efficiencies</td>
</tr>
<tr>
<td>Task 1 - timer controls to HWU’s and wall split a/c’s (Completed 30/8/2013).</td>
</tr>
<tr>
<td>Task 2 – hydrotherapy pool cover, pool pump and gas heater timer control (Completed 18/12/2013)</td>
</tr>
<tr>
<td>Task 3 – Theatre air conditioner upgrade 83kW with CO2 control (Completed 9/05/2014)</td>
</tr>
<tr>
<td>Task 4 – Installation of bulk R3 (2900m²) ceiling batt</td>
</tr>
</tbody>
</table>
insulation (Completed 9/05/2014)

Task 5 – BMS & EMS installation (Completed 16/06/2014)

Task 6 – Lighting Upgrade (Completed 16/06/2014)

Due to the date of the report and when various parts of the works where completed there is a very short time in some instances to ascertain the performance improvements compared to the original baseline energy usage.

Gas usage was extracted from the utility meter and the information provided by Novita Children’s Services.

There was a notable step change in the gas usage from when the hydrotherapy pool cover and timers where installed.

We have 4 months of data which show that the gas usage has dropped by 25% during the warmer months of the year which can mainly be attributed to the hydrotherapy pool energy performance improvements.

At this stage we are unable to provide details for the improvements in performance of the electricity usage as the report is approximately a month after the majority of the energy saving measures has been commissioned.

Further information can be provide at the end of 2014 which will provide a true indication on the performance improvement