

Sustainability-oriented Service Innovation: Successful deployment of resource-conserving system at tourist accommodation



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Training staff to persuasively explain how to conserve resources will save significant amounts of energy and water (photo: Crystal Creek Meadows)

This report summarises progress in deploying the sustainable hospitality solution 'My Green Butler' (SDG 9), and the management challenges that go into implementing responsible consumption and production (SDG12) within their tourist accommodation. Findings show once management can see the previously invisible areas of waste, they become significantly more motivated to take innovative steps to save resources that can become part of their competitive point of difference and appeal to guests.

The International Centre for Responsible Tourism – Australia is undertaking a sustainable tourism project to measure the benefits and barriers for hospitality management, staff and guests to conserve resources using the sustainable hospitality solution ‘My Green Butler’. Our report explains the second year of the project where we expand the number of sites, increase our strategic partnership and grants and are able to report on progress at a ‘grassroots’ level.

Conserving opportunities have been found to include:

- Guest direct energy use saving by 12-33% electricity and 18-20% gas
- 18% housekeeping energy use between check-out and check-in
- Up to 4°C public space overnight heating
- Natural ventilation and advice to guests can save 1°C average hourly heating/cooling
- Frequent persuasive communication can help managers refine energy management beyond automated systems
- Increase guest stay satisfaction through ‘sharing of values’

Background

To achieve the Paris Agreement’s goals to cut carbon emissions to zero, and implement the overarching premise of the Sustainable Development Goals, much attention has focused on eco-technologies and renewable energy. However, these represent only two of the three methods we can apply. The third, to conserve resource use, is often ignored. Conserving means the deliberate action to avoid resource use (e.g. choosing to not shower twice a day), or reduce wastage while consuming (e.g. collecting shower water) or reduce consumption (e.g. taking a shorter 2-minute shower). It is consciously choosing a conserving action. This approach can be done in isolation of eco-technologies or enhance them. Eco-technologies tend to permit humans to continue to apply routines in a regular manner without the individual’s need to save resources. These tend to be favoured as it does not involve the inconvenience of persuading someone to adapt their behaviour. However, our challenges, accelerated by tourism growth, require all options to be considered at this time if we are to meet our goals.

Applying conserving resources to tourist accommodation appears, at first sight, to be a contradictory position to the modern idea of offering hospitality. The current commercial exchange revolves around providing facilities in unrestricted amounts i.e. guests have full access to having multiple baths per day without being told they cannot have more than one. But our shared future, living within the global resource limitations and changing climate, questions the premise that a commercial exchange should be unrestricted, particularly as hotels are one of the most energy and water intense building types, and where many tourist accommodations are located in communities that suffer water scarcity and poverty.

Deployment of conserving solution

The International Centre for Responsible Tourism - Australia chose to deploy the 'My Green Butler' solution as a method to encourage conserving behaviours, and audit record results. As a cloud-based platform, we were able to apply it to any size of building in any climatic region. We wanted to learn what would be the uptake of testing 'My Green Butler' in a 'real world' commercial environment where we are actively challenging the idea of unrestricted resource consumption.

We have been delighted with the response of the tourism accommodation sector. The ICRT-Australia approached different sized businesses and types of hospitality firms - from very large organisations and 5-star properties, to small and micro-enterprises. These businesses were chosen in the three countries and four climate zones. Property types are:

- 5 star and 3-star hotels (415-1000 rooms)
- 5-star timeshare lodges
- 2-star self-contained cabins
- self-contained apartments
- glamping
- Airbnb – shared economy style
- traditional B&B and bunkhouse style accommodation

We found a similar level of interest and motivation, indicating that conserving resources is scalable across the hospitality sector globally. We are proud to record that our strategic partners are:

- Amora Jamison Hotel Sydney – NSW Australia
- Crystal Creek Meadows – NSW Australia
- Disneyland Paris (2 sites) – Chessy, France
- Inverlock Glamping Company, Victoria, Australia
- Jetty Road Retreat – Victoria, Australia
- Langdale Leisure Group – Cumbria, United Kingdom
- Reefman Arts estate – Victoria, Australia
- Swan Cove – Victoria, Australia
- Thorney How - Cumbria, United Kingdom

Secondly, we have been successful in funding our project from both the private and public sector. This indicates that stakeholders recognise that conserving resources is a worthy method to save resources and cut carbon and addition to efficiency and renewables methods. They see conserving as very much lower in cost to implement, seeing the programme as innovative (SDG 9). Our fiscal partners have been: City of Sydney, Disneyland Paris, Langdale Leisure Group, NSW Government and WISE Sustainability. In-kind support has been provided by Destination Gippsland, Lake District Foundation and the National Parks of England & Wales.

In 2019 we have also been successful in winning a prestigious Australian Research Council ‘Discovery Grant’ for three years collaborating with Griffith University (Australia) and Surrey University (United Kingdom). This significant grant will permit us to expand sites in 2020.

The deployment has also enabled us to test the solution in different climate zones within the Southern and North Hemispheres which are:

- Maritime/Oceanic
- Continental
- Subtropical

Factors that influence Sustainability-oriented Service Innovation

Our project focuses on persuasive communication (technology and interpersonal) to encourage management, staff and guests to adapt their behaviour and conserve. The solution ‘My Green Butler’ which records consumption, provides eco feedback and audits results, is introduced into the daily operations of a tourist accommodation business (big and small). We have found this affects change and improves the process, organisation and service delivery through insights and new ideas. Put simply, the system spotlights wastage, self-motivates guests and stimulates learning. The solution can be called a sustainability-oriented service innovation, as described by Warren, Becken & Coghlan, 2018, in that it permits a high degree of flexibility for management/staff to apply their skills and knowledge. From the outset the solution involves the integration of previous sustainable tourism initiatives the property might have applied and the involvement of suppliers and guests accelerating ways to save. Managers are able to reflect (using hindsight) on the behaviours of staff/guests and resource use and then compare to the insights from the audits of conserving resources and the positive results. This stimulates progress. Innovations stimulated by the ‘My Green Butler’ solution cover four areas of focus: organisation, process, service and marketing. Depending on the skill base and experience of the manager(s) there can be a leaning towards any one of these areas of focus (Figure 2). The following summarises observations:

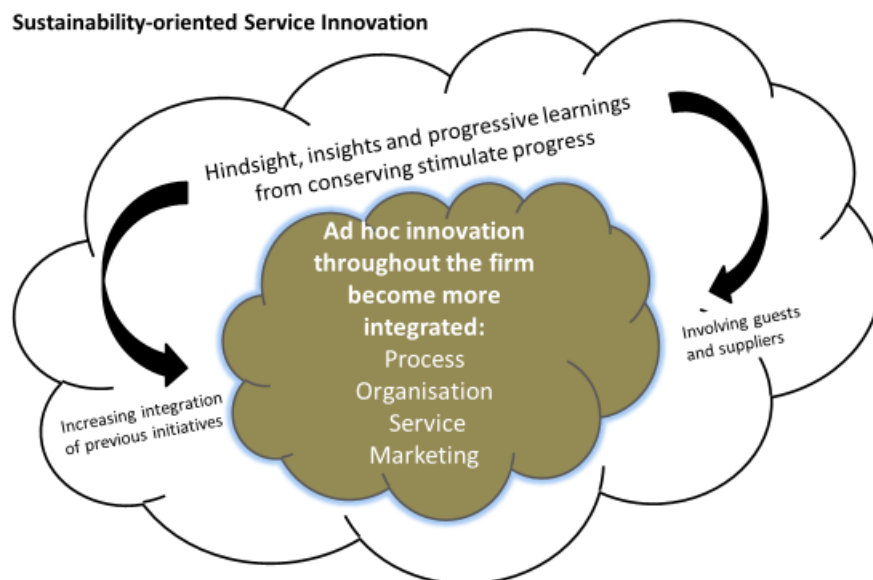


Figure 1. Adapted from Warren, Becken & Coghlan (2018)

Organisation

Sustainability-oriented Service Innovation requires a whole of a hospitality business participation rather than a stand-alone sustainability department. This is because sustainability solutions in hospitality have to progress through a complex maze of staff functions, automated and manual systems, so solutions require the cooperation of the whole team.

Process

To achieve responsible consumption and production hospitality firms must have integrated processes which record the core consumption activities. This requires linking between Building Management Systems or similar to other systems and manual tasks, something our intervention 'My Green Butler' has been designed to deliver.

Service

Once management is able to see data which identifies wastage, hitherto invisible, they see the benefits of conserving and how this can add to the guest experience rather than detracting from it. Understanding and seeing the 'invisible' wastage becomes a key tipping point where greater savings can be made across the business.

Marketing

Those businesses which are most motivated are those that progress from taking anticipatory actions (those that will provide cost savings) to taking an innovative approach that builds on

collaboration with suppliers, staff and guests. They come to view conserving solutions as a competitive advantage.

Resource Use and Conserving Potential

The project is measuring conserving in the following resources:

- Electricity
- Solar power
- Gas
- Biomass
- Water
- Food Waste
- Laundry (linen and towels)
- Thermal comfort actions measure behaviour adaption and changes in resource use

1. Staff – Organisational

Conserving opportunities were found by:

- Correct setting of room temperatures during housekeeping could save 18% of energy use. Current processes show housekeeping staff often use natural ventilation to ‘freshen up rooms’ with examples of windows being open 4.3% of the time between check-out and check-in in winter. However, housekeeping then leaves the room temperature at the original temperature set by the previous guests who have left, resulting in significant amounts of energy being consumed to re-establish the accommodation to a warm temperature when unoccupied for several hours.
- Reducing the room temperature set by housekeeping as guests often want a lower temperature; for example, not leaving the room at 24°C but setting it at 18°C as guests can prefer a wider range of temperatures from 18 to 26°C.

2. Guests – Service experience

Conserving opportunities were found by:

- Guests widely supporting the accommodation’s My Green Butler service as it is seen as positive and responsible. Only one site recorded some guests preferring to not participate in their conservation programme (8%).

- Guiding guests to self-moderate their consumption with examples of 5-20% savings in energy. In the case of Crystal Creek Meadows which has been applying the solution for three years, savings of +30% are recorded suggesting that as staff become more confident, they are also more persuasive.
- Extending the opportunities for guests to save by placing recycling bins outside their accommodation. This was found to be highly successful. It shows guests are prepared to go out of their way to sort their waste and contribute to the wider ethos of the conserving programme. In this case guests chose to leave their accommodation and use recycling bins outside rather than leave the waste for housekeeping in their accommodation.
- Several sites reported that guests were requesting more information to help them save and to select more sustainable tourism attractions at the destination. Guests voice their support as they feel the actions to conserve matches their own personal values.

3. Thermal Comfort – Process

Conserving opportunities were found:

- Many guests are prepared to use natural ventilation methods to adjust their thermal comfort rather than equipment which uses energy. In summer, a site was able to compare a guest in a control group compared to the My Green Butler service, and found they were using more than 33% electricity because they relied on air conditioning rather than more actively using natural ventilation.
- By better communicating how to keep comfortable and how to use a/c controls. We found at one site guests, in a control group, were using natural ventilation throughout the night (10% opening windows) in winter to better moderate their in-room temperature. While at another site guests who had received the conserving service only opened the windows 0.4% of the time indicating they were more able to manage their preferred comfort level. A further study site showed that guests who received the service tolerated a 1°C higher inside temperature in summer, and a 1°C lower winter temperature, whilst using less electricity (30% and gas 20%).
- By setting lower public area temperatures at night in winter, as often guests prefer cooler night temperatures. For example, guests may choose 18°C while public areas can be 22° throughout the night. One site was able to reduce night time temperatures in its public areas to 14°C in winter without guest complaints.

- Some energy systems do not provide sufficient granular control to moderating fuel, so large quantities are used when occupancy is low. Our persuasive communication solution informs management of such situations allowing them to conserve fuel outside the automated heating system’s programme

From earlier research, we identified that three factors influenced saving resources: the built environment, socio-cultural and climate (Figure 2). This project’s findings so far confirm that these factors do both lead to high resource use, but equally offer conserving opportunities because of the invisible nature of energy and water consumption. By making it visible savings are achieved, and at low cost.

Our observations, from measuring the conservation of resources, clearly demonstrate that each tourist accommodation site has a very unique balance of these three factors which influence saving potential and the degree resources are ‘invisible’ to management/staff and guests, and therefore unknowingly wasted. The uniqueness of each site demonstrates the need for flexible solutions rather than a standardised ‘tool box’ approach.

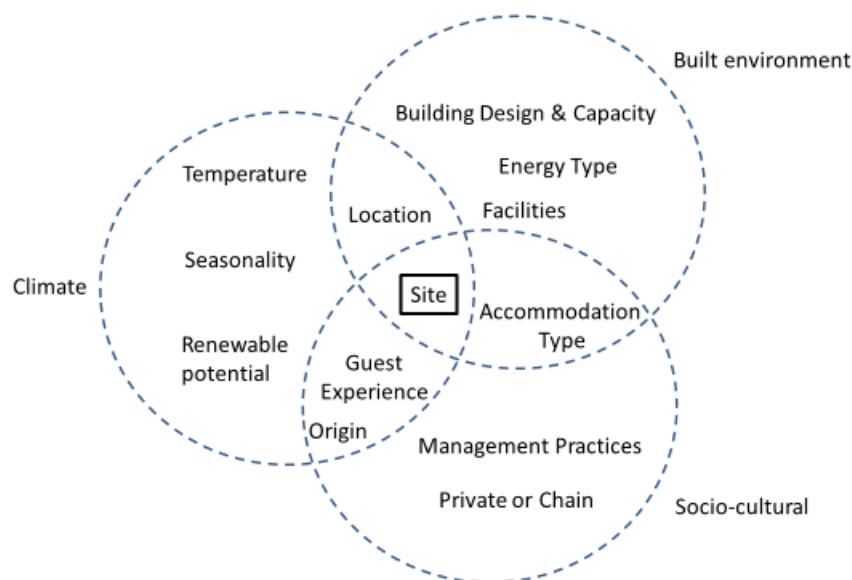


Figure 2: Three factors that influence saving at tourist accommodation; Warren & Becken, 2017

Book sharing the best ways to implement conserving

Based on the progress made to date, Dr. Christopher Warren has written a book called *How to Create Sustainable Hospitality. A handbook for guest participation* (published shortly by Goodfellow Publishing) which explains how to introduce conserving strategies at tourist accommodation successfully.

Reference

Warren, C., Becken, S. & Coghlan, A. (2018). Sustainability-oriented Service Innovation: fourteen-year longitudinal case study of a tourist accommodation provider, *Journal of Sustainable Tourism*, DOI: 10.1080/09669582.2018.1511721