

Aga Khan Foundation Canada – Reducing GHG Emissions at the Delegation of the Ismaili Imam

Tool at a glance

Title: Reducing GHG emissions from building operations

Addresses: Environmental impact from building operations

Pertains to greening: Operations



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Overview

[The Aga Khan Development Network \(AKDN\)](#) works to improve living conditions and opportunities for those living in poverty in parts of Asia and Africa. Specifically, the network's agencies focus on health, education, culture, rural development, institution-building, and the promotion of economic development. [The Aga Khan Foundation Canada \(AKFC\)](#), a registered Canadian charity, is a part of this global network. Headquartered at the Delegation of the Ismaili Imam building in Ottawa, AKFC works in partnership with the Canadian government and other Canadians towards alleviating poverty in parts of Asia and Africa.

[The Delegation of the Ismaili Imam \(DII\)](#) is a secular facility serving as a centre for building relationships, knowledge dissemination, and quiet diplomacy for the Imam and its institutions. Simultaneously, the space reflects the humanitarian agenda of the AKDN. The DII is also renowned for its award-winning architecture, and while it is not explicitly a 'green' building, the DII seeks to keep its environmental impact as low as possible. Environmental stewardship and the promotion of environmentally sustainable practices are key priorities in the AKDN's policy and operations. As the impacts of environmental degradation and climate change have grown in the communities where the AKDN works over the past several decades, these priorities have taken on greater importance and urgency. Through its programs, AKFC promotes environmental sustainability, works with communities to mitigate and adapt to the effects of climate change, and encourages more sustainable use of natural resources.

The DII's Building Operations team is working with AKFC and other tenants to reduce the facility's greenhouse gas (GHG) emissions, contributing to a broader effort to limit its environmental impact and act as a steward for a sustainable environment. More specifically, over the past seven years, the team has sought to streamline its building systems and practices and improve its infrastructure in a cost-efficient manner to reduce the building's GHG emissions.

Reducing the DII's environmental impact

The problem

The AKDN works to be a steward of the environment and, in recent years, has increasingly committed to environmental sustainability and climate action as key priorities in its programming and operations. AKFC is cognizant of the intersection between environmental sustainability and poverty alleviation and is committed to integrating environmental sustainability into its programming, using established environmental screening and assessment tools. While this commitment to environmentally sound practices has been and continues to actively be considered in the AKDN's policy, programming, and operations, in recent years, greening of building operations at the DII has emerged as an area of opportunity to further the network's commitment to reducing its environmental footprint in Canada.

Moving towards a solution

In line with the AKDN and AKFC's objective of environmental stewardship and sustainability, the DII has been working to streamline its building operations and reduce overall GHG emissions. On an ongoing basis, all aspects of building operations are reviewed to identify areas for improvement. Once annual priorities are identified, the Building Operations team meets with relevant contractors or consultants to determine how to maximize efficiency while reducing costs and determine the return on investment (ROI) if capital is required. The building's unique architectural elements and staff comfort are paramount and are not compromised in this planning process.

Working in consultation with AKFC's Environmental Sustainability Task Force (or 'Green Team'), the Building Operations team has actively sought feasible ways to increase resource use efficiency at the DII and to reduce its overall GHG emissions.

Reducing GHG emissions at the DII

In recent years, a number of changes to building operations have been implemented to advance the DII's efforts to reduce energy consumption and GHG emissions. For instance, lighting fixtures in offices, meeting rooms, and common areas have been swapped out with more energy-efficient LED lighting fixtures.

The general process for implementing such changes includes the following steps:

- *Identification of Opportunities:* The Building Operations Team identifies opportunities and undertakes extensive due diligence.
- *Preparation of Case:* Based on this research and the opportunities identified, a discussion paper or business case is prepared for review by the Senior Management Team.
- *Presentation of Case to Senior Management:* The document is then presented to the AKFC CFO for financial validation, and subsequently to the AKFC CEO and AKDN Diplomatic Representative for approval.

Results

As a result of greening measures taken to date, the DII has undergone a significant reduction in energy consumption and GHG emissions in recent years. Over the past 7 years, natural gas consumption (m³) has been reduced by 7% and electricity consumption (KWh) by 20%. Table 1 illustrates the reduction in overall energy consumption from 2017 to 2019, as a result of retrofits made to lighting and the HVAC system.

As outlined in Table 2, waste audits conducted at the DII have determined that the building's waste diversion rates have increased in recent years; the total number of metric tonnes recycled increased from between 2018 and 2019, while recycling levels were maintained at 98 percent. Waste diversion has important impacts for reducing GHG emissions; by keeping recycling and composting levels high, waste is diverted from landfills, where high levels of GHGs are emitted as trash decomposes.

Table 1: Hydroelectricity Data (2017-19)

Year	Measurement (kWh)	Delta	
2017	1,224,148	-	
2018	1,135,998	-88,150 kWh	-7.2%
2019	1,042,896	-93,102 kWh	-8.2%

Table 2: Waste Audits at the DII (2018 and 2019)

Measure	2018	2019	Delta
Diversion Rate	62%	70%	8%
Recycle Capture Rate*	98%	98%	0%
Materials Recycled**	6.27 Mg	7.55 Mg	1.28 Mg

*% of cardboard and other recyclables that is being captured

**metric tonnes being diverted from landfill (paper, organics, food/drink, e-waste/batteries, etc.)

Next Steps

The Building Operations Team is currently considering lifecycle asset replacements and is undertaking an Investment Grade Audit to determine the most appropriate way forward. Looking ahead, the DII is also working to determine the ROI of bringing forward lifecycle replacements for more energy efficient equipment as assets expire. The main assets under consideration currently include air handlers, heat exchangers, make up air units, boilers and heat pumps. On a related note, in 2019 the DII and its tenants began collecting comprehensive GHG emissions data that will allow establishment of an institutional baseline and future year-on-year comparisons.

Insights and Lessons Learned

- **Management buy-in:** Through the DII's process of greening its operations and building utilities, buy-in from senior management has proved key to a successful investment in reducing GHG emissions. It has also been noted that energy-efficiency investments with positive ROI and clear payback periods are more readily taken up by Senior Management.
- **Task force:** The formation of AKFC's Environmental Sustainability Task Force in 2018 proved beneficial to DII environmental sustainability efforts, as this facilitated consultation and encouraged implementation of behavioural/process changes to complement operational changes aimed at minimizing the building's energy efficiency. Furthermore, the existence of the Task Force has improved the frequency and rigour of internal recording, monitoring, and reporting on sustainability efforts at the DII. Among other efforts, the Task Force has helped push forward the agenda for paperless operations within AKFC, which also contributes to improved energy efficiency and reduced GHG emissions.
- **Stewardship:** The DII's reduction of GHG emissions in recent years contributes to and aligns with the AKDN and the AKFC's work in climate action and environmental stewardship. The substantial changes to operations made to date, and those that continue to be explored, are examples of the AKDN's commitment to enhancing the environmental sustainability of its processes and practices.
- **Building architecture:** A key challenge encountered by the Building Operations team in implementing changes to the DII has been the imperative to protect the architectural value and mission of the building. Despite some investments being determined to be otherwise financially feasible, the team has had to be careful not to compromise the design intent of the building, as well as its custom-built architectural properties.

Sources

- [AKFC Policy for Environmental Sustainability \(PES\) and PES Flow Chart for Program Staff and Environmental Focal Points](#)