

Sagarmatha next:

From mountain waste to art and inspiration

The Vision - sustainable management of solid waste

Mount Everest is a mountain of many names, Sagarmatha is one of them. Sagarmatha next brings innovative ways of generating a sustainable system for the management of solid waste in the Everest¹ region (Khumbu Valley) of Nepal by creating an Inspirational Learning Centre and empowering local organizations. It is the next frontier for tourism, sustainability, and environment and the first project of Himalayan Museum and Sustainable Park (HMSP).

Located near Namche Bazar on the way to Everest Base Camp, the project is much more than a museum. It is a social enterprise with important goals and innovative approaches. We want to develop a model that can be replicated in mountain areas of the developing world.

In these mountain regions, trekkers have brought positive socio-economic development but also created environmental challenges. Often these areas are environmentally sensitive national parks or bio-diversity hotbeds, where the lack of infrastructure cannot handle the pressure of countless tourists, resulting in degradation of the environment (water, land, air, bio-diversity).

At Sagarmatha next, we want to show a way to keep the balance. We have started by tackling one of the challenges this region is facing – solid waste. In 2018, 60K visitors came, leaving copious amounts of waste behind. Our idea is to include the tourists as part of the solution.

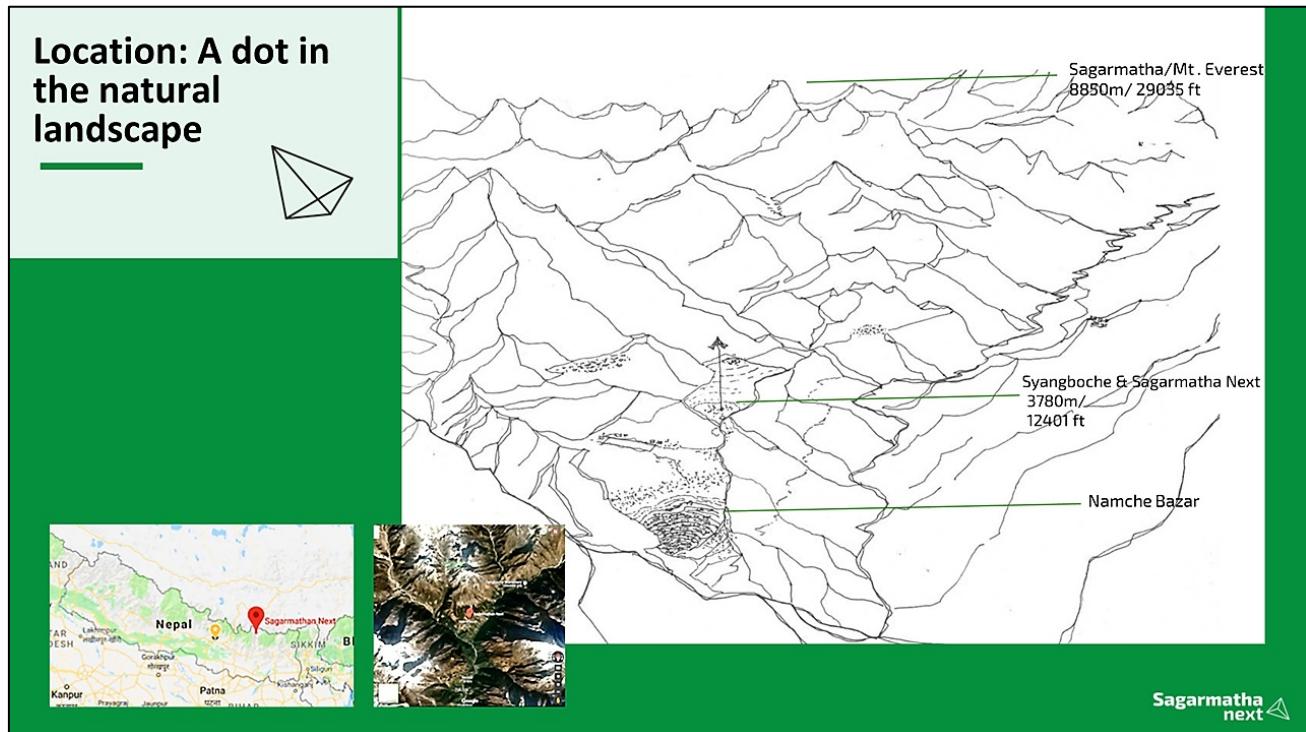
We envision Sagarmatha next (www.sagarmathanext.com) as a project for the future of the environment, tourism, and sustainability.

The Project

Sagarmatha next project has two components – waste management solutions and the Learning Centre.

1. Sagarmatha next offers **environmental solutions for waste management** and support to local organizations to better handle garbage left in this fragile mountain valley. Much of the garbage will be semi-processed to reduce the volume so that it can be removed from the Khumbu Valley. The question is how to take it out.
2. By **highlighting art and innovation** in its Learning Centre, Sagarmatha next aims to change attitudes about garbage by attracting art lovers, artists, and trekkers while benefiting the locals. It will teach students, locals, trekkers, and mountaineers about the Himalayan environment. The Centre offers facilities to transform waste into art and design products, with film screening, digital displays, a café, and a shop to generate funds for operating and sustaining the waste management infrastructure and services in the Everest region.

¹ This is a mountain of many names – Chomolungma, Everest, and more recently, Sagarmatha. In the early 1960s, the Government of Nepal coined a Nepali name for Mount Everest, Sagarmāthā or Sagar-Matha.



The **Sagarmatha next Project** has the potential to be a powerful global changemaker with its position near a place that attracts the world. This project anchors around waste. We aim to change the perception of the value of 'waste' and be a model to create awareness locally, nationally, and globally. We will use the Centre as a fulcrum to bring about this change.

We hope that the symbolism of the project can inspire people to be more careful with the environment and support practical means to address real problems in mountain valleys around the world. Sagarmatha next aims to contribute to the [SDG #12](#) that includes reducing waste generation through prevention, reduction, recycling, and reuse. We will use profits from the Centre to assist local organizations to improve and operate the waste management infrastructure along the trekking route.

The situation - growing tourism = more waste

Twice a year, the world comes to Mount Everest, the highest (8,848 m) and most famous mountain on earth. A symbol of challenge and accomplishment, the allure of Everest, Sagarmatha, moves people of every country and nationality to visit this once remote valley.

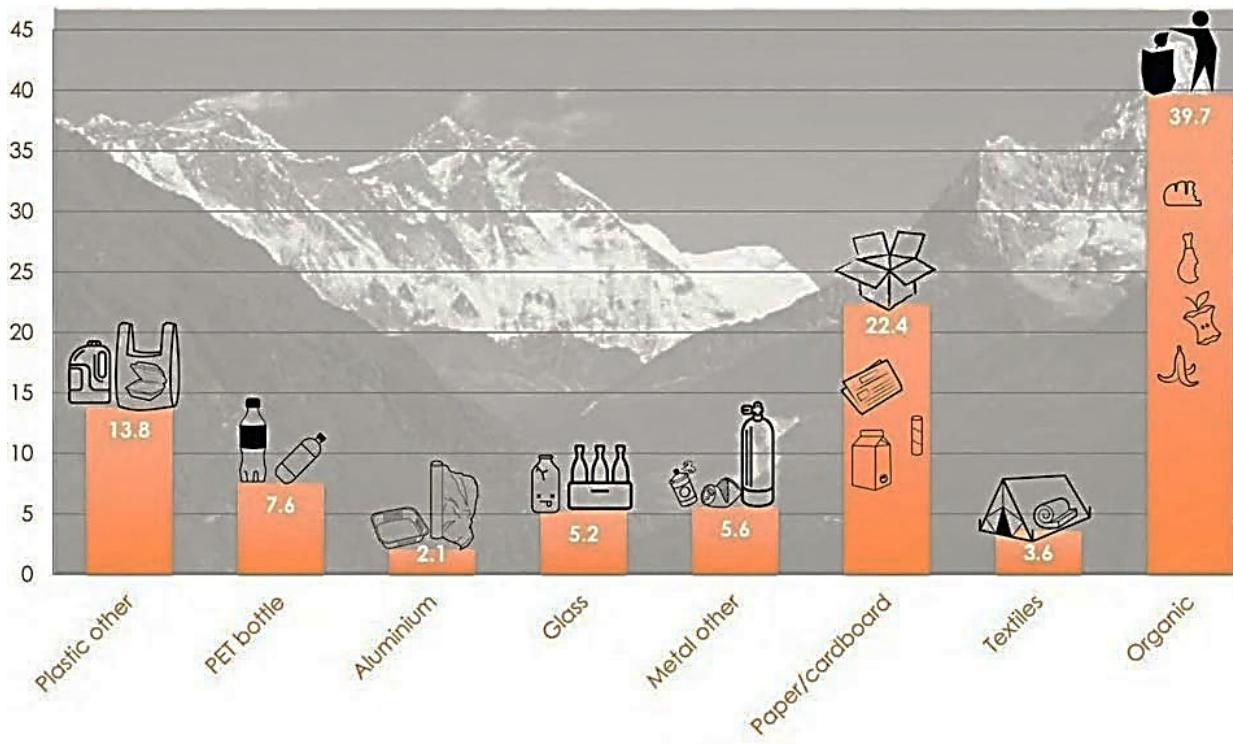
The Khumbu Valley received its first foreigners in 1951 as they sought a route to climb Everest. Since then the number of visitors has grown from 3,600 visitors in 1979 to about 60,000 in 2018, with a local population of about 11,000 indigenous Sherpas and workers from other parts of Nepal.²

Mountaineers climbing Mount Everest and other peaks must pay a deposit to the Government of Nepal that is refundable only upon proof that they have had their garbage removed from basecamp and brought back to Kathmandu. A local organization cleans the various base camps at the end of each climbing season.

² Khumjung, Namche, and Chaunrikarka wards = 7,161 residents plus ~ 4,000 workers at hotels and treks, SNP entries 2018 = ~60,000



The bigger challenge is the garbage left by the now 60,000 trekkers and estimated 11,000 local population visiting and living in the Khumbu region. During the trekking season, about 790 kg of waste is left each day in the Khumbu Valley.³



The composition of waste is 40% organic waste, 22% paper, 14% plastic, 8% PET bottles, 5% metal, 5% glass, 4% textiles, such as tents, and 2% aluminium. Organic waste is fed to cattle or composted for the fields, but plastics, glass, and metals are collected but need more effective separation, handling, and treatment.

Conservation in Sagarmatha

The first endeavour for conservation was the establishment of Sagarmatha National Park (SNP) with aid from the New Zealand government to establish infrastructure. SNP covers 124,400 hectares including eight peaks over 7,000 meters.

However, the park did not have a specific means to deal with garbage. In 1991, locals⁴ set up the Sagarmatha Pollution Control Committee (SPCC) as an NGO for waste collection and recycling. It now prepares the climbing route on Mt Everest every spring for the climbing expeditions and supports base camp clean-up campaigns, village waste disposal and recycling programs, and teaching environmental education programs. The problem has always been what to do with the collected waste, especially with the volume of garbage being left in the Khumbu Valley.

³ Kathmandu University study revealed that waste generation in Sagarmatha National Park and buffer Zone area is around 787 kg/day (per capita waste generation rate is 0.43/kg/day/person).

⁴ SPCC was conceived of and initiated by one of the first Sherpas to study and fill the role of Warden of Sagarmatha National Park, Mingma Norbu Sherpa. Mingma went on to lead the work of Worldwide Fund for Nature in Nepal and the Himalaya. He unfortunately died in a helicopter crash in 2006.



For years, various groups donated equipment for waste management. In the end, the garbage is usually left in numerous pits. Dumping and burning waste in open pits increases air and water pollution and contaminates the soil.

Most past Everest Clean-up expeditions focused on base camp and above where they sometimes cleaned garbage from the climbing route as a part of reaching the summit. The Saving Mount Everest (SME) project in 2011-12 was a partnership of EcoHimal, SPCC, and the Everest Summiteers Association. It hired climbing Sherpas to collect waste on the climbing route and helped SPCC to build waste bins and improve collection methods on the trekking route. When SME brought the waste to Kathmandu for recycling and disposal, a group of young artists asked if they could use some to create art. The artists and SME organised an exhibition and sale in Kathmandu, after which the remaining pieces were taken to Sweden for a very successful exhibition.

Still, the question remains ... what to do with the garbage collected.

An idea was born - Trash to Treasure

Two partners in the SME project, EcoHimal and SPCC, started discussing the creation of an outdoor park of sculptures made from Everest garbage.

The idea was realized when the Saraf Foundation became involved... bringing initial funding and waste management expertise through its associated company Blue Waste to Value⁵ (BW2V). The idea of a park evolved into a Learning Centre with a gallery, workshop, cafe, shop, displays, and accommodation for visiting artists.

The concept of transforming some of the collected garbage into works of art and design products aims to change attitudes about waste.



⁵ Social Enterprise based in Kathmandu, specialising in waste management, recycling, and upcycling.



The promoters of the Centre established a profit non-distributing⁶ company (PND), Himalayan Museum & Sustainable Park (HMSP), to manage the Sagarmatha next Project's Learning Centre and waste management activities. The project showcases new and inventive ways of creating the facility, making garbage into art and innovative products.

The Saraf Foundation has provided initial funding, but more support is required to complete the ambitious plans for the Centre. The Foundation will complete the structure but needs more funds to complete the 'fitouts' (fixtures, furniture, equipment), and the programming and content for the Centre. EcoHimal and SPCC bring organizational experience from working in the Everest region.

Organizations

ECOHIMAL NEPAL	SARAF FOUNDATION	SAGARMATHA POLLUTION CONTROL COMMITTEE	HIMALAYAN MUSEUM & SUSTAINABLE PARK	SUSTAINABLE MOUNTAIN ARCHITECTURE
<p>National NGO working in Khumbu region for over two decades. Lead organization in implementing "Saving Mount Everest" project from 2011 to mid 2014.</p>	<p>National organization for social welfare and environmental conservation.</p>	<p>Local organization dedicated to managing waste in the Mt. Everest region. Local partner in implementing "Saving Mount Everest" Project.</p>	<p>Non profit company dedicated to environmental preservation and waste management through innovative initiatives.</p>	<p>Non-profit organization. focuses on sustainable design for mountainous areas of Nepal and improving building methods in the mountains by utilizing the contemporary knowledge of innovation.</p>







Saraf Foundation

Saraf Foundation for Himalayan Traditions and Culture – is a non-profit distributing company founded by Mr. Arun Saraf in 2015 for the preservation, restoration and documentation of art and heritage of the Himalayan region. The rapid urbanization and development has stressed the ecosystem and the Foundation strives to provide a balance in this chaos. The Foundation collects and documents photographs, maps, letters, drawings, or any item that holds significance towards making the history of Nepal accessible for future generations.

EcoHimal

Eco Himal Nepal is a national NGO founded in 2009 with the goal of achieving sustainable development through community empowerment in Nepal's mountain region. Having worked in

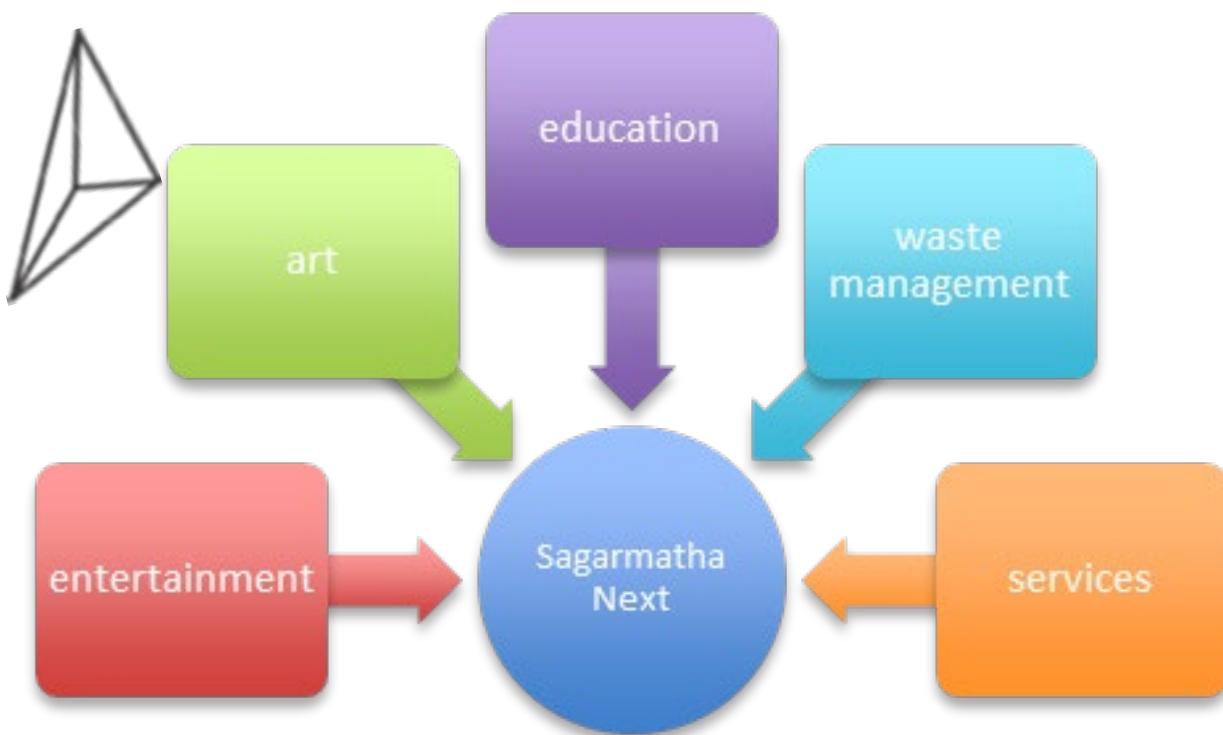
⁶ Profit Not Distributing company... in other words a non-profit company where the profit supports ongoing activities.



Nepal since 1992 as the Asia Regional Office of Eco Himal, an INGO, Eco Himal Nepal have more than two decades of experience in livelihood enhancement through sustainable development and community capacity-building using an integrated and participatory approach.

SPCC

The Sagarmatha Pollution Control Committee (SPCC) is a community-based NGO set up by the local Sherpa people of Khumbu in 1991. It is the lead organization working to manage waste in Khumbu Region, which includes Sagarmatha National Park, its Buffer Zone, and the main Everest trekking area. SPCC has been continuously working to keep Khumbu clean by collecting and managing garbage, strengthening community participation, and doing public education.



More than a museum – a place of learning and inspiration

The **Sagarmatha next Centre** aims to create awareness, generate revenue, and innovate by upcycling garbage into sculpture, art, and design products. The production of these design products aims to create cottage industries in the region. The Centre and its supporting production can only handle only about 5 – 10% of the waste, so most waste would need to be separated, processed, and removed from the region by SPCC and trekkers as part of our "carry me back" initiative.

The Learning Centre includes a gallery to display the art and sculptures and an Learning hall with exhibits to teach visitors and locals about the Himalayan environment, local culture, socio-cultural changes, and waste management in the region. The Centre aims to attract students and youth from Nepal and make them aware of environmental conservation through proper waste management systems, which can be replicated in other mountain areas.



More than garbage collection – what to do with the waste

Sagarmatha next aims to support SPCC in dealing with garbage by facilitating implementation of a waste management plan. Profits generated at the Centre -- from the entrance fee and sales of artwork and design products upcycled from garbage -- will be available for SPCC to provide the waste management services and maintain the waste management infrastructure.

SPCC made the plan jointly with BW2V, which acts as a consultant to SPCC. The plan includes waste management solutions for all areas in the Khumbu Valley except for Base Camps and climbing expeditions.

Currently, most garbage from the trekking routes goes into numerous waste pits. The waste is generated in the villages where the trekkers use the tea houses and consume products and services. Either the locals themselves or collectors hired by SPCC take the waste to these pits where it is left and burned.

The Sagarmatha next project goes beyond a clean-up campaign by supporting management of the waste after it is collected. We are working to solve the problem of moving the waste on these trekking routes where humans or pack animals must carry it.

The plan developed by SPCC and BW2V gives details for a formal waste management system and infrastructure including environmental stations (waste collection centres) and Material Recovery Facilities (MRFs). First, the system will promote proper segregation of waste both at sources (tea houses and shops) and at the environmental stations. Then, it will provide a system and facilities for reduction of the waste volume by shredding and bailing at the MRFs.

SPCC and trekkers will the carriers of the waste out of the Khumbu Valley. The 'carry me back' initiative is our way of providing trekkers with an opportunity to participate in reducing their environmental footprint. The waste processed at the material recovery facilities will be put in 1kg bags and offered to the trekkers to take back with them to Lukla and then to Kathmandu airport where they deposit the bags in bins. From here, BW2V will manage the waste. A simple selfie or post will confirm that the trekker gets a reward from Sagarmatha next.

Sagarmatha next Project

aims to create a nexus for tourism, environment, and sustainability by:

- Reducing the **environmental impact** of tourism and development so that the region can be preserved for future generations
- Creating a system for the **removal of waste**
- Changing the perceptions of garbage by **up-cycling waste** to create art and design products. The Centre provides exhibition space for artists and arranges events and exhibitions that promote local, national, and international interest





- Creating an Inspirational **Learning Centre** for trekkers, mountaineers, the local people, and students and youth from Nepal so that they can learn and exchange knowledge about environmental conservation, eco-tourism, and climate change. An outdoor learning curriculum is being developed.
- Creating **local employment and job opportunities** for the locals by supporting locals to develop skills to make souvenirs and useful products from up-cycled waste.

The Sagarmatha next Centre

The Learning Centre facility has four buildings that create a courtyard as a gathering place that links the activities in each building. The Centre integrates into the environment in several ways. The sense of energy and movement make the buildings special architecturally.

The complex of buildings was designed to sit with the natural flow of the land to blend into its contours. The pointed shape of the buildings allows the wind to flow around them. The curved buttresses in long walls make the structure more earthquake resistant. The construction uses local materials as much as possible. The design team determined that dry stone walls require more heating, cement mortar makes the building colder, but that the traditional mud mortar is best for thermal insulation.

Welcome area: As the first stop for visitors, it is easily visible and offers information about the Centre and the different activities on offer from staff, an information board, and booklets.

Learning Centre: As a 'museum,' the Learning Centre presents a wide range of topics from up-cycling and environmental considerations to local ecology and cultures. Within the space, a film salon has been created to show various documentaries. Digital displays, physical exhibits, and Virtual Reality (VR) presentations create an immersive learning experience.

Workshop: In this hall, artists and local artisans will create sculptures, art and design products from collected waste materials. The workshop will also be used for demonstrations for visitors to observe and then even make their own souvenirs. Tasks like melting and welding will be done on the workshop deck, but the floor will be heat resistant and robust to handle heavy equipment.

Gallery: As a highlight of the Centre, the Gallery features trash to treasure - the art made by visiting and Nepali artists from the upcycled waste left in the Khumbu Valley.

Shop: The shop will connect to the workshop for visitors to watch up-cycling in action and talk with the workers. It will sell the locally made up-cycling products as souvenirs back to the tourists who brought the waste.

Café: Opening to the southern courtyard, the café will offer beverages and a limited food menu. Part of the interior is a winter garden or solarium that warms up as the day progresses.

Visiting artist housing: The Centre provides housing for renowned artists to come and create sculptures on up cycling themes. These works of art will then be exhibited in the gallery.

Innovative building makes a difference

The design concept and process is being led by Sustainable Mountain Architects⁷, a non-profit with professional and academic affiliations in New Delhi, Amsterdam and Colombo. Sagarmatha next is a special project for the team because it offers the opportunity to contribute to positive

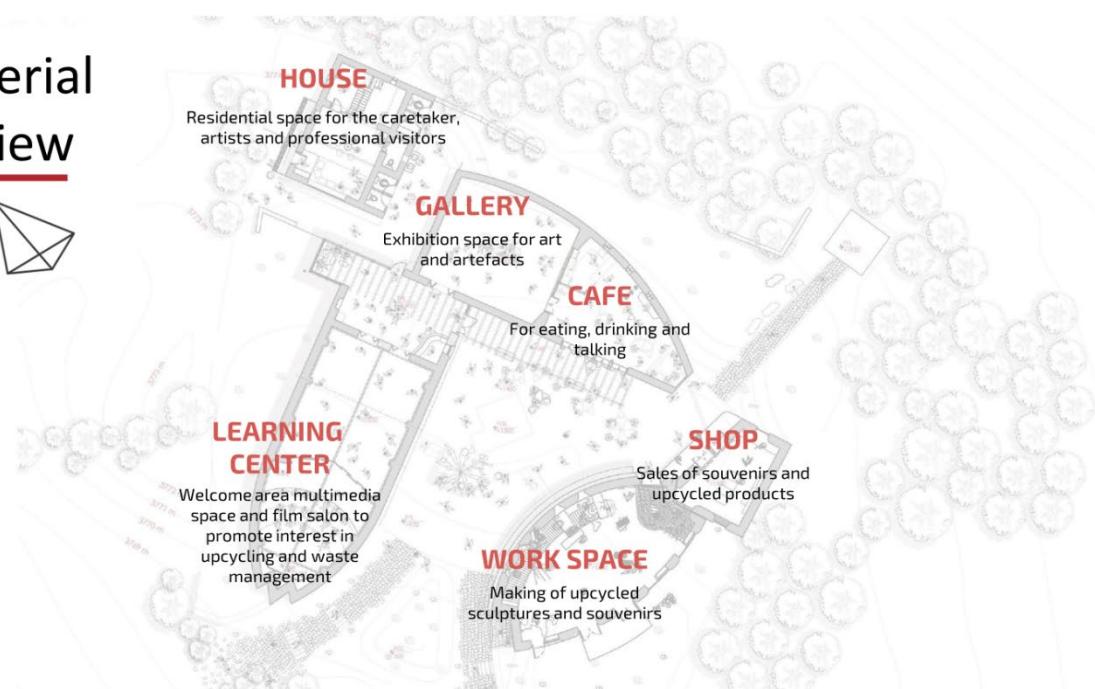
⁷ <https://sagarmathanext.com/2018/05/24/sustainable-mountain-architecture/>



change by presenting another way at being in and with environment to the world. The designers first looked at the accumulated knowledge of the local Sherpas to combine traditional (orientation and materials) and contemporary (acoustics, solar) together.



Aerial View





The Khumbu Waste Management System

Although visitors sometimes remark that they are "surprised at so little garbage," much remains to be improved to manage solid waste, especially after it has been collected.

The challenge is still 'What to do with the waste?' At present most waste is left in numerous pits throughout the Khumbu Valley, where it is burnt.

The waste management plan developed by SPCC and BW2V aims to improve the entire handling process.

The plan suggests that three bins for waste separation would be placed in each tea house along the trekking route. The waste would be transferred from these bins to the environmental stations located along the trails and near villages.

At the environmental stations, the types of waste will be further separated for recycling. The most convenient model for these stations is probably a plinth over an existing pit with a shed with wire mesh walls and a small gate that locks. Inside the shed will be separate chambers to separate dry waste materials like plastic bags, wrappers, PET bottles, glass, metals (heavy and light), rubber, batteries, and textiles.

SPCC will then transfer the waste from these environmental stations to four proposed Material Recovery Facilities (MRFs) in Dingboche, Syangboche, Namche, and Lukla. A small percentage of the waste would be sent to the Sagarmatha next Centre in Syangboche for production and the remaining will be sent to the other MRFs where it will be semi processed (shredded or crushed or bailed) to reduce the volume for eventual transportation to Kathmandu. Either the trekkers or SPCC will bring the waste to Kathmandu, where it is picked up by BW2V.



BW2V thereafter will send plastics, aluminum cans, metals, construction materials, tents, tracks, stove small cylinders, batteries by truck to its own recycling facility or to other recycling plants in Hetauda and Pokhara.

This is an evolving process in which we need to think out all the potential long-term consequences at how we use the waste.



What makes this project special for me...

"For me, Sagarmatha next is an opportunity to show how social entrepreneurship can really work. I believe the Centre will have the required source of funds that will allow us to manage the waste management infrastructure in this sensitive area. Further it allowed me to combine my love for the mountains and waste and create one project out of it."

Varun Saraf – Project promoter, Saraf Foundation director

"What drives me is to protect this pristine mountain valley for local people and visitors to experience its unique nature for the future."

Tommy Gustafsson, visionary and Project Director

"The creation of art and architecture from the waste will form an exquisite balance with the surrounding eco system and its rich and vulnerable bio-diversity. What makes this project special to me is its potential to be a global changemaker."

Prof. Anne Feenstra, Sustainable Mountain Architects

"Sagarmatha next can be a good model to create awareness for locally, nationally and globally. Apart from waste management, the Centre can attract art lovers, artists and environment conscious tourists that is added benefit for the locals. The Centre itself can be an attraction for visitor, who can learn much about waste and environment."

Phinjo Sherpa, Director, EcoHimal

