



CREATORS OF COMMUNITIES

Shared Economic Value through Co-living Cooperative Opportunities



Vision and Value Proposition

We want the neo-hospitality industry to **transform societies**; becoming the driving force that **inspires communities** and other industries to engage in **the very transformation of our world by 2050**. We envision hospitality to become the **cradle of a shared economy**, and to create lasting **responsibilities** towards our planet, ourselves and forthcoming generations. This is **SEVCCO**.

→ Where are we now?



Loneliness

Developed and developing countries are facing a “loneliness epidemic”. Nearly half of Millennials have reported feeling lonely, left out and isolated. Elders’ social isolation is linked with a 50% dementia risk increase, impaired immunity, poor sleep quality, and cardiovascular function. The symptoms of this loneliness epidemic can be seen in the housing market: in the US, the share of single-person households has doubled in the last 50 years and makes up a quarter of the adult population. Unfortunately, this new way of living is also negatively affecting the planet health as it lays at the core of our unsustainable consumption habits.



Depression

The total depression rates increased by 18.6% between 2005 and 2015 to 322 millions. Meanwhile the depression-related economic burden grew by 21.5% from 2005 to 2010 to a final amount of \$201.5 billion in the US (2015). Unsurprisingly, the depression numbers have spiked with the covid crisis, which puts governments at the need to find new innovative ways of tackling the problem.



Isolation

Being socially connected in meaningful ways is essential to human health and survival. With the booming growth of cities and mega-cities, no one is ready to admit that they feel isolated. When cities expand, attracting more and more workers, little is available to make meaningful connections in a crowd of a few million people. This goes against the human nature of living in organised communities.



Equal Opportunity

Despite these gains, many challenges remain: discriminatory laws and social norms remain pervasive, women continue to be underrepresented at all levels of political leadership, and 1 in 5 women and girls between the ages of 15 and 49 report experiencing physical or sexual violence by an intimate partner within a 12-month period. In 2019, women only held 28 percent of managerial positions worldwide



Housing Crisis

Nationally, the gap between income and home value has been rising. Job insecurity, student loan debts, high down-payments, economic factors and increasing home prices all contribute to downward trends of home-ownership among Generation X, Y and Z. As for developing countries, overcrowding leads to faster and wider spread of diseases due to the limited space in slum housing. Poor living conditions also make slum dwellers more vulnerable to certain diseases. Across the spectrum, countries are dealing with a housing crisis and if we do not increase space efficiency millions of people will struggle to find adequate housing.



Education

260 million children were still out of school in 2018 — nearly one fifth of the global population in that age group. And more than half of all children and adolescents worldwide (about 617 million) are not meeting minimum proficiency standards in reading and mathematics. Some 750 million adults – two thirds of them women – remained illiterate in 2016.

PROBLEMS



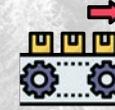
Soil Exhaustion

Roughly 30% of the world’s arable land has been abandoned over the past 40 years, primarily due to extensive deforestation and desertification. Furthermore, 52% of the land currently used for agriculture is moderately to severely affected by the negative effects of soil degradation.



Carbon Emissions

Much of the world consumes and derives their energy from fossil fuels and other unsustainable sources which contributes tremendously to carbon emissions. According to Forbes, renewable energy is now becoming cheaper than other alternative sources of energy and will continue to shape the energy grid of the world. With reducing costs, it is becoming imperative for the hospitality industry to switch its grid to renewable energy.



Linear Production & Waste

When we reach the estimated population of 9.6 billion by 2050 we would need the equivalent of almost three planets to provide the natural resources to sustain our current lifestyles. Electronic waste grew by 9Mt since 2014 and of that, less than 20% of that waste was recycled. Additionally, rising fossil fuel subsidies for production (estimated at \$427 billion) continue to contribute to the climate crisis. Lastly, 13.8% of food is lost within the supply chain.



Waste Management

The current trajectory of food waste will rise by a third by 2030; representing the third largest emitter of carbon dioxide in the world. Reducing such food waste throughout the value chain is estimated to be worth upwards of US\$ 405 billion per year by 2030. The world generates 2.01 billion tonnes of municipal solid waste annually, with at least 33% of that is not managed in an environmentally safe manner.



Inefficiencies and Energy

Smart hotels save roughly 40% on their energy costs by automatically responding to vacant room patterns and adjusting the thermostats to conserve energy when a guest is not in the room. Benefits of green architecture include a decrease in utility costs, increased guest satisfaction and loyalty for sustainable measures, and a higher return on investment in the real estate market.



Slums

Roughly 863 million people reside in slums and will continue to suffer from respiratory illnesses perpetrated by pollution. Furthermore, access to basic hygiene measures, medical attention and care, and clean sanitation. Additionally, waste management is severely limited in slums which leads to environmental degradation.

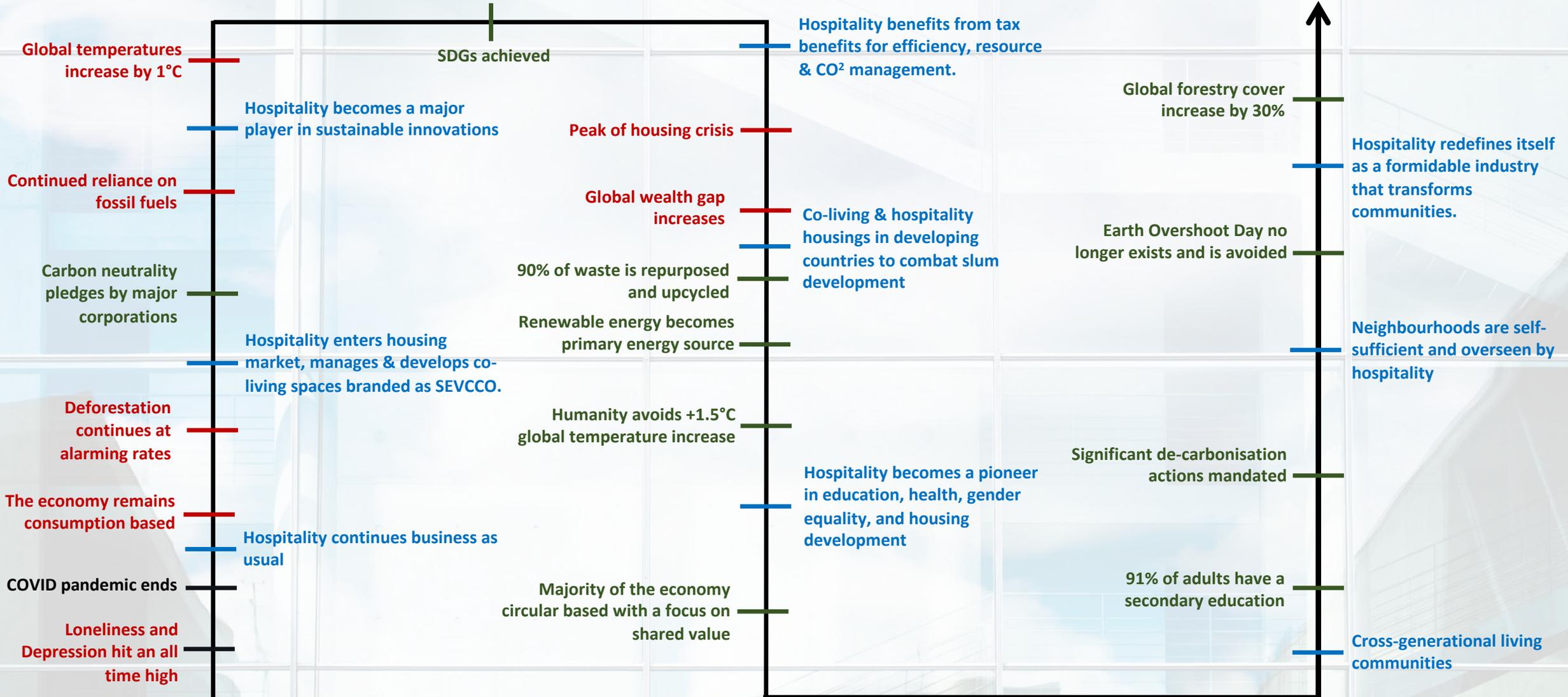
TIMELINE

2030

2050

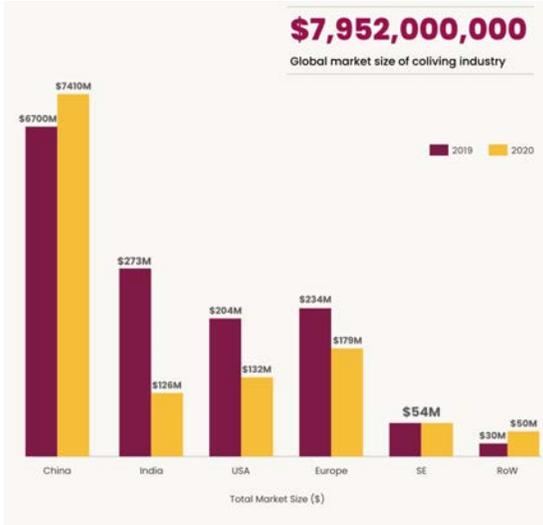
2020

2040



The Co-Living Landscape

Market size 2019-2020

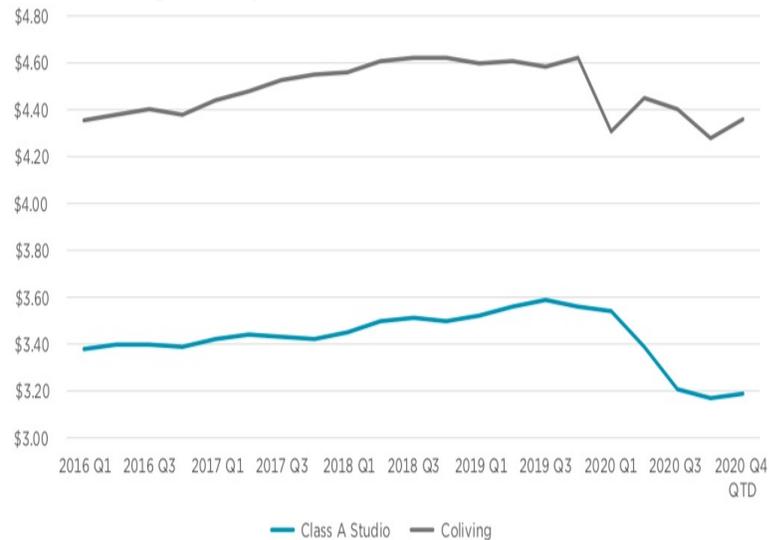


A housing crisis is taking place in many developed countries due to the unexpected exponential growth of cities, misaligned with urban planning.

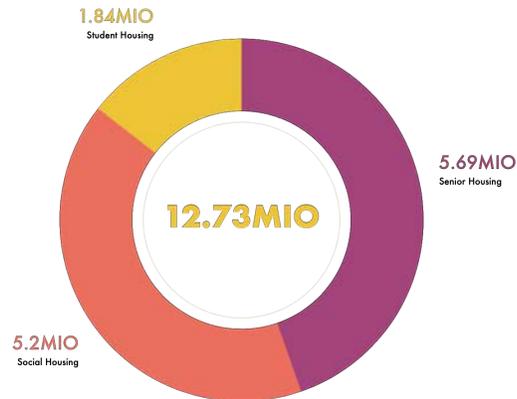
Furthermore, co-housing is growing in popularity among young and old around the world as a way to improve social connections and decrease loneliness, among other benefits like cost efficiency and sustainability.

“Homes are getting smaller, rent are going higher, people are moving away from ownership, given a better alternative”

Effective Market Rent Per Square Foot in the US market
Co-Living vs Comparable Studio Product



Existing co-living market (UK 2019)



Competition

Co-living industry leaders



Chinese Market Leader
Based on leased buildings
>1.4 million tenants



Indian Market Leader
Based on intermediary model
>50 thousand tenants

Hospitality entrants



Operator Benefits

- Venturing into popular employment hubs and transit hubs with affordable rentals and higher operating income levels
- Significant demand in a low competition market – ensuring first mover advantage and high occupancy levels.
- Emerging sector with high interest from institutional investors and venture capital funds.
- Gain market share from the current, unorganised market through tie-ups with landlords and local developer.
- Co-living assets continued to maintain a 23.2% rent per square foot premium over the average of studio rents in comparable markets as of Q3 2020.

Horizon 1 - 2030

Horizon 1: Defend and extend current businesses with SEVCCO.



By leveraging the efficiencies gained through sharing resources, spaces and moments, hospitality can create shared value for **planet**, **individuals**, and **businesses** alike.

ASSET MANAGEMENT + EXPERIENCE MANAGEMENT + OPERATIONS MANAGEMENT
= HOSPITALITY INDUSTRY



Planet

Decrease waste production and increase energy efficiency through sharing.
Increased accessibility to sustainable living practices by taking the weight of sustainable infrastructure investment from individual to business level.



People

Gained time efficiency through centralising processes like recycling, cleaning and cooking.
Decrease loneliness, depression and isolation through community programming.
Increase value for money in the housing market through shared spaces.
20-30 % Rent discount to comparable product.



Business

Steady flow of income even during travel restricted times such as COVID.
Hotel owners and investors can improve rental yields by up to 12.1% if they convert an existing property into a co living scheme. SEVCCO will become incubators for development.



Sustainability Drivers

- Waste Recycling Facilities
- Air Purifying Operated Garden
- Zero Waste Grocery Store
- Green Building Standards
- Solar Cells
- Facilitated Ride Sharing
- Sustainability and Wellbeing as core value of the community.
- Efficiency gain of workforce through improved overall well being.



Customer Value Drivers

- Equipment Sharing
- Community programming platform to organize events and activities.
- Integrated F&B Outlets as alternative to home cooking
- Increased Flexibility through shorter lease contracts.
- Integrated Co-Working Space
- Niche focused communities that promote net working and collaboration.



Profit Drivers

- Cost efficiency through economies of scale.
- Potential government tax cuts as measure against housing crisis and loneliness epidemic.
- Use of existing brand awareness of hotel brands to attract customers.
- Private equity participation from Goldman Sachs, Softbank, Sequoia Capital, IDFC, Mirae Assets etc

To ensure the hospitality industry's longevity and growth while progressing into the volatile future ahead, the sector should expand its offering to fill the gap in the housing market by offering **sustainability focused community living**.

Horizon 2: 2040

Exploring profit-making opportunities in the slums

Community Living in Developing Countries

Slums are the symptom of non-functioning urban development, management and inequality. They reduce efficiency, the growth of cities and businesses while destroying the local eco system through environmental degradation and the depletion of natural resources.

AN UNCAPTURED MARKET OF
\$5 TRILLION
IN PURCHASING POWER

Today's developing countries will be home to the future' biggest megacities, hosting colossal potential for economical growth. It will be crucial for the survival of the planet to ensure the sustainability and efficiency of this growth.



Horizon 2: Explore and build emerging businesses.



Public-private partnerships

- High volume, low margin markets are backed by public entities for security
- Hospitality provides additional finance and expertise in the development, operation and implementation of neighbourhoods

Communities as clients

- Individuals are not interesting, but a collective organization is
- NGOs and CBOs provide credit guarantees on slum-based investments
- They require all basic services & products and hospitality can provide most of them, in large volumes

Leveraging high-end markets

- Building operated mixed-housing development create affordable housing and no income exclusion
- Governments ease restrictions for new development including low-income serviced housing
- Marketing of philanthropy

Leverage community-wide services

- Large-scale purchases and preparation of food = economy of scales.
- Cost efficiency will benefit both companies and low-income households.
- Services provided by the local community members under the management of the hospitality brands.

Triggering reverse migration

- Reduce urban migration by promoting WHS and off-the-beaten-path tourism destination
- Creating employment opportunities outside of cities to create and maintain tourism infrastructures
- Existing support by NGOs

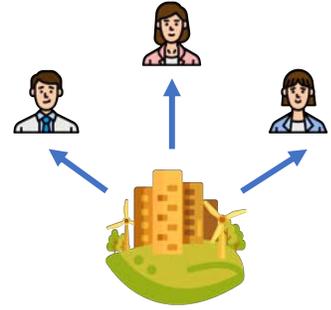
Local economy & financial security

- Providing increased income-gaining potential through the development of inclusive communities
- Instant payment/monthly passes for services and goods reduces the risk for private companies to supply low-income communities

Horizon 3: 2050

People and Planet in a Symbiotic Relationship

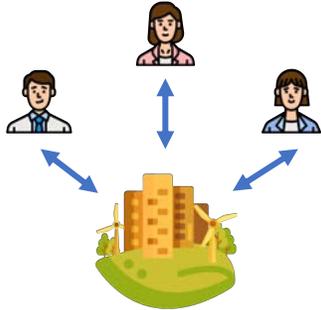
TOP-DOWN



SEVCCO 1.0

The "Top-Downers" - these create community "animations" such as events, gatherings, or ceremonies, but don't involve the residents in their creation. The current state of hospitality.

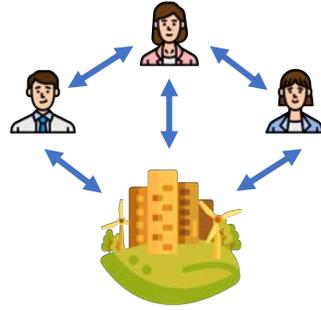
FACILITATORS



SEVCCO 2.0

The "Facilitators" - these operators involve the community in its own creation, meaning empowering residents to activate their needs and giving them the opportunity/responsibility to shape the communal experience.

SYSTEMS



SEVCCO 3.0

The "Systems" - in this case, operators train residents to be self-sufficient and to have a community that is self-run, whereby residents are fully responsabilized.



Horizon 3: create entirely new possibilities and competencies.



The role of a co-living operator is to create a **feeling** of community, meaning an **emotional connection** between people. This can only happen if you create systems that **create interaction** between residents: giving residents **ownership** over their own journey and because you give the community a **common goal**.

The goal? To reach stage whereby planet & people in a **symbiotic relationship** where both improve in a harmoniously for mutual benefit. This can be best achieved in the "Systems" stage. This is what we envision SEVCCO to be.

Having a stronger community impacts the financials in five core different ways: The **Onboarding Process** is longer and more resource-intensive, **Human Resources** can increase if a more mature, emotionally intelligent community facilitator is needed, **Event Costs** vary and are reduced the more the community is involved, **Maintenance Costs** are reduced as stronger communities take more care of the place, and **Acquisition Costs** are also reduced due to stronger word of mouth.

The answer lies in the **social return on investment (SROI)** - namely, stronger community feelings and therefore a bigger emotional and transformational impact on the resident.

Hospitality Institutions act as **Community Builders** through the development of multi-use complexes that address the most key issues of the time.



Estimated 18-month costs on an average community.	Top-Down	Facilitators	Systems
Community Cost per Resident	\$4,830	\$5,990	\$2,580
SROI (Community Feeling)	3/10	7/10	10/10

Creating an ecosystem whereby people and planet **co-exist together** in a harmonious relationship.

This is SEVCCO.

Sustainable Innovations for SEVCCO in 2050

Integrating Technology and Co-Living



Integrated **closed-loop supply chain model** whereby food waste is fed back into the value chain, the development of transparent supply chain platforms, the **utilisation of AI** to facilitate efficient supply chain management regarding sustainable transportation logistics and stock management and food production., sustainable packaging modifications for **extended shelf life**, and finally, a programme initiated with government compliance to incentivise food providers to reduce their waste.



Transformation to healthy diets by 2050 will require **immense dietary shifts**: double intake of fruits, vegetables and nuts coupled with a 50% reduction of red meats and sugars. There is a great opportunity for hospitality to provide a planetary health plate which is not only tasteful but also encourages healthy eating. Encouraging **protein alternatives** will be a keystone in the F&B industry by 2050 coupled with **personalised nutrition plans** that match a community member's digestion characteristics.



By 2050, hospitality will adopt **100% renewable energy** and will not only perform this through the purchase of renewable energy certificates but also through the investment of new technologies. Whether that be in the sourcing of see-through **solar panels that replace windows** or other technology developed in 2050, SEVCCO will be the first to implement such solutions into the design and operations. As a **carbon tax** is envisioned for 2050, this will significantly reduce such tax and will eliminate the Scope 2 emissions.



SEVCCO will be fed with highly technological **vertical farms** which will reduce resources used in conventional farms. **Hydroponic family** only requires roughly 10% of the water usage and can generate produce over ten times the crop yield of traditional means per square meter. As produce is harvested per order, food waste is further reduced.



Carbon capture & sequestration technology will be integrated within SEVCCO to offset any carbon emissions towards **carbon negative society**. Nearly 1,400 companies have promised to cut their net carbon dioxide emissions to zero over the coming decades.



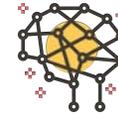
Water-consumption tracking (advanced metering with digital feedback messages), can nudge people toward conservation and **reduce consumption by 15 percent** in cities where residential water usage is high. In many parts of the developing world, the biggest source of water waste is leakage from pipes. Deploying sensors and analytics can cut those losses by up to 25 percent.



Applications such as pay-as-you-throw digital tracking can **reduce the volume of solid waste** per capita by **10 to 20 percent**. Overall, cities can save 25 to 80 liters of water per person each day and reduce unrecycled solid waste by 30 to 130 kilograms per person annually.



Hydrogen-led pathways to cleaning up the environment forecast hydrogen powering more than 400 million cars, 15 to 20 million buses, and more than 20 percent of passenger ships and locomotives by 2050. Although battery-powered electric vehicles exhibit overall higher fuel efficiency, **hydrogen-powered fuel cells can store more energy with less weight**. In short, hydrogen fuel could help the world meet its goal of **decreasing carbon dioxide emissions by 60 percent**.



AI algorithms increase potential revenues through **optimised occupancy** but it will also help hotels **manage their utility costs** through the use of smart thermostats in guestrooms, increase energy efficiency in kitchen appliances through machine learning, produce their own energy through technology such as solar panel windows, and increase accuracy by **automating tasks traditionally held by hotel staff** (Leigh, 2020).



The construction of hospitality will consider the use of cement-alternatives and other **sustainable materials** that **minimise the use of heating and cooling costs**. Through the use of AI, smart hotels **save roughly 40% on their energy costs** by automatically responding to vacant room patterns and adjusting the thermostats to conserve energy when a member is not in the room. Benefits of green architecture include a decrease in utility costs, **increased guest satisfaction and loyalty** for sustainable measures, a higher return on investment in the real estate market for sustainable energy efficiency systems and finally, a **reduced carbon footprint** along the Scope 2 emissions.



Community engagement **supports multi-generational living** as we view this as the historical human default. It **reduces financial risk** for land owners and **increases stability** for communities. SEVCCO resolves loneliness in the elderly, a high-risk factor for health, financial stability for young adults as well as provide a safe environment for children. Community tasks are distributed with each person's health and age in mind, and the elderly become a supporting workforce to the operation of neighbourhoods.



Combining operational and management expertise to community living, hospitality and current hotel chains could bring a **paradigm shift to becoming community creators through government and private partnerships to develop new communities**. Smart communities change the economics of infrastructure and create room for partnerships and private-sector participation.



SEVCCO will be the community builder, yet will rely heavily on the participation of members to **create an ecosystem**. Like any symbiotic relationship, it is imperative that both sides strive to develop a healthy environment that is mutually beneficial. the use of technology should not hinder or replace but aid in the pursuit of interconnectedness amongst members. SEVCCO represents a dream scenario for many whereby imaginations of a **utopic society are realised through the collaboration of all**.



Cooperative Programming - 2050

Automation

Digital integration, computational design and connected appliances; new communities are supported and built on the capitalisation of new technology that increase efficiencies. SEVCCO is equipped with the latest algorithms that **streamline** operational and resource needs to **reduce leakage** within the system. Cyclical and regenerative living form the foundation.

Food

Vertical farming and **IA-driven supply chain procurement** become the norm in SEVCCO. Community canteens and restaurants source directly and harvest on demand to **reduce food wastage**. Partnerships with rural communities abound to **encourage reverse migration**. Dishes are more plant based with the food best tailored to individual dietary, health and supplementary requirements.

Energy

Solar panels replace windows and wind-turbines fitted on the roofs generate renewable sources of energy. Carbon capture technology are located within emission ducts and **repurpose the residual physical carbon** into other products where necessary. Renewables make up 100% of the electricity supply of communities and **reduce urban heat island effects** and pollution. SEVCCO is carbon negative.

Education

Hospitality facilitates education into hospitality and other ventures. With their expertise in talent development and culture, hospitality can **pave pathways** for those less fortunate and **provide them equal and diverse opportunities**. Hospitality encompasses so many work disciplines and can be the job creator that promotes shared value amid economic development.

Transportation

SEVCCO will include many of the basic services as to reduce transportation and circulation of people around the city. Should members require to travel, all transportation vehicles will be **powered by hydrogen fuel cells** with the residual water emission being upcycled into the very ecosystem of the city. Carbon emitting vehicles will be off the roads.

Waste Management

Waste generated by the ongoing operation of the community will be **upcycled and rigorously sorted** to adhere to strict regulations. Whether repurposing metals into new products, food into compost or bio-fuels, or increasing the lifetime value of a product, **circular production and consumption** will form the foundation of all current and future developments.

Relationship and Community Building

Event, sports, and downtime facilities encourage interaction between members, and offer an escape from the digital world by taking advantage of humanity's need for **human connection**. Loneliness, depression and isolationism are at an all-time low with centres dedicated to mental health and wellbeing. Mindfulness and psychological aid is provided by hospitality's human resources department.



The Team

Ecole hôtelière de Lausanne



Lukas Lauber

final year student

Found his love for community-centered hotels at Ace Hotel and has since ventured into the vegetarian fine-dining world.

Currently part of a start-up accelerator program and acquiring a professional self-management mentoring certificate. He believes in creating value through shared experiences.



Stefano

final year student

His sustainability commitment has taken him from working at the Four Seasons Maldives to spearheading Rosewood Hotel Group's sustainability goals at their corporate office. He wishes to transform the hospitality industry to become a leader in sustainability.



Eve Mignot

final year student

Passionate about F&B, sustainability and gender issues, she worked in some of the world's best bars in service and R&D, recently joined the world's first closed-loop spirit distribution technology. She dreams of absolving the barrier between profit and doing good.

Sources

- Amy Novotney, A. N. (2019). The risks of social isolation. American Psychological Association. <https://www.apa.org/monitor/2019/05/ce-corner-isolation>
- Arup Foresight, Research and Innovation and Sustainable Development. (2019). *2050 Scenarios: Four plausible futures* (Rep.). Retrieved 2020, from Arup website: <https://www.arup.com/perspectives/publications/research/section/2050-scenarios-four-plausible-futures>
- Baker, J. L., & McClain, K. (2008). PRIVATE SECTOR INVOLVEMENT IN SLUM UPGRADING. *Global Urban Development*, 4(2), 1. <https://www.globalurban.org/GUDMag08Vol4Iss2/BakerMcClain.pdf>
- Business Commission. (2020). New Report: Valuing the SDG Prize in Food and Agriculture. Retrieved November 29, 2020, from <http://businesscommission.org/our-work/valuing-the-sdg-prize-in-food-and-agriculture>
- Buckley, R., Shekari, F., Mohammadi, Z., Azizi, F., & Ziaee, M. (2019). World Heritage Tourism Triggers Urban–Rural Reverse Migration and Social Change. *Journal of Travel Research*, 59(3), 559–572. doi:10.1177/0047287519853048
- CBRE. (2019). The Rise of Co-Living. https://www.cbre.us/-/media/cbre/countryunitedstates/media/images/multifamily/innovation-watch/co-living/021420_innovationwatch_january-2020-fw.pdf
- Conscious Coliving. (2020). The Conscious Coliving Manifesto. <https://www.consciouscoliving.com/the-manifesto/>
- Cushman & Wakefield. (2019). COLIVING - REDEFINING URBAN RENTAL LIVING <https://www.cushmanwakefield.com/en/india/insights/co-living-report>
- Cushman & Wakefield. (2020). COLIVING DURING COVID-19. <https://www.cushmanwakefield.com/en/insights/covid-19/coliving-during-covid-19>
- EAT-Lancet Commission. (2019). *Healthy Diets From Sustainable Food Systems* (Rep.). Retrieved 2020, from https://eatforum.org/content/uploads/2019/01/EAT-Lancet_Commission_Summary_Report.pdf
- Ferguson, B., & Navarrete, J. (2003). A financial framework for reducing slums: lessons from experience in Latin America. *Environment and Urbanization*, 15(2), 201–216. <https://doi.org/10.1177/095624780301500210>
- Food and Agriculture Organization of the United Nations (FAO). (2020). Land assessment and impacts. Retrieved November 29, 2020, from <http://www.fao.org/land-water/land/land-assessment/en/>
- Food and Agriculture Organization of the United Nations (FAO). (2013). Food wastage footprint: Impacts on natural resources. Retrieved November 29, 2020, from <http://www.fao.org/3/i3347e/i3347e.pdf>
- Food Reform for Sustainability and Health (FRSH). (2018). *CONSUMPTION BEHAVIOR AND TRENDS: Understanding the shift required towards healthy, sustainable and enjoyable diets*. (Rep.). Retrieved 2020, from http://docs.wbcsd.org/2018/07/FRSH_Consumption_Report.pdf
- Hassan, N. & Ahmad, K. (1991) The nutrition profile of the slum dwellers: A comparison with the rural poor, *Ecology of Food and Nutrition*, 26:3, 203-214, DOI: 10.1080/03670244.1991.9991202
- Hegnsholt, E., Unnikrishnan, S., Pollmann-Larsen, M., Askelsdottir, B., & Gerard, M. (2020, August 05). Tackling the 1.6-Billion-Ton Food Loss and Waste Crisis. Retrieved November 29, 2020, from <https://www.bcg.com/publications/2018/tackling-1.6-billion-ton-food-loss-and-waste-crisis>
- Global Hunger Index. (2020). Addressing the Challenge of Hidden Hunger. Retrieved November 29, 2020, from <https://www.globalhungerindex.org/issues-in-focus/2014.html>
- Hussain, T., Abbas, J., Wei, Z., & Nurunnabi, M. (2019). The Effect of Sustainable Urban Planning and Slum Disamenity on The Value of Neighboring Residential Property: Application of The Hedonic Pricing Model in Rent Price Appraisal. The Effect of Sustainable Urban Planning and Slum Disamenity on The Value of Neighboring Residential Property, 11(4), 1144. <https://doi.org/10.3390/su11041144>
- House Monk. (2020). Global Coliving Report 2020. <https://thehousemonk.com/global-coliving-report/>
- House Monk. (2019). Global Coliving Report 2019. https://thehousemonk.com/wp-content/uploads/2020/11/Global-Coliving-Report-2019_TheHouseMonk-1.pdf
- Kadri, R. (2020, September 19). The vision of slum-free Indian cities needs to be viewed through the lens of Inclusive development. Retrieved November 29, 2020, from <https://scroll.in/article/972781/the-vision-of-slum-free-indian-cities-needs-to-be-viewed-through-the-lens-of-inclusive-development>
- Kielland, A. (2015). Evolution in approaches to improve access to education for children living in urban slums. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000232395>
- Kieti, D. M., & Magio, K. O. (2013). The Ethical and Local Resident Perspective of Slum Tourism in Kenya. Retrieved from <https://dergipark.org.tr/tr/download/article-file/372550>
- Leigh, G. (2020, July 06). How Artificial Intelligence Is Going To Change Hotel Stays. Retrieved from <https://www.forbes.com/sites/gabrielleigh/2020/07/09/how-artificial-intelligence-is-going-to-change-hotel-stays/>
- Marx, B., Stoker, T., & Suri, T. (2013). The Economics of Slums in the Developing World. *Journal of Economic Perspectives*, 27(4), 187–210. <https://doi.org/10.1257/jep.27.4.187>
- Michael E. Porter and Mark R. Kramer. (2011). Creating Shared Value. Harvard Business Review Home. <https://hbr.org/2011/01/the-big-idea-creating-shared-value>
- Owusu, G. (2010). Social effects of poor sanitation and waste management on poor urban communities: A neighborhood-specific study of Sabon Zongo, Accra. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 3(2), 145-160. doi:10.1080/17549175.2010.502001
- Owusu, G., Agyei-Mensah, S., & Lund, R. (2008). Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(3), 180-190. doi:10.1080/00291950802335798
- Papargyropoulou, E., Wright, N., Lozano, R., Steinberger, J., Padfield, R., & Ujang, Z. (2016). Conceptual framework for the study of food waste generation and prevention in the hospitality sector. *Waste Management*, 49, 326-336. doi:10.1016/j.wasman.2016.01.017
- WBCSD & PwC. (2018). FUTURE OF HOME: A Lighthouse for future living, today. https://docs.wbcsd.org/2018/10/WBCSD_Future_of_Home.pdf
- Ranganathan, S. (2019, November 20). Smart Hotels Easily Save 40% on Energy. Retrieved November 29, 2020, from <https://www.sensorflow.co/hotels-maximise-energy-efficiency-with-technology/>
- Schaap, J. (2019, May 16). Why is Hotel Technology Lagging Behind the Rest?: By Jos Schaap. Retrieved November 29, 2020, from <https://www.hospitalitynet.org/opinion/4093372.html>
- Social Isolation and Mortality in US Black and White Men and Women. (2018). *American Journal of Epidemiology*, 1–5. <https://academic.oup.com/aje/article/188/1/102/5133254?login=true>
- United Nations Convention to Combat Desertification (UNCCD). (2020). Land and Human Security. Retrieved November 29, 2020, from <https://www.unccd.int/issues/land-and-human-security>
- United Nations. (2018). Food. Retrieved November 29, 2020, from <https://www.un.org/en/sections/issues-depth/food/index.html>
- Tsujita, Y. (2009, March). Deprivation of Education in Urban Areas: A Basic Profile of Slum Children in Delhi, India. Retrieved from <http://hdl.handle.net/2344/841>
- Quantifying the Cost of Depression. (2015). American Psychiatric Association. <http://www.workplacementalhealth.org/Mental-Health-Topics/Depression/Quantifying-the-Cost-of-Depression>