9 Design as Loom: Interweaving Health with Nurturing Care. A Visual Essay on Two Early Childhood Development Centres in Eastern Zambia as Architectures of Health

Tomà Berlanda and Sunniva Berlanda Viking

Abstract

Through a visual essay, the authors argue that health needs to be understood not simply as a medical result, but should instead be the evidence of a holistic attention to care for all, where the physical and conceptual framework of any infrastructure plays a pivotal role in creating the conditions for a planetary well-being. This is evidenced in the narrative of their experience in enabling a collective and participatory design and build process for two pilot early childhood development (ECD) hubs in remote villages in Eastern Zambia. Initiated by a programme launched by UNICEF Zambia in support of the country's Government Seventh National Development Plan, the architectural response proposes the construction of social landscapes of care, benefitting existing cultural practices, bringing new spatial perspectives, and augmenting educational and agricultural capacities. Conceived of as a ribbon of meandering structures, interweaving health with nurturing care, each centre becomes the anchoring point for societal change. Here services are delivered, promoting resilience and social transformation, using a language of scarce material resources, planting the seeds for an evolving, living ecosystem. One marker of the success of the scheme presented has been its replication in eight other sites since 2020, as a lead up to developing national guidelines for ECD centres in the country.

Keywords

Design · Community · Participation · ECD · Africa · Zambia · Architecture · Health

9.1 Introduction and Position

Health is widely understood as a universal right, value, and goal. However, different material, social, cultural and political conditions offer diverse interpretations of health. Importantly, the idea of health is no longer identified simply with the absence of illness. Similarly, what is understood as being an architecture for health is no longer limited to a hospital, or a medical centre, but stands as the result of a holistic interplay between primary developmental functions, and their relationship with their surrounding. To demonstrate our point, and as a contribution to the panel, this visual essay documents a design

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and construction project we have been involved with in Eastern Zambia since late 2018, guiding the construction of integrated community hub prototypes, aptly called "Insaka" centres, a Bemba word for "place to gather".

Operating at the nexus of socially engaged and transcultural design, our studio's commitment is to experiment and cross pollinate with a multiplicity of forms of architecture and urbanism, balancing economic and political forces. Through spatial negotiations and interrogations, our collaborative platform seeks innovative architectural thoughts and processes, bridging cultural, social, and ethical distances between local and foreign building techniques.

Globally, an estimated 43% (or 250 million) children under 5 years of age are not achieving their developmental potential. Children who do not receive adequate health, nutrition, early stimulation, learning opportunities and services, care and protection,—all identified by the WHO in a 2018 document as foundational elements of "nurturing care"—tend to have lowered cognitive, language and psychosocial outcomes, translating to lowered academic achievement in future.

To contrast such risks, UNICEF's Early Childhood Development (ECD) Programme Guidance Note (2017) indicates how young children, from birth to school entry, require access to essential quality health, nutrition, protection, and early learning services to address their developmental needs. To achieve this, parents and caregivers should be supported and engaged in nurturing care with their young children. Evolving skills in early childhood are acquired through interaction with the environment and therefore the parents and caregivers are critical as they are the architects of this environment.

The methodology and approach used here build upon two strands of literature. The first points to elements presented in Ager and Metzer's (2012) structured review of existing approaches and operational frameworks to developing ECD centres. The second is exemplified in Amorós Elorduy's (2021) theoretical framing of the role architecture and design have in providing a nurturing environment for young children (Fig. 9.1).

This is particularly important in a context such as that of rural Zambia, with one of the world's fastest growing populations, projected to almost triple by 2050. Combined with the harsh reality of the country having one of the highest levels of poverty and inequality globally, this requires innovative imagination in terms of securing health for all.

As a response to the programmatic perspective and challenging background, in 2018 UNICEF Zambia conceptualised an integrated approach to ECD delivery. This addresses children (aged 0–6 years) as direct beneficiaries to critical services, whilst at the same time aiming to equip parents and caregivers, who create the primary enriched environments for young children. The result is the creation of "Insaka" hubs within vulnerable communities in two rural villages of the Katete District, to contribute to the Human Development national objective under the Government of Zambia's Seventh National Development Plan (2017–21) and SDG Target 4.2, to ensure that by 2030 all children have access to quality ECD (Fig. 9.2).

The entire life cycle approach underpinning the project, leads to our argument that health needs to be understood not simply as a medical result, but should instead be the evidence of a holistic attention to care for all, where the physical and conceptual framework of the infrastructure plays a pivotal role in creating the conditions for everybody's well-being. As will be further elaborated in the essay, this holistically speaks to four different SDG goals, integrating goal 3. Good Health and Well-being, with goal 4. Quality Education, as well as finding overlaps with goal 2. Zero Hunger, and goal 6. Quality Water and Sanitation (Fig. 9.3).

Operating as designers between a multiplicity of stakeholders, ranging from international donors, UN agencies, NGOs as implementing partners, local and national authorities, and communities, we engaged in creating ensembles where the complex articulation of flexible and evolving spaces between buildings and site is influenced by the layout of traditional compounds.

This was done to establish a clear ownership of the design, and its replicability, and developed

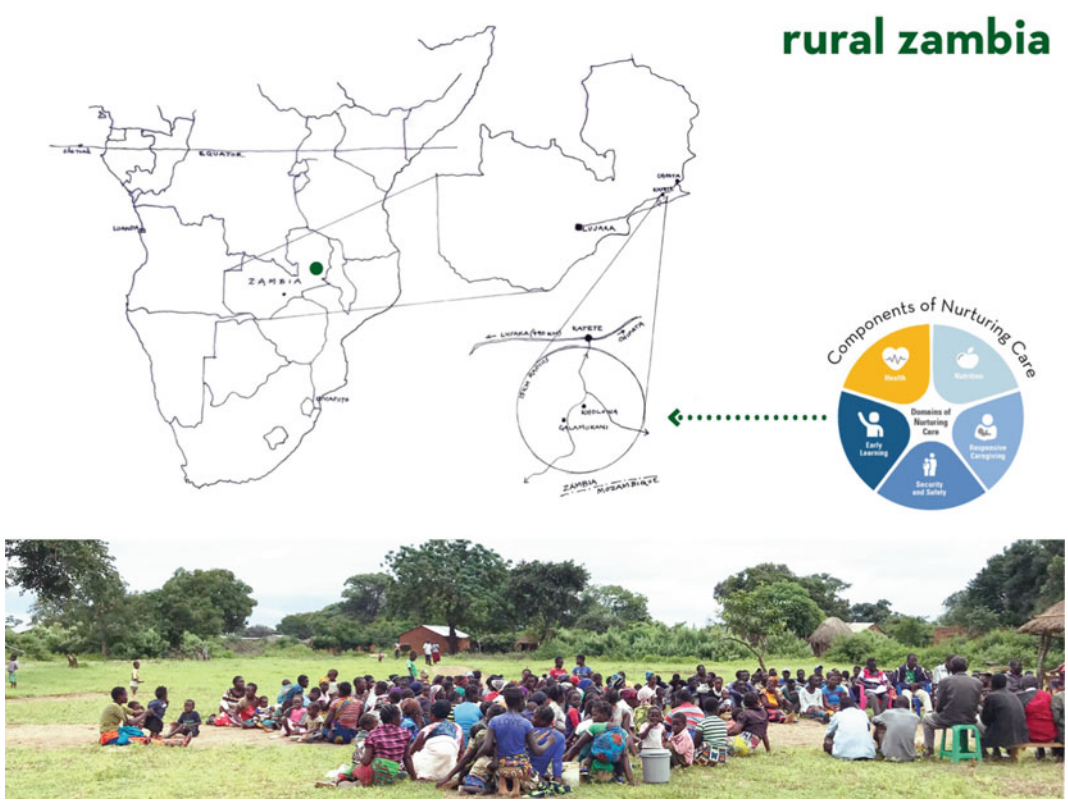

Fig. 9.1 Nurturing care framework and the rural Zambian context

on site as an extensive participatory process to guide the construction of integrated community hub prototypes. The schemes are conceived of as social landscapes of care, benefitting existing cultural practices, bringing new spatial perspectives, and augmenting educational and agricultural capacities (Fig. 9.4).

Kholowa and Galamukani, the two villages we worked in, are located approximately 15 km to the southeast of Katete, the district capital. The two communities, although similar in size, and close to each other, feature differences that can be traced back to their relative proximity to, or distance from, a main road. The Galamukani site is a large flat field that abuts the road, and lies in a relatively barren land, with scarce vegetation surrounding it. By contrast, the Kholowa site is in the heart of a dense village structure, embedded in rich vegetation and agricultural fields, and connected to a busy pedestrian movement network.

To facilitate the provision of services, the Insaka hubs are linked to the nearest health and education facilities and will benefit from the existing community outreach programmes under the various sectors (Fig. 9.5).

UN agencies, NGOs and foreign consultants like us, operate along fraught lines in seeking a balance between imported technical solutions and the ability to involve local inhabitants. By deliberately avoiding an initial design phase, the project allowed for co-production and knowledge exchange, engaging the social fabric of the end users. This meant that we did not arrive with a predetermined design, and "offered" it to the community, but rather initiated a hands-on stakeholder consultation. Whilst living on site, through a set of questionnaires and data gathering, we proceeded to build trust in the process, as well as documenting the availability and financial viability of technical and material solutions. The construction of a 1:1 mock-up made of

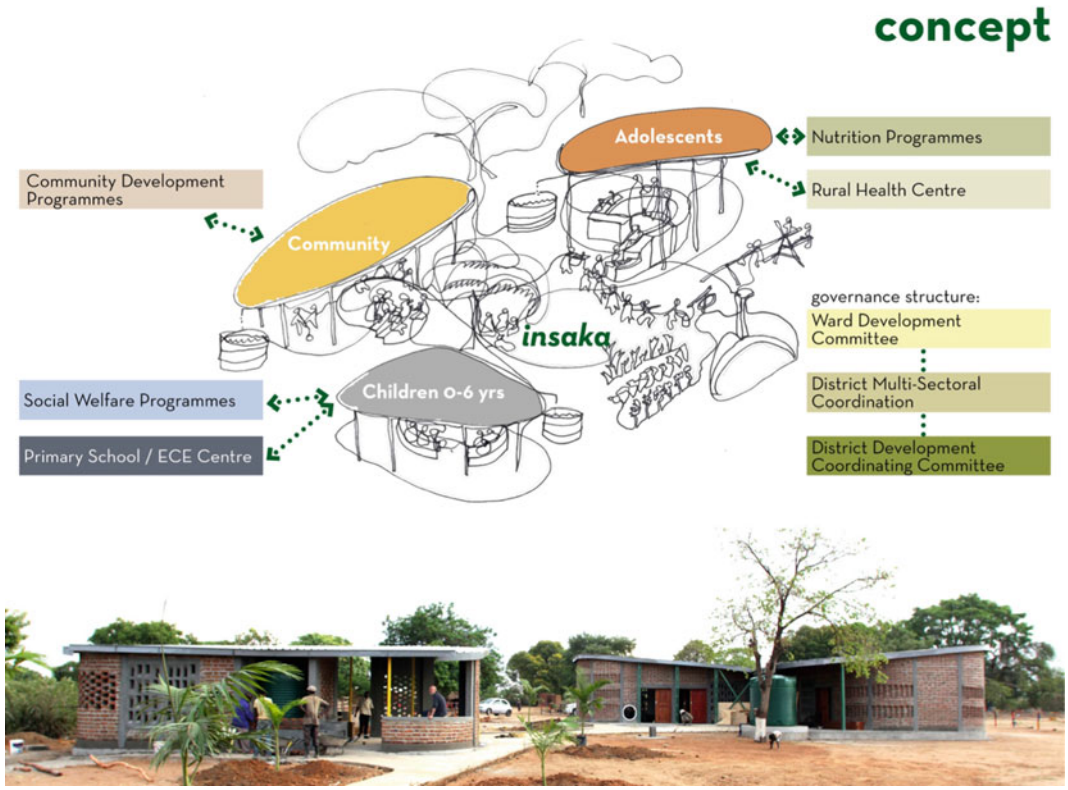

Fig. 9.2 UNICEF and the Insaka concept

primary load bearing elements, as well as cladding and finishing experiments, allowed us to define a grammar of architectural elements that we could then start developing further through the design.

To limit the impact of transport and energy consumption in a period of drought and prolonged electrical blackouts, the design adopted a support-and-infill approach. The structural framework operates as a loom, providing a stable and durable envelope, where perforated brick walls are assembled to provide climatic comfort, absorbing heat, and allowing for airflow, interweaving health with nurturing care (Fig. 9.6).

The different programmatic elements of the Insaka centre are organised around a central courtyard space. This coincides with the belief that education, nutrition, health, and agriculture are all interrelated, and that at their nexus the most significant and thoughtful improvements to daily life can be made. The landscaping, boundary walls, shading trees, kitchen garden, playground, all work with the architecture to create an integrated educational landscape which is born off the ground in response to the climate.

Thus conceived, each hub becomes the anchoring point for societal change, where services can be delivered, promoting resilience and social transformation, using a language of scarce material resources, and planting the seeds for an evolving, living ecosystem (Fig. 9.7).

The lesson we learnt whilst working on this project is that the relationship between architects and community concerns should be further developed and institutionalised, securing the promotion of health. It is an ecosystem made of interconnecting and interacting parts. As such, the design of the ECD centres purposefully integrates the different programmatic components at various scales with the desire that the site be both a hub, and a catalyst for the development of surrounding villages. The result allows waste

Fig. 9.3 Stakeholders: UNICEF/Childfund/communities/designers

products to be shared and recycled, land use to be multifaceted, and the implementation of a kitchen garden and energy generation at a meaningful scale. In addition to environmental benefits the different spaces can be configured to promote cross-pedagogical and community programmes within a productive landscape. The use of locally available resources such as clay and stone make it possible to shorten the supply chain and to spend the construction budget within the local community (Fig. 9.8).

The formal and material choices of the design act as an added educator, and provider of care. Stimulated, healthy, well-nourished children are poised to become the next generation leaders of societal change. As such, the design and architecture exist as a crossroad between educational centre, agricultural hub, community farm, water source, children's playground, biogas plant processor, and health post. Whilst so varied a programme might be problematic in some situations, the multivalent and ever-evolving functions of the Insaka buildings allow them to become a critical part of village life, attracting interest from neighbouring communities (Fig. 9.9).

Care in education is closely connected to health and hygiene. For this reason, thermal and acoustic comfort, as well as protection from rain and wind are critical elements in defining the appropriate nurturing environment. This allows to showcase also for adults in the community, the possibilities of using limited resources in improving the spaces in which children grow, facilitating nurturing care at household level, to maximise the impact of the intervention. The end result is directly linked to achieving SDG target 4. Quality Education (Fig. 9.10).

The infrastructure operates as an integrated provider of multiple services. From rainwater

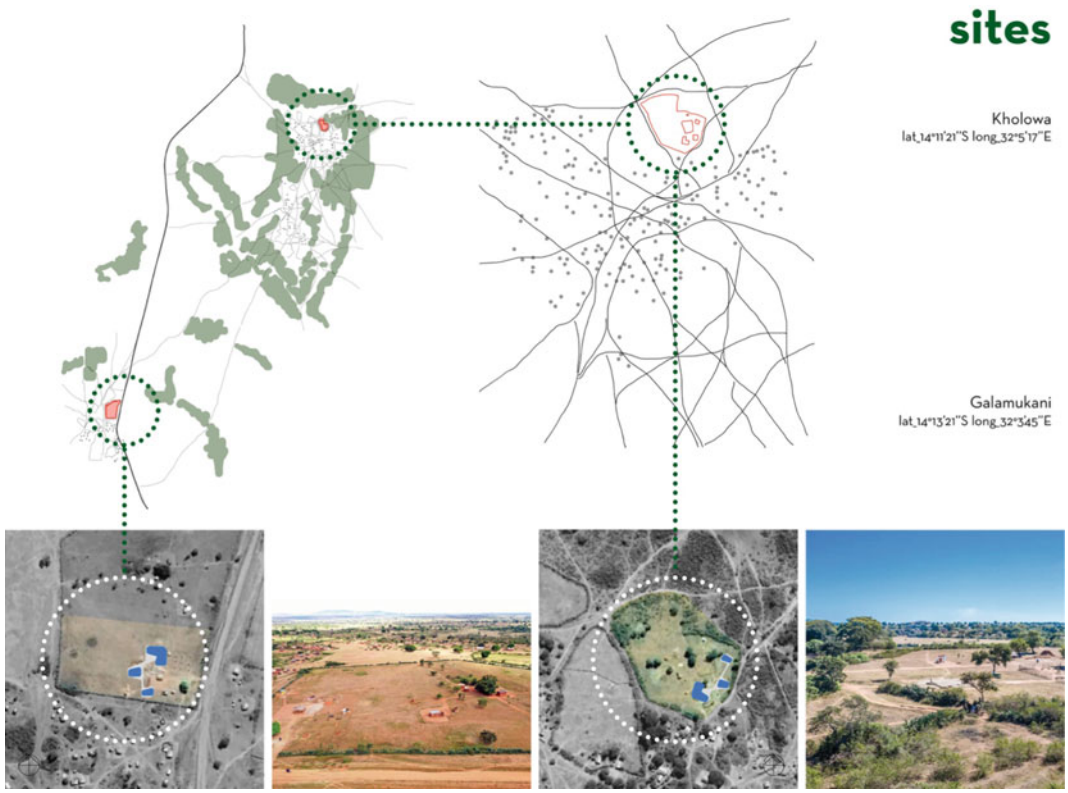

Fig. 9.4 Villages and sites

harvesting, to biogas production, provision of artificial lighting through solar energy panels, the adaptability of the spaces, and their flexibility, facilitates social, cultural, and economic development. The technical decisions taken contribute to achieving SDG target 3. Good Health and Well-being. The storage of rainwater in large tanks creates a viable source for the kitchen garden during the dry season. A bio-digester supplies fertiliser and gas that allows to cook meals without consuming precious wood. The solar panels help charge mobile phones, and power the only artificial lights in the village (Fig. 9.11).

The Insaka also serves as a health outreach post providing community outreach services to children, expectant mothers, and adolescents. Health facility workers perform growth monitoring, immunisation services, basic health screening and referrals, as well as facilitating nutritious cooking classes and hosting Child Health Week activities. Achieving SDG target 2. Zero Hunger, and target 6. Quality Water and Sanitation, were integral to the decision-making process (Fig. 9.12).

The choice of materials and techniques was a balancing act as the community initially asked to employ CO_2 emissions intense ones, seen as a paradigm of progress. Our approach follows two principles: preferencing the innovative use of locally available material and where cement and steel were used and maximising the production of building components on site, to avoid transport and favour low-tech assembly. The use of regionally scarce wood and glass was avoided. The walls are in exposed locally produced kiln fired bricks from glycoprotein intense termite stack grounds, simplifying maintenance efforts and limiting the use of plaster. The intuition behind this stems from, amongst others, Pereira (2008), who suggested how termite mound soil/clay has better qualities than ordinary clay

Fig. 9.5 Assemblages

for brick moulding in terms of strength and elasticity, being more resistant to weather, abrasion, and penetration of liquids and antibacterial and antifungal properties (Fig. 9.13).

One marker of the success of the scheme presented has been its replication in eight other sites since 2020, as a lead up to developing national guidelines for ECD centres in the country. Questioning binary distinctions—urban and rural, non-indigenous and local, rich, and poor—we maintain that understanding the ecosystemic role ECD centres have in, and for, communities, is a critical component of their capacity to operate as catalyst for urban growth of surrounding villages and landscapes.

Particularly in the global south and the post-colony we believe it is architecture's responsibility to imagine spatial infrastructures where healthcare-related services to be delivered play an integral role to redress environmental, economic, and racial injustices. Ultimately, we posit one should translate the notion of "dispersion" across social and cultural barriers, to achieve the spatial, and social, contract that will be necessary to mitigate inequality, and envision better, inherently healthier, futures.

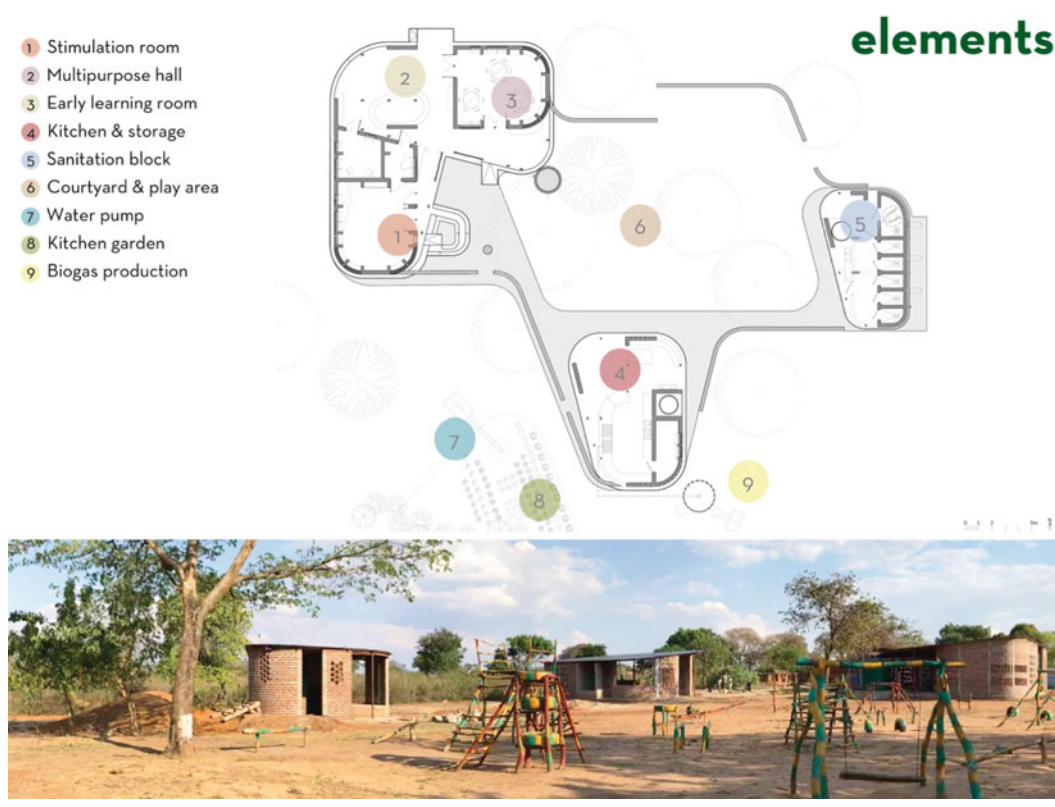

Fig. 9.6 Elements

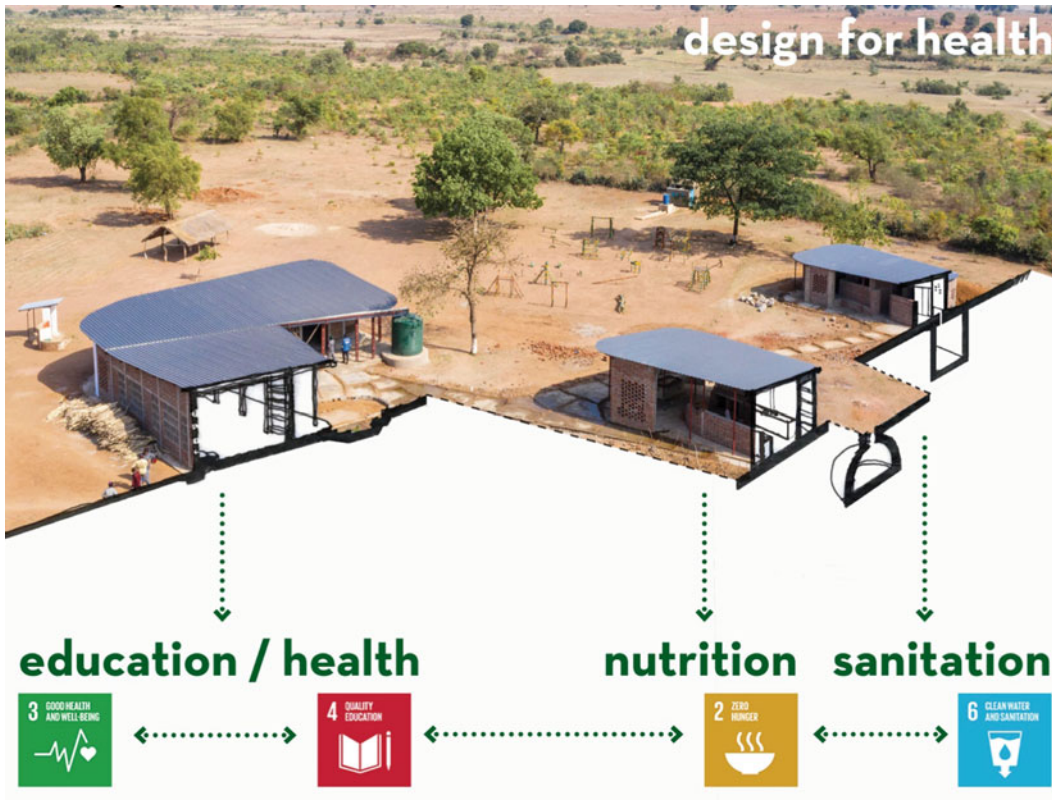

Fig. 9.7 Design for health

Fig. 9.8 Environment

Fig. 9.9 Stimulation

Fig. 9.10 Framework

Fig. 9.11 Nutrition

Fig. 9.12 Systems

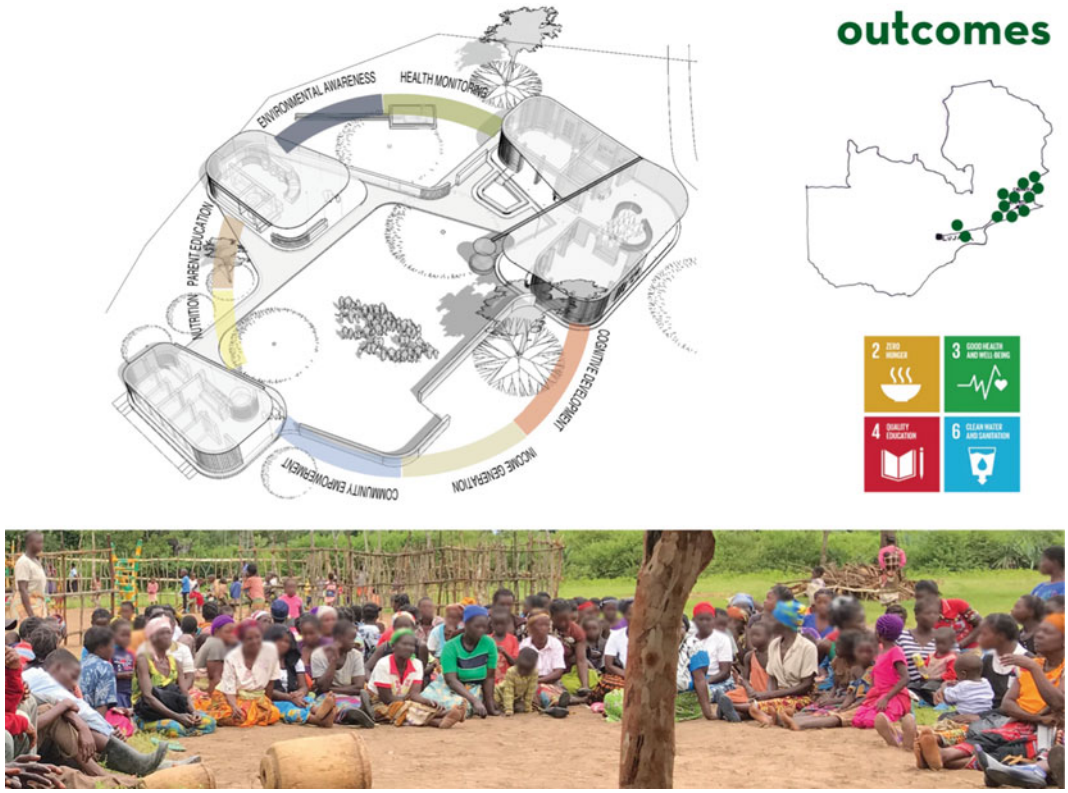

Fig. 9.13 Outcomes

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