



ARKNA

ECO-PARK

MASTERPLAN 2016

EXCEPT
INTEGRATED SUSTAINABILITY

Version 2.42
May 27 2016

"Looking at beauty in the world, is the first step of purifying the mind."

Amit Ray

INDEX

WHAT IS ARKNA ECO-PARK?	5
1. VISION & GOALS	7
2. PROGRAM OVERVIEW	20
3. METABOLIC STRATEGY	21
4. DESIGN PRINCIPLES	46
5. SPATIAL STRATEGY	49
6. BUSINESS STRATEGY	57
7. MARKETING STRATEGY	70
8. ROUTE MAP	108
APPENDIX I – PROGRAM	110
APPENDIX II – GANTT CHART	116
COLOPHON & IMAGE CREDITS	142



WHAT IS ARKNA ECO-PARK?

Arkna is a self-sufficient eco-park in the east of Estonia, close to the town of Rakvere, about 100km from Estonia's capital Tallinn. It is developed alongside the Arkna village and its community, with roots dating back for centuries with many old structures sited in a lush forested landscape. The park is centered around the old Manor as well as its agricultural production activities and tourist program and events.

The Arkna Eco-park Ambition

Arkna is a place where body and mind come together in a natural setting where both are fed in the most sustainable manner. Its ambition is to become a world class destination for those interested in sustainable lifestyle, technology, food production and holistic healing.

The Arkna Masterplan

This masterplan outlines a framework to achieve this goal, with a vision, goals, spatial and technical framework, communication plan and action plan. Following this framework, Arkna can become largely self sufficient in energy, water, food and basic services, a tremendous achievement. This allows Arkna to attract international visitors as well as support.

At the same time, Arkna sets out to become a major tourist destination in Estonia, redefining what leisure and learning is, and strengthening the country's portfolio with a unique proposition.

This masterplan has been developed in tight cooperation with Arkna's founders and pioneers, as well as several inspiring partners. Our thanks go out to all that made this project possible, first and foremost, of course, Arkna Eco-Park's founders Olle Saare and Piret Kuldkepp.

Masterplan development

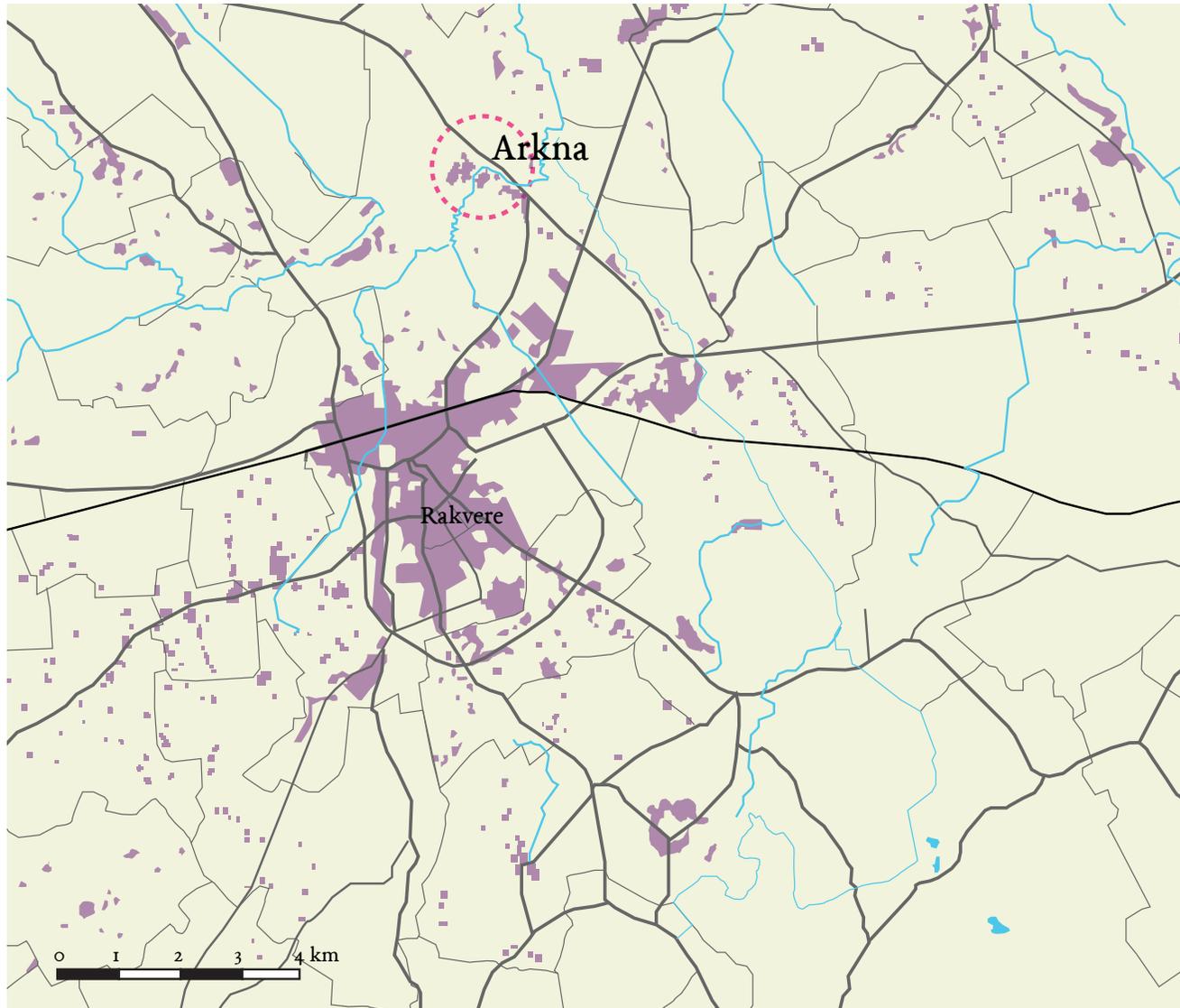
As with any masterplan, this is a living document that changes direction and content as Arkna is developed. We hope it brings oversight and insights, and allows the many partners required to make Arkna a success to join forces towards its noble mission.

*Tom Bosschaert
Director, Except Integrated Sustainability*



› The Arkna Eco-Park Masterplan Team

› Territorial map of Arkna



1. VISION & GOALS

1.1. VISION

Arkna Ecopark's vision is to redevelop the existing Arkna village into a globally recognized self-sustaining eco-park by 2020 that draws local and international tourists who value natural wellness, health and heritage, in combination with education, cultural events, sustainable agriculture, tourism and local community.



› Arkna Manor and its surroundings



1.2. MISSION

Arkna Eco-Park's mission is to build on and improve the historic value and heritage of Arkna and its community, and promote ecological and healthy lifestyle for local and foreign tourists. We want to be an internationally competitive tourism attraction, in combination with demonstrating a healthy community with self-sustained production where history, innovation, education, culture, and leisure are combined.

1.3. AMBITION

Arkna manor is turning into a place that, through ancient legends and stories very much alive today, helps guests understand their personal stories to bring meaning, understanding, clarity and order to their own life. In the healing grounds of Arkna the body becomes alive and the restless soul becalms.





1.4. GOALS

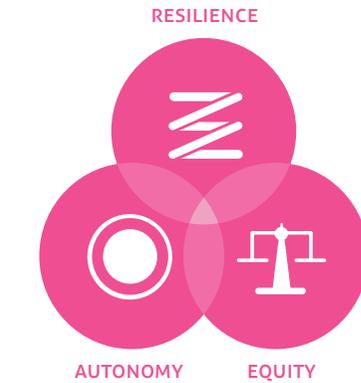
1.4.1. Arkna Eco-Park system goals

The goal of Arkna Eco-park is to become a pioneering example of sustainable development with a healthy year-round living and working community. Arkna builds its sustainability on a highly resilient environment, supported by balanced self-sufficiency in operations and exemplary social justice.

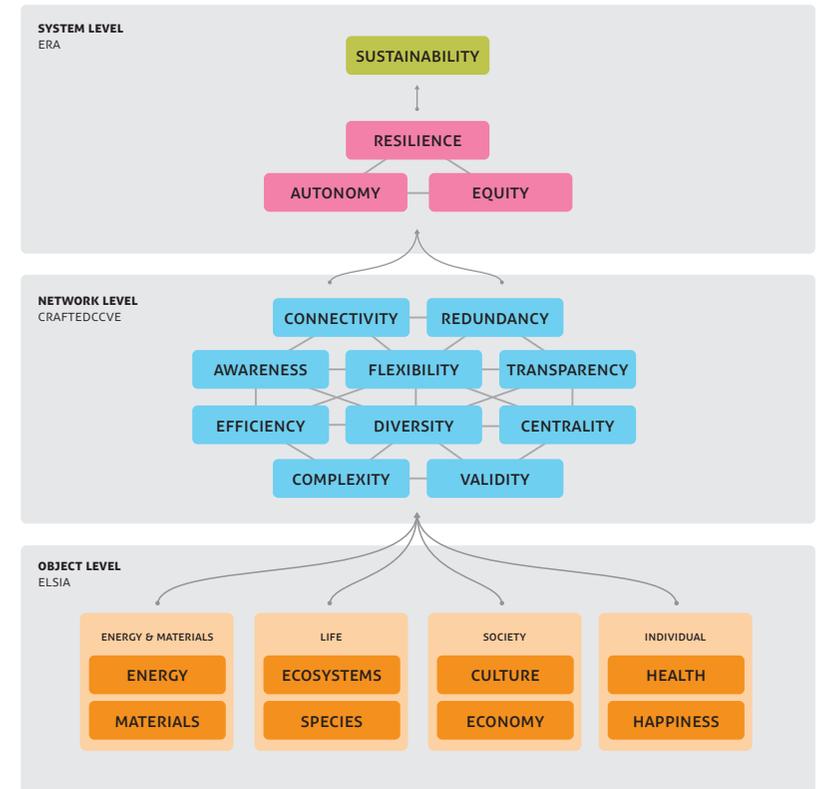
Arkna contributes to the health and wellbeing of all visitors and community members, generates inspiration and valuable educational quality for all ages, from students to professional groups. It combines traditional values and knowledge with innovative practices in an environment that is diverse in philosophy, program, solutions and methods.

Arkna aims to become a premier example of true sustainable development, and lead the way for other regions in Northern Europe and beyond to follow.

A sustainable Arkna is realized by making it resilient, autonomous and socially equitable, as per the Symbiosis in Development (SiD) definition of sustainability.



› The 3 components of Sustainability



› Sustainability measured: from system to object level (Symbiosis in Development)



Arkna Resilience

Arkna aims to maximize resilience of its operations and community through effective resilience management where diversity, redundancy and flexibility of markets and services goes hand in hand with a strong local community, economic health and a widespread perception of international value. Resilience is maintained by redundant infrastructure connections with its regional environment.

Arkna Autonomous

Arkna maximizes local autonomy for essential life support systems such as water, basic food, waste processing, energy, sustainable operations, community services, and a healthy mental and physical environment. To increase resilience of itself and surrounding communities, Arkna backs this up by exchange networks for basic resources with the surrounding community. Arkna endeavors limited self-sufficiency in secondary support needs such as production of building materials, tools, clothing, and household wares.

Arkna Socially Equitable

Arkna's main value lies in its community. Inhabitants, employees and visitors are the lifeblood of Arkna and maintain a fair and transparent relationship with one another where freedom and responsibility go hand in hand. Problems can be anonymously reported and without fear of retribution. Both community and inhabitants have a collective deciding vote in aspects that directly influence on matters concerning their health and wellbeing

1.4.2. Arkna Strategic network goals

Awareness

1. Knowledge gathered and shared willingly, online and offline
2. Values, solutions and methods communicated to audiences on-demand through eg. audio-tours for visitors, virtual tours for online visitors, guided tours, paper exploration guides

Connectivity

1. Reach-out programs run year round to attract and connect visitors, via PR partner
2. Use of social media to connect with visitors, partners and community

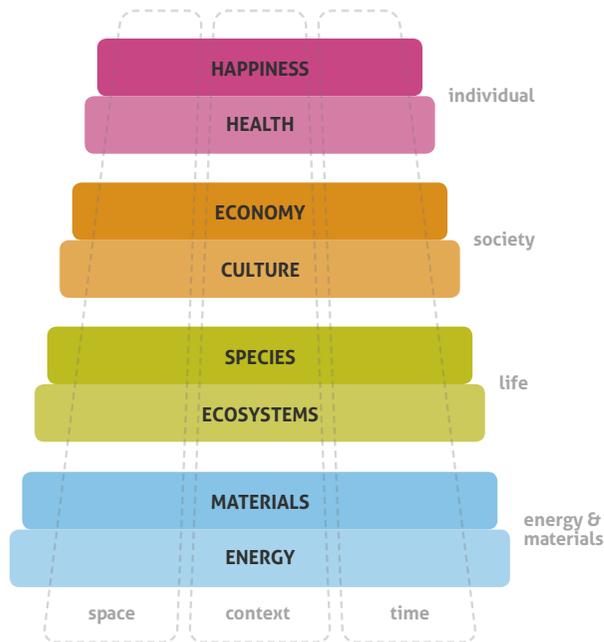
Diversity

1. Intentional diversity of program, audience, solutions approaches, design styles and operational practices, as well as diverse ecosystem support.
2. Both new and old have a place, from traditional perspectives and lessons from the past, to innovative approaches and techniques
3. All solutions implemented with multiple performance goals

Validity

1. All successes and failures communicated fully, without bias
2. Tracking and reporting of performance on a yearly basis

1.4.3. Arkna Object goals



- › Object level categories, ELIA stack
Symbiosis in Development (SiD)

All object goals active from 2020

Energy

1. Energy neutral, measured per year, reported
2. No use of fossil sources
3. All renewable energy reported is generated on site or within 20 kilometers, reported

Materials

1. Water neutral operations, reported
2. No water deposited in river or ground that's less clean than rainwater, reported (benchmark by yearly rainwater test)
3. Maximum use of natural materials in all constructions
4. No toxic material use
5. CO2 neutral operations, reported

Ecosystems & species

1. Climate adaptation measures for extreme rainfall, snow and peak heat
2. Increase of 25% biodiversity in entire area, and retained, reported
3. Development of 3 niche-ecosystem habitats
4. Fully organic operation by 2025 (no use of artificial fertilizer, pesticides), reported
5. All organic waste recycled on site
6. Specific support programs for endangered species, reported
7. Self sufficient in provision of pollinators

Culture

1. Target is 100,000 annual visitors;
Phase 1 2016 - 2017: about 5,000 visitors per year.
Phase 2 2017 - 2019: tourist accommodation ready; about 25,000-30,000 per year.
Phase 3 2019 - 2021: with the inclusion of the wellness and health center/activities grow to 70,000.
Final goal: 100,000.
2. Support of local traditions and heritage culture with yearly programs, reported
3. Year round education programs for schools, visitors, and local community
4. Open to programs organized by members of community
5. Retention of cultural heritage, all listed buildings restored within heritage guidelines
6. High percentage of foreign tourists, Finland, Latvia, Russia, Sweden, Germany; Open and accessible to international audiences, at least 1/3rd of visitors from abroad
7. Regional support through tourism info center where guests are introduced to Arkna, Rakvere and West-Viru county
8. Active support of innovation development; 3 projects annually
9. Manor park renovated including landscape, views opened, benches, waste bins, hiking and cross country paths renewed and with outdoor lighting
10. Manor complex used for children summer camps, 5 per year

Education

1. All employees go through initial training (guiding principles, values, goals, service standards) upon hiring, and additional service and content trainings (heritage, herbal medicine, new trends, languages) at least twice a year
2. Guest are educated on sustainability (water & sewage usage, recycling, reuse of products); signage in 100% of rooms and public places
3. Training and education opportunities, workshops for local and foreign tourists, special interest groups, schools and kindergartens as well as locals - arts & crafts, woodworks, cultural heritage, folklore, herbal medicine, natural therapies, horticulture, permaculture, organic farming; annual activities plan, 70% of sessions include 60% local tourists and 25% foreign tourists.
4. Seminar space available for professional gatherings, special interest group trainings and training/coaching/consulting companies; 30% of all customers are businesses

Economy

1. Profitable, self-sustainable operations
2. No structural dependency on subsidies
3. Provision of at least 50 permanent jobs paid 120% above minimum wage
4. Every year from year 5 the growth in visitor numbers is 3% , more and more eco and health tourists from all over the world choose Arkna health village as their preferred destination- Target 100

000 (max capacity 120 000), international target 1/3 or 33 000

5. Manor complex including the main building is also a destination for business audiences and training programs, 15 000 participants annually

Health

1. Safe working environment for employees, target 0 accidents per year, reported
2. Visitors' safety, target 0 accidents per year, reported
3. Community security and safety
4. Reduction of 80% in Volatile Organic Compounds (VOCs) in indoor air environment
5. Year round programs for self-evaluation and health support
6. Allergy free rooms, hypo-allergenic rooms, renovated with natural materials, target 10% of rooms
7. Air quality consistently healthy (benchmark yearly after shutdown of all local air-influencing services for 24 hours)
8. Local organic medicinal herbs used for tea, spa therapies, cosmetics line; 80% of raw materials is local; reported

Happiness

1. Increase of 20% mental wellbeing in community, from benchmark 2016
2. 90% satisfaction rating by visitors on average through survey, reported
3. The tourism park meets expectations of family vacationers offering family and child friendly conditions, survey, reported
4. All animals treated by Arkna standards¹ for animal welfare
5. All community members have a say in affairs that directly influence their lives and environment
6. Arkna Eco-Park follows EU labor law and the EU Equal Treatment Directive for equality between men and women in the workplace
7. Arkna Eco-Park maintains both an employee and community decision making body with binding advisory rights for critical elements and advisory rights for non-critical elements.

1. under development

1.5. Guiding principles



Innovative and creative

- › We use innovative technologies, designs and tomorrow's solutions for systems and processes
- › We approach our work and solve problems creatively

Nature-oriented

- › Everything we do is either inspired by nature, sourced sustainably from nature or done considering the protection of nature
- › Energy independent
- › Using renewable energies (solar, wind, ground, water) we aim to be energy independent



Sustainable

- › We understand and apply the Life Cycle thinking.
- › We recycle and reuse our waste and water, use environment-friendly supplies, machines and equipment.
- › We use non-toxic and ecological materials and build green/passive buildings.

Collaboration

- › We work collaboratively and across disciplines
- › We work closely with colleagues, partners, clients, stakeholders and the community through different communication channels



Profit and beyond

- › We create long-term business and financial value for the owners.
- › We believe that profit is not the end goal. We acknowledge other values such as culture, personal development, quality of life and heritage.
- › We are privately owned without any financial profit interest from 3rd parties.
- › Network and open source
- › We support a freedom of information and knowledge.

1.6. Current state & inventory

Arkna village consists of several separate but uniform sections:

- › 19th century manor complex comprising of about 20 historic buildings and a 16-hectare park;
- › agricultural area with four barns (cows, goats), production plant, fields (grain, feed), and orchards surrounding it;
- › residential area with seven 2-story apartment buildings and seven private houses

The general state of the manor complex is bad to fair - most buildings need total renovation. Being under heritage protection the renovations fall under heavy regulation and strict guidance of Estonian Heritage Protection Agency. The park is well maintained and cared for, walking paths have been added; lacks lighting, benches and waste bins.

While most of the agricultural parts are just ten years old or less, there are buildings used that date back to 1880s. These buildings have been maintained but need renovation. Fields are actively in use and maintained.



The apartment blocks of the village date back to 1960s and 70s. All apartments are privately owned, and are managed and maintained by separate building associations for each block, as well as by residents themselves. Two blocks have managed to replace old roofs but the exterior of all houses need renovation, heating and electrical systems need upgrading. Private houses are either new-built or renovated.

A covered road leads through the village with one entrance on the 96th kilometer of Tallinn-Narva road, and the other on the 98th km, passing the manor complex and residential area. Agricultural land is further inside, and is accessible via a network of gravel roads.

Complex/Area	Building name	Complex/Area	Current state
Manor complex	Manor	Needs full renovation exterior and interior. Roof is new.	5* hotel, luxury spa, special events, restaurant
Ice cellar	Ice cellar	Roof is new, structure needs basic touch up, utilities need to be added	Cheese maturing, tasting and sales
Visitors center	Manor barn	Poor conditions, needs full renovation	Visitors center, nature pharmacy, workshops, seminar room 280m2
Herb garden	Manor garden	Needs total redesign and construction. Design and landscape plans finished.	Educational and experience tours, activities
Spa-hotel	Cake project	One heritage protected building in very bad shape, 3 buildings to be demolished and built new	Heritage spa, natural therapies, medical treatments, beauty salon, 3* hotel, F&B.
Water mill	Water mill	Fair condition, needs full renovation	Restaurant, bakery, catering, main kitchen for manor complex, mini mart, info center
Masters Court	Masters Court	Fair condition	Con certs, fairs, events
Stables	Art Gallery	Fair condition, needs full renovation	Art gallery, exhibitions
Carriage shed	Stage	Roof being renovated, other parts still need renovation	Theatre shows, concerts
Blacksmith's workshop	Blacksmith's workshop	Bad condition, no roof, needs full renovation	Active blacksmith's workshop
Woodshop	Wood workshop, antique shop	Fair condition, needs full renovation	Antique and woodworks shop, competency center for building renovation
Stable master's house	Artists' workshops	Fair condition, needs full renovation	Artists' workshops and galleries
Goat barn	Goat palace	Good condition, roof is new, interior has been cleared.	Goat farm, pet therapy
Cow barn 1	Cow barn 1	Good condition, built 2005, actively used and maintained	Cows, milk production, breeding
Cow barn 2	Cow barn 2	Good condition, used and maintained	Cows
Cow barn 3	Cow barn 3	Good condition, used and maintained	baby cows
Processing plant	Processing plant	Being reconstructed for honey, herb, juice and milk processing	food processing and packaging
Museum	Manor dairy	Half owned by municipality, half owned privately. Good condition, looking for a possibility to purchase the building	Village and heritage museum
Heritage hotel	Manor personnel house	Fair condition, needs full renovation. Design and drawings finished.	Hotel, authentic look&feel
Community center	Private barn	Bad condition, roof fallen in, needs maintenance and renovation, design and drawings finished	Village community center, day care, senior center, library, trainings, workshop



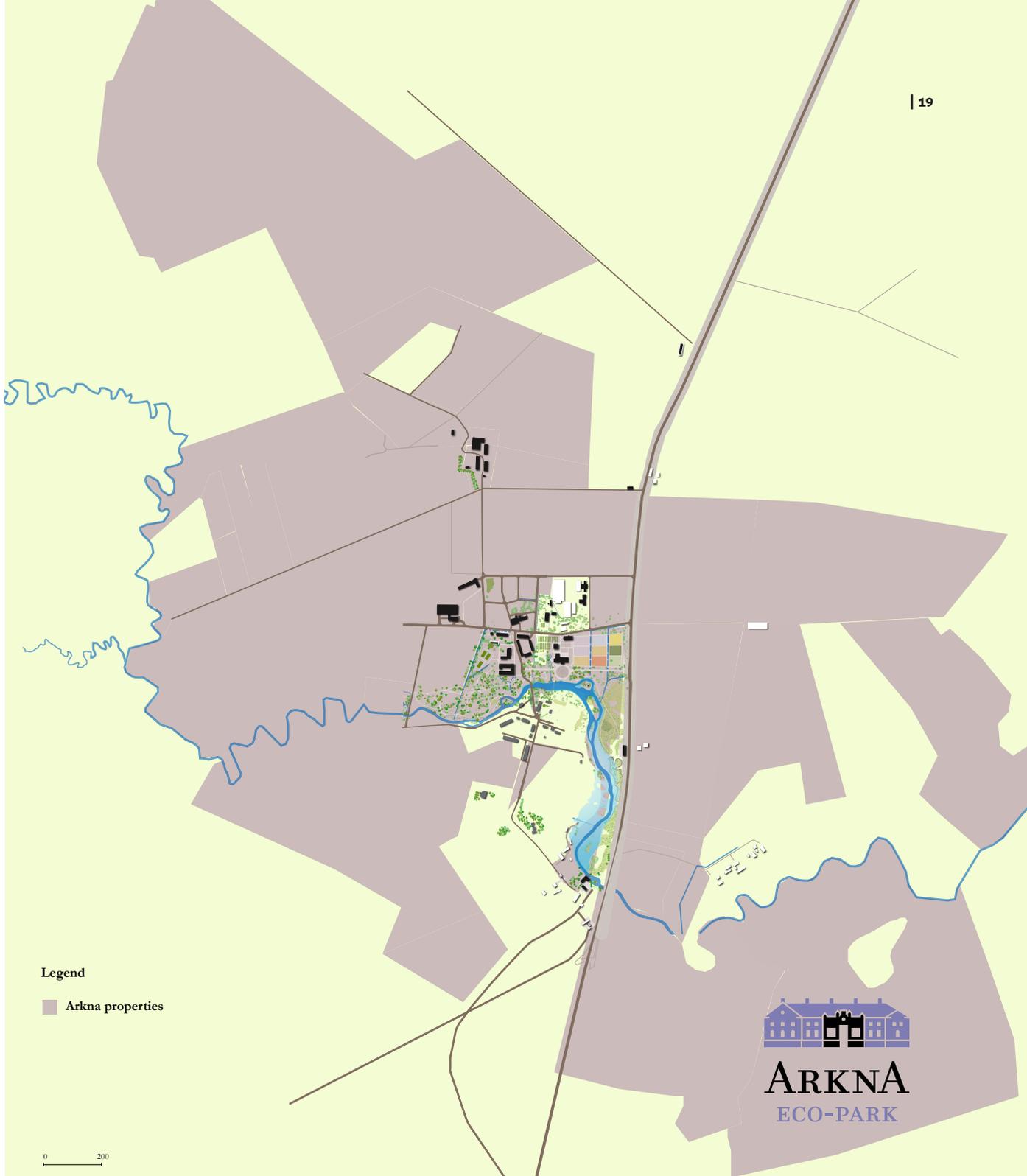
› Current state map



ARKNA
ECO-PARK

› Arkna building map





› Arkna properties map

Legend

■ Arkna properties



2. PROGRAM OVERVIEW

For the full program see appendix I

The main programmatic elements are:

1. Tourism & hospitality
2. Health & Wellness park
3. Cultural development program
4. Competency & training center
5. Production systems
6. Community program
7. Infrastructure

1. Tourism & Hospitality

The tourism & hospitality services of Arkna park center around hospitality in health and wellness, the natural park and healthy food. This is supported by camping grounds, sports, and outdoor activity spaces. Five-star luxury accommodations are centered around the manor, while new complexes accommodate three-star services and a health and wellness spa. There are restaurants and cafes in these facilities. The whole is set within the Arkna eco-park grounds with gyms, sports facilities, hiking trails, boat rental and other outdoor activities.

2. Health & wellness park

The health park offers specialist health and wellbeing services, starting with healthy food and a toxic-free environment, eco-spa, healing environments, meditation spaces, physiotherapy and therapeutic

programs. To support this are pet-therapy, a nature pharmacy.

3. Cultural development program

The culture program of Arkna Eco-Park includes a year round art museum, galleries and exhibitions, concerts and theatre performances, as well as international festivals, poetry & literature events.

4. Competency & training center

The competency & training center of Arkna Eco-Park provides students from 8 to 80 with hands-on education for sustainable food production, heritage healing, and historic renovation. This is supported by workshops for wood, ceramics, crafts, summer programs and a sustainable village and active house learning center. Training is also supported by international exchange programs, WWOOFing and voluntourism.

5. Production systems

The eco-park produces the majority of Arkna's sustenance needs, including a dairy farm with cows and goats, and an herb garden. An innovative Polydome provides a wide variety of herbs, spices, vegetables and fruits year round, orchards provide berries and apples, and beehives create honey and pollinate. To support this, wheat and cereals are produced for animal feed, biomass for fertilization, heat and electricity supported by solar and ground coupled heat storage.

6. Community program

Arkna's community is supported through everyday services such as a daycare center, new community center, pre-school and senior program. In addition playgrounds around Arkna are combined with indoor and outdoor health activities. A new bicycle path connects Arkna to Rakvere for a safe and healthy trip to town, supported by new public transport lines. Surrounding the renovated and sustainable houses is a lush productive landscape, well maintained roads and public facilities. The community is supported with employment opportunities and the current community center converted to a village heritage museum.

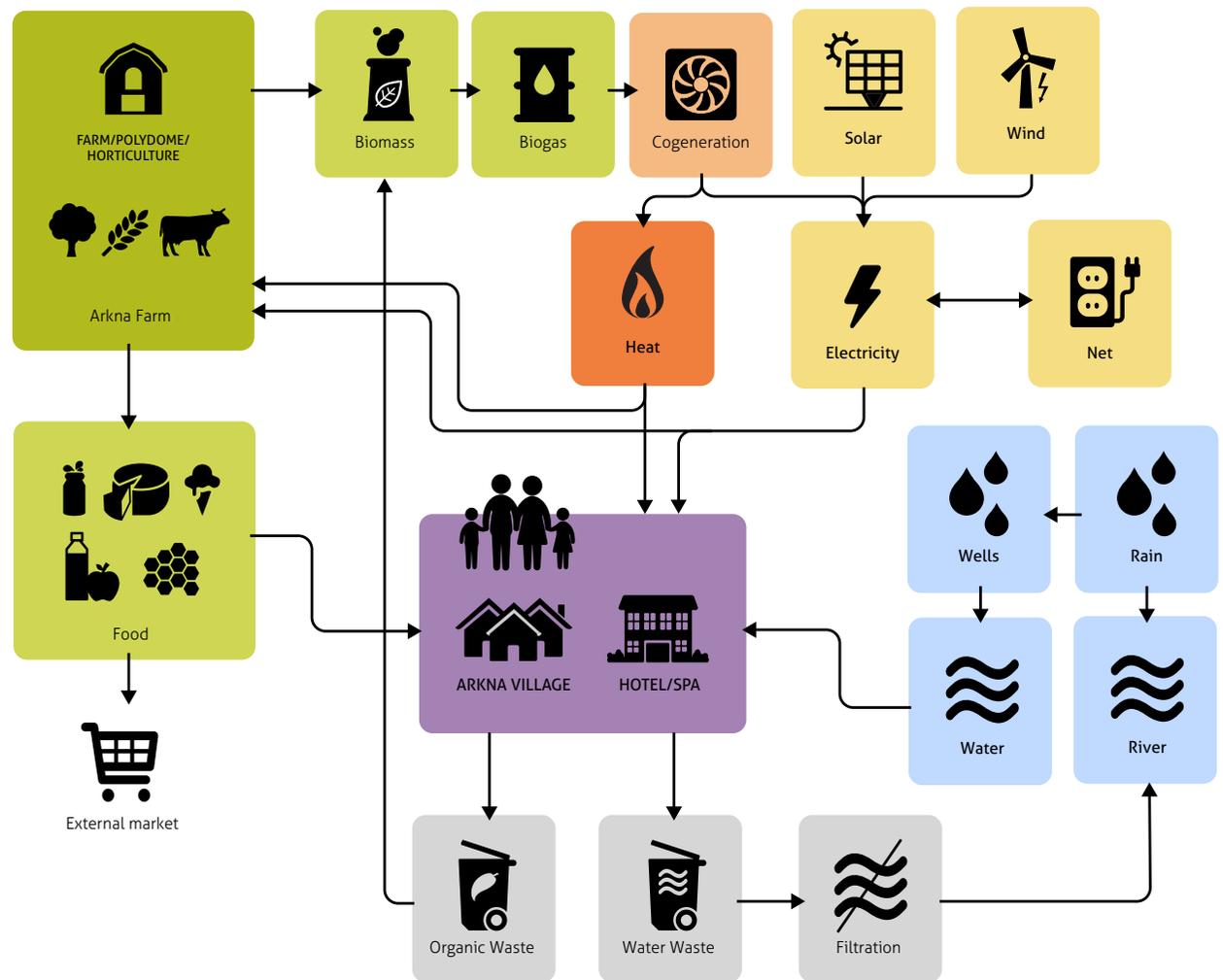
7. Infrastructure

To maintain Arkna's self sufficient operations are infrastructure services for water, waste, electricity, lighting, heat, logistics, storage, cooling and tooling. Communication technologies are implemented to increase internet bandwidth and mobile reception. In addition, facilities for cars and touring cars provide space for visitor parking. Lastly, suitable accommodation for staff and its community.

3. METABOLIC STRATEGY

The metabolic strategy of Arkna encompasses all flows and systems required for its healthy operation and provision of services. These include systems to provide electricity, heat, and water and process its waste. One of its most major components is its food production facilities, including the dairy farm, herbiculture, polyculture, and other agricultural facilities.

The Arkna Eco-Park metabolic system is designed for a unique demonstration of a locally closed loop, circular operational model that provides exceptional sustainability performance on a world class level, a unique knowledge development and dissemination opportunity, and of course value through its services and healthy, exciting and delicious food.



› This diagram shows a simplified strategy of the metabolic flows in Arkna Eco-Park

3.1 ELECTRICITY

Electricity is self-produced within Arkna through the installation of sun powered photovoltaic panels, bio-gasification of biomass generating heat and electricity through turbines, and a possible additional source of wind energy. Biogas is produced with the fermentation of biological waste from farming, agriculture and visitors. The gas can be burned to generate heating and to activate an electricity generator in high season. Generated CO2 can be used by plants in the Polydome sustainable agriculture facility.

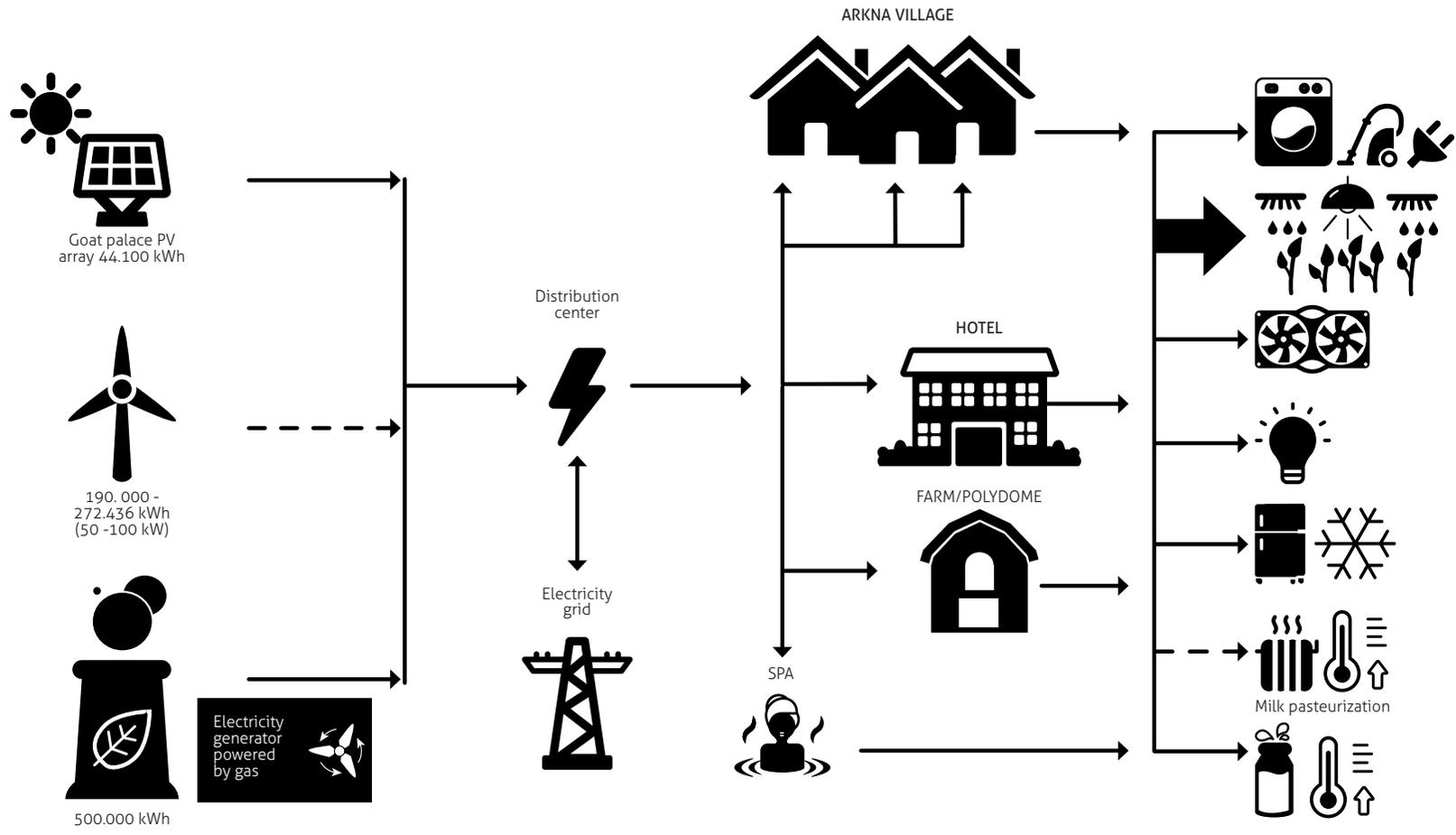
Arkna has its own electric grid, connecting different elements and distributing its own produced electricity. For this purpose 5 distribution centers are built throughout Arkna. Our target is to produce electricity for our own needs first, and for export second.

The Arkna electric grid will be connected with the state electrical grid which ensures a stable availability of electricity. The grid connection allows a balanced exchange: in case of peak loads, Arkna can get back electricity from the state grid. Arkna grid will have a 10KW connection to state grid.

Our target is to be energy neutral, which means we produce as much energy, as we use in Arkna. This is measured over a year.

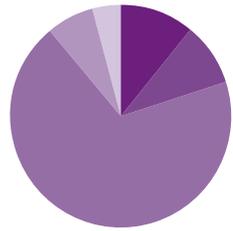
The main electricity consumption is due to tourism (lighting, spa etc), production (food processing), agriculture and horticulture (lighting for Polydome plants growth, water circulation pumps and other equipments).

Electricity is needed also for heating, to give additional power to thermal energy with heat pumps.



› Arkna Eco-Park Electricity Overview System Map

Distribution of electricity consumption (in kWh)



● Tourism ¹	233.300
● Farm and milk pasteurization	202.000
● Polydome lighting	1.517.000
● Polydome equipment	148.000
● Heating ²	100.000
Total	2.200.000

1. Lighting, spa, housekeeping etc
2. Note: 75% of heating demand is covered by biogas. Self production: 56% of the electricity demand. 100% of the heating demand

Complex name	Area m2	Electricity (lighting and appliances)		Heating			
		kWh	kW	Space heating kWh	kW peak demand	kW at the generator system	Hot water kWh
Total	19801	2100274	599	1122301	1202	636	183756
Manor complex	2000	60000	14	192000	125	89	61000
Herb garden	960.1	28803	7	92170	40	28	29283.05
Spa/hotel (cake project)	2500	75000	17	240000	157	112	76250
Watermill	564.7	16941	4	54211	0	0	17223.35
Masters court (egg)	651	19530	4	62496	49	35	
Farm	2024.7	202000	46	190824	190	136	
Heritage hotel	1100	33000	8	105600	40	28	
Poledome	10000	1665000	500	185000	550	163	

ENERGY PRODUCTION

Photovoltaic panels (45 kW)	Wind (100 kW turbine)	Biomass cogeneration plant
kWh	kWh	kWh
450.000	272.436	500.000

SUMMARY

Production	Consumption	Balance
kWh	kWh	kWh
1.222.500	2.200.000	-1.000.000

3.1.1. Electricity needs

Buildings

Predicting the electricity use of the buildings in Arkna can only be done on a global level. Much will be determined by the design and execution as well as their usage patterns. If we use a variety of calculation methods, we may safely arrive at an upper limit.

Method 1: statistics

Assuming 1.250 kWh/yr per person and 500 people (250 average number of visitors, plus 250 residents) or 30 kWh/yr/m² (estimate for lighting plus appliances, northern averages) and 20.000m² of buildings floor space, in both cases the estimated yearly electrical consumption is around 600.000 kWh/yr. In addition the energy for heating should be considered. The average annual energy consumption for heating in residential buildings in Estonia is 192 kWh/m²/yr (Reference: [iNSPiRE FR7 report](#) on the European building stock, 2014). Assuming that our buildings are at least 50% more efficient than average, the heating demand is 1.900.000 kWh/yr.

Method 2: precalculation

According to the calculations of a local consultant, we need about 585kW peak energy use for heat and ventilation for all buildings. With some safety margin this results in a demand of 600 kW. This does not include electricity use for lighting and appliances.

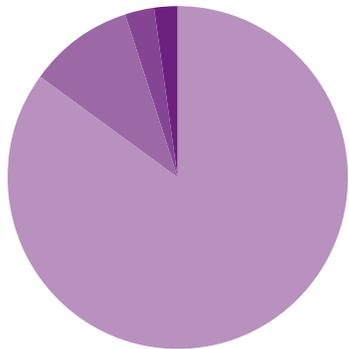
Method 3: our calculation

Using a combination of both, and a more accurate building schedule in the building spreadsheet, the dairy farm's and Polydome's electrical needs, we arrive at 2.100.000 kWh use per year and 600 kW peak load. Around 70% of this electricity is required for Polydome's lighting. Additionally a heating demand of 1.306.000 kWh per year has been estimated (pace heating plus domestic hot water). This number is the required heating by the buildings. Depending by the technology of the selected heater and its type of energy input (gas or electricity), it is possible to convert the buildings energy demand into the energy input for the heater.

Polydome

In modern greenhouses about 85% of all electricity use is due to lighting (if heating is not performed using electricity). Flower growers use about 75% of the energy, and vegetables 25%. The other energy usages are due to the facilities for the boiler heater (10%), 3% generic equipment, and 2% for water services.

For Polydome a need of 185.000 kWh/yr for heating, 1.517.000 kWh/yr for lighting and 148.000 kWh for the other equipments has been estimated. The calculated energy for heating is the demand, no electrical energy. If this demand is supplied by a geothermal coupled heat pump (GCHP) powered by electricity, the coefficient of performance (COP) of the heat pump can be assumed around 3,5. This means that the electrical input is 3,5 times smaller, resulting in 53.000 kWh of electricity.



- Lighting
- Boiler heater
- General equipment
- Water services

Lighting

Polydome requires additional lighting to improve its production capacity. On average, assimilation lighting (for plant growth) delivers about 8000 lux. In the Netherlands it is used for about 3000 hours per year, 80% of this is at night. However, lux is not an appropriate measure for measuring light for plants, since their specific sensitivity to red and blue light. This is now expressed in the unit μmol . Polydome does not need as much light as normal greenhouses, but Estonia is darker than the Netherlands because of its more northern location. These two factors are both difficult to estimate, so we'll use the average values for peak energy calculations.

Energy usage depends on the type of lights used. There's roughly two options: Sodium lights (SON-T) and LED lights. LED lights have specific advantages: lower light waste (more directed), no power peaks, longevity. But, LED lights are more expensive. LEDs are less efficient than SON-T sodium lights.

For the most advanced green houses in the Netherlands a combination of LED and SON-T lights are used (about 50/50), in addition to diffuse glass and the use of light screens. Energy reductions of up to 35% have been achieved with less than 1% in production drop. For basic hybrid lighting and diffuse LED, 258 kWh/m² and 161 kWh/m² are used respectively per year. The diffuse option is vastly more energy efficient. The installed power in these

installations is 72 W/m² for SON-T, 43 W/m³ for LED and 30 W/m² in-between LED lights.

On average, 50 W/m² is used in assimilation lighting in the greenhouse industry in the Netherlands. Using this, total electricity use for lighting a 1 hectare Polydome amounts to a power flow of 500 kW. Estimating an average use of lighting for 3000 hours per year, the electricity amounts to 1.517.000 kWh/yr.

Dairy farm

The electricity needed by the dairy farm includes standard operations plus a considerable amount of power for for pasteurizing milk before production or sale. Pasteurization happens in a to be acquired future stage 1: batch pasteurizer of 28 kW, which treats 1000 liters in 2 hours. This is equivalent to 0,056 kWh/lt energy use for pasteurization. A future stage 2 flow pasteurizer changes this to 0,017 kWh/lt (60kJ/kg).

With a total yearly production of 2.120.000 liters of milk (1.800.000 liters from cows and 320.000 liters from goats) and an energy consumption of 0,056 kWh/lt, the energy for the pasteurization is around 119.000 kWh/yr.

The additional electricity use for standard operations is estimated at 83.000 kWh/yr¹. Then the overall consumption for the dairy farm including pasteurization is around 202.000 kWh/yr.

* Data based on current consumption: 166.400 kWh for dairy farm and 35.220 kWh for the cow barn (Nurme)

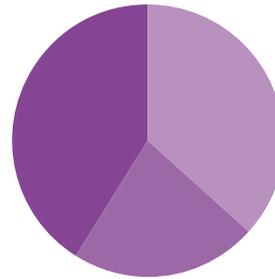
3.1.2. Electricity generation

We need to generate 2.200.000 kWh/yr electricity in total per year, with a peak load of 600 kW. Of those around 70% are for Polydome lighting. For Arkna to become self sufficient we need to generate this. Unfortunately, hydroelectric production seems not feasible on site, and geothermal will be too costly. We can generate electricity with the following practical means:

- › Solar
- › Wind
- › Biomass

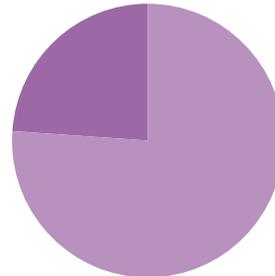
The electricity production is enough to cover 56% of the overall electricity including lighting for Polydome and 100% of the electrical consumption for the park alone.

Electricity production



- Photovoltaic
450.000 kWh - 45 kW
- Wind turbine
272.436 - 100 kW
- Biomass cogeneration
500.000 kWh
- Total**
1.222.500 kWh

Electricity consumption



- Polydome lighting
1.665.000 kWh
- Arkna Eco-Park
535.000 kWh
- Total**
2.200.000 kWh

Solar power

Despite the lower amount of sunlight hours in Estonia, and Estonia's lacklustre attention to this power source, solar power is a viable option. Because of lower general temperature, the efficiency of solar panels is increased. The flat and generally unshaded landscape is well suited for solar plants, and the availability of land is plenty. Help can be acquired from local solar power promoters and developers such as Energy Smart.

When installing solar panels, they should be located on a site that is not shaded, and it helps to install them on a green roof, surrounded by plants, for cooling in summer. With the northern position of Estonia, a typical output of a 10kW installation will yield 8,849 kWh per year (via PVWatts calculator).

The first allocated area for a large solar array is on the roof of the goat palace building.

Goat palace PV array

The installation planned for the Goat Palace consists of 180 panels, each 3,6A and 250W, with an efficiency of 17,25% (totalling 45kW). The manufacturer predicts an output of 44.100 kWh for a total installed system price at € 61.926,-. This number checks out, assuming that the goat palace has less than 3% of shade and a 30% roof pitch, its output will be around 45.000 kWh according to PVWatts.

Wind

Wind power is a viable option from a technological perspective. The land is well suited, and the conditions are good. However, usually local opposition against wind power is significant. In 2014 there was only 302 MW of wind power installed in Estonia, with about 25 MW under construction, which is a decrease in development trend.

Wind power is only efficient when developed at a significant scale. Small wind turbines are vastly less efficient than large ones, which pushes the development towards larger units constantly. Small wind turbines are manufactured locally in Estonia by Konesko AS. They develop a 10 kW and a 20 kW unit that appear small and should be implementable without too much local opposition, but don't deliver a significant output. A 60 kW or 100 kW unit might be more appropriate though, developing 6 to 10 times more energy with only a small increase in size



› The Tuge 10, 10 kW turbine from Konesko AS

Developing a large turbine (1MW>) may be a possibility but will be a lengthy and complicated process, likely meeting with local opposition. That said, large wind turbines all around the world are installed despite local opposition, and the business case is strong. Further research into a large wind power station is recommended.



› The 60kW NPS 20-24 from Northern Power.

The amount of wind power that can be harvested at Arkna depends on the wind speed, local features of the landscape and choice of turbine. Calculations performed before for a 50kW and 100kW turbine are as follows:

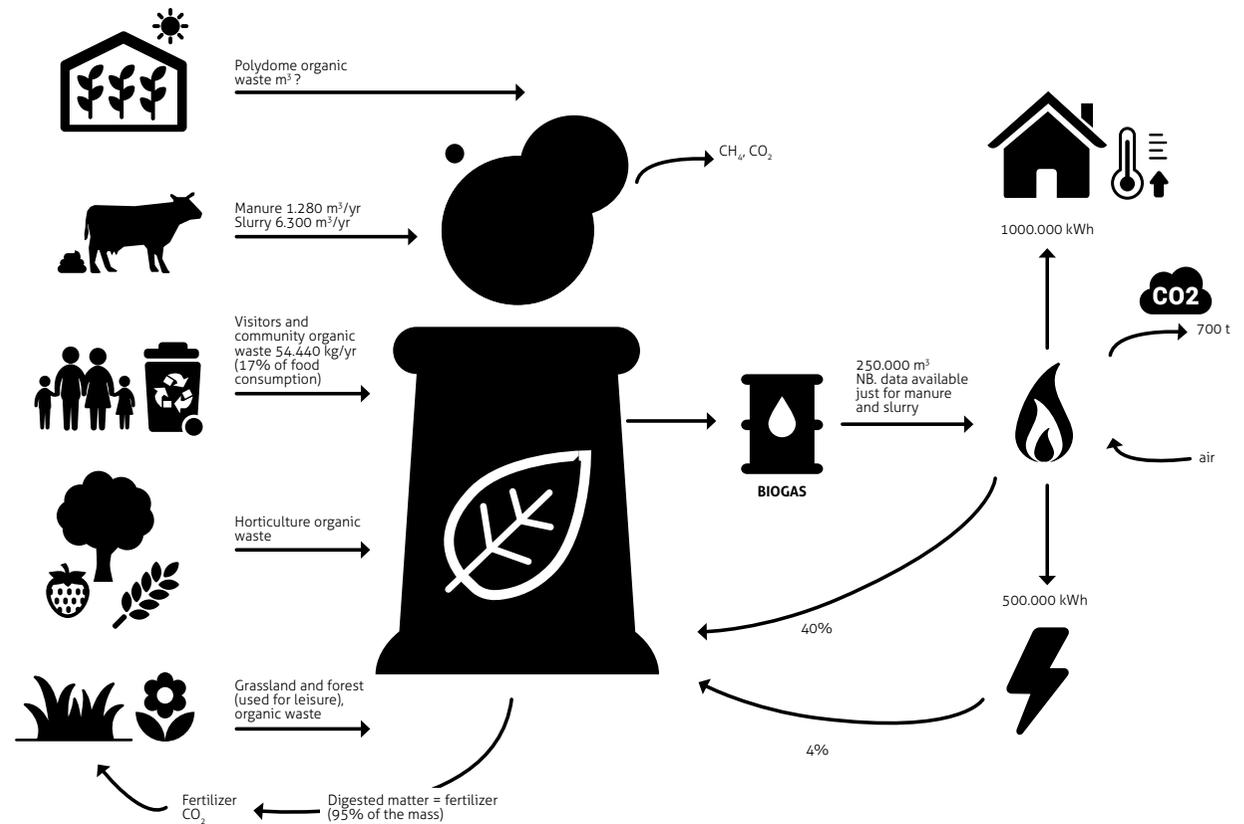
"Mean wind speed [at Arkna] has been measured at 7,5 m/s. One 50kW wind turbine (H50KW) and 100kW turbine (H100KW) has an annual rate of return of approximately 190.000 kWh/yr and 272.436 kWh/yr respectively." Vahur Essenson, www.solwindsystems.com

Biomass

Biomass electricity is produced by fermenting biomass and using the resulting gas to convert to electricity and heat in a turbine. It is a viable option to develop both electricity and heat, and increase the potency of fertilizer from manure. Biomass plants are readily available and are a reliable source of energy. The added advantage is that biomass and biogas can be stocked, so it can be used to cover peak electricity use areas, where supply-driven technologies such as solar and wind cannot.

Biomass inputs

- › Manure: 1.280 m³/yr, slurry: 6.300 m³/yr.
- › NB. those numbers are for cows which are kept in farms to collect all the manure. If cows are let free to graze in the pasture, the amount of not collectable manure should be estimated.
- › Specific mix-biomass plant types can be used as landscaping to provide sufficient mix-feed.
- › Biomass from grass cuttings, fallen leaves, garden maintenance, food waste to be estimated.
- › When biogas plant is in use, all manure processed into digester and produces gas and byproduct liquid fertilizer. Needs to be mixed to be used as surface fertilizer, or injected into ground as liquid. Biogas plant is dependent on gas price. Gas price is dropping lately, needs to be at minimum 1 euro per m³.



Biomass plant specifications:

Heat needed by Arkna building, kWh	Heat needed by Polydome, kWh	Electricity needed by Arkna buildings, kWh	Electricity needed by Poledome, kWh
1.121.000	185.000	535.000	1.665.000
1.306.000		2.200.000	

Biogas installation

A biogas installation consists of several components which can be sourced from different suppliers or can be sourced from a single agency. A supplier with experience is desired, and in Estonia there's only a few agencies with this experience, among which [Baltic Biogas OU](#). The main components of a biogas installation are storage tanks, the biogas digester (a heated tank with some mixing equipment), the engine and the generator. Choices are available for each which impact costs, efficiency, and output.

The engine can be anything that translates gas to movement. Typically an internal combustion engine is used, as they're affordable, reliable and easy to maintain. Gas turbines are more efficient and generate more energy and heat, but more expensive. Stirling engines are a possibility, but unlikely.

Up to 200kW, diesel engines are typically used, with some level of diesel injection to facilitate combustion (around 2%). Gas motors with spark ignition (Otto system) can work entirely on biogas, but a small amount of gasoline is often used to start the engine.

Reference: [Calculate costs](#)

Power output

1 m³ of biogas can be converted to around 1.7-2 kWh. We have 7.580 m³ of manure per year (dung 1.280 m³/yr plus slurry 6.300 m³/yr) which correspond to about 20 m³ per day. The average calorific value of biogas is about 21-23.5 MJ/m³ (around 6,5 kWh/m³), so that 1 m³ of biogas corresponds to 0.5-0.6 l diesel fuel or about 6 kWh (FNR, 2009). It is important to consider that around 40% of the heat produced by the biogas can not be used, because it needs to be input back into the digester*. The biogas yield of a plant depends not only on the type of feedstock, but also on the plant design, fermentation temperature and retention time. Maize silage for example - a common feedstock in Germany - yields about 8 times more biogas per tonne than cow manure.

* [TiS innovation park, "Analisi energetica, ambientale ed economica di impianti a biogas in Provincia di Bolzano", 2011.](#)

ENERGY PRODUCTION: KWH PER M³ OF GAS

Electricity	Heat gross (40% is needed by the digester)	Usable heat
2	6.4	3.9

Calculation method 1: approximation

Version 1

In average, 1 cow gives about 27 - 50 kg of manure a day. We have 450 cows and estimated about 20 m³ of manure per day. The density of manure is around 960 kg/m³. This means we have 19200 kg/day (divided by 450 cows = 42.6 kg manure/cow). 1 kg of fresh cow dung under anaerobic conditions in a day produces around 30 to 40 litres of biogas. Hence, 1 m³ of gas requires 25-33 kg of solid fresh dung and we produce around 550-750 m³ of gas per day.

Version 2

Biogas produced from 1 kg of cattle manure can vary greatly, since it depends on the water and on the organic matter content. The water content oscillates normally between 85-92% and organic matter content is around 80-85% (based on dry matter). That's why normally biogas produced from any substrate is expressed in terms of m³/kgVS (volatile solids). Once that this is known, biogas production from cattle manure is around 0,29-0,37 m³/kgVS, with a 55-65% CH₄.

Animal (kg)	Manure production (kg/day)	Total solids (kg/day)	Volatile solids (kg/day)
220	13,2	1,54	1,32
300	18,0	2,08	1,06
450	27,0	3,10	2,70
600*	36,0*	4,18*	3,56*

* The values in last row of the table are conservative for an adult female cow. In average an adult female can weigh 720 kg and male 1.100 kg. Assuming an average of 0,33 m³/kg VS and 3,56 kg VS we produce 1,17 m³/day per cow. With 450 cows we produce 530 m³ of gas per day.

Version 3

1,5 liters of biogas can be estimated per day per 1 kg live weight (weight of the cow when alive). With an average weight of 600kg/cow and 450 cows, we can produce 400 m³ of gas per day.

Calculation method 2: involvement of an expert

Based on the calculations of an expert from Energie-fonds Utrecht, with our amount of manure we can produce 250.000 m³/yr of biogas. This corresponds to 680 m³/day which is in the calculated range with the other method. Those could be used to generate 1.611.111 kWh/yr (5.800 GJ/yr) of heat and 500.000 kWh/yr of electricity.

Digester size

The size of the digester, i.e. the digester volume, is given by the product of the substrate input and the retention time. The retention time is influenced by the temperature. Longer retention times increases the efficiency of output. The retention time should amount to at least 40 days up to 100 days. An average good retention time is 60-80 days. The solid content in the digester should be less than 10% (optimal 8%). In our case, if we consider the 20m³/day of manure, those already include fresh manure (just 8-15% of dry matter) and urine, so additional water is excluded from the calculation. Considering a retention time of 40-60 days and 20 m³ of manure/day, 800-1200 m³ is the volume of the digester (40 days x 20 m³ = 800 m³). With this

dimensions, multiple digester tanks are probably required. Products on the market are available for different sized. Small digesters are in the size of 4-20 m³, middle capacity is considered at around 100 m³ (example) and large size biogas plants have a capacity of around 400 m³ per digester (example).

Conclusion

With the above-mentioned amount of manure and slurry, around 250.000 m³ of biogas could be produced. Those could be used to generate 1.611.111 kWh/yr (5.800 GJ/yr) of heat and 500.000 kWh/yr of electricity. Around 40% of the heating energy can not be used because needed back as an input for the digester. It should be taken into account that the manure and related biogas is produced all year round while space heating is needed during 6-8 months. Part of the gas produced in summer should be stored to cover the higher winter season needs. Production of heat and electricity at the same time is possible with a cogeneration plant. The burning process generates around 700 t of CO₂, of which we can use a percentage in the Polydome to support plant growth.

Adding into the biodigester corn would considerably increase the output. E.g. with 10.000 ton/yr of corn, 4.500.000 kWh/yr of electricity could be generated (9.000.000 m³ of biogas).

Electricity distribution

Arkna builds its own electricity lines underground, distributing electricity between its objects. Lines are on channels, so it is easy to add a line in the future, if demand changes. Long distances are covered with 10KV lines and there will be 5 substations. In substations electricity is lowered to 0,4KV and distributed locally, using the same channel system. This plan doesn't cover Nurme yet.

Peak/base load strategy

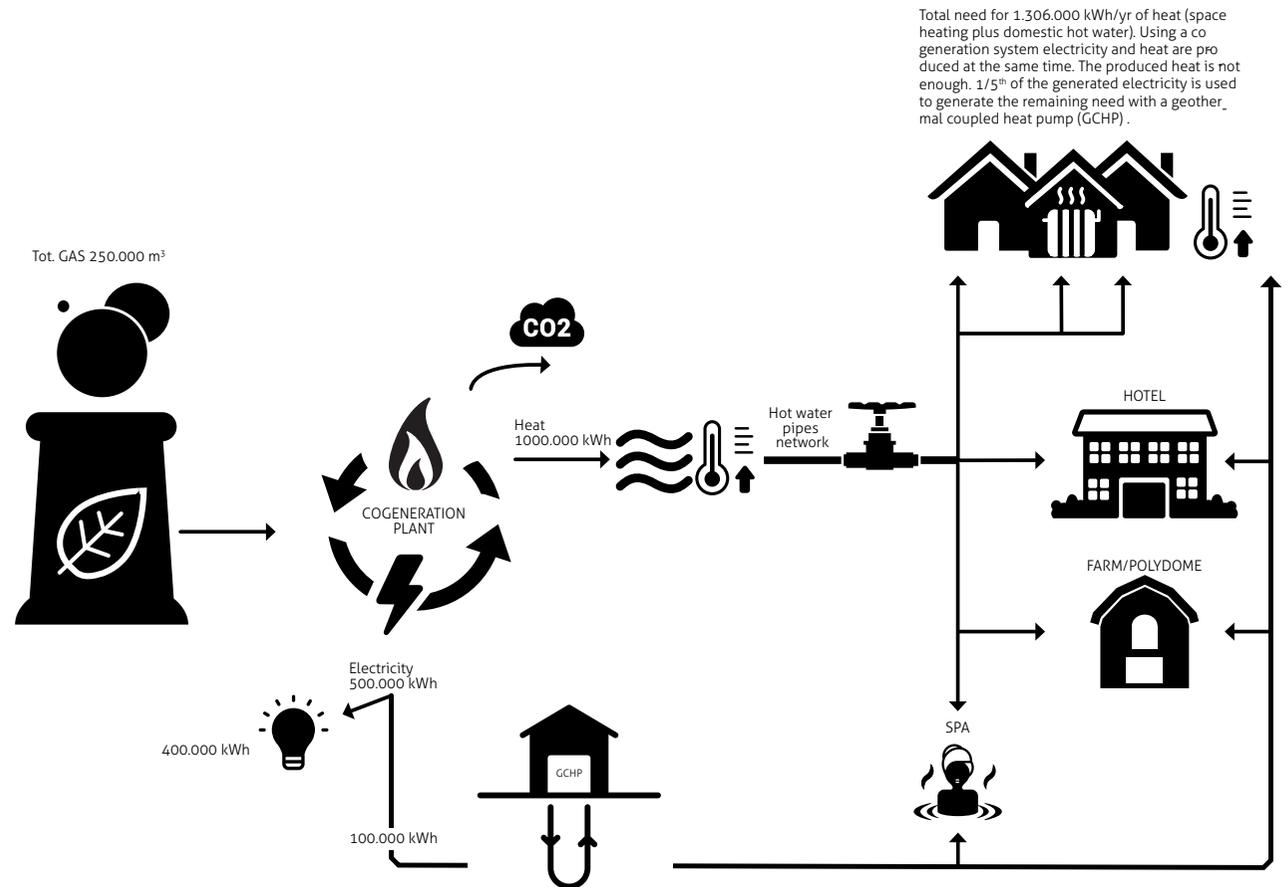
Arkna produces its own energy; at the same time it is connected with the state electrical grid (Eesti Energia) which ensures a stable availability of electricity. The grid connection allows to manage the peak loads and when Arkna produces more electricity than it needs, it is given to the state grid. In case events are organized or in moments of the day with peak loads, Arkna can get back the electricity from the state grid.

3.3. HEAT

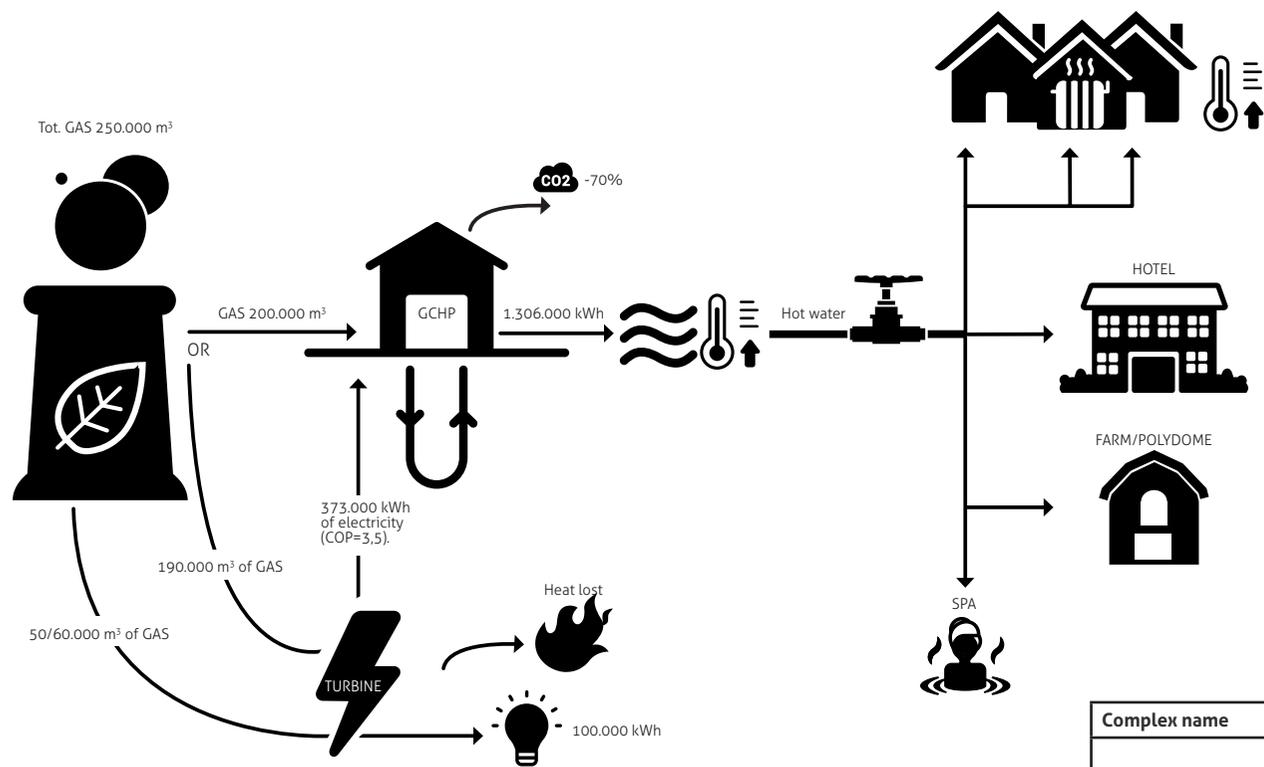
The heating is mostly required for warming houses in winter. The heating system depends on several main choices. The first choice concerns the selection of number of heat generation units. It is possible to have:

1. A single generation plant, where the water is heated and distributed with a district heating pipe network to all the buildings
2. Multiple generation units which generate heat, each for a building, part of a building or a buildings complex

The first option is energetically more efficient and with a lower environmental impact. The space required doesn't impact the single buildings but it requires a dedicated area for the plant. This solution requires the placement of an underground pipes network (insulated pipes) which distributes the heat from the plant to the terminals. The cost depends on multiple factors: the adopted technologies, the power of the single units, the demand of hot water etc.



› Heating option 1A, District Heating Network with Cogen plant



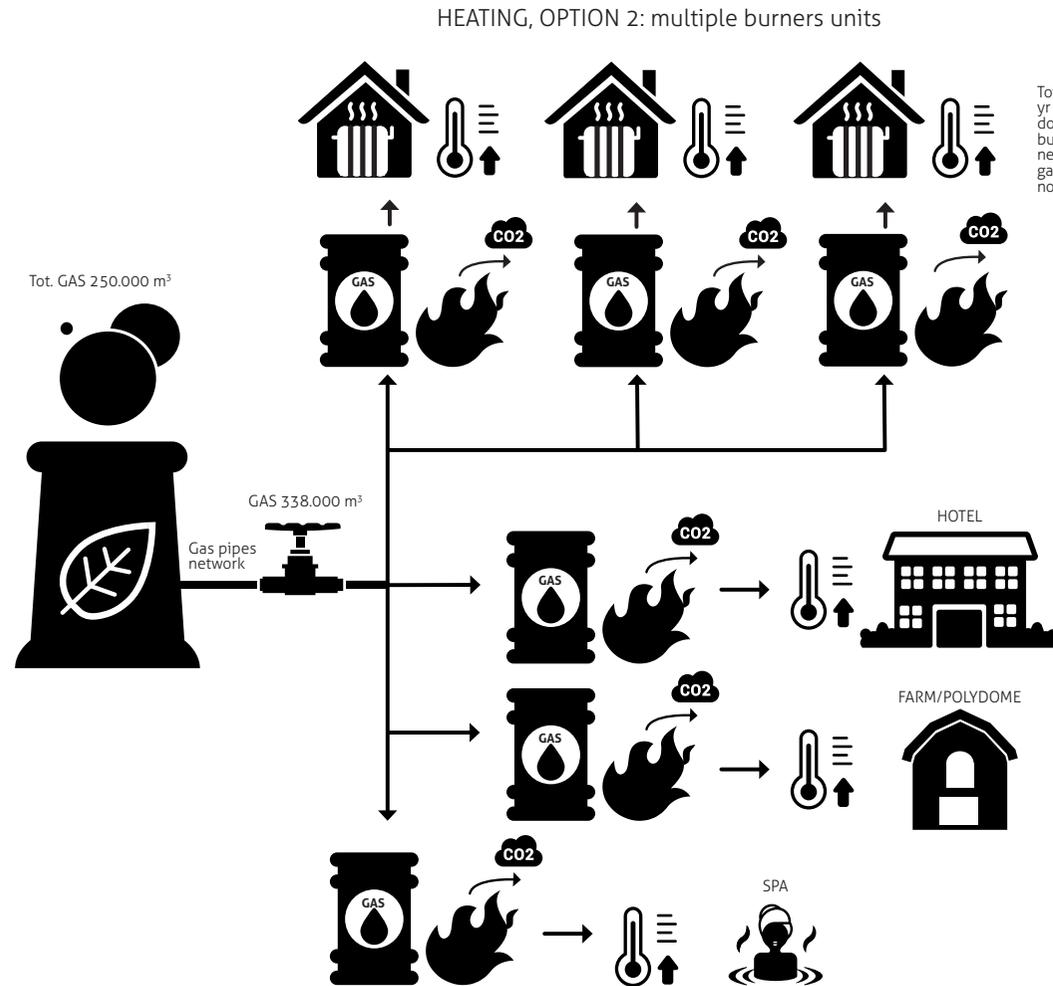
Total need for 1.306.000 kWh/yr of heat (space heating plus domestic hot water). A geothermal coupled heat pump (GCHP) can be used. If powered by gas, 200.000 m³ are needed. If powered by electricity, 373.000 kWh are needed (equivalent to 190.000 m³ gas). With this solution 50-60.000 m³ of gas are left to produce electricity for lighting/appliances.

› Heating option 1B, District Heating Network with Ground Coupled Heat Pump

Complex name	Area m²	Heating			Hot water kWh
		Space heating kWh	kW peak demand	kW at the generator system	
Total	19801	1122301	1202	636	183756
Manor complex	2000	192000	125	89	61000
Herb Garden	960.1	92170	40	28	29283.05
Spa/hotel (cake project)	2500	240000	157	112	76250
Water mill	564.7	54211	0	0	17223.35
Masters court (egg)	651	62496	49	35	-
Farm	2024.7	190824	190	136	-
Heritage hotel	1100	105600	40	28	-
Polydome	10000	185000	550	163	-

The second choice consists of the selection of the generation system. Different technologies are available:

1. The amount of produced gas with the biomass plant used as an input for a boiler. This solution generates just hot water and it is the least energy efficient.
2. The biogas can be used in a cogeneration system. In this case the energy coming from the combustion of the biogas is used to heat water and to activate at the same time a turbine which produces electricity. Part of the produced electricity can be used to power a heat pump that provides additional heating whether it is needed. The remaining amount of electricity is used for lighting and appliances.
3. The produced biogas is directly used as an input for a geothermal coupled heat pump (GCHP) with an absorption cycle. In this way the heat pump is powered directly by gas, no electricity. The left amount of gas can be used to generate electricity with a turbine, to be used for lighting and appliances.



Overall heating demand is estimated at 1.306.000 kWh per year (pace heating plus domestic hot water), corresponding to a maximum power demand of 750 kW. This is the demand of the buildings and it is different from the energy input in the generation system. This depend by the efficiency of the heating system itself, of the distribution and the terminals.

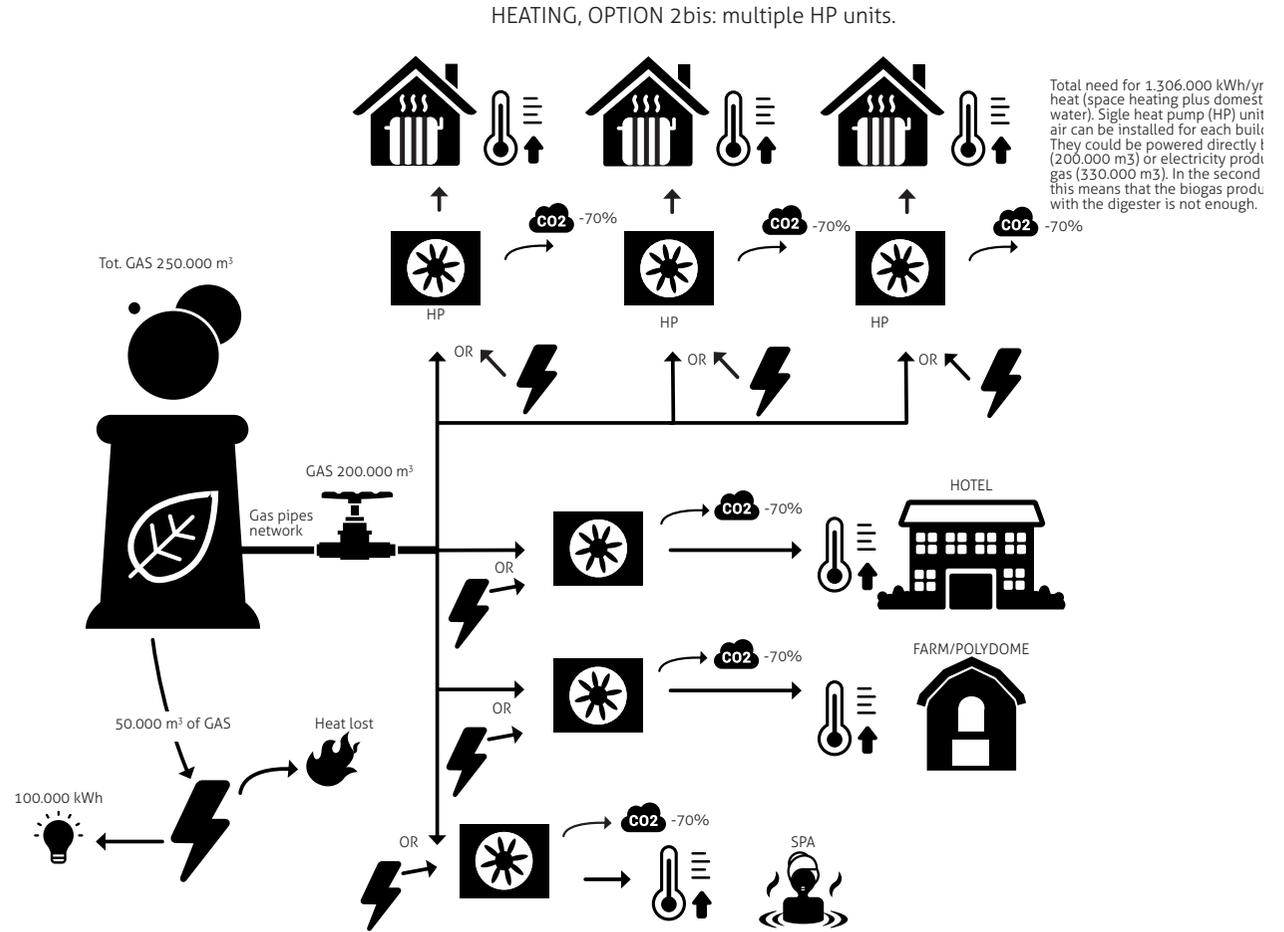
Total heat use Polydome: 185.000 kWh. If this is provided with a GCHP (geothermal coupled heat pump), we can assume the COP (coefficient of performance) to be 3,5. In this case the electricity input for the GCHP would be 53.000 kWh.

Dairy farm

- › Heat needed by dairy farm 15.000 liter/yr light diesel. With an average energy density of 35 MJ per liter, around 40.000 kWh/yr are needed. Efficiency may be increased by insulation, and more effective heating systems.

Suggested heating strategy including peak loads

- › Heat pumps are installed for buildings heating before the biomass plant
- › Once the biomass plant is realized, it supplies the base heat load to a district heating network
- › The heat pumps are used to boost the district heating network to cover the peak loads
- › Additional electric boilers are possible as a backup source



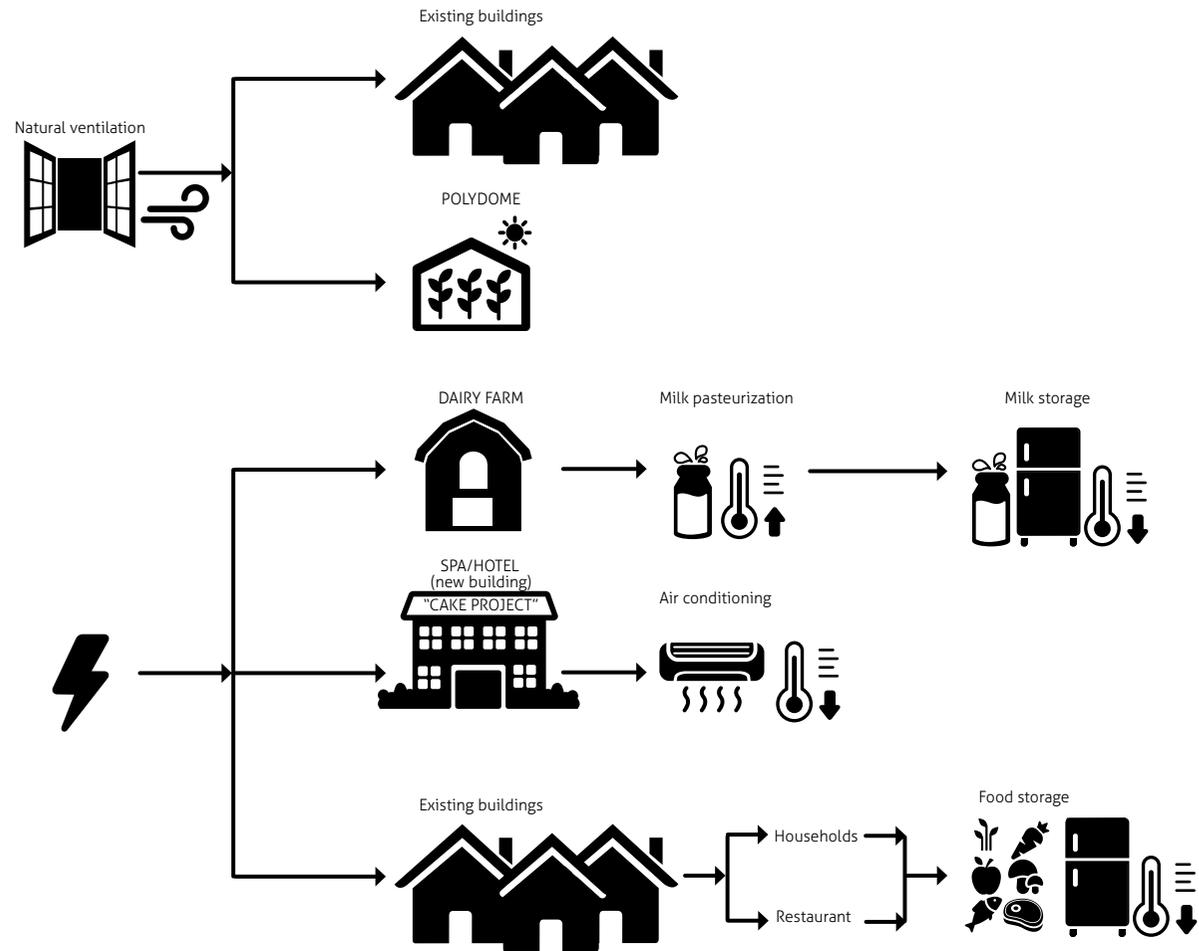
3.4. COOLING

Cooling at Arkna is mostly used for the spa/hotel “cake project” complex, the food-production process, Polydome logistics center and the berries freezer.

Dairy milk is cooled, then stored in the barn till it is pasteurized (heated), then it is cooled back and processed. Ready-made products should be stored in cooled premises. Cold storage rooms are suggested in the basement, underground to exploit the thermal mass of the earth.

Polydome is cooled by natural ventilation, active cooling with e.g. refrigerant cycle is not needed. A 3D model of polydome has been computer simulated. The model has shown that high ventilation rates are reachable by placing 1m high openable windows all over the perimetral walls and 25% of the roof area openable. This allows the indoor temperature to be the same as outdoor with solely natural ventilation. In case additional air flow rate would be needed, it is easy to install a fan on the upper part of Polydome which increases the airflow rate.

Fridges are located in the restaurant of the manor. They are integrated into the building and the condensers placed in an unheated area on the north side of the basement.

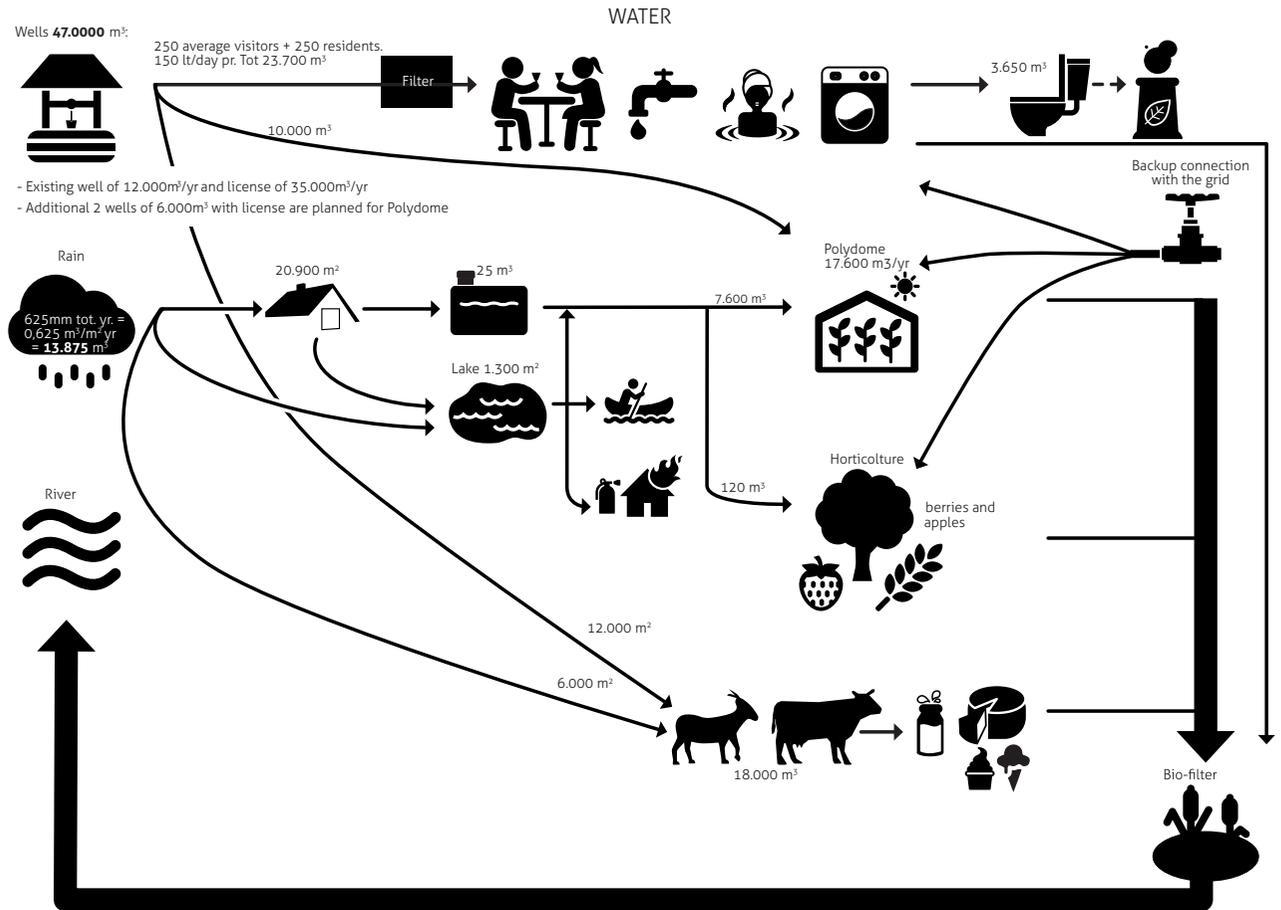


3.5. WATER

We need 63.000 m³ of water in total per year. For Arkna to become self sufficient we need to supply this amount without counting on the municipal grid. We can supply water with the following practical means:

- › Rain water collection
- › Wells
- › Reuse of greywater

The use of the local river as a supply is avoided because of its limited volume and the difficulty to obtain the required licence.



Total water use for buildings:

250 people are expected on average in Arkna Eco-Park per day. Peak in summer is 450 people (including the tourists and the employees of Arkna park). In Arkna itself currently live 125 residents. With active houses, this number will rise to 250 in 2025. The water consumption per person (including commercial use as e.g. washing machines) is assumed to be 150 liters per day. This brings total yearly water load at $500 \text{ (people)} \times 0.15 \text{ (m}^3) \times 365 \text{ (days)} = 27.000 \text{ m}^3$. Of this $3.600 \text{ m}^3/\text{yr}$ are used to flush toilets. The average daily use is $500 \text{ (people)} \times 150 \text{ (liters)} = 75.000 \text{ liters}$.

The peak summer demand is $700 \text{ (people)} \times 150 \text{ (liters)} = 105.000 \text{ liters}$.

The water for this use is taken from local wells, except the water to flush the toilet which reuse grey water coming from showers, washing machines, sinks etc.

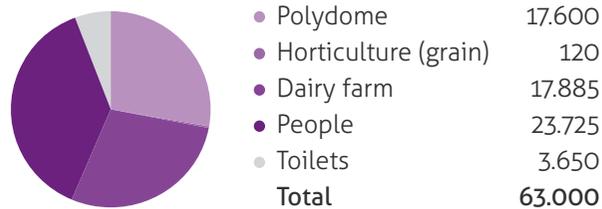
Usage for dairy farm:

Number of animals: 250 cows, 250 calves and 400 goats.

Assuming 120 l of water/day per cow, 80 l/day per calf and 10 l/day per goat the total yearly water need becomes 18.000 m^3 . The water for this use is taken mainly from agriculture wells.

Building / Activity	Needed m ³	Rain collection	Wells	Reuse (e.g. grey water)
Polydome	17.600	7.600	10.000	
Horticulture (just grain. No berries and apples included)	120	120		
Dairy farm (animals' water intake)	17.885	6.000	11.885	
People (incl. commercial use)	23.725		23.725	
Toilets	3.650			3.650
Total use	62.980	13.720	45.610	3.650
Total available	61.471	13.875	35.000	12.596
Needed additional wells license	10.610			

Water demand in m³



Water supply in m³



Usage for Polydome:

The use of water for Polydome is estimated at 17.600 m³/yr. It is supplied by rainwater and wells.

Usage for horticulture:

Horticulture includes apples trees, berries and grain. At the moment, the amount of water needed has been estimated just for grain and it is 120 m³/yr. 10 m³ tank should be sufficient as buffer, supplied by rainwater.

Water use herb garden:

The necessary tank size has been calculated to be 10 m³. A 15 m³ tank will be located on stilts, preheated by sun.

Amount of water per well: 12.000/year

Currently there are 2 wells. A small one only for winter and a big one is in the apple orchard, in the herb garden, with a capacity of 12.000 m³/year. The current license allows to pump 35.000 m³/yr. Two new wells of 6.000 m³ each with an additional license are needed for Polydome.

Amount of rainwater

The roofs of the building nearby the storages are used to collect rainwater (Polydome: 100.00 m², Experience center: 900 m², barn: 7.000 m², silo: 3.000 m²). The open lake around Polydome and tanks are used as buffers, the lake is used also for recreation and emergency fire water storage. The total yearly average precipitation is 625 mm. The collected rainwater per year is around 13.900 m³.

River exchange limit

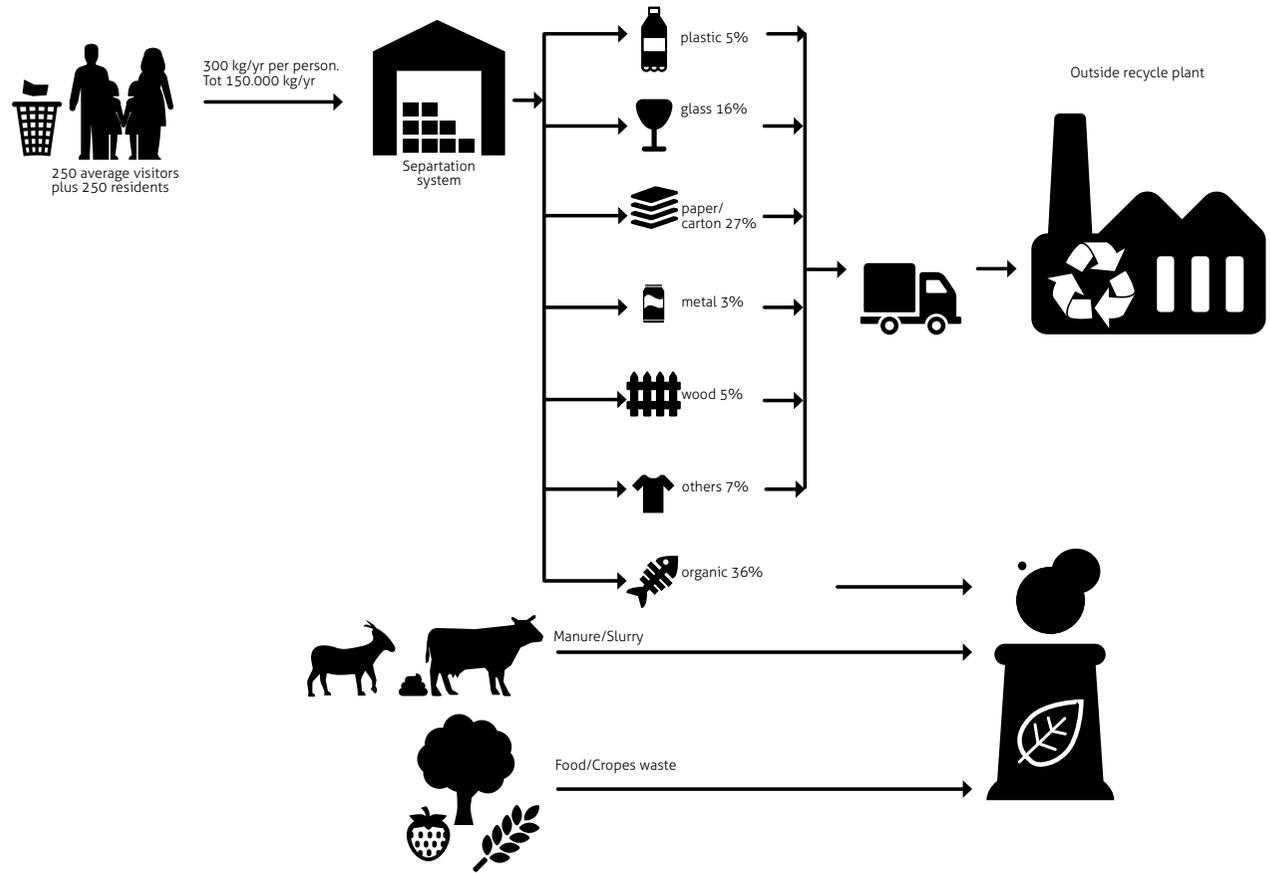
There is a plan to use the river as a buffer for Arkna itself but this should be avoided if possible because it is difficult to obtain the required licence. Rainwater can be drained to the river limitlessly.

3.6. WASTE

Arkna is a 100% waste-free production environment:

- › The guests are educated to minimize non-recyclable waste.
- › A container exchange system with the retailers is used to minimize the waste derived from packagings.
- › A waste separation system/station in the village divides paper, plastic, organic, wood, metal and others. The waste station will be located nearby the village well, with freestanding roof.
- › Organic waste coming from food, horticulture and Polydome are used as an input for the biomass plant, whose outputs are heat, gases and compost to fertilize.
- › Concerning the black water, there is existing municipality treatment plant.

It is necessary to arrange a cooperation of local house owners, that manages all houses, and agrees on a central waste collection system, and can hire a building concierge. This requires the participation of all owners. This union would also allow collective landscape maintenance, building maintenance, renovation works, etc. Arkna park waste goes to the same waste station (centralized).

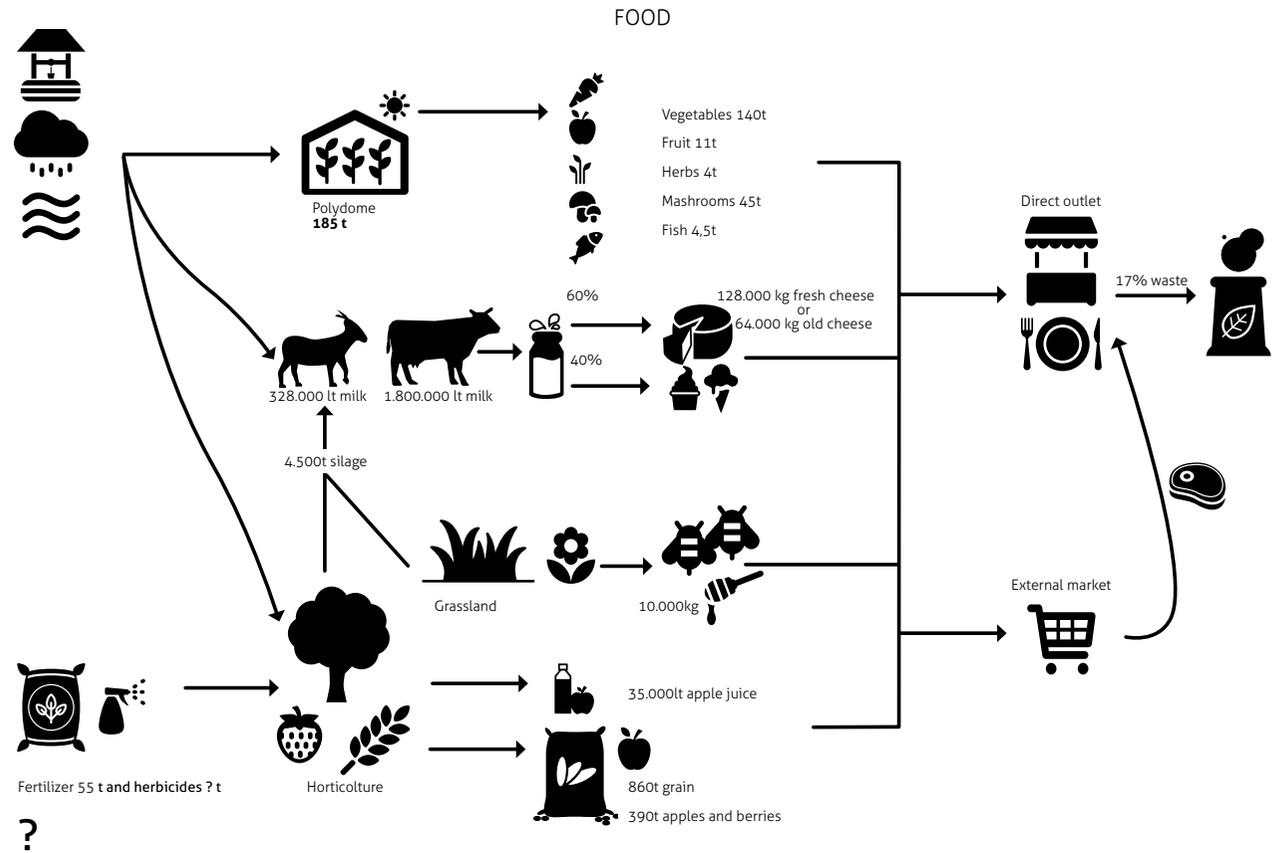


Average n° people	kg/yr person of overall waste	kg/yr per person of organic waste	Total kg/yr Waste	Total kg organic/yr waste
500	300	108.8	150.000	54.400

Type of waste	Organic	Paper/ carton	Glass	Plastic	Metal	Wood	Other
Ratio	36%	27%	16%	5%	3%	5%	7%

3.7. FOOD

The food systems at Arkna are aimed at sustainable, local production, and organic production where possible. The food production is for local consumption at the park, local resale and external resale. The systems are designed to have both a wide spectrum of food available as well as year round production possibilities and high efficiencies. The main food supply systems consist of the dairy farm, the polydome, field agriculture, and the herbal garden. This results in a largely vegetarian offering, which is far more efficient than relying on meat products.



3.7.1. Food system inputs and consumption

- › Farm fertilizer uses: NPK 16t, AN 32,5t, NS 6,5t.
- › Herbicides: Round-Up, Axial, Mustang/Sekator
- › Water used by dairy farm and horticulture etc
- › Food per person (average 250 visitors/day) in the following table:

Food consumption per year	Manure production (kg/day)	Visitors kg consumption per person/year	Units
meat	80	20.000	kg
fish	25	6.250	kg
cereals	120	30.000	kg
potatoes	80	20.000	kg
vegetables	120	30.000	kg
fruit	115	28.750	kg
cheese	20	5.000	kg
milk	80	20.000	lt

3.7.2. Production

Arkna Eco-park produces around 15 times more food than the consumption of its visitors. The over production is sold at the direct outlet located in the park and to external local markets. Few groceries are purchased from the external market, because of insufficient production, mainly consisting in meat, fish and potatoes. The production of Arkna consists of fruit and vegetables, including berries and mushrooms (thanks to Polydome those are produced all year round), cereals and legumes, aromatic herbs, fish, honey and milk. The derivatives are juice from apples, old and fresh cheese, yogurt, butter and ice cream from cow and goat's milk.

Honey

- › Current honey production, 30 beehives. 2015 was a bad year and only 400 kg were produced, 1000 kg were expected. Because it was cold and rainy, bees did not align with flowering and started stealing from one another. Additionally, the lack of good beekeeper has aggravated the situation. A new Beekeeper is being sought. 150 beehives are planned by 2020. Goal is 10.000 kg of honey (75kg/bee hive).

Dairy farm:

- › 450 cows (225 calves, 225 cows). Possible addition of 150 extra cows. 5000 liters daily of cow milk are produced. With organic farming 3500~4000 liters. In total 1.8 million liters/yr



are produced.

- › Goats (350~400 in 2016), organic from start. Expectation: 900 l/day, 328.000 l/yr.
- › Cheese production starts in 2016. The majority of goat and cow milk (speculated 60%) is converted into cheese. The rest is converted into yoghurt, ice-cream, butter and milk products. Approximately 1kg of fresh cheese or 0.5 kg of matured cheese are obtained from 10 liters of milk. Additional calculation is needed to estimate the quantities of butter, yoghurt and ice cream .
- › In 2020 we start importing milk to increase the cheese production, 25.000 to 50.000 liter per day (5~10 times more than on-site). The milk should be local, according to our principles.
- › Farm feed is self grown: silage 470 ha, 5300t. Grain 200ha, 860t (wheat 70 ha, winter wheat 43 ha, barley 79 ha, yellow pea 10,5 ha). Cows are fed mainly with silage mixed in silo with other ingredients, these are the monthly quantities: barley 180200 kg, corn 9000 kg, rape cake 19200 kg, silage 318000 kg, hay 7710 kg, straw 13000 kg, micro feed 1200 kg, palm oil 600 kg.
- › A cow consumes approximately 20 kg of dry food per day. Currently Arkna is able to be auto-sufficient with its own production. In case of an unproductive year due to e.g. natural disasters, bad weather or pest infestation,

external sources are needed. Another option would be to purchase additional land to produce extra corp as a buffer but land is not yet available for sale.

Fruit:

- › 36 Ha are planted with blackcurrants and apples together. Apple orchard, 4 Ha planted in 2017 to a total of 26 Ha in 2020. Historic data: 3500 kg apples turned into 1600 liters apple juice. 2000 apple trees/hectare. Apple production full rate is reached in 7 years (by 2020). 12-15 ton/hectare (max 20 tons/hectare) are produced, resulting in ~390 tonnes/year total average by 2020. 20% on average is converted into juice = 78.000kg, 35.000 liters of juice/yr. Suggestion: Katy apples.
- › 23.000 black currant bushes are planted in October 2015 on 4 Ha land plot and increased over time to 10 Ha. The production rate starts significantly in 2017. 7-9 tons/hectare are produced in between the 3rd-7th year. In 2017, full production at 70-90 tons/year is reached. 17.500-22.500 liters juice and 35.000-45.000kg jam are produced. Life cycle is 10-12 years.

Polydome:

- › Polydome Arkna sells fresh vegetables, fruits, herbs, mushrooms and some fish produce to the local market. Polydome production fully

meets the consumption of vegetables of the park, producing around 4 time more than the visitors needs and offering a diverse choice of products. The overproduction is sold to the local market. Some of the crops are lemon, raspberry, asparagus, turnip, blueberry, apricot, peach, peas, onion, garlic, oregano, rosemary and thyme. More details about the quantities can be found in the table below.

Food production per year	Quantity	Units	Notes
Silage	5.300	ton	Used to feed cows
grain (wheat, winter wheat, barley, yellow pea)	860	ton	
apples and berries	390	ton	- 78.000 kg for juice (20%)
apple juice	35.000	ton	
Tot. milk cow	1.800.000	lt	-60% cheese
Tot. milk goat	328.000	lt	-60% cheese
Cow cheese fresh	108.000	kg	10lt per 1 kg fresh cheese
OR			
Cow cheese old	54.000	kg	20 lt per 1 kg old cheese
Goat cheese	19.680	kg	10lt per 1 kg fresh cheese
OR			
Goat cheese old	9.840	kg	20 lt per 1 kg old cheese
Milk not used for cheese	851.200	lt	
Polydome			
Vegetables	126.241	kg	
Fruit	10.311	kg	
Herbs	3.544	kg	
Mushroom	40.500	kg	
Fish	4.128	kg	



3.8. LAND

In Estonia 851 thousand ha of land is used as permanent grassland (25%) or other functions. The total area of Arkna is 671 Ha of which 60% (400 Ha) is grass crops mainly used for cows grazing and to produce silage for cows feeding. Arkna village and Eco-park occupy 5% of the land (15 Ha) of which just around 13% (20.000m²) are used by buildings. 30% of the land (200 Ha) is cultivated with grains and 5% (36 Ha) with apples and berries. Polydome is built on 1 Ha. The rest of the unassigned land is used for recreation, spiritual function and biomass production.

There are restrictions to drilling because of water contamination issues through the limestone. It should be checked with the local authorities if deep drilling for GCHS (ground coupled heat storage) is possible. The current solution calculated is for horizontally oriented GCHS. This is located underneath the goat/cow pasture, costing about 650.000 euro.

Land: total 671 ha

Horticulture

- › Silage 60%
- › Grain 30%
- › Apples and berries 5%



Village & Eco-Park 5%

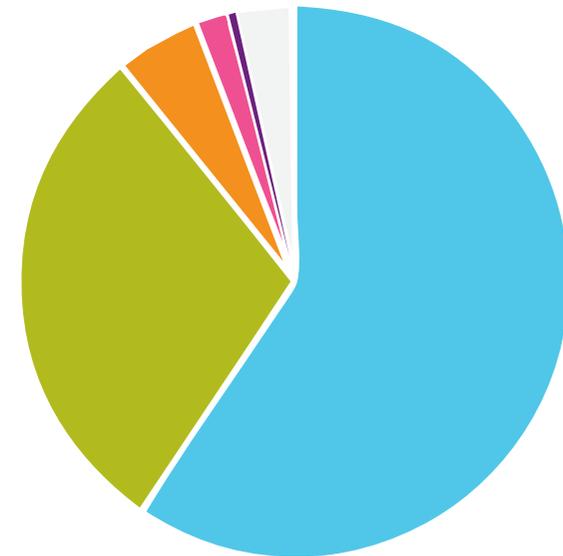


Polydome 0,2%



Others 3,8%

- › recreation
- › spiritual yard
- › biomass production



4. DESIGN PRINCIPLES

Arkna Eco-Park is a wholesome place to visit, and enjoy on many levels. From its services and events to the way the whole is designed, communicated and operated. The design guidelines ensure a uniform philosophy and quality in execution.

4.1. Materialization Guidelines

4.1.1. Urban strategy

The urban development strategy for Arkna follows the main project's goals closely. These urban design principles may be expanded on over time to form a comprehensive Arkna philosophy of area development. Important elements that are applicable to the urban strategy are as follows:

1. Diversity is one of the most important urban principles. Because the area has a layered history, and its intended use is new, different ideas about what the area is, can look and work like, are welcome to live side by side as long as they inhabit the values of the project. Implement innovative urban design methods, and make room for lessons from the past.
2. Arkna is about healthy, happy and responsible living. Everything is serving this goal, and an important reflection in the urban plan is to place attention and make room for small, human scale interventions. There has to be room for nature

more than for machines, and form follows human function and wellbeing rather than aesthetic imprints from the outside.

3. Where the community is concerned, design the urban environment by hosting co-creation sessions with the community present.
4. Preserve natural elements and historic elements by default. If a conflict arises, long term natural elements such as trees or geological formations should be most valued, then historic elements, and only lastly immediate needs of the present.
5. The space between buildings is where the landscape design gives space to nature and people. Prevent large hard surfaces, allow elements to be reclaimed by nature.
6. Try to make all spaces have double function, and to revolve in functionality throughout the year.
7. Only make hard surface roads where absolutely necessary. Use compacted, sealed dirt roads where possible.
8. Stimulate biodiversity by using different design scales and approaches for the landscape and buildings.
9. Avoid outdoor messages except for service updates.

4.1.2. Landscape

1. Follow Feng-Shui principles
2. Use all elements for more than 1 reason: Never just aesthetic, productive, etc.
3. Follow English Garden landscape design guide-

lines: increase mystery, hidden elements, prevent long straight paths, highly diverse landscape conditions.

4. Developed in symbiosis with urban strategy, in the same manner (co-creation).
5. Florence Charter - the charter of protection of historical parks, registered by ICOMOS on Dec 15, 1982 as an addition to the Charter of Venice.
6. Estonian laws and regulations regarding parks, arboretums and forests.
7. Estonian Heritage Protection Authority's regulations and guidelines for parks in general, and specific guidelines for Arkna Manor Park.
8. All new plants must adhere to MAARYL-2000 guidelines

4.1.3. Buildings

Health & Happiness

1. Rely on research about healthy and pleasant buildings throughout the process
2. Ensure adequate ventilation throughout inhabited areas
3. Do not use materials containing toxins or toxically off-gassing materials
4. Make maximum use of natural light.
5. For residential houses, take into account the full life cycle of people, to allow them to live there from young to old age.
6. Allow people to make buildings theirs, adding their mark and personality. Stimulate interaction, attachment and historical and present narrative.
7. Stimulate a diversity in sensory experience, including visual, touch, temperature, light levels, large and small spaces, main circulations and small (secret) passthroughs.

Culture & Economy

1. Rely on historical, passive and natural strategies for performance management of buildings.
2. Preserve historic elements and materials.
3. Where the historic elements and materials are longer available, the use of modern techniques and designs are welcome. This generates contrast between the new and the old.
4. Rely on local tradesmen and stimulate the education of both sustainable and historic construction methods.

5. Rely on both local and international artists and make them work together to help transfer knowledge about sustainable design and healthy building practices.
6. Where possible do not work historicizing. EG. Do not pretend something new is old. Build something that is as good from the here and now.
7. Stimulate diversity in design, technical solutions and philosophies. Support this by hiring different designers and artists to work on the buildings, rather than choosing the same ones for multiple projects. For example, from passive pre-fab villas to earthships, to active-houses. From abstract to contextualizing, open and closed.
8. When working on building projects keep and update these principles and guidelines, and make them a living, growing and shared document. Give maximum freedom within the borders of those guidelines. Accept that they will be re-interpreted, but make sure that the principle goals of Arkna are always followed.

Ecosystems and Species

1. Use materials and design interventions that stimulate biodiversity, such as bird-nooks
2. Spare trees and mature natural elements when planning new buildings
3. Use the building's structure to stimulate ecosystem services such as rainwater buffering, soil generation, heat capture, shading, etc.
4. Make use of ecosystem services, such as rainwater, shading from trees, biomass generation, etc.

Materials & energy

1. Close all resource loops as locally as possible.
2. Re-use building materials from nearby sources and from previous structures occupying the site.
3. Do not accept building waste, and do not waste any buildings.
4. Use only materials that are toxin free.
5. Use local materials where possible.
6. Use materials with the lowest Life Cycle Assessment (LCA) impacts (eg wood over metal over plastic.).
7. Apply principles of design for deconstruction to provide for beneficial end-of-life scenario's.
8. Use water and energy in a visual way, that allows for direct experiential learning
9. Build only energy neutral buildings, connected to each other to benefit their functioning and exchange excesses and buffer losses.
10. Allow a broad range of temperature fluctuations to save energy and make building experience more dynamic through the year.
11. Do not use any fossil or nuclear or otherwise non-sustainable energy source during construction, operations or deconstruction.
12. Use passive energy technologies where possible, such as ventilation stacks driven by sunlight, gravity operated greywater systems, and greenhouses and phase change materials for energy capture.

4.1.4. Services & Hospitality

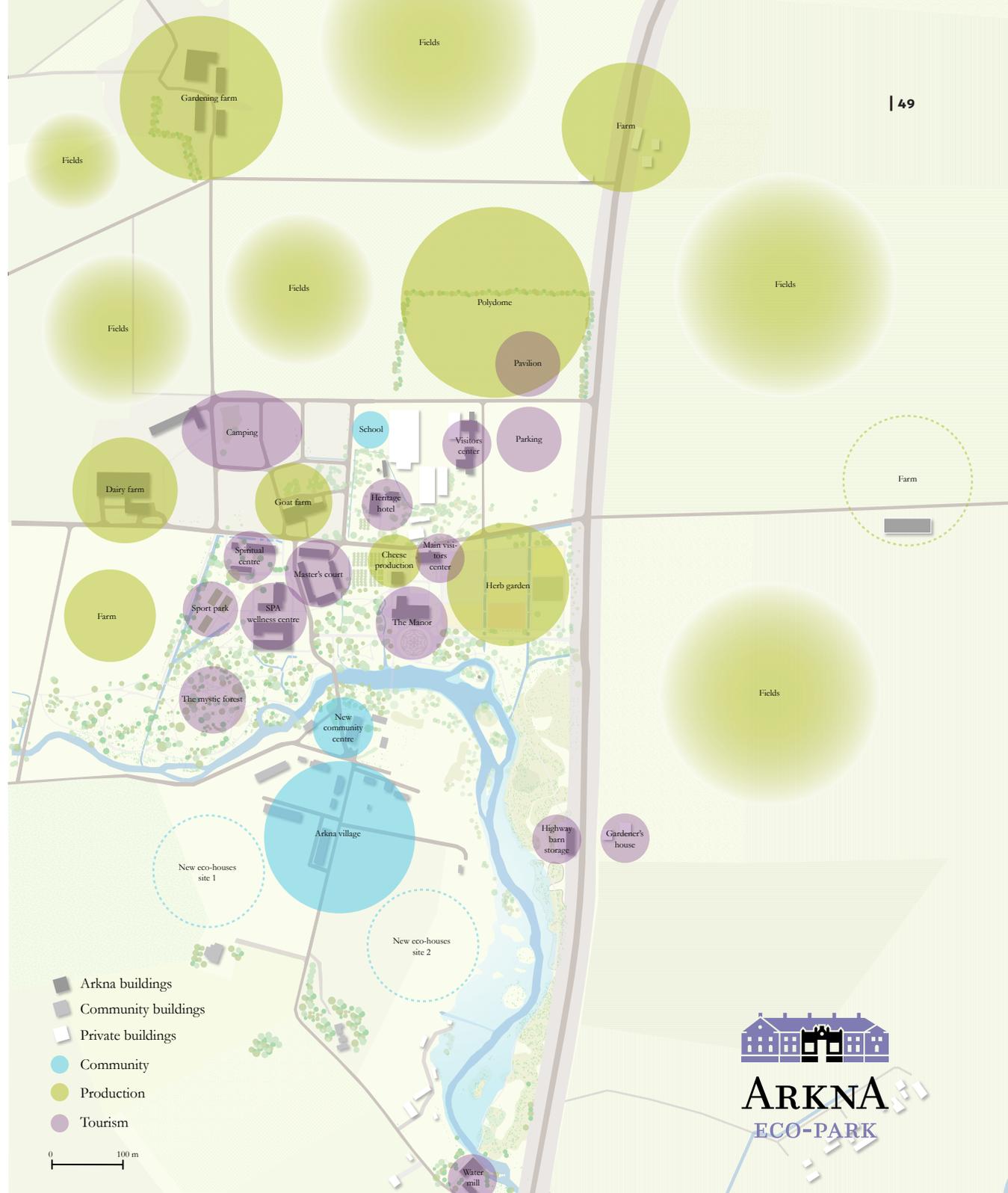
1. Respect, equality and kindness are the flagships of Arkna's service.
2. Arkna practices freedom of speech, religion, sexual orientation and philosophy, as well as respect for tradition.
3. Facilities are made accessible for people with physical and mental handicaps, but do not pander excessively. Temporary aids can be adequate.
4. Arkna gives people responsibility, and holds them to it, respectfully.
5. Arkna allows people to make their own mistakes, and only warns about the most critical of dangers. This means an absence of notes and warning signs except for the most critical areas concerning bodily injury (high voltage, etc).
6. Arkna has a level of luxury that is not focused on traditional notions of comfort in the western world but on providing comfortable basics with an additional range of unexpected pleasures that may not be material in nature. For example, a guesthouse may not have central heating, but a proprietor will bring wood and make a fire in the hearth on request.
7. Service is people focused, and people sourced, which means Arkna relies on people to provide services mostly, rather than the latest technology.
8. Curiosity is welcome, children are encouraged to explore and discover boundaries



5. SPATIAL STRATEGY

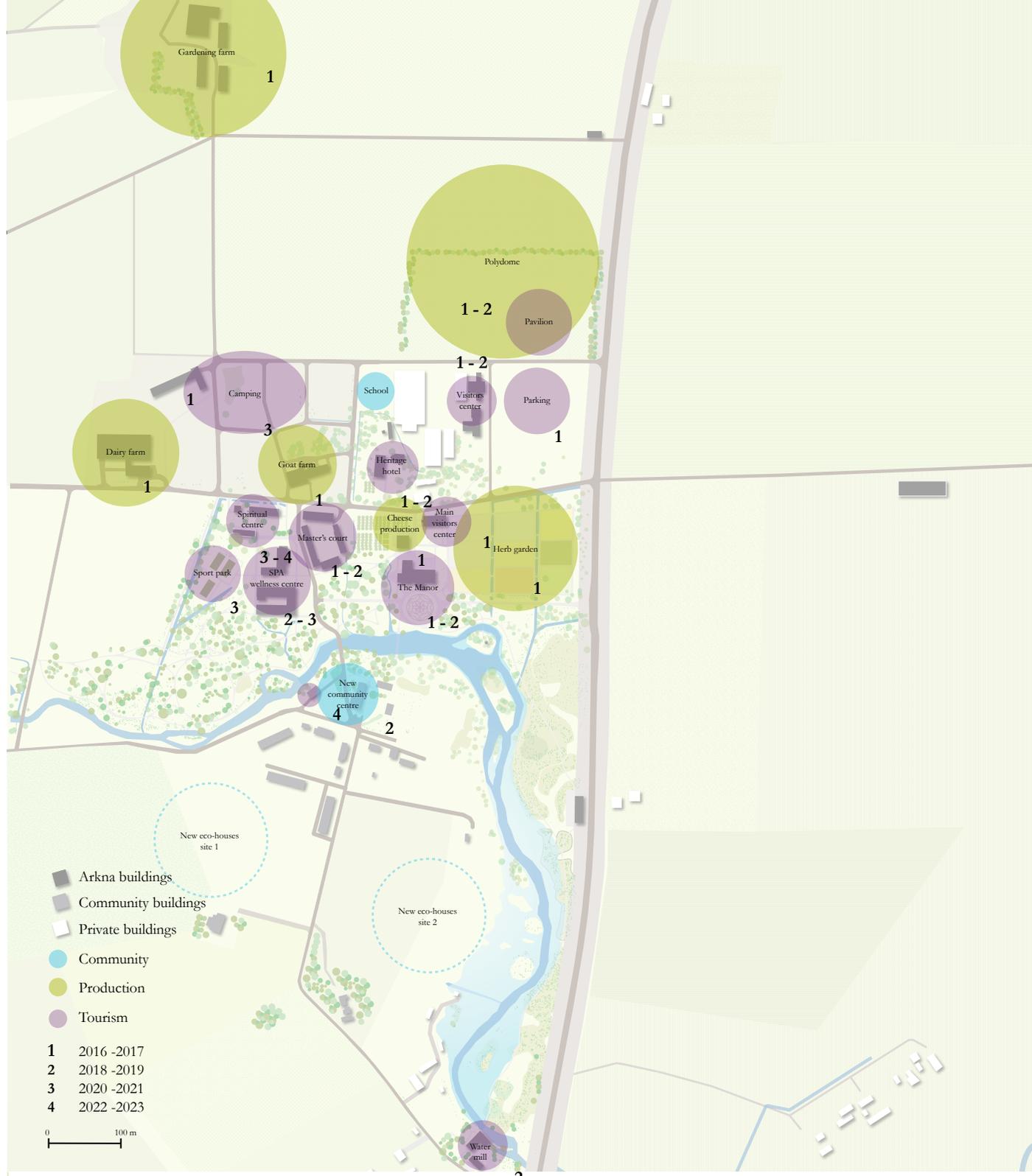
5.1. Programmatic zones & phasing

The programmatic zones are centered in the area of the Manor. This allows the outside zones, such as the Arkna village and the camping to be quiet zones and not disturb each other.



› Map of program elements

› Map of phased developments



5.2. Routing

The Routing is focused on pedestrians, allowing for a number of 'circles' to be traversed, and also make sure that people do not need to backtrack. Also, logistics for the farm are kept out of the center to make sure no accidents occur.



› Map of routing

- Arkna buildings
- Community buildings
- Private buildings
- Community
- Pedestrians
- Emergency maintenance vehicles
- Camping vehicles
- Service access
- Visitors vehicles

0 100 m



5.3. Landscape & ecosystems

The landscape typifies itself by a combination of functional use (productive landscapes) and maximum biodiversity, where most open areas are utilized for diverse plant and species growth and cultivation, including small ridges, snippets of open land etc. This makes for an almost garden-like landscape setting, where many pathways are unpaved, except for the main routes. The paved areas allow rainwater to seep through, and are therefore of a semi-open nature.

Following the urban strategy, the landscape makes stacked use of most places, for example, stacking productive, aesthetic, supportive and educational functions.

Through these strategies, Arkna Eco-Park displays a variety of landscapes. Each building and function area can have its own character in landscape expression to support this diversity. For example, one building may focus on insect-supporting flowers, while another on nitrate fixing soil regeneration

planting. Mostly set on flat land, the manor complex consists of 20 buildings in visible proximity to each other. Most buildings are surrounded by majestic high trees that set the atmosphere.

The park, set South of the manor, is a maintained wild area with curving paths in the woods and by the river. The park displays high biodiversity, especially a high population of different birds. Pastures and cows are visible from the East side of the park.



The grain fields are to the East and North of the manor complex, the berry and apple orchards are to the East, not visible to the visitors, but logistically at a most convenient location. Cattle barns, dairy and apiary are within walking distance of tourism complex, visitors are encouraged to explore the grounds.



The Polydome greenhouse with its attractive visitor center, lake and restaurant are at a walking distance from the manor complex, near the highway with excellent visibility to passers-by. This modern part of the Eco-Park sets an example of old and new combined into a consistent whole.



Arkna community is located immediately West of the heart of Arkna Eco-Park. The village community is considered part of the Eco-Park and will be developed simultaneously.



5.4. Infrastructure

The following map shows Arkna's technical infrastructure, cables, water flow, facilities.



› Map of infrastructure

6. BUSINESS STRATEGY

6.1. Main strategy

The main business strategy of Arkna focuses on three distinct groups of operations: The Arkna Eco-Park for tourism, the agricultural production for product sales, and the Community development program. These are detailed below.

› Touristic map



Wellness Tourism

Like all of Arkna's ventures, this focuses on health and wellness. Our hotels and wellness center are the places for healing the body, mind and spirit. The four buildings designed for accommodation are of different comfort and luxury level for housing guests with a variety of needs and wants, including for people with disabilities. There are options for indoor and outdoor exercise, therapies, massages, spa relaxations, hiking trails for nature walk.

Agro and Eco Tourism

Attracts people who are interested in innovative agriculture, country life experiences and organic food production. Special guided tours are held for special interest groups. The Botanical Garden and Polydome greenhouse are the main attractions and reason for visitors to come to Arkna. The uniqueness of the Herb Garden lies in the assortment of plants from medicinal herbs to heritage protected flowers all arranged according to the elements, their spiritual and esoteric effect. The nine activity areas provide options to learn about the garden, plants, history, and biology. Polydome is an innovative greenhouse with a functioning ecosystem inside. It provides healthy local food products for Arkna and the surrounding areas year round.

Cultural Tourism

Encompasses concerts and summer theater performances in the Master's Court, art exhibitions in

the gallery and other buildings. Artists and craftsmen will have workshops for producing art, holding classes for visitors, and selling their work. Trade, art, antique and food fairs are held on Arkna premises. There are educational programs tied into all the cultural activities.

Agricultural & food production/ Arkna Eco-Farm

Arkna food production is focused on providing local, chemical-free food for people in the area. Since the grains we grow on Arkna grounds are feed for our farm animals, which in turn are part of our food-chain and production (dairy), we need to ensure the highest quality possible for all aspects of of the chain starting from clean water for plants and animals to high hygiene in food processing plants.

Fresh produce

We grow fruits and vegetables for fresh consumption in our food outlets (cafes, restaurants, shops). 18 hectares of land will be under berry and apple orchards, 1-hectare test Polydome will be built by 2018 with up to 7 hectares of space for possible expansion.

Dairy

Cows and goats are raised for milk and milk products (cheese, yoghurt, butter). Total count of farm animals is to reach 800 by 2020.





Support crops

We grow wheat, rye, barley, oats and hay for high quality animal feed. Part of the harvest is sold to mills for flour.

Processed food

Part of the fresh produce will be processed into health snacks, energy bars, jams, preserves and juices.

Community development/ Arkna küla

The Arkna community is an essential part of the Eco Park. The inhabitants live in the middle of the development projects and are therefore affected by the decisions made, the amount of tourists in the area, but also by the jobs created, convenience and vicinity of services. The count of Arkna inhabitants was 127 in 2011. Most of them live in 2-storey apartment blocks from the 1960s and 70s.

Community growth

We aim to grow the village to twice the size by adding zero-energy passive houses. We also need a considerable amount of skilled labor, which is currently not available in the village, and scarce in the area. New housing development will attract high-quality (skilled, educated) people to the village.

Community services & support

There will be a new Community House built for the purpose of tightening community relations, providing services for children and the elderly, including day care, library, leisure time activity areas and internet services. The building will have an event space for village meetings and parties.

Community involvement

Community representatives are involved in the decision-making concerning the developments in and around the residential areas. Regular meetings will be held at least twice a year to inform, brainstorm and receive feedback from inhabitants.

6.2 Business drivers

The success and growth of the Arkna Eco-Park depend on two main drivers:

- › Generation of traffic
- › Arkna brand

Traffic

The traffic follows the usual diffusion of innovations: innovators, early adopters, early majority, late majority, and late mass. In the early stages the innovators and the early adopters are the ambassadors of the project that define the success of the whole eco-park. The key to generating traffic to the Eco-Park is to identify and involve these groups.

Local Innovators

A start with the involvement of the innovators is made with the relationships built with local, regional and national government, and the local community. Also, some initial relationship have been made with partners and suppliers. These groups are important ambassadors to get the Arkna Eco-Park and brand launched.

Champions

The next group of innovators are the champions and potential customers that support the concept of the Eco-Park. They are a specific subsection of larger customer groups. Apart from being the first "paid" customers they have an important value in also con-

tributing to the development of various services and convince their peers in their own community to visit the park.

Local businesses

A third group is local business owners. This group assist in development of the services as entrepreneurs. This can be an extension of their existing business but also new entrepreneurs that adhere to and support the main principles of Arkna Eco-Park. This group is an important accelerator for the business development and variety of services in the park.

Early adopters

The early adopters are attracted in two ways. First of all, they are directly connected or influenced by the ambassadors in the group of innovators. Second, these are attracted through media and very specific value-add events. Something that enriches their life. Still they adhere to and support the main principles of the Eco-Park. Communicating the uniqueness and special experience in marketing and communication efforts is key to attracting this group.

Once a critical mass of traffic has been generated. The next phase is to widen the communication network and link to bigger B2B partners to sell the services and products of the eco-park.

Brand

The brand of the Arkna Eco-Park builds on three pil-

lars: identity, visibility and trust. The identity of the Arkna brand has been defined as part of this document. This brand image must be applied consistently in all activities of the Eco-Park.

This feeds into the second pillar which is visibility. The marketing and communication activities focus on specific target audiences as indicated in the paragraph above. During a specific period of time products, services and activities are positioned where and when this target audience is present. Specific attention is given to the segmentation and positioning of the different customer groups of the Arkna Eco-Park.

Finally, value and quality are the key to creating customers trust and therefore retention. The complete customer experience from creating expectations until after sales is managed. The general manager of the park is responsible for the representation of the overall concept in all activities. Product and service managers are responsible for translating the overall concept into a full customer experience targeted towards specific target markets. Their combined activities aim to create synergies between services, which need to be continuously monitored, evaluated and adjusted.

The brand development is essential for the retention and word-of-mouth marketing in the early stages of the Arkna Eco-Park development. Personal relations and shared experiences between staff, management and (potential) clients and partners is key.

6.3 Market

Tourism & Hospitality

General, year round audience

Our primary target markets for the tourism and hospitality sector are Estonian, Finnish and Russian families for leisure, health and wellness travel, and businesses for company meetings, seminars and workshops. The secondary market focuses on the United States eco-friendly foodie traveller looking for a new and exciting destination.



› Russian tourist family

Event audience

Seasonal, summer.

Music festivals, concerts, fairs and theatrical shows & festivals attract a younger, more hip, Europe-wide crowd to Arkna. Organized in collaboration with special events teams from different countries and organizations in Europe with the help of Creative Europe program funding. Festivals happen year-round. They start small and expand to an increasingly large number until a reasonable limit is reached, estimated around 500-1500 people. Events increasingly focus on an international audience, drawing visitors from Europe and beyond with unique, involved and co-created programs that involve body, mind and soul, as well as education, music, production and arts and crafts.

Production

Primary markets for food production are:

Local and regional customers who buy for own



consumption (local farmers market, direct delivery and pick-up);

- › Local restaurants, cafes, bakeries and other F&B outlets that need fresh produce and prefer to source locally;
- › Arkna Eco-Park visitors via Eco-Park F&B outlets and via shops on premises to take home.
- › Secondary markets are specialty supermarkets in Tallinn and Tartu, and direct deliveries via an online shop.

Community services

Community services are aimed at Arkna village inhabitants. As of 2011 there are officially 127 people living in Arkna, of whom 18% are children and minors, 60% are of working age and 22% are retired and elderly persons. The village, and also the surrounding villages, lack services for all age groups. The population of the village is aging rapidly as young people tend to leave for the cities and not return after studies. About 15% of the village is aged 70+. We may expect a change in the population within 5 to 10 years as these apartments will be sold mostly, not inherited.

Our expectation is that as the Eco-Park develops, the real estate in the village will rise in value and attract more families with children. We aim to be prepared for the change in population considering the needs of people looking for comfortable living in the countryside.

6.4. Products/Services

Tourism & Hospitality/ Arkna Eco-Park

This is one of the main areas of major income for the Eco-Park. Major focus is on hospitality service quality, exceeding customers' expectations and creating memorable emotions.

Phase 1

- › Special events, weddings
- › Conferences
- › Trainings, seminars and meetings
- › Accommodation (Manor 5*, Heritage hotel 4*)
- › Concerts, theater shows
- › Herb Garden
- › Visitors center
- › Cafes (pop-up around Arkna, Masters Court)
- › Tourist info
- › Health store/natural pharmacy
- › Educational, guided tours (barns, herb garden, hiking trails)

Phase 2

- › Summer bar (Manor)
- › Consultation services
- › Wine cellar
- › Art gallery
- › Car, bike, boat rent
- › Camping site
- › Caravan park
- › Picnic ground
- › Restaurant

Phase 3

- › Accommodation (Cake hotel 3*, Voluntourism center 2*)
- › Voluntourism activities
- › Playgrounds (indoor and outdoor)

Health Park/ Arkna Eco-Park

Phase 1

- › Hiking trails

Phase 2

- › Deluxe spa (Manor)
- › Hiking trails
- › outdoor gym

Phase 3

- › Indoor gym
- › Tennis court (2)
- › Multi-sport court
- › Heritage spa (Cake complex)
- › Natural therapies
- › Alternative therapies
- › Personal trainer
- › Nurse
- › Physiotherapist
- › Dietitian
- › Herbalist

Culture/ Arkna Eco-Park

Planned revenue streams from organizing cultural events.

Phase 1

- › Concerts
- › Fairs (food, arts & crafts, antiquities)
- › Historic manor tours

Phase 2

- › Festivals
- › Theatrical shows
- › Poetry and literature events

Phase 3

- › Village museum
- › Art gallery, exhibitions



Training & Competence center/ Arkna Eco-Park
Training sessions and workshops for participation fees.

Phase 1

- › Cooking
- › Cheese-making
- › blacksmith
- › ceramics

Phase 2

- › arts and crafts
- › Woodworks

Phase 3

- › renovation

Production/ Arkna Eco-Farm

Our branded foods are clean, fresh and locally produced in and around Arkna.

Phase 1

- › Grains (wheat, barley, rye and oats)
- › Milk and milk products, incl. yoghurt and cheese
- › Honey

Phase 2

- › Jam, preserves, marmalade
- › Juice
- › Fresh produce
- › Fresh and dried herbs (medicinal and cooking)
- › Bread, cakes and other baked goods
- › Food store
- › Phase 3
- › Biomass, heat and electricity
- › Food deliveries
- › Natural cosmetic products
- › Community services/ Arkna küla
- › Supportive services - minimum revenue planned via renting rooms for events.

Phase 3

- › Hobby groups (folk dance, handicrafts, book club)
- › Internet connection
- › Meeting/event rooms
- › Daycare for kids
- › Senior day center
- › Library



6.5. Value proposition

A place where you can viscerally experience a self-sustained modern community in nature.

We offer a peaceful escape to nature where body, mind and soul are taken care of by Mother Earth and by everything She has to offer. Harmony, health, vitality and joy through local food, walks in the park, getting pampered at the spa and listening to the many sounds of nature.



6.6. Target audience

National

- › Families; Man, wife, two kids
- › Anthroposophic single females, 45+ divorced
- › Health oriented couples mid-twenties & older
- › Schools
 - › Elementary: field trips
 - › High schools: field trips
 - › Universities: study trips
- › Weddings & special events parties (200 people)
- › Companies
 - › Training & coaching organizers (b2b)
 - › Medium to big companies (retreats, executive meetings)
 - › Small to medium companies for summer retreat (250)
- › Festival go-ers

International

- › Affluent, 40+, no accompanying kids, active, seek the best
 - › Come for the hotel, discover the specials
 - › Require good infrastructure, luxury services
- › Global Anglophones
 - › Eco-tourism & agro-tourism
 - › Health oriented couples mid-twenties & older
- › Finland
 - › Spa tourists that want something more
 - › Eco-tourists
- › Russia
 - › Families, health, quality food & entertainment, history
 - › Couples 35+, luxury spa & health
- › Germany
 - › Families, 40+ couples, historic perspective
 - › Festival goers
- › Netherlands
 - › Senior caravan travelers
 - › Festival goers
- › WWOOFers, voluntourists



6.7. Market approach

Food production

Product

There's three products: On-site exclusive series, high-end retail series, and local bulk series.

High end-retail:

High-quality local (organic) food products grown/ made on Arkna grounds and premises. Each product is a piece of philosophy. Small splinters of Arkna's soul and soil. This comes to life in the produce itself, its packaging, label, brand, store placement, etc. There's a focus on processed foods (jams, honey, cheese) rather than fresh produce.

On-site exclusive series:

The same product as high-end retail series with the exception of a slightly alternate, more exclusive packaging. The aim is for the customer to have a feeling that this product cannot be purchased anywhere else. These series are only sold on location.

Local bulk:

Bulk packaged and delivered, for local markets and direct delivery to restaurants, as well as take-away from Arkna itself. This has more fresh produce. Not individually wrapped. Less packaging material, less branding, less 'prettifying', lower price, closer to the earth.

Price

High-end retail: Priced at medium-high level the products exhibit high quality, local organic origin and sustainable/reusable packaging. It sits between 80-95% of the market pricing (with 100% the most expensive product).

On-site exclusive series: Priced at high level with the perception of exclusivity. Packaged accordingly.

Local bulk: Priced at medium level, competing with other organic produce, but providing the advantage of local production and lifting along on the high-end branding impact.

Promotion

High-end retail:

Primary strategy: Inject in high-end retail cycle through celebrity endorsements, radio & tv interviews, upmarket blog placements.

Secondary: In-store promotion, traditional advertising (newspaper, banners at markets), 'true' social media placements (not advertisements), give-away stunts in cooperation with media partners (win an Arkna box on radio show etc).

On-site exclusive series: Displayed and sold only on Arkna Eco-Park gift and farm shops

Local bulk: Presence on market stands, banners, specialized boxes, flyers at markets, giveaways at store/market entries, articles in local media (not ads)

Place

High-end retail:

Direct sales (eg online ordering, direct delivery)
High-end retail throughout Estonia (health/organic/cheese stores etc.)

Once established: Up-market supermarket chain(s)

On-site exclusive series:

Park-based retail

Local bulk:

Local direct sales

Local (farmer)market sales

Regional direct sales (eg online ordering, direct delivery)

Regional direct sales to restaurants

Up-market supermarket chain(s)



Tourism

Product

- › Accommodation+entertainment packages
- › Accommodation+relaxation packages
- › Day-spa
- › Agro-tourism tours
- › Entertainment+F&B packages
- › Restaurants
- › Events+F&B packages

Price

Medium-high price range, focus on excellent service
high-quality food, weekly popular entertainment

Promotion

- › Social media (international bloggers, Facebook page + promotions, Twitter, Instagram)
- › National media (TV, radio, magazines and newspaper)
- › Online promotion sites and sales channels
- › Travel agencies
- › Direct B2B sales

Place

Arkna Eco-Park grounds

Community

Product

Services for local community (internet access, library, hairdresser, day care for children, senior day care, building maintenance)

Price

Low-cost for community members, some services for free to build community strength, some subsidized.

Promotion

- › Word-of-mouth
- › Face-to-face
- › Direct promotion
- › Events

Place

Arkna village/community center



6.8. Partners & stakeholders

6.8.1. Partner Principles

We choose partners with similar values and principles regarding sustainability, eco-friendliness and 'can do' attitude.

- › Provide services using own community to keep value in the community. If possible and available we use the services of local and regional partners.
- › We prefer partners with best global knowledge, combined with local preferences and who share knowledge freely.
- › We collaborate with parties that have multiple values to exchange and that support Arkna's principles

6.8.2. Current partners

- › General partners
- › Municipality of Rakvere
- › County of West-Viru; Marko Torm
- › Arkna village community
- › Travel agencies
- › Enterprise Estonia
- › West-Viru Development Center
- › PRIA Agriculture support
- › National Heritage Board of Estonia
- › European Union
- › Rakvere Smart House
- › TFTA Competence Center for Food & Fermentation Technologies
- › Estonian University of Life Sciences

Cultural partners

- › Keio Soomelt - Prior director of Rakvere Cultural Center, resident Arkna
- › Rakvere Teater
- › Peep Veedla - organizer of international Viru Folk and Viru Jazz festivals

Commercial partners

- › Other manors; Vihula, Sagadi
- › Grossi Markets; Oleg Gross
- › Horticulture Association; Raimond Strastin
- › Polydome; Except Integrated Sustainability
- › Juustukuningad; Erwin Wassenaar's cheese shop

PR, marketing and web design

- › Travel agents; Estravel, Baltikumreisen, Baltic Travel Group
- › Tour guides; EVH OÜ (Russian, Czech and Slovak), Tiiu Saarist, Jaan Masing
- › Marketing; Leelo Sui (freelance expert of Finnish market)
- › Web design; Tarmo Lindaru

Construction

- › Architect; Markus Kaasik, Katrin Etverk
- › Landscape designer; Kersti Lootus
- › Construction company; VMT
- › Construction company; Revin (local)
- › Engineering; Aksiaal
- › Interior Designer; Mari Kurismaa
- › Electric; Aksiaal

- › Plumbing; Aksiaal
- › Legal; Raidla
- › Building material suppliers; Värrikeskused; Paint, coatings & interior coverings
- › Professional kitchens; Metos

6.8.3. Needed partners

Material suppliers

- › Wholesalers for restaurant supplies
- › Engineering companies
- › Logistics & transport

Clients & client suppliers

- › Travel agents
- › Schools supplying kids
- › Training and coaching companies
- › Festival organizers
- › Alternative medicine associations

Work Partners

- › (Hand)craft entrepreneurs from Lääne-Viru county

Marketing & Business

- › PR agency; brand building (not creation) abilities and focus. Perhaps 2: international and local.
- › Recruitment; CV online, Rakvere vocational school
- › Media design & website; Local graphic design & media development

6.9. Funding Strategy

Funding is critical for Arkna. As investments are scarce, the area should be developed step-by-step. Three million euros have been invested into the whole project so far. This includes the purchase of the estate and investments for years 2012-2015. This three million euros is considered owner's equity investments. We have attracted some grants and subsidies, in the sum of 300,000 euros in 2012-2015.

As this project has been in the preparation phase, owner's investments have been considerably larger than grants and subsidies. We have had to prepare for funding opportunities, which means numerous projects must be fully prepared: strategies, buildings construction projects, park maintenance projects etc. Meanwhile we are also financing ongoing operations and prepare Arkna for bigger investments. There is a need to cover financing for 8 positions, which do not generate income yet. There are 12 positions in agriculture that generate some income.

The overall strategy is to attract grants and subsidies to fund the whole project investments. Grants and subsidies together with owner's equity should cover the bigger part of the needed investments.

Priority 1

Our first priority is to work with projects that are already running. Cow milk production is the most important in terms of revenue generation. As the milk price is very low, it has kept us in the loss. We plan to start producing cheese and yoghurt from raw milk to give value to the dairy products. We believe it is possible for the farm to make profits. Starting production requires an additional investments of 100,000 euros.

Priority 2

Planning and projects preparation is our second priority. We have to be ready for grants and subsidies when opportunities open. We are at about 65% right now with all the preparations.

Priority 3

Third priority is to finance small scale maintenance and repairs of Arkna manor buildings, maintaining the park and the surrounding area.

Priority 4

Our fourth priority is to invest through large grants. At the moment we are preparing for Regional Competitiveness grant documentation in order to get funding for Herb Garden and 7 buildings. This is an investment of 2 million euros and 15% owner's investment (300,000 euros).

Priority 5

Investments into accommodation and food & beverage is fifth priority. Necessary investment amounts are large and must be covered by other profitable operations

Revenue from the tourism sector starts to flow only after Priorities 4 and 5 have been materialized.

Sources of investments

- › Grants and subsidies
- › Owner's investments
- › EU Funding (partners) - heritage/protected sites
- › SME instruments

Principles

- › Start where funds and grants are available
- › Owner's investment for critical projects
- › Consideration for private partners/investors for some projects/businesses
- › Investment from entrepreneurs to run own business such as crafts and arts.

7. MARKETING STRATEGY

7.1. Introduction

In 1527 the noble Hastver family established a crop and cattle manor in Arkna village on Selja River. To this day the manor fulfills this function. We, the current owners of Arkna eco-park have made it our mission to promote an ecological and healthy lifestyle. We bare the historic and cultural heritage of the place. This spacious village combines wellness, history, innovation, production, culture and leisure. Specialists prepare food from local lands. We have know-how of and apply traditions. We have a clear sense of healers and modern technologies. All intertwine into the best approach for each guest. Legends and stories have kept Arkna manor alive through the centuries. Now it is turning into a place that helps guests bring meaning, understanding, clarity and order to their own lives. In the healing manor of Arkna the body becomes alive and the restless soul becalms.

7.2 Branding

Outline of branding approach
Arkna has a rich history with compelling stories. We start collecting the stories and myths. Next, we reverse engineer products out of that story that match our key elements. We use existing stories and myths, because it's more than just advertising. The stories contains everything Arkna believes, makes, does, and says. From the stories we partner up with companies to promote and market Arkna.

The test for good branding and advertising: "If your brand story were a movie, would you go see it?"

7.3 Arkna brands

Inspired by the stories and myths, we develop a portfolio of world class brands:

- › Arkna Eco-Park
- › Arkna Eco-Farm
- › Arkna Küla, the community brand
- › Arkna Events, organizes and helps create a transformational experience.
- › Arkna, generic brand (eg for bulk food, legal)

7.3.1 The brands

For each of the brands we collaborate with our community, innovators and early adopters to develop our products and services (see next page).

7.3.1. The brands (continuation)



ARKNA
ECO-PARK

The Arkna Eco-Park is the main brand. It is a premier example of true sustainable tourism development.



ARKNA
ECO-FARM

The Arkna Eco-Farm brand consists of natural, healthy, high quality products and farming. The Eco-Farm brand is embedded in Arkna Eco-Park.



ARKNA
EVENTS

Arkan Events organizes and helps create a transformational experience.



ARKNA
KÜLA

We will use the 'Arkna Kula' brand when there is substantial support yet for a community brand. We expect this will take a few years.



ARKNA

We use the generic "Arkna" brand for bulk food sales and generic communication that does not need or is desired to have less flavor, EG legal forms. The logo is distinguished, but neutral, without color.



ARKNA
ECO-PARK

7.3.2 Brand personality

In the stories and myths all characters have a voice and a face. The stories are not linked to one brand, but are overarching. This is a draft of one of the stories. It is about the origin of Arkna:

“Arkna Hastver” is a wise and caring person. She’s lived in this area as long as she can remember and has witnessed many changes over the past few decades. A few things have never changed. For centuries people came to Arkna’s ancestors to ask for advice and help to regain their health. This great responsibility is now in her hands. The years have taught her everything there is to know about nature, good food and a healthy state of mind. She shares her wisdom of secrets with her guests.

Arkna reminds of a 1950’s mom. She shows effortless hospitality, has an eye for detail, and knows when to hold her tongue. She moves with elegance, and confidence. When she talks, she engages the room. She shows interest in other people and asks questions to delve for deeper understanding. Tradition inspires her to be innovative for the future. People respect her, and come to her with questions. In her home you have the freedom to be yourself, to explore and play.

She loves her nephews, the forest brothers. The kids always make her smile. They explore, play and hunt for all of Arkna’s secrets. Their adventures bring joy to Arkna’s life.”

Arkna collects the stories and myths about the manor, Arkna and Estonia and builds Arkna’s own storyline.

7.4 Positioning

Arkna wants to stay ahead of competition in terms of true sustainable development. We lead the way for other regions in Northern Europe and beyond to follow. We are open to collaborate with others to learn from each other. We aim to make all regions more resilient, autonomous and social justiciable.

Arkna is a luxury brand. For our guests we provide a perfect experience that is giving them food for thought. Arkna is not just a place to stay or sleep. It is a place or a destination to visit to witness, enjoy, learn and relax. The uniqueness of Arkna is not only the pure nature and vegetation, but also the beauty of authentic culture.

We create a concept that brings guests back in time. Hidden away from the crowds, its unique experience offers the opportunity to learn and transform yourself. We offer full service of accommodation, food & beverage, courses and events. Our Manor, Master's court, farm, forest and other traditional buildings frame the experience.

Arkna is suitable for all discerning travellers who love nature, adventure and learning. It is suitable for those who are not too attached to city life. It is for those who want to visit a different place to get away from their routine. It may not be everyone's taste but it is a place where everyone should come and experience once in a lifetime.

Our brand promise.

The unique benefit for customer is:

*"A place of personal transformation,
Where the old and the new combine,
Where dreams and reality meet its community."*



- › Due to their ecology conservation concept, the Kanchanaburi River Quay Hotel floats. No electricity is used.

7.5 Identity

The Arkna visual identity system creates value for our next wave of service and product offerings. It helps us express feelings, be simple and creative. It elevates the content that matters most. It creates delightful connections.

The Arkna identity celebrates our heritage and our future. It highlights and stimulates:

- › The historic value and heritage of Arkna and its community
- › An ecological and healthy lifestyle today
- › Curiosity to the increasing breadth of unexpected and innovative contributions Arkna can make for the future

Logo, typography, color, imagery, icons and clothing are part of the identity elements. The identity elements make it easier to create memorable internal and external communications.

At Arkna, we aim to create a portfolio of brands. We have our shared design elements and principles. This helps to communicate a united vision to our audiences.

The guidelines cover both shared design elements that are used by all Arkna brands. And a draft in how to create a diversion.

7.5.1 Identity Keywords

Through ancient legends and stories, Arkna helps guests understand their personal stories. We are turning into a place that brings meaning, understanding, clarity and order. In the healing grounds of Arkna the body becomes alive and the restless soul becalms. These identity keywords are:

- › Sustainable tourism
- › Eco Farming
- › Arkna
- › Ecological and healthy lifestyle
- › Personal interaction
- › Challenging
- › Straightforward
- › Active
- › Mystical
- › Traditional values
- › Innovative practices
- › Healthy
- › Manor
- › Nature-oriented

7.5.2 Logo



The Arkna logo is familiar and welcoming, drawing upon the heritage of our brand values, typeface, and colors. The symbol is built for the digital world. It supports the diversity of our businesses, represents and endorses our products and services.

Purpose of the logo is a powerful trademark that target markets recognize. The logo is timeless and applicable for all brands under Arkna. All Arkna products and services carry the logo.

- › Subtle logo with enough white or transparent space around it. The logo is clean & pure, the context defines the interpretation.
- › Elements of traditional past versus innovative future.
- › Logo is square (or almost square), this makes it easy to use in media.
- › All Arkna brand names share one logo, with different subtitles. Our designer adapts it to apply:
 - › On products
 - › In printed and non-printed media
 - › In the physical environment.

7.5.3 Fonts and typefaces

Fonts matter. Type is more than a design element. It articulates our message, expressing both what we say and how we say it. We seek an expression with historical value, that is easy to read, breathes tranquility and space, and has humanist undertones.

The chosen font for this is EB Garamond for all general text use. This font was chosen because of the above values, but also because it is open source and is a full featured, exquisitely designed typeface. It is freely available. EB Garamond allows our messages—from the enthusiastic to the practical—to be easily understood.

The font is used within products and in communications across brands, including all brochures and websites. No other font is used, except for specific branding purposes. It is critical that no other font is used in any public communication, from the way-finding signs to the business cards, and marketing materials.

EB Garamont: Standard size: 12

EB Garamond Regular (8 regular)

1234567890 _-+&()%€\$£
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz

EB Garamond Italic (8 italic)

1234567890 _-+&()%€\$£
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz

EB Garamond bold (12 regular)

1234567890 _-+&()%€\$£
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz

EB Garamond bold (12 italic)

1234567890 _-+&()%€\$£
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz

7.5.4 Color

Color captures passions, inspires transformations, and connects people. We want to express bright and energetic, pure and natural. The Arkna colors add vibrancy to communications. They are among the most recognizable and unifying elements in our visual identity. Arkna is colorful.

"Give freedom to colours and you shall meet the rainbow everywhere!"

Mehtmet Muratilda

We choose one of the core colors for each brand as the primary color in our layout. Generate support colours to be used as highlights and accents.



Arkna Eco-Park
RGB: 131, 126, 177



Arkna Eco Farm
RGB: 131, 172, 115



Arkna Events
RGB: 117, 170, 214



Arkna Kula
RGB: 199, 127, 94



Arkna
RGB: 154, 154, 154

7.5.5 Icons

We use icons where there is a clear function or when extensive translation takes up too much space:

- › Icons appear in the core colour of a brand name
- › The background is off-white, grey or a natural material
- › Icons should never be used decoratively
- › Stay true to the medium. Don't try to make an icon look realistic
- › Eliminate the chrome
- › Don't use an icon to represent a complex message



- › Example: Icons used in combination with Arkna identity



7.5.6 Clothing style

We are looking for a unique clothing range that captured the essence of Arkna. The clothes are designed by local designers, capturing the ethos of Arkna. The fabrics are natural and poison free, combine modern interpretations of traditional styles. Our clothes are part of the stories we tell. We offer guests the opportunity to become part of the story and buy (part of) the outfits, as a souvenir. We sell clothing items in the gift shop with the story "how it's made".

Each sub-brand and working area has its own clothing style, but they link in their values and design strategies. For example, the farm clothes are Arkna Farm branded, sturdy fabrics with practical pockets, a shade of green, and darker natural colors to hide dirt. The Manor staff has purple clothing, more elegant and simpler, finer fabrics.



- › Many guests upload photo's on social media because of the original experience at Olde Hansa Medieval Restaurant in Talinn.



- › Center Parcs redesigned their uniforms and choose berry colours to express the woodland experience.



- › Wooden buttons express both natural and historical values.



- › Cutting edge computer simulation and digital fabrication technologies create innovative clothes.

Staff clothing properties

- › The clothing style is traditional with a modern twist
- › Local clothing traditions inspire the design
- › Use the natural core color of the brand
- › Use natural and local materials
- › Use local designers
- › Use the logo for the lining of the clothes, in a subtle way (no big logos on backs)
- › Use details to distinguish from mainstream brands
- › Use different clothing styles for different jobs

The use of color is integral to the success of the clothes. We explore natural tones to work within the natural settings. The ultimate choice is a palette inspired by the core colors, together woodland greens. The designs have subtle style details. Think about contrast stab stitch, wooden button details or even small branches as buttons, and lines inspired by the manor.

Arkna employees work both indoors and outdoors, all year round. We create layered effects to offer warmth and protection where needed. Each of the complex/area's get distinct looks. For example:

- › We have waistcoats and smart shirts for the more formal restaurants.
- › We have polo shirts and aprons for casual festival food courts.
- › The Herb garden and Polydome staff require hardwearing and practical outfits. This to allow freedom of movement.

We use fabrics that looks like natural fibre but is easy care and requires no ironing.

Involve the staff

Work with the staff and involve them in the process to capture what staff like and dislike about uniforms. It is important to capture these before starting the design process. Staff members are often the main point of contact for many of our customers – they are the brand ambassadors. If they feel good about themselves, they usually offer a better service. The clothes design has a big role to play in making this happen.

7.6. COMMUNICATION & PR STRATEGY

7.6.1 Community groups

Arkna's main value lies in its community. Inhabitants, partners, suppliers, employees and visitors are all part of this lifeblood of Arkna. They maintain a fair and transparent relationship with one another. Freedom and responsibility go hand in hand. Community members have a collective deciding vote on matters that influence their health and wellbeing.

We use different communication channels to work with our community. We recognise and target these community groups:

- › Partners
- › Suppliers
- › Inhabitants
- › Business market
- › Tourists
- › Local farming organizations
- › Employees

Arkna provides separate offerings to appeal to different market segments. We provide unique benefits to each group. One commonality is the strategy that focuses on creating a transformational experience. This is based on a visceral experience, meaning, and interaction. We provide all community groups with materials to become ambassador of Arkna.

More detail about some community groups:

Partners

We establish a safe environment for partners to feel stimulated, valued and empowered to contribute to our goals. Our doors are open for partners to join and collaborate at all times. We want to use existing talents of partners to build on and improve the historic value and heritage of Arkna and its community. Besides we want to collaborate to promote an ecological and healthy lifestyle.

Our stories and myths inspire other organizations to join forces. We communicate the values of Arkna in the stories. We work together and know our suppliers, tourism agencies, training organizers, festival partners personally. We have high ambitions and aligned standards. Together we provide quality services and products.

Arkna provides a Community Membership to partners. We co-create programs and find innovative solutions to obtain our goals. We need a few key partners to start with. At first, we want to join forces with other favorable Estonian brands. Arkna rewards loyal partnerships with invitations to special events. This helps partners understand Arkna even better and improves strategic alignment for common goals.



Local community

We influence the life of locals with our renovation and expansion plans, and aim to have this impact be overwhelmingly positive. The number of inhabitants in Arkna will double within 10 years. We aim to provide at least 50 permanent jobs paid 120% above minimum wage. We contribute to every-day services, playgrounds, infrastructure, mobility, honest and healthy food supply, and maintenance of environment.

Inhabitants of Arkna have a vote in matters that influence their health and wellbeing. We maintain a personal relationship with inhabitants and include them in our activities. We organize round tables and brainstorm sessions to gain community member input. We help inhabitants to make their dreams come true. And last but not least, we celebrate milestones together.



Business market

The final goal is to attract 30,000 annual business visitors within 2 years after finishing renovation and opening all area's.

Business visitors aim per year

Phase	Year	Description	Target
Phase 1	2016-2017	Early operations in the manor	1,500
Phase 2	2017-2019	Tourist accommodation is ready	7,500 - 9,000
Phase 3	2019-2021	The wellness and health center/ activities are ready	21,000
Final Goal	2022 onwards	Fully operational	30,000

Medium to big Estonian companies meet at Arkna. They get a warm welcome and high-end experience. They come for training, coaching, retreats, executive meetings, retreats and incentives.

Number of enterprises in Estonia

Enterprise Size	Number of enterprises	Average number of employees	Average revenue per year
Micro	54,572	2,3	€ 36,648
Small	4,824	20,3	€ 414,594
Medium	982	96,8	€ 7,128,310
Large	151	586,6	€ 19,867,549

We position Arkna as a unique transformation experience. We provide interaction, sensory and cognitive stimulation. Central themes: collective awareness, interaction, and learning.

At companies it's often the secretaries that decide the location for these events. We have to team up with them and enable them to persuade their bosses. A good way to do this is invite them once a year to a special "trainings" event, where their bosses can send them for free, and they come alone. They experience everything that is possible at Arkna, as well as have a great time and meet each other. They can taste the best dishes and get a few workshops organised by our training partners. All partners collaborate for free, to plug Arkna as the perfect business location. We give them access to clear package deals with formal communication. We make clear how Arkna can help the desired business transformation. We offer them options that those that do not come to these events do not get, to feel like an 'insider' and part of the family.

Tourists

After five years of operations, Arkna hosts 70,000 guests per year. We value the input of guests to develop Arkna. As mentioned before, we focus on the innovators and early adopters in the build-up phase. We value the contribution of the ego in this positioning. Innovators believe they can trigger a transformational experience. They are our key ambassadors to attract more visitors.

We approach innovators informally in their own language. We invite one or two from each target market

for a unique experience. They taste the history of Arkna and co-create future developments. We value the contribution of these individuals. We build the foundations for a long-term partnership as ambassadors and event organizers.

For the early majority of tourists we position Arkna as a unique sustainable experience. Their view on history, future, health and well will never be the same after a visit to Arkna. We provide interaction, sensory and cognitive stimulation. Central themes: meditative, wellness, good food, nature and spiritual.

We focus on sharing our stories and myths to create brand awareness. We use known and upcoming partners to resell to the tourism market: TripAdvisor, Booking.com, Airbnb, and websites that offer camping space at farmers. Tourists are looking at other websites and blogs for tips. We position ourselves in each of these markets. The innovators and early adopters are key resources for communication with tourists.

Marketing and PR efforts lead to partnerships with innovators and early adopters. We are building up to an estimated amount of visitors:

National

After 2 years of finishing all renovations we aim to host 45.000 - 50.000 visitors per year. Most of them are repetitive visitors, coming for an event or a good meal. They are the biggest market to purchase products.

Aimed number of local visitors per year

Phase 1	2016-2017	Early operations in the manor	2.000 - 2.500
Phase 2	2017-2019	Tourist accommodation is ready	12.000 - 14.000
Phase 3	2019-2021	The wellness and health center/ activities are ready	30.000 - 34.000
Final Goal	2022 onwards	Fully operational	45.000 - 50.000

› **Families**

Repetitive visits from families. Kids are asking their parents to go back to Arkna, because they love the experience. They come for special activities, workshops and fairs. Food court at events and mid-priced restaurant suits them best for a meal.

› **Couples**

Health oriented couples without kids in their mid-twenties and older. They come for an event or unique dining experience. Most of them are regulars.

› **Females**

Anthroposophic (single) females, usually over the age of 45. They love to follow workshops at Arkna. They come to meet like-minded people. They buy products.

› **Schools**

Estonia has 600 schools. Arkna provides them with educational materials. Arkna collaborates to give students a unique training and education experience.

- › Elementary: field trips
- › High schools: field trips
- › Universities: study trips

At the same time, schools are a good channels for publicity. Kids usually introduce their families to locations they've visited with school.

› **Weddings & special events parties**

Host up to 200 people who uses several facilities. Arkna aims to organise at least one special party each week.

› **Festival go-ers**

In collaboration with other parties, Arkna organises several themed festivals and fairs. We would like the estonian market to be part of the visitors and grow our community.



International

Final goal within 2 years after finishing renovation and opening all area's: 20.000 - 25.000 international visitors per year. Most of them are coming once for a unique experience.

Aimed number of international visitors per year

Phase 1	2016-2017	Early operations in the manor	1.000 - 1.500
Phase 2	2017-2019	Tourist accommodation is ready	6.000 - 7.000
Phase 3	2019-2021	The wellness and health center/ activities are ready	15.000 - 19.000
Final Goal	2022 onwards	Fully operational	20.000 - 25.000

- › **Affluent**
Over 40 years old, without accompanying kids. They are active, and seek the best. They come for the hotel, and discover the specials. They require good infrastructure, and luxury services.
- › **Global Anglophones**
They come for Eco-tourism & agro-tourism. Usually health oriented couples in their mid-twenties & older.
- › **Finland**
Spa tourists that want something more and Eco-tourists.
- › **Russia**
Families that come for health, quality food, entertainment, and history. Also couples 35+ year old that come for luxury, spa & health.
- › **Germany**
German families and 40+ year old couples, that come for a historic perspective. Besides, german tourists love to go to festivals.
- › **Netherlands**
Senior caravan travelers and festival goers
- › **WWOOFers**
World Wide Opportunities on Organic Farms voluntourists

Local farming organizations

Arkna has a functional position. Mutual challenges bind us. Professional equipment is expensive. We share our materials to create more value for farmers in the neighbourhood. Some of them can also be suppliers of Arkna.

Organize a "Peekaboo" tour for local farmers. Usually they are interested to look behind the scenes of what developments are on the way in their area. This is a good moment to explain the vision and our idea to share equipment. We ask what they need to resolve objections.

7.7 Corporate Communication

All corporate communication contribute to the goal to create awareness about true sustainable development. They lead the way for other regions and individuals to follow.

Arkna shares knowledge willingly, both online and offline. It generates inspiration and valuable educational quality. We communicate values, solutions and methods to several audiences on demand.

We prove our goals' validity when we communicate all our successes and failures, without bias. We track and report of performance on network and object goals on a yearly basis. We try to be an example for other facilities

We use several channels to connect with visitors, partners and community members.

7.7.1 Text identity

The values of Arkna are personal interaction, challenging, straightforward and active. This shows in all our texts. We try to communicate from our brand's voice and be authentic.

Personal interaction

Whenever we write something, we think of it as a one-to-one between us and the reader. We have a conversation – not telling our readers what's right and what is wrong. We're their friend or adviser. We

want to paint a picture with words and be emotive and show real, personal responses. We talk about people's feelings, transformations and connect them to others.

We use storytelling to connects us to our humanity. It is what links us to our past, and provides a glimpse into our future.

Challenging

We're a passionate bunch of people and we want to express this when we communicate with people. We want to motivate as many people as possible to embrace a healthy and ecological lifestyle. The best way to do that is to inspire them through our words, our stories and our actions. That means saying when we think something's fantastic and do it ourselves.

One thing we always avoid are unnecessary punctuations. As F Scott Fitzgerald once said: "Exclamation marks are like laughing at your own jokes." That means no exclamation marks!!! no dot dot dot...

Straightforward

When people are are looking for information or want to share their experience, we want to make it as easy as possible for them. We always find the clearest and most direct way to express ourselves.

That means plain English, no acronyms and no confusing jargon. We apply the grandma test. Would

she understand what we are saying? If not, we go back and try again.

Active

In all our communications, we're practical. We don't just talk about a problem – we suggest a course of action. We want to give people energy – energy to transform themselves and inspire others to do the same.

The active is also a grammatical term. What you need to think about is making sure the subject (what you're talking about at the beginning of the sentence) comes before the action it performs (or the verb). That way our copy is always powerful and engaging.

Idea: All documents have a one-sentence tip (to pick from a top 5 or 10), where Arkna shares her wisdom. This can be about Bio-local food, Heritage healing, Golden hands, exercise or lifestyle.

To do: Co-create a "catchy phrase" for each brand name.

Create a top 10 with tips to activate frontrunners and tempt potential guests.

7.7.2 Website

The website's major function is to set us apart from our competitors. We need to distinguish ourselves from our competitors. We pride ourselves on being different and the stories on our website reflect it. Inspired by the stories on our website, visitors want to know more about Arkna.

We want to increase leads by boosting our marketing content and build trust amongst visitors. We need navigation so that our users could easily access our stories, guides and values. By focusing on:

- › content that shows us as an industry thought leader we boost web traffic
- › user engagement
- › search engine ranking for our keywords

The website is image driven and few text. There are big background images that show Arkna from the perspective of our guests. The website is multilingual.

Stage 1

Website Arkna.ee is a single page with the same info as the brochure. It builds trust amongst initial partners.

- › Language: Estonian and English
- › Also claim website addresses with extension .com, .eu, .de, .pl, .fi, .ru, .lv, lt
- › Ready before April 2016
- › Expenses: 4 hour DiY

Stage 2: 2017 - 2019

There are 4 URL's: Arkna.ee, Arkna-Ecopark, Arkna-Ecofarm, and Arkna-Kula.

Arkna.EE has a bit of everything, and embeds the other websites. The sub-websites do link to one another. The Ecopark and Ecofarm have webshops. The ArknaEcopark website has 'See & do', 'Events', 'Hotel', 'Spa', 'Shop' as its own categories and 'Farm' and 'Community' as switch links to the other sites. There's a hotel booking system, and event calendar.

The farm and park shops are the same system , but with different products put on the front page.

- › The websites are multilingual. 90% of all visitors are able to navigate the website in their mother tongue. Languages: Estonian, Russian, German, Finnish, and English
- › Focus on building an easy to maintain website. Create websites and elements that are easy to embed. Also an option to integrate social media, allowing for easy modifications to the website.
- › Indication expenses: 30 days work for web development and content development. Suggestion: Find local web developer, hire a professional data architect. Expenses around € 13.000.
- › Ready before 2018.

Stage 3: 2020

Evaluate performance of website. Consider the following data-driven objectives

- › Increase number of visitors
- › Reduce bounce rate
- › Increase time on site
- › Improve domain authority
- › Increase number of new leads/form submissions
- › Increase total amount of sales generated
- › Enhance current SEO rankings for important keywords

7.7.4 Prints

Strategy is to develop printed media to grab attention of potential customers. People receive fewer printed items nowadays. Printed media offer an opportunity to stand out and tell our story. In all constructions, including prints, we aim to have maximum use of natural materials.

- › Use handmade paper, soy ink, no bleach
- › Develop: Online and offline template for letters, invoices and brochure
- › Menus and other hand-held reused items in Arkna have a support wooden plate.



- › Example: Menu with wooden support plate

7.7.5 Product package and labels

The strategy for packages and label is to create awareness for waste and reduce waste from the Arkna brands to a minimum. At the same time we make the maximum use of natural materials in producing both packages and labels. We set a new standard for the sustainability of products, and also for our packaging. This involves the entire supply chain, also suppliers to Arkna.

- › All packaging is 100% recycled and returned to Arkna. There is no waste. Labels are re-attached, or branded in the material to survive recycling. This goes both ways: from products to customers and materials that are brought in from suppliers as well. We offer guests the opportunity to take their own packaging container with them. They can buy a package of choice as well. This means we have bulk storage, and people can fill their own container or buy pre-filled packages. All are from natural materials. To stimulate returning them, packages have a container deposit. People can also choose to reuse the packaging at home.
- › Labels are beautifully designed and contain practical information. They include: logo, name of product, ingredients, time or date of production, date of purchase, story of production, tips on how to use it or why it is good for you. Labels are either printed on stickers or printed on cardboard.



7.7.6 Inventory and utensils

The strategy for the inventory of Arkna is to give people a complete experience, make them part of the Arkna story. From the fork they use to the towels they dry themselves off with we promote an ecological and healthy lifestyle. All Arkna dinnerware, linen and other goods carry a subtle logo. We share the stories, of their origin, how are they made, etc. They are made out of natural, unbleached materials. Cotton, linen, silk, wool and hemp for textiles. Wood, bamboo and ceramic for dishes and cups. Recycled glass on the tables, and so on.



› A wooden plate looks natural and authentic



› Recycled wine or beer glass

7.7.8 Social Media

The strategy for social media use is to become an engaged conversation partner with a broad audience throughout the year, and seamlessly integrate this into the visitor's experience. Topics we focus on: sustainable development, a healthy and ecological lifestyle, combining traditional values with innovative methods.

We recognise a few steps. Step 1: Build up Phase, Step 2: the operational stage

Step 1: Build-up phase

Activate innovators, early adopters and journalists to co-create the future of Arkna. This helps to build trust amongst potential partners and long term commitment.

Traditional travel organizations send messages to sell destinations. This still has value to reach the early majority. Yet, with the introduction of new technologies and social platforms, we see a shift. New approaches are to create value for guests outside of the normal local offering, such as giving them tips or online workshops or answering their questions. If we invite innovators from target markets in a pre-development stage, we can discover what their questions and interests are for online community building.

Before developing a product or service, we invite one or two innovators from the target groups for a unique travel experience. Show them Arkna's qualities, and invite them to think along about specific services. Ask them to share their experience on social media using the hashtag #arkna.

After the trip they are updated about progress. Integrate social media in Arkna's website to make this easy. Tag all posts with the #arkna. This makes it easy to track down the reply from people on posts and track down how many times and where it is shared. Monitoring the replies, responses from markets on the project are identified. Use this to detect in which target market Arkna is likely to be a success. Apply the basics of empirical research: Learn by doing.

At the same we build trust by giving information about Arkna in a few media:

- › On tourism booking websites in the target market
 - › For holidays: Trip Advisor, AirBnB, Booking.com
 - › For camping: camp sites
 - › For dinner: MyTable, TimeOut, Open Table
 - › Tourism agency
- › Wikipedia: Expand the Arkna article on Wikipedia in the languages of our target groups.
- › Hashtag: Use #arkna for social media; Facebook, Twitter, LinkedIn, Pinterest etc
- › Google Maps: Add pictures and landmarks to google maps



Stage 2: Operational stage

We interact with like-minded people and inspire others with innovative examples and by sharing our knowledge.

› Facebook

We have a facebook page and update it regularly with progress and tips. We create separate event pages for each new event. We respond to complaints, share messages to have bigger exposure or help people who use #arkna to improve our credibility.

› LinkedIn

Employees have LinkedIn profiles, we create an Arkna group where we share updates. We invite people (the innovators) to join the thinking process. And we invite journalists to gain knowledge about health and nature related topics.

› Twitter

We share updates on progress on an @arkna twitter account (currently owned by a fantasy card game company from Chile, but not very active). Employees use personal accounts to share experiences and use #arkna

› Youtube

Arkna starts a Youtube channel. We ask other people to make video's that we share. Later we can make easy "How to..." instruction videos with Arkna in the lead.

› Dashboard

Create a dashboard to track down all communication on social media. Create resource and capability to enable us to respond to social media communications.



7.8. Corporate behaviour

In the world of hospitality, the behaviour of staff is key in providing a unique experience. Our staff at Arkna is polite, warm and welcoming towards our guests, more so than typically in Estonia. They show effortless hospitality, volunteer to talk to guests and welcome them, have an eye for detail, and know when to hold their tongue. They have a passion for what they do and are part of one or more personal Arkna stories. Arkna has its own training facility for training our customer representatives and employees. The facility teaches employees about Arkna's stories, culture and values.

Arkna establishes a safe environment for employees to feel stimulated, valued and empowered to develop existing and new talents. They use these for the benefit of guests and other target groups.

7.8.1 Hiring

Tips for hiring:

- › Think about diversity
- › Try to give a chance to elderly and juniors
- › We make sure staff members speak the languages of our guests. We show what languages staff members speak.
- › Hire people with a passion for what they are doing
- › We set up our own training facility
 - › Aligned with the main principles and goals of Arkna.
 - › Train all our staff in storytelling and the stories of Arkna. Think about myths, bio-local food, heritage healing and golden hands.
 - › Train hospitality skills. "Please let me introduce you to a colleague who can help you..." provides a different feeling than "I don't know".

7.8.2 Feedback

Give guests the opportunity to give real time feedback. Respond to tips and compliments immediately. Thank guests for their feedback if they complain. Apply and use complaints as input to improve.

Behave the same way towards employees. Make them feel safe to suggest improvements for Arkna. Train them to only give feedback if they present an alternative. "Interesting idea... How would you do it?"

An online presence offers the opportunity to communicate real time with guests. Use this opportunity to create a strong brand.

Arkna's responses to feedback:

- › Always respond within 24 h
- › For a good customer experience respond within 6 hours
- › For an excellent customer experience, respond within 1 hour
- › Respond publicly and constructively to a complaint (also on social media) and offer support in a closed environment (mail or direct message)

Publicly responding to complaints, with a time constraint for customer service personnel, can easily lead to mishaps. Build up slowly towards the 1h only if you know 100% sure you have staff that can deal with it.

7.9. Events

7.9.1 Strategy

Arkna celebrates change. With our events, we link history to the future, and we bridge the gap between nature and human culture. Arkna focusses on creating a transformational experience for all visitors based on meaning and interaction. Our visitors are looking for an experience that leaves them a better person. They are more connected, more engaged and better equipped. Not just for their jobs, but for their life. They want to attend meetings with meaning. At Arkna we provide events for that contribute to this need for a transformational experience.

In this chapter there is attention for the way we organise these events, the checklist for events, and suggestions for events.

7.9.2 How to organize

We aim to facilitate a transformational experience. However, event management and engaging target groups is labour intensive. Collaboration with other initiatives strengthens all partners. It allows for lower overhead, Arkna and a higher return on investment, and increases the impact on our common goals.

We organize one or two signature events ourself each year. We establish ourself as the perfect facility partner. We try to find partners for other events. Each partner is a specialist at one type of event, and has its own community. We develop a business case that all parties benefit from. Dependent on the added value to the core mission of Arkna, prices might differ. We also take it into consideration to settle for 30%-60% of ticket sales. The benchmark expenses for events says:

- › 30% expenses for location and facilities
- › 30% expenses for programing, content and materials at events
- › 30% expenses for staff
- › 10% profit

7.9.3 Checklist for events

When guests leave an Arkna event, a transformation has occurred. To enable this change all events enhance a Plan, Think, Feel, Sense, Interact & Learn section. This also applies to events our partners organize. We use the checklist to decide whether we can host or organize any event.

Checklist plan for [Event Name]

General	
Intended results	
When	
Where	
How often	
Organiser	
Stakeholders	
Accountability	Partner 1
› Obligation	
› Responsibility	Partner 2
› Tasks	
› Financial risk	Partner 3

Timeline

Preparation	Event	After care	Evaluation

Checklist content for [event name]

Think	Guests think about a certain topic, the event gives new insights.
Feel	Parts of the program affect people and their state of mind.
Sense Impact at least 5 senses, check all	Sight, hearing, taste, smell, touch, balance, acceleration, change in temperature, kinesthetic sense, pain, time, vision, gravity, belonging, pheromones, echolocation, electroreception, magnetoception
Interact	Events facilitate interaction between people and nature.
Learn	Arkna shares knowledge and teaches "how to..."

Checklist for plan Opening event

General	Give a taste of what is possible at Arkna. We send out V.I.P. tickets. Provide them with good camping facilities. Give them the time and space to become prosumers. Prosumers are consumers who like to co-create.	
Intended results	Get stakeholders enthusiastic. Co-create with them. Activate them to collaborate	
When	In the spring of 2016 Arkna	
Where	Manor	
How often	Once	
Organiser	Nele	
Stakeholders	Investors, Suppliers, Innovators, Early adaptors, Locals	
Accountability	Partner 1	
› Obligation		
› Responsibility	Partner 2	
› Tasks		
› Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for [event name]

Think	Everybody thinks about Arkna and its potential.
Feel	Guests feel engaged to Arkna. And they feel happy and proud to be part of the community. We evaluate all ideas to make them aware of their feelings.
Sense Impact at least 5 senses, check all	Sight: We show guests what is there Taste: Guests taste local products and traditional dishes to get a better understanding of Arkna. Time: We time travel with our guests. We look at past, current situation and what is possible in the future. Vision: We imagine a potential future and inspire our guests in what we think is possible. Belonging: The most important sense. It doesn't matter that we don't have all the facilities yet. We make a plan to give all our guests a sense of belonging
Interact	Several visits, storytelling and brainstorming on Arkna.
Learn	We teach and show our guests a few things about natural healing and the impact of good food, golden hands and meditation.

7.9.4 Event suggestions

At Arkna we host several type of events. There are big events that establish our name and small events that provide a continuity in income. We recognise festivals, fairs, small, special and private events.

Festivals are events that lasts several days with a central overarching topic. A festival offers a broad range of activities, usually combined with camping facilities. Fairs are one or multiple day events with a single topic. Several activities around the topic complete the experience of transformation at fairs. Small and special events cover a part of the day.

In the next few pages, we start to describe a few events that have a big potential for Arkna. The ideas are in development, feel free to contribute to them.

Opening event

- › Good food festival
- › Evolution of music Festival
- › Arkna Festival
- › Law lands
- › Antiquity fair
- › County fair
- › the Evolution of Consciousness
- › Santa Land
- › Small and special events



Checklist plan Good food festival

General	Local farmers, display of home-made products, a market, tastings and workshops on food and production processes.	
Intended results	Create awareness for good food and its origin. Create a change in lifestyle of visitors.	
When		
Where	All over Arkna, camping, manor, shops	
How often	Every summer and winter	
Organiser		
Stakeholders	Local farmers, producers, the village of Arkna, visitors	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Good food festival

Think	Guests think about food, food production, their own habits and people with other habits.
Feel	Guests feel happy, maybe shocked, confident to take something home.
Sense Impact at least 5 senses, check all	Guests can see, taste, smell and touch food. But for example also get a sense of how temperature change or balance affects the eating experience.
Interact	Farmers from our target markets share their local products. We create several physical "embassies" at the festival to interact with other cultures.
Learn	Guests learn by doing in cooking workshops.

Checklist plan Evolution of Music festival

General	Link local traditional bands and classical orchestras to rising DJ's in the music scene. The music generates several feelings.	
Intended results	Market Arkna as a vibrant place where we link history and future.	
When		
Where	All over Arkna, camping, manor, shops	
How often	Once a year in summer	
Organiser		
Stakeholders	Musicians, producers, talent scouts, music lovers, music press	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Evolution of Music festival

Think	Guests think about a music, the music, workshops and festival program celebrate music from the past and the future.
Feel	Guests have a fear of missing out, are in an ecstatic state of mind, and tired when they go home.
Sense	Guests listen to music; Dance on the SenseFloor, to feel the vibes of the music; They taste amazing food; They get a sense of acceleration and slowing down;
Impact at least 5 senses, check all	The sight complements the festival.
Interact	Guests can add to the program. They are welcome to organise a debate, gathering or activity to connect to people.
Learn	Instruct guests on how they can contribute to a sustaining Arkna, e.g. reduce waste.

Checklist plan Antiquity fair

General	Themed antiquity fair with a market place, auction and opportunity to determine value of an item. The theme changes every time. It can be based on a specific era, place, subject or target group	
Intended results	Brand Arkna as a place that values history	
When	Every Month	
Where		
How often	Once a year	
Organiser		
Stakeholders	Visitors, antiquairs, historians, auction houses, people who own antiques.	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Antiquity fair

Think	Guests think about their treasures
Feel	They are excited
Sense	Guests can feel, touch, and smell most objects. They listen to music, and taste dishes and drinks from that era.
Impact at least 5 senses, check all	
Interact	They interact and compete in auctions
Learn	Guests can learn in workshops about how to value items or items from a specific era.

Checklist plan Law Lands

General	<p>In several jobs, people are obliged to get a specific amount of training each year. With Law lands we focus on one of these groups: lawyers. A business festival with glamping facilities creates a new demand on a traditional market.</p> <p>Basic facilities of good quality to facilitate guests: space, f & b, support. User generated content during the event: e.g. Lawyer bands provide music; Guests add to the program with lectures, They explain precedents; They organize training and debates; They can host social activities.</p>	
Intented results	Create new products for professional markets	
When	In summer, first one 2018. We already start with stakeholder involvement now.	
Where	All over Arkna, camping, manor, shops	
How often	Once a year	
Organiser		
Stakeholders	In this case lawyers, policy makers, universities, training agencies	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Law Lands

Think	Guests think about law, legislation and precedents.
Feel	They feel relieved they can easily perform their obligation for training and are happy to get out of the country.
Sense Impact at least 5 senses, check all	Hearing: Music from lawyer bands. Taste: Good food. Belonging: Like-minded people willing to learn. Time: Learn from history, contribute to new legislation. Acceleration: Speed up own learning experience in a different surrounding
Interact	Interaction between lawyers in official part, social activities, camp villages.
Learn	The core of the event is learning.

Checklist plan Arkna Festival

General	Celebrate the annual birthday of Arkna.	
Intented results	Inclusion of the community of Arkna. Link visitors and suppliers to each other. Celebrate results we've achieved together	
When	Spring or Autumn	
Where	All over the village of Arkna	
How often	Once a year	
Organiser		
Stakeholders	Locals, Suppliers, Guests	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Arkna Festival

Think	Guests think about Arkna, its history, current community and future opportunities.
Feel	They feel happy and perhaps scared for a little while when experiencing some of the history.
Sense Impact at least 5 senses, check all	Guests get visual impressions of Arkna; they taste traditional F&B; They listen to traditional music; They experience time traveling; And they can touch traditional objects.
Interact	Guests interact with the local community.
Learn	Everybody learns about the history.

Checklist plan County Fair

General	The county fair exhibits equipment, animals, sports and recreation associated with local agriculture. Guests take part in the show.	
Intended results	Celebration of culture	
When	When farmers are not so busy and the weather is ok.	
Where	In the entire village	
How often	Once a year	
Organiser		
Stakeholders	Locals, visitors	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for County Fair

Think	Guests get to think about local farm skills in an agricultural show.
Feel	Guests are curious, competitive and in a good mood
Sense Impact at least 5 senses, check all	Guests can see local production methods. They can touch equipment, pick their own meal, and enjoy the smell of spices. They discover traditional and innovative preparation methods.
Interact	Interact and compete in teams on a series of activities, eg making the best "apple pie"
Learn	Learn by doing

Checklist plan Evolution of Consciousness

General	Set of workshops, sessions and tastings to stimulate spiritual evolution. It enhances philosophical, theological, esoteric and spiritual compounds. They link the evolution of nature to human beings.	
Intended results	People are in touch with their emotions. People take time to know themselves better. People do what makes them happy. More love on this planet	
When	In summer, first one 2018. We already start with stakeholder involvement now.	
Where		
How often	Every season	
Organiser		
Stakeholders	Guests are busy and/or spiritual people, workshop organisers	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Evolution of Consciousness

Think	Guests think about heritage, health, esoteric
Feel	They are open-minded.
Sense Impact at least 5 senses, check all	Arkna stimulates all sort of senses of guests to give them a unique experience.
Interact	Interaction between guests on a higher level of common consciousness.
Learn	Guests evolve and get new insights

Checklist plan Santa Land

General	They have entrance to Santa's workshop. They can make beautiful gifts for their loved-ones.	
Intended results	Create awareness for true holiday spirit	
When	November or December	
Where		
How often	Every year	
Organiser		
Stakeholders	Chefs, suppliers of materials, workshop organisers, tourists, businesses (end of your gift to employees)	
Accountability	Partner 1	
> Obligation		
> Responsibility	Partner 2	
> Tasks		
> Financial risk	Partner 3	

Timeline

Preparation	Event	After care	Evaluation

Checklist content for Santa Land

Think	Think about the true meaning of the holiday season
Feel	Guests feel blessed
Sense Impact at least 5 senses, check all	Taste: New recipes for holiday season. Touch: Materials to make gifts. Smell: The smells of Christmas. Hear: Listen to Christmas music and learn how to make it yourself. Temperature change: Guests experience the warmth inside, and cold outside.
Interact	Guests share DiY idea's for their best gifts. They interact with nature and each other in workshops.
Learn	They go home proud and ready to make someone else happy.

Small and special events

We also consider to host small and special events. On a regular basis, they can provide a steady income.

Events that cover a part of the day

- › Host a home made market every week with locally produced foods, drinks and products
- › We host concerts: have signature performances where old meets new
- › Theatre productions are welcome at Arkna
- › Calendar launch of a new season

Unity events

- › Taste of Estonia
 - › Collaboration with partners in the neighbourhood for international guests to visit several places during one trip
- › Loyalty tour
 - › Collaboration with international partners to reward guests who visit several locations

Private events

- › Weddings
- › Family reunions
- › Closed business events



› Wedding in the forest



› Farmer's market

7.10. Communication & PR Strategy

Reserve budget and resources for PR. On average, each Euro in marketing budget generates €38* in visitor spending. To secure the incline of number of guests, we need to invest 10% of the revenues per year. In the mature stage, 4% will do. In addition we need to spend time on PR and communications ourselves. Each employee can use 10% of its time for Sales, PR or communication purpose.

* Source: The economic Advantages of Travel and Tourism.

Assignment PR agency

Arka wants to become market leader in the world of sustainable destinations. We want to inspire other regions to do the same. We are looking for a PR agency to collaborate with for the upcoming 5 years. We establish the brand name of Arkna. We attract key stakeholders to collaborate and guests to line up to visit.

There are different roles in the communication and PR strategy for Arkna. We work with a team of employees, interns, community and professional PR agencies home and abroad. The Masterplan is a draft for the strategy for Arkna. Our final goal is to attract 70.000 paying guests per year and inspire other regions to sustainably develop their area.

The role of the professional PR agency in Estonia is to tap into their network, to strengthen the community, and to send customers our way. They plug Arkna in key publications. We have to ask our PR agency for references of these kinds of publication placements, perhaps even working with competitors of Arkna. Also remember to ask about their experience in B2C, B2B and community building. Our agency should cover all 3 expertise areas. We prefer a small to medium size agency (3-15 people) where the labour is secured and the relationship is still personal.

Tasks PR agency

We ask a PR agency in Estonia to identify creative innovators home and abroad and build partnerships. They identify and approach innovators, early adopters and high influencers in our target markets. They link them to Arkna and suggest how to keep them engaged. In case the agency is not equipped, we ask them to partner us with a small agency in a target country to establish the same.

We should make sure the PR agency understands our background and history. Let them read the stories and give feedback about it in the intake interviews. The agency has to understand the product and services Arkna sells.

Additional tasks

There are several other tasks that need to be done in order to obtain our goal of 70.000 annual visitors. A PR agency can perform them, but we might also chose an intern or employee to perform one or more of the tasks.

- › Identify social and traditional media opportunities per country and for each group
- › Identify decision makers in target groups
- › Develop and execute loyalty program
- › Media relations: coverage of Arkna in key publications
- › Get nominated for at least 3 awards and create speaker opportunities
- › Create traffic to our website from the business market and the agricultural market.
- › Script writing and develop materials from our stories.

7.11 Communication plan

In the build up phase communication efforts facilitates building trust, interaction with key stakeholders and co-create future development. After that we aim all our efforts on engaging, expanding and activating our network. In the stage of early operations we aim that a buzz is going on, people cannot wait to make reservations. After everything has opened, in the maturing & completion phase our community is loyal and trusts that Arkna is here to stay and follow up on promises. In improvement cycles we think and act on ways to become a market leader that encourages others to be sustainable.

Outline for communication plan:

Time	Audience	Actions
Q2-Q4 2016	Team	Collect stories and myths
Q2-Q4 2016	Team	Collect wisdom and tips
Q3	Innovators: government, local community, partners, suppliers, high influencers and ambassador	Invite innovators from target markets and give them the full experience of Arkna. Decide on the target markets we want to start with.
Q3-Q4 2016	Innovators	Test stories and myths if they are appealing
Q3-Q4 2016	Innovators	Co-create future development of Arkna
Q3-Q4 2016	Innovators	Keep them involved in the community, keep them updated about progress
Q3-Q4 2017	Team	Create knowledge management system to save and have easy access to knowledge
Q2-Q4 2016	Bookers	Make stories shareable (text, picture, film)
Q4 2016	Community, potential members, guests	Use storytelling to promote and market Arkna
Q2 2016	Early adopters	Create guidelines brand identity after consulting innovators and early adopters
Q2 2016	Bookers	Define brand promise with innovators
Q2 2016	Community and bookers	Define primary identity keywords, 4 to describe Arkna, additional top 5 to describe the feeling.
Q2 2016	Team	Define shared identity elements and principles
Q2 2016	Early adopters	Initial design brand identity for Arkna Eco-Park
Q2 2016	Early adopters, high end market	Initial design brand identity for Arkna Eco-Farm
Q1 2017	Locals	Initial design brand identity for Arkna
Q1 2018	Inhabitants and buyers	Initial design brand identity for Arkna Kula
Q1 2017	Bookers and decision makers	Initial design brand identity for Arkna Events

Time	Audience	Actions
Q1 2017	Community	Evaluate and adapt guidelines brand identity to attract early majority
Q2 2016	Potential community members	Build trust, register Arkna on tourism booking sites, Wikipedia, Google maps, Twitter
Q3 2016	Innovators, early adopters, potential bookers	Interact with like-minded people and share examples and knowledge on Facebook, LinkedIn, Twitter, YouTube, Pinterest
Q3 2016	Team	Create a dashboard to track down all communications
Q2 2016		Develop single page website stage 1
Q2 2016		Claim website addresses
2017-2019		Develop 4 websites one by one in stage 2
2020		Evaluate and adapt website based on data-driven objectives
Q2 2016 - onwards	Partners	Built trust: Meet, find common goals, create collaboration, share stories, follow-up
Q3 2016 - onwards	Other sustainable areas	Contact, connect, share successes and failures, present Arkna on conferences, register for award
Q2 2016 - onwards	Suppliers	Built mutual trust and partnerships: Meet, find common values and goals, create collaboration, share stories, follow-up
Q2 2016 - onwards	Inhabitants	Make them proud and an essential part of the community: Meet, talk, facilitate learning, share experiences, co-create and celebrate successes.
Q4 2016 - onwards	Business market (secretaries and their bosses)	Create long lasting partnerships with secretaries: become favorable destination, invite them for V.I.P. event, facilitate them to persuade their boss, make it easy to book and change, follow-up, personal loyalty program
Q3 2016 - onwards	local innovators, early adopters and high influencers	Create partnerships with those who think along and influence an audience to book. The aim is to have 2500 local visitors this year and 50000 local visitors in 5 years. Invite them over for a true Arkna experience, share stories and myths, ask them to share their experience and stories, keep them updated.

Time	Audience	Actions
Q3 2016 - onwards	international innovators, early adopters and high influencers	Create partnerships with those who think along and influence an audience to book. The aim is to have 1000 international visitors this year and 25000 international visitors in 5 years. Invite them over for a true Arkna experience, share stories and myths, ask them to share their experience and stories, keep them updated.
Q2 2016 - onwards	Local farming organizations	Create long lasting collaborations, built trust amongst each other. Invate a peekaboo behind the scenes of Arkna, share your dreams, explain intentions with local farming organizations, create events with them, learn from each other successes and failures, celebrate collective successes.
Q2 2016 - onwards	Journalists	Use LinkedIn, Events, Twitter and Wikipedia to establish long term relationships with journalists
Q2 2016 - onwards	Other regions	Make impact in the entire world: Get known for our efforts and results to sustainably redevelop an area, including eco farming, tourism and knowledge creation, give lectures, get rewards, publish articles, organise groundbreaking events (in collaboration with partners) at Arkna.
Q2 2016	Partner	Make list of needed skills and tasks, share with the first partners and hire diverse staff. For open positions, publish these on social media and on job-websites 6 weeks later.
Q2 2016 - onwards	Potential employees	Assess them on their capabilities to facilitate a transformation with guests. We use the checklist for events to ask how they can contribute to the experience of a guest.
Q3 2016 - onwards	Employees	Design feedback mechanism
Q2 2016 - onwards	Team	Process and learn from feedback
Q2 2016	Partners & guests	Make events calendar
Q2 2016	Team	Use checklist for events to organise them
Q2 2016 - onwards	Partners	Find loyal partners to sustain the events for the future
Q2 2016 - onwards	Guests	Announce each event separately in Social Media channels and through partners, share what is going on, while the event is happening and follow-up with results.

8. ROUTE MAP

The route map for the Arkna Eco-Park is divided into four distinct phases, from preparation and startup to a growth trajectory towards maturity. Connected to this phasing is an action plan for all parties to follow.

8.1. Development Phasing

Phase 1: Preparation and start-up (2015 – June 2017)

During this phase there is no sizeable accommodation yet. Therefore, this initial phase focuses on single day visitors, short events, and brand development. The spatial area that is at the heart of this all is the Master's Court which can host various events in and around the courtyard. The focus on infrastructure development also lies in this area in combination with the basic infrastructure needs for the Manor House.

Key areas of development:

- › Master court (partly ready in June 2016)
- › Goat palace (start operation in June 2016)
- › Ice cellar (ready in March 2016)
- › Herb garden (funding application end of 2016)
- › Visitor center (Funding application Enterprise Estonia)
- › Nurme processing plant (operational Q4 2016)
- › Establish project office (June 2016)
- › First floor Manor House (June 2017)

Phase 2: Tourism development (June 2017 – April 2019)

This phase focuses on the attraction and expansion of visitors to the Arkna Park. The major components for accommodation are the Manor House second floor (5-star accommodation) and the Heritage hotel (3-star accommodation). Furthermore, the tourism offerings is expanded with overnight stays, trips and tours to invite tourist to spend several days at the Arkna Eco-Park and increase their spending. This should be accompanied with the development of food outlets. This opens up employment opportunities in the region which is an important element in the community development strategy. At the end of this stage events are in full swing and bring tourist from all over the world.

Key areas of development:

- › Manor House (June 2018)
- › Heritage Hotel (April 2019)
- › Polydome (September 2018)
- › Community center (June 2018)
- › Water Mill (April 2019)

Phase 3: Growth and expansion into Health and Wellness (April 2019 – April 2021)

With the realisation of the accommodation and food & beverage outlets in phase 2 the focus in phase 3 is on growth and the development of additional services, primarily health and wellness. The cornerstone of this phase is the development of the Spa center and resort. This includes the development of the guesthouse and spiritual center nearby.

Key areas of development:

- › Spa center and resort (April 2020)
- › Guesthouse (December 2020)
- › Spiritual center (April 2021)

Phase 4: Enrichment and integration

This stage focuses on the open air and outdoor activities. Furthermore, the development of additional interests such as the museum, boat house, and the tool shed equipment rental takes place. This is also the stage where the additional housing both residential and for touristic purposes (clay houses) can be developed. Finally, a new development plan for the following years needs to be established.

Key areas of development:

- › Museum
- › Tool shed
- › Boat house
- › Camp site and sanitation
- › Residential development
- › Clay houses
- › Renovation Arkna buildings

A detailed planning of all activities is in the Master-plan Gantt chart.

8.2. Action plan

The action plan outlines the priorities and activities for phase 1. At the start of each phase a new action plan should be made to evaluate and guide the activities of that phase.

No	Description	Due date
1	Contact Enterprise Estonia through West Viru Development Center (WVDC), start preparatory talks about funding applications, figure out details, fine grained details, get introduced to national agency, start building trust & support.	March 2016
2	Renovate ice/cheese cellar	March 2016
3	Goat palace > Renovate > Buy goats and start production	March 2016 June 2016
4	Make sales plan cheese and goat milk	March 2016
5	Develop heat supply and grid > Apply together with smart house center to fund the horizontal systems > Horizontal GCHP > Manor house grid	March 2016 September 2016 September 2016
6	Community meetings > 50 people > 250 people > 500 people	April 2016 October 2016 April 2017
7	Make event planning summer 2016/2017 > Antiquities fair > Arkna days > Heritage festival > Santa land > Arkna festival > Harvest festival > Outdoor cinema	May 2016 June, 25th, 2016 August 2016 December 2016 Summer 2017 Autumn 2018 Unplanned
8	Engage vocational schools and try to assemble summer camp reconstruction teams to work on the Heritage Center clean-up	June 2016
9	Start polydome development	June 2016
10	Develop and implement communication packages	June 2016
11	Make sales plan for fresh produce (berries, honey, apples and herbs)	June 2016
12	Nurme processing plant > Start cheese production > Processing facility ready	June 2016 December 2016

No	Description	Due date
13	Establish project office	June 2016
14	Make zoning plan Make routing plan	June 2016 June 2017
15	Renovate Master Court > Phase 1: Blacksmith and stage > Prepare for events > Phase 2 > Master court activity planning	June 2016 June 2016 December 2016 December 2016
16	Establish visitor center > Funding application Enterprise Estonia > Operational	June 2016 June 2017
17	Make waste collection and separation plan	June 2016
18	Establish electricity grid > Manor house > Master's court	September 2016 June 2017
19	Establish water grid > Water grid manor area > Grid Mater court area > Sewerage and filtration	September 2016 June 2017 June 2017
20	Develop herb garden > Funding application > Activity, tours and training plan > Operational	October 2016 June 2017 June 2017
21	Build parking lot	December 2016
22	Renovate first floor Manor House	June 2017
23	Make activity plan first floor manor house > Company events and conferences	June 2017
24	Develop voluntourist market	unplanned

APPENDIX I – PROGRAM (1/5)

Prio	Program Entity	Building/area	Services	Space req.	Phasing	Revenue model	Audience	Visitors/yr	Turnover/pp	Yearly revenue
	Tourism									0
1	5 star accom- modation	Manor	Special events (weddings)			facilities rent, catering	High end			
			Conferences			facilities rent, catering	High end, B2B			
			Training & meetings			facilities rent, catering	B2B			
			Hotel restaurant			F&B sales	High end			
			Wine cellar			F&B sales, facilities rent	High end			
			Small spa	Half basement		admission, services	High end			
			Summer Bar			F&B sales	All			
1	Heritage hotel	Manor staff house	Manor staff house	Accommodation			room rent	Mid/high		
2	Health & wellness center, Spa	Cake complex	Cake complex				admission, services	Mid/high		
2	3 star accommodation	Cake complex	Cake complex	Accommodation			room rent	Mid		
3	Health office	Consultation service	Consultation service				services	Mid/high		
3	Meditation/Spiritual center	Spiritual Center	Spiritual Center	N/A			N/A	All		
1	Herb garden	Existing location	Existing location	Educational, guided tours and services			Admission, services	All		
1	Visitor center	Herb Garden	Herb Garden				N/A	All		
1	Nature pharmacy	Visitor Center	Visitor Center	Sales of natural products			sales	All		
1	Seminar space	Visitor Center	Visitor Center	Seminars, trainings, meetings			facilities rent, catering	B2B		
3	Santa-land	Herb garden	Herb garden	Theme park in December			admission	children, families		
1	Herb demonstration area	Herb garden	Herb garden	Educational, guided tours and services			admission	All		
1	Roadside restaurant	Water mill	Water mill	F&B			F&B sales			
3	Catering service	Water Mill	Water Mill	F&B			catering			
2	Bakery	Water Mill	Water Mill	F&B			F&B sales			
2	Mini-market	Water Mill annexe	Water Mill annexe	Food shop			sales			
3	Tourism info center	Water Mill annexe	Water Mill annexe	Tourist info			N/A			
2	Antique shop	Masters court	Masters court	Competency center, trainings, sales			sales, services			
2	Workshops (blacksmith, woodwork, ceramics)	Masters court	Masters court	Trainings, workshops, sales			sales, services			
4	Rental sporting goods	Toolshed	Toolshed	rental of sporting goods			equipment rent			
4	Electric car rental	Toolshed	Toolshed	car rent			equipment rent			
4	Boat rental	Spirit house	Spirit house	boat rent		tentative	equipment rent			
3	Pet therapy	Goat Palace	Goat Palace	therapy, trainings			services			

APPENDIX I – PROGRAM (2/5)

Prio	Program Entity	Building/area	Services	Space req.	Phasing	Revenue model	Audience	Visitors/yr	Turnover/pp	Yearly revenue
	Park									0
1	Park grounds		Inter-Manor tours Hiking trails Education trails Playground & activity center (outdoors)			services N/A N/A N/A				
4	Viewing towers / tree houses	Around Arkna	Leisure			N/A				
2	Picnick and Caravan grounds	Camp ground	Caravan parking Tent camping			Reservation Fee				
3	Children summercamps	Gardener's house	Organizing camps			Facilities rent, catering				
1	Car parking	Car park				N/A				
2	Touringcar parking	Car park				N/A				
3	Sports hall	Cake Complex	workout, training, sporting events			Admission, services, equipment rent				
3	Exercise rooms	Cake Complex	workout, training, physiotherapy			Admission, services, equipment rent				
2	Sports field/ court	Camp ground	2 tennis courts, 1 multi use			Admission, services, equipment rent				
	Competency & Training center									
3	Competency center organic production	Polydome	Promotion organic agriculture							
3	Competency center historical restoration	Wood workshop	training, coaching, colsulting			sales of services				
4	Active house demo center	Active house	promotion of +energy house							
2	Wood workshop	Master's court				rent				
3	Ceramics workshop	Master's court				rent				
3	Active-holiday workshop (handicraft, art, sculpture, film)	Master's court	workshops, trainings			services, sales of artwork				
3	Blacksmith	Master's court				rent				

APPENDIX I – PROGRAM (3/5)

Prio	Program Entity	Building/area	Services	Space req.	Phasing	Revenue model	Audience	Visitors/yr	Turnover/pp	Yearly revenue
Production										
1	Dairy Farm	Dairy Farm	production of raw milk			sales of raw milk				
1	Goat farm	Goat palace	production of raw milk			sales of raw milk				
1	Herb garden	Herb garden	production of herbs			sales of herbs				
1	Polydome	Polydome	food production			sales of fruits and vegetables				
2	Berry orchard	Fields	food production			sales of fruits				
2	Berry storage	Nurme Farm	storing							
1	Honey production	Nurme Farm	production of honey			sales of honey				
2	Cheese production	Nurme Farm	production of cheese and other milk products			sales of milk products				
1	Biomass production		production of biomass							
1	Heat & electricity		production of heat and electricity							
1	Water storage & filtration	Current water plant/river								
1	Feed production		production of feed							
2	Storage & preservation	Nurme Farm	storage facilities							
1	Processing	Nurme Farm	food processing							
1	Package & distribution	Nurme Farm	packaging and logistics services							
2	Management office									
2	Agricultural Services		equipment rent, services			equipment rent				
Culture										
2	Art Gallery	Master's court	Art exhibitions Cafe Seminar space		tentative					
1	Outdoor Concert/festival location	Master's court	Theatre performances Festivals & events Folklore events Toilets (1000 ppl)							
2	Indoor Music/ Theatre	Art Gallery/Manor	Poetry & literature events		tentative					
3		Pet therapy	Goat Palace	therapy, trainings			services			

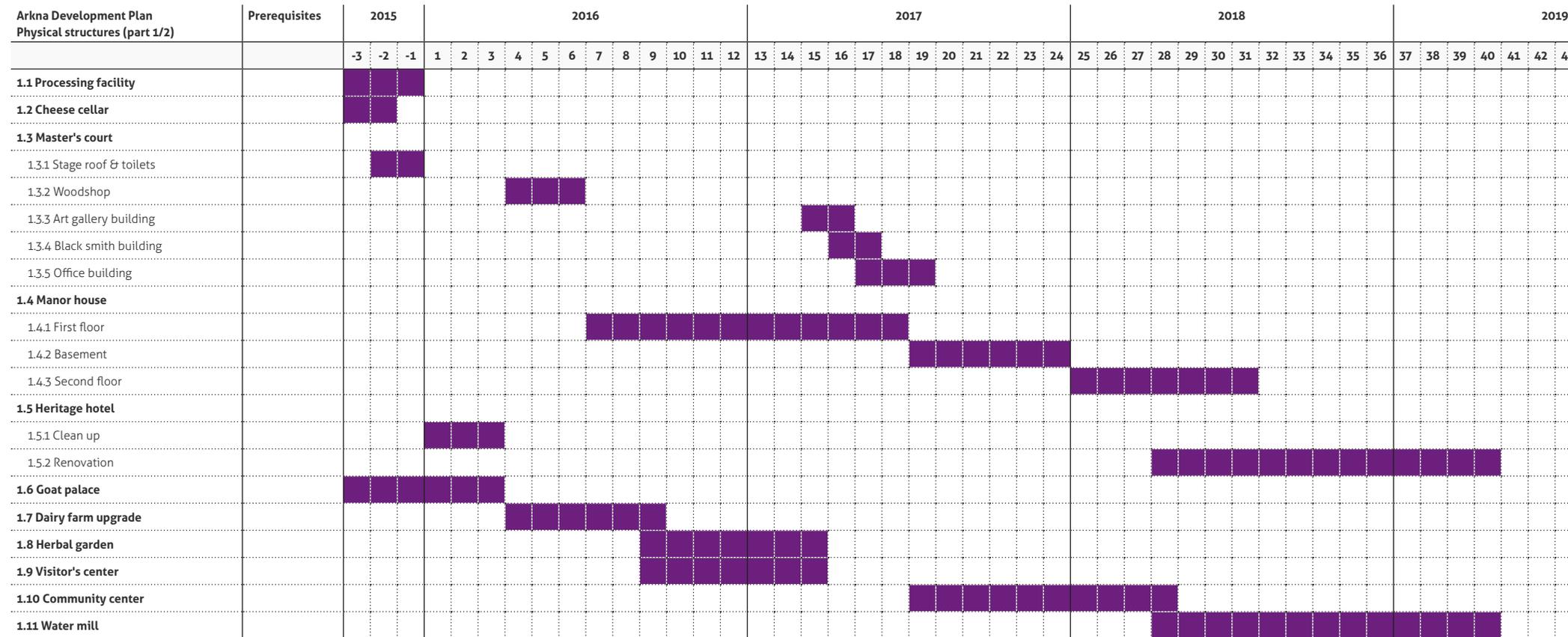
APPENDIX I – PROGRAM (4/5)

Prio	Program Entity	Building/area	Services	Space req.	Phasing	Revenue model	Audience	Visitors/yr	Turnover/pp	Yearly revenue
	Community									
2	Community center	New community house	activities, hobby groups, internet connection							
4	Community gardens	New community house								
3	Local events	Master's court/Herb garden	community involvement							
2	Bicycle road Arkna-Rakvere					N/A				
3	Indoor/outdoor health activity	Park/Spa	gym classes, yoga etc			admission				
3	Daycare	New community house	child care services			fee				
3	Senior center	New community house	activities, hobby groups			N/A				
4	Pre-school	New community house	child care services			fee				
3	Library	New community house	books, internet			N/A				
3	Playground	Current location				N/A				
4	Outdoor gym	In park	health and wellness			N/A				
4	Village museum	Current community center	heritage education			admission				
2	Broadband internet	Everywhere	connectivity							
4	Public transport Rakvere-Arkna									
3	Well maintained community environment									
2	Sound wall main road and village									
2	Employment opportunities	New community house	employment							

APPENDIX I – PROGRAM (5/5)

Prio	Program Entity	Building/area	Services	Space req.	Phasing	Revenue model	Audience	Visitors/yr	Turnover/pp	Yearly revenue
	Infrastructure									
3	Staff housing	Cake complex	staff housing							
2	Staff parking	Main parking	staff parking							
1	Water processing	Current new plant	water processing							
1	Waste processing	Biogas, separated	waste processing							
3	Composting	Compost center village, Polydome	composting							
3	District heating		heat							
3	Electricity		electricity							
2	Material storage	Repair palace	repairs, maintenance of machinery							
		Highway barn								
2	Tools	Repair palace	storage							

APPENDIX II – GANNT CHART (PHYSICAL STRUCTURES PART 1 OF 2)



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“Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts. There is something infinitely healing in the repeated refrains of nature — the assurance that dawn comes after night, and spring after winter.”

—Rachel Carson, *Silent Spring*



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