The Institute of Bioeconomy

Campus Development - Stage 2/C Feasibility Report -rev.0
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Issue Status DRAFT
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Concepts, Visions and Objectives

II CONTENTS

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INTRODUCTION
1 CONTEXT

The Site forms the Northwestern segment of the active Bio Economy Campus, that houses POKE, and JAMK's BTI institute. A number of site locations for the development were tested in terms of: 1) their Ability to meet the needs of the Brief, 2) the Suitability to mitigate adverse impacts and appropriate scale and relationship to the existing context, 3) the potential to develop a sensitive and high-quality Environmentally diverse Landscape and Architectural Ambition, and 4) the potential to maximise orientation, prospect, aspect, and organisation. The developments siting has therefore been split with some developments positioned on the southerly boundary to the applicants' land ownership addressing the existing water reserve and other developments developing a compact centre critical for the success of the Campus and its culture, and finally more specialised environments located on the Northwesterly part of the site for logistical reasons. The siting also benefits from existing topographical landforms.

Site ownership boundaries (blue)
Application Boundary (red)
Location of Building Siting

Site Area ??? Hectares (??m²)
SECTION 1 SITE

INTRODUCTION
This Section, Site, will be explored as a generator for design strategies first as a series of observations from ‘character of area & location’ to ‘context’, ‘climate & environment’ to ‘topography’ and ‘access’. This information will be utilised in subsequent sections in the report.

Further more this section will reflect the character of built environment, its history and the current policy framework that impact upon the site.

SITE CHARACTER

AREA
The Proposed Site Location is situated near to the area of Saarijärvi and forms the historical connection from Jyväskylä to Saarijärvi. It is a site of prime significance.

From North to South; the site is situated on a gentle sloping gradient towards the water. From this axis the site occupies an obscured and sheltered position.

From East to West; the historic Old road from the Blue House, heading westwards, has been masked over time. From this axis the site area is glimpsed from a limited but primary position upon the main road itself.

SITE CHARACTER LOCATION

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The site area broadly from existing topo-graphical landforms

Site ownership boundaries (blue)
Application Boundary (red)
Location of Building Siting
Site Area - Boundaries

SECTION 2 SITE

1 INTRODUCTION
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SITE CHARACTER

TOPOGRAPHY

The topography of the area forms a gentle gradient generally to the existing site topography. More widely the area’s topography forms an inclined gradient moving North-South with the adjacent farm buildings being of higher elevation than the embankments.

SITE GRADIENT

1m Intervals

Site Plateaus Already Formed

The location of the proposed development have been positioned at existing level plateaus to minimise groundwork excavations and fills together with site and area disturbances.

ACCESS

Primary Access Provision

Historic Access point to quarry disused.

VIEWS

Principle Views Onto Site from the Main Access Road.

Limited vantage points onto the site are located at the southern and northern boundaries to the site. Boundaries to the East provide a sheltered views onto or into the site, while Boundaries to the West offer open visual vistas. More widely the area is of open farmland with multiple views.

CLIMATE

Given that the design and its strategies for the Proposal will need to be ‘innovative’ and consideration to the climate conditions will be important, that defines the appropriate design mix of Passive and Active design strategies.

SOLAR GAIN

In terms of Solar Orientation, the site and its location provides the opportunity of utilising solar gain, with some 60-80% of solar radiation being accessible throughout the Day.

WIND & ENCLOSURE

In terms of wind direction and pattern these should be taken into consideration during design. Although acknowledging that an appropriate and sensitive design approach may limit the use of wind as a renewable resource, wind and its operating direction will motivate careful consideration to the building form more generally.

WATER

Owing to the provision of a water reserve adjacent and on the site, there is considerable potential to utilise evaporative Cooling in any Design. While any discharge and surface water run off will require Sustainable Drainage Systems to limit contamination.

NOISE

Designs will need to provide natural/artificial acoustic barriers to the surrounding context.
Generally, the built environment is of incremental development of one to two storey developments of residencies and teaching facilities.

A principle ‘Building Line’ and ‘Axis’ for orientation can be clearly seen from the figure ground plan to the left. This ‘Axis’ sets up a contextual and organisational response to the incremental development that defines the character of the area.

**Figure Ground Plan of Built Environment showing build up of building stock from up until the Present time (indicated as Black to Grey)**

**Principle Building Line/Orientation**

**Principle Building Axis**

**Secondary Building Axis/Orientation**
COMPLETE SITE APPRAISAL

Principle Building Axis/Orientation

Principle Building Line

KEY
- Red line Site
- Solar Gain Sun Path
- Wind Rose, Seasonal
- Topography
- Existing Change in Levels
- Principle Proposed Access Point
- Historic Access point to Site
- Principle Building Axis/ Orientation to Context
- Principle Views onto the Site

Tarvaala
Bioeconomy
Campus
2 STRATEGY
DESIGN STRATEGY 1:
SITE
Conceptual Ecology

WE ARE NOW MUTUALLY DEPENDANT IN CO-EVOLUTIONARY INTERACTION NETWORKS
DESIGN STRATEGY 1:
SITE

Site Strategy

MASTERPLAN Living Lab Approach

ENTERPRISE

NEEDS

ACTION

TESTING

VALUES

THINKING

NATURE

DEPLOYMENT

IMPACT
DESIGN STRATEGY 1: SITE

Site Strategy

Principle Building Axis/Orientation

Key Views and Vistas from the Site

Key Island Area

Historic Buildings

Historic Main Square

Significant Landmarks

Central ‘Gateway Conditions’

Missing ‘Nodes’

New Key External Spaces

Radial Routes around the site

Principle and Historic ‘Main Street’ axes

5-10 minutes walking distance
DESIGN STRATEGY 1:
SITE

Agrarian Structure in the Town Plan

Bioscape 1
Bioscape 2
Bioscape 3
Bioscape 4
Bioscape 5
Tarvaala
Bioeconomy
Campus
Most Sustainable Developments are analysed through environmental assessment methods (BREEAM/LEED) that rate and certify the performance of new developments. The BIOECONOMY CAMPUS is designed to reach ‘Outstanding’ level rating in the first instance and Zero Carbon/Carbon Neutral Development status in the second.

Sustainably designed projects are sometimes referred to as a ‘Zero Carbon Development’, meaning in broad terms that the energy requirements made by the inhabitants and the building itself are:

- Firstly, through the layout, efficiency and performance of the building fabric. This is achieved through the design and specification of the building envelope and how it reduces or eliminates heat loss; it is how we passively manage energy.
- Secondly through the generation of on-site energy, by renewable technologies such as in Zero Carbon (ZC) campus buildings.

These two factors, ‘Passive’ and ‘Active’ both have varying requirement on the shape, layout, and appearance of new developments which the design team have utilised in accommodating the clients brief to be Light and Airy while bearing in mind the context and impact to the site.

The Design strategy has focused on the long term goal of achieving a Zero Carbon development with earlier phases providing the basis to progress. The first phase has concentrated on the ‘Passive Design Principles’ primarily with the ‘Active Design Principles’ being able to be included in subsequent phases.

The BIOECONOMY CAMPUS should be seen in this context of an initial passive design stage with a design strategy over its useful life of being a ‘Zero Carbon Development’.
3 PROPOSAL
Yleissuunnitelma


Koulutusta ja yritystoimintaa tukevia tiloja ja toimintoja


Alueen tunnettavuutta vahvistavia toimintoja

Development Sub Projects

1. Bioterminaali ja koneopetustila (Bioterminal and machine workshop)
2. Hajautetun energiatuotannon koulutus- ja T&K –ympäristö (Novel energy system)
3. Vesilaboratorio ja bioympäristöt (Environmental lab and bioscapes)
4. Maitokarjatalouden koulutus- ja T&K –ympäristö (Milk production environment)
5. Tarvaala-talo ja yrityskehitysprosessit (Tarvaala house and business development processes)
6. Tarvaalan Yrityspuisto (Tarvaala Business park)
7. Vihreä Tarvaala (Green Tarvaala)
8. Campus hostelli, liikuntatilat, (Campus hostel, gym and sport park)
9. Vanhan navetan uusi käyttö (Novel use of the old cow-house)
10. Tarvaalan maamerkki (Tarvaala landmark)
DESIGN PROPOSAL 3: FACILITIES and services

Development Sub Projects

1. Bioterminal and machine workshop (Bioterminal and machine workshop)

2. Högprisenergiarensystemet korallera: ja T&K – ympäristö (Novel energy system)

3. Verkkolaboratorio ja biolaboratorio (Environmental lab and biolaboratory)

4. Muokatut teknologiarakennukset ja T&K – ympäristö (Modified production environment)

5. Tarvala:n tunnus ja ympäristöoperaattorit (Tarvala’s landmark and environmental operators)

6. Tarvala:n Sauna ja rekreaatiomaisema (Tarvala’s Sauna and recreational area)

7. Vihreä Tarvala (Green Tarvala)

8. Campus hostel, leisure club, and sports park (Campus hostel, leisure club, and sports park)

9. Vanha savon Marian kylä (Novel use of the old cow-kennel)

10. Tarvala:n maamerkki (Tarvala’s landmark)
LEARNING LANDSCAPE
spillout space for auditorium, exhibition and info area for main building

AUDITORIUM SPACE

GROUP WORK SPACES INFORMAL

LEARNING LIBRARY

OFFICES (SSYP)

BUSINESS INCUBATOR SPACES (7 spaces)

OFFICES (7 spaces)

INCUBATOR SHARED COCREATION LOUNGE

KAHVILA Primary dedicated space

SMALL KITCHEN and Servery

FLOAT SPACE
(including circulation, Toilets, Kitchens, entrances and Lockers)

INCUBATOR SPACES (7 spaces)

INCUBATOR SHARED MEETING LOUNGES

FLOAT SPACE
(including circulation, Toilets, Kitchens, entrances and SAUNA)

SUB PROJECT 5

Tarvaala
Bioeconomy
Campus

Tarvaala
Bioeconomy
Campus
DESIGN PROPOSAL

Learning Landscapes 1

THE New LIVING HUB, Centre

AL 007 First Floor Plan Proposed

(1/1000 A3)
DESIGN PROPOSAL

Opportunities for Bio Diversity and Cultural activities could be staged at the various Bioscapes.

Collaborations with Greencare could benefit from Bioscape 5 and the designed landscaping themes.

4 IMPACT