Submission to Parks Victoria: Olinda Commons - Integrated Redevelopment Proposal for the former Olinda Golf Course into a Community Environment Park (aka Olinda Connect Precinct Plan)

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SUBMISSION TO PARKS VICTORIA:

OLINDA COMMONS -
INTEGRATED REDEVELOPMENT PROPOSAL FOR THE
FORMER OLINDA GOLF COURSE INTO A
COMMUNITY ENVIRONMENT PARK
(OLINDA CONNECT PRECINCT PLAN)

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SUBMISSION TO PARKS VICTORIA: OLINDA COMMONS - INTEGRATED REDEVELOPMENT PROPOSAL FOR THE FORMER OLINDA GOLF COURSE INTO A COMMUNITY ENVIRONMENT PARK (AKA OLINDA CONNECT PRECINCT PLAN)

“This proposal is part of a vision and integral plan to create a future world which is socially just, culturally rich, thriving and enriching, spiritually fulfilling, and ecologically sustainable and creates a regenerative human presence on this planet and wellbeing for all sentinel beings indefinitely. This is through a local demonstration and educational site of a commons based community environment park”

1 INTRODUCTION, BACKGROUND AND CONTEXT

1.1 Introduction

In 2015 the local member of parliament, James Merlino MP asked local people to provide their views and ideas for the future of the former golf course site. Over 160 submissions were received. The current planning picks up that valuable work and carries it forward with and intent to develop an overall precinct plan.

Parks Victoria focus is on a plan for use of the former Olinda Golf Course site that will provide recreational and tourism benefits for the local community and Victorian public. Yarra Ranges Council focus is on connections to the Olinda township and making it simpler and easier for locals and visitors to walk between the many attractions in Olinda. A Project Steering Group was convened by the local member James Merlino MP and includes members of local community groups, businesses and sports clubs.

The current first consultation stage started in March 2016, with community information days and request for input. This will be followed by the second stage to consult on draft Township Connections Plan and draft concept plan for the former Olinda Golf Course in May 2016. This in turn will be followed by a third consultation stage on the draft Golf Course Precinct Plan in August 2016.

The purpose of this submission is to the first and second consultation stages, is to provide high level ideas, a plan, proposal and strategy for the re-development of the former Olinda Golf Course land, taking into account the local social, environmental and economic situation of the land and surrounding area and to create a community based and centred, future focused,
sustainable, resilient, regenerative and thriving, multi-dimensional and integral re-development and use of a unique area of land in the heart of the Dandenong Ranges. This submission does not provide detailed proposals or re-development designs, which in my view will, in line with this proposal be developed through deep and dynamic engagement with the local community and all other interested stakeholders in the next stages of a development strategy. But the submission is one approach to implement a vision for a sustainable, regenerative and thriveable Olinda and Dandenong Ranges and beyond as part of a sustainable and liveable future.

This submission is based on my intimate knowledge, appreciation and desire for a sustainable future for the Dandenong Ranges and the local social, environmental and economic status and issues, residing in the suburb of Sassafras. And my background and long term experience in environmental sciences, environmental engineering, sustainability, sustainable and regenerative design and permaculture.

1.2 Background

Olinda is a small well established village and urban-fringe suburb located in the heart of the Dandenong Ranges, some 40 km east of the Melbourne CBD. As part of the Dandenong Ranges (also called “the hills”) it provides for mostly low density residential living in a very “leafy” environment with a natural feel, surrounded by the native forests of the Dandenong Ranges National Park, which form the backbone of the natural beauty and attraction of the rugged hilly area within easy reach of the city. Tourism is the main local economic foundation for the area with a number of small hospitality (i.e. cafes, restaurants, B&Bs, events centres etc.) and related businesses (e.g. tourist shops, galleries, craft centres) within Olinda and other hills villages and dotted around the whole Dandenong Ranges.

Olinda, like the other villages in the Dandenong Ranges has been settled for more than 100 years, with initial clearing of the native old growth forests and initially slow development and use for residential and commercial purposes (e.g. nurseries, orchards, herb and berry farms). Most intense development in the hills occurred after WWII particularly in the 1960s and 1970s, initially with city dwellers building “weekenders” which eventually were used or converted to permanent residential use, based on increased mobility and availability of private transport. From early on the hills were and still are the destination for recreational day trips to “escape” the city and experience some more natural environments, which has been enshrined by the establishment with the creation of the first forest reserves in the 1880s. These were expanded many times over the years to eventually form the Dandenong Ranges National Park in 1987.
with further land additions since, reaching an area of 354 km$^2$ by 2005. Intensive programs of re-forestation (some logging occurred until the 1960s), weed eradication and active management have occurred over the years (Parks Vic 2006) (Figure 1-1).

By the 1980s the hills were “fully developed” providing for limited space and opportunities for any further developments (i.e. no new land releases) other than some limited land use changes (e.g. from nursery to residential) or infill development and also with limited need or capacity for additional traditional hospitality businesses. All “undeveloped” areas are under high level of protection (e.g. national park, reserves, public gardens etc.) and owned and managed by the state government (i.e. Parks Victoria) or the local council (i.e. Shire of Yarra Ranges).
Currently there reside approximately 30,000 people in approximately 10,000 dwellings across the hills on an area of approximately 200 km$^2$ of residential land, which compared to city suburbs is a low density of habitation. Olinda village harbours approximately 1570 residents over its area of approximately 6 km$^2$.

Although outwardly known and revered by residents and visitors alike for the natural beauty there are significant environmental issues putting a lot of pressure on these natural assets, which for example includes, invasive species (partly due to intermeshed occurrence of protected areas and residential developments, where exotic species are often planted), pests (e.g. foxes and feral cats) as well as surface water degradation and pollution either due to soil erosion, surface run-off and most importantly from discharges from septic-tanks (the hills are unsewered) and greywater (largely going directly into waterways). Of course pressure due to extensive use and large visitor numbers to the area are of concern as well (Parks Vic, 2006; Yarra Ranges Shire, 2015).

The site of this plan, is the former Olinda Golf course (which I call “Olinda Commons” from now on in this report), a parcel of land of approximately 80 acres in size near the eastern edge, within walking distance, of Olinda Village (Figure 1-2). The Golf course was closed in 2012 due to not being economically viable for the commercial operator to continue the lease. In mid of 2015 the state government started a public consultation process to evaluate future uses of the parcel of land, which is currently zoned as Crown Land for Community Use.
The purpose of this proposed plan is to inform the current debate and public consultation for future uses and long term management of the Olinda Commons as is proposed in this plan as the Dandenong Ranges Community Environment Park to provide for an integrated development proposal with a visionary re-development and regeneration based on a vision for a future world which is socially just, culturally rich, thriving and enriching, spiritually fulfilling, and ecologically sustainable and provides for a regenerative human presence on this planet and wellbeing for all sentinel beings indefinitely, including re-localised sustainable economic and socially just livelihoods for the local communities. The focus of the plan is on integrating sustainable land re-development with the social, environmental and economic aspects, issues and drivers for the Olinda Commons and hills communities.

This plan includes an outline of a possible re-development of the site and strong connection and integration with the surrounding area, according to the author’s vision for a sustainable and socially just future for the hills, exemplified in the overall plans for the site. Because of the size and complexity of the proposal and plan, many aspects are only discussed in general high level terms and as concepts to assist with the direction of further more detailed planning, design and implementation studies and plans in due course (including detailed community and stakeholder engagement – i.e. commons based development), but to provide visions and ideas to stimulate discussion and engagement of all stakeholders.

Sustainability and Sustainable development was brought into the common use after the World Commission on Environment and Development report in 1987 (‘the Bruntland Report’) with its most recent advancement through the 2015 UN Sustainable Development Goals. In Australia’s National Strategy for ecologically sustainable development, it is defined as:

'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased’

This principle is defined within the Environmental Protection and Biodiversity Conservation Act (1999), which is the federal Government’s central piece of environmental legislation.

Within Victoria, integrated catchment management (i.e. integrated land and water management) is delivered through the Catchment and Land Protection (CaLP) Act (1994). Here, sustainable development in relation to natural resource management seeks to deliver

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social, economic and environmental outcomes for the community and reduce our ecological footprint. It also encompasses community empowerment and integrated management – recognising the linkages between land and water, accountability and efficient, targeted investment.

A key principle in integrated sustainable land and water management is the recognition that individual sites should be considered in their context and that land and water management problems do not align to property boundaries, therefore co-operative efforts are often required to achieve effective outcomes (Yarra Ranges Council, 2015). For Olinda Commons, this is particularly important due to its position adjacent the Dandenong Ranges National Park, as well as close to a nearby watercourse (i.e. Olinda Creek) at the top of the catchment running through the National Park.

1.3 Context to Redevelopment of Olinda Commons

The former Olinda Golf Course land is owned by the state government, zoned Crown Land for Community Use, managed by Parks Victoria and forms part of the Olinda Bushfire buffer land. The land was leased out by the state government to private commercial operators for several decades for use as an 18 hole golf course. Before the recent lease expired in 2012, an assessment of the economic viability of the golf course was negative and a decision was made to not renew any leases for such uses. In 2014 the state government asked for expressions of interest for commercial use of the site, but due to community pressure was forced into consideration and consultation about other uses and forms of future management for the site, which so far included one community meeting in June 2015.

Initial ideas suggested to split the site into three areas (but state government retaining ownership) between Parks Victoria, Yarra Ranges Council and private commercial use and management.

In response to these plans for primarily private commercial businesses to determine the use and future management of significant portions of the site, an alliance of several community groups, local businesses and individuals from Olinda and the hills was formed (i.e. Olinda Commons, olindacommons.org), who developed their own vision and ideas about future re-development, use and long term management of the site. These views were conveyed to the state government during community meetings and submissions to the government in mid-2015.
The initial development ideas and visions include the following:

- Preserve site as a community facility and asset
- Collaborative and community based development and management (commons)
- Manage to enhance the natural, cultural and visitor value, encourage ongoing community connections, stewardship and involvement in its management as a valuable asset to the community in the long term
- Ideas include low impact recreational opportunities, but also co-working spaces, technology and business hub, the arts, permaculture and education
- Based on other developments like CERES or Collingwood children's farm to establish a Dandenong Ranges Community Environment Park
- Avoid inappropriate and purely commercially focused larger scale development (like has been proposed for redevelopment of Burnham Beeches estate in Sherbrook by celebrity chef Shannon Bennett), which so far is opposed by the hills community and the local council.

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2 From the Olinda Commons website (olindacommons.org) accessed 28 October 2015
3 The initially proposed development plans for the 40 acre historical Burnham Beeches Estate in Sherbrook included some 70 residential style “cottages” (with up to 4 or 5 bedrooms), a large resort hotel and various other businesses, including the renovation of the existing Art Deco buildings at the site, adding to the already existing Piggery Café, which was built in the area of the old on-site Piggery. The development would increase maximum “residents” numbers to about 1700 people from around 200 to 300 in Sherbrook at the moment. More information available on https://www.facebook.com/BurnhamBeechesDevelopmentCommunityWatch/
2 KEY ECOLOGICAL, ECONOMIC, SOCIAL AND CULTURAL ASSETS, ISSUES, CHALLENGES AND OPPORTUNITIES

2.1 Assets

The natural, social and economic assets of the site (Olinda Commons) can be summarised as follows:

- A relatively large area of high value landscape and natural habitat potential (due to its location next to the Dandenong Ranges NP to the east and north of the site, which is an important area in the parks and reserves system between Port Phillip Bay/Western Port to the Yarra Ranges and also harbours a range of endangered plant and animal species)

- The natural environment and assets include the following:
  
  o Geology: Devonian Rhyodacite (Volcanic)
  
  o Geomorphology: North – south running ridges of rolling hills, with steeply incised streams and creeks (Figure 2-1 and Figure 2-2)
  
  o Elevation: 465 to 570 m AHD
  
  o Soils: Sandy Loam to Loamy Sand, nutrient poor, slightly acidic, well-draining, low water holding capacity, prone to water erosion
  
  o Climate: Cool to temperate with temperatures on average 5°C cooler than the city (annual average Temperature: 8 to 15°C; average of 1,200mm precipitation with 184 rainy days)
  
  o Aspect and slope: east to north-east facing and gentle to moderately steep slopes
  
  o Water courses: None on site but tributaries of Olinda Creek within few hundred metres to north and east
  
  o Bioregion: Highlands – Southern Fall
Natural Ecological Vegetation Classification (DSE, 2004): 29 Damp Forest, 30 Wet Forest, 45 Shrubby Foothill Forest, – Generally ridges and northern/western slopes covered by sclerophyll forest of Stringybark and box; other directions and gullies with Mountain Ash and protected gullies in North with temperate rain forest (e.g. Olinda Creek); all with diverse middle and understory as well as ground cover and in wetter areas with abundant ferns and tree ferns. The Dandenong Ranges National Park is the closest area to Melbourne where Mountain Ash forests are found, hence the area is of very high conservation and educational value (Figure 2-3).

Because the site and surrounds fall within the high natural and cultural value area of the Dandenong Ranges there is strong emphasis on maintaining the character and core values of the national park unchanged but with improved ecological conditions (Parks Vic, 2006; Yarra Ranges Council, 2015). This is clearly reflected in the vision for the Dandenong Ranges National Park: The tall forest, wildlife and scenery are managed for their outstanding natural values and diverse recreational opportunities. Sophisticated ecological management techniques are employed to protect and manage the natural values. Populations of rare and threatened species of plants and animals are now secure and the range of species such as the Superb Lyrebird has expanded. The forest is relatively weed-free and there are only small numbers of feral animals. Continuing attention is given to protection of life and property from wildfire, with the prescribed burning for fire protection integrated with the ecological requirements for fire. The broader community is well aware of the park’s values and management programs, and many community groups promote the park and participate in its management on a voluntary basis. Natural and cultural values conservation programs and visitor services programs are integrated with the programs of local government agencies, to the benefit of all categories of land. The community has ready access to the park for new recreational activities and traditional uses on an equitable basis. The community’s enjoyment of the park is supported by high quality visitor services with a focus on environmental education and information programs that contribute to people’s understanding of the natural and cultural values of the park. The park is a source of serenity, inspiration and human health and well-being. Which is consistent by the councils environmental strategy (which covers the whole council area and not only the Dandenong Ranges): “We are dedicated to making the Yarra Ranges a place of thriving communities, at home in healthy landscapes” (Yarran Ranges Council, 2015). The National Parks management, which is important for the site re-development and
regeneration, because of its vicinity to the National Park also because parts of the site are planned under this submission for regeneration to natural forest environments, hence it sets out a clear strategy, aims and management strategies for all natural and cultural values of the area including useful aspects for input to this re-development plan:

- Geology and landform features
- Rivers and catchments
- Vegetation
- Fauna
- Fire Management
- Pest Plants and animals and diseases
- Soil conservation
- Indigenous Cultural heritage
- Historical heritage
- Visitors (including, access, vehicles, picnicking, walking, dog walking, horse riding, cycling, tourism services)
- Community involvement and engagement
- Local Economy and livelihoods

- Extensive recreational opportunities and areas for active nature connection, including bushwalking, dog walking, retreats, running, biking (road and mountain), sightseeing, nature exploration, education and training etc. and opportunities to bring people together and enjoy the outdoors and natural environments at the doorstep of Melbourne including iconic sites (e.g. 1000 Steps trail, Skyhigh observation deck).

- Olinda and surrounding hills villages rely on natural environments and beauty for residential, recreational and touristic use largely by day tourism from Melbourne for the localised part of the economic activity and incomes and livelihoods, and includes a wide range of hospitality and related businesses (e.g. nurseries, tourist shops,
galleries, craft shops, B&Bs, cafes, restaurants etc.) and with it supports and sustains other local services businesses (e.g. groceries, medical, etc.).

- Due to the long established presence of the National Park there is strong connection and collaboration between Parks Victoria and local council and other stakeholders (e.g. community groups and Port Phillip CMA) as well as established information, education and training programs and facilities to raise awareness and knowledge about conservation and land/water protection and management issues (Parks Vic, 2006; Yarra Ranges Council, 2015).

Figure 2-1: Olinda Commons & surrounds
2.2 Issues

Some of the issues the site has to contend with include:

- Site currently contains artificially maintained golfing greens of largely exotic grasses and a combination of sparse native and exotic vegetation (trees and bushes).

- Significant past use of herbicides and artificial fertilisers as well as manual high energy input maintenance works to sustain golf course operations.

- Encroachment of exotic vegetation and “weeds” (e.g. ivy, blackberries, Rhododendrons, etc.) onto property since stopped using as golf course, due to lack of much maintenance and also due to closeness of residential areas with such non-native vegetation and National Rhododendron Garden to the north of the site.

- Thoroughfare and “habitat” for pest animals (e.g. Foxes, feral cats), which are impacting on wildlife in nearby national park land.
• Site is within a High Bushfire Risk Area (i.e. Site is part of fire buffer for Olinda), which needs to be maintained within future site re-development, management plans and regimes. The last main bushfires affecting the Dandenong Ranges occurred in 1997 when significant areas in the hills burned destroying several properties and causing a number of fatalities. Bushfire activity during summer months can be substantial particularly due to arson, but is generally well contained due to high vigilance and monitoring.

• Site Physical Challenges: north to north-east aspect, moderately steep slopes, no vehicle access to most of site at moment and infrastructure is limited to a gravelled parking areas, a pavilion (with BBQ facilities), and the former golf club building on the western edge of the site.

2.3 Challenges and Opportunities

The interlinked challenges and opportunities for the re-development of Olinda Commons includes the following as a foundation for the development of the integrated re-development plan, some of which are issues beyond the actual site and affecting all of the hills:

• **Ecological**: weeds and exotic species, significant waterway pollution (in hills area in general), overuse and fragmentation of natural habitats, pests, unsustainable water management (e.g. septic tanks, greywater, reticulated supply) and energy systems (including high reliance on commuting to far flung jobs in the city and elsewhere due to limitations on local opportunities)

• **Economic**: High value of natural living, recreation and tourism in area of the hills; limited opportunity for further commercial or other developments; land currently unused and vacant and inaccessible and hence of low ecological, social or economic use and benefit.

• **Social**: accessible recreational and learning places for locals and visitors; desire by state government to find and develop beneficial use and sustainable long term management of land.

• **Economic**: Challenges of viability and tension between commons and community based re-development and management against commercial, individual and profit based development or against conventional conservation (e.g. bush regeneration) and state government and/or council based management.
• **Opportunities**: bring community together, develop alternative vision and plan for sustainable and restorative and regenerative futures of hills, a living example of re-localised lives, livelihoods and economies in harmony with the natural environment, educate and inspire communities within and way beyond the Dandenong Ranges.

• **Regenerate** and re-connect with natural environment which provides for and sustains us (i.e. through recreational, productive and educational activities).
3 PROPOSAL AND PLAN OBJECTIVES, PRINCIPLES, METHODOLOGY/APPROACHES

3.1 Objectives

Following key objectives for the successful and sustainable re-development and regeneration and future use and management of the site have been identified:

- Beneficial use of site for benefits/interests of all relevant stakeholders and the local community and consistent with current and future management plans of those stakeholders (i.e. Parks Victoria and Shire of Yarra Ranges (Parks Vic, 2006; Yarra Ranges Council, 2015) as well as Port Phillip CMA

- Sustainable long term beneficial use and management and development of the site into an important and valuable asset providing synergistic and mutual benefits to the environment and community

- Develop a local and commons based plan for site re-development and regeneration and overall beneficial and sustainable use of the site for the social, environmental and economic benefits for the whole community

- Apply the best and most appropriate Principles, Approaches and Methods of integrated, sustainable and regenerative site redevelopment/regeneration

- Deeply and dynamically engage with community and stakeholder views and participation on co-creating the site re-development & regeneration

- Develop a re-development and regeneration strategy which can engage and educate the community and provide a long term recreational, educational and training resource and provide for local livelihoods for the local environment as the Dandenong Ranges Community Environment Park and a demonstration and inspiration for regenerative development elsewhere

- Protect existing remnant habitat and regenerate parts of the site into natural forest habitat linking with surrounding National Park areas.

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4 The Regional Catchment Strategy for the Port Phillip & Western Port region was accessed online on 28/11/2015 on <http://www.ppwrcs.vic.gov.au/about>
• Prepare a high level implementation strategy and basis for a detailed site re-
development implementation and management plan for Olinda Commons

### 3.2 Principles, Methods and Approaches

#### 3.2.1 Principles

The development of an integrated site re-development and regeneration plan/proposal is based on a number of overarching high level sustainability principles (of design, development and management), approaches and methods, which have been used for the development of this proposal and will be utilised during detailed re-development planning and design stages, but including (but not necessarily limited to what is presented here), which holistically and integrally cover all aspects of environmental, social, cultural, personal and economic dimensions for an integrated transformative, sustainable, resilient and regenerative development, which will provide benefits for the site itself, but co-creating stronger and caring communities in the hills and beyond (e.g. through education, training, demonstration, innovation, engagement, etc):

- Environmentally Sustainable Design (ESD) (Walker, 2014)
- Zero Waste (for energy, water, resources and waste to landfill)
- Closed Loop and Circular Economy (of water and nutrient cycles)
- Permaculture Ethics (Earth Care, Self and People Care, Fair Share)
- Decentralisation (of water and waste as well as other systems (e.g. food, energy)
- Bellagio Principles of Sustainable Sanitation (social, governance, resources, environment)\(^5\)

• Supported by and underpinned by principles of Voluntary Simplicity (Alexander, 2015a, 2015b), Transition Towns (Hopkins 2013), Degrowth (D’Alisa et al, 2015) and re-localisation as underlying guiding philosophies for the plans vision

3.2.2 Methods and Approaches

• Permaculture Principles (Holmgren, 2002; Hemenway, 2015; Throught, 2015) (e.g. catch and store energy, use and value renewable resources and services, produce no waste, use small and slow solutions, integrate rather than segregate)

• Cradle to Cradle (i.e. nutrient cycling) (Braungart et al. 2007)

• Integrated Urban Water (CYCLE) Systems (IUWS) (Marlow et al. 2013)

• Water sensitive urban Design

• Integral Sustainable Design (DeKay, 2012), Integral Ecology and Integral Methodological Pluralism (Esbjoern-Hargens & Zimmermann, 2011)

• Regenerative Sustainable Design and Development (Hes & Du Plessis, 2015; Wahl, 2016) Figure 3-1

• Ecosystem Services Principles (Hes & Du Plessis, 2015)

• Living Building, Community, Product Challenge (International Living Future Institute, 2014a, 2014b, 2015)

• Human Centred (IDEO, 2015) and Socially Responsible Design (Melles et al. 2011)

• Commons Principles, Practices and Methods (on the commons) for re-development and long term management and use of the site (Walljasper, 2010; Mare & Lindegger, 2011; Bollier, 2013, Bollier & Helfrich, 2012, 2015)

• Solidarity Economy Concepts and Practices (Miller, 2010)6 - Figure 3-2

6 “The solidarity economy includes a wide array of economic practices and initiatives but they all share common values that stand in stark contrast to the values of the dominant economy. Instead of enforcing a culture of cut-throat competition, they build cultures and communities of cooperation. Rather than isolating us from one another, they foster relationships of mutual support and solidarity. In place of centralized structures of control, they move us towards shared responsibility and democratic decision-making. Instead of imposing a single global monoculture, they strengthen the diversity of local cultures and environments. Instead of prioritizing profit over all else, they encourage a commitment to shared humanity best expressed in social, economic, and environmental justice.” SolidarityNYC (2015) accessed on 21 April 2016, <http://solidaritynyc.org/#>
Figure 3-1: Sustainable, Restorative to Regenerative Development

Figure 3-2: Map of Solidarity Economy
4 GRAND PLAN FOR THE OLINDA COMMONS – DANDENONG RANGES COMMUNITY ENVIRONMENT PARK

4.1 Objectives

Along with achieving the overall re-development and regeneration objectives for the site (Section 3.1), particularly in relation to fire buffer management and beneficial community use, the following key objectives have been identified for the integrated re-development plan for the Dandenong Ranges Community Environment Park as an example and demonstration site of sustainable, restorative and regenerative living and community and provide for the anchor point for a transition of the local area into sustainable “eco-village” community (Figure 4-1):

- Redevelop and regenerate the site into an important asset for the community which provides for balanced but improved ecological, social and economic outcomes and benefits for the area and the hills in general aligned with the principles and approaches (see Section 3)

- Provide an opportunity to engage, integrate and educate and in the long term train the community regarding integrated sustainable and restorative re-development and regeneration and long term management for the site and the hills and beyond

- Regenerate significant portions of the site with linkages to the surrounding National Park areas and village and allow for responsible weed, pest and bush fire risk management;

- Develop local initiatives and networks promoting increased local-self-reliance and regional economic development and self-governance with an aim to improve the wider system and rooted in an ethics of non-violence and interbeing with all life, but within a balanced globally networked collaborative system of exchange, support and trade.
4.2 Re-development Proposal (Master Plan)

Based on the expressed ideas by the Olinda Commons group and my own ideas and understanding of the site and taking into account the sustainable, regenerative and holistic and integral re-development principles, approaches and methods following overall plan for re-development of the site is envisaged:

- Recreational (partly managed by Parks Victoria; partly managed by council and partly a Commons or community land trust)
  - Regenerated Natural forests (natural habitat restoration and protection and walking, education and nature connection/immersion)
  - Woodlands (used for mushroom growing, coppicing for energy production; recreational use and walking as well as education) forming integral part of fire break management.
  - Small scale demonstration and educational animal farm (chickens, rabbits, pigs, goats, sheep, cows) partly for public access but integrated with a “commercial” (but commons managed) permaculture farm (e.g. with integrated food, manure, pest management, water management) and including some paddock areas for grazing and integrated with aquaponics (water cycling systems)

- Co-working spaces (commons or co-op/Not for profit based social enterprises, B-Corps) for primary and secondary production (mostly from on-site products)
- Micro-dairy and Cheese & butter production, bakery, butcher, honey production, cider/fruit wine, preserving/canning, fermenting and fresh produce production; incl. sale (i.e. coop grocery store and cafe) and distribution to local households and businesses and training of sustainable food production skills

- “Community” Gardens, food forest (including berries and herbs) for local and village use (partly selling to local businesses and residences through the coop and delivery system [e.g. veggie box scheme]) through CSA approach

- Permaculture farm and “farmacy” (i.e. medicinal plants) (some for community and some for commercial use and production and sale, including herbal medicine production and training) as well as small scale farming (CSA) and permaculture training.

- Technology and Business hub and cluster (commons or co-op/Not for profit social enterprises)

  - Natural, sustainable and regenerative building and ecovillage/co-housing design (Sustainable Design Academy) and appropriate technology, research, education and demonstration construction centre (e.g. earthships, adobe mudbrick, earthbag, strawbale, sustainable and regenerative water, energy and waste management systems, social and economic aspects of sustainable living, etc.)

  - Nature connection and outdoor education base (for retreats, vision quests, deep nature immersion, rites of passage, school camps etc.)

  - Horticulture, Agroecology, Integrated or holistic Poly- and Permaculture and Sustainability education and training (similar to CERES\(^7\), Collingwood Childrens Farm\(^8\), Milkwood Permaculture\(^9\), Permaculture Research Institute\(^10\) and/or Gaia Education\(^11\))

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\(^8\) [http://static1.squarespace.com/static/52c4afc0e4b077a7b031e74b/t/562d9553e4b0057d8fa14664/1445827923861/CCF+Strat+Plan_Directions+one+pager+October2015+%282%29.pdf](http://static1.squarespace.com/static/52c4afc0e4b077a7b031e74b/t/562d9553e4b0057d8fa14664/1445827923861/CCF+Strat+Plan_Directions+one+pager+October2015+%282%29.pdf)

\(^9\) [https://www.milkwood.net/about/](https://www.milkwood.net/about/)

\(^10\) [http://permaculturenews.org/what-is-the-permaculture-research-institute/](http://permaculturenews.org/what-is-the-permaculture-research-institute/)

- Local sustainability and social innovation hub and skills sharing and training centre for social entrepreneurs: A training and education hub for advancing community based skills at all skills and age levels in the theory and practice of sustainable and regenerative living (e.g. social permaculture, dynamic groups and decision making, sustainability leadership, local currencies, swap trading, time banks, local exchange trading systems (LETS), bartering, social lending, peer-to-peer currencies, tool exchanges, land share, clothing swaps, toy sharing, shared workspaces, co-housing, co-working, CouchSurfing, car sharing, crowdfunding, bike sharing, ride sharing, food co-ops, walking school buses, shared microcrèches, peer-to-peer rental i.e. on how to create a solidarity economy etc) to support and create local opportunities and strengthening and enriching the social and ecological fabric of the community

- Community Environmental Social Arts Centre (commons or co-op/Not for profit or Arts Trust)
  - Pottery and other artistic handicrafts
  - Arts studio/gallery (and shop)
  - Arts retreat and education (incl. personal development and resilience, Arts Therapy, spiritual reflection) and/or arts performance space
  - Community development centre, training & support (e.g. creating commons, intentional communities, non-violent communication, conflict resolution, sustainability leadership)

![Figure 4-2: Some Commons based development opportunities](image)
• Permaculture Co-housing or Ecovillage (~50 to 60 people?) – long term lease from government or from a Community Land Trust in form of a coop (which government may donate land as was done for CERES in Brunswick or Collingwood Childrens Farm in the past) to act as a demonstration, research and education project for sustainable bioregional building and living (in community).
  
  o Sustainable and natural buildings (incl. retrofits) demonstration village and educational site and residents to support/manage/operate much of site on a commons basis (through a community land trust)
  
  o To include integrated circular water and “waste” management (tank and pond water, composting toilets, greywater for aquaponics, bio-digesters, drip irrigation, etc.)
  
  o Villagers are envisaged to be largely involved in operating and maintaining the various enterprises and management of the land for productive, recreational, spiritual and conservation beneficial uses to the benefit of the whole wider community.
  
  o Provide a centre for training and consulting in the establishment, build, operation and sustainable maintenance of various forms of intentional communities and sustainable living environments.

Even though the ideas above provides only a glimpse of options and many other are possible and would be determined and developed an co-created in collaboration with the community but the re-development proposal is based on a vision for the site and in more general on a vision of a re-localised, ecologically sustainable and socially just, and fulfilling life for the whole community based on the principles provided in Section 3.2.1. The Vision can be expressed as follows (based on Gaia Education vision):

We will create a space and facility to work towards creating a regenerative and resilient future within planetary boundaries where no one is left behind. A space and world of safe and nutritious food; of clean drinking water; of universal access to sustainability education; of physical, mental and social well-being. A place and world which uses energy and materials with greatest efficiency, distributes wealth fairly and strives to eliminate the concept of waste. A place and world of universal respect for human rights and human dignity; of justice and equality; of respect for race and ethnicity; and of
equal opportunity permitting the full realisation of human potential while promoting shared prosperity.

The Mission of the Dandenong Ranges Community Environment Park (DRCEP) is to become a place of community-based living, learning and action to create environmentally beneficial, socially just, economically satisfying, culturally enriching and spiritually nurturing ways of living together and at the same time enrich and regenerate the local environment and community. A version of this vision in form of a life story in a community and site like what could be developed on Olinda Commons as the Dandenong Ranges Community Environment Park, is provided in Appendix A. This proposal is of course subject to change through the detailed design and stakeholder engagement process, but provides an initial starting point for discussion, but also ties in with other already existing initiatives by Parks Victoria locally like the EPIC Permaculture Garden at George Tindale Memorial Gardens.

4.3 Integrated Sustainable Land Development Plan for Olinda Commons

Section 4.2 provides an outline of the overall redevelopment plans for the site. However, due to the main importance of ideas and plans for the redevelopment and beneficial use of the land the purpose of this section is to provide some details of the aspects related to land and water, which are thought to be integrally linked and the main aspects for re-development of the site. It must acknowledged that all other re-development aspects interrelate with land and water issues, but the key aspects are discussed here.

The aspects of the site re-development which do relate more closely to land and water management include the following management and investment priorities, with tentative site use zones outlined in Figure 4-3 and Figure 4-4:

- Undertake detailed integrated land and water planning using Permaculture, ESD and related design principles and approaches (Section 3.2) but also integrate social, cultural and economic aspects as is the practice for sustainable design projects (DeKay, 2011, Hes & Du Plessis, 2015, Throught, 2015, Mare & Lindegger, 2011) and inclusion of re-generation and recreational use objectives and requirements.

- Remediate any soil contamination (using bioremediation methods) and restore soil health (e.g. using compost/biochar and succession planting) (all zones)

12 Zones (0 to 5) are used as per Permaculture Design Principles and Methods (Holmgren, 2002) used in site design
• Restore and regenerate natural vegetation and habitats (Zone 5) – integrated with recreational use
  ▪ For the protection and regeneration of native vegetation and creation of wildlife corridors and habitats
  ▪ Ecological survey and conservation management plan
  ▪ Ongoing environmental monitoring on status and progress of regeneration program
  ▪ Set key environmental values for these areas with stakeholders
  ▪ Weed and Pest management plans
  ▪ Re-vegetation and conservation management plan
  ▪ Recreational use, design and management plan

• Create woodlands for energy and mushroom production (zone 4) – also integrated with recreational use
  o Develop public access control to maximise access for recreational and educational use and awareness raising while maintaining integrity and safety of other site uses. Through community engagement process.
  o Bush fire risk management plans in line with council and CFA requirements
  o Because site is a bush fire buffer land, this is a contentious issue which will affect the detailed planning and design of site use and development options, particularly for regeneration of native bushland and forest areas.

• Create food forests combined with pastures also used for some low level recreation (i.e. walking or foraging) (zone 3)

• Create biointensive Permaculture produce “farm”/gardens (Zone 2)

• Create Herb Gardens and farmacy (zone 1)

• Eco-village dwellings and communal/commercial and educational buildings and structures (Zone 0)
- Using on-site (or local) resources for construction and maintenance of buildings and structures to extent practicable (e.g. timber, soil for bricks and walls, on-site plans for green roofs, locally sourced straw, etc.)

- Using integrated water cycle system (e.g. rainwater harvesting, composting toilets, biodigesters, greywater treatment/reuse, aquaponics, swales, ponds, drip irrigation, etc.)

- Integrated Renewable energy systems (i.e. biodigesters, community solar hot water and photovoltaics and small scale wind, central wood heating [from woodlands])

An overview of a possible design of land uses (i.e. zones) (which will require detailed design and review and integration into a final Master Plan) is provided in Figure 4-3 and areas of public access and use is provided in Figure 4-4.

![Figure 4-3: Possible site re-development zones]
4.4 Cost Estimates

There are significant costs associated with the development and implementation of site re-development and re-generation plans, also for land and water specific management tasks. Funding for the initial stages of planning and development is anticipated to be obtained from various grants and possibly donors. The costs for commons based “commercial” and eco-village development are not included here due to the uncertainty on this development at this stage, but are envisaged to be financed by a combination of sources, including low/no interest loans, direct social impact investment, crowd funding, land bank etc. High level tentative cost estimates for initial development stages are provided in Table 4-1 (but excludes more administrative type tasks like establishing legal frameworks, define roles and responsibilities and management structures and systems etc.). Other costs which are not directly related to the land and water management plan but more to the overall site redevelopment are not provided here, but will eventually need to be integrated into an overall plan and cost estimate to maintain an integrated approach for the site re-development and regeneration program, which will likely delivered in a staged process over a number of years, due to size and complexity of the project:
<table>
<thead>
<tr>
<th>Program Task</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of detailed Integrated Sustainable Land and Water Plan</td>
<td>$50,000</td>
</tr>
<tr>
<td>Stakeholder engagement and community based marketing plan and implementation</td>
<td>$100,000</td>
</tr>
<tr>
<td>Plan and implement soil remediation</td>
<td>$100,000</td>
</tr>
<tr>
<td>Ecological Survey and conservation management plan</td>
<td>$30,000</td>
</tr>
<tr>
<td>Ongoing environmental monitoring (with large community group component) – per year</td>
<td>$15,000</td>
</tr>
<tr>
<td>Stakeholder engagement and setting of environmental values</td>
<td>$30,000</td>
</tr>
<tr>
<td>Weed management plans</td>
<td>$10,000</td>
</tr>
<tr>
<td>Re-vegetation and conservation management plan</td>
<td>$20,000</td>
</tr>
<tr>
<td>Recreational use, design and management plan</td>
<td>$20,000</td>
</tr>
<tr>
<td>Bush fire management plan</td>
<td>$15,000</td>
</tr>
<tr>
<td>Implement bush restoration and regeneration and woodland construction (Zone 5 and 4 including recreational facilities)</td>
<td>$180,000</td>
</tr>
</tbody>
</table>

### 4.5 Key Issues

Some of the identified key issues in relation to this plan may include the following:

- Attitudes and opinions as well as interest about future development in community is largely unknown, and so is lack of clarity of intent by State Government, but which is under development with the current consultation program

- Possible perceptions and beliefs and widely diverging perspectives as well as mind sets and mental models by residents and other stakeholders on best future use and long term management of the site

- Institutional structures, culture and attitudes in state government and local council faced with new forms of land and water management approaches (through community land trust and commons based development and hence attitude may be why change what is not broken attitude or preservation of business as usual)

- Financial challenges with establishing and maintaining a commons based management model (at least in initial and establishment stages, where reliance on grants and other public financial input will be required and/or until initial income generating social enterprises provide for income and measures to attract more finances)
• Legal and regulatory impediments of Commons or community based management of site due to current ownership structure

• Difficulties and inexperience with management under commons structure and with holistic and integrated stakeholder engagement

From the above points it is clear that many of those aspects are still poorly understood in detail in general and in particular for the re-development and regeneration of the site, due to the novelty of a commons based approach for the management of public land (which is not without precedent – e.g. CERES or Collingwood Children’s Farm). However, further technical, legal and social research, stakeholder engagement and investigations will be needed to understand and be able to resolve those issues for the site and will need to form part of a future detailed design and delivery plan.
5 KEY STAKEHOLDERS, EXPECTATIONS AND STAKEHOLDER MANAGEMENT

Key stakeholders expected to be directly involved in this plan and their roles include the following:

- State government (i.e. Parks Victoria) as land owner/manager (has a strong operational presence in Hills due to National Park and a number of public gardens (e.g. A.J. Hanmer Arboretum) as partner and possible sponsor
  - concerned about ongoing management costs and commitments and highest possible “use” of land
  - responsible for managing natural habitats and land zones (Zone 5) by Parks Victoria in corporation with and Olinda Commons Land Trust (i.e. commons based management entity)
  - through Parks Victoria also concerned about and interested in education and training of public about conservation and sustainable land management (Parks Vic, 2006)
  - priority issue is maintenance of fire buffer function of the site and control of weeds and pests
  - Can provide support and expertise and some grants for certain site re-development and regeneration projects consistent with organisations objectives.
- Local council (Shire of Yarra Ranges) as possible future owner/manager, but also as partner and possible sponsor
  - concerned about hills character, economy and local facilities but also any management costs & commitments
  - maintain and improve natural character and environment of the hills in a socially, environmentally and economically sustainable manner (Yarra Ranges Council, 2015)
o Ensure sufficient public access and use potential of the site and in support of site used for education and awareness raising.

o Can provide some grants for certain site re-development and regeneration projects consistent with council objectives and/or reductions in council rates for sustainable land management practices.

o Will possibly be responsible for management of some recreational site areas (Zone 4) by council in corporation with Land Trust; with main focus on bush fire risk management and recreational uses.

- Community groups (Friends of Olinda Creek, Local Landcare Group, Friends of Dandenong Ranges National Park, Local Transition Town and Resilience Groups, Recreational Groups and Sports Clubs etc.) and schools as partners

  o conservation and regeneration of local bush and maintenance of a fire break working with Community Land Trust, Parks Victoria and local council

  o local knowledge about site and surrounds biodiversity priorities and opportunities

  o Provide resources for volunteer events (i.e. time and labour) which will be important and integral part of regeneration plans implementation

- Local businesses and business groups as partners and possible sponsors

  o development opportunities (food, permaculture, arts, technology, education) & re-localised economy; employment and income streams creating local livelihoods;

  o develop educational and training opportunities based on sustainable social enterprise business models consistent with site development plans (see Section 4.2) which can provide revenue fund for sponsoring projects and development proposals (i.e. through not-for-profit set up and operation of enterprises)

  o may be willing to provide some funding or donations once benefits to community are certain and tangible plans with defined outcomes are available and stakeholders brought on board during community engagement process
• Residents and visitors – liveability and natural character and beauty & local livelihoods and beneficiaries of recreational, educational, training and business and employment opportunities and engagement in re-generation work (i.e. community building) and overall beneficiaries of site re-development and regeneration

• Other: Melbourne Water, Port Phillip CMA, Yarra Valley Water, Melbourne Water, Department of Sustainability, Environment and Water, CFA, Clean Energy Futures (Offset management – i.e. funding), Trust for Nature (Biodiversity Fund) etc. concerned about preserving and enhancing habitat and ecological resilience of local land and water systems;
  o Can provide some grants for certain site re-development and regeneration projects consistent with organisations objectives.
  o Can provide perspectives and expertise on re-development and regeneration of site

5.1 Engagement Strategy

The Stakeholder engagement will be based on a Commons or Community based/driven holistic and integrated re-development and management of landscapes, water, land and covering all environmental, social, cultural and economic dimensions, aspects, issues and perspectives (Figure 5-1).

13 Port Phillip CMA is currently in the first year of a three year $3 million coordination project for wildlife, weeds and bushfire management in the Dandenong Ranges and works with and provides grant funding for a number of groups and projects (Port Phillip CMA, 2015).
The site has great potential for a sustainable and integrated re-development and regeneration which can benefit all stakeholders and provide for balanced ecological, social, cultural and economic outcomes based on the stated principles and approaches and outlined in the development plan, which is consistent with current Parks Victoria management plan (Parks Vic, 2006) and local council environment strategy (Yarra Ranges Council, 2015), but also provides specific novel opportunities for constructive and ongoing community engagement in the natural parts of the site (zones 4 and 5), aside from the commons based management and development of the whole site:

- **Integrated environmental and sustainability education and training;** like recreational track planning and implementation, fire management, sustainable woodlot harvesting, sustainable water and energy systems and uses, sustainable gardening and farming, sustainable design building and living, nature connection and appreciation, environmental arts etc. This has particularly useful potential for local schools, but also hills residents and surrounds and businesses and employment.

- **Revegetation and bush regeneration activities and training;** like bush regeneration, weed & pest management, soil restoration, fire management etc.

- **Environmental monitoring:** Ecological surveys, soil and water quality, vegetation and fauna evaluations, succession plantings reviews, site use impacts, water, energy and waste audits, etc.
The engagement and participation of all relevant stakeholders and in particular the local community will be critical to the success of the re-development and regeneration of the site. Therefore it will be critical to create strong dialogue and partnerships with the local community and other stakeholders. The chosen approach for the creation and operation of Commons based developments are well established and apply to the formation and operation of the proposed Commons “group” itself (and any related entities, e.g. coops, social enterprises, intentional communities) but extends to dialogues and partnerships with others as well and is based on principles and approaches like:

- Nonviolent & Compassionate Communication (Rosenberg & Gandhi, 2003)
- Co-sensing & Co-creation approaches and U Theory process (Scharmer, 2009; Scharmer & Kaufer, 2013)
- Visioning and Strategic Planning (Bragg, 2011; Cuming, 2007)
- Integral Ecology and Integral Methodological Pluralism (Esbjoern-Hargens & Zimmermann, 2011 and see Appendix B for a brief discussion)
- Integral Community Development (Hochacha, 2006)
- Community based Social Marketing approaches (McKenzie-Mohr 2010, Darnton & Horne, 2013)

- And many other principles, approaches and methods for stakeholder engagement to obtain the credibility, commitment and ability to create value for the environment and local community and beyond.

A separate and detailed stakeholder engagement and community based marketing plan will be developed once the Commons management group and committee is established and operational, which by itself will need to follow the same principles and approaches, with initial clear establishment of a vision, definition of common goals and objectives, definition of roles and responsibilities, implementation strategy and detailed activities for on the ground works. Support for the development and implementation of the engagement strategy and plans from external experts will be sought in due course.
6 IMPLEMENTATION STRATEGY AND TIMELINE

6.1 Strategy

The high level strategy for the re-development and regeneration of Olinda Commons is as follows:

- **Set up legal structures** for commons based re-development and management of site (e.g. community land trust, cooperatives, co-housing group, stakeholder engagement group etc.)\(^{14}\)

- **Set up Olinda commons management group;** multi-stakeholder (including residents & businesses) to develop alternative re-development plans (incl. plans, research & engagement where required)\(^{15}\) and apply for grants for initial operation and works of organisation

- **Change management:** change minds, perceptions, beliefs, etc. and develop support for commons based re-development and re-generation project (including research and training as required) through multi-stakeholder initiatives and partnerships and engagement through development and implementation of a **stakeholder engagement plan**;

- **Research:** Human needs analysis (alternative views/perspectives) – **human centred and sustainable design** approach for redevelopment and regeneration and multi-dimensional and multi-perspective approach through collaboration with relevant research organisation (e.g. universities, TAFE, government entities)

- Establish and define management structures, roles and responsibilities (between state/local government and commons)

- Detailed design studies (including public and stakeholder engagement) for commons based re-development and regeneration and detailed implementation and management plans (Section 4.3) including obtaining funding for those

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\(^{14}\) Information and examples provided on [http://communitylandtrust.org/two-tier-clt](http://communitylandtrust.org/two-tier-clt)

[http://www.centerforneweconomics.org/content/community-land-trusts](http://www.centerforneweconomics.org/content/community-land-trusts)

\(^{15}\) Commons based management or operations are well established around the world ([www.onthecommons.org](http://www.onthecommons.org)) and a wide range of processes and tools can be used for the establishment and operation of commons based groups/entities (e.g. Walljasper, 2010; Mare & Lindegger, 2011).
• Apply for and gain permits and approvals (and if and where possible funding) for re-development and regeneration plans (i.e. from federal, local and state government and other sources)

• Implement re-development and regeneration plans and activate management plans (likely to occur in a staged process over an extended period of time to allow sufficient resources and funding availability and for manageable work packages), starting with bush regeneration and working through woodlands areas, public access and recreation areas, gardens and permaculture farm areas towards “ecovillage” and enterprise area.

• Promote, educate, incentivise and support alternative re-development options and plans (incl. pilot projects onsite, commons based investment, grants from stakeholders, Landcare and community groups, schools etc.)

• Monitor and reviews (evaluation) plans and their implementation and troubleshooting

6.2 Timeline

Due to the size and complexity of the tasks associated with the detailed planning and implementation of the overall site re-development and regeneration as well as land and water plan only a brief outline of the implementation strategy tentative time line can be provided.

<table>
<thead>
<tr>
<th>Program Task</th>
<th>When?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement by state and local government to proposed re-development plan and development of future use strategy</td>
<td>December 2016</td>
</tr>
<tr>
<td>Formation of Land Trust as legal and economic entities &amp; commons management committee and vision and plan</td>
<td>March 2017</td>
</tr>
<tr>
<td>Complete negotiations and stakeholder engagement process on site re-development and regeneration strategy and plan outlines (including Master Plan)</td>
<td>September 2017</td>
</tr>
<tr>
<td>Obtain legal control of land by Land Trust</td>
<td>December 2017</td>
</tr>
<tr>
<td>Obtain funding from various sources for detailed planning and design (as well as research where needed for overall development as well as land and water plan)</td>
<td>June 2018</td>
</tr>
<tr>
<td>Complete detailed design (including engagement and consultation) and planning of redevelopment/regeneration</td>
<td>September 2018</td>
</tr>
<tr>
<td>Complete remediation of soil impacts</td>
<td>March 2019/20</td>
</tr>
<tr>
<td>Start implementing regeneration and re-development plans and implement zones for re-development</td>
<td>March 2019</td>
</tr>
<tr>
<td>Program Task</td>
<td>When?</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Complete re-generation project (in conjunction with other plans, some of which will take longer to fully implement but will likely occur in stages)</td>
<td>June 2020 &amp; ongoing</td>
</tr>
<tr>
<td>Monitoring, evaluation and reviews</td>
<td>Every to 2 to 3 years for reviews</td>
</tr>
</tbody>
</table>

It should be noted that the timeline of the site re-development plans may vary and change depending on plan details, engagement process, funding and approval timelines. However, the regeneration aspects and plans can to some extent be planned and completed separately from other activities once the overall strategy and plans have been agreed to by all relevant stakeholders.

6.3 Risks

Due to the unusual and largely untested nature of the way Olinda Commons is proposed to be re-developed there are a number of overall issues and risks, but also opportunities for changing entrenched current ways of doing things. Some aspects include:

- **Viability**: Decentralised and local community based integrated (environmental, social, cultural, economic) re-development and management likely less costly, more viable and suitable for transition to a sustainable and re-localised future (i.e. simplicity)

- **Feasibility**: “Technically” feasible but regulatory, institutional and value, views and attitudinal barriers and hurdles (e.g. Legal, Finance, community buy in and ongoing support)

- **Desirability**: high sustainability, equity and social justice rating, but main hurdles are:
  - Lack of knowledge, interest, education, incentives, support
  - Perceptions, Habits, mind sets, mental models, values, worldviews, beliefs and attitudes
  - Existing structures and institutions (silos, business as usual, vested interests, power structures and control)
  - Funding (traditional vs. non-conventional – e.g. crowd and local funding, Land Bank etc.)
Complexity and size of overall project is considerable with some significant uncertainty on success. Hence a staged approach to re-development will be needed to make project manageable and more tangible, easier for stakeholders to buy into.

Other issues and possible risks are related to the overall re-development plan (e.g. legal, financial, social, cultural etc.), which inflict onto the integrated land and water plan, but are not discussed any further here as is not the purpose of this plan. Some key risks related to the integrated land and water plan are discussed in Table 6-2.

### Table 6-2: Risk Assessment of Re-development Proposal

<table>
<thead>
<tr>
<th>Issue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public access and recreational use opportunities</td>
<td>Recreational use will be a core value for any site re-development and regeneration. But that will need to be balances with other sites uses and to maintain safe public access some areas will likely need to be restricted to protect physical and commercial assets and hence it will not be possible to open all of the site for public use/access. It is planned that zones 4 and 5 will be fully publically accessible and some parts of zone 3 (may vary from area and time of year), which together will constitute approximately 2/3 of the site. Details will be worked through in stakeholder engagement process.</td>
</tr>
<tr>
<td>Community perception and involvement</td>
<td>Within the community a perception may exist that the site should be purely for community use (e.g. recreational). However, in light of the need for balanced and integrated sustainable re-development of the site, the social, cultural and economic benefits will need to be made clear, that in the long terms it will be for a re-localised, resilient and self-reliant community. This aspect will need to be an important aspect of community engagement process.</td>
</tr>
<tr>
<td>Bushfire risk and ecological protection</td>
<td>As bushfire buffer land this is a high priority issues and will be considered through a detailed bushfire management plan in consultation with CFA and other stakeholders to minimise bushfire risk in an ecologically responsible way but still allow for regeneration of the site. Due to the high sensitivity of bushfire risks in the community this issue will need to feature prominently in community engagement.</td>
</tr>
<tr>
<td>Integrated water and waste management</td>
<td>The plan is to use and re-use all water falling onto the land (plus reticulated supply for potable uses) in a circular manner including nutrient cycling (i.e. humanure). Maintaining soil health and productivity (for crops) is a key issue and will need careful management to prevent any leaching, erosion and run-off into surrounding areas and also minimise impacts on regenerated native forest areas (Zone 5). Regular soil monitoring will be carried out, which will be part of organic</td>
</tr>
</tbody>
</table>
6.4 Monitoring and Evaluation

Key performance objectives have been identified for monitoring and evaluation of progress against the land and water as well as energy and resources strategy. Initially the current site conditions will be assessed and used a base line, and reference areas set for ongoing monitoring and review to demonstrate progress and target achievement. This will also help to assess further targets for action and change for future plans or need for modification of this current strategy and plan.

The Community Land Trust will take lead responsibility for the monitoring and evaluation, however, will seek to involve other key stakeholders in this process (i.e. Parks Victoria, Shire of Yarra Ranges, community groups, volunteers). The monitoring will also be used for training and educational purposes as the site as demonstration site for regenerative and sustainable development and living and for continuous improvement assessment in accordance with site specific management plans.
Key performance indicators include:

- Successful establishment of legal structures (i.e. Land Trust) and agreement of stakeholders to re-development and regeneration plan strategy through community or commons based systems structures and institutions.

- Obtain sufficient funding to start detailed design and planning phase of overall project and of integrated sustainable land and water plan (likely involves separate funding sources including public and private)

- Detailed Design of Land and Water Plan(s) and Energy and Resources Use/Production Plans (integrated with overall detailed plan for re-development and regeneration)

- Successfully remediate any residual soil contamination from past site uses and maintain soil health and no impact on site or nearby water bodies

- Successful completion of re-generation (zone 5 and 4) of bushland and preparation of recreational facilities and access and maintain management of weed and pest levels

- Development of a site specific bush fire risk management plan

Some of the key monitoring activities will include:

- Ecological surveys – baseline, and at completion of re-generation program (zone 4 and 5)

- Operational monitoring of Zone 4 and Zone 5 recreational facilities as well as water, energy, resources and waste audits of other Zones

- Environmental monitoring of bush re-generation, weeds/pests and soil and waterways (baseline and annually)

- Community engagement: Levels of use and volunteering for site works, surveys, feedback, complaints, enquiries - annually

- Review of bushfire risks with CFA, council and Parks Victoria (every 2 to 3 years)
7 REFERENCES


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A Vision for Olinda Commons
A Vision for Olinda Commons

A Vision to create a future world which is socially just, culturally rich, thriving and enriching, spiritually fulfilling, and ecologically sustainable and a restorative human presence on this planet and wellbeing for all sentinel beings indefinitely

Preamble: using the words of Theodore Roszak: *There is one way forward: the creation of flesh and blood examples of low-consumption, high quality alternatives to the mainstream pattern of life. This we can see happening already on the counter-cultural fringes. And nothing – no amount of argument or research – will take the place of such living proof. What people must see is that ecologically sane, socially responsible living is good living; that simplicity, thrift and reciprocity make for an existence that is free.*

Vision: “A day in my life in let’s say around 2030 to 2035:

Waking up at dawn through the colourful calls of the birds just outside the window of my bedroom to what it seems to be another glorious sunny, but almost too warm a day for this time of the year, well some climate change is still with us. Jumping into my new, locally grown and handmade clothing, made largely of hemp it is time for some meditation and Yoga first as on most days to connect to myself and the world around me. Then out into the kitchen which we share between eight of us humans, one couple and two families of three, and of course a bunch of beloved pets. One of my mates hands me a Dandelion roots coffee with some fresh raw milk of the day from our communal cows from down the hill, but soon getting into my new leather boots I recently made myself, to collect a few eggs from our chooks and some green leaves for a delicious fresh breakfast accompanied with a few slices of wholesome and fresh, and of course locally made sourdough bread with fresh cultured butter and cheese again from our own communal production. Briefly chatting to a couple of the other adult dwellers before they head off on bike to the nearby town hub where they do some paid work for the day. And I warmly welcome to leave the dishes and cleanup of the kitchen to the two teenagers still around before they head out into the community orchard for work and permaculture training for the day. I myself have a brief look around the beautifully hand crafted energy positive house made of straw-bales, locally produced of course, with massive recycled timber beams, timber staircases and floor-boards and many other recycled and repurposed and reused materials, thanks to the skills of our local crafts people.
But now time for me to head out as well into the emerging warmth of the day, first going across our little eco-village, and trying not to get tied down in too many chats with other villagers many of who go about their things to do outdoors. Our village is one of many communal living spaces and of various types and sizes near the urban fringe and surrounding retrofitted sustainable suburbs and local activity hubs, ours with sufficient land for intensive semi-rural farming activities created based on permaculture design principles, and including communal, bio-intensive veggie areas, food coppicing and timber as well as wildlife forests, chook tractors, bee hives, mushroom logs, aquaponics, foraging cows, goats and sheep and much more, together not only providing for a large part of our villages own food supplies, fresh, fermented and preserved, but also contributing to some on-site food production enterprises and expanding trade and barter with surrounding village areas further afield, most of which goes without the exchange of money and if so using mostly local currencies. Arriving at my first meeting, the village own cheese factory, where we produce most of our dairy needs, and provide for other villages, local farmers markets and hospitality businesses. I have a discussion with our head cheesemaker about putting on some more cheese making training opportunities in surrounding areas and also into the closest city, due to ongoing demand, as well as tonight’s upcoming discussion in the local community assembly about a community grant for getting more cheese making equipment, so we can fulfil rising demand for our products.

After the meeting I am heading just across the street to our local community bakery, to help our baker with a training session of a group of teenagers learning sourdough bread making as one of their many “Skills for Life” training days. Just before lunchtime I pick up some supplies I will prepare later to bring along to the local community assembly event from our community run grocery store, where we barter all what we produce or forage on our turf of land, but lucky enough I still have plenty of time share credits from my teaching work so that local currency is not even needed, and of course it’s still all electronically recorded. And luckily the working bee crew on a nearby house construction site, where they are in the process of building another amazing Earth Ship, big enough for two to three families, they invite me to join them for a really hearty (of course vegetarian) lunch provided by the host, to have a chat with them about details and issues for the upcoming installation of the rainwater collection and re-use system, composting toilet and greywater system and we are also joined by a nearby working bee crew, who are doing a radical retrofit of one of the older houses in the village, with high quality upgrades to insulation, windows, solar and geothermal heating and cooling system, sustainable water and waste cycling system, needless to say all sustainably designed and largely from pollution free, low energy and low impact production, which normally achieves at
least 80% reduction of energy and water use and practically no waste production anymore and significant improvement in comfort, with materials largely produced locally in the many workers coops and B-Corps and other forms of thriving social enterprises, and much of the materials are endlessly recycled or often also repaired and repurposed stuff, so getting close to a circular or cradle to cradle materials systems in many things we need and use, large and small.

After lunch it's time for me to head out of the village into the nearby town-hub, where one can get most of the supplies and necessities not produced in the village, much of which is made fairly local hence not much need or desire to travel or transport far for anything and so low energy transport is fashionable and desirable, which has dramatically decreased transport needs and energy use, and car ownership is basically unnecessary for most but various integrated forms of transport are still available on demand, fully integrated between, walking, cycling (including e-bikes), e-buses, trams, trains, car sharing and much more. The village hub is only a short electric cargo bike ride away, hence I am taking some of our village produce, cheese and bread to our market stall in town and to a couple of restaurants as well, which gets me a few time share credits. For much of the afternoon I cruise around various areas and green leafy, ecovillages, apartments and single dwellings, which were called suburbs in the past, now they are self-contained villages and towns and more rural communities. I am to check on and do some maintenance of peoples and communities composting toilets, greywater and other water and waste cycling systems so they function well, and provide training and advice to dwellers, which is the work I do for a salary mostly in local currency, doing this for about two days a week around the whole district. But I also teach water and nutrient cycling technologies, at local and regional community run vocational training hubs but also teach about circular economy, sustainable heating and cooling systems and the area I am really passionate about, systems and integral thinking and living. But there is no need for more paid work, partly because we have universal guaranteed income, interest free loans, affordable housing, education and free decent welfare services in order to be able to afford a dignified life, but there is no marketing, consumerism, owning things for the sake of owning the latest gadget, things are designed and made locally, last long, are repairable, repurpose able, transferable, and of course fully recyclable, hence waste has been reduced by some 80% now with aims of 90% in coming years, the same what we have achieved with overall energy use which is now able to comfortably be provided by local renewable energy.

There is no need for lots of money, because there is not so much stuff around to begin with but we have a conscious, caring, compassionate and sharing and truly and deeply connected community, and competitive, combative and greedy economics are a thing of the past, since
growth based capitalism was dismantled and with it many multi-national corporations lost their license to operate. They were disbanded some time ago and replaced with a steady-state or better described as degrowth participatory economy based on real needs, simplicity, frugality and most of all of on one planet living. But getting torn out of my thoughts about how dramatically things have changed for the better, by the presence of abundant nature even within our relatively densely populated neighbourhoods, by a Koala seemingly yelling at me from the majestic Redgum tree right next to where I walk, through local bushland, resembling more and more a restored regenerated rainforest along the local river, which was a dirty, heavily polluted and eroded drain abutted by a major highway in the past and heavily degraded by livestock, all of which has been restored to nature corridors with thriving biodiversity and abundance of wildlife or some for productive agricultural uses, but nature connection is one pillar of our strength in thriving again with nature which is up close and personal everywhere.

Time to get to the local community assembly, which has largely replaced the role of local government, with many locals actively participating and contributing and have the time to do so. This came about because our lives are deeply local and deeply connected to community, hence the drive to create an even stronger and thriving local community for all, but unfortunately there is no time now to think about the rest of our highly participatory and real democratic systems at all other levels of governance, even though less important than in the past due to radical re-localisation of our lives, least to say no more career politicians or lobbyists to see far and wide. Also to say international relations are largely peaceful now, of course with much less trade of tangibles, but more so free exchange of knowledge, skills, culture and more, not hampered by any IP restrictions and there are few violent conflicts due to the end of fossil fuels and most of trade globalization is history, poverty alleviated and we have equal development opportunities everywhere, which has taken the wind out of fundamentalism and extremism.

Anyway after getting the community grant approved for our village it's time to head back to our village home and enjoy some quality time and some philosophizing about the world and then later playing some music together, singing and dancing with our fellow house dwellers and some friends, over a cuppa of foraged herbal tea or better some of our hallmark fruit wines and ciders, cherished and in demand far and wide, before its time to head to the dream world with some ideas about where to head for an upcoming camping and deep nature immersion trip with a group of the village next generation."
"Another world is not only possible, she is on her way. On a quiet day, I can hear her breathing" Arundhati Roy
Appendix B

14 Pages

Integral Ecology approach to Regeneration projects

Integral Ecology: Design Principles for Sustainable Human Habitats (from Mare & Lindegger, 2011)
Overview of Integral Ecology approach towards Regeneration Projects

To illustrate the value of Integral Ecology and Integral Community Development for some aspects of the Land and Water Plan for Olinda Commons Regeneration project and which form part of the planning, design and stakeholder engagement work to get a more integral view and insight into all aspects of the regeneration project (as well as the overall re-development project), some possible quadrant specific questions which can help a comprehensive restoration project are provided and have to some extent considered for the preparation of this strategy and plan. Integral Ecology Esbjoern-Hargens & Zimmermann, 2010) and for that matter Integral Sustainable Design (DeKay, 2011) and Integral Community Development (Hochacha, 2006) can and should also be used for all other aspects of the planning, design and implementation of this project (see for example Figure B-1).

To re-iterate the integral approach to eco-social issues and developments and projects is guided by integral theory and practice (Wilber, 2000). This approach brings together a myriad of disciplines and strategies into a dynamic whole, such that they inform and complement each other. This approach also integrates the “exterior”. Practical aspects of life (such as ecology, economic and social systems) with the “interior”, subtle aspects of humanity (like psychology, culture and spirituality). By uniting disciplines and by acknowledging the role of interiority on society, the integral approach includes more of reality in its embrace. Thus, it offers a more comprehensive framework for understanding eco-social issues and developments and more appropriate methods of working with such issues and developments (Esbjoern-Hargens & Zimmermann, 2011).

Integral Questions to consider for a Regeneration Project

Subjective Dimensions to Consider:

Soma: Somatic Realities: How can we design walkways, and place signs, benches, etc. to support or create a positive interior experience for recreational site users?

How can we construct walkways, etc. so as to minimize the somatic impact on the local flora and fauna?

Psyche: Psychological Dynamics: What forms of consciousness exists around Olinda Commons? How do they affect one another? How will they be affected by the proposed regeneration project? What are the features of the landscape that are most aesthetically pleasing and more likely to inspire people (current and planned)?

What will be concealed from view and revealed by any design we utilize? What do we want to reveal? Is there anything we want to conceal? (E.g. burrows or breeding areas).
What kind of signs or information booths will connect people to the history, landscape, and ecology of the site and area?

**Pneuma: Spiritual Realisation:** How does the proposed design serve the development of consciousness or spiritual state experiences?

What kind of spiritual experiences are associated with the project area (e.g. Dreaming)?

**Intersubjective Dimensions to Consider**

**Communion: Intercorporeal** Dimensions: Which kinds of meaningful encounters can we facilitate between species, and which ones should we avoid?

What are the rights of each species, and how might we honour them?

How does the design of the area (e.g. walkway direction, sitting arrangements) create shared somatic space?

**Community: Shared Horizons:** What are the community values and perceptions of the site area? How can we accommodate different values in visiting the site?

What are the power dynamics (e.g. gender and class as well as race) in the community that are relevant to the proposed regeneration project?

How might the community become motivated to take short- and long-term responsibility for the restored area?

What is the eco-cultural history of the area? What are the ways that history has been documented (e.g. books, journals, songs, drawings, survey, aboriginal dreaming, local legends)?

**Commonwealth: Compassionate Perspectives:** How can this site be a sanctuary for divinity?

How does the site area connect to the local indigenous tribe’s dreaming?

**Objective Dimensions to Consider**

**Movement: Physical Movements:** Which species are native? Which ones are introduced?

What are the health conditions of various components of the sites ecosystem (e.g. soils, vegetation)?

How can individuals be sure not to introduce toxins into the soils?

How are nearby homes, businesses, and school activities impacting on the site and surrounding area?

What kind of behaviours do we want to encourage and discourage at and around the site and restoration area?

**Action: Intentional Conduct:** What kinds of local organisations would volunteer or contribute time and energy to the restoration project?

How might school activities interface with the site area?
Can we use local and/or repurposed or recycled materials for construction?

**Skilful Means: Worldcentric Action:** What can we do to encourage different individuals with different worldviews to support the plan and use the site area?

How is the plan and regeneration plan promoting actions that consider multiple perspectives?

**Interobjective Dimensions to Consider**

**Intersections: Environmental Systems:** How is the site connected to the larger hills ecosystems (e.g. National Park)?

What are the ecological dynamics of the site and area, and what ecosystems does the site display (current and planned)?

What migratory birds pass through this area?

What is the drought and fire cycle?

**Institutions: Noetic Systems:** How do the local politics facilitate and complicate the project?

What are the dynamics of the local economy? Where will financial maintenance come from?

What environmental laws or bylaws exist in the community/state which may support or hinder the regeneration project?

How will the public be information and educated about the regeneration project?

**Matrices: Global Systems:** How will the regeneration project fit with the overall re-development project, local issues as well as global issues?

Which world- or planet-centric organisation could be enlisted as a sponsor of this project?

**Integral Benefits for community led/owned/managed regeneration projects**

In applying Integral Ecology to community or commons managed regeneration projects through the application of the 12 niches of the integral ecological framework to understand the multifaceted nature of such an approach. For example, carrying out the physical work outdoors leads to a feeling of physical well-being (soma) and improved physical health (movement).

Being involved in a team learning together how to plant and manage native vegetation (communion) results in currently un-used land of low ecological value becoming and regenerated forest with high biodiversity (intersections). A feeling a psychological balance (psyche) comes from practical hands-on outdoor work (action) and associated improvement in mental health. A shared community/commons project, involving diverse members and age groups in the community, results in a strengthening of communal feeling, making the community feel more safe and secure, and a sense of connecting community with nature (community). A local group with long-term existence result in drastically improved long-term volunteer rates beyond the involvement of the Commons (or Community Land Trust), and therefore a very cost efficient way of generating and maintaining new nature green space and
habitat, contributing to local, regional and national governmental sustainability strategies (institutions). In some cases, by being involved in a long term project with regular contact with nature, people make connection with being part of something larger (pneuma). Their actions spread beyond the project, resulting in private or public land in the area becoming managed in a more sustainable and biodiverse way, and other sustainability projects emerge (skilful means). In some cases, communities have reached out to other cultures involved in protecting or creating woodlands, such as villagers in Papua New Guinea, and formed a “global kinship” link of friendship between the communities (commonwealth) contributing to shared understanding and appreciation across cultures. And practical mutual assistance and support in caring the planet’s energetic systems (matrices) (Esbjoern-Hargens & Zimmermann, 2011).
Sean Esbjörn-Hargens and Michael Zimmerman team up to offer here a ‘multi-perspectival’ approach to ecological design. Integral Ecology is derived from Ken Wilber’s Integral Theory; as such, it uses the Four Quadrants to define four separate yet inter-related perspectives from which to view a design challenge: objective, interobjective, subjective, and intersubjective. The authors argue that all too often only one of these perspectives may be used to justify a given solution, which makes that solution inherently incomplete or one-sided. What is needed is understanding the problem from all four quadrants. This parallels perfectly the organization of the EDE curriculum into four dimensions.

Integral Ecology: Design Principles for Sustainable Human Habitats

Sean Esbjörn-Hargens Ph.D. and Michael E. Zimmerman Ph.D. – Integral Institute, Colorado, USA

Introduction

Since its inception in 1866, with Ernst Haeckel’s publication of General Morphology of Organisms, the field of ecology has multiplied, divided, and morphed into numerous schools and sub-schools. Each such school is an attempt to capture something not included by other approaches. Every knowledge niche seems to have a corresponding school of ecology connecting its insights to the understanding of ecological processes and environmental dynamics. With the emergence of new schools of ecology, as with most disciplines, there is a tendency for the nascent approach – the ‘new kid on the block’ – to define itself against existing approaches in order to justify its particular position. All too often, fences are built between approaches where bridges are needed, and some approaches pair up with each other to discredit other seemingly misguided approaches. The net result is a fragmented field of various approaches either pitted against each other or in alliance through protective politics.

So what is someone concerned about the environment to do when confronted with the magnitude of variety that currently exists within the field of ecology and environmental studies? How is an activist, scientist, or philosopher expected to be effective in the face of such multiplicity? No wonder the world of ecology is in such disarray – it has grown so big that it no longer knows itself. For instance, all too often practitioners of landscape ecology have never heard of environmental aesthetics; environmental philosophers do not know
the difference between population ecology and community ecology; individuals working in the field of acoustic ecology do not know about linguistic ecology.

Today there is a bewildering diversity of views on ecology and the environment. With more than 200 distinct and valuable perspectives on the natural world – and with researchers, economists, ethicists, psychologists, and others often taking completely different stances on the issues – how can we come to agreement to solve the toughest environmental problems of the 21st century? We need a framework to help sort through these many approaches and connect them in a pragmatic way that honors their unique insights on their own terms. Integral Ecology provides this framework: a way of integrating multiple approaches to ecology and environmental studies into a complex, multidimensional, meta-disciplinary approach to the natural world and our embeddedness within it. Integral Ecology unites valuable insights from multiple perspectives into a comprehensive theoretical framework, one that is already being put to use around the globe. This framework is the result of over a decade of research exploring the many perspectives on ecology available to us today and their respective methodologies. In short, this framework provides a way of understanding the relationship between who is perceiving nature, how the perceiver uses different methods, techniques, and practices to disclose nature, and what is perceived as nature.

Integral Ecology is a comprehensive framework for characterizing ecological dynamics and resolving environmental problems. It is comprehensive in that it both draws upon and provides a theoretical scheme for showing the relations among a variety of different methods, including those at work in the natural and social sciences, as well as in the arts and humanities. Integral Ecology unites, coordinates, and mutually enriches knowledge generated from different major disciplines and approaches. Integral Ecology can be: a) applied within a discipline (e.g., by integrating various schools of ecology); b) applied as a multidisciplinary approach (e.g., by investigating ecological problems from several disciplines); c) applied as an interdisciplinary approach (e.g. by using social science methods to shed light on economic or political aspects of environmental values); and d) applied as a transdisciplinary approach (e.g. by helping numerous approaches and their methodologies interface through a well grounded meta-framework).

The Integral Ecology framework has promising applications in many areas: outdoor schools, urban planning, wilderness trips, policy development, restoration projects, environmental impact assessments, green business, village design and community development to name a few. In fact, a wide variety of ecologists, environmentalists, urban planners, wilderness guides, and activists recognize the theoretical comprehensiveness and practical efficacy of Integral Ecology and have been using its principles and distinctions successfully in a variety of contexts: community development in El Salvador, marine fisheries in Hawaii, eco-activism in British Columbia, climate change initiatives in Norway, permaculture in Australia, environmental policy in Tasmania, sustainable consumption and waste reduction in Calgary, and
urban design in Manitoba. In this article we will be focusing on how aspects of this framework can be used for design initiatives. But first let us introduce one of the key conceptual lenses involved with integral ecology and design.

The Four Quadrants

The Integral Ecology framework draws on integral theory as developed by American philosopher Ken Wilber. Integral theory provides a content-neutral framework – the AQAL model – that has been developed over 30 years and is being used in over 35 professional disciplines (e.g., economics, law, medicine, art, religious studies, psychology, and education). According to integral theory, there are at least four irreducible perspectives (objective, interobjective, subjective, and intersubjective) that must be consulted when attempting to understand and remedy environmental problems. These perspectives are represented by four quadrants: the interior and exterior of individual and collective realities. These four quadrants represent the intentional (‘I’), cultural (‘we’), behavioral (‘it’), and social (‘its’) aspects of ecological issues.

Put briefly, the objective perspective examines the composition (e.g., physiological and chemical) and exterior behavior of individuals such as humans, bears, salmon, redwoods, or beetles. The interobjective perspective examines the systemic structures and exterior behaviors of collectives, ranging from human socio-economic systems to ecosystems. Data generated by methods belonging to objective and interobjective perspectives are valuable, but they neither provide an exhaustive understanding of the problem at hand nor do they necessarily provide motivation for action. Technical information alone cannot persuade people to act. Motivation
arises when we experience a given environmental problem through two additional perspectives – subjective and intersubjective. Academic and public environmental efforts only infrequently approach problems with awareness or appreciation of the role played by these interior perspectives, including aesthetic experience, psychological dynamics, religious meaning, ethical issues, and cultural values.

Integral Ecology labels these four irreducible perspectives as follows: terrain of experience (first-person subjectivity), terrain of culture (second-person intersubjectivity), terrain of behavior (third-person objectivity), and terrain of systems (third-person interobjectivity). In other words, Integral Ecology recognizes and draws on first-, second-, and third-person perspectives. The perspectives are irreducible because, for example, a first-person perspective contains important aspects of a situation that are not captured or represented by a third-person perspective. When I say, “I feel devastated as I look at this polluted stream,” I am speaking from a first-person perspective. The perspective informing my assertion cannot simply be replaced by a third-person perspective, which would issue forth a statement such as: “That person sees the polluted stream.” There is quite a difference between simply ‘seeing’ the polluted stream and ‘feeling devastated’ by it. Likewise, the second-person significance of a multi-stakeholder gathering, which brings together culturally divergent and even contentious worldviews, cannot be equated with the third-person function that the meeting may have in socio-economic terms. Each of these terrains highlights a different and essential aspect of reality and are known through different types of methodologies and practices.

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**The Four Terrains.**

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<tr>
<td><strong>Terrain of Experiences</strong></td>
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<td>The subjective realities of any being at all levels of its perception.</td>
<td>The objective realities of any being at all levels of its organization.</td>
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<td>The intersubjective realities of any being at all levels of its communion.</td>
<td>The interobjective realities of any being at all levels of its intersection.</td>
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These four perspectives are often used to look at an environmental problem or ecological reality, either informally or through formal disciplinary traditions. Following is a simple example of an Integral approach to design provided by the work of Mark DeKay and his colleagues. This section briefly examines some of the principles at play within each of these terrains and the kinds of perspectives that would be included in looking at and addressing a design issue.

**Principles of Integral Ecological Design**

Mark DeKay is an Associate Professor in the College of Architecture and Design at the University of Tennessee in Knoxville. He has been a leading figure in the emerging new field of Integral Ecological Design. DeKay has been applying integral principles to a variety of design contexts for many years. For example, he recently co-authored a paper with fellow architect Mary Guzowski that presents “A Model for Integral Sustainable Design Explored through Daylighting,” for the 2006 American Solar Energy Society Conference (ASES). After presenting an overview of Integral Theory, this article discusses Integral Ecology’s four terrains and applies them to sustainable design by asking, “From an integral sustainability perspective, how shall we shape form?”.

From the perspective of behaviors, (UR), the design question is, “How shall we shape form to maximize performance?” In this terrain, good form minimizes resource consumption and pollution while maximizing preservation and recycling. From the perspective of systems, (LR), the design question is, “How shall we shape form to guide flow?” In this terrain, good form solves for ecological pattern by creating structure in the built environment that best accommodates ecological process through mimicry of and fitness to the context of natural ecosystems. From the perspective of cultures, (LL), the design question is, “How shall we shape form to manifest meaning?” In this terrain, good form reveals and expresses ‘the patterns that connect’ in ways that celebrate the beauty of natural order, place inhabitants into relationship with living systems (or the idea of nature), and situate human habitation in bioregional place. From the perspective of experiences, (UL), the design question is, “How shall we shape form to engender experience?” In this terrain, good form orchestrates rich human experiences and creates centering places conducive to self-aware transformation, in which we can become most authentically who we are. Summarizing this in a table (see below), they explain that “This expanded multi-perspectival view can enable designers to more comprehensively address the complexity of today’s ecological challenges by including the individual, cultural, and social dimensions that contribute to the creation of a sustainable world”.

Building on the “The Four Terrains of Sustainable Design,” DeKay and Guzowski present the “Twelve Niches of Daylighting” to illustrate how they “could integrally-inform sustainable design thinking, allowing a designer to move beyond objective physical performance to also consider
### The four terrains of sustainable design.

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<td>Shape form to <strong>MAXIMIZE PERFORMANCE</strong></td>
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<td>• Environmental Phenomenology</td>
<td>• Energy, water, materials efficiency</td>
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rich experiential, ethical, moral, and social implications of light”. After presenting an overview of the Twelve Niches of Daylighting (see figure below) they apply them to daylighting at the United Theological Seminary’s Bigelow Chapel in New Brighton, Minnesota.

DeKay is also using integral design principles to guide the Beaver Creek Watershed Green Infrastructure Plan. This project is connected to the Green Vision Studio at the University of Tennessee’s College of Architecture and Design. DeKay and his colleague, Tracy Moir-McClean, are the principle investigators. The project is a visionary exercise with the goal of creating a document that can be used by various individuals and institutions to support their decision making process around issues of preservation, conservation, and land use development. According to DeKay, “This is probably the most integrally-informed project we have. Our use of integral theory and integral ecology shows up in various places in the language of the report and in the issues we chose to address and the methods we used to address them. While the integral model is not overt it nevertheless is the guiding framework.”

While the details of the project extend beyond the scope of this article, the following quadrant chart provides good overview of how DeKay and his colleagues are using the Integral Model in the context of this project:

### Conclusion

In summary, there are numerous approaches to the environment and ecological design: philosophical, spiritual, religious, social, political, cultural, behavioral, scientific, and psychological. Each highlights an essential
component, but too often remains silent concerning other important dimensions. To overcome this fragmentation, Integral Ecology provides a way of weaving all approaches into an environmental tapestry, an 'ecology of ecologies' that honors not just the physical ecology of systems and behaviors, but includes the cultural and intentional aspects as well – at all levels of organization. Thus, integral ecology is the study of the four terrains of the natural world at different levels of complexity. In addition, Integral Ecology takes into account the multiple worldviews within individuals, communities, and cultures, and their accompanying environmental perspectives – each with its specific forms of mutual understanding. Furthermore, Integral Ecology highlights that the environment and its various aspects are revealed differently depending on the

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<td>• Experience of subtle or spiritual aspects of light</td>
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<tr>
<td>• Mystical light &amp; enlightenment</td>
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<tr>
<td>• Experiencing Inner Light</td>
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| **[L2] Psyche: Psychological Dynamics** |
| • Environmental psychology of light |
| • Phenomenology of light |
| • Aesthetics, beauty, poetics of light |

| **[L1] Soma: Body Feelings** |
| • Physical sensations of sunlight and daylight |
| • Archetypal responses (diurnal, seasonal) |
| • Experiences of delight, comfort, health & well-being |

| **[L3] Skillful-means: Effective Actions** |
| • Models for sustainable action |
| • Designing healing environments |
| • Building transfiguration (alchemy of light) |

| **[L2] Action: Intentional Conduct** |
| • Dynamics modeling & simulation (quantitative & qualitative) |
| • Technological systems, constructions, codes |
| • Architectonic systems & spatial order with light |

| **[L1] Movement: Physical Behaviors** |
| • Physics of light in buildings |
| • Biology of vision |
| • Physiological response to light and visual comfort |

| • Effect of light on subtle energy patterns |
| • Color properties of Inner Light |
| • Alexander’s Field of Centers |

| **[L2] Institutions: Social Systems** |
| • Urban planning for light access, politics |
| • Education, building & energy codes |
| • Social activity patterns (work schedules, programming, etc.) |

| **[L1] Interaction: Natural Systems** |
| • Ecological impacts and fitness of architectural daylight |
| • Bioregional & contextual response |
| • Complex building systems integration |

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The Four Quadrants and Twelve Niches of Daylighting.
### Interior

**UL: Experience**

**Individual-Interior: Self and Consciousness**

The invisible subjective interior reality of an individual.

**Intention:** Rich, full-sensory experiences. Facilitate individual development to higher levels of ecological self. Provide opportunities to relate to nature at each level.

**Areas Addressed:** Human experience of landscapes, ecological education, ecological aesthetics, landscape and urban aesthetics, environmental psychology, personal identity, 1st-person phenomenology.

**Tools:** Integral aesthetic awareness of the designer, role-taking, design for nearby nature, access to natural recreation, visual impact assessment, view-shed analysis, environmental education, and educational landscapes.

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### Exterior

**UR: Behavior**

**Individual-Exterior: Organism and Part**

The visible, objective, external reality of an individual.

**Intention:** Settle the land with minimum impact and maximum health. Conserve resources and reduce flows to environmental sinks.

**Areas Addressed:** Resource conservation and efficiency, reducing water and air pollution, habitat conservation, farmland, wetland, and forest preservation.

**Tools:** Best Management Practices (BMPs), ecological monitoring, performance standards such as TMDL, conventional engineering, flood zones, stream buffers, slope protection rules, conservation easements, NRCS techniques, urban forestry.

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### Culture

**LL: Culture**

**Collective-Interior: Meaning and Worldviews**

The invisible, intersubjective, internal realities of groups.

**Intention:** Come to agreement on how to design and live with nature. Manifest rich symbolic human-ecological relationships.

**Areas Addressed:** Civic dialogue, fitness to cultural context, cultural regionalism, sense of place, Genius Loci, historical and cultural landscapes, collective values, meaning of form languages, ideas of and relationships to nature(s).

**Tools:** Charettes, community visioning, public input processes, Pattern Languages of the building culture, multiple intelligence communication, visual preference surveys, symbolic design languages, civic design, urban design with nature for community identity, shared knowledge bases.

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### Systems

**LR: Systems**

**Collective-Exterior: Social Systems and Environment**

The visible, interjective, external realities of groups.

**Intention:** Fit settlement pattern to natural pattern using principles of ecological order. Making cities work like nature.

**Areas Addressed:** Bio-regionality, spatial pattern of habitat, ecological restoration, greenway and park networks, ground-surface water system, pedestrian-bicycle networks, building-transit-open space patterns.

**Tools:** GIS landscape analysis, urban design, zoning, including special historic, cultural and environmental overlays, comprehensive planning, site review processes, design guidelines, development and building codes, Pattern Languages, land trusts, parks foundations, Low Impact Development (LID), Smart Growth, ecological engineering, science of landscape ecology, contextual thinking, network thinking.

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### Green Infrastructure in The Four Quadrants.

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**Mode of Inquiry**

Integral Ecology identifies eight methodological families that need to be utilized, on their own terms, for comprehensive knowledge of any given ecological reality. In short, Integral Ecology recognizes that different approaches to ecology and the environment are the result of a spectrum of perspectives (‘the who’) using a variety of methods (‘the how’) to explore different aspects of the four terrains of nature (‘the what’).

Only by becoming increasingly aware of the who, how, and what of environmental issues can we truly integrate the multiple voices calling for a more just and ecologically friendly world. Only in such a world is there the capacity to generate sustainable solutions to complex multidimensional
problems, and only in such a world are all the notes of nature’s song sung. Integral Ecology is committed to the complexity and multidimensionality of this world in its entire mysterious splendor. Integral Ecology supports us in becoming increasingly reflective of what we are looking at, who we are as we are doing the looking, and how are we looking at it. By becoming deeply reflective individuals, we can hope to reach effectively across the divides that separate us, and foster mutual understanding in service of our blue-green planet.

People who use the Integral Ecology framework recognize that it is not enough to integrate ecosystems and social systems (e.g. economies, laws, education). Nor is it enough to also include objective realities (e.g. behavioral studies, laboratory testing, empirical analysis). Instead, what is needed is to integrate these interobjective and objective realities with subjective (e.g. psychology, art, phenomenology) and intersubjective (e.g. religion, ethics, philosophy) realities. In effect, Integral Ecology unites consciousness, culture, and nature in service of sustainability.

It is our hope that Integral Ecology supports a new kind of ecology – an ecology of perspectives – one that is informed by the strengths of many approaches and methods while at the same time exposing the limits and blind spots of any single approach. Integral Ecology provides one of the most sophisticated applications and extensions of integral theory available today, and as such it serves as a template for any truly integral effort, especially integral design.

References
1 For additional examples, see the seven case studies edited by Sean in a special double issue of World Futures and the two dozen examples presented in chapter 11 of our book, Integral Ecology: Uniting Multiple Perspectives on the Natural World (2009).
3 For a description of all 200 perspectives, see the appendix in our book, Integral Ecology: Uniting Multiple Perspectives on the Natural World (2009).
4 Ibid.
5 Ibid. 4. Note the third level in the presentation of the twelve niches is based on an earlier version than the one presented in the book.
6 For an overview of the project see http://www.knoxvilleparkway.com/bcgiridot.pdf
7 DeKay, personal communication, 7 July 2006.

INTEGRAL ECOLOGY: DESIGN PRINCIPLES FOR SUSTAINABLE HUMAN HABITATS


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