

## Villages Nature 2013-2014 Annual Review



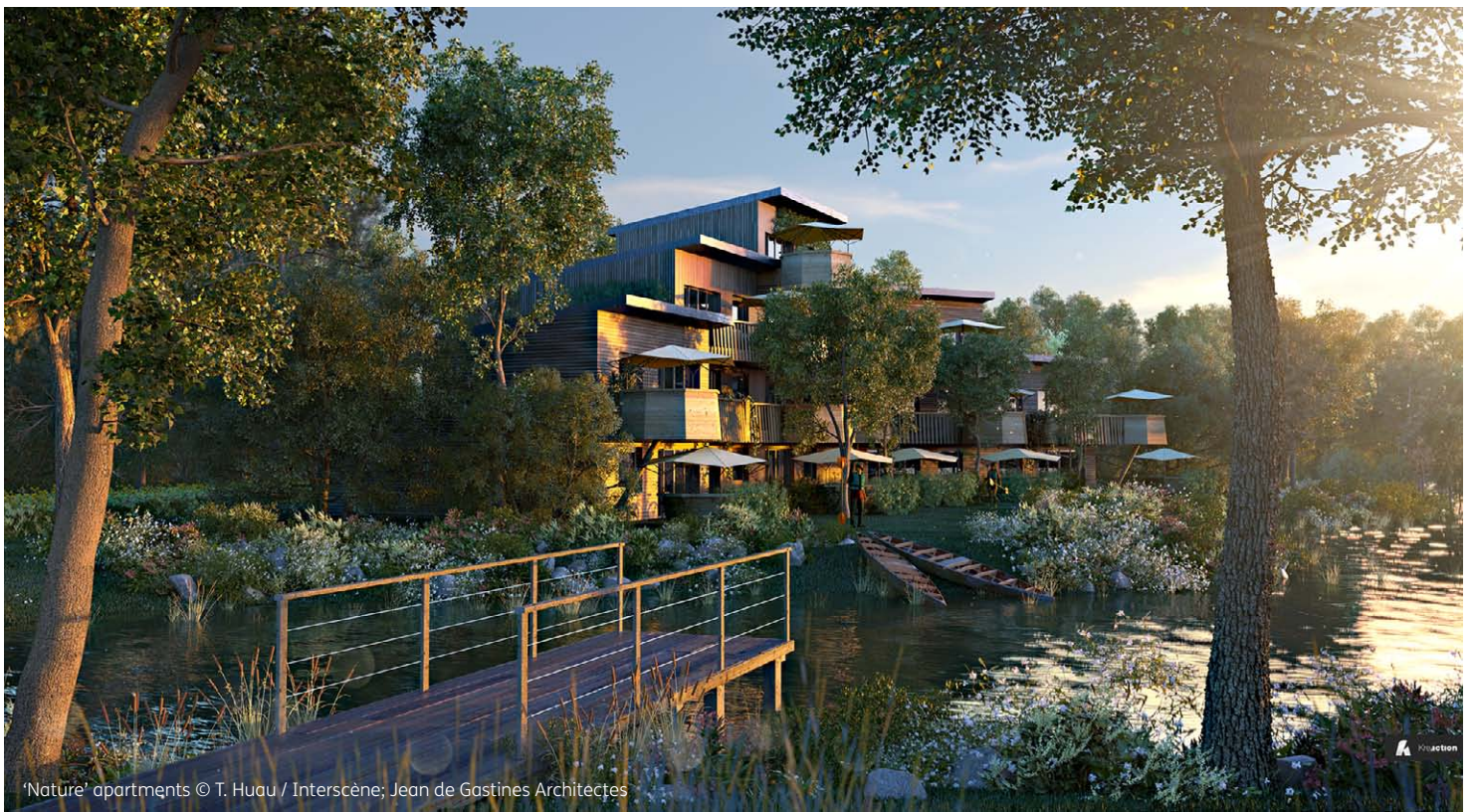
The Lakeside Promenade © T. Huau / Interscène; Jean de Gastines Architectes



ONE  
PLANET  
LIVING



A  
framework  
by Bioregional



Villages Nature, an equal joint venture being created by Euro Disney S.C.A. and Pierre & Vacances-Center Parcs Group, is a major sustainable tourism project located near Paris and a One Planet Community with a sustainability action plan endorsed by Bioregional.

## Villages Nature, giving our dreams a new horizon

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*Message from Dominique Cocquet, Villages Nature General Manager*

This year we have seen the first steps of moving the vision for Villages Nature into a reality, culminating in the laying of the cornerstone with the Prime Minister Manuel Valls in December. We want to make Villages Nature a unique place, at the doorstep of Paris, a space in time for relaxation and recuperation, dedicated to simple pleasures and marvelling at the beauty of nature, blended into art, but also a space for human warmth and sharing, playing its part in building a more responsible world.

We believe that Villages Nature, by combining good transport access, proximity to urban areas and a local energy source, can set a new benchmark in sustainable tourism. The One Planet Living Framework has been fundamental in helping us create and stick to this vision. By using the ten principles of One Planet Living we have set quantitative and qualitative criteria throughout each project phase: design, construction and operation, including the guest experience we wish to create.

This strategy has also been selected by the United Nations Environment Programme as a major project in 2013, joining the “Global Partnership for Sustainable Tourism”. This is the first Annual Review of our progress against the commitments that we made in our One Planet Action Plan, and we are delighted to see that we are on track for meeting these commitments – though we know that there remains a lot of hard work ahead!

Looking ahead, 2015 is a highly significant year both for Villages Nature and in securing a global deal in Paris in December to halt climate change. The business model of Villages Nature is based on a sustainable management of resources – we believe aiming for One Planet Living will make us a more successful company, and by promoting this hopefully we can make our own contribution to securing the deal in Paris that we all need.

## A One Planet Community coming to fruition

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*Message from Pooran Desai, Bioregional cofounder and International Director for One Planet Communities*

Almost ten years ago Villages Nature was one of the first projects to use the One Planet Living framework to develop a sustainability strategy. We were delighted last year to see how the vision and aspiration had evolved into a firm commitment to meet all the targets of the One Planet Communities programme, and so to welcome them into the One Planet family!

Tourism is one of the world's largest global industries and one that continues to grow. As the urgency for action on climate change and protection of ecosystems becomes increasingly clear we need the major tourist organisations to be taking the industry in a new direction. To see two companies as globally significant as Euro Disney and Pierre et Vacances committed to creating a tourist destination that will enhance local ecosystems and provide an experience that brings the guest closer to nature and a deeper understanding of man's place in the environment is what makes Villages Nature such an important project.

We have been impressed to see how the ethos and philosophy of One Planet Living has been internalised into the project, and is helping to guide its design and strategies for operation, and very pleased with the results summarised in this Review. Nonetheless 2015 will be a crucial year, construction will be going apace and new teams to set up and subsequently manage the site's operations will be established. If the new staff and construction teams can successfully be inducted into Village Nature's vision and philosophy this will go a long way to ensuring achievement of the project's commitments.

The Paris negotiations in December are being discussed as our last chance for a timely global deal on curbing climate emissions. A deal will only be possible if all sectors; politicians, business and civil society, are pulling in the same direction. Villages Nature and the companies behind it have demonstrated their commitment to sustainability – hopefully this can inspire more of the business community to follow suit.



'Clan' cottages © T. Huau / Interscène; Jean de Gastines Architectes

## What is Villages Nature?

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Villages Nature is a major new ecotourism destination on the edge of Paris being delivered by Euro Disney S.C.A. and Pierre & Vacances-Center Parcs Group. Construction of the first phase began in the summer of 2014. It is expected to open in 2016 attracting 900,000 visits a year. Its major features are:

- 180 landscaped hectares with 160,000 m<sup>2</sup> of recreational facilities
- 916 holiday homes
- The flagship Aqualagoon, a 9,000m<sup>2</sup> covered water park and 2,500m<sup>2</sup> outdoor lagoon, heated to more than 30° by geothermal energy all year
- 15 hectares of lakes
- 8,000 m<sup>2</sup> of shops and restaurants

Villages Nature is designed to connect people with nature in family friendly, short to medium stay visits. It has its own farm, forests, meadows, lake and spa. Families will enjoy activities such as boating, hiking, horse riding and enjoying seasonal festivals and culinary events. Pride of place is being given to natural materials, green walls and hanging gardens. Villages Nature will not only be offering a zero carbon holiday destination accessible to millions of people by high-speed rail but also providing heat to neighbouring users.

## Summary of 2014

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With construction starting onsite and the development of the operational phase stepping up several gears, 2014 has been an important year for Villages Nature, and the integration of sustainability into the construction site and operational plans has been impressive. Nonetheless, with construction continuing to scale up, contracts for retail and restaurant partners to be signed and the guest experience to be developed, it will be highly important to ensure that there is no loss of momentum in 2015. With the completion of the final design details, certain aspects of the Action Plan will be completed, and there is a need to refresh the plan with greater focus and detail on the operational phase of the project.



## One Planet Living principles

Principle	Actions	On track?
Zero carbon	Energy efficiency standards agreed	✓
	Construction of geothermal energy to supply 100% of heat underway, plans for renewable electricity supply under development	✓
Zero Waste	Partner engagement to reduce waste	✓
	Construction waste separation started well - < 2% to landfill	✓
Sustainable Transport	Construction site: bus route from local train station established. Only 22% of construction staff using unshared private car to commute in July-September	✓
	Visitor public transport access strategy being developed	✓
Sustainable Materials	Embodied energy in buildings approximately 25% below base case	✓
	Zero export of material excavated in the construction of the lakes	✓
	Environmental standards provided to operational retail partners	✓
Local and Sustainable Food	Initiation of the work towards local food supply	✓
	Sustainability specifications for restaurants established	✓
Sustainable Water	Zero impact on quality and quantity of groundwater	✓
	37% of the Aqualagoon water to be treated and reused through reverse osmosis and reed beds	✓
Land Use and Wildlife	Effective habitat protection during construction and renaturation or creation of natural habitat (wetlands, ditches, biodiversity favourable landscape, 15 hectares of ecological corridor)	✓
	Acquisition of 115 hectares of forest as compensation for clearing during construction	✓
	Green management plan with objective of zero chemical products (synthetic pesticides and fertilisers)	✓
Culture and Community	Initiation of a unique guest programme centred on nature and sustainability	✓
	Initiation of activities with local tourist organisations	✓
Equity and Local Economy	Local economy supported in construction; engagement with local horticulture industry, 1/3 <sup>rd</sup> of infrastructure contracts to Seine et Marne businesses	✓
	'Insertion' (experience/apprenticeship) programme running with > 10,000 hours agreed	✓
	Implementation of strategies to maximise the benefit of construction to the local economy	✓
Health and Happiness	Human resource values and employment terms under development	✓
	Construction employees' well-being; the Pôle Vie de Chantier to be implemented	✓

✓	Substantially or entirely completed, or a high degree of certainty over deliverability
✓	On track for a long term target or to be implemented in operational phase
✗	Substantially incomplete, behind schedule or doubt over delivery

## Background to this document

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As part of the One Planet Communities programme Villages Nature have made a commitment to reporting annually on progress in implementing their One Planet Action Plan. This report summarises the progress made in 2014 (the exact period is October 2013 to October 2014). It should be read in conjunction with the One Planet Action Plan – which can be found **here**.

The aim of this first Annual Review is to establish the structure and framework for subsequent reviews. As construction has only just started there is little empirical data to report on. Sustainability is such a high priority for Villages Nature that a specific committee has been established to ensure all commitments are met. The Comité Consultatif de Développement Durable (CCDD – Consultation Committee on Sustainable Development), is made up of key public and civil society stakeholders including NGOs such as Nature Environnement 77, Association RENARD, Ligue pour la Protection des Oiseaux, Association UFC Que Choisir and Association Aquibrie. It is presided by the General Secretary of the Seine-et-Marne prefecture, Nicolas de Maistre. It meets at least once a year to review progress on the sustainability targets, with a formal report provided each year. This report draws on the document provided to the CCDD. The Villages Nature CCDD is an innovative governance body with oversight of sustainability ensuring that the project's objectives are met and encouraging effective engagement with stakeholders.

## Villages Nature and One Planet Living – a brief history

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From its earliest days in 2003 the concept for Villages Nature was a holiday destination that embeds its visitors in nature and sustainable development. In 2004 Villages Nature started working with Bioregional to develop a One Planet Action Plan outlining the key design, operational and guest experience objectives of the project. This Action Plan was used to guide the project's evolution through the design development process. A One Planet Action Plan is necessarily an evolving working document and so in late 2013 an updated version was published as part of Villages Nature receiving endorsed One Planet Community status.

## Villages Nature One Planet Action Plan

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The last year has been a particularly important one for Villages Nature with the final signing of the financial agreements on 25th May and, subsequently, the commencement of the construction works for the first tourist residences and associated recreational facilities in July. It is now official: Villages Nature will open to the public in 2016!

The main focus of this last year has therefore been on finalising the studies and designs to ensure that the park will meet the environmental standards specified when it opens, and on the commencement of the construction programme including instigating the 'Green Construction Site'. With these components up and running the ground has been laid for more detailed focus on the operational phase next year covering areas such as site management, guest communication and staff training. This section summarises the activities over the past year (October to October) and explains the role of this document.

## Charte Chantier Vert – the Green Construction Charter

Construction work has the potential to cause adverse environmental impacts. Measures have been put in place to reduce these impacts from the outset, primarily through the implementation of a ‘Green Construction Charter’ (Charte Chantier Vert, CCV) and by adapting the construction programme to the rhythms of the natural environment.

The CCV lays out how sustainability will be managed onsite, the reporting requirements and the minimum expectations for all the contractors. The CCV is overseen by a CCV site manager supported by technical specialists (e.g. for biodiversity) and Environmental Coordinators (‘Référénts Environnement’) in each company. The CCV provides the performance standards of the site and all companies tendering were required to sign the charter and outline in their proposal what they would do to meet and exceed these requirements (with this accounting for 10-50% of the scoring). The role of the CCV manager is to ensure they are meeting their commitments and improve site performance through training, engagement and communication. As part of this the creation of ‘the Pôle Vie de Chantier’ (a central area for staff to relax) is being investigated: a comfortable space with healthy food, equipment for hire and the central point for engagement with staff.

In order to minimise the impact of the construction work key habitats have been protected and already eight of the ten ponds/marshes have been created as new habitat for key species. Furthermore all clearing work is being carried out at the end of most species’ breeding seasons. Another key programming strategy has been the digging of the 15 hectares of lakes early in the process to ensure that they will have two winters to fill with rainwater – eliminating the need for additional water when Villages Nature opens in 2016.

In 2014 the main focus has been on embedding the Charte Chantier Vert, and putting in place a monitoring programme which covers:

- Electricity consumption
- Waste generation and recycling
- Employee transport
- Water consumption
- Training
- Safety

The goal for the construction site is continual improvement, both in this phase and in any subsequent phases, and so the monitoring data is used for assessing performance, engagement with employees, and setting a baseline and benchmark for subsequent phases. For the first phase the immediate strategies for improving performance include:

- Development of a simple Construction Site One Planet Action Plan covering all 10 principles to drive employee engagement and improvement in areas not covered in the CCV
- Empowerment and training for the ‘Référénts Environnement’
- Continued improvement and development of the training programme for construction staff, tailored to them, their roles and the Villages Nature project
- Wider communications and engagement with employees about One Planet Living

## Design and buildings

With construction having started, the building designs have been finalised and the construction companies brought on board, this can be a challenging period of translating the ambitions of the design into reality. There has been some compromise; for example, the area of green roofing and walls has been cut by one third because these did not make a significant contribution to biodiversity). But in the main the construction phase remains well on track to meet its targets. Some notable design achievements to date include:

- The 11,500m<sup>2</sup> Aqualagoon complex has met HQE 'exceptionnel'<sup>1</sup> in its bespoke rating system (see Case Study 1)
- The housing will be built almost entirely out of FSC or PEFC certified timber, giving a significant embodied energy saving over other construction techniques
- The farm is Villages Nature's experimental building aiming to maximise the use of natural materials and incorporate habitats into the building
- A landscape design creating valuable new habitat; 34,000 trees and 430,000 bushes will be planted at Villages Nature

## Operations – experience and retail

With the opening of Villages Nature fast approaching, the strategy for delivering the One Planet Living Vision is being developed in more detail. Key areas include guest transport, restaurants and retail and guest experience. The goal of Villages Nature has always been to enable visitors to explore nature and discover new ways of living as part of an unforgettable holiday. Five themes are being used to structure the activities and experiences that will be available to guests: the present, body and spirit, sharing, culture and future and one planet. Villages Nature is developing the programme and starting the process of engaging partners to deliver the activities.

Guests will be able to easily arrive at Villages Nature by public transport and negotiations with the relevant authorities over how this will be delivered are ongoing. The retail facilities and restaurants will be delivered by external partners who will be selected in early 2015. All prospective partners have been provided with simple guidelines of the principles that they would be expected to adhere to including healthy options, making use of local and sustainable materials and produce, and creating an immersive experience for guests.

## Principle by principle review

This section reviews each of the ten One Planet Living principles in turn, assessing progress against each target. This is done quantitatively where possible, using agreed indicators, though in many cases only a qualitative assessment is possible. Each target is then given a Red, Amber or Green rating.

✓	Substantially or entirely completed, or a high degree of certainty over deliverability
✓	On track for a long term target or to be implemented in operational phase
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1 Haute Qualité Environnementale (High Quality Environmental standard) is a standard for green building in France based on the principles of sustainable development set out at the 1992 Earth Summit. It follows similar procedures to other national and international standards such as BRE, LEED and DGNB. 'Exceptionnel' is the highest rating available.



Making buildings more energy efficient and delivering energy with renewable technologies.

	Target	Indicator	Baseline or current status	
ZC1	Reduce and control energy consumption	Meet energy efficiency standards of Réglementation Thermique 2012 <sup>2</sup>	✓	201 kWh primary/m <sup>2</sup> /year for average residential as a baseline
ZC2	Energy strategy favouring renewable energy	100% heat demand met by onsite renewable energy from day one	✓	38,000 MWh primary heat/year predicted demand – met by geothermal energy
ZC3		Net zero carbon by 2020	✓	Plus 42,000 MWh year predicted electricity demand, to be met with zero carbon electricity

The Aqualagoon is the site's major heat demand (about 70% of the total heat requirement) but, surprisingly, it also accounts for 50% of Village Nature's electricity demand – mostly due to the pumps and dehumidification (see Case Study 1). While the heat is all provided highly efficiently by geothermal energy, there is ongoing analysis into the opportunities for further reducing the electricity demand (particularly in the Aqualagoon) and to secure a supply of renewable energy

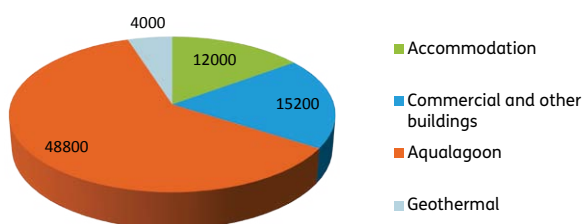


Figure 1: Heat and electricity demand at Villages Nature in MWh/year

## Key activities and progress in 2014

In terms of building energy use the majority of the groundwork had already been done in the designs and specifications, and the challenge is now ensuring that the buildings meet those specifications.

### Energy Efficiency

- Aqualagoon achieved 'Très Performant' in its design stage assessment
- A+ appliances included in specifications for housing

### Renewable energy

- Geothermal permits received and work commenced (November 2014)
- 140m<sup>2</sup> PV planned for the Aqualagoon
- Agreement signed with Euro Disney S.C.A. to provide geothermal heat to Disneyland Paris' central energy plant. The 20,000 MWh/year geothermal supply will cover about 40% of the heat demand of the two Disney theme parks and the Disneyland Hotel

### Monitoring

- A site wide system will be developed to allow monitoring of energy by house and area
- 10 test houses will have detailed monitors to allow consumption to be better understood

<sup>2</sup> The Villages Nature project is required to meet Réglementation Thermique 2005 (RT2005), but as part of its sustainability commitments it aimed to meet RT2012 before this was a legal requirement. RT 2012 requires a 50% improvement in thermal performance compared to RT 2005.

## What is geothermal energy?

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All the heat at Villages Nature will be provided by geothermal energy. Two wells will be bored to a depth of 1,800 metres into the Dogger aquifer; water will then pass through pipes in the aquifer and be heated to 78°C. This water will then be distributed around the site in insulated pipes to provide heating and hot water for all of the houses and recreational facilities.



### Case Study 1: Aqualagoon

The Aqualagoon is a unique building, a vast aquatics complex (11,500m<sup>2</sup>) which will be the icon of Villages Nature. But it also accounts for 60% of the site's primary energy use and about 20% of its water use. Extraordinary design measures have been used to reduce its environmental impacts, energy consumption and embodied energy and carbon (See also Case Study 5, p 20). The Aqualagoon is not only indoors, it also has 2,150 m<sup>2</sup> of external heated pools. To minimise heat loss and evaporation at night all 2,200 m<sup>3</sup> of this water will be drained into insulated storage tanks, every night! Detailed modelling has been undertaken to finely characterise and control the building's electricity demand. The amount of concrete and embodied energy in the Aqualagoon has been reduced by opting for a timber-framed design whilst the concrete that is poured in this building will have a carbon footprint about 15% less than standard.

## Plans for 2015

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- Selection of energy efficient appliances for the commercial buildings
- Study for photovoltaic panels on the roof of the bike shelter
- Tender for the energy monitoring system to ensure effective measurement and management of energy use across the site
- Development of strategy for 100% renewable electricity
- Training programme for operational staff under development



Reducing waste, reusing and recycling, creating products and jobs where possible, and ultimately sending zero waste to landfill

	Target	Indicator	Baseline or current status	
<b>ZW1</b>	Ongoing reduction of waste	kg/visitor-night/year	✓	<b>Baseline:</b> Similar tourist destinations in France: ~ 371kg/visitor/year
<b>ZW2</b>	Maximise separation and valorisation of waste	Material recovery rate of > 90%, and > 60% recycling	✓	<b>Construction, Baseline:</b> unknown <b>Status:</b> 64% recycling of construction waste, <2% landfill (August – December)
			✓	<b>Operation:</b> <b>Baseline:</b> Similar tourist destinations in France: ~ 22% of waste segregated for recycling
<b>ZW3</b>	Education of guests about waste	Number of activities	✓	<b>Baseline:</b> Little education provided to guests

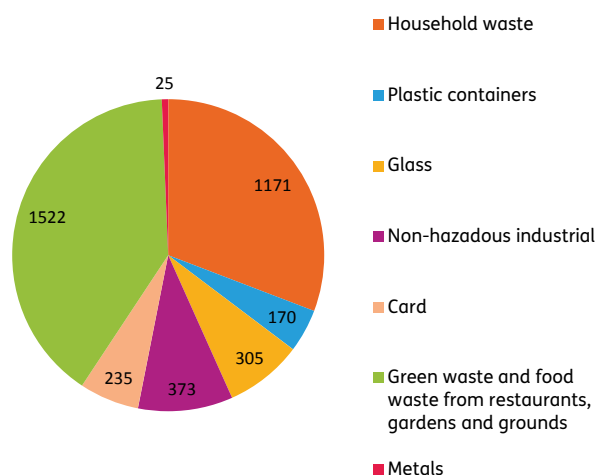


Figure 2: Estimated waste arising from Villages Nature in operation (tonnes/year)<sup>3</sup>

Waste management at Villages Nature will be complex due to the huge range of activities on site: houses occupied by people on holiday, a farm and landscaping, shops and restaurants and maintenance activities (see Figure 2). All this means that there is no easily comparable baseline. Furthermore, Villages Nature has limited levers of influence in some areas, such as on the behaviour of guests in their houses. Nonetheless the strategy for waste management is relatively straightforward:

- Encourage and make it as easy as possible for visitors to recycle
- Maximise the segregation and valorisation of all non-domestic waste streams – where Villages Nature has a higher degree of control

<sup>3</sup> Additionally there will be about 1.6 tonnes of hazardous waste per annum, e.g. medical waste





Encouraging low carbon modes of transport– especially cycling and walking - and reducing the need to travel

	Target	Indicator		Baseline or current status
ST1	Concept of a zero car site	Tonnes CO2e / year	✓	Not Applicable
ST2	30% of visitors to come by public transport	% of visitors, Tonnes CO2e / year	✓	Estimate: 50kg C/visitor for Villages Nature and 200 for 'alternative destinations' (see Case Study 3 below)
ST3	30% of staff to commute by public transport once Villages Nature opens	% of staff commuting by public transport, Tonnes CO2e / year	✓	Baseline: TBC Current status for construction: 22% by public transport, 63% in car share (July-September)

Situated just outside a huge urban centre, within a three hours high speed rail journey for more than 40 million people, and adjacent to a major public transport interchange, Village Nature's location is ideal for a major tourism destination. An initial estimate has shown that the transport emissions of visitors to the site are likely to be approximately a quarter of a comparable short break (see Case Study 3 below). Nonetheless the carbon intensive nature of transport means that staff and visitor travel to and from the site is likely to be the largest contributor to the project's total operational ('in-use') carbon emissions and its most significant negative impact. In order to minimise this, significant focus is going into making the use of public transport as attractive as possible for both visitors and staff.



The Hanging Gardens, the Lakeside Promenade and the Aqualagoon  
© T. Huau / Interscène; Jean de Gastines Architectes; Jacques Ferrier Architectures (JFA)

#### Case Study 3: Guest visitor transport

One of Villages Nature's key sustainability features is its location; close to Paris, next to Disneyland® Paris (the most visited attraction in Europe), and its exceptional national and international public transport connections. Furthermore, by offering year-round swimming in the expansive and attractive indoor and outdoor surroundings of the Aqualagoon, Villages Nature offers an alternative to a short to medium-length beach break. Using the greenhouse gas conversion statistics of the French Department for the Environment, an 'average' visitor to Villages Nature from France, the UK and Germany is estimated to have transport emissions of 50kgCO<sub>2</sub>, whereas the average emissions of going to an alternative European popular beach break destination reached by short-to-medium-haul air travel are approximately 200kgCO<sub>2</sub> – four times greater. Only some Villages Nature visitors will be travelling there as an alternative to flying to a destination further away, but even so this comparison demonstrates the project's potential to reduce transport greenhouse gas emissions by being sited in the heart of densely populated north western Europe and an extensive high speed rail network.

## Key activities in 2014

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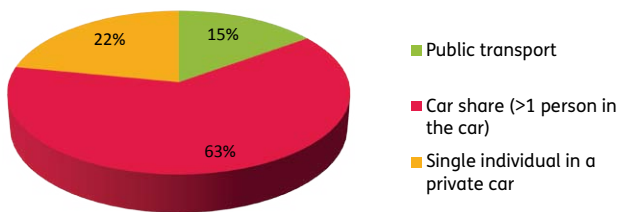


Figure 3: Construction staff travel to work modes for July to September 2014

The discussions with the various public transport bodies in the region commenced many years ago, and while they are not finalised it remains a clear commitment of Villages Nature that there will be a bus connection from the main transport hubs (the RER station at Marne la Vallee and TGV/ RER at Val d'Europe) for both staff and guests. There is now a working group with public partners established to define how this will be delivered.

The final details are being added to the design to facilitate a car free site with guests' vehicles restricted to parking areas at the periphery. These include:

- locating the cycle parking spaces near to the recreational facilities (10,000m<sup>2</sup> of cycle parking)
- 10km of cycling and walking routes being created onsite. These will link to local cycle and pedestrian routes to facilitate visitors coming by bike

Construction contractors have been encouraged to car share and use public transport. A bus service running 14 times a day has been put in place with SIT (Syndicat Intercommunal de Transport), connecting the construction site and the Val d'Europe train station. Other alternatives to private car use, such as car sharing, are also being promoted, with the result that only 22% of workers came by private car on their own between July and September 2014.

## Plans for 2015

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- Define strategies for incentivising visitors to come by public transport
- Contact potential partners for providing a fleet of green vehicles for onsite operations and for hire by guests for local offsite trips
- Definition of sustainable transport prescriptions for partners and subcontractors
- Company travel plan to be developed outlining strategies to incentivise staff to avoid the use of the private car



Choosing construction and consumer goods with low embodied energy – the amount of energy it takes to manufacture and distribute a product – sourced locally wherever possible and made from renewable or waste resources

	Target	Indicator	Baseline or current status	
SM1	Reduce embodied carbon	- > 20% reduction over ADEME standard figure for residential buildings <sup>4</sup>	✓	ADEME: 435 kgCO <sub>2</sub> eq/m <sup>2</sup> On target to achieve this: Apartments 360 kgCO <sub>2</sub> eq/m <sup>2</sup> (-20%) Cottages: 180 kgCO <sub>2</sub> eq/m <sup>2</sup> (-60%)
SM2	Value the materials on the site	To be defined	✓	No export of excavation material from Villages Nature construction site
SM3	100% certified timber	% certified FSC, PEFC or equivalent	✓	Baseline: To be defined, Belgium is approximately 55%
SM4	Low impact materials in operation	% of products certified	✓	Baseline: To be defined
		% of products 'environmental'	✓	Baseline: To be defined

Any construction of the scale of Villages Nature will have a significant embodied energy, but by favouring the use of timber construction and looking for low carbon alternatives to standard construction materials (such as concrete), these have been significantly reduced (see Case Study 4). Once Villages Nature opens to visitors, the majority of the products for sale will be sold by third parties operating stores onsite. The impact of these will be tackled through engagement and contracts with these partners.

## Key activities in 2014

The major activities have focused on finalising the construction processes and materials. Some notable achievements include:

- Zero export of fill material from the site, with 480,000m<sup>3</sup> of material to be reused onsite and reuse of cleared timber e.g. as benches and outdoor artworks
- Reduction in embodied energy through maximisation of wood in construction, selection of a low carbon concrete for the Aqualagoon, and the use of excavated material from the site as a replacement for imported aggregate in the road construction
- All tenders have specified the use of 100% certified (FSC or PEFC) timber
- In terms of materials in operation the guidance provided to prospective retail partners outlines requirements concerning the durability and sourcing of goods

<sup>4</sup> Agence de l'Environnement et de la Maîtrise de l'Énergie (ADEME) provides data on average embodied energy of buildings

## Plans for 2015

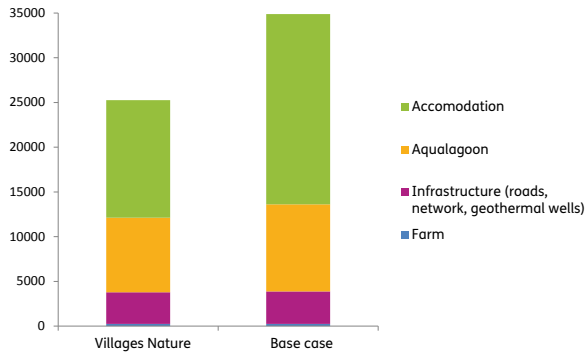


Figure 4: Estimate of embodied carbon of construction (tonnes Carbon eq.)

- Engage with the contractor for the housing to investigate the use of low carbon cement for the foundation slabs (which account for more than 40% of the embodied energy of the housing)
- Definition of fit out and interior design to include low impact materials
- Definition of sustainable material standards for partners and sub-contractors



Protected trees © Biotope

### Case Study 4: Embodied carbon savings at Villages Nature

Many steps have been taken to reduce the embodied energy of the construction at Villages Nature. The exact outcomes and savings will not be known until completion and auditing. Using industry average figures, the total embodied carbon of Villages Nature (Aqualagoon, accommodation, infrastructure and farm) on a 'business-as-usual' baseline would have been approximately 35,00 tonnes CO<sub>2</sub>eq (based on ADEME standard practice). The carbon-saving initiatives at Villages Nature have reduced this by more than 25%, saving the annual carbon emissions of approximately 1000 individuals! The most important factor has been the favouring of wood in construction in general. The visitor accommodation accounts for more than 50% of the embodied carbon in the business as usual baseline, and so the use of wood for the entire construction other than foundation slabs, saves approximately 20% of these total embodied carbon emissions. The Aqualagoon includes significant elements of timber, but it also includes large quantities of concrete. Some of the cement used to make this concrete will be replaced with waste ash from an incineration plant (which has cementitious properties), reducing the carbon content by about 15% compared to standard concrete. Its use is also being explored for the accommodation – which would provide further savings. Finally instead of importing gravel to be used as the road base, excavated material is being stabilised and reused, giving approximately a 7% saving in carbon emissions.



## Local and sustainable food

Choosing local, seasonal, humanely produced and fairly traded food for a healthy, low impact diet higher in vegetable than animal protein, and minimizing food waste

	Target	Indicator	Baseline or current status	
LSF1	A 'responsible' and attractive food and drink offer always available for visitors	Number of outlets with a 'responsible' meal	✓	No standard on other tourist sites
LSF2	A healthy and varied choice for all visitors	% of total sales labelled (organic, fair trade etc)	✓	To be confirmed; for example the baseline in France
LSF3	Favour onsite production and local and regional food	% of onsite sales from the region (or within 100km)	✓	To be confirmed

Local and sustainable food will be a key component of the guest experience at Villages Nature, not just from the food that will be on offer, but also in terms of learning about ingredients, cooking and healthy eating. The construction site also offers an opportunity to engage with the construction workers on food and this is planned for the 'Pôle de Vie Chantier' through the provision of healthy snacks.

## Key activities in 2014

Villages Nature have been in discussions with local agricultural organisations for many years and the first study on the potential for local food was completed in 2006. Likewise onsite production has always been a key aspect of the project, with the inclusion of a productive and educational farm. Some food growing is also included in the 'Earth Garden' of the Extraordinary Gardens and the farm gardens. While further opportunities are being sought, harvesting of food grown on site by guests will have to be carefully managed given that Villages Nature can have up to 8,000 visitors at any one time. Notable progress in 2014 includes:

- Several meetings with the Chamber of Agriculture and **Cervia** (the trade body representing the producers of the Ile de France) have taken place concerning securing local food
- Sustainability requirements for onsite restaurants and food outlets have been integrated into tenders with a strong focus on local food supply

## Plans for 2015

With the restaurant partners coming on board in early 2015 and the guest experience programme rapidly developing the key activities in 2015 will be:

- Launching an action plan in partnership with Cervia and other partners in the region to identify in more detail the sectors, actors and scope of the role of local partners
- Defining detailed requirements for partners and subcontractors
- Developing of the guest experience to ensure a strong relationship with local food and healthy eating
- Investigating opportunities to expand the food grown on site
- Integrating a healthy and attractive food offer into the 'Pôle de vie Chantier' for construction staff

	Target	Indicator	Baseline or current status	
SW1	Maintain the quality of the aquifer and waterways	Level and quality of water table	✓	Measured prior to construction
		Flow and quality in provisioning water bodies	✓	Measured prior to construction
SW2	Reduction in water use – 20% below standard for residential accommodation and for Aqualagoon bathrooms and showers	Total water use (m <sup>3</sup> )	✓	<b>Baseline:</b> Approx. 600,000m <sup>3</sup> /year <b>Estimate:</b> > 500,000m <sup>3</sup> /year
		l/visitor night in accommodation	✓	<b>Baseline:</b> 165 l/p/day (residential) <b>Estimate:</b> > 20% saving
		Total l/visitor in the Aqualagoon	✓	<b>Baseline:</b> > 50l/visitor/day <b>Estimate:</b> 38l/visitor/day
		% potable water used for irrigation	✓	On track for 0%
SW3	Recycle part of the Aqualagoon water	% recycled from the Aqualagoon	✓	<b>Baseline:</b> 0% <b>Target:</b> 37%

Minimising potable water use has been a key design objective from the outset at Villages Nature, and the result of this is that projected water use is approximately 20% lower than a 'base-case' (see Figure 5: Potable water use at Villages Nature in m<sup>3</sup>/yr). It is important to note that the lodgings account for over 70% of the total water use, and the Aqualagoon less than 19%.

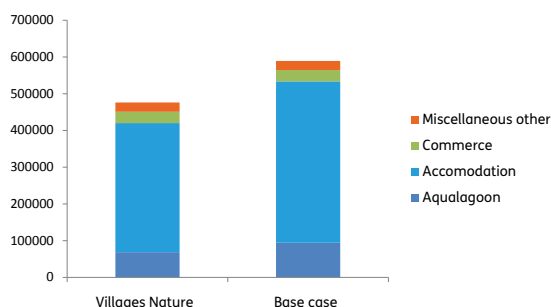


Figure 5: Potable water use at Villages Nature in m<sup>3</sup>/yr

The concept of sustainable water isn't restricted to potable water use, but includes the impact on biodiversity and stormwater management. The lakes at Villages Nature will form part of the stormwater management plan for the Seine et Marne department, and also by being used to guarantee a flow of water all year round in certain streams will have a positive impact on biodiversity.

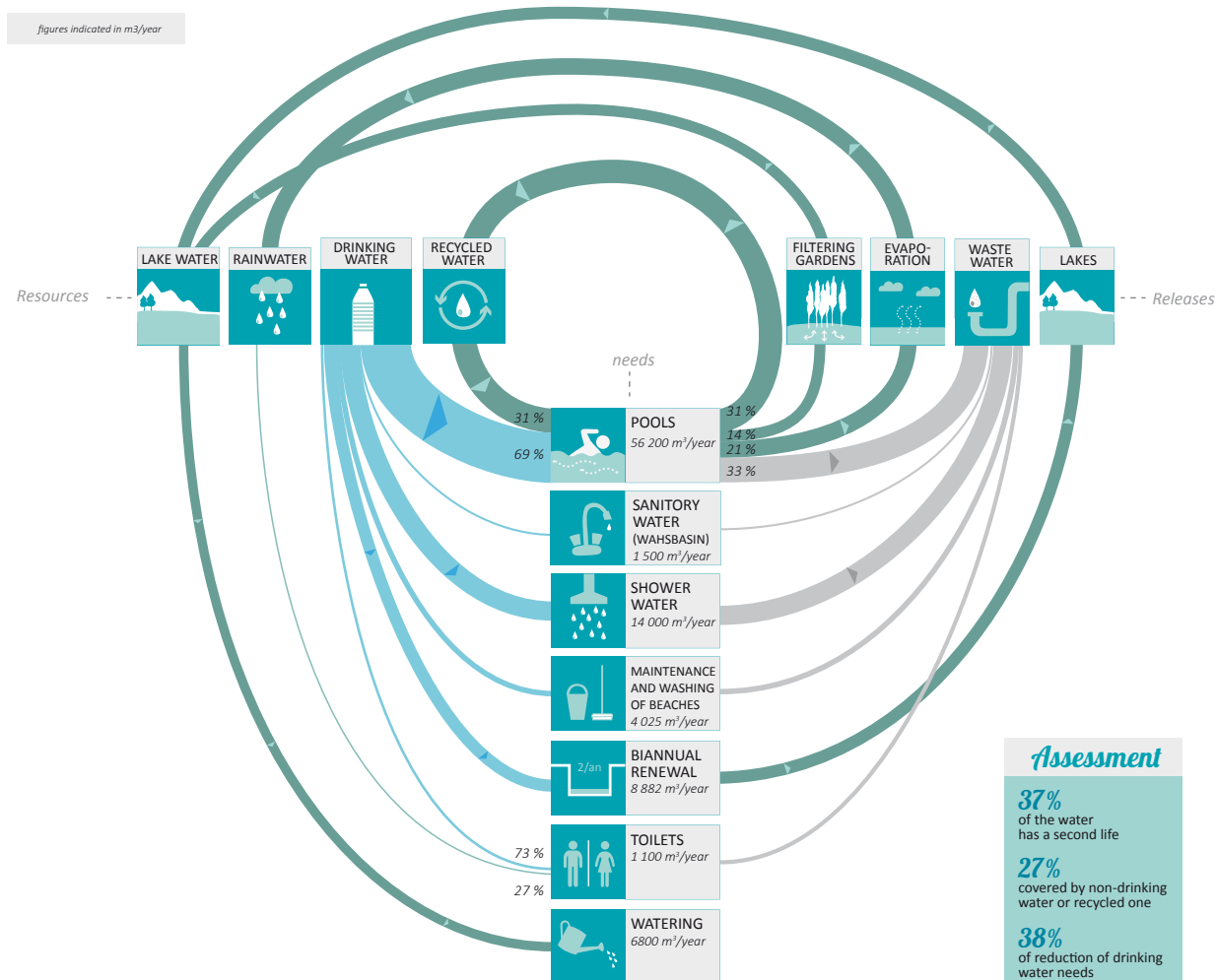
## Key activities in 2014

With the designs becoming finalised it is possible to be more precise about projected water use. The outcomes of this are:

- Agreement of equipment for the lodgings, with a projected average use of between 109-114l/person/day depending on the accommodation type, giving a saving of over 20%.
- Design for the Aqualagoon gives a 38% potable water saving over standard and

37% of the water will be reused (see Case Study 1) thanks to the use of the reverse osmosis purification and water-treatment gardens

- To preserve a minimum flow in the Ruisseau de la Lignière (a stream) during dry periods, an additional storage capacity of more than 50,000 m<sup>3</sup> will be provided
- Boreholes drilled to monitor impact on the ground water (quantity and quality)
- As noted in Section 2.1 the construction programming has been developed to ensure that the 15ha of lakes will be filled by rainwater, eliminating the demand on borehole or treated water



Case Study 5: The water cycle at Villages Nature's Aqualagoon

Water use at Villages Nature is complex with three separate treatment systems on site: the lakes, filtering gardens (natural reed beds used for cleaning water) and reverse osmosis plant (delivering the recycled water as shown in the diagram above). This results in four separate sources of water being available (the lakes, rainwater, mains water and reverse osmosis treated water). This integrated approach contributes to the significant reduction in mains water use compared to a base case (of approximately 20%), and also provides an interesting engagement and education tool for the guests.

## Plans for 2015

- Natural swimming outdoors in Villages Nature's lake: the tender for the work which includes natural (reed-bed) filtration is underway, the call for tenders is planned for the end of June, 2015
- Incentives for water efficient behaviour to be developed



	Targets	Indicator		Baseline or current status
LW1	Neutral impact on the 72 protected species identified on the site	Numbers of each species	✓	<b>Baseline:</b> 68 protected species (plus 4 potentially observed) <sup>5</sup> in 2010/11 (129 total fauna species).  <b>Status:</b> 2014, 64 protected species (136 total fauna species)
LW2	Ongoing management to be 'biodiversity positive'	Land use indicator from Aménagement durable <sup>6</sup>	✓	From initial study: Initial state: 0,59 Projected final state: 0,61
		Area of green roofs and walls (8,000 m <sup>2</sup> of each)	✓	About 10,000m <sup>2</sup> agreed <sup>7</sup>  Planting of 34,000 trees and 430,000 shrubs

The enhancement of biodiversity has been a goal since the design outset of Villages Nature, with a detailed strategy to avoid and minimise the impact on biodiversity and then to compensate offsite for the impact on the habitat of specific species, as is required by French Law.

## Key activities in 2014

The focus of activities has been on the preparation of the construction site to minimise the impact of construction and start to create new habitats, including:

- Implementation of protection fences for sensitive areas
- Creation of habitats for reptiles (such as wetlands) as part of the construction process, as well as 20 bird houses and 15 bat shelters on the construction site to complement the habitat across the site
- Renaturation of the Rue de La Folie stream launched in August 2014 and continuing during the first quarter of 2015
- Creation of 2,610m<sup>2</sup> of ponds contained in the Forest of Jariel on Villages Nature site.

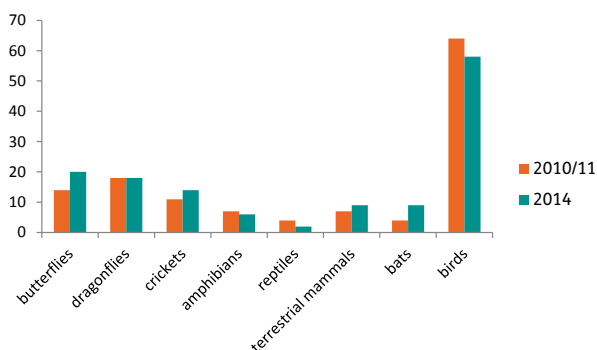


Figure 6: All species identified at Villages Nature

- First round of removal of invasive species

Initial results of the impact of these activities are encouraging. There has been no statistically significant change in the variety of species found onsite with a small observed increase in the total number of fauna species

<sup>5</sup> 2010-2011: 68 protected species observed plus four potentially observed (total 129 fauna species); 2014, 64 protected species observed (136 total fauna species).

<sup>6</sup> Environmental management tool devised by the Environmental Protection Agency for the Ile de France

<sup>7</sup> Intensive green roofs (with deep soil) 1,670m<sup>2</sup>, extensive green roofs (shallow soil) 503m<sup>2</sup>, suspended gardens 5000m<sup>2</sup>, Aqualagoon green roof 2368m<sup>2</sup>

and a small drop in the number of protected species positively identified onsite (from 68 to 64). This will be monitored further. The offsite compensation work has also started with the permits received to lease (and manage for biodiversity) 100ha of woodland. Separately the plans to create 4,000m<sup>2</sup> of ponds adjacent to Villages Nature have been put in place.

Attention is also turning to the operation phase in terms of the sourcing of native species and the establishment of the 'zero pesticide' target for the site (including all pesticides and fertiliser). Village Nature's buildings will have nearly 10,000m<sup>2</sup> of vegetation-covered surfaces, split between the Jardins Suspendus (hanging gardens) (5,000m<sup>2</sup>) and green roofs (4,541m<sup>2</sup>). This has been reduced from the 16,000 m<sup>2</sup> originally conceived, but discussions with ecologists suggest that the impact of this change on biodiversity will be minimal as their main value was aesthetic. The real biodiversity benefits will be through habitat creation within the landscape.



## Plans for 2015

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- Creation of 6.5 km of new natural shoreline (85% of the linear embankments created) with a range of plants adapted to wetlands
- Restoration of existing ponds and ditches in preserved areas
- Defining and finalising the project's ecological corridor connecting the site to the surrounding habitat areas
- Review of indicators for operation



Respecting and reviving local identity, wisdom and culture; encouraging the involvement of people in shaping their community and creating a new culture of sustainability

	Targets	Indicator	Baseline or current status	
CC1	To create a transformational experience for visitors, awaken them to sustainable development	Number of, and participation in, activities raising awareness of sustainability	✓	TBC
CC2	To develop synergies with the key actors and flagship tourist locations in Seine-et-Marne	Number of visits to local sites made by Villages Nature guests	✓	TBC

Celebrating culture in all its forms will be a core part of the guest experience for Villages Nature. Paris and France are well known for their cultural significance and Villages Nature aims to build and expand on this, for example by promoting local cultural events to guests. The focus on providing local food will ensure a connection with local producers, and the aim is to extend this to local craft products also. Villages Nature also aims to build and support a culture of sustainability amongst its employees, contractors and visitors, and core to this will be the organisational culture of Villages Nature.

## Key activities in 2014

While the majority of the operational staff will only be recruited during the run up to Villages Nature's opening, a Human Resources director is already in place with a key early task being to agree the core values of Villages Nature and embed One Planet Living into this vision. Further activities include:

- Tender for the development of a package of sustainability training for tourism to be run in Seine et Marne colleges, subsequently to be incorporated into the training of employees
- Training of all construction staff in sustainability
- The development of the visitor experience programme has commenced. This outlines how cultural activities, environmental awareness and appreciation of nature will be integrated into the experience
- Contact made with the local and regional tourism agencies to ensure that Villages Nature is integrated into the local tourism offer

## Plans for 2015

- Commissioning of partners to define and develop the visitor experience
- Development of the Human Resources framework to create a culture of sustainability amongst employees



Equity and  
local economy

Creating strong, diverse local economies that meet people's needs and support fair employment and international fair trade

	Target	Indicator	Baseline or current status	
Eq1	Support the local economy through procurement	% of procurement from businesses within 100km of the site	✓	<b>To date:</b> 1/3 <sup>rd</sup> of contracts with local companies
		Local tax revenues	✓	<b>Estimate:</b> 7m euro/year
Eq2	Support local employment in construction and operation	Number of direct and indirect jobs created	✓	<b>Estimate:</b> 4,500 (1,600 direct)
		% of employees local	✓	<b>Baseline:</b> to be confirmed
Eq3	Development of local partners in various fields	% of local businesses consulted in the tender process	✓	<b>Baseline:</b> TBC <b>Status:</b> e.g. tree nursery engagement

Given its large scale, Villages Nature will create a large number of local jobs and generate significant local tax revenue. Its focus on creating a visitor experience embedded in the local region will further reinforce that.

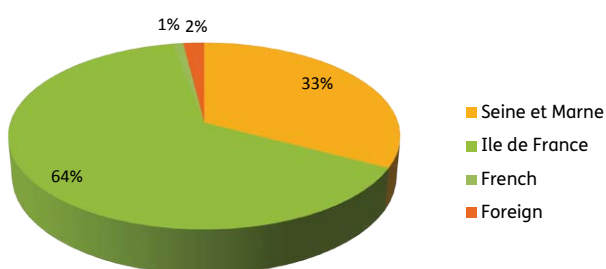


Figure 7: Location of companies delivering the preliminary work (road construction) – total 101 companies

## Key activities in 2014

The focus in 2014 has been on ensuring the construction process benefits the local economy while laying the groundwork for ensuring that Villages Nature reinforces the local economy and global equity once it opens. For the construction some early successes include:

- Only 3% of contracts for the preliminary works to date (on roads) are with companies based outside of the Ile de France, and one third have been with companies based in Seine-et-Marne
- Engagement has started with “le Conseil Horticole d’Ile-de-France” to enable access for local tree and plant nurseries to the landscaping contracts, see Case Study 6
- Collaboration with the Chessy Job Centre to advertise construction jobs
- 10,000 hours of ‘Insertion’<sup>8</sup> agreed with a projection of over 25,000 during the lifetime of the project (equivalent to more than 10 full time equivalents)

<sup>8</sup> Insertion is a programme to provide work experience to, e.g. long term unemployed and other job seekers (seniors, students)

- The staff restaurants are stocking both locally produced and Fair Trade food, supporting the local economy as well as farmers in developing countries

## Plans for 2015

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- Tender for construction site restaurant under development, will include a Fair Trade requirement
- Close engagement with local organisations in the development of the guest experience
- Construction site: continue local employment efforts and further development of the insertion programme to exceed the statutory requirements

### Case Study 6: A global construction project for the local economy

In order to maximise the effectiveness of the Insertion programme Villages Nature worked closely with local employment centres (Pôle Emploi et les Missions Emploi) to identify the most relevant contracts and integrate requirements for 'insertion' into these contracts. This has led to over 10,000 hours of insertion agreed on the infrastructure and landscaping work packages. The local horticulture industry has also been identified as one that can benefit from Villages Nature and 30 meetings have been held with the Conseil Horticole d'Ile de France to enable the local tree nurseries to access this market. Measures identified include:

- Modifying the work packages to enable smaller nurseries to compete
- Strengthening the environmental (carbon footprint) requirements of the assessment process
- Early submission of tender documents

To date 4 (of 23) contracts have been awarded to local nurseries representing 41% of the landscaping contracts by value.

	Targets	Indicators	Baseline or current status	
HH1	Assure the comfort and security of employees and visitors	Satisfaction and engagement of visitors	✓	TBC
		Satisfaction of workers	✓	
HH2	Improve wellbeing of visitors and employees through reconnection with nature	Audit of activities and participation rate	✓	TBC
HH3	Protect and enhance the quality of life of neighbouring residents	Satisfaction of stakeholders	✓	TBC
HH4	Drive a policy of responsible employment	Villages Nature values	✓	Under development

As a tourist destination, it is to be expected that Villages Nature should have a beneficial impact on the health and wellbeing of its visitors! But by focusing on cultivating a deeper appreciation of the beauty and wonder of nature and the services that it provides, it is hoped that a stay at Villages Nature could have a long term impact on an individual's wellbeing. More than just a governance and social responsibility body, the CCDD (see page 7) ensures constant dialogue between Villages Nature and its stakeholders which is essential to the success of the project.

## Key activities in 2014

On the construction site the standard measures have been taken to guarantee the employee's safety and wellbeing, but this will be extended through the Pôle Vie de Chantier. Additional initiatives include:

- Construction site tenders include requirements to use healthy cleaning products
- Measures taken to reduce the noise of the construction site and road congestion—encouraging vehicle sharing and only accepting deliveries outside of peak traffic hours

In the operational phase the human resources policies and guest experience will be the main vehicles for maximising the wellbeing of staff and visitors respectively. Work on both of these commenced in 2014, specifically:

- Initiation of defining the human resource policies for the operation of the site and the guest experience programme
- All tenders for works include requirements to protect human health, e.g. to ensure the water quality in the Aqualagoon

## Plans for 2015

- Implementation of the Pôle Vie de Chantier
- The human resources policies will guarantee equal employment opportunities, staff engagement, and define the health and well-being protocol for staff
- The guest experience programme will contain a range of activities linked with well-being, particularly reconnection with nature

## Looking back and forward

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Scanning through the principles it is clear that significant progress has been made and that none of the targets is significantly off-track. While this is clearly an excellent start significant challenges lie ahead on both the construction (see section 4) and the operation of Villages Nature. The original One Planet Action Plan was, by necessity, focused on the design more than the operations. At that time the detail of the design was known whereas for operations only the key concepts had been outlined without any detail on how they would be delivered. The goal has always been to have a car free site, to integrate sustainability into the guest experiences and to educate all staff about One Planet Living. The real detail of how these ambitions will be delivered are only now being developed. This makes 2015 a transitional year, with design development coming to an end and operational development really stepping up. Therefore it makes sense to review the Action Plan, to reframe it in an operational context and potentially to update the targets as appropriate.

Some of the key areas of focus for 2015 are:

- Bringing the retail and restaurant partners on board and aligning them with One Planet Living
- Integrating sustainability into the guest experience
- Ensuring the Human Resources strategy supports One Planet Living and takes ownership of key aspects of the Action Plan
- Aligning of marketing messages and online experience

2014 has undoubtedly been a successful year for Villages Nature but there are further challenges in the coming years.



## A new benchmark for tourism

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*Message from Marie Balmain - Head of Sustainable Development, Pierre et Vacances-Centre Parcs Group.*

From its outset the ambition for Villages Nature has been to set a new benchmark for sustainability in the tourism sector and maximise the positive impact by embedding sustainability within the guest experience – raising awareness about nature and sustainability through fun and enjoyment!

We have been using One Planet Living for nearly 10 years and so it really has become embedded into what the project stands for. The framework has helped to guide the design process and the concept for the experience that we are aiming to create for guests.

As the project has changed gear and the team is growing rapidly for both the construction and also the future operations phase, One Planet Living is proving a useful tool in succinctly communicating the vision for Villages Nature to the new staff. Taking the construction site as an example, employees of most major companies have received environmental management training many times before, but by tailoring the training to this site and by using One Planet Living to personalise the message we hope the construction workers will notice that the construction site is different from Business as Usual. Likewise by embedding the values embodied by One Planet Living into the Human Resources values of the company we can ensure that all staff are educated about sustainability and aware of their role in ensuring that Villages Nature has a positive environmental impact.

While the construction site and construction phase is important, the biggest positive impact that we can have is by engaging with the expected 500,000 visitors a year. By demonstrating to them that you can have a truly unique and inspiring experience with minimal impact, as well as helping guests to develop a wonder in the beauty and intricate interactions of nature we can contribute to the growing global momentum for securing a sustainable future for everyone. At the end of 2015 the eyes of the world will be on Paris to see if our global leaders can secure a deal to stop climate change. We have a huge challenge in front of us and it is now time to develop on a large scale the positive initiatives and innovations that the business sector has been incubating. Villages Nature is one of them. It prefigures a new generation of resort destinations, close to major metropolitan areas, easily accessible by public transport and firmly committed to a transition towards renewable energy. It is driving new kinds of holiday-making practices that save time, space and energy resources and serve as wide a public as possible.

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For further information, please contact:

*Ben H Gill, International Technical Manager of the One Planet Communities Programme*

**[ben.gill@bioregional.com](mailto:ben.gill@bioregional.com)**

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Written and published by  
**Bioregional**

BedZED Centre  
24 Helios Road  
Wallington  
London  
SM6 7BZ  
United Kingdom

+44 (0)20 8404 4880

[info@bioregional.com](mailto:info@bioregional.com)  
[@Bioregional](#)  
[bioregional.com](http://bioregional.com)

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