

# Sustainable Facility Management

*Maintaining and managing Z-squared*

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**Zero waste & Zero carbon community**



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# **Sustainable Facilities Management**

## **Introduction**

Professor Franklin Becker, Director of the Cornell University International Workplace Studies Program and founding editor of the *Journal of Facilities Management*, has defined facilities management (FM) as:

*“The responsibility for coordinating all efforts related to planning, designing, and managing buildings and their systems, equipment, and furniture to enhance the organisations ability to compete successfully in a changing world”*

The discipline of facilities management is perhaps most commonly associated with the day-to-day operation of support services within organisations which enable them to successfully focus on their main business activities. The scope of facility management in this context can include a wide portfolio services ranging from the maintenance of premises and equipment to the provision of laundry, catering and security services.

However, by acknowledging the inherent similarities between businesses and communities, from an organisational and ‘infrastructure needs’ perspective, as well as appreciating that there are fundamental links between ensuring ongoing business competitiveness and the long-term sustainability of our lifestyles, it is perhaps possible to arrive at a definition for a sustainable facility management approach for a community. Taking Professor Becker’s definition as a start point, facility management for sustainable communities could be:

*“The responsibility for coordinating all efforts related to planning, designing, and managing **communities** and their buildings, systems, and equipment to enhance the **occupants’** ability to **live sustainably** in a changing world”*

## **The aims of this study**

The ethos behind the Z-squared community is to create and support a community in which it is easy for the residents, workers and other users to choose to lead sustainable lifestyles at a level consistent with using their fair share of the planet’s resources. The proposals developed in the Z-squared main report<sup>1</sup> describe the proposed community in terms of masterplanning, building performance standards, as well as the infrastructure, technologies and services required to support the community.

Although the Z-squared report does refer to some management and maintenance issues, the aim of this study is to consider the ongoing management, support structures, services, obligations and responsibilities associated with sustaining the Z-squared community into the future. A further important aim of this study is to investigate how the management responsibilities and requirements of the aspects of Z-squared could best be inter-related to support and benefit the sustainable ethos of the community.

## **Z-squared Community**

The mixed-use Z-squared community will offer a variety of residential accommodation, local employment, retail and commercial spaces together with a range of community and institutional facilities to support the population in achieving a high quality of life whilst consuming resources and producing wastes and emissions consistent with achieving sustainable development.

There are several key challenges in attempting to develop a facilities management strategy for the Z-squared community. These are primarily associated with scale and characteristics of the community, the innovative technologies and infrastructure proposed, and the triple-bottom-line approach to management.

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<sup>1</sup> Z-squared: Enabling One Planet Living in the Thames Gateway – J. Durney and P. Desai of BioRegional Development Group – November 2004

## ***Scale and characteristics of the community***

As stated earlier, the discipline of facilities management is most commonly associated with the commercial sector and the day-to-day operation of organisations and premises. The commercial FM market is sophisticated with established multi-skilled support organisations able to offer a wide variety of services to companies seeking to outsource elements of the operation. These client companies receiving services can vary in size and constitution from independent academic institutions (such as schools), to large multi-national corporate organisations with diverse and dispersed premises.

In comparison, facilities management in the residential sector is less recognised as a discipline, and the scope of the FM service-providers operating in the market tends to be smaller and primarily focussed on maintenance provision. It is not unusual for providers of large portfolios of residential accommodation, or those owning prestigious real estate, to outsource (planned and reactive) building maintenance and basic services such as cleaning and security.

In the UK, the majority of the management and maintenance of residential accommodation is undertaken by individual owner-occupiers, or via small management companies on behalf of the freeholders or a management company in leasehold properties. In the private sector, there are few organisations which own and manage large estates or portfolios of residential property in the UK, but in the social housing sector the situation is somewhat different. Housing associations<sup>2</sup> are the main providers of new social housing in England, and can manage portfolios ranging from a handful of homes to many thousand units. As an example, the Peabody Trust is one of London's largest housing associations, as well as being a charity and community regeneration agency. The Peabody Trust Group owns or manages over 19,000 properties across 30 London boroughs,

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<sup>2</sup>The Housing Corporation is responsible for investing public money in associations and for protecting that investment and ensuring it provides decent homes and services for residents. The Corporation invests in housing associations to provide homes that meet local needs, and through regulation they seek to ensure that people will want and be able to live in these homes, now and in the future.

housing nearly 50,000 people. Their largest single Peabody Trust community appears to be the Pembury Estate in Hackney, with over 1,200 homes and a residential population of around 5,000 people.

What is proposed at Z-squared – a mixed-use and mixed-tenure community offering 2,000 homes, workspace, retail and community facilities supported by local energy generation, water treatment and innovative lifestyle services - could be viewed as somewhat of a hybrid when compared to the existing models for commercial and residential FM.

The community is sized to provide accommodation, employment and amenities for 5000 people. This is comparable in head count terms to a very large social housing estate, although the ambition for Z-squared is to include management of all elements of a mixed-use community (e.g. shops, offices, schools etc.) within the sustainable facilities management scope to ensure a comprehensive approach to supporting sustainable lifestyles. The 5,000-people community could also be compared in size to a large business organisation, but although some businesses may have a diverse portfolio of property types and activities including retail, commercial and manufacturing, there are very few who also have responsibility for providing and managing accommodation.

A further source of inspiration and guidance on developing a sustainable facilities management strategy for Z-squared may be to consider the institutional sector. In many ways, Z-squared will be similar to a university in terms of scale and characteristics.

## ***Technologies and infrastructure***

Z-squared is planned to include some innovative technologies (e.g. Aquifer Thermal Energy Storage) and services (e.g. car clubs) not commonly seen in contemporary communities. The presence of these 'unusual' elements will pose challenges to the development of a comprehensive sustainable facilities management plan for the community. Given the specialist nature of some of these technologies and services, it is likely that niche skilled contractors are likely to be required to ensure ongoing management and maintenance. Although such contractors could be managed by larger multi-

disciplined facilities management service providers, the importance of the interface does raise some challenges for Z-squared.

**Triple bottom line**

Another ambitious characteristic of the Z-squared community which poses challenges in terms of developing a robust and sustainable facilities management strategy, is the ‘triple bottom line’ ethos to be expressed in all aspects of the community to ensure that it is easy for people to choose to live sustainably within their fair share of the earth’s resources whilst achieving a high quality of life.

The facilities management strategy developed for Z-squared will need to have a close compatibility to the framework of 10 One Planet Living Principles (below) which cover primarily environmental and social issues. The success of the ongoing facilities management will therefore be assessed in delivery terms from a financial perspective (effectiveness, efficiency and value for money), but also against social and environmental performance.

One Planet Living Principles	
Zero Carbon	Sustainable Water
Zero Waste	Natural Habitats and Wildlife
Sustainable Transport	Culture and Heritage
Local and Sustainable Materials	Equity and Fair Trade
Local and Sustainable Food	Health and Happiness

The Sustainability Action Plan developed for the Z-squared community will have ongoing targets identified against each of the 10 Principles, and given the critical role of facilities management provision in achieving

these, it is likely that the performance of service providers will be monitored against these over-arching targets. For example, as part of the Zero Waste Plan increasing targets will be set for minimising waste to landfill over time. The service provider responsible for resource management within Z-squared will be given this target as a performance indicator. By taking this approach, it is envisaged the providers will have the freedom and the responsibility which will result in them taking a holistic approach to their service, e.g. working with retailers to reduce levels of packaging in addition to providing recycling facilities for consumers. Furthermore, it is anticipated that facilities management partners will be required to develop and commit to their own Sustainability Action Plan to identify their own route to sustainability as an organisation. These concepts are explored in this document using a ‘development charter’ mechanism.

This document divides into 4 key sections which help to explain the process of moving from the 10 OPL principles towards a set of sustainable FM ‘Packages’ and the identification of possible delivery partners:

- Section 1** Using the One Planet Living framework of principles to identify specific aims for the community and associated ‘hardware’ and ‘software’ management services.
- Section 2** Expression of the identified services into ‘Packages’ correlating with each of the 10 OPL principles. Delivery partners are indicated, as are how their responsibilities and remits will interface and overlap.
- Section 3** The responsibilities and possible performance targets are indicated for each of the key service providers identified in the previous section.
- Section 4** Expresses the overall relationships between key stakeholders and partners associated with the delivery of sustainable facility management at Z-squared in an organisational diagram.

## ***Section 1: Issues, approaches and maintenance requirements***

## Zero Carbon

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Reduced energy demands	Low energy fittings and appliances in buildings and externally 1.1	All buildings supplied with efficient fittings and appliances	Repair and replacement of broken products with higher performing products	Remit of building owners or occupants to repair/replace	Efficient appliances and fittings could be leased to occupants?	By energy partner (with RSL?)	- Covenant in lease?	
	Low energy communal lighting 1.2	Efficient external lighting	Repair and replacement of broken products with higher performing products	By energy partner or maintainer of communal external areas	-	-	-	
	High performance thermal building fabric 1.3	Efficient building design	Repairs	Building owners and occupiers	-	-	-	
	Solar orientation and fenestration 1.4	Design issue	-	-	-	-	Development Charter will require future developments to consider passive solar issues	
	Visible metering 1.5	Design issue	-	-	-	-	Development Charter	
	Education 1.6	-	-	-	-	Provision of guidance and support	Service for new occupants of community and ongoing support for all	Links to education service to residents on all OPL issues
	Information 1.7	-	-	-	-	Online consumption data and billing facility	By energy partner (with RSL?)	Links to information service to residents on all OPL issues

## Zero Carbon

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
On-site power generation from renewable resources	Inter-seasonal aquifer thermal storage	1.8	Boreholes, pumps and associated energy supply	Facilities management provision to include <i>normal responsive, emergency responsive, programmed cyclical, and programmed preventative maintenance</i>	Remit of Energy Partner	Provision of thermally-valuable water for space heating, cooling and other uses	Remit of Energy Partner	-
	District heating/cooling	1.9	Distribution network		Remit of Energy Partner	Distribution of energy and power	Remit of Energy Partner	-
	Combined Heat and Power plant	1.10	Engines running on natural gas or biomass		Remit of Energy Partner	Provision of heat and power	Remit of Energy Partner	-
	Anaerobic digestion	1.11	Array of anaerobic digesters		Remit of Energy Partner, maybe in partnership with waste partner	?	Remit of Energy Partner, maybe in partnerships with waste partner?	Link to waste management (see Zero Waste, section below)
	Wind turbines (on-site)	1.12	Array of building-integrated or free-standing turbines		Remit of Energy Partner with Waste partner and Water partner	Supply of electricity	Remit of Energy Partner	-
	Solar thermal collectors	1.13	Building-mounted or separate array		Remit of Energy Partner or building owner at small scale	Provision of thermally-valuable water for space heating and other uses	Remit of Energy Partner or building owner at small scale	-
	Biomass boilers	1.14	Boiler plant serving distribution network		Remit of Energy Partner	Provision of thermally-valuable water for space heating and other uses	Remit of Energy Partner	-
	Pilot Energy-from-Waste plant	1.15	Small scale gasification / pyrolysis plant		Remit of Energy Partner with Waste partner	Provision of heat and power	Remit of Energy Partner	Link to waste management (see Zero Waste section below)
	Possible solar or PV	1.16						

## Zero Waste

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Minimised levels of construction waste	Audits of buildings to be demolished 2.1	-	-	-	-	-	Design issue. Stipulated as requirement for all future developments via Development Charter
	Implementation of best practice site strategies 2.2	May require temporary facilities within construction site	-	By individual site developers	-	-	-
	Materials reclaimed or recycled 2.3	-	-	-	-	-	Reclamation and remanufacturing businesses could be established as part of Z-squared community
Reducing levels of waste generated	Provision of guidance and support 2.4	-	-	-	Service for new occupants of community and ongoing support for all	By Waste Partner (with RSL?)	Links to comprehensive education/information service to all users on all OPL issues
	Reducing levels of packaging 2.5	-	-	-	Working with manufacturers and retailers to develop solutions	By Waste Partner	Long-term performance targets will be set for this issue
Making recycling easy	Provision of facilities for homes to segregate waste 2.6	Bins internally and externally	Repair and replacement of broken products	Remit of building occupants or owners to repair/replace	Kerbside collection of segregated waste streams	By Waste Partner	Would need to ensure that collection vehicles are low impact / carbon-neutral
	Provision of facilities for retail, commercial, industrial and community users to segregate waste 2.7	Bins and storage areas internally and externally	Repair and replacement of broken products	Remit of building occupants or owners to repair/replace	Kerbside collection of segregated waste streams	By Waste Partner or specialist contractor	Would need to ensure that collection vehicles are low impact / carbon-neutral
Making composting easy and capturing organic waste	Provision of facilities for homes to compost 2.8	Bins internally and externally	Repair and replacement of broken products	Remit of building occupants or owners to repair/replace	Kerbside collection of compostable materials	By Waste Partner	Encourage home composting for units with gardens
	Provision of facilities for retail, commercial, industrial and community users to compost 2.9	Bins internally and externally	Repair and replacement of broken products	Remit of building occupants or owners to repair/replace	Kerbside collection of compostable materials	By Waste Partner	Links to food-growing programme
	Working to close local food loops 2.10	-	-	-	Delivering compost to local food-growers	By Waste Partner with Community Trust and Retailers' Association	Links to <i>Local and Sustainable Food</i>

## Zero Waste

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
	In-sink macerators 2.11	Designed into kitchens	Repair and replacement of broken products				
Recovering energy from waste	Anaerobic digestion 2.12	Array of anaerobic digesters	Facilities management provision to include <i>normal responsive, emergency responsive, programmed cyclical, and programmed preventative maintenance</i>	Remit of Energy, Waste and Water partners	Gas	Remit of Energy, Waste and Water partners. Gas provided by energy provider.	Link to carbon management (see Zero Carbon, section above)
	Pilot Energy from Waste plant 2.13	Small-scale plant and associated sorting and storage facilities	Facilities management provision to include <i>normal responsive, emergency responsive, programmed cyclical, and programmed preventative maintenance</i>	Remit of Energy Partner and/or specialist contractor in partnership with Waste Partner	Generation of energy for communal supply network. Treatment of residual waste	Remit of Energy Partner and/or specialist contractor in partnership with Waste Partner	Link to carbon management (see Zero Carbon, section above)

## Sustainable Transport

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Reducing the need to travel	Range of facilities located locally	3.1 Retail, commercial and industrial units and community support facilities	Facilities management provision to include <i>normal responsive, emergency responsive, programmed cyclical, and programmed preventative maintenance</i>	Remit of building occupants, owners or their representatives	-	-	Design issue initially. Continuity of good local services required under Development Charter
	Facilities to support home-working	3.2 Digital networks and suitable space and conditions to work within homes	Repair of damaged network and upgrades over time to higher performing systems	Digital and ICT services partner	Broadband access or future equivalent. Community intranet/extranet.	Digital and ICT services partner	Potential links to utilities providers in terms of digital connectivity to support remote billing and monitoring
		3.3 Dedicated shared support facilities	Maintenance as per other commercial spaces	Remit of building occupants, owners or their representatives	-	-	Support facilities could be run as a small business or as a community service
	Facilities to support internet ordering and coordinated delivery	3.4 Digital networks and access points	Repair of damaged network and upgrades over time to higher performing systems	Digital and ICT services partner	Broadband access or future equivalent. Community intranet/extranet.	Digital and ICT services partner	Potential links to utilities providers in terms of digital connectivity to support remote billing and monitoring
		3.5 Suitable space for goods drop-off and collection in homes or community centres	Maintained as part of community centre	Remit of building occupants, owners or their representatives	Concierge service to receive and dispatch goods	Provided as part of community centre by Community Trust and funded via service charge?	Developed in partnership with on-line retailers

## Sustainable Transport

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Supporting sustainable modes of transport	Encouraging walking and cycling	3.6	Secure and sheltered cycle storage	General repair	Part of buildings or landscaping Package	-	-	-
		3.7		Increased provision of storage over time	Responsibility of mobility Package partner	Adequate storage to meet growing demand	Responsibility of mobility Package partner	Mobility Package partner will have performance target related to increasing cycling and walking
		3.8	Network of foot paths and cycle paths	Ongoing resurfacing and repair	Part of hard landscaping Package	-	-	Provision unlikely to increase once built
		3.9	Provision of CCTV	Planned and reactive repair	Security partner	Adapting/upgrading service over time	Security partner	-
	Car-free core to development	3.10	Access restrictions for vehicles	Barriers, bollards etc	Part of hard landscaping Package	Enforcement of parking management and access	Mobility Package partner and/or security partner	-
	Encouraging use of public transport	3.11	Public transport nodes and interchanges	Facilities management provision to include <i>responsive and programmed</i> maintenance	Buildings maintenance partner in partnership with TfL	Real-time information at stops and on intranet	Mobility Package partner in partnership with TfL and ICT partner	-
	Provision of a car club	3.12	Secure parking spaces	Ongoing resurfacing and repair	Part of hard landscaping Package	Enforcement of parking management	Mobility Package partner and/or security partner	Link to 3.9
		3.13	Fleet of vehicles	Planned and reactive maintenance, cleaning and repair of vehicles	Responsibility of mobility Package partner	Provision of adequate fleet of modern, efficient vehicles	Mobility Package partner	Mobility Package partner will have performance target to increase/upgrade fleet over time
		3.14	Digital booking system	Maintenance of electronic kit within cars	Responsibility of mobility Package partner	Online booking facility via intranet	Responsibility of mobility Package partner r in partnership with ICT partner	-
	Develop 'mobility Packages'	3.15	-	-	-	Securing convenient discounted travel for members	Responsibility of mobility Package partner	Delivered in partnership with TfL and local stakeholders
	Support alternatively-fuelled vehicles	3.16	Fuelling facilities	Repair of charging points and filling facilities	Responsibility of mobility Package partner	Provision of facilities to meet future demands	Responsibility of mobility Package partner	Mobility partner will have performance target to reduce transport carbon emissions
Green Travel Plans for organisations	3.17	-	-	-	-	-	Would be a requirement of all organisations within Z-squared to develop and implement own Green Transport Plan (GTP)	

## Local and Sustainable Materials

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Materials chosen for construction of buildings and infrastructure to give high performance in use with minimised impact in manufacture and delivery	Use of reclaimed and recycled construction materials	4.1	Potential for materials reclamation/recycling facility within Z-squared	Remit of third party operator	Remit of third party operator	Potential for 'matchmaking' service and auditing of demolition sites	Remit of third party operator	Issue addressed through design and specification by developers Commitment to involve FM partner(s) as part of design team Continuity ensured by developers signing Development Charter
	Use of local construction materials	4.2	-	-	-	Support network of local suppliers and manufacturers	Community trust?	
	Use of 'healthy' construction materials	4.3	-	-	-	-	-	
	Use of certified sustainable and fairly traded construction materials	4.4	-	-	-	-	-	
Materials chosen for repairs to buildings and infrastructure	Use of local, 'healthy', certified, reclaimed and recycled construction materials	4.5	-	-	-	Ongoing planned and reactive maintenance to buildings, landscape and infrastructure	Building maintenance partner, external and landscaping maintenance partners	Providers will have performance targets related to increasing percentages of use of sustainable construction materials
Cleaning materials used in operation	Sustainable cleaning products in communal areas	4.6	-	-	-	Only 'natural' and sustainable products used	Cleaning partner	Cleaning partner will have performance targets linked to use of only suitable products
	Sustainable cleaning products in private areas	4.7	-	-	-	Provision of information, guidance and samples for residents and business tenants etc	Cleaning partner in partnership with Community Trust	
Promotion of sustainable materials, products and packaging	Materials and products sold by Z-squared retailers	4.8	-	-	-	Provision of information and guidance to retailers	Community Trust in partnership with retailers association	Links made with existing similar initiatives. Also refer to <i>Equity and Fair Trade</i> section
	Materials and products purchased by Z-squared residents and businesses	4.9	-	-	-	Provision of information and guidance to residents and businesses	Community Trust with Retailers Association	
	Incentives to purchase of sustainable materials, products and packaging	5.0	-	-	-	-	Local currency provider. Possibly Community Trust	Links to loyalty scheme. Local currency points system?

## Local and Sustainable Food

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Promoting and enabling local and sustainable food in homes	Provide space and facilities for growing food	5.1	Balconies, gardens and mini-allotments within curtilage	Ongoing planting, tending and harvesting	Individual building occupants	Potential for gardening services to be provided as part of service contract?	Possible service could be undertaken by Landscaping partner tending communal grounds	-
		5.2	Provision of (mini) allotments	Ongoing planting, tending and harvesting	Individual allotment leaseholder	-	-	Administered by Community Trust?
	Support local food networks	5.3	Provision of secure space to receive food boxes within homes or communally	General repair of boxes and fixings	Individual occupant if in homes, Communal Internal FM partner if in shared area	Alternatively, storage boxes could be hired	Third party operator	Primarily a design issue
		5.4	Provision of space and facilities for farmers' market	Maintenance of hard surfaces and street furniture/shelters etc	Communal External FM partner	Facilitation of regular farmers' market	Third party operator in partnership with Community Trust	Links maintained with existing market networks
	Facilities to encourage own preparation of fresh and healthy food	5.5	Steamers, blenders and juicers supplied in kitchens	Cleaning, repair and replacement	Individual building occupants	-	-	-
	Facilities to support closed food loops	5.6	Maceration facilities for food waste in apartments	Cleaning, repair and replacement	Individual building occupants or RSL	-	-	Links to <i>Zero Waste</i> section
		5.7	Domestic compost bins for houses	Cleaning, general repair and replacement	Individual building occupants	-	-	Bins could be provided by Waste partner
	Encourage use of fair trade and organic produce	5.8	-	-	-	Guidance and information	Community Trust	Links to existing initiatives Refer also to <i>Equity and Fair Trade</i> section

## Local and Sustainable Food

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Promoting and enabling local and sustainable food in organisations	Support local food networks <sup>5.9</sup>	Provision of suitable storage facilities to enable delivery of local fresh produce	Cleaning and general repair	Building occupants	Facilitate supply contracts with local producers	Community Trust in partnership with specific organisations and local food groups	Provision of facilities is primarily a design issue
	Offering sustainable food vending to employees and users <sup>5.10</sup>	Provision of 'green' vending machines	Stock replenishment, emptying money, cleaning and repair	Third party operator	Variety of vending options including cafes and farm-to-desk delivery	Specific organisations and third party local suppliers	-
	Facilities to support closed food loops <sup>5.11</sup>	Maceration facilities for food wastes in buildings	Cleaning, repair and replacement	Building occupants or owners	Kerbside collection service for large volumes	Waste contractor in partnership with local food growers	Links to <i>Zero Waste</i> section Compost to be used as soil conditioner by local growers
Promoting and enabling local and sustainable food by retailers	Encourage retailers of sustainable, fair trade, seasonal and organic produce <sup>5.12</sup>	-	-	-	Facilitate supply contracts with local organisations	Community Trust in partnership with specific organisations and local food groups	Link to 5.9
	<sup>5.13</sup>	-	-	-	Provide concessions for sustainable food retailers	Community Trust	Partly a design issue. Ongoing provision facilitated via Development Charter
	Facilities to support closed food loops <sup>5.14</sup>	-	-	-	Kerbside collection service for large volumes	Waste partner with local food growers	Links to <i>Zero Waste</i> section and 5.11
Promoting and enabling local and sustainable food in communal areas	Support local food growing <sup>5.15</sup>	Planting to include areas of edible landscaping	Ongoing planting and tending	Landscaping partner	-	-	-
	Facilities to support closed food loops <sup>5.16</sup>	Provision of communal composting bins	Cleaning, emptying and general repair	Waste partner	Kerbside collection from bins	Waste partner with local food growers	Links to <i>Zero Waste</i> section and 5.11

## Sustainable Water

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Reducing water demand	Reducing water demand in all buildings	6.1	Water efficient appliances and fittings (taps, showers etc) in all buildings	Repair and replacement	Building occupant, owner or RSL, as appropriate	-	-	Primarily a design issue
		6.2	Future buildings specified to facilitate reduced water demands	-	-	-	-	Development charter issue
		6.3	Systems to reduce leakage	Repair and replacement	Water partner	-	-	Water partner will have a performance target relating to minimised water use.
		6.4	-	-	-	Guidance and information on water efficiency	Water partner	
	6.5	Provision of rainwater butts for homes	Repair and replacement	Water partner	-	-		
	Reducing water demand in landscape	6.6	Drought-resistant planting selected	As per other planting	Landscape partner	-	-	Mains water vs. rain / grey water?
		6.7	Treated grey water used in communal toilets	Treatment systems, pumps and distribution pipe work	Repair and replacement	Building occupant or owner in partnership with water partner	-	-
Sustainable water supply	Common supply mechanism for all of Z-squared	6.8	Boreholes for abstraction	Facilities management provision to include <i>responsive and programmed</i> maintenance	Water partner	Provision of local potable water to all	Water partner	Water partner will have a performance target relating to continuity of sustainable water supply

## Sustainable Water

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Sustainably managing rain water	Building and landscape design to 'harvest' rainwater	6.9	Vegetative roofs	Designed to be maintenance-free, although membranes require replacement in time	Communal external contractor partner	-	-	-
		6.10	Porous paving as part of SUDS scheme	Facilities management provision to include <i>responsive and programmed</i> maintenance	Landscaping, and hard landscaping contractor in partnership with water partner	-	-	Water partner will have a performance target relating to sustainable water management
	Treating rainwater in the landscape	6.11	Landscape features including gravel and reed beds	Low maintenance with some harvesting of vegetation	Landscaping contractor in partnership with water partner	-	-	
Sustainably managing waste water	Landscape design to treat waste water	6.12	Landscape features including gravel and reed beds	Low maintenance with some harvesting of vegetation	Landscaping contractor in partnership with water partner	-	-	
	Treatment of waste water	6.13	Treatment of solids using anaerobic digester. Treatment of grey water using gravel and reed beds.	Facilities management provision to include <i>responsive and programmed</i> maintenance	Waste, water and energy partners	-	-	-
Flood management	Configuration of landscape and built form	6.14	Sacrificial areas and flood barriers	Planned and reactive repair to barriers and flood areas	Landscaping contractor partner in partnership with Environment Agency	Provision of adequate protection may include adapting provision over time	Government?	Primarily a design issue
Management of water bodies for biodiversity	Design and manage water bodies to sustain high levels of biodiversity  Maintained equitable balance between use of water for recreation and amenity	6.15	Aquatic habitats for wildlife	Ongoing planting, tending and maintenance	Landscaping contractor partner	-	-	-
		6.16	-	-	-	-	-	Development Charter issue

## Natural Habitats and Wildlife

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Conserve the natural environment, increase biodiversity and create habitats for wildlife	Develop and implement a Biodiversity Action Plan	7.1	-	-	-	Implementation of BAP	Landscape partner in partnership with Community Trust	Landscape partner will have performance targets linked to implementation of BAP and increases in biodiversity
		7.2	-	-	-	Ongoing monitoring of levels of biodiversity	Landscape partner with Community Trust and local wildlife groups / schools	
		7.3	-	-	-	-	-	
	Encouraging biodiversity in private outdoor areas	7.4	Provision of private gardens with native and drought-resistant planting	Planting, tending and ongoing maintenance	Building owners and occupants	-	-	-
		7.5	-	-	-	Provision of guidance and information	Landscape partner in partnership with Community Trust	-
	Encouraging biodiversity in communal outdoor areas	7.6	Provision of open green spaces, some with native and drought-resistant planting	Planting, tending and ongoing maintenance	Landscape partner	-	-	
	Encouraging biodiversity in the built environment	7.7	Provision of bird and bat boxes etc	Seasonal cleaning and repair	Landscape partner	-	-	
		7.8	Provision of green and brown roofs	Designed to be maintenance-free, although membranes require replacement in time	Communal external contractor partner	-	-	

## Culture and Heritage

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Z-squared developed with sensitivity and acknowledging the history of the site and the surrounding area	Continued consultation with community stakeholders 8.1	-	-	-	Consultation throughout design phases and into long-term	Community Trust	Ongoing consultation ensured via Development Charter
	Capturing the 'identity' of the location 8.2	-	-	-	Series of workshops, interviews and recorded journeys with visual & audio archive	Community Trust	Maintained into the future as a rolling archive of the community. Link to 8.7
	Protection of valuable environmental features (buildings and landscape etc) 8.3	Valuable environments protected	Building conservation and repairs	Building maintenance partners in partnership with specialist as appropriate	-	-	Ongoing protection of environment in partnership with community trust and local stakeholders
	Supporting and reviving local industries 8.4	-	-	-	Consultation with local partners	Community Trust	Ongoing consultation ensured via Development Charter
Z-squared developed to acknowledge and support future culture and heritage	Communication of cultural heritage 8.5	Museum(s)	Planned and reactive buildings maintenance	Building maintenance partners or via third party operator	-	-	Ongoing provision of museum ensured via Development Charter. Close link to digital archive (8.7)
	8.6	Public art installations	Cleaning and repair as appropriate	Communal external partner with specialists as appropriate	-	-	Ongoing provision of public art supported via Development Charter
	8.7	Digital archive of community	Ongoing additions to archive and associated maintenance	ICT partner with Community Trust	-	-	Ongoing provision of archive ensured via Development Charter. Close links to physical archive in museum (8.5)
	Spiritual/religious facilities 8.8	Provision of multi-faith hall (as part of community centre?)	Planned and reactive buildings maintenance	Building maintenance partners or via third party operator	-	-	Ongoing provision ensured via Development Charter
	Community facilities 8.9	Provision of community building(s)	Planned and reactive buildings maintenance	Building maintenance partner as part of shared services	-	-	Ongoing provision ensured via Development Charter

## Equity and Fair Trade

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Promoting equity and fair trade to residents of Z-squared	Ensuring high levels of accessibility	9.1	Inclusive accessibility strategy for all environments	Planned and reactive maintenance of lifts and repairs to ramps	Building occupants, owners and building maintenance partners	-	-	Primarily a design issue
		9.2	-	-	-	Ensure ongoing provision matched to future needs	Building occupants and owners	Ongoing provision ensured via Development Charter
	Ensuring provision of affordable homes	9.3	Provision of quota of affordable homes	Planned and reactive buildings maintenance	RSL with building maintenance partners	-	-	Primarily a design issue
		9.4	-	-	-	Ensure ongoing provision of appropriate levels and types of units	RSL	Ongoing provision ensured via Development Charter
	Ensuring provision of opportunities for education	9.5	-	-	-	Opportunities for lifelong learning	Community Trust with LEA and education provider	Ongoing provision ensured via Development Charter
		9.6	Provision of schools, academies and colleges etc	Planned and reactive buildings maintenance	LEA or third party operators (e.g. via City Academy programme)	-	-	Primarily a design issue
	Ensuring provision for local employment	9.7	Provision of work spaces for local businesses	Planned and reactive buildings maintenance	Building occupants, owners and building maintenance partners	-	-	-
	Informing choices	9.8	-	-	-	Information for all on fair trade issues	Community Trust	-
Promoting equity and fair trade to organisations within Z-squared	Fair trade organisations promoted	9.9	-	-	-	Provide concessions for fair trade organisations	Community Trust in partnership with building owners	Ongoing provision ensured via Development Charter
	Fair trade suppliers promoted	9.10	-	-	-	Facilitate supply contracts with fair trade organisations	Community Trust in partnership with specific organisations	-
	Ensuring high levels of accessibility	9.11	Inclusive accessibility strategy for all environments	Planned and reactive maintenance of lifts and repairs to ramps	Building occupants, owners and building maintenance partners	Ensure ongoing provision matched to future needs	Building occupants and owners	Primarily a design issue
	Informing choices	9.12	-	-	-	Information and guidance on fair trade issues	Community Trust in partnership with business groups	-

## Equity and Fair Trade

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Achieving Fairtrade community status	Achieving Fairtrade community status 9.13	-	-	-	Maintaining status	Community Trust	Ongoing status a requirement of the Development Charter
Provide identity and 'voice' to community	Establish Community Trust 9.14	-	-	-	Create trust and maintain in perpetuity	Developers, site owners, local authority and local stakeholders	Requirement for a Community Trust supported via Development Charter
	9.15	-	-	-	Community Trust services include: Details of upcoming events and leisure facilities, info on local transport timetables and car club bookings, utilities information, time bank etc	Community Trust in partnership with ICT partner and other stakeholders	
Equitable and fair facilities management	Operating principles 9.16	-	-	-	FM partners committed to operating in accordance with OPL principles	Monitored by Community Trust as client	FM partners will have performance targets relating to equity and fair trade issues
	Products used 9.16	-	-	-	FM partners required to use only sustainable products, e.g. cleaning materials		
	Partners retained 9.17	-	-	-	FM partners to demonstrate equal opportunities and local employment and investment in staff training		
	Ongoing performance 9.18	-	-	-	FM partners to commit to continual improvement		

## Health and Happiness

Strategy		'Hardware'			'Software'		Notes / Links	
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility		
Promoting health and wellbeing in the built environment	Materials used in construction and refurbishment	10.1	Minimisation of toxic materials, those with high levels of allergens and which off-gas	As part of general buildings maintenance	Building occupants and building maintenance partners	-	-	Primarily a design and specification issue
	High levels of daylight, low levels of noise, air and light pollution	10.2	-	-	-	-	-	Primarily a design issue. Ongoing requirement via the Development Charter
	Cleaning products and furnishing materials	10.3	-	-	-	Requirement for cleaning contractors for use 'healthy' products	Cleaning partner	-
	Informing decisions	10.4	-	-	-	Information and guidance	Community Trust	-
Promotion of healthy food	Facilities to encourage growing, preparation and consumption of fresh and healthy food	10.5	Allotments, food box storage and kitchen facilities	Refer to <i>Sustainable and Local Food</i> section	Individual occupants	-	-	Refer to <i>Sustainable and Local Food</i> section
	Informing decisions	10.6	-	-	-	Information and guidance	Community Trust	-
Promotion of exercise and healthy living	Provision of facilities to encourage exercise	10.7	Gyms / trim trails / green gyms	Reactive and planned building maintenance	Third party operator	'Green gym' outdoor activities	Community Trust with local wildlife groups and BCTV	-
	Informing decisions	10.8	-	-	-	Information and guidance	Community Trust	-
Safety and security	Safe and secure environments	10.9	Environments designed to best practice standards	Securing access points, trimming vegetation, fixing lights etc	Internal and external building maintenance partners with security partner	-	-	Ongoing requirement via the Development Charter
		10.10	-	-	-	CCTV and security services	Security partner	-
Community involvement	Community trust	10.11	-	-	-	Create trust and maintain in perpetuity	Developers, site owners, local authority and local stakeholders	Refer to 9.11
	Community intranet	10.12	-	-	-	Create and maintain community intranet	ICT partner with Community Trust	Refer to 9.12

## Health and Happiness

Strategy		'Hardware'			'Software'		Notes / Links
Issue	Approach	Infrastructure	Maintenance Requirements	Management Responsibility	Service Provision	Management Responsibility	
Ongoing monitoring and support	Buildings performance 10.13	-	-	-	Commitment to ongoing monitoring and reporting of performance	Individual FM partners with Community Trust	-
	User satisfaction 10.14	-	-	-	Commitment to ongoing monitoring and reporting of satisfaction levels	Individual FM partners with Community Trust	-
	Continual improvement 10.15	-	-	-	All FM partners commit to continual improvement	Individual FM partners with Community Trust	Performance targets will be set for all FM partners relating to overarching Z-squared ethos

## Section 2: Facility Management Packages for Z-squared

The previous section of this document expressed the ongoing aims of the Z-squared community, in terms of built form and services, using the framework of the 10 One Planet Living principles. This section builds upon this model to explore the development of a range of over-arching service Packages which would help facilitate the ongoing sustainable management of the Z-squared community.

In support of consistency and expressing clear correlation between the high-level One Planet Living aspirations and the detail of day-to-day service provision, one service Package has been identified for each of the ten OPL principles.

### Responsibilities diagrams

Each of the service Packages has been explored below in a 'responsibilities diagram'. This approach has been used to illustrate how each of the numbered issues identified in the previous section is being picked up as an area of sole or joint responsibility by the group of identified service providers.

Due to the inherent complexities of the Packages and the demands of managing a large mixed use community, there are numerous partners involved in the delivery of each of the Packages. However, where appropriate, lead partners have been identified who would take a pivotal role in the delivery of the Packages with the support of other partners. In most cases, it would be these lead partners who would take responsibility for working to meet the 'one planet living' aims of the Z-squared community, and would hence have monitoring, reporting and continual improvement performance targets as part of their service contracts

The key service partners represented in the following responsibility diagrams are:

Partner	Description
Carbon Partner	Lead responsibility for sustainable energy provision within buildings
Waste Partner	Lead responsibility for sustainable management of resources
Mobility Partner	Lead responsibility for reducing carbon emissions associated with transportation
ICT Partner	Lead responsibility for the provision of information and communication technologies, e.g. networks and online services
Water Partner	Lead responsibility for the sustainable provision and management of water
Communal External Partner	Responsible for maintenance of communal external elements
Communal Internal Partner	Responsible for maintenance of communal internal elements
Landscape Partner	Responsible for maintenance of communal landscaped areas
Community Trust	Represents community as client for service providers, also acts as service provider for community services
Retailers Association	Represents retailers with sustainable development and management issues
RSL Partner	Registered Social Landlord responsible for social and affordable housing provision
Security Partner	Lead responsibility for issues of safety and security
Cleaning Partner	Lead responsibility for day-to-day cleaning of communal (and private) areas

In managing a complex large mixed community, such as Z-squared, it is most probable that these partners will be supported by a further tier of sub-contracted service providers who may offer increased capacity or further specialist skills. However, it is not within the scope of this report to discuss this secondary group of providers in detail.

The use of sub-contracted service providers would not be prohibited, as the mechanism potentially facilitates valuable flexibility to respond to changing demands over time, and to offer best value services. In circumstances in which a sub-contracted provider would be involved, it will be imperative that the chain of responsibility for quality service provision is extended along the lengthened supply chain. On this basis, it is envisaged that it would be the responsibility of the main contracted provider to contractually transfer their obligations to their sub-contracted partners.

### ***The Development Charter***

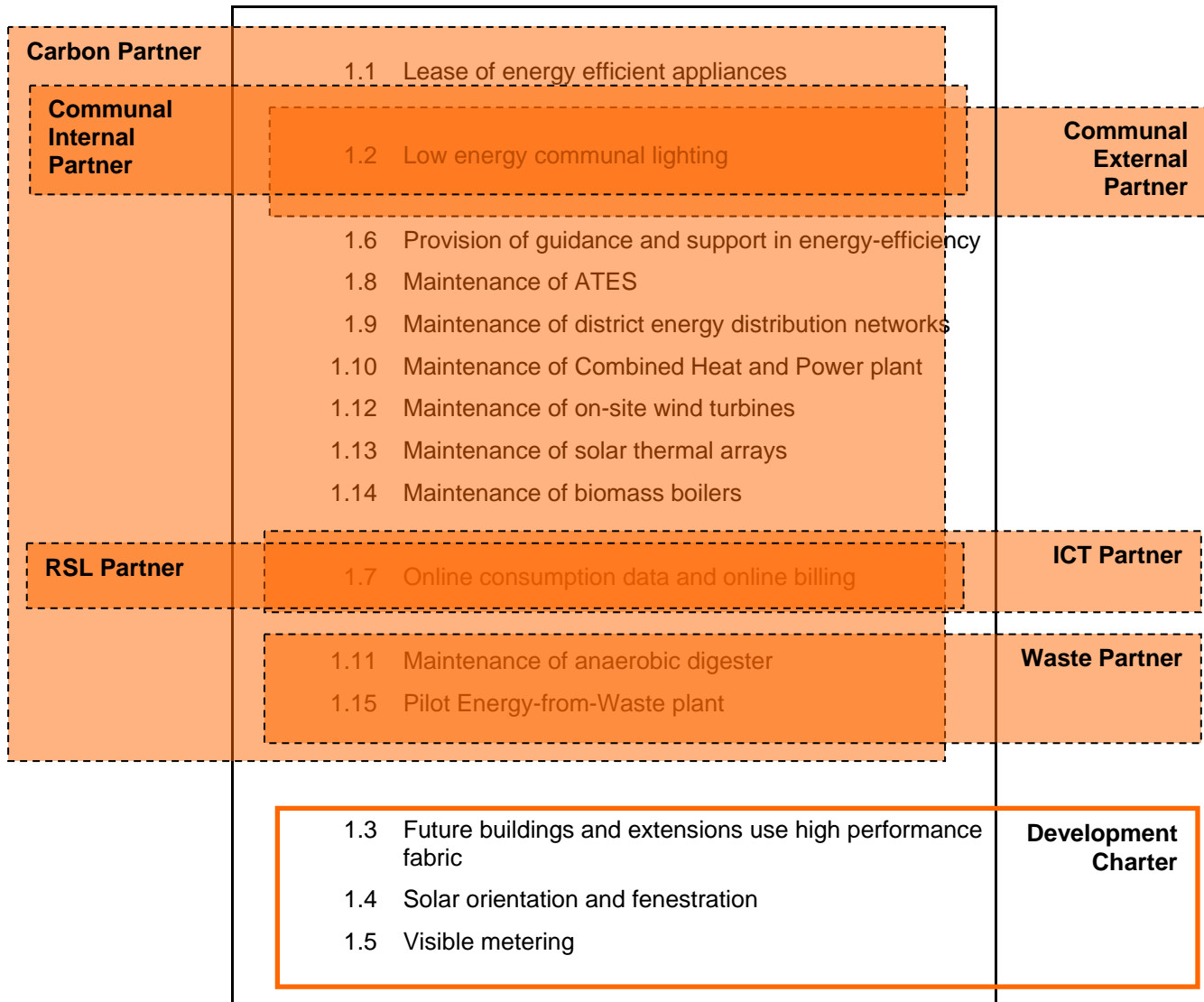
A further key tool in the ongoing delivery of a sustainable facilities management solution for Z-squared is the Development Charter. This will be created at the inception of the community and Community Trust to express the aspirations for the community, and to pass into the 'DNA' of the founding stakeholder organisations and key service providers.

The Development Charter will have a critical role over time as the settlement is built out, augmented and adapted, and as new partners and stakeholders join. The Charter has the aim of ensuring that all future decisions regarding the evolution of Z-squared community will be in-line with the original sustainable ethos. The Charter could represent an iteration of the agreed Sustainability Action Plan which would have been started as a rolling 'touchstone' document in the early stages of the masterplanning process.

It is envisaged that all new stakeholders and service providers in the future will sign to commit to the ethos and to develop the necessary strategies and policies to ensure that aims and targets are met. Examples of how the Development Charter would influence future decisions could include:

- Requiring all future new buildings to be designed to meet best practice thermal performance benchmarks
- Requiring audits of all demolition works with associated high targets for resource reuse
- Commitments to maintain a balance a key local retail types
- Maintained equitable balance between the management of water bodies for recreational and wildlife uses
- Requiring future buildings and environments to be built to best practice standards in terms of accessibility
- Ongoing commitment to maintaining Fairtrade community status

## Carbon Package



The Carbon Package could be considered as one of the most important facilities management Packages, as it deals with the fundamental issue of providing energy to heat, cool, power and light the buildings. Furthermore, unlike several of the 10 notional Z-squared Packages, the choice of main service partner is relatively straightforward.

To effectively deliver the aims of the carbon Package the lead (carbon) partner will need to consider their service provision with regard to addressing both demand-side and supply-side energy issues to facilitate a long-term zero carbon future for the Z-squared community. This 'lead carbon partner' role could potentially best be delivered by an Energy Services Company (Esco), a strategy which is discussed in more detail later in this document.

Alongside the lead carbon partner, other service providers will have key roles in supporting the delivery of the carbon Package:

The Communal Internal and Communal External partners would have important roles in addressing energy demands in communal areas through the day-to-day maintenance of communal lighting and other fittings.

In the capture and presentation of energy consumption data, for the benefit of users and in demonstrating performance (with regard to zero carbon) to the client body, there would be an important role for the ICT partner in relation to data management of digital infrastructure. As an allied service, it is proposed to facilitate the 'on-line' payment of energy bills by occupants of Z-squared. This facility could be particularly useful for social housing landlords in supporting flexible payment mechanisms for their tenants. It is therefore envisaged that the RSL partner or partners would be involved in the provision of this service.

The carbon partner would take lead responsibility for the ongoing maintenance and management of the network of energy supply mechanisms, with the support of specialist partners as appropriate. Particular reference is made above to the Waste Partner who would be involved with the anaerobic digester and the pilot energy-from-waste plant due to their innovative nature and clear overlap with the waste Package.

## Waste Package

	2.1 Audits of buildings to be demolished 2.2 Implementation of best site practice in future	<b>Development Charter</b>
	2.3 Reclamation and recycling businesses established	<b>Third Party Operators</b>
<b>Waste Partner</b>	2.4 Provision of guidance on resource efficiency 2.5 Working to reduce packaging levels 2.8 Provision of composting facilities for all users 2.9 Provision of kerbside compost collection services for all users	<b>Retailers Association</b>
<b>Community Trust</b>	2.10 Working to close food loops by supplying local producers with compost	
<b>Communal Internal Partner</b>	2.6 Provision of segregated bins for all users 2.7 Provision of kerbside collection services for all users (using low/zero carbon vehicles)	<b>Communal External Partner</b>
	2.11 Maintenance of anaerobic digester 2.12 Pilot Energy-from-Waste plant	<b>Carbon Partner</b>

The Waste Package addresses the provision of services and infrastructure to enable Z-squared to move to zero waste, and to maintain this status into the long-term. Although this is a complex and demanding Package which needs to tackle macro issues of resource use and minimising waste generation, as well as ensuring high levels of reuse, recycling and composting etc., possible lead partners could include private waste companies.

Many local authorities have transferred the collection and treatment of municipal waste in their region to private waste contractors who are tasked with providing the appropriate facilities and services to enable the local authority to meet their waste management obligations.

The lead waste partner would have responsibility for providing suitable facilities for all users for the collection and segregation of waste streams. All collection services will be managed by the lead partner (using low carbon vehicles or vacuum system) to help ensure that maximum levels of resource efficiency are achieved. The lead partner will also be required to disseminate information to all user groups within Z-squared covering resource efficiency and waste minimisation issues. This guidance may include information on purchasing choices and packaging, as well as details of recycling services and home composting.

A fundamental aspect of achieving reduced resource use en route to a zero waste society will be to tackle commercial partners and retailers, for example, with reference to reducing levels of packaging produced and ensuring that commercial waste streams are recycled/composted as appropriate. It is envisaged that the retailers' association will have an important role in supporting the lead waste partner in this regard. Furthermore, with the support of the Community Trust and retailers association, it is anticipated that the lead waste partner will work to create local food loops by supplying growers with compost from the community.

As discussed in the carbon Package section above, there will be a close partnership between the lead waste and carbon partners with regards to the management of the Energy-from-Waste and anaerobic digester plant.

## Mobility Package

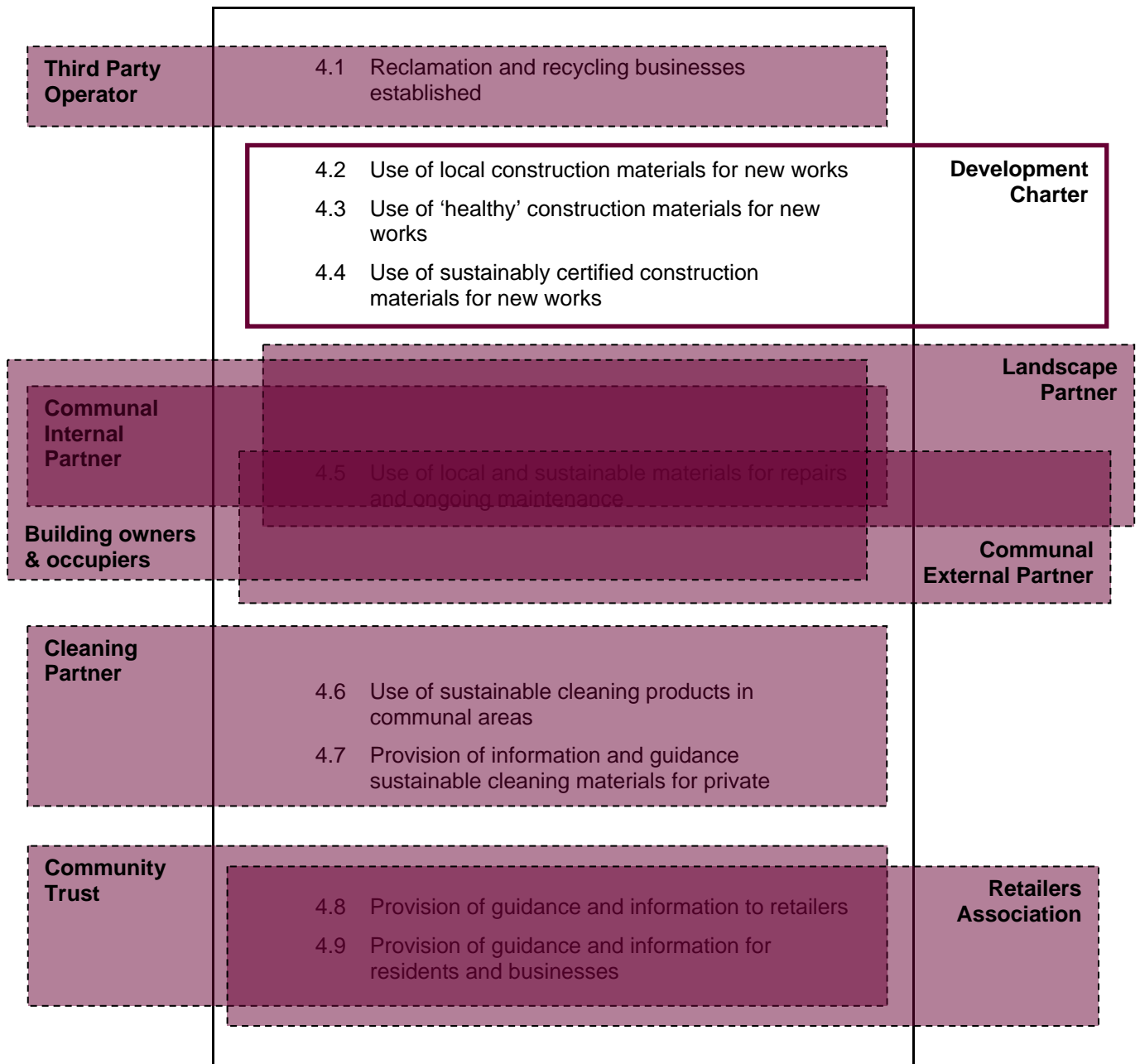
	<ul style="list-style-type: none"> <li>3.1 Range of facilities maintained locally</li> <li>3.11 Growing public transport network</li> <li>3.16 Range of fuelling facilities for alternative fuels</li> <li>3.17 GTP required for all organisations</li> </ul>	<b>Development Charter</b>
	<ul style="list-style-type: none"> <li>3.13 Provision of fleet of car club vehicles</li> <li>3.16 Provision of alternative fuelling facilities</li> </ul>	<b>Mobility Partner</b>
<b>Communal Internal Partner</b>	<ul style="list-style-type: none"> <li>3.6 Safe and secure cycle storage</li> <li>3.8 Network of cycle and foot paths</li> <li>3.12 Maintenance of parking spaces</li> </ul>	<b>Communal External Partner</b>
<b>Security Partner</b>	<ul style="list-style-type: none"> <li>3.9 Provision of CCTV</li> <li>3.10 Access and parking restrictions</li> </ul>	
<b>Transport For London</b>	<ul style="list-style-type: none"> <li>3.11 Provision and maintenance of transport nodes</li> <li>3.15 Development of personal mobility Packages</li> </ul>	
	<ul style="list-style-type: none"> <li>3.2 Provision of digital networks and services (link to Carbon Partner?)</li> <li>3.11 Real-time transport information at stops and online</li> </ul>	
	<ul style="list-style-type: none"> <li>3.14 Car club digital booking system</li> </ul>	
<b>ICT Partner</b>	<ul style="list-style-type: none"> <li>3.4 Community network points to support internet ordering</li> </ul>	
	<ul style="list-style-type: none"> <li>3.3 Support facilities to enable home working</li> <li>3.5 Provision of communal drop-off points for goods</li> </ul>	

The Mobility Package is concerned with both reducing the need to travel and supporting more sustainable modes of transport than private fossil-fuelled cars. The diverse nature of the Package described above will require the participation of numerous partners, but a key role has been identified for a lead mobility partner. This partner could be an organisation based around a car club operator, as a key element of their service will be the provision of a fleet of sustainable pool vehicles. In terms of reducing the need to travel, the lead mobility partner with others, would support the provision of suitable ICT access and adequate space to enable home-working, whilst the Development Charter would help to ensure that a range of local facilities are maintained at Z-squared into the future.

To encourage users of Z-squared to walk and cycle, the lead mobility partner will need to work with the communal maintenance partners and security partner to ensure the ongoing provision of networks of safe and secure foot paths and cycle ways. The provision of fuelling facilities for alternatively fuelled vehicles into the future will also be an important element of the mobility Package.

By viewing mobility as a service, it is anticipated that the lead partner may be able to offer residents tailored 'mobility Packages' which may include, for example, car club membership, discounted public transport travel, special offers on bicycle hire and repair, all potentially managed through an 'oyster' card or similar mechanism.

## **Materials Package**



The Materials Package considers the specification and use of local and sustainable materials in the maintenance and operation of the Z-squared community over time.

Unlike the three previous Packages described above (carbon, waste and mobility), there is no logical lead partner to take ownership of the overall delivery of this Package.

The suggested mechanism for addressing the use of suitable sustainable materials as part of the construction of new buildings and infrastructure, will be through the Development Charter which will require future developers, partners and key stakeholders within the Z-squared community to abide by the ethos of the One Planet Living principles. The responsibility for specifying and using sustainable construction materials for ongoing landscaping and building maintenance, repairs and refurbishments will fall mainly with the communal external, communal internal and landscaping partners.

In the day-to-day cleaning of communal areas, the cleaning partner will have performance targets relating to the use of sustainable and 'healthy' cleaning materials and products.

A further key element of successfully implementing the 'local and sustainable materials' aims of the One Planet Living framework, will be to influence the attitudes and behaviours of all users at Z-squared in their everyday material choices. It is envisaged that the Community Trust, in partnership with the Retailers' Association, will take a lead in the provision of guidance and information for all residents/users on issues related to the procurement, usage and environmental benefits of local and sustainable products.

## Food Package

<b>Community Trust</b>	<ul style="list-style-type: none"> <li>5.1 Potential service to cultivate communal food-growing areas</li> <li>5.15 Provide and maintain areas of edible landscaping</li> </ul>	<b>Landscaping Partner</b>
	<ul style="list-style-type: none"> <li>5.3 Provision of secure spaces for food box delivery (or third party lease to homes?)</li> </ul>	
	<ul style="list-style-type: none"> <li>5.4 Provision of space and facilities for farmers' markets (with local third party partner)</li> </ul>	<b>Third Party</b>
	<ul style="list-style-type: none"> <li>5.8 Guidance produce on fair trade food and drink issues</li> <li>5.9 Facilitation of local supply contracts</li> <li>5.10 'Green' vending/catering options for organisations</li> <li>5.12 Facilitate supply contracts with local organisations</li> </ul>	<b>Retailers' Association</b>
<b>Waste Partner</b>	<ul style="list-style-type: none"> <li>5.7 Provision of compost bins for homes and businesses</li> <li>5.11 Provision of kerbside compost collection service for all users</li> <li>5.16 Provision of communal compost bins</li> </ul>	
	<ul style="list-style-type: none"> <li>5.2 Rights to allotments maintained in perpetuity</li> <li>5.13 Concessions for local and sustainable food retailers</li> </ul>	<b>Development Charter</b>

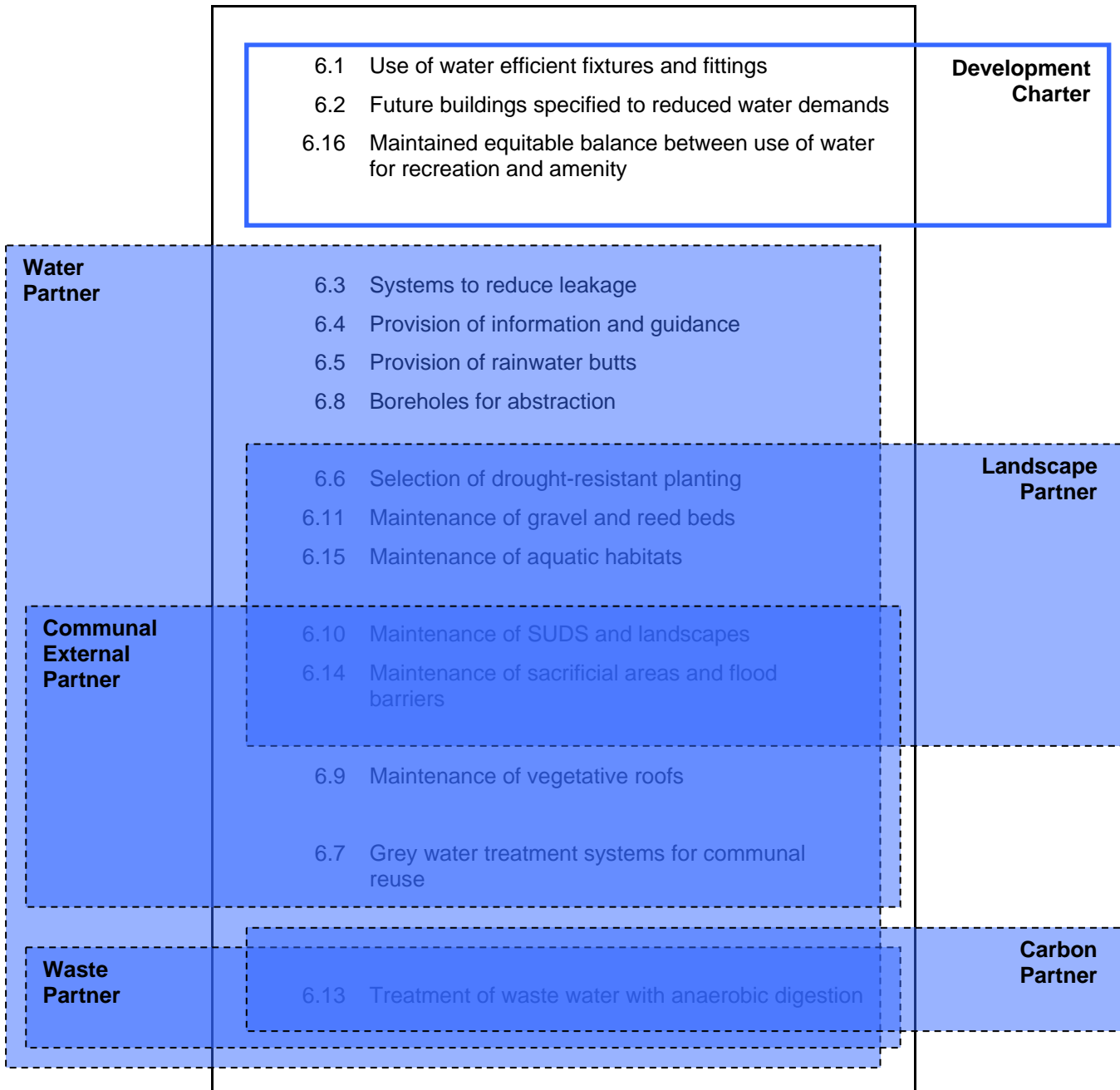
As with the 'local and sustainable materials' issues addressed above in the materials Package, there is equally no clear lead partner for the 'local and sustainable food' Package described above. The food Package considers promoting the supply of local and seasonal produce through supporting local food-growing opportunities and links with local farm networks, as well as facilitating closed resource loops through the local use of composted waste. The delivery of each of these aims will be the responsibility of 4 key partners.

The landscaping partner will support on-site food growing initiatives including the maintenance of areas of edible planting within communal landscaping, and the provision of services to cultivate any private or communal food growing areas as part of additional service agreements with residents and stakeholder groups.

The Community Trust and Retailers Association will have key roles in supporting markets for local produce through the provision of support facilities, such as secure drop-off/collection facilities for food boxes and a suitable location for farmers market, to helping to broker supply contract contracts between local organisations and suppliers.

The main role of the waste partner, from the perspective of the food Package, will be the provision of suitable facilities and collection services to ensure high levels of composting of food wastes. It is anticipated that the lead waste partner will have performance targets as part of their service contract, related to establishing compost supply chains to local food growers to facilitate efficient local-scale closed resource loops.

## Water Package



The Water Package considers the fundamental provision of potable and non-potable water for use within the community. From a sustainability perspective, the Package addresses reducing water use, treating grey and waste water, and managing rain and flood water.

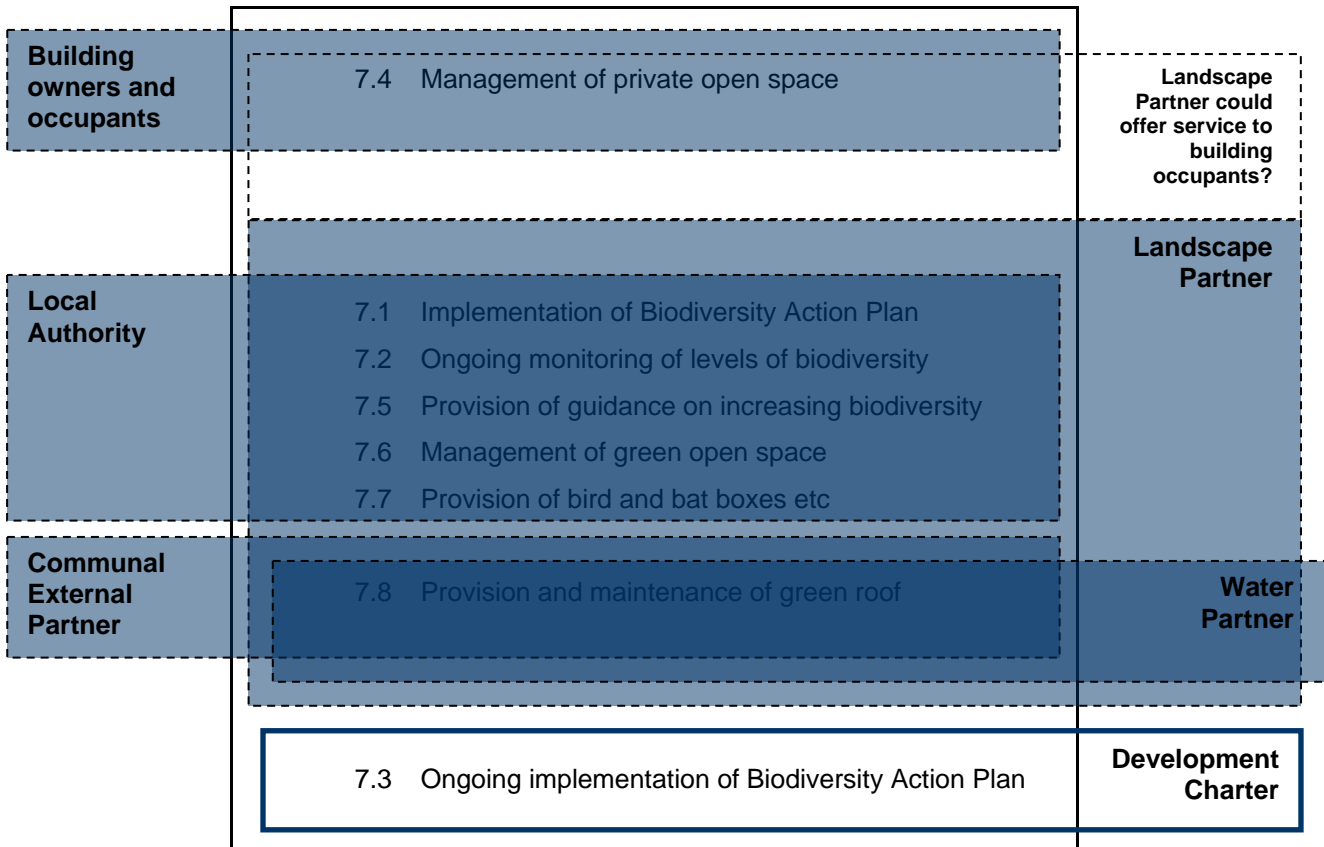
In similarity with the carbon Package, the water Package deals with the provision of an essential service, upon which there are ever-increasing demand pressures. The opportunity exists for a lead partner to take key responsibility in the delivery of this Package by considering both supply-side and demand-side issues.

The lead water partner will take responsibility for the operation and maintenance of the infrastructure required to provide the community with potable water, and for facilitating reduced overall water demands through the provision of systems to reduce leakage, the specification of appropriate fittings, fixtures and planting, and the reuse of locally treated waste water. In the maintenance of these systems, there will be key roles for the landscaping partner and the communal external partner.

The lead water partner will additionally be responsible for providing information and support to all residents/users of Z-squared on the importance of sustainable water issues and how they can be addressed.

The ongoing maintenance and operation of the anaerobic digester will be undertaken in partnership with the carbon and waste partners respectively, due to the clear overlap between Packages and the complexities of management and delivery.

## Natural Habitats and Wildlife Package



The natural habitats and wildlife Package considers the protection of existing ecological features and conservation of species, as well as providing new habitats and ongoing management strategies to facilitate increased levels of biodiversity. Unlike the other Packages discussed above, there is perhaps a more obvious framework which can be used to host the aspirations and aims for the Package.

It is proposed above to create a Biodiversity Action Plan (BAP) to record the aims for the Z-squared community, in terms of natural habitats and wildlife, as well as the long-term mechanisms and commitments to facilitate their delivery. This approach is in-line with the implementation of the UK Biodiversity Action Plan, and the development of a portfolio of BAP for specific locations and species around the UK.

In terms of delivering the BAP over time, the scope of the Package will require the involvement of several key partners.

Regarding the management of private spaces and features, this is most likely to be undertaken by the respective building owners and occupiers, although the responsibility may be contracted to the landscaping partner for private communal areas. To support the aims of the natural habitats and wildlife Package, the lead landscaping partner will be required to develop and disseminate information on relevant issues to support all residents/users of Z-squared.

It is assumed that the areas of 'public' open space would be adopted by the local authority, retained as the communal private responsibility of the community and hence managed by a landscape partner, or a combination of the two ownership/management models.

On this basis, it is concluded in the description above that the responsibility for implementing the Biodiversity Action Plan would lie within a partnership between the public and private sector. Lead responsibility would be taken by the (private) landscaping partner working in close consultation with the local authority and with other management partners such as the water partner and communal external partner.

To further support the ongoing implementation of the BAP, niche stakeholders such as local wildlife groups and species experts, will need to be involved. These partners could play a significant role in the development of management proposals as well as undertaking monitoring and reporting of progress against it.

## Culture and Heritage Package

<b>Community Trust</b>	8.7 Provision of rolling digital community archive	<b>ICT Partner</b>
	8.1 Continued consultation throughout design, development and occupancy phases 8.2 Series of interviews, workshops and recorded journeys to create digital community archive 8.4 Consultation with local partners to promote reviving local industries and crafts	
	8.8 Operation and maintenance of multi-faith hall 8.9 Operation and maintenance of community buildings	<b>Communal Internal Partner</b>
<b>Third Party Operator</b>	8.5 Operation and maintenance of museum 8.6 Maintenance of public art installations	
<b>Communal External Partner</b>	8.3 Protection of valuable environments (built and natural)	<b>Landscape Partner</b>
	8.1 Ongoing consultation with stakeholders ensured 8.2 Maintaining rolling digital community archive 8.5 Ongoing provision of museum 8.6 Ongoing provision of public art 8.7 Ongoing provision of digital community archive 8.8 Ongoing provision of multi-faith hall 8.9 Ongoing provision of community buildings	<b>Development Charter</b>

When compared to the provision of utilities and basic services, as outlined in most of the Packages above, the Culture and Heritage Package includes issues covered by one of the 'softer' One Planet Living principles and which are not frequently part of the remit for community development. The Package addresses issues of the protection, continuation and revival of valuable aspects of an area's cultural heritage, as well as supporting a sustainable future the helping to engender a sense of place, community and identity.

The issues covered, and the associated management responsibilities, broadly split into two groups; those associated with the built environment (hardware) and those associated with service provision and support (software).

The conservation of the built form and the ongoing provision of facilities to support community cultural growth (such as community centres, multi-faith halls, museums, public art etc) will be undertaken primarily by the communal internal and external partners from a maintenance perspective in partnership with third party operators.

The Community Trust will take lead responsibility for the 'software' including ensuring ongoing community consultation as the settlement grows and evolves, as well as the capturing and recording of the cultural identity of the emerging community over time in an accessible digital archive (a task which would be undertaken in partnership with the ICT partner).

## Equity and Fair Trade Package

Community Trust	9.4	Ongoing provision of affordable units matching needs	RSL Partner	
	9.5	Provision of opportunities for lifelong learning	LEA	
	9.13	Achieving/maintaining 'Fairtrade Community' status		
	9.14	Establish and maintain a community trust		
	9.15	Establish and maintain community intranet and digital services	ICT Partner	
	Retailers Association	9.8	Provision of information on fair trade issues	
		9.10	Promoting fair trade organisations for supply contracts	
		9.9	Provide units for fair trade organisations/retailers	Building owners & occupiers
		9.2	Provision of accessible environments for all	
		9.1	Maintenance of accessibility 'features' and equipment	
	9.7	Maintenance of work spaces for local employment		
Communal External	9.3	Maintenance of affordable housing	RSL Partner	
LEA	9.6	Maintenance of education facilities	Communal Internal	
9.2 Ongoing provision of highly-accessible environments 9.4 Ongoing provision of affordable housing 9.5 Ongoing provision of opportunities for learning 9.7 Ongoing provision of local workspaces 9.9 Ongoing concessions for fair trade organisations 9.13 Ongoing commitment to 'fairtrade community' status 9.14 Ongoing commitment to a community trust 9.15 Ongoing commitment to a community intranet 9.16 FM partners committed to OPL principles 9.17 Ensure all FM partners only use sustainable products 9.18 FM partners committed to local employment 9.19 FM partners to commit to continual improvement			Development Charter	

The *Equity and Fair Trade Package* is derived from one of the 'softer' OPL Principles, as with the Cultural Heritage Package described above. The Equity and Fair Trade Package addresses ensuring that issues of equity, affordability and accessibility etc. are promoted at all stages of the developments design, construction and operation.

There will be a key lead role for the Community Trust in the delivery of this Package. Furthermore, the establishment and continuation of a Community Trust will be an important aspect of this Package. With key local stakeholders and other service providers the Trust will take responsibility for ensuring affordable and equitable access to a range of community support facilities, and the promotion of Fairtrade issues within the operation of the community.

A lot of Equity and Fair Trade issues will be picked up within the Development Charter; the mechanism for ensuring that future development and new stakeholders/partners agree to actively support the OPL ethos for Z-squared. These requirements will include the ongoing provision of suitable community support facilities (e.g. learning facilities) and support structures (e.g. community trust), as well as clear commitments by all partners to a process or target-setting, monitoring, reporting and continual improvement.

## Health and Happiness Package

	<p>10.4 Provision of guidance and information on health and happiness issues</p> <p>10.6 Provision of guidance and information on healthy and sustainable food</p>	<b>Community Trust</b>
<b>Local Partners</b>	10.7 Organising of 'green gym' and other healthy outdoor activities	
	<p>10.8 Provision of guidance and information on exercise and healthy living</p> <p>10.11 Ongoing provision of community trust</p>	
<b>ICT Partner</b>	10.12 Create and maintain community intranet	
<b>All Service Providers</b>	<p>10.13 Ongoing monitoring and reporting of building performance</p> <p>10.14 Ongoing monitoring and reporting of community satisfaction and wellbeing</p> <p>10.15 Commitment to continual improvement</p>	
<b>Building owners &amp; occupiers</b>	10.5 Maintenance of facilities to grow and prepare fresh healthy produce	
	10.1 Use of sustainable materials in construction, refurbishment and repairs	<b>Communal Internal Partner</b>
<b>Communal External Partner</b>	10.9 Maintenance of buildings and communal areas for security benefits	
	10.10 Provision of CCTV and security services	<b>Security Partner</b>
<b>Cleaning Partner</b>	10.3 Use of sustainable 'healthy' products and materials	
	<p>10.2 Provision of buildings with high levels of daylight</p> <p>10.9 Design safe and secure environments to best practice standards</p> <p>10.11 Ongoing provision of community trust</p> <p>10.12 Ongoing provision of community intranet</p> <p>10.13 Ongoing monitoring/reporting of building performance</p> <p>10.14 Ongoing monitoring and reporting of community satisfaction and wellbeing</p>	<b>Development Charter</b>

The *Health and Happiness* Package covers a broad range of issues, many of which are not commonly considered within community development and management. The Package covers issues such as creating healthy environments, maintaining community support structures and monitoring levels of satisfaction and wellbeing.

The Community Trust will have a key role in the provision of guidance to all users of health and wellbeing issues, together with the ongoing facilities and structures to support community growth and contentment. The Trust will also play an important role, as client, in ensuring that the performance of all service providers is monitored against the OPL ethos and that continual improvement is committed to.

This Package also overlaps to varying extents with other Packages, for example, in the specification and use of 'healthy' and non-toxic materials for construction, maintenance and cleaning etc. As with the Equity and Fair Trade Package, the Development Charter will be an important mechanism for delivering this Package. This will be used to ensure that future buildings will help create healthy internal and external environments, and that community wellbeing and satisfaction will be maintained as a monitored performance indicator.

### **Section 3: Facility Management lead partners for Z-squared**

Building upon the previous two sections of this document which firstly expressed the aims of the community using the One Planet Living framework to identify associated 'service Packages', and consequently described how the responsibility for delivery would be divided between partners, this section records the overall range of service provision associated with each of the lead partners.

Furthermore, for each of the lead partners, areas of lead and joint responsibility are recorded together with any associated performance targets which would form part of their service contract. A brief discussion of possible organisation types and actual organisations which may be suitable as possible lead partners for each of the roles is also included.

In addition to describing the services from the perspective of the lead partners, a summary of the issues picked up by the Development Charter is also included towards the end of this section.

The section concludes with a relationship organigram illustrating how it is envisaged that the key partners and stakeholders involved in the ongoing operation of the Z-squared community interact with each other.

## Carbon Partner

Areas of Lead Responsibility	...with
1.1 Leasing of energy efficient appliances to residents	
1.6 Provision of guidance and support on energy efficiency to all residents/users	
1.8 Maintenance of ATEs (Aquifer Thermal Energy System)	
1.9 Maintenance of district energy distribution network(s)	
1.10 Maintenance of CHP (Combined Heat and Power) plant	
1.12 Maintenance of on-site wind turbines	
1.13 Maintenance of solar thermal arrays	
1.14 Maintenance of biomass boilers	
1.2 Provision of low energy communal lighting	Communal Internal and Communal External Partners
1.7 Provision of online consumption data and billing services	ICT Partner and RSL Partner
<b>Associated Performance Targets/Metrics</b>	
<ul style="list-style-type: none"> <li>- Provision of energy efficiency information to all new residents/users of Z-squared</li> <li>- Ongoing reductions in total energy demands</li> <li>- Ongoing reductions in total carbon dioxide emissions</li> <li>- Working towards zero fuel poverty in line with government targets</li> <li>- Performance criteria based on ensuring continuity of low/zero carbon supply over time</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Areas of Joint Responsibility	...with
1.11 Maintenance of anaerobic digester	Waste Partner
1.15 Pilot Energy-from-Waste plant	Waste Partner
<b>Associated Performance Targets/Metrics</b>	

Possible Service Providers
<p>To deliver against the performance targets outlined above in terms of reducing the carbon emissions associated with the operation of our buildings to zero, the lead carbon partner will need to actively address both demand-side and supply-side issues. One possible model for this would be to establish an Energy Services Company or Companies (ESCO) as lead carbon partner.</p> <p>The ESCO model has been developed to allow a route for utility suppliers to provide a value-added service rather than a unit-based product. Consumers can benefit from low energy costs, carbon dioxide reductions, savings on infrastructure reinforcement and system reliability. To operate successfully, ESCo must be involved in demand-side management, engage in long-term contracts and respond quickly to funding opportunities which support energy and carbon dioxide savings. Management models for ESCo can be based on community ownership, not-for-profit companies or private utilities.</p> <p>The potential for expanding the remit of a long-term utilities partner to create Water, Waste and Energy Services Companies (WWESCO) to provide holistic sustainable carbon solutions is an exciting area which could be further investigated.</p>

## Waste Partner

Areas of Lead Responsibility	...with
2.4 Provision of guidance and support on resource efficiency to all residents/users	
2.6 Provision of segregated internal/external bins for all users	
2.7 Provision of kerbside collection services for all users (using low/zero carbon vehicles)	
2.8 Provision of composting facilities for all users	Retailers Association
2.9 Provision of kerbside compost collection for all users	Retailers Association

### Associated Performance Targets/Metrics

- Provision of resource efficiency information to all new residents/users of Z-squared
- Ongoing increasing reductions in total waste arisings
- Ongoing increasing reductions in waste sent to landfill (with zero waste long-term target)
- Ongoing increasing levels of recycling
- Ongoing increasing levels of composting
- Continuity, punctuality and quality of service

### Areas of Joint Responsibility

#### ...with

2.5 Working with partners to reduce packaging levels	Retailers Association
2.10 Working to establish closed food loops by supplying local food producers with compost	Retailers Association and Community Trust
2.11 Maintenance of anaerobic digester	Carbon Partner
2.12 Pilot Energy-from-Waste plant	Carbon Partner

### Associated Performance Targets/Metrics

- Ongoing targets for reduced levels of packaging waste arising

### Possible Service Providers

As with the 'carbon partner' previously, the lead waste partner will need to tackle supply and demand issues in order to facilitate the move to a zero waste community.

There are numerous private waste contractors who may be suitable for this lead role, those who have been contracted to undertake municipal-scale waste management services on behalf of local authorities may be particularly experienced in working towards waste reduction targets.

The lead waste partner will need to take an innovative and creative stance on resource management with a zero waste community, and it may be that the lead role is in actuality a consortium pairing an organisation with waste management and processing 'muscle' with others offering resource efficiency 'brainpower'.

## Mobility Partner

Areas of Lead Responsibility	...with
3.13 Provision and maintenance of fleet of car club vehicles	
3.16 Provision and maintenance of fuelling facilities for alternatively-fuelled vehicles	
3.6 Provision and maintenance of safe and secure cycle storage	Communal Internal and Communal External Partners
3.8 Provision and maintenance of network of safe cycle ways and foot paths	Communal Internal and Communal External Partners
3.12 Maintenance of vehicle parking areas	Communal Internal and Communal External Partners
3.15 Development of personal mobility Packages	Transport for London
3.2 Provision of online transport options information	ICT Partner with TfL
3.11 Provision of real-time transport information at stops/stations	ICT Partner with TfL
3.14 Digital booking system for car club vehicles	ICT Partner
Associated Performance Targets/Metrics	
<ul style="list-style-type: none"> <li>- Reduced total personal travel distances compared to local benchmark</li> <li>- Ongoing reductions in transport carbon dioxide emissions</li> <li>- Ongoing upgrading and increasing of car club fleet to reflect changing needs</li> <li>- Increasing numbers of journeys made on foot or by cycle</li> <li>- Ongoing adaptation of cycle storage provision to match changing needs</li> <li>- Increased levels of public transport usage compared to local benchmark</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Areas of Joint Responsibility	...with
3.9 Provision and maintenance of CCTV	Security Partner
3.10 Management of access and vehicle parking restrictions	Security Partner
3.11 Provision and maintenance of public transport node and interchange facilities	Transport for London
3.4 Provision of community internet points	ICT Partner with Community Trust
3.3 Provision of support facilities to support home-working	Community Trust
Associated Performance Targets/Metrics	...with
- Increasing number of digital network users	ICT Partner with Community Trust

Possible Service Providers
<p>Considered masterplanning and ongoing work with the Community Trust and the ICT partner should enable the lead mobility partner to help address reducing the need to travel within the Z-squared community. This leaves the key role of providing sustainable alternatives to private fossil-fuelled car use.</p> <p>It is envisaged that a car club operator may be a potential lead partner in this regard in establishing and maintaining a sustainable vehicle fleet, fuelling facilities and simple transport booking systems. Additionally, by working in partnership with key stakeholders, the mobility partner would take a lead in developing and delivering a scheme of personal mobility Packages for individuals living and working at Z-squared.</p>

## ICT Partner

Areas of Lead Responsibility	...with
3.4 Provision of community internet points	Mobility Partner with Community Trust
8.7 Provision of rolling digital community archive	Community Trust
9.15 Establish and maintain community intranet/extranet	Community Trust

Associated Performance Targets/Metrics
<ul style="list-style-type: none"> <li>- Continuity of access to services</li> <li>- Ongoing updates to digital archive</li> <li>- Provision of information and support on community intranet/extranet to all new users</li> <li>- Continuity, punctuality and quality of service</li> </ul>

Areas of Joint Responsibility	...with
1.7 Provision of online consumption data and billing services	Carbon Partner and RSL Partner
3.2 Provision of online transport options information	Mobility Partner with TfL
3.11 Provision of real-time transport information at stops/stations	Mobility Partner with TfL
3.14 Digital booking system for car club vehicles	Mobility Partner

Associated Performance Targets/Metrics	...with
<ul style="list-style-type: none"> <li>- Increasing number of digital network users</li> </ul>	ICT Partner with Community Trust

Possible Service Providers
<p>The ICT partner will have a key service provision role which will include aspects of physical infrastructure and community support facilities. It is envisaged that community intranet/extranet will be established which will perform several key roles including:</p> <ul style="list-style-type: none"> <li>• Representing the 'face' of the Community Trust internally and externally</li> <li>• Providing a hub for information on the community, the area and events etc</li> <li>• Facilitating the booking of venues and vehicles</li> <li>• Proving real-time data on resource consumption and performance</li> </ul> <p>There are numerous ICT providers who have developed intranet/extranet systems for organisations and communities, including both the hardware and software aspects.</p> <p>At Z-squared, it may become apparent after future study that in reality the broad scope of the responsibilities may require a partnership between software- and hardware-focussed organisations.</p>

## Water Partner

Areas of Lead Responsibility	...with
6.2 Provision and maintenance of systems to reduce leakage	
6.3 Provision of guidance and support on water efficiency to all residents/users	
6.4 Provision of rainwater butts to all homes	
6.7 Maintenance of boreholes for water abstraction	
6.6 Provision and maintenance of grey water treatment systems for communal reuse	Communal External Partner

Associated Performance Targets/Metrics
<ul style="list-style-type: none"> <li>- Provision of information and support on water efficiency to all new residents/users</li> <li>- Ongoing increasing reductions in potable water demands</li> <li>- Ongoing increasing reductions in water demands for outdoor needs</li> <li>- Continuity of potable water supply</li> <li>- Continuity of 'green' water supply</li> <li>- Continuity, punctuality and quality of service</li> </ul>

Areas of Joint Responsibility	...with
6.5 Selection of drought-resistant planting	Landscape Partner
6.10 Maintenance of gravel and reed beds	Landscape Partner
6.14 Maintenance of aquatic habitats	Landscape Partner
6.9 Maintenance of SUDS and landscapes	Landscape Partner and Communal External Partner
6.13 Maintenance of sacrificial flood areas and barriers etc	Landscape Partner and Communal External Partner
6.8 Maintenance of vegetative roofs	Communal External Partner
6.12 Maintenance of anaerobic digester in the use of waste water treatment	Waste Partner and Carbon Partner

Associated Performance Targets/Metrics	...with
<ul style="list-style-type: none"> <li>- Performance against Biodiversity Action Plan with regards to aquatic habitats</li> </ul>	Landscape Partner

Possible Service Providers
<p>There are notable overlapping areas between the roles and responsibilities of the carbon and water partners, particularly in terms of managing access to essential services whilst trying to reduce demand and only supply from sustainable sources.</p> <p>On this basis, the water partner may be part of a joint organisation taking lead responsibility for all three services to form a Water, Waste and Energy Services Companies (WWESCo) to provide holistic sustainable carbon solutions. This organisation would have the remit to tackle both supply- and demand-side issues with regards to all three areas.</p> <p>Equally, it may be appropriate for a major water utilities company to provide water management services to the Z-squared community as part of a wider sustainable water service for the surrounding neighbourhood or district.</p>

## Communal External Partner

Areas of Lead Responsibility	...with
4.5 Use of sustainable and local materials for repairs and ongoing maintenance	Communal Internal Partner and Landscape Partner
6.9 Maintenance of SUDS and landscapes	Landscape Partner and Water Partner
6.13 Maintenance of sacrificial flood areas and barriers etc	Landscape Partner and Water Partner
6.8 Maintenance of vegetative roofs	Water Partner and Landscape Partner
Associated Performance Targets/Metrics	
- Percentages of sustainable and local materials used	
- Continuity, punctuality and quality of service	

Areas of Joint Responsibility	...with
1.2 Provision of low energy communal lighting	Communal Internal Partner
3.6 Provision and maintenance of safe and secure cycle storage	Communal Internal Partner
3.8 Provision and maintenance of network of safe cycle ways and foot paths	Communal Internal Partner
3.12 Maintenance of vehicle parking areas	Communal Internal Partner
6.6 Provision and maintenance of grey water treatment systems for communal reuse	Water Partner
8.8 Operation and maintenance of multi-faith hall	Community Trust with Communal Internal Partner
8.9 Operation and maintenance of community buildings	Community Trust with Communal Internal Partner
8.5 Operation and maintenance of museum	Third Party Operator with Communal Internal Partner
8.6 Maintenance of public art installations	Third Party Operator with Communal Internal Partner
8.3 Protection of (culturally) valuable environments	Communal Internal Partner and Landscape Partner
9.1 Maintenance of accessibility 'features' and equipment	Building owners/occupiers with Communal Internal Partner
9.7 Provision and maintenance of local workspaces	Building owners/occupiers with Communal Internal Partner
9.3 Maintenance of affordable housing	RSL Partner
9.6 Maintenance of education facilities	LEA Partner
10.9 Maintenance of buildings and communal areas for security benefits	Security Partner
Associated Performance Targets/Metrics	...with
-	

### Possible Service Providers

This partner will have lead responsibility for the maintenance and repair of the communal external areas of built form. It is also probable that the partner may offer extensions of their services to private building owners and occupiers.

In reality, it is probable that the lead partner would be a main building contractor skilled in coordination and project management who would retain a body of sub-contractors to undertake specific roles and/or specialist tasks. There are numerous potential lead partners in the market who currently offer estate and premises management solutions to organisations including businesses, institutions and Registered Social Landlords.

## Communal Internal Partner

Areas of Lead Responsibility	...with
4.5 Use of sustainable and local materials for repairs and ongoing maintenance	Communal External Partner and Landscape Partner
Associated Performance Targets/Metrics	
<ul style="list-style-type: none"> <li>- Percentages of sustainable and local materials used</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Areas of Joint Responsibility	...with
1.2 Provision of low energy communal lighting	Communal External Partner
3.6 Provision and maintenance of safe and secure cycle storage	Communal External Partner
3.8 Provision and maintenance of network of safe cycle ways and foot paths	Communal External Partner
3.12 Maintenance of vehicle parking areas	Communal External Partner
8.8 Operation and maintenance of multi-faith hall	Community Trust with Communal External Partner
8.9 Operation and maintenance of community buildings	Community Trust with Communal External Partner
8.5 Operation and maintenance of museum	Third Party Operator with Communal External Partner
8.6 Maintenance of public art installations	Third Party Operator with Communal External Partner
8.3 Protection of (culturally) valuable environments	Communal External Partner and Landscape Partner
9.1 Maintenance of accessibility 'features' and equipment	Building owners/occupiers with Communal External Partner
9.7 Provision and maintenance of local workspaces	Building owners/occupiers with Communal External Partner
9.3 Maintenance of affordable housing	RSL Partner
9.6 Maintenance of education facilities	LEA Partner
10.9 Maintenance of buildings and communal areas for security benefits	Security Partner
Associated Performance Targets/Metrics	
-	

Possible Service Providers
<p>This partner will have lead responsibility for the maintenance and repair of the communal internal areas of built form. It is also probable that the partner may offer extensions of their services to private building owners and occupiers.</p> <p>In reality, it is probable that the lead partner would be a main building contractor skilled in coordination and project management who would retain a body of sub-contractors to undertake specific roles and/or specialist tasks. There are numerous potential lead partners in the market who currently offer estate and premises management solutions to organisations including businesses, institutions and Registered Social Landlords.</p>

## Landscape Partner

Areas of Lead Responsibility	...with
4.5 Use of sustainable and local materials for repairs and ongoing maintenance	Communal External Partner and Landscape Partner
5.1 Service to cultivate communal food-growing areas	
5.15 Provision and maintenance of areas of edible landscaping	
6.5 Selection of drought-resistant planting	Water Partner
6.10 Maintenance of gravel and reed beds	Water Partner
6.14 Maintenance of aquatic habitats	Water Partner
7.1 Implementation of Biodiversity Action Plan	
7.2 Ongoing monitoring of levels of biodiversity	
7.5 Provision of guidance and information on increasing biodiversity and protecting habitats for all residents/users	
7.7 Provision and maintenance of bat and bird boxes etc	

### Associated Performance Targets/Metrics

- Percentages of sustainable and local materials used
- Percentage of 'green' waste arisings composted
- Minimised use of water for irrigation / maximised use of locally treated waste water for irrigation use
- Ongoing performance targets associated with implementation of BAP (e.g. increasing biodiversity, protection of habitats and species etc)
- Provision of information and support on wildlife and biodiversity issues to all new residents/users
- Continuity, punctuality and quality of service

### Areas of Joint Responsibility

#### ...with

6.9 Maintenance of SUDS and landscapes	Communal External Partner and Water Partner
6.13 Maintenance of sacrificial flood areas and barriers etc	Communal External Partner and Water Partner
6.8 Maintenance of vegetative roofs	Communal External Partner and Landscape Partner
8.3 Protection of (culturally) valuable environments	Communal External Partner and Communal Internal Partner

### Associated Performance Targets/Metrics

#### ...with

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### Possible Service Providers

As discussed previously in this document, it is assumed that the areas of 'public' open space within Z-squared would be adopted by the local authority, retained as the communal private responsibility of the community and hence managed by a landscape partner, or a combination of the two ownership/management models. In any of these cases it is likely that the service will be provided via a partnership of public and private stakeholders.

It is envisaged that the lead role would be taken by a private landscape contractor who would have lead responsibility for the tending, cultivation and maintenance of the communal landscaped areas and green spaces. It is also probable that the partner may offer extensions of their services to private building owners and occupiers.

In reality, it is likely that the lead partner would be a main landscaping contractor who would offer the majority of related services, but who would also have access to a range of sub-contractors for specific roles and/or specialist tasks. There are numerous potential lead partners in the market who currently offer grounds management solutions to organisations including businesses, institutions and Registered Social Landlords.

## Community Trust

Areas of Lead Responsibility	...with
2.10 Working to establish closed food loops by supplying local food producers with compost	Retailers Association and Waste Partner
3.3 Provision of support facilities to support home-working	Mobility Partner
3.5 Provision of communal secure drop-off points for delivery of food and other goods	
4.9 Provision of information and guidance on local and sustainable materials issues for residents and businesses	Retailers Association
5.4 Provision of space and facilities for farmers' markets	Third Party Operator
5.8 Provision of information and guidance on local and sustainable food issues for residents and businesses	Retailers Association
9.8 Provision of information and guidance on equity and fair trade issues for residents and businesses	Retailers Association
9.10 Promoting fair-trade organisations for supply contracts	Retailers Association
9.13 Achieving and maintaining 'fairtrade community' status	
9.14 Establish and maintain Community Trust	Various stakeholders initially
10.4 Provision of information and guidance on health and happiness issues for residents and businesses	
10.7 Facilitating 'green gym' and other healthy outdoor activities	Various (local) stakeholders
10.13 Ongoing monitoring and reporting of building performance	All service providers
10.14 Ongoing monitoring and reporting of community satisfaction and wellbeing	All service providers
<b>Associated Performance Targets/Metrics</b>	
<ul style="list-style-type: none"> <li>- Maintaining 'fairtrade' community status</li> <li>- Percentages of local people actively involved in consultation processes</li> <li>- Ongoing targets for resident/user satisfaction and wellbeing</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Areas of Joint Responsibility	...with
3.4 Provision of community internet points	Mobility Partner with ICT Partner
5.9 Facilitation of local supply contracts	Retailers Association
5.10 Provision of 'green' vending/catering options for organisations	Retailers Association
8.7 Provision of rolling digital community archive	ICT Partner
8.8 Operation and maintenance of multi-faith hall	Communal Internal Partner with Communal External Partner
8.9 Operation and maintenance of community buildings	Communal Internal Partner with Communal External Partner
9.4 Provision of affordable housing to match changing needs	RSL Partner
9.5 Provision of opportunities for lifelong learning	LEA
9.15 Establish and maintain community intranet/extranet	ICT Partner
9.9 Provision of units for fair trade retailers/organisations	Retailers Association with Building Owners
9.2 Provision of accessible environments for all	Building Owners and Occupiers
4.8 Provision of information and guidance on local and sustainable materials issues for retailers	Retailers Association
<b>Associated Performance Targets/Metrics</b>	
<ul style="list-style-type: none"> <li>- Increasing number of digital network users</li> </ul>	

- Ratio of local workspace provided compared to livespace
- Appropriate provision of affordable housing (using Housing Corporation KPI?)
- Appropriate provision of education facilities and opportunities (using DFES KPI?)
- Number of fair-trade business tenants
- Number of participants in community activities (e.g. green gym)

<b>Possible Service Providers</b>
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The Community Trust will perform a critical and varied role in the ongoing management of the Z-squared community. At one level, the Community Trust will represent the interests of the various groups within the community, and hence the client in terms of the procurement of facility management services, whilst it will additionally act as service provider in taking lead responsibility in the delivery of some of the more social and community based services.

Whether it is viable for a single organisation to embrace and adequately perform these dual roles will need to be the subject of further study, but it is clear that the selected management mechanism will need to provide essential community support facilities in the quest for enabling sustainable lifestyles.

The Community Trust would be established at the inception of the community and may include the representation of local stakeholders, residents, developers, land owners, NGOs etc. The Trust could fulfil a variety of functions for the community – the freeholder of the site may be transferred to the Trust to be managed for common benefit (a remit which could be extended to include ownership of communal buildings). The Trust might also act as freeholder of residential units in partnership with RSLs as part of innovative approaches to providing affordable housing.

Furthermore the Trust could use funds collected via a service charge mechanism to pay for communal insurance and other communal services in addition to all of the facility management Packages described in this document.

## ***Retailers Association***

<b>Areas of Lead Responsibility</b>	<b>...with</b>
4.8 Provision of information and guidance on local and sustainable materials issues for retailers	Community Trust
5.9 Facilitation of local supply contracts	Community Trust
5.10 Provision of 'green' vending/catering options for organisations	Community Trust
5.12 Facilitate supply contracts with local organisations	
<b>Associated Performance Targets/Metrics</b>	
<ul style="list-style-type: none"> <li>- Provision of information and support on wildlife and biodiversity issues to all new residents/users</li> <li>- Number of local supply contracts brokered</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

<b>Areas of Joint Responsibility</b>	<b>...with</b>
2.8 Provision of composting facilities for all users	Waste Partner
2.9 Provision of kerbside compost collection for all users	Waste Partner
2.5 Working with partners to reduce packaging levels	Waste Partner
4.9 Provision of information and guidance on local and sustainable materials issues for residents and businesses	Community Trust
9.8 Provision of information and guidance on equity and fair trade issues for residents and businesses	Community Trust
9.10 Promoting fair-trade organisations for supply contracts	Community Trust
9.9 Provision of units for fair trade retailers/organisations	Community Trust with Building Owners
<b>Associated Performance Targets/Metrics</b>	
<ul style="list-style-type: none"> <li>- Number of retailers actively participating in waste, recycling and composting initiatives</li> <li>- Number of fair-trade retailers</li> </ul>	

<b>Possible Service Providers</b>
<p>The Retailers Association will represent the interests of the retailers within Z-squared in terms of decision-making and the ongoing operation of the community.</p> <p>The Association will need to be actively involved in positive partnerships with service providers to help deliver the overall sustainability aims of the community. One of the key responsibilities will be in the brokering and facilitation of local and sustainable supply contracts to support the ethos of sustainable food, materials and livelihoods.</p> <p>It is anticipated that the Retailers Association would be established with the support of the Community Trust by the initial group of retailers operating within the community. Membership may be voluntary or by subscription basis.</p>

## RSL Partner

Areas of Lead Responsibility		...with
9.4	Provision of affordable housing to match changing needs	Community Trust
9.3	Maintenance of affordable housing	Communal External Partner and Communal Internal Partner
Associated Performance Targets/Metrics		
<ul style="list-style-type: none"> <li>- Appropriate provision of affordable housing (using Housing Corporation KPI?)</li> <li>- Ongoing targets for resident/user satisfaction and wellbeing</li> <li>- Continuity, punctuality and quality of service</li> </ul>		

Areas of Joint Responsibility		...with
1.7	Provision of online consumption data and billing services	ICT Partner and Carbon Partner
Associated Performance Targets/Metrics		...with
		-

Possible Service Providers
<p>Registered Social Landlord (RSL) is the technical name for social landlords that are registered with the Housing Corporation — most are housing associations, but there are also trusts, co-operatives and companies. Housing associations are run as businesses but they do not trade for profit. Any surplus is ploughed back into the organisation to maintain existing homes and to help finance new ones.</p> <p>A feature of housing associations is that, although the larger ones usually have paid staff, a committee or board of management made up of volunteers has overall responsibility for the work of the organisation. A board might include tenants, representatives from local authorities and community groups, business people and politicians.</p> <p>Housing associations (HA) are the main providers of new social housing in England. The Housing Corporation is responsible for investing public money in HA and for protecting that investment and ensuring it provides decent homes and services for residents.</p> <p>The Housing Corporation invests in and regulates a sector that owns and manages more than 1.45 million homes (approximately 7% of English housing stock). If investment levels are maintained and the transfer of former local authority stock continues, housing associations will own and manage around 4 million homes in 10 years time.</p> <p>Most associations are small and own fewer than 250 homes. However, the largest 7% of associations — those with 2,500 plus homes — own 78% of all the sector's homes. Based on the scale of Z-squared, and the likely expectation for 50% of units to be 'affordable', it may be that the RSL partner role for the community may be delivered via a consortium of partners.</p>

## Security Partner

Areas of Lead Responsibility	...with
3.9 Provision and maintenance of CCTV	Mobility Partner
3.10 Management of access and vehicle parking restrictions	Mobility Partner
10.9 Maintenance of (communal) buildings for security benefits	Communal External Partner and Communal Internal Partner
10.10 Provision of security services	
Associated Performance Targets/Metrics	
<ul style="list-style-type: none"> <li>- Ongoing targets for reductions in crime levels</li> <li>- Ongoing reductions in 'fear of crime'</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Possible Service Providers
<p>The lead security partner will be responsible for the provision of passive (CCTV) and active (patrols) within the community, as well as the maintenance of buildings and outdoor environments for the benefit of security and reduced fear of crime. Allied to this, it is anticipated that the partner would have an important role in supporting decision-making in the design process advising on future schemes and ongoing management from a security perspective.</p> <p>The lead security partner will also have main responsibility for helping to ensure that Z-squared is a low car community, through the enforcement of parking and access restrictions, and the provision of safe and secure foot paths and cycle ways. As with some of the other partner roles described previously, it may be that the service is delivered via a main contractor and sub-contractor arrangement.</p>

## Cleaning Partner

Areas of Lead Responsibility	...with
4.6 Use of sustainable cleaning products in communal areas	
4.7 Provision of information and guidance on sustainable cleaning materials for private residents/users	
10.3 Use of 'healthy' and non-toxic products and materials	
Associated Performance Targets/Metrics	
<ul style="list-style-type: none"> <li>- Provision of information and support on sustainable cleaning issues to all new residents/users</li> <li>- Percentages of sustainable and 'healthy' non-toxic materials/products used</li> <li>- Continuity, punctuality and quality of service</li> </ul>	

Possible Service Providers
<p>The lead cleaning partner will have direct responsibility for the day-to-day cleaning of communal areas with the Z-squared community. The partner will need to maintain a close working relationship with both the Communal Internal and Communal External partners. The lead partner will be required to disseminate information of sustainable and 'healthy' cleaning products as a mechanism for engaging with and influencing private owners and tenants. It is envisaged that the partner will additionally offer the cleaning services to private tenants including businesses and even individual householders.</p> <p>Once more, it is likely that the lead partner in the delivery of these services will be supported by sub-contractors to performance bulk and specialist roles. In this situation the lead partner will be required to take responsibility for the performance of their sub-contractors with regard to their contractual obligations.</p>

## Development Charter

	Issues addressed
Zero Carbon	1.3 Future buildings and extensions use high performance fabric 1.4 Solar orientation and fenestration 1.5 Visible metering
Zero Waste	2.1 Audits of buildings to be demolished 2.2 Implementation of best site practice in future
Sustainable Transport	3.1 Range of facilities maintained locally 3.11 Growing public transport network 3.16 Range of fuelling facilities for alternative fuels 3.17 GTP required for all organisations
Local and Sustainable Materials	4.2 Use of local construction materials for new works 4.3 Use of 'healthy' construction materials for new works 4.4 Use of sustainably certified construction materials for new works
Local and Sustainable Food	5.2 Rights to allotments maintained in perpetuity 5.13 Concessions for local and sustainable food retailers
Sustainable Water	6.1 Use of water efficient fixtures and fittings 6.2 Future buildings specified to reduced water demands 6.16 Maintained equitable balance between use of water for recreation and amenity
Natural Habitats and Wildlife	7.3 Ongoing implementation of Biodiversity Action Plan
Culture and Heritage	8.1 Ongoing consultation with stakeholders ensured 8.2 Maintaining rolling digital community archive 8.5 Ongoing provision of museum 8.6 Ongoing provision of public art 8.7 Ongoing provision of digital community archive 8.8 Ongoing provision of multi-faith hall 8.9 Ongoing provision of community buildings
Equity and Fair Trade	9.2 Ongoing provision of highly-accessible environments 9.4 Ongoing provision of affordable housing 9.5 Ongoing provision of education facilities and opportunities for learning 9.7 Ongoing provision of local workspaces 9.9 Ongoing concessions for fair trade organisations 9.13 Ongoing commitment to 'fairtrade community' status 9.14 Ongoing commitment to a community trust 9.15 Ongoing commitment to a community intranet 9.16 FM partners committed to operating in accordance with OPL principles 9.17 Ensure all FM partners only use sustainable products (e.g. cleaning materials) 9.18 FM partners to commit to local employment and staff training 9.19 FM partners to commit to continual improvement
Health and Happiness	10.2 Provision of buildings with high levels of daylight 10.9 Design safe and secure environments to best practice standards 10.11 Ongoing provision of community trust 10.12 Ongoing provision of community intranet 10.13 Ongoing monitoring/reporting of building performance 10.14 Ongoing monitoring and reporting of community satisfaction and wellbeing

# Section 4: Facilities Management Relationships

