

PHASE  
TWO  
INNOVATION  
IN ACTION  
SEGRO  
PARK  
RAINHAM

INNOVATION FACTSHEET

Part of  
East 

SUPPORTED BY  
MAYOR OF LONDON

SEGRO

[SEGRO.COM/PARKRAINHAM](https://segro.com/parkrainham)

PHASE  
TWO

SEGRO PARK RAINHAM



# SMART BUILDING TECHNOLOGY

## WHAT ARE THE SENSORS MEASURING?

There will be 8 sensors in Unit 9, and 12 sensors in Unit 6. These sensors will measure:

- Temperature, humidity, light levels, motion
- Sound
- Pressure
- Energy usage (gas and electricity)
- Water usage
- Indoor air quality (CO<sub>2</sub>, nitrogen dioxide, nitrogen oxide, etc.)
- Door activity sensors – warehouse loading doors

## WHAT USE WILL THIS BE FOR CUSTOMERS?

Data from these sensors will help customers understand their building and become more operationally efficient, improve working conditions for employees, save money on heating and electricity and be more sustainable.

## WHAT PRACTICAL EXAMPLES ARE THERE OF THE BENEFITS TO A CUSTOMER?

The benefits are not finite, but some basic examples include:

- A customer is able to identify when CO<sub>2</sub> levels rise within the office areas, enabling them to take action, such as opening windows to improve airflow, and ensure an optimal working environment.
- The warehouse door activity sensors could help drive supply chain efficiencies through understanding delivery periods and time at bays. In addition, by understanding the relationship between door activity and warehouse temperature, this could lead to the customer becoming more operationally sustainable through reducing the demand on heating / cooling systems, thus resulting in reduced energy costs.
- Customers could use the platform to identify energy usage outside of working hours. This would help them identify when their facility has a relatively high energy use and help them take steps to reduce costs.

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## WHAT COSTS WILL BE INCURRED BY THE CUSTOMER?

- There is an annual subscription cost for the software platform.
- The capital and operational cost for the sensor suite and software platform is currently being met by SEGRO for year 1, and we are working with customers to understand how the operational cost should be met going forward.
- The annual licence fee is c. £2,750 for Unit 9 and for Unit 6 c. £3,900.
- Over a 3 to 5 year period, it is likely that sensors will require maintenance, such as new batteries. This could be undertaken by the customer or through a third party.



## BIODIVERSITY AND LANDSCAPING

The already vibrant environment at SEGRO Park Rainham, adjacent to a local naturereserve, will be enhanced with extensive landscaping and tree planting. We are enhancing the wetland area which we're calling 'the green corridor', which separates Phase 1 from Phase 2. The corridor will be steeped with grassland species, providing food sources and local habitats for several species including water voles, which are believed to be located in this area.

We are also going to include some seating for occupiers to enjoy observing the wildlife.

### WHAT BENEFITS WILL THE LANDSCAPING BRING?

#### Benefits include:

- Improving environmental quality and human wellbeing
- Pollution removal
- Carbon storage / CO<sub>2</sub> removal
- Oxygen production
- Avoiding building runoff
- Improving building energy use (shading, blocking wind, etc.)
- Providing outdoor space for public enjoyment

### WHAT TYPES OF PLANTING WILL BE INCLUDED?

- 63 new trees
- Native and exotic species
- Most common species (see page 4 for plant stock schedule)
- Diverse species to decrease the risk of disease and insect destruction

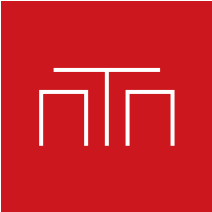




# BIO DIVERSITY AND LANDSCAPING

## PLANT STOCK SCHEDULE

Ref.	No.	Species	Size	Root Condition	Specification	No. Plants p/m <sup>2</sup>
Trees						
Ac	7	Acer campestre	10-12cm girth	Rootballed	2x, min 350cm high, well balanced even canopy, min 175cm clear stem	As indicated
Ag	4	Alnus glutinosa	14-16cm girth	Rootballed	3x, min 450cm high, well balanced even canopy, min 200cm clear stem	As indicated
Bp	11	Betula pendula	14-16cm girth	Rootballed	3x, min 450cm high, well balanced even canopy, min 200cm clear stem	As indicated
CmS	17	Crataegus monogyna 'Stricta'	18-20cm girth	Rootballed	4x, min 450cm high, well balanced even canopy, min 200cm clear stem	As indicated
Ms	3	Malus sylvestris	8-10cm girth	Bareroot	2x, 250 - 300cm high, 175 - 200 clear stem, min 3 No. branches	As indicated
Pav	3	Prunus avlum	14-16cm girth	Rootballed	3x, min 450cm high, well balanced even canopy, min 200cm clear stem	As indicated
Pnl	7	Populus nigra 'Italica'	400-500cm high	Rootballed	3x, min 450cm high, well balanced even canopy - feathered	As indicated
QrFK	5	Quercus robur Fastigiata 'Koster'	500-600cm high	Rootballed	5x,60-100cm spread well balanced even canopy - feathered	As indicated
Sau	6	Sorbus aucuparta	10-12cm girth	Rootballed	2x, min 350cm high, well balanced even canopy, min 175cm clear stem	As indicated
Multi Stems, Specimen Shrubs & Topiary						
Al	3	Amelanchier Lamarkii	200-250cm high	Rootballed	3x, multi stemmed, min 3 No. stems	As indicated
Perennials, Shrubs, Ferns and Grasses						
EEG	370	Euonymus 'Emerald Galety'	20 - 30D	3 litre	Bushy, min. 7 No. breaks.	5 No./m <sup>2</sup>
LIG	95	Lavandula Intermedia 'Grosso'	15 - 20D	3 litre	Bushy, min. 5 No. branches.	5 No./m <sup>2</sup>
LnM	460	Lonicera nitida 'Maygreen'	30 - 40D	3 litre	Bushy, min. 6 No. branches.	5 No./m <sup>2</sup>
Sch	460	symphoricarpos x chenaultii 'hancock'	40 - 60	2 litre	Branched, min. 3 No. branches.	5 No./m <sup>2</sup>
Woodland Planting #1						
Cm	183	Crataegus monogyna	60 - 80	Bareroot	1+1, Transplant	1 No./m <sup>2</sup> @ 25%
Cs	183	Cornus sanguinea	60 - 80	Bareroot	1+2, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Sc	37	Salix caprea	60 - 80	Bareroot	0/1, Branched, min 2 No. branches	1 No./m <sup>2</sup> @ 5%
Sn	183	Sambucus nigra	60 - 80	Bareroot	1+1, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Sv	146	Salix viminalis	60 - 80	Bareroot	0+1, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 20%
Woodland Planting #2						
Ac	17	Acer campestre	60 - 80	Bareroot	1+1, Transplant	1 No./m <sup>2</sup> @ 15%
Ca	23	Corylus aveliana	60 - 80	Bareroot	1+2, Branched, min 2 No. branches	1 No./m <sup>2</sup> @ 20%
Cm	28	Crataegus monogyna	60 - 80	Bareroot	1+1, Transplant	1 No./m <sup>2</sup> @ 25%
Lv	28	Ligustrum vulgare	60 - 80	Bareroot	1+1, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Rc	17	Rosa canina	60 - 80	Bareroot	1+1, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 15%
Coppice mix #1						
Ca	134	Corylus aveliana	60 - 80	Bareroot	1+2, Branched, min 2 No. branches	1 No./m <sup>2</sup> @ 25%
Cs	134	Cornus sanguinea	60 - 80	Bareroot	1+2, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Rc	134	Rosa canina	60 - 80	Bareroot	1+1, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Vm	1599	Vinca minor	20 - 30D	2 litre	Strong crowns, min. 7 No. shoots	3 No./m <sup>2</sup>
Vo	134	Viburnum opulus	60 - 80	Bareroot	1+2, Branched, min 3 No. branches	1 No./m <sup>2</sup> @ 25%
Hedges						
Cb	182	Carpinus betulus	80 - 100	Bareroot	1+2, Transplant - planted in a double staggered row	5 No./LM
Fs	464	Fagus sylvatica	80 - 100	Bareroot	1+2, Transplant - planted in a double staggered row	5 No./LM



# WELL CERTIFICATION

The SEGRO Park Rainham site has provisions to help improve the wellbeing of customers' employees. Specific principles of WELL\* have been incorporated in the design of Units 6 & 9, therefore the customer could pursue WELL certification if they wanted to.

**We have committed to providing the following, which either meet or exceed WELL requirements:**

- Cycle parking for 10% of all employees
- Outdoor gym to encourage and promote health and wellbeing
- Air quality monitoring through smart sensors
- Upgraded Air Handling units to meet WELL requirements
- Water testing to meet WELL criteria
- Appropriate lighting measures, including ensuring mandatory daylight levels are achieved in office and warehouse areas

The WELL Building Standard is a health and wellbeing focused certification scheme run by the International WELL Building Institute (IWBI).

WELL measures, verifies and monitors building features that impact health and wellbeing.

Green Business Certification Inc. (the same organisation that administers LEED certification) provides third-party certification for WELL.

**The standard includes ten concepts, providing a comprehensive approach to wellbeing:**

- |                |                    |
|----------------|--------------------|
| 1. Air         | 6. Thermal comfort |
| 2. Water       | 7. Sound           |
| 3. Nourishment | 8. Materials       |
| 4. Light       | 9. Mind            |
| 5. Movement    | 10. Community      |



\*[wellcertified.com](http://wellcertified.com)



## SOCIAL IMPACT

(Training, Skills and Employment for local people)

The space SEGRO creates provides modern premises in which companies of all types can operate. These bring with them direct and related employment opportunities, allowing the community to benefit from the regeneration.



We are committed to going above and beyond being simply a landlord, and through the construction phase we worked with our contractors to secure local employment.

Through directly investing in Havering Works, an innovative employment and skills service developed by the London Borough of Havering, we continue to show our commitment to offering local people access to jobs, training and employment support services at SEGRO Park Rainham.

A dedicated Employer Engagement Manager from Havering Works can work in partnership with customers at SEGRO Park Rainham to recruit, train and retain valuable employees from the Havering region.

For additional information on how to benefit from this forward-thinking and collaborative local service, please visit **Havering Works**.

**Email: [havering.works@havering.gov.uk](mailto:havering.works@havering.gov.uk)**

**Call: 01708 434456**

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## SUPPLY CHAIN INITIATIVE



SEGRO wants to enable local SMEs to benefit from the construction of its developments, and in 2016 launched its Supply Chain Initiative.

The initiative is designed to promote supply chain packages to local SMEs to maximise the economic benefits for the business community.





## GREEN LIVING WALLS

### WHAT ARE THE BENEFITS?

Green living walls are one of the best ways to reduce air pollution in cities. Whether internal or external, the walls help to extract harmful elements in the atmosphere such as Nitrogen Dioxide by as much as 60%, allowing for cleaner air to circulate throughout the buildings.

#### Green aesthetics

Green living walls create immediate visual impact for your building. They are not only beautiful, but also help companies communicate green credentials to their customers.

#### Reducing the urban heat island effect

High urban temperatures are caused by the increased capacity of the urban land surface (eg. roads, buildings, pavements) to absorb and trap heat. This causes our city temperatures to be up to 10 degrees Celsius higher than rural areas, resulting in the 'Urban Heat Island' effect.

Adding living walls and green roofs to urban structures mimics the conditions presented in rural surroundings, evapo-transpiration from plants mitigates the 'Urban Heat Island' effect and makes cities more comfortable places to live and work in the summer months by both reducing temperatures and dust in the air.

#### Improved urban biodiversity

Green roofs and wildflower roofs will increase the habitats available to birds, bees, butterflies and insects.

#### Acoustic benefit

Green living wall structures can reduce noise levels in buildings. Plants are regularly used to reduce noise on motorways and within urban environments. Living walls reduce noise levels by reflecting, refracting as well as absorbing acoustic energy. This further assists with reducing stress in working environments leading to happier, healthier staff and improved staff retention.

Unit 9 – Green living wall in the office.

Unit 10 – Green living wall in reception which is visible on entry to the estate.





## CARBON NEUTRALITY

### HOW WILL SEGRO PARK ENFIELD ACHIEVE EPC A+ (CARBON NEUTRAL)?

Carbon Neutrality will be achieved by offsetting the electricity required to run the building with an appropriate amount of roof-mounted photovoltaic (PV) panels.

### HOW DOES CARBON NEUTRALITY TRANSLATE INTO COST SAVINGS FOR CUSTOMERS?

Depending on tenant fit-out, the energy generated by the PV array could generate enough electricity to power the whole of the building during periods of peak generation, with no need to import from the national grid.



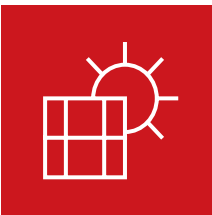
## TESLA BATTERY



Unit 8 will be fitted with a Tesla battery, which will store the energy generated from the unit's PV panels on the roof.

The surplus energy stored in the battery which is not used in peak hours will then be used during off-peak times to save money for the customer.

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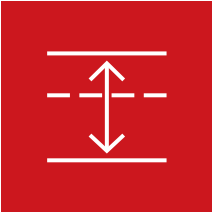
## PHOTOVOLTAIC PANELS



### WHAT IS THE PV PROVISION AT PHASE TWO SEGRO PARK RAINHAM?

Unit No.	PV max output (kWp)	kWh/annum	Annual electricity cost offset at £0.13/kWh
6	100.52	17,120	£2,225
7	111.72	17,786	£2,312
8	59.64	7,874	£1,023
9	53.76	9,252	£1,202
10	52.7	6,302	£819





## MAXIMISING WAREHOUSE VOLUME



UNITS 6 & 7 – Increased undercroft to 6m of clear space providing excellent storage and racking capabilities.

UNIT 9 – Offices are located above the loading doors which are typically an under-used space unless a mezzanine is installed, maximising the volume in the warehouse.



## ELECTRIC CAR CHARGING

Electric car charging provides our customers, employees and guests with easy-to-use smart charging solutions. The provision includes data insights, control features and services, making charging highly efficient and beneficial to the customer.

### WHAT TYPE OF ELECTRIC CAR CHARGING IS AVAILABLE ON SITE?

The electric car charging points are provided by Newmotion and are compatible with all electric cars.

### WHAT ARE THE BENEFITS?

#### Easy-to-use

The electric car charging points are carefree and easy-to-use and are ready for the cars of today and tomorrow.

- High-charging speed up to 22kw (68 miles per 1 hour of charging)

#### Smart charging

The points are remotely monitored and controlled to minimise infrastructure costs and maximise efficiency.

- In-depth charging data and online charge point management

#### Service excellence

Newmotion guarantees 99% uptime with 24/7 assistance, 365 days of the year.



