![JLL]

*Utilization Intelligence*

## Measuring space utilization effectively and ethically

*Uncomfortable sitting at a desk with a sensor tracking your every movement? There's now another way.*

Up until recently, the most common way for companies to track how their office space was being utilized was by installing a binary sensor under every desk.

While these "1 or 0" sensors may seem harmless to some, your staff may not think so. Personal privacy is a growing concern while the regulation around collecting and storing personal information is also getting tighter.

There have been numerous cases where companies have been accused of 'spying' on their staff by sticking sensors under their desks. While it was later established that companies could legally monitor their staff this way, the damaging press forced the removal of these sensors nonetheless.

Clearly, what is legal is not necessarily acceptable – and companies seeking to win and retain the best talent need to take this into consideration.

## Evolution of occupancy sensing technology

Desk sensors evolved from a time when surveyors would walk the floor with a clipboard to keep score of occupied seats at fixed intervals. This approach migrated into sensor-based studies by default rather than by design.

Leading furniture makers were among the first to deploy desk- and seat- based occupancy sensors in order to understand how their furniture were being used. These sensors used motion detection technology such as infrared, light and temperature to determine occupancy.

As technology evolved, new methods have emerged.

## Understanding space utilization without making people uncomfortable

At JLL, our Utilization experts have experimented with emerging technology and practical data science to uncover new methods for utilization analysis.

Accurately understanding space utilization can help:

- "Right size" your space requirements ensuring cost efficiencies

- Manage the space more proactively by understanding the demand of your employees

- Improve the employee experience by delivering spaces that match their needs.

All this can be achieved without putting a sensor at the desk of your colleagues.

We've developed and field-tested sensor solutions that are more robust, more accurate, less intrusive compared to the seat and desk sensors of old. More importantly, these newer solutions respect the privacy of the individual.
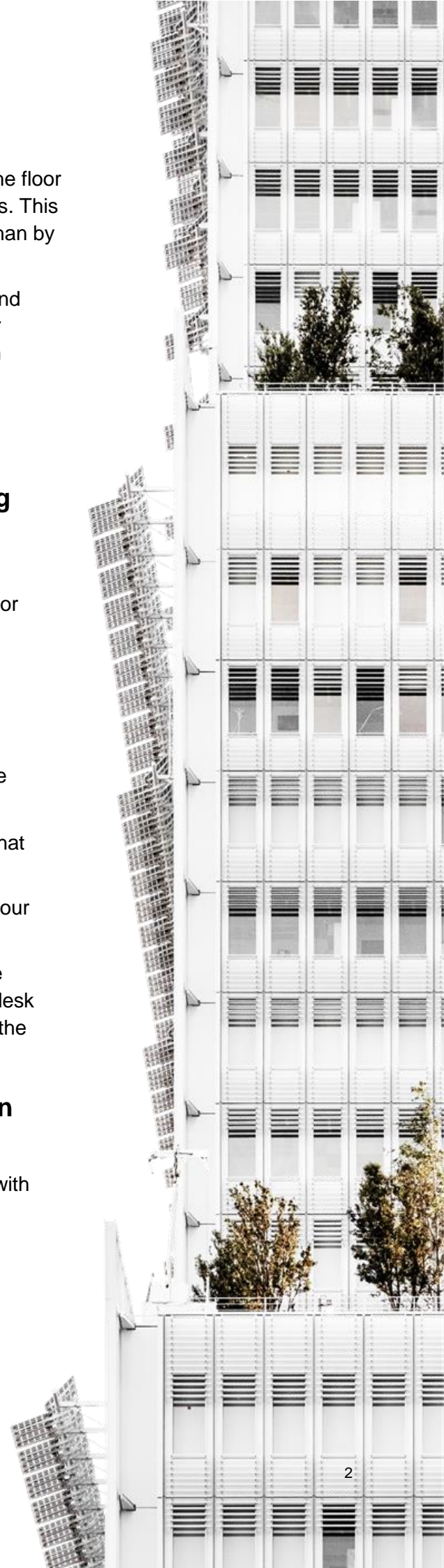
## Get your floor plans ready and contact us for an obligation-free discussion

Since 2018, we have deployed Utilization Intelligence solutions with clients in Australia, Singapore and Hong Kong and created real value and outcomes. We invite you to try out our solutions for yourself with our promotional starter kits valid from now till 30 September.

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# Package A: Meeting Room Starter Kit - SGD 24,000

9 out of 10 clients we speak to have challenges with their meeting rooms ranging from perceived shortage, guerrilla style mis-use, nagging suspicion that "we don't have the right rooms" or "why isn't room booking working?".

**Using our Meeting Room approach, an international airport operator was able to zoom in on their room supply-demand mismatch, fix problems of an unpopular room and update their design standards for their next office build.**

**With this package, you can get to the real bottom of the meeting room mystery and never have to lie awake fretting about rooms.**

## Duration:

- 2-3 weeks for set-up and 10 weeks of data collection.

## Hardware:

- 10 x POE CogniPoint Anonymous People Counter (95% accuracy)
- 1 x HPE/Aruba 1420 24G PoE+ Switch (12-ports POE+, 124W)
- 1 x Dlink DWR-921 4G LTE Internet Router
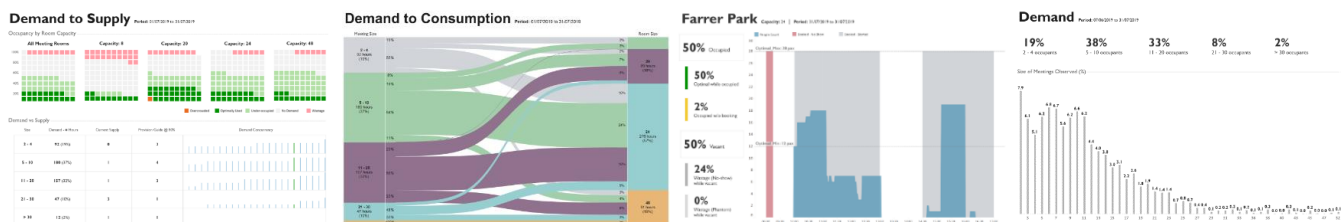- 1 x 03 month Circle Life data SIM (20GB/month)

## Utilization Services:

- Sensor planning, location marking, commissioning, calibration. Analysis dashboard, insights, action recommendations.

## Installation Services:

- Please reference the section entitled, "Installation & Support Services" on pg. 6.

## Utilization Dashboard Examples:

## Package B: Floor Monitoring Starter Kit - SGD 25,000

It is every space managers' wish that everyone swipe in and out religiously, at every floor, at every pass. In reality, tailgating, shared badges and uncounted guests prevent us from understanding "just how many people are on the floor now?" Without understanding floor loading, it is pointless to answer the question "is Donald at his desk?".

**Using our Floor Monitoring approach, a leading pharmaceutical client was able to prove that an entire floor of prime office could be given up with minimal impact to its business.**

**With this package, you can get to the bottom of "how many people are on the floor" at any point in time - from the comfort of your desk.**

## Duration:

- 2-3 weeks for set-up and 10 weeks of data collection.

## Hardware:

- 7 x POE Irisys Traffic Flow Counter (99% accuracy)
- 1 x HPE/Aruba 1420 24G PoE+ Switch (12-ports POE+, 124W)
- 1 x Dlink DWR-921 4G LTE Internet Router
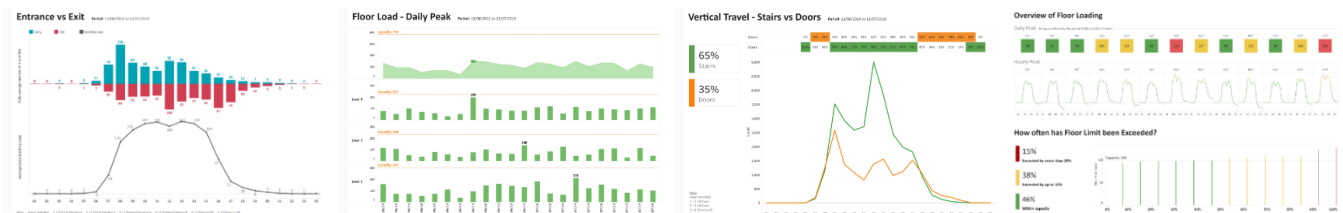- 1 x 03 month Circle Life data SIM (20GB/month)

## Utilization Services:

- Sensor planning, location marking, commissioning, calibration. Analysis dashboard, insights, action recommendations.

## Installation Services:

- Please reference the section entitled, "Installation & Support Services" on pg. 6.

## Utilization Dashboard Examples:

# Package C: Hybrid Starter Kit - SGD 29,000

You want to know how the whole floor is really, really being used. You want to know if you have enough and the right type of rooms and spaces. You also want to know how many seats you really need to provision - all without infringing on your colleagues' privacy...

**Our Hybrid approach is a combination of Room and Floor Loading approaches. This innovative approach enable clients who do not want to monitor the individual to gain the benefits of understanding utilization.**

**With this package, you can understand how "I" and "We" spaces are being used, to help you provision just the right amount of the right spaces.**

## Duration:

- 2-3 weeks for set-up and 10 weeks of data collection.

## Hardware:

- 6 x POE CogniPoint Anonymous People Counter (95% accuracy)
- 4 x POE Irisys Traffic Flow Counter (99% accuracy)
- 1 x HPE/Aruba 1420 24G PoE+ Switch (12-ports POE+, 124W)
- 1 x Dlink DWR-921 4G LTE Internet Router
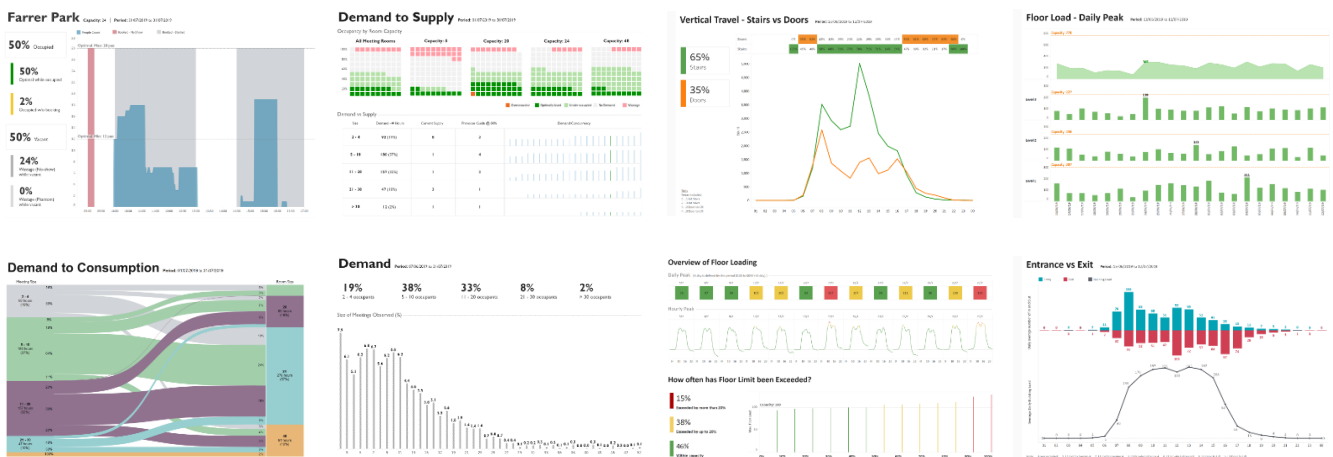- 1 x 03 month Circle Life data SIM (20GB/month)

## Utilization Services:

- Sensor planning, location marking, commissioning, calibration. Analysis dashboard, insights, action recommendations.

## Installation Services:

- Please reference the section entitled, "Installation & Support Services" on pg. 6.

## Utilization Dashboard Examples

# Installation & Support Package – Included

## Install

(1) Structured Cabling (point-to-point) for sensors.

- LAN (RJ45) terminated both ends between sensors and switch.
- Patch cords ONLY for Internet Router.

(2) Network equipment installation.

- No mounting. Equipment to rest free-standing on available area identified by customer.
- 2 x power points with locked cover to be provided by client.
- Broadband internet gateway configured with basic firewall without configuration of incoming network traffic filtering.

(3) Mounting Sensors on the ceiling

- Assume plaster board allowing punch-through for POE cable.
- Sensors are surface-mount. No drop-poles or extension arms.
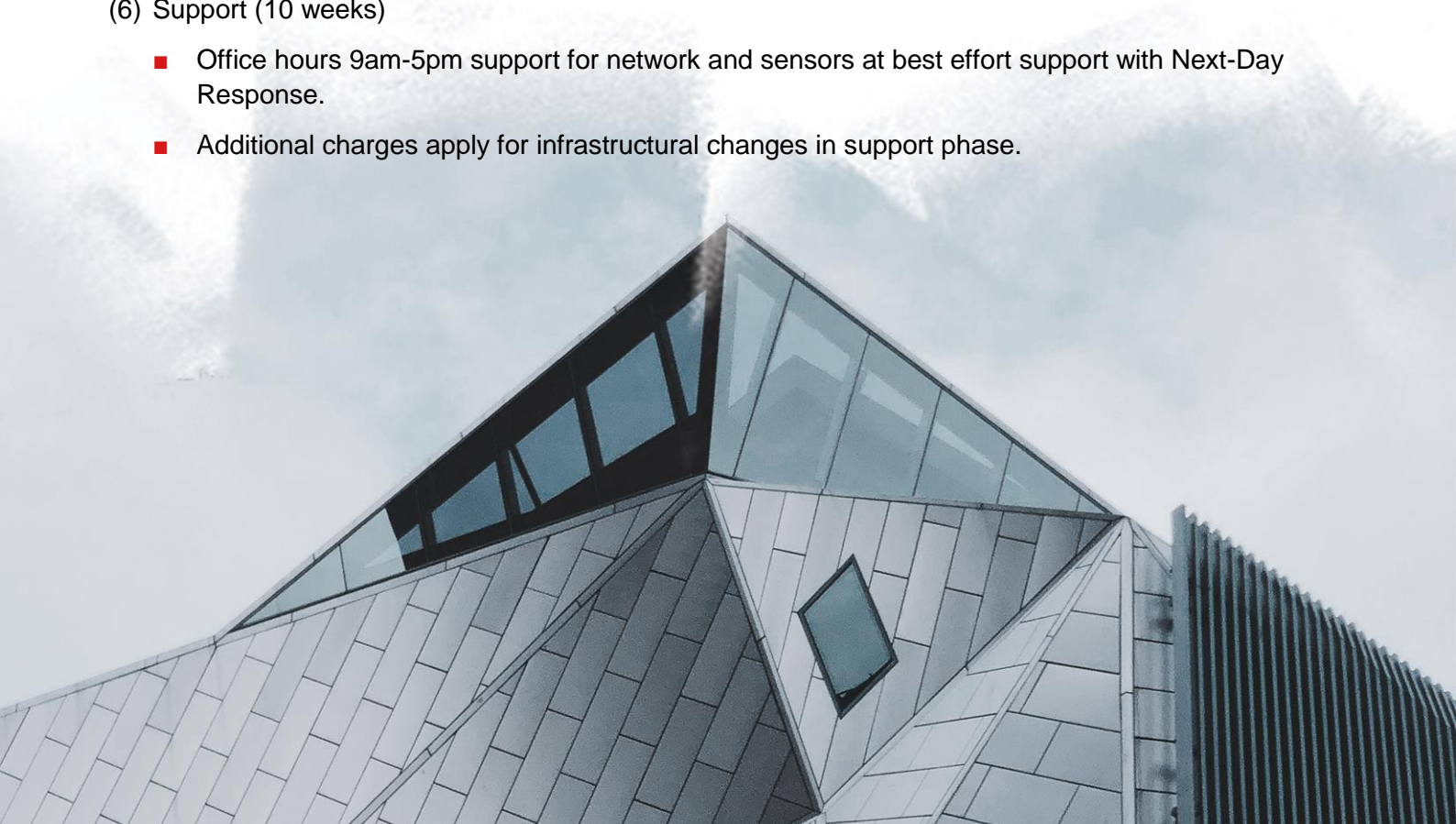
(4) Installation/Configuration

- Office Hours Only for implementation / installation.

(5) Assumptions

- Works is allowed to commence and complete within 3 weeks.
- Installation works allowed during office hours.
- Every switch-to-sensor cable run is less than 90m.
- Sensors can be mounted between at between 2.5m to 4m height with no need for additional mounting poles/aid.
- Variation from the above will result in additional charges.

(6) Support (10 weeks)

- Office hours 9am-5pm support for network and sensors at best effort support with Next-Day Response.
- Additional charges apply for infrastructural changes in support phase.

# Terms & Conditions

1. Offer valid with stock lasts, subject to confirmation

2. Prices quoted exclude prevailing GST and local taxes

3. Payment due in full upon confirmation of order

4. Deployment must start on or before 14 October 2019

5. PO must be issued to "Jones Lang LaSalle Property Consultants" on or before 30 September 2019

# Options After Starter Kit Period (Post 12 weeks)

| Options | Cost (SGD) | Notes/Remarks |
|---|---|---|
| A) Retain in-Situ | $12,500 Annual Sensor/Dashboard Subscription/Support | Work to change the network architecture and network support arrangement will be will be quoted separately depending on your needs. |
| B) Relocate | $ 4,000 One-Time reconfig of sensors and dashboards<br><br>$12,500 Annual Sensor/Dashboard Subscription/Support | |
| C) Remove | $ 1,500 Sensor Removal and Reinstatement Work:<br>• Removal of installed structured cabling.<br>• Dismount of sensors.<br>• Replace customer provided ceiling boards<br>• Disposal of waste materials. | |

# FAQ

1. **I'm using a binary PIR occupancy sensor, that can't be intruding on privacy, right?**

   Yes, you may be infringing on privacy rights. For fixed-assigned seating, a "1" (occupied) implies the named staff is at his/her desk - that's monitoring the individual.

2. **Why do I need cabling?**

   For security and stability. While WiFi seem simpler, it is more prone to bandwidth congestion (lost data) and open to over-the-air attacks.

3. **Why do I need 10 weeks?**

   This allows you to make some changes and then measure the results of those changes.

4. **Why do I need 95% - 99% accuracy?**

   2 pax in a 6pax room in not optimal but 3 pax in the same room is ok - hence meeting rooms need 95% accuracy or more. Traffic line analysis is error-compounding, hence the need for 99% accuracy.

5. **Are these solutions more expensive?**

   While the sensors are significantly more expensive than a desk sensor, you will need less of these sensors to achieve your goal. The total cost to cover a floor is comparable and over the long term, these sensors are more cost effective