

# Engineering canopy solutions that are built to last

An inside guide to site-specific calculations



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**“Conducting the right site-specific calculations can make all the difference between having the canopy you want and having to settle for an alternative design.**

**“With some minor adjustments to materials, fixtures, fittings and build techniques, almost any canopy installation is possible.”**

**Jason Eastwood, Managing Director, Canopies UK.**

# 1

## Calculating quality - the Canopies UK way

From hospitality to education, canopies are being increasingly recognised by organisations across a wide range of sectors, as the ideal solution to maximising their outdoor space.

While planning permission may not always be required to install an outdoor canopy, walkway or entrance canopy, there are still some fundamental factors that should always be considered to ensure the end product:

1. **Is fit for purpose.**
2. **Won't require any on-going maintenance or repairs.**
3. **Stands the test of time.**

Here at Canopies UK, we ensure that these factors are taken into consideration in the design, build and installation of all our canopy solutions, thanks to our site-specific calculations.

**In this guide, we explore the ins and outs of site-specific calculations – what they are, what they involve, the benefits of using them plus, key questions to ask your canopy supplier.**



## 2

## What are site-specific calculations?

Site-specific calculations are a series of technical measurements that are taken on-site by our technical surveyor before the design of a canopy can be finalised. These measurements should always be carried out before a quote is given to ensure there are no nasty surprises during the installation.

Our site-specific calculations cover key factors, including:

- Wind speed
- Annual snow fall
- The quality and structure of the wall that will support the canopy
- The terrain in which the foundations will sit
- Drains and below ground drainage that might be in the way
- Nearby trees and tree roots
- How tall the canopy needs to be



### What happens if the calculations uncover a problem?

#### Answer

Don't worry – almost all issues can be overcome with minor adjustments to the design, material or fitting techniques.

## 3

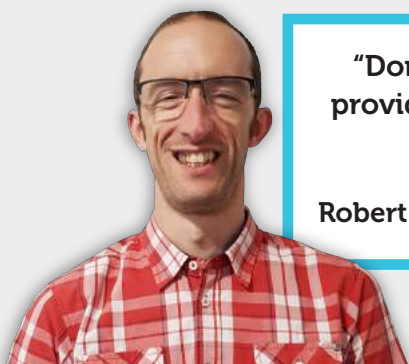
## A closer look at site-specific calculations

### Battling the elements: Wind speed and snowfall

It should come as no surprise to hear that coastal towns are subject to more wind than inner-city suburbs, and that the most northerly parts of the UK experience more snow than the Midlands. The weather plays a major part in all of our installations, which is why factors, including wind speed and snowfall are covered in our site-specific calculations.

Believe it or not, there's a whole host of variables involved when it comes to calculating wind speed and snowfall. In addition to basic wind speed and snowfall measurements. Here are just 5 of the key considerations we take into account to ensure our canopies withstand the natural elements:

1. Local topography – the natural lie of the land including valleys, creeks, hills and slopes.
2. Town terrain and site layout – urban density and on-site make up.
3. Altitude – how high the building is above sea level.
4. Roof shapes and adjacent buildings – slopes, walls and man-made surroundings.
5. Canopy height – distance from the floor to the underside of the canopy.



**“Don't be afraid to ask prospective canopy providers about the calculations they'll make before building your canopy.”**

**Robert Cassidy, Marketing Manager, Canopies UK.**

## A closer look at site-specific calculations

### Getting a good grounding: Ground type and below ground obstructions

It's not just the natural elements that need to be considered ahead of a canopy or walkway installation. There are numerous below ground variables that can affect how a canopy is erected to ensure that it performs at its best throughout its warranty period and beyond.



Here are two of the key below ground variables that tend to impact the vast majority of canopy installations:

#### 1. Ground type

Whilst many urban areas benefit from good solid ground with healthy clay content, it's not unusual for buildings to be constructed on historic landfill sites which, unsurprisingly, don't offer the same construction-perfect ground. Furthermore, rural buildings can be sited on ground which is loose and not conducive to standard footings, which is where alternative foundation structures, such as pile and beam systems come into play.

#### 2. Below ground obstructions

Canopies are almost always positioned close to pre-existing buildings, so the likelihood of below ground obstructions is high. Drainage systems, pipes, cables and tree roots are just some of the obstacles that a market-leading canopy supplier should be able to work around - if they've performed the correct site-specific calculations beforehand.

By positioning the vertical posts of your canopy in accordance with any pre-existing obstructions and using steel to reinforce the structure where necessary, a highly experienced installer can save you money on expensive utility re-routing works.



**The footings of a typical canopy structure sit at around 800mm deep, but they can go down as far as one metre if the shelter requires additional support due to high winds or other factors.**

## A closer look at site-specific calculations

### Off the wall: Wall-mounted systems

Many organisations, particularly schools, colleges, nurseries and places where there's high footfall, often choose to have a cantilevered canopy installed on to a wall. This approach helps remove the potential risks associated with having supporting posts installed in the ground.

As with any construction project, it's important to establish whether or not the wall that the canopy's going to be hung from, is structurally sound. The wall also needs to be strong enough to take the weight of the canopy structure, which will be dependent on its:

- Age
- Position
- Material
- Plus, the type of canopy that's being installed



Instead of choosing a canopy and then being disappointed when it doesn't fit, site-specific calculations help determine where a canopy would be most suitable and whether additional supports might be required to ensure it can be installed as safely as possible.



**Not all canopies have to be freestanding. If you're concerned about how much space your canopy is going to take up or the risk of people bumping into the supporting posts, then a wall-mounted, cantilevered design is the best option to go for.**

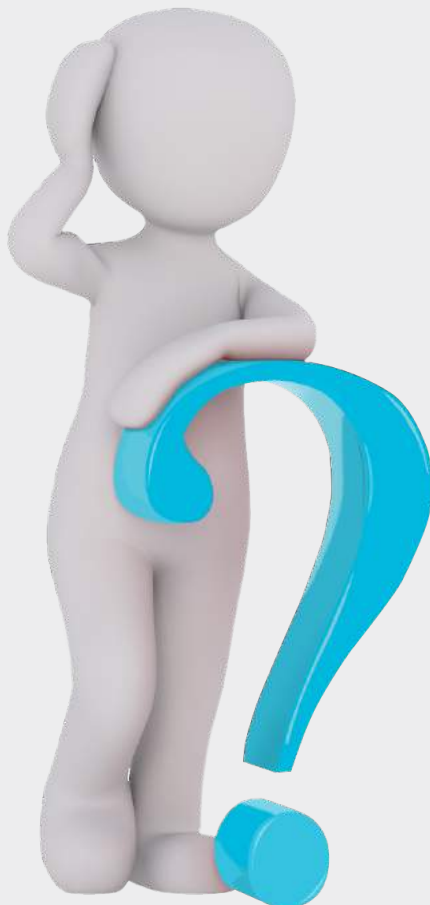
# 4

## Key questions to ask your canopy supplier

Unfortunately, not all canopy manufacturers use site-specific calculations like we do here at Canopies UK, which means they can't always guarantee that their solutions deliver in the product and installation quality and longevity and performance stakes.

Don't be afraid to ask your supplier about these measurements, as they're a clear sign that your canopy will be fit for purpose (not an off the shelf solution) and, more importantly, stand the test of the time.

### Not sure what to ask? Here are some key questions to get you started:



Do they perform site-specific calculations?

What do their calculations cover?

Who are they carried out by and at what stage?

Will they share their findings with you and at what point?

How will they engineer your canopy to accommodate their findings?

Will their quote include any alterations or special installation requirements?

What type of guarantee do they offer?



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## About Canopies UK

Canopies UK is the country's leading designer, manufacturer and installer of high quality canopies. Celebrating its 25th anniversary in 2016, the company employs over 50 staff at its Lancashire headquarters, which incorporates offices, production space and warehousing.

Serving a multitude of sectors including hospitality, education, healthcare and construction, Canopies UK is proud to offer a ten-year guarantee on many of its canopy systems.



**For more information about our site-specific calculations or to book a site survey to discuss your canopy requirements with us, contact us on:**

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