Serious about Sustainability

WHITECODE GROUP

CONSTRUCTION

Newsletter Issue Number 01 – Winter 2018

The London Plan & 'Zero Carbon' – What should developers do?

In 2015, the government decided not to proceed with the 'zero carbon' target for new dwellings in 2016, as stated in the document *"Fixing the Foundations: Creating a more prosperous nation"*, dated July 2015. However, the latest version of the London Plan created by the London Mayor, published in March 2016, still requires new developments with dwellings to achieve 'zero carbon' from October 2016 (Policy 5.2).

The London Plan is the Regional Policy for all London Boroughs.

As a minimum, both residential and non-residential schemes are still required to achieve a 35% improvement over Part L 2013 of the Building Regulations. The remaining regulated CO_2 emissions, to achieve 'zero carbon', are to be off-set through a cash in lieu contribution – the carbon off-set fund.

Did you know?

"Regulated" energy is energy used for space and water heating, ventilation, cooling and lighting.

Energy used for cooking and appliances, such as TVs and vacuums, is "unregulated" energy.

How much is the carbon off-set fund?

London boroughs are required to set a price at which the CO_2 emission reduction shortfall will be calculated. They can choose to use the suggested nationally recognised price of £60 per tonne of CO_2 per year, over 30 years (£60 x 30 years = £1,800 per tonne of CO_2 is to be off-set), or to develop a locally specific fund.

A majority of London boroughs have applied the nationally recognised price; however, some have chosen to either go beyond the set price or below.

Boroughs can also agree to off-set any shortfall of CO_2 emission reductions from a proposed scheme by applying improvement measures to nearby buildings.

What is most cost-effective – To pay into the carbon off-set fund or to pay for extra improvements to achieve a higher CO_2 emission reduction onsite?

The Whitecode Sustainability Department have carried out an exercise for a sample development consisting of 206 dwellings to demonstrate how improving the specification that already achieves a 35% improvement will affect the overall costs.

Five scenarios were looked at – **1)** maximum amount of PV array; **2)** improved wall U-values adjacent to unheated spaces; **3)** upgrading to triple glazing; **4)** upgrading to balanced heat recovery (MVHR) and reducing the air permeability rate; and, **5)** combining all four scenarios.

The graph in **Figure 1** indicates the results for the above scenarios, showing the payment required into the carbon off-set fund and the costs for the improvements.

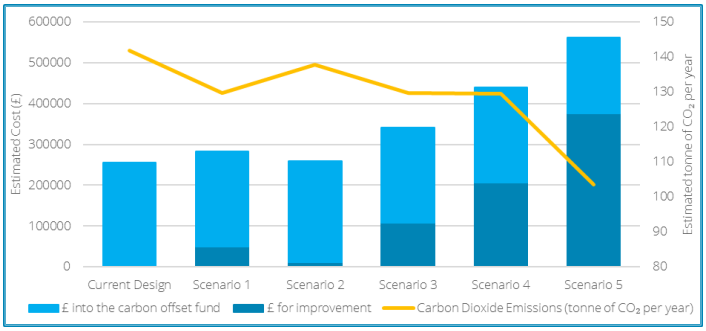

Figure 1 Graph showing sample SAP calculation results

It was found that improving the wall U-values (Scenario 2) was the most cost-effective improvement. Even though this doesn't achieve the greatest CO_2 emission reduction, the price of insulation is a lot cheaper compared to the other scenarios, meaning that less expenditure is required overall, even when including the higher payment required for the carbon off-set fund.

This is based on the development being located within a London borough that has applied the nationally recognised price of £60 per tonne of CO_2 per year.

It does depend what London borough the development is in whether it is worthwhile to reduce CO_2 emissions beyond the 35% improvement or not.

For example, if the development was located in Islington with a one-off payment of £920 per tonne of CO_2, then the payment required for the carbon off-set fund would **reduce** by £124,847.

If the development was in Westminster with a one-off payment of £7,560 per tonne of CO_2, the total payment required into the carbon off-set fund when achieving a 35% improvement would **increase** by £817,183. Therefore, it would be more beneficial for a development within this borough to achieve a greater improvement over Part L 2013 of the Building Regulations before paying into the carbon off-set fund. By maximising the PV array, as in Scenario 1, a saving of £42,874 could be achieved.

Developers should appoint a sustainability consultant at the early stages of a project to assess what would be the most appropriate way forward for their development.

Contact Us

Let us know if you have any questions regarding this article, or if you have a topic in mind that you would like us to discuss.

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WORLD

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Artificial vs. Real Christmas Trees – Which is better for the environment?

Now that the festive period has passed, here is something for you to think about for this year – What's better for the environment, artificial or real Christmas trees?

Image from Google Images

Both artificial and real trees have their pros and cons.

Artificial trees are a more cost-effective option as you don't have to pay out each year for a new tree. The quality of modern artificial trees makes them quite appealing as they look almost "real life", they don't need watering and don't leave pine needles all over your floor. You can even purchase trees with lights already fitted on them, which appear to be better positioned than when you put them on yourself.

They are a favourite in the commercial sector as they are made flame retardant, non-allergenic and reduce the risk of bringing in unwanted pests, such as other plant or material damaging insects.

However, as artificial trees are made of metal and polyvinyl chloride (PVC) components they are non-recyclable and non-biodegradable. Real trees are recyclable and can be used in landscaping, gardening or chipped and used for playground material, hiking trails, paths and walkways.

Better still, if you buy a potted tree you can replant it after the festive period. If you are unable to do this due to restrictions, such as available space, you can always ask your local council to see if they can replant the tree in a local park or woods. The trees can be re-used for beachfront erosion prevention, lake and river shorelines and fish and wildlife habitats.

Did you know?

Burning real trees emits the CO_2 emissions that it has stored up when it was growing, so there would be no net increase.

Real Christmas trees should only be purchased from sustainable tree farms as they ensure that for every tree felled an extra sapling is planted. One farmed tree absorbs more than 1 ton of carbon dioxide (CO_2) emissions throughout its life. One acre of trees produces enough oxygen for the daily needs of eighteen people.

However, tree farms can be damaging to the environment and are better if sustainable farming techniques are used, i.e. no chemical pesticides or fertilisers are used that can damage surrounding areas.

So, looking at greenhouse gases, which is better?

More emissions are obviously made during the production of artificial trees compared to real trees. The carbon footprint is further increased for the transportation, as most are imported from China. Therefore, even if real trees are not locally sourced, the overall carbon footprint for production and transportation would still be smaller than artificial trees produced and imported from overseas.

If this was compared to driving an average-sized car the production of a six-foot artificial tree is equivalent to driving for 120 miles, whereas for real trees it is equivalent to driving for less than 10 miles.

Image from Google Images

Studies carried out by the Carbon Trust show that if a six-foot artificial tree is sent to landfill it has a carbon footprint of 40kg of greenhouse gases (CO_2e). A real tree has a carbon footprint of 3.5kg of CO_2e if burned or chipped and spread over the garden. Burning the tree emits the CO_2 emissions that it has stored up when it was growing so there would be no net increase. A real tree sent to landfill has a carbon footprint of 16kg of CO_2e. The tree produces methane gases as it decomposes which is more potent than CO_2 emissions.

Therefore, an artificial tree has a carbon footprint ten times greater than a real tree and will need to be reused for ten Christmases to be better than a real Christmas tree.

So, if you have an artificial tree make sure that you use it for over ten years to make it worthwhile for the environment.

Did you know?

It better for the environment to burn a real tree than to dispose it at a landfill site.

This is because more greenhouse gases are emitted when a tree composes, such as methane, which is more potent than CO_2 emissions.

Contact Us

Let us know if there is a topic you would like us to discuss in our next issue.

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