

# THE ULTIMATE UNDERFLOOR HEATING BUYER'S GUIDE

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Discover everything you need to know when considering underfloor heating for your home



# THE ULTIMATE UNDERFLOOR HEATING BUYER'S GUIDE

**When it comes to building or renovating a property, how you choose to heat your home is the most important decision you will make.**

Your choice will affect how comfortable you and your family are, how you use each room in the home, your fuel bills and even your carbon footprint.

**Traditionally, homes have been heated by high-temperature radiators but there is a better way: underfloor heating.**

At Nu-Heat, we have coming up to 30 years' experience in heating homes in the best possible way. We know that you probably have a lot of questions if you are thinking about making the switch from radiators to underfloor heating!

*What actually is it? How does it work? How does it compare to radiators? What might it cost? Can you still have carpet? How do you go about choosing the right system?*

That's why we have put together this Ultimate Underfloor Heating Buyer's Guide, to help you decide on the right option for your home - I hope you will find it helpful!

Jo Snell  
Nu-Heat Self-Build Manager

*In my opinion home heating is just as important as interior design. There's little point investing the time and energy trying to create the right ambience and setting if it is jeopardised by a poorly designed or badly functioning heating system.*

Kirstie Allsopp



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# WHAT IS UNDERFLOOR HEATING?

Underfloor heating essentially works by turning your floor into a giant, efficient and invisible heat emitter.

Plastic pipework or electric cables are installed beneath the floor, which heat up, to warm the room from the ground up.

**There are two quite different types of underfloor heating:**

1

## WARM WATER UNDERFLOOR HEATING

This works by circulating warm water through strong and flexible pipework that is embedded in the floor.

It's the most popular and efficient type of underfloor heating and can be installed in all types of property, even if you're renovating!

2

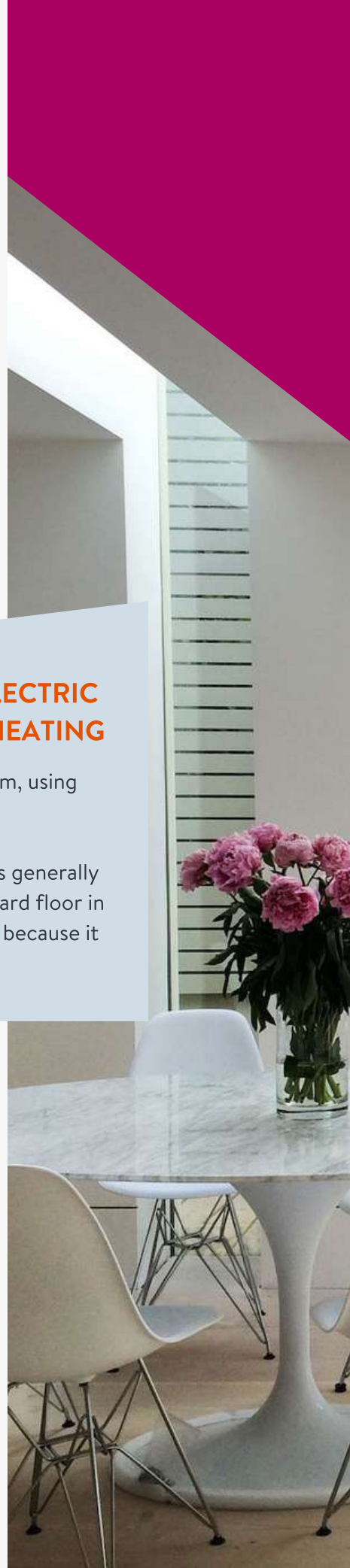
## ELECTRIC UNDERFLOOR HEATING

This uses cables to warm the room, using electricity rather than water.

This type of underfloor heating is generally used just to take a chill off of a hard floor in a small room, like in a bathroom, because it costs more to run.

Because warm water underfloor heating covers such a large surface area, it is able to both effectively and efficiently heat your home using much lower water temperatures than radiators. This makes it more efficient; safer as there are no exposed, hot surfaces; and it also better heats a room as the area is evenly heated, so there are no cold spots.

Underfloor heating can be used throughout your home, just downstairs or in one single room. Wherever you are considering underfloor heating, it's always best to do your research and have the system professionally designed, so that it is tailored specifically to your home, for maximum comfort and low running costs.



# Most homes in the UK are still heated by radiators, so you're probably familiar with these problems...



## **“It’s always cold in that room! Shut the door, there’s a draught!”**

Radiators rely on one surface to heat an entire room. Because they circulate air to do this, known as convection, they do a pretty poor job of heating rooms evenly - the temperature can vary as much as 5 degrees from one side of the room to the other! That’s why you often find cold spots or draughts in homes with radiators.

## **“Ouch, I just burnt myself!”**

Radiators need to use incredibly hot water, around to 70-80°C, to heat a room from just one small surface. This means they get worryingly hot and aren’t ideal if you have young children or elderly relatives at home.

## **“Nope, that can’t go there because it’ll block the radiator.”**

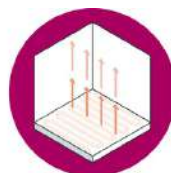
Radiators take up valuable space in your home. They affect where you put your furniture, the length of your curtains and can spoil your decor. And, let’s be honest, they aren’t something you want to make a feature of!

*Did you know underfloor heating uses water that’s around 45 degrees to heat your home compared to a whopping 75 degrees required by a radiator system?*



# Thankfully, underfloor heating offers some big benefits over radiators.

## The feeling



The number 1 benefit of underfloor heating is how great it feels! It gently heats from the floor up and makes cold floors feel warm underfoot.

There are no cold spots or draughts that you experience with radiators. Air quality is much better as there are no convection currents moving dust around the home, which is particularly good if you suffer from allergies.

## It's invisible



Underfloor heating is practically invisible. The heart of the system, the manifold, is stored away in a cupboard. This means there are no exposed hot surfaces and you can put furniture wherever you please.

## 25% more efficient



Warm water underfloor heating is a low temperature heating system, using water that is around 40-45°C.

This means that your heat source, whether a boiler or heat pump, is more efficient as it doesn't have to produce high water temperatures to heat your home.

*Underfloor heating is around 25% more efficient than radiators, and up to 40% more efficient when combined with a heat pump!*

THE DIFFERENT TYPES OF

# Underfloor Heating

Unlike radiators, you have far more choice and flexibility when it comes to installing underfloor heating.

There are systems to suit every type of project and subfloor - Nu-Heat offers over 60! - and these can be split into three main categories:



**UNDERFLOOR HEATING FOR  
NEW BUILDS**



**UNDERFLOOR HEATING FOR  
RENOVATION PROJECTS**



**UNDERFLOOR HEATING FOR  
ONE ROOM**

1

## UNDERFLOOR HEATING FOR NEW BUILDS



Warm water underfloor heating is a breeze to install as part of a new build project when following a design. It's usually installed as part of the build, over insulation, before being buried in the screed.

Upstairs, or where you have joisted floors, the underfloor heating is installed between the joists before the floor deck is laid.

This type of underfloor heating is cost-effective - often cheaper than fitting radiators - and also incredibly efficient thanks to the screed acting as a large thermal store, holding heat.



2

## UNDERFLOOR HEATING FOR RENOVATIONS



If you are renovating, you'll be relieved to know that you don't have to dig up your floors to enjoy warm water underfloor heating.

Known as retrofit systems, this type of underfloor heating is installed on top of your existing floor. They are typically low profile, meaning you won't need to worry about losing much floor to ceiling space, and offer high heat outputs to suit slightly older buildings.

A bespoke design is a must-have in a renovation project where heat losses can be higher because of poorer quality insulation, as it guarantees performance throughout the winter.



3

## UNDERFLOOR HEATING FOR ONE ROOM



You can also install underfloor heating in just one room with an underfloor heating kit. There are two main types of kit: electric and warm water.

Electric underfloor heating is cheap to buy, easy to install and a great option for smaller kitchens and bathrooms where you want to experience the feeling of warm floors.

For larger rooms, more than 10sqm, the running costs of electric can rule it out. This is when you would instead look at a warm water underfloor heating kit which costs around a third of the cost to run in comparison to electric!





# UNDERFLOOR HEATING FOR NEW BUILDS

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**If you're building your own home and considering underfloor heating, then it's likely that a screed system will be right for you.**

Screed systems are installed by securing the heating tube through a polythene layer, usually with clips, into the insulation. This is then covered by the screed.

In most builds, you'd be laying the screed anyway, so it's just a case of adding in the underfloor heating which is particularly affordable in this type of project.

The screed, which is usually around 65mm in depth, acts as a thermal store, holding onto the heat. This makes underfloor heating for new builds incredibly efficient and a great option whether you are opting for a boiler or a renewable heat source, like a heat pump.

It's worth mentioning that you can also install underfloor heating upstairs, too! Metal spreader plates are a good option in this scenario as they're lightweight and completely hidden within the floor deck, meaning no height build-up.





# 1

## UNDERFLOOR HEATING FOR NEW BUILDS

### Pros

- Affordable - likely cheaper to install than radiators!
- Simple to install, fitting neatly into the build schedule.
- Highly efficient as the screed acts as a thermal store.
- A great option if considering a heat pump. Underfloor heating is up to 40% more efficient with a heat pump than a radiator system!

### Cons

- If you're on a tight schedule, screed drying times could hold you back, although if time is an issue you could choose an overlay system to avoid this.
- The system takes time to warm from cold but once you understand how it is controlled, this can be avoided.

*I found it a lot easier to fit the underfloor heating than radiators. It took just a couple of days for both floor levels. The end result is so much better – there are no radiators to spoil the look of the home or pipework on show.*

Richard Garrett

### Summary



**Warm water underfloor heating systems for new builds, like screed, are so affordable and simple to install, it's difficult to justify even considering radiators!**

# UNDERFLOOR HEATING FOR RENOVATION PROJECTS

**Known as retrofit systems, this type of warm water underfloor heating has been specifically designed to be installed in renovation projects.**

Retrofit systems are all about making underfloor heating possible in renovations with minimal disruption. You won't need to dig up your floors to enjoy underfloor heating with one of these options!

You can expect this type of underfloor heating system to be laid directly on top of your existing floor. It will be low profile - starting from just 15mm, the height of a 5p coin - offer high heat outputs to suit slightly older buildings, and provide super-quick response times.



There are two main types of retrofit underfloor heating: a dry, pre-routed gypsum board that holds the heating tube; or a plastic 'egg tray' panel which is covered in a liquid compound.



## 2

# UNDERFLOOR HEATING FOR RENOVATION PROJECTS

## Pros

- No need to dig up your floors! The system is installed directly on top.
- Heats up and cools quickly
- High heat outputs to effectively heat older buildings.
- Can be installed throughout your home, between existing and new parts of a building, or just in one room.

*We'd definitely recommend retrofitting underfloor heating. The whole process has been no more disruptive than any other part of the renovation, so why wouldn't you?!*

[Paul and Gill Regan](#)

## Cons

- Underfloor heating for renovations tends to cost more than for new builds. This is because more materials are supplied.
- Whilst retrofit systems aim to cause minimal disruption, you will still be having your entire floor covered with underfloor heating. It can make using some rooms a bit tricky for a few days.
- The higher heat output of retrofit systems means that they can damage sensitive floor coverings, like vinyl. A good design will always take this into account, though, and include floor sensors to protect your choice of floor covering.

## Summary

Thanks to retrofit systems, underfloor heating is an option for most renovation projects. You can enjoy all of the benefits with just a little upheaval.

It's worth mentioning that a high quality design that factors in the fabric of the building (insulation, ceiling heights, wall and window construction) is absolutely essential in this scenario to guarantee it will heat your home throughout the coldest months.



## UNDERFLOOR HEATING FOR ONE ROOM

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**Renovating just the one room? You can still enjoy underfloor heating by choosing either an electric or warm water kit.**

If you are updating a bathroom or refurbishing a small kitchen, electric underfloor heating could be the right choice for you.

This type of system uses cables to heat the floor. It's powered by electricity, so we wouldn't recommend using it over a large area because it would lead to eye watering running costs. Over small areas, though, it can add a touch of luxury with minimal outlay.

Building an extension or creating a large open living space? We'd highly recommend looking at a warm water kit over electric. It's much cheaper to run and there are options to suit every type of property, making installation simple.

You can easily buy underfloor heating kits online. Just remember, they won't include a design specific to your home.

A kit can work well in a single space but is risky when heating multiple rooms because it will not take the fabric of the building or its heat losses into account.







### 3

## UNDERFLOOR HEATING FOR ONE ROOM

### Pros

- Cheap and easy to buy online, also delivered quickly.
- Great for DIYers. You can lay the heating pipework or cable yourself and just get a plumber or electrician to finish the install for you.
- There's a kit to suit every project, covering extensions, renovations and even the smallest ensuite bathroom.

### Cons

- No design. This can make a kit trickier to install and runs the risk of not heating the room as well as you would like.
- Electric underfloor heating kits can cost a lot to run, so are best for smaller rooms like bathrooms.
- The quality of some underfloor heating kits can be poor. Make sure that you buy from a reputable supplier that offers fully designed systems, long warranties and technical support.

*House guests always comment on how nice it is to get out of the shower to a warm bathroom floor.*

James Lavers



### Summary

Underfloor heating kits make it possible to enjoy warm floors in typically tiled rooms, like bathrooms and kitchens, for less outlay than a fully-designed system.

As you're likely to buy this online, we'd recommend looking at customer reviews and also speaking with your installer to check that the system is of good quality.

# CHOOSING THE RIGHT FLOORING FOR UNDERFLOOR HEATING

Did you know that you can have pretty much any floor covering with underfloor heating, even carpet? Yes, really!

The key to choosing the right flooring for underfloor heating is in the design process. Providing the floor covering is factored in, you can pick from a wide range of options.

**These are the 3 most popular, along with tips to bear in mind to achieve a perfect finish:**

## CERAMIC & STONE TILES



Tiles provide the highest thermal conductivity out of all floor coverings.

This means the heat passes through them with minimal resistance, so they warm quickly. As they are easy to clean, you're likely to choose them for a kitchen, hallway and in bathrooms.

### Tip:



It's important that a decoupling membrane is used over the underfloor heating before you fit tiles. This allows for any movement in the sub-floor, protecting tiles from cracking.

## SOLID & ENGINEERED WOOD



Wood floor coverings also transfer heat well, come in a variety of colours, grains and patterns and are durable.

Engineered wood works particularly well with underfloor heating as it has strong structural stability, so is able to maintain its shape under temperature.

### Tip:



Wood floor finishes should be acclimatised to the underfloor heating gradually to avoid the risk of the timber expanding or contracting.

## CARPET & RUGS



Carpet is always a popular choice for living rooms and bedrooms.

As you might expect, it does have insulative properties and whilst it isn't the most conductive floor covering you can use it with underfloor heating, as well as rugs.

### Tip:



Make sure that the overall Tog value of the carpet and underlay doesn't exceed 2.5. This will ensure the underfloor heating can still heat the rooms effectively.

# THE COST OF GOOD UNDERFLOOR HEATING

Exactly how much an underfloor heating system costs varies depending on the type of system you choose, the size of your home and whether you opt for a fully-designed solution or a kit.

**When looking at the cost, you should consider:**

## IS A BESPOKE DESIGN INCLUDED?

A bespoke design will guarantee the system works - no-one wants a cold home in the winter!

A design will tailor your heating to your home and how you use it. This will factor in the floorplan of your property, the fabric of the building to calculate room-by-room heat losses, and even the floor coverings you plan to use.

## IS THE SYSTEM GOOD QUALITY?

Underfloor heating is beneath your floor, so it's important that the system is of a good quality and uses reliable components.

You'll want to check the experience of the supplier, the components used in the system (are they reputable brands?) and the length of warranties. Systems you buy online, or without a design, are often cheaper for a reason.

## WHAT SUPPORT IS AVAILABLE?

If you're new to underfloor heating, you might want a little extra support.

Can your supplier help you to find an installer? Will they help explain how to control your new heating system? Can they guide you through how the system is installed? And will they continue to offer support for the lifetime of the system?





# THE COST OF GOOD UNDERFLOOR HEATING

## HERE'S WHAT YOU CAN EXPECT A GOOD UNDERFLOOR HEATING SYSTEM TO COST:

- Fully-designed, warm water underfloor heating for a new build project:  
**from £50 per sqm**
- Fully-designed, warm water underfloor heating for a renovation project:  
**from £100 per sqm**
- Non-designed, underfloor heating for one room:  
**from £22 per sqm**



# YOUR FAQs

There are a handful of questions that always pop up when we're asked about making the switch to underfloor heating from radiators.

## → **CAN THE UNDERFLOOR HEATING LEAK?**

Don't worry, it's really, really unlikely that a warm water underfloor heating system will leak!

The heating pipework is strong and durable, making it incredibly hard to damage during installation. Your system will also be filled with water and pressure tested before being buried in the floor, or having floor coverings fitted, for complete peace of mind.

## → **CAN I KEEP MY CURRENT BOILER?**

Yes. Underfloor heating will work with your existing boiler, a new boiler or a heat pump.

## → **CAN I USE UNDERFLOOR HEATING AND RADIATORS TOGETHER?**

Underfloor heating can replace radiators entirely, or work alongside them. So, if you would just like underfloor heating downstairs, you could choose to keep radiators upstairs.

## → **HOW LONG DOES UNDERFLOOR HEATING TAKE TO WARM UP?**

Retrofit underfloor heating systems heat up quickly, at a similar speed to radiators, because the heating pipework is very close to the floor surface.

New build systems that are set within a screed will take longer to heat initially, at the start of winter, but they retain their heat for longer. Once up and running, this type of system will react quickly to keep your home warm.



Still have some questions? Our Self-Build Team are always happy to answer them.  
[Get free advice](#)



# HOW TO CHOOSE THE RIGHT SYSTEM FOR YOU

Now that you know about the different types of underfloor heating, the next step is to choose the right system for your home, and there are plenty of suppliers and options to choose from!

To make it a bit easier, we've listed a few of the most popular types of underfloor heating systems, along with their features and benefits in a comparison table. This will help you to see if one solution might suit you better than another.

One of the benefits of underfloor heating is its versatility. There's a system for every type of home. If you aren't sure which system is best, or need something specific, there are many others to choose from!



	WARM WATER UNDERFLOOR HEATING FOR NEW BUILDS		WARM WATER UNDERFLOOR HEATING FOR RENOVATIONS		ELECTRIC UFH FOR ONE ROOM
	Screed UFH	Spreader plate UFH	Gypsum panel UFH	'Egg tray' with compound UFH	Electric wire system
Installed under or over floor?	Under, during build	Under, during build	Over existing floor	Over existing floor	Over existing floor
Ground floor or first floor?	Ground	First	Both	Both	Both
Height build-up	50-65mm	0mm (installed within the floor deck)	15mm	22mm	5.5mm
Heat output	High	Medium	High	Very high	Very high
Drying time before laying floor coverings	50-65 days	None	72 hours (small amount of compound around edges)	72 hours	None (just tile adhesive)

# SO, WHY SHOULD YOU CHOOSE UNDERFLOOR HEATING?

## BECAUSE UNDERFLOOR HEATING:

### FEELS GREAT

You really can't beat the feeling of warm floors, especially in rooms like a kitchen or bathroom. It adds a touch of luxury to your home.

### IS MORE EFFICIENT

Enjoy better heating for your home whilst also being more efficient - win, win!

### IS UNOBTRUSIVE

Experience perfect heating in every room without even knowing it's there. No unsightly radiators to worry about.

If you still have some questions about underfloor heating and whether it's right for your home, our Self-Build Team is here to help.



[Book a call to talk through your project](#)

Email your questions to  
[info@nu-heat.co.uk](mailto:info@nu-heat.co.uk)

Jo Snell  
Nu-Heat Self-Build Manager



# WHY CHOOSE NU-HEAT?

Nu-Heat has been happily heating homes with underfloor heating for coming up to 30 years.

We offer you:



## BESPOKE HEATING DESIGN

Our underfloor heating systems are designed and overseen by our experts, to meet the specific needs of your project.



## AWARD-WINNING SERVICE

With our award-winning customer service and support, we ensure you get the best underfloor heating system for your project.



## LIFETIME TECH SUPPORT

We offer lifetime tech support on our underfloor heating systems, so you can rest easy knowing we are always on hand to help.



## LONG WARRANTIES

We offer comprehensive warranty protection with all of our UFH systems, with long warranty periods for added peace of mind.



## REGISTERED INSTALLER NETWORK

Our Registered Installer Network helps you to find local professionals with expertise in installing underfloor heating and renewable systems.