



ARCHITECT CLIENT GUIDE

Explaining Radiant Heat to Clients

Four Benefits of Radiant Floor Heating

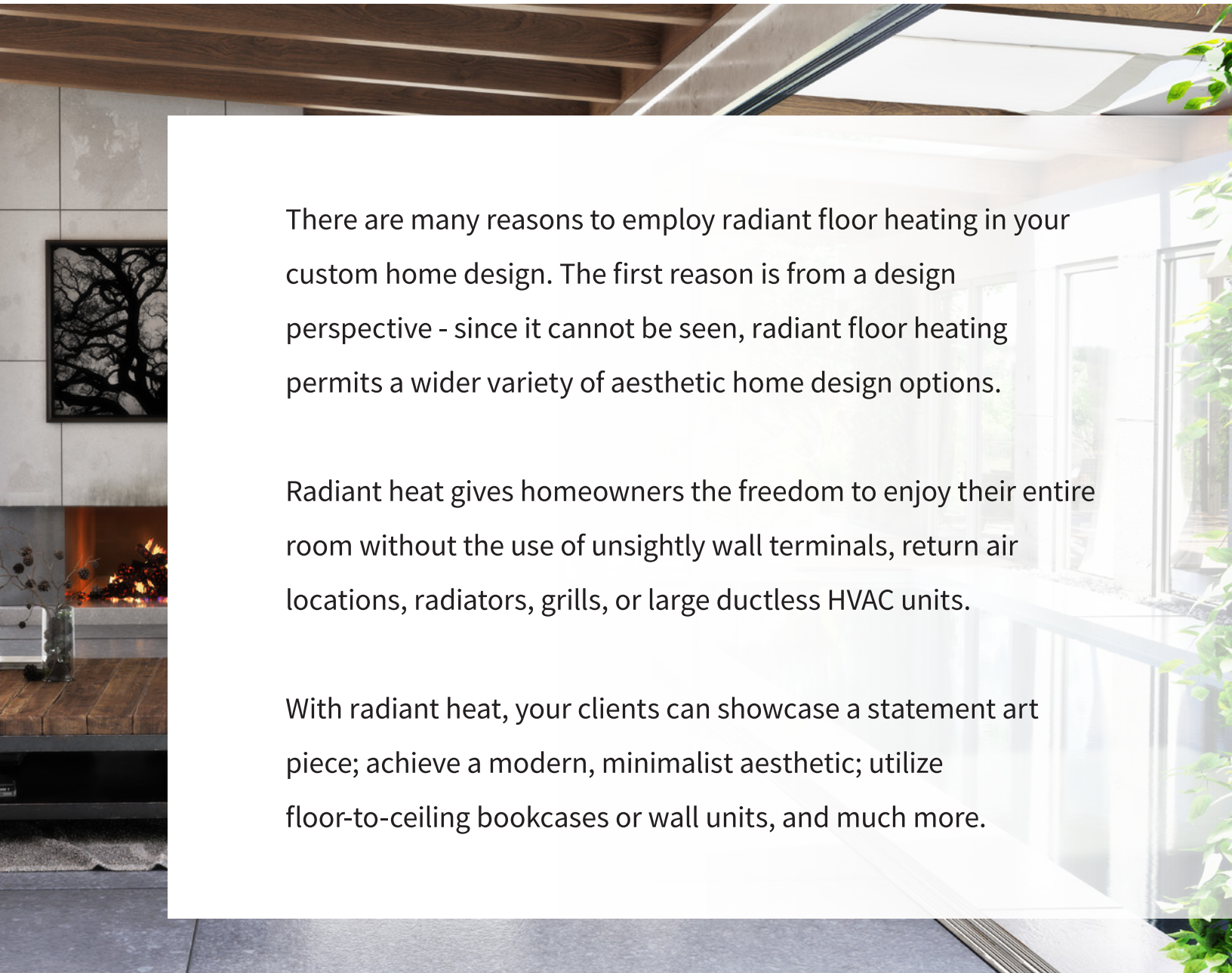
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A WBI PRODUCT
THERMALBOARD™
ECONOMICAL SUSTAINABLE PANELS

1. Radiant Heat is Less Intrusive

Radiant floor heating is one of the most energy efficient, environmentally friendly heating systems available today.



There are many reasons to employ radiant floor heating in your custom home design. The first reason is from a design perspective - since it cannot be seen, radiant floor heating permits a wider variety of aesthetic home design options.

Radiant heat gives homeowners the freedom to enjoy their entire room without the use of unsightly wall terminals, return air locations, radiators, grills, or large ductless HVAC units.

With radiant heat, your clients can showcase a statement art piece; achieve a modern, minimalist aesthetic; utilize floor-to-ceiling bookcases or wall units, and much more.



“

This makes me so happy! Very impressed with the product and how easy it was to install. Everything ran without a hitch. This was my first experience putting a WBI product in my own home, and I could not be more excited about it.

– Anthony Carrino, thebuild.tv



2. Ultimate Thermal Comfort

Knowing just a few basic principles of heat can help you make an informed decision when choosing the most comfortable, energy efficient heating system for your client's home, office, or building.

Radiant heat functions by a principle of physics called thermal radiation, a form of heat transfer generated by electromagnetic waves. It is due to thermal radiation that we feel the sensation of heat on our skin when standing outside on a hot summer day. Radiant heat operates under the same principle. It works by warming people and objects in a room from the ground up, rather than blowing hot air like forced-air systems. With radiant heat one feels true thermal comfort.

Radiant heat excels at eliminating cold spots. With traditional forced air systems, heat is distributed unevenly throughout the room, even with the thermometer set to 70 degrees. Like walking from direct sunlight into shade, although the air temperature remains the same, our perception of comfort varies

significantly. This change in sensation is due to heat loss. Radiant heat loss is a term used to describe the transfer of heat from a warm body to a cooler object. In fact, almost half of our body's total heat output is released by radiation.

When we are in proximity of objects cooler than ourselves, our bodies radiate heat towards those objects to warm it. This forces our bodies to work harder in an attempt to equalize the heat between us and the environment.

Let's say you live in a cold climate and have a home office with your back towards a north facing window. That large, cold window will have a much greater influence on your perception of comfort than any other surface in the room, regardless of the air temperature.

Radiant floor heating warms the objects for us so our bodies don't have to, and cold spots are eliminated because each object is heated at the same time.



Radiant heat eliminates cold spots, drafts, and uneven heat distribution common in traditional forced-air systems.

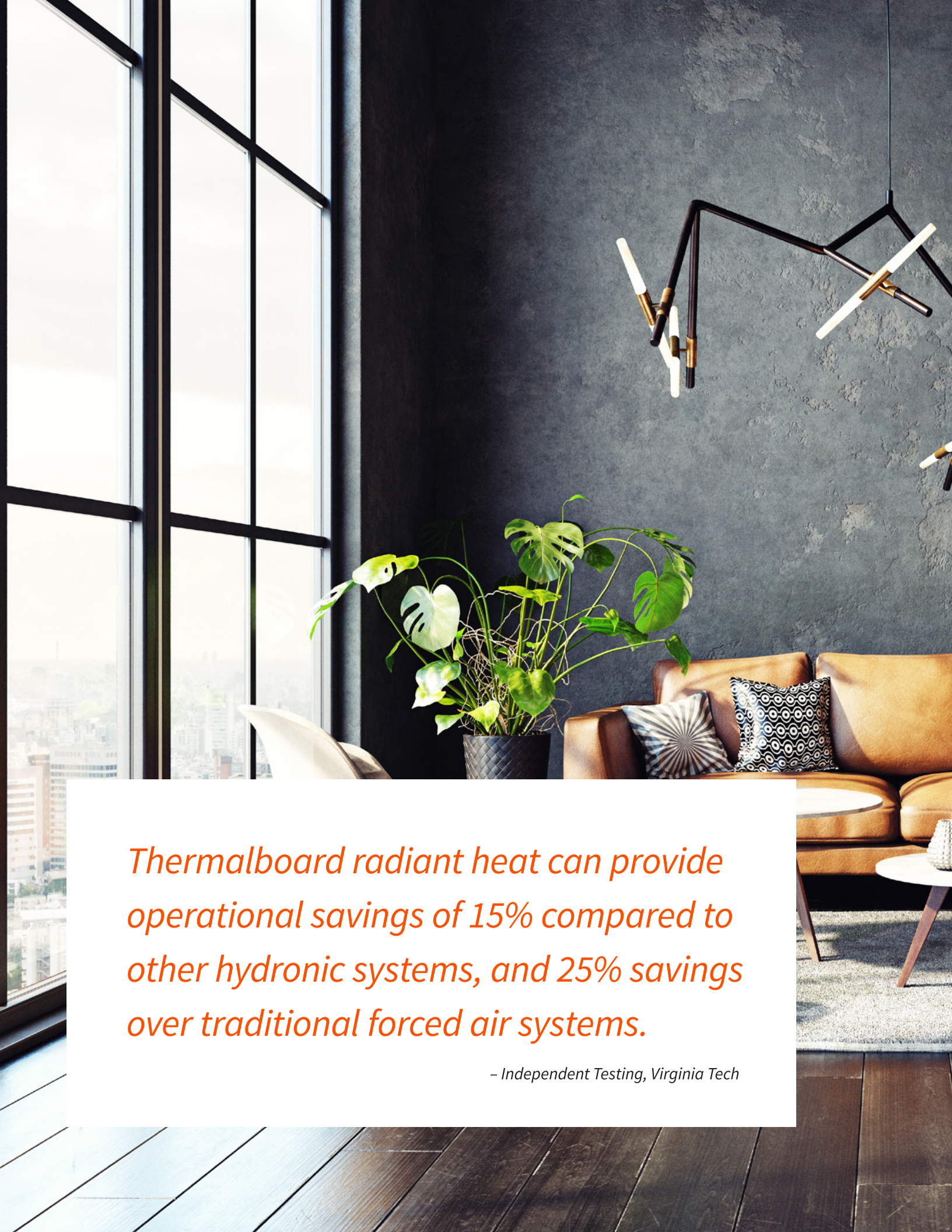


Another example of heat loss is through airflow. We experience “wind chill” whenever air flows past us at a temperature lower than our bodies. Although wind chill is usually thought of as an outdoor phenomenon, it can also occur inside.

The faster the airflow, the colder you feel, even though the temperature hasn’t changed. The word “draft” is used to describe this (usually undesirable) effect during the heating season. To maintain comfort, heating systems must avoid creating noticeable drafts.

Another benefit of radiant floor heating is just that...it keeps your feet from getting cold. From toddlers playing on the ground to octogenarians with poor circulation, everyone appreciates the way radiant floors keeps your feet warm. As an added bonus, dogs and cats love heated floors too!



A modern interior space featuring a large window on the left with a black frame, offering a view of a city skyline. A large potted plant with green leaves sits on a dark wooden floor. To the right, a brown leather sofa is adorned with two patterned pillows. A modern, geometric light fixture hangs from the ceiling. The overall aesthetic is contemporary and minimalist.

Thermalboard radiant heat can provide operational savings of 15% compared to other hydronic systems, and 25% savings over traditional forced air systems.

– Independent Testing, Virginia Tech



3. Effective & Energy Efficient

We're all familiar with the large, vaulted spaces favored in custom homes and modern log and timber cabins. As beautiful as these homes are, when it comes to heating they can be very inefficient. Hot air rises and fills the top of these tall rooms first, wasting energy and creating drafts; not too comfortable or efficient. As radiant primarily heats objects, most of those inefficient and uncomfortable drafts are eliminated.





How is radiant heat more efficient than traditional forced air?

As hot air from forced air systems enters the room, it immediately begins rising upwards. After reaching the ceiling, it falls back down again, losing much of its heat in the process. Air near the floor is noticeably colder – 20 degrees or more – than the air five or six feet above the ground. The uneven heat distribution of forced air systems creates multiple hot and cold spots throughout the home.

Leaks in forced air duct systems are considered a major source of energy waste in new and existing homes. According to Energy Star, about 20% of the air that moves through your home is lost. Additionally, forced air systems must continuously cycle on and off with significant air leakage occurring around doors and windows.

With radiant heat, the lower half of the room is heated first. Heat radiates from the floor and is then distributed throughout the room by natural air convection. Wall-to-wall floor panels create uniform heat distribution, providing comfortable, even heat with no vertical temperature variations.

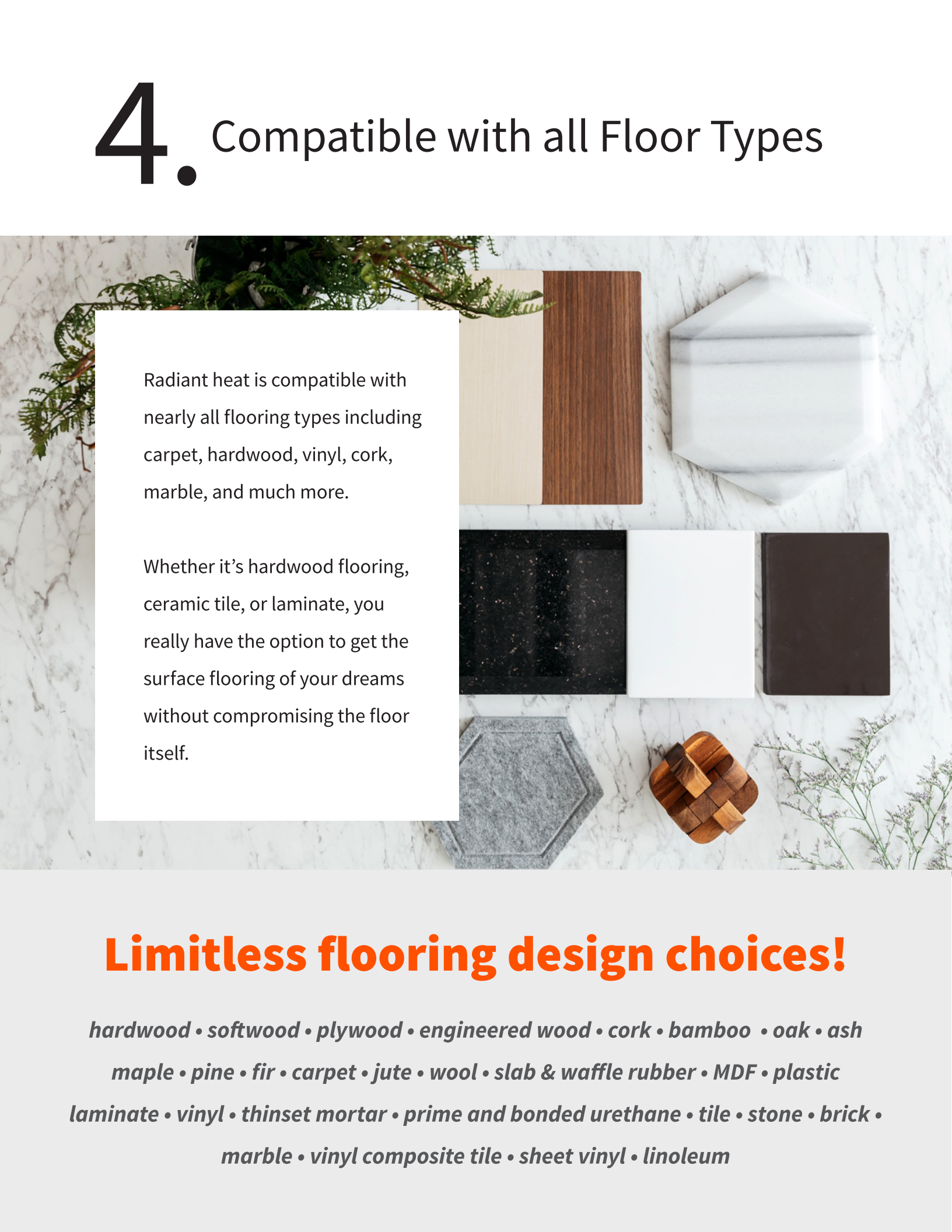
25%

*A radiant heat system can operate
25 percent more efficiently than
traditional forced-air systems.*

– American Society of Heating, Refrigerating and Air-Conditioning Engineers



4. Compatible with all Floor Types



Radiant heat is compatible with nearly all flooring types including carpet, hardwood, vinyl, cork, marble, and much more.

Whether it's hardwood flooring, ceramic tile, or laminate, you really have the option to get the surface flooring of your dreams without compromising the floor itself.

Limitless flooring design choices!

*hardwood • softwood • plywood • engineered wood • cork • bamboo • oak • ash
maple • pine • fir • carpet • jute • wool • slab & waffle rubber • MDF • plastic
laminate • vinyl • thinset mortar • prime and bonded urethane • tile • stone • brick •
marble • vinyl composite tile • sheet vinyl • linoleum*