

# THERMAL MASS

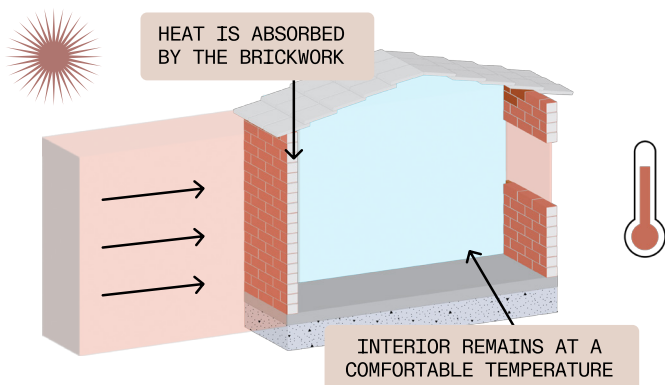
What you need to know

Midland Brick

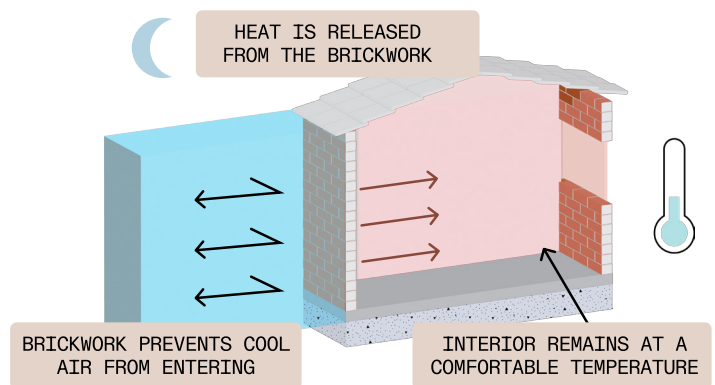
THINK  
BRICK  
AUSTRALIA

Thermal mass refers to a system's ability to absorb, store and release heat. High thermal mass materials such as bricks are able to slowly absorb and release heat, which is a great way to passively heat and cool your home and reduce the need for air conditioning. Combining insulation with high thermal mass bricks improves passive heating and cooling even further, putting more money back into your pocket.

## DAY

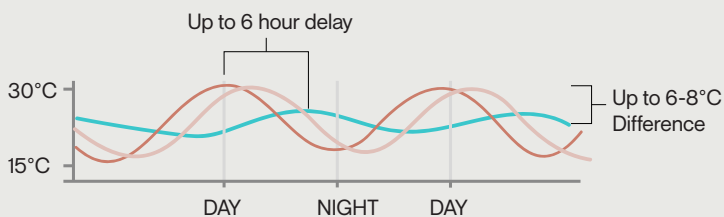


## NIGHT



## THERMAL LAG

Thermal lag describes the time it takes for heat to travel from an exterior to interior surface. Clay bricks typically have a high thermal lag value of 6 hours, meaning heat will take 6 hours to travel from the outside into your home. By prolonging the rate at which heat flows into the interior, your home can achieve a more stable internal temperature, regardless of the weather outside.



- External Temperature
- Internal Temperature with Low Thermal Mass ❌ HIGH VARIATION
- Internal Temperature with High Thermal Mass ✅ LESS VARIATION

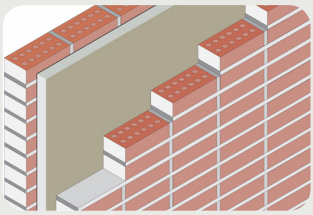




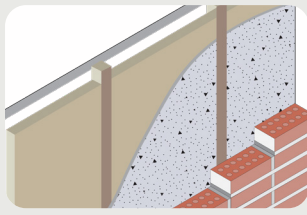
Shakespeare Grove | B.E Architecture  
Photography by Victor Vieaux

## WALLING SYSTEMS

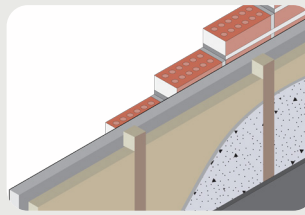
Achieving a 7 star energy rated home is easy and affordable with masonry walling systems given their high thermal mass. Detailed findings by YourHome show that insulated cavity brick houses can easily achieve an 8.1 energy star rated house which can equate to a 53% reduction in energy usage when compared to a 6-star energy rated house<sup>1</sup>. YourHome also found that insulated brick veneer can help achieve a 7.1-star energy rated house and reduce energy usage by up to 26% when compared to a 6 star energy rated home<sup>1</sup>.



BETTER



GOOD



GOOD

## ENERGY EFFICIENCY & SAVINGS

An analysis by YourHome found that 42% of Australian household energy use in 2019 was from artificial heating and cooling<sup>2</sup>. This shows how heavily intertwined a building's thermal performance and energy efficiency are. Using building materials with a high thermal mass will not only help passively heat and cool a household but can also reduce energy bills by 25% every year<sup>3</sup>.



Energy consumption of houses with different walling systems

### REFERENCES

- 1) Yourhome | Australia's guide to designing, building and living in ... (n.d.) Design Options - Banksia Perth. Available at: <https://www.yourhome.gov.au/sites/default/files/2021-08/Design%20Options%20-%20Banksia%20Perth.pdf>
- 2) Ibid
- 3) "Sustainable Energy Info Fact Sheet", Sustainable Energy Authority Victoria; University of Newcastle