



LIVE IN COMFORT

## A Practical Guide to Achieving Comfort, Efficiency, and Health.

Welcome to this simple guide on how to achieve proper orientation for your new home.

Living on a spacious rural block offers numerous advantages, and I've personally enjoyed this lifestyle for 15 years. As a building designer, I particularly appreciate the opportunity it provides for homeowners to create comfortable homes throughout the year. However, I've observed that some homes fail to maximize the benefits due to improper orientation.

Whether you are building in Murrumbateman or elsewhere in the region, this guide will provide valuable insights to ensure your home is optimally oriented for comfort and efficiency.

While this document uses 'The Fields' in Murrumbateman as an example, the principles outlined here can be applied wherever you have large blocks and minimal constraints on your home's orientation.

Proper orientation sets the foundation for a comfortable living environment and facilitates the seamless integration of other elements that contribute to the overall well-being, health, and efficiency of your home.

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*It is important to note that there are upcoming changes to the National Construction Code, effective from October 1, 2023, which require all new homes to achieve a minimum 7-star thermal performance rating and impose higher performance requirements for BASIX. If you haven't started planning your new home, it is crucial to consider these changes as they may impact your project.*

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### Why do we care so much about your home facing North?

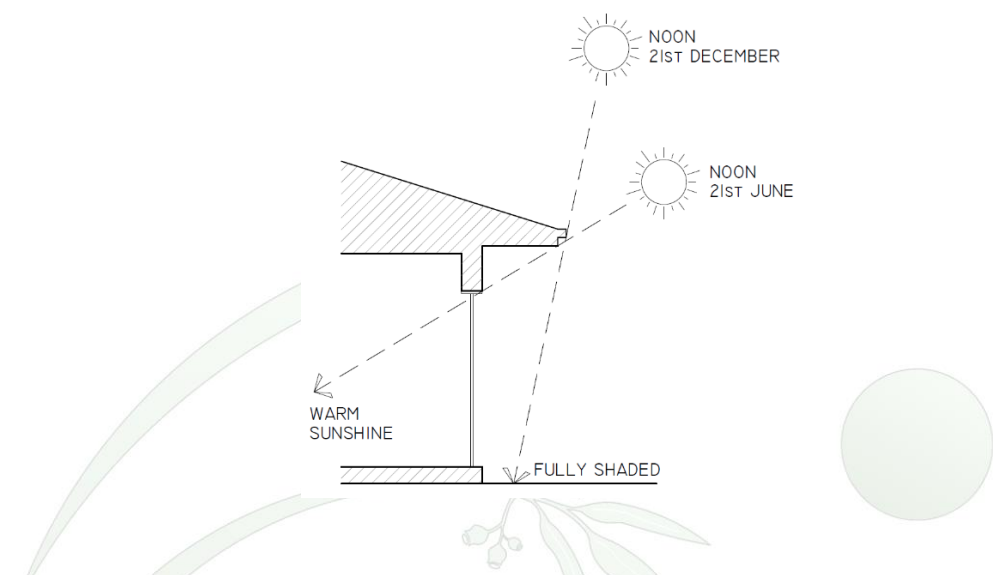
**Sun Path:** In Australia, the path of the sun predominantly lies in the north. Therefore, orienting the living areas of your home towards the north allows them to receive sunlight for the longest duration during winter while being easily shaded by the roof's eaves during summer.

**Enhanced Comfort and Energy Efficiency:** Good orientation can significantly improve your overall comfort and minimize the need for excessive heating and cooling. By harnessing the sun's warmth in winter and strategically blocking solar access with appropriate shading devices in summer, you can create a more energy-efficient and comfortable living environment.

**Variation in Orientation:** While north is considered the optimal orientation, it's important to note that your home can still receive the same benefits if it is within approximately 10 degrees west or 20 degrees east of true north.

**Solar North vs. Magnetic North:** When referencing the optimal orientation, it is important to clarify that "north" refers to solar north (the position of the sun) rather than magnetic north (based on the Earth's magnetic field).

I will assume that many people are familiar with this diagram. It represents the ideal scenario for North-facing windows in the living rooms of a home, maximizing the benefits of sunlight and creating a warm and inviting space.



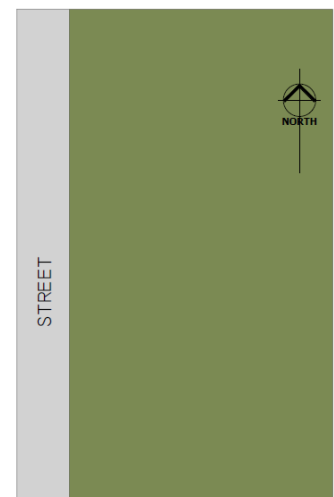
### Which block should I choose?

In general, there are three types of blocks available, and for the purpose of this guide, we will assume that they are all relatively flat. The blocks depicted here have an approximate size of 6000m<sup>2</sup>. The house size shown has a spacious 250m<sup>2</sup> floor area. There is still plenty of space for a giant shed, vegie garden, or tennis court., or all three.

**North to the Street**

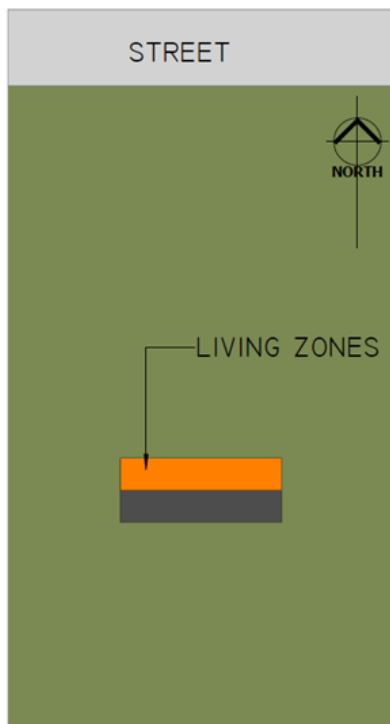
**North to the Rear**

**North to the Side**



**How should I approach each option to maximize the comfort, efficiency, and health of my home?**

## North to the Street.

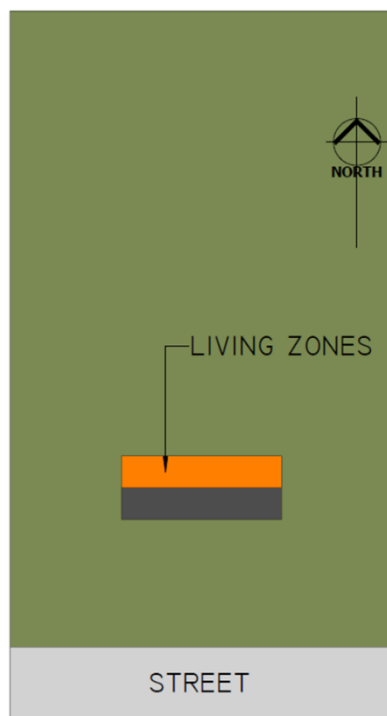


Setting your home back from the street offers the advantage of enhanced privacy for the living spaces that face the street. By strategically planting trees or hedges, you can further mitigate any concerns and eventually enjoy a beautifully landscaped view from your living rooms.

It's worth noting that if you opt for a project home, the conventional front door may end up being positioned at the "back" of the house due to this design choice. Some people may find this too unconventional.

I deliberately chose to design my home with the entry at the back, and I personally do not see it as a problem. While it may be viewed as unconventional by some, I believe it is often the most suitable approach for this design.

## North to the Rear.

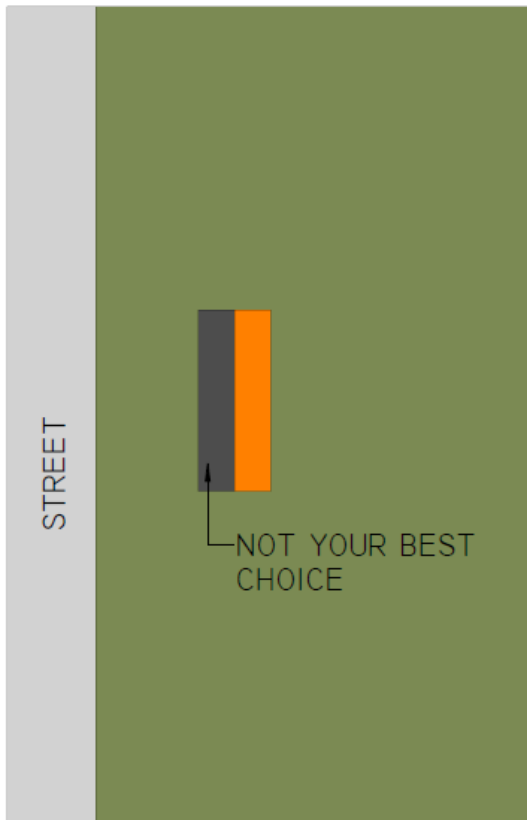


If having your home visible from the street is an important feature for you, this block type is well-suited to meet that preference. It follows a familiar suburban layout, featuring a smaller front yard and a larger backyard.

By opting for this type of block, you can enjoy the benefit of increased privacy for your living spaces. The positioning of the house allows for a sense of seclusion and a more intimate living environment away from the street.

This layout provides a balance between having a visible presence in the neighbourhood while still ensuring the privacy and comfort of your home's interior.

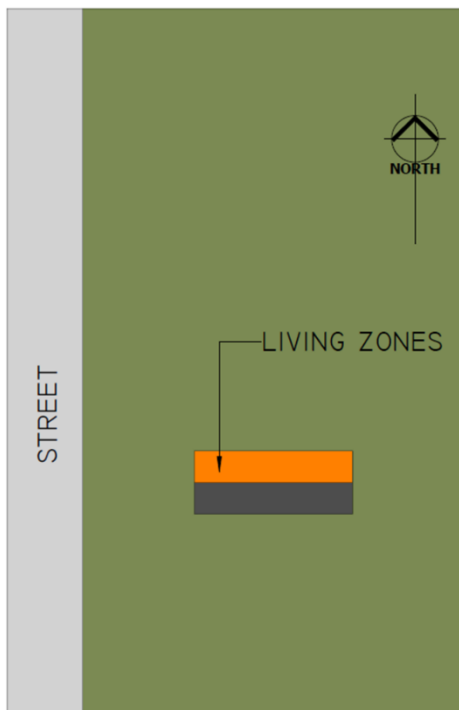
## North to the Side.



One of the most common mistakes I often observe is when homes are oriented with the front facing the street, which can prevent them from receiving valuable winter sunshine.

If this preference resonates with you, then the block described may not be the ideal choice. Instead, you should consider selecting a block where the North orientation is towards the rear of the property.

The orientation illustrated will result in minimal winter sunshine and exposes the front of your home to the hot afternoon summer sun.



Making a simple change in the orientation of your home can have a transformative effect on its performance compared to the previous option described. By adjusting the orientation to prioritize optimal sun exposure and minimize heat gain, you can achieve significant improvements in comfort and energy efficiency.

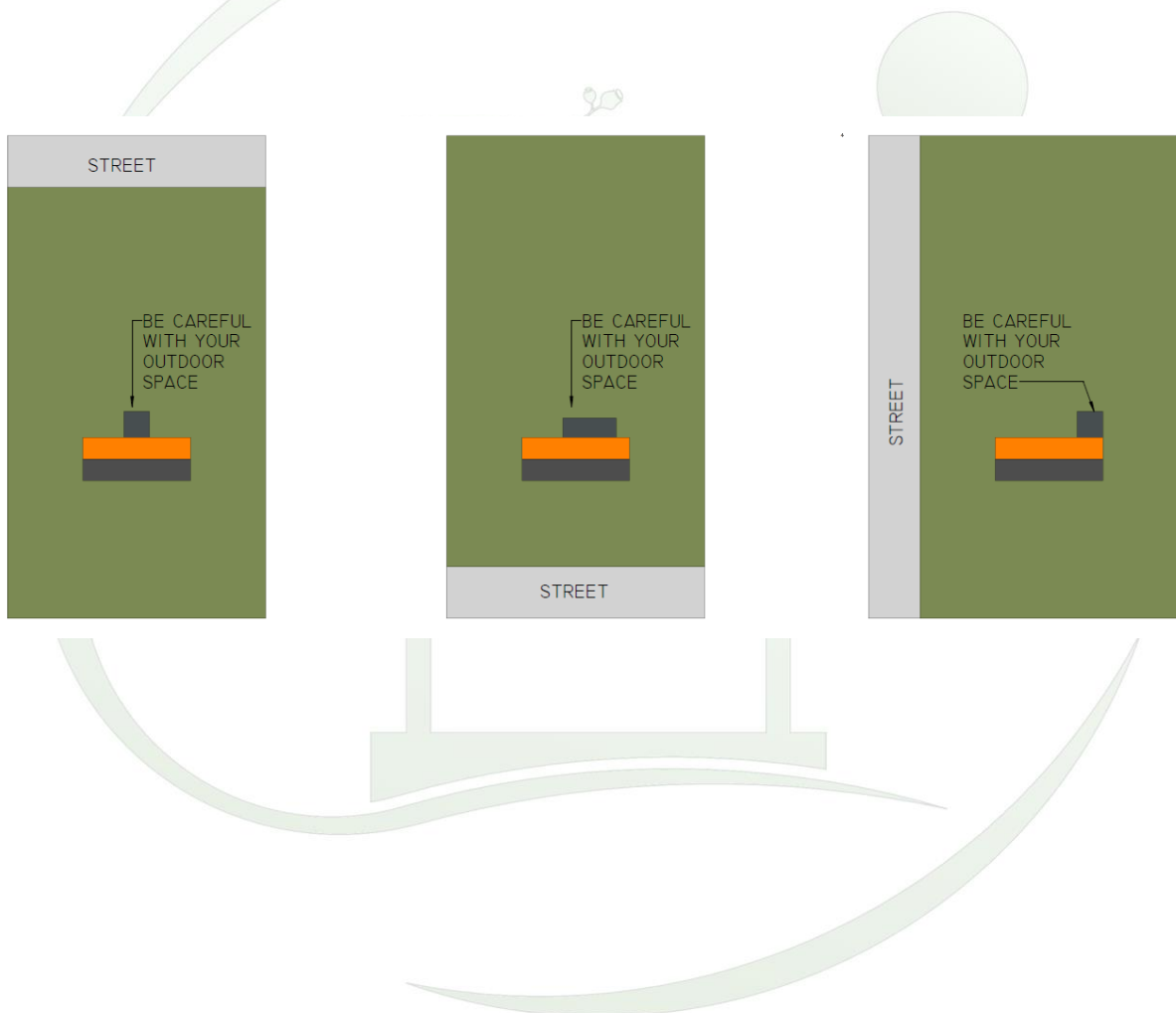
It's important to note that even with this change, your home can still maintain an attractive appearance from the street. Design elements such as landscaping, architectural features, and thoughtful placement of windows and entryways can contribute to the overall aesthetic appeal of your home while ensuring its performance is optimized.

## Alfresco spaces, outdoor rooms, and pergolas.

### Don't block the sun!

By now you should have correctly prioritized the orientation of your home to maximize its benefits. However, it is equally important to consider the impact of outdoor areas such as a pergola, alfresco space, or roofed areas on the sunlight that your home receives.

By considering the outdoor space during the initial design phase, you can ensure its integration is seamless, functional, and respectful of the valuable sunlight your home is oriented to receive. This holistic approach will result in a more cohesive and enjoyable living environment.



## Other important factors for comfort.

In addition to proper orientation and integration of outdoor spaces, there are several other important elements to consider for a comfortable and efficient home. Here are some key aspects to focus on:

**Continuous Insulation** - Proper and thorough installation of insulation, without any gaps, is critical to maximize its effectiveness. **Even a small 5% gap in ceiling insulation can halve its effective R-value.**

**Windows** - Windows will always be the weak point in terms of the insulation of your home. Even triple glazed windows can't compare to a well-insulated wall. **Invest in the highest quality windows you can afford.** Good curtains or blinds, and pelmets are also encouraged and improve the thermal properties of the house significantly.

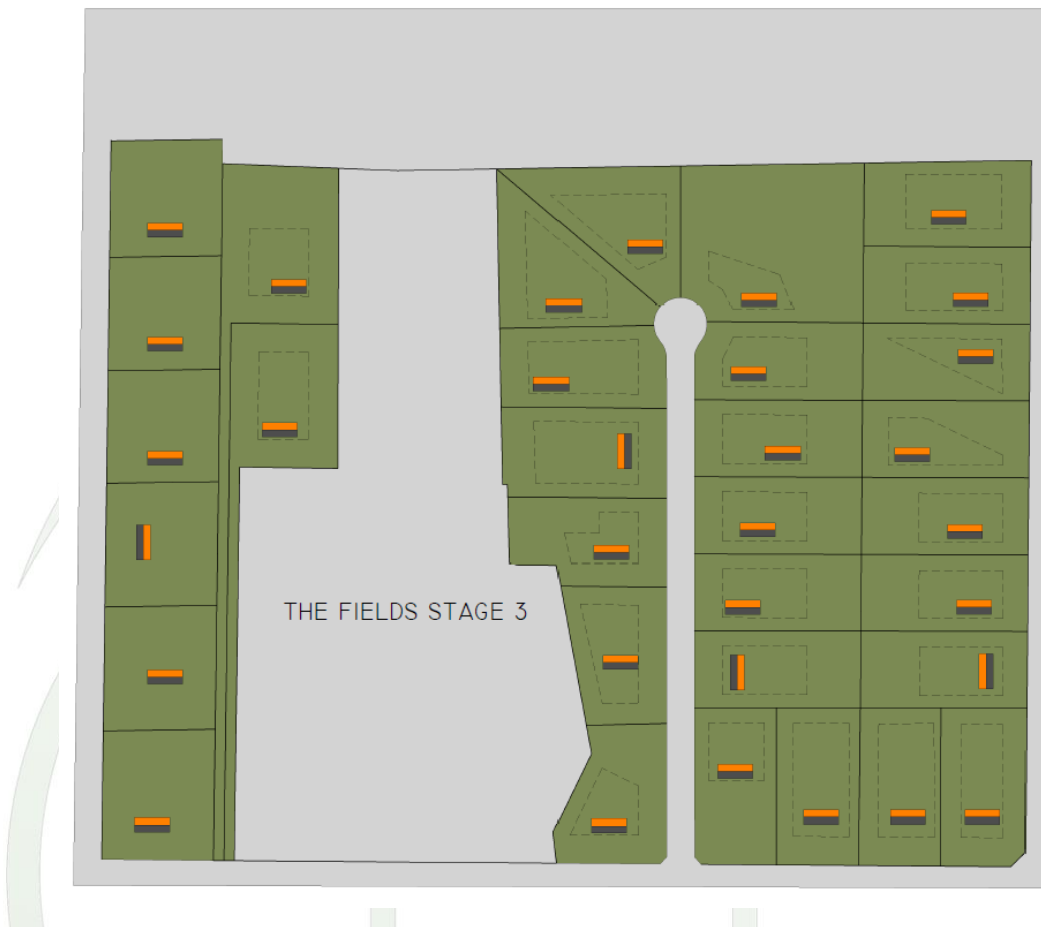
**Thermal Mass** - You can utilize thermal mass to enhance passive heating and cooling in your home. **Thermal mass refers to materials with a high capacity to absorb, store, and release heat**, such as concrete. By incorporating thermal mass elements into your home design, such as concrete floors or walls, you can take advantage of their ability to absorb heat during the day and release it slowly at night, helping to regulate indoor temperatures and improve overall comfort.

**Thermal bridges** - To prevent the creation of thermal bridges, it is essential to thermally break any conductive elements that connect from the inside to the outside of your home. **One significant source of thermal bridging is the concrete slab.** It is important to incorporate a thermal break between outdoor slabs such as garages and patios, to minimize heat transfer and maintain better thermal efficiency within your home.

**Air Leakage** - In Canberra, the air leakage rates in many homes typically range from 15 to 30 air changes per hour. However, it is advisable to target a lower rating of 5 to 8 air changes per hour for improved energy efficiency and indoor air quality. It's worth noting that the German Passivhaus standard, which is increasingly recognized in Australia, sets an even more rigorous benchmark of 0.6 air changes per hour or less. **99% of homes are never tested.** Are you getting what you have paid for? A blower door test is recommended as the most effective method to assess the airtightness of your new home.

**Active participation** – **Active engagement with your home's features is essential to optimize its performance.** By opening blinds, closing blinds, and adjusting windows at the appropriate times, you can effectively manage natural light, ventilation, and thermal comfort. Opening blinds during the day allows sunlight to enter and provide natural warmth, while closing them at night helps retain heat. Similarly, opening windows strategically can facilitate cross-ventilation for cooling, while closing them when outdoor temperatures are extreme helps maintain a comfortable indoor environment.

Below is a map of Stage 3 & 4 of "The Fields" with the ideal orientation and indicative location for each block. Having read this guide, I'm hoping you can spot the few examples I have shown that are not optimal. North is to the top of the image.





I hope this guide has been helpful in highlighting the importance of proper home orientation and the benefits it can bring to your daily life.

I am excited to witness the sight of beautifully efficient homes under construction around Murrumbateman and the surrounding region. Please feel free to share this guide with anyone you believe would benefit from the information provided.



Hi, I'm Mark Edmonds, Owner of [UnMarked Earth](#).

I have been a Murrumbateman local for the past 15 years.

As a Building Designer, Accredited Thermal Performance Assessor, and Certified Passive House Designer with over 25 years of experience. My expertise lies in designing homes that prioritize the well-being and health of the occupants while ensuring optimal energy performance.

### **Would you like to discuss the design of your new home?**

I am here to guide you every step of the way. It's never too early to start planning for your dream home. Together let's create a home that not only meets your needs but exceeds your expectations in terms of comfort, efficiency, and overall well-being.

### **Are you building a home designed by another professional?**

We can offer independent advice on how to best optimise the comfort and performance of your home. As an Accredited Thermal Performance Assessor, we use the latest NatHERS modelling software to assess and test your design to find the sweet spot between cost and performance.

**Thanks for reading and if you have any questions, please contact me via email.**

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Your home designed  
for  
Comfort  
Health  
Efficiency



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