



# Sustainable Living with Bricks

BRICKS FOR LIVING







THE BORO PROJECT | TYSONS, VA | SILVERBROOK

## Comfort, style and affordable living.

When planning to build a sustainable home and a comfortable life, you have a lot to consider. With their complete range of cost, comfort and style benefits, bricks are the one and only choice.

### 10 reasons why Bricks are better.

1

Bricks last forever

2

Bricks can be reused or recycled

3

Bricks are maintenance free, they don't fade, rot or rust

4

Bricks are fireproof, unlike glass & fiber cement that shatter and fail

5

Bricks are known for their outstanding durability and colorfastness for life

6

Bricks are a thermal battery keeping your home cooler in summer and warmer in winter

7

Brick homes are more energy efficient than those constructed with lightweight materials

8

Bricks have excellent sound reducing qualities

9

Bricks are the natural healthy choice as they breathe and allow moisture to escape.

10

Bricks have a better return on a home investment



# Unbeatable benefits of brick

## Resilience



### Bricks are resilient.

Bricks are weather and age-proof, able to withstand even the harshest conditions, from severe marine environments and cyclones, to wildfire-prone areas. This makes bricks the perfect solution for North America's harsh climatic conditions.

Bricks are also termite resistant because termites can't eat bricks. If you build a full brick home, with a steel roof frame, on a concrete slab, your home will be termite resistant for all structural elements.

## Fireproof



### Bricks are fireproof.

Bricks are non-combustible and don't assist the spread of fire, making them ideal for building in wildfire-prone areas. Clay bricks normally don't suffer any structural damage after a fire and can be re-used even as load bearing walls.

Bricks alone don't fireproof a building but are not like timber and plastic which are flammable, and glass that shatters in the heat. Building in brick ensures a strong foundation for protecting your investment.

## Low Maintenance



### Bricks are maintenance free.

Bricks do not require any painting, coating or varnishing in order to maintain their aesthetics and durability, unlike other building materials. Long-lasting brick is completely weather-proof, even in extreme conditions such as storms, and because bricks do not contain plant matter they are resistant to pests and won't decay in hot or humid conditions.

## Design Flexibility



### Bricks come in styles to suit any building project.

Time and time again, brick has continued to be a popular building material choice among architects and designers because of its design flexibility, strong structural capabilities, and intricate detailing.

Whether you intend to build a contemporary cliff-top retreat, inner-city living/work terrace, school, art gallery or heritage restoration project, there are bricks to suit any building style. There are now hundreds of brick colors to choose from and many different finishes from sleek glossy blacks and metallics to rough-hewn rustic bricks with a hand-crafted appearance.

## Noise Cancelling



### Bricks act as a sound barrier.

Whether between rooms within a home or from outside noise, brick provides superior sound insulation. So, whether it's the garbage truck outside at 5am or your teenager's drum kit at 11pm, you can enjoy more peace and quiet in your own home.

## Energy Efficient



### Bricks help save energy.

Bricks provide human thermal comfort. Bricks are high density materials, meaning they have an ability to effectively absorb and store heat energy keeping your home cooler in summer and warmer in winter.

Correct use of thermal mass moderates internal temperatures, averaging out day and night temperature extremes, which makes a massive difference to your comfort, and reduces energy bills.

## Durable



### Bricks are long-lasting.

Once it's built, your brick home remains weatherproof and age proof, with minimal upkeep. Brick doesn't get tired like other man-made materials, giving you both a sound mind and a sound home.

## Natural



### Brick is the healthy, natural building material.

Brick is manufactured from naturally occurring materials and do not emit volatile organic compounds as many lightweight products can.

With virtually no emissions and high thermal mass, brick is the right choice for the health conscious as it caters for those with acute allergies or sensitivity to weather.

Not only is brick better for your health, but it's also better for our planet. The shale and clay that bricks are made from is naturally abundant, so brick is an environmentally sensitive option. They can be reused, keeping their original properties and features intact, or even recycled. And, because bricks do not contain harsh chemicals, plastics or artificial compounds, brick homes are healthy environments to live in.







## Create an energy efficient and comfortable home with bricks.

Reduce your energy consumption and live comfortably year, after year, after year. With a brick veneer assembly reduce the amount of heat passing through the wall by approximately 50% compared to other lightweight wall systems.\*

\* Source: "Brick and Energy Efficiency in Residential Construction: The Real Story", Builder Notes. Retrieved from [https://www.gobrick.com/docs/default-source/read-research-documents/Builder-Notes/bia-builder-note\\_april-2018.pdf?sfvrsn=12](https://www.gobrick.com/docs/default-source/read-research-documents/Builder-Notes/bia-builder-note_april-2018.pdf?sfvrsn=12)  
 1. Source: "Breaking Down the Typical Utility Bill".. Retrieved from <https://www.energystar.gov/products/ask-the-expert/breaking-down-the-typical-utility-bill>

### Design checklist

# 1

#### Design

Design and build your home to suit your local conditions.

# 2

#### Build

Build with bricks to take advantage of their thermal mass to minimize diurnal heat fluctuation.

# 3

#### Control

Incorporate bricks within the internal walls of your home to help control internal temperatures.

# 4

#### Save

Save on the cost of running and maintaining your home.

Save up to

# 50%

on your heating and cooling bills with brick veneer wall assembly.\*

Did you know

# 43%

of your energy bills goes into heating and cooling your home.<sup>1</sup>

★★★★★

# 5 Stars

Creating a 5 Star energy efficient home is easy and affordable with bricks.





## Reduce your maintenance bills.

Independent research has shown that the longer a brick house stands, with reduced maintenance bills, bricks can save you thousands of dollars.

Building your home with brick ensures it remains weatherproof, durable and attractive for years to come. Brickwork doesn't need painting, staining or any other coating, unlike other building materials such as wood.

Increase the value of  
your home by

**8%**

when you build with bricks.\*

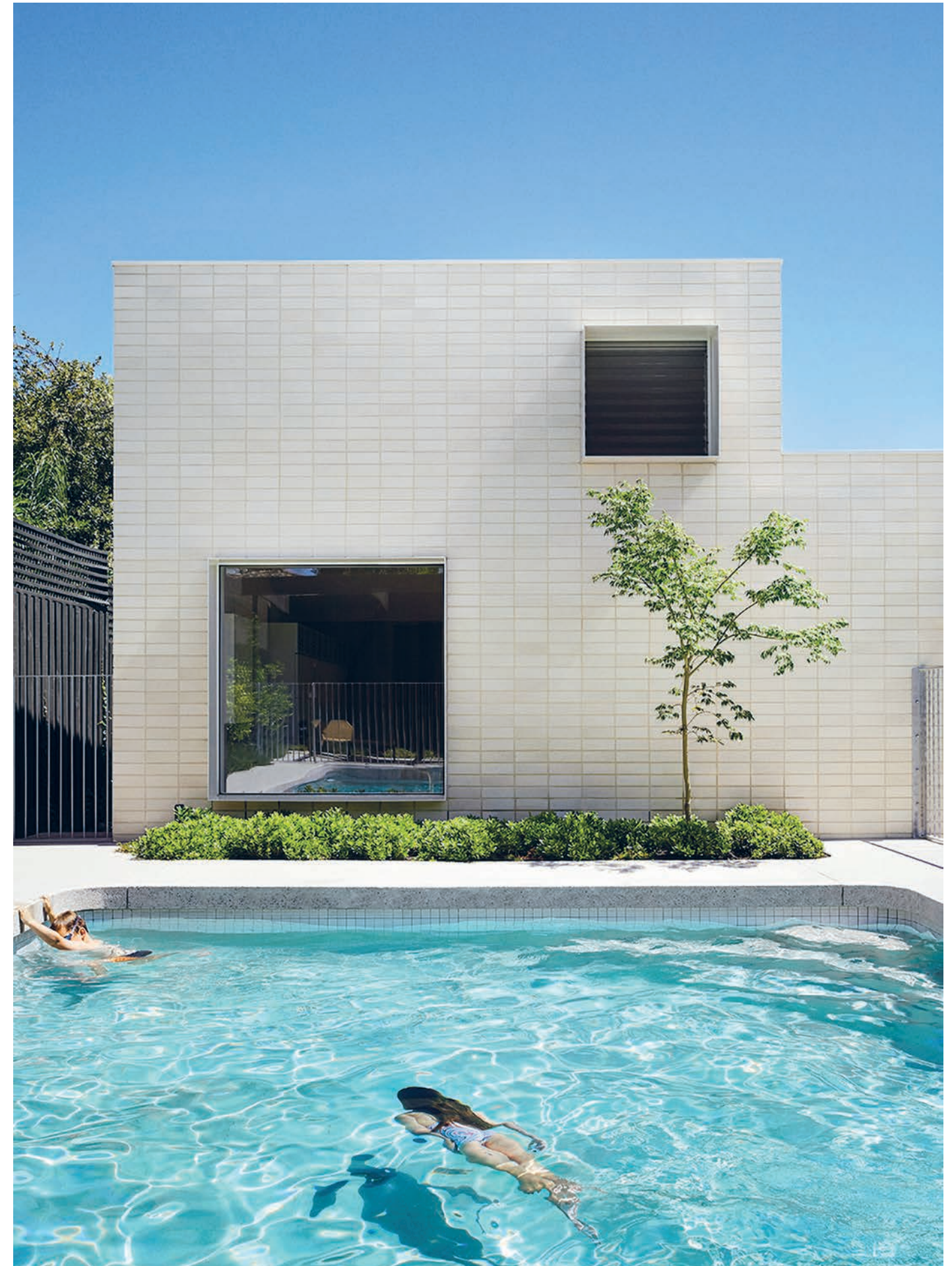
Save up to

**\$500**

every year on energy bills  
and maintenance of your  
home with the efficient  
performance of bricks.<sup>1</sup>

# Affordable for life

\* Source: <https://gambrick.com/does-brick-siding-add-value/>  
1. Based on average annual American household spend on energy bills of \$2,000







## Bricks are Fireproof

*"BIA conducted fire tests at the Southwest Research Institute in San Antonio in accordance with ASTM E 119, the Standard Test Method for Fire Tests of Building Construction and Materials. A new, "hollow brick" product was tested along with vinyl siding and fiber cement in typically constructed exterior wall sections. Each material was subjected to fire for one hour or until one of the failure criteria was met (wall collapses, flame or hot gas penetrates the wall, or when the temperature rises to 250°F or greater on the unexposed (interior) side of the wall.) No one was surprised when vinyl failed in under 20 minutes. Surprisingly, fiber cement couldn't attain one hour. Needless to say, the brick passed easily."*

## Bricks are fireproof and a wildfire durable material.

Clay bricks are not flammable, not combustible and do not burn. A home built with brick is fire resistant. The process to manufacture clay bricks consists of firing in a kiln to temperatures between 1800 and 2100 degrees Fahrenheit. Firing to such high temperatures imparts beneficial properties including durability, longevity and fire resistance.

Clay bricks have proven their resistance to fire and repeated high temperatures through their ongoing use in fireplaces, BBQ's and for chimney construction. Bricks do not suffer structural damage and will also maintain their original properties following a fire.

When building in a wildfire-prone area external walls must be constructed using non-combustible materials. The American Standard Test Method for Fire Tests of Penetration Firestop Systems provides guidance to improve the protection of building elements from wildfire depending on the severity of the potential exposure to ember attack, radiant heat and direct flame contact. With concerns about combustible cladding materials many lightweight building products are simply not suitable to be used where a fire rating or non-combustible material is required. Polystyrene cladding panels and fiber cement boards fail the American Standard test and are deemed combustible.

If you desire your home to be resilient to fire and extreme weather events then clay bricks are the perfect product choice.



Bricks are non-combustible unlike other materials.





THE CHICAGO HOUSE | CHICAGO, IL | FLINT HILLS ROMAN MAXIMUS

## What is embodied energy?

Embodied energy is defined as “is a concept that simplifies the assessment of the environmental impact for materials and products used.”

All building materials require energy for their manufacture. The study conducted by the Center for Sustainable Technology at The University of Newcastle, conveyed building with brick is low on the scale of embodied energy. While, aluminum, polystyrene, glass, paint, particleboard and steel have higher levels of embodied energy than bricks. The embodied energy in hardwood is only slightly lower.

Unlike less durable materials, the energy embodied in bricks does not need to be continually topped up with repairs, refinishing or even replacement. It is known renovation and maintenance also adds to the embodied energy over a building's life. Not only the initial materials should be considered but also the materials consumed over the life of the building during maintenance, repair and replacement.

The energy embodied in bricks is a one-off investment that pays dividends now, and in the future.

# Bricks are a thermal battery

\* Source: <https://www.sciencedirect.com/topics/engineering/embodied-energy>.



# A better life cycle

## Life cycle analysis highlights energy use.

“Life cycle assessment is a cradle-to-grave or cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product’s life, which is from raw material extraction through materials processing, manufacture, distribution, and use\*.”

A life cycle analysis of five popular forms of housing construction was conducted by the Center for Sustainable Technology at The University of Newcastle. It concluded that, “The materials of construction have only a small impact on the overall energy and greenhouse emissions.”

The study also showed that the greatest environmental impact in a typical house was in day-to-day living, which accounted for over 90 percent of energy consumed and greenhouse gases emitted over a 60-year life cycle. Brick houses that have functioned well for many more years than this are all around us and would produce even greater savings.

According to the Brick Industry Association, in an average household, a massive 43 percent of energy is consumed in heating and cooling. More recently there has been a marked increase in the use of air-conditioners. Therefore designing and building to improve household energy efficiency will pay major dividends, both financially and environmentally.

The thermal mass inherent in clay bricks is ideal as part of passive design, a well established system that allows a high level of natural thermal comfort, while reducing our growing dependence on artificial heating and cooling.

\* Source: <https://www.sciencedirect.com/science/article/pii/B9780128119891000051>  
1. Brick Industry Association. “Brick and Energy Efficiency in Residential Construction.”



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## Bricks offer you style and choice.

With over 130 years of manufacturing experience to our name, Glen-Gery is transforming the humble brick into a versatile and creative design material.

We've combined style, form and function with an extensive range of colors, shapes and textures so you can opt for a home that's modern and contemporary or elegant and classic. It's your choice with brick.

## Individuality and design.

The new generation of brick design and manufacturing means you can take advantage of its unrivaled strength and natural character while creating a look that's more versatile than ever before.

Today's brick selection offers a range of sizes, shapes, colors and textures to give you endless options for a unique and creative home design for both internal and external walls. Plus, brick blends beautifully with other materials like wood, steel, pavers and tiles to create a striking and stylish look.

While innovation and variety is always available, you can also choose a more traditional look with brick – one that harmonizes well with your local environment.

# Timeless style



## We are Glen-Gery.

Glen-Gery Corporation, part of Brickworks Limited of Australia, is a premier brick and stone manufacturer offering the most diverse product portfolio of more than 700 brick and stone products. For more than a century, Glen-Gery has provided high quality building products that meet both innovative design challenges and demanding construction specifications. Through technology advancements and product innovations, Glen-Gery delivers a premium product line that caters to the high-style needs of today's architects, designers and homeowners. Founded in 1890, Glen-Gery is headquartered in Wyomissing, PA.



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