



*Where is heat lost?*



# 'Think Circular' in Birmingham - A student Design Challenge

Design homes and a community for future living in Birmingham

**LOVELL**

**MOBIE**  
Ministry of Building  
Innovation and Education

*Can heat be recycled?*



# Introduction

**Lovell and Birmingham City Council along with Architect and TV presenter George Clarke and his charity MOBIE are inviting Birmingham's young people to create designs to help shape the city's homes of the future.**

By 2031 Birmingham will need 65,000 new homes for its growing population (Birmingham City Council). But what should those future homes be like? Who will they be built for and what do those future occupiers need from a home?

This challenge is asking young people to design their Birmingham home of the future. Whilst we need more homes, we also need to look after the planet. The challenge wants you to think about how your home design can be as sustainable as possible – how can the way the home is built and used minimise its impact on the environment?

When designing and specifying the construction methods and materials for your homes and planning the site location and the site layout, we want you to 'think circular'. How can we reuse land and materials to create greener places?

The term circular economy means reusing materials (and land) so what we produce is more environmentally friendly. It has three very basic principles - eliminating waste and pollution, recycling materials and products and regenerating nature.

All housing development schemes start with a site. Applying the 'circular economy' principles to this project, we can start by looking at selecting and re-developing a 'brown field' site - one that has been developed before but is no longer in use or underused.

**These principles can be applied to house building and the built environment by:**



**Designing out waste**



**Designing for adaptability**  
- thinking about how what we need from the home will change over time, or with different occupants



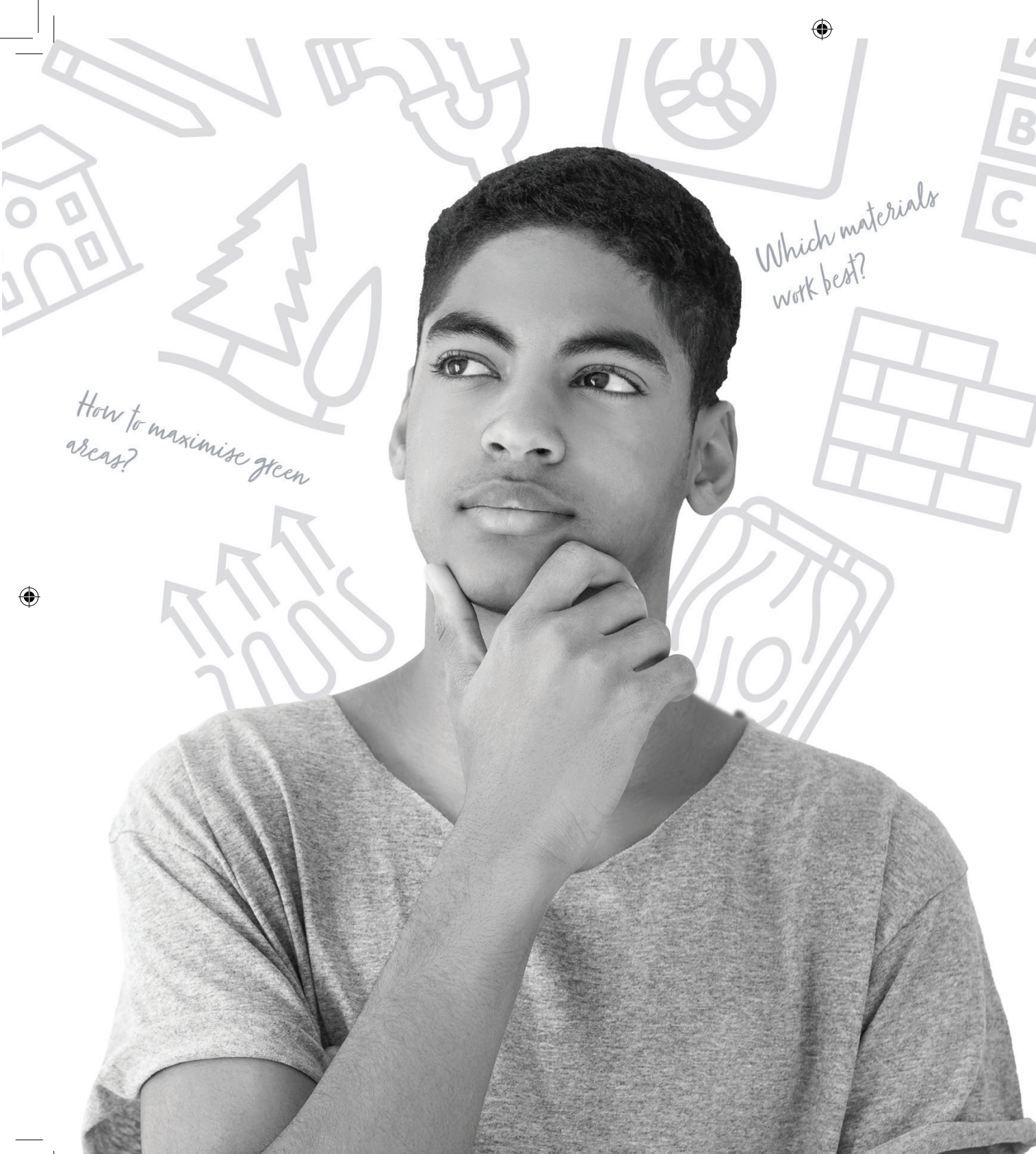
**Material selection - re-use, recycling and using renewable resources, including energy. renewables**



**Designing for wildlife, nature and biodiversity**



**Designing for deconstruction**  
- how can a home be dismantled and the materials reused at the end of its useful life?



Think about your community. Have a good look around your local area and find a potential site / area that you think will make an ideal location for your house of the future. It must be a "brownfield" site that is local to you or one that you know, and large enough to build a house or a small number of different sized homes and allow the creation of a master planned community.

The planning and design of every home needs to consider, its location, the method of construction, the building materials, energy usage, and above all how the homes will be used and by whom and how their use might change over their lifetime. In designing new residential communities, we must consider protecting our planet for future generations and create safe, beautiful and sustainable local environments that will enhance the health and wellbeing of everyone and everything that lives there.



*How to promote biodiversity?*



*Can materials be reused?*

# Your Homes and Masterplan Design



*Can waste water be reused?*





## 1. The Homes

The challenge is for you to design a home or homes for your chosen site. The home(s) could then be replicated across larger sites or even the whole city.

Your homes can range in size from one-bedroomed or 2-person flats up to five-bedroom family houses. The homes can be detached, semi-detached or form a small terrace(s). The layout, spaces and accommodation of your homes is for you to create and present in your plans and designs. You can design one house that can be repeated or several of different sizes and styles. They could even be constructed so that additional space can be added (or removed) according to the occupants needs. You might think about the family unit itself, larger families living together, younger members not moving away, the increase in multigenerational living. Each house should have an outside space / garden and for larger

developments, think about communal spaces and how the occupants will meet others in the neighbourhood. You should consider the orientation of your home in relation to its outside space, the site and even the sun (how can the natural power of the sun help reduce energy needs).

## 2. Design and Materials

New building technologies, services and methods of construction should be investigated. You should ensure your homes will have low energy use and running costs, and that they contribute towards our carbon reduction obligation. How can you use design to reduce energy demand in the first place and then ensure that the energy that is used comes from renewable sources? We want to see homes that are 'green' to build and to run.

You should consider how your designs will reduce the need for materials and keep waste to the minimum. The materials you use should

be sustainable and preferably locally sourced, possibly recycled. Natural daylight should be an important feature of your new home. Water is also a finite and scarce resource so saving use and then recycling water should be a priority when considering our lifestyles and home designs.

How are you future proofing your homes? Not just against climate change and extremes of weather, but accommodating the new and foreseeable digital technologies that the occupants of both today and tomorrow will need. Show us how your designs will last over the years ahead, i.e. flexible for future adaptations to future lifestyles.

By including all of the above into your designs you will be 'thinking circular' and adhering to the principles of a circular economy.

Finally, your homes, should be beautiful to look at, as well as great to live in.

### 3. Landscape, Nature and Environment

Good access to green space should be integral to all developments. You will need to consider lots of different factors in your proposals for your site to create a pleasing, welcoming, healthy environment and place that will promote wellbeing and the natural environment, that encourages wildlife.

The layout of the site, roads, paths, orientation of the homes, green spaces, communal areas, planting and landscaping should be an intrinsic part of your overall scheme as well as the house designs themselves.

### 4. People, Community & Services

It might be possible to visit the site and carry out your own site survey, if it is accessible to the public and safe to do so. Alternatively check it out on Google Maps. Where will the access points be, will it be easy to reach the site, are there any particular obstructions,

what about deliveries of materials, disruption to the local inhabitants during construction? How close is the development to the city centre or local neighbourhood? Where are the main roads, other infrastructure, shops, schools, public transport, leisure facilities and so forth?

In your written research notes you might include a report on what kinds of services, facilities and activities are close to the site. Are there things to do, is there a sense of place? Will families be attracted to this location?

### 5. History & Heritage

Birmingham and its communities have a rich history and heritage. To help you formulate your design and master plan you could explore and research the local history of the chosen location / site itself and its history, previous buildings and occupants. Its history might give you inspiration for the future!

### 6. Submission Details

The challenge is open to secondary school students, who will compete in two distinct categories: **ages 11-15, and ages 16-18.** Students can enter as individuals or as part of a group.

You can submit physical or digital entries, hand drawings or using CAD, and/or a video presentation.



### Please also provide:

- Your home(s) designs and a site layout and master plan.
- Concept / Mood Boards showing your research, inspiration and design thinking
- Your findings about local history and how this has influenced your design.
- You may want to make a model, you should only submit photos of your models (but keep them safe, as we may want to include it later in an exhibition).

**Entries will close on January 19th 2024. For those wishing to express an interest in this challenge or to find out more about the terms and conditions and submission requirements, please contact: [home@mobie.org.uk](mailto:home@mobie.org.uk).**

### How will we assess your entries:

- How does your home design consider 'greenness', how does it protect the planet and the local environment?
- How has the submission focussed on the 'Circular Economy'? - reusing materials, land, and resources and reducing energy?
- How has the submission considered the site, its surroundings and the area, how have these influenced the design?

AND - We really want to see home designs and a site that is beautiful, exciting, innovating, amazingly creative and unique. Somewhere you would love to live.

**GOOD LUCK**

## 7.Support & Resources

- MOBIE and the challenge partners will provide a 'toolbelt' for teachers/tutors to help guide and support their students with information and examples including the circular economy, sustainable construction techniques and materials, renewable energy options, some case studies, Modern Methods of Construction (MMC) and Offsite Construction.
- We will offer 'live' hands on practical design masterclasses/workshops in your schools and colleges
- We will deliver a series of webinars and Q & A sessions for participating students and their tutors.



*How would this benefit the community?*



*Is there a sustainable alternative?*



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