



'Think Circular' in Suffolk - A student Design Challenge

Design homes and a community in Newmarket, West Suffolk

LOVELL

MOBIE
Ministry of Building
Innovation and Education

 **Suffolk**
County Council

Can heat be recycled?

Where is heat lost?

Introduction

Lovell and Suffolk County Council have formed a joint venture company – Edmundham Developments, which has been established to accelerate high quality, sustainable homes and communities across Suffolk. Throughout the progression of this joint venture, Edmundham has strong social value commitments to support and grow the economy and to provide development opportunities for students across the county.

Along with Architect and TV presenter George Clarke's MOBIE, Edmundham are inviting the young people of Suffolk to design homes and green spaces that could be built on the attached site. In designing, creating and specifying the materials for your homes and planning the site layout and green landscaping we want you to *'think circular'*.

The circular economy has three very basic principles - Eliminating waste and pollution, recycling materials and products and regenerating nature.

These principles are applied to house building and the built environment by:



Designing out waste



Designing for adaptability and flexibility



Material selection, re-use, recycling, 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?

Suffolk is a growing county – and council officials believe it will need 70,000 new homes to accommodate its growing population between now and 2030.

All housing development schemes start with the site itself. Applying the 'circular economy' principles to our project it is natural that we are re-developing a 'brown field' site. In this case the location of a secondary school (now demolished) and its attendant buildings, playgrounds and adjacent playing fields.

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 home will be used and how its use might change over its lifetime. In designing new residential communities, we must consider protecting our planet for future generations and create safe, beautiful and healthy local environments that will enhance the health and wellbeing of everyone and everything that lives there.

How to maximise green areas?

Which materials work best?

Site Location

Our site is in Newmarket, a market town (pop 18,000) located in the West of the County of Suffolk. Newmarket is considered the birthplace and global centre of thoroughbred horse racing with over fifty racing stables, home to 3,500 racehorses and two large race courses. One in three local jobs is related to horseracing.

The area has a number of listed buildings and its homes are an eclectic mixture of scales and types, ages and styles from historic to modern contemporary, providing variety and interest and reflecting the character of Suffolk architecture.

The site is 12 acres (5 ha.) with trees and hedgerows forming the boundary. There is a cluster of mature trees in the centre of the site an unnoticeable slope of one metre from east to west. There are two vehicular accesses to the site, at the northern and southern ends of the eastern boundary.

See 8. Site Plan and Location Details.

The Challenge Briefs

There will be **THREE** age categories for entry: **5-11 years (Primary)**, **12-16 (Secondary)** and **16-18 years (Further Education)**

We are setting **TWO** challenge briefs. **One for Primary Schools, and another for Secondary Schools and Further Education Colleges.**

The Primary School Challenge Brief (5-11 years)

We are inviting you, as the future designers and creators of our built environment to show us how you imagine homes might be designed that can boast as being, energy and resource efficient, Net Zero, producing no carbon in their energy consumption and daily life and routine. We want designs for homes that are 100% *green, environmentally*

friendly and embrace renewable technologies, sustainable materials and minimise waste of precious resources.

Can you design a future-proof home with some outdoor space that will help protect the planet and allow the people who will live there to cope with not just the effects of climate change and global warming but future ways of living?

We want you to do some research, lots of creative thinking, develop your designs and produce drawings, maybe a model, a short presentation (slides, a video or text) and show us some pictures of what has inspired you and how this influenced your designs. You might choose to design/draw using a CAD software, for example, Minecraft, Sims, Sketch Up, Roblox etc.

When designing your homes and outdoor spaces, we would like you to think about

how you might create a community for the residents, green spaces, wildlife, possibly recreational facilities, planting and growing areas (vegetables, flowers, trees, grass).

We want this to be a fun, engaging and inspiring project for you and an opportunity not just to learn about innovative home designs but to explore really creative, totally different, alternative ways we might live in the future.

You might also carry out some research into the history of the site and Newmarket itself and include this with your submissions – see 4. History and Heritage further on.



The Secondary School and College Challenge Brief (12-15 and 16-18 years)

The challenge wants you to think about how your home designs can be as sustainable as possible – incorporating not just innovative, creative design but built using *green* renewable technologies and materials, with net zero energy efficiency, future proofing against climate change and global warming. How can the way the home is built and lived in 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 site will accommodate up to 50 new houses. The challenge proposal is for you to design homes that can be replicated across this 12-acre location.

Your homes can range in size from one-bedroomed, 2-person flats up to five-bedroom family houses. They might 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. You can design one house that can be repeated or several of different sizes and styles. They might be of modular construction so units can be added, adapted, according to family specification and need. Each house should have an outside space / garden. Consider the orientation of your home in relation to its outside space and the site layout itself.

Your Homes and Masterplan Design

How to promote
biodiversity?

Can materials be reused?

Can waste water be reused?

1. Design and Materials

New building technologies, services and methods of construction should be investigated, as well as ensuring your homes will have low running costs and energy use will create zero carbon emissions. They must be 'green' homes to build and run. You should consider how your designs will reduce the need for materials, keeping waste to the minimum. The specified materials and services must be sustainable and preferably locally sourced, possibly recycled. Energy must be created from renewable sources. Natural daylight should be an important feature of any new home. Water is an increasingly scarce natural resource so saving and 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, must be beautiful to look at, as well as beautiful to live in.

2. Landscape, Nature and Environment

You will need to consider lots of different factors in your proposals to landscape the site to create a pleasing and welcoming environment and community that will promote wellbeing and the natural environment, increasing biodiversity and encouraging 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.

3. People, Community and Services

It might be possible to visit the site and carry out your own site survey, alternatively check it out on Google Maps, some plans and images are included further on. Note where the access points are, will it be easy to reach the site, any particular obstructions, what about deliveries of materials, disruption to the local inhabitants during construction? How close is the development to the town centre, 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?

4. History and Heritage

Newmarket has a rich history and heritage. To help you formulate your design rationale and master planning it will be helpful to explore and research this as well as the local history of the site itself and the previous buildings and occupants.

5. Submission Details

There will be THREE age categories: 5-11 (Primary), 12-16 (Secondary) and 16-18 (Further Education)

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 site layout master planning
- Concept / Mood Boards showing your research, inspiration and design thinking
- Your local and site history report
- You will probably 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).

The closing date for entries is 22nd March 2024.

For those wishing to express an interest in this challenge or to find out more, ask any questions, take part in a workshop AND submit your entry, please go to:

home@mobie.org.uk

6. How will we assess your entries:

- How has the submission focussed on the 'Circular Economy'?
- How has the submission considered the 'greenness' of the home, how does it protect the planet and environment, especially how sustainable and recycled materials have been specified and how has net zero energy been incorporated?
- How have new and future technologies been featured into the home design and how these will benefit the people who will live there?
- 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.

There will a cash prize for the winners of each category:

Primary School - £300 to the winning the winning team or student and £1,000 for your school.

Secondary School / Further Education College - £300 for the winning team or student and £1,000 for your school /college

GOOD LUCK

7. Support and Resources

To get you started, we are offering some free help. Designers from MOBIE and local industry can come to your school / class and work with you on an innovative design class and practical workshop. We can share ideas about net zero, sustainable homes for the future, some new renewable, recycled, materials and technologies and ways of protecting how we are going live with global warming. We will help you with some drawing and design practice, simple model making and get you on your way to creating your own amazing proposals.

MOBIE and the challenge partners will provide a 'toolbelt' for teachers / tutors to help guide and support their students and our workshops will include information and examples including the circular economy, sustainable construction techniques and materials, renewable energy options, some case studies, MMC and Offsite Construction.

8. Site Plan and Location Details

Ariel view of site and Site Location Plan (highlighted in red)



Ariel Views looking South and East



Opportunities and Constraints Plan



Existing Northern & Southern site vehicular access off Fordham Road



How would this benefit the community?



...ustainable alternative?

LOVELL

MOBIE
Ministry of Building
Innovation and Education

**EDMUNDHAM**
DEVELOPMENTS

 **Suffolk**
County Council