

**PRÓ-REITORIA DE PESQUISA E INOVAÇÃO**  
**PROGRAMA DE PÓS-GRADUAÇÃO EM ENGENHARIA AMBIENTAL - PPEA**  
**MESTRADO EM ENGENHARIA AMBIENTAL MODALIDADE PROFISSIONAL**

**Prova de Proficiência em Inglês – Turma 2010**

- DIA: 24/02/2011
- DURAÇÃO: 3 horas (início às 14h)
- OBJETIVOS:

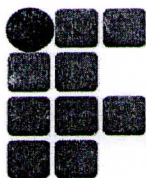
A prova visa a testar se o aluno/candidato é capaz de:

1. traduzir para Português (com fidelidade, mas sem estranhezas – às vezes temos que fazer adaptações) textos ou parágrafos em Inglês, nas áreas temáticas e/ou de atuação, bem como as linhas de estudo do curso;
2. compreender as estruturas frasais do texto, dando especial atenção às inversões (frases nominais ou “noun phrases”), ao uso do ING, ao uso de conectivos (“link words”), ao uso de verbos no contexto e à tradução correta de certas palavras com vários sentidos em inglês, sabendo, para isso, buscar no dicionário a palavra que traduz adequadamente o termo do texto (“colocação lingüística”);
3. compreender o texto em termos de macroestrutura e microestrutura do mesmo, sabendo, para isso usar estratégias de leitura (ex. “skimming”, “scanning”, referências lexicais, organização do texto e inferências lexicais (descobrir o sentido de uma palavra através do contexto));
4. resumir um texto ou uma parte do texto usando as próprias palavras, mas mantendo as idéias principais discutidas neles.
5. compreender e interpretar figuras, gráficos, tabelas.

**OBS.**

**SERÁ PERMITIDO O USO DE 1 DICIONÁRIO DE PORTUGUÊS-INGLÊS E/OU INGLÊS-INGLÊS. Não será permitido apanhar dicionário(s) emprestado(s) com colegas na hora da prova, nem usar dicionário de computador ou qualquer meio eletrônico (isso privilegiaria somente aos que podem adquirir tais dicionários).**

**Pede-se que faça a prova com letra legível e a tinta.**



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Esta prova tem 15 questões que deverão ser respondidas num papel à parte. NÃO SE ESQUEÇA DE NUMERAR SUAS RESPOSTAS DE ACORDO COM AS QUESTÕES. ELAS ESTÃO ORGANIZADAS NA ORDEM EM QUE OCORREM NO TEXTO. Não se apavore com o número de páginas, pois você não terá que ler o texto todo para responder as questões. Portanto, use estratégias de leitura para garantir que todas as suas respostas sejam dadas em tempo hábil, ou seja, 3 horas

# The Green House of the Future

APRIL 27, 2009 / By ALEX FRANGOS

## Parte 1a: Compreensão do Texto (3 pontos)

A. Responda as questões sobre o TEXTO da Parte 1 - INTRODUÇÃO - em PORTUGUÊS, podendo, para isso, consultar seu dicionário tanto Português - Inglês quanto Inglês - Inglês:

1. O que se discute na Parte 1 do texto?
2. Que inovações o autor imaginou, inicialmente, para as casas futuristas?
3. Que proposta o periódico THE WALL STREET JOURNAL fez a quatro arquitetos?
4. O que os arquitetos, por sua vez, propuseram à equipe do periódico?
5. Como casas poluem o meio ambiente e em que proporção?
6. O que ajuda a explicar a necessidade de se construírem "casas verdes" no futuro?

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## INTRODUCTION

What will the energy-efficient house of the future look like?

It could have gardens on its walls or a pond stocked with fish for dinner. It might mimic a tree, turning sunlight into energy and carbon dioxide into oxygen. Or perhaps it will be more like a lizard, changing its color to suit the weather and healing itself when it gets damaged.

Those are just a handful of the possibilities that emerged from an exercise in futurism. The Wall Street Journal asked four architects to design an energy-efficient, environmentally sustainable house without regard to cost, technology, aesthetics or the way we are used to living.

The idea was not to dream up anything impossible or unlikely -- in other words, no antigravity living rooms. Instead, we asked the architects to think of what technology might make possible in the next few decades. They in turn asked us to rethink the way we live.

"This is a time of re-examining values, re-examining what we need," says one of our architects, Rick Cook, of the New York firm Cook + Fox. "We are re-examining the idea of home."

A fresh look may be long overdue, given the amount of damage that homes can do to the environment. It's easy to envision a power plant spewing pollution or a highway full of cars burning billions of gallons of petroleum. But buildings -- silent and unmoving -- are the quiet users of much of our energy, through electricity, heating and water consumption. The U.S. Energy Department estimates buildings are responsible for 39% of our energy consumption and a similar percentage of greenhouse-gas emissions.

The growing awareness of that fact helps explain why green building is one of the most pervasive trends in the construction industry -- even as the economy struggles and home-building is at its lowest level in a generation.

So, how will the green homes of tomorrow help solve the energy puzzle? Here's a gander into the future.

### Parte 1b : Compreensão de figuras e/ou texto (2 pontos)

- 7. O que a casa chamada THE RIOS CLEMENTI'S HALE STUDY inclui (fig 1)?
- 8. Quais são os 3 principais níveis da casa (fig. 1)?
- 9. Que tipo de energia é usada nesta casa (fig 1)?
- 10. Cite 5 inovações da casa do arquiteto Willllian McDonough (Fig.2 /texto)

ON THE HOUSE The Rios Clement 'si Hale Studios house has a garden façade that includes chickpeas, tomatoes and other plants. The plants also provide shade and cooling. A roof top reservoir collects water and keeps the building cool, while roof top windmills generate energy.

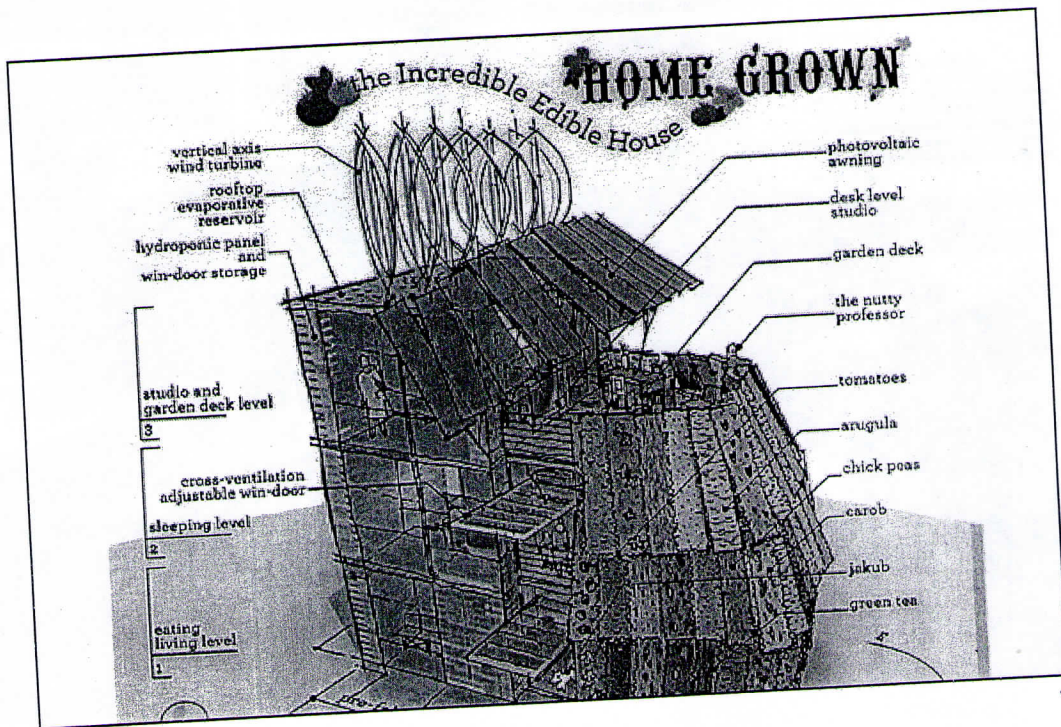


Figura 1

## Out on a Limb

"I'd love to build a house like a tree," says architect William McDonough of the Charlottesville, firm William McDonough + Partners. And that's what he set out to do here.

The surface of his house, like a leaf, contains a photosynthetic layer that captures sunlight. Unlike today's solar panels, which are often pasted above a roofline, these are woven into the fabric of the exterior. They heat water and generate electricity for the home – and create oxygen for the atmosphere, to offset carbon produced in other areas of the home.

The appeal of ultrathin, integrated solar panels goes beyond convenience. Today's solar is plain ugly and off-putting to many homeowners, something Mr. McDonough calls the "potpourri of miscellany stuck on our roofs." Unseen solar arrays, especially ones that create hot water, will be a "breakthrough from aesthetic perspective, which is a huge issue," he says.

As for the rest of the design, Mr. McDonough envisions a sleek, curved roof with generous eaves to provide shade, which lowers the heat load in summer, thereby reducing the need for energy-hogging air conditioning. The roof also insulates and provides an outdoor garden. (Mr. McDonough designed a similar "green roof" for a Ford Motor Co. factory -- one of the first large U.S. buildings with that design.)

The "bark" of the treelike house would be thin, insulating films that would self-clean and self-heal, Mr. McDonough says, thus avoiding the need to replace them after years of exposure to the elements.

BRANCHING OUT William McDonough and partners envisions its house like a tree. The "bark" of the house is made up of thin, insulating films that would self-clean and self-heal if damaged. A curved roof with large eaves provides shade, which lowers the heat load in summer. The "trunk," or the frame of the home, consists of carbon tubes, while the "roots" are a heat-pump system buried in the yard.

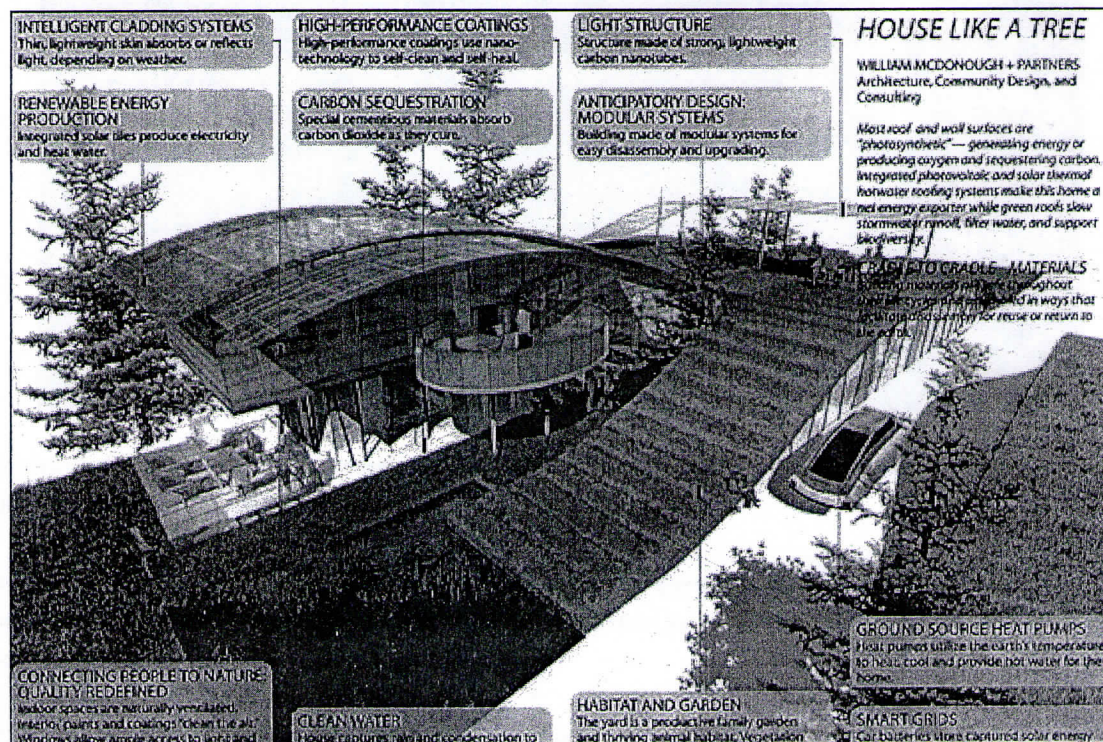


Figura 2

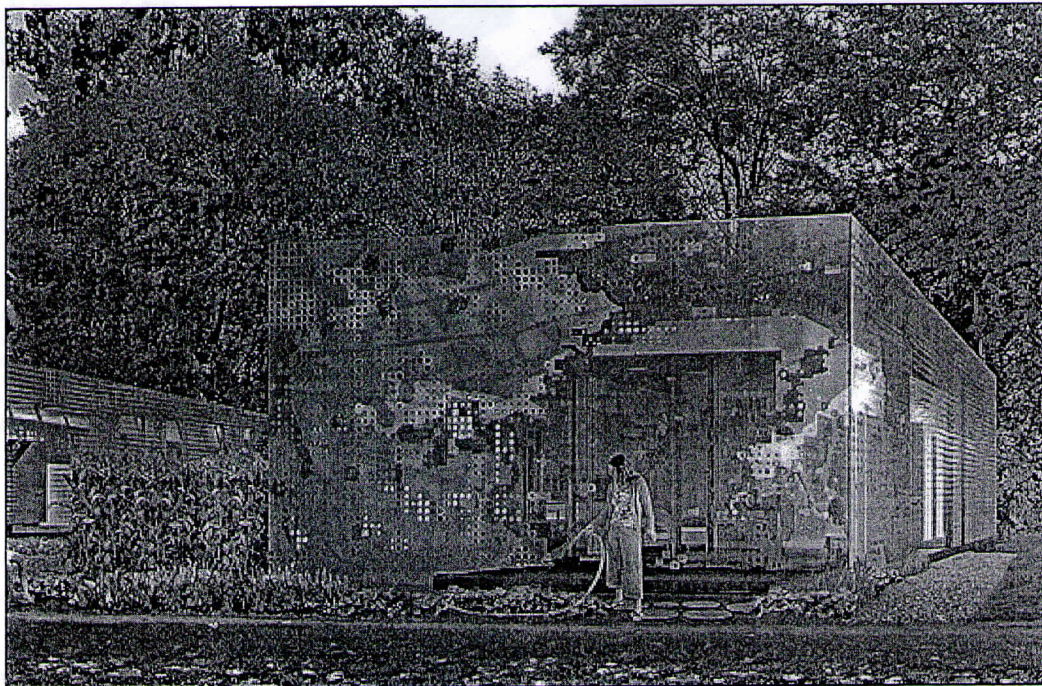
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## Part 2: Tradução de parágrafos (5 pontos)

Agora, traduza os parágrafos numerados e em negrito e sublinhados dos 2 textos seguintes para o PORTUGUÊS, podendo, para isso, consultar seu dicionário tanto Português- Inglês quanto Inglês -Inglês:

### The Reptile House

**(11) UNDER MY SKIN** Cook + Fox's house reacts to the weather, turning dark in the bright sun to insulate the house from heat and turning clear on dark days to absorb light and heat. The façade also captures rain and condensation to fill the household's water needs. Inside, walls and furniture are on rollers to take advantage of the fact that some spaces, such as bedrooms, are underutilized most of the day. If Mr. McDonough's house is a tree, then this one is a lizard -- whose skin is among its most important features for survival. Cook + Fox's house has a "biomorphic" skin that reacts to the weather, turning dark in the bright sun to insulate the house from heat and turning clear on dark days to absorb as much light and heat as possible.



The façade also captures rain and condensation to fill the household's water needs -- much like a desert-dwelling horny lizard rolls drops of dew from its nose to its mouth.

Mr. Cook sees the house of the future looking toward nature's way of solving problems as much as it looks to technology, a concept called biomimicry. "You need to view a house as a surface area for life, as opposed to a thing to be power-washed," Mr. Cook says.

**(12)** Cook + Fox is well known for its green designs. Its biggest green project is the New York headquarters of Bank of America, which is known as One Bryant Park. The sculpted white-glass tower, Manhattan's second-tallest after the

Empire State Building, creates massive ice blocks in the evening when electricity is cheapest. As the "ice batteries" melt, they are used to cool the building during times of peak electricity loads during the day.

## Old and new

(13) The Mouzon Design house uses tomorrow's technologies -- as well as ancient techniques to reduce energy use. Solar paneling built into the roof and façade provides electricity and hot water. The house also employs a "breeze chimney," an ancient architectural tool, as a kind of air conditioning. The Cook and Fox's house has a modern look, but it is designed to fit into a traditional neighborhood setting.

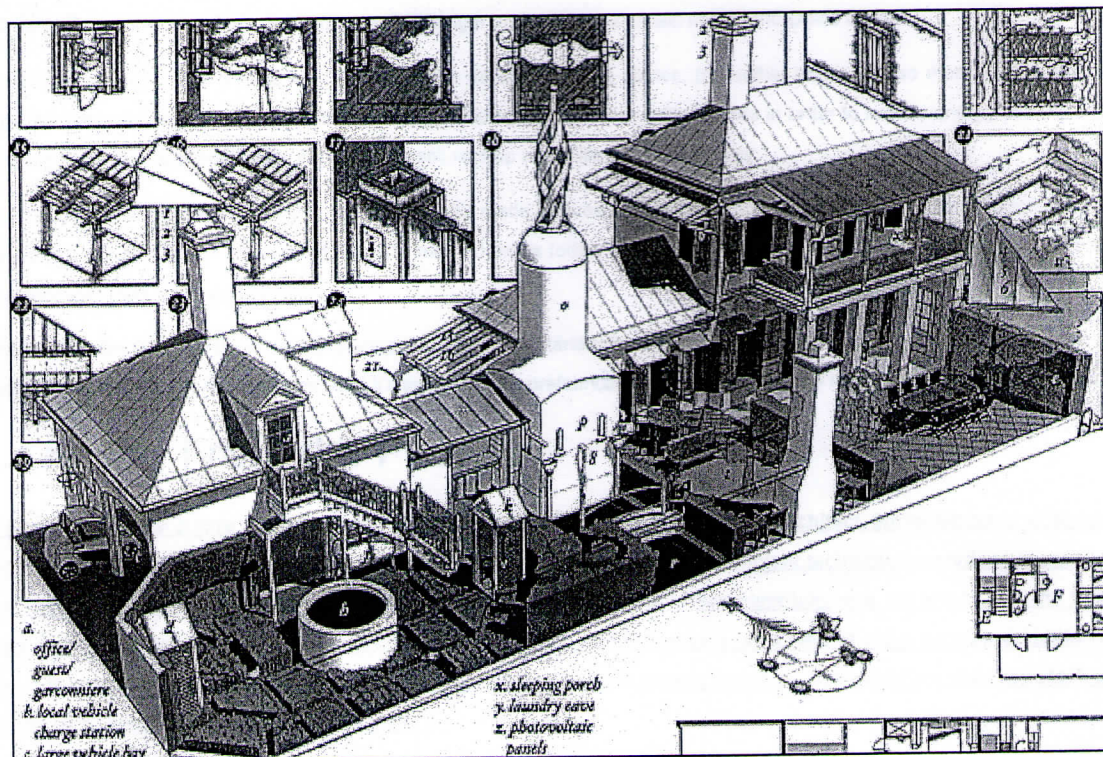


Figure 3

Inside, rooms are easily configurable for lounging or work. Walls and furniture are on rollers, for instance, to take advantage of the fact that some spaces, such as bedrooms, are underutilized most of the day.

What's more, toilets and washrooms are separated, serving more people with less space. Making a house that's more conducive to work is important for energy efficiency because it eliminates driving -- and thus reduces energy consumption.

A key feature of the house is perhaps its most traditional: a front stoop, which enables the home dweller to look out on neighbors and observe the area. Noting an idea from scientist E.O. Wilson, Mr. Cook says, "No matter how advanced we get with technologies, there are things that make the human feel good no matter what. People like to see a horizon view and feel safe."

## Meals at Home

(14) Rios Clementi Hale Studios cheekily calls their concept the "Incredible Edible House." This somewhat fantastical design seems to be as much about the future of food production as architecture. The façade of the three-story above is slathered in a vertical garden that includes chickpeas, tomatoes, arugula and green tea. Step outside in the morning and harvest your meals. The plants both nourish the inhabitants and provide shade and cooling, absorbing heat better than a wall made of wood, brick, stucco or glass.

Rios Clementi Hale, based in Los Angeles, has a reputation for playful and innovative designs. Its best-known works include the angular red, ochre and green-striped campus of the California Endowment in downtown Los Angeles. It has also done designs for Hollywood powers such as Walt Disney's Robert Iger and movie and music impresario David Geffen.

But the plants aren't the only striking feature of the design. At three stories, the edible house is also more vertical than the typical suburban home, a nod to the importance of building dense, urban-style houses in order to reduce energy use. A rooftop reservoir collects water and keeps the building cool; rooftop windmills generate energy.

The house is also put together in an intriguing way: It's made of three prefabricated containers stacked on top of each other that can be moved on a trailer if the mood fits. This method exists today, but it's not used very much, since homeowners associate prefabrication with lower-end homes.

But the benefits for lowering energy use are substantial. The standardized construction in prefabricated homes reduces defects that can hamper energy conservation. And it's easier to ship prefabricated parts, which means reduced fuel use for deliveries.

## Learning From the Past

(15) Looking to the future isn't the only way to be innovative. The house from architect Steve Mouzon, of Mouzon Design in Miami Beach, Florida, uses tomorrow's technologies while mining ancient techniques to reduce energy use. For instance, solar paneling built directly into the roof and façade provides electricity and hot water. But the house also employs a "breeze chimney," an architectural tool used by the ancients, as a kind of old-school air conditioning. The difference between the air pressure in the chimney and outside causes hot air to flow out of the chimney stack and cooler air to enter through windows and doors.

"It must make sense first," says Mr. Mouzon, a so-called New Urbanist architect who believes in traditional designs that emphasize pedestrian-friendly neighborhoods. His house "isn't trying to do wild and wacky things with roof shapes or wall shapes but a good sensible building that is highly lovable. It is inventive where it needs to be."

Like Rios Clementi Hale, Mr. Mouzon sees the house as a source of food. He would add "melon cradles," an invention he says he thought up for this project, to allow heavy melons and other vegetables to grow vertically up the sides of his house.

Another of his innovative ideas would require Americans to do more than just feed the goldfish bowl: He would install tilapia pools in a "kitchen garden" to provide fresh fish to the homeowner. It's among the most energy-efficient ways to raise animal protein, Mr. Mouzon says.

But the most important order for Mr. Mouzon is to make the house compact. "The smaller thing you can create, the more sustainable it is."

In fact, that's something that all four of our architects agree on: Americans need to learn to live in smaller spaces if we are going to make an impact on the environment.

—Mr. Frangos is a Wall Street Journal staff reporter in New York.  
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<http://online.wsj.com/article/SB124050414436548553.html>  
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The history of home is a complex and multifaceted one, spanning across centuries and cultures. It is a concept that has evolved significantly over time, reflecting the changing needs and values of societies. From the simple dwellings of ancient civilizations to the modern, technologically advanced homes of today, the journey of home is a testament to human ingenuity and the desire for a better living environment.

In ancient times, homes were often built from natural materials like mud, stone, and wood. They were designed to provide shelter and protection from the elements. The layout of these homes was typically centered around a courtyard or a central hearth, reflecting the communal nature of early societies. As civilizations advanced, the concept of home expanded to include not just a place of shelter, but also a place of work, learning, and social interaction.

The Middle Ages saw the rise of more permanent and fortified dwellings, such as castles and manor houses. These homes were designed to provide security and status. The architecture was more elaborate, with multiple stories and decorative elements. The concept of home during this period was closely tied to land ownership and social hierarchy.

The Renaissance and the Enlightenment periods brought about significant changes in the way homes were designed and lived in. The emphasis was on symmetry, proportion, and the use of classical architectural elements. The concept of home became more individualized, reflecting the personal tastes and preferences of the inhabitants. The Industrial Revolution further transformed the home, as the need for more space and light led to the development of the modern house with its large windows and open-plan layouts.

The 20th century saw the rise of modernist architecture, which emphasized functionality and the use of new materials and techniques. The concept of home was redefined as a place of comfort, convenience, and aesthetic appeal. The mid-century modern movement, in particular, popularized the idea of a clean, open, and bright living space. The home became a reflection of the individual's personality and lifestyle.

In the 21st century, the home has become a place of technology and connectivity. Smart homes, with their automated systems and internet-connected devices, have become increasingly popular. The concept of home now encompasses not just the physical structure, but also the digital environment. The home is a place where work and leisure often overlap, and where the boundaries between the two are becoming increasingly blurred.

As we look towards the future, the history of home continues to unfold. With advancements in technology and changing social norms, the home of tomorrow will undoubtedly be a place of innovation, sustainability, and personalized living. The journey of home is a continuous one, and it is a testament to the human spirit's quest for a better and more meaningful way of life.