

Chapter 1 : Top 15 Green Home Building Techniques and Ideas - Conserve Energy Future

new housing over the coming 15 years entitled 'Homes for the Future: more affordable, more sustainable' (DCLG, b), and an accompanying policy statement 'Building A Greener Future' (DCLG, a).

The overriding principle in sustainable housing is ensuring it promotes better quality of life and involves less waste, better reliability, lower life-cycle environmental impacts, less maintenance and more re-use. These are some of the ways that are used to make a home more sustainable. Making our homes sustainable is a simple task and not need to cause a lot of anxiety during or after construction. If a house is already constructed, there are many improvements that are needed to make it more sustainable. Some of them are immediate, but and are cheap while others take longer and are more costly. For new homes, there are so many ways it can be made sustainable. Most of these sustainability aspects are applicable when renovating or when constructing a new building. Insulation of walls and the floor and having a ceiling board. This will help to aid in cooling purposely to save on energy costs. Insulation will help in saving money on energy bills and make the house more comfortable because insulation will bar heat passing in and out of the house. It will maintain a comfortable temperature inside regardless of the outside temperature. Insulation allows the temperature to remain balanced even in winter or summer. Install windows that are double-glazed. Double glazed windows help to insulate house making it cooler during the summer and warmer during the winter. One can as well use thermal blackout curtains in place of double glazed windows in case they are too costly. Make use of the sun. Orientate a new home for maximum sunlight. This involves passive solar heating designs and making use of daytime lighting fully. By the use of passive solar, the windows can let in energy and the heat absorbed reduces the need for warming the house during cold periods such as winter. Seeking advice from the architect for more ideas is necessary. Choose appliances that have more energy-efficiency. Swapping of the regular electrical appliances with energy-saving certified products is highly desirable for a sustainable house. Selection of non-toxic building materials for constructing the house. Non-toxic building materials lower life-cycle environmental impacts the house might pose. The use of local materials. Using of locally available materials is appropriate to reduce degradation of the environment during transportation. During construction, recycling of wastes can be done to reduce the accumulation of wastes as much as possible. For instance, materials can be sourced demolished products which have been recycled. Usage of renewable electricity sources. This is done through the installation of a small-scale wind turbid or micro- hydro system. Choosing of the power company that generates sources that are renewable is also recommended. Building the house with comfort taking care of the future will make it more sustainable. If the plan is to stay longer in the room, then the indoor and outdoor access will be a requirement. Selection of a local or native plant life for landscaping and interior design is an essential element. It will make the house to look beautiful and attractive as well as creating a calm environment for sustainability. Plants also act as natural air purifiers. Installation of solar panels and temperature regulating walls. It will make the house to be more eco-friendly and make the house cooler. Putting up of energy saving bulbs in the house. Energy is saved when incandescent light bulbs are replaced with compact fluorescent lamps or LED bulbs. Usage of extension loads types of equipment. The house power consumption can be reduced by almost fifteen percent if multi-socket extension loads are used. Building compost for kitchen waste. Compost for a kitchen waste will help to reduce amount of household waste in landfills and reducing the costs associated with collection of wastes. Use of organic beddings. Changing to organic cotton or bamboo is more sustainable and efficient. Use of windows that are energy efficient. Energy efficient windows will keep the house cool during the summer and warm in the winter due to their proper insulation. Planting of spider plants in the room. Spider plants are known for air purification, they are planted in the chamber, and they will help to purify the air especially in the bathroom. Creating a comfortable eco house with a passive design. A house that has a passive design makes the room to cool and heat naturally; this is will the occupants comfortable due to its excellent orientation and proper ventilations,

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this house will facilitate the sun rays in during cold seasons and will be able to cool down during the hot season. The house can also be designed to receive more natural light than artificial light, reducing the overall electricity costs. Design to create a microclimate. The design should allow lightweight ventilation in hot, dry climate. The house should also be well insulated and have good solar access during winter. Design for good life. Ensure the house aims to stay for a longer period. The materials should be vigorous and durable, and that can be recycled easily. The house should also adapt to the changing needs without incurring the cost in the future by building extension or renovation. Creation of efficient heating and cooling without buying air conditioners in the house. It can be done by use of curtains and blinds, and sealing any leaks. If you have to buy air conditioner, then you also have to set up ceiling fans to increase the efficiency of the air- conditioner. Build water tanks to collect rain water. Collect the rainwater in tanks for use in bathrooms and garden is part of water use efficiency. Rain water harvesting will help to reduce wastage of piped water thereby leading to sustainable living. Use of drought tolerant plants for landscaping the house environment. Drought tolerant plants require less water and can survive during drought, thus making them beautiful throughout the year. They also have aesthetic value. Use solar or wind power. The two are renewable energy sources that are cheap and non-polluting. If using wind energy plants for landscaping, it is necessary to use wind maps that can help to predict the mean annual wind speed in your location. There are factors to be taken into consideration when using the wind and solar energy. Once the system is set up, it will supply the house with clean and free electricity. Turning off the taps after usage helps to avoid water wastage. Ensuring that the taps are turned off after using them avoids the misuse of water and in the long-term, it contributes to saving on water bills hence increased sustainability. Installation of thermostat that is programmable. Thermostats can be used to monitor the house temperature, keeping it warmer or cooler when the one is not around. Low-flush toilets can significantly help to reduce water wastage compared to traditional ones that uses 6 liters of water per flush. Particularly, low-flush toilets use about 4. Reuse of the furniture. Other than purchasing new furniture, one can recycle the old ones to save the money and trees. Use of eco paints for the walls during construction will make the house more sustainable. The use of paints that are plant or water based other than using the traditional ones which are full of volatile organic compounds is part of building a sustainable house. Installation of monitor sensing lights in the room. Monitor sensing lights will help in turning on the lights when a person or people are occupying a room and turn them off when there is no one. This contributes to saving energy costs often associated with wastage when people forget to turn off the lights when leaving the house. Installation of skylights in the room. Skylights not only provide beautiful lighting but are also energy saving thereby reducing energy consumption. Use of sustainable flooring materials. Sustainable materials will make the floor appear attractive and durable. The use of bamboo trees is appropriate since they grow very fast and require small area.

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Chapter 2 : 10 examples of "Green" Architecture in Africa | OUR FUTURE CITIES

The bricks and mortar we live and work in are no longer keeping us safe as houses. Almost half the UK's carbon dioxide emissions come from heating and running commercial and residential buildings, and three million new homes are expected to be built by 2020. There is an urgent need to ensure new.

Share via Email Sustainable and stylish: But there are exceptions. In the 1970s, Vinoba Bhave set up a huge movement called Bhoodan meaning land-gift in India, to which ordinary landowners donated 5m acres " an area the size of Wales " to be put back into common ownership so that peasants could live and farm on it. So it is obviously difficult, if not impossible, to currently talk about building a home for free. There are huge issues concerning planning permission and council tax. For council tax, work activists such as John Harris and Lawful Rebellion provide a fascinating resource to draw on. Council tax is effectively a tax on being alive " many countries, such as Ireland, use other more equitable systems. Next, you can then think about building your own low-impact dwelling. Here is a short selection of the many options open to you, some of which can be built without costing any money: The brainchild of Michael Reynolds, these are a type of passive solar home, made from recycled and natural local materials. Earthships can be self-sufficient in food, water and energy. They incorporate fantastic design " glass bottles are even used to create stunning lighting effects " making them visually beautiful to boot. Subterranean homes maximise space in small areas, the excavated materials can be used in the building and they are wind-, fire- and earthquake-resistant. One of the greatest benefits of underground homes is their energy efficiency, as the mass of soil or rock the geothermal mass surrounding the house stores heat and insulates the house, keeping it warm in winter and cool in the summer. Circular houses, with a frame of wooden posts covered by wattle-and-daub or cordwood panels finished with cob. Their conical roofs are usually either thatched or have a reciprocal frame green roof. Houses built using straw bales to form the walls of the building. In the UK, the bales can be made of wheat, rye or oat straw. They are also naturally well insulated. Of course, doing all this completely for free is fairly unrealistic today. But even if you choose the relatively upmarket Earthship on a few acres, it at least means you will only have to spend a fraction of your time in the money economy paying the bank back money. Ultimately, I believe it is a fundamental human right for every person to have the opportunity to live without money if that is their belief, as stated under Article 9: His book, *The Moneyless Man*, is out now, published by Oneworld " sales from the book will go to a charitable trust for the Freeconomy Community.

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Chapter 3 : How to build sustainable homes without spending a penny | Environment | The Guardian

The analysis in Building a Greener Future Regulatory Impact Assessment⁷ shows that while the implementation of our approach will increase construction costs, there are also benefits in terms of reduced energy bills and reduced carbon dioxide emissions.

News Indigenous Green Architecture: In this section, Dr Zalina Shari ZS , senior lecturer at the Faculty of Design and Architecture, Universiti Putra Malaysia, shares her perception on how to close the gaps between sustainable building and affordable living with indigenous Green architecture that is rich in local character, cultural identity and climate sensibility. Malaysia has experienced rapid urbanisation within the past 30 years. Are there effective planning policies to control urban sprawl in the country? Sprawl is the result of the migration of urban populations from major city centres to urban fringe areas due to changing lifestyles, which emphasised on spacious, more affordable and comfortable living environment. For the past 30 years, intense urban sprawl has occurred in the metropolitan areas of Kuala Lumpur, Penang and Johor. Agricultural and forest lands have been converted to suburban development patterns at an alarming rate, extending our city centre boundaries further. Many of these developments are of low density, requiring cars to move between zones. This trend has contributed to increased ecological, social and economic consequences. However, the government has shown commitment towards sustainable growth. There are also planning guidelines to control activities in land development. For example, the guideline on Environmental Sensitive Areas ESA was developed to assist in deciding the type of use and activities that can be allowed in areas designated as ESA and the minimum planning standards that must be applied for each use. The Green Neighbourhood Planning Guideline is about achieving low carbon societies and improving the standard and quality of life. Though these policies and guidelines are well and good, what gets translated on the ground is still replete with gaps. There are still environmental problems in Malaysia and we need to close these gaps. Unless the public is willing to align their attitudes with the requirements of sustainability, no legislation or conservation programme “however well designed” will be successful or have the desired impact. What are some of the notable efforts in encouraging smart growth and urban greening in Malaysia? Smart growth is the answer to the problem of urban sprawl. Rather than extending towns and cities by encouraging new houses and commercial buildings outside the city centre boundaries or sprawling onto prime agricultural or forest areas, smart growth is aimed at encouraging wiser infrastructure investments, protecting open space and widening reinvestment opportunities in central cities or existing communities. I foresee that the trend of continuing urban sprawl in Kuala Lumpur is likely to slow down in the near future as we have many mega mixed development projects launched in the city centre. BBCC and Bandar Malaysia are two good examples of infill developments also known as urban renewal and redevelopment to contain urban growth within central areas and counterbalance sprawl by redeveloping dilapidated areas into high-density mixed developments. All the projects I mentioned earlier are indications of the need for our city to grow vertically to create economies of scale in terms of space consumption and the need to minimise vehicular movement. These compact, inclusive, transit-oriented, mixed developments augur well with the desire for Kuala Lumpur to be among the top 20 world-class cities in economic competitiveness and quality of life. They were designed to promote liveability, reduce journey times and create lively, sustainable neighbourhoods by incorporating smart growth principles in their planning and design. The relative compactness of these developments is important because how close buildings are to one another impacts how far people have to travel between destinations. When densities are low, driving is the most effective mode of transportation. When buildings are closer together, the development promotes walking and cycling. Higher concentration of people also makes public transit economically feasible, whereas low-density areas cannot afford or support such infrastructure. For example, Bandar Malaysia will provide Green infrastructure, housing diversity, affordable sustainable housing, commercial and lifestyle facilities with open spaces and urban greenery to restore and enhance the ecological value of the site.

There will be a variety of transportation choices and facilities, which reduces car dependency. All these provisions aim to improve the overall environmental quality and quality of life for the community. Given the hot-humid climate in Malaysia, how important is it that designs take that into account? It is crucial because those who produce climatically insensitive designs or blindly copy Western designs are the promoters of ill-suited urban design, wasteful energy use and environmental destruction. In hot-humid climates, we often experience consistent, year-round warm temperatures instead of extreme heat like in the Middle East. The mean annual temperature stays between 24 and 30 degrees Celsius, and is cooled with frequent afternoon showers. This low indoor-outdoor temperature differential makes insulating the building shell limited in energy-saving efficiency. However, shading becomes an effective strategy in this climate zone because it reduces solar heat gain. This explains why most traditional tropical houses in our country often have massive roofs and deep sunshades. They may even have no walls but never without roofs. The true aesthetics of our climatically appropriate architecture is portrayed by the vocabularies of moderate openings, generous shading from sun and rain, balconies and ample ventilation. When we design Green architecture that is sensitive to climate, ecology and energy efficiency, our buildings will naturally convey indigenous character. The residential market has been hijacked by curtain wall towers, which create uncomfortable, poorly ventilated and energy-guzzling living environments. The consequences are expressionless cities dominated by gleaming, see-through glass buildings and a global energy crisis. Glass buildings are not suitable for tropical climates because the shading property of glass will never outperform that of opaque exterior shading or exterior walls. Although there are radical advances in glass technology recently—low-E glass with high shading reduces cooling load—the intrinsic weakness of large-area glazing in terms of energy efficiency still makes it less effective than an insulated solid wall. Modern mechanical equipment has provided unlimited possibilities for environmental control, but has also stripped our buildings of any indigenous character and their ability to adapt to our climate. An important part of critical reflection is asking ourselves: As a responsible designer, should we continue embracing the existing practice of blindly copying Western designs or start catalysing a Green architecture culture that is rich in local character, cultural identity and climate sensibility? Given global warming and increasing energy consumption, how are energy sustainability practised and energy efficiency improved in the different sectors in Malaysia? In the energy sector, the development of renewable energy RE in our country was rather slow. It was introduced in the Five Fuel Policy way back in with a target of 5 percent of RE in the energy mix by , but only 0. Subsequently, the Feed-in Tariff FiT mechanism started to be implemented for biogas, biomass, mini hydro, solar PV and geothermal. These efforts have provided a good platform for the growth of RE in Malaysia. In a bid to transform our energy sector, the government is targeting to achieve 11 percent of RE in the energy mix by and 17 percent by . But the building sector—both residential and commercial buildings—consumes well over half of the total electricity generated. That is why the building energy efficiency programme has formed a major and important part of our national energy efficiency framework. Once we reduce electricity demand in buildings, we promote the saving of primary energy and ensure security in the national energy supply. As a result, the energy efficiency sub-sector contributed RM1. As of August , there are GBI-certified buildings. In transforming our transportation sector, the Ministry of Energy, Green Technology and Water has developed the Electric Mobility Blueprint for public transport and private vehicles. Consequently, the first bus rapid transit BRT line in Malaysia has begun operating in using all electric buses. What kind of sustainable building strategies have been employed in Malaysia and how effective have they been? In , I assisted Greenbuildingindex Sdn Bhd in analysing more than score sheets of building projects certified by the GBI rating tool from to in order to understand the Green building trend in Malaysia. Whereas for IEQ, they are high-frequency ballasts, tobacco smoke control, mould prevention and electric lighting levels. On the other hand, the criteria under Materials and Resources were seldom obtained. Less than 40 percent of the projects scored criteria for sustainable timber, construction waste management, recycled content materials, materials reuse and selection, as well as refrigerants and clean agents. For residential projects, the requirements for Innovation criterion were commonly achieved, but many

requirements for Water Efficiency were seldom being obtained. Overall, the least popular criteria were water recycling, sustainable timber, renewable energy residential only, air change effectiveness non-residential only and brownfield development. This means that less than 30 percent of the projects managed to obtain at least the minimum points offered by these criteria. These strategies can be considered as too expensive, too difficult or too risky. What are the existing barriers in the promotion of sustainable building practices in Malaysia and what measures can be implemented to overcome them? I was asking this question during my doctoral research conducted in and findings from more recent research also tell the same thing. There is a perception that Green buildings cost more, so consideration of Green features is dismissed out of hand, despite clear evidence that many Green features are cost-effective, with short paybacks. This explains why there is a lack of interest among clients, owners, tenants and occupiers for sustainable buildings, especially among local companies for class B and C premises and buyers of residential properties. Their main interest is to reduce the cost of development or the rent per square metre. There are still many developers and builders in the country who react negatively to building environmental rating tools because compliance means additional cost. This results in buildings being designed without addressing the needs of occupiers, such as comfort issues that link to productivity. Owner-occupiers should now be moving to life cycle costing and this will create good drivers for energy efficiency. The prevalent mindset should instead focus on accumulative savings over a number of years rather than immediate financial impacts. Developers must be convinced that solving sustainability issues will add value to the development and the public should be prepared to pay a higher entry cost to enjoy such benefits. Unfortunately, the industry still lacks understanding about sustainable building and construction. As such, MGBC has been actively promoting the concept, strategies and technologies of sustainable building and construction among our members and non-members via training sessions, talks, seminars and conferences. We would like to attach a financial value to the benefits of Green buildings and this is crucial information for the real estate lenders and investment community. We hope that this study will help to encourage more demand for sustainable buildings. Regular sharing of best practices for Green building needs to continue. The government should continue providing incentives in terms of tax treatment and regulation to developers and owners who spend extra money to promote sustainability in their projects with Green ratings. What is the outlook for the Malaysian construction industry in the next few years? There are plenty of high-value projects already in the pipeline, with affordable housing and highways being constructed, as well as the Light Rail Transit 3 project. CITP outlines measures to improve the sector in a range of areas, including safety and professionalism, quality, environmental sustainability, as well as productivity and internationalisation. In a bid to reduce accidents and injuries at construction sites, stricter regulations will be introduced. The increasing initiatives of the government in the field of Green development will also provide a strong impetus to the growth of Green architecture in the country in the future. Consequently, the focus of Green building construction will be shifting from new building design and construction to greening existing buildings. What do you think of the emerging crop of students as future architects and designers? I assume our architecture students now are more ecologically literate and environmentally aware compared to those who graduated 10 years ago. In many instances, I have seen a bunch of brilliant students from these universities who came up with not only energy-efficient, comfortable, adaptable building designs, but also beautiful, exciting and relevant to the contexts that make sustainable living easy, affordable and attractive. Regardless of all the sustainability-related courses that are offered, I have also seen students who were influenced by the iconic images of works by Frank Gehry, Zaha Hadid, Santiago Calatrava, etc. They placed the architecture of form and beauty above one of environmental and social value. They followed Western architectural style that requires active mechanical systems for comfort, rather than opting for tropical architecture using passive cooling strategies. Do they have what it takes to design sustainably for a future faced with certain climate change consequences?

Chapter 4 : SPENCER SMITH - Building a Greener Future

Building A Greener Future: Towards Zero Carbon Development 4 3 Code for Sustainable Homes - a step-change in sustainable home building practice (Communities and Local Government, December).

The methods and ways you can go about changing your home from an emission-producing powerhouse into more of a greenhouse are easy and simple concepts. Everything you can think of in order to save energy can be implemented in creating a green space for you and your family. Being aware of energy saving benefits, making the switch from waste producing products to more environmentally friendly products like the best tankless water heater , and much more. While in the long run, going green will save you lots of money, the initial renovations needed to go green can sometimes be costly. Consider obtaining a home equity line of credit to finance your green home endeavors. This means using less electricity and trying to eliminate the products that have a negative impact on the environment. Here are some of the top reasons why you should choose to go green in your household for the sake of your budget. You can eliminate the stress that comes with paying high monthly bills. Saving money for other things like trips, special occasions and outings. Reducing your carbon footprint. Encouraging others in your family to save energy by eliminating the use of certain things during high peak or mid peak hours on par with what your energy company has outlined. You can put the money you saved to good use, no matter what it is. While buying property for yourself, take a note of couple of things that you must foresee before moving in. Firstly, avoid building west facing home. This will keep your home cool as it minimizes sun exposure. Secondly, avoid building home in environmentally sensitive locations such as earthquake or hurricane or flood prone areas. Thirdly, check if public transportation is easily available and local grocery shop is not that far away. This will help you avoid taking your own vehicle every time and will reduce your travel time. A small home built with eco friendly techniques is going to have smaller environmental impact as against a large home. A house that is too large is likely to cost more to heat and cool. Try to keep the place manageable and cost effective. If you are planning to extend your family and bring in few relatives, you need to put proper resources and accommodation in place. These appliances offer significant cost and energy savings without compromising performance. Insulation is one of the most important thing that you need to consider while building a green home. Proper insulation will not only reduce your energy consumption but will bring down your electricity bills substantially. Reduce your need for buying new products that are not environment friendly. Reuse your old material such as wood floors, doors, windows in your next home. Use Sustainable Building Materials: If building a green home is your goal, then using environmentally or eco-friendly products should be on your list which can reduce the impact of construction on the environment. Each and every part of your house such as roofing material, building material, cabinets, counters and insulation to your flooring should be environmentally friendly. Solar energy is clean and renewable source of energy. Solar panels are an emerging and hot technology for people who want to utilize the natural power all around us, the sun. Solar panels may be expensive at first, but the long-term savings you can put into your pocket is a stunning example of the benefits of turning your life from black to green. The location of your house and the way you have constructed solar panels can determine how much power you can collect. By taking advantage of solar power you can bring down your energy consumption and supply excess energy, if any, to your utility company. Also, government grants, incentives and tax breaks are huge bonus to those who want to use solar power in their home. The ratings for these windows determine how energy efficient they will be. The lower the rating, the more energy efficient are your windows. The energy savings provided by these windows are enough to cover the added cost per window. Install a rainwater harvesting system while building your green home to collect rainwater from roofs and then storing it in a tank. The collected water can then be used for other purposes such as toilets and sprinkler systems. Rain barrels are one of the most common methods of rainwater harvesting being used today. With tankless water heaters, you need not wait for the water to get heated. Tankless water heaters heat only that much water that is needed as it

is passed through electric coil. This gives you twin benefits. Firstly, it eliminates excess energy costs as it heats up only that much amount of water that is needed and secondly, you can get ample storage place by eliminating the hot water tank. Since they offer significant cost savings in the long run, they can be ideal for your new green home. Low flow faucets, toilets, showerheads are few of the ways that you can use while building a green home to conserve water. They can cut down on your water bills cost and make your home much more environment friendly. Apart from that, consider buying washing machines and dishwashers that give you same kind of cleaning and can save water and energy. The simplest way to cut down this cost and reduce electricity bill is to install programmable thermostat. Your HVAC system will work when the thermostat reaches the designated temperature. Buy a high efficiency, Energy Star rated HVAC system based on the design and construction of your house that will help you save energy and money. A HVAC system needs to be properly installed so that it could perform up to its full potential. Make sure ducts are short, straight and air tight. Shady landscaping can protect your home from direct sunlight during the summer and allows more sunlight to reach your home through windows during the winter. Planting trees on southern and western side of your home can keep your home cooler as they will block sunlight from falling directly on your home and during the winter, when trees lose their leaves, they will allow more sunlight to reach your home. Geothermal energy is known as energy from the earth. Geothermal energy requires more upfront investment but provide unlimited energy to heat and cool your home. However, there are so many different methods that people choose to go with that can help you save both the money and the effort that goes into making an extensive green energy plan for your home. Some of these methods are often forgotten by people who make green energy plans because they are just so simple and overlooked. Buying only recyclable containers and reusing plastics for food storage. Creating a family energy plan that everyone can plan their daily routine by. Having safe and environmentally friendly alternatives for things like entertainment. Eliminating the extensive use of the television or the Internet is also a great way to get the family more involved with one another. Plan family game nights and other fun ways to spend your time together.

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Chapter 5 : Sustainable Housing | Inhabitat - Green Design, Innovation, Architecture, Green Building

INVESTING IN A GREENER URBAN FUTURE - Towards sustainable housing and low-emission infrastructure. Buildings in cities account for nearly 50% of the EU's energy consumption and over a third of its CO2 emissions.

Increasing numbers of people are looking to minimize both environmental impact and financial outlay by outfitting their homes with sustainable technology, and the resulting boom in sustainable building is driving new levels of architectural innovation. With this in mind, Gizmag highlights ten remarkable sustainable houses. True sustainability is made up of many facets, from building materials to the use of renewable energy sources to design that strives for efficiency and harmony with the surrounding environment. We think the following selections meet many of these criteria. As its name suggests, the prototype home is built almost exclusively from discarded waste. The interior of the S House is very basic and measures just 30 sq m sq ft , with one large interior space. The building is prefabricated and can be disassembled into multiple small pieces for easy transport by local builders. Vo Trong Nghia Architects is still working on the design of the S House but the eventual plan is to mass market it. The copper is also designed to offer a degree of fire-protection. In addition to its enviable looks and views, the two-story Fall House features energy-efficient windows and its open design naturally encourages stack ventilation, automatically opening windows help reduce the need for air-conditioning. A graywater recycling system is also installed. In order to achieve this performance, the ZEB Pilot House features the proverbial kitchen sink of sustainable technology, including a large photovoltaic array, rainwater collection system, solar thermal panels, and an efficient heat exchanger. Pop-Up House Whatever kind of home you live in, the chances are it took longer to build than the Pop-Up House , by French architecture firm Multipod, which was erected by a team of builders in just four days with no more tools than a screwdriver. The firm likens the construction process to building with Lego. Thanks to its excellent insulation and near-airtight thermal envelope, no heating is required for the home in its location in Southern France, and it meets the very exacting Passivhaus energy standard. Architectural design firm Fabrica added a new rear facade, an additional story, a roof terrace, and an art studio to the house. Sustainable technology installed includes two solar thermal panels for hot water needs, and solar PV panels, which reduce grid-based electricity requirements. As the home is almost air-tight, a highly-efficient heat recovery ventilation system HRV is always running to provide plenty of fresh air. However, this particular home is also flood-proof. The Blooming Bamboo house is placed on stilts and designed to withstand floods of up to 1. The 44 sq m sq ft home is built around a central frame constructed from bamboo that is clad using locally-sourced materials including bamboo, fiberboard, and coconut leaves. Slotted between a row of terraced houses in London, the residence also rests on a brownfield site, formerly used for industrial or commercial purposes. Its unusual form consists of three slipped orthogonal box shapes. The Slip House features a rainwater harvesting tank, solar panels, mechanical ventilation, triple glazing, and a high level of insulation – all of which saves up to Carl Turner Architects is using the home as a prototype for in-house research, hoping to refine its ideas for producing affordable and sustainable family homes. The Illawarra Flame house project involved a lengthy renovation process, including transforming a bedroom into a living space, and the installation of prefabricated pods which contain amenities including laundry room and bathroom. Sustainable additions include a roof-based 9. Renowned French designer and architect Philippe Starck recently teamed-up with Slovenian prefab firm Riko to bring out a new line of high-end prefab houses called Prefabricated Accessible Technological Homes or P. H homes can sport an all glass outer shell, a combination of wood and glass shell, or fully-wooden shell. Optional sustainable tech includes a roof-based solar array, roof-based wind turbine, and a rainwater collection and filtration system. That completes our pick of innovative sustainable houses, You can check out each one in the gallery.

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Chapter 6 : GBEE - Greening Public Buildings - Sustainable Housing

In an effort to reduce waste and engage in more sustainable construction, this research focuses on the development of a cost-competitive, environmentally-friendly geopolymers concrete mixture that offers structural benefits relative to ordinary Portland cement (OPC), uses fly ash, a toxic waste byproduct as a raw material, and reduces the amount of CO₂ emitted during production of the concrete.

You can get our headlines via email as well, or follow us on Twitter. Homes being built these days must meet certain criteria that homes of earlier times did not. As society progresses and we realize that old building practices may harm the earth by diminishing resources or harm people by introducing toxins into living environments, we seek out and develop better ways to build homes. Building sustainably by making homes more energy efficient is one way of protecting the earth. But, at a more fundamental level, just being more mindful of the products we use to build homes will go a long way toward developing more sustainable homes and building practices for the future. It is a good idea to learn a little more about sustainable materials on your own, too. The following are some examples of green building materials that can be used now to create more sustainable homes for the future: Structure Amazingly, homes can be constructed from a range of materials that you might not imagine such as adobe bricks made of mud or straw bales. Structures can be built using composite or waste materials. For example, finger-jointed studs are studs made from piecing smaller pieces of wood together. They are considered a good replacement for regular studs because they will not twist. Sheeting materials can also be made from recycled or waste materials such as oriented strand board. OSB is made from by-products of the lumber industry and is widely used in construction. Insulation Insulation is essential to every home, no matter where you live. The right insulation can keep your heating and cooling bills to a minimum while helping to keep you and your family comfortable. It can be created using a wide variety of materials and techniques. You could insulate your home with rigid foam insulation made from plant-based products. Hemp insulation is naturally pest resistant, so it not only insulates your house from the weather but from pests, as well. You could insulate your home with recycled materials made from shredded newspaper or denim. The great news about those products is they do not out-gas toxins. In fact, some naturally sourced insulation poses so little threat, you do not even have to wear a mask when installing it. Roofing Roofing is important because it not only protects a structure from the elements, it helps to keep a structure insulated. A good roof can prevent heat transfer which means that you are spending less money to cool your house in summer. Roofing tiles can be fabricated from recycled plastic and rubber which prevents a lot of usable materials from going into landfills. Although, if you are looking to cover your roof with more natural and sustainably sourced products, you might consider clay tiles or wooden shakes. Both can be attractive alternatives. Decor The eyes may be the windows to the soul, but the windows are the eyes of the house. Low emissivity windows or Low-E for short feature a clear coat of metallic oxide that helps to prevent heat from getting out during the winter or in during the summer. If you are trying to keep toxins out of your home, look for paints with low or no VOC volatile organic compounds. These are usually found in the odors you smell just after painting. No matter what your green building goals for your home—whether it is using more sustainably sourced materials, creating a less toxic environment, creating less waste by using recycled materials, or some combination of the above—there are products and techniques that will help you achieve them. Starting with ecologically inclined builders and contractors who know about the materials and how to use them should be the first step in creating a sustainable home that will carry you into the future.

Chapter 7 : INVESTING IN A GREENER URBAN FUTURE | Friends of Europe

Use Sustainable Building Materials: If building a green home is your goal, then using environmentally or eco-friendly products should be on your list which can reduce the impact of construction on the environment. Each and every part of

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your house such as roofing material, building material, cabinets, counters and insulation to your flooring.

Chapter 8 : Basic Information | Green Building |US EPA

The Code for Sustainable Homes was launched as part of a package of measures towards zero carbon development, including an overarching consultation: Building A Greener Future on the shift to zero carbon.

Chapter 9 : Green living: Top 10 sustainable houses

Building the house with comfort taking care of the future will make it more sustainable. If the plan is to stay longer in the room, then the indoor and outdoor access will be a requirement., it will also avoid future extension of the house as well as renovation so as the reduce future expenditure in the house.