Tech work 11/05/20

A composite material (also called a composition material or shortened to composite, which is the common name) is a material made from two or more constituent materials with significantly different physical or chemical properties that, when combined, produce a material with characteristics different from the individual components. The individual components remain separate and distinct within the finished structure, differentiating composites from mixtures and solid solutions

Composite materials are generally used for buildings, bridges, and structures such as boat hulls, swimming pool panels, racing car bodies, shower stalls, bathtubs, storage tanks, imitation granite and cultured marble sinks and countertops.

5 different composite materials

- Reinforced concrete and masonry.
- Composite wood such as plywood.
- Reinforced plastics, such as fibre-reinforced polymer or fiberglass.
- Ceramic matrix composites (composite ceramic and metal matrices)
- Metal matrix composites.

Reinforced concrete – It's extremely resistant to fire and water. It is the reason engineers and professionals build underwater structures using that concrete only. The reinforced concrete was invented by Joseph Monier in 1849. The first reinforced concrete bridge was built in 1889. Early 20th-century engineers thought reinforced concrete structures would last a very long time – perhaps 1,000 years. In reality, their life span is more like 50-100 years, and sometimes less. To increase its overall strength, steel rods, wires, mesh or cables can be embedded in concrete before it sets. This reinforcement, often known as rebar, resists tensile forces. Reinforcement is generally placed in areas of the concrete that are likely to be subject to tension, such as the lower portion of beams. Concrete has excellent compressive strength, but very poor tensile strength. Reinforced concrete has materials added to improve tensile strength. Plain concrete is strong on its own but cannot withstand much pressure when subjected to a load. Therefore, it can easily break or fail.

Glass reinforced plastic - It's composed of strands of glass. Each individual glass fibre is very fine with a small diameter, and they are woven to form a flexible fabric. The fabric is normally placed in a mould, for instance a mould for a canoe and polyester resin is added, followed by a catalyst (to speed up the reaction). The process is repeated so that there are many layers of fibre glass and resin and

allowed to dry/cure. The resulting material is strong and light. Glass Reinforced Plastic can be sanded for a smooth finish and painted. Glass reinforced plastic is lightweight and has good thermal insulation properties. It has a high strength to weight ratio, making it useful for the production of products such as water tanks, surfboards, canoes, small boat hulls and similar products. The new European fighter plane, called 'Eurofighter', has an airframe which includes 12% glass reinforced plastic.

The pattern of weave determines the strength and weight of the Glass Reinforced Plastic, after resin has been added. Different weaves have been developed for different practical applications.

Carbon fibre - An extremely strong and light fiber-reinforced plastic which contains carbon fibers. CFRPs can be expensive to produce but are commonly used wherever high strength-to-weight ratio and stiffness (rigidity) are required, such as aerospace, superstructure of ships, automotive, civil engineering, sports equipment, and an increasing number of consumer and technical applications. Carbon fiber-reinforced plastic (CFRP) is a material made by curing carbon fiber-impregnated resin to increase the strength. It has been used for airplanes, tennis rackets, fishing rods, and others because they are lightweight and mechanically very strong

My unlimited budget product designed for the leisure industry

Using composite materials me and my team of excellent engineers are going to build an elite boat taking the form of a yacht that will sail to any des5tination at the click of a button. This will provide you with a private way of travelling in your own property however you are able to relax due to the advanced technology built within the boat. It will have a unique satellite system which enable travelling to a location easier more sustainable and efficiently perfect.

As I have been studying composite material my research has shown that glass reinforced plastic floats therefore that will be the base material for my structure. In the process of plastic melt flow, glass fiber and resin have different flowability and different mass density, so they have the tendency of separation. Glass fiber floats to the surface and resin sinks to the inside, thus forming the phenomenon of glass fiber exsertion

Being the advanced engineers that we are, me and my crew have sailed all around the world putting satellite stations in every holiday location that may be attractive for tourists.

- England
- France
- Germany
- Greece/Greek islands
- America
- Spain
- Cyprus
- Russia
- Italy
- Africa
- Bora Bora
- Canada
- Australia
- New Zealand
- Japan
- China
- Caribbean
- Maldives
- Thailand
- Bahamas

We are still working on adding countries as we wish to design our product so that it suits a wide range of customers therefore we have already sorted out the most popular destinations. Our satellites are based in the biggest port that's easily accessible and in a famous landmark therefore if you wish to travel anywhere you must do it on land or navigate yourself to a different dick. Our satnavs also notify you on that countries ports so if you wish to be some other destination in that country, our yacht can assist you.

We understand that many of you prefer the idea of cruises however I can assure you owning this yacht is like your own private cruise that is safe, reliable and perfectly built. Here at

Scotland Yard we pride ourselves on looking after our planet therefore we have ensured that our sailing wonder is %85 less harmful to the oceans of the world and releases far less pollution than any other boat that's graced the waters.

The satellite device gives you your country options which you can search and then gives you different routed you may take as there will be an option of the scenic route which will take you past areas of the sea that are rarely seem such as seal island, dolphin play area and beautiful shoals of tropical fish etc. or you can take the quickest way that gets you to your dream destination the fastest all by the click of a button. You only have to get your destination sorted at the beginning of your journey and then you leave it up to our engineering to give you the sail of your dreams through the worldwide oceans safely but flawlessly. We don't know what a bumpy ride is and no matter what the sea decides to do, you are always streaming along the waters calmly and without disturbance.