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Editor:
Walking Dog

Reporters:
Robert Eyford
Ron Wilkes

THIS WEEKS FEATURES

- | | | |
|---|--------------------------------|----------------|
| 1 | UNIQUE HOMES – Cob Homes | Ron Wilkes |
| 2 | IS IT A STROKE? | Natalie Trueit |
| 3 | WHAT IS EIFS.? | Ron Wilkes |
| 4 | WE LEAVE YOU WITH THIS THOUGHT | Editor |

1. UNIQUE HOMES – Cob Homes

Ron Wilkes, Integral Property Loss Consultants

Cob is a mixture of sand clay and straw - wet enough to mold yet dry enough to build up without forms. Walls are built up to be monolithic, which gives them greater strength in earthquakes. Cob invites creativity to be expressed in the process of building and designing by these spaces; living space, meditation space, work space, sleeping space, play space. These homes are uniquely individual because they have a common feature of curved walls, arches, and niches. Most materials we use for building an earth house are unprocessed, natural products such as sand, clay, straw and recycled materials.

During the past decade some people in England and parts of North America have been rediscovering an ancient building technique: Cob Construction. There are cob houses in England which are over 400 years old, and now people are building them in B.C. and from Oregon down to Texas.

Earth is an abundant resource that can produce beautiful and responsible homes. Cob construction uses sand, clay and straw. Mixed well, this special mud is applied to the foundation in continuing layers. Each layer must dry so that it can support the next, and the wall is tapered in as you build up. When dry, the walls are very hard and load bearing. The roof is built directly onto the walls, as the walls themselves are the support structure. This one-solid-earth-wall aspect of cob allows it to be called "Monolithic Adobe."



This technique requires almost no money or skill, and involves very little environmental destruction, while at the same time allowing creative and organic designs which blend in to the surroundings. Cob allows itself to be shaped and molded while you build, allowing bas-reliefs, shelves, alcoves, and even furniture to be built right into the wall. Cob, being earth, is totally fireproof, so even a fireplace can be built into the design.

Regular working windows and doors are embedded in the cob along with their lintels while you build the layers up. If you want a window that stays closed, you can use any kind of glass embedded directly into the cob. This allows for using broken windows (cob over the broken part) or creative things such as glass bottles or car windshields.

These buildings are incredibly durable, and no, they don't wash away with the rain. Usually an aesthetic earth or lime plaster is applied to the finished cob. There are no joints or seams, which makes it earthquake resistant. Cob houses have been known to last for many centuries and survive earthquakes which destroy the modern homes nearby.

Cob has a high thermal mass which allows it to absorb the sun's energy during the day to keep the interior cool, and radiate the energy back out at night to keep the interior warm. In this way cob acts as a temperature regulator.

Does cob sound too good to be true? It might be for this climate.

Having walls which regulate the temperature to the average daily temperature is great when you live in England or British Columbia or the Sahara Desert and the average daily temperature only goes down to around 0 degrees Celsius.

However, no one has tried to use cob construction in our winter climate and no one knows what the insulation value of cob is. Some estimate it is between that of wood and stone, that is, not very good.

The average material cost for a cob home is under \$ 5,000, but the big draw back is that it is labour intensive and would become very expensive to build if you had to pay the going labour rate.

Cob homes have their draw backs too.

- They are time consuming and requires an enormous amount of labour
- They require a stone foundation, two feet up from grade so there will be no wicking from the ground.
- Their performance in an earthquake is suspect (we are not aware of any cob building ever having been approved for seismic performance in an earthquake area).
- They don't meet the building code R20 requirement for insulation.
- They are very low compressive strength.

In summary

- Cob is an ancient building method using earth, clay, sand, and straw.
- Over 50% of the global population lives in earth structures.
- Thousands of cob houses in England's damp climate have been continuously occupied for over 500 years.
- Cob foundations are made of recycled broken concrete and/or rock.
- Cob structures have self-supporting, load bearing walls 1-2 feet thick (depending in the number of stories they are carrying).
- Cob's sculpt ability makes it conducive to building curved walls, niches, arched doors and windows.
- Cob's curved walls are stronger than brick or block as they have no weak straight line mortar joints.
- Cob's continuous reinforcement network of straw holds the structure together as one monolithic mass.
- Because cob structures are one monolithic unit with curved walls it is the most earthquake resistant building method known.
- Cobs thermal mass creates passive solar structures that are cool in summer and warm in winter.
- Cob's porous nature (unlike adobe) makes it resistant to weathering.
- Cob allows for add-ons, cut-outs, and reshaping at any time.
- Cob dries to the hardness of concrete.
- Cob structures are fireproof.
- Cob building requires no power tools.
- Cob is non-toxic and completely recyclable.

2. IS IT A STROKE?

Natalie Trueit, Pioneer Agencies, Smithers, BC

Sometimes symptoms of a stroke are difficult to identify. Unfortunately, the lack of awareness spells disaster. The stroke victim may suffer brain damage when people nearby fail to recognize the symptoms of a stroke. Now doctors say a bystander can recognize a stroke by asking three simple questions:

*Ask the individual to smile.

- *Ask him or her to raise both arms.
- *Ask the person to speak a simple sentence.

If he or she has trouble with any of these tasks, call 9-1-1 immediately and describe the symptoms to the dispatcher.

After discovering that a group of non-medical volunteers could identify facial weakness, arm weakness and speech problems, researchers urged the general public to learn the three questions. They presented their conclusions at the American Stroke Association's annual meeting last February. Widespread use of this test could result in prompt diagnosis and treatment of the stroke and prevent brain damage.

A cardiologist says if everyone who gets this e-mail sends it to 10 people, you can bet that at least one life will be saved. Tell as many people as possible about this. It could save their lives!

3. WHAT IS EIFS?

Ron Wilkes, Integral Property Loss Consultants

Exterior Insulation and Finish Systems (EIFS) are multi-layered exterior wall systems that are used on both commercial buildings and homes. They provide superior energy efficiency and offer much greater design flexibility than other cladding products.

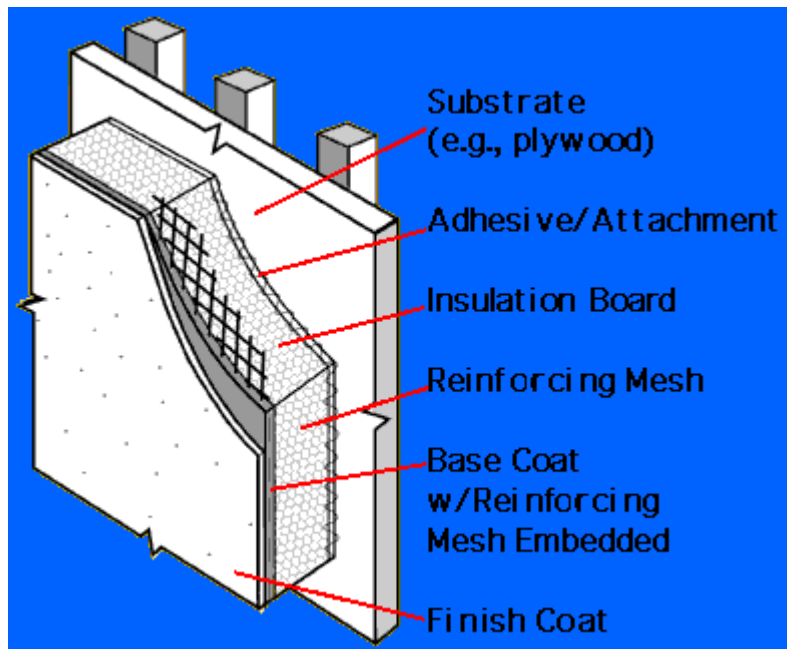
Developed in Europe in the 1950s, EIFS were introduced in the U.S. almost 30 years ago. They were first used on commercial buildings, and later, on homes. Today, EIFS account for nearly 30% of the commercial exterior wall market. EIFS typically consist of the following components:

- insulation board, made of polystyrene or polyisocyanurate foam, which is secured to the exterior wall surface with a specially formulated adhesive and/or mechanical attachment
- a durable, water-resistant base coat, which is applied on top of the insulation and reinforced with fiber glass mesh for added strength
- an attractive and durable finish coat — typically using acrylic co-polymer technology — which is both colorfast and crack-resistant.

The growing popularity of EIFS is due to the fact that few, if any, competitive materials offer such a wide range of desirable product benefits. Chief among these are superior energy efficiency and virtually unlimited design flexibility.

If you've ever felt the comfort of being wrapped in a warm blanket on a cold winter night, you have some idea of what EIFS can do for a home or building.

EIFS literally wrap the exterior in an energy-efficient thermal blanket. By insulating outside the structure, EIFS reduce air infiltration, stabilize the interior environment and reduce energy consumption.



By contrast, traditional "between-the-studs" insulation, no matter how thick, leaves "thermal breaks" — gaps where heat and cold pass more freely between the outdoors and the space within — at studs, wall outlets, wall joints, and elsewhere.

In fact, EIFS can reduce air infiltration by as much as 55% compared to standard brick or wood construction. And since walls are one of the greatest areas of heat and air conditioning loss, improvement in the wall insulation can be very meaningful in terms of energy conservation.

What's more, EIFS add to the "R-value" of a home or building. (R-value is a measurement of the resistance to heat flow; the higher the R-value, the better the material's insulating value.) Most EIFS use insulation board with an R-value of R-4 to R-5.6 per inch as the innermost layer in the wall system. When combined with standard wall cavity insulation, this extra layer can boost wall insulation from R-11 to R-16 or more.

Another point to keep in mind on new construction: Due to the energy efficiency of EIFS, it may be possible to specify lower-capacity heating and air conditioning equipment without sacrificing anything in terms of interior comfort.

The rich appearance of EIFS bears a resemblance to stucco or stone, but the systems are far more versatile than these and other materials. Not only do EIFS come in virtually limitless colors and a wide variety of textures, but they also can be fashioned into virtually any shape or design.

With EIFS, skilled applicators can create all sorts of exterior architectural detailing that would often be cost-prohibitive using conventional construction — cornices, arches, columns, keystones, cornerstones, special moldings and decorative accents are but a few examples.

Most of this detailing is computer-generated. The designs are precision-cut out of insulation board, attached to the substrate or wall, then covered with the EIFS base coat, mesh and finish coat.

Using this ingenious process, EIFS applicators can give a striking, distinctive appearance to any building or residence.

EIFS are definitely not do-it-yourself wall claddings. They should be installed only by experienced applicators who have completed an EIFS manufacturer's training program. Verification that critical related items are being properly installed, especially quality windows and doors, flashing and sealants.

Unlike wood, stucco and other siding materials, EIFS rarely need painting. Most EIFS systems are specially formulated with 100% acrylic binder, which gives EIFS superior resistance to fading, chalking and yellowing. As a result, the systems tend to maintain their original appearance over time. And since the color is integral to the finish coat, even if the surface is scratched, the same color appears beneath the abrasion.

EIFS also have excellent resistance to dirt, mildew and mold, which helps keep the building exterior looking clean and freshly painted. Should the surface ever become soiled, it can usually be cleaned by hosing it down.

The systems are designed to be very flexible, which makes them highly crack resistant. When walls expand or contract due to rising or falling temperatures, EIFS are resilient enough to "absorb" building movement and thus avoid the unsightly cracking problems that are so common with stucco, concrete and brick exteriors.

EIFS are among the most water resistant exterior surfaces you can put on a house. But as with all claddings, EIFS must be correctly installed and properly detailed if they are to perform properly. Otherwise, moisture can get behind the systems and cause damage, just as it can with wood siding, brick or any other exterior.

Water intrusion is seldom a problem on commercial structures with EIFS. Water intrusion damage to homes is uncommon, but when it does occur, the moisture typically affects only small areas which can be easily and inexpensively repaired.

In cases where homes have been damaged, the problems have been traced to the use of poor quality (even leaky and/or non code-compliant) windows and/or improper flashing and sealing. As a result, when building with EIFS, it is wise to use quality windows (such as those with AAMA certification) which are code-compliant, and to make sure there is proper flashing and sealing around

windows, doors, roofs, deck-to-house attachments, and all other exterior wall penetrations.

Periodic maintenance should include thorough checking of the flashing and sealing to ensure that the building envelope remains watertight. Damaged or missing flashing should be repaired or replaced immediately; likewise, cracked or deteriorated sealants should immediately be repaired, or removed and replaced.

4. WE LEAVE YOU WITH THIS THOUGHT

“See everything – overlook a lot!”

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