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CONCRETE FOOTING

On the solidity of the insubstantial



PHOTOGRAPHS BY ALFRED EDELMAN

TO BE HONEST, I'm tired of always worrying about what flies away—time, truth, children, decades, all the decades. I've been trying to pay more attention to *durability*, trying to understand what is *real*, to follow Thoreau's advice to make contact with the *solid earth!* the *actual world!* So I have been studying up on concrete.

It turns out that if you want to make a good concrete footing, you need only two things: a cement, the substance that binds things, and an aggregate, the substance that is itself bound. After that, I guess all it takes is imagination. The Romans ground up Greek art for aggregate; aqueducts are built from the bare arms of goddesses and vases once painted with swallows and boys. In old California, padres built into the mud walls of their missions the bodies of Indians who collapsed and died during construction. The walls of buildings in Portland, Oregon, are likely to have been made of cement and river sand, although the concrete footing behind the drinking fountain on Burnside Street seems to be reinforced with pigeon droppings. White nodules have petrified onto the ledge there, harder than the concrete that erodes around them.

Cement is made by firing limestone in a kiln to 2,100 degrees. And what is limestone? It turns out that limestone is the compressed bodies of sea angels and ancient sharks, crushed by time into stone. Whatever remained of sea creatures so delicate they were

invisible—beaks, transparent heads, anuses that doubled as mouths, mucus-slathered tube feet, hairy jaws, and stems like lilies; and whatever remained of animals unfathomably large—toothed jaws, tail bones, paddle fins, fingered wings—anything that was shell or bone or tooth, these are the components of limestone. *Really?* I wondered, *Teeth?* Yes, teeth are stones grown by animals. Teeth, and shells: shells of ancestral periwinkles, armor of trilobites and clams. The animals died, who knows how many hundreds of millions of years ago. Between then and now, many of their species have entirely vanished. All these bodies drifted in the tides, rising and falling on tattered wings until they sifted to the ocean floor, bone on bone, bone on shell, under the dark weight of the sea. The calcium carbonate of such ancient creatures is mined, burned into clinkers, ground into cement, and piled bag on dusty bag.

Mix the cement with water and sand. Water: once the ice of ancient comets that sizzled to earth, melted, and rolled toward rivers. Sand: rumples mountains and unimaginable time, tumbled in surf. This, finally, is concrete, solid and real.

But there is another truth. Concrete is liquid before it is solid. The walls of a city are *poured* into place. You and I have got used to the fact that humans are sacks of salt water, but the city is no less ocean. The first three ingredients of concrete—sand, ocean creatures, and water—create the solidity of pipes and pilings

CONCRETE

Synonyms:

Real, tangible, existing, actual, material, solid, physical, particular, certain.

Antonyms:

Transient, imagined, immaterial, insubstantial, vanishing.



and sidewalks and walls. Reinforced with rebar, pressed between bricks, the concrete hardens, but only with time, which is the fourth ingredient of concrete.

So. What is time?

The inquiring mind groans. Is it true that before one can understand what is most solid and steady, it is necessary to understand what is most transient—this *time* that leaps from my hands and flies away, leaving me aching and bewildered?

Whatever else it might be, time is a measure of the earth turning under the sun and the moon. As the earth turns, the moon's gravity drags a bulge of water around the planet, creating the tides. Imagine how difficult it must be to build a sea wall from concrete. It has to be timed perfectly to the rhythm of the tides,

so that the concrete hardens, not too fast and not too slow, in the time between the ebbing tide and the flood. To build the foundation for the Eddystone Light on an exposed island in the English Channel, John Smeaton invented a special formula for concrete so that it begins as soft mud while the tide falls into the dim light of eelgrass, but solidifies to stone by the time the tide returns to the land of gulls. The concrete city ebbs and flows. As the earth rotates under the sun, the sun slowly pulls the sharp line between light and darkness across the landscape, pulls cars across bridges as night falls, drags shadows across empty streets, closes doors and locks them. As the earth rotates under the moon, the moon floods the city with pools of white light and then pulls the light slowly away, leaving the streets and sidewalks shining.

In the glare of day, when the moon is a narrow crescent washed out by the sun, the moon and the sun are on the same side of the earth, pulling with their combined weight. This lifts the strongest tide of the month. In the city, concrete blocks yearn upward as the sun and the moon heave together and the earth turns heavily on its axis. Every overpass and abutment, every slab, the heavy flanks of bank buildings and the thin layers of dust lift toward the hard

Massachusetts Audubon Chart No. 1, 1898

In the corner of an antique store
hanging by a nail, I bumped into
this water-stained, frayed-edge chart.
Ingenious at getting twenty-six birds—
from chimney swift to chipping sparrow,
all life-sized—on 27 x 42 inches,
Fuertes painted his stiff birds posed
in characteristic attitudes
on a convenient streamside dead tree, on reeds,
and on the wing in the background sky.

After I bought the chart and hung it
near the stairs, I found almost all twenty-six
are right here, going by
at various times outside my window.
Seeing the little golden crown on a kinglet,
or the tail-splash of red that sets off
the catbird's silky grey, puts me in good cheer.
And there's the sudden paradise of intimacy
when I turn my binoculars toward a house wren
nesting under the skewed lid of my propane tank.

None of this is life-changing
or halts the numbing dailiness of chores,
but since I hung this chart of birds,
I've come to think that what we know of our lives
often has nothing to do with understanding,
but with some accidental loveliness
we put our hopes in, the excess, say,
of a thrush fluting its elongated ee—oo—lay;
or the way a flock of goldfinches
yellow the air they fly through without asking.

—Robert Cording

light. In each water fountain and crack between pavement stones, water rises. In each basement, water gurgles against concrete floor. Water deep inside culverts lifts toward the invisible moon; concrete creaks against stone slab. Rock and water, the whole city lifts its shoulders toward the sun and the moon. The day sounds the groan of the stiff city shifting, ancient stone against ancient bone.

I can't find any way to escape this: in its origins and in its fate, solidity is transient and vanishing. The concrete that protects us from rain and strangers was secreted from the mucous mantles of gooey animals that vanished long before we knew them. The *actual world!* is as contingent as trilobites. Concrete is no more substantial than the tiny sea angels that winged away through water blue as sky. Moon-pull gurgles up and down in the walls, cracking the cement. When the footings crumble, as they will, the city's dreams and the dusty angels will return to sand and time. Then it will all begin again. The next time, there will be no calcified shells or coral. In an acid sea, everything will have to be made of glass. But it will begin again, nonetheless, life flashing from ephemerae to ash. This is what breaks our hearts, we soft beings who desperately love what is destined to disappear—our own lives, the singing substantiality of our daughters and sons, the spans of city bridges.

None of these, though, is the most important of the facts. The most important is that although solidity is essentially insubstantial, the reverse is just as true. The insubstantial is solid enough to stand on. We stand on time and sand. We stand on truth. Waiting for the bus, we stand on forests of sea lilies flattened into streets. What is durable? The shadow of a roofline cast on a concrete wall. A memory of the swallows that once slid down the rising air above a city street. A yearning for the child who long ago walked out the door. The tube of emptiness inside a pipe. The smell of dust in silent light. Can we find the beauty in fleeting moments, held in the conscious mind? If not, all our loves will be sorrows. And all our astonishments will be overwhelmed by regret, that these wonders cannot last forever. 🐾

