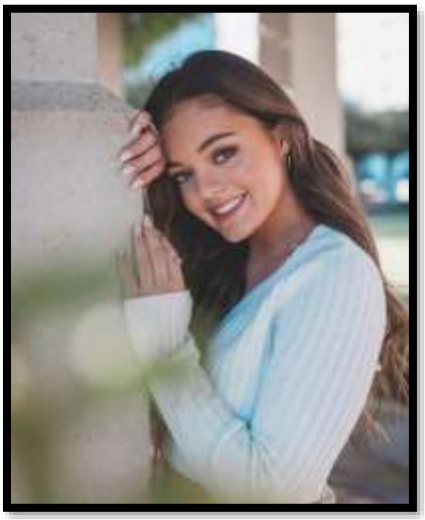
KENTUCKY CONCRETE ASSOCIATION



2021 – 2022 William T. Robertson High School Essay Winner

Elizabeth Wessel, Dixie Heights High School, Edgewood, KY

Unhappy New Year

A cockroach crawled from the eye socket of a skull - the only motion on the hazy, barren, and otherwise lifeless surface of the earth. Two weeks earlier, distant blasts were mistaken for 2099 New Year's Eve fireworks. Party music continued to play after radioactive particles spread from the blast epicenters to permanently silence jubilant voices. Minutes later, the power grid took its last breath. The music faded…then…deathly silence.

Two weeks later the radiation fell to relatively safe levels. A dust-covered, three-foot square patch of ground began to shift, then was pushed aside. Ellie Logsdon, great-granddaughter of Eileen Logsdon, her family, and a few neighbors emerged from their fallout shelter. They survived, along with thousands of others because of the strength, resilience, durability, and affordability of concrete.

Fifty years earlier, the Global Cement and Concrete Association achieved their goal of producing carbon neutral concrete, but the technological advances didn't stop there. By 2080, the amount of clinker required to make concrete was nearly eliminated, replaced by naturally occurring bacteria and byproducts of other industrial processes. Advanced chemistry allowed for significantly lowered kiln temperatures. While concrete was already the world's most used building material, environmental and technological advancements ensured its use would be even more widespread. The advancements couldn't have come at a better time. By 2090, peace talks between the 19 countries that possessed nuclear weapons were breaking down. As war became imminent, fallout shelter construction accelerated. Concrete was the obvious choice to build the thousands of vital fallout shelters since it doesn't burn, rot, or rust, and is resistant to water, vibrations, and earthquakes. The high density of concrete allowed it to endure the hydrostatic pressure underground structures must withstand. The construction was able to proceed quickly since the materials needed to make concrete were abundant near the construction sites, which eliminated transportation delays.

As more survivors resurfaced across the country, basic necessities were a top priority. People needed food, shelter, and a country-wide transportation network. The benefits of concrete, once taken for granted, became evident.

In the second half of the 21st century, significant innovations in lighting technology and robotics enabled vertical farming to be profitable. Hundreds of giant vertical farming concrete buildings were constructed across the county. Concrete was used because of its ability to store energy which helps maintain optimized interior temperature growing conditions. Generators could now provide sufficient electricity for the growing lights since the power requirements were low due to the thermal mass of concrete. The ability of concrete to endure the vibrations and pressure exerted from the blasts during the war ensured survivors would have an ample food supply.

The survivors began moving into apartment buildings constructed of concrete since they had very little or no structural damage. Hospitals built with concrete were still structurally stable and were used to continue to save lives. The network of self-healing concrete roads and highways were still usable, allowing survivors to travel and regroup.

While it will take decades to rebuild, one thing is certain: concrete saved lives and there is now hope for mankind. The durability and resilience of concrete will be as integral in rebuilding as it was for the progress of civilization throughout history.