

Vulcan Solutions

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
Ali Mirza	2022	Classics, Molecular Biochemistry
Hanna Raveh	2023	Computer Science
Margarita Sinko	2022	Philosophy, Finance
Alec Studnik	2023	Classics, Latin, History

Advisor(s): Dr. Joan Martínez Evora

Topic: Building with Zero

Audience: Cemex Board of Directors

Sustainable Development Goal

SDG #13: Take urgent action to combat climate change and its impacts

Target #13.2: Integrate climate change measures into commercial cement market

Executive Summary

Our team, Vulcan Solutions, is proposing a plan financially and ethically beneficial to Cemex's Board of Directors. Concrete currently accounts for about 8% of the earth's greenhouse gases, nearly as much as agriculture's 9%. In the face of growing demands by the world population to preserve the life of our planet, and the significant toll concrete takes on the environment, innovation is necessary.

Carbon injection is the new revolutionary method by which carbon can be injected directly into freshly produced concrete. The results are incredible: 25 to 40 pounds of carbon dioxide are saved per cubic yard of cement. Additionally, the concrete's compressive strength can be increased by 10%. As another benefit, existing concrete factories can be retrofitted with Carbon Injection technology at a low cost. Concretes made in this way are compliant with ASTM guidelines for the Chemical Admixture of Concrete. In short, implementing Carbon Injection is affordable, compliant with accepted industry standards, and an ethical choice for cement companies to make.