



WEBCOR	100 MILLION+	
	#9 Best place to work	In 2014 Webcor became a wholly-
FOUNDED IN 1971	Image: style="text-align: center;">\$1.3B 2023 ANNUAL REVENUE Image: style="text-align: center;">WEBCOR BUILDERS Image: style="text-align: center;">WEBCOR CONCRETE Image: style="text-align: center;"	 owned subsidiary of Obayashi USA, LLC ranked 15th on ENR's list of Top 250 Global Contractors. The partnership with Obayashi ensures small-company attention with mega-company resources. This allows Webcor to thrive during economic downturns and leverage the global resources of Obayashi and its other companies.
	5 CONTO SAFETY EMR 798 SALARIED STAFF TILD EMPLOYEES	- BUILDING SOLUTIONS. BETTERING LIVES. 3















CEMENTIOUS CONTENT OF A CONCRETE MIXTURE				
STRENGTH	WORKABILITY	RATE OF STRENGTH GAIN		
W/CM	CEMENTITIOUS MATERIALS & TOTAL CEMENTITIOUS CONTENT	CEMENTITIOUS MATERIALS & TOTAL CEMENTITIOUS CONTENT		
STRENGTH IS <u>PRIM</u> INCREASE WITH LO	ARILY CONTROLLED BY W/CM AND WER TOTAL PASTE CONTENT, AS TH	TENDS TO SLIGHTLY E PASTE GENERALLY HAS		
LESS STRENGTH TH				







Practice Approach

COLLABORATION

Many projects start with incomplete requirements and may be unsure of what's possible. Forge relationships and work with design teams.

GOALS

Alignment to reporting goals and sustainability as early as project's RFP / Procurement Phase

PROJECT DOCUMENTS

EPD Submittal requirements and GWP limit requirements

WEBCOR



Practice - Legislation Life Cycle Analysis

CALGREEN Embodied Carbon Req. California – CALGreen Amendment (In effect July 1, 2024)

3 Pathways:

WEBCOR

- 1. Building Reuse 45% of struct/enclosure
- 2. Life Cycle Analysis Performance 10% Reduction from baseline
- 3. Prescriptive 175% of EPD GWP Limits



CHALLENGES IN USING LOW EMBODIED CARBON (LCC) CONCRETE

USING MIXTURES WITH SLOWER RATES OF STRENGTH DEVELOPMENT

- DESIGN MIXTURES WITH CEMENTITIOUS COMPONETS COMPATIBLE WITH REQUIRED STRENGTH DEVELOPMENT
- SEE SLIDE ON ADMIXTURES

UNFAMILIARITY WITH FRESH STATE PROPERTIES OF LCC MIXTURES

• ALWAYS TEST NOVEL MIXTURES BEFORE FULL SCALE USE

PROJECT TECHNICAL REQUIREMENTS INCONSISTENT WITH ENVIRONMENTAL GOALS

• THIS IS DISCUSSED IN CASE STUDY 2

TYPE IL CHALLENGES – RELATIVE TO FLAT WORK:

- ABRUPT ROLL-OUT BETTER PREP AND COMMUNICATION NEEDED IN FUTURE
- INCONSISTENT PERFORMANCE ACROSS THE INDUSTRY
- LESS POROSITY LEADING TO LOWER BLEED WATER
- SHORTER INITIAL SET TIMES
- CRUSTING
- CRACKING
- MOTTLED SURFACES









Projects			
Case Study 1: LCA Approach			
Collaboration			
Concrete specifications include EPDs to be provided, but no GWP requirements.			
CALGreen Embodied Carbon (EC) Requirements, Performance Path, Life Cycle Assessment (LCA) with 10% Peduction from Baseline			
Reduction nom basenne.		LCA A1-C4 kgCO2e	% of Total
LCA Model = EC Contributions in Phases	Concrete	11,936,902.10	50%
A1 – C4:	Rebar	3,686,941.90	15%
	Precast Panels	3,728,819.60	16%
• 50% Concrete		19,352,663.60	81%
50% Concrete15% Rebar	Subtotal		
 50% Concrete 15% Rebar 16% Precast 	Subtotal All other	4,576,149.90	19%











		4-14				
PROJE	CT S	PE	CIFI	CATI	ONS	
WEBCOR CONCRETE 31145 SAN ANTONIO S HAYWAR SA4 CA 94544 PASTE VOLUM PASTE SG = 1.0	696 AMADO SAN FRANCI 415-20 WEBCOR CONCRETE 31145 SAN ANTONIO STREET HAYWARD CA 94544 FOR : PASTE VOLUME = 26.3% PASTE SG = 1.68			SLAG - W - PILE CA	2003	
MIX # 501X70 4000	PSI 5.0	5K 1" A	D-70% SLAG	4.00) Slump	
	VOLUME CU.FT.	SPECIFIC	S.S.D. WEIGHTS			
AIR	0.405	0.00	1.5	VOL		
WATER	3,878	1.00	242.0	LBS		
TYPE II MODIFIED	0.717	3.15	141.0	LBS		
SLAG	1.818	2.90	329.0	LBS		
1" SECHELT AGG	10.900	2.72	1850.0	LBS		
SECHELT SAND	3.628	2.65	600.0	LBS		
ANGEL ISLAND SAND	5.594	2.65	925.0	LBS		
0077 0000		0.00	3.0	OZ/CWT		









