

Project Narrative Sample #1

(Photo 1) Occupying over 20,000 square feet in a difficult-to-access forested ravine, the new Zoo exhibit Eagle Canyon was highly dependant upon the use of four innovative concrete products and construction techniques.

(Photo 2) One part of the exhibit, an 800 square foot cast-in-place concrete viewing shelter, presented unique waterproofing challenges. The entire structure had to ultimately disappear into the landscape, aided by a densely planted green roof and planted artificial rock facades. One wall abutted a 10,000-gallon pool, with three formed openings for acrylic windows.

(Photo 3) The concrete walls alone had to hold the water. The green roof planted atop the shelter has a basin of water pouring over the roof edge into the pool below.

(Photo 4) Aesthetically, waterproof coatings and pool liners could not be used. The solution was to use a truly waterproof concrete mix for the overall structure and pools.

(Photo 5) To recreate a naturalistic environment for visitors and animals alike, the Zoo's own in-house Exhibits Crew created 200 cubic yards worth of realistic hand-carved artificial rocks.

(Photo 6) The shotcrete mix supplied was pre-colored to match natural rocks on site, and applied by the Zoo's own crew. Environmentally sensitive paving was used for the 300 linear feet of pathway winding up the canyon walls.

(Photo 7) Pervious concrete paving was used to eliminate storm water runoff and protect the forested site from subsequent erosion.

(Photo 8) To ensure longevity, and reduce maintenance, footbridges crossing tributaries were topped with colored, stamped concrete replicating wood planks. Exposed natural wood planks, under the feet of over one million visitors a year, would require far too much time to maintain and repair. **(Photo 9)** The cast-in-place concrete viewing structure, once covered with carved shotcrete rocks, soil and plants, becomes a far more naturalistic feature.

(Photo 10) Eagle Canyon prominently features concrete, in many forms, to successfully merge hardscape and landscape with minimal required maintenance and maximum aesthetic appeal.

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Project Narrative #2

(Picture 1) The Lovejoy Block One project, located in the Pearl District of Portland. This multi-use structure encompasses a full square city block and stands nine stories tall.

(Picture 2) Features: Safeway grocery store - ground floor/mezzanine, four levels sheltered parking, three levels office space.

(Picture 3) By “thinking outside the box”, designers were able to utilize innovative, state-of-the-art, hybrid precast concrete moment frame components with cast-in-place shear walls to resist the lateral forces of the structure. The frame is an unbonded post-tensioned system and can self-right after a seismic event. On-site soil conditions required more than 400 concrete grouted piles to be driven into the soil.

(Picture 4) A combination of four 120-foot tall cast-in-place shear walls and four 120-foot tall precast hybrid moment frames were used to construct the massive superstructure.

(Picture 5) 1900 pre-cast concrete components were delivered & installed. The congested construction site required a carefully orchestrated transportation and erection sequence.

(Picture 6) Several precast components were 10 feet wide by 60 feet long and weighed more than 40,000 lbs. each. A tower crane was required to erect these massive pieces. Due to the distinct profile of the building, the majority of the precast pieces were unique, which greatly increased the project’s complexity. In order to minimize tower crane loads, the columns were erected in pieces and spliced using cast iron sleeves and 11,000 psi grout.

(Picture 7) Time constraints made the use of precast components the obvious choice. All 1900 pre-cast pieces were erected in fewer than five months. This was quite cost-effective, as site work could be completed simultaneously with the precast production & installation.

(Picture 8) Concrete was the preferred construction material due to its environmental sustainability. The concrete was comprised of locally-produced materials, which allowed the building to accumulate a number of LEED points towards a Gold Certification.

(Picture 9) Concrete structural integrity for a green roof terrace to be placed on the 7th floor & roof.

(Picture 10) This project utilized various methods of concrete construction, including the use of precast concrete, cast-in-place concrete, post-tensioned concrete, and concrete piling.

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Narrative #1 – Bad Example

The Grocery Supercenter in Hebo, Oregon sits atop what used to be a wetlands area. After months of placing structural fill for the building pad, construction of the 185,000 square foot building began. CMU walls were used along with architectural and structural timbers to create an aesthetically pleasing and environmentally friendly façade, required to fit the look of the small community. The concrete footprint of the Supercenter including: the retail center, the garden center, the warehouse, and the loading dock totaled over 235,000 square feet. 9,496 cubic yards of concrete was used. (Use photos 1,2,3,4, or 9). The Supercenter is next to Lowe's and Hollywood video.

(Photo 4, 5, 6, 7, 8, 9,10) Some of the concrete was colored using a lot of liquid color to complete the job. After seven days wet curing, the interior slab was densified, using a potassium silicate based hardener, and then polished, revealing the mottled finish the owner desired. The concrete contractors skillful work, including the use of a Honda telescoping concrete boom pump, produced floor results exceeding the owners expectations. ARXX ICF was also used in parts of the construction. It has energy saving benefits. Our local concrete provider, Concrete R US, made the process an easy one. This new development is a local piece of art!