Fig. 1: The earthy color of the concrete at Torguson Park in North Bend, WA, was inspired by nearby Mt. Si; photo courtesy of Grindline Skateparks, Inc.

Shotcrete Makes for Smoother, Safer Skateboarding

By Kristin Dispenza, AOE

Early skateparks may have been made out of wood, but as the sport grew in popularity, concrete became the recommended material, providing a smoother, safer, and more durable surface. Shotcrete, specifically, became the best placement option for concrete because of its flowability and high strength, allowing for complex curvatures with tight tolerances that would not be possible with other installation methods. The appeal of this particular market to the younger generation makes it a very effective space to target workforce needs. The Skate4Concrete program puts student interns to work on skatepark jobsites and helps them learn concrete construction skills, including how to handle shotcrete equipment.

SHOTCRETE: A SOLUTION FOR SKATEPARKS

Concrete skateparks are built using a familiar construction type: Non-structural slab on grade. Designers use earthwork to provide the shape and support of the concrete skating surface, and then edge and shape control formwork is installed.

"The formwork used for skateparks is unique compared

to other types of concrete construction," said Matt Fluegge, Chief Executive Officer of Grindline Skateparks, Inc. "We don't use panels, since every part of a skatepark is geometrically unique. We custom-fabricate radii out of plywood and board lumber."

After formwork is in place, 6 in. (300 mm) of concrete is shotcreted against the soil. Shotcrete placement is essential for achieving smooth-flowing transitions in features such as bowls, pools, and banks. Finishing methods are also important.

"We hand trowel an air-entrained mix, which is not standard," said James Klinedinst, Senior Project Manager at Grindline Skateparks, Inc. "Typically, air-entrained mixtures are broomed or textured. It requires a technique learned over years to hand-trowel in a way that releases the trapped air and prevents delamination."

Having consistency in the concrete mix is also critical. "We've used a tried and true, off-the-shelf shotcrete mixture from Heidelberg Materials for years. And while we have that single, preferred mixture design, because we build parks all over the country, we also have to take into consideration variations due to regionally available aggregates, cement and other local materials," said Klinedinst. "We address this by sending our suppliers a cut sheet that breaks down aggregates and other mixture contents."

SKATE4CONCRETE CONNECTS SKATERS WITH SHOTCRETE

Founded by Crystal Howard in 2014, the non-profit organization Project Cornerstone focuses on education and workforce development in the concrete and construction materials industry. That same organization launched Skate4Concrete in 2023.

There's ample evidence that a passion for skateboarding can lead to a lifelong career in the concrete industry. The team at Grindline, a Seattle-based skatepark construction company, comprises former professional skateboarders-turned-concrete craftsmen. (See the sidebar on the next page for project details on the Grindline project: Torguson Park.)

"For just about all of us at Grindline, it started with a passion for skateboarding and recognition that skate facilities could be improved and made into more skateable terrain if designed and constructed by skateboarders. Several of us have now been at the company for more than 20 years, building our careers by moving up in the ranks while also contributing to the sport we love," said Fluegge.

Project Cornerstone created Skate4Concrete with funding from, and in cooperation with, the Concrete Advancement Foundation. Initial efforts included a series of informational videos and a website with a **map-based interface** to help students easily find job openings with member companies of the National Ready-Mixed Concrete Association (NRMCA). Skate4Concrete also created the Concrete Certification for high school students, an online course that continues to expand its reach today. When the course was being beta tested, schools stressed

Fig. 2: Skatepark designers use earthwork to provide the shape and support of the concrete skating surface, then formwork is installed; photo courtesy of Grindline Skateparks, Inc.

Fig. 3: Formwork for skateparks is custom-fabricated; photo courtesy Grindline Skateparks, Inc.

Fig. 4: Shotcrete is essential for achieving the smooth-flowing transitions in features such as bowls, pools, and banks; photo courtesy Grindline Skateparks, Inc.

Torguson Park
North Bend, WA

Fig. 5: ACI award-winning Torguson Park; photo courtesy Grindline Skateparks, Inc.

Opened in 2021, this 13,000 ft² (1200 m²) facility features a one-of-a-kind flow bowl, pool-style bowl, and large street skate area. The skatepark was constructed using shotcrete placement, which helped achieve the smooth-flowing transitions and curves of the design. Ready-mixed concrete containing Heidelberg Materials' EcoCem®PLC portland limestone cement (which lowered the carbon footprint by about 10%) allowed the team to design and build any shapes desired, including a rock coping mini pool, a replica of a mountain, stairs, banks, ledges, and curbs. The earthy color palette of the concrete, achieved using integral color, was inspired by nearby Mt. Si, which can be seen from the facility. The project was a **first-place winner** in the American Concrete Institute's (ACI) 2023 Excellence in Concrete Construction Awards in the Decorative Concrete Category.

TEAM MEMBERS:

- Owner: Si View Metropolitan Park District
- Architectural Firm: Grindline Skateparks, Inc.
- Engineering Firm: Mackay Sposito
- General Contractor: Grindline Skateparks, Inc.
- Concrete Contractor: Grindline Skateparks, Inc.
- Concrete Supplier: Heidelberg Materials formerly Cadman, Inc.

that the certification would be more widely adopted if it was nationally recognized by the industry, so an endorsement soon followed from the NRMCA.

A current goal is to get the certification adopted in more states. To ensure the certification fulfills its intended function of connecting students to available jobs, some states require the certification to be on a state-approved list, and may require letters showing not only that the program is nationally recognized, but that it has local support, including proof that local companies consider the certification to be a differentiating factor when they are hiring.

Heidelberg Materials has provided such proof in the form of letters to states including Washington, Maryland, New York, and Illinois. The letters list Skate4Concrete Certification as an approved certification for Career and Technical Education (CTE).

"We have skaters in our work force at Heidelberg Materials, and we believe Skate4Concrete Certification provides valuable experience for students, which translates to greater interest and success in the workplace," said Larry Rowland, Sustainability Market Manager at Heidelberg Materials.

"Closing the loop with input from [the] industry is important, because states need to understand the relevance of the certification program," said Howard. "That is what drives school adoption of the program."

Corey Rosson, Senior Sales Representative of Pacific Northwest Heidelberg Materials, works in the building materials industry but has been a skateboarder since he was 10 years old. He became aware of Skate4Concrete when Heidelberg Materials North America mentioned the program on social media channels.

"It's exciting to see Skate4Concrete offering a different approach to career development," Rosson said. "Often, three main routes come to mind for young people coming out of high school: College, trade school, or the military. Having an additional pathway that connects people to work — work that's built around something they already love — is a real benefit."

Building on its success with the certification program, Skate4Concrete's next initiative was to create an internship program, which had its first intern in 2023. Students are currently recruited through the **Concrete Industry Management (CIM)** program, which is offered at five universities across the U.S.

Interns spend three months being part of a building team for a skatepark and, one day a week, gain exposure to various aspects of the concrete industry. For example, they tour concrete and cement plants and quarries, or spend time with city officials or other owner representatives who are managing the skatepark construction project. These excursions are organized by local concrete associations, with whom Skate4Concrete partners to increase awareness of concrete careers.

Partnerships with skatepark construction companies are a keystone of the program's success. While Skate4Concrete and Project Cornerstone rely on grants, an annual golf

tournament, and corporate contributions for funding to pay interns' wages, skatepark construction companies provide on-site instruction, mentoring, and even summer housing with the construction crew.

"In our first two years, we had one student each summer," said Howard. "For the summer of 2025, we have two. One student will work with New Line Skateparks in Idaho Springs, Colorado, and the other with Grindline Skateparks on their Las Cruces, New Mexico skatepark."

"The internship is a great opportunity for everyone involved," said Fluegge. "Years ago, when members of my team and I were entering the concrete/skatepark industries, we didn't have an opportunity like this, so supporting the effort is important to Grindline. It's a great opportunity for the applicant to learn and display their skillsets, as well as an opportunity for us to scope new talent, which ideally would develop into a long-term career opportunity."

Related to Skate4Concrete's certification and education efforts, the organization hosted its first Construction Summer Camp in 2024. The camp features interactive activities and educational sessions that provide 15- to 18-year-olds with insights into career pathways. The 2025 camp program launched an affiliation with the Associated General Contractors (AGC) Apprenticeship and Training Trust Program. On the second day, campers worked with the Miramar College Diesel Technology program, receiving hands-on training with heavy equipment including a ready-mix concrete delivery truck. The third day of camp was "concrete day", with students visiting a concrete supplier, Pedroza Ready-Mix. The camp concluded on its fourth day at Martin Marietta Materials, where the itinerary included a quarry tour. A new event for this year's camp included a team exercise designing and constructing mini-skateparks — complete with mock interviews and a mini-skatepark competition.

Like shotcrete placement, which efficiently solves many technical hurdles in concrete construction, Skate4Concrete's direct approach to addressing workforce shortages provides a unique solution to industry challenges.

Visit **www.skate4concrete.com** for a complete listing of resources, and follow, like, and share them on Instagram at **www.instagram.com/skate_4_concrete**. Find out more about the Concrete Advancement Foundation at **www.concreteadvancement.org**.

Kristin Dispenza *is a Senior Account Manager with Advancing Organizational Excellence, developing trends articles, case studies, and other PR materials. She received a Bachelor of Science degree from The Ohio State University College of Engineering/School of Architecture and has more than 30 years of writing and editorial experience. She can be reached at* ***kristin.dispenza@aoeteam.com****.*

A "Field Report" from Paul J. Nunez, Skateboarder and Skate4Concrete Intern

I was already a student in the Construction Industry Management (CIM) program at California State University, Chico when one of my professors approached me about a summer internship. The internship was offered through Skate4Concrete, an organization that provides information to skaters on entry-level careers in concrete.

I was the program's first intern, and I went to Lenexa, KS, to be part of the team building the city's new skatepark. My work there was hands-on from the very beginning. By my second day, I was helping place reinforcing bars. On only my third day, I learned how serious site inspections are: I had to redo some of my reinforcing to make sure the spacing was correct — down to a T! By the end of the summer, I had learned how to pump water off the site, handle shotcrete equipment, and do floating and troweling to finish the concrete skating surface.

As part of the internship, I got to do more than work on the construction site. Every Friday, I visited a place — or spent time with a person — where I could learn even more about how concrete is made and how it gets used. I spent time with the Lenexa city inspector and a Parks & Recreation official. I toured a cement plant and even saw a limestone mine, which was 1200 ft (370 m) below sea level and had all kinds of trucks and equipment working underground.

Elise Besse Skatepark Torrington, CT

Opened in October 2024, the Elise Besse skatepark has 11,000 ft^2 (1000 m^3) of concrete and is designated for beginner, intermediate, or expert levels. The shotcrete method was used to construct the park. The O&G Industries' concrete mixture contained Heidelberg Materials cement and a pozzolan, which is commonly available in the northeast region and is added to mixes to improve pumpability.

"This was a very smooth and workable mix. We appreciate working with the suppliers to get the pozzolan in the mix, which makes things a little easier on the jobsite," said Tony Misiano, project manager and shotcreter for New Line Skateparks.

TEAM MEMBERS:

- Owner: City of Torrington, CT
- Design-Build: New Line Skateparks
- Concrete Supplier: O&G Industries
- Cement Supplier: Heidelberg Materials