



Layer by Layer: Transforming Construction with 3D Printed Concrete (3DPC)

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Abstract:

3D concrete printing is had transitioned from experimental demonstrations to practical construction applications. Most 3DPC applications still use specialized mortars but our work from the beginning has focused on printing concrete materials with coarse and fine aggregates to maintain pumpability, extrudability, and buildability while still maintain mechanical properties desired (strength, stiffness, durability). One critical aspect to 3DPC advancement is the integration of reinforcement and conventional construction components, enabling printed elements to work within established structural systems and building practices. The economic impact in 3DPC technologies is still in its infancy but already represents substantial cost savings as demonstrated by LX's completed projects.

This presentation reviews the current state of the 3DPC industry, highlights the role of LX Construction in advancing practical implementation, and discusses remaining challenges including reinforcement integration, material consistency, and scalability. Finally, it explores the next generation of construction-scale printers and the role they may play in shaping the future of reinforced concrete buildings.



Bio:

Nathan founded and grew Lilly Capital to a \$30M private investment firm to include its most notable investment of LX Construction, a robotics construction company utilizing 3D concrete printing technology. Nathan started his career at Crawford, Murphy, & Tilly working on airport infrastructure projects before transitioning to the real estate investment industry. He ultimately became the Chief Investment and Chief Financial Officer of JSM, INC. where he led the investment of more than \$300M worth of real estate developments. Wanting to make an even bigger impact on the world, Nathan started his own private investment firm which ultimately led to investing into the 3D Concrete Printing Space. Nathan resides in Monticello, IL with his wife and two little girls.

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1310 Yeh Student Center