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Racheal D. Lute, Ph.D.

Technical Staff III

About Racheal

Racheal Lute has 14 years of engineering experience specializing in the areas of rehabilitation and preservation of building enclosures with a focus on evaluating material performance.

Racheal's professional experience encompasses many aspects of architectural conservation and rehabilitation, from research to implementation. Her professional experience includes laboratory analysis of construction materials, field investigation, and condition assessment of numerous building types. She specializes in the assessment of concrete and masonry structures providing mitigation strategies for material deterioration.

Education

Doctor of Philosophy in Civil Engineering, 2016
The University of Texas at Austin

Master of Science in Civil Engineering, 2008
The University of Texas at Austin

Bachelor of Science in Architectural Engineering, 2006
The University of Texas at Austin

Licensure | Certifications

Engineer-in-Training/Fundamentals of Engineering, Texas

Professional Affiliations

Association for Preservation Technology International (APTI), 2018 – present

Member, American Concrete Institute (ACI) Associate Member, Rehabilitation Committee (ACI 364), 2015 - 2020

Association for Preservation Technology Texas (APT TX), 2018 – present
Austin Regional Co-Director, APT Texas Board of Directors, 2020 – 2022
Secretary, APT Texas Board of Directors, 2022 - present

Publications

Investigating the use of lime residuals as an alternative in Portland limestone cement. Lute, R., Drimalas, T., Folliard, K. *Advances in Civil Engineering Materials* 8, no. 1, 2019 pp. 623-636

Synthesis on Alternate Reinforcements for Enhanced Corrosion Resistance in TxDOT Bridges. Lute, R., Drimalas, T., Folliard, K. Austin, TX: Center for Transportation Research 2018

Beneficial Use of Lime Residuals in Industrial and Infrastructure Applications: A Feasibility Study. Lute, R., Drimalas, T., Folliard, K. Austin, TX: The University of Texas at Austin, 2017

Durability of Calcium-Aluminate Based Binders for Rapid Repair (Dissertation). Lute, R. The University of Texas at Austin, 2016

Coatings and Sealers for Mitigation of Alkali Silica Reaction and/or Delaed Ettringite Formation. Lute, R Folliard, K., Drimalas, T., & Rust, C. *proceedings of the International Conference on Alkali-Aggregate Reaction in Concrete*. Sao Paulo, Brazil, 2016

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Publications Continued

Evaluation of Coatings and Sealers for Mitigation of Alkali-Silica Reaction and/or Delayed Ettringite Formation (Thesis). The University of Texas at Austin. Lute, R. (2008)

“Evaluation of a Procedure for Determining the Converted Strength of Calcium Aluminate Cement Concrete”. Adams, M., Lute, R., Moffatt, E., Ideker, J. *Journal of Testing and Evaluation* Vol. 46, No. 4, 2018

“An Alternative Method to Evaluate the Sulphate Resistance of Cementitious Binders” Aguayo, F., O. J. Funez, T. Drimalas, K. J. Folliard and R. D. Lute. *RILEM Final Workshop of TC 251-SRT External Sulphate Attack – Field Aspects and Lab Tests*, Madrid-Spain, 2018

Presentations

"Concrete Removal in Repairs Involving Corroded Reinforcing Steel (364.6T-02(11)) Use of Hydrodemolition for Removal in Unbonded Post Tensioned Systems (354.8T-02(11))” *American Concrete Institute (ACI) Fall Convention 2016*, Session: Repair and Rehabilitation Tech Notes, Philadelphia, PA, October 25, 2014

"Durability of CAC and CSA Blended Systems for Rapid Repair Applications,” *American Concrete Institute (ACI) Fall Convention 2014,* Session: Research in Progress, Washington, DC, October 26-30, 2014