Ash at Work Index of Feature Articles

Issue 1, 2023 – Rebuilding American Infrastructure

“Highway and Bridge Construction Market Responds to Investment Boost Under IIJA,” By Alison Black, Ph.D. (ARTBA), page 8.

“Concrete 2.0: Durable, Versatile...Sustainable,” By Doug Rhodes (Eco Material Technologies), page 12.


Issue 2, 2022 – Ash as a Recoverable Resource


“NEU Leads the Journey to Reduce Carbon Emissions in Concrete,” By Drew Burns, CAE (NEU: An ACI Center of Excellence for Carbon Neutral Concrete), page 8.


“ACAA to Develop Product Category Rule for Supplementary Cementitious Materials,” By Anna Lasso (Smart EPD), page 20.


“Matching Demand and Supply for Recycled Ash,” By John Halm (Duke Energy) and Jimmy Knowles (The SEFA Group), page 32.


“Towards Greener Concrete,” By John Simpson (John Ward Inc.), page 10.


“ACAA Encourages EPA to Expand CCPs’ Role in Federal Procurement,” By John Simpson (John Ward Inc.), page 22.


**Issue 2, 2021 – Charting the Path Ahead for Beneficial Use Markets**

"CCPs and Utility Compliance with Clean Air Act: Necessity Proves to Be the Mother of Invention,” By John Simpson (John Ward Inc.), page 6.


**Issue 1, 2021 – CCPs in Geotechnical Applications**

“Sustainable Use of FGD Structural Fills in Mine Reclamation: Geotechnical Properties and Environmental Response,” By Tarunjit Singh Butalia, Chin-Min Cheng, and Mehedy Amin (The Ohio State University), page 6.

“A Unique Solution to a Challenging Scenario: Placement of an Ash Buttress by Dredging Within an Ash Basin,” By R. Kula Kulasingam, Gabe Lang, and John Priebe (AECOM), page 12.


“There’s More to CCPs Than Fly Ash,” By Eric Effinger (Charah Solutions), page 22.

“Full-Depth Reclamation and Subgrade Modification,” By Darryl Neapolitano (LafargeHolcim), page 27.
“Risk Evaluation Finds Fly Ash-Based CLSM Safe in Common Applications,” By Rafic Minkara (Boral Resources), page 29.

“Guide to Existing CCP Standards,” By Ivan Diaz (Boral Resources), page 32.

“Important Updates and New and Proposed Standards Related to CCPs,” By Ivan Diaz (Boral Resources), page 35.

**Issue 2, 2020 – Coal Ash 101**


“Concrete, Concrete Blocks, and Controlled Low-Strength Material,” By John Simpson (John Ward Inc.), page 12.


“Agriculture and Soil Modification,” By John Simpson (John Ward Inc.), page 22.


“Other End-Use Applications of CCPs,” By John Simpson (John Ward Inc.), page 28.

“The Importance of Logistics in Ash Marketing,” By Rob Reynolds (Charah Solutions), page 32.

“10 Things You Didn’t Know About Fly Ash,” By Rafic Minkara (Boral Resources), page 36.

“Coal Ash Regulation 101,” By John Ward (John Ward Inc.), page 42.

“Coal Ash Is Not Toxic,” By Lisa JN Bradley (Haley & Aldrich), page 46.

**Issue 1, 2020 – New Frontiers in Coal Ash Beneficial Use**


“CCPs Help Winter Drivers Get a Grip,” By John Simpson (John Ward Inc.), page 16.


“The U.S. Fly Ash Market: Production & Utilization Forecast,” By Alison Premo Black (American Road & Transportation Builders Association), page 34.

**Issue 2, 2019 - CCPs: Not Just for Concrete**


“Using Business Intelligence to Gauge the U.S. Coal Ash,” By David Cox (FirmoGraphs LLC), page 26.


“CFB Ash’s Diverse Beneficial Uses,” By John Simpson (John Ward Inc.), page 34.

**Issue 1, 2019 - CCP Beneficial Use: The Next 50 Years**


“Geosynthetic Solutions for Final Closure: A Decade of Performance,” By Mike Ayers (Watershed Geosynthetics LLC), page 10.

“Mining Coal Ash for Rare Earth Elements,” By John Simpson (John Ward Inc.), page 16.

“Digging Through the Past: Harvesting Legacy Ash Deposits to Meet Future Demand,” By Rafic Minkara (Boral Resources), page 22.


“A Future Outlook on Harvested Ash,” By Bill Fedorka, Robb Erwin, and Ross Gorman (The SEFA Group), page 36.

“2020 to 2070 and Beyond: Transitioning from Production to Post-Production Coal Ash Use,” By Bruce Sifton and Brad MacKenzie (SonoAsh), page 38.


Issue 2, 2018 - ACAA Celebrates 50 Years


"31 Key Events in ACAA History," By John Simpson (John Ward Inc.), page 16.


Issue 1, 2018 - Ash Around the World

"An Acoustic Skin of FGD Gypsum for Hamburg, Germany’s Top-Class Concert Hall," By Hans-Joachim Feuerborn (European Coal Combustion Products Association), page 6.

"Utilizing the UK’s Vast Landfilled Fly Ash Deposits," By Dr. Nigel Cooke (UK Quality Ash Association), page 8.

"The Effect of Land Application of Sludge Stabilized with Coal Fly Ash and Lime on Soil and Crop Quality in Israel," By Dr. Pinchas Fine and Dr. Uri Minglegrin (Agricultural Research Organization, Volcanic Center), page 10.


"South African Fly Ash Used to Help Build the Continent’s Longest Suspension Bridge," By Mark Hunter (South African Coal Ash Association), page 18.

"Fly Ash from Thermal Power Plants in India: The Challenge of 100% Utilization," By Dr. Anjan K. Chatterjee (Conmat Technologies), page 20.
"Environmental Assessment of Coal Fly Ash Usage in Agriculture and Infrastructure Projects in Israel," By Dr. Nadya Teutsch (Geological Survey of Israel), page 28.

"Punching Above its Weight: Australian Innovation and Latrobe Magnesium," By David Paterson (Latrobe Magnesium), page 32.

"Limited Availability of Cementitious Materials Could Impact the Value Chain," By Dr. Vassiem Sheikh (SCB Europe S.r.l.), page 34.

**Issue 1, 2017 - CCP Supply 2.0: Infrastructure and Logistics Address Shifting Markets**


"Coal Fly Ash Regulations Spur Questions over Dust Emissions and Wastewater Control," By Derek Schussele (Dust Control Technology), page 30.

"Key Role of Leachate Data in Evaluating CCP Beneficial Use," By Ari S. Lewis, Eric M. Dubé, and Andrew Bittner (Gradient), page 32.

"Bridging the Gap between Regional Supply and National Demand Through Charah’s MultiSource™," By Scott Ziegler (Charah LLC), page 36.

"Environmentally Friendly Pervious Concrete with Fly Ash as Sole Binder Modified by Graphene Oxide," By Gang Xu (Washington State University), page 45.

"Organo-Silane Modified Coal Fly Ash for Use and Leachate Proof Disposal," By Jenberu Feyyisa (University of North Carolina at Charlotte), page 47.

"Coal Ash Cement," By Sarah Hodges (University of Kentucky), page 51.

**Issue 2, 2016 - Best Coal Ash Management Practices—Integrating Strategies for Disposal and Beneficial Use**

"Methods of Closing CCR Surface Impoundments: Holistic Assessment Key to Developing Effective Plans," By Ari Lewis and Andrew Bittner (Gradient), page 6.

"Integrating Ash Marketing and Management," By J. Gary Gentry (Boral Material Technologies), page 10.


"Navajo Generating Station," By Gary England (Headwaters Resources), page 22.


"Sonic Reactor Technology for Coal Ash Beneficiation and Rare Earth Element Recovery," By Claudio Arato (SonoAsh), page 28.


"LiteEarth—Patented Synthetic Grass + EPDM Geomembrane Composite," By Chuck Fleishman (LiteEarth LLC), page 34.

"Promoting Successful Beneficial Use of Coal Combustion Residuals in Maryland," By Robin G. Lee, Leonard G. Rafalko (Environmental Resources Management Inc.), and Paul Petzrick (Maryland Department of Natural Resources), page 36.

Issue 1, 2016 - Synthetic Gypsum: Beneficial Uses for Construction and Agriculture


"EPRI Research on Use of FGD Gypsum in Agricultural Applications," By Ken Ladwig (Electric Power Research Institute), page 10.


"Gypsum Moves Front and Center as Soil Improvement Tool," By Karen Bernick (Gypsoil), page 20.

"Cultivating Public Policy Support for Agricultural Gypsum," By Nancy Pals (Headwaters Resources) and Joshua More (Schiff Hardin LLP), page 24.


"Coal Combustion Products in the Fabrication of Calcium Sulfoaluminate Cement," By Tristana Y. Duvallet and Thomas L. Robl (University of Kentucky Center for Applied Energy Research), page 30.

"FGD Gypsum—Pure as the Driven Snow?" By Lisa J.N. Bradley (Haley & Aldrich), page 34.
Issue 2, 2015 – Beneficiation & Reclamation


"We Energies’ Coal Combustion Product Beneficiation, Recovery, and Use," By James R. Rosenmerkel and Bruce Ramme (We Energies), page 10.

"How PACT Was Used to Avoid 5 Million Tons of Landfilled Fly Ash," By G. Craig Plunk (Boral Material Technologies LLC), page 14.

"A Personality for Every Pond," By Paul C. Schmall and Christopher J. Colangelo (Moretrench), page 18.

"RestoreAir Carbon Passivation Technology," By Rafic Minkara (Headwaters Resources), page 24.


"Improving Beneficial Use, Ash Conditioning, and Metals Stabilization with High-Intensive Mixing," By Keith C. Day, Ethan G. Day (Beneficiate: North America), and Edwin C. Kercher (Kercher Industries Inc.), page 34.


"Improving Non-Specification Grade Fly Ash for Beneficial Use," By Scott Palmer, LEED AP BD+C (Salt River Materials Group), page 44.

Issue 1, 2015 – Sustainability: Improving Product Performance and Longevity with Coal Ash


"Coal Ash Underground Mine Stabilization" (Ash at Work staff), page 25.

"Comparative Life Cycle Assessment of Traditional Concrete and Concrete Made with Fly Ash," By Christa Heavey, Angelica Hernandez, Shea Hughes, and Lindsay Willman (Stanford University), page 27.
Issue 1, 2014 – Beyond Concrete: Coal Ash Beneficial Use Enhances Sustainability in Myriad of Applications


"Technical Considerations for Beneficial Use of Coal Ash in Civil Engineering Applications," By Veronica E. Foster (Golder Associates) and Robert S. Valorio (Minerals Technologies Inc.), page 14.

"Converting Sulfur from Flue Gas into Fertilizer," By Gail Reitenbach (Power Magazine), page 17.

"Cold In-Place Asphalt Recycling with Class C Fly Ash," By Dr. Tyson Rupnow (Louisiana Transportation Center) and Ben Franklin (Headwaters Resources), page 21.


"Environmental Win-Win—ARIPPA’s Role: Cleaning Up Historic Coal Waste Sites, Restoring the Land Using Ash" (Ash at Work staff), page 27.

"PURR-fect HARMONY® Advanced Clumping Cat Litter" (Ash at Work Staff), page 32.

"Congressman David McKinley—A New ACAA Champion" (Ash at Work Staff), page 34.

"A Study in Collaborative Success: A Proposal to Sustain it," By Anne Weir (Association of Canadian Industries Recycling Coal Ash), page 36.

Issue 1, 2013 – World of Coal Ash in Review

"World of Coal Ash 2013" (Ash at Work staff), page 4.

"Coal Ash: A Resource for Rare Earth and Strategic Elements," By David Mayfield and Ari Lewis (Gradient), page 17.

"ASHphalt Paving: Better Performance Using Fly Ash-Amended Binders in Asphaltic Concrete," By Art Covi (We Energies), page 22.

Issue 1, 2012 - CCPs on the Farm: Why Gypsum Is the Hot New (Old) Tool for Agriculture

"CCPs in Agriculture," By Dan Zinkand (Dan Zinkand Communications), page 7.

"New Three-Year Project to Advance the Use of FGD Gypsum to Improve Water Quality," By Ken Ladwig (Electric Power Research Institute), page 12.
"Farm Aid: GYPSOIL Connects Farm Market to FGD Gypsum," By Kevin Orfield (Orfield Communications), page 16.

"Environmental Risk Assessment for Gypsum Tells Positive Story," By Karen Bernick (Gypsoil), page 19.


**Issue 2, 2011 – Crossroads: Which Direction Will America Choose for Coal Combustion Products?**


"Landfilling vs. Recycling," By Christopher D. Hardin (Haley & Aldrich), page 23.

"Legal Considerations," By Joshua R. More and Ashley L. Thompson (Schiff Hardin LLP), page 27.

"High Volume Fly Ash Grout," By Drew DeCarlo (Headwaters Resources), page 34.

**Issue 1, 2011 - The $100 Billion Benefit: Coal Ash in America’s Roads and Bridges**

"The $100 Billion Benefit: New Study Finds Utilizing Coal Ash in Roads and Bridges," By Alison Premo Black (American Road & Transportation Builders Association), page 8.


"Focus on Geotechnical Uses: Soil Stabilization for Road Construction," By James R. Rosenmerkel (Lafarge North America), page 34.


"Focus on Geotechnical Uses: Structural Fill for Airport Expansion Project," By Mary Reed (Construction Equipment Guide), page 42.
Issue 2, 2010 – Investing in Environmental Improvement: CCP Industry Deploys Capital to Improve Performance

"Investing in Environmental Improvement: Wet to Dry Ash Handling Conversion Completed by Headwaters and Detroit Edison," By Sara Cowgill (Headwaters Resources), page 8.

"Investing in Environmental Improvement: Unique Limestone Grinding Facility Opened," By Scott Sewell (Charah Inc.), page 11.


Issue 1, 2010 - EPA’s Coal Ash Rule Proposals: Good Science vs. Political Science


"Program Pays for Using Coal Ash," By Lura Schmoyer and Miranda Intrator (West Main Consultants), page 8.


"Whatever Happened to Old What’s-His-Name?" By David C. Goss (American Coal Ash Association [Consultant]), page 17.


"Potential Use of FGD Gypsum as an Agricultural Amendment," By Liming Chen, David Kost, and Warren A. Dick (The Ohio State University), page 32.
Issue 2, 2009 – Preserving Natural Beauty

"Transcending Portland Cement with 100 Percent Fly Ash Concrete," By Doug Cross, Michelle Akin, Jerry Stephens, and Eli Cuelh (Montana State University), page 12.


"Revising the Coal Combustion Byproduct Regulations in Virginia," By Melissa Porterfield (Virginia Department of Environmental Quality), page 22.

"A Wisconsin First Turns Highway Project Green," By James R. Rosenmerkel (Rosenmerkel Engineering), page 27.


Issue 1, 2009 - A Green Gem in the Treasure State


"Déjà Vu All Over Again – HVFA," By David C. Goss (American Coal Ash Association), page 29.

"What Strategic Planning Can Do for You," By Cheri Miller (Gypsum Parameters LLC), page 33.


Issue 2, 2008 – ACAA's 40th Anniversary

"Using Fly Ash and Natural Pozzolans in Long Life Structures," By Bruce Ramme and Julia Jacobsmeyer (We Energies), page 6.


"Re-Imaging Coal: Novel Process Removes Mercury While Retaining Ash Sales," By Al Bland (Western Research Institute), page 18.

Issue 1, 2008 - Toothpaste to Railroad Ties: CCP Use Over the Past Four Decades


"High Carbon Fly Ash Finds Uses in Highway Construction," By Haifang Wen (University of Wisconsin at Madison) and Robert Patton (DOE-NETL), page 42.


"Forty Years with the National Ash Association and ACAA," By Oscar Manz (University of North Dakota), page 4.


"Follow That Mercury!" By Alvaro A. Linero (Florida Department of Environmental Protection), page 18.

"Coal Fly Ash: The Most Powerful Tool for Sustainability of the Concrete Industry," By P.K. Mehta (University of California, Berkeley), page 38.

"EPRI's Coal Combustion Product Use Research," By Ken Ladwig (Electric Power Research Institute), page 44.

"Utilizing Fly Ash Particles to Produce Low-Cost Metal Matrix Composites," By Graham Withers (Ultalite), page 50.

Issue 2, 2007 - FGD Gypsum’s Place in American Agriculture

"Rehabilitating Asphalt Highways," By Tarunjit S. Butalia (The Ohio State University), page 11.

"FGD Gypsum’s Place in American Agriculture," By Chad Haynes (U.S. Department of Agriculture), page 22.


Issue 1, 2007 - ACAA Releases Annual Coal Combustion Product Production and Use Survey

"Awareness and Benefits Drive Increasing CCP Beneficial Use" (Ash at Work staff), page 7.

"Venture Recycles 60,000 Tons of Coal Ash Per Year," By Melissa Burke (American Coal Ash Association), page 14.

"EPA Recognizes Industry Leaders for Beneficial Use," By David C. Goss (American Coal Ash Association), page 16.


"Fly Ash Chemical Classification Based on Lime," By John Fox (BASF Admixtures Inc.), page 28.


"Thinking Outside the Box," By James McLean (InBulk Technologies), page 40.

Issue 2, 2006 - Optimal Mixes for Concrete Durability and for Industry Collaboration

"Optimal Mixes for Concrete Durability and for Industry Collaboration," By Mike Thomes (Xcel Energy), page 8.

"Poland's CCP Market Prospects Rise with European Union Status," By Agnieszka Myszkowska (Ekotech), page 12.


"Geotechnical Applications of CCPs in Wisconsin," By Tuncer B. Edil and Craig H. Benson (University of Wisconsin-Madison), page 16.


Issue 1, 2006 - CCPs: A Valuable U.S. Economic Resource

"A Win/Win Solution for FGD-Gypsum: Researchers Discover Beneficial Applications for By-Product in Agriculture," By Cliff Ramsier (Ag Spectrum Co.) and Darrell Norton (U.S. Department of Agriculture), page 10.


"2004 ACAA Survey Reflects Continued Annual Growth in Ash Utilization" (Ash at Work staff), page 29.

"The Industrial Resources Council - A New Marketing Opportunity," By David C. Goss (American Coal Ash Association), page 36.

"Field Demonstration of Coal Combustion Byproducts-Based Road Sub-Base in Illinois," By Chugh Y.P., Mohanty S. (Southern Illinois University), and Bryant M. (Ameren Energy Fuels and Services), page 37.

Issue 2, 2005 - C^2P^2 Awards

"C^2P^2 Awards Ceremony Follow-Up" (Ash at Work staff), page 8.

"Environmental Release of Mercury from Coal Utilization By-Products: Will New Mercury Controls at Power Plants Make a Difference?" By William W. Aljoe, Thomas J. Feeley III, Lynn A. Brickett, Karl T. Schroeder (DOE/NETL), and James T. Murphy (Science Applications International Corp.), page 12.


"Computer Modeling and CCPs," By Defne Apul (University of Toledo), Kevin Gardner, and Taylor Eighmy (Recycled Materials Resource Center), page 23.


Issue 1, 2005 - High Volume Fly Ash in Concrete

"Beneficial Use of Coal Ash at Mine Sites in Pennsylvania," By Kathleen McGinty (Pennsylvania Department of Environmental Protection), page 8.

"High Volume Fly Ash for Everyday Concrete," By Robert Munro (Lafarge North America), page 11.

"North Dakota College Erects New Building Made Largely From Byproducts of Coal Combustion," By Vicki Voskuil (Bismarck State College), page 16.
"Cement Shortage and Performance-Based Specifications," By Carol Carder (Rocky Mountain Construction), page 22.

"Putting Green Construction Using CCPs," By Max Schlossberg (Penn State University), page 26.

**Issue 1, 2004 – What Are CCPs?**

"What Are Coal Combustion Products?" By David C. Goss (American Coal Ash Association), page 8.


"FGD Synthetic Gypsum Quality and Supply Issues for Wallboard Manufacture," By P.J. Henkels (United States Gypsum Company), page 23.

"Soil Treatments with Class C Fly Ash," By Craig Plunk (Boral Material Technologies), page 27.