1923-2023

100 years RK&K

FOREWORD

This book was the result of contributions from current and former employees, with specific acknowledgment to:

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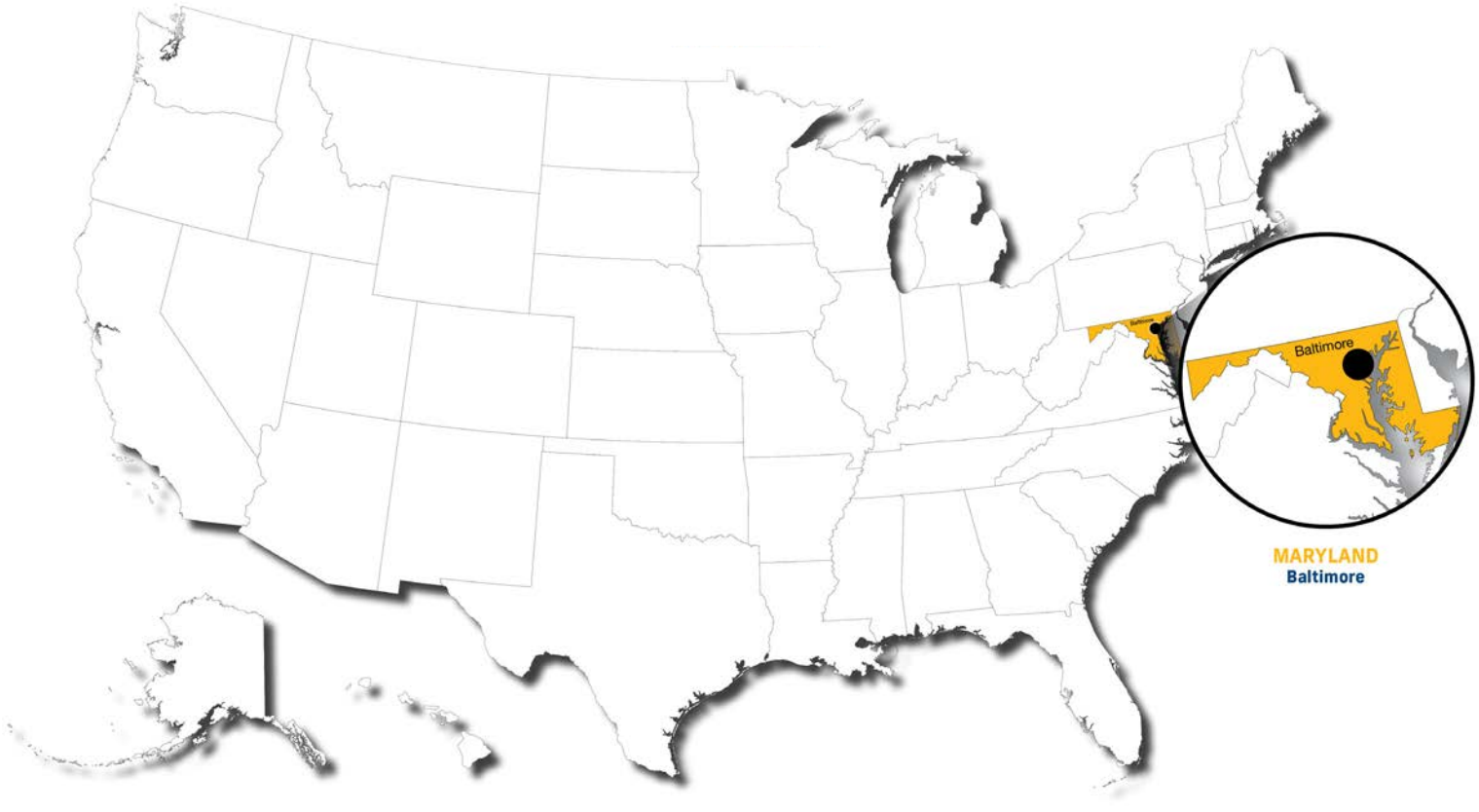
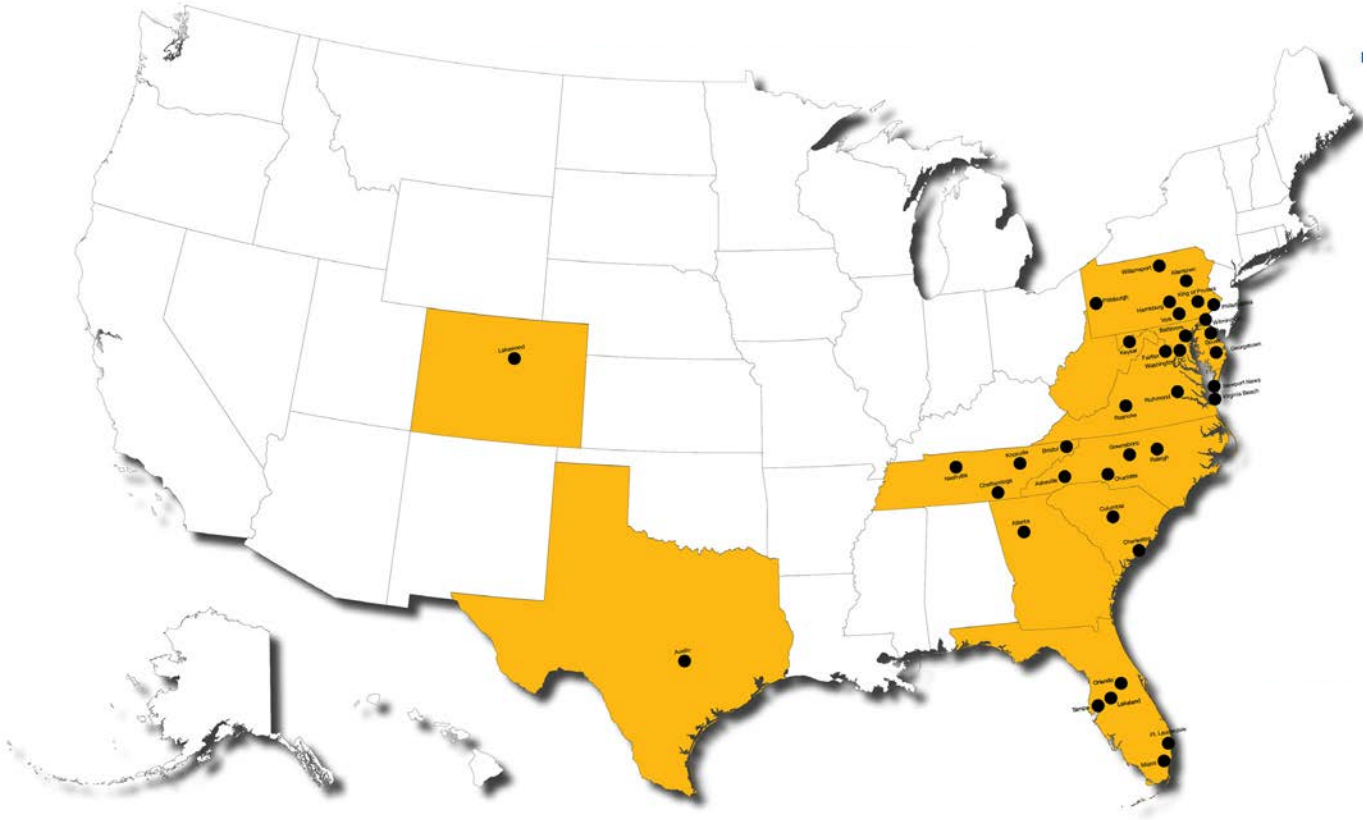
In addition, this book includes material from the firm's 75th anniversary book, ***A Tradition of Excellence (1998)*** with text by Thomas Nugent and graphics by Kirk Nowlin, Sr, and with significant contributions from the current and retired partners and other staff. A special thanks to the following for their contributions: David Wallace, Mike Potter, Debi Adkins, Eric Almquist, Maggie Berman, Barry Brandt, Jim Burnett, John d'Epagnier, Kelly Duffy, George Escojido, Bob Freyman, Josh Gentry, Al Grubb, Patrick Hager, Barb Hoage, Chris Jordan, Karen Kahl, Dick Klepper, David Klyce, Chris Krupinski, Rick Maddox, Lori Magoon, Lucy Noya, Owen Peery, Todd Rousenberger, Seyed Saadat, Bill Snyder, Matt Thomasson, and Jen Trimble.

1923

FROM 1...



2023
...TO 1,586



Lakewood, CO
Washington, D.C.
Georgetown, DE
Dover, DE
Wilmington, DE
Tampa, FL
Lakeland, FL
Fort Lauderdale, FL
Miami, FL
Orlando, FL

Sandy Springs, GA
Baltimore, MD
Charlotte, NC
Greensboro, NC
Raleigh, NC
Arden, NC
Pittsburgh, PA
York, PA
Allentown, PA
Williamsport, PA

Harrisburg, PA
King of Prussia, PA
Philadelphia, PA
North Charleston, SC
Columbia, SC
Knoxville, TN
Nashville, TN
Chattanooga, TN
Bristol, TN
Austin, TX

Virginia Beach, VA
Richmond, VA
Newport News, VA
Roanoke, VA
Fairfax, VA
Keyser, WV

INTRODUCTION:
RK&K AT 100 YEARS

Only a tiny fraction of firms stand the test of time to reach a centennial anniversary. Such a journey speaks volumes, not just of perseverance, but of an unwavering dedication to excellence. As we mark this momentous occasion for RK&K, we reflect with respect and humility on a legacy sculpted from core principles of quality, integrity, responsiveness, and teamwork. The footprints of RK&K are everywhere in our daily lives: from the roads we traverse, the bridges we cross, to the water we drink. The commitment to precision and quality is not just about building infrastructure; it's about crafting the backbone of thriving communities, one project at a time.

Tracing back to 1923, RK&K's story began with one man, Richard Sandlass, bravely deciding to start his own company. Founded in the heart of Baltimore, RK&K remains deeply rooted in its origins. The company stands not only as an emblem of the City's resilience and spirit but also as a hub of enterprise and ingenuity. Over the ensuing 100 years, the company expanded beyond its Baltimore roots to more than 1,500 employees in 12 states and over 30 offices across the country. What makes this growth especially compelling is RK&K's ability to expand its horizons, branching out into new markets and services without ever losing sight of its foundational values. While we don't have records for every person who has ever worked for RK&K, our best estimate places the number at over 6,000 professionals—employees who dedicated their skills and passion to the collective purpose of serving clients and enhancing communities.

This book is a summary of RK&K's first 100 years and sets the stage, with vision and innovation, for the possibilities that the next century holds for RK&K. Of course, there isn't enough space to record every project, client, and service that a company this large has been involved with over the past century. The intent is to highlight pivotable decisions, projects, and enduring principles that tell the story of how RK&K's unique and unwavering culture were originally formed and continues to be fostered by its people.

> AT ITS CORE, RK&K IS ITS PEOPLE. ITS HISTORY, ACHIEVEMENTS, AND LEGACY ARE THE STORY OF ITS EMPLOYEES. RECORDS FOR RK&K IN THE ERA BEFORE COMPUTERIZATION ARE INCOMPLETE, AND A COMPREHENSIVE ROSTER OF ALL THE PEOPLE WHO HAVE WORKED AT RK&K IS NOT AVAILABLE. BUT THE BACK PAGES OF THIS BOOK LIST THE NAMES OF EVERYONE WHO WE KNOW HAS WORKED AT RK&K FROM 1923 THROUGH 2023.

FIRM TIMELINE

1923 Firm founded by Richard Sandlass

1926 George Weiman joins and Sandlass & Weiman is formed

1929 Stock Market Crash/Start of Great Depression

1936 Ed Rummel joins the firm

1941 Attack on Pearl Harbor/United States enters WWII

1946 Howard Klepper joins the firm

1947 William Kahl joins the firm

1951 Firm name is changed to Rummel, Klepper, and Kahl

1953 First section of US Route 50 opens

1954 Brown vs. Board of Education Supreme Court decision

1959 First office outside of Baltimore opens near Harrisburg, PA

1963 President Kennedy assassinated

1969 Apollo 11 Moon landing

1974 "Roses for Two" Article in the Baltimore Sun

1979 Iran Hostage Crisis begins

1980 Start of Baltimore Inner Harbor revitalization projects

1989 Fall of the Berlin Wall

1997 Beginning of Woodrow Wilson Bridge project

2001 9/11 Attacks

2008 Financial crisis leads to the start of the Great Recession

2013 Carolann Wicks becomes first female partner

2020 Beginning of COVID-19 pandemic

2023 100th Anniversary

PART 1:

THE EARLY YEARS

(1923 - 1945)

Founding and Early Years

RK&K had humble beginnings. Early in 1923, Richard Sandlass, a German immigrant, already 53 with a family and stable career, decided to leave his position as the chief engineering at the Chesapeake Iron Works. He left to become a private consulting engineer; to lead his own business instead of working for someone else. At first, Sandlass worked out of his Baltimore home at 4409 Maine Avenue. The following year, he set up a separate office at 404 St. Paul Place.

Baltimore in the early 1920s seemed as promising a place as any to open a new engineering business. The United States had emerged from World War I as the world's largest economy and industrial base with a rapidly growing and urbanizing population and sustained prosperity that would last until the last year of the decade. Construction flourished as office buildings, factories, paved roads, and new housing was evident everywhere. Automobile production soared, suburban housing expanded, and homes, towns and cities were electrified. Prices were stable, and the Gross Domestic Product (GDP) grew steadily.

Baltimore seemed to encapsulate the strong trends of growth. The City was a major industrial center, port, and transportation hub—second only to New York for the intake of immigrants. Between 1900 and 1920, the City's population increased by over 40% to more than 730,000. After the Great Baltimore Fire of 1904, the center of Baltimore was completely rebuilt, and major urban improvements were completed to accommodate the substantial population growth.

Consistent with the widespread changes of the Progressive Era, which brought political, business, and social reforms, the Baltimore Municipal Art Society was formed at the turn of the 20th century and became the driving force directing Baltimore's physical development. The society's initial goals were inspired by the National City Beautiful Movement. They commissioned artists to create several monuments and hired the Olmsted Brothers' Landscape Architects to create the 1904 Baltimore City Park plan. They successfully advocated for a comprehensive sewer system (1914), for annexation to expand the City's borders (1918), and for a comprehensive zoning ordinance (1923).

But even in this climate of growth, the work in the beginning for Sandlass was slow and small. He described the struggle to make a living as a consulting engineer in a letter to his son, Henry (later a Baltimore architect), dated October 25, 1925:

> "DEAR HENRY…I GOT A COMMISSION FROM MR. FRED BAUERNSCHMIDT, THE EX-BREWER, TO CONVERT ONE OF HIS BUILDINGS—THE BOILER AND COMPRESSION HOUSE—INTO A HEAVY WAREHOUSE. IT IS NOT A VERY LARGE JOB, BUT EVERYTHING HELPS, AS WORK HAS BEEN VERY SCARCE IN BALTIMORE THIS YEAR."

Throughout these early years Sandlass completed small-scale engineering jobs for local architects. He designed roofs, staircases, building supports, and foundations—anything to bring in a few dollars. Another major source of income during this early era was steel detailing, which involved detailed drawings that showed how beams, girders, and other steel elements were to be fitted together during construction projects. Such detailing was an arduous, painstaking assignment, so the steel companies hired engineers to produce reliable drawings that indicated where holes should be drilled for rivets and where joints would be connected.

In another letter, dated April 24, 1926, Sandlass tells Henry that the firm has obtained another detailing job, but points out that design jobs pay better, although they are harder to get:

> "DEAR HENRY…BUSINESS IN BALTIMORE IS STILL A LITTLE BACKWARD IN OUR LINE, BUT THE PAPERS ARE OPTIMISTIC AND THERE ARE INDICATIONS THAT CONDITIONS WILL IMPROVE. WE GOT A BIG JOB FROM DIETRICH BROS. THIS WEEK, AND THAT WILL RUN ABOUT $1,800. BUT IT IS DETAILING, AND THE DESIGN JOBS ARE STILL FEW AND SMALL."

But Sandlass persevered and within a few years he was able to convince his old associate and friend from Chesapeake Iron Works, George Wieman, to join him. Wieman was a younger, soft-spoken, and brilliant engineer who served as Sandlass' second-in-command for many years. They officially formed the partnership of "Sandlass & Wieman" on January 1, 1926, and moved into a larger office space at 331 North Calvert Street in Baltimore.

During their early years together, Wieman served as the principal engineer and business manager while Sandlass was responsible for getting the work. Wieman also had many contacts at the huge Bethlehem Steel operations in Sparrows Point, so he was frequently able to obtain steel-detailing assignments for their new firm. But the income from these jobs as a "secondary contractor" was small and the frequency of these jobs was uncertain.

AMERICA 1923

GENERAL HISTORY

This is the era of the "Roaring Twenties" and Prohibition

PRESIDENT

William Harding and Calvin Coolidge (Harding died soon after Richard Sandlass started his company)

ENTERTAINMENT

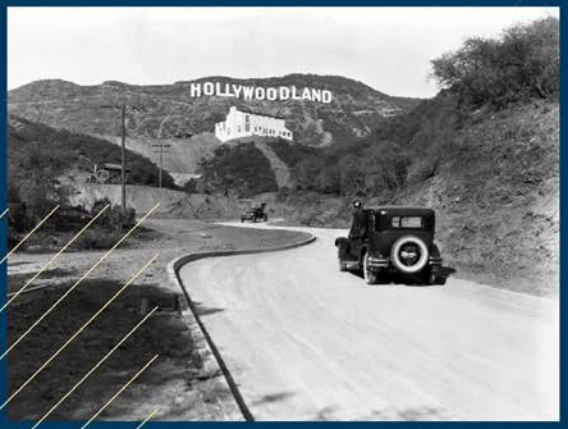
The Walt Disney Company is founded

CULTURE

The "Hollywood" sign is inaugurated in Los Angeles (originally reading "Hollywoodland")

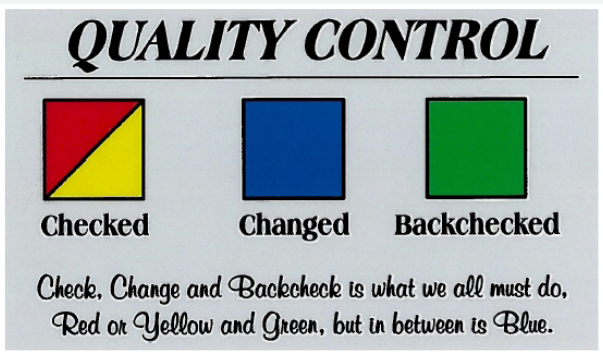
SPORTS

The New York Yankees win their first World Series title



Early Successes

As the 1920s progressed the slow pace of growth was frustrating. Wieman would reportedly walk around the office complaining that, "We're just sitting around catching flies!" And then the most challenging economic period of the 20th century hit, The Great Depression, which began with the Wall Street Crash of October 1929 and then spread worldwide. The stock market crash marked the beginning of a decade of high unemployment, poverty, low profits, deflation, plunging incomes, and lost opportunities for economic growth as well as personal advancement. Altogether, there was a general loss of confidence in the economic future. It was estimated that by the early 1930s, the unemployment rate for engineers across the nation hit 50%. The nadir came in 1931–1934. And Baltimore was no exception to the devastating economic challenges—on September 30, 1931, the Baltimore Trust Company closed its thirty-two-story skyscraper; by 1933, the Governor closed all banks to try and prevent mass bank withdrawals; and 29,000 Baltimoreans were officially unemployed in 1934. Before the spending of the first New Deal public works programs, there just wasn't much work to be had.

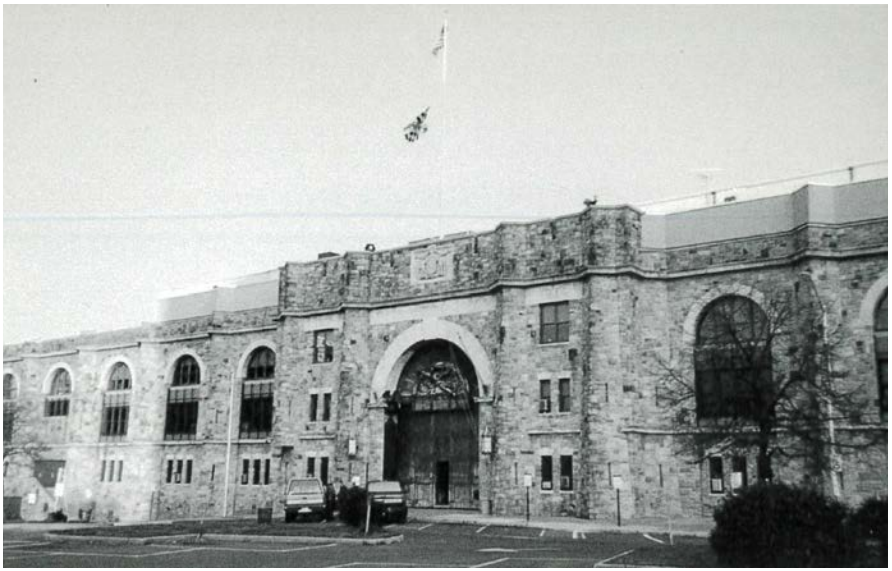


QUALITY

While work in the beginning was slow and uncertain, one element that was certain was a dedication to quality. Sandlass and Wieman focused on delivering excellent products. Henry Sandlass talked frequently of his father's "unerring precision." David Wallace, who joined the firm in 1973, reflected that the culture of quality established by Sandlass and Wieman was felt even 50 years after the founding: "I think the focus was we are engineers, the mind set many German engineers, therefore we shall do a good job, we shall check our work, we shall back-check our work, and we should be sure. That was mindset of the firm when I joined. It was this German attention to detail, you know the 'trains run on time,' drawings are produced with assurance."

How did the firm survive this period? One explanation is the different nature of how engineering design and drafting was completed in those days. During this era, before consulting engineers became widespread and "professionalized" there existed a network of journeyman designers and detailers. When firms like Sandlass & Wieman won work, they would contact the network and hire the needed staff for that job. When the job was completed, the staff were let go, somewhat analogous to contract employment today. In this way, the firm was well positioned to handle lean times. If revenue was low, the partners took home less money, but because there were few permanent staff, the business could survive. Indeed, the firm was able to grow slowly as the best of the journeyman designers and drafters were hired as full-time employees.

In spite of the hard times, success did come. Stewart Weikel joined the firm as a partner around 1930. In 1931, the firm moved into a larger office space at 107 West Saratoga Street. Two major projects stood out during this period. The firm designed a new roof for the Main Auditorium of the Fifth Regiment Armory on Howard Street, a job that had to be completed twice due to a fire that destroyed part of the original, and design of the armory building and gymnasium for the United States Military Academy in West Point. The latter job required frequent travel back and forth between Baltimore and New York.



The Fifth Regiment Armory in Baltimore (1998 photo). Sandlass & Wieman helped design the building...twice. After the original building burned in 1933, the firm designed a new roof.

WHO WERE RICHARD SANDLASS & GEORGE WIEMAN?

Richard Sandlass was born in Germany on April 20, 1870. He moved to the United States at the age of 12 when his father, a skilled craftsman, took a job with Baltimore's Knabe Piano Company. The Sandlass family were one among millions of Germans who immigrated to the United States during the decades before and after the turn of the 20th century. The family settled permanently in Baltimore, which was a major destination for German settlers. The German-born immigrant population in Baltimore peaked in 1890, when the number of German-born Baltimoreans grew to nearly 42,000 out of the total population of 366,000. By 1914, the number of German-born or first-generation German Americans had risen to 94,000, 20% of city's population. During the 19th century, many of the city's public schools were known as "German-English". By the 1920s, one third of Baltimore's public schools still offered German-language curricula and a quarter of Baltimoreans could still speak German fluently. Up until World War I, the notes from the Baltimore City Council were published in both German and English.

Richard attended public schools and then studied mechanical drawing at the Maryland Institute. Sandlass returned to Germany for his formal engineering studies, getting his "Master of Building trades" certification from the Hoehere Landes-Bauschule in Holzminden (in Hanover) in the early 1890s. Following his studies, Sandlass returned to Baltimore and took his first engineering job at Campbell & Zell Company in 1895 - as "chief designer and engineer of structural steel."

Top photo: Founding partner Richard Charles Sandlass. He led the firm through its early years on West Saratoga Street. Bottom photo: The Sandlass home at 4409 Maine Avenue. Richard Sandlass loved to host parties in this sprawling, Victorian-style house in northwest Baltimore (1998 photo).

His first assignment was as a steel inspector on the Baltimore Circuit Courthouse. After four years at Campbell and a brief stint at Bartlett Hayward Company, Sandlass would spend 19 years as chief engineer and general manager of the Chesapeake Iron Works. Among other skills, he was a specialist in heavy cranes and machinery.

"Richard Sandlass was a very jolly person," recalled his daughter-in-law, Virginia Sandlass, during an interview in 1998. "He was a lot of fun! He was full of humorous anecdotes, and he was very active in the German culture of the day. I remember how he served as President of the old Arion Singing Society and how they used to have these 'Sangerfests,' which were big singing competitions that everybody loved to attend. Richard had a beautiful baritone signing voice. He was a member of the vestry of Zion Lutheran Church in Baltimore, and he dearly loved to sing those beautiful old hymns."

In his later years he was remembered as "a formidable old gentleman" whose vest was often covered with cigar ashes. He wore a "Von Hindenburg haircut," according to reports of the day, and he carried a big walking stick. He had his eccentricities. For example, he was famous for stepping out into the middle of Baltimore's Calvert Street (which was four lanes in those days), and standing motionless for a few seconds, glaring at the traffic. Then he would raise his stick and charge forward until the startled drivers slammed on their brakes.

While Sandlass was an outgoing entertainer, his business partner George Wieman was more reserved. He was born in the United States, likely around 1880, but was of the same German stock as his future business partner. He was sent to Germany by his parents to complete his engineering studies, graduating from Darmstadt University in 1901. After returning to Baltimore, he bucked rivets for a metal fabricator for a while before landing a job as a draftsman at Chesapeake Iron Works, where he remained from 1905 through 1925. It was there where he worked under, and became close friends with, Richard Sandlass. Reportedly a handsome man with a striking mustache, Wieman was introspective and thoughtful. Wieman was intellectually accomplished and more cautious than Sandlass, which served him well as the man who paid the bills, devised engineering solutions, and ran the day-to-day affairs of the firm. Wieman also relished good storytelling, especially if it concerned his school days in Germany or engineering projects that had gone sour, with comical results.

Founding partner George Arnold Wieman, a "terrific business manager." He relied on his contacts at Consolidated Gas, Electric, Light & Power Company of Baltimore to provide engineering jobs for the growing firm in the 1930s.

AMERICA 1933

GENERAL HISTORY

This was the era of the Great Depression; Prohibition ends

PRESIDENT

Herbert Hoover and Franklin Delano Roosevelt

ENGINEERING

Construction of The Golden Gate Bridge begins

ENTERTAINMENT

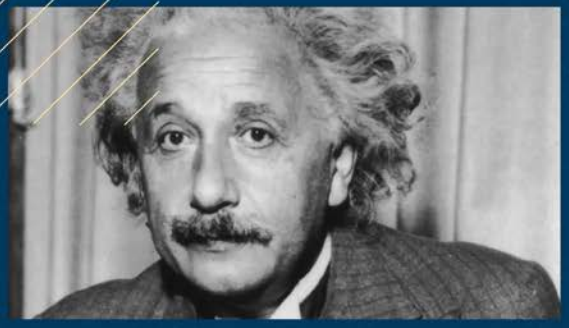
*In film, **King Kong** climbs the recently completed Empire State Building*

CULTURE

Albert Einstein arrives in America after leaving Nazi Germany

SPORTS

The first Major League baseball All-Star game is played in Chicago



By the late 1930s, federal spending on major public works increased dramatically. Abel Wolman, the fourth person to receive a Bachelor of Science in Engineering from the Whiting School of Engineering at The Johns Hopkins University and later Chief Engineer of the Maryland State Department of Health from 1922 to 1939, coordinated the Civil Works Administration (CWA) in Baltimore to help put thousands of people back to work. The Works Progress Administration (WPA) followed the CWA and provided work for many more. And then World War II fully pulled the nation out of The Great Depression.

According to several former partners, Wieman was on "very good terms" with the chief draftsman of the Engineering Department at Consolidated Gas, Electric, Light & Power Company of Baltimore (CGEL&P) which would later become Baltimore Gas and Electric (BGE). That relationship proved to be the source of some much-needed revenue, since CGEL&P could often be counted on for steady work assignments. In fact, during the 1930s, Wieman and several other employees would often spend the entire workday at the utility's headquarters on Monument Street, near the Maryland Penitentiary. CGEL&P designed all of its new coal-fired utility plants there, and the Sandlass & Wieman engineers developed many of the design plans on the top floor of the CGEL&P office.

Often described as the "father" of RK&K, the hard-charging Ed Rummel led the firm's rapid expansion during the war years.

Ed Rummel Joins the Firm

The economy was slowly improving by the second half of the 1930s including Sandlass & Wieman, who were gradually expanding. The firm size increased substantially after the partners made one of the wisest decisions in the firm's history by hiring an individual who would almost single-handedly bring them into the modem world of engineering. The new employee was a talented and enormously ambitious engineer named Edward Frank Rummel, a smart, likable figure who had been working at the larger Baltimore firm of Whitman, Requardt and Smith since 1931.

After five years as an associate engineer at Whitman, Ed Rummel was looking around for a better opportunity. He found it in Sandlass & Wieman, with both senior partners taking an immediate liking to him. After he joined the firm, they paid his tuition at The Johns Hopkins University so that he could continue to study engineering at night. During the next nine years, the personable and hard-working Rummel would labor tirelessly to expand the firm's list of clients, while personally supervising most of the larger assignments that were performed in the West Saratoga Street office.

PROFESSIONAL RECORD OF SANDLASS AND WIEMAN

A document from the late 1930s records the major projects completed by the firm between 1926 and 1938. This provides an excellent record of both the type of work being completed during the early years and increasing scale of the projects.

Professional Record of Sandlass and Wieman

Sandlass & Wieman, Consulting Structural Engineers,
107 W. Saratoga Street, Baltimore, Maryland.

The members of the firm are Richard Charles Sandlass and George Arnold Wieman, both are members of the American Society of Civil Engineers. The firm has served as consulting structural engineers to architects and as designers of engineering structures to owners. We are also prepared to furnish shop details for buildings and structures designed by us and to steel fabricators.

Among the structures designed by us since January 1, 1926, we mention the following:

1. McNamara Bros. Company, Baltimore: Addition to boiler and plate shop.
2. Mano Swartz: Alterations to buildings, 329-331 N. Charles Street, Baltimore, Md.
3. Frederick Bauernschmidt, Baltimore: Foundation for mausoleum.
4. John H. Greer & Company: Warehouse at Ridgely [sic] Street and B&O Railroad, Baltimore. This warehouse covered one half of a city block.
5. National Fruit Products Co., Washington, D.C.: Studies and preliminary sketches in connection with plant extension.
6. Farboil Paint Co., Baltimore: Alterations and additions to plant.
7. Structural steel frame, reinforced concrete work, foundations and swimming pool for gymnasium Dickinson College, Carlisle, Pa., William W. Emmart, Architect, Baltimore.
8. Remodeling three passenger elevators in the American Building, Baltimore.
9. Davis Paint Co., Baltimore: Reinforced concrete tank.
10. The Funkhouser Co., Hagerstown, MD.: Foundations and superstructure for Chrusher Building. Superstructure for mill building. Both buildings at Charmian, Pa.
11. Addition to Home for Incurables, Baltimore. Wm. W. Emmart, Architect, Baltimore, Md.
12. Sanitarium for Teacher Sisters of Notre Dame, Notch Cliff (Glen Meadows), Md., B. Evander, Architect, Baltimore.
13. Structural Steel Frame, reinforced concrete foundations for Maryland Masonic Home (Bonnie Blink), Baltimore County, Md.
14. Addition to Silverware Factory for Samuel Kirk & Sons, 25th Street & Kirk Avenue, Baltimore.
15. New Roof for Main Auditorium—Fifth Regiment Armory, Baltimore, Md., Wyatt & Nolting, Architects, Baltimore, Maryland.
16. New Offices and Manufacturing Building, including Boilerhouse for the National Color Printing Company, Inc., 930 E. Monument Street, Baltimore, Md. This is a modern, two-story Day Light Building of fireproof and slow burning construction and involved an expenditure of about $60,000 not including the land. Started plans and specifications February 24, 1934. Building turned over to owner November 8, 1934.
17. October 1935—Consulting Structural Engineer for New German Aged Home, Irvington, Baltimore, Md. Buckler & Fenhagen, Architects. Involving intricate steel and reinforced concrete design.
18. November 1935—Associate Consulting Structural Engineers for New Eastern High School, Baltimore, Md.
19. 1936—Armory Building-Cost $700,000—Gymnasium-Cost $900,000. Both for the U.S. Military Academy, West Point, N.Y.
20. 1937—Crematory & Crypt, Greenmount Chapel, Baltimore, Md. Buckler & Fenhagen, Architects.
21. 1937-Men's Dormitory University of Maryland-Cost $200,000.
22. 1938 Singers Stage for the 1938 Saengerfest
23. 1938-Hospital for the Women of Maryland-Cost $330,000, Crisp & Edmunds, Architects, Baltimore, Md.

World War II and the Future of Sandlass and Wieman

Endlessly energetic, the high-spirited Rummel became the driving force behind the transformation of Sandlass & Wieman from an engineering company that mostly worked for architects and steel fabricators to a large prime consultant that went after the biggest structural design jobs. This work started in Maryland but soon expanded throughout the mid-Atlantic. The widespread economic boom that accompanied the run-up to World War II and finally ended the Great Depression (U.S. GDP finally surpassed 1929 levels in 1940) was providing steady new work for Sandlass & Wieman as new factories, roads and public utility projects were initiated. Rummel was elevated to partner in 1944, but his substantial contributions were recognized earlier, as the firm was briefly known as "Sandlass, Wieman & Rummel" in 1941.

By the watershed year of 1945, Richard Sandlass was about to retire, and George Wieman would soon follow, but the groundwork had already been laid for future growth. With more than a dozen employees in 1945, the company that was painstakingly built by two German-Americans, now known as Sandlass, Weiman & Associates, was ready to expand in earnest. From a foundation of excellence in which it was understood that every job would be personally supervised by one of the partners, the firm was about to soar into the great post-war boom that would transform American in the decades to follow.

Richard Sandlass with grandkids. After retiring in late 1946, the firm's venerable founding partner would die in 1952, at age 82.

AMERICA 1943

GENERAL HISTORY

World War II rages on in Europe, North Africa, and the Pacific

PRESIDENT

Franklin Delano Roosevelt

ENGINEERING

The Pentagon, the world's largest office building, opens

ENTERTAINMENT

***Casablanca** is released and "Paper Doll" by The Mills Brothers is the most popular song*

CULTURE

The Jefferson Memorial is dedicated

SPORTS

All-American Girls Professional Baseball League starts, the first female professional sports league

RUMMEL, WHO WOULD BECOME A PARTNER IN 1944, MADE AN UNFORGETTABLE IMPRESSION ON ALL WHO KNEW HIM...

Ed Rummel was a prince!" says Ron L. Johnson, who spent more than four decades at RK&K. "I got to know him quite well. Everybody was very fond of him. I'll tell you the kind of things he loved to do. Each year when we held our Christmas party, usually at the Belvedere on Chase Street, he'd get out his 'Olympic Drinking Team' sweater, and put it on over his suit, and then he'd direct the festivities! He was a very down-to-earth guy, and he always had time for you. "

John J. Huber, who worked for RK&K for more than 50 years added, "Ed Rummel was a great guy, and when I joined the firm, he was just hitting his stride. He was thought of as the 'father' of the entire firm, no question about it."

Broad-shouldered and stocky the fast-moving Rummel never stopped thinking about ways to land new business or of innovations that would allow the firm the complete projects faster and with greater accuracy.

"Richard Sandlass looked upon Eddie Rummel as a son," said Virginia Sandlass. "They were very fond of each other, and that relationship lasted until Richard's death in 1952. After that, Mr. Rummel became the 'father figure' who looked after everybody else at the firm."

> *"He was a very down-to-earth guy, and he always had time for you."*

PART 2:

EXPANSION

(1946 - 1967)

Post World War II

After World War II, the United States underwent a transformative period marked by post-war adjustments and the onset of the Cold War. Economically, the nation experienced a post-war boom. The GI Bill provided opportunities for veterans, leading to a surge in higher education and homeownership. The baby boom began, heralding a significant population increase. Consumer goods, long withheld due to wartime restrictions, became widely available, leading to a rise in consumerism, suburbanization, and the creation of a burgeoning middle class. One example which had a significant impact on the growth of RK&K, was the Interstate Highway System (officially named the Dwight D. Eisenhower National System of Interstate and Defense Highways) which was authorized by the Federal Aid Highway Act of 1956. This legislation provided an initial funding of $25 billion for the construction of 41,000 miles of the Interstate Highway System over a 10-year period. This was the largest public works project in American history up to that point. The system was designed not only to aid in domestic travel and commerce but also for defense purposes, allowing for the rapid movement of military troops and equipment across the country. In practice, the construction of the interstate system revolutionized transportation and reshaped American cities and suburbs.

In 1946, Sandlass, Wieman & Associates remained a Baltimore firm and, in the decade following World War II, Baltimore, like many American cities, underwent significant transformations. The war had bolstered the City's industrial sector, particularly shipbuilding and steel production, but the post-war years saw a gradual shift. As defense-related industries faced declines, other sectors like service and trade began to rise. This transition was not without its challenges, as some factories closed while others relocated to areas where labor was cheaper, leading to job losses.

The Harbor Tunnel. RK&K assisted the engineering team on this huge project, which was completed in 1954.

The return of soldiers after the war created a pent-up demand for housing, improved public infrastructure and

vastly improved roads to accommodate all the automobiles appearing on Baltimore's streets. Domestic programs had been deferred during the war years. Newly elected Maryland Governor William Preston Lane unveiled a five-year roads agenda in 1947 that included $200 million for a Baltimore-Washington Expressway, a Baltimore-Harrisburg Expressway and a Chesapeake Bay Bridge. Within four years, 1,100 miles of new roads would be been built in Maryland. In 1950, Baltimore would record its highest population to date at nearly 950,000, but after that, suburbanization, facilitated by the rise of the automobile and newly developed highways, began to draw families out of the city, leading to a slow decline in Baltimore's population. This migration to the suburbs also coincided with a rise in shopping malls and commercial centers outside the urban core, furthering the economic shift.

Howard S. Klepper became key part of the firm's growth in the ensuing decades.

Sandlass, Wieman & Associates were well poised to support the infrastructure changes taking place in Baltimore and across the country. In fact, as early as 1948, the firm would find itself directing the planning and construction of one of Maryland's first four-lane expressways: US Route 50, which stretched from Washington, D.C. to Annapolis (and described in greater detail later in this book). Two other landmarks of the postwar era in Maryland would be the completion of the Baltimore Harbor Tunnel (1957), which provided a major link in the state's highway network, and the preliminary construction of the Baltimore Beltway (I-695), in the late 1950s. RK&K would play a major role in both projects.

The firm's growth necessitated another move to new offices, this time at 1021 North Calvert Street. Ed Rummel, now senior partner, began recruiting a new generation of engineers. In 1946, Howard S. Klepper joined from local firm Whitman, Requardt and Smith. Klepper was a highly regarded engineer who brought expertise in water and wastewater engineering, a key part of the firm's growth in the ensuing decades. Klepper, seemingly as energetic and creative as Rummel, earned his stripes as a sanitary engineer during the war years, serving as a U.S. Navy engineer helping to build vitally needed airfields and bases in the Pacific campaign against the Japanese. Earlier in his career before the war, Klepper had begun to specialize in sanitary engineering projects.

Once the war ended, Klepper briefly worked at the Bureau of Yards and Docks in Washington. One of his first civil projects involved construction of the Skyline Drive in Virginia's Blue Ridge Mountains. After joining RK&K, Klepper quickly became a partner in 1946 and launched a vigorous initiative aimed at bringing new water and wastewater projects to the firm. The campaign proved to be hugely successful as the firm won very large contracts for water and wastewater treatment facilities with Baltimore City, Baltimore County, and Washington, D.C. The firm designed the unique Cromwell Pumping Station to boost Baltimore's water supply system, and the Whitemarsh and Gunpowder wastewater pumping systems for fast-growing Baltimore County. "Klepper was quiet," recounted John Huber, a 50-year veteran of RK&K. "But he was willing to 'go on the board' and work with people if there was a deadline to meet. He'd even do surveying work. He was almost like one of the employees. Once we were putting in overtime on a project and I remember I was working one side of the drawing and Mr. Klepper was working on the other side. He jumped right in. That's the way he was."

In 1947, William R. (Bill) Kahl was recruited from the Portland Cement Association. A native Baltimorean, he had grown up on a farm on Reisterstown Road and graduated from Baltimore Polytechnic Institute where, while still a student, he found time to work at local engineering firms and the State Roads Commission. Upon graduation, Kahl attended The Johns Hopkins University and earned a bachelor's degree in civil engineering in 1932. He later added a master's degree in civil engineering from Brooklyn Polytechnic College in New York. Kahl's first full-time job took him to Staten Island, New York, for the Baltimore & Ohio Railroad, where he designed railroad yards and transfer bridges. Then it was on to the Portland Cement Association as a structural engineer for seven years before joining RK&K.

Bill Kahl. He was the "Super Salesman" who brought many new accounts to the firm during its middle years.

A born salesman, Kahl took the lead in expanding the firm's business footprint. He loved to talk highway and bridge design with anybody who crossed his path. Bill knew how to charm the clients, even as he convinced them that his firm had "more engineering expertise than anybody else in town." Kahl directed the firm's growing participation in transportation under the Federal Highway Program of the 1950s. While Klepper masterminded many of the big engineering projects, especially those related to public utility construction, and Rummel directed the business affairs of the surging firm, Kahl hit the road week after week to chase the large accounts that would put RK&K on the map beyond Baltimore and Washington, D.C.

The firm's list of clients expanded beyond Maryland to include Delaware and Pennsylvania.

George Wieman retired in 1951, after 28 years with the company. All the partners decided it was time to re-name the thriving firm. The public statement of these two events read:

PARTNERS IN SANDLASS WIEMAN & ASSOCIATES
ANNOUNCE THE CHANGE IN THE NAME OF THE FIRM TO
RUMMEL, KLEPPER & KAHL ENGINEERS
1021 N. CALVERT STREET
BALTIMORE 2, MARYLAND

———

GEORGE A. WIEMAN ANNOUNCES HIS RETIREMENT FROM ACTIVE MANAGEMENT IN THE PARTNERSHIP BUT WILL CONTINUE TO GIVE THE FIRM THE BENEFIT OF HIS WISE ENGINEERING EXPERIENCE IN AN ADVISORY CAPACITY.

FEBRUARY, 1951 MULBERRY 3105

WHAT'S IN A NAME?

In early 1951, the firm changed its name to "Rummel, Klepper & Kahl", and soon after started to be known as "RK&K." From its founding in 1923 through today, the firm has had several names:

1926: Sandlass & Wieman, Consulting Structural Engineers

1940/1941: Sandlass, Wieman & Rummel

1946: Sandlass, Wieman & Associates

1951: Rummel, Klepper & Kahl *(but the Sandlass, Wieman & Associates name was also retained until 1956). Their three last name initials are stacked on two lines, in gold, typically alongside the color green, as the RK&K firm's new logo.*

1997: Rummel, Klepper & Kahl, LLP

AMERICA 1953

GENERAL HISTORY

The Korean War ends and Queen Elizabeth II is crowned

PRESIDENT

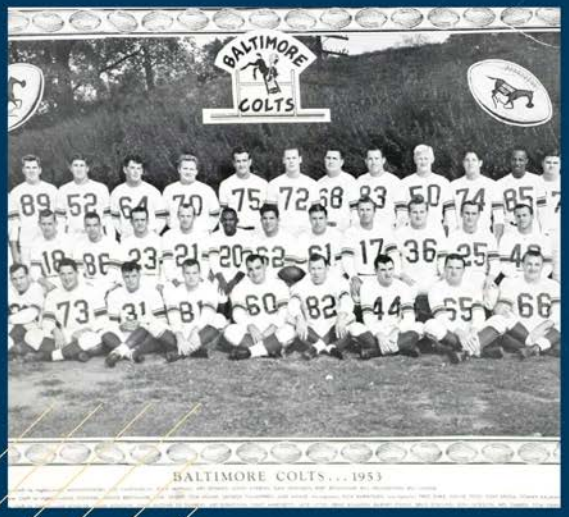
Dwight Eisenhower

ENTERTAINMENT

Half of Americans now had a television in their home and "I Love Lucy" was the most popular show

SPORTS

The Baltimore Colts (football) started playing and the St. Louis Browns (baseball) played their final season... they'd move to Baltimore in 1954 and become the Orioles



NEW OFFICES

Former partner Burt Cox described the move to new offices at 1021 North Calvert Street: “And they found the ideal spot at 1021 North Calvert Street. It was an old rooming house, and we went up there in September of that year. This is where the firm of RK&K really started. We ripped all the furniture out, repainted the walls, and tried to make the damn place decent."

Within a few months, said Cox, the fast-moving employees had converted the "Calvert Street rabbit warren" into a thriving office complex that would eventually include a total of eight former rowhouses within the 1000 block of Calvert Street, a geotechnical office in Lansdowne, Maryland, and another office at 1010 Saint Paul Street. "The tone of the place was very interesting," said Cox. "The new headquarters consisted of a lot of little rooms connected by narrow hallways and staircases. It was a real labyrinth! The basement was where we set up the Highway Department, and three of the partners wound up in one little room on the upper floor. The Sanitary Department was on the second floor and Structures was on the first floor. And it was all very informal. I mean, everybody called everybody by their first name, partners included. And it was great. We were just trying like hell to make a buck and make the firm work. And we must have done something right because it really started to grow!"

Bob Enos, who spent over 40 years with the firm, was hired by Howard Klepper in 1948 for 80 cents an hour just days after graduating from Edison Vocational High School. He remembered his early years in the basement of 1021 North Calvert before it was remodeled. The floor was rough brick, the walls stone masonry. Overhead pipes had to be wrapped with newspapers to prevent condensation from dripping on the blue lines. John Huber recalled his early years in the Calvert Street offices as most uncomfortable, particularly in the summer months. “It was very, very hot. They had no air conditioning. We used to place wads of paper towels under our arms on the drafting boards to protect the linen from any perspiration. We used to have all the windows open. We learned the higher up you were, the fewer flies there were.”

Another 40-year veteran also recalls his years in the rabbit warren along Calvert Street: "We spent half our time running back and forth from one building to the next. Year by year, we just seemed to keep picking up new buildings, until it seemed like we owned most of Calvert Street."

ED RUMMEL'S COMPANY

The hard-charging Rummel was an unforgettable figure, according to several veterans of RK&K's middle years. A relentless perfectionist on the job, he also knew how to play, while unwinding over one (or more) beers once the long day's efforts were done.

As the growing company reached out for new clients and new projects in the late 1940s, Ed Rummel seemed to be everywhere at once. Involved in nearly every engineering assignment that the firm took on, he spent endless hours helping partners and employees alike improve the quality of their work, while barking such well-known Rummel-isms as, "If it don't look right, it ain't right!" and "The language of engineering is drawing, and if you can't draw, you can't speak the language!"

Brash and impulsive at times, the growling Rummel was no saint. But according to those who knew him, he loved the challenge of finding new clients, and he loved the challenge of presenting them with flawless work.

Ed Rummel was also a kind-hearted supervisor who frequently dug deep into his own pocket to help his friends at the firm. If you ask former partners like John L. Bell, E. Robert Seitz and Burton (Burt) N. Cox to describe Rummel's character, they will recite a long litany of "Ed Rummel stories" that have been handed down over the years. In one such story, Rummel confronts an employee who is about to travel five hundred miles to comfort his dying father. Rummel hands the employee $300 out of his own pocket. "What's this for?" asks the startled employee. Rummel smiles: "Take it. You never know what may come up. "

Bill Kahl, Howard Klepper, and Ed Rummel pose for a photo in the late 1950s. The "Three Musketeers" were key players during RK&K's middle years.

In another famous Rummel story, the veteran engineer gives a brand-new employee a hefty Christmas bonus even though the new hire has only been on the job a few weeks. Rummel smiles: "You have yourself a great Christmas!"

Having weathered what he always described as the "tough times" in Depression-era Baltimore, Rummel had a keen sense of compassion for his co-workers, and a fierce hunger to see that everyone who worked for him was treated fairly. He also had a lighter side, a jovial streak that loved boisterous parties, loud talk, and, of course, lots of beer.

"Rummel was an incredibly hard worker," remembers one 40-year veteran of RK&K, "but he also had a 'happy-go-lucky' side. He was great fun at the Christmas parties over at the Belvedere!" Former employee Bill Butler recalled: "We always called him Uncle Eddie! In those early days of the 1950s, RK&K was very much like a family, and we took the same pride in our work that you would take in your family. And Eddie Rummel personified that. He was a very humble man, and he cared about the people who worked for him."

Adds Rummel's daughter, Carol Seitz: "There's no doubt that my dad was a brilliant engineer. They say he could look at a set of plans and tell you in five seconds: 'I don't know what's wrong, exactly, but you've got a problem here.' And he would be able to tell you that, just by glancing at your drawings.

> *"[Eddie Rummel] was a very humble man, and he cared about the people who worked for him."*

QUALITY
RESPONSIVENESS

EMPLOYEE **DEVELOPMENT**

By the late 1950s, according to several former employees and partners alike, the growing firm had already established several of the key principles upon which its reputation for excellence would be based. Principles of operation would include the following:

- *Regardless of changing situations and shifting economic fortune, RK&K must always remain a partnership. Instead of becoming just another faceless corporate bureaucracy, the firm must maintain its ''personal touch." Each new engineering project would be assigned to a partner, whose name would be attached to the job, guaranteeing personal responsibility. "If a client had a problem with a job," remembers one former employee, "they always knew who to call!"*
- *Early on, RK&K emphasized promoting from within. This approach encouraged great loyalty, and it also motivated employees on the job. If they did outstanding work, they knew they were enhancing their own chances for promotion.*
- *Throughout its history, RK&K has paid tuition costs for employees who want to learn more about engineering and other engineering-related subjects.*
- *Starting with Sandlass and Wieman, the firm's marketing philosophy was simple, "we depended on repeat business." If you base your success on repeat business, then you've got to make sure that every job is done perfect."*

Highways

If there was a single theme that dominated the 1950s at RK&K, it was surely highway engineering. By the middle of the decade the federal highway program was booming and highway engineer Bill Kahl was tirelessly pursuing new projects. One of his biggest finds, and a major watershed in the history of the firm, was the project that became known as the "Washington-Annapolis Expressway, US Route 50. "We'd already gotten one or two big jobs in Baltimore City," remembered Kahl. The State had decided they were going to build an expressway system and "we landed US Route 50, and that was the big one. That was our first big highway job, really. We were given the design of the highway from Washington, D.C. to Annapolis."

"So we went ahead and put in interchanges at Annapolis and Washington, and another one at US Route 301. That was the first major job we did for the State of Maryland, and it certainly was one of the highlights of the 1950s. And it was also the beginning of a whole lot of highway and bridge work during the next two decades." Describing the endless work on US Route 50, the easygoing Kahl laughed out loud. "I walked every foot of that right-of-way! In those days, you'd hire a plane and a cameraman, and the cameraman would lean out the side of the plane and take a picture of where you wanted to put the road in. "So we laid out the line between Washington and Annapolis. I walked every foot of it and the survey crews came behind me and they surveyed

| *US 50*

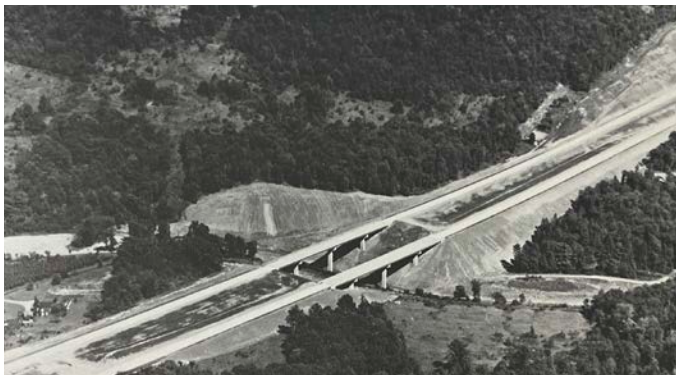
Top photo: The Russell Street Viaduct, under construction. This complex engineering project of the 1950s helped to relieve traffic congestion in downtown Baltimore. Bottom photo: The Baltimore Beltway, build in the late 1950s and early 1960s. RK&K was part of the design team. This aerial view shows the stretch from I-83 to Providence Road.

it!" The first 14-mile section of US Route 50 opened in 1953, a second section in 1957 and the final segment in 1961.

Following the US Route 50 project, noteworthy projects during this "highway era" in Maryland included engineering assignments on the Northeast Expressway (I-95), I-70, I-795, and the beginning of a long period working on both the Baltimore Beltway (I-695) and the Jones Falls Expressway (I-83). For I-83, RK&K spent many years providing engineering services for construction and improvement of this key Baltimore high-speed arterial. The firm's assignments on the $16 million project included alignment and interchange studies, soil investigation, contract plans and specifications for roadways, ramps, structures, stream changes and signage. RK&K also prepared contract plans and specifications for major bridges carrying city traffic over I-83 at Calvert, Guilford, Preston, Biddle, and Eager Streets. Another major project in Baltimore City was the Russell Street Viaduct, described as one of the most complex and challenging engineering assignments that the company ever worked on. The elevated structure carries traffic from the Baltimore-Washington Expressway in and out of downtown Baltimore. The six-lane viaduct eliminated grade crossings at the B&O Railroad and at three streets in South Baltimore. RK&K provided contract plans and specifications as well as construction supervision.

During the late 1950s and early 1960s, RK&K worked on a preliminary study for the Maryland State Roads Commission to establish the locations and criteria for roadways and structures for the 32-mile expressway

I-83 & Northern Parkway



I-80 Keystone Shortway

I-80 Bridges over Beaver Creek and B&O Railroad

encircling Baltimore, now known as the Baltimore Beltway (I-695). The job involved field surveys, supervision of aerial photogrammetry, soil sampling and testing, and soil profiles. RK&K also prepared contract plans and specifications for a 15-mile section of the Beltway, including interchanges and bridges.

Over the border in Washington, the firm worked on the Southeast Expressway. RK&K assisted the District of Columbia in lengthy efforts to expand and improve this important Washington roadway by providing alignment and interchange studies, soil testing and field surveys while also preparing contract drawings and specifications for demolition of buildings, construction of roadways, streets, structures, utility relocations and signage.

In Pennsylvania, where the firm would open up an office near Harrisburg in 1959, early work included many bridges along I-80. The firm also won work in North Carolina, including directing operations of the construction of 18 miles of I-95, and, in 1964, opened an office in Raleigh. Work even extended as far west as Illinois with the North Illinois Toll Highway. This project called for alignment studies, investigation and preparation of cost data for a 15-mile section of the new road. The $10 million project also required contract plans and specifications and construction supervision, including interchanges, ramps, bridges, and provisions for toll and service areas.

| *Baltimore Veterans Hospital*

Building Foundations and Superstructures

During this era RK&K completed the foundation and superstructure design for several major buildings.

» *Baltimore Veterans Hospital.* For the Loch Raven Boulevard site, provided contract drawings and specifications of the foundations and structural concrete frame.

» *Mt. Wilson State Hospital.* Eight stories high, this project north of Pikesville in Baltimore County, RK&K supplied contract drawings and specifications for foundations and structural steel frame for the hospital, which treated patients with tuberculosis.

» *Baltimore County Office Building.* This sleek, horizontal structure connected to Towson's historic old courthouse serves as home to Baltimore County government. Prepared contract drawings and specifications for foundations and the structural concrete frame.

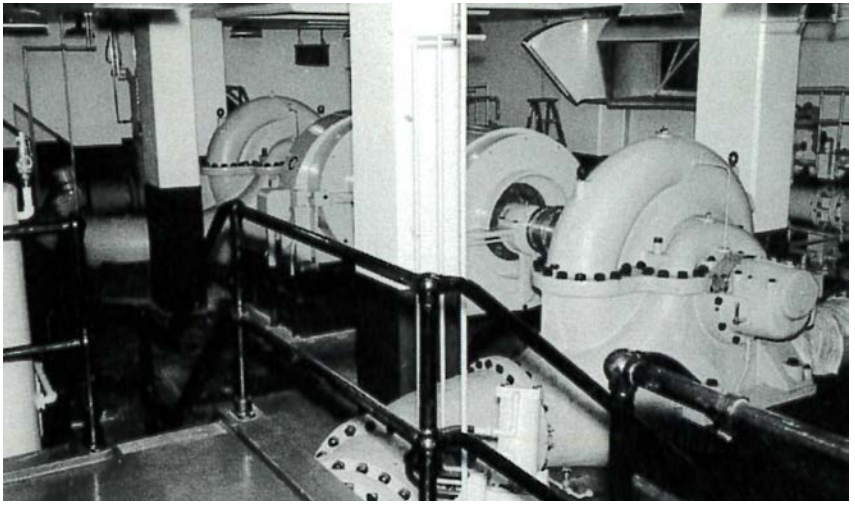
» *Shriver Memorial Hall.* The central focal point for students on Johns Hopkins University's Homewood campus. Prepared contract drawings and specifications for the foundations and structural frame.

Water and Wastewater

The firm's Sanitary Department was expanding as well. In 1957, Burt Cox took over the reins for those projects from Howard Klepper, who wanted to focus more time on administrative matters. Under Cox, the department grew its work with Baltimore City, Baltimore County (Stemmers Run, Bengies, and Catonsville Pumping Stations), the Washington Suburban Sanitary Commission (water and storm drainage projects), Washington, D.C. (dual force mains under Ohio Drive near the Lincoln Memorial), and Allegany County, Maryland (the Georges Creek wastewater transport system). It was a busy, hectic time for everyone in the company.

Another significant project was the Guilford Pumping Station, where RK&K developed contract plans and specifications for remodeling and enlarging the pumping facilities at this key water supply plant located on Cold Spring Lane near Loyola College. The assignment included electrical work, modernization of the chlorination treatment system and alterations to the Guilford Reservoir's piping, metering, controls and new supply main. RK&K also prepared the First Zone Water Report, a task preparing a study on the reinforcement of Baltimore's First Zone water supply for South Baltimore and northern Anne Arundel County. The report included a comparison of gravity booster pumping versus a straight gravity system and interim methods of reinforcement.

Guilford Pumping Station. Interior and exterior views.



THE WAY ENGINEERING DRAWINGS USED TO BE CREATED

While the RK&K leadership was important in nailing new projects, the success wouldn't have been possible without the work of the growing ranks of talented, hard-working engineers, designers, and draftsmen. John Lhotsky, a 44-year veteran as a draftsman and designer, recalled the enormous pride that the highway staffers took in everything they did. "I spent many years with the Highway Department," recalls Lhotsky, "and back in the 1950s, we were all 'hand-drafters.' All the drawings had to be done by hand with ink on linen. We used black-indigo ink on linens, and you would dip your pen into an ink well. It had a metal point, and you'd draw so carefully with that on the linen. You lived in fear of mistakes or of knocking your ink well over onto your drawing! And you had to demonstrate that you could produce a certain standard of lettering before they'd even let you work on the drawings. "

Another employee recalled: "It took years of practice and training to develop these skills. A few special tasks were always reserved for the real 'professionals.' In 1946, our important title sheets were handled by Mr. Klepper. Because drawings were the end result of the firm's engineering efforts and the final product which we had to sell, Mr. Rummel insisted that engineers, as well as the draftsmen, work at engineering tables. Desks were for bookkeepers. Mr. Wieman, one of the firm's founders in 1923, never worked at a desk. Anyone who couldn't produce, check, and make changes to drawings couldn't make the grade, and 'time on the board' was a necessary part of every engineer's, as well as every draftsman's training and work experience."

When another RK&K retiree, Doug Ward, started in the 1960s, he ran the diazo printer, which was kept busy in those days. Sheets were exposed to light and developed with ammonia. Real linen material was used to create engineering drawings – the kind of material that could be made into table linens. The firm was averaging 100,000 square feet of engineering drawings per year.

A SON'S MEMORY

Howard Klepper worked at RK&K from 1946 through 1968, leading the firm during a critical period of growth. As RK&K approached its 100th anniversary, Dick Klepper, Howard's son, shared some of his memories about his father and RK&K:

What did your dad love about being an engineer?

My dad was a problem solver and engineering certainly provided him a lifetime of challenges to apply this skill. I imagine this trait goes back to the training and education he received at [Baltimore] Poly[technic Institute] (A Course / 1925) under the leadership of Dr. Wilmer DeHuff, an icon at Poly through the 1950s. It was certainly reinforced during World War II when he was a Construction Battalion (CB) officer in the Navy, serving in the South Pacific. The CB's motto was "can do" and that is an attitude that I have always associated with my dad. If there was a problem to be solved, he always took the positive approach of determining potential solutions and proceeding with the best alternative. It was the mindset of "tell me what you can do, not what you can't ". I'm certain that this positive, can do attitude contributed to the success that RK&K achieved during his tenure and helped solidify a legacy of excellence among clients and other engineering firms in Baltimore.

How did RK&K change during the time your dad was there?

It seemed like a time of growth. I remember that the firm kept outgrowing its North Calvert Street facilities. They went from just [building] 1021, adding 1025, then 1035, and there was some expansion into Pennsylvania. I believe there was also growth in technology with the introduction of some data processing functions. However, most importantly for the future of RK&K was the promotion of a number of employees to partnership level. In addition to the three principals, the letterhead included Burt Cox, Bob Reindollar, Gus Noack, Emil Kordish, Harry Schmale (and there may have been others that I just don't recall). Promoting from within seemed to be a company philosophy that would ensure loyalty as well as an orderly succession plan for the future growth and well-being of the firm.

What do you remember about RK&K from the time your dad was there?

In spite of the growth, RK&K seemed to me to be like a family. I know our family was particularly close to the Rummels. Mr. Rummel introduced us to the Sherwood Forest community where he had a summer cottage and in 1955 my dad purchased a cottage right next door to the Rummels. Over the years, my brother Bob and I were close to the Rummel children (Carol, Bobby, and Gayle) for the summer months that we lived there, and Mr. and Mrs. Rummel were always welcoming neighbors. Mr. Rummel was a big personality and I can

| *Howard with sons Bob and Dick (right, age 9) on a family trip to New York in 1956.*

still hear his hearty laugh from the patio where he spent countless summer hours entertaining family. We also visited them at their Edmonson Village home at Christmas time, marveling at the train layout that Mr. Rummel constructed and enjoying Mrs. Rummel's famous sour beef! I remember what a shock it was in the spring of 1962 when my father got the call about Mr. Rummel's death following a Sunday visit to Sherwood. I think my dad was contemplating an early retirement, but after Mr. Rummel's death, he felt that had to be put on hold to help ensure the stability of RK&K. It wasn't just about work at RK&K. They sponsored a team in the engineer's softball league and I remember attending some games with my dad. I know he participated on the RK&K team in the engineer's bowling league, and also competed in the RK&K golf league. I think all of those activities fostered camaraderie among the employees and contributed to a sense of loyalty to the firm.

What was your dad most proud of during his career?

I think there are three things my dad was most proud of from his career at RK&K: 1) A legacy of engineering excellence on countless projects that benefited so many lives on a daily basis, 2) RK&K's unwavering reputation of integrity, and 3) contributing to the success of a thriving business which provided career opportunities for talented engineers. Personally, I know I always experienced a sense of pride whenever I would drive the JFX and see the RK&K logo on the Mosher Street facility. That same feeling recently extended to my family when one of my sons, while visiting the Baltimore Aquarium, texted me a photo of the RK&K logo on the new Pratt Street facility.

Howard with wife (Emilie Eve) and Dick at his son's graduation from Bucknell University in 1968 (the year of Howard's retirement from RK&K) when Dick was also commissioned as a Second Lieutenant in the Army.

FAREWELL MR. RUMMEL

One event marred those buoyant times for the firm: the sudden death of its vibrant, spirited senior partner, Ed Rummel. He collapsed at home in his garage from a heart attack that would claim him within a few minutes on May 6, 1962. It was a stunning blow for everyone. The death of the man whom many had called "the father of RK&K" left an enormous void.

Several other notable projects included: preliminary designs and sub-surface investigations for a recommended 72-inch transmission main crossing Baltimore Harbor; the Middle River Area Sanitary Facilities project, including preparation of contract plans and specifications for interceptor sewers, pumping stations, force mains, and a 1,400-foot underwater crossing of Back River; and the Montgomery County Water System, a huge pumping project including contract plans, specifications and supervision of construction for a new zone of services in the Maryland county. In the end, the new system required 12 miles of water mains and installation of pumps, automatic controls and metering equipment at the Patuxent Pumping Station.

By the mid-1960s, RK&K would be solidly established as a major regional consulting firm with construction underway on projects with a combined value of more than $30 million (nearly $300 million in 2023 dollars). Having completed more than 1,200 projects since its founding, the firm now included more than 100 employees. A new generation of partners and engineers would take over during the decade, and the firm would expand into new services, including construction inspection, geotechnical engineering, and site design.

AMERICA 1963

GENERAL HISTORY

On November 22, 1963, President Kennedy was assassinated in Dallas, Texas. Vice President Lyndon B. Johnson was sworn in as the 36th president of the United States later that day

ENTERTAINMENT

The Beatles released their first albums "Please Please Me" and "With The Beatles" in the UK, marking the beginning of Beatlemania

SPORTS

Jack Nicklaus won his first Masters, solidifying his reputation as one of golf's rising stars

PART 3:

STRENGTHENING THE FOUNDATION

(1968 TO 1998)

Expansion

The late 1960s and 1970s were a period of major changes and challenges in American society. The late 1960s were tumultuous. In 1968, the assassinations of Dr. Martin Luther King Jr. and Senator Robert F. Kennedy rocked the nation. The Vietnam War escalated, with the Tet Offensive marking a turning point in public perception. Domestic opposition to the war intensified, culminating in massive protests, including those at the Democratic National Convention in Chicago. The Civil Rights Movement saw progress with both laws and growth in Black Power sentiment.

The 1970s were characterized by economic challenges and significant political events. The decade started with the tragic Kent State University shootings on May 4, 1970. Nixon's visit to China in 1972 began diplomatic relations, and détente with the Soviet Union aimed at easing Cold War tensions. However, the Watergate scandal overshadowed Nixon's achievements, leading to his resignation in 1974, the first for a U.S. president. His successor, Gerald Ford, faced criticism for pardoning Nixon and struggled with an energy crisis and recession. The Oil Crisis in 1973, caused by an OPEC oil embargo, triggered an economic downturn, giving rise to "stagflation." This economic malaise persisted, challenging both Ford and his successor, Jimmy Carter. Simultaneously, social movements gained momentum. Women's Liberation, environmentalism, and the gay rights movement emerged as potent social forces. The end of the Vietnam War in 1975, following the Fall of Saigon, marked a significant shift in U.S. foreign policy.

RK&K was expanding beyond its Baltimore home with offices in Pennsylvania and North Carolina and doing work throughout the Mid-Atlantic and upper South. The period from 1968 to 1980 in the Mid-Atlantic and parts of the South was marked by significant economic shifts and population dynamics. The late 1960s and 1970s marked a decline in traditional manufacturing and heavy industry, especially in places like Pennsylvania. There was a budding shift to a service-based economy, particularly in areas closer to Washington, D.C., like Northern Virginia and Maryland. Proximity to the federal government led to an increase in defense contracting, consultancy, and tech-oriented services. The energy crisis of the 1970s made domestic coal more critical, but it also led to increased calls for diversification and conservation.

Major cities, especially in the Northeast and Midwest, and including Philadelphia, Baltimore, and Washington experienced urban decay. The de-industrialization led to job losses, and some parts of these cities faced population decline, increasing crime, and degrading infrastructure. Despite challenges in urban centers, the suburbs of these cities grew. The lure of suburban living, bolstered by new housing developments and improved transportation infrastructures, drew many families outward. The broader trend of Americans moving from the North to the South (Sunbelt Migration) began to have impacts, though its most significant effects in states like North Carolina would be more pronounced in subsequent decades.

Water and Wastewater Expansion

During the late 1960s the firm's water and wastewater work expanded. Initial work in the 1940s included many smaller distribution mains but expanded by the 1960s to include many of the larger transmission lines. The firm designed several water and wastewater treatment facilities in Baltimore City, Baltimore County, and several smaller towns around Maryland. This included a design for a major sewage pumping stations in Baltimore County that would become a standard in many places across the country and described in at least one textbook on the subject. This work was a continuation of the firm's long involvement in Baltimore's water system.

Also in the late 1960s, the firm was assigned by Baltimore City to identify ways in which water could be supplied to the major growth areas northeast of the City. RK&K devised a unique plan to use the Gunpowder Supply Tunnel (a 12-foot diameter, 7-mile raw water tunnel constructed through solid rock almost 30 years before). RK&K's imaginative design reactivated the tunnel by sending water in a reverse direction from the city northward to the high-demand areas in the northeast.

Soon after completing this project, the firm would enter the realm of water treatment plant design for the first time with the launching of Montebello Phase I in 1970. Since then, RK&K has had an almost continuous involvement in the process of upgrading the city's three water treatment facilities. Former employees will describe the rewards of providing the vital water and wastewater infrastructure, including former partner Ralph Marquiss who stated, "It was always a great feeling to be able to say that we'd cleaned up a stream, or put [in] sanitary sewers, or put [in] a water treatment plant, to provide people good and safe drinking water. That kind of engineering was extremely important, especially the small communities, because they usually didn't have a Department of Public Works to fall back on, and they really needed help. I remember projects we did for Denton, Secretary, and Queenstown, Maryland, and all around the Cumberland area, we did several projects in that region. It was always a great feeling to walk away and say, 'Now they have safe drinking water or good wastewater treatment.'"

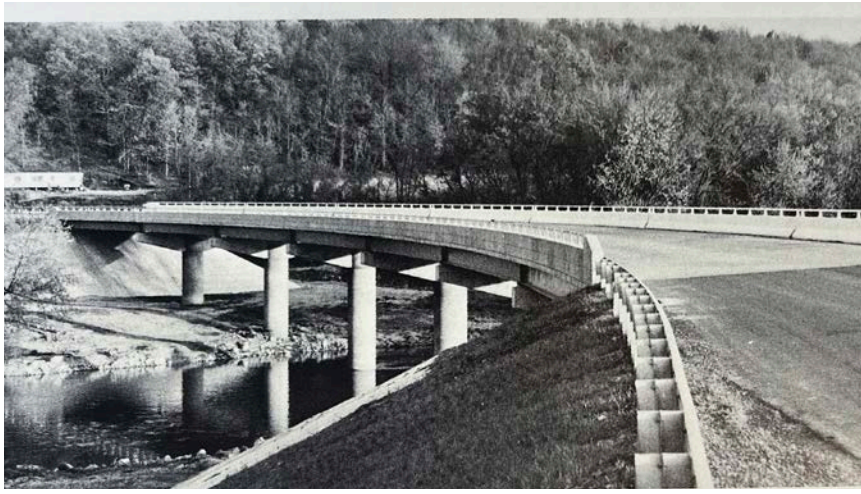
Montebello Water Filtration Facilities. Baltimore City retained RK&K to provide design and construction administration on this major upgrade of the city's water supply system—a $23-million project. Top picture shows a rendering from the original project. Bottom picture shows current facility in 2023.

Highway and Bridge Design

It was also during this time that the firm's role in highway and bridge construction continued expanding. RK&K was building staff of skilled engineers and designers who could provide the vital support necessary to complete these huge projects. Ron Johnson, who joined the firm in 1956, remembered the early 1970s growth-surge as a period of enormous challenge: "I worked for Gus Noack and Bill Kahl in the Highway Department, and we were really going full-speed-ahead. It seemed like we were getting new highway and bridge jobs almost every day of the week. We worked real hard, and sometimes it was a struggle just to keep up. But I learned so much, it was a pleasure to come to work!"

According to employees from that era, the key to RK&K's growing success in highway and bridge design during the 1970s and 1980s was its knack for keeping clients happy, so that "repeat work" would keep flowing into the firm. This followed the philosophy first established by Sandlass and Wieman and later emphasized in the decades that followed. What was the secret to making sure that the "clients stayed happy?" According to veteran engineer, John Huber, it was the ability to pull together for the good of the firm as a whole: "Sure, we had our ups and downs over the years. But when the big crunch came and we had to get a job out on time, we all seemed to pull together and get it done! And that was a really good feeling."

Freeway interchange in Baltimore County. The Windlass and Southeast Freeways interchange includes a 1,407-foot curved steel plate girder bridge—the largest of its kind in Maryland—and designed by RK&K.



Bridge over Monacacy River

A PORTRAIT OF WORK AT RK&K

Having first moved their Baltimore offices to North Calvert Street in 1946, RK&K now occupied offices in four rowhouses on the east side of the 1000 block. Work areas were very sparce. Professional staff had one drafting table, senior designers had large layout tables, and project engineers had a wood desk in addition to a drafting table and one phone for their group on that desk. Contract plans were prepared on mylar, although some linens remained. Migration from hand lettering to "Leroy lettering" was well underway. All work areas were air-conditioned, which was a welcomed change. Smoking, however, was permitted throughout all work areas. There weren't yet, of course, copying machines, fax machines or desk top computers, but a few senior designers had massive Friden (a mechanical plug-in) calculating machines. A committee of the employees operated the coffee concession, which generated not only sufficient funds for coffee/tea/hot chocolate, but also funded an annual crab feast.

The majority of RK&K's professional staff was male (and white). Greater diversity resulting from the expansion of professional consulting services and greater diversity in college civil engineering programs wouldn't really be seen until the 1980s when women entered the RK&K work force in larger numbers.

Transportation Planning

As RK&K's transportation work was expanding, a wave of environmental awareness and corresponding regulation was being passed to address the negative effects of new transportation infrastructure. This would have a profound effect on how the industry completed projects and open a wide array of new services for RK&K.

The growing awareness of environmental degradation and the backlash against aggressive, top-down urban planning, exemplified by Robert Moses's extensive projects in the New York City area, contributed to a growing environmental movement in the United States. This movement emphasized the importance of considering environmental impacts and the voices of local communities in planning processes. It led to the introduction of several federal regulations which profoundly changed the way transportation projects were studied, evaluated, reviewed, and approved. This included the National Environmental Policy Act (NEPA) in 1970, perhaps the most influential environmental law passed during this period. It mandated that all federal agencies consider the environmental impacts of their actions and decisions and consider alternatives that might produce fewer adverse impacts. NEPA also ushered in greater public participation by requiring public review and comments on environmental documents.

The Clean Air Act (1970) and Clean Water Act (1972) were aimed at controlling air and water

Photos of the bill signings for NEPA (1970), Clear Air Act (1970), and Clean Water Act (1972)

pollution by setting standards for emissions by controlling pollutant runoff to restore the nation's waterways. For transportation projects, the Clean Air Act meant ensuring that projects did not exacerbate air pollution levels beyond federal standards, that transportation plans had to be in "conformity" with the state's air quality goals. This resulted in an emphasis on public transportation and other alternatives to reduce emissions from cars and trucks. The Clean Water Act required the need to manage stormwater runoff during and after construction. Infrastructure projects had to secure permits if they discharged dredged or fill material into waters, ensuring minimal harm to aquatic ecosystems. Other regulations like Section 4(f) (1966), the Endangered Species Act (1973), and the Surface transportation Assistance Act (1978) required avoidance of impacts to parks, endangered wildlife, and consideration of the social, economic, and environmental effects of projects.

These new policies and regulations were seen early at RK&K. By the 1970s, work outside of Maryland was expanding with offices growing in North Carolina and Pennsylvania. Former partner John Bell spent a decade working in Raleigh and recalled, "we were down there with a commission to design 38 miles of I-95 and that was just one of the many jobs we won over the years. We worked out of an office in Raleigh, and we did any number of jobs there. At one point we even branched out to West Virginia for a while and opened a small office in Beckley. We did the first environmental impact study ever performed in North Carolina, and that was important because those kinds of impact studies would soon become a whole new area of business for RK&K in Baltimore."

"I remember how Bill Kahl called me one day in 1974 and explained that we had a big job going in the Baltimore area, and it required an impact statement of the kind I was learning about in North Carolina." Bell hurried back to Baltimore and went to work on the project, which eventually became the "Baltimore-Annapolis Transportation Corridor Study" (BATCS) and paved the way for the construction of I-97 (during the 1980s and early 1990s), which now links Annapolis and Baltimore.

"It was a very interesting period, " remembers another former partner, "because transportation planning was just getting started. And today, it's obviously a big part of the process of building new highways and bridges." An entry-level engineer and future partner, David W. Wallace, who transferred to the Transportation Planning Department in 1974 soon after arriving at the firm, said that the mid-1970s were a very exciting time for RK&K, "John Bell and I and a lot of other people at this firm worked on what was affectionately called 'BATCS,' and when you drive that 26-mile freeway from the Baltimore Beltway to Annapolis, it's a great feeling to know that you had a hand in making it all happen."

While the I-97 project went forward, said Wallace, the highway planners at the firm were making great strides with several other major projects, and "our planning department grew a lot in the 1970s." The firm completed

planning studies on the Capital Beltway, where it goes through Rock Creek Park, and worked on studies involving the Northwest Expressway (I-795), and MD 10 in Anne Arundel County. These are only the most prominent of a very long list of planning projects during the 1970s.

A new team of RK&K managers was arriving in the early 1970s and their leadership would prove crucial in developing several new initiatives for the expanding firm. This included construction inspection and transit, both of which proved to be major growth areas for the firm. Beyond technical services, the firm increasingly engaged in industry advocacy, led by partner Emil Kordish who was deeply engaged with the American Council of Engineering Companies (ACEC), as an advocate and industry expert who would represent that body before Congress and before many state governments. Ultimately, Kordish would go on to become an expert on such questions as quality-based selection and safety standards.

Integrity

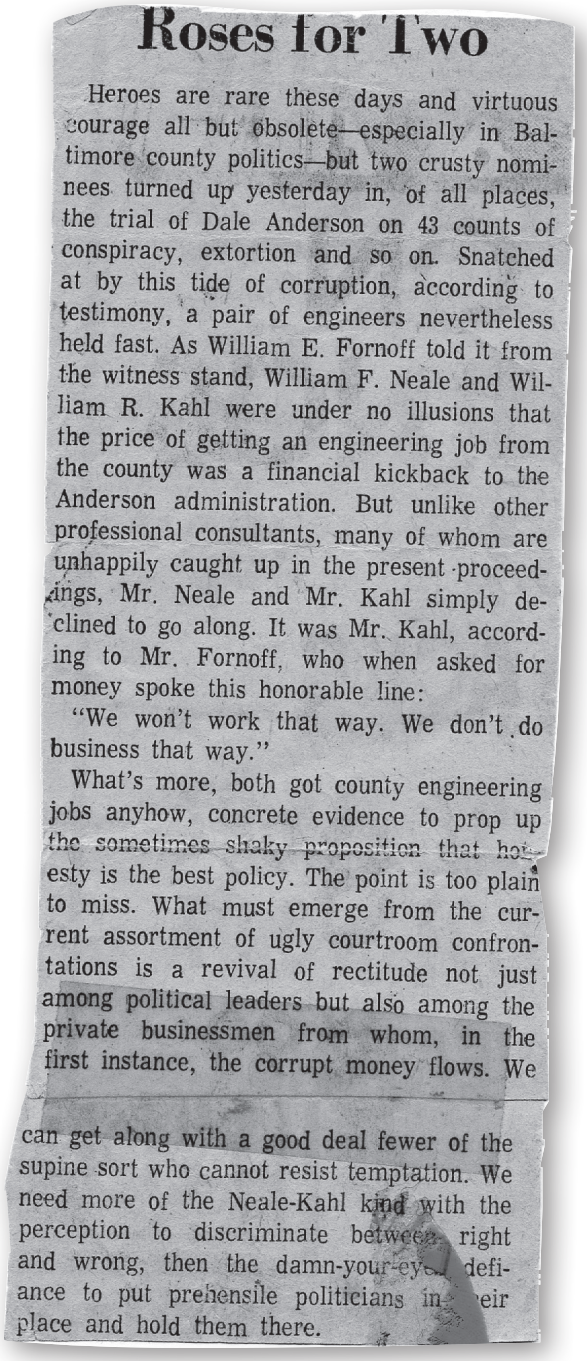
Spiro Agnew served as the Governor of Maryland from 1967 to 1969 before becoming the U.S. Vice President under Richard Nixon. In the early 1970s, while serving as Vice President, Agnew was investigated for criminal conspiracy, bribery, extortion, and tax fraud. The allegations dated back to his time as Baltimore County Executive and continued during his tenure as Maryland's governor. Agnew was accused of accepting kickbacks from engineers and architects in return for lucrative state contracts. These were typically related to infrastructure and public works projects. As payments flowed in from these contracts, a portion would allegedly be returned as kickbacks to Agnew and other officials. In 1973, Agnew entered a no contest plea to a single count of tax evasion, stemming from these alleged kickbacks. He became the second Vice President in U.S. history to resign from office. As part of the plea deal, Agnew was fined and put on probation but served no prison time.

Around the same period as the Agnew scandal, Dale Anderson, the Baltimore County Executive, was convicted on extortion and tax evasion charges. His charges were also related to accepting bribes in exchange for county contracts. The Anne Arundel County Executive and later the Maryland State Comptroller, Joseph Alton, was embroiled in a scandal where he was accused of receiving kickbacks from contractors. In 1973, he pleaded guilty to conspiracy and was sentenced to prison. The public works departments in Maryland were a particular area of focus during these investigations. Many of the kickbacks and bribes were related to infrastructure projects, reflecting a pattern of corruption within the State's contracting process.

These scandals, particularly Agnew's, had significant national implications. Agnew's resignation came amidst the broader Watergate scandal that would later lead to President Nixon's own resignation. The Maryland corruption cases of the 1960s and 1970s exposed a culture of graft and unethical practices in public office, leading to increased scrutiny and calls for reforms in the State's political and contracting processes.

As history would later record, RK&K maintained its standards of integrity during this difficult period and refused to meet the demands for kickback payments by corrupt officials. According to several partners, at one point in the early 1970s, the firm's refusal to 'pay off' elected officials for receiving work on the Baltimore Beltway project, and this resulted in RK&K losing the project entirely. Despite its growth, partners of that era noted that the firm suffered from the decision not to make kickbacks. As a former partner summarized, "we did the right thing, ethically, and in the long run, it was obviously the correct decision to have made." To this day, many professionals in the engineering business recognize RK&K as one of the few firms that refused to pay kickbacks. According to staff from that time, the price for insisting on integrity was high. "We stayed clean on the Agnew thing, and it cost us dearly. We lost a lot of business, and we even had some layoffs. But everybody at RK&K was behind the decision 100 percent. Our pride meant more than greed and we proved it in a difficult situation."

According to several RK&K employees, the decision not to pay crooked politicians for engineering work was unanimous throughout the firm after long-time partner Bill Kahl explained that he had been approached by Baltimore County officials who told him that further work on Beltway projects would require the illegal bribes couched as political contributions. A common approach was for an elected official to have staff go around to engineering firms with a list of projects and an associated list of dollar contributions to get a given project. "We simply refused to do it," said Kahl during an interview long after his retirement, while explaining that the decision had cost the firm substantial dollars in the early 1970s. "It didn't require much thought; we just knew that paying off county officials wasn't something that we wanted to be part of."



Roses for Two

Heroes are rare these days and virtuous courage all but obsolete—especially in Baltimore county politics—but two crusty nominees turned up yesterday in, of all places, the trial of Dale Anderson on 43 counts of conspiracy, extortion and so on. Snatched at by this tide of corruption, according to testimony, a pair of engineers nevertheless held fast. As William E. Fornoff told it from the witness stand, William F. Neale and William R. Kahl were under no illusions that the price of getting an engineering job from the county was a financial kickback to the Anderson administration. But unlike other professional consultants, many of whom are unhappily caught up in the present proceedings, Mr. Neale and Mr. Kahl simply declined to go along. It was Mr. Kahl, according to Mr. Fornoff, who when asked for money spoke this honorable line:

"We won't work that way. We don't do business that way."

What's more, both got county engineering jobs anyhow, concrete evidence to prop up the sometimes shaky proposition that honesty is the best policy. The point is too plain to miss. What must emerge from the current assortment of ugly courtroom confrontations is a revival of rectitude not just among political leaders but also among the private businessmen from whom, in the first instance, the corrupt money flows. We can get along with a good deal fewer of the supine sort who cannot resist temptation. We need more of the Neale-Kahl kind with the perception to discriminate between right and wrong, then the damn-your-eyes defiance to put prehensile politicians in their place and hold them there.

After Vice President Spiro T. Agnew resigned and the system of illegal payoffs by engineering companies in Maryland was exposed, the Baltimore Sun reported on how RK&K had refused to make the illegal payments. In a story of January 16, 1974, the paper explained:

> TWO ENGINEERS ... [WHO WERE] SOLICITED FOR KICKBACKS REFUSED TO PAY, [A] FORMER [BALTIMORE] COUNTY ADMINISTRATIVE OFFICER TESTIFIED YESTERDAY. MOST OF THE CONSULTANTS WHO PAID OFF CAME TO HIM SEEKING WORK AND WITH AN UNDERSTANDING OF THE PAYOFF 'SYSTEM' THE...[FORMER OFFICIAL] TESTIFIED IN THE FEDERAL COURT TRIAL OF DALE ANDERSON, THE COUNTY EXECUTIVE. BUT TWO MEN HE ASKED FOR MONEY... TURNED HIM DOWN. HE SAID THEY WERE WILLIAM F NEALE OF WHITMAN, REQUARDT & ASSOCIATES, AND WILLIAM R. KAHL, OF RUMMEL, KLEPPER & KAHL. "MR. KAHL SAID, 'WE WON'T WORK THAT WAY; WE DON 'T DO BUSINESS THAT WAY."

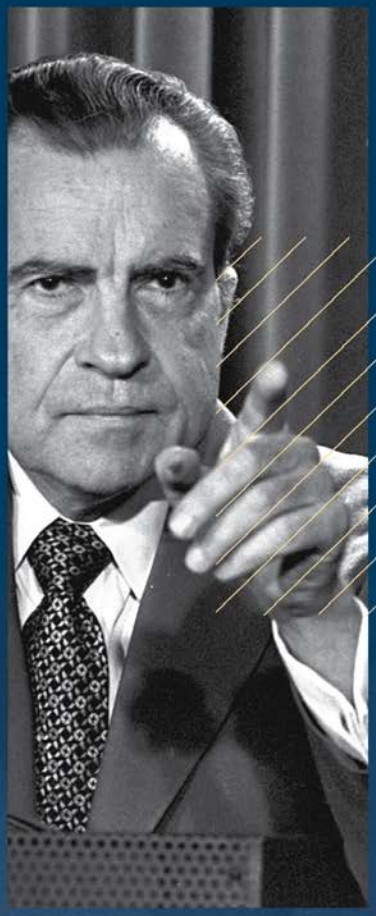
On the same day that this news account appeared in the Morning Sun, the evening paper in Baltimore published an editorial lauding RK&K and Whitman, Requardt & Associates for their refusal to participate in the seamy political scam.

Former partner David Wallace reflected on ways the firm sought to maintain Bill Kahl's model of integrity: "When we were around the partner table, we were always

AMERICA 1973

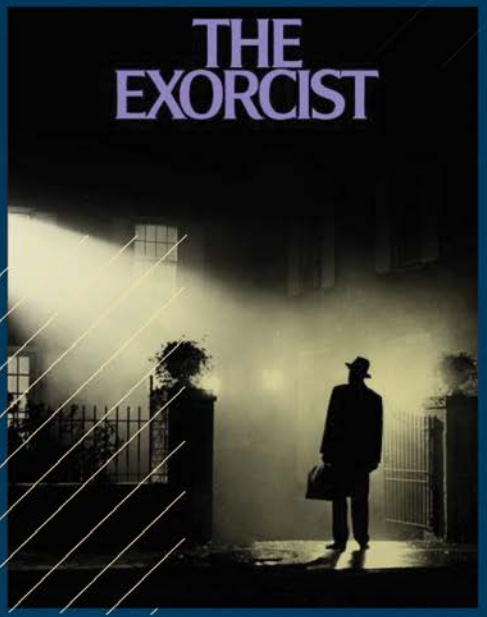
GENERAL HISTORY

In January, the U.S. signed the Paris Peace Accords, officially ending American involvement in the Vietnam War. The last U.S. soldier left Vietnam on March 29.



PRESIDENT

Richard Nixon



ENTERTAINMENT

"The Exorcist" was released and became a cultural phenomenon, while "The Sting" won Best Picture at the Oscars.

SPORTS

The Miami Dolphins defeated the Washington Redskins in Super Bowl VII, completing the NFL's first and only perfect season.

COMP-TRON, THE COMPANY WITHIN A COMPANY

In the late 1950s, RK&K bought its first mainframe computer, the IBM 1030, a revolutionary technology at that time. Computers were in their infancy but offered clear utility to aid in engineering computation. Al Stallknecht and other young RK&K engineers were fooling around with early, primitive computers. They developed software that generated rapid calculations for highway and bridge designs, hydraulics, soil mechanics, and bridge pier design far faster and more accurate than laborious hand computations. During the early 1960s, the firm continued to invest in new computer systems. By the mid-1960s the firm purchased an IBM 1130. This investment in new technology was significant, and to ensure that this didn't stress the firm's resources, the partners decided to create a wholly-owned subsidiary that would own and manage the firm's IT infrastructure. This company would become known as Comp-Tron, Inc.

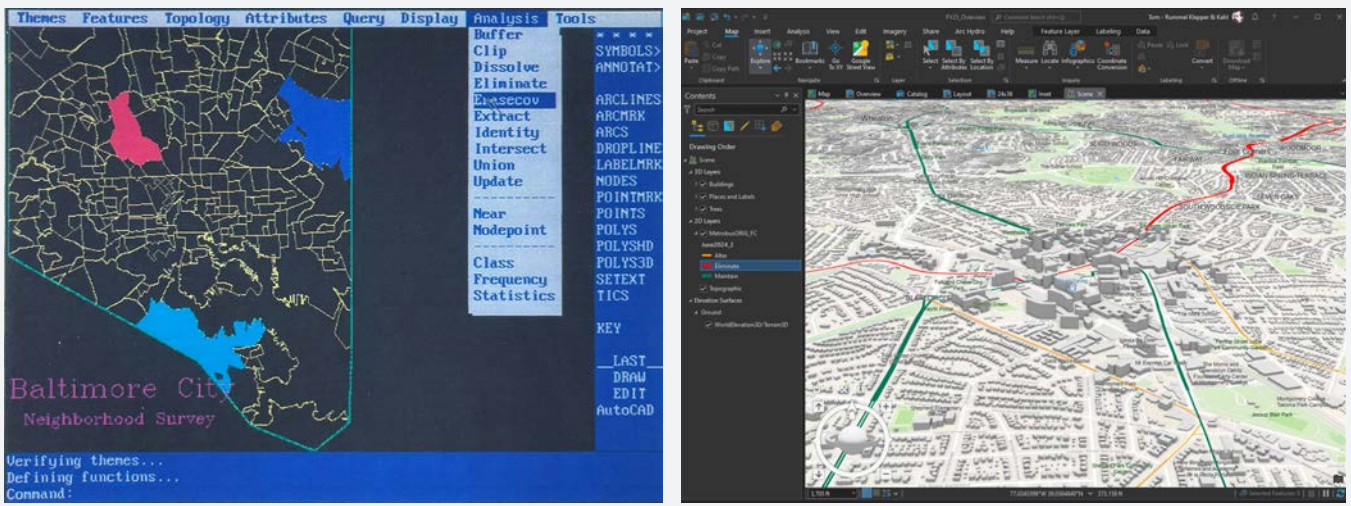
Over the following three decades Comp-Tron would continue to grow its services with RK&K. The services would not only include managing RK&K's IT, but also provide and service computer and networking services to outside entities, including several engineering competitors. Comp-Tron would also develop and support software for engineering work. By 1982, it had evolved into a computer software time-sharing business. Jim Ridenour, who moved over to Comp-Tron in 1985, recalled the rudimentary mainframe computer that filled an entire room. "It was huge," he said, "and it had about as much power as a cell phone does today!" For many local firms, though, gaining access to Comp-Tron's time-saving engineering programs marked a major advance. An example software was CTCoGo, an early civil design software that facilitated the design of roadway alignments, converting survey information into topography and computation of cut/fill areas among other features. This was a precursor to the civil design software that would eventually become integral to transportation engineering work.

RK&K's "Computer Center," 1950s IBM 1030 version. This 1957 photo reflects the early era of "punched-card" computing at the firm.

Eric Crawford, the last employee hired by Comp-Tron (1993), still with RK&K at the 100th anniversary.

Extending into the 1990s, Comp-Tron occupied its own space in RK&K's Mosher Street headquarters. Eric Crawford, still working at RK&K at the time of the 100th anniversary, was the final employee hired by Comp-Tron in 1993. He recalled, "we installed a complete network system, soup to nuts, for Michael Baker and several other competitors. We sold AutoCAD and ArcGIS to competitors and did customized programming for others. In Mosher Street our offices were separated from the rest of the building by walls. We had our own kitchen and bathrooms, and a separate entrance and address."

However, in the early 1990s the business logic for Comp-Tron faded quickly. The computer revolution spread throughout the consulting industry and companies that formally utilized Comp-Tron's services built their own IT groups. Further, the sophistication of civil design software increased quickly, with software companies like Bentley offering tools more capable than what Comp-Tron could offer. In 1994, the partners decided to dissolve Comp-Tron, most of whose employees "rejoined" the parent company. But Comp-Tron lives on. One of the final initiatives the company started was helping governments computerize their vast, confusing underground infrastructure maps. Today, this work goes by the name of Geographic Information Systems (GIS).



| ***Screenshots from GIS product developed by Comp-Tron (1993) and a 3D model from today.***

conscientious and transparent on political contributions. The reality is that politics in our society runs on money, and if you favor a politician's position regarding our infrastructure industry, then you are motivated to give to that politician. Clearly, it is a fine line as to when you should, or should not, contribute to a political campaign. Our preferred approach was to support political campaigns via an Industry Group of engineering firms and/or construction firms...thus not making it about which firms/companies contributed (and perhaps thus sought special favors), but rather the infrastructure industry as a whole offering their support. In other cases, we would discuss political solicitations with our competitors and make decisions together as a group, 'Is this a politician we want to support? Who else is supporting them?' At those times, if a politician that we desired to support was holding a publicly open fund raiser, we would call other engineering firms and inquire if they were also supporting that politician. If enough of our competitors were supporting that politician and were also planning on attending the event, then we decided we should go as well. If only a few firms were supporting the event, we didn't do it."

There were periods, throughout the 1970s, including during the "kickback era," when assignments slowed to a crawl. RK&K's consulting business depends heavily on government contracts, and thus the ups and downs of the economy often determine if jobs are scarce or abundant. For instance, the late John Eder, a longtime RK&K employee, accepted his 20-year watch in 1994 with a "thank you" to the firm "for keeping me on board during some lean years (1976-1979). There were times when it was difficult to 'create' work to stay alive. Once, things were so bad that when the messenger was out for a couple of days I delivered the mail!"

However, as the 1970s continued, the RK&K partners and employees, secure in the knowledge that they had and continued to have "fought the good fight" for honesty and integrity in the political process, turned their attention back to the core mission of ensuring that each and every job with RK&K's name on it would meet the highest quality standards of their industry.

1980 to 1998

The 1980s saw a conservative resurgence with the election of Ronald Reagan in 1980. His policies, dubbed "Reaganomics," emphasized tax cuts, deregulation, and reductions in government spending, aiming to stimulate the economy. Technology began its rapid ascent.

The personal computer revolution started with companies like Apple and IBM introducing home computers. This decade also marked the early stages of the digital age and globalization, as companies started to establish a more global presence. While the economy improved, the AIDS epidemic emerged as a significant health crisis. Internationally, the Cold War witnessed dramatic events. U.S.-Soviet relations fluctuated, with early tensions like the 1983 Korean Airline shootdown. However, the rise of Soviet leader Mikhail Gorbachev ushered in policies of glasnost and perestroika. The decade closed with the symbolic fall of the Berlin Wall in 1989, heralding the imminent collapse of the Soviet Union.

At RK&K, as the 1970s gave way to the 1980s, RK&K's long list of clients demonstrated just how far the firm had come. One veteran RK&K employee who watched the firm's growth carefully over the years was Charlie Clarke, a construction specialist who had joined the firm in 1954. "When I first arrived in 1954, we had about 60 employees, but by the time of my retirement (1987), that figure was up to around 270. I attribute our growth to the pattern of excellence that we tried to develop in everything we did. From the first day I worked there, I was told: 'We want to get it right. We'd rather lose money on a job than get it wrong!' And that was our philosophy from beginning to end." One major job that Clarke was especially proud of took place at the Inner Harbor as RK&K participated in the widely publicized renovation of the downtown waterfront.

Bill Kahl Retires

As the 1980s started, Bill Kahl concluded the company was in good hands, retiring in March 1981. He wished to spend more time at his large farm in Reisterstown pitching hay, looking after his horses, and restoring vintage motor cars, including three rare, four-cylinder Woods Mobillettes manufactured between 1913 and 1917. Kahl eventually moved to Jupiter, Florida and continued to enjoy life for nearly another quarter-century. When Kahl, the last of the name partners, retired, it marked the end of an era in RK&K's history. Bill Kahl had assiduously guided Rummel, Klepper & Kahl for a remarkable 34 years – through periods of substantial growth, transition, and a few dry spells. The scope of the firm's engineering work had exploded since his arrival at 1021 North Calvert Street in 1947. He made sure RK&K kept pace with the changing demands of government and industry while looking after employees like a doting father.

BILL KAHL

The engineering business is a service business," Bill Kahl used to say. "Any firm can hire good talent, but the successful firms are the ones that use that talent to furnish good service." Kahl knew that people, not a company's name, made the difference. In his 34 years as a partner at RK&K, he continued Ed Rummel's tradition of treating employees as members of an extended family and giving the client superb work. For Bill Kahl, no task was too small if it helped the firm succeed.

"Bill considered himself an employee of RK&K and not a partner," said retired partner Harry Schmale. "He spent his life as a down-to-earth engineer." William R. Kahl "set the tone for the firm," noted former partner Bill Hellmann. "He was a gentleman's gentleman and a lovely person in every sense of the word. And he was a man of great vision. The company is the way it is today because of him."

There's no doubt Kahl was a gifted engineer, yet he was practical minded as well. After working long hours at the firm, he would hurry home to his large farm on Reisterstown Road near the Baltimore City line to tend to his agricultural chores. He became such a dedicated farmer that Kahl sometimes arrived for work in the morning with bright purple stains covering his arms and hands. "It was sheep dip," remembered a veteran of that era. "We were all yawning and reaching for that first cup of coffee and Kahl had been up since the crack of dawn dipping his sheep!"

Bill Kahl (second from the left) post retirement with other Partners, including Howard Klepper (front, center)

David Wallace called Kahl an incredibly hard worker "who didn't have a big ego. He was an old-style engineer who kept us on the straight and narrow and didn't mind getting his hands dirty. And he worked hard at keeping a certain family feeling between the employees and partners." Kahl regarded his role in landing the design work for U.S. 50 (the Washington-Annapolis Expressway) as a high point of his career. He was as deeply involved in that extended project as anyone in the firm.

Redevelopment of the Inner Harbor

William Donald Schaefer never studied civil engineering. He couldn't use a slide rule or manipulate a CADD computer mouse. Yet in his 15 years as Mayor of Baltimore and eight years as Governor of Maryland, Schaefer became the best thing that ever happened to civil engineering firms. In the 1970s, 1980s, and early 1990s, Schaefer's "do it now" credo echoed throughout the State and led to massive public projects, particularly in RK&K's niches of highway and transit engineering and water and wastewater treatment.

Schaefer's crowning achievement as mayor, beyond restoring pride and optimism to dispirited city residents after the 1968 riots and decline during the 1970s, was Baltimore's gleaming waterfront gem, the Inner Harbor. While many firms and individuals played a role in bringing this dream to fruition, it was RK&K partner Gus Noack who served as the original design engineer for infrastructure development underpinning the Inner Harbor's rebirth. According to several partners, Noack spent a good deal of time on a trip to Stockholm marveling at that Scandinavian city's harbor development. He devoted hours to producing sketches he brought back to Calvert Street and incorporated into his design. Those plans were the first of many RK&K Inner Harbor assignments and gained high praise for Noack and his pivotal role in a 60-minutes documentary entitled, "Global Harbors: A Waterfront Renaissance."

Partner Charlie Clarke remembered the pride at RK&K when the downtown waterfront drew national

RK&K was a major designer of the city's Inner Harbor revitalization, while helping to build new bulkheads, docks and floating piers.

The Harborplace complex opening in 1981. RK&K helped design the pleasing walkway, piers and most of the streets in this photograph.

applause. “We prepared the dredging plans and the foundation and seawall designs, along with the bulkheads. We also did a good bit of street relocation. That was a good feeling, to be part of that whole redevelopment, which gave such a lift to Baltimore.”

In 1980, the Rouse Company’s Harborplace festival marketplace opened to rave reviews and packed crowds. Millions flocked to see it each year. It set new standards that Rouse replicated to resuscitate other urban waterfronts. Two years later, I-395 connected the Interstate Highway system to the downtown area and the following year was the opening of the Charles Center subway station just blocks from the Inner Harbor, where RK&K was intimately involved.

A current photo of Harbor East and Federal Hill in Baltimore, a continuation of the waterfront development started at the Inner Harbor.

AMERICA 1983

GENERAL HISTORY

The domain name system was introduced, setting the foundation for the internet's growth

PRESIDENT

Ronald Reagan

ENTERTAINMENT

Michael Jackson's album "Thriller" became a cultural phenomenon

SPORTS

The Baltimore Orioles won the World Series (their last as of 2023), defeating the Philadelphia Phillies

New Leadership

Standing close by Schaefer in this period was a young engineer who later would join RK&K not once, but twice. William K. Hellmann had worked his way up from a design engineer at the State Highway Administration to the top post at the affiliated Interstate Division for Baltimore City (IDBC), where he planned, designed and managed $2 billion of prime city highway construction. Just as important, Hellmann served concurrently as Mayor Schaefer's transportation adviser. His achievements were widely recognized, including a citation for creatively surmounting obstacles during construction of the Fort McHenry Tunnel. In 1986, the American Public Works Association named him one of the nation's top ten public works engineers.

Hellmann's unpretentious, hands-on management style endeared him to colleagues. When he decided to leave the IDBC for a private-industry job, he sought the advice of two industry veterans whose judgment he trusted, RK&K's Bob Seitz and Gus Noack. Over lunch, Hellmann explained his job offer from another firm and sought their advice. To his surprise, they asked, "Why don't you come work for us?" So, in 1983, Hellmann joined RK&K as an Associate working primarily on Delaware projects. However, his stay was brief. Fifteen months later, Hellmann received a phone call from Maryland Governor Harry Hughes: Would he like to run the State's Department of Transportation? "It was the best job I ever had. It was the most fun I ever had," Hellmann recalled. "What did [comedian and filmmaker] Mel Brooks say? 'It's great to be the king'? Well, it was great fun to be the boss" of all transportation activities in Maryland.

| *I-68*

| *Fort McHenry Tunnel construction*

SECRETARY HELLMANN

There were stories about Bill Hellmann during his time as Secretary that made their way around the transportation community. One story that circulated mentioned a person who was a couple minutes late to a meeting Bill had called. The conference room door had been locked. The message was clear—with Bill, you were on time (or much better, a bit early) or you missed out.

Bill's value to the state extended well beyond his tenure as Secretary. He had excellent command of public and private financing for transportation. He was repeatedly called on in the decades after he left the state government to get involved in funding strategies and "blue ribbon commissions" on transportation funding. Near the end of his career, he served on the Maryland Transportation Authority Board as the Board's engineering and transportation expert.

Fortunately for RK&K, after his three-year tenure as MDOT Secretary he came back to the firm. "When Schaefer ran for governor in 1986, Harry Schmale and Bob Seitz had already talked to me and asked, 'Do you want to come back as a partner?' And having to put four kids through college, I said, 'Oh, yeah.' I told Schaefer when he was running that I was only going to stay till the [increase in the] gas tax passed the legislature and then I would leave." During this period, Schaefer and Hellmann made lasting imprints on transportation in the city and state, launching and expediting major interstate road projects and long-overdue mass transit construction in the Washington suburbs and metropolitan Baltimore. This explosion of construction work proved a boon for local engineering consultants.

Mike Krupsaw, who joined RK&K in 1978, was immediately thrown into one such undertaking: construction of the long-delayed Inner City (now Martin Luther King Jr.) Boulevard and connecting highways. "I was told I could probably spend my entire career working on that job," he recalled. "However, under Mayor William Donald Schaefer and his 'get it done now' approach, the remainder of the project was finished in just two years."

PROTECT THE BUFFALO

Former partner Harry Schmale was the originator of the "Buffalo Story." Schmale frequently preached to his fellow partners the need to sacrifice personal gain for the good of the firm, which he referred to as "the buffalo." The way Schmale explained it, vast herds of buffalo provided Native Americans with their survival needs, such as food, clothing, and shelter against the elements. The tribes' very existence depended on doing whatever they could to protect these magnificent animals. Similarly, the men and women of RK&K, like Native American tribes, are dependent on the firm, the buffalo in Schmale's analogy, for sustenance. When evaluating the fiscal consequences of business decisions, Schmale urged colleagues to "protect the buffalo."

That constant refrain struck a deep chord. "Protecting the buffalo" became embedded in RK&K's way of thinking. To his fellow partners, Schmale's admonition took on new meaning. They saw a need to re-create the firm's old family atmosphere. They sought to focus greater attention on the well-being and contentment of RK&K employees, the lifeblood of this corporate buffalo. Employees should be guided by actions that are in the long-term interest of RK&K. Today the buffalo has become the unofficial mascot of RK&K.

This metaphor can be seen in RK&K's one profit center structure. If the firm has one profit center, then everyone can help the buffalo, and focus on what's good for RK&K and not just their group or office.

In later years, the buffalo idea led to other employee-centered initiatives, such as improved vacation policies, annual picnics, and updated 401(k) plan and new benefits packages, and scheduled social events. A different way of running the firm had been set in motion, yet all designed to "protect the buffalo." RK&K employees received toy stuffed buffalos and were encouraged to take "Mr. Buffalo" on their travels and send back photos. Within 15 months, "Mr. Buffalo" had visited all 50 states and even Antarctica. Harry Schmale's vivid buffalo analogy remains relevant and timely. Today new employees still get a stuffed buffalo and are told the story of the buffalo as part of their orientation.


| Rocky Mountain National Park, CO


| Abbey Road


| Estonia


| Stockholm, Sweden


| San Francisco, CA


| Moreston Island, Queensland, Australia


| Lisbon, Spain


| Castel Gandolfo Gardens, Italy


| Badwater Basin, CA

A PORTRAIT OF WORK AT RK&K

Toward the middle of the 1980s it was clear RK&K would need to begin embracing the future. Engineering technology leapfrogged into the computer age. The firm's growth created office space problems. A large contingent of senior partners was nearing retirement age. Increasingly, the firm's new hires were college-trained engineers (including a few women) rather than high-school draftsmen.

Jim Zito remembered the working conditions: "We were occupying some of the homes along the 1000 block of North Calvert Street so you're essentially working in a row home. The houses were one next to the other with openings in the walls, so you'd have to walk from one building to the next to the next by going up or down stairs.

"All the walls were paneled at the time with tile flooring. There were a lot of drafting tables, one after the other after the other. Most folks sat at drafting tables with the exception of the project managers who had desks.

"The space that we had in the row house was very segmented. You were actually going from one room to another room versus a big open space. So, if you were coordinating with some other department, you had to go up or down three or four different flights of steps and over one building, and in some cases, down the street six or seven buildings to meet with someone else.

"Later we occupied space on St. Paul Street, so then you had to walk to 1010 St. Paul Street and back. Actually, it wasn't too bad. People looked upon it as a time to take a break to walk outside and get some fresh air.

"Dress was more formal than it is today. Everybody wore a shirt and tie and the engineers all had their sport jackets as well. And the draftsmen were wearing shirts and ties back in that time, too."

Chuck Easter started his career at a drafting board in the third-floor Structures Department of the rambling Calvert Street townhouses. "It was so crowded" in those small rooms, he recalled, "you couldn't pull your chair out without hitting someone!"

David Wallace remembered "in the old days, we worked in what we called 'rabbit warrens.' It was quaint but not very functional. It was easy to get lost in those old houses on Calvert Street but we were used to it. The partners had offices in 1035 N. Calvert Street. They were off by themselves."

According to Zito, "It was in a time when people were free to smoke while they were working and most of them did. You'd have smoke-filled air. They'd put out their cigarettes on the floor, something that today seems repulsive."

There was a lighter side to this cramped arrangement, Zito added. "I can remember at 1021 North Calvert Street in the basement there would always be a poker game going on at lunchtime with pennies, every day, for the longest time."

Boom Times in Maryland

The 1980s saw a seemingly endless series of major projects throughout Maryland. RK&K conducted the civil work for The Johns Hopkins Hospital's huge new Outpatient Center and two associated parking garages. This project included a crucial underground pedestrian tunnel linking the busy outpatient building to the main hospital across Broadway to the Metro subway station under the roadway. Complicating the assignment was the need to protect a 99-inch pressure sewer bisecting the site.

Inspection services on the lower portion of the $150 million rehabilitation of the Jones Falls Expressway (I-83/JFX) continued RK&K's participation in this major interstate roadway that deposits traffic in the heart of downtown Baltimore. The firm performed similar work on the JFX back in the early 1960s. Building continued on the Baltimore-Annapolis Expressway (I-97) with RK&K engaged for over two-and-a-half years in both design and construction inspection, among other assignments.

In 1984, RK&K was assigned a critical portion of the long-anticipated National Freeway (I-68) through Western Maryland. It conducted planning studies to evaluate alternative alignments along the final 19-mile gap of this vital east-west interstate. The firm then initiated final designs for a six-mile segment near Flintstone. Forty engineers worked overtime to complete this assignment on an accelerated schedule. Finally, RK&K was chosen to inspect the entire project except for the portions it designed, a task that required 45 inspectors to do the job right.

Also in Western Maryland, RK&K conducted extensive hydrologic studies for the City of Frederick, whose downtown suffered two devastating floods in the 1970s. Construction began in 1983 on a closed-conduit design to control the flood-prone Carroll Creek and was completed ten years later at a cost of $60 million.

Closer to Baltimore, RK&K assisted in the major reconstruction of 7.4 miles of the Baltimore Beltway between US 40 and the Baltimore-Washington Parkway, including four miles of the parkway from the city line to BWI Airport. RK&K also designed the reconstruction of four miles of I-270 north of Rockville and undertook a major roadway and interchange project of immense complexity, the Milestone Project, in which the new Father Hurley Boulevard provided key access in Germantown from I-270 to Marriott Corporation's new headquarters building.

RK&K engineers proudly witnessed the 1985 opening of the Fort McHenry Tunnel, which cost $750 million and took five-and-a-half years to complete. The firm had been a design subcontractor for this eight-lane, immersed tube tunnel that completed I-95 through Baltimore. It is the widest underwater tunnel in the world.

Meanwhile, RK&K's exemplary work on highway design and construction documents for the Northwest Expressway (I-795), including ten miles of roadway, six interchanges, 26 bridges and four miles of a rail transit

line in the median, won the "Outstanding Engineering Achievement" award in 1987 from the Maryland Section of the National Society of Professional Engineers.

Washington Metro, Gallery Place Station. RK&K played a major role in designing this widely-praised subway station in the nation's capital.

RK&K continued in those years to assist the State in defending against claims associated with the building of the first section of the Baltimore Metro subway. Later RK&K was assigned as a prime consultant to prepare a feasibility study "for a light rail transit line in the northern corridor" following the Northern Central Railroad line from Hunt Valley to downtown Baltimore. That was just the beginning of work on another of Schaefer's "do it now" projects.

In the Washington region, RK&K designed two massive Washington Metro stations downtown, Farragut North and Gallery Place, that won architectural plaudits. The firm eventually would be deeply involved in designing nine segments of the Washington Metro, more than any other engineering firm.

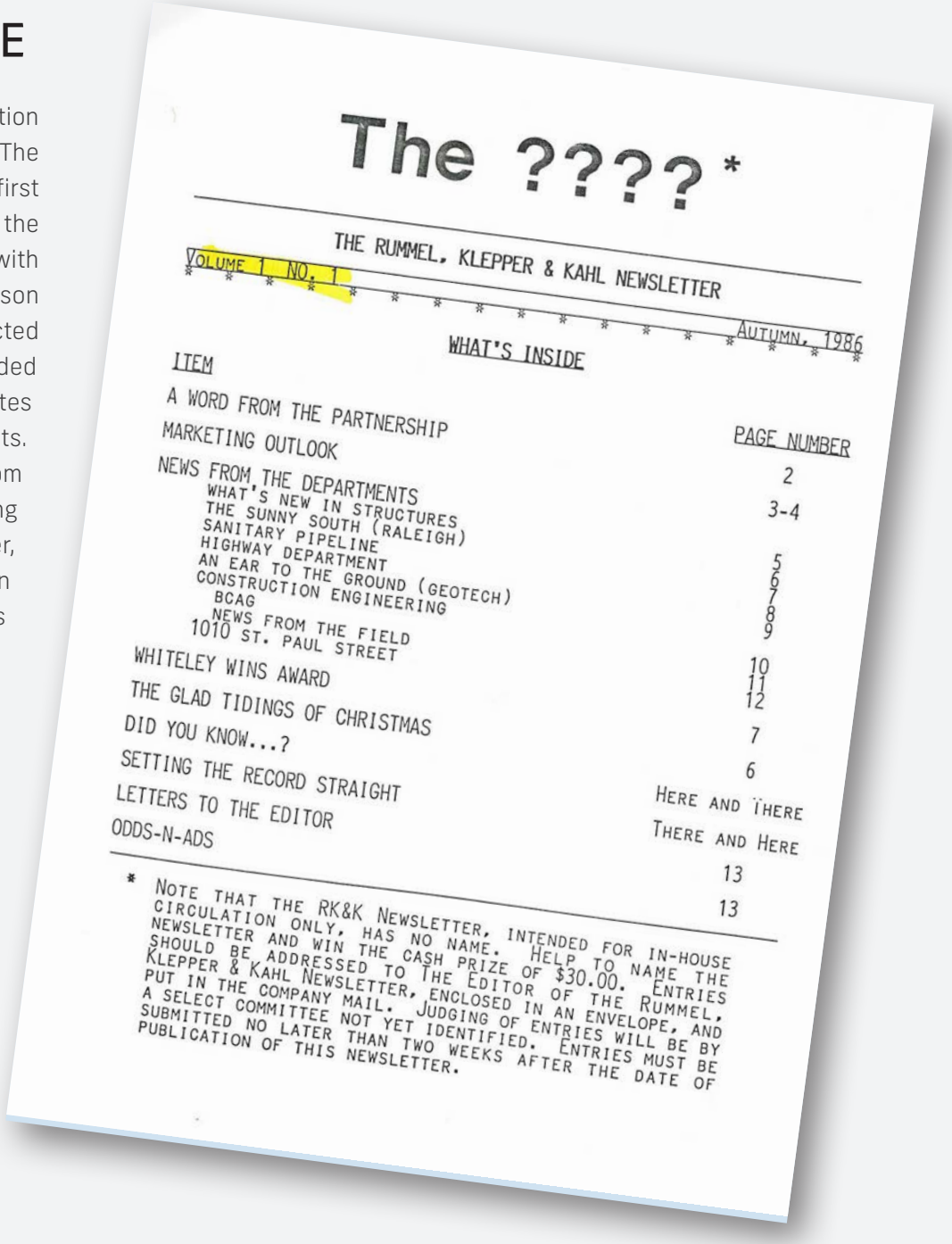
In the summer of 1987, employees were informed of another large assignment: "We recently received notice to proceed on a new project, Maryland Route 115, Inter-County Connector (ICC) in Montgomery County" to conduct three hydrologic and hydraulic studies for three crossings. That's the same $2.5 billion ICC project that would be under construction 20 years later, with RK&K leading the team of General Engineering Consultants overseeing all design and construction activities.

During the 1980s, Maryland's Eastern Shore provided fertile turf. RK&K's extensive design for the new Choptank River Bridge, more than a mile in length leading into the town of Cambridge, won the 1987 "Innovative Excellence in Engineering Design Award" from the American Council of Engineering Companies/Maryland Section. The other Shore project of note was the much-publicized Ocean City Beach Replenishment program. It got underway in May of 1988 with Governor Schaefer tossing the first symbolic shovelful of sand. Wet sand was dredged from the ocean and then pumped onto the beach for four months – 2.2 million cubic yards of it. RK&K served as construction manager.

Sanitary engineering projects seemed to be never-ending and always complicated. These included the on-going rehabilitation of the Montebello Water Filtration Plant to increase its capacity by 50 percent; the insertion of two

THE KRONICLE

In fall 1986, the first edition of what would be named The Kronicle was published. This first edition had no name, and the partners held a competition with a $30 cash prize for the person who came up with the selected name. This first edition included a marketing outlook and updates from the company departments. It opened with a message from the partners, which looking back from nearly 40 years later, provides an interesting read on the state of the firm and issues that were being discussed:



The ????*

THE RUMMEL, KLEPPER & KAHL NEWSLETTER

VOLUME 1, NO. 1 — AUTUMN, 1986

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* NOTE THAT THE RK&K NEWSLETTER, INTENDED FOR IN-HOUSE CIRCULATION ONLY, HAS NO NAME. HELP TO NAME THE NEWSLETTER AND WIN THE CASH PRIZE OF $30.00. ENTRIES SHOULD BE ADDRESSED TO THE EDITOR OF THE RUMMEL, KLEPPER & KAHL NEWSLETTER, ENCLOSED IN AN ENVELOPE, AND PUT IN THE COMPANY MAIL. JUDGING OF ENTRIES WILL BE BY A SELECT COMMITTEE NOT YET IDENTIFIED. ENTRIES MUST BE SUBMITTED NO LATER THAN TWO WEEKS AFTER THE DATE OF PUBLICATION OF THIS NEWSLETTER.

A Word From the Partnership…

In its early years with Ed Rummel at the helm, RK&K was more of a family than a company. This was natural, given the small size of the firm, narrow scope of our practice, and the limited quarters in which we were housed. Every man was a marketer, every man a designer, every man a draftsman, as the situation required. Some of you remember those days…

Ed would have been proud to see the way his professional family has grown – from a building structures practice to a reputation for competence and experience in all aspects of transportation, water resources, geotechnical and construction management engineering; from a handful of male employees to nearly 200 men and women professionals; from one converted row house to offices in Baltimore, Harrisburg and Raleigh; from a strictly local identify to recognition for successful projects as far west as Iowa, north to New York, and south to Louisiana and Florida; and from slide rules to the advantages (and headaches) of computers.

But this kind of growth carries a price of less flexibility and informality. More rigid departmental organization to satisfy the procedures and schedules imposed by our varied clients and more specialization of RK&K people. As a result, we know less and less about the jobs our colleagues are working on, and worse, we tend to know our colleagues less – in short, we become more company than family. Over a period of time, this transition is gradual and subtle, and so goes unnoticed.

Some of these changes are inevitable and irreversible. But to the extent we can, the partners want to restore and rebuild a feeling and attitude of "family" rather than staff. This new newsletter, the brainchild of the RK&K associates, will help us do that.

In future issues, we will discuss some of RK&K's interesting projects, new assignments, joint ventures, share with you any plans for new branch offices or consolidation of our main office, the impact of the liability insurance crisis and how we can combat it through top quality performance, and other important matters, so that we all will have a better feeling for who the RK&K family is, and where we are headed.

Let us know about the things that are most important to you.

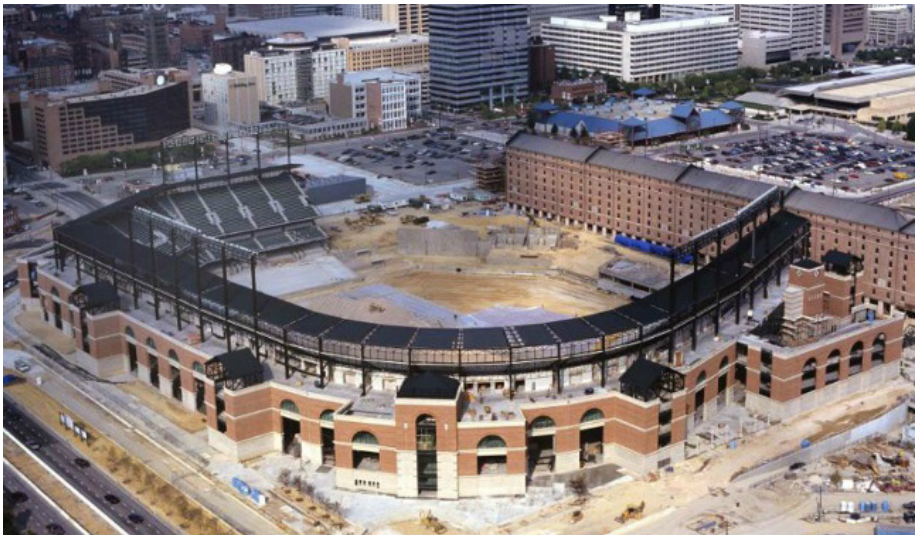
By Ralph E. Marquiss for the Partnership

turbine pumps and support equipment, plus modifications, at the Cromwell Water Pumping Station; and designs for an 80-million-gallons-a-day pumping station to meet the drinking-water needs of fast-growing Howard County and western Baltimore County at the Leakin Park Water Pumping Station.

Finally, RK&K spread its wings a bit with two significant local projects. The first involved an innovative expansion of the Walters Art Gallery into an adjacent mansion, Hackerman House. RK&K carried out a preliminary utility inventory, then conducted a study and came up with recommendations on what should be done. The second unique Baltimore job involved the Pride of Baltimore Memorial. The original Pride of Baltimore, a reproduction of an 1812-era topsail schooner, tragically sank in a white squall off Puerto Rico in 1986, taking her captain and three crew members down with her. RK&K provided structural engineering services for the conception, design and construction of this Inner Harbor memorial in just eight weeks. It was dedicated to the lost crew members on May 14, 1988.

Camden Yards and the Beginning of Site Development at RK&K

RK&K's much-praised traffic and transportation engineering efforts for the Inner Harbor helped land an assignment to conduct a Stadium Access Study giving the state options to either a) modernize Memorial Stadium and thus keep the Orioles from leaving Baltimore, or b) build a new baseball stadium for the Orioles. It was the mid-1980s, not long after the Baltimore Colts famously left town under the cover of darkness in green Mayflower trucks in a move to Indianapolis. In earnest, Maryland officials began planning for a new baseball stadium, partially out of fear that the Orioles could leave town as well. Planning for, designing, and building a new ballpark is a massive undertaking requiring professionals of all kinds. With Memorial Stadium's deteriorating condition and the Colts exit from Baltimore fresh on everyone's minds, a masterplan team led by international design firm RTKL, was tasked with finding the Orioles a new ballpark site from a list of properties that had recently been amended to



| *Oriole Park construction*

include the parcel immediately adjacent to the B&O Warehouse and Camden Station. To evaluate the various possible stadium sites, the team needed local knowledge of all the elements which factor into what makes a site viable for a new ballpark. At the top of that list is infrastructure, necessitating a civil engineer, preferably one like RK&K with a local team headquartered in the city. And so began the relationship between RK&K and the Orioles which has lasted over thirty years and counting. Partners David Wallace and Bill Hellman were responsible for placing RK&K in a solid position to provide engineering services for the redevelopment. The design and construction of this site was the true beginning for the creation of the Site Development Group at RK&K. John d'Epagnier led the team's efforts in the site and utility design for the project. It was a major success story for RK&K and led to the site group becoming a go-to design team for major re-development projects. Subsequent projects such as The Columbus Center, Baltimore Ravens Football Stadium (now M&T Bank Stadium), and a major campus improvements project at Johns Hopkins University furthered this reputation.

Another Move

RK&K's expansion took another big step in October of 1988, when the entire Baltimore operation moved to a new office at 81 Mosher Street, adjacent to the Jones Falls Expressway (I-83). The move was initiated as it was clear the firm had outgrown the multiple offices the Baltimore staff occupied. The rowhouses along Calvert Street, the offices on Saint Paul Street, and in Lansdowne were simply too small (totaling about 36,000 square feet), too fragmented and inefficient. The five story, brick "Butler Paper" building in the Mount Royal area was selected from a number of potential sites (the building had been built at the turn of the 20th century as a manufacturing facility for International Harvestor). Following a feasibility study, the 55,000 square foot building was purchased in 1986 and completely renovated, including a new conference room/elevator/stair tower addition.

Although many wondered how RK&K would ever fill such a big space (early thoughts were that a retail store could occupy the "annex" and the fourth floor would be available to rent out), when moving day came on October 23, 1988, the building was fully occupied by 122 staff (not including 63 construction inspectors working in the field within the Baltimore metropolitan area). For the first time since the early days on West Saratoga Street, all of the Baltimore staff would occupy a single building. RK&K would occupy the Mosher Street building for 29 years until 2017.

The decision to consolidate everyone in one office proved a huge boon to interdepartmental collaboration and cooperation with more energy in the office. Within a few years, however, the firm began to outgrow the office space again with the Structures Department de-camping in the early 1990s to renovated offices immediately across the street. Later, as growth continued, the Structures Department and other support functions moved to rented space on the entire first floor of the 600 block of North Calvert Street.

GOING TO THE WORK

Throughout the firm's history, RK&K's partners and staff have demonstrated a willingness to take on projects far from existing markets. As noted earlier, this included work early in the firm's history at West Point, and in the 1950s in Illinois. Following the work in Louisiana, the energy group would take on work in Ohio and Indiana. Today, the firm has taken assignments in places as far afield as Mississippi and Washington State. This willingness to take on projects and delivery quality services in new markets has been one of the reasons RK&K has found success in measured, organic, yet consistent growth during the firm's history.

Growth Around the Country

While business was booming in Maryland with hundreds of assignments, this period saw the growth of work in other regions. In North Carolina, Bill Kahl's and John Bell's efforts to secure jobs in the state was initiated in 1964, and by the spring of 1987, with Bill Butler at the helm, the Raleigh Office had 12 staff. It had redesigned an interchange of I-77 between Charlotte and the South Carolina line, one of only three roadway projects awarded by the state's transportation department, then strapped for cash, over the prior 10 months.

In Delaware, Bill Hellmann's second arrival at RK&K sparked a resurgence of work, where Bill focused much of his attention in growing work in the State. The firm would have a hand in just about every big road and bridge undertaking that took place in the State over the next several decades.

In Pennsylvania, RK&K's Harrisburg office worked on design and inspection contracts for the complex Vine Street Expressway (I-676) linking the Schuylkill Expressway to I-95 across center-city Philadelphia as well as the Mid-County Expressway (I-475), known as the "Blue Route," connecting I-95 at Chester with the Pennsylvania Turnpike near King of Prussia. RK&K also completed inspection services on the Pottstown By-Pass, I-95 near Philadelphia International Airport, and rehabilitation of the twin bridges over the Schuylkill River.

RK&K even worked in Louisiana during the 1980s, with one of the firm's most ambitious undertakings, civil site design and construction inspection contracts for the Sidney A.

Sidney Murray Power Station

Murray, Jr. Hydroelectric Station near Vidalia. This massive engineering job would eventually cost $550 million and was the largest low-head, run-of-river hydroelectric facility in the country. The Murray station, located on a man-made channel that diverts water from the Mississippi River to the Red and Atchafalaya Rivers, uses the natural difference in elevations between these river systems, as much as 26 feet under flood conditions, to generate electricity. It is an integral part of the U.S. Army Corps of Engineers' flood and sediment control system for the lower Mississippi River.

In Virginia during the 1980s, RK&K continued rehabilitating aging water mains on the sprawling Fort Belvoir military base. This involved restoring 70 miles of water mains to near-pristine condition. Then in 1988, RK&K opened multiple offices in Virginia. Partners Ralph Marquiss and Eric Weber established RK&K's Virginia Beach office in the Tidewater region and commenced marketing efforts. The first awarded contract was a water modeling project for the City of Virginia Beach Department of Public Utilities (DPU). In 1989, the first design contract was awarded for a water and sewer expansion project for the under-served Burton Station neighborhood. These projects led to the beginning of a long-term relationship with the City of Virginia Beach.

An Alexandria office in Northern Virginia was also opened and primarily functioned as a base for the firm's Building Construction Advisory Group so it could serve banks and other building clients in metropolitan Washington.

Future new digs! This photo was taken in 1987, shortly after RK&K purchased the building and before renovations began at 81 Mosher Street.

Perched beside the Jones Falls Expressway, RK&K occupied these new headquarters in 1988.

1990s—A New Decade

The 1990s began with the formal end of the Cold War, as the Soviet Union dissolved in 1991. George H.W. Bush navigated this transition and led an international coalition in the Gulf War against Iraq's Saddam Hussein in 1991, responding to the invasion of Kuwait. Domestically, the Rodney King trial and subsequent L.A. riots in 1992 highlighted racial tensions. The "Culture Wars" also intensified, addressing topics like abortion, gun rights, and gay rights. Bill Clinton's election in 1992 signaled a shift back to centrist policies. His tenure saw economic prosperity but was marred by personal and political controversies, including the Monica Lewinsky scandal, which led to his impeachment by the House in 1998 (though he was acquitted by the Senate in 1999). The 1990s were marked by the tech boom, with the rise of the Internet and companies like Microsoft, Google, and Amazon. This digital revolution transformed the economy and society, setting the stage for the 21st century. By 1998, the U.S. stood as the world's unchallenged superpower, but it faced complex domestic debates and evolving challenges on the global stage. This period laid the foundation for the profound transformations of the new millennium.

Within the regions where RK&K was doing business the economy and demographics continued to evolve. The move from a manufacturing to a service-based economy became more pronounced during this period, especially near Washington, D.C., Northern Virginia and parts of Maryland, which experienced growth in tech-related services, defense contracting, and IT. North Carolina, especially Charlotte, further emerged as a major banking hub. Pennsylvania and West Virginia continued to experience the decline of heavy industries like steel and coal. While some areas diversified into other sectors, others struggled with job losses and economic downturns.

The 1980s and 1990s saw a continuation of the suburban boom. Areas outside major cities like Philadelphia, Baltimore, and Washington saw significant growth, with new housing developments and business districts cropping up. The Immigration Reform and Control Act of 1986 and other factors led to increased immigration, diversifying the region. Northern Virginia and parts of Maryland, in particular, saw rising Latino, Asian, and African populations. By the 1990s, some cities began efforts to combat the urban decay of previous decades. Baltimore's Inner Harbor and Philadelphia's downtown, for instance, saw investments in infrastructure, housing, and businesses, aiming to attract residents and tourists alike. The presence of strong universities and research institutions (like Research Triangle Park in North Carolina) not only influenced local economies but also demographic trends, attracting international students and fostering tech startups. While some areas like the Research Triangle in North Carolina and Northern Virginia experienced population booms due to job opportunities and quality of life.

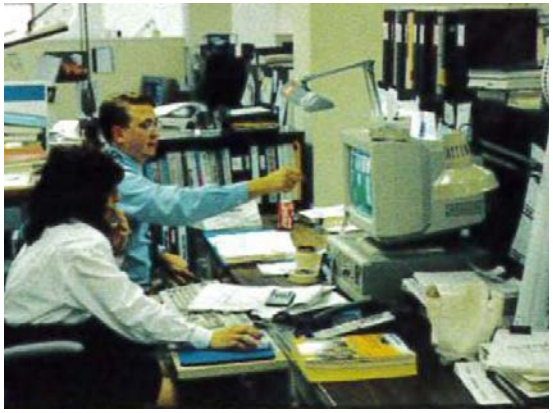
Surviving Tough Times

A deep national recession in the early 1990s made things tough for consulting engineers. "1991 and 92 were the worst," remembered David Wallace. "We were fortunate there were enough folks at the firm committed to projects so things didn't get too bad. Thank goodness, the money continued to flow for the priority road projects and the EPA [Environmental Protection Agency] came out with new mandates on wastewater treatment. We really benefited from that."

Though those times were difficult, the firm's tradition of going the extra mile for its employees continued. No one was laid off or lost his or her job because RK&K's business was down. Bob Freyman, who started at RK&K in early 1989, recalls those lean times during 1991-92. He feared that since he was the "new kid on the block" he would be laid off. "Harry Schmale, the administrative partner at that time, came up to me and in his dry style said, 'You are not going to be laid off. I'll have you wash windows if needed to keep that from happening.'"

In all economic cycles, the economy's roller coaster goes up as well as down. What followed the recession of the early 1990s was a tremendous uptick fueled in part by the advent of the Computer Age. A surge in state and federal spending for infrastructure improvements set new records during the rest of the booming 1990s. RK&K was ready to capitalize on this period of prosperity.

The Slow Adoption of Computers



By 1990, most of RK&K's operations were linked by high-speed computers, as the "on-line revolution" took off in earnest.

At RK&K, the growth throughout the mid-Atlantic and Southeast continued with more than 300 employees by 1990, the firm would expand its range of services and the engineering tools to complete this work. This growth required an important shift in technology. Though RK&K had developed its own engineering software for project designs and then offered it to others on a time-sharing basis, the firm had been slow to embrace personal computers (PC). PCs were very costly back then, and it wasn't until 1985 when partners Bob Seitz and Harry Schmale convinced the other partners that PCs were essential to stay competitive. At the time, RK&K had just nine terminals and did not have automated drafting capabilities. So, the firm announced a six-year computerization plan that envisioned one workstation for every two engineers. It was slow going, but two years later, employees had 30 computer workstations in the building.

MAJOR PROJECTS AT RK&K FROM 1969 TO 1989

Even a brief look at some of RK&K's major projects between the year when America landed the first man on the moon (1969) and Ronald Reagan's last year in office (1988) is enough to show the wide scope of engineering activities in which the modern firm was now engaged. Some examples:

Transit

» ***The Washington Metro.*** This project included work on both the Farragut North station and line segments and cost $30 million. RK&K developed design and contract plans, along with construction specification for a 600-foot center platform station and 1,200 feet of box-type cut and cover tunnel. At the Gallery Place and Dupont Circle stations, RK&K would provide many of the same services, on a project that cost $26 million. The client on both assignments was the Washington Metropolitan Area Transit Authority.

» ***Phase 1, Section B of the Baltimore Region Rapid Transit System.*** This mammoth, $68-million project called for design, contract plans and specifications for a 6.2-mile surface line, six transit bridges, three highway bridges, and a very large surface parking lot. The client was the Maryland Mass Transit Administration.

Dupont Circle Station

Port Improvements

| *Locust Point Marine Terminal*

» *Locust Point Marine Terminal.* This project called for a major refurbishing of Baltimore's major shipping docks, located on the south side of Baltimore Harbor. An $8-million project managed by the Maryland Port Administration, the Locust Point spruce-up required RK&K to provide design, contract plans, and specifications for a 1,200-foot-long "general cargo finger pier."

» *Inner Harbor Bulkhead and Constellation Dock.* This high-profile job lasted for many years, and continues even today, as part of the continuing "Renaissance" at the city's Inner Harbor. The work called for design, contract plans and specifications for 2,100 feet of relieving platform bulkhead, 1,060 feet of masonry shore protection and a 100-by-250-foot dock for historic vessel and tour boats. Performed for the Charles Center-Inner Harbor Management, Inc., quasi-public development agency, this project brought RK&K notoriety as a contributor to the city's revitalized downtown.

Environmental Engineering

» *Montebello Water Filtration Plants #1 and #2.* The City of Baltimore hired RK&K to provide design, contract plans, specifications and construction inspection on the rehabilitation of plants that would increase capacity from 240 to 360 mgd. This large-scale project cost $23 million.

» *Cromwell Water Pumping Station Addition.* Described by longtime partner Burt Cox as "a highly innovative project that called for lots of creativity," the Cromwell Pumping Station required the insertion of two 1.250-HP, 15-mgd vertical turbine pumps, plus support equipment, structural modifications, and signal and control telemetering. This $1.5-million gem was planned and designed for the Baltimore County Department of Public Works.

» *Sidney A. Murray Jr. Low-Head Hydroelectric Generating Station.* It was one of the largest and most ambitious hydroelectric engineering projects in the history of the United States. RK&K spent nearly a decade working on this monster-sized, $500-million dam project near Vidalia, Louisiana. The firm provided permit license applications, environmental assessments. Structural and geotechnical designs, contract plans and

specifications, and resident engineering and inspection services. The major client on this wide-ranging job was Forte & Tablade, Inc. of Baton Rouge.

Highways and Bridges

» *Arundel Expressway.* A $15-million project coordinated by the Maryland State Highway Administration, the Arundel Expressway (Route 10) called for RK&K to produce studies, design contract plans, then provide specifications and construction inspection for 2.5 miles of multi-lane expressway, plus two interchanges and 11 bridges.

» *The Baltimore-Annapolis Transportation Corridor Study.* Affectionately knows as "BATCS," the job assignment included alternate alignments, traffic analysis, environmental impact statements and public hearing testimony for a 20-mile, high-density corridor, including consideration of mass transit potential. The client was the Maryland State Highway Administration.

» *North Carolina I-95: This $30-million project was executed for the North Carolina Department of Transportation.* The project required design, contract plans and specifications on 36 miles of four-lane rural expressway.

Geotechnical Engineering

» *Waterfront Improvements, Inner Harbor, Project I.* A highlight for RK&K in the 1970s, the Inner Harbor "Renaissance" required numerous engineering services. This assignment called for geotechnical investigation, report and foundation recommendations, as well as designing bulkheads, relieving platforms, streets and utilities.

» *Waterfront Improvements, Seawall at Fort McHenry.* This project didn't cost a lot of money—only $200,000—but its cultural significance was huge. RK&K stepped in to help repair Baltimore's most famous historical landmark with preliminary engineering, design, contract plans, specifications, construction inspection and partial reconstruction and stone protection of existing masonry seawall.

"When we got our first computers, you had to sign up to use them to complete a portion of your work," recalled Jim Zito. Barb Hoage, a traffic engineering specialist, was hired in 1989 and discovered to her surprise, "We had the use of one shared computer and we would fight for time on it." Indeed, computers were such futuristic devices to the RK&K staff that when the Structures Department received its first computer-aided design and drafting (CADD) workstation in 1986, everyone stopped what they were doing and stood around watching such a wondrous leap in technology. "They marveled at this machine that could do in minutes what it took them months to do by hand," recalled the company's longtime graphics leader at the time, Henry Bankard.

Mike Myers came from the U.S. Army to RK&K in 1990 and observed that "...things were very antiquated. When I started, we had two CADD stations" in the Environmental Engineering Department. "That was a shock. People were sharing personal computers. Technologically, we were behind our peers. But this changed pretty dramatically within five years."

Bill Williams, a long-term RK&K administrative assistant during the late 20th century described the change that computers ultimately delivered. "I mean, I started here working on a typewriter, typing on stencils, or typing on carbons, and if you made a mistake, you had to erase six times. Then all of a sudden, starting in 1986, we got our first computers. And we thought it was the end of the world! We told each other, 'We'll never learn these things!' But by the mid-90s, what would we have done without them?" Drafting tables were giving way to workstations. User friendly software for engineering applications became available. RK&K's headquarters office and other office computers could "talk" to one another, exchange data files, and accommodate simultaneous engineering operations on a single file from multiple office locations. These new technologies led to the need for increased IT staff and a new staff of graphics and marketing specialists, and printing technicians to support RK&K's operations.

A Changing Workforce

When Barb Hoage arrived in 1989, she noticed another area where RK&K had slipped behind the times—there were only a handful of women beyond the administrative staff. "For years, I was the only woman in the room for meetings. Things did change. It was just the times. Still, it was a little tough. Sometimes Bill Hellmann would tell me to look away or hold my ears. This really upset me because I didn't want to be singled out." Hoage later became RK&K's first female senior leader.

By the 1990s, engineering schools were graduating many more female civil engineers and RK&K, prompted by its newer partners, started hiring them. After Bob Halbert and Mike Myers joined the Environmental Engineering Department within a few months of one another in 1989 and 1990, they suggested hiring non-engineers with

PROVIDING MOTIVATION FOR INVESTING IN NEW TECHNOLOGY

While the necessity of embracing new computer technology was clear, it may have taken a few motivated employees to make it happen. Debi Atkins recalls her start at RK&K, "I moved to Maryland in 1984 and after 12 years at another Baltimore based engineering firm, I started at RK&K on July 1, 1996. It didn't take me long to believe I'd made a big mistake. I liked everything about the place...except for the computers; they were awful! We had one decent monitor and one ancient, amber, out-of-focus, monochromatic DOS based "thing" that was only intended to be used for choosing icon commands for Microstation. My then much younger eyes were screaming, 'What are you doing to me?!' I kept appealing to the then head of IT, Chris Wright, who kept saying, 'You're not wrong, Deb, but the Partners are not going to spend more money on computers.' Not too long after I started, I was waiting for the elevator at the end of the day. David Wallace came up to me and asked me to step into to the nearby conference room. He asked me how I liked it at RK&K so far. Without even thinking, I blurted, "I like it a lot, but your computers really suck!" He asked why, and I explained how having the proper equipment helps you work more efficiently so you cannot help but pick up speed. And thus began the RK&K Computer Revolution. You're welcome!"

Remember When the Internet Was a Strange New Invention? by Lori Magoon

In the late 1990s, I took a course at the University of Maryland on Earthquake Engineering. Our homework assignment was to use the Internet to research large earthquakes that had occurred in the past. This thing called the Internet was not yet widely used in peoples' homes or at work. In fact, the only people at work who could access the Internet were our CADD operators. So, one day I asked one of our CADD operators, Karen Brehm, if I could use her computer during lunch to do my homework research. I had never accessed the Internet before and carefully typed in the website address with the goofy forward slashes. I got to the home page and that is where I stayed. The information I was looking for was not there and I told the professor it only had titles. I later realized that I had to click on the blue underlined text which was the link to take me to the detailed information that I needed to complete my assignment. Those were the days when we shared computers among three or four engineers, and most people would either read a book or play cards on them during lunch. Sometimes I miss the simple, unplugged life!

science degrees, which included many women. This change in hiring approach was needed because new environmental regulations were starting to require such things as reforestation and wetlands restoration on infrastructure projects.

The traditional route into RK&K for many old-timers, like work-study programs while in high school, was giving way to the need for advanced expertise in engineering, computers, mathematics, and the sciences.

Meanwhile, RK&K was finding it increasingly difficult to hire sufficient numbers of experienced engineers from other firms. The supply was tight and demand was heavy. At one partner meeting, in a moment of frustration, Hellmann said, "Darn it, quit worrying about that and let's hire smart kids out of engineering schools and train them. In five years, we'll have people with experience doing things the RK&K way." This approach of hiring professionals out of college remains a core tenet of how RK&K builds and trains staff, and is essential as finding and fostering talent is an essential element that has allowed RK&K to be as successful as it has been.

A LOW EGO FIRM

Al Grubb reflects on his time at RK&K: "I came to work for RK&K in the spring of 1993. I must admit that I was a bit apprehensive about moving to such a large firm, having worked the previous six years at a small engineering company. Some of my coworkers there told me that many of the engineers at RK&K had graduated from Johns Hopkins and that I should be prepared to deal with some large egos. Nothing could have been further from the truth. Everyone I encountered at RK&K, from top to bottom, was genuinely helpful, approachable, and respectful. I never expected to find such an atmosphere of "family" in a company of this size, but that is exactly what I found. I was also caught off guard by the level of appreciation shown to every employee. Upon the submission of the first project I was involved in after being hired, the project manager, Mike Krupsaw, invited me to a celebration luncheon along with others who had been involved. I had never experienced such appreciation with my former employer. After nearly 30 years, I am still thrilled to be part of a firm where so many remarkable people strive for excellence.

Environmental Engineering

During the 1990s federal agencies were increasingly cracking down on polluters and demanding major cleanups. The EPA was imposing strong regulations on localities to ensure clean drinking water for the nation's citizens and purification of wastewater before it was returned to rivers, bays and lakes. "In 1990," partner Bob Halbert recalled, "probably the largest job we had was the Montebello Treatment Plant. We had been working there since 1970, but in relationship to the projects we do now, they were very small. Of course, we had done lots of wastewater work since the 1940s with Mr. Klepper, but nowhere near the scale of our projects today. In 1990, we only dabbled in wastewater treatment."

Halbert's goal was to have RK&K "do exemplary work at whatever level required and prove to our clients we can take the next step. If you do the very best work, when the opportunities arise you can take advantage of them. We started by incrementally increasing our involvement in wastewater treatment facilities at Back River. We did improvements to the blower building and the digesters and conducted nitrogen removal studies. We incrementally worked our way up and then when a much larger project came up, like the $300 million enhanced nitrogen removal plan for the Patapsco Plant, we were ready."

One of the first jobs RK&K worked on during this time was the Stemmers Run Pumping Station and force main. It was a big improvement that included a major relief pumping station that was added to another adjacent pumping station. The new force main crosses Back River. That project was the largest in Baltimore County.

Two major undertakings surfaced in the mid-1990s. The first involved a massive study for Baltimore City of the Jones Falls Sewershed examining improvements that would eliminate sanitary sewer overflows from the Jones Falls. After all, the Jones Falls dumps its deposits into the harbor and from there into the Chesapeake Bay. RK&K planned and implemented improvements throughout the decade. Baltimore had been sued by the EPA and the Department of Justice and agreed to a consent decree. RK&K was hired to do all the follow-on work in the Jones Falls, which became one of the largest studies ever completed in Baltimore City history.

The second big environmental undertaking in the 1990s was a Comprehensive Plan for Water Facilities for Baltimore City. RK&K won the contract as a result of its superior work at the Montebello and Ashburton plants earlier in the decade. The contract called for a massive investigation of the city's entire water system, from the source, the Susquehanna River, the lakes, the reservoirs, all the way to the homeowners' water taps and everything in between. The study specified improvements, which led to other assignments upgrading pumping facilities and reservoirs later in the decade.

Expanding Transportation in Maryland

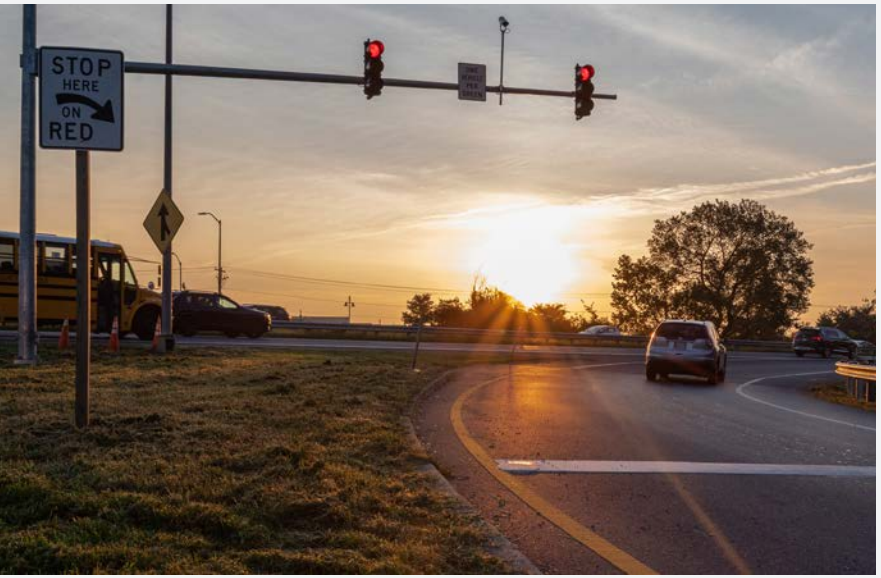
The firm completed extensive work along I-270 and in Montgomery County, Maryland, including key access roads to and from I-270, Father Hurley Boulevard and Observation Drive. The firm won awards for its collector-distributor road system on I-270 aimed at easing congestion along Montgomery County's high-tech corridor. "That was one of our best projects of the 1990s," said Jim Zito. "We were one of the first engineering firms to develop a collector-distributor system along an Interstate Highway in Maryland. In fact, some of the entrance and exit design details were published for the industry to utilize elsewhere." Rick Adams said this project "cemented the firm's relationship with Montgomery County" and led to a stream of civil engineering work for the state's largest jurisdiction that continues today.

RK&K also took on some unusual assignments, such as finding a suitable replacement location for an ice-hockey rink in Montgomery County and inspecting and evaluating an ice-skating rink in Prince George's County. Additionally, the firm worked on the $200 million Christopher Columbus Center for Marine Research at the Inner Harbor and the enormous expansion of the Baltimore Convention Center.

Pennsylvania and Virginia

RK&K's Pennsylvania staff continued intense assignments on numerous projects for the Pennsylvania Department of Transportation and won its first big contract from the Pennsylvania Turnpike Commission in 1998.

The firm's presence in Virginia grew significantly when it began providing engineering services to Richmond's Department of Public Utilities. This included new energy and corrosion (E&C) services, which began in Richmond in 1992. After winning the annual engineering contract for the City of Richmond Gas Department, the partners felt a dedicated natural gas pipeline group would be helpful in supporting this work. This generated enough business and attention that RK&K opened an office in Virginia's state capital. As the E&C group grew, the Richmond work was soon followed by contracts with Virginia Natural Gas (1995) and the City of Danville, VA Utilities Department (1996). RK&K continues to support these clients nearly 30 years later. Growth continued through the late 90s, with the addition of Washington Gas (WGL) as a client as well as the opening of two satellite offices to support Sempra Energy projects in Bangor, ME (1998, see below) and Elkin, NC (1999).



I-270: AN RK&K LEGACY

RK&K has been working nearly continuously on projects along I-270, the major interstate running through Montgomery and Frederick counties northwest of Washington, since the 1980s. This has included the design work for the collector-distributor system, planning work on multiple studies over several decades (the I-270 Multi-Modal Corridor Study, West Side Mobility Study, I-495/I-270 Managed Lanes Study, and the I-270 North Pre-NEPA Study), implementation of innovative roadway and ITS solutions to improve traffic operations under the nation's first progressive design-build transportation project (I-270 Innovative Congestion Management), and design and construction management GEC services for the reconstruction and widening the southern half of the highway to add managed lanes. This is merely one example of many that can be told across RK&K where our long-term, successful relationships with clients have seen us work on specific facilities over long stretches of time. And it shows how RK&K's work has become integral to the history of many of the facilities (across all our divisions and services) for the clients and jurisdictions we serve.

New Services

During the 1990s, RK&K's services would expand beyond transportation and water and wastewater projects to include projects such as major sports facilities, centralized chilled and hot water distribution systems, natural gas transmission, and rail transit facilities. Baltimore's Central Light Rail Line provided plenty of work, too. Built without federal funds, a rarity, the first 22.5 miles of this rapid-transit project were opened in 1992 in time for the inaugural baseball game at the new Oriole Park at Camden Yards, which, as noted earlier, RK&K was significantly involved in. Other light-rail segments were added later in the decade.

The firm's civil work on the baseball stadium, a breakthrough in "back to the future" design for sports venues, led to complex and delicate assignments on the adjoining Ravens Stadium: site development, utility relocation, service connections, geotechnical and foundation work, civil site work including parking lot and access, truss bridge connection to the light-rail station, and parking/transportation analysis. The rush job was finished in time for the Ravens' football season-opener in 1998.

This led to a new, complicated assignment tied to the building of FedEx Field (Redskins, now Commanders, Stadium) in Landover, Maryland. The firm designed a partial diamond interchange on the Capital Beltway (I-495), the main access road for Redskin Stadium, in record time. The work took 4,000 hours during a six-week period as RK&K crafted an alignment that avoided a 60-inch and an 84-inch water main, two major water valve vaults, two stormwater management ponds, a 100-year flood plain, the USAir Arena and its parking lots, a church, a school and a few businesses.

Another sensitive undertaking involved reconstruction of Main Street in historic downtown Annapolis, Maryland. RK&K placed all utilities underground, widened the sidewalks, narrowed the brick roadway, reconfigured the parking, and investigated the status and location of underground

Top photo: Reconstruction of Main Street in historic downtown Annapolis. Bottom photo: The project team

AMERICA 1993

GENERAL HISTORY

The Treaty on European Union (Maastricht Treaty) took effect, officially establishing the European Union (EU)

PRESIDENT

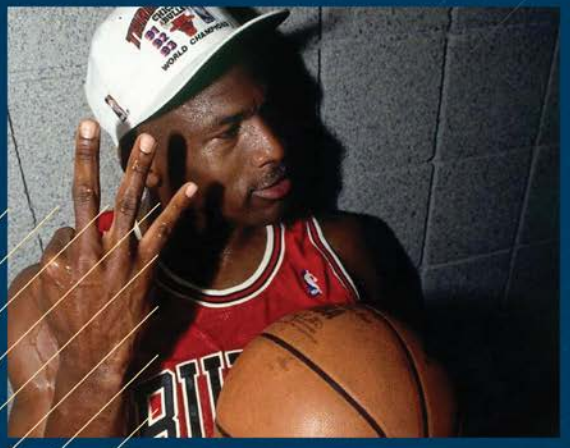
Bill Clinton

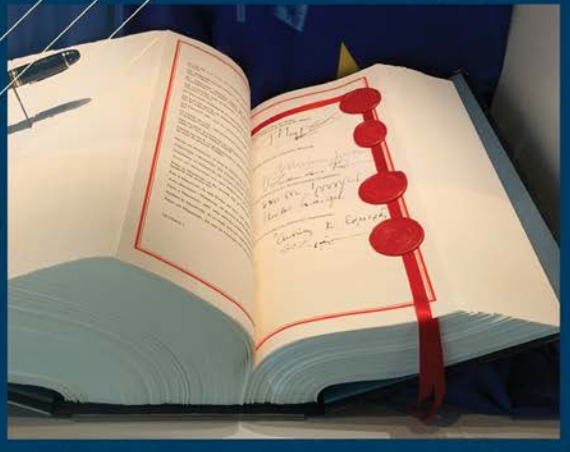
ENTERTAINMENT

Steven Spielberg had a big year with "Schindler's List" winning Best Picture and "Jurassic Park" becoming a massive hit, pioneering the use of CGI in film

SPORTS

The Chicago Bulls, led by Michael Jordan, secured their third straight championship title by defeating the Phoenix Suns





storage tanks, all while maintaining pedestrian and vehicle traffic and diplomatically navigating multiple layers of historic preservation groups, as well as city, county and state regulatory agencies. "The work was done in a setting that made you stretch to make the project succeed," noted David Wallace. For this work, RK&K won several engineering society awards.

RK&K designed and oversaw construction of new gas transmission and distribution systems tying the City of Bangor, Maine, to the Maritimes & Northeast Pipeline, which receives its natural gas from the Sable Island field near Nova Scotia, Canada. What made the project so daunting was Maine's narrow seven-month construction schedule before freezing weather set in.

One increasingly important area of service was environmental regulation and compliance. Regulations passed during the 1970s and 1980s were now dramatically impacting on federal, state, and local programs. In response, RK&K created two new groups, a water resources group and hazardous waste services group.

The Water Resources Group supplemented an already established environmental engineering and drainage expertise that had been gained from a wide variety of planning and design projects assembled by specialists in natural and aquatic resources. Swamps that had been routinely ''filled in" by previous generations were now protected by state and federal legislation and RK&K's specialists spent lots of time delineating, protecting, and enhancing these valuable resources. The clients for this highly creative new service included county, state, and federal agencies, along with the private sector.

While the drainage projects went forward, RK&K's Hazardous Waste Services Group was energetically assisting the federal government's campaign to clean up contaminated military bases. The first of these initiatives produced a major contract with the US. Army Corps of Engineers, which was administered out of the Corps' Baltimore District office. This contract called for environmental site assessment and remediation design and construction engineering at Vint Hill Farms Station, Virginia.

While completing that major project, the Hazardous Waste Services Group began to expand its list of public and private clients. Three of these were long-term clients of the firm: the State Highway Administration and Mass Transit Administration of Maryland, and the Delaware Department of Transportation.

West Virginia, North Carolina, Delaware, and Washington D.C.

In order to spread RK&K's wings westward, the firm formed a joint venture with Vanscoy Engineering in Keyser, West Virginia, and won a contract to perform construction inspection services for West Virginia's Division of Highways. The joint venture's work was so good it was later nominated for a state award. It came as no surprise

when RK&K soon purchased Vanscoy Engineering and gained a solid foothold in the Mountaineer State. This would be RK&K's first of only two acquisitions made to date.

Tommy Peacock

To the south, RK&K's North Carolina office witnessed a dramatic changing of the guard. Bill Butler, the firm's senior associate who had run the Raleigh office for a decade, retired after 49 years with RK&K. "He was a memorable character," recalled Keith Skinner. A big man at six feet, five inches, Butler "could be a bear and a pussycat at the same time. He was your best buddy away from the office but at work he wanted it done right and done his way." Butler handed responsibility for the Raleigh office over to Tommy Peacock, a respected 30-year veteran of the North Carolina Department of Transportation (NCDOT) where he was Chief Engineer of Preconstruction. Peacock's intimate knowledge of the Tar Heel State and its engineering community, not to mention his expertise in design and construction as well as his personal demeanor and strong leadership skills, proved to be a winner.

One of RK&K's first assignments after Peacock joined was completing the $15 million extension of Western Boulevard in Raleigh. Soon after, the Raleigh office was doing the preliminary alternatives analysis for a 15-mile U.S. 17 By-Pass around the town of Washington. Work on the draft environmental impact statement (DEIS) and preliminary design followed.

Among other projects was the I-73 Bypass at Rockingham, which involved delineating wetlands along two alternative routes noted in the DEIS and constructing the 11-mile freeway, as well as a hydraulics design contract with NCDOT. Peacock's team of about 20 also was asked to do most of the design work for the reconstruction, upgrading and beautification of the Baltimore-Washington Parkway (MD 295).

| *Churchman's Crossing*

In Delaware, RK&K won big contracts throughout the decade. RK&K's role in the widening and improvements to the Delaware Turnpike (I-95) began in the late 1980s and continued into the

1990s. The firm played a continuing role in the Churchman's Crossing area near the Delaware Turnpike in New Castle County with a detailed alternatives analysis study that led to a raft of multi-modal projects over the next 12 years. In 1991, RK&K won the "Outstanding Highway Project" award from the Delaware Department of Transportation for its work on State Route 896 from Porter Road to Muddy Run.

Another large project for RK&K helped transform an industrial wasteland along Wilmington's Christiana River into an improved version of Baltimore's Inner Harbor. Gus Noack's inspired infrastructure design back in the 1960s paved the way for RK&K to participate in the brownfields cleanup of the waterfront and Wilmington's exciting makeover of this area. The firm designed the two-mile, high-end walkway from the train station to the Riverfront Market and Shipyard Shops outlet, did the civil site work and laid out new street grids for what now is the popular Riverfront Wilmington (work that continues through the time of writing this book).

In Washington, D.C., construction inspectors from RK&K were kept busy on multiple road improvements in the nation's capital and on the Washington Metro, where the original system was completed in 2001.

Traffic Services

At the dawn of the 1990s, RK&K did not have a Traffic group and had been struggling to find a traffic engineer to generate signal design plans for the Baltimore Light Rail Line. The firm was lucky to hire a young traffic engineer, Barb Hoage. During the next decade the traffic team grew slowly but steadily, completing planning, design, and analysis tasks. This marked the start of a group that would grow to be one of the largest and most successful in the firm, with more than 100 staff members by 2023 across all markets and expand beyond "basic" traffic tasks to include the full gamut of design services, sophisticated analyses, traffic modeling and simulations, work zone management, ITS, and tolling.

REPUTATION MATTERS

Why did Tommy Peacock choose RK&K, with its small North Carolina presence, when he was pursued by larger local engineering companies? "The reputation of the firm was high. You could depend on their quality. And the partners appeared to be straight shooters. It looked like they were involved with what was going on. They knew what was happening by participating in the work."

Peacock also clicked with Hellmann when he came to Baltimore for his interview. "His desk looked like mine, paper everywhere. He seemed heavily involved in the work, which I liked. At some of the other companies where I interviewed their executives had shiny desks. There wasn't a piece of paper anywhere."

AWARDS

RK&K has gained recognition for its superior engineering. In 1992, the firm's precise, innovative work on the Vine Street Expressway (I-676 linking the Schuylkill Expressway to I-95 across the heart of Philadelphia) won the "Grand Conceptor Award" from ACEC of Pennsylvania.

The following year, RK&K's architectural and structural engineering work on the reconstruction of Baltimore's Hilton Parkway won the "Excellence in Concrete Award" from the Maryland Section of the American Concrete Institute.

In 1996, the firm won the "Outstanding Engineering Achievement Award" from the Baltimore Engineers Week Council for its superlative work on downtown Frederick's Carroll Creek flood-control project.

New Ways to Deliver Projects and New Places to Work

Along with these planning and design innovations, RK&K had become involved in helping to implement several new construction techniques. While the traditional "Design-Bid-Build" method of project procurement had remained the primary means by which most owners procured their projects, the 1990s saw a shift towards innovative or alternative methods such as "A+B bidding," "incentive/ disincentives" and "design-build."

These new methods were both highly creative and challenging. Steve Kagay, a former partner in the firm's Construction Engineering Department, said at the time, "... design-build...can certainly work on selected projects and we can expect to see an increased application of it in the future. We might as well accept the fact that design-build is attractive to many owners, change our way of thinking and get on with business. After all, times are changing and RK&K has not been successful for the last 75 years by ignoring change." Steve's words proved to be prophetic as design-build was destined to become an important part of RK&K's work in the 21st century.

In Virginia, RK&K's first was awarded from the City of Richmond DPW in 1995 that included transportation, water resources, and infrastructure design and construction. (Since that time, RK&K has held the DPW contract continuously with five consecutive contract re-selections over the span of the last 28 years.) This work with the City of Richmond led to RK&K's selection as the engineering firm selected to provide all civil, site, utility, and transportation design, along with extensive traffic engineering and forecasting for the $150 million expansion of the Greater Richmond Convention

Center, expanding it from one city block in size to a site that encompasses five city blocks. This project remains one of the largest public works projects in Downtown Richmond in the last 30 years.

| *Greater Richmond Convention Center Expansion*

Meanwhile, RK&K's presence became more well known in the Hampton Roads region after winning municipal stormwater, drainage, and utility design contracts for the Cities of Norfolk and Suffolk. In Virginia Beach, RK&K has been involved in the revitalization of the entire residential neighborhood of Lake Holly, located near the south end of the resort area for more than 20 years. This work included upgraded water and sewer systems, enclosed stormwater collection and treatment systems, new sidewalks, curb and gutter, and streets within the neighborhood. RK&K also became well respected for large diameter water transmission main design with the City of Norfolk DPU. The 48-inch Red Top to Nansemond Parkway raw water main replacement and the 48-inch Kempsville Road water transmission main projects were two major expansions for Norfolk in the late 1990s. RK&K also performed civil work for a residential community in Virginia Beach called Pocahontas Village.

Transportation began to take off in Virginia in the 1990s. RK&K was awarded the first contract with the Virginia Department of Transportation (VDOT) in 1994 for utility relocations in the Staunton, Culpeper, and Fredericksburg Districts. This was followed by two additional firsts with VDOT in 1995, the VDOT Statewide Design Contract and the Staunton District Construction, Engineering, and Inspection (CEI) Contract. One of the largest initial assignments under the Statewide Design Contract was the reconstruction of the US Route 29 and Route 210 Interchange outside of Lynchburg, Virginia.

These initial on-call contracts allowed staff to gain relationships with VDOT across the state which led to the selection for the first major stand-alone contracts with VDOT. First, in 1997, RK&K was selected for CEI services for the Farmville Bypass, a 2.5-mile expansion of an existing two-lane roadway to four lanes with a median, including two bridges and large amounts of earthwork. This was followed by two stand-alone design projects. The first was the Route 58 project in Washington, Grayson, and Smyth counties and consisted of the widening and reconstruction of approximately 9.4 miles of rural mountainous roadway with most of the project passing

through Jefferson National Forest, both in and around numerous trout streams. The second stand-alone project was for the design of the reconstruction and widening of four miles of Interstate 81 in Harrisonburg, Virginia that included two interchanges and several bridges. At the time, this was the largest design contract RK&K had been awarded in Virginia.

| *Farmville Bypass*

The Raleigh office continued to provide transportation planning and design services for the NCDOT, Federal Highway Administration, City of Raleigh and other local municipalities, and the firm's services in North Carolina were also expanding with the addition of natural environmental evaluation and mitigation and utility design services.

In Pennsylvania, RK&K first opened an office in Camp Hill, and then moved closer to Harrisburg. In 1997, RK&K opened a new office in Norristown, Pennsylvania, and won the firm's first-ever contract with the Pennsylvania Turnpike Commission in early 1998. Around this same time, as work continued on various projects for the Pennsylvania Department of Transportation, RK&K's York office opened.

In Washington, D.C., RK&K opened a small "office" in 1993 to provide a space to support a fledgling construction management practice in support of the city's Department of Public Works. While the office was short-lived and not regularly used by employees, it provided a District address and a place to collect local mail. Work in the District primarily consisted of construction inspection services for bridges and highways until Rick Adams joined the firm in 1986 and started spearheading transportation work in the 1990s.

RESTATING RK&K'S MISSION

In 1997, the firm's legal name was updated to reference a change to a Limited Liability Partnership (LLP), Rummel, Klepper & Kahl, LLP. Around this same time, the Partners adopted senior partner Bill Hellmann's succinct statement about the firm's business philosophy and relationship with employees.

This statement began appearing in marketing folders and other publications in the late 1990s and was included on an acrylic plaque given to every employee to celebrate the firm's 90th Anniversary in 2013.

RK&K is a partnership that promotes Teamwork.

We stress quality and service, are product-driven and responsive to our clients' needs.

We are technically strong, diverse and aggressive, yet respectful.

Our people are our greatest asset.

PART 4:

GROWTH

(1999 TO 2023)

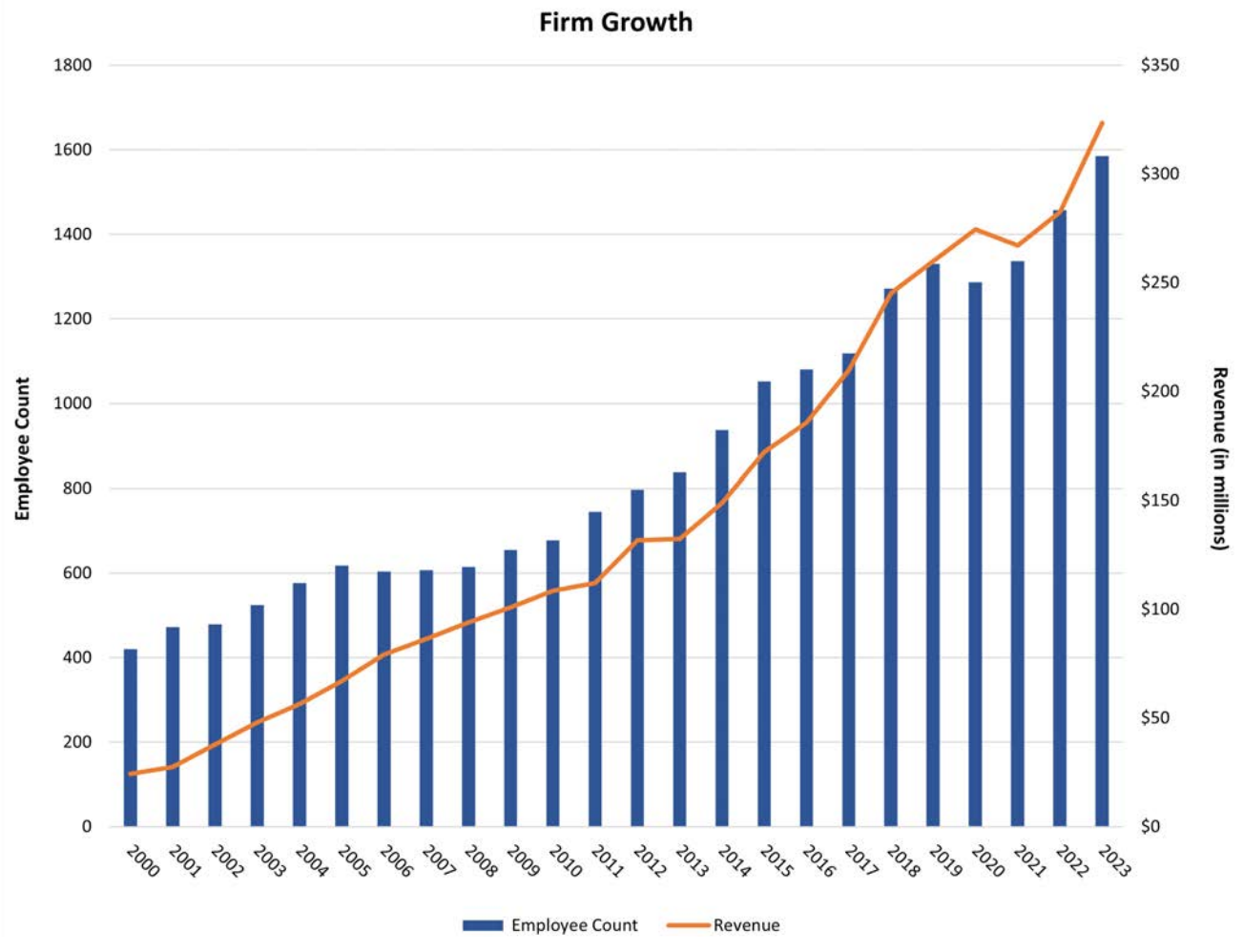
At the dawn of the new millennium, the U.S. economy experienced significant turbulence. The end of the 1990s saw the dot-com bubble, and when this bubble burst around 2000, it resulted in an economic downturn that led to the bankruptcy of many online companies. Politically, the year 2000 was marked by one of the most controversial presidential elections in U.S. history where the Bush vs. Gore election ultimately had to be decided by the Supreme Court. The political focus, however, would soon shift dramatically. In 2001, the nation faced one of its darkest days when al-Qaeda terrorists hijacked several planes, leading to the tragic events of 9/11. The Twin Towers in New York City were destroyed, and nearly 3,000 lives were lost. This catastrophe fundamentally reshaped U.S. foreign policy and domestic security measures.

Domestically, the mid-2000s presented more challenges. In 2005, Hurricane Katrina, one of the deadliest hurricanes in U.S. history, struck the Gulf Coast. New Orleans, in particular, faced severe devastation, prompting national discussions about infrastructure, preparedness, and racial and economic inequalities. Economically, while the nation recovered from the dot-com bubble, another crisis loomed. The housing market, for years buoyed by unstable subprime mortgages, began to falter. This culminated in the 2007-2009 recession, one of the most severe economic downturns since the Great Depression. The decade concluded with a significant political milestone. In 2008, Barack Obama was elected as the first African-American president of the United States, signaling a profound moment in the nation's long and complex history with race.

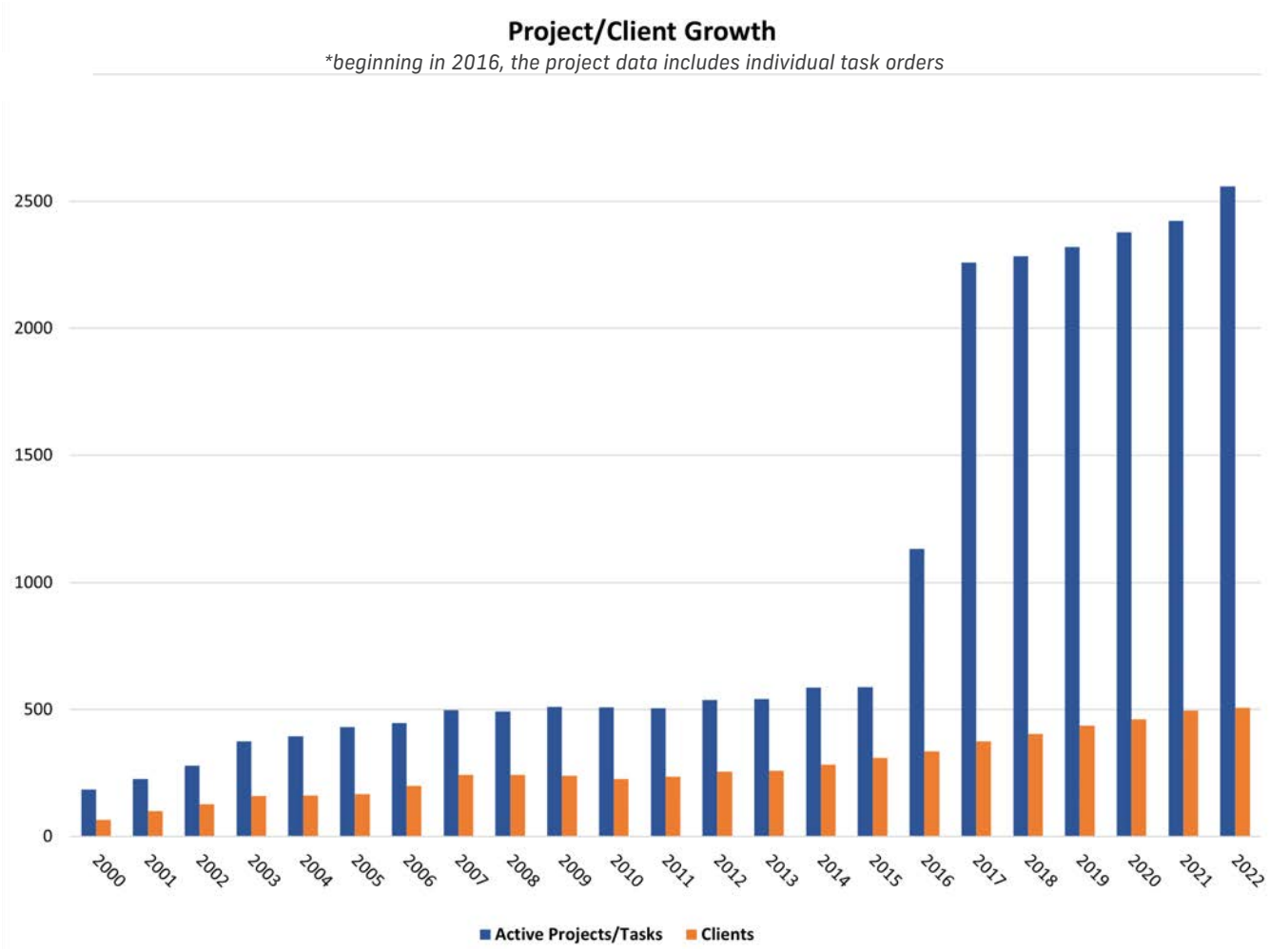
The new millennium would ultimately be a watershed for RK&K as well. Because of a steadily growing workload and winning an increasing number of larger projects, the firm experienced substantial growth by the end of the 1990s in terms of number of staff, offices, revenue, and geographic footprint. Building on long-term thinking, organic growth and fostering strong leadership, the firm significantly expanded its vision and was successful in solidifying opportunities beyond the Mid-Atlantic region with a focus on expanding markets and engaging in a variety of new disciplines.

Growth

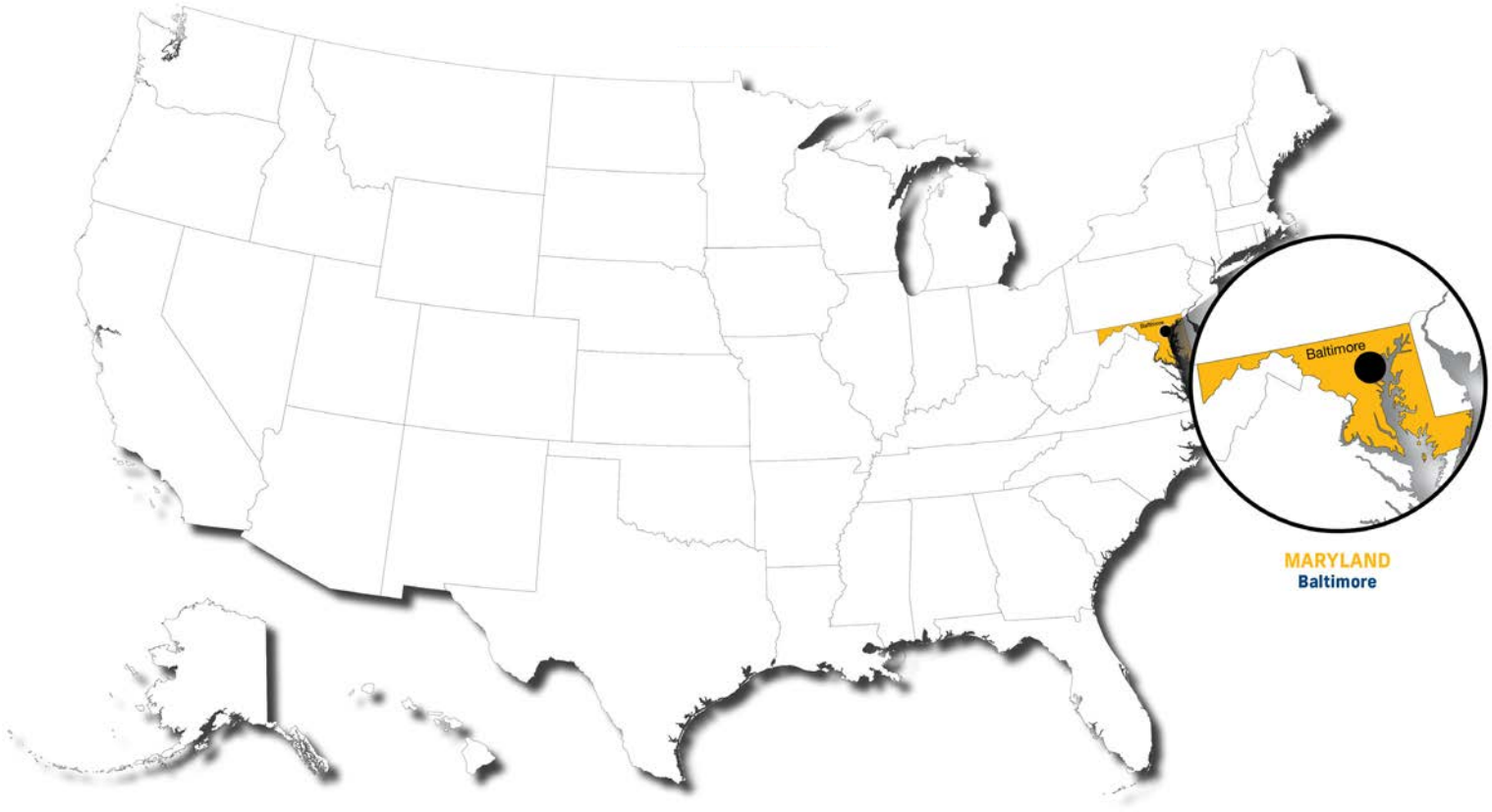
The overriding theme of the last quarter century at RK&K has been growth. In terms of employees, revenue, markets, and clients, the last 25 years saw substantially more growth than the firm's first 75 years. This is dramatically illustrated by the information graphics over the following pages.



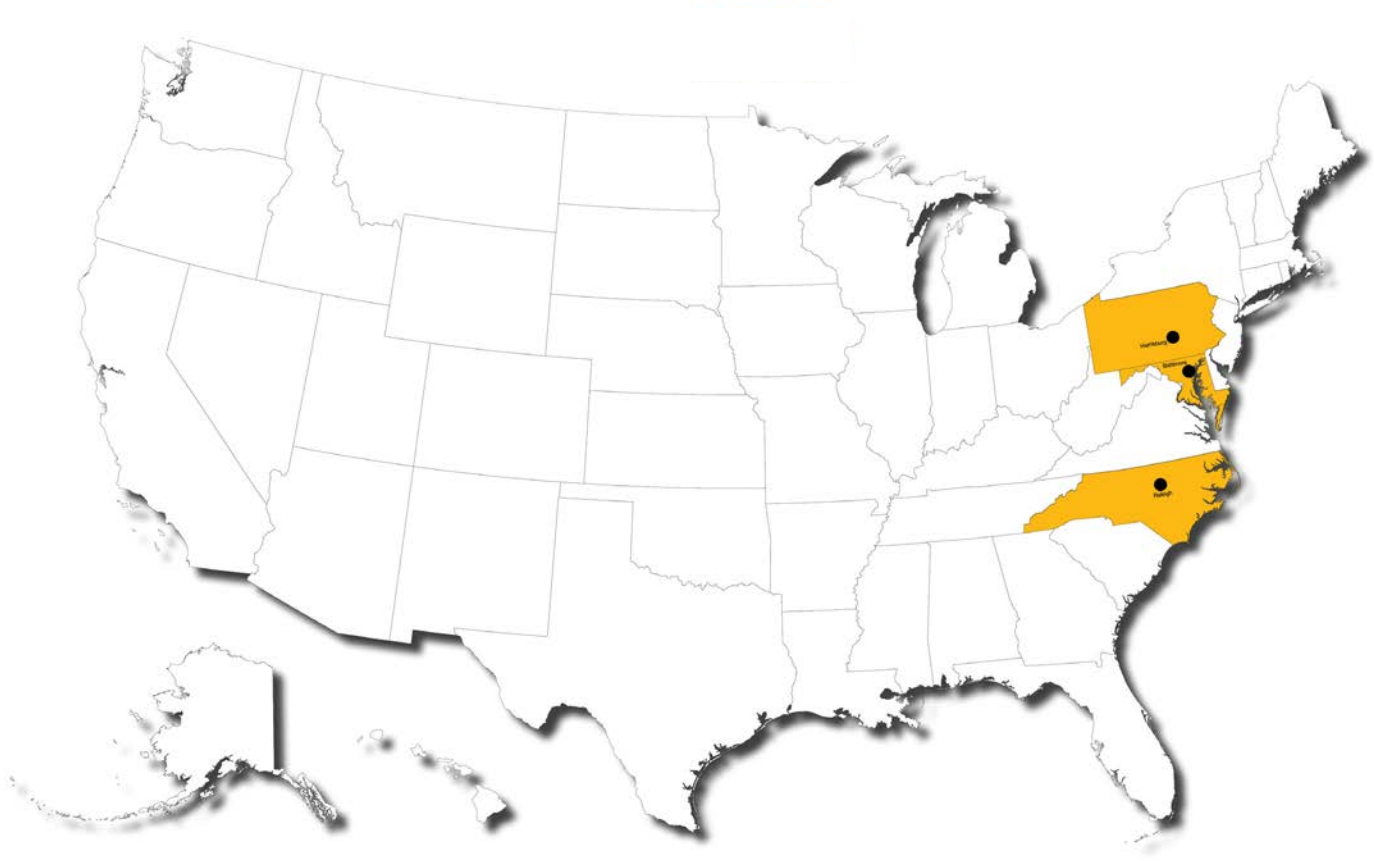
This section recounts the events that supported this growth. The narrative is different than the preceding sections, eschewing a strictly chronological retelling to better provide a broad picture of work, the many simultaneous major initiatives, new services, markets, and staff changes over this period.



1923

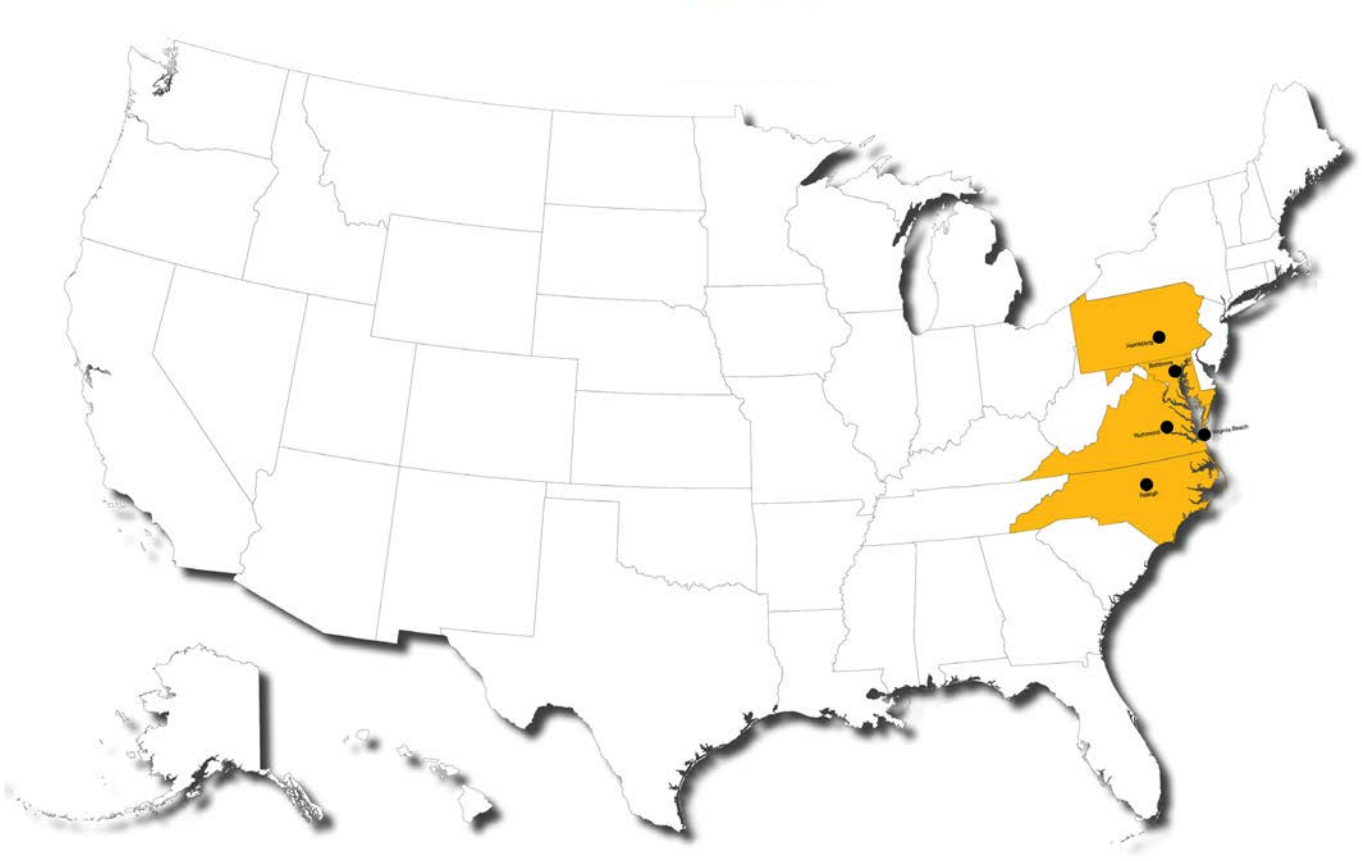


1973



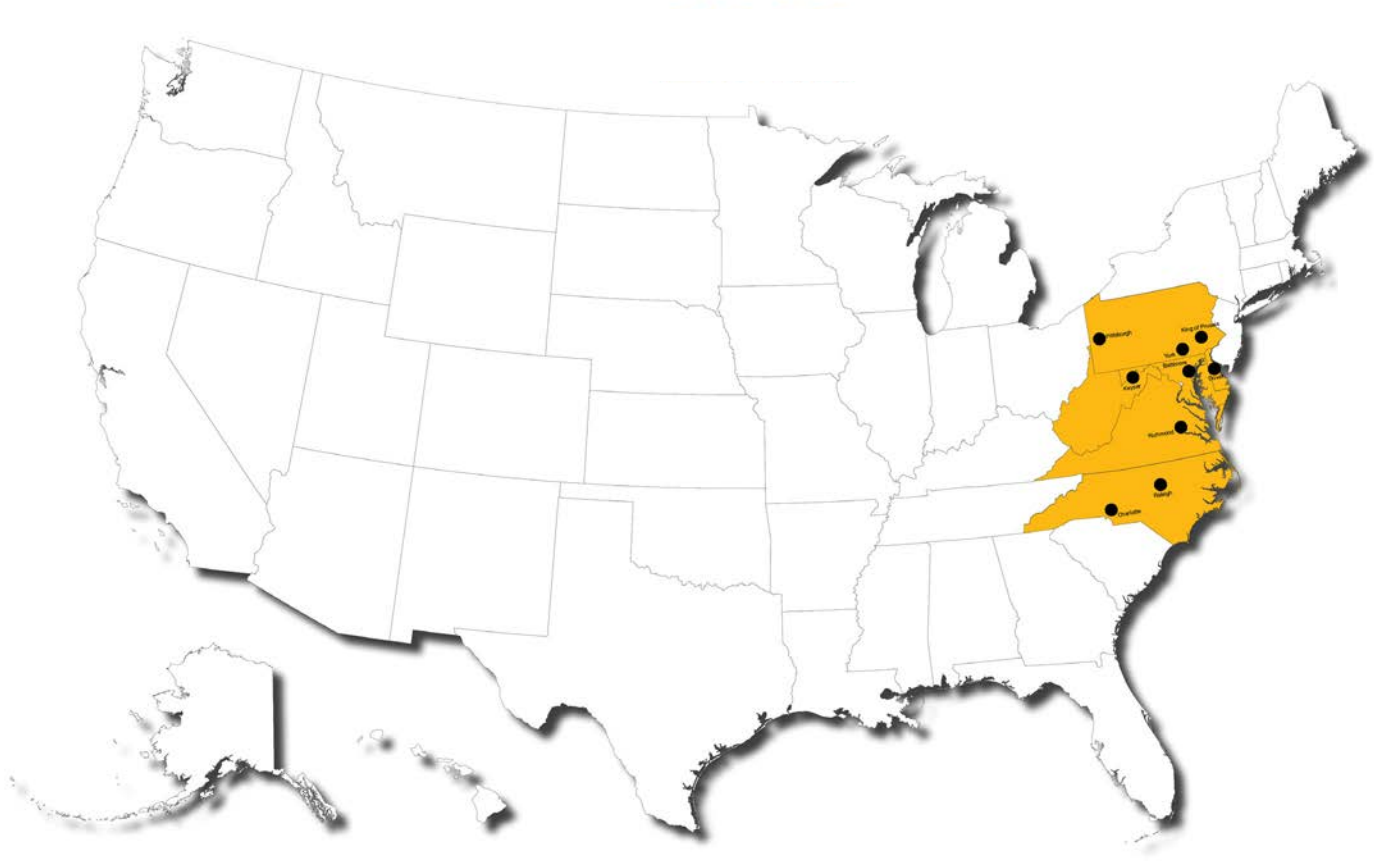
Baltimore, MD
Raleigh, NC
Harrisburg, PA

1993



Baltimore, MD
Raleigh, NC
Harrisburg, PA
Richmond, VA
Virginia Beach, VA

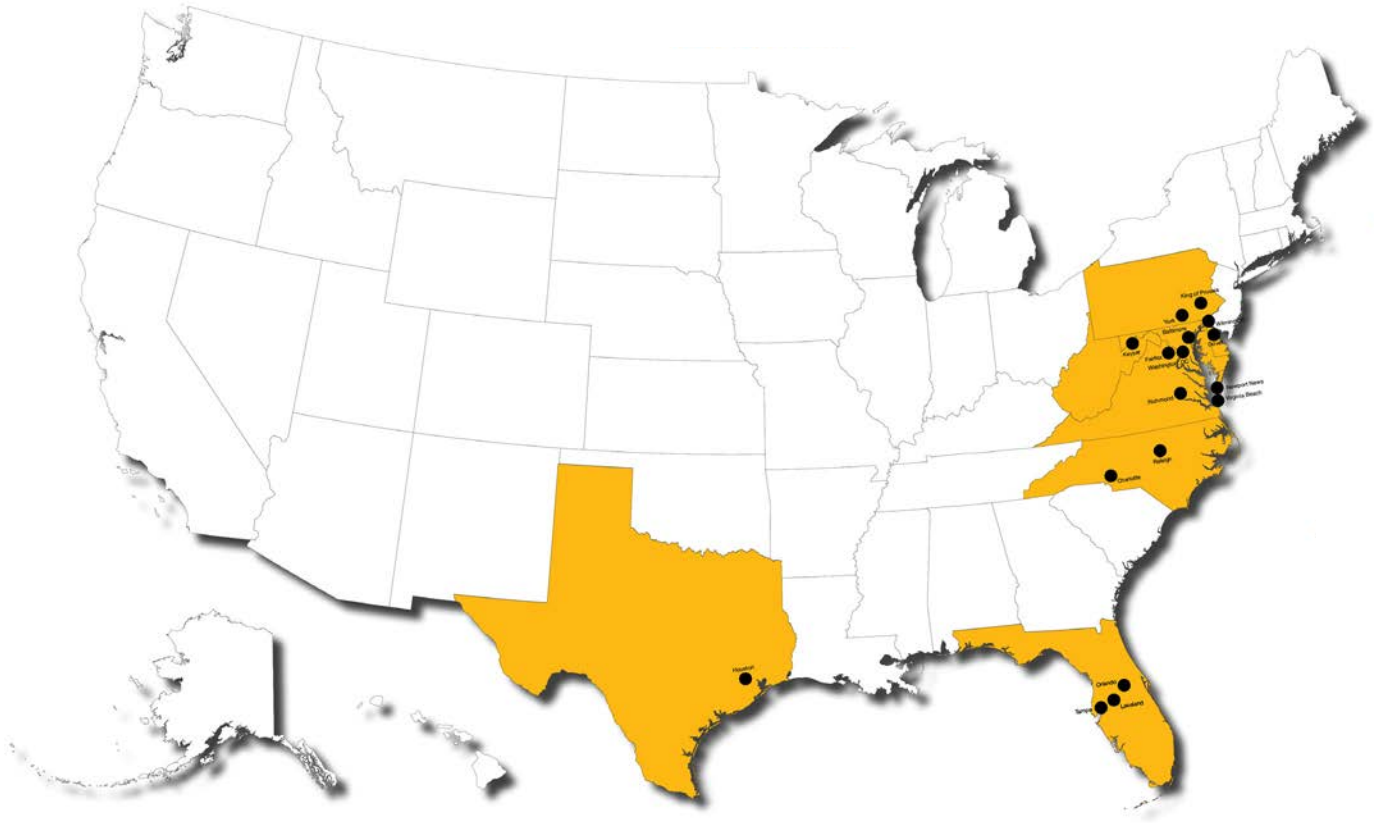
2003



Dover, DE
Baltimore, MD
Charlotte, NC
Raleigh, NC
King of Prussia, PA

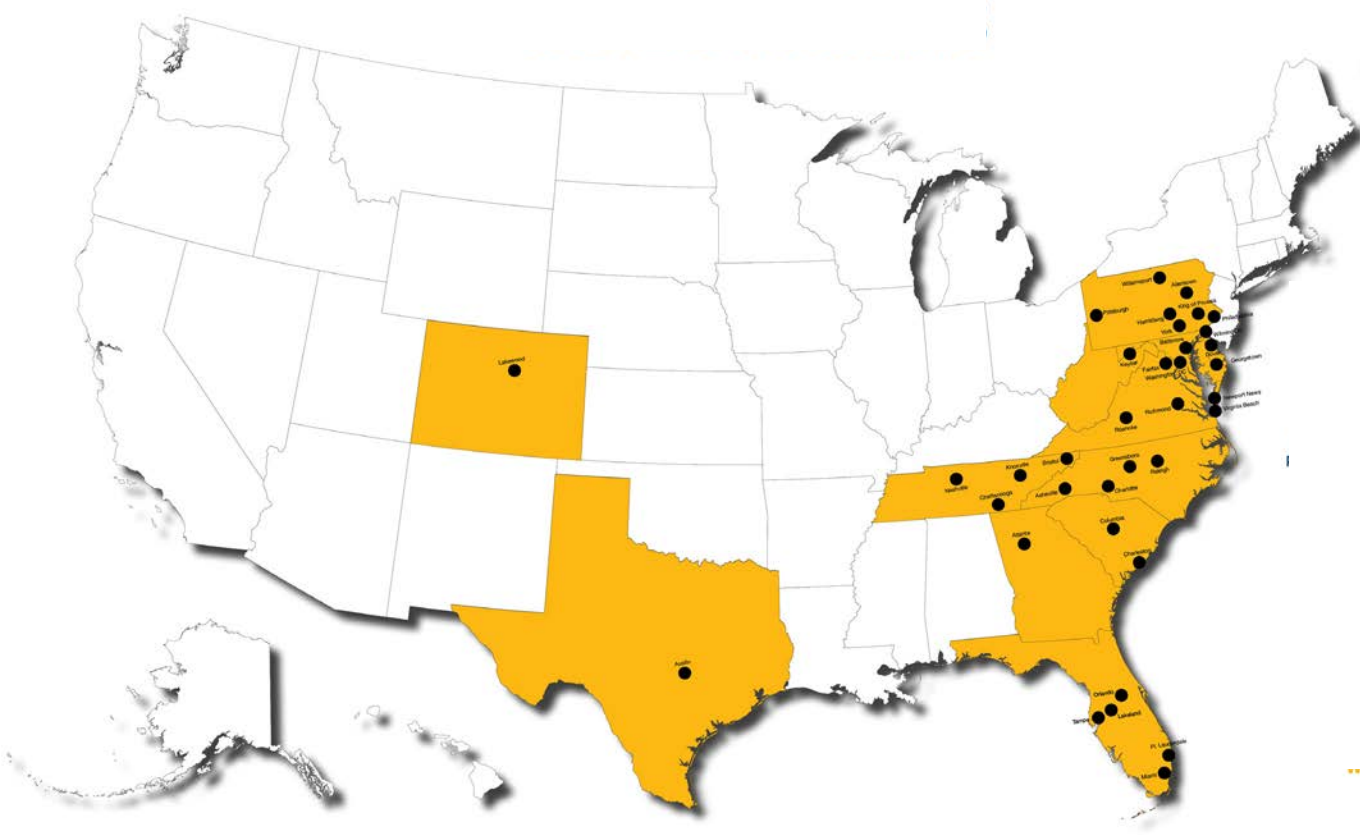
Pittsburgh, PA
York, PA
Richmond, VA
Virginia Beach, VA
Keyser, WV

2013



Dover, DE
Wilmington, DE
Lakeland, FL
Orlando, FL
Tampa, FL
Baltimore, MD
Charlotte, NC
Raleigh, NC
King of Prussia, PA
York, PA
Houston, TX
Fairfax, VA
Newport News, VA
Richmond, VA
Virginia Beach, VA
Washington, D.C.
Keyser, WV

2023



Lakewood, CO
Washington, D.C.
Georgetown, DE
Dover, DE
Wilmington, DE
Tampa, FL
Lakeland, FL
Fort Lauderdale, FL
Miami, FL
Orlando, FL

Sandy Springs, GA
Baltimore, MD
Charlotte, NC
Greensboro, NC
Raleigh, NC
Asheville, NC
Pittsburgh, PA
York, PA
Allentown, PA
Williamsport, PA

Harrisburg, PA
King of Prussia, PA
Philadelphia, PA
North Charleston, SC
Columbia, SC
Knoxville, TN
Nashville, TN
Chattanooga, TN
Bristol, TN
Austin, TX

Virginia Beach, VA
Richmond, VA
Newport News, VA
Roanoke, VA
Fairfax, VA
Keyser, WV

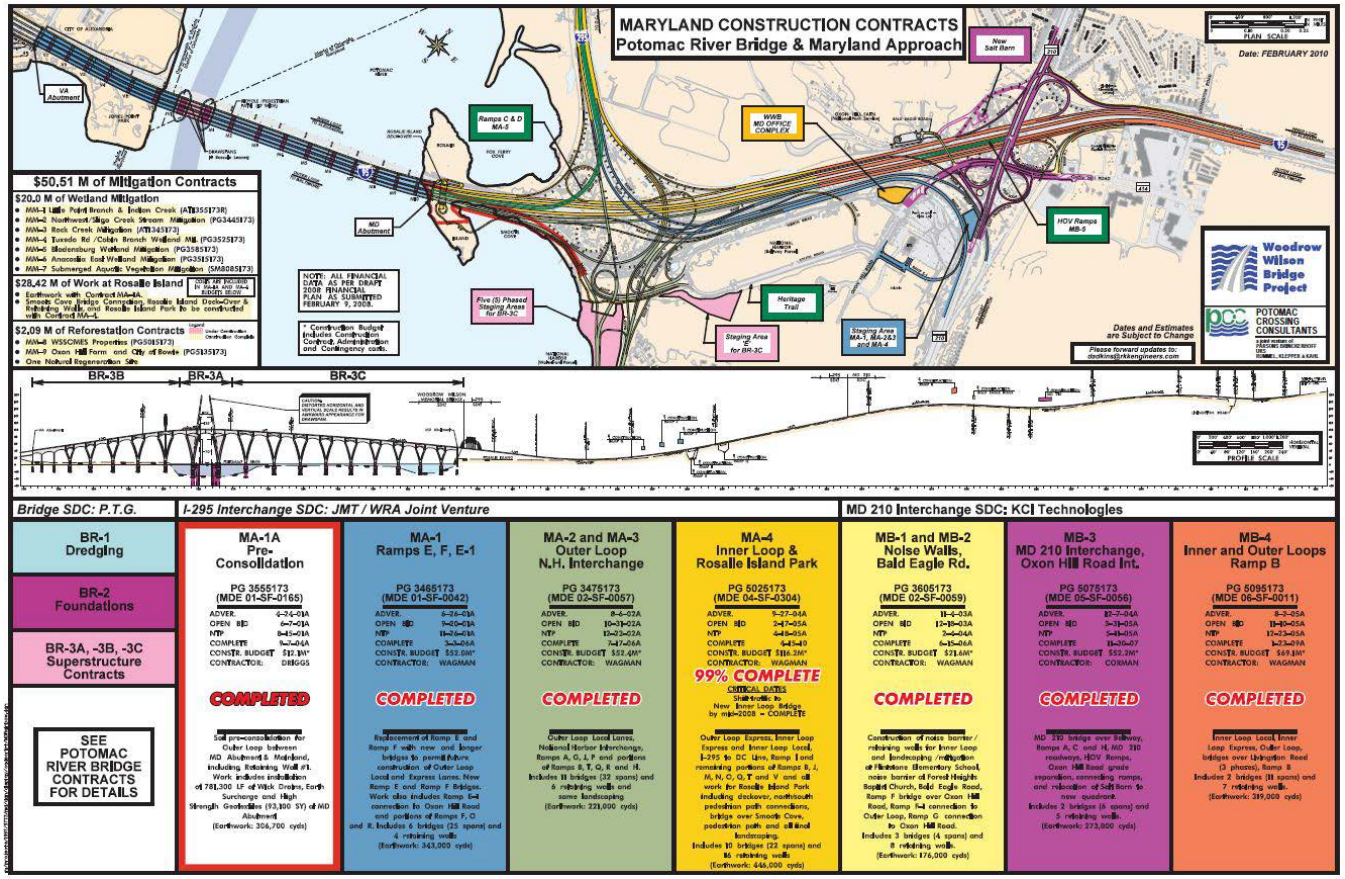
A Watershed Project: The Woodrow Wilson Bridge

As we look back at the firm's transportation practice, unequivocally, the involvement in the replacement of the Woodrow Wilson Bridge (WWB) over the Potomac River and more than eight miles of the Capital Beltway (I-495 / I-95), near the southern tip of Washington DC, created a dramatic expansion of the firm's capabilities, reputation, and expertise. RK&K's role as one of three Joint Venture (JV) partners as General Engineering Consultant (GEC) on this $2.5 billion program spanned nearly 20 years from 1997 to the mid-2010s. The firm's successes on this mega-project dramatically changed its trajectory.

In the early 1990s, when future RK&K partner Tom Mohler was a senior leader at Greiner Engineering, they had just won the US Naval Academy bridge competition and completed an award-winning design of an elegant bridge over the Severn River in Annapolis, Maryland. Using that successful competition as a model, the State of Maryland, in collaboration with Virginia, the District of Columbia, and United States Department of Transportation (USDOT)/FHWA, announced a conceptual design competition to replace the WWB. With a goal of bringing the best highway designers in Maryland and Virginia onto their team, Greiner selected RK&K to join them in pursuit of that competition. With very creative bridge solutions, excellent traffic analyses, and great interchange and alignment work on both approaches, the Greiner Team won that competition.

As the bridge itself was federally owned, US DOT and FHWA initially obtained authorization from Congress for approximately $960 million in bridge replacement funding and later obtained an additional $600 million. In a collaborative agreement among US DOT/FHWA, Maryland SHA, VDOT, and the District Department of Transportation (DDOT), the solicitation process for a GEC began in 1996. Having previously and successfully worked together, the team focused on aligning the JV's key staff well known to the client consortium's key staff: a one-to-one match-up. This proved to be pivotal in the win, and RK&K was selected to provide both the Maryland approach design manager and construction manager on the PB/Greiner (soon to become URS)/RK&K JV, named of Potomac Crossing Consultants (PCC).

The international competition for this coveted GEC contract was intense, and five stellar teams were short-listed, including the PB/URS/RKK JV. Each team was permitted only ten attendees at the oral interview; David Wallace and Steve Kagay represented RK&K and the other eight slots were taken by other presenters from our JV. However, and most fortuitously, Bill Hellmann was able to join the select group as an 11th participant permitted by the clients in order to "...run the computer mouse for the PowerPoint presentation" (which was ironic as computers were not in Bill's comfort zone!). During the interview, Bill crushed the answer to a question by drawing a parallel between his prior work on the very successful I-95 Fort McHenry Tunnel Project in Baltimore



and the WWB Project. Consequently, the JV awarded Bill the very computer mouse he had used during the presentation, within a glass covered box frame…aka, what became known as the "mouse click award."

Given the importance of the WWB project on a national perspective and the strength of RK&K's Maryland-based staff in offices close to the WWB's project office, RK&K ultimately obtained leadership positions within the JV in many additional disciplines, including baseline geometric ground control surveys, traffic/traffic operations/ITS, NEPA environmental documentation, and other key disciplines. This proved to be the birth of RK&K's GEC expertise, which was subsequently leveraged into leadership of the GEC JV for the $2.4 billion ICC project in Maryland and numerous other mega projects.

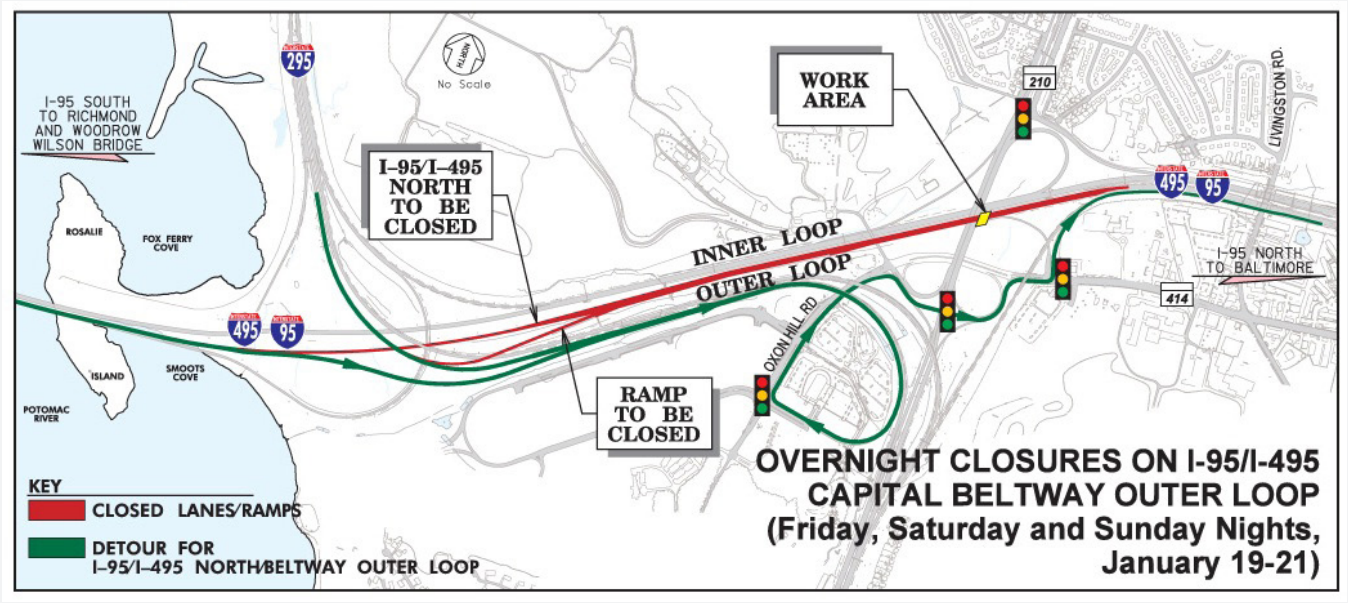
WWB: A Personal Story by Barb Hoage

About 10 years into my career at RK&K, I was assigned as the lead Traffic Engineer on our JV team to compete in the Woodrow Wilson Bridge design concept competition. Each team was given a set of rules to follow and criteria against which our concept would be judged, including hours of delay, level of service, cost, environmental impacts, visual impacts and inconvenience penalties for ships under the bridge. Our concept had a fairly quick due date that could not be missed or we would be disqualified. Because of that, our team was "all-in" and met for many long hours to develop and test various concepts against the judgment criteria to determine the best solution. This was exciting work, and I thoroughly enjoyed my role on the team!

After many hours of hard work, we finally submitted our design and were relieved to be finished and excited about our solution. However, when the results came in, I felt deflated. Our team had scored the highest of them all, but it wasn't a great score, and the clients were not thrilled with any of the designs. The issue was in the criteria they had set, against which the designs were judged. The criteria left very little room for creativity and all the designs looked mostly the same as a long and tall bridge over the Potomac River with enough clearance for all the ships to pass under. It turns out, that wasn't the look the clients wanted after all. So, instead of moving forward with our concept, everything stalled.

Eventually, our team was reformed and given the go-ahead to develop a hybrid option for some bridge clearance but also with a drawbridge for larger ships. I was involved in the traffic analysis and modeling efforts for this design concept development, eventually helping to prepare the environmental document that led into the design phase. Once we were in the design phase, my role was phased out, but the Traffic Team had a significant effort in overseeing all traffic engineering final design plans.

Near completion of final design, I was briefly engaged in a value engineering effort. This was a one-week effort, sequestered in a room with a small team pretty much around the clock, to pick apart every aspect of the plans. As I recall, we identified and developed nearly 100 value engineering options. At the end of the week, our group presented our options to the clients, and many were then incorporated into the final design. I recall the week I spent with this multi-disciplined, multi-firm, value engineering team as one of the most exciting weeks of my career.



The WWB Project would go on to win many prestigious awards, including the Outstanding Project & Leadership Award (OPAL) for a Civil Engineering Project from the American Society of Civil Engineers

New and Expanded Services

The 2000s would see major growth in service areas across all RK&K departments, many of which have grown to be central to RK&K's work.

Site Design

John d'Epagnier led the expansion of the site development group through the 1990s and into the 2000s. The group grew from a 3-person team to a 14-person discipline during this time-frame. While maintaining a large portfolio in major redevelopment projects, the group decided it was necessary to enhance its services by adding several design elements including master planning, streetscapes, park design and landscaping. Notable projects in these disciplines include the Reconstruction of Main Street in Annapolis and master planning for the University of North Carolina.

In early 2000, Johns Hopkins University (JHU) in Baltimore had received a major windfall from an anonymous donor after he was presented with JHU's latest Master Plan. However, there was a catch, the donor wanted all the proposed open space improvements designed and constructed over the coming summer. This was a busy time for most engineering firms and three different firms declined the project due to the extremely challenging proposed schedule. JHU's next call was to David Wallace, who with John d'Epagnier, quickly assembled a team to develop a workplan that would meet JHU's goals.

The workplan needed to be creative and would require cross-discipline support from all RK&K's Departments. For more than six months, many across the company stepped up to work long hours every day and on weekends to stay on schedule. In addition to the vast amount of design manpower, the project team needed to address the regulatory and operational hurdles associated with reconstructing 25 acres of an urban campus in a condensed time-frame. The approach required the preparation of parallel documents, one for design and one for permitting, with the early focus on the permitting set. The permit set used old-school scanned survey drawings for the base map which made the production process very complicated but necessary to hit the permit submission deadline.

Johns Hopkins University (JHU) in Baltimore Phase I Site Plan

"This ended up being a great memory," recalled Chris Krupinski, "walking into our project team meetings with those big permit drawings and seeing the client grinning, knowing that this was a major feat." The permit was issued on-time allowing the contractor to mobilize his crews—literally minutes after the spring semester ended. This was a huge breakthrough moment for the Site Group. From that point forward, RK&K was the first call that JHU made when they had other projects—big or small—on their Homewood Campus.

| *Johns Hopkins University (JHU) in Baltimore Phase II Site Plan*

| *Johns Hopkins University (JHU) in Baltimore Phase II*

Joining RK&K
by Scott Crumley

After starting my career in the public sector, I was looking to make a move. I wanted to consider options in the private sector and thought about the consultants that I enjoyed working with most—RK&K was at the top of the list. Everyone I worked with at RK&K was technically strong, transparent, fun and humble. So, I reached out to the person I knew the best, Rick Adams in the Baltimore Highway group, to discuss possible employment opportunities. Come to find out, RK&K needed a Traffic Engineer for the Woodrow Wilson Bridge project and it sounded enticing. I came in for the interview with Barb Hoage, Barry Brandt, and David Wallace. The short story is that I could tell immediately that Barb was a stellar leader, Barry and I "geeked out" about the technical details of the project, and David shared that the right person for this role had to have "ice in their veins" to deal with the wide variety of people, personalities, and contractors on the massive program. I was immediately hooked and joined RK&K in October 2002.

The first couple of months at RK&K were memorable in more ways than one, and I soon learned that you don't mess around with certain traditions. Before working full-time in the project office, I worked in the Baltimore office to meet as many people as possible in order to know who to reach out to for support. For decades, the firm had provided donuts for employees on Fridays, so I innocently signed up to bring in the donuts for the Baltimore Traffic team. However, I completely forgot to bring them in on my designated Friday and by about 8 AM, I hear someone passionately asking "Where in the world are the donuts?" It was an early bird in the Traffic team, Doug Eby, who wasn't happy about the delay in breakfast. I hurriedly ran to Safeway and picked up whatever they had available and got back to the office as quickly as possible. I realized then that these engineers take their donuts seriously!

Continued Growth and Expansion in Energy and Corrosion

The Erosion and Corrosion (E&C) group experience substantial expansion in the early 2000s through the firm's 100th anniversary, growing for its original clients in Virginia to the Mid-Atlantic with Baltimore Gas and Electric (BGE) and the Midwest with metering and regulation (M&R) station work in Ohio. The North Carolina office moved from Elkin to Concord, North Carolina (2002) to support municipal gas clients such as the Cities of Wilson and Lexington, North Carolina, as well as private gas utilities like Piedmont Natural Gas and Public Service of North Carolina (PSNC). Charlotte also supported project wins with Rocky Mount and Greenville Utilities in eastern North Carolina.

The firm's E&C services also expanded to include tank inspection, horizontal directional drill (HDD) design and inspection, and cathodic protection (CP) design, testing and troubleshooting. Thanks to these new skill sets, RK&K was included as the engineering consultant on a Department of Defense (DOD) multi-year (2007-2011) project assessing fuel facilities and CP systems at more than 450 DOD facilities worldwide. This work saw RK&K engineers travel to DOD facilities throughout the continental United States and overseas to facilities in Spain, Japan, and the British Indian Ocean Territory of Diego Garcia.

At the start of the 2010s, the group was working on pipeline and HDD projects throughout the Carolinas and mid-Atlantic for clients like Piedmont Natural Gas, PSNC, VNG, Dominion Energy, WGL and BGE. Corrosion

Greenville Utilities, NC |

projects, which included CP and newly added AC interference modeling and mitigation design services, extended from Georgia to New Jersey and were expanding to the Gulf states and Texas. A Houston E&C office was opened in 2010 to support CP and AC work and soon also included HDD work for companies like Conoco-Phillips, Phillips66, Williams, Plains Pipeline, and Colonial Pipeline, to name a few. In 2011, the Concord office relocated to the current location in Charlotte.

2015 was a big year for the E&C group with two large pipeline projects: the 300-mile Mountain Valley Pipeline (MVP), and the 600-mile Atlantic Coast Pipeline (ACP). Both are large diameter steel pipelines designed to transport shale gas to Virginia and North Carolina. The E&C group was awarded the design of the 17,000 mcfh Southside Connector M&R station, which was located at the Virginia Beach terminus of ACP and connected ACP to Columbia Gas' and VNG's systems. This is the largest station yet designed by RK&K. The group also won the AC mitigation and CP designs for ACP which required field survey and design support for ACP's entire 600 miles. On MVP, the group was charged with assessing all trenchless crossing locations (highways, rivers, etc.) on the project and their respective feasibility using conventional bore, HDD or Direct Pipe techniques.

The late 2010s saw the E&C group land another large client, UGI Utilities (2018), which is the largest gas utility in Pennsylvania. Assignments began slowly with simple base mapping projects, but have grown to include pipeline, station, and HDD design work throughout UGI's service territories. The E&C group expanded offerings to include M&R station assessments (2016-present); 250 stations were surveyed throughout Virginia, Pennsylvania, Ohio, and Indiana to verify compliance with Pipeline and Hazardous Materials Safety Administration (PHMSA) operating pressure requirements. In 2020, the E&C group expanded its footprint again. This time in a slightly different direction by adding a Pittsburgh office offering environmental and site/civil services specific to energy companies. The early 2020s also saw the addition of natural gas designers and engineers to the Utility group in Baltimore to support RK&K's new engineer of choice (EOC) contract with BGE.

The Growth and Expansion of Construction Management and Inspection

For decades RK&K has been one of the leading firms providing construction inspection services throughout Maryland and Virginia. However, by the turn of the century partner Mike Potter realized that construction management (CM), consultants being hired by government agencies to manage their projects, was going to be an important new service. Few other consultants in the transportation industry appreciated this or were willing to make the financial commitment to support such a transformation. In addition to inspectors, a responsible CM team would need to include degreed engineers, CPM schedulers, cost estimators, and others to fully manage projects. There was also a concern that much of the revenue in construction services was coming from only a few mega-projects, so expanding and diversifying the firm's client base was needed for continued growth and to minimize risk to the firm.

While the opportunities for CM services were likely to increase, the significant challenge was the long-term investment to build a professional construction management staff. But Mike and other leaders shared this vision and RK&K led the charge with certification. What was an unknown education and credential became the CCM (Certified Construction Manager) behind the names of our staff, our competitors' staff, and even our clients' staff. RK&K construction leaders became speakers at conferences and to our clients' staff meetings, sharing the message of what "real" construction management was and served in responsible roles at the Construction Management Association of America (CMAA) at both the state and national level.

| *NC Aluminum Culvert CEI*

AMERICA 2003

GENERAL HISTORY

U.S. led forces invade Iraq and depose Saddam Hussein

PRESIDENT

George W. Bush

ENTERTAINMENT

Apple launched the iTunes store, revolutionizing the music industry by offering legal downloads of individual songs

SPORTS

In Wimbledon, Roger Federer won his first Grand Slam title, marking the beginning of his illustrious tennis career

The RK&K Family by Chris Krupinski

In 2003, I was called up as an Army Reservist to deploy overseas. I was pulled from my local unit and reassigned to a unit based out of Texas, so I would be mobilizing with soldiers I did not know with no local support for my family staying behind. This was one of the most challenging times in my life, leaving my wife and son who was just over a year old with no other family in the area.

Although a difficult time, there are a few specific memories related to RK&K that were positive. First, the reaction from David Wallace and John d'Epagnier when I shared the news set me at ease. They made it clear that they had my back. I could focus on getting my family ready for my departure and the RK&K team would make sure my projects were covered until I came home. Secondly, the overall sup-port from staff around the company was absolutely amazing. I would receive updates from my wife sharing all of the events she was invited to attend at RK&K where staff showed their continued sup-port for my family. It provided me peace of mind to know that they had folks locally thinking about them.

I also received an RK&K care package at Christmastime which included a DVD. Popping it in for a quick look at the end of a long day, I was shocked to see several hours of footage from co-workers providing well wishes, copies of home videos, and the company singing "We Wish You a Merry Christmas" on the steps of Mosher Street! The kindness of co-workers like David Wozniak during my deployment was unforgettable. RK&K has a history of attracting remarkable people and my experience during this time made this clear.

Harford Road over Herring Run, MD CEI

Hiring was key. RK&K's future construction project engineers had to first learn highway construction from the ground up, serving as entry construction inspectors. The firm hired degreed civil engineers and our government clients were compensating our firm at the inspector rate. RK&K subsidized that cost until a point was reached that our clients fully understood the value of our young CM staff. Then, our clients could not get enough of them. Soon, we had six-year BSCEs with a PE managing $10 million highway projects. RK&K was now able to manage projects for our clients, something other consultants were unprepared to do.

CM soon expanded across RK&K's offices. A good example is North Carolina where, with the help of Tommy Peacock, RK&K was able to hire Wade Hoke, a recently retired NCDOT Division Engineer. Wade found other quality people, and within a few years, the firm's North Carolina construction staff exceeded 100 people, and then 200 people with the help of George Escojido. The growth was impressive, yet deliberate, one quality hire and one quality project at a time.

George Escojido joined the firm from another company and, having Florida DOT experience, and ad-miring RK&K's CM/CI growth in North Carolina, helped position the firm for growth in Florida. George convinced Mike Lausier to join RK&K in Orlando, and RK&K quickly won a major project with the Central Florida Expressway Authority. CM/CI work grew throughout central Florida. Within a few years, this led to the connection and ultimate acquisition of Tamayo Engineering in south Florida (which is discussed in more detail later).

While the effort was to diversify and grow geographically, the firm paid particular attention to remain strong in existing markets. Towards that end, Mimi Kronisch led the firm into the busiest, but yet until now, one of the only VDOT districts where RK&K was not providing CM/CI services, Northern Virginia. Today (2023), the CM/CI staff numbers more than 550, well over one third of RK&K's total employees. RK&K's CM/CI staff now manage projects in Maryland, Pennsylvania, Delaware, Washington, D.C., West Virginia, North Carolina, South Carolina, Georgia, Tennessee, Florida, Texas, and soon will in Mississippi. All the growth, both geographic and in service diversification, followed the same approach of demonstrating to clients what RK&K's quality people can do for them, waiting for the opportunity, and then performing outstanding work.

Growth in Design-Build and the ICC

While RK&K got its first experience in design-build in the late 1990s, after the turn of the century the firm started providing many more of these projects. Design-build consisted of agencies issuing a Request for Proposal (usually along with a concept design) for construction contractors to pursue. Typically, a two-step process, a contractor and engineering design-build team would be asked to provide qualifications first, followed by a bid. This encouraged contractors to hire engineering firms directly to generate a streamlined and cost-effective final design. Usually, construction would begin soon after preliminary design to advance the schedule and open new facilities sooner. RK&K's first design-build project was the $21 million MD 216 project in Maryland in 2002, which provided a new 1 ¼ mile 6-lane divided east-west roadway connecting two major north-south facilities, I-95 and US 29, between Baltimore and Washington. Eric Mellor recalls little fanfare with the new endeavor with future partner Jim Zito simply saying, "Just do this project."

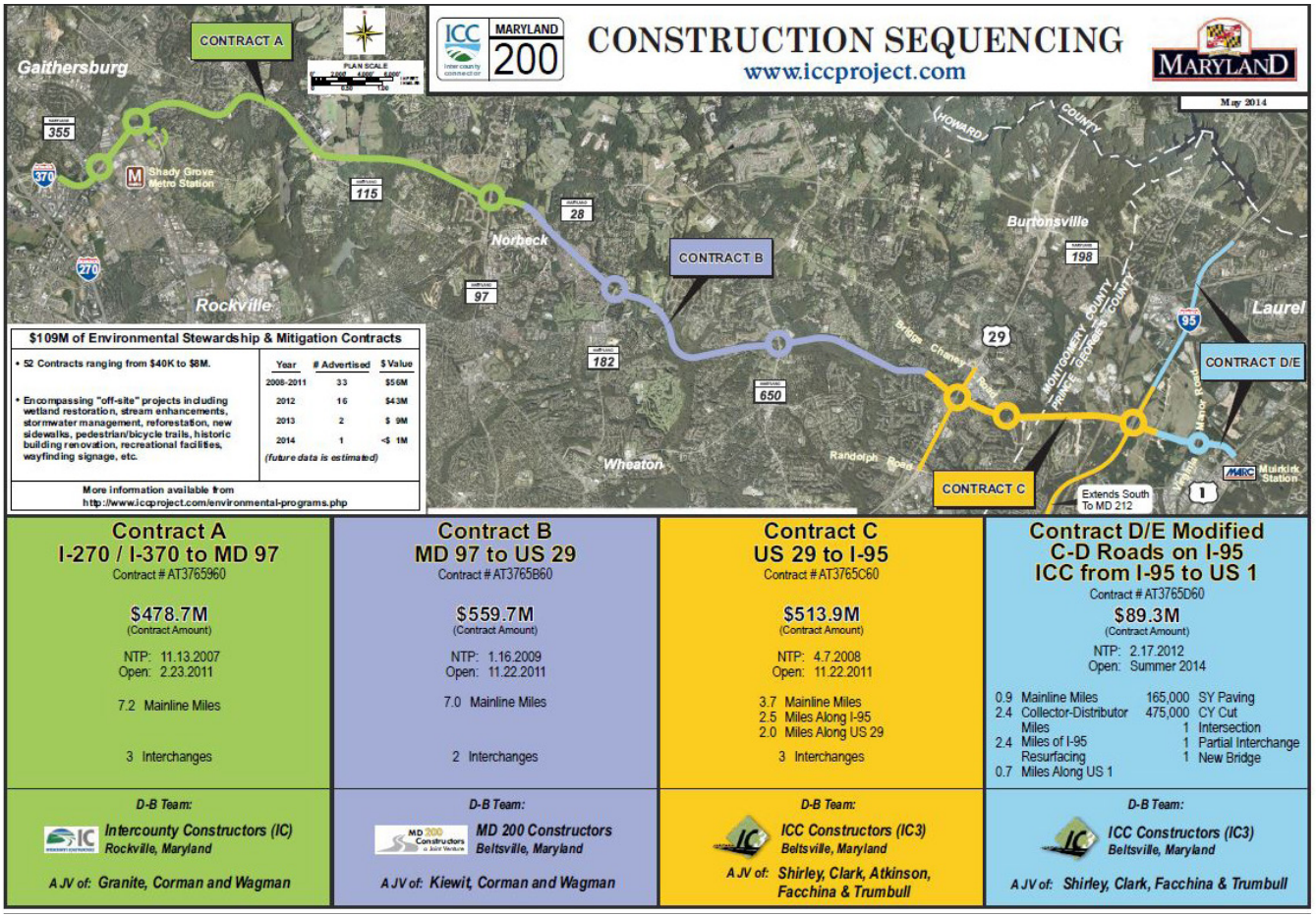
Building upon continued successes in the Mid-Atlantic region and positive experiences on the WWB project as part of the PB/URS/RKK JV Team, the decision was made in 2004 to pursue the GEC contract for Maryland SHA's largest highway endeavor to date, the $2.4 billion Inter-county Connector (ICC). On SHA's planning books since the 1950s, the ICC was to be a six-lane, east-west connector toll freeway in the northern Washington suburbs

| *MD 216*

between two major interstates, I-270 and I-95 and envisioned as a relief route for the heavily traveled I-270 and Capital Beltway (I-495).

The project languished for decades until the political will and traffic demand truly materialized around the turn of the century. Much of the funding for the ICC was from GARVEE bonds, which are based on future toll revenues making the ICC the first toll road to be constructed in Maryland since the Fort McHenry tunnel was constructed in the 1980s. As a toll road, the ICC would eventually become a facility operated and maintained by the Maryland Transportation Authority, but SHA led the procurement, design oversight, and construction management of the project given their significant institutional capabilities to deliver such a large facility. Melinda Peters, having joined SHA straight out of college, had ascended into leadership positions, and in 2006, SHA Administrator Neil Pedersen named Melinda to be Project Director for the ICC. FHWA formally announced the Record of Decision on May 29, 2006, and the project was officially approved to proceed to design and construction. Procurement for Maryland's largest design-build procurement needed to begin in earnest.

| *Inter-County Connector*



Having proven the ability to hold its own with the national firms on the PB/URS/RKK JV team and integrating lessons learned from the WWB project, David Wallace was tapped as GEC Project Manager responsible for leading RK&K's JV Team, named the ICC Corridor Partners, and then winning the ICC GEC contract. Efforts immediately began with preliminary engineering in support of the final NEPA documentation, but quickly pivoted to develop performance specifications for multiple DB construction contracts. RK&K and our teammates finalized the performance specifications and RFP documents necessary to solicit DB teams who would design and construct the ICC under four major DB contracts, totaling more than $1.5 billion. RK&K would lead several key disciplines including procurement, agreements, structures, traffic, environmental permitting, and right-of-way to secure properties along the project corridor. As the lead JV partner, RK&K's significant role on this program spanned more than a decade from 2005 to the mid-2010s.

More GEC Projects

The combination of successfully delivering on multiple high-profile programs in the Washington, D.C. region provided substantial leverage to foster further growth of the firm. Two of the most significant wins for the firm were the Purple Line and Red Line Light Rail Transitways with the Maryland Transit Administration. These two transit projects, north of Washington and in the heart of Baltimore, respectively, were the first significant expansions of MTA's system since the completion of double tracking the Central Light Rail line in Baltimore in 1995. Given the magnitude of each project, around $2 billion anticipated for each, the MTA solicited a Program Management Consultant (PMC) and General Engineering Consultant (GEC) contract for each line. The successful teaming of RK&K with PB was continued along with AECOM to pursue, and win, the PMC contract for Purple Line and the GEC contract for Red Line.

US 301 DE to MD Line

With RK&K's long-time presence in Baltimore, it was very exciting to be able to design such a transformative transportation project. Unfortunately, politics intervened, and the Red Line project was canceled in early 2015 after more than 80% of the design had been completed (but would resurface in 2023). Thanks to RK&K's one profit center and work sharing philosophy, the staff on Red Line were quickly absorbed into other company efforts. On a more positive note, the Purple Line's PMC Team continues (at the time of this writing) to work with MTA to deliver the completed transit line between Bethesda and New Carrollton. The project was one of the largest transit Public Private Partnership (P3) projects in the country.

In Delaware, RK&K helped deliver one of the largest projects in the state's history, the new US 301 toll road. This project included a new alignment for US 301 from the Maryland state line to SR 1 just south of the Chesapeake and Delaware Canal, including four interchanges and new toll collection infrastructure. RK&K provided planning services through full NEPA approval, served as the GEC to deliver the project through design and construction, and Bill Hellmann worked with DelDOT on the complicated project financing. The new highway opened to traffic in 2019.

Growth in Pennsylvania

By 2003 RK&K had Pennsylvania offices in Norristown and York. But work in the Keystone state was limited as the York office was largely supporting work from outside of Pennsylvania and the small Norristown office only had four people at that time. RK&K had active contracts in District 6 and recently completed assignments for Districts 5 and 8 (all in the southeast part of the state). However, under the new leadership of Todd Rousenberger, the firm was able to win three new contracts for District 5 (Allentown) over the next several years. And this ultimately led to additional work including the SR 441 Relocation in District 8, which was completed in 2014 and won a Diamond Award from ACEC, and the I-95 Section ITS with the Pennsylvania Turnpike which established RK&K as a go-to traffic resource with the Turnpike.

By 2008, RK&K took the next step in Pennsylvania by being selected as a prime consultant project manager for District 5. This followed with a $2 million open-end assignment and various other assignments over the next several years. In the role as consultant project managers the team developed lasting relationships with decision makers and between 2008 and 2023, RK&K has helped District 5 let 57 projects totaling more than $466 million. RK&K has become one of the District 5's top three firms as suggested by the selection for the I-78 Section project, a $300 million, 19-mile interstate reconstruction project.

After the SR 441 relocation project in District 8, RK&K was selected for the rehabilitation of the 7,000-foot Columbia-Wrightsville Bridge project. The bridge structure is the longest concrete arch bridge in the world and has evolved into a major project with significant challenges. At the time of this writing, the project is scheduled to be let in 2025.

| *Columbia-Wrightsville Bridge, PA*

In 2015, Jeff Guzy joined RK&K as overall Pennsylvania leader with a goal of growing business across the state. Jeff helped to expand the firm's client list to include significant work in District 6 with the I-76 Integrated Corridor Management Program in Philadelphia, where the shoulders are being upgraded to handle traffic during peak periods. Other assignments include local consultant project management for bridges in Philadelphia and Delaware Counties, and open-end contract assignments and improvements to Roosevelt Boulevard in Philadelphia. Subsequently, RK&K has expanded into new parts of the state, including District 3 (Williamsport) where the firm has completed several interstate rehabilitation projects, and work for the PennDOT Central Office helping to develop the state's Automated Work Zone Speed Enforcement Program and develop a Strategic Recycling Program. By the 2020s RK&K had expanded west to Pittsburgh. As of 2023, there are over 80 staff in Pennsylvania in six offices.

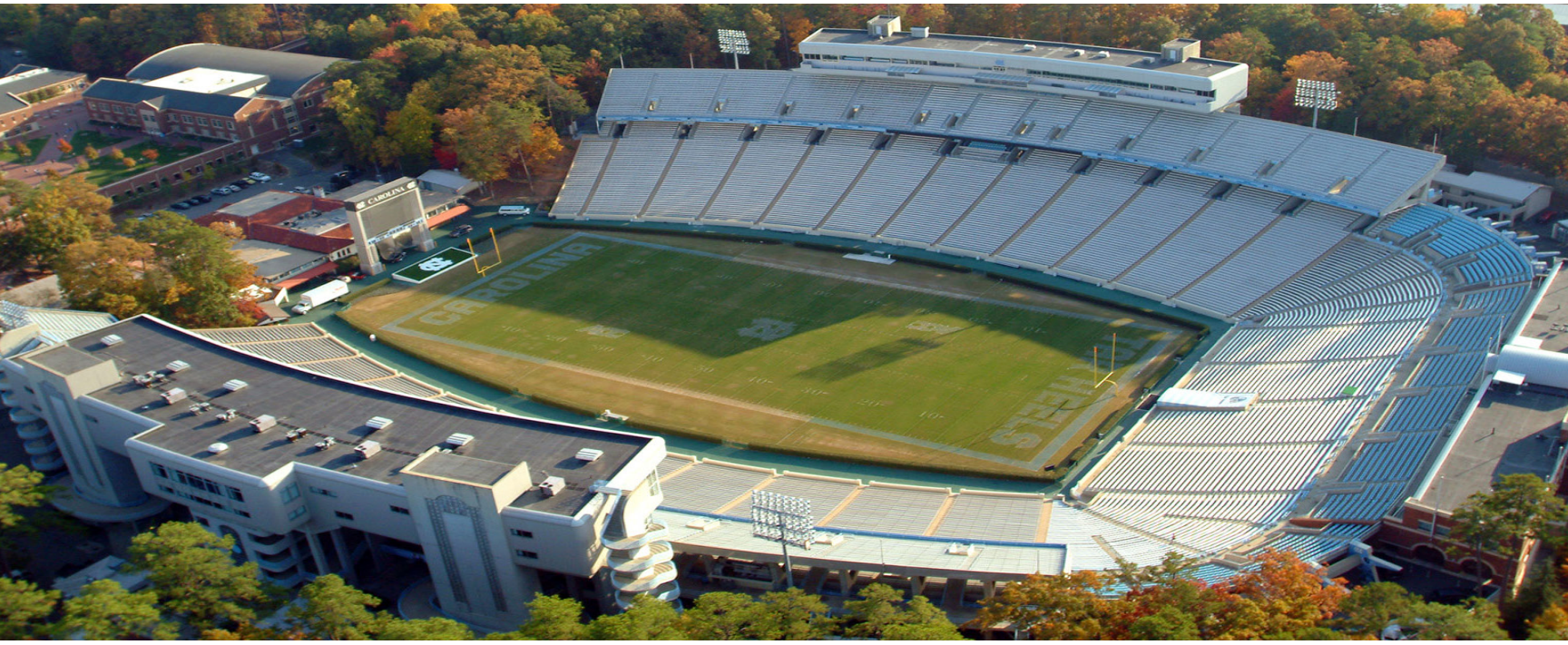
Automated Work Zone Speed Enforcement Program

Joining RK&K by David Klyce

I first interviewed with RK&K in 2002 and was given an offer but declined it in favor at staying at my current employer. I was a bit hesitant to join a firm in Pennsylvania that was not well established in our region. At the time, RK&K had only two or three employees in the southeastern Pennsylvania office. I received a call from David Wallace, an RK&K Partner, who asked me to reconsider and invited me to Baltimore to see RK&K operations there, which I did and eventually accepted RK&K's offer.

The next call I received from David was to notify me that the office would actually be smaller than when I was interviewed as the most senior person in Pennsylvania had resigned. This left the Pennsylvania Transportation team in the Philadelphia area truly bare bones when I first started. But through work sharing, the firm's Pennsylvania presence steadily grew. David Wallace continued to be involved and it was noticeable, particularly compared to prior employers, how RK&K's senior leadership was humble and took the time to get to know the entire staff and I see that this is still part of the culture today.

I recall we were shortlisted for a PennDOT Agreement around 2003 and David Wallace was hands on in preparation of the Technical Proposal, which included a field visit of a corridor in southeastern Pennsylvania. David and I went on this field visit, but it was later in the day and I needed to get my son from daycare first. David Wallace and I went to my son's daycare, put him in the car, and the three of us drove the corridor while David took notes. From that time on, when I would periodically see David, he would frequently ask about my son, once again, demonstrating how the partners have great consideration for the staff. Over the past 21 years since these early days, through work sharing and performing well on the projects we have won, RK&K is now no longer a startup but considered among the top tier transportation firms, not only in this region but also throughout other areas of Pennsylvania.



Stadium Transportation Work

RK&K's experience working on Camden Yards and Ravens Stadium, including relationships forged during those projects with nationally recognized stadium architects, launched RK&K into a new market: providing transportation engineering and planning services for stadiums, arenas, special events, and other venues that attract large numbers of people. Over the past 25 years, under the leadership of Jim Burnett, RK&K has provided transportation engineering/planning services on a wide variety of projects throughout the east coast including: the expansion of Beaver Stadium (Penn State University), the construction of the Ripken Stadium complex (Aberdeen, Maryland, also home of the Aberdeen Ironbirds), the expansion of SHI Stadium (Rutgers University), the expansion of Keenan Stadium (University of North Carolina), the construction of Subaru Park (Philadelphia Union), the construction of Nationals Park (Washington Nationals), the expansion of Johnny Unitas Stadium (Towson University), and the potential relocation of Tropicana Field (Tampa Bay Rays) and CFG Bank Arena (Baltimore). RK&K has also worked on enhancements to the stadium-event transportation plans for Dover Downs International Speedway (NASCAR), and, most recently, Sanford Stadium (University of Georgia). RK&K's strong relationship with Baltimore's hometown teams has continued over the years, with RK&K developing a Gameday Transportation Plan for the Ravens in 2016 that not only addressed NFL games, but also major concerts at M&T Bank Stadium.

CHASING THE OLYMPICS

RK&K had a rather unique experience related to special event planning when, in 2000, the firm was asked to join the Washington 2012 coalition, a group established to develop an official bid seeking to have Washington, D.C. selected as the host city for the 2012 Olympics. RK&K's role, under the direction of David Wallace, Barbara Hoage, and Jim Burnett, was to create the overall Olympic transportation plan for the bid document, detailing how the regional transportation system could accommodate (or could be modified to accommodate) hundreds of thousands of fans, athletes, coaches, members of the press and other VIPs traveling between dozens of the proposed Olympic venues scattered throughout the "DMV" (District of Columbia, Maryland, Virginia). While London was ultimately selected to host the 2012 Olympic Games, the United State Olympic Committee (USOC) found no "deficiencies" with the transportation plan during their bid evaluation process, and Washington survived multiple rounds of cuts to become one of the four finalist cities to represent the United States in the international bid city competition. During the development of the bid document, Jim joined the mayors and Baltimore and Washington, as well as three other members of the Washington 2012 team in a trip to Sydney, Australia to observe the 2000 Olympic Games. The Washington 2012 bid was heavily influenced by lessons learned during that trip – which, at nearly 10,000 miles, likely holds the record for the furthest business trip ever taken by an RK&K employee!

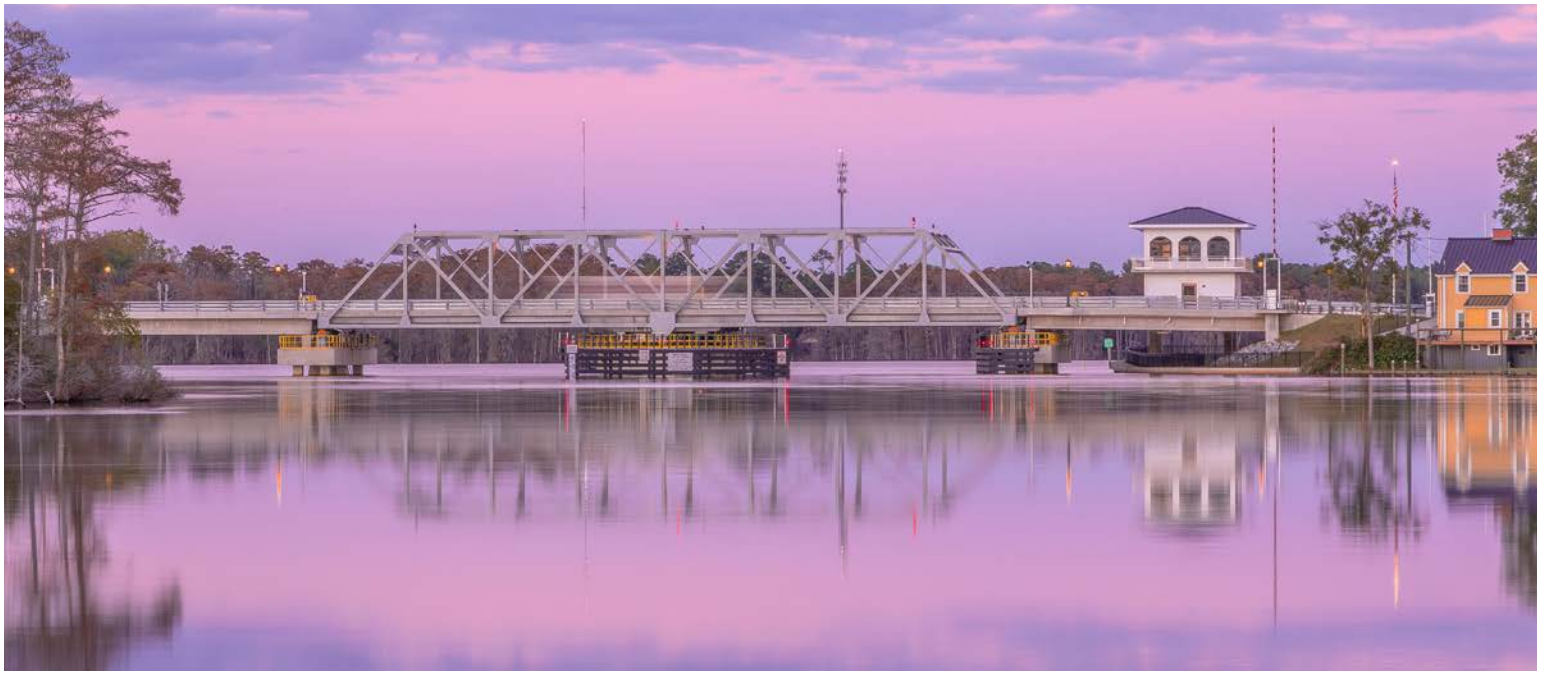
| *Triangle Parkway*

Design-Build in North Carolina, Virginia and Beyond

The North Carolina Department of Transportation (NCDOT) first implemented the design-build project delivery method in 2001. Prepared to enter the new and unfamiliar era of design-build delivery, RK&K's Raleigh office collaborated and partnered with a local contractor to pursue NCDOT's third ever solicited design-build project. Launching the first sign of success, RK&K was awarded the Ruin Creek Road Widening project in 2002. With a construction cost of $9.4 million, which was impressive at the time, this was the beginning of RK&K's long successful resume of delivering North Carolina design-build projects.

As the decade continued, RK&K fostered a reputation for providing innovative design, receiving extremely high technical scores, and maintaining an impressive shortlist record. Recognized as one of North Carolina's premier design-build designers, RK&K easily accumulated an extensive list of regional and national contractor teaming partners. Building upon existing contractor relationships, as well as establishing new partnerships, RK&K was awarded seven design-build projects during the decade. Among these were significant projects, including North Carolina's first toll facility, the $137 million award winning Triangle Parkway in 2008 and North Carolina's largest project at the time, the $464 million Monroe Connector Bypass in 2010.

| *NC 12 Rodanthe Bridge*



| *US 17 Perquimmans Swing Span Bridge*

From 2002 to 2020, RK&K's impressive resume included serving as the lead designer for 27 design-build projects throughout the state with a combined construction value of more than $2.5 billion. Partnering with 15 individual, regional, and nationally recognized contractors, RK&K designed more than 150 miles of roadway, 213 bridges and 46 interchanges. Illustrating the firm's reputation as an industry leader in the design-build arena, several notable and award-winning projects included the $192 million Future I-73/PTI in 2014, $244 million Asheboro Bypass in 2015, $145 million NC 12 Rodanthe Bridge in 2015, $57 million US 17 Swing Span Bridge in 2017, $408 million I-40 Widening in 2018, $410 million I-95 Widening in 2019, and one of North Carolina's first progressive design-build transportation projects for the City of Charlotte, $14 million Bryant Farms Road in 2020.

In Virginia, RK&K was the Lead Designer and Design Manager for the $129 million Route 29 Solutions design-build project, which consisted of three distinct 'elements' bundled into a single design-build contract. The three elements were: Route 29 and Rio Road Grade Separated Intersection (GSI); Route 29 Widening from four lanes to six lanes from Polo Grounds Road to Towncenter Drive; and Berkmar Drive Extension for 2.3 miles of new alignment from Hilton Heights Road to Towncenter Drive. RK&K was the lead designer on the Rio Road element, which required that the depressed travel lanes and associated bridge along Route 29 in the center of the Rio Road intersection be constructed within one summer in a period of 103 days. RK&K's innovative design allowed

| *Route 29 Solutions*

| *I-64/High Rise Bridge*

| *I-64/High Rise Bridge*

the for the bridge construction and associated intersection work to be completed and open to traffic 46 days early, earning the design team a $7.3 million early completion incentive. This project won the VTCA Engineering Award for design-build; the ACEC Engineering Excellence Award, Grand Award; the ACEC Engineering Excellence Award, Pinnacle Award for best project of the year; and the DBIA Mid-Atlantic Design-Build Award.

RK&K was the Lead Designer for the I-64 Widening project, which involved widening 4.5 miles of I-64 from a four-lane divided freeway to a six-lane divided freeway, with additional through lanes constructed to the inside of I-64 in both the eastbound and westbound directions. RK&K's innovative design approach included performing the hydraulic analysis to determine that the bridge openings could be reduced, and new, shorter bridges could be constructed in less time and at a reduced cost than repairing the existing bridges as was shown in the RFP. RK&K was also part of the design-build team awarded the major High Rise Bridge project aimed to increase the capacity of I-64 by widening the existing four-lane interstate to six lanes including HOT/HOV/managed lanes and exterior "hard running shoulder" lanes for use during peak traffic hours. The 8.5-mile long project features construction of a new 6,300-foot-long fixed-span bridge over the east branch of the Elizabeth River adjacent to the existing bi-directional bridge. RK&K provided complete roadway, stormwater, drainage, and MOT design services for 2.3 miles of I-64 widening improvements from the HRB to the I-64/Battlefield Boulevard interchange, structural design for the replacement of the bridge carrying Great Bridge Boulevard over I-64, design for signing and lighting, noise analysis and sound barrier design, and led the development of the project-wide transportation management plan.

By early 2021, RK&K had accumulated nearly two decades of expertise streamlining project delivery through the design-build procurement method. These accomplishments combined with our relationships with trusted contractors, allowed the firm to seamlessly share this success with neighboring Departments of Transportation in South Carolina and Tennessee. Strategically focused on South Carolina, RK&K was awarded our first design-build project in 2021, which included an $18 million group of 16 bridges and was shortly followed by another $14 million group of eight bridges in 2022. Continuing our focus on expanding our footprint, our efforts were recognized in Tennessee, as RK&K was awarded a $191 million I-75/I-24 Improvement project in 2022.

Locality Managed Federal and State Funded Projects in Virginia

RK&K's planning and design of transportation projects, managed by municipalities while using federal and / or state funding, has grown from the first project in the early 2000s into a very significant portion of the transportation work in all Virginia offices today. In a state where VDOT owns and operates most of the roadways, this shift made a significant impact to the transportation scene in Virginia, and RK&K has been in the forefront of this effort. RK&K works with VDOT and municipal clients throughout the state to bring their projects to fruition

through a variety of funding sources. RK&K staff have developed an in-depth understanding of how these organizations interact and are very familiar with the funding process. Recent projects involve various types of funding including Enhancement, TAP, Revenue Sharing, SMART SCALE and other funding streams. To date, RK&K has provided planning, design or construction management of well over 100 locality-managed projects with VDOT and / or federal oversight.

Expansion of Water Resources

The water resources group had started in the 1990s as environmental regulations became more stringent. By 2003 there were nine water resources staff in the Transportation Department in Baltimore. At that time, the team had very few direct water resources contracts and the bulk of work came primarily from other disciplines'

Minebank Run Stream Restoration and Water Quality Improvement Project, located along I-695 at Cromwell Bridge Road north of Baltimore, was completed in 2021 for Maryland State Highway Administration, and included stream and floodplain restoration, outfall stabilization, wetland creation, reforestation, and stormwater management.

Staff Growth, Diversity, and RK&K's Women's Leadership Forum
by Barb Hoage

Barb Hoage was recruited in 1989 to lead the firm's rapidly growing Traffic Department. Barb became the firm's first female Associate in 1998, then a Senior Director, and when she retired in 2018, the Traffic Department had grown to more than 70 professionals throughout many RK&K offices.

Increasing staff diversity was never a specific goal of the Traffic Team; rather, we sought to hire the best person available for the position and then provide the training and encouragement to be the best "version" of themselves. Along that line, it was always my hope, as the leader of the Team, to find a specific role for each person that only they could fill as well as they did. I had seen how Bill Hellmann and David Wallace fostered this in me, and I wanted to do the same. As it turned out, the Traffic Team was one of the most diverse in the company.

At one point, Bill approached me about joining the Women's Transportation Seminar (WTS), a national, women-led organization with the purpose of providing networking and growth opportunities for women in Transportation. Up to that point, I had tried very hard to see myself, and everyone see me, as "one of the guys." If I was going to be singled out, I wanted it to be for my expertise and not my gender. Joining WTS seemed like the opposite of that to me and I told Bill that I wasn't interested.

Bill asked me again and again. It took a few times until I reluctantly agreed to engage in WTS. I eventually worked my way up to President of the Baltimore Chapter. Somewhere along this path, I realized that WTS offered something that was generally missing in our industry, that women do need to look to other women as role

models for support and encouragement. Most women have different responsibilities than men outside of work, typically filling a larger role within the family, which adds pressure and presents conflicts. Also, working in a male-dominated field can be intimidating at times. I saw that I could use WTS and my role to show other women the possibilities and how to use typical "women skills" to succeed as an engineer. From that point, I encouraged as many of RK&K's women to join WTS as I could.

One day, a few other women leaders of the firm and I decided to have lunch together and started talking about forming a group like WTS within RK&K. The idea of this was a bit daunting. Would the partners see it as a potential threat? Would our male counterparts raise a fuss? The answer was "yes" to both! For this reason, we started small and quietly. We had the backing of Carolann Wicks, the first woman partner in the firm, but even she had to tread carefully. Initially, we invited only senior women in the firm, primarily to see if there was interest and because we knew they would be forgiving of the mistakes we were sure to make along the way. But before too long, we expanded the group to include any woman who wanted to participate. From there, we decided the organizational structure, topics to focus on, how and when to meet, position chairs and responsibilities, and so many other decisions.

RK&K WOMEN'S LEADERSHIP FORUM

When we had some momentum and were ready to be more public about it, we asked for pink RK&K polo shirts for the group to wear! This was the first big step to forming group cohesion and a sense of purpose. Developing a name for our new group, as well as a mission statement, were hotly debated. But through the hard work and vision of those involved, the RK&K Women's Leadership Forum was formed and took off.

| *Lunch & Learn Discussion Panels*

| *Dress for Success Clothing Drives*

| *International Womens Day Celebrations*

Solving Problems the RK&K Way
by Josh Gentry

In North Carolina, RK&K was involved in a design-build project with Flatiron to replace the bridges on I-40 over the Yadkin River. This project turned out to be a testament to how well RK&K was able to work with the contractor to come up with solutions instead of degenerating into a blame game or divisive relationship.

During construction a pipe pile walked outside the limits of one of the bent caps during driving. The pipe piles were 24 inch diameter battered steel pipe piles. The piles never achieved fixity at the base due to subsurface conditions. Since the piles had a pinned end condition, the design-build team decided to batter the piles in an alternating pattern to achieve stability much like a sawhorse. When the misaligned pile walked outside the limits of the bent cap, it threw off the design of the bent and the alternating pattern. This required the contractor and our engineers to put our heads together to come up with a solution.

Instead of arguing about whose fault it was or delaying the project, we worked together. We had several brainstorming sessions, and the contractor did not think they could remove the misaligned pile nor did we want to drive a pile in the opposite batter direction due to the balanced pattern we had previously designed. The idea we came up with was to cut off the misaligned pile just below the ground surface and redrive a vertical pipe pile and then fill that vertical pile with concrete to increase the stiffness of the pile to make up for the fact that it was not battered like the rest of the piles. RK&K reanalyzed the bent with a vertical pile and ran adjusted calculations to make sure it was structurally adequate. I was proud of how the project was handled and the teamwork atmosphere during the project meetings.

client contracts (Highways, Transit, and Site Development contracts in Maryland and Delaware). Firmwide, there were approximately 20 water resources staff, but they were located only in three offices, Baltimore, Richmond, and Raleigh. Work areas and capabilities were primarily limited to related roadway drainage, legacy stormwater management ponds, floodplain mitigation, stream restoration, and erosion/sediment control designs. Software capabilities were limited to publicly available programs and limited in-house spreadsheets. The water resources world was evolving rapidly and water quality, watershed analysis and curbing emanating pollutant loads from transportation development, resiliency and sustainability were increasingly becoming more and more prominent.

RK&K responded vigorously to this changing environment. The firm, led by new leader Seyed Saadat, adopted a multi-pronged approach to further develop and expand the water resources and remain continuously relevant in this ever changing field with varying requirements by: staying abreast of the latest in the nuances of the stormwater industry, shaping and effectively contributing to the changing stormwater regulations; assisting clients to instill pragmatic approaches and recommending meaningful revisions and solutions to address new regulations and providing assistance in respective manual re-writes; and recognizing that the new environmental mandates would be nationwide, some with specific stringent local requirements, that would surely require retooling and hiring experienced staff across many of RK&K offices, not just in stormwater and pure drainage design in transportation fields, but also expanding and augmenting our expertise in various applications of hydrology and hydraulics, ecological restoration, TMDL, MS4, watershed-based modeling, inventory and inspection of variety of drainage and stormwater related assets, bridge scour analysis, dam breach evaluation, flooding mitigation, and coastal and non-coastal sea level rise impact analysis. The team embarked on new hiring and in training existing staff in these water resources subcategories and were quickly noticed by many of our clients and attracted new clients through diligent and close collaborative work.

By 2023, the water resources team in Transportation and Environmental Departments has grown to more than 100 professionals firmwide and water resources staff work in nearly all RK&K offices. Staff still support many other disciplines within the firm, but water resources clients have grown dramatically, and the firm now has multiple open-end and direct water resources related contracts in many offices. This promotes the ability to share work readily and seamlessly across offices. The team has expertise in 2D (and hopefully soon, 3D) modeling H&H software, has stayed current with the latest industry technologies, participates, and presents in related conferences, and supports our clients in better management of their infrastructure assets with our sustainable and resilient design.

Expansion of Natural Resources

The firm's Natural Resources discipline was initiated in the mid-90s to address the challenging wetland and waterway regulations in Maryland and to expand services to meet those permit requirements. Early transportation and water/wastewater clients for the three-person Baltimore team included Maryland State Highway Administration (SHA) and Baltimore City. Prior to that time natural resources services had exclusively been met by subconsultants. It was the Woodrow Wilson Bridge project that allowed the Baltimore team to more than double in size and emphasize the value of an in-house natural resources discipline to address complex permitting issues. Projects including the Indian River Inlet Bridge and US 301 for DelDOT, stream monitoring for Montgomery County, and wetland mitigation monitoring for SHA also helped establish our team as experts in wetland delineation, forest conservation, mitigation, and monitoring. The Baltimore team has grown to 20 environmental scientists and managers who support in-house engineering projects and lead specific natural resources contracts. This team is well-known for their knowledge of forest conservation regulations, wetland and waterway permitting, mitigation monitoring, wetland mitigation design, innovative data collection and the consistent quality of their work.

Natural resources staff completing field work.

Meanwhile in North Carolina wetland mitigation design opportunities in the late 1990s led to the establishment of a small team in Raleigh. The newly established Raleigh Natural Resources team continued their early success, with their first NCDOT contract in 2000. That group has since expanded to a team of eight with senior expertise in protected species, Section 7 consultation, wetland delineations/permitting and establishing themselves as NCDOT's most used firm for natural resources services since 2015. The Raleigh team has been innovative in their approach to deliver quality work including pioneering the use of drone and marine sonar technology for Submerged Aquatic Vegetation (SAV) surveys and the development of a GIS-based project management tool that combines drone-derived aerial imagery, design files and permit plans to track construction progress and environmental compliance.

Natural resources teams have grown the last several years in Virginia, Florida and Pennsylvania with strong wetland delineators, permit knowledge and unique protected species experience. There are experts in gopher tortoises and several bat species and our team uses cost-effective acoustic monitoring techniques with specialized recording devices to monitor caves, mines, and roost trees. The bat "calls" are recorded then processed using analytical software to identify bats to species. This technique was used for the I-495 & I-270 Managed Lanes Study at 70 locations and recording 55,000 "calls". The Natural Resources discipline continues to expand with environmental scientists and managers newly engaged in the Atlanta and Nashville offices adding to the firm's regional strength in protected species and permitting. The firmwide team is now one of the largest on the East Coast approaching 50 scientists, engineers and managers with comprehensive skill sets and an emphasis on our ability to quickly pivot to react to changing regulatory requirements and client needs.

History and Expansion of Geotechnical Engineering

RK&K's geotechnical services date back to the early decades of the firm. In the 1950s, the geotechnical team started in Baltimore performing geotechnical engineering and laboratory testing on soils, rock, and materials for construction activities. By the mid-1960s, the team grew to the point that it needed to relocate to a larger space in the Lansdowne office (just south of Baltimore). At the time, an engineering firm with a fully functioning laboratory to support design and construction activities was cutting edge, especially since RK&K owned one of the first consolidation testing machines. The geotechnical laboratory was fully functional and supported the testing needs of projects until the late 1990s when the team relocated to the Timonium office (just north of Baltimore). In 2004, the geotechnical team re-joined the Baltimore staff in the Calvert Street office in downtown Baltimore.

In the late 1970s, the geotechnical team began supporting the City of Baltimore, Department of Parks and Recreation by evaluating problems associated with slope stability, deteriorating retaining walls and storm

drainage system problems at Federal Hill in Baltimore. This project site produced numerous task requests spanning multiple decades. In the 1990s, the geotechnical team supported a major effort to identify and evaluate the cultural resources associated with the north slope of Federal Hill. This project included additional stabilization measures for the slopes, but also mapping of historic sand caverns which were mined for glass making. Currently, RK&K continues to provide the City of Baltimore with geotechnical engineering services for emergency repair measures to mitigate additional slope instability issues.

| *RK&K's early geotech lab*

In the early days, under the direction of Edward Zeigler and John Miller, the geotechnical team published multiple technical papers summarizing the team's involvement with the design and construction along the Fall Zone of the Baltimore Regional Transit System. This helped expand RK&K's exposure beyond the mid-Atlantic region. The team continues to publish papers and present at technical industry events involving interchanges near the Woodrow Wilson Bridge project over the Potomac River near the District of Columbia, the ICC project in central Maryland, excavation support for an Amtrak bridge widening project, the Hickory sinkhole and Perquimans Swing Span Bridge in North Carolina, and the Christina River Bridge project in Delaware, amongst many others.

| *Boring monitoring*

Traditionally, the geotechnical team has held very few direct contracts with clients. The bulk of work has typically come from supporting other disciplines' contracts (primarily structures, highways, transit, site development, water/wastewater for multiple jurisdictions and states). Nearly every project that involves breaking ground has been supported in some way by the geotechnical team regardless of the project size or design / construction phase. Today, the Geotechnical Team has stand-alone on-call geotechnical engineering contracts with four state agencies including Maryland DOT, NCDOT, SCDOT, and TDOT.

Until 2016, the Geotechnical Team provided support from Baltimore, but in that year, services were started in Raleigh. With the selection of two Geotechnical On-Call contracts for Tennessee DOT and a major design-build project in Chattanooga, the geotechnical team further expanded to

provide staff in Nashville in 2023. Today, the Geotechnical Team consists of 21 geotechnical engineers and two geologists in five offices that support the company's ongoing project work as well as traditional and alternative delivery pursuits.

Site Design at the Smithsonian

In the late 2000s, RK&K was asked to join a team led by Baltimore architectural firm Ayers Saint Gross on their Planning and Design Services contract for the Smithsonian Institution. This became a major effort for the Site Development group and led to the expansion of the group's services in the Washington, D.C. area, including the opening of a site design group in RK&K's offices in Washington. A notable achievement during this period was the hiring of RK&K by renowned architect Philip Freelon to provide the site planning and design services for the Smithsonian's award-winning National Museum of African American History and Culture on the Mall in Washington DC.

| *National Museum of African American History and Culture*

| *Veteran's Expressway*

Moving to the Sunshine State

In the mid-2000s, the partners embarked upon a strategic growth initiative to expand the firms' services into Florida. The intent was two-fold, to grow the firm, and to balance the geographic risk of the firm's services concentrated to the mid-Atlantic region.

As described earlier, the initial efforts were focused on construction support in the mid-2000s. These efforts focused on introducing RK&K to potential clients and partners in central Florida. The next step included assembling a qualified team and this resulted in early success winning the firm's first prime construction management (CM) contract with the Florida DOT for District 1 (south of Orlando and Tampa) on the US 27 Lake Hamilton widening and improvements project.

After Mike Lausier was hired in 2009, the focus for CEI growth was broken down by the distinct regions of th state: north, central, and south. Shortly after Mike's arrival, the firm won its first prime CM contract with the Central Florida Expressway Authority (CFX). In late 2011, the team won its first prime CM contract with the Florida Turnpike Enterprise (FTE) on the Widen Veteran's Expressway project.

Throughout the 2010s, the firm continued to hire strong CM leaders focused in central Florida which resulted in incredible growth with an expanding list of clients including FDOT, CFX, FTE, and local city and county municipalities. In late 2019, the firm won GEC contracts in support of FTE Roadway and Maintenance assignments, as well as District 2 Construction.

Market conditions for pursuing work in south Florida were very different than the central Florida market. As such, in 2015 the partners decided to enter the south Florida market by seeking a strategic acquisition of a local, established CEI firm. It didn't take long for Tamayo Engineering, LLC to be recognized as the right firm to integrate into the RK&K culture, just the second (and to date last) acquisition in the firm's history. Owned and operated by Enrique Tamayo, RK&K acquired Tamayo Engineering in early 2016, which integrated a very successful firm with a solid reputation, strong client and industry partner relationships, and longevity in the south Florida CEI market. The Tamayo Engineering contracts were absorbed by RK&K including stand-alone conventional CEI projects and multiple FDOT hybrid and on-call support.

The new south Florida CEI team administered various projects throughout south Florida including projects for FDOT Districts 4, 6 and Florida's Turnpike Enterprise. In 2019, RK&K won its first contract with the Seminole Tribe of Florida (STOF) to provide CEI services for various infrastructure projects that consisted of resurfacings, safety improvements, roadway and new housing construction. Since that time, RK&K has successfully recompeted and won two additional CEI contracts with the STOF to manage projects on the Big Cypress and Brighton Reservations.

FDOT Okeechobee Road, Miami-Dade County, FL

In 2020, RK&K successfully won its first CEI standalone project for FDOT District 1 in southwest Florida for the SR 776 resurfacing, widening and safety improvement project. In 2022, the south Florida team provided CEI services for FDOT District 6's $105 million Okeechobee Road reconstruction project, which is the second largest active construction project within FDOT District 6. Early in 2023, RK&K secured the first CEI win in north Florida for Leon County (Tallahassee) on their Magnolia Drive Phase II Trail project.

From the early days of entering in Florida in 2006, the central Florida CEI team has ballooned to more than 50 full-time professionals on five dedicated CEI project teams supporting several FDOT Districts, CFX, FTE and many local jurisdictions. Similarly, the south Florida CEI team has grown to more than 30 full-time professionals with a client base of multiple FDOT Districts, Miami-Dade County, The Seminole Tribe of Florida, the Village of Pinecrest, Lennar Homes, and other local municipalities. The success has been the results of following in the proven approach of hiring strong leaders, fostering long-term relationships with clients, and delivering high quality services.

RK&K began pursuing transportation design work in Florida several years after the initial CEI efforts. Early efforts included setting the groundwork for future expansion by focusing on marketing and introducing RK&K to many clients and teaming partners. These efforts yielded many planning and design assignments throughout Central Florida and RK&K had planning and design staff working out of offices in Orlando, Tampa, and Lakeland. But work increased substantially later in the 2010s. Existing staff, led by Jason Lyle, formulated a plan to procure more and larger FDOT design projects. The design group was shortlisted on their first District 1 design project in January of 2019 on US 92 at Fish Hatchery Road, which was a resurfacing project. This project kick-started the design group and subsequent successes the group would experience over the next several years.

The design group began pursuing projects in District 7 and won SR 586 (Curlew Road) in 2019 which was a 2.5 mile 6-lane resurfacing project. Later that year the design group was successful in winning SR 572 at Waring Road Multi-lane Roundabout. At this time RK&K design services was solidified in Florida and we began setting goals to expand over the next several years. In 2020, RK&K added many design team members to the Florida staff, and RK&K was successful in winning their first Turnpike project that was an 8-mile long resurfacing project.

2022 was a pivotal year for the design group. The group continued to win projects with existing clients including FDOT District 1 and District 7, and also won several contracts with new clients including the FDOT District 5, and the City of Bonita Springs. At the end of 2022, moving into 2023, the design group was successful in winning contracts with the City of Sarasota, Brevard County, and FDOT District 1. Today (2023), the Transportation group in Florida employees over 30 staff members working in four different offices supporting various clients with roadway planning and design, environmental, water resources, traffic and design-build disciplines.

In total, RK&K has expanded to five offices across Central and South Florida (Orlando, Tampa, Lakeland, Fort Lauderdale, and Miami) with over 130 employees.

Cultural Resources

RK&K archaeologist work on the Phase II study for the Schantz Road project.

Evaluation of the effects to cultural resources, such as historic architecture and archaeological resources, is a major requirement for infrastructure development. Traditionally, this work was subcontracted on our planning contracts. In 2007, recognizing an opportunity to expand the firm's planning capabilities, RK&K launched the Cultural Resources team from our Planning Group with our first full time Architectural Historian, Stuart Dixon, and our first archaeologist, Scott Emory. Since then, the Cultural Resources team has grown to more than 30 full-time and field professionals. We have supported work for all departments throughout RK&K; won major statewide cultural resources contracts for multiple state DOTs, including Maryland, Virginia, West Virginia, North Carolina, and Tennessee; and has led cultural resources compliance on hundreds of projects. The largest projects have included the historic architecture survey for Amtrak's proposed Frederick Douglass Tunnel in Baltimore, and archeological investigations for the I-495 and I-270 Managed Lanes Study.

Tolling

Toll agencies have been important RK&K clients for decades. Typically, assignments included transportation planning, design, and CEI for roadway and bridge projects. In 2010, a contract to perform electronic toll collection services for the Maryland Transportation Authority (MDTA) was advertised that the Traffic and Planning team decided to pursue based on the similarity with Intelligent Transportation Systems (ITS) work that the traffic department was performing and our strong reputation with MDTA. We were successful in winning that contract, and that served as the beginning of today's tolls group. Randy Brown, former COO and Executive Director at MDTA, was hired to lead the group in 2012 and helped inform existing toll clients of the new toll-specific services we could provide and market new clients of our toll service capabilities. Services have expanded to include back office systems, customer service centers, and tolling operations. There are now 12 toll staff members providing services to customers in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, Florida, Texas, and Oklahoma.

A NEW TAGLINE AND A NEW LOGO

In the late 2000s, a marketing firm was hired to assist in updating the firm's long-standing logo. The marketing firm solicited feedback from clients about the attributes and characteristics of the firm and its employees. Among many affirming attributes, the most dominant were Responsive People and Creative Solutions, which became the firm's tagline. In 2009, the firm's logo was reformatted into a contemporary single line, thick and forward-leaning font style, and predominant color change from dark green to bold, dark blue. Also, when the new logo was adopted, the word "Engineers" was removed from the Mosher Street building façade and email addresses were shortened from "@RKKEngineers.com" to "@RKK.com" to better represent a firm that had moved beyond just engineering.

Wastewater Treatment

RK&K has been providing wastewater treatment engineering (earlier known as sanitary engineering) since Howard Klepper joined the firm in the late 1940s, and as described in earlier sections of this book, these services have been a core part of RK&K's work in the decades since then. However, even with the long history, the firm's municipal wastewater treatment practice experienced significant growth since the late 1990s in terms of numbers of clients served, number of staff, and range of expertise. Over the last 25 years the firm's portfolio has grown from a handful of designs at small treatment plants performed by a few engineers and designers to study, testing, design, construction, and operations assistance services at more than 75 facilities throughout Maryland, Virginia, Pennsylvania, West Virginia, Delaware, and North Carolina from dozens of RK&K staff at several offices. The philosophy of finding technically sound and cost-effective solutions to meet the needs of rural towns, growing counties, and large cities has resulted in RK&K successfully applying a wide variety of proven treatment processes, as well as innovative processes, to achieve clients' water quality and biosolids re-use goals.

During the past 25 years, this group has designed systems to meet the stringent Chesapeake Bay enhanced nutrient removal limits at numerous facilities including the 0.67 million gallons per day (mgd) Region II Wastewater Treatment Plant (WWTP) in St. Michaels, MD, the 8 mgd Broadneck WRF in Anne Arundel County, MD, and the 81 mgd Patapsco WWTP in Baltimore. At Plymouth Meeting, Pennsylvania and in Washington County, Maryland, RK&K was the first engineer to utilize ballasted active sludge (BioMag) technology to expand treatment capacity without adding new tanks and achieve nutrient removal. RK&K designed the innovative two-phase (acid-gas) anaerobic digestion system at Baltimore's Back River WWTP which significantly improved the treatment efficiency. Prior to their design, RK&K worked closely with clients in pilot testing both the BioMag and two-phase systems. The design of a biosolids drying facility for the Harrisonburg-Rockingham Regional Sewer Authority in Mt. Crawford, Virginia earned an award for the Authority. RK&K's staff has gained increased recognition throughout the region and presents technical papers at local, regional and national conferences. Growth during the past 25 years has earned RK&K the recognition of being a leading wastewater treatment engineering firm in the region.

City of Baltimore, Patapsco WWTP

AMERICA 2013

GENERAL HISTORY

In April, two bombs exploded near the finish line of the Boston Marathon, killing three people and injuring several hundred others. The bombers, Tamerlan and Dzhokhar Tsarnaev, were identified and pursued by law enforcement in a dramatic manhunt

PRESIDENT

Barack Obama

ENTERTAINMENT

"Frozen," Disney's animated feature, was released, becoming a significant commercial success and cultural phenomenon, especially among children

SPORTS

The Baltimore Ravens defeated the San Francisco 49ers in Super Bowl XLVII, a game memorable for a power outage causing a long delay early in the second half

Growing Sophistication of the Business Management Group

As RK&K grew from a company of 400 employees to over 1,500 employees during the first two decades of the 21st century, it was necessary for the business management group (a name first used in 2016) to adapt systems and processes to best serve a larger company spread out over many more offices and offering services to many more clients. These changes were wide ranging across IT, Accounting, HR, Marketing, and Graphics. A sampling of these changes includes:

- It was only during the 2000s that Microsoft Office suite became the base software for the firm's day-to-day work, and Microsoft Outlook wasn't finally settled on in the early 2010s.
- Introduction of HERD (formerly FRED) and the Facilities Help Desk as a central clearinghouse for employee questions and requests. Formerly, all requests were ad hoc between and employee and whomever at IT, HR, and Facilities they might know.
- Timesheets have evolved from handwritten, hardcopy submission as recently as the mid-2000s to, by 2016, fully automated and integrated with the firm's accounting system.
- Introduction of the much more powerful Deltek system to support accounting, HR, and marketing functions. This replaced the Sema4 system.
- All project setups and employee data, including assignment of employee ID numbers, just to name a couple of examples, were laboriously documented on written forms before being entered into the firm's accounting system. Now all data entry is simplified and fully automated.
- All hardcopy receipts, including from company credit cards had to submitted by hand (and mailed from all offices to Baltimore) and then manually entered in the accounting system. Now receipts are electronically submitted in Deltek.
- Project invoices used to be printed, marked-up by hand, and sent around the office via interoffice envelopes. The process is now fully electronic.
- Office supplies (note pads, pens, pencils, printer paper, envelopes, etc.) used to be a big deal and hunting across the office to find supplies was a routine activity.
- HR has vastly increased the benefits and tools available to employees, such as MD Live to schedule virtual doctor's and therapist appointments.

The Evolution of Accounting at RK&K by Bob Freyman

In 1989 when I started working for the firm, RK&K had just transitioned the prior year to paper timesheets, "green sheets" as the employees at the time called them as they were printed on green paper to stand out from other paperwork floating around the office. Prior to that, the company used IBM punch cards in one form or another for recording time and expenses via a DOS based program "Revelation" which consisted of basic employee hours and expenses tracking and an MIS system that tracked budgets versus spent by project. This software was managed by Comp-Tron, a subsidiary of RK&K at the time, who provided and supported all of the company's software needs. Timesheets and expenses were entered by one person in Comp-Tron, not by the individual employees as they are now. All general accounting functions were done by hand and a little later via spreadsheets.

In 1995, the administrative partner at the time, Steve Zentz, started soliciting proposals from accounting software providers, to bring in a more fully encompassing Financial and Project Management System. Sema4 was ultimately chosen, and the process began to upload data from Revelation and set up the General Accounting function from the various manual processes in place at the time. By early 1996, Sema4 was up and running and a more fully integrated accounting and project management system was born. Time and expenses were still entered into the system by one or two staff members, and not until 2016 when Sema4 was replaced by Deltek did employees enter the information themselves.

In early 2016, after well over a year of many, many hours of set up and testing by a core group of a half dozen or so staff, including partner Mark Dumler, our current system, Deltek, was ready to go live and continues to be the Financial and Project Management System for the firm. More recently the Project Management function has been enhanced by Power BI (now Fabric).

So, in summary, there has been quite an evolution from the Accounting and Project Management perspective over the last 30 years, and with a great team in place in the Business Development Group, we can expect may more great things to come in the future.

EMBRACING NEW TECHNOLOGY

In 2012, the partners decided to provide all senior leaders with their own iPad Air (with the firm's logo engraved on the back). This expensive investment was made when it was observed that early applications of iPads (a new technology then) to daily work efforts by some staff were proving to be so successful and helping to differentiate RK&K from other companies. Providing all senior leaders with iPads was seen as a way to jump-start the migration to mobile technology in order to continue to grow and expand the firm by embracing and investing in new technology...a far cry from just two decades earlier when buying computers for all staff wasn't seen as a needed investment.

Michael Nutt, Project Accountant, noted that the firm invested considerable effort into improving systems. "In 2019 when we brought the consultant in for the Billing department. There was a want for a better connection between Project Accountants and Project Managers. There was a clear disconnect before we brought in the consultant. Building that group of Billing and Project Management and IT brought the entire thing together to build a better process."

Utilities

The first formulation of an RK&K Utility Group was initiated in early 1970 with the development of a team of engineers, designers, and drafters assigned to work on the Boulevard Segment 5 Project for the Interstate Division of Baltimore City (IDBC). The project involved test hole designation and review, evaluation of the potential utility conflicts, and utility relocation for what is now known as Martin Luther King Boulevard, which was a major project for the city and RK&K at that time.

The RK&K Utility Group was retooled in the early 1980s with the design of the MTA Baltimore Light Rail Project where the team lead the utility design and relocation effort required to clear the pathway of utility conflicts for proposed transit system. The experience learned from this unique transit project helped to propel the utility group for the next couple of decades as a premier utility design discipline capable of supporting both transportation projects and site/civil development projects for major institutions such as Johns Hopkins and the University of Maryland. Well-equipped with skills in stakeholder relationships, utility coordination,

subsurface utility engineering review, utility capacity analysis, relocation design, and new facility services; in late 2010, the utility group was poised once again to take on larger scaled infrastructure projects.

In 2011 RK&K embarked on the design of the proposed MTA Baltimore Red Line Light Rail project proposed as an east west 14-mile light rail system. As part of RK&K's roles as the general consulting engineer (GEC), RK&K was responsible for utility development of existing utility plans, utility coordination, and relocation design for the entire project corridor. RK&K assembled a team of talented individuals to be located with the project office. While RK&K was already a long-time leader in the design of water and sewer conveyance systems, conduit, and gas, assembling a team of experienced staff that could spatially coordinate the orchestrated relocation of all utilities on a project of the scale of the Red Line had not previously been handled. The team of five staff members were supported by other staff from the Tri-Venture and various subconsultants. The team flourished over the nearly four-year period that included challenging relocation designs, coordination with more than 12 utility stakeholders, and development of right of way needs to support the extensive utility relocations. Upon cancellation of the project, Mike Myers, the Partner in charge of the Environmental Department challenged the team to stay intact, expand, better serve current clients, and expand our client base.

The Utility Team has continued to grow, expand the breadth of services, and add new clients in a variety of jurisdictions and states including private and public

"BE THE YETI"

During the 2018 senior leaders meeting, Mark Dumler stood on stage in front of three coolers, a cheap white Styrofoam version, a middle-of-the-road Igloo version, and a top-of-the-line Yeti version. These props were used to illustrate a metaphor. RK&K staff and the services we provide are top-of-the-line; providing the highest quality services to our clients has been RK&K's calling card since the firm was founded. We're the Yeti and everything we do should be done to Yeti standards. But Mark noted the real-world constraints that often arise. Limited client budgets and tight schedules put pressure on our delivering our services for the fees and time clients are willing to give us. But the message was clear, our quality is the foundation on our success. When we work on a project, we have to deliver whatever "Yeti-level" services we can provide for the budget and time our clients have available. We cannot compromise on our quality, but must set expectations on what we can deliver for each assignment.

This approach is a concrete example of how the firm navigates our work while adhering to the principles of being technically strong and fiscally responsible.

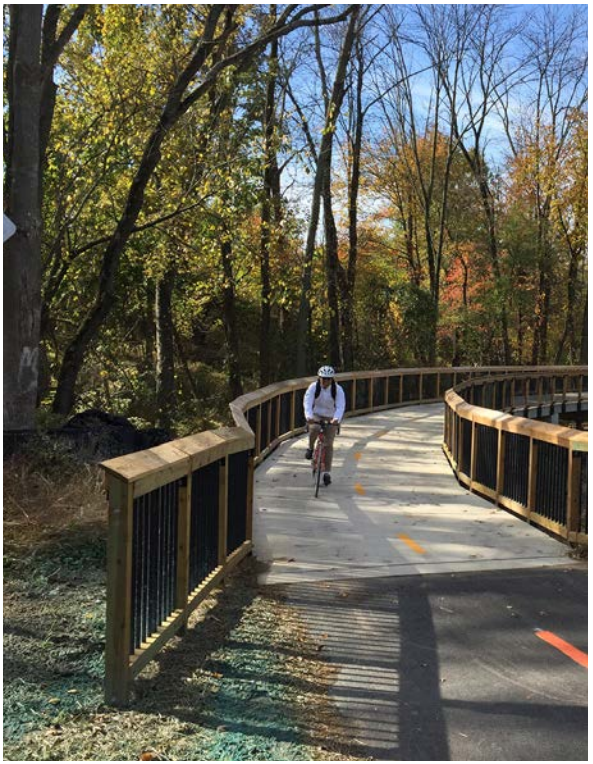
utility owners. The award of the Exelon Engineer of Choice (EOC) in 2019 provided the springboard to develop a gas design team located in the Baltimore office to serve the Baltimore Gas and Electric Company (BGE).

Currently the Utility team is comprised of over 20 professionals including CADD/Designers, utility coordinators, and engineers. The team is providing on-site, embedded staff providing utility coordination and design support for MDTA, SHA, and Chesapeake Utilities. BGE gas design work includes design and construction coordination for new business gas services, overtaxed meter, builder-overs, large gas distribution replacement programs, and major transmission projects. Regional large and mega transportation and transit projects continue to provide a steady backlog of work for the team; and utility relocation coordination and design associated with the landfall and 16-mile ductbank system for a large offshore wind project in New Jersey have taken the team into a new direction in the sustainable energy realm.

Planting a Flag in Washington, D.C.

Building on a solid foundation of transit and rail work for the Washington Metropolitan Area Transit Authority (WMATA) throughout the 1970s and 1980s, RK&K's transportation and construction management work in the District increased substantially during the 1990s and into the 2000s. To improve access to the District Department of Transportation (DDOT) and other clients and teaming partners, an office was opened in the District at 300 M Street SE in June 2013. The prominent office location in the Navy Yard enhanced RK&K's responsiveness to several clients including DDOT, the Smithsonian Institute, Architect of the Capitol, Montgomery County and Chevy Chase Village in Maryland, and Arlington County and the City of Alexandria in Virginia. Assignments also facilitated an improved staffing connection and increased collaboration

DC staff in 2019



Anacostia Riverwalk Trail. This project, which was led by staff in the Washington, D.C. office, won an Honor Award from ACEC/MD and a Recognition Award from ACEC National.

between the Baltimore and Fairfax, Virginia offices. Initially staffed by a part-time leader, the team grew to five full time people within a year, more than 20 people within five years and now more than 30 people in a wide variety of disciplines including roadway, water resources, site development, traffic, public outreach and construction management. The office moved to 100 M Street SE in early 2021 to accommodate further expansion and growth.

As of 2023, the Washington office supports clients throughout the metropolitan area including DDOT, DC Depart of General Services, WMATA, the Smithsonian Institute, Architect of the Capitol, Montgomery and Prince George's Counties and Takoma Park in Maryland, Arlington County and the City of Alexandria in Virginia. Aside from multiple on-call contracts, RK&K continues to provide staff augmentation services for several clients becoming trusted advisors. As part of RK&K's A/E contracts with DDOT since 2010, more than 60 projects were completed totaling more than $40 million and involved a wide variety of disciplines including bike/pedestrian, environmental and NEPA, right-of-way, roadway, structures, traffic, site development, transit, water resources, and construction management. Prominent projects include:

- Program leadership for the final commissioning and safety certification of DDOT's H Street / Benning Streetcar system culminating with a February 27, 2016 opening, more than 50 years since streetcar service ended in the District in 1962
- Lead JV partner of the Program Management Consulting team Capital Underground Partners for DDOT's $500 million DC Pepco Line Undergrounding (DC PLUG) program
- Staff augmentation for comprehensive Traffic Engineering services for both Montgomery and Prince George's Counties, Maryland
- From preliminary to final design, lead firm for DDOT's $33 million Connecticut Avenue NW Streetscape and Deckover project from Dupont Circle to California Street NW
- Engineer of Record for various Stormwater Management Design and Construction Management projects for the City of Alexandria
- Arlington County's Vision Zero Action Plan development, public outreach and implementation
- Construction Management for DDOT's reconstruction project of Florida Avenue NW and 9th Street NW from T Street NW to Barry Place NW, which recently won CMAA National Capital Chapter's award for Infrastructure Project of the Year for projects less than $25 million

Working on Fire
by Maggie Berman

Back when we were at Mosher Street, I was down to the wire on a deadline that I had been working towards for more than two years, the release of the Hampton Roads Crossing Study Supplemental Environmental Impact Study. There was suddenly a burning smell and smoke coming from under my desk. The surge protector running my computer imploded and caught my cubicle wall on fire. I was frantic to finish my submittal and after calling our facilities team to address the small electrical fire, I resumed work in another empty office, only losing about four minutes of time and my document was submitted on time. Not even a literal fire can keep us from meeting our client's needs!

A New Office for Baltimore

With a desire to again consolidate all Baltimore-based employees within one workspace, the partners began steps to rent office space at 700 East Pratt Street, right across from Baltimore's Inner Harbor. First to relocate was the Water/Wastewater group (formerly, they were on the entire top floor of the Mosher Street building). In 2017, after continued growth and expansion, the firm consolidated its multiple Baltimore area offices into 100,000 square feet of leased space on the 5th and 6th floors of the building. Off-street parking was provided in adjacent parking garages. All 300+ Baltimore-based employees were fully relocated to Suite 500, with an internal stairway connecting the two floors. Similar to the Mosher Street building in the late 1980s, this new space offered tremendous opportunities for collaboration and interaction. The Mosher Street building was sold to the Maryland Institute College of Art (who had been outbid for the building by the partners in 1986!).

The new contemporary space faces Baltimore's Inner Harbor and proudly displays a large RK&K logo atop the building.

Expansion into South Carolina

By the mid-2010s, North Carolina DOT's program was stronger than ever. And in 2017, the partners made a strategic decision to initiate the pursuit of work in South Carolina. With a new infusion of funding, SCDOT's program was preparing for growth. The initiative was launched in the fall of 2017 with tremendous support from across the firm. A "meet and greet" event was held late in the year with SCDOT project development staff, which was very well received. RK&K's office in Columbia, South Carolina was established in March 2018.

The office grew quickly adding key discipline leaders and roadway design and water resources staff to support the significant volume of work in North Carolina while building an experienced team in South Carolina. It was RK&K culture as its best, work sharing, teamwork, training and support, as the Columbia office began to take shape. More key hires followed, along with structures, traffic, CEI and marketing staff as the Columbia office continued to support the North Carolina team and began to develop in-state work. An unofficial but frequently mentioned goal was to reach a point where North Carolina staff were providing support for South Carolina work. It did not take long to realize that goal.

RK&K's first transportation win in South Carolina was memorable and high profile. During the summer of 2019, RK&K was selected for a $8+ million contract by SCDOT as one of five firms to provide Statewide Scour Critical Assessments for more than 8,000 bridges, work that was needed to support a bridge maintenance program experiencing substantial scrutiny. This selection quickly gained attention across the South Carolina engineering industry and within SCDOT. Additional wins with SCDOT quickly followed for several On-Call services contracts

SCDOT Statewide Scour Critical Assessment inspections

including traffic safety engineering services (2019), roadway design (2020), and CEI services (2020 and 2023), which provided a variety of assignments across the state.

Building on the firm's legacy of design-build successes in North Carolina, the firm won its first design-build project for a package of 16 closed and load restricted bridge replacements in the western part of South Carolina in 2020. A similar win followed in 2021 for a package of 8 bridges in the northern part of the state. The firm won its first CEI standalone project in 2021 (US 301 bridge replacements in the southwest part of the state) and its first design standalone project in 2022 (three intersection improvements on US 378 in Sumter County). Local government clients were also added including annual C-Fund reporting services for Lexington and Pickens County, on-call services for the Town of Mount Pleasant, and stormwater/drainage services for Charleston County.

Because of the firms' responsive, creative and cost-effective quality services, the firm's reputation continues to grow with SCDOT and industry partners. Due to continued strong growth, an additional office in Charleston was opened in summer 2022 with structures and CEI staff. The South Carolina transportation team currently boasts more than 35 professionals, which is a great example of work sharing and support from across the firm to win and successfully deliver work to clients throughout the state.

In 2022, RK&K won its first project specific CEI Contract, the US 301 Bridge Replacements in Orangeburg. This contract, along with our Prime On-Call statewide CEI contract has put RK&K on the "map" in SC as a leader in CM/CI. In 2023, RK&K won another project specific CEI contact, I-26 Widening MM 125 MM 136 Project in Calhoun and Lexington Counties.

Right-of-Way

In February 2017, RK&K initiated efforts to start a right-of-way (ROW) group by making two key hires with extensive backgrounds related to ROW services predominantly to the he private energy utility sector. While RK&K had historically developed ROW plats and other related ROW services to identify property needs, services related to title research, negotiations, relocations, and closing had been outsourced. The initial marketing and outreach efforts were focused on ROW services related to the private utility sectors and spreading the word at RK&K that we had developed a ROW group that would provide an added resource to our current and future clients and create the opportunity to maintain services in-house that were previously outsourced to subconsultants. The ROW group quickly became engaged in the MTA 14-mile light rail Purple Line project located in Maryland north of Washington through Prince George's and Montgomery counties and provided valuable insight into the evaluation of and resolution of ROW issues related to utilities. The group's efforts lead to the elimination of a few hundred new property rights request and helped maintain the project schedule.

The ROW group quickly secured contracts with the energy company Exelon, other DOT's, and municipalities through extensive marketing, outreach, and support from RK&K project managers. Initial projects included several design-build projects for small bridge replacement projects under West Virginia Department of Highways, Exelon business units including BGE, Atlantic City Electric (ACE), and Delmarva Power & Lighting (DPL), various municipalities located with Maryland and Virginia, and VDOT. RK&K has successfully secured property rights for utilities, drainage, sidewalks, stormwater management, roadway improvements, highways, and transit. RK&K is the lead ROW team for an offshore wind project located off the New Jersey coast to acquire properties to make landfall and routing of a large system of conduits and manholes related to the transmission of the offshore power to area substations.

Within six years the ROW group has grown to eight employees and has an extensive list of clients and pre-approvals in New Jersey, Pennsylvania, Maryland, Delaware, Virginia, Tennessee, Texas, and Georgia.

MTA Purple Line Light Rail Transit (rendering)

Moving South to Georgia

In 2018, there was an opportunity to leverage the firm's growing water resources and green infrastructure services in Gwinnett County, Georgia, a large and growing jurisdiction northeast of Atlanta. The Gwinnett County Department of Water Resources was seeking a consultant to provide on-call services for Green Infrastructure planning and design, along with specialized technical support services. Gwinnett County, known for its forward-thinking approach to smart stormwater management in the southeast, offered an ideal environment for RK&K's expertise. The firm assembled a team with diverse expertise to closely collaborate with the client team and ensure successful contract execution.

The pursuit of this opportunity required a collective effort from RK&K's team, drawing on extensive experience in delivering successful green infrastructure projects in the Chesapeake Bay region. Despite RK&K's lack of prior presence in Georgia and limited existing relationship with the client, the firm's exceptional qualifications stood out among the competition. RK&K was ultimately selected (along with four other firms) for the Green Infrastructure planning and design category and specialized technical support category. This recognition affirmed the outstanding capabilities and strengths of the firm.

In 2019, RK&K delivered its first green infrastructure master plan and BMP designs for Gwinnett County. The firm's green infrastructure design experience, paired with local knowledge, allowed RK&K to provide green infrastructure in line with local design requirements

RK&K'S CULTURE

RK&K's century of success seemed in large part to stem from never straying far from core principles that emphasized quality and service to our clients. As the firm grew the partners recognized the need to more formally understand what RK&K's culture is so it could be maintained and strengthened as the firm continued to expand. The RK&K Culture Committee was formed in 2019 with the purpose of making a thorough assessment of the state of RK&K's culture and identifying recommendations to preserve and strengthen it. The Committee met with groups across the company and conducted a company-wide survey to gather feedback on what makes RK&K unique and the key characteristics that define its culture. The results overwhelmingly identified quality, integrity, responsiveness, teamwork, a "family feel," and creativity and innovation as the fundamental elements that define RK&K.

Being "true to our culture" forms the third-leg of the firm's fundamental principles that also include being technically strong and fiscally responsible.

and backed with real-world experience of putting these types of green infrastructure projects in the ground. This notable win and expanding stormwater client portfolio across the state led to the firm opening its first office in Georgia in Sandy Springs in 2019. The Georgia pursuits have expanded beyond water resources to also include transportation and construction services.

Tennessee

After testing the waters in Tennessee with meetings and proposals, RK&K journeyed over the Smokey Mountains into Rocky Top country opening offices in Bristol and Nashville in late 2019. The firm won its first Tennessee Department of Transportation (TDOT) contracts in early 2020 with on-calls for Intelligent Transportation Systems (ITS) Design and Geotechnical Engineering. Soon after were wins for on-call contracts to provide roadway safety audits for TDOT Strategic Transportation Investments Division and Archaeology and NEPA Documentation as a subconsultant for the Environmental Division. Also in 2020, RK&K's Construction Management group won a CEI contract as a subconsultant. Further success was seen in 2021 and 2022 with the City of Chattanooga Green Infrastructure, City of Morristown, Nashville Department of Transportation (NDOT) Complete Streets and Greater Nashville Regional Council (GNRC) winning on-call contracts with each.

In 2022, our CEI group won their first prime contract to provide services in TDOT Region 2 and our team won its first Tennessee design-build project for the I-75 at I-24 Interchange Phase II project in Chattanooga. Finally in 2023, our CEI group won their first project specific contract for the Hamilton Place Boulevard Interchange at I-75 and RK&K was awarded a Pre-Construction Environmental Review and Analysis On-Call with TDOT's Environmental Division.

RK&K currently has 29 (17 CEI and 12 Transportation) staff in Tennessee, have opened a construction office in Chattanooga, and the Nashville office has moved into its third location. In 2024 we will open an office in Knoxville.

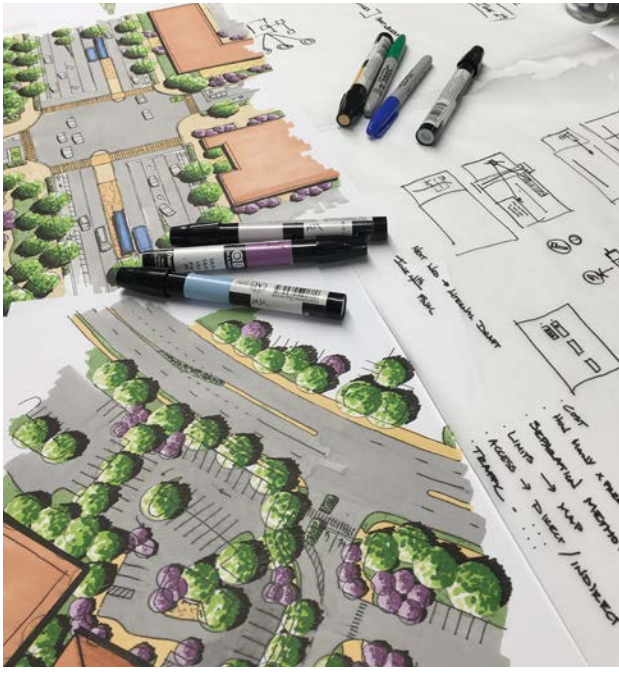
Deep in the Heart of Texas

In the 2000s RK&K had undertaken an initial attempt to penetrate the large Texas transportation market, focusing on Houston. While the firm was successful in developing an energy and utility practice in the state, it was not able to make in-roads into transportation. However, Texas continued to boom, gaining more population that any other state during the decade of the 2010s. Moreover, the state's already substantial transportation program was rapidly expanding due to dedicated funding from the state's booming energy industry. The time seemed right to make another attempt expand into the Lonestar state. Hiring David Raines, to support tolling work

across the firm, helped plant a new flag in the Austin region. With the growth across the Texas Triangle (Austin, Dallas, Houston) and a massive transportation budget, RK&K shifted focus to winning transportation and construction work with TxDOT and other clients in Central Texas. Mark Jones, a former TxDOT District Engineer was hired to focus efforts and expand the office. Success to date has included winning RK&K's first prime construction contract for statewide CPM support services, a prime contract to support environmental documentation and technical services for the Houston District, a prime contract for traffic engineering services for the Austin District, several CM/CI assignments, management of the toll system replacement for border city of Eagle Pass, toll services for Fort Bend County, along with many subconsultant assignments in transportation.

RK&K's Healthy Communities Team

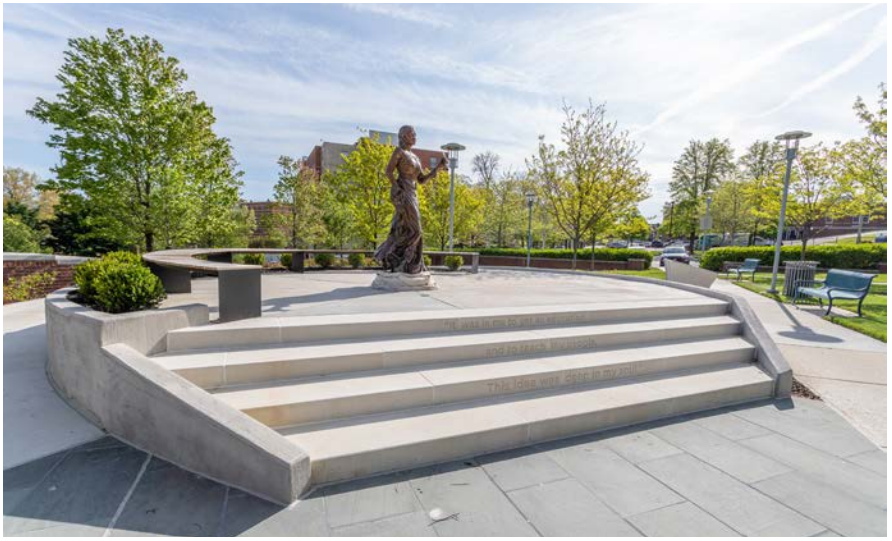
RK&K's efforts have always been focused on delivering solutions to benefit communities, and that means a growing awareness for solutions that take a human-centric approach to planning, design, and project delivery. In 2018, with the addition of a Landscape Architect Melissa Miklus, the Healthy Communities Team was started to focus on innovative bikeways projects, complete streets design, and connectivity studies. Early work included ten miles of cycle tracks in Washington, D.C. that involved many hands-on public engagement events. The team's portfolio expanded to connectivity studies such as the Eastover Forest Heights Study, Sykesville Connectivity Plan, and Chesapeake Beach Study. Each plan highlights the emphasis on safety and modal priority for vulnerable roadway users. In these projects, pedestrians, bicyclists, and people accessing transit are envisioned to have new facilities in these multimodal environments with appropriate end of trip amenities including street furnishings, bicycle parking, and bus shelters.



In Maryland, the Healthy Communities Team guided the State Highway Administration to adopt an innovative and discerning approach to planning and designing the State's roadway network – Context Driven.

Context Driven emphasizes a more symbiotic relationship between roadways and the land uses they connect and has generated several acclaimed efforts to improve safety and mobility throughout Maryland including the Statewide Pedestrian Action Plan and the Context Driven Toolkit.

The team's work has expanded across the firm to Pennsylvania, Delaware, Virginia, West Virginia, Tennessee, North Carolina, South Carolina, Georgia, and Florida. A few of the team's favorite projects are the Draper Complete Streets Master Plan in Blacksburg, Virginia; a stormwater feature designed as a park in Virginia Beach; a skate park in Vinton, Virginia; and the Glasgow to Iron Hill Pathways Project in Delaware.



Close to home in Baltimore City, the team was humbled and excited to develop a concept for Coppin State's Fanny Jackson Coppin Memorial Plaza – integrating a seven-foot bronze statute into a raise, integrally colored concrete, circular plaza accessed by an incline plane or custom pre-cast concrete steps featuring a quote from Coppin in relief. Our community engagement skills shined through as we charetted with the Charles Village Civic Association to inspire ideas, work with a contractor, and provide construction management services as a closed roadway for one block in Baltimore City was transformed into a community park and event space with pavement murals, self-watering raised planters, and a stage. Projects like these allow our team to work with sustainable and innovative materials such as thermally modified ash that will patina and last for 30-plus years and save the community time, energy, and funds to program and enjoy their beloved park.

As the team grows, the focus of every project will continue to be pairing appropriate planning and design solutions with the community who will implement, maintain, and use new and retrofitted spaces.

Adapting to COVID

In early 2020, the global COVID pandemic interrupted life in a way not experienced in perhaps a hundred years. This novel disease originated in China in late 2019, causing flu-like symptoms and with a mortality rate that rose sharply with a patient's age. The disease spread from China, initially with major impacts in Northern Italy then escalating impacts across the world, including in the United States. March began with confirmed COVID-19 cases in several states, including Washington, California, and New York. These were primarily linked to travelers from affected countries or close contacts. It soon became evident that the virus was spreading within communities, indicating undetected transmission chains. This was especially notable in places like New York City, which quickly became a hotspot. On March 13, President Trump declared a national emergency, freeing up federal resources for state and local governments. States began implementing measures to contain the virus. Many declared their own state of emergencies, closed schools, and limited large gatherings. Concerns about the pandemic started impacting the economy. Stock markets saw significant fluctuations, and unemployment claims began to rise as businesses, especially in hospitality and travel, felt the immediate impact.

In mid-March the immediate future seemed uncertain. A health crisis of frightening severity seemed to be at hand, and it was unknown if any of the firm's work, especially in-person construction work, would continue. The partners made the decision to close all RK&K offices, shifting the entire firm to remote work. Fortuitously, the firm's Business Management Group, and especially the IT team were ready for this massive change. IT had already initiated the transition from desktops to laptops for disaster recovery and business continuity and upgraded VPN capabilities to support remote work. This proactive approach significantly improved the firm's position, with about 75% of the company now using mobile computers. IT purchased and stocked enough laptops to meet the demand but faced challenges in adapting internal processes for remote work, deploying up to 30-40 devices per week from technicians' homes.

Within a week, IT deployed around 200 laptops to complete the migration, enabling staff to work remotely. Improved communications and collaboration allowed the team to adjust quickly to remote work, with an enhanced VPN process ensuring reliable access to company resources. (Only a few years earlier, limits on the firm's VPN access capabilities made widespread remote work impossible.) Overcoming connectivity issues at home, IT rapidly deployed cloud-based virtual desktop environments, supported by an earlier cloud upgrade, Panzura file management, for increased file access.

Microsoft Teams, previously underused, experienced a surge in activity as new communities and collaborations emerged. The IT team worked to expand Teams' utility for internal and external collaboration, adding meeting dial-ins and allowing external users to join internal teams. Despite the initial challenges posed by the pandemic, the adaptations made during this period have strengthened RK&K's resilience for future adversities.

Fortunately, by-and-large the firm's work also continued strong throughout the pandemic. COVID restrictions would continue into 2022, but RK&K offices reopened by May 2020. However, it was clear that for health, personal, and social reasons, a return to the "100% office" environment was not tenable. One of the clear legacies of the COVID experience was the formal implementation of a hybrid work environment where employees were given the option of working from home part time.

Public Engagement

The firm's long history of transportation planning work has included supporting traditional public involvement activities, such as logistics and staffing for public meetings and hearings. During the 2010s the need for this work was increasing and the decision was made to develop staff that specialized in public engagement. This effort, initially led by Karen Kahl and Kim Troiani, focused on existing clients like the Maryland State Highway Administration and the Delaware Department of Transportation. An example project was SHA's large I-495/I-270 Managed Lanes Study, which required many public meetings and outreach campaigns. RK&K led this effort, which was ongoing when the COVID-19 pandemic struck. Suddenly, many traditional face-to-face public engagement activities were not possible due to pandemic restrictions. RK&K was able to pivot quickly to implement innovative public outreach techniques that met the clients' and public's needs, including virtual public meetings and hearings and new approaches to sharing information with the public.

RK&K provided creative services and outreach and event management to support and promote grand opening event for Metro Silver Line Phase II extension in Washington D.C.

These efforts and the growing sophistication of RK&K's public engagement services ultimately helped lead to securing a major contract with the Washington Metropolitan Area Transit Authority (WMATA), which greatly expanded the number of assignments and types of services RK&K's public engagement team provided. These new and enhanced services include public awareness and education campaigns; print, broadcast, and electronic media coordination; special event coordination; research and stakeholder identification; multi-media presentations and video production; website design, hosting, and maintenance; and social media engagement. One of the largest tasks to date has been supporting WMATA with the public engagement activities for the opening of their Silver Line extension, which includes six stations along 11.4 miles, spanning from the Wiehle-Reston East Station to Ashburn Station in Northern Virginia. RK&K's team was brought on board to prepare for the opening day event on November 15, 2022. Outreach activities involved developing and refining the Silver Line Extension website, a communications toolkit, and the Silver Bulletin newsletters. RK&K also developed multiple informative videos, including an overview of the project, tours of the stations, and new rider and opening day excitement highlights. Leading up

RK&K staff hosting a virtual public meeting for the I-495/I-270 Managed Lanes Study.

to the grand opening, RK&K's team developed promotional materials such as a logo, invitations, microsite, signage, program, attendee tags, and station welcome banners, as well as social media content and graphics. "We're humbled WMATA trusted us to build out and execute a communications plan around the opening of the Silver Line Extension and to educate the region about the new service," said Kim Troiani.

Over the last several years the public engagement team has increased to six dedicated staff. The team won another major contract with Amtrak for community engagement, public affairs, and corporate and strategic communications. The team now provides services to SHA, WMATA, Amtrak, the Maryland Department of Transportation (MDOT), the Maryland Transit Administration, Maryland Port Administration, VDOT, DelDOT, and FHWA, among other clients.

RK&K at 100 Years

Organic growth that began a century ago continues and the future is bright for RK&K in the changing landscape of professional engineering services. Circling back to RK&K's first home in and near Baltimore, major projects at the end of 2023 included work on the Purple Line, the Red Line project is being revived and RK&K is well-positioned to rekindle design work. Another major win in the long line of Program Management/GEC-type work was RK&K's selection on a JV team for Program Management Support Services on the $2 billion Long Bridge project between Washington, D.C. and Virginia. These are just a few of the hundreds of major assignments the firm carries into its second century.

AMERICA 2023

GENERAL HISTORY

On October 7, Hamas militants invaded Israel killing 1,400 Israeli civilians, the latest atrocity in the long Israeli-Palestinian conflict

PRESIDENT

Joe Biden

ENTERTAINMENT

Taylor Swift's "Eras" tour became the highest grossing musical tour by a female artist, quickly on the way to being the highest growing tour, period

SPORTS

The Baltimore Orioles and Baltimore Ravens won their divisions in their respective leagues, the first time this has happened

ROSTER OF PARTNERS

Over its 100 years, RK&K has had 37 owners.

Name	Partner Years	Name	Partner Years
Richard C. Sandlass, PE	1923-1946	Harry F. Schmale, Jr., CPA	1985-1995
George A. Wieman, PE	1926-1951	William K. Hellmann, PE	1987-2004
Stewart F. Weikel, PE	1930?-1949	David W. Wallace, PE	1988-2013
Edward F. Rummel, PE	1944-1962	Stephen W. Kagay, PE	1990-2003
Howard S. Klepper, PE	1946-1968	Robert J. Halbert, PE	1990-2009
William R. Kahl, PE	1947-1981	Frank H. Donaldson, PE	1990-1995
Emil F. Kordish, PE	1956-1986	Stephen G. Zentz, CPA	1995-2012
Burton N. Cox, Jr., PE	1956-1986	J. Michael Potter, PE	2002-2017
August W. Noack, Jr., PE	1956-1984	Thomas E. Mohler, PE	2004-2019
Robert M. Reindollar, Jr., PE	1958-1977	James A. Zito, PE	2004-2010
Albert R. Stallknecht, PE	1967-1990	Michael W. Myers, PE	2008-2020
Ralph E. Marquiss, PE	1968-1989	Mark M. Dumler, Esq., CPA	2011-2022
C. Robert Varndell, PE	1968-1987	Carolann D. Wicks, PE	2012-2016
Charles G. Clarke, PE	1973-1987	Mimi Kronisch, PE, CCM	2017-
Albert L. Deen, Jr., PE	1973-1991	Melinda B. Peters, PE, CCM	2017-
John L. Bell, PE	1974-1987	B. Keith Skinner, PE	2020-
F. Pierce Linaweaver, PE, Ph.D.	1978-1987	Nathan C. Atkinson, PE	2020-
Eric K. Weber, PE	1979-1990	Peter J. Patrone, CPA	2022-
E. Robert Seitz, PE	1981-1992		

A PORTRAIT OF RK&K IN 2023

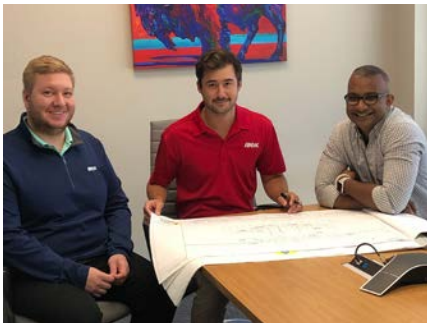
In the contemporary world of RK&K, the office environment has become a dynamic blend of technology, diversity, and flexibility, reflecting the profound changes in the professional landscape over recent years. One of the most notable transformations at RK&K has been the increase in staff diversity. Today, the firm prides itself on a workforce that includes a significantly higher number of women and racial minorities compared to past decades. This shift reflects changes in the broader society, with increased female engagement with STEM fields and a more diverse national population. The inclusive environment at RK&K fosters collaboration and innovation, with employees from various backgrounds contributing unique insights and experiences. This diversity is not only seen in the workforce but also in leadership roles, reflecting a commitment to equality and representation at every level.

The ubiquity of technology in RK&K's daily operations marks a pivotal transition in the way work is conducted. First emerging at the start of the COVID pandemic, Microsoft Teams has become the backbone of meetings and remote coordination, enabling seamless communication regardless of physical location. This platform has become integral for project discussions, company announcements, and even informal catch-ups, ensuring that the essence of office camaraderie persists in a digital format.

The near-universal adoption of laptop computers signifies another major shift. The mobility provided by laptops facilitates work from any location, aligning with the firm's adaptive work practices. As a result, the traditional desk phones have become obsolete, phased out in favor of smartphones, which offer the dual benefits of communication and smart applications. Moreover, the digitization of most work products has streamlined processes, reducing paper usage and enhancing efficiency. Digital tools and platforms have become the norm for design, planning, and management, enabling a more integrated and sustainable approach to project execution.

Post-COVID, RK&K has embraced a hybrid working model, allowing employees to split their time between the office and home. This approach acknowledges the shifts in work-life balance preferences while maintaining the importance of in-person collaboration. The hybrid model at RK&K is not just a response to the pandemic but a forward-thinking adaptation to the evolving preferences of the workforce. It offers employees the flexibility to work in an environment that suits their needs, leading to increased job satisfaction and productivity.

RK&K has seen a proliferation of employee-led initiatives, reflecting a socially engaged workforce. These initiatives cover a broad spectrum, from the DEI Council to RK&K's Culture Committee, Community Engagement, Sustainability, and the Women's Leadership Forum. Through these initiatives, employees are able to contribute to the company's evolution in a way best focused on their interests. In addition, expanded programs for mental health and professional development offer support and resources to ensure employee well-being.



PART 5:

AWARDS

RK&K's century of engineering and professional excellence has included tens of thousands of projects, all important to the communities they served. Many of these projects were identified for special praise. We cannot list all projects that have won awards since the records, especially before the early 2000s, are incomplete, but the following is a list of some of the projects that have won awards since the late 1990s.

Project	Client	State
Carroll Creek Flood Control	City of Frederick	MD
Main Street Reconstruction	City of Annapolis	MD
I-95 / Arena Drive Interchange / Redskins Stadium (FedEx Field)	Jack Kent Cooke	MD
Bunting Blaustein Cancer Research Building	Henningson, Durham & Richardson, Inc.	MD
West Virginia Statewide Inspection	WVDOH	WV
Open Space Implementation Phases I and II	Johns Hopkins University	MD
Canal Parkway Phase V Construction from River Avenue to MD 51	MDOT SHA	MD
On-Call Structural Design Engineering Services	MTA	MD
Corridor H Construction Inspection Services	WVDOH	WV
West Virginia Statewide Inspection	WVDOH	WV
Open-End Preliminary and Final Engineering Design Services	MDOT SHA	MD
MD 216 Noise Barrier Modifications from I-95 to US 29/MD 216 Design-Build	Corman Construction, Inc.	MD
West Street Development Site (Christina Crescent)	DelDOT	DE
Rehabilitation of Frederick Douglass Bridge over Anacostia River Design-Build	Corman Construction, Inc.	DC
Baltimore Red Line Corridor Transit Study and General Engineering Contract (GEC)	MTA	MD
Keyser- McCoole Bridge (Route 50)	WVDOH	WV
I-95/SR 1 Interchange Improvements	DelDOT	DE

Project	Client	State
Potomac River Raw Water Intake and Pumping Station	Berkeley County Public Service Water District	WV
On-Call Sanitary Engineering Services Task 12 Stemmers Run Relief Wastewater Pumping Station and Force Main	Baltimore County	MD
Small Structure Inspections	City of York	PA
Woodrow Wilson Bridge Replacement	VDOT	VA
Justison Landing	DelDOT	DE
Chester Riverfront Master Plan/Soccer Stadium Study	Buccini Pollin Group	PA
Stormwater Master Plan Study	UNC-Chapel Hill	NC
Wilmington Riverfront Walkway, Russell W. Peterson Urban Wildlife Refuge & Educational Center	DelDOT	DE
Inter-county Connector (ICC) GEC Design-Build	MDOT SHA	MD
Harbor Point Thames Street Wharf	Ayers Saint Gross	MD
Stormwater Master Plan, Phase 2 and GIS	UNC-Chapel Hill	NC
The Fitzgerald at the University of Baltimore - Bolton Yard	Bozzuto Development Company	MD
West Virginia Route 2, Cresap to McKefrey Design-Build	J.F. Allen Company	WV
NCTA Triangle Parkway Design-Build	S.T. Wooten Corporation	NC
North Main Street Improvements	Town of Blacksburg	VA
The John and Frances Angelos Law Center at the University of Baltimore	Ayers Saint Gross	MD
Charlotte R. Bloomberg Children's Center & Sheikh Zayed Clinical Tower	Johns Hopkins Hospital	MD
Morgan State Center for Built Environment and Infrastructure Studies	CS&D	MD
John Marshall Hotel Residences	RJT+R	VA
NCDOT I-40 Widening & Signing Design-Build	S.T. Wooten Corporation	NC
I-95/I-476 Interchange Improvement Feasibility Study	Delaware Valley Regional Planning Commission	PA
New Design Road Water Treatment Plant Expansion	Frederick County	MD

Project	Client	State
Traffic Engineering Design & Analysis Statewide	VDOT	VA
Patapsco Force Main	Baltimore County	MD
Candidate Safety Improvement Segments (CSIS), I-495 at MD 185/ Connecticut Avenue, I-495 at US 1	MDOT SHA	MD
UDE Interdisciplinary Science & Engineering Building and East Campus Utility Plant	Ayers Saint Gross	DE
A/E Services Schedule	DDOT	DC
Westin Hotel Wilmington	Buck Simpers Architect & Associates	DE
National Youth Science Center Bridge State Project	WVDOH	WV
Hurricane Protection Improvements for the Inner Harbor Navigation Canal	Eustis Engineering, Inc.	LA
Inwood Bypass	WVDOH	WV
Travel Forecasting Services and Traffic Engineer Analysis	MDOT SHA	MD
I-95 / Section 100 White Marsh Interchange (I-95/MD 43) Express Toll Lanes	MDTA	MD
Route 250 Bypass Interchange at McIntire Road (Meadowcreek Interchange)	City of Charlottesville	VA
The American Veterans' Disabled for LIFE Memorial	Disabled Veterans Life Memorial Foundation	DC
Purple Line - Corridor Cities Transit	MTA	MD
I-485/I-85 Interchange Design-Build	STV/Ralph Whitehead	NC
On-Call Bridge Design Services	City of Baltimore	MD
Rehabilitation/Replacement of the Southwest Diversion Sewer – Phase 3 and Construction Phase Services	City of Baltimore	MD
NCDOT Macy Grove and I-40 Business Widening/Extension Design-Build	Blythe Development Company	NC
Final Design and Construction Consultation for SR 0441-012	Borough of Columbia	PA
US 50 / 301 Bay Bridge Toll Plaza	MDTA	MD

Project	Client	State
Mudd-Levi Homewood Campus Undergraduate Teaching Labs	Ballinger Architecture Engineering	MD
Columbia-Wrightsville Bridge over Susquehanna River	PennDOT	PA
SR 441, Section 012 Relocation Project	PennDOT	PA
CEI Services for Veterans Expressway (SR 589) Widening	Florida's Turnpike Enterprise	FL
Technical Analyses and NEPA/MEPA Document Preparation	MDOT SHA	MD
Northern Mineral County Regional Sewer System Wastewater Treatment Plant Phase 1	Frankfort Public Service District	WV
Wastewater Treatment Plant Enhanced Nutrient Removal (ENR)	Buchart-Horn, Inc.	MD
Harbor Point Master Plan and Development	Harbor East Development	MD
Greensboro Regional Wastewater System	Town of Greensboro	MD
Four Mile Run Tidal Restoration	Northern Virginia Regional Commission	VA
On-Call Engineering, Watershed Restoration & Coastal Construction Planning, Stockley	Delaware Center for Inland Bays	DE
Anacostia Riverwalk Trail	DDOT	DC
Project Management for the Downtown Tunnel / Midtown Tunnel / MLK Freeway Extension	VDOT	VA
Baltimore and Potomac (B&P) Tunnel NEPA	Amtrak	MD
Route 29 Solutions Design-Build	VDOT	VA
National Museum of African American History & Culture	Smith Group	DC
Battle Grove Regenerative Stormwater Conveyance	UNC-Chapel Hill	NC
Eager Park Design Project	Mahan Rykiel Associates	MD
MD 404, US 50 to Denton Design-Build	MDOT SHA	MD
I-495 SB Lane Extension	DelDOT	DE
San Martin Drive Pedestrian Improvements	Johns Hopkins University	MD
GRTC Transit System, Pulse Bus Rapid Transit (BRT)	Kimley-Horn & Associates	VA
Inwood Bypass Phase 2	WVDOH	WV

Project	Client	State
CEI for Widen Beachline (SR 528) from I-4 to TPK	Florida's Turnpike Enterprise	FL
North River WWTF Enhanced Biosolid Reuse and Reduction Project	Harrisonburg-Rockingham Regional Sewer Authority	VA
Connector/Piedmont Triad International Taxiway Design-Build	Flatiron Constructors, Inc/ Blythe Development Co. JV	NC
Automated Work Zone Speed Enforcement Program Support	PennDOT	PA
Rodanthe Submerged Aquatic Vegetation (SAV) Monitoring	NCDOT	NC
Redesign of Rash Field	Waterfront Partnership	MD
Chesapeake Bay Bridge AET Final Design	MDTA	MD
Enhanced Biosolids Reuse & Reduction Project North River Wastewater Treatment Facility	Harrisonburg-Rockingham Regional Sewer Authority	VA
MD 213 Over Old Mill Stream Branch Phase V	MDOT SHA	MD
I-95/I-276 Intelligent Transportation Systems (ITS), Signing and Lighting Design	Pennsylvania Turnpike Commission	PA
Clifton Park Athletic Field	City of Baltimore	MD
Patapsco WWTP Tertiary PS (#845R)	City of Baltimore	MD
US 301 Mainline Project, GEC	DelDOT	DE
Jones Branch Connector	Fairfax County	VA
CEI Group 157 (Wekiva Section 3A and 3B) SR 46/US 441	FDOT	FL
School of Nursing Renovation/Expansion of the Pinkard Building	Johns Hopkins University	MD
Jones Branch Connector	VDOT	VA
Rock Creek East One Livability Study	DDOT	DC
Asheboro Southern Bypass and Zoo Connector	NCDOT	NC
Northern Virginia Districtwide CEI Services	VDOT	VA
Christina River (Senator Margaret Rose Henry) Bridge and Approaches	DelDOT	DE
Annual Contract for Project Management & Construction Inspection Services, Poindexter Street Bridge	City of Chesapeake	VA
Purcell Park Master Plan	City of Harrisonburg	VA

Project	Client	State
Minebank Phase 5 Services	MDOT SHA	MD
SR 528/SR 436 Interchange Improvements and SR 528 Widening for SR 436 to Goldenrod Road	Central Florida Expressway Authority	FL
Lyons Road - C-14 Canal to Sawgrass Expressway	FDOT	FL
Church Road Safety and Mobility Projects	Henrico County	VA
Cahill Fitness and Wellness Center Construction Management and Inspection	City of Baltimore	MD
Chesapeake-Elizabeth Interceptor System Diversion Improvements	Hampton Roads Sanitation District	VA
Managed Lanes Study	MDOT SHA	MD
Move DC 2021	DDOT	DC
South Wilmington Wetland Park	City of Wilmington	DE
CMI for Florida Avenue and 9th Street Reconstruction	DDOT	DC
Pedestrian Safety Improvement Program	Prince George's County	MD
South Washington Street Intermodal Transit Plaza	City of Falls Church	VA
US 17 Business/NC 37 Perquimans River Swing Span Bridge Design-Build	NCDOT	NC
Replacement of Governor Harry W. Nice Memorial Bridge Peer Review Services of Design-Build Contract Documents	MDTA	MD
Yellow Line Steel Liner and Bridge Structure Repair Design/ Engineering	WMATA	DC
Morgan State University Morgan View Student Housing Complex	A&R Development Corp.	MD
Bridge Engineering & Design Services Statewide	MDOT SHA	MD
Fulton Avenue Bridge over US I-170 (US 40) Streetscape	City of Baltimore	MD
Superstructure Replacement of I-895 over Patapsco River Flats	MDTA	MD
Sandy Forks Roadway Improvements	City of Raleigh	NC
Hampton Roads Crossing Study SEIS	VDOT	VA
Masonville 48-inch Water Transmission Main Risk Assessment	Maryland Port Administration	MD

PART 6:

CENTENNIAL CELEBRATIONS

The year 2023 marked a milestone for RK&K as we celebrated 100 years in business. The festivities kicked off in January with a Partner Road Trip that started in Baltimore and Raleigh and continued as the partners traveled together to each office to commemorate the occasion, with festive cakes, banners, balloons, giveaways, and apparel. We updated our external website with a special edition 100-year logo and video, and we dedicated a page to our internal website to capture photos and events.

Throughout the year, we instituted 8 hours of community service for each employee to give back in their own meaningful way. Additionally, we solicited and recorded nostalgic memories from employees about their time with the firm and broadcast these anecdotes every two weeks in the Herd, our digital newsletter.

Other highlight events during the year included client and student PDH offerings; a special partner dinner in April uniting current and former partners; summer picnics for all offices from May to July with giveaways and fun for employees' families; and special “plus one” December holiday parties for all offices, each attended by one or more partners to ring in the season.

All of these events provided opportunities to celebrate our past and set the course for the next 100 years.

TAMPA, FL

VIRGINIA BEACH, VA

CHARLESTON, SC

WASHINGTON, D.C.

MIAMI/TAMPA, FL

HARRISBURG, PA

KEYSER, WV

GREENSBORO, NC

RICHMOND, VA

LAKELAND, FL

NASHVILLE, TN

ORLANDO, FL

PHILADELPHIA, PA

RALEIGH, NC

HEADING TO DC

CHARLOTTE, NC

WILMINGTON, DE

COLUMBIA, SC

NEWPORT NEWS, VA

ATLANTA, GA

AUSTIN, TX

BALTIMORE, MD

WILMINGTON, DE
(AT MEMORIAL FOR JONI O'BRIEN)

ROANOKE, VA

PHILADELPHIA, PA

PART 7:

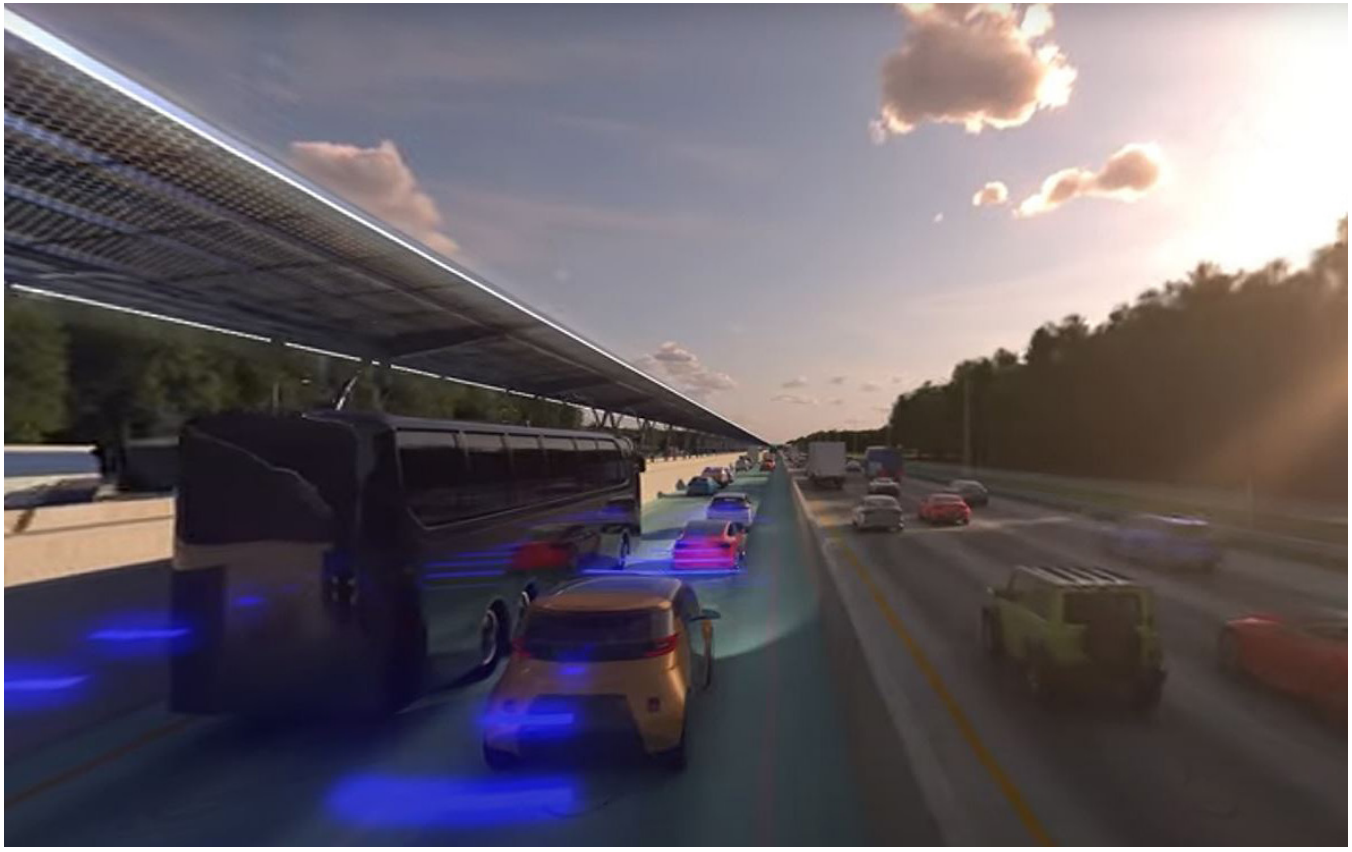
THE NEXT 100 YEARS

As this book has detailed, the first 100 years of RK&K have been a remarkable story of entrepreneurship, innovation, quality service, and growth. From one man who had the courage to venture into structural steel detailing on his own to the multi-discipline engineering and consulting firm of 1,500+ engineers, scientists, technicians, and administrative staff, RK&K has been witness to the full maturity of the industrial age through the space age and into the ever-expanding digital age. No One can predict the future, but it's worth our pondering what might come in the decades ahead and consider what that could mean for RK&K.

At the founding of the firm in 1923, commercial airline flight was in its infancy, and as we begin the next 100 years of RK&K, space tourism is poised to be a possibility for more than just billionaires. NASA is planning new missions to the Moon to establish sustained human presence on the lunar surface as a prelude to human exploration of Mars. Just as the original space age brought cutting edge technologies to bear on everyday life, it is reasonable to expect a similar leap in technology required for interplanetary travel to filter into the technology, appliances, and processes used by the private sector for the advancement of quality of life here on earth.

Concerns over the impacts of climate change and sea level rise, ongoing environmental impacts of global industrialization, including humanity's continued encroachment into the natural habitat of so many of earth's valued flora and fauna, extractions of natural resources, and the desire to see the improvement of the economic health and food security of the world's population will all combine to drive the technological advances of the next century. Looking within our nation and communities, the infrastructure of our cities and transportation facilities will have to be maintained, rebuilt, and expanded to serve the needs of a still growing population and to ensure continued improvements in our collective quality of life.

The great challenges the global community will face will be solved by the collective knowledge and expertise of innovators in a multitude of industries. Some of the emerging technologies likely to be employed by RK&K include:



- *Connected and Autonomous Vehicles (CAV).* CAVs have the potential to significantly improve road safety and traffic efficiency. Infrastructure will be equipped with sensors, communication systems, and infrastructure-to-vehicle (I2V) technology to facilitate seamless integration with autonomous vehicles.
- *Electric Vehicle (EV) Charging Infrastructure.* As electric vehicles become more prevalent, the infrastructure will need to support widespread EV charging stations, including fast-charging solutions along major roadways to facilitate long-distance travel.
- *Artificial Intelligence (AI).* AI is likely to drive significant gains in efficiency, safety, cost savings, and innovation across the civil engineering field in the coming years. It will augment human capabilities and allow engineers to focus on higher value and creative aspects of projects. The adoption challenges involve data availability, technical expertise, and cultural acceptance.
- *Robotic Road Maintenance.* Autonomous robots and drones can be employed for road maintenance tasks, such as pothole repair and road inspection, increasing efficiency and reducing the risk to human workers.
- *Advanced Water Purification.* Innovative water treatment methods, such as advanced oxidation processes, membrane filtration, and nanotechnology, are becoming more prevalent for removing contaminants and producing high-quality drinking water.
- *Desalination Technologies.* With increasing water scarcity in many regions, desalination technologies, such as reverse osmosis and forward osmosis, are being developed and improved to provide a sustainable source of freshwater from seawater or brackish water.
- *Microplastics Removal.* With growing concerns about microplastic pollution, innovative filtration systems and treatment processes are being developed to remove microplastics from wastewater.
- *Building Information Modeling (BIM).* BIM is already making a significant impact, but its role is set to expand further. It allows for the creation of detailed 3D models that incorporate data on all aspects of a construction project, from design and planning to maintenance and operation.
- *3D Printing.* 3D printing is being employed for creating construction components, such as building modules, concrete structures, and even entire houses. It promises to reduce construction time and waste.
- *Internet of Things (IoT).* IoT sensors on construction sites can monitor equipment, machinery, and environmental conditions. This data can be used for predictive maintenance and real-time project management.

» ***Composite Materials.*** Advanced composite materials, like carbon fiber and graphene, are becoming more common in structural design due to their high strength-to-weight ratios and corrosion resistance.

» ***Shape Memory Alloys.*** Shape memory alloys can be integrated into structures to provide self-healing capabilities by repairing damage through temperature-induced shape changes.

» ***3D Scanning and Photogrammetry.*** 3D scanning and photogrammetry techniques create highly detailed digital replicas of artifacts, architecture, and archaeological sites, aiding in preservation and research.

» ***Passive flood barriers to counter sea level rise and climate change.*** Self-activating systems that rely on hydrostatic pressure to deploy. FEMA recommends passive flood protection where feasible because it is not dependent on human intervention and can be deployed real-time dependent on active storm or surge conditions.

In essence, the next 100 years might see an unprecedented confluence of technology, sustainability, and user-centric design, leading to a world where infrastructure is not just faster and more efficient, but also more equitable and environmentally friendly.

Whether all, some or none of the emerging technologies actually come to fruition in a broad-based, usable way for the masses, we can be sure the RK&K will be poised to take advantage of the state-of-the-art in transportation and infrastructure in whatever form it takes. The next 100 years of RK&K's story will follow the themes of the first 100 years. Throughout the firm's existence, the culture binding together the people who make up RK&K has been founded on professional and personal integrity, honest leadership and management, technical excellence through collaboration and teamwork, prudent fiscal management, and a professional team founded on solid competence, pro-active responsiveness, and creative, innovative solutions.

Every RK&K team member has been supported by incredible teams of talented professionals working together to make the RK&K family stronger, more resilient and ready to embrace the challenges that the next 100 years are likely to hold.

EMPLOYEE ROSTER | 1923 THROUGH 2023

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