From the bedside to the battlefield: Collaboration brings ultrasound training to Ukraine

Since the onset of the Russia-Ukraine war in February 2022, the Heal Ukraine Group (HUG) has hosted numerous activities and provided resources to help address the health care crisis in Ukraine. Through one of HUG’s most recent impactful initiatives – along with the Harvard Scholars at Risk Program – six Ukrainian clinical scholars came to Boston for six months of specialized training as part of this at Harvard-affiliated hospitals, including Mass General.

Through this program, these medical practitioners gain new knowledge and skills – with guidance from mentors at Mass General and Brigham and Women’s Hospital – to bring home to Ukraine. These clinical observerships not only address the medical education disrupted by the war, but further contribute to the improvement of long-term medical care and delivery and advancements in health care provision for Ukraine.

“In addition to the education and training Ukrainian clinicians receive through this initiative, many new relationships have been forged,” says Mark Poznansky, MD, PhD, director of the MGH Vaccine and Immunotherapy Center and co-founder of HUG, along with Nelya Melnitchouk, MD, a colorectal surgeon at Brigham and Women’s Hospital, and Jacqueline Hart, MD, director of a Boston-based non-profit serving vulnerable populations. “These lasting connections help create a network for international collaboration to continue to fortify and repair medical care and delivery in Ukraine.”

One such relationship is between Vadym Vus, MD, a Ukrainian family medicine visiting scholar, and Andrew Liteplo, MD, chief of the MGH Division of Emergency Ultrasound and director of the Center for Ultrasound Research and Education at Mass General. The two met on Vus’s first day of his observership when Liteplo – who is Ukrainian-American – approached Vus, speaking Ukrainian. They discussed their shared focus of work in ultrasound imaging and diagnosis, and in education and training of ultrasound methodology.

“Prior to the war, it could take days to get an ultrasound in Ukraine, even more so in areas like the countryside where resources are limited,” says Vus. “To make matters more difficult, ultrasound performance was limited to physicians, specifically doctors trained as sonographers, unlike in the U.S. where other types of trained specialists can complete ultrasounds.”

Throughout his observership in Boston, Vus – who has since returned to Ukraine – consulted with Liteplo to expand his knowledge and skills in ultrasound, learning about advanced ultrasonographic techniques and different applications of ultrasound, including for cardiac, musculoskeletal, procedural and sinususes, which is not currently used in Ukraine.

Prior to his return home, Vus began sharing his observations with Ukrainian colleagues at weekly virtual rounds, providing the preliminary steps to implementing improved methods of education and teaching for ultrasonography.

“Many said it was impossible for a family doctor to give an ultrasound,” says Vus. But now, after his time at Mass General with Liteplo and two years of medical reform in Ukraine, Vus leads the FOCUS POCUS ultrasound team. The group provides training in sonography and point-of-care ultrasound (POCUS) to medical clinicians including nurses, physician assistants, military personnel and paramedics. This method of imaging is used for rapid diagnosis as opposed to traditional radiology-based ultrasound. It is performed by the clinician at the bedside, and the results are immediately integrated into patient care.

“This has tremendous benefits for patient care because it can provide rapid, life-saving information in seconds; the procedure is also safe and inexpensive,” says Liteplo. “During this time of chronic warfare, life-threatening injuries such as pneumothorax, abdominal bleeding or even shrapnel that we can’t see by X-ray imaging can now be identified quickly via POCUS for immediate and life-saving intervention in the operating room.”

Liteplo also supports other global health efforts through international courses designed to educate and train residents, medical students and fellows in a variety of POCUS applications and techniques. Most recently, he traveled with his team to Ghana to provide a bedside ultrasound course, disseminating the knowledge and skills necessary for proper ultrasound clinical use.

“We are democratizing this technology and putting a powerful tool in the hands of everybody, which is facilitated as the price of the devices continues to fall,” says Liteplo.

Together, Vus and Liteplo plan to further broaden the scope of ultrasound education in Ukraine, maximizing its potential in saving lives. Liteplo hopes to travel to Ukraine soon to teach POCUS to physicians who provide frontline care to injured soldiers and civilians, and to provide additional training to Vus and the FOCUS POCUS team in advanced applications like nerve blocks.

“The goal is to improve patient care in Ukraine by further disseminating POCUS education to fellow Ukrainians in an effort to broaden life-saving ultrasound use and application in the country,” Liteplo says.

The valuable collaboration between Liteplo and Vus is just one of many successes born of the Ukrainian visiting scholars and Mass General and Brigham and Women’s Hospital mentors. Also among the first group of six visiting Ukrainian scholars were a psychiatrist, anesthesiologist, infectious disease specialist, medical oncologist and surgical oncologist. With these observerships complete, HUG and Scholars at Risk are in process of identifying the next round of physicians to visit.

“There are so many different areas of medicine that weren’t fully appreciated before the war – psychiatry, trauma care – and people find the time to make the most of this program for the Ukrainian physicians to support training in these areas here at MGH and BWH,” says Poznansky. “The commitment of the doctors here is truly amazing as they do anything they can to help their Ukrainian counterparts in any way they can.”
A familiar sight to MGHers is the Bulfinch Building, whether the actual granite edifice or depictions of it in historical photographs and logos of various eras.

Recent visitors to the laboratory of Guillermo (Gary) Tearney, MD, PhD, Department of Pathology, were treated to a new view of the building by peering through a scanning electron microscope.

The lab — part of the Wellman Center for Photomedicine — contacted staff of the hospital’s Paul S. Russell, MD Museum of Medical History and Innovation — no strangers to odd requests — to borrow a bread-loaf-size plaster model of the building. A three-dimensional scanning firm created a 3D computer-aided design model. Tearney Lab members then fed this information to the lab’s nanoscale printer to create a version that is 170 microns wide, about the width of a human hair.

Tearney chose to create this tiny Bulfinch — which possesses extraordinary detail, down to its five pillars and double staircase — as a compelling demonstration of the capabilities of their new printer, generously funded by donors.

The printer’s typical purpose is no less extraordinary: to create microscopic lenses that Tearney Lab members place inside medical imaging probes, which go on to be used inside patients in clinical trials. These devices allow clinicians to “fly through” the gastrointestinal tract, coronary arteries and lungs to see microscopic images inside living people and identify problems less invasively.

“One advantage of this nano 3D printer is we can now make tiny probes to image inside patients that are much smaller than can be made by hand,” says Tearney. “Also, we can make unique lens designs that cannot be made by any other manufacturing method, allowing the lenses to be used to grab images at unprecedented resolutions. We can now see, for example, microscopic cholesterol crystals in human coronary arteries that are harbingers of coronary artery disease.”

This spring, Mass General launched an initiative to replace each of its 890 general care bed frames and mattresses. With regular deliveries arriving to the hospital each week, this 7-week endeavor has proven to be successful thanks to hardworking staff from across many role groups and departments.

The process to replace old beds with new ones on one inpatient floor takes about an hour and a half, with the beds being prepared upon their arrival at the MGH. Every Monday and Wednesday, a delivery of 84 beds arrives and is readied by staff. This includes the installation of auxiliary parts, performance of a comprehensive preventative maintenance check, and finally, cleaning and covering. Then, every Tuesday and Thursday, up to three inpatient units are converted, and old beds are removed from the hospital.

George Reardon, director of Patient Care Services Clinical Support Systems, says feedback from patients, families and clinical and support staff about the beds has been positive so far, thanks to the planning, preparation, support and oversight from each unit.

“This has truly been a multi-departmental effort,” Reardon says. “We couldn’t have done this without the fantastic support we’ve received from staff in Biomedical Engineering, Building and Grounds, Environmental Services, Materials Management, Police and Security, and Nursing and Patient Care Services.”
MGH volunteers: Celebrating remarkable people

Like many historic traditions at Mass General, volunteerism has been part of the hospital’s fabric since its founding. Every year, hundreds of volunteers donate their time and talents to make the MGH community a better place for patients, families and staff. Whether they fundraise for new programs and initiatives or help to transport patients during their stay, the work of volunteers is a central part of successful hospital operations and positive patient experiences.

“Before becoming president of Mass General, I was a physician in the Emergency Department and worked very closely with volunteers,” says David F.M. Brown, MD, MGH president. “I’ve seen firsthand — and with gratitude — how so many of them bring comfort and compassion to patients and their families during times of stress and uncertainty.”

One of those compassionate individuals is Hattie Kessler, LVC chair, who has volunteered at the MGH since 2009. In addition to her work with the LVC, Kessler frequently assists with patient discharges and escorts and provides support in the Yawkey Family Waiting Area. In April, Kessler received the

2023 volunteer award recipients

Jessie Harding Award
Hattie Kessler, volunteer since 2009

Maeve Blackman Award
Max von Franque, volunteer since 2022

Pat Rowell Extraordinary Volunteer Achievement Award
Loretta Attardo, volunteer since 2005
Chris Kelly, volunteer since 2002

Trustees Award
Baby Cuddling Program
Janet A. Bell, RN, nursing director, Clinical Nursing Services; Alexa O’Toole, RN, Patient Care Units, Special Care Nursery; Special Care Nursery staff

Pet Therapy Award
Jen Brountas and her dog Phoebe, volunteers since 2017

2023 Jessie Harding Award from the MGH Volunteer Department, which is presented annually to a volunteer who demonstrates fervent commitment and generous service to patients and their families. “Volunteers don’t do this work to be recognized, but knowing we’re appreciated feels great,” Kessler says. “Every time I walk through the doors of Mass General, I’m inspired and amazed by remarkable people. This work is enriching and life changing, and I learn something from it every day.”

Even Mass General’s youngest patients get to experience the generosity of volunteers. Each week, 60 volunteers spend at least three hours in the Special Care Nursery or the Neonatal Intensive Care Unit (NICU) cuddling with newborns in need of additional human comfort. They work alongside nursing staff and use different calming strategies to help the babies relax and fall asleep and to support their growth and development.

This year, the Baby Cuddling Program received the 2023 Trustees Award from the Volunteer Department, which recognizes a department or employee for involving, supporting and recognizing Mass General volunteers and collaborating with the Volunteer Department.

Each volunteer has a unique background, experiences and reasons for wanting to give back. For some, volunteering is also a way to learn more about careers in health care and take the next step in building one. Max von Franque, a recent graduate of the Massachusetts Institute of Technology, currently works in the MGH Fisher Lab and volunteers frequently to assist with patient discharge, special projects and in the MGH Center for Perioperative Care. He received the 2023 Maeve Blackman Award — awarded each year to a college student pursuing a career in health care — and plans to attend medical school in the future. For von Franque, volunteering teaches him to effectively communicate with patients and gain insight into day-to-day hospital operations.

“Most people don’t necessarily want to be at the hospital,” says von Franque. “If I’m able to make their time here a little bit better, it’s really rewarding. There are so many opportunities to make a positive impact on people’s lives as a volunteer at Mass General.”

“Every time I walk through the doors of Mass General, I’m inspired and amazed by remarkable people.”
Mass General celebrated the life of W. Gerald “Jerry” Austen, MD — a renowned cardiac surgeon and the hospital’s former chief of surgical services — on Sunday, May 6 at Boston Symphony Hall.

Austen passed away at Mass General — his second home — at the age of 92 on Sunday, Sept. 11, 2022, due to complications from metastatic melanoma. Even during his final moments, his sense of humor radiated, jokingly telling family he thought it was “finally time to retire.”

For 70 years, Austen was an integral part of the Mass General community, having completed his residency at the hospital and continuing to become one of the most distinguished and well-regarded physicians in the hospital’s more than 200-year history. At 39 years old, he was named Mass General’s chief of surgical services — a position he held for nearly 29 years. Under his leadership, the Department of Surgery became one of the greatest academic departments of surgery in the country. Among his many contributions, he was influential in the design and creation of a cardiopulmonary (heart-lung) bypass machine and the intra-aortic balloon pump. Austen was also the founding President and CEO of the MGPO, the first physician elected to the MGH Board of Trustees, and a founder of the Partners HealthCare system.

In addition to his clinical work, Austen was a physician leader of philanthropy whose commitment to and passion for Mass General shined bright and were crucial to hospital’s success. He mentored several generations of division chiefs, department chairs, and MGH and MGPO presidents. In 2020, the W. Gerald Austen, MD, Building was named in his honor to recognize his six decades of leadership and service to Mass General.

Hundreds of Austen’s closest friends, colleagues and family members gathered at Boston Symphony Hall to commemorate his legacy. Numerous friends and colleagues — from David F.M. Brown, MD, Mass General president, to Peter L. Slavin, MD, former hospital president, and Mike Minogue, retired chairman, president and CEO of Abiomed — shared fond memories of Austen, further illustrating his unmatched and lasting impact on others.

Special musical performances were coordinated by Austen family friend, Kim Taylor, including a surprise performance by Kim, her husband and Grammy Award winner James Taylor, and their son Henry.

Celebration was the theme of the afternoon, as everyone reminisced about how much Austen meant to them, both personally and professionally. Aside from being a beloved physician to his patients, the “Austen” name is synonymous with Mass General. You see it adorned on the side of buildings and above corridor entryways — a welcoming reminder for anyone who enters these spaces that they are in safe hands.

In a statement to Mass General staff, Brown and Marcela del Carmen, MD, president of the Massachusetts General Physicians Organization said:

“It seems fitting that W. Gerald ‘Jerry’ Austen, MD, dedicated his life’s work to one of the most vital organs — the heart.”

Mass General will continue to mourn the loss of such a giant in the medical world and will carry on Austen’s legacy through compassionate care and an unparalleled commitment to all patients.
Addressing capacity and improving stroke outcomes in the Neuroscience ICU

For patients experiencing stroke or other serious brain or nervous system conditions, time is always of the essence.

To deliver this highly specialized, time sensitive care to patients quickly while also helping to combat ongoing capacity challenges, a multidisciplinary team in the departments of Neurology and Neurosurgery developed the Neurosciences Receiving Unit (NSRU) – a new space that can receive transfer patients in need of urgent care following a stroke, even when a bed is not immediately available in the Neuroscience Intensive Care Unit (ICU). When a transfer request comes in from an outside hospital, the MGH Capacity Coordination Center works with a neurointensivist or neurologist to determine whether the patient would be a candidate for the NSRU.

"The NSRU is essentially a small 'express' emergency department within the Neuroscience ICU," says Bob Carter, MD, chair of Neurosurgery. "Patients in need of immediate, lifesaving neurocritical care can come to MGH knowing their injury or illness will be treated with the highest priority right at the bedside to determine the best treatment course. The goal of the NSRU is to increase capacity while improving patient outcomes."

The NSRU sits adjacent to the Neuroscience ICU at the Mass General main campus and became fully operational in February 2023. W. Taylor Kimberly, MD, PhD, chief, MGH Division of Neurocritical Care, says there are three types of patients who potentially qualify for treatment in the space – someone who has a sudden neurological deficit due to stroke, subarachnoid hemorrhage or large brain tumor, typically from mass effect or seizure.

"A typical situation would be a patient goes to an outside hospital and the ED staff member there gets the scan and discovers this is a life-threatening brain injury. They know the patient needs high-level, multidisciplinary, tertiary level neuroscience expertise and they need to get them here fast because if they don't, the patient could die," says Kimberly. "When this happens, they call the MGH, and we determine whether the patient qualifies for this low-friction transfer pathway and, if so, we bring them in. The idea behind the unit is that many of these patients will need an emergency intervention or treatment that could be lifesaving."

Before the NSRU space was created, physicians from outside facilities and emergency departments would often need to make multiple calls before finding an open transfer hospital bed. Aman Patel, MD, director of Stroke Intervention at Mass General, says for many patients, faster intervention means better recovery. The goal of the NSRU is to increase the speed by which a patient can get that lifesaving care. A patient arriving on the unit can begin necessary testing and imaging right away as it is staffed 24 hours a day, which a patient can get that lifesaving care. A patient arriving on the unit can begin necessary testing and imaging right away as it is staffed 24 hours a day, 7 days a week and leverages the expertise of the entire neurocritical care team.

"As soon as we get the call that a patient needs or could potentially need treatment in the NSRU, we evaluate the situation and often get them to the MGH immediately," says Stephanie Qualls, RN, nursing director, Neuroscience ICU. "We work behind-the-scenes to get the patient here efficiently and quickly and facilitate the next steps in treatment immediately upon arrival."

Qualls expects NSRU volume to increase as other hospitals – within Mass General Brigham as well as other area hospitals – realize they can send appropriate candidates to Mass General right away. "When we're able to get patients into the operating room quickly, they are more likely to get return of function and go back to leading a life with minimal or no disability," she says.

In addition to improving outcomes for patients, the NSRU has been rewarding for staff, too. By nature, it is a highly collaborative space, and patients often improve significantly during their time on the unit. Nurses on the floor played a large role in designing the room, deciding where equipment would fit best and imagining how it would feel to work in the space. The team met weekly with architects to view blueprints and diagrams and optimize the space. They eventually landed on a layout that will allow for two patients to fit comfortably in the room.

"We spent a great deal of time getting buy-in from nurses, advanced practice providers, our Stroke Team – anyone who would end up caring for patients there," Qualls says. "It was important for us to do mock run-throughs of what it would be like to receive a patient in that kind of unit and identify any vulnerabilities we needed to work out. We've learned a lot from this experience, and it feels good to be taking these additional steps to open up access to more patients in the MGH community."

"It feels good to be taking these additional steps to open up access to more patients in the MGH community."
Discharge Lounge ensures a comfortable transition from hospital to home

Providing high-quality patient care and a pleasant patient experience is a top priority at Mass General, from the start of the patient’s stay until their safe return home. To ensure a comfortable transition from hospital to home, while also helping to make way for new admissions, the MGH Capacity Coordination Center created the Discharge Lounge – a space in the Wang Lobby for medically cleared patients to relax as they await their transportation out of Mass General.

Initially launched as a pilot program during the first COVID surge in 2020, the Discharge Lounge is now a resource that serves close to 125 patients per month and allows staff on inpatient floors to facilitate earlier discharges and open beds to other patients sooner.

“When we think about addressing capacity challenges, small interventions like the Discharge Lounge add up to have a large impact,” says Tina Stone, MSN, RN, associate chief nurse, Case Management, Capacity Coordination Center, Emergency Services and Psychiatry. “Thanks to these initiatives, we have the opportunity to discharge patients sooner when appropriate, which leads to less wait time in backup in the Emergency Department.”

The average patient spends one hour in the lounge before being picked up – an hour that would have otherwise been spent occupying a bed when they no longer required inpatient care. Patients receive free meal vouchers while they wait, and Discharge Lounge staff help transport them to Eat Street Café to enjoy a free meal.

“Our priority is to make this transition period as seamless and stress-free as possible,” says Patrick Jordan, Discharge Lounge ambassador. “Our compassionate staff is always on hand to ensure patients receive the care and support they need.”

For those who require additional support during discharge, the Discharge Lounge also provides a Care Van service, which helps patients without reliable transportation get home safely. Since November 2022, the Care Van has transported close to 500 patients.

“When the Care Van is commonly used in surrounding areas such as Revere, Somerville and Chelsea, it has also taken patients as far as western Massachusetts, Rhode Island and New Hampshire,” Stone says. “Sometimes, our drivers even deliver forgotten medical equipment and materials for dressing changes when a patient realizes they left it at the hospital.”

Discharge Lounge staff take great pride in the services they offer and the comfort they provide to patients. Jordan, who played professional baseball before working at the MGH, says this new career path has allowed him to learn from people from diverse backgrounds and cultures – all while working as a unified team to save lives.

“It has been extremely rewarding and utterly amazing to see the growth of our Discharge Lounge team, even in just a few short months since I started in this role,” Jordan says. “Some of our staff – including me – have never worked in a hospital setting before, but I learn so much about patient care and hospital operations every day.”

Stone says having ambassadors like Jordan dedicated to the space has been beneficial for both patients and staff on the floors.

“They truly are an anchor,” she says. “Knowing nurses can call down to the lounge and someone dedicated to helping our patients get home will be there has made a huge difference. The utilization of alternative spaces and services has been a well-received addition to Mass General.”

MGH Respiratory Therapists provide systemwide support

Across Mass General Brigham, teams and individuals continuously work together to find new ways to share information, resources and best practices. So in 2021 when Salem Hospital’s Respiratory Therapy team needed extra staffing and training support, staff from Mass General helped to fill in the gaps – and eventually continued to develop this partnership and create systemwide learning opportunities through the Mass General Brigham Respiratory Therapy Educational Program.

“Our team at MGH had been providing education to staff at Salem Hospital on a very general basis before 2021,” says Carolyn La Vita, MHA, RRT, director of MGH Respiratory Care Services. “After 2021, we began specialized training in their special care nursery for newborn respiratory failure, but it was more sporadic.”

In an effort to engage staff in more consistent learning, La Vita says MGH’s Respiratory Team invited staff from Salem Hospital to their monthly continuing education lectures to help them learn more about topics that interested them. Soon, teams from other Mass General Brigham hospitals expressed interest in these opportunities.

“One month, the topic of our session was ventilator withdrawal, and staff from other institutions heard about it through the grapevine,” La Vita says. “Our partnership with Salem was so strong, I thought it would be great to open these sessions up to colleagues across the system every month.”

The sessions were traditionally hosted and led by MGH respiratory therapists, but as staff from more and more hospitals began to attend, La Vita opened the opportunity to others.

“It’s so important for all of us to learn from each other,” she says. “We encourage anyone and everyone – regardless of their seniority or specialty – to share their knowledge and expertise. It’s great that we can have such a widespread sharing of information on a regular basis.”

La Vita says the most significant benefits of this program are the way it helps staff understand topics they might be interested in but don’t have hands-on experience with, as well as the way it establishes consistency across the system.

“Across Mass General Brigham, teams and individuals have been working together to find new ways to share information, resources and best practices,” La Vita says. “This is a great way to work together to provide high-quality care, and it’s been exciting to see the growth of our Respiratory Therapy team.”

From left, Jordan and Stone with Discharge Lounge staff Kristina Rowe and Louis Bougari.
MGHer’s green thumb gives back

Dolph Smith, RN, staff nurse in the MGH Emergency Department (ED), has always enjoyed gardening. Whether it’s flowers, fruits or vegetables, tending to his plants helps him maintain a sense of balance in his personal life after long shifts in the ED. Now, as summer arrives and his fresh produce sprouts, Smith is using his green thumb to give back.

Smith has been a nurse for 25 years, the last three at Mass General. He initially came to the MGH as a travel nurse, but quickly realized he wanted to stay long-term.

“As a travel nurse, I’ve been everywhere,” Smith says. “Here, it’s like a family. Everyone gets along and watches out for each other in the ED. Things got tough during the pandemic, but we all stuck together and got through it.”

Smith says he, like many health care workers, struggled with the uncertainty that initially surrounded COVID-19. Following his own bout with the virus, he decided to focus more on the things that make him happy outside of work – volunteering in his community and gardening.

On his 9,000 square-foot property in Ludlow, Massachusetts, Smith maintains more than 20 fruit trees and 24 raised garden beds for produce.

“My yard might be tiny, but I keep it well-manicured and donate all of the food I grow,” Smith says. “I volunteer at a local homeless shelter and bring my produce there. It’s rewarding to be able to give healthy, organic food to people who don’t usually have access to it.”

Smith says nursing will always be his passion, but Smith believes strongly in having hobbies and interests that promote well-being at home. When colleagues ask what keeps him motivated after more than two decades in emergency nursing, he credits the therapeutic aspects of getting down in the dirt and connecting to nature.

“Nurses never stop being nurses,” Smith says, “but it’s important for me to leave my stress at the door after every shift. When I’m in my garden, it’s almost like I have a separate life – a separate identity. By knowing my limits and setting boundaries, I’m able to be the best nurse I can be for my patients.”

Smith encourages everyone – health care workers and otherwise – to discover an activity they are passionate about. Whether it’s baking, painting or working on cars, he says everyone deserves to experience the joy of “getting back to the basics.”

“For me, being in the dirt and the sun brings me back to nature and makes me appreciate things a bit more,” Smith says. “It’s a different type of relaxation – when I’m in my garden, nothing else matters. My neighbors always tell me it looks like so much work, but I just say work is back in Boston.”

Smith’s home garden

“Nurses never stop being nurses. By knowing my limits and setting boundaries, I’m able to be the best nurse I can be.”
Beginning in May, the very first pieces of the Phillip and Susan Ragon Building were put in place with the construction of a slurry wall. The slurry plant – nine large tanks – arrived to the construction site to mark the beginning of this exciting new phase, which will be ongoing for the next 3 to 5 months.

A slurry wall is used to build reinforced concrete walls to provide a foundation element to support the building, and to prevent groundwater from getting into the underground building. More than 50% of the overall perimeter of slurry wall panels have been put in place since this phase began, with an average of four panels being placed in the ground each week.

A clamshell-shaped bucket will excavate down between two concrete guide walls, creating a trench for a panel section, about 10 to 25 feet wide, of the slurry wall. This trench is filled with a slurry mixture of water and bentonite – a clay material – during excavation to keep the trench from collapsing. Once excavated to the desired depth, 100 feet or more, reinforcing steel cages – being built this week – are lowered into the trench and placed with concrete, displacing the slurry mixture to be reused for the next panel section. When these concrete-filled cages cure, they form the walls and the interior columns of the enclosed area of what will be the Ragon Building’s parking garage.

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