



COVID-19 Support Emergency Response Solutions

Arcadis and CallisonRTKL work to enable rapid response to COVID-19. We provide assistance to convert existing healthcare space, hotels, dormitories, and other large open spaces into medical facilities. Our Asset Assessment Tool and Rapid Response Planning and Specifications Guide can assist asset owners to determine the suitability for conversion and a plan for mobilization.

CHALLENGES

Healthcare facilities experience a large uncontrolled influx of COVID-19 patients and are therefore in urgent need for capacity expansion.

Dependent on circumstances the expansion strategy focuses on moving quarantine care patients to alternative locations to dedicate the hospital facility to acute and critical care patients.

Commercial facilities such as hotels, holiday parks, convention centers, sports venues, experience an abrupt loss of market as a result of the globally adopted (semi) lock down strategy to mitigate the COVID-19 crisis.

RAPID RESPONSE

Arcadis specializes in environmental incident/disaster response and has worked with clients and communities following a variety of natural disasters and pandemic events. We can develop remediation protocols

and project specifications to eliminate contamination and prevent future occurrences.

Our design partner, CRTKL is a global leader in architecture and design and specializes in a variety of space types including both healthcare and hospitality. In addition to design and management, CRTKL offers space activation, readying rooms, patient move process, command center support, medical equipment planning, equipment procurement, lead time scheduling, logistics support for receipt and installation of equipment.

Together, we provide a range of architectural and engineering services. Our teams have extensive experience in all scales of healthcare institutions, and our knowledge of standards, facilities guidelines, and the culture of healthcare profession offer a unique perspective.

OUR EXPERTISE

- Site Assessments / Adaptations
- Engineering Systems
- HVAC Requirements
- Building Water Systems
- Building Finishes
- Hazardous Materials Protocols
- Program Management
- Cleaning and Site Remediation
- Architecture and Planning
- Interior Design
- Medical Equipment Planning
- Healthcare Transition Planning
- Change Management
- Technology Design

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Through internal capabilities and long-standing partnerships, we can design and rapidly construct temporary medical facilities, including modular and large-scale temporary facility deployment programs. Our teams are currently working with clients to deliver rapid response solutions including the transformation of facilities to repurposed emergency use, expanded use of rooms in existing hospitals and building new hospital accommodations through a modular approach, and all options in between.

Once the medical response effort is complete, Arcadis can conduct hazardous cleanup and post-remediation validation testing to document that remediation efforts were thorough and effective and assist with reconstruction activities.

DO YOU NEED AN IMMEDIATE ASSESSMENT?

Arcadis has developed an **Asset Assessment Tool** through which we can remotely and rapidly assess the suitability of available assets and deliver an executive summary report within 24 hrs.

CRTKL has developed an emergency healthcare facility **Rapid Response Planning & Specifications Guide** to assist in asset mobilizations.

OUR EXPERIENCE

Consolidated Regimental / Battalion Aid Station, Kaneohe, HI

Arcadis designed the Consolidated Regimental/ Battalion Aid Station at MCB that included 10,000-SF of modular facilities. The design included modular units assembled into a single turn-key unit that included treatment and exam rooms, waiting areas, offices, conference rooms, storage, personnel workstations, fixtures, furniture and equipment needed for an efficient medical clinical environment.

Presence Center for Advanced Care, Chicago, IL

CRTKL, an Arcadis Company, designed a new 380,000 SF building to consolidate outpatient services, increase physician partnerships and add medical office space. The outcome is a patient-focused facility with a refreshed brand identity and greater accessibility. Components include three floors of ambulatory care, three floors of medical offices and a comprehensive cancer center.

Adventist Healthcare White Oak Medical Center, Silver Spring, MD

CRCRTKL designed a new replacement facility featuring 170 all-private beds and an emergency department planned

to accommodate 50,000 to 60,000 visits per year, along with an ambulatory care center with outpatient and cancer treatment services.

San Antonio Military Medical Center (SAMMC), San Antonio, TX

CRTKL planned and designed a 765,000SF new addition with inpatient beds and emergency department, plus over 300,000SF of extensive renovations, including the expansion of the catheterization laboratory, doubling the existing pathology laboratory, and women's and children's services.

William P. Clements Jr. University Hospital at UT Southwest Medical Center, Dallas, TX

CRTKL designed a new 1.3 million SF, high-profile academic hospital for UT Southwestern Medical Center, one of the country's leading academic medical centers, patient-care providers, and research institutions.

Hotel Design

CRTKL has supported many hotel brands such as Marriott, Four Seasons and others in the planning, design and renovation of their existing hotel properties.

Modular Building Solutions

Arcadis has experience doing design for assembly and manufacturing for modular building solutions. Combined with supply chain partners such as Arkel International, Arcadis can integrate design, manufacturing, and delivery on site, substantially improving the overall time schedule. We have successfully delivered modular turn-key solutions in industries such as health, defense, housing (municipality and private), industrial manufacturing, and key worker accommodations.

OUR SOLUTIONS

Design, Planning & Activation

CRTKL has designed and planned hospitals all around the world and are familiar with disaster and pandemic planning. In response to this crisis there are various levels of interaction that you may need. CRTKL can immediately assist with

forward triage and operational flow assessments, concept design and diagramming, and rapid response design and specifications for existing healthcare space conversion, adaptive reuse, modular solutions, temporary structures, and new builds. We offer space activation, readying rooms, patient move process, command center support, along with medical equipment planning, procurement and logistics support for equipment installation.

Site Assessments / Adaptations

Arcadis and CRTKL has designed and constructed hospitals, hotels and dormitories all around the world. We use digital tools to quickly assess each potential alternative care site and collect information critical to the transformation to a medical facility (e.g., structural, mechanical, HVAC, electrical).

FieldNow® is Arcadis' digital data collection program that enables faster and consistent facility condition assessments. Important details of each facility, such as locations of equipment and site-specific layout limitations, will be obtained via the Holobuilder® 360-degree image capture. Using the digital data and images gathered in this assessment step, Arcadis can overlay the standard USACE alternative care facility design and assess the need to make site-specific adaptations.

Engineering Systems

Overhauling mechanical or electrical systems is not practical within the timeframe required. A condition survey can be conducted to identify constraints imposed by the existing systems. A few examples of existing systems that must be evaluated include elevators (must be sized for gurney movement), WiFi (must be reliable for communication and data collection), and lighting (upgraded for brightness and true color rendering).

HVAC Requirements

Each room should be configured for negative pressure. This requires an evaluation and modification of the HVAC system. In addition, the system may be inspected for filter bypass, and

filtration efficiency. If the system is suspected to be compromised, we may recommend duct sanitization and cleaning using chemicals specifically designed for HVAC. Most corridors will be fed fresh air to create positive pressure relative to patient rooms. HVAC units within each room will need to be cleaned and have the required filters. Ventilation can be increased to provide a level of negative pressure in the patient rooms.

Building Water Systems

Arcadis can evaluate areas in the buildings that are most susceptible to the growth and dissemination of harmful microorganisms. This will include plumbing, wash stations, water heaters, decorative fountains, drinking water sources, process water, and other locations. Arcadis can reconfigure facility features to limit or eliminate the hazard. Additionally, we can determine the water needs for the medical facility and establish an adequate supply, if required.

Building Finishes

The furniture and fittings in hotels and dormitories will be more akin to a home setting than a hospital environment. During the assessment and evaluation of the site against the standard design, we will review the existing finishes such as flooring, window coverings, mattresses, wall coverings, and general conditions within the rooms. Each item will be removed or cleaned and prepared for repurposed use in accordance with project-specific requirements.

Hazardous Materials Protocols

Arcadis has decades of experience working with hazardous materials and can handle the material safely and appropriately while supporting the development of facility protocols during operation (e.g., clinical waste, linens, etc.). Arcadis' Certified Industrial Hygienists and toxicologists are able to provide an in-depth evaluation of site conditions and identify building conditions that have the potential to impact human health. If issues are identified, Arcadis has experience designing disinfection protocols and remedial plans, managing the work, and verifying that project specifications are met.

Program Management

Arcadis is a full-service project management consultant with end-to-end capabilities in task, project, program, and construction management. Our resources, located throughout the world, are well-qualified in all facets of design and construction and are ready to begin supporting this effort immediately. Our team can manage site data, be an owner rep, control site-adapted standard design implementation, track costs and schedules, coordinate contractors and equipment procurement, supervise on-site work (and/or act as a general contractor as appropriate), and communicate after the medical use of with stakeholders.

Cleaning and Site Remediation

Arcadis can also support the remediation of the building using specialty virucidal agents with known effectiveness against related viruses such as MERS-CoV and SARS-CoV. In alignment with the CDC (or other authorities regionally) to facilitate rapid and thorough decontamination, we utilize appropriate methods such as: cleaning with wet mopping and wiping; HEPA-vacuuming; liquid application and extraction; air-scrubbing (mechanical filtration, UV treatment, and wet-scrubbers); air movement, and power washing methods; disinfecting using specific chemicals and ultra-violet light; and sanitizing.

Arcadis / CallisonRTKL have a skilled team of architects, designers, engineers, managers, life science professionals and specialty contractors who can rapidly prepare and implement detailed work plans during emergencies.

WE ARE READY TO HELP.

ARCADIS EMERGENCY
HOTLINE

877-455-5463

Resources Where and When You Need Them



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