

Performance Buildings in the Post-Pandemic World

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authored by
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on behalf of the partners of Charcoalblue



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Executive Summary

Performing arts organisations are facing huge challenges from the COVID-19 crisis. Demand for entertainment and meaningful cultural engagement, however, shows no sign of diminishing and could actually be enhanced as a result of the pandemic.

The so-called “Spanish” flu of 1918 to 1920 similarly affected the performing arts, with blanket closures of venues in the US commonly lasting three weeks or more. History also suggests that venues should be prepared for a second wave of closures during a possible resurgence of the virus. Following the reopening of venues, the health-worthiness of venues will be scrutinised by both authorities and the public.

The closure of venues in 1918 was not a death knell for the arts. The decade after the 1918 flu, fuelled by the post-war boom, saw the rapid development of theatre venues and a sustained period of well-funded creative development.

For all organisations with shuttered venues, immediate concerns are not to be underestimated. Stabilising cash flow will be the most pressing need. However, audience engagement, especially in a time of stress and uncertainty for many people, should continue to be a priority. The management of closed performance venues will continue to be a challenge, although there are some opportunities to take advantage of during the downtime.

As audiences and artists return, venues will need to make a number of quick shifts. Audiences will need to be assured that attending events is safe. The conditions for artists, likewise, may need to be modified according to a new best practice. Short-term impacts on certain performance types may also be experienced.

We have every confidence that post COVID-19 performance practice will look largely the same as before. Some small but meaningful changes to front- and back-of-house facilities, including dressing rooms, toilets, and food services may result. Perhaps most significantly, the infrastructure for digital engagement with live performance will see a surge in interest, not only for outreach but also to ensure resilience in the future. Other considerations for the built environment, including air quality and sanitation, will likely affect new developments and refurbishments. Paired with continued efforts to address the climate crisis, there may be renewed interest in performance spaces integrating meaningfully with their environment.

The economic fall-out of this sustained crisis will be substantial for arts organisations. However, well-positioned groups will find opportunities. Among these will be the improved affordability of construction projects following a recession. Additional benefits may be found by engaging the contractors/builders early in the early stages of projects.

Charcoalblue continues to support our projects, clients, and design colleagues through this difficult period. Our global working style lends us a certain resilience for remote working and information sharing. We can offer the insights of our experienced and innovative team to you for solving specific problems or considering longer term strategies. We hope that you won't hesitate to get in touch.

Precedent for an Unprecedented Situation

“The present calamity of the influenza plague which inspired the authorities to this action calls for drastic treatment, and through we regret exceedingly the deprivation which this suspension inflicts upon so many working under us, there is only cheerful compliance with orders to be considered.

“We adhere to our belief expressed to the officials of the Board of Health that the theatre is the least harmful of all places of gathering, and claim that the providing of amusements for the people would appear to be most necessary in these threatening times that portend panicky conditions.

from a joint statement by the Association of Theatre Managers of Boston and Motion Picture Exhibitors of Massachusetts, 26 September 1918

“On Thursday, the governor ordered Broadway’s theatres — which played through war and the 1918 Spanish flu — to close down as he forbade gatherings of more than 500 people.

from “New York City to close America’s biggest school system,” by Joshua Chaffin, Financial Times, 17 March 2020

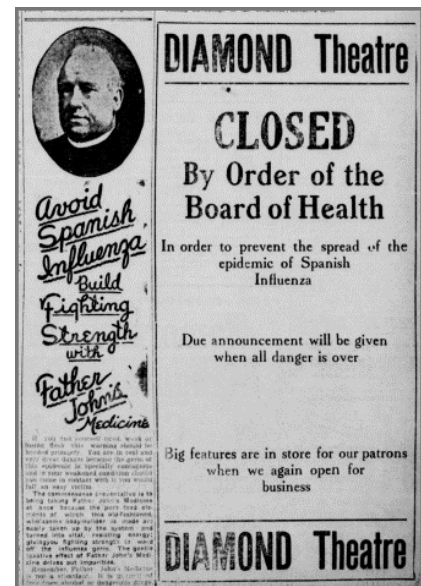
It’s true that Broadway didn’t close during the so-called “Spanish” flu, but public entertainment venues were indeed closed in London and almost every other city in the US. While the performing arts industry is currently reeling from the blanket closure of venues, we can find useful guidance in the precedent of that earlier pandemic.

With less understanding of the science of infectious disease than we have now, governments at the time of the 1918 flu arrived at generally the same policy prescriptions as those today: reducing crowding and modifying personal hygiene to slow the spread of the disease and limit the number of people infected.

Most theatres in the US were shut down for longer than three weeks, with some cities, especially in the West, enduring six- or seven-week closures. Generally, theatres reopened about ten days after the number of deaths peaked.

Multiple waves of the virus were experienced, with the second often being worse than the first. Omaha closed its theatres a second time after being open for five weeks of performances; Denver’s theatres were open for just three weeks before being shut again.

The global spread of the 1918 flu was slow due to less international travel and longer travel times than we have today. Developments in antiviral treatments, vaccines, and antibody testing all point to the impact of COVID-19 being less severe and shorter duration than the 1918 flu.

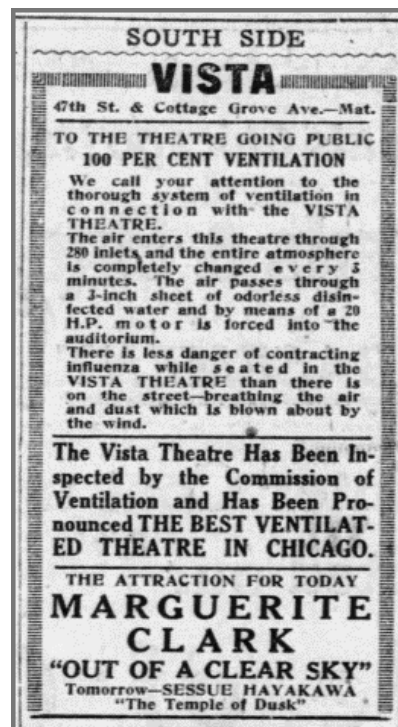


An advertisement for a medical remedy alongside the closure announcement from the Diamond Theatre in East Liverpool, Ohio, from The Evening Review, East Liverpool, Ohio, 11 Oct 1918

Following the re-opening of theatres, there was increased scrutiny of the health-worthiness of places for entertainment. In many cities in the West, such as Fresno and Sacramento, patrons were required to wear masks while attending performances or motion pictures. Boards of health became more active in inspecting theatres and enforcing ventilation ordinances. Inspectors in Chicago, for instance, ordered some theatres to close because of non-compliance.

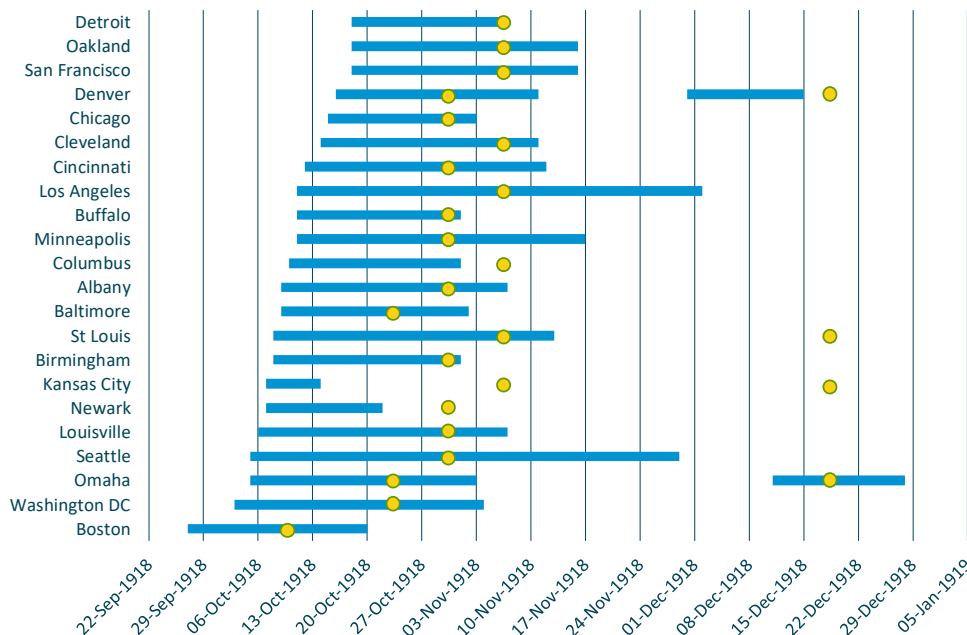
Public health was on the mind of the theatre-going public and theatres began to boast about ventilation in advertisements. Some of these statements were surprisingly detailed, such as for the Vista Theatre in Chicago: "The air enters this theatre through 280 inlets and the entire atmosphere is completely changed every 3 minutes. The air passes through a 3-inch sheet of odorless disinfected water and by means of a 20 H.P. motor is forced into the auditorium."

The performance industry in the US faced another substantial setback not long after the resolution of the 1918 flu. In August 1919, the Actors' Equity Association walked out of twelve New York theatres. The strikes spread to Boston, Chicago, Philadelphia, Washington DC, and St Louis. These strikes are part of a longer arc of labour organising in US theatres starting in 1913. The treatment of actors during the pandemic is not specifically cited as a factor in the strike. Certainly in New York, where the labour action began, actors were better off than elsewhere where theatres were closed. It is, however, hard to imagine that the economic hardship faced by performers in the previous year was entirely separable from the movement for better treatment by their employers.



Advertisement for the Vista Theater in *The Motion Picture Directory*, from the *Chicago Tribune*, 2 November 1918

Timeline of US theatre closures during the 1918 flu pandemic, Sept 1918 through Dec 1918



Blue bars indicate the length of closure. Yellow circles indicate the peak excess death rates reported. Vertical lines indicate weeks.

source: University of Michigan Center for the History of Medicine and Charcoalblue research

In summary, we can draw some guidance for today from the theatre industry of the 1918 flu era:

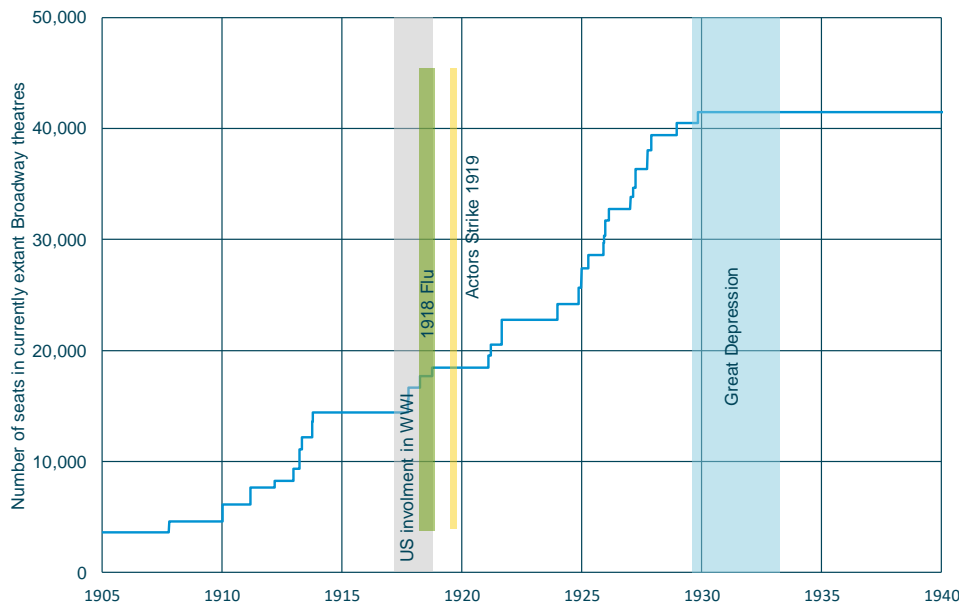
- While the past doesn't predict the policies of the current period, theatres should be prepared for closures to last well beyond the peak in infections.
- Theatres should be prepared for a second wave of infections and even a second wave of closures, pending the success of antiviral treatments and a vaccine.
- Changes to codes and standards for ventilation and other safeguards of public health may result from the pandemic.
- Communication with the public will be required to provide assurances about the safety of theatre-going.
- Sustained closures of theatres may contribute to issues with labour relations. The hardships faced by artists through the current structure of employment contracts will be re-evaluated and may have impact on organisations and venues.

Resiliency of Urban Development and Theatre-Building

The decade immediately following the live entertainment industry's unprecedented and sustained downturn—from the years leading up to the First World War, through the 1918 flu, and then the actors strike in 1919—saw the highest rate of theatre construction seen previously or since. Of the current number of seats on Broadway (roughly 50,000), nearly half of those are in theatres built between October 1919 and October 1929 (nearly 21,000).

Closures, alone, will not stall the development of cultural buildings. While the Great Depression did cause theatre construction to stop almost without exception from 1930 for many years thereafter, the effect of less sustained recessions may be more mild. Indeed, it could even provide some benefit to well-placed organisations.

Addition of (currently extant) theatres on Broadway, by seat count, from 1905 to 1940



Total seats in Broadway theatres are plotted against WWI (grey), the 1918 Flu (green), the 1919 Actors Strike (yellow), and the Great Depression (blue).

source: Playbill.com and Charcoalblue research

Enduring Humanity

The health of the performing arts industry should not, of course, be measured on buildings alone.

Great art continues to be developed in the era of COVID-19, just as it was during the time of the 1918 flu and the years immediately following it. Holst's *The Planets* was premiered between the first and second waves of the 1918 Flu. By the time just before the Great Depression, audiences were experiencing Ravel's *Bolero*, Hammerstein and Kern's *Show Boat*, Kurt Weill and Bertolt Brecht's *The Threepenny Opera*, Gershwin's *American in Paris*, and Sean O'Casey's *The Plough and the Stars*.

Our audiences will return, perhaps even with pent-up enthusiasm after self-isolating with Netflix and Disney+ for many weeks.

We will emerge from the COVID-19 pandemic with a new appreciation for how connected we really are, irrespective of the availability of global travel. At our best, we'll find a "we're all in this together" attitude that will embrace new and adventurous artistic work.

As this crisis unfolds, there are, however, warning signs that the inequality between communities may be deepened by it. Developing a robust artistic response to inequality, both cultural and economic, should be at the forefront of our thinking.

Our industry must find ways to be resilient; our humanity depends on it.

Returning to Normal—Three Phases

Through the fog of personal and collective pain from COVID-19, it is tempting to talk about a "new normal" that awaits us. There will be some of us whose lives will be forever changed by this illness and its effect on our families. But for our organisations and our industry, it is likely that what emerges on the other side of the crisis will be more "normal" than we expect.

Getting back to normal will take us through three phases:

- **Crisis management**
- **Ramp-up**
- **Adjustment**

As lockdowns of our communities and closures of performance venues continue, we'll continue to practice **crisis management**.

Operations will then **ramp up** towards normal, as our workforce and then audiences return. All of this will occur with heightened caution and respecting new sensitivities of our artists, employees, audiences, and donors. Changes aimed at preventing disease and reassuring theatregoers will hasten the return of audiences. These efforts may also forestall the imposition of additional closures during a possible second wave of infection.



Immediately following World War I, London returned to a full concert season at the Queens Hall and Royal Albert Hall, from the Westminster Gazette, 08 November 1918

A period of **adjustment** will follow when lasting changes to behaviour and standards will need to be incorporated into normal operations.

The sections below address key considerations for each of these phases, with recommendations drawn from Charcoalblue's collective experience.

Crisis Management: Cash

Lost revenue and managing available cash are the immediate and all-encompassing concerns. Pay reductions, furloughs, or lay-offs must be weighed against the commitments to valued teams and institutional stability.

We await the details of what assistance may be offered by governments. Our industry advocates, and the largest of our organisations, have a responsibility to influence policymakers.

A recession is likely inevitable; the key questions concern its depth, duration, and the pace of the eventual recovery. In this environment, it is prudent for organisations to be prepared for reduced drawings from endowments, less generosity from donors, and slower ticket sales.

Crisis Management: Engaging Audiences through Education and Outreach

It is critical that we maintain our audiences during this period. As the crisis hit, questions of how to communicate closures and ticket policies were some of the first to arise. Now that the closures have been ongoing for some weeks, successful organisations continue to engage their audiences with updates and whatever (largely digital) cultural enrichment they can offer.

We have already seen orchestras and theatre companies move performances online during the brief period between restrictions on public assembly and full lock-down. Organisations which had already invested in digital technology found a more straightforward path to their existing audience members and even to gaining new ones. In the first few days of venue closures, digital streaming was a lifeline. However, even the best digital streaming can't serve viewers and listeners if there is no content to deliver.

For the young, schools deliver exposure to the arts. While schools are closed, there will be a void left in those lives. Especially now, the mission of education and outreach should be a priority. Watching after our children during this time will engender loyalty from current and future audiences.

Free opera and classical for watching at home: our critics' top picks

There's a growing treasure trove of classical music to watch for free. Each day, our critics will choose a highlight



▲ The Berlin Philharmonic with conductor Simon Rattle perform without an audience at the Philharmonic Hall in Berlin, on 12 March. Photograph: Stephan Rabold/AP

24/3: Berlin Philharmonic/Rattle: 13 March live-streamed concert Simon Rattle's concert with the Berlin Philharmonic on 13 March must rank as one of the strangest of even this conductor's, this orchestra's or indeed anybody's concert experiences. In retrospect it feels worryingly reckless to have gathered the orchestra together one last time without any physical

Concert reviews and recommendations moved to streamed performances during the COVID-19 crisis, from The Guardian, 23 March 2020

Crisis Management: The Liability of a Shuttered Building

Buildings that are closed still need maintenance and have running costs. Organisations which have made energy-saving and energy use-monitoring upgrades will immediately see benefits from those improvements.

A closed building will present opportunities to tackle deferred maintenance. It might be a lobby floor that needs waxing or the electrical testing of lighting equipment. When movement restrictions are relaxed for non-essential staff, there should be nothing holding back this maintenance from being undertaken before audiences return.

For theatres, as shows are cancelled or deferred, the sequence of making and storing scenery and costumes may become a logistical constraint. There are, however, few easy answers to these problems. Third party-owned off-site options are in short supply as industrial and warehouse space remains under huge demand, especially given COVID-19's boost to e-commerce. Creative solutions to rigging in existing spaces and partnerships with other organisations may allow some of the investment in these materials to be protected.

Ramp-Up: Front of House Management

As venues reopen, new checks (from body temperature readings to affidavits about recent travel) may be compulsory or recommended for all those entering public places. Planning for this disruption to the normal flow of audiences should be contemplated. Many venues are only marginally equipped for queuing for security checks and bag searches, and the introduction of health checks will only make these problems worse.

Revised procedures for ticketing may also be advised to limit physical transactions, especially cash-based ones. While e-tickets on mobile phones are convenient and touchless, ushers may object to being presented with hundreds of mobile phones of questionable cleanliness.

Communicating with established audiences and potential ticket-buyers about the precautions that individual venues are taking will become industry-standard. We've already seen such messages crowding our inboxes from grocery stores, rental car companies, and restaurants.

Traditional seating density in theatres and concert halls is clearly at odds with social distancing. There may be an impulse to reduce venue capacity. Following the lifting of venue closures for the 1918 flu, some venues instituted every-other-row seating policies. The box office management of such a system would likely be untenably complex. The economics of such a policy is more dubious—twice the performances to serve the same audience. However, in this ramp-up stage, there may be venues that experiment with that approach.

Food and beverage, a significant revenue stream for venues, will also face change. The operation of the crush bar, to use the British term, will have to change when the public wishes to avoid a crush. Perhaps pre-ordering for intervals will become compulsory rather than optional. There may be perceptions that single-serving options and disposable utensils are safer, contrary to environmental goals. Material supply and waste streams may be affected.

Ramp-Up: Back of House Management

Protecting back-of-house teams will be as important as protecting audiences. Those working in costume and make-up will face the same risks as other professions working in close physical proximity with others. Dressing areas may need to quickly adopt social distancing practices, including de-densifying rooms.

The cleanliness and regular disinfection of surfaces in dressing rooms and other areas will be required.

The resiliency of companies may also be considered. The number of understudies may have to be increased or their training broadened to keep performances going in the event of illness.

Ramp-Up: Performance Practice

Given the increased social stigma of coughing or sneezing in public, we are hopeful that concert-going will become more peaceful, as the reflex of coughing between movements is suppressed!

More seriously, there is a very real possibility that immersive performances may be perceived as less safe than traditional performance styles. The healthfulness of standing in large crowds and interacting with actors and other audience members may be substantially less appealing in the short term. Over the long term, however, it would seem very unlikely that interest in interactive and immersive shows will decline.

While no one knows just how long the closures will last, many organisations have been forced to cancel or postpone productions for many months in advance. Organisations that have cancelled scheduled productions well into the future may soon find themselves scrambling to back-fill seasons with other programmes that can be produced at shorter notice. In the longer term, the very long planning periods for artists' contracts, scenic and costume construction, rehearsal periods, and subscriptions ticket sales may need to be reconsidered.

Adjustment: Front of House and Back of House Design

As we move toward long-term adjustment, new refurbishments and buildings will incorporate management methods introduced during the COVID-19 pandemic.

Toilet facilities may see substantial changes, including using more easily cleaned surfaces, reducing density of spaces, expanding the use of touchless fittings, and designing serpentine door-less entries and exits. Given the importance of handwashing, the debate over paper towels versus hand dryers, while incorporating environmental concerns, is likely to return.

The provision of devoted first-aid rooms, sometimes required for licensed venues (depending on the jurisdiction), will likely be expanded. Spaces specifically for the isolation of staff or audiences who are unwell will become expected.

The space standards for crew rooms and multiple-occupant dressing rooms are likely to change.

Ticketing and food and beverage operational procedures could see long-term adjustments. These changes have potential impact on the built infrastructure of performance buildings and are likely to be costly.

Adjustment: Artistic content and control

The initial phase of self-isolation and lockdown has seen an explosion of self-generated content and free streamed performances. Artists are going direct to audiences with live readings, 24-hour playwright

competitions, and collective choirs. Many organisations, from the National Theatre (UK) to the New York Philharmonic, are opening up archives and offering free streaming. Providing this content may be setting a difficult precedent—for how long can content remain free? After this crisis, how can we encourage audiences to return and pay for content? Organisations will need to respond quickly to the direct delivery of content over digital platforms in order to harness the enthusiasm for this personal and informal exposure to artists.

The continued evolution of artists' rights regarding recording and video broadcast is likely to be hastened by this period's reliance upon digital content.

Adjustment: Digital Infrastructure Design

Our reliance upon technology to stay connected during lockdown and quarantine—from videoconference, to app-based delivery services, to delivery of entertainment content—has been widely discussed. One of the most assured permanent adjustments to performing arts will be the integration of the digital realm.

Performance streaming had already been taking off. The Berlin Philharmonic's Digital Concert Hall is well over ten years old, and others have followed suit, including the Detroit Symphony Orchestra and the Metropolitan Opera. While the live broadcast of theatre and opera to cinemas isn't as useful during enforced venue closures, the technology of performance capture and live streaming is extremely relevant. Audio and video capture with high-production values will be standard for new venues.

The advances being achieved at universities worldwide in networked performance using low-latency technologies and multi-channel streaming will likely accelerate into normal performance practice. While the technological hurdles continue to be high, commercially available solutions are emerging and will be pushed forward due to COVID-19.

With schools closed, digital platforms are likely to replace in-person instruction for months for many students. The impression this period will leave with many students, especially the youngest, will be indelible. The current crisis will lower perceived barriers for arts education and engagement to be delivered digitally.

Adjustment: Built Environment

Once the scientific community and public health agencies are able to review the whole arc of the COVID-19 crisis, it is likely that the standards for indoor air quality and sanitation will be reviewed and updated. Concerns over the inherent sanitary qualities of finishes, especially those which are regularly touched by audiences, will be scrutinised. It is likely that high-throughput public buildings such as museums and performance venues will be under pressure to lead this innovation.

Through this period it will be important to not lose sight of our other ongoing crisis: climate change. It was only two months before virus-related lockdowns began in Australia that the bushfires were extinguished. In the midst of the COVID-19 crisis, many of us are prioritising health at the expense of the environment—especially in choosing the disposable over the reusable. When the pendulum swings back to environmental sensitivity, arts buildings will need to retake their place in the centre of advocacy for sustainability and carbon-emissions reduction.

The use of outdoor spaces may be revitalised following the pandemic. The inherent safety (real or perceived) of fresh air may lure performances out of buildings more often. There may even be a renewed impulse to integrate public buildings with the landscape, potentially giving organisations resiliency in later outbreaks. (If the transmission of COVID-19 is, indeed, proven to be affected by temperature and humidity, could the normal performance season shift from the autumn and winter to spring and summer?)

Opportunities: Taking Advantage of a Construction Inflation Cool-Off

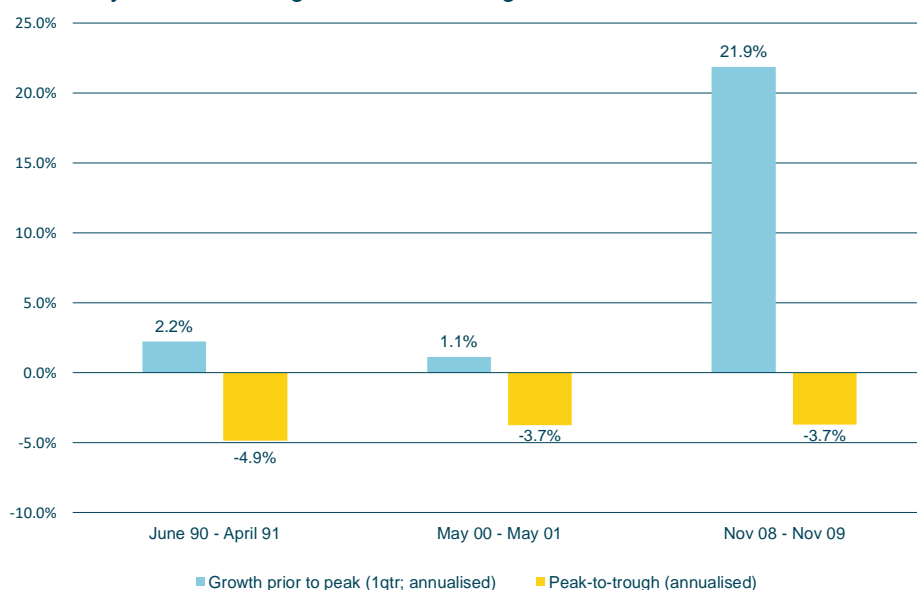
The COVID-19 crisis is sure to cause economic hardship, but we do not yet have a sense of the likely depth and duration of the downturn, nor the pace of the eventual recovery. Central banks and governments have reacted swiftly and aggressively, but the efficacy of their initiatives is far from known. However, there are potential silver linings specifically for organisations owning and operating performance buildings.

In the near term, lower energy prices will provide some relief for building operations budgets. This should not be taken as an excuse to withdraw any commitments to sustainability. Moreover, these price adjustments are likely to be only temporary.

Falling prices are perhaps more compelling for arts organisations looking to refresh or renovate their existing performance buildings or to build new ones.

Economic recessions tend to reduce inflation-adjusted construction costs. Those with “shovel-ready” projects may see very good value in the market in the near term. Previous recessions have seen construction prices lag behind inflation by as much as 3% to 5%. This is in sharp contrast to construction inflation just before recessions, when construction costs rose at least 1% to 2% faster than inflation (and by more than 20% leading up to the Global Financial Crisis!)

Inflation-adjusted annual growth in building costs in the US over three recessions



Annualised rates of inflation-adjusted building cost growth are shown for the quarter immediately preceding recessions (in blue) and during recessions (in yellow) for the three economic recessions of the last 30 years. For the purposes of this chart, recessions are defined as the period between the peak and trough of real building costs.

source: Engineering News Record and Charcoalblue research

This analysis likely understates the cost savings possible when beginning a building project in the wake of a downturn. The available building cost indices capture only the cost of the basic inputs—labour and raw materials. They do not capture the contractor’s margin, which can constitute as much as 5% of an overall construction budget. In Charcoalblue’s experience, during a recession actual total bid costs will flex much more than the underlying price of materials and labour, as builders are willing to accept reductions on their margins in order to cover fixed costs.

In some cases, the softened market has been enough to bring projects whose costs had escalated beyond available capital back into the realm of feasibility. However, only organisations that were advanced enough in the design process have been able to take advantage of the dip.

Indeed, there may be advantages in adjusting methods of procuring construction contracts in a cooler construction market. While the early engagement of contractors/builders has become more common, this may become even more important in the context of a downturn. Contractors will be looking to back-fill cashflow and attempting to lock-in projects earlier. At the same time, they will have time to engage design value-added services.

Concluding Thoughts

The COVID-19 crisis, while not unprecedented, is unlike anything any of us living today have experienced. While it may be difficult to accept from the throes of damage control, history suggests that the performing arts world will be resilient. Bringing venues back on-line and reassuring audiences of their safety is not going to be an easy process, however people will be hungry for culture and engagement once lockdowns and self-isolation end. Meanwhile, there are potential opportunities to take advantage of during the downtime—from venue maintenance to expanded digital outreach. We expect that in the long term, there will be some changes to venue planning and operation. These changes will be folded into the normal evolution of venue design, and we don't foresee any seismic shifts. However, for those with venues in design currently, it will be wise to react quickly and heed these early warnings. Of course, we are also facing a period of economic uncertainty as a result of COVID-19. As in any downturn, the savvy will be able to capitalise on the weaker economic conditions. We may be coming upon a particularly favourable time to initiate construction projects, especially those which are poised for tendering or nearly so. Even in the midst of crisis, a “we're all in this together” attitude is prevailing. At Charcoalblue, we're discussing the effects of this crisis on venue design and management with our clients all around the world. We're looking out for the best ideas and developing innovations for dealing with the current conditions. We hope that we can continue to be a resource to you.

About the author

Byron Harrison is a Charcoalblue partner and Acoustics Principal. He has worked widely in the US and UK as well as Australia and Singapore. He is currently living in Hong Kong, where the first wave of the epidemic arrived before it was even known as COVID-19. In Hong Kong, performance venues and attractions were closed from the last week in January.

About Charcoalblue

Charcoalblue is the world's leading integrated Theatre, Acoustic and Digital Consultancy service. Established in 2004, we operate as a collaborative team across six international studios in the UK, USA and Australia, delivering projects to every corner of the globe.