I have come to architecture as an artist inquiring into extreme environments, and the histories of their exploration and representation. Architecture is the shelter that stands between us and the open sky. Architecture has the mediating role in a relational and ecological understanding of human and environment. I want to offer here a few observations on the hybrid productions that occur through cross-disciplinary approaches to a topic such as the exploration of extreme environments, and how approaching architecture through art can generate these.

My contribution to architecture is not on the level of design programs but in the engagement with past histories and present architectural representations, and in the imagining of architectural futures. And my approach has been indirect or oblique, expressed through art practice, and approached via the examination of the representations of landscapes. On the way, I have made art works sited in the architectures of collections and/or displays of archives, libraries, museums of natural history and art, in botanical and zoological gardens, as well as works that engage with the visual and formal aspects of spatial relations, either as sculptural objects, as installations, or two-dimensional works. These figuratively reference landscapes as documented in the archive or as the environment to which those documents refer.

I have been working on the watercolor practice of the Antarctic explorer Edward Wilson (1872–1912), who was one of the first people to reach the South Pole and who died with Robert Falcon Scott and all the others in the party on their fateful return trek. Wilson documented those previously unseen landscapes in watercolors that were extraordinarily colorful and observationally accurate. Although past its peak, topographical drawing in watercolor was still a device of exploration and colonial power at the time, and as a form of documentation it facilitated the exploitation and occupation of the newly ‘discovered’ territories to which it was applied. My research led me to consider the standardization of the production of watercolor pigments intended to be stable across global space, the development of permanent colors that would not fade over time, and to how their ambition for universal scope was limited by their encounter with different climates.

Wilson followed the tradition of *en plein air*, or open air and topographical painting, but its translation to application in this extreme environment of sub-zero conditions demonstrated how far from being universal this medium was: its suitability was limited to certain climates. Using watercolor out in the open air while directly observing the landscape was impossible in the freezing conditions of Antarctica. In fact, Wilson was only able to work with pencil out of doors, and even this was difficult as even the softest grade lead behaved as the hardest in subzero conditions. Wilson instead had to work up his watercolors in the relative comfort of the expedition, using annotated pencil sketches made in the field. In Wilson’s time, reaching Antarctica required a long sea journey—navigating the globe from the northern hemisphere to the southern. On his way there, Wilson complained in his diary:

> My paint-box has been upset more times than I can say, and this in the Tropics where most of the paints are semi-fluid and all get swamped in pasty vermilion, makes it hard to know where you are. Everything wanders if it isn’t chained up.

In the Antarctic his paints froze, in the tropics they melted into confusion, both climates rendering watercolor difficult to work in—the frigid and the torrid climates posing contrasting challenges to the production of watercolor paintings. Thus this topographical watercolor practice, the purpose of which was to support colonizing surveys, was untenable in those zones beyond the temperate.

The topographical watercolor painting is a device for looking through which knowledge is constructed. It must be understood in its aesthetic conventions and historical purposes. Other devices for looking include the architecture of a museum building and its displays, as well as the arrangement of an archive. I would also argue that the written text is a device for looking, insofar as it articulates a point of view that ‘colours’ the vision of any object associated with its focus. And these devices are all themselves already entangled in spatial epistemologies that have long traditions. In terms of the mapping and exploration of the world, these epistemologies include the meaning of space in contrast to place; of here and elsewhere; of North and South and of the Equator; of center and periphery; of the climate zones of the polar or frigid; the temperate and the tropical or torrid; and of emptiness. All the epistemologies and the aforementioned devices—the watercolor painting, the museum display, the archive, the written text—orchestrate a set of spatial relations between the subject, the environment, and the object.

The globe can also be understood as a device and epistemology. In his work *Geography*, Ptolemy (second century), a mathematician, astronomer, and geographer, introduced the system of a grid to list the then-known places in the world. Ptolemy created some of the first world maps, establishing the convention of placing north at the top of the map. He also described a landmass to the south as Terra Incognita, and provided the motivation for many explorations in that region. Practical methods had to follow some centuries later with Renaissance navigation.
Ptolemy’s Geography grappled with the task of representing a spherical earth in two-dimensions: he developed different projections for generating flat maps from the globe. Flat representations of the world most often exaggerate the expanse of the polar regions, stretching their territory into enlarged areas. The Poles occupy the extremity, from the regular point of view of the middle, that is, they are the most stretched out of shape in map projections. British geographer Denis Cosgrove cogently sets out how the visualization entailed in the development of ‘latitude’ and ‘longitude’ constructed new epistemological possibilities of knowing the world as globe.

If we want to take note of these dominant spatial epistemologies it is sometimes necessary to come at them sideways. These oblique approaches offer an alternative perspective, comparable to anamorphic projections, which is fruitful in generating alternative subject positions, similar to those generated in hybrid forms. Anamorphism displaces the Cartesian subject, favored in conventional perspective, as the disembodied view from nowhere. An anamorphic image demands that the viewer takes a particular, and often oblique, position in order to see it, thereby making the viewer located, contingent, and embodied.

At the end of the nineteenth century and early twentieth century, Antarctica was the last unexplored territory on the planet, the last real Terra Incognita. To this day, the territory remains an unusually empty one: an almost unpeopled place. With nothing but a very recent human history of habitation and lacking any tradition of architecture, the architecture that exists there is in limited quantity and in rather eccentric forms. But nonetheless, or perhaps precisely because of this eccentricity, the architecture in the extreme environment of Antarctica provides fruitful examples by which to consider architecture as mediator of our relation to the open air, the outside. These eccentric architectures include the following: the derelict stations of nineteenth century whalers; the ship Discovery used as static accommodation when ice-bound in McMurdo Sound; the early prefabricated structures brought to the continent by explorers, such as The Hut at Hut Point and Scott’s Hut at Cape Evans, where Wilson worked on his watercolors, and that are now heritage sites and in a state of frozen ruin; the canvas tents used on the sledging expeditions to the South Pole, such as the tent left at the South Pole by Amundsen as a marker of his priority, and the one in which three of the Scott Polar Party perished; and the subsequent research stations on the continent at McMurdo Sound and at the South Pole itself, such as the iconic Geodesic Dome after the Buckminster Fuller design that was constructed in the 1970s and deconstructed in 2010. Finally, of course, there is another kind of building associated with that continent but not situated there: the architectures that house the archives that have been derived from those historic expeditions.

My encounter with the landscape of Antarctica has been indirect, as has my access to most of the architectures that pertain to that landscape, those that have been sited on the continent, apart from the Discovery ship that doubled as accommodation on the Wilson’s first expedition and that can now be visited as the RSR Discovery attraction in Dundee. The Scott Polar Research Institute in Cambridge is one of places that houses the Edward Wilson archive. The entrance hall is formed as a double domed vestibule, each dome portraying a polar hemisphere encircled with the names of conquering explorers and at the center of each is a yellow sun-like motif at the Poles. These domes remind us of classical domed architecture that had the opening to the sky at this pole point, known as the oculus. The domed ceiling painted with the sky-like territory reminds us that even the open-air is mediated by a sheltering interpretation. That this entrance hall should be domed with a painted illusion of the sky fits the ambition that the knowledge stacked in the surrounding shelves should furnish the reader at its center with a panoramic vision. The domed ceiling also reminds us of the problem that a shift from two dimensions to three dimensions poses to mapmakers and would-be global travelers.

Like map projections, anamorphic projections are the translations of a one-grid system onto another, for example in mapping of the globe from a flat surface to a curved surface; or in architecture, in the transposition of a painting onto the interior of a dome. A datum provides the fixed point of reference for these transformative grids. The environment of Antarctica, as seen through the archival manifestation, is also a distortion. Encountering Antarctica through the archive, the far-away territory is reconfigured as image or artifact or narrative. The subsequent interpretation of the archival content, part of which this watercolor artifact might constitute, will entail a further distortion as the work is narrated or reproduced in another form.

My own process of research into the archive produced an ongoing, newly-made archive of copies and reproductions: hand-painted watercolor versions of Wilson’s work, found newspaper and magazine articles, postcards, and photographs, pinned on the wall in a constellation of new arrangements at each subsequent configuration, offering incidental cross-readings and associations (Fig. 1) The encounter with Antarctica through the archive seems to suit the flatness of paper: the immersive environment has been rendered as an assemblage of fragments that are all subject to the dimensional restriction of what will fit into the archive; books on bookshelves; manuscripts in boxes; stacked paintings—flat layers of a paper version of a fully rounded reality that would surround me if I were to be actually in situ. Antarctic Archive (Fig. 1) is set out like a panorama but without a horizon, or with so many horizons of a fragmented and multiple sorts as to undo an illusion of distance. It brings the viewer or reader back to the experience of the surface. This pin-board archive covered the four walls of a room as an installation, thus putting the viewer in the center.

In Anamorphic Landscapes (Fig. 2), I took another approach to this interest in creating a panoramic experience of the archive but with regards to the individual watercolor landscape painting and their portrayal of the open territory of Antarctica. Anamorphism is a perspective distortion that renders images comprehensible only from a special viewpoint or with the intervention of suitable correcting devices that reflect the image back to us in a recognizable form. Architecture uses anamorphic perspective to solve the problem of painting a readable
picture upon the interior of a domed ceiling, but anamorphic perspective can also be compared to looking obliquely at the Antarctic landscape through the Wilson archive. As I looked at Wilson’s watercolors online in sequences of fragmented sections, or went to the archives and leafed through the archive boxes that held the painted watercolor papers, according to the order allowed and the restrictions of number of archival boxes one might be able to have to hand at any one time, I found that I wanted to reassemble them into a totality, to allow them to ping back into a three-dimensional reality. I decided upon something in miniature. I found a number of Wilson’s watercolors to work from that in combination are not real or true to the topography of the landscape, but fit aesthetically, for reasons of composition or color to create an inverted panorama to paint upon the flat sand-blasted glass.

I decided to make globes of glass that I then intended to mirror, as the correcting device that would reflect the distorted landscape, but realized that if they were mirrored all over then the ceiling of the room in which they were displayed would appear in the globes and ruin the appearance of the sky. Therefore the globe above the equator line was made in colored opaque glass.

I initially assumed that I would make my anamorphic paintings by calculating the distortion needed in transposing from one grid to another, but I found that I was much happier working by eye. These distorted panoramas appear to be landscape views when seen through the correcting distortion of the mirrored globe.

Archives are not neutrally dispersed atoms of artifacts and information but are constituted by assembled arrangements that create viewpoints of legibility. American art historian Donald Preziosi describes the “the anamorphic archive” as a knowledge apparatus that determines understanding and interpretation because of what is occluded and included by condition of the subject’s position within it. As Preziosi puts it, “Not unlike the various forms of anamorphic painting of the European baroque, the art historical archive projects very specific perspectives or sites from which the archival display locks into a telling and narrative order.”

One must occupy prescribed viewpoints if one is to see clearly or read sensibly. This approach spatializes the archive, and treats it as a territory. Knowledge is constructed through our visual devices for looking, such as the museum building, the archive, or the watercolor.

The archive is a knowledge apparatus and it is also a built architecture. I suggest that we can think of architecture as mediator between the environment and us humans. Beyond the provision of a roof, there are further highly developed ways in which architecture mediates and controls our experience of climate, such as in technologies of air conditioning. These climate control modifications find some of their most precise and specific manifestations in archives and museums. In a curious distorted mirroring of the open-air watercolor practice that Wilson attempted in Antarctica, my attempt to use watercolor in the archive was restricted by climate, too. The use of watercolor is forbidden in this climate-controlled environment in which fragile watercolor and paper artifacts are preserved. Pencil only. I have to imitate Wilson’s practice by making my own pencil-written annotations of my color observations of his landscape paintings.

My response to seeing the watercolor works in the enclosed housing of the archive had produced in me the wish to create three-dimensional miniatures of what I imagined that immersive environment to look like, had I been there. In another odd coincidence, I found that the mirrored-globes that I had developed as *Anamorphic Landscapes* looked reminiscent of the marker at the Ceremonial South Pole, the place used for photo opportunities. I had not known before making my works that since the 1950s the South Pole has been marked by a reflective silver globe on a plinth. This globe is made of polished metal and it is entirely reflective, so that the huge canopy of the open sky of the Southern Hemisphere above it is reflected without interruption in its upper half. Until 2010 when it was deconstructed in reverse order to its construction the iconic South Pole architecture of the Geodesic Dome could be seen in the background to this Ceremonial South Pole. Inspired by the design of Buckminster Fuller and designed by TEMCOR, it functioned like a promise of an artificial sky as an enclosure to protect the other structures beneath it from some aspects of the harsh Antarctic climate.

My approach to architecture is indirect, coming via art. This oblique approach to architecture via art and the archive has produced anamorphic works, but has also been generative of anamorphic perspectives that can be understood as transpositions of one grid system upon another, that I argue can be also be noted as at play in hybrid cross-disciplinary practices. Anamorphic perspective can challenge dominant spatial epistemologies and can also be understood as a strategy for rectifying long-established injustices in how global space has been imagined in ways that have created centers and peripheries that have served dominant and colonial interests. Cross-disciplinary approaches to architecture have the potential to reform and inform the mediating role that architecture has between human and environment, thus refashioning architecture towards a new climate specificity, as well as relational ecological understandings and practices.

Figure 1. Polly Gould, *Antarctic Archive* (detail), 2013. (watercolour, pencil, pen, print media, found image and text, drawing pins and paper clips, dimensions variable). Image courtesy of author.

Figure 2. Polly Gould, *Erebus and Northern Islets*, 2012 (hand-blown coloured and mirrored glass, watercolour on sand-blasted glass, 45 × 45 × D. 16 cm). Image courtesy of author.