

Gary Woodley · Impingements
27 June — 12 September 2015

Laure Genillard Gallery
2 Hanway Place, Fitzrovia
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Open Wed/Thu/Fri/Sat, 1 – 6 pm

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I first ran into Gary Woodley's work in 2007, seeing beautiful wooden benches made for the new Chelsea Space, run by Donald Smith. I thought these simple constructions might look just right for our new gallery space in Hanway Place, combining modular multi-function utility with an elegant look. Then Donald said that the maker was also an artist.

Later on that year, our first gallery assistant Lynton Talbot suggested Gary's name again as an appropriate artist for a group exhibition entitled *Presque Rien*, as we were developing ideas on the minimal touch or the small gesture but with large impact. The idea of the small becoming big, revaluing the physical space of an idea – was part of an ongoing interest since the early days of the gallery's existence in Foley Street back in 1988. Gary came up with an intriguing work, a one line wall and floor drawing in the shape of a double-helix which expanded into the entire space, upstairs, downstairs and in the stair case. We liked it so much, we kept the piece running over the next exhibition. The process of making was wonderful to watch and actually quite complex. The artist marked out his line by butting up endless sheets of computerized papers throughout the space.

It's a pleasure therefore to invite Gary for a solo presentation this summer and I'm indebted to him for also taking the time to help put together materials for this publication, a survey of his work covering more than forty years. It was long due for an artist of his stature.

I would like to thank all the photographers, Matthew Appleton at Modern Activity and both authors for their inspired texts, curator Lynton Talbot and Rozemin Keshvani. I'm especially grateful to Rozemin for her meticulous skills in over-seeing and editing all necessary materials for the publication.

Laure Genillard

Laure Genillard is a private contemporary art space in Fitzrovia close to Oxford Street.

Director Laure Genillard has operated her gallery since 1987, bringing an alternative eye to developments in abstract and conceptual art internationally, expanding on 1970s minimal art practices and discussions. The gallery became known for its large installations and for allowing artists the freedom to engage directly with the space. Laure has been seminal to the practices of several young British artists, whose work was first showcased at her gallery, including Catherine Yass, Fiona Banner, Martin Creed, Peter Doig, Gillian Wearing, Simon Starling as well as many artists from the continent such as Maurizio Cattelan and Sylvie Fleury.

Relocated in Hanway Place since 2007, the programme presents a mixture of young and older artists through exhibitions, at times curated by guest curators. The gallery does not represent artists.

*I am surrounded by nothing.
Not empty space, for there
is no space to be empty.*

*Not blackness, for there
is nothing to be black.*

*Simply an absence, waiting
to become a presence.*

*I think commands:
let there be space.*

But what kind of space?

*I have a choice:
three-dimensional space,
multidimensional space,
even curved space.*

Ian Stewart, *Nature's Numbers*, 1995

Point, line, plane. Euclidian geometry. The flat surface. A sheet of paper. The stretched canvas. These are the rules and surfaces by and onto which we have, until recently, mapped our existence, drawn our histories, conceived our arts and constructed our architectures. They have given us the golden ratio, led us to adopt three-point perspective and underlie our notions of perfect reflection and symmetry. Yet mathematics provides us with a multiplicity of possible geometries whose modalities might take us into worlds unknown.¹ Albert Einstein's theory of general relativity suggests that the physical space of our universe itself is non-Euclidean. The mathematician Ian Stewart has said that he dreams of 'a world in which curved space, or space with more than three dimensions, is not only commonplace but inevitable'.² To extend space – this is surely a utopic enterprise. The artist who undertakes this utopic enterprise must forge a new language through which to release us from the bondage of point, line, plane.

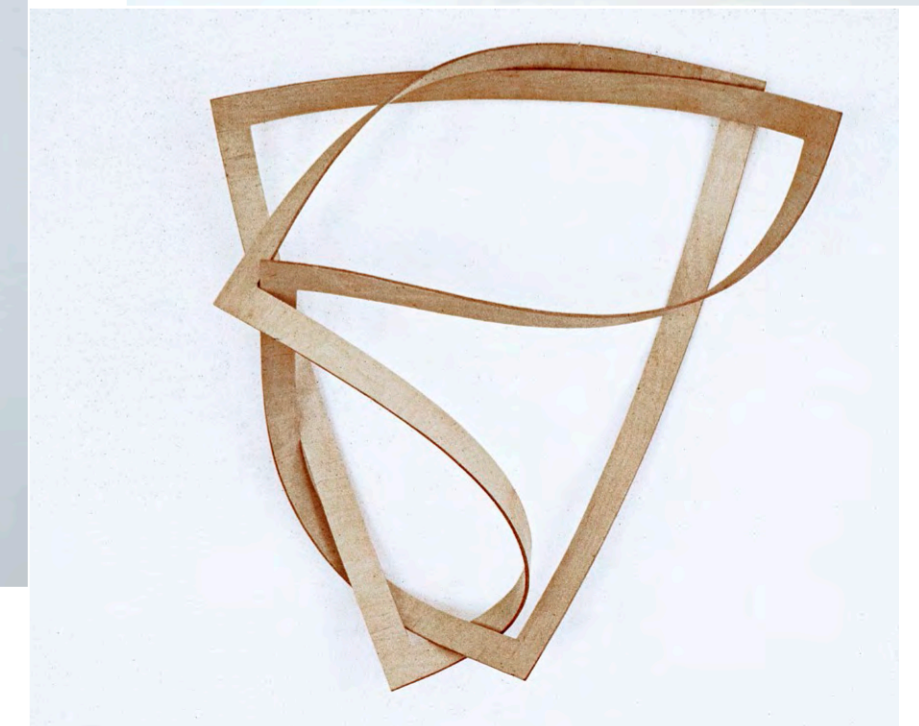
Gary Woodley is such an artist. An artist's artist, Woodley has, over the course of his forty year practice, prodigiously worked from idea through to resolution. He has engaged material to visualise, explore and interpret the fundamental precepts of geometry and the related concepts embedded within architectural space. His signature works, the impingement series, comprise large-scale architectonic topographies thrown onto architectural surfaces. Euclidean space, hyperbolic space, topological space, minimal surfaces – these are the manifold fabrics through which Woodley structures his materials within architectural frames to bring about a physics of encounter with the language of mathematics.

Woodley began this journey as a young boy while assisting his father in his workshop. A cabinet maker and restorer of antique furniture, Woodley senior welcomed his son's participation in the process of making, giving him full support to explore tools and materials. These early experiences would continually inform Woodley's practice and prove formative to his ideas about the creation of art, the role of problem solving, the relationship of idea to material, and the very intimate connection between tool and craft.

I have been employing tools since I was quite young. I gained a realisation of how things are formed – just putting two pieces of wood together and cutting them in a particular way, and you get a marvellous form such as an arm for a Queen Anne chair. I got a sense of how economical that process is. It was a three dimensional learning, building furniture, and an inspiration for my continued investigation into incredible shapes and complex curvatures.

Gary Woodley, 2015³

A very tangible engagement with material informs Woodley's exploration of these complex mathematical relationships. Drawing inspiration from Swiss architect and designer Max Bill (1908 –1994), Woodley began to realise his own vision of concrete art through which 'good form' is achieved once an idea or problem is fully resolved through the creation of an object. His earliest works involve a progressive exploration into ideas of topology beginning with his desire to create an object with a single-sided surface, no front, no back and one edge.⁴ An homage perhaps to Max Bill's *Endless Twist*, 1953-56, Woodley's relief *Single Boundary* comprises a rectangle with a half twist that realises a Mobius transformation. The work retains an elegance and simplicity of idea. The grain of the wood is visible, allowing the pure idea of the Mobius strip to flow through the viewer. This continuous plane Woodley further explored through the more complex forms. *7/7 a square with even sides and seven half twists* and *Cubic Transformation*, and later in 2002, the paradoxical *Surface derived from a hyperdodecahedron*.

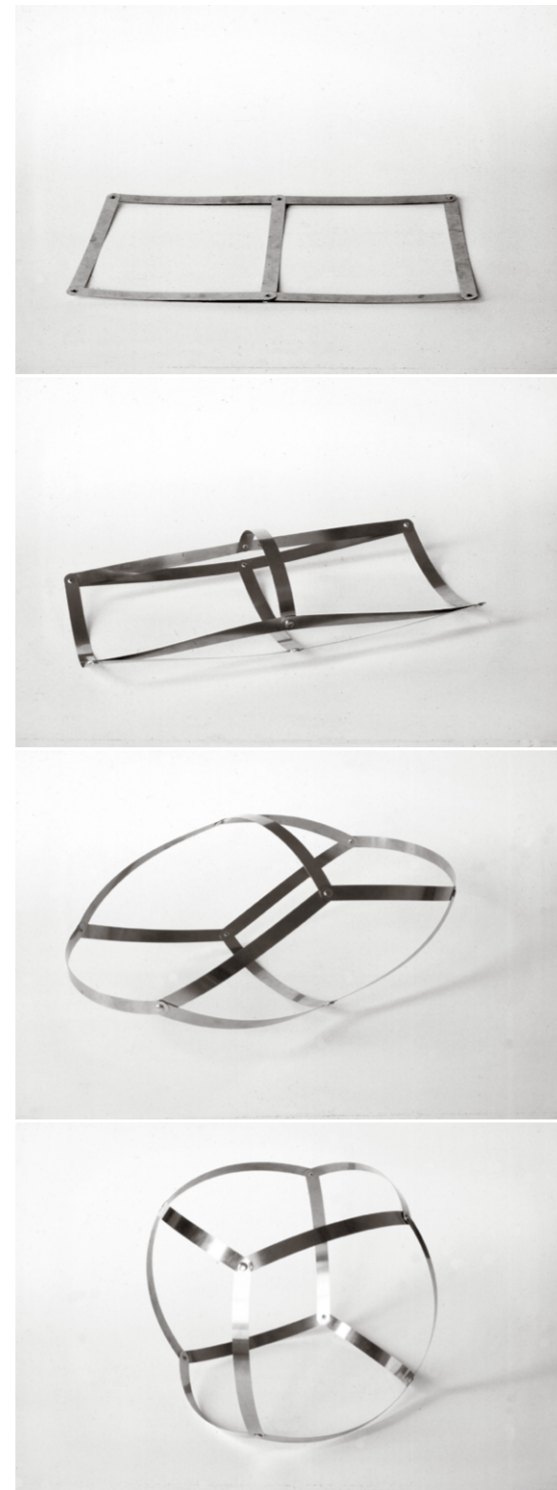
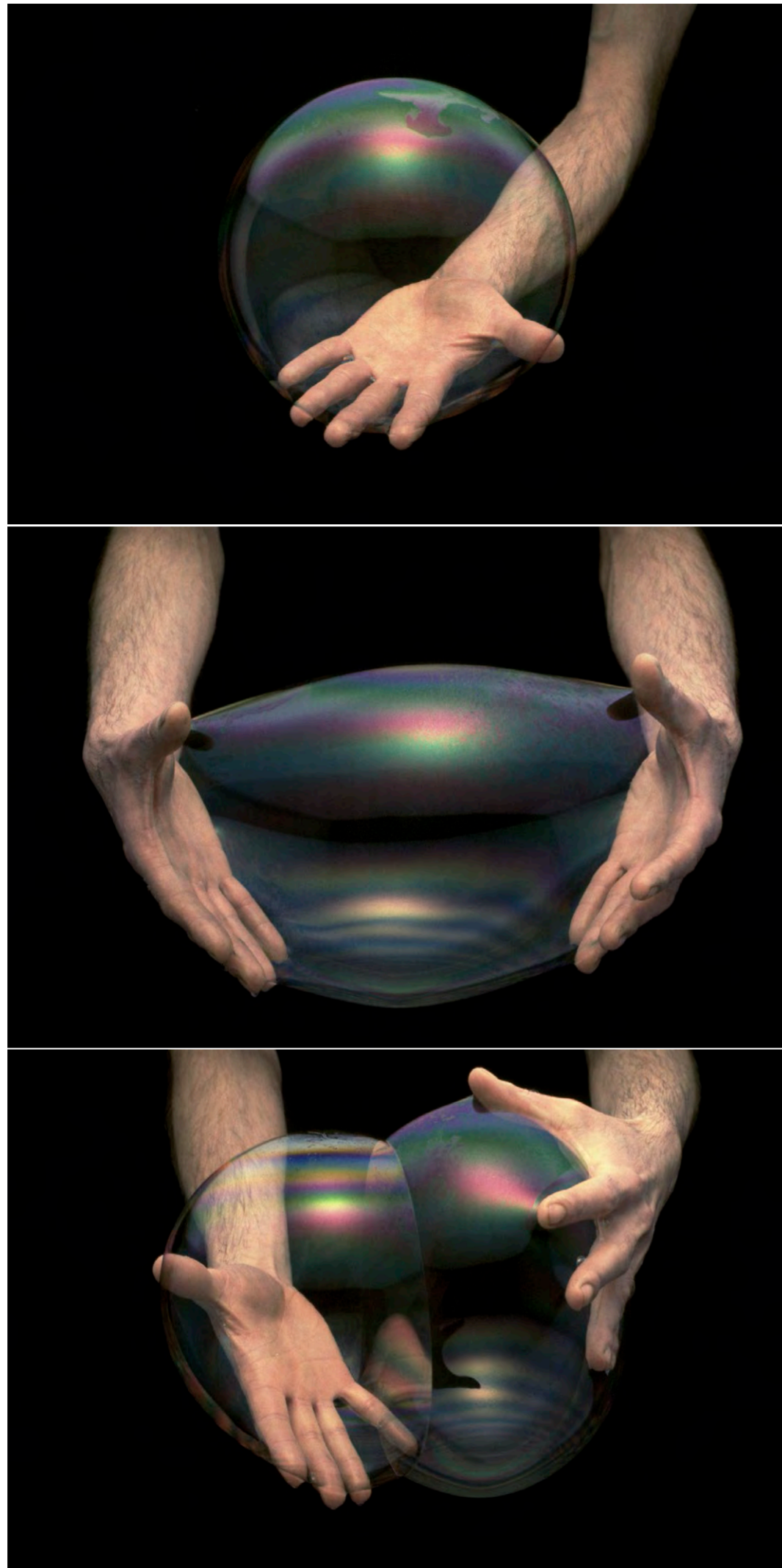


Single Boundary, 1979

7/7 a square with even sides and seven half twists, 1981

Cubic Transformation, 1998

Surface derived from a hyperdodecahedron, 2002



Characteristic of these topological works is the use of a confluence of tension and compression to bring about a visual and engineered harmony. As Woodley explains, 'The tension in the material is very much part of the actual form. It is the form deployed by the tension as well as the concept, so it is concept and material coming together to be resolved.'⁵ In each case, Woodley's mathematically- inspired problem is resolved through the material's inherent elasticity and to use Max Bill's phrase 'a representation of its rhythms and relations'.⁶ His constructions speculate on the forces of tension and compression that appear to underlie the structure of the physical world. Equally remarkable is how the artist succeeds in visually transposing the topological language of the Mobius strip to the grid, first by reference to the otherwise flat plane of the two-dimensional square and then, by extension, into the third and fourth dimensions through his relocation of this one-sided non-orientable surface to the idea of the cube.

Indeed, strategies of transposition and relocation are central to Woodley's practice. In the early 1980s, Woodley began experimenting with the idea of variability, researching structures which by virtue of hingeable junctions might give rise to self-deploying sculptures whose form was variable. *Flexicube*, a hinged assemblage comprising twelve metal strips connected by eight rivets, is a pleasure to deploy, precisely because of its multiple variability. Woodley's hinged works raise fascinating questions on self-organising processes as found in soft matter, but equally in our understanding of the meaning of 'form' and its transposition between dimensions, suggestive of Deleuze's notion of 'divergent actualisation'.⁷ Hinging permits the work to adopt a two-dimensional flat state yet assume a voluminous three-dimensional state on deployment.

Many of the great creative acts in art and science can be seen as fundamentally metamorphic, in the sense that they involve the conceptual re-shaping of ordering principles from one realm of human activity to another visual analogy. Seeing something as essentially similar to something else has served as a key tool in the fluid transformation of mental frameworks in every field of human endeavour.

Martin Kemp, 2004⁸

Woodley's discovery of the 'impingement' is one such metamorphosis. It occurred while observing the behaviour of soap films when immersing his hinged assemblages in a basin of soapy water, much like those experiments which might have been conducted by Belgian physicist Joseph Plateau in the 19th century.⁹ The artist was familiar with theories relating to minimal surface geometries and was especially interested to find the minimum amount of material he could use to create sculpture. He became fascinated with these soap films whose seeming immateriality provided a real life visualisation of minimal surface geometries and seemed a possible source for his developing ideas on sculpture.

Floating alone, the soap film forms a bubble, a perfectly smooth unbroken spherical form. Yet when shaped by the artist's hands, the material could be formed and transformed without altering its minimal nature. Woodley became entranced with how the soap films' geometries would consistently alter and reform when pressed against one another and in particular how the shape of soap film made lines around the fingers. Its membrane-like film pressing against the artist's fingers, giving rise to a transformation of material and so becoming an act of sculptural formation and information.

The forms created through the deployment of these soap films are the origins of the works Woodley called his *Transient Structures*. The minimality of their materiality appears correspondingly reflected in the minimality of their existence, their momentary transient nature. Sculptural works that figured as a step in the artistic process, *Transient Structures*, exist only as photographic memory. For Woodley the soap films became things-in-themselves, works of sculpture. In soap film, the artist had found the minimal material for which he had been searching.

The soap film allowed Woodley to abandon traditional material and focus instead on the line made where the soap film becomes contiguous with its receiving surface. Woodley's first experiment with this idea took place by notionally pressing a spherically shaped soap film into the corner of a room in his flat in Hackney, allowing the geometry of the room to deploy the surface of the sphere and using line to record this journey.

This contact of form with architecture, Woodley would term 'impingement'. *Impingement* creates an indexical relation. It presses and impresses its form upon the receiving surface, completely contouring its shape to the contact surface. This moment of contact is itself an 'event'. The event is, in a very real sense, the sculpture, and yet inasmuch as the relation is indexical, the point of contact can be said to have altered the space.

This intersection between the immaterial upon a material surface eludes capture. It is fundamentally unstable, appearing as a trace, a remnant of the geometric reality that has momentarily passed through and in so doing transforms a space. Impingement is thus both indexical and indicative; it imbricates an architectonic resonance of its mathematical form that can only be experienced on encounter. As Woodley has said, 'the whole body is in there...'

When using one language to investigate the structure of another, things begin to get interesting. More a situation of continual cross-fertilisation, rather than two things becoming one.

So when using various concepts of geometry as a source to make three-dimensional works of art, certain adjustments have to be made to one's thought processes. The postulates of geometry are of surfaces without thicknesses and volumes without substance or solidity. They are immaterial, and generally presented in two-dimensional form, in diagrams or mostly in equations: the language of the mathematician. Effortlessly working across a range of dimensions, two-, three-, four- and higher, the mathematician has little recourse to visual imagery as this only applies to a small percentage of his/her field of interest....

The concerns of edge, surface, boundary, the minimum amount of material necessary, back/front and inside/outside relationships stay consistent. But when you pick this lot up and throw it at the architecture another transformation takes place, and another language engaged. The questions of boundary are applied to the architecture, the gallery and where possible, the social situation within which these lie.

The immaterial can now be approached as the architecture carries the form, surface is implied. More importantly the whole body is in there.

Gary Woodley, 1994 ¹⁰

26 The first public installation of an impingement took place in 1985 at the invitation of Exhibiting Space, an artist collective between 1984 until 1989, whose programme has been described as artist-instigated intervention and investigation dedicated to 'raising the public profile of systematic constructive art practice.'¹¹ Offered an entire room, Woodley was able to create a work whose defining quality would quite literally be the space of the room itself. Building on previous works in which a sphere passes through a room, Woodley hypothesised a sphere, the volume of which would equal that of the room, and thereby reproduce the space of room in an act of 'epistemic reflexivity'.¹² This first realisation of *impingement no. 4, sphere with a volume equal to that of the room* represented a critical juncture as it became clear to Woodley that the entire space of presentation constituted the work. Through the act of impingement, the geometric form is stripped of its notional autonomy. Not merely a site-specific interpolation, the impingement's deployment is entirely interdependent with its architectural setting, both in terms of its impression and in terms of the interpretive contextuality through which it alters the place of its exhibition to create a new space, in this case by assuming the volumetricity of the room itself. In Woodley's words, 'The given space is half the work.'¹³ The effect of this alteration is two-fold, first to provide an entry point into a language that might otherwise be untranslatable, and second, by shifting the act of translation to one of transposition or relocation, the impingement inheres within it a transformative potential.

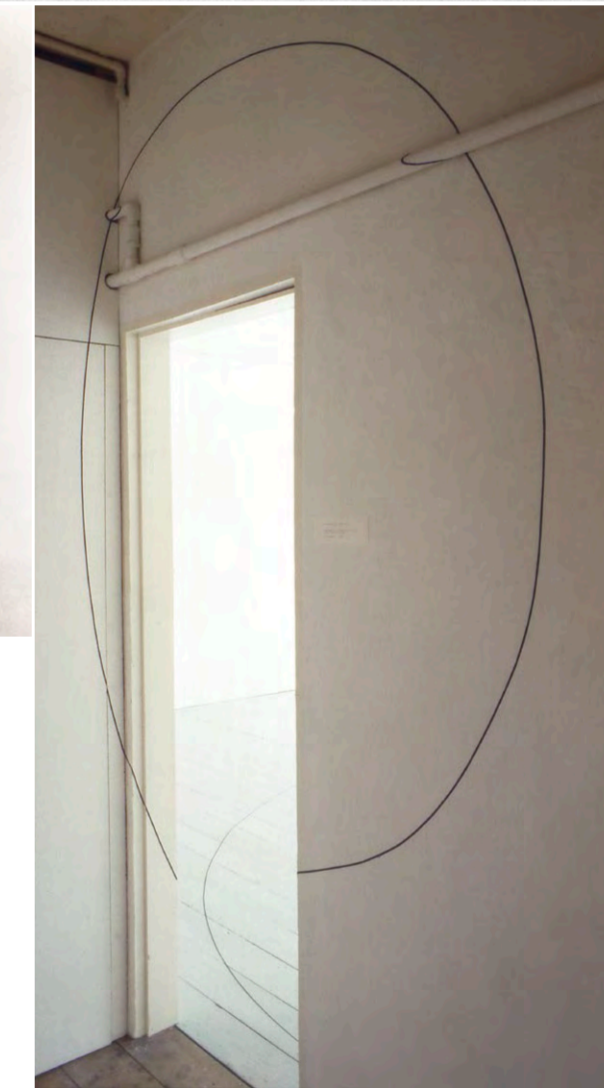
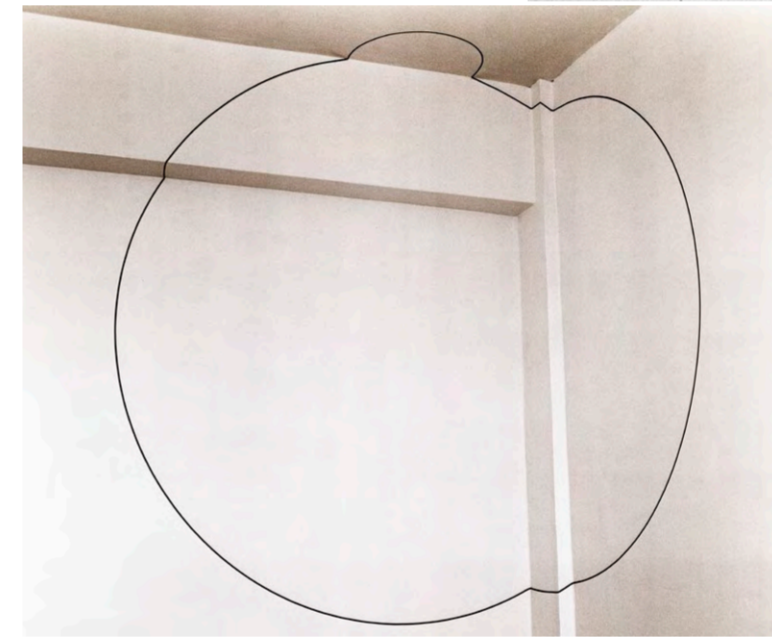
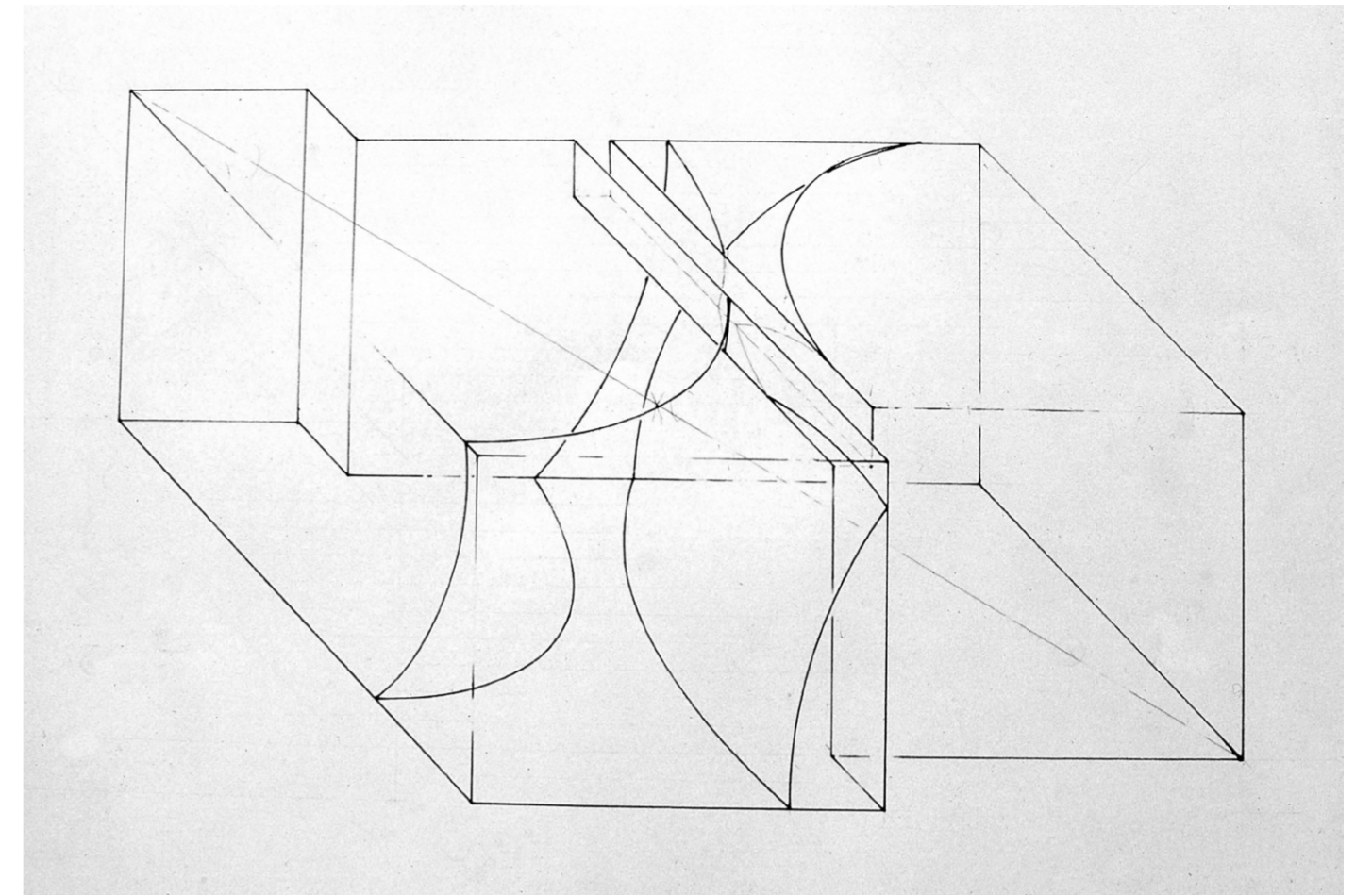
Here one recalls Martin Heidegger's essay *Building Dwelling Thinking* in which he states 'the relationship of man to places and through places to spaces is based on his dwelling in them.'¹⁴ *Sphere with a volume equal to that of the room* contours the physical place of the gallery, highlighting and recording itself upon the architectural features— a window pane, the geometries of a window sill, the now apparent water damage and cracking paint, the hidden and otherwise unnoticed edges and overhangs, the meaning of the sphere translated within and through the architectural frame of the room. *Sphere with a volume equal to that of the room* transforms the space of the room into itself but in so doing it leaves behind its imprint. The relation is both dialogic and real, an oscillation that permits the viewer a revelation without demanding a synthesis.

There is thus a utopian project within Woodley's impingements which is nonetheless fully concrete, and which, akin to Heidegger's project, involves 'a movement away from the thin abstractions of representational thinking and the stratospheric constructions of scientific theorizing, and toward the full concreteness, the onefoldness of the manifold, of actual life experience.'¹⁵

As Mel Gooding has noted, 'A constructive art is concerned above all with the experience of space as the beginning of our consciousness of existence and of being in the world. It seeks to break free of the dimensions immediately visible to propose extensions beyond immediately perceptible space.'¹⁶

In 1987, Kay Roberts organised an exhibition of Woodley's *impingements* at her gallery, *Actualities* and a second pop-up location. Cutting through the space of *Actualities* was an ellipsoid, *impingement no.7, two ellipsoids*, its passage carefully marked through strips of black vinyl that contoured the surfaces of the gallery. The ellipsoid's curvatures interfere with the vernacular of the gallery as it emerges from the wooden floor-boards and presses itself against the balusters, the skirting board, and makes its way across the frame of the door to eventually push through the ceiling and walls, its curved boundaries revealing, attenuating the authoritative verticals of the gallery. In articulating itself, ellipsoid both actualises and extends the space of the gallery and contains the viewer in a what is now a 'thinking' space.

Woodley's *adjacent spheres* reveal how surfaces might provide profound moments of reinterpretation simply through the confluence of energies created through contact. Consider *impingement no. 20, adjacent spheres*, realised at the invitation of Mel Gooding at the Curwen Gallery in 1990. Here the meaning of edge, surface and boundary became paramount, providing both a topological reading of a space as well as a geometric intervention that literally intersects the space of the gallery to create an energy field at the point where the spheres interact. An act of perfect intimacy, two spheres with a minimal surface area very nearly conjoin in an unbearable lightness of being.



impingement no. 1, adjacent spheres, 1982

impingement no. 2, passing sphere i, 1985

impingement no. 4, sphere with a volume equal to that of the room, 1985

22
23

Woodley seems to record their meeting at the moment just before they merge, before they float through the gallery ceiling, recalling the transformations of Robert Barry's (b.1936) *Inert Gas Series/ Helium, Neon, Argon, Krypton, Xenon/From a Measured Volume to Indefinite Expansion*. One can quite literally sense this virtual midpoint, the contact point of these 'invisible' forms, creating a Deleuzian 'space of energetic possibilities' and providing perhaps an inroad to 'bubble theory' – the idea of that our universe is one of many bubbles in gigantic cosmic foam and that matter accumulates at locations where these invisible bubbles touch one another.¹⁷

↙ 28

This moment of contact and its interpretive context are further explored through full-scale architectural transformations which deploy a series of rectilinear impingements. Installed in 1988, *impingement no. 12, parallel planes ii* at Musée Cantonales, Sion and *impingement no.13, the x,y,z axes disrupted* at Galerie Niggendijker both engaged disruptions in the harmonics and symmetries of parallel lines to emphasise the architectural frames of their respective galleries. In the case of the Musée Cantonales show, this disruption was already implicit in the materials of construction: granite rock, stone tile, and sand cement; while Woodley's disruption of the x, y, z axes at the Galerie Niggendijker juxtaposed the harsh angles and cubist design of the otherwise ideologically neutral white cube. The use of similar strategies to compare these two vastly differing museums brings to mind a not dissimilar analogy between the Haus der Kunst in Munich, which in 1937, housed the Grosse Deutsche Kunstausstellung (the Great German Art Exhibition) and the 'densely cluttered, and apparently disorganized show, Entartete Kunst (Degenerate Art) that opened in a nearby archaeological institute the following day.'¹⁸

↙ 32

In *impingement no.18, two planes: 10°, 100°* at the Watertorn in 1989, Woodley uses white tape to create two intersecting planes to cut through the space on an angle, highlighting the tower's internal grid-like structure (despite its spiral formation), its extending cement pillars and heavy black cast iron pipe railings and stairs. The work seems to elevate the otherwise heavy atmosphere of the architecture giving it a strange transcendent quality. *impingement no.23, cubic volume with stopped corridor* at the Scavi Archeologici, installed in 1992, shadows the rectangular prism-like gallery, highlighting its function as a container of historical artefact which, in this case, itself was an excavated building, thus a container for a container, while the volumes created through *impingement no.24, interlocking rectangular volumes with stopped corridors* at Galerie Lydie Rekow seem to speak directly to the volumes that comprise that space.

↙ 33

In each of these works, the logic of line exposes the possibilities of meaning within architecture through a tracing of impingements over the multifarious undulations, corners, edges, obtrusions, features and folds that form the surface of each building.

↙ 34

In Deleuzian terms, Woodley's work presents a process a 'divergent actualisation', revealing the virtual as a complication of the multiplicity of differences implied in any actuality, in this case the frame of the gallery.¹⁹

In each case, the impingement cannot be taken in as a totality. It impresses itself slowly upon the mind, gradually affecting or, indeed, impinging itself without instantaneous visualisation or conceptualisation. Traversing space is both haptic and direct. The eye as measuring, gleaning, taking in; the feet as moving, walking, counting steps; the body as gauging, experiencing, feeling. Each step, like its footprint, is an act of measurement, through which information is received, processed and adjudicated upon, a totality of proprioception. Woodley's treatment of the place of exhibition is as a landscape onto and through which to impinge forms that dislocate our customary haptic awareness of surface. Here impingement disrupts the viewer's locatedness within the exhibition space and defies the search for an authoritative perspective. One is propelled on through the space to take in the work.

Kettles Yard's exhibition *A Measure of Reality*, curated by Michael Harrison, was another key group showing for Woodley. The themes involved questions around artist and viewer position, perspective, containment, measure and location. Through his work *impingement no. 42, ellipsoid with a pair of parallel ramped notches*, Woodley explores how geometric form contains us, literally, conceptually and as a form of measuring – a device through which we station ourselves in relation to the rest of the world – perspective.

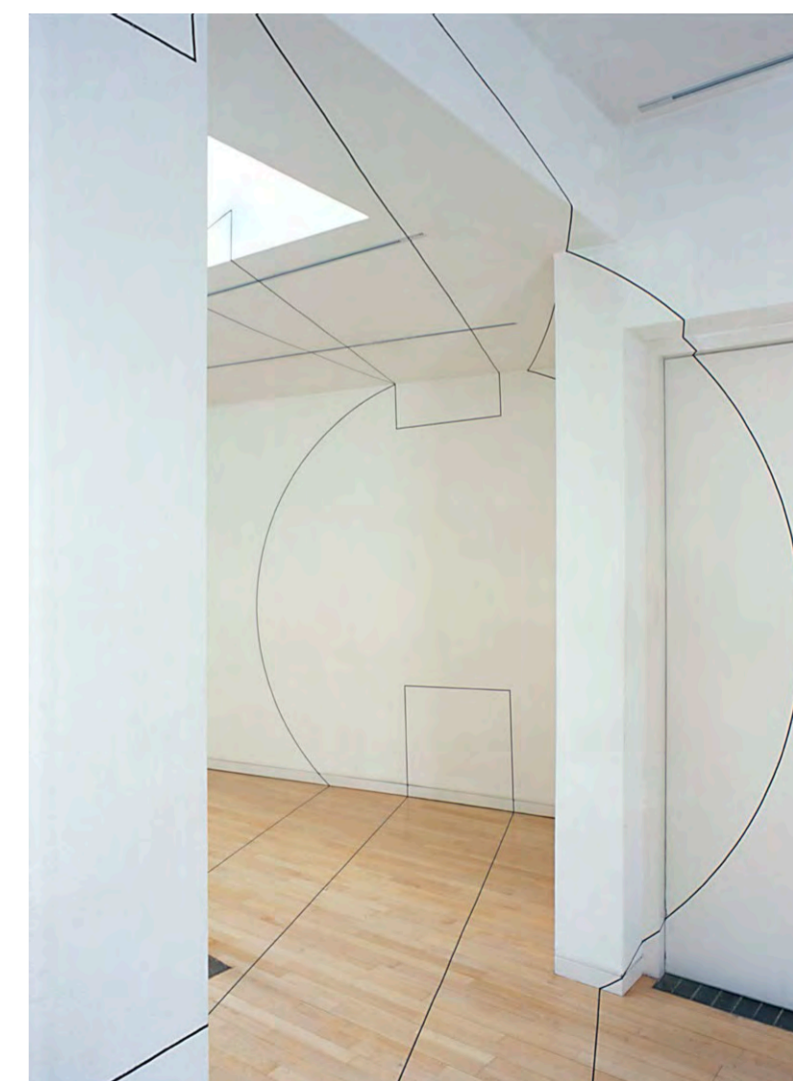
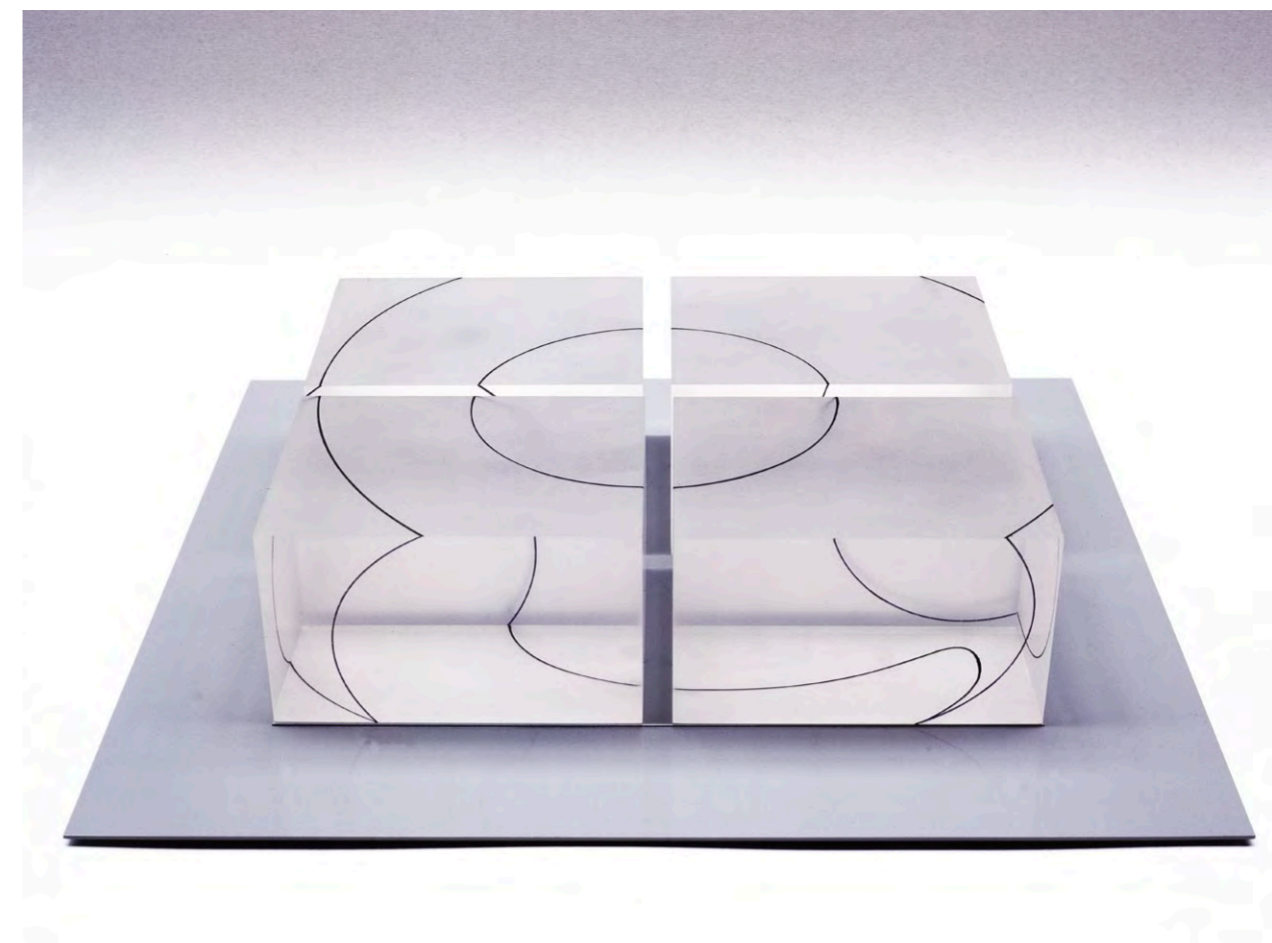
Woodley impresses black lines upon the variegated surfaces of Kettles Yard to define the edges of a different space, traversing the entirety of the gallery and extending beyond.

*In encountering the traces of this formation we may feel ourselves to be inside it, yet we can no more see this imaginary space through the architectural surfaces than we can actually walk within it.*²⁰

The site of the gallery complex becomes the work; to experience the work one must navigate its totality. There can be no authoritative perspective. As Brian Hatton notes:

*If we search Woodley's installations in vain for the figurative image of our 'Vitruvian' man it is because he is the observer-artist himself at the projective centre of his impingements...*²¹

Transposing the logic of Velazquez's *Las Meninas* outside the Euclidian frame, Woodley has as it were engaged the erasure of a perspectival reference point.



24 *impingement no. 42* connects the private space of
 25 the gallery with that of the public domain, thus obfus-
 cating the typically authoritative position of author-
 artist and art gallery. This logic was extended in
 ↙ 60 *Project Franchise* organised by VHDG, a semi-public
 art intervention in which installations by six artists
 were ‘franchised’ out of the gallery and into abandoned
 shops in the Dutch city centres as a way of returning
 these spaces to the public. Woodley’s installation
 spanned two locations separated by a distance of
 3.6 kilometres. Drawing inspiration from the Willem
 Marinus Dudok designed tri-level pedestrian bridge
 that connects the two main towers of the Corus Steel
 Factory (a landmark visible on the journey between
 the two sites at Beverwijk and Ijmuiden), Woodley
 ↙ 48 connected the two sites *via impingement no. 49,*
project franchise. The final form which necessarily
 ↙ 01 extended outwards into the public domain was
 deployed by rendering an 8mm wide black line
 against the buildings’ interiors. It is strikingly visible
 from outside the space at Beverwijk. The effect,
 Woodley emphasises:

*[inverts] the usual hierarchy of initiated (interior)
 art public and uninitiated (exterior) local art public.
 So from slowly building a familiarity, it is possible
 that more information is processed in the mind,
 without the forceful intimidation of having to enter
 an ‘art gallery’, to process and respond immedi-
 ately, and to form an opinion.²²*

Architectural space is phenomenologically reinvented
 as both containing and interpretative. Erasing the
 boundary between inside and outside, personal and
 social are repositioned.

Creating a bridge, a continuum between public and
 private, initiated and uninitiated, personal and social,
 appears central to Woodley’s practice. His 2007
 ↙ 50 installation *impingement no. 51, Enneper surface*
 realised at Laure Genillard’s group show *Presque Rien*
 provides another example. Theorising this unfamiliar
 and exotic non-Euclidean minimal surface, Woodley
 translates this idea into an impingement that is
 ‘almost nothing’ and yet whose surface extends far
 beyond the gallery walls. Contrast Woodley’s impinge-
 ment with Man Ray’s confession on his reinterpretation
 of the Enneper surface in his painting *Antony and
 Cleopatra*, 1934:

*I have always been in accord...with perverting
 the legitimate legends of mathematical objects,
 if we are to consider these as a valid source
 of inspiration.²³*

Taking this logic further, through Woodley’s work,
 mathematical objects become material themselves
 thrown upon their real world manifestations in the
 form of architecture. Here the ‘perversion’ is the act
 of topological dislocation itself — a deformation of one
 surface by another. If we imagine idea to be master,
 and material, servant, Woodley’s works both invert
 this relation and bring about a continued reflexivity
 to the master and servant dynamic.

The artist’s subsequent installation at Laure Genillard
 is revealing. Working within the interstices of the group
 show *Sukima-Schema*, Woodley created a work for
 the stairwell. Climbing like Tatlin’s Tower, *impingement
 no. 62 double helix* is both a monument to the double-
 stranded molecules of nucleic acids such as DNA but
 also a juxtaposition of the evolution of meanings in
 architecture (and in art) of traditional Euclidian planes
 with more complex curvatures such as Giuseppe
 Momo’s spiral staircase that graces the Vatican.
 Does the gallery now become the centre of spiritual
 and moral authority? And is there perhaps a reference
 to Hegel’s infinitely self-complicating topology, a mani-
 fold and temporally a spiral, that unfolds and refolds
 itself through history?

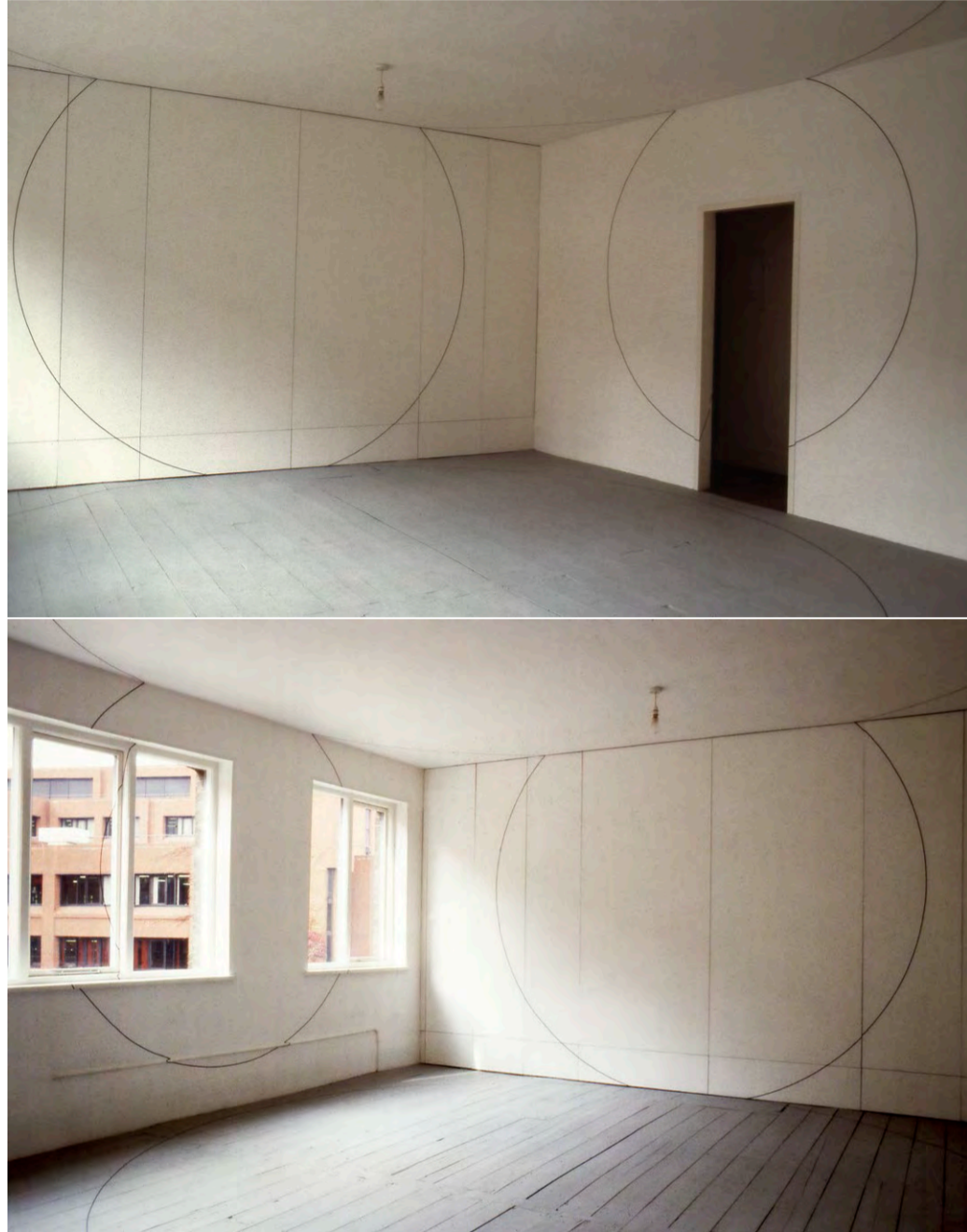
In Woodley’s current solo show at Laure Genillard,
impingement no. 63, tetrahedron, octahedron,
icosahedron, we find ourselves challenged by just
 such a re-engagement with beginning. Woodley articu-
 lates three of the five Platonic solids, ‘tetrahedron’,
 ‘octahedron’, ‘icosahedron’ to further complicate the
 landscape with a return to the Euclidean roots that
 have for at least two millennia formed the basis of
 much Classical architecture, reflecting the Pythagorean
 view that geometrical shapes and propositions express
 profound truths about the nature of the universe.²⁴
 In so doing, Woodley reveals the space of the gallery
 itself as a manifold, a self-complicating topology,
 whose meaning is continually complicated through
 the dialogue, whispers and murmurs of the traces
 and layers of each preceding exhibition.

In Woodley’s world, like his artworks, we always read
 the shape of one reality in terms of its impingement
 (and not its reflection) upon another reality.²⁵ To para-
 phrase Nicolas Bourriaud’s reading of Serge Daney,
 Woodley’s forms become ‘a face looking at me,
 summoning me to dialogue with them.’ The sites
 of Woodley’s installations assume an inherent plastic-
 ity. His work seems to share in the dream expressed
 by mathematician Ian Stewart and through it, we
 experience space as an architecture, a resonance,
 both real and virtual, entangled together with its
 deeper structures, ideologies and modes of creation,
 opening the mind to the manifold systems which
 underlie and re-inform our conceptions of space
 and which in reply to Jean-François Lyotard, offer
 the possibility for a ‘reconstruction of the space
 inhabited by human kind.’

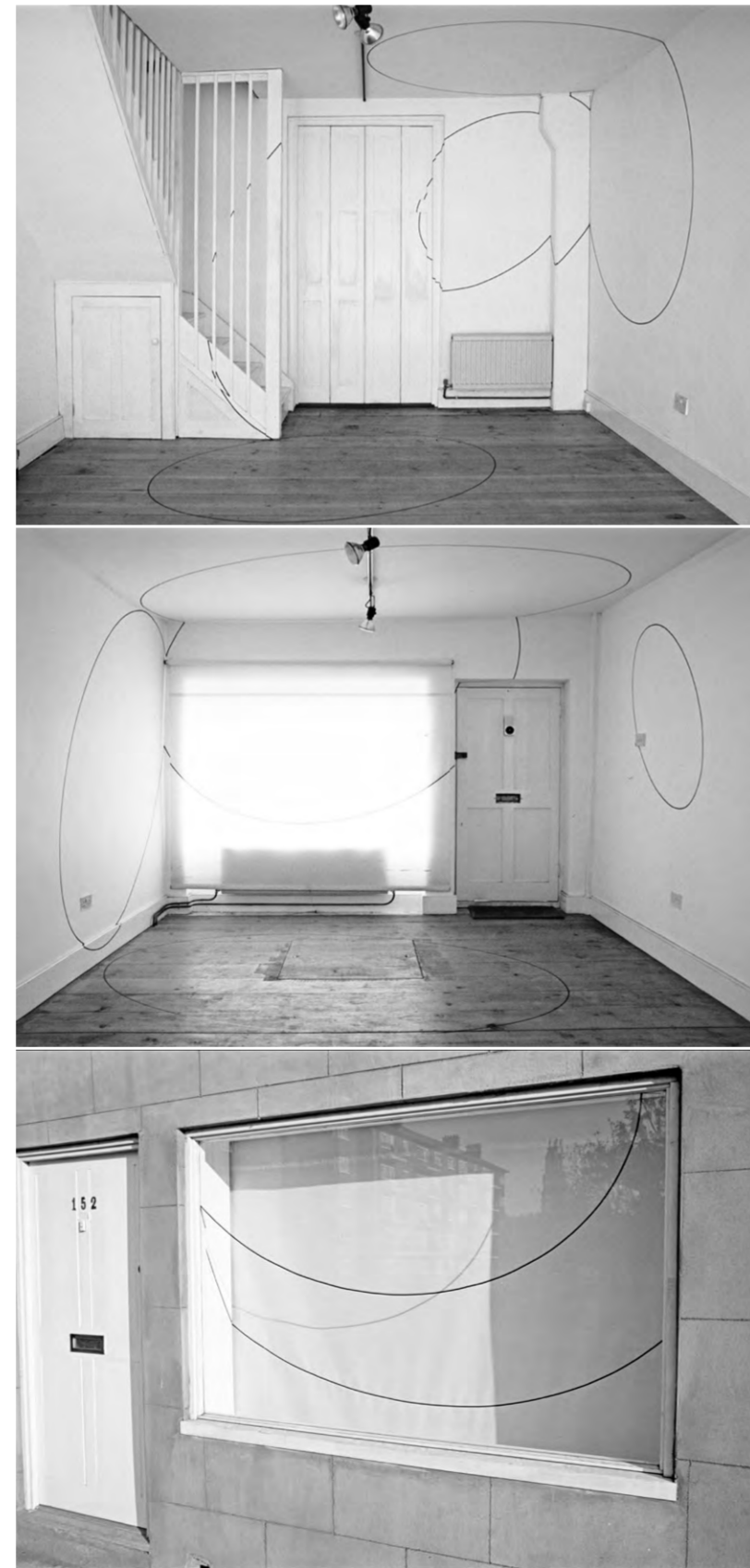
Rozemin Keshvani, 2015

Endnotes

- 1 ‘Poincaré defined topology as the science that introduces us to the qualitative properties of geometric figures not only in ordinary space but also in more than 3-D space. Adding the geometry of complex systems, fractal geometry, chaos theory, and all of the mathematical images discovered (or invented) by mathematicians in the last 30 years using computer graphics, it is easy to see how mathematics has contributed to changing our concept of space – the space in which we live and the idea of space.’ See Prof. M. Emmer, ‘The Idea of Space, from Topology to Virtual Architecture’ *AUSART Journal for Research in Art*, 1 (2013), 1: 255-264, at 257 (available at http://www.generativeart.com/on/cic/GA2010/2010_26.pdf).
- 2 Ian Stewart, *Natures Numbers: The Unreal Reality of Mathematics* (New York: Basic Books, a division of HarperCollins, 1995), at Prologue, ix.
- 3 Woodley, Gary, Interview with Laure Genillard, Lynton Talbot and Rozemin Keshvani, Digital recording at Laure Genillard gallery in Fitzrovia, Friday 30 January, 2015.
- 4 Mathematician Jules Henri Poincaré defined topology as the science that introduces us to the qualitative properties, of geometric figures not only in ordinary space, but also in more than three-dimensional space. Jules Henri Poincaré, *Analysis Situs*, 1895 discussed in Michele Emmer ‘The Fantastic Wold of “Tor” Bled Nam’ in *Imagine Math: Between Culture and Mathematics* (Springer Verlag Italia, 2012), at 120.
- 5 Gary Woodley, Artist Talk presented at the symposium, *Sculpture and Mathematics: The Role of Beauty*. Henry Moore Institute, 4th October, 2014.
- 6 Joy Flower, ‘Max Bill: Architect’ (unpublished dissertation, submitted as part of the final examination for a BA degree, University of Newcastle Upon Tyne, 1967), Tate Library and Archive, TGA 8318/8, in which the author in interviewing Max Bills explains ‘concrete art’ and Max Bill’s concept of the ‘shaped environment’ as being how form is concerned with the interrelation between purpose and structure; geometry being the basis for this art, not mathematics as such, but rather ‘a representation of its rhythms and relations.’ Once the artist solves the problem he sets for himself, he translates this into concrete visual form or image. Concrete art is explained as being the experimental field of pure aesthetic research.
- 7 Deleuze’s notion of ‘divergent actualisation’ is the ability of topological forms to give rise to many different physical instantiations. See Manuel de Landa, ‘Deleuze, Diagrams and the Open-ended Becoming of the World’ in *Becomings: Explorations in Time, Memory, and Futures*, ed. Elizabeth A. Grosz (New York: Cornell University Press, 1999), 29-41.
- 8 Martin Kemp, ‘Intuizioni strutturali e pensiero metamorfico nell’arte, architettura e scienze’ in K. W. Forster, 9^a *Mostra Internazionale di Architettura*, ed. Marsilio Focus (Metamorph, Venezia, 2004), 31-432.
- 9 HMI talk, see note 5, above.
- 10 Gary Woodley in *A View over the Channel*, exhibition catalogue, 6th November 1994 - 1st January 1995, Pfalzgarlerie Kaiserlautrn, Bezirks Verband, at 60.
- 11 Exhibiting Space (blog, no author), April 2015, available at http://www.exhibitingospace.com/?page_id=71.
- 12 I use Pierre Bourdieu’s notion of ‘epistemic reflexivity’ as ‘... the constant analysis of your own lived experience as well as your own theoretical and methodological presuppositions’. See David Coghlan & Teresa Brannick, *Doing Action Research in Your Own Organization*, 2nd edition (London: Sage, 2005), at 62; and Karl Maton, ‘Reflexivity, Relationism, & Research, Pierre Bourdieu and the Epistemic Conditions of Social Scientific Knowledge’, *Human Relations* (January 1st, 2015) 68: 55-78.
- 13 Gary Woodley, A conversation with Rozemin Keshvani at the artist’s studio on 5th May 2015.
- 14 Martin Heidegger, ‘Building Dwelling Thinking’, this translation cited in Peter Zumthor, *Thinking Architecture* (Birkhauser, 2nd ed., 2006), at 37.
- 15 Martin Heidegger, *Poetry Language Thought*, Translations and Introduction by Albert Hofstadter (New York: Harper Perennial Modern Classics, 1971, current edition 2001) at xvii.
- 16 Mel Gooding, ‘Some propositions concerning an unprecedented art’ in *A View over the Channel*, exhibition catalogue, 6th November 1994 - 1st January 1995, Pfalzgarlerie Kaiserlautrn, Bezirks Verband, at 6.
- 17 Victoria Jaggard, ‘What Is the Universe? Real Physics Has Some Mind-Bending Answers’, *Smithsonian.com* (September 15th, 2014), available at <http://www.smithsonianmag.com/science/what-universe-real-physics-has-some-mind-bending-answers-180952699/#4sFravXAlVCjHPKD.99>; see also, Roderick H. Boes, *The Physics of Encounter*. (Victoria, B.C. Trafford Publishing, 2009), at 27.
- 18 This description drawn from Elena Filipovic’s excellent essay, ‘The Global White Cube’ in the *Politics of Display*, Issue 22nd, April 2014 (available on <http://www.on-curating.org/index.php/issue-22-43/the-global-white-cube.html>). For further reading, see ‘Degenerate Art’: The Fate of the Avant-Garde in Nazi Germany, ed. Stephanie Barron (Los Angeles: Los Angeles County Museum of Art, 1991); Neil Levi, “‘Judge for Yourselves!’ — The Degenerate Art Exhibition as Political Spectacle,” October 85 (1998): 41–64; and Berthold Hinz, “‘Degenerate” and “Authentic”: Aspects of Art and Power in the Third Reich,” in *Art and Power: Europe Under the Dictators, 1930–1940*, ed. Dawn Ades et al. (London: Thames and Hudson, 1995), 330–34
- 19 For a discussion on Deleuze’s notion of ‘divergent actualisation’, see Manuel DeLanda, ‘Deleuze, Diagrams and the Open-ended Becoming’ in *Becomings: Explorations in Time, Memory, and Futures*, ed. Elizabeth A. Grosz (Ithaca, New York: Cornell University Press, 1999), at 34; and Manuel DeLanda, ‘Deleuze and the Genesis of Form’, *Art Orbit*, issue 1: available at http://www.artnode.se/artorbit/issue1/f_deleuze/f_deleuze_delanda.html
- 20 Brian Hatton, *cutting memory - Installations and exhibition of work by Julia Wood and Gary Woodley* (Bradford: Bradford Art Galleries, 1998) Catalogue of an exhibition curated by Michael Harrison, 20 February – 10th April 1988.
- 21 Brian Hatton, *cutting memory - Installations and exhibition of work by Julia Wood and Gary Woodley* (Bradford: Bradford Art Galleries, 1998) Catalogue of an exhibition curated by Michael Harrison, 20th February – 10th April 1988.
- 22 See VHDG, *Franchise: The New Chain Store in the Dutch Shopping District*, Green Paper Press, 2008. Catalogue of an exhibition at Beverwijk/ Ijmuiden, Franchiseholder: RC De Riumte, 26th May – 9th June 2007. Statement by artist in exhibition catalogue at 17.
- 23 Robert Tubbs, *Mathematics in Twentieth-Century Literature and Art: Content, Form, Meaning* (Baltimore: John Hopkins Press, 2014), at 10.
- 24 See generally, Alekseĭ Petrovich Stakhov, *The Mathematics of Harmony: From Euclid to Contemporary Mathematics and Computer Science* (London: World Scientific Publishing, 2009).
- 25 Nicholas Bourriaud, *Relational Aesthetics* (Les Presses du réel, 2002).



impingement no. 4, sphere with a volume equal to that of the room, 1985



impingement no. 7, two ellipsoids, 1987

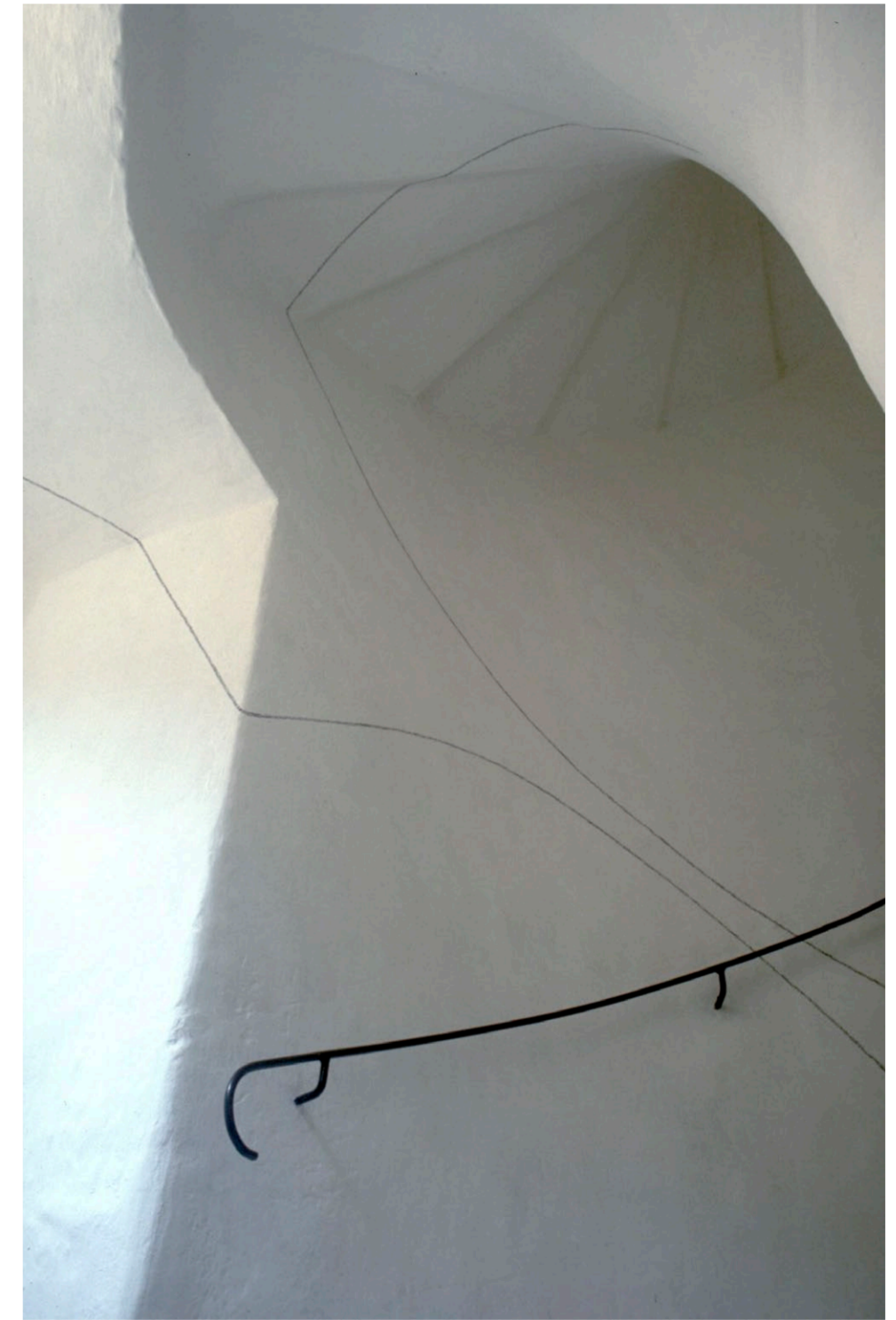


impingement no. 8, two intersecting planes, 1987

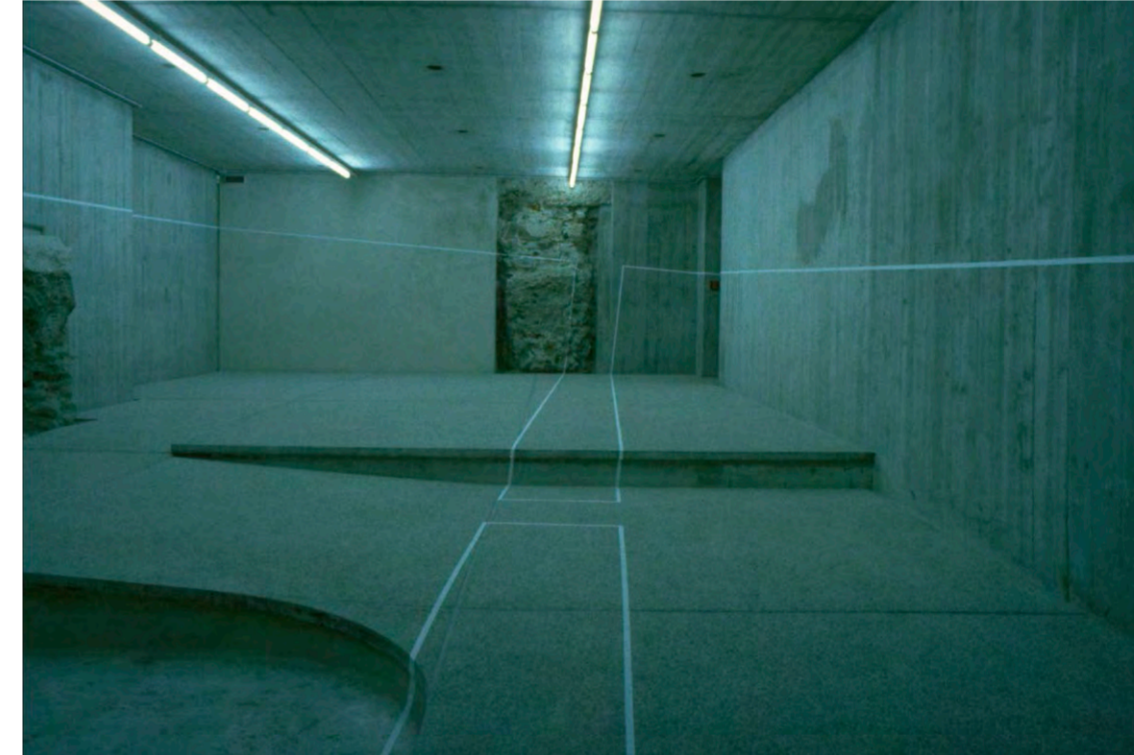
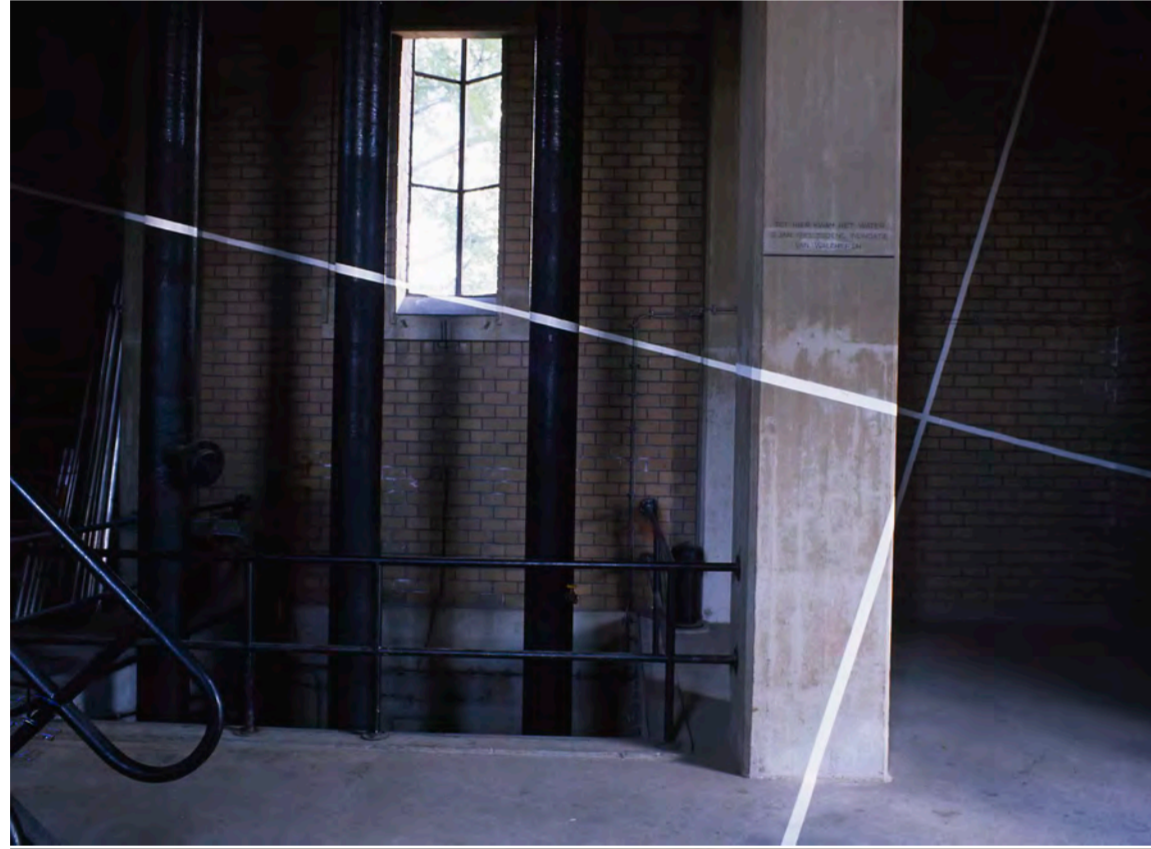




impingement no. 13, the x,y,z axes disrupted, 1988



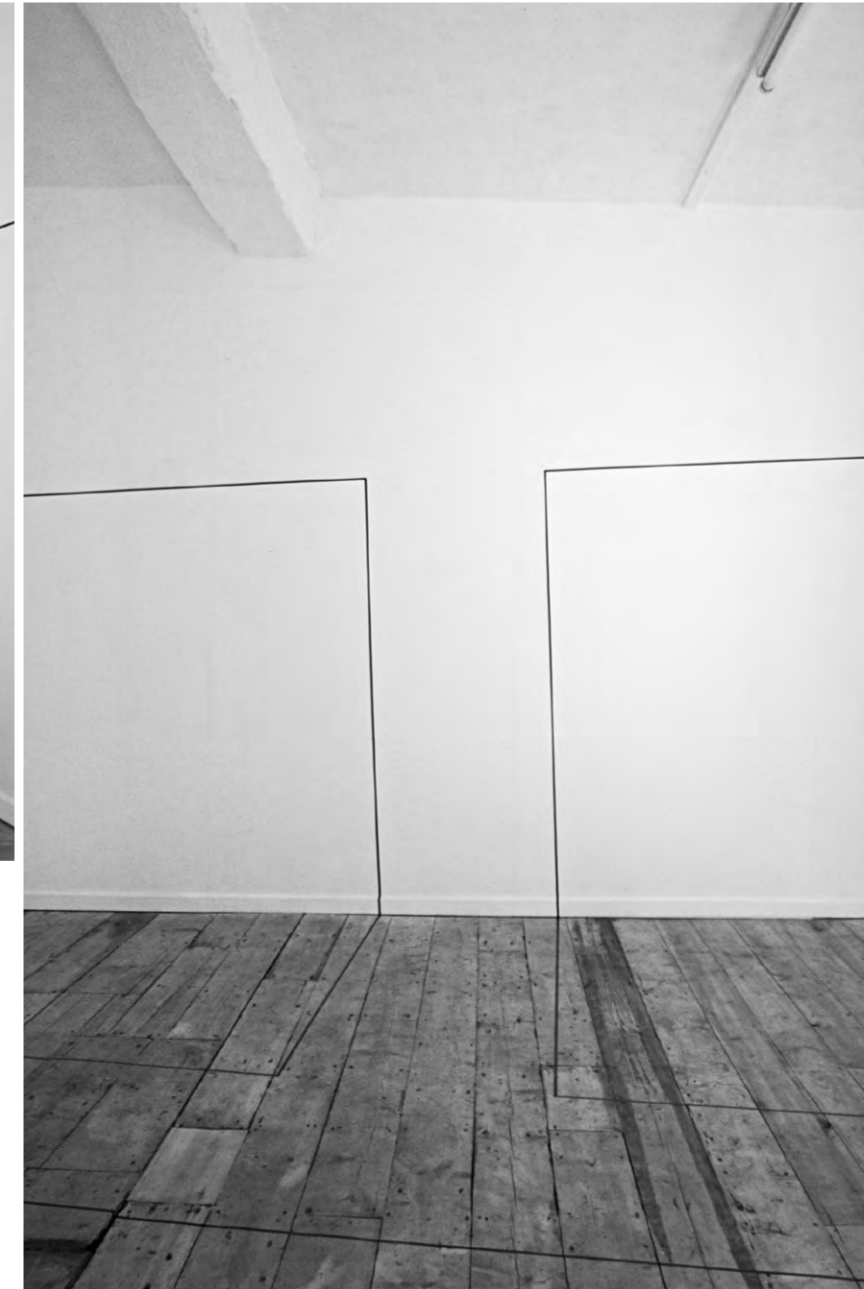
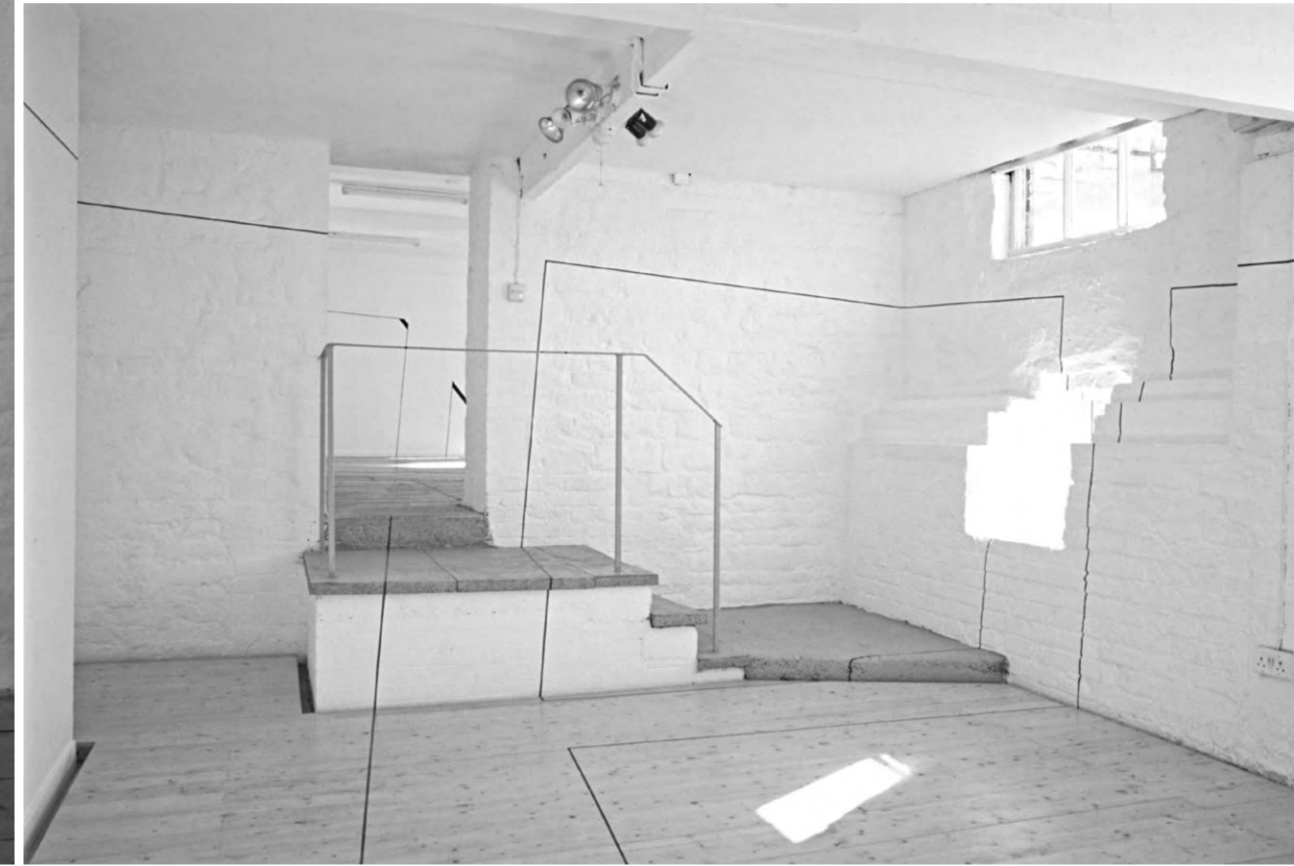
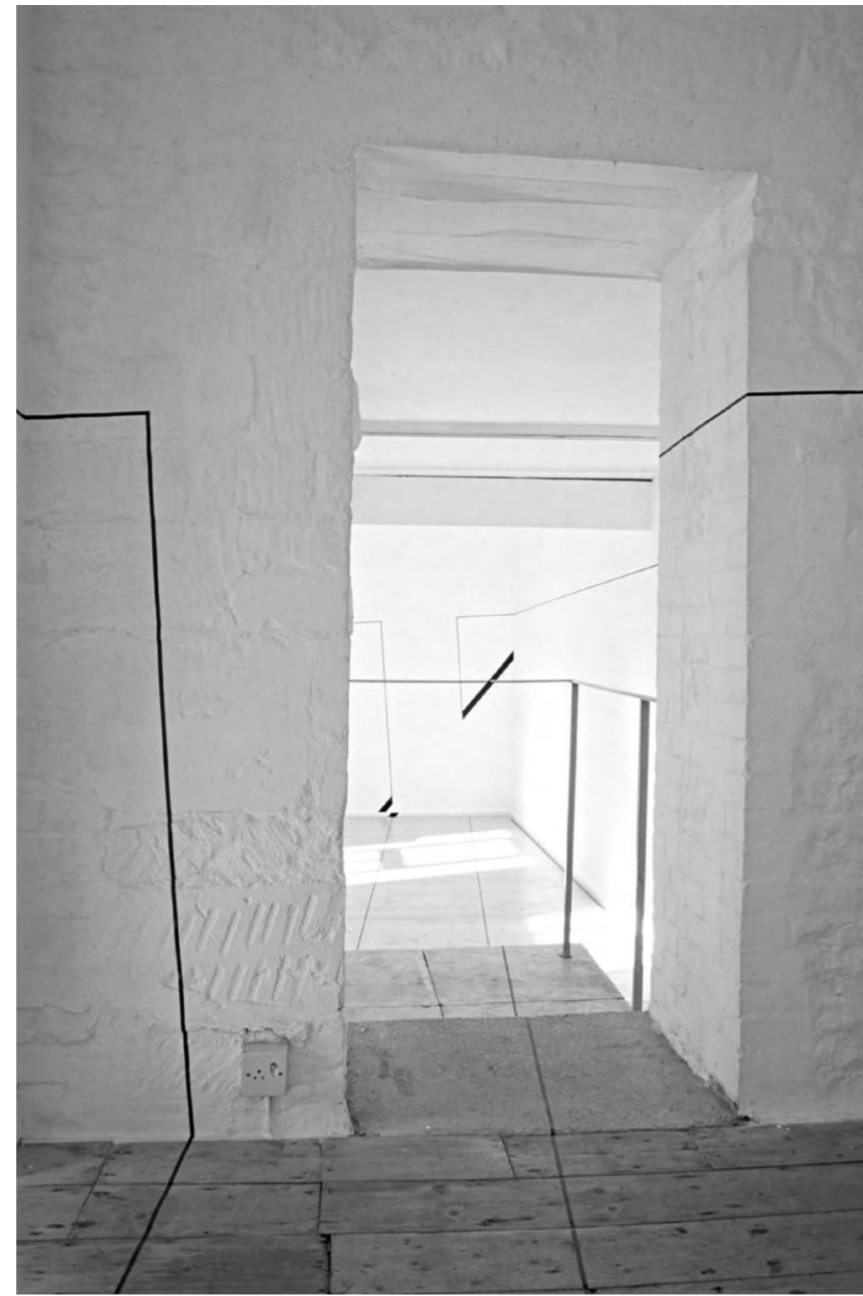
impingement no. 17, three planes: 67.5°, 45°, 22.5°, 1989

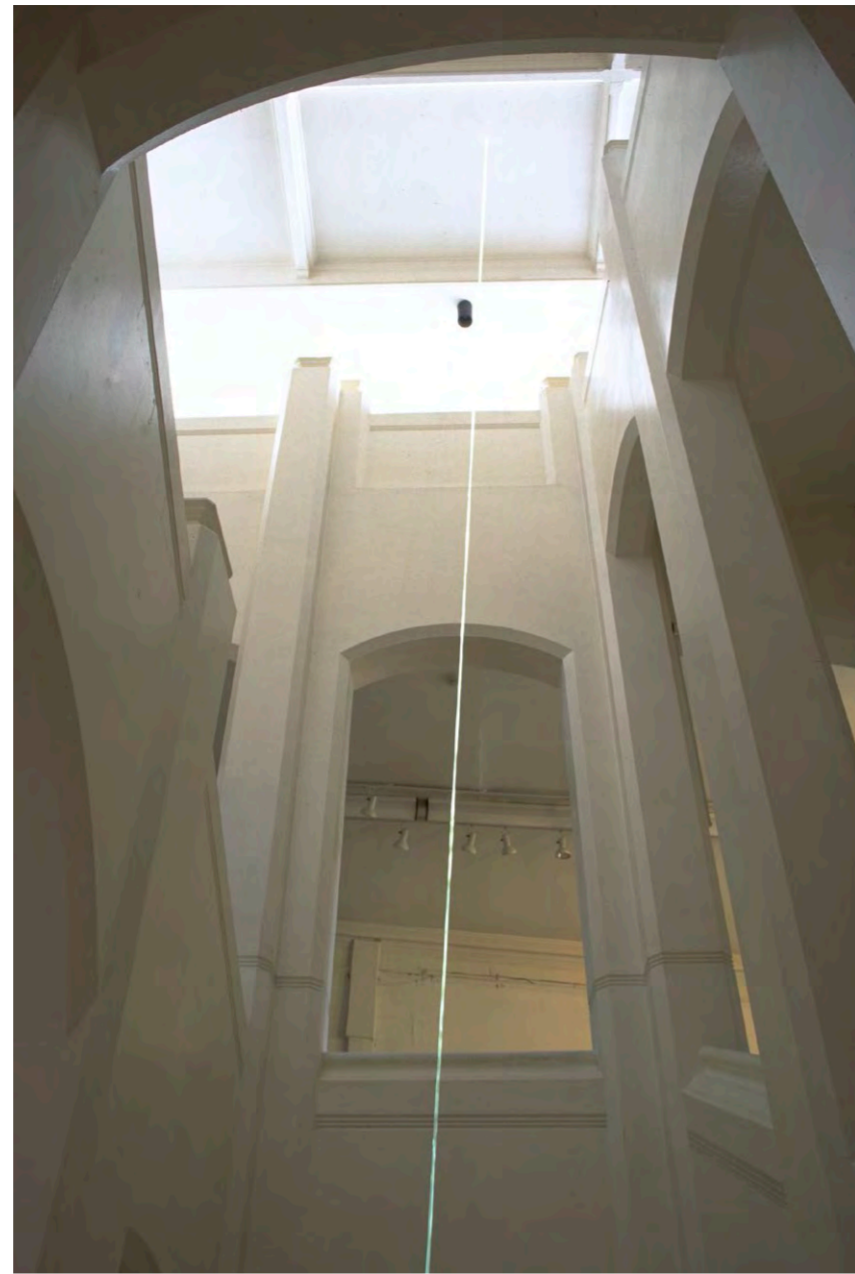


impingement no. 18, two planes: 10°, 100°, 1989

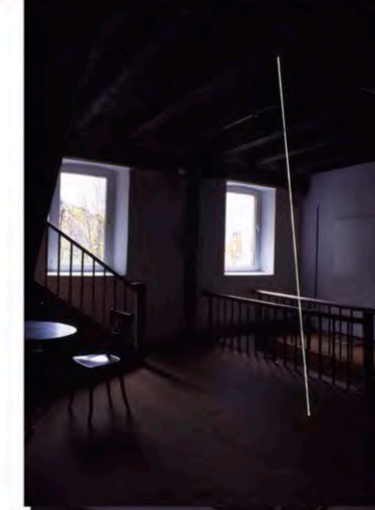
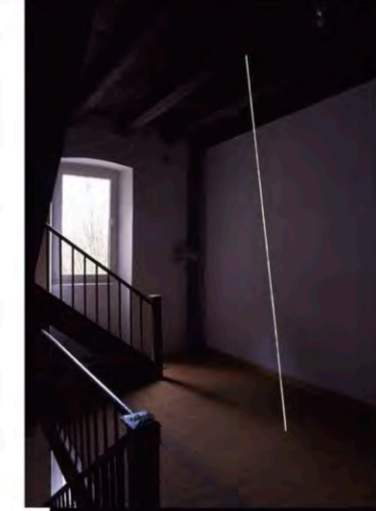
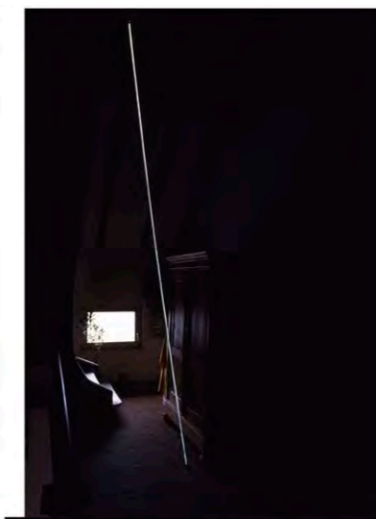
impingement no. 23, interlocking rectangular volumes with stopped corridors, 1992

impingement no. 24, interlocking rectangular volumes with stopped corridors, 1993



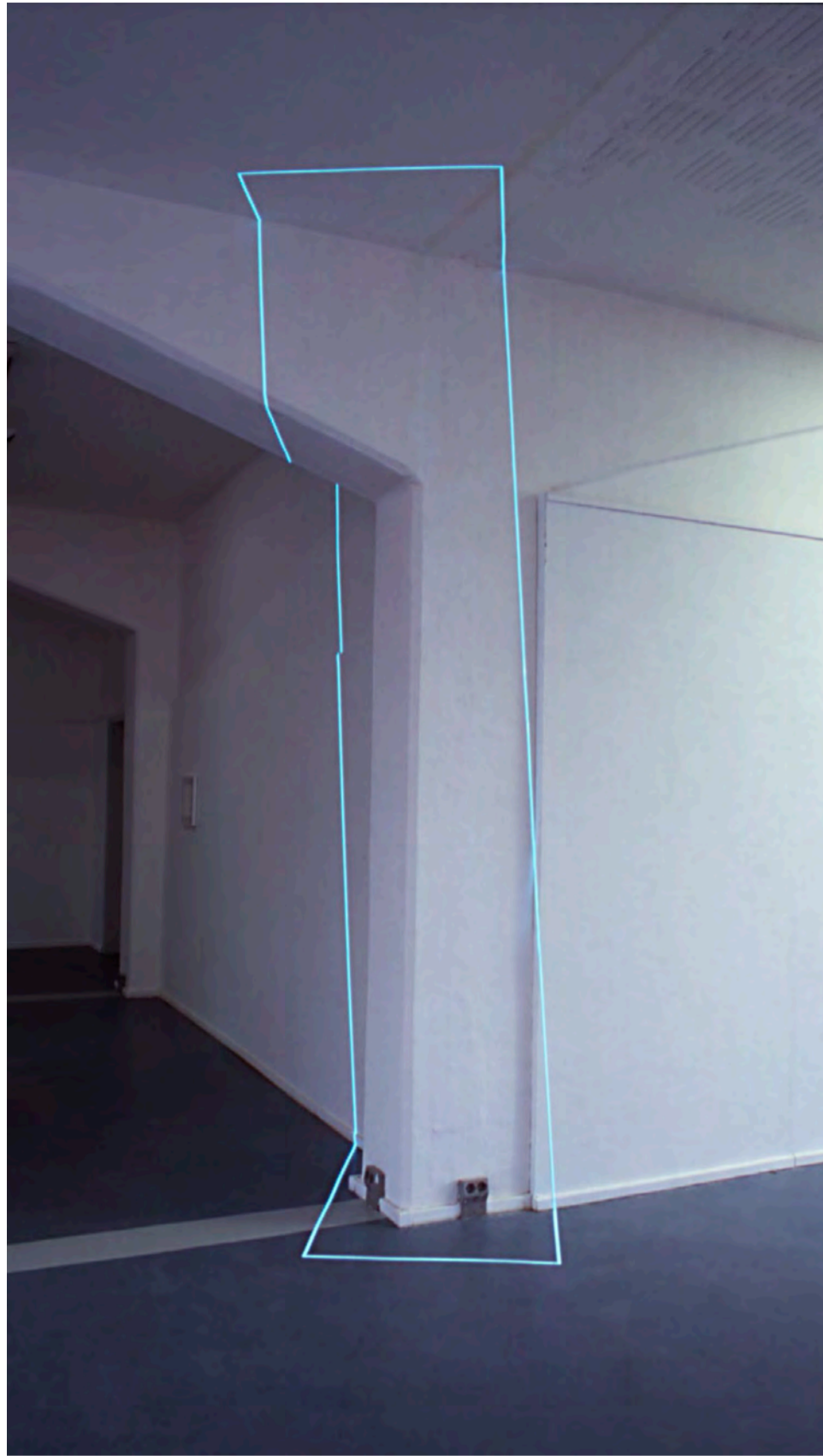


Lightwell, East International, Norwich 1995

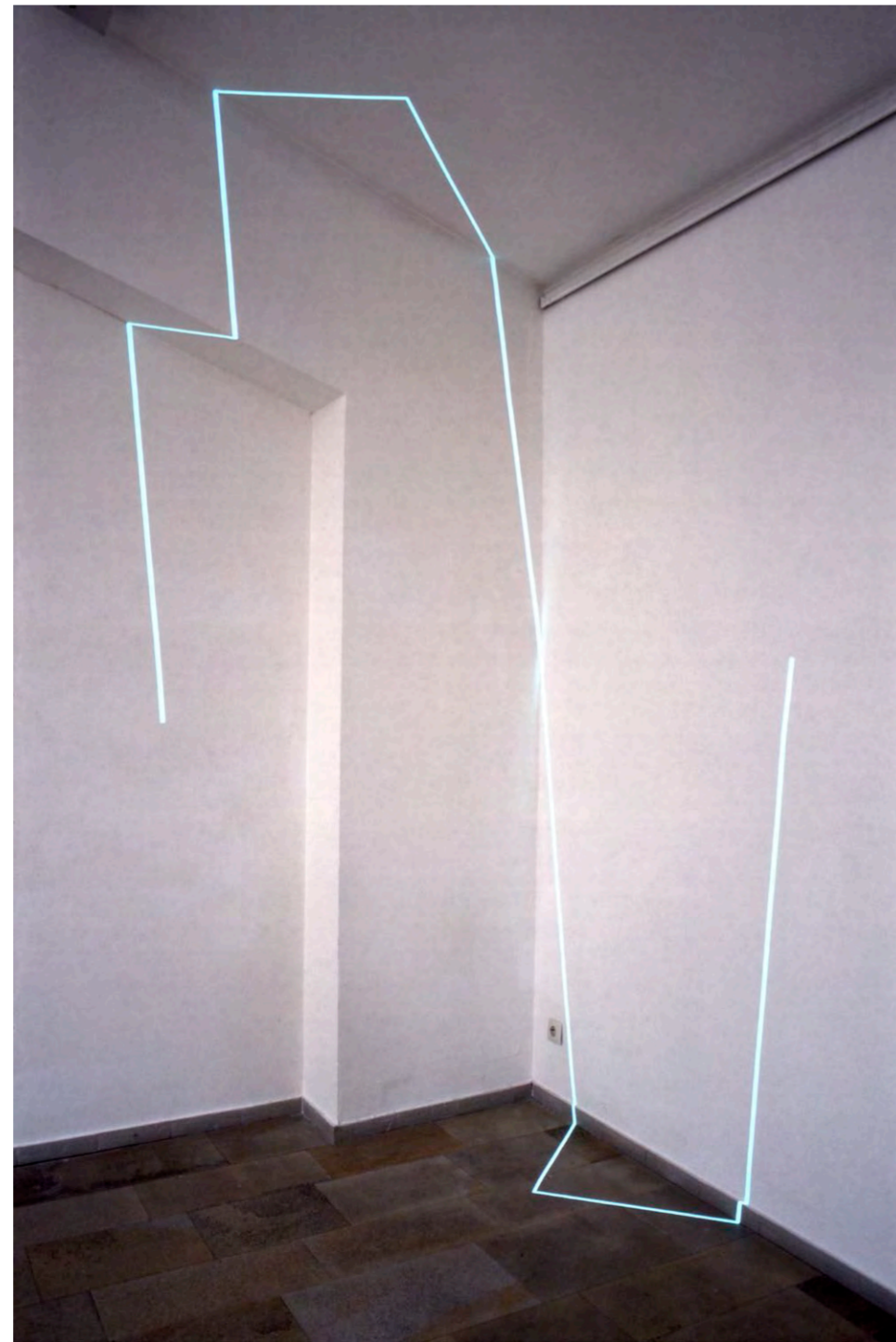


Path through five floors, Galerie Hoffmann, Germany 1994





impingement no. 35, stopped corridor, 1999

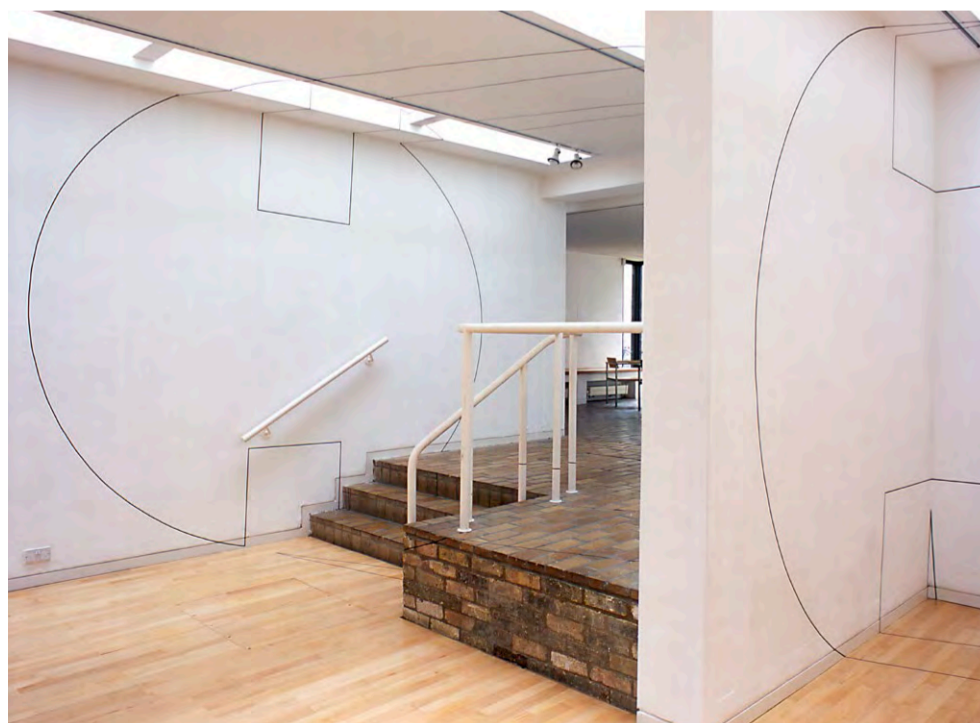
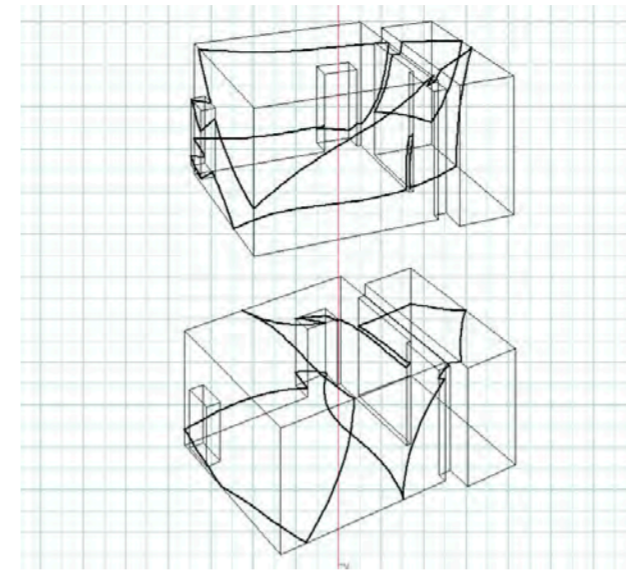
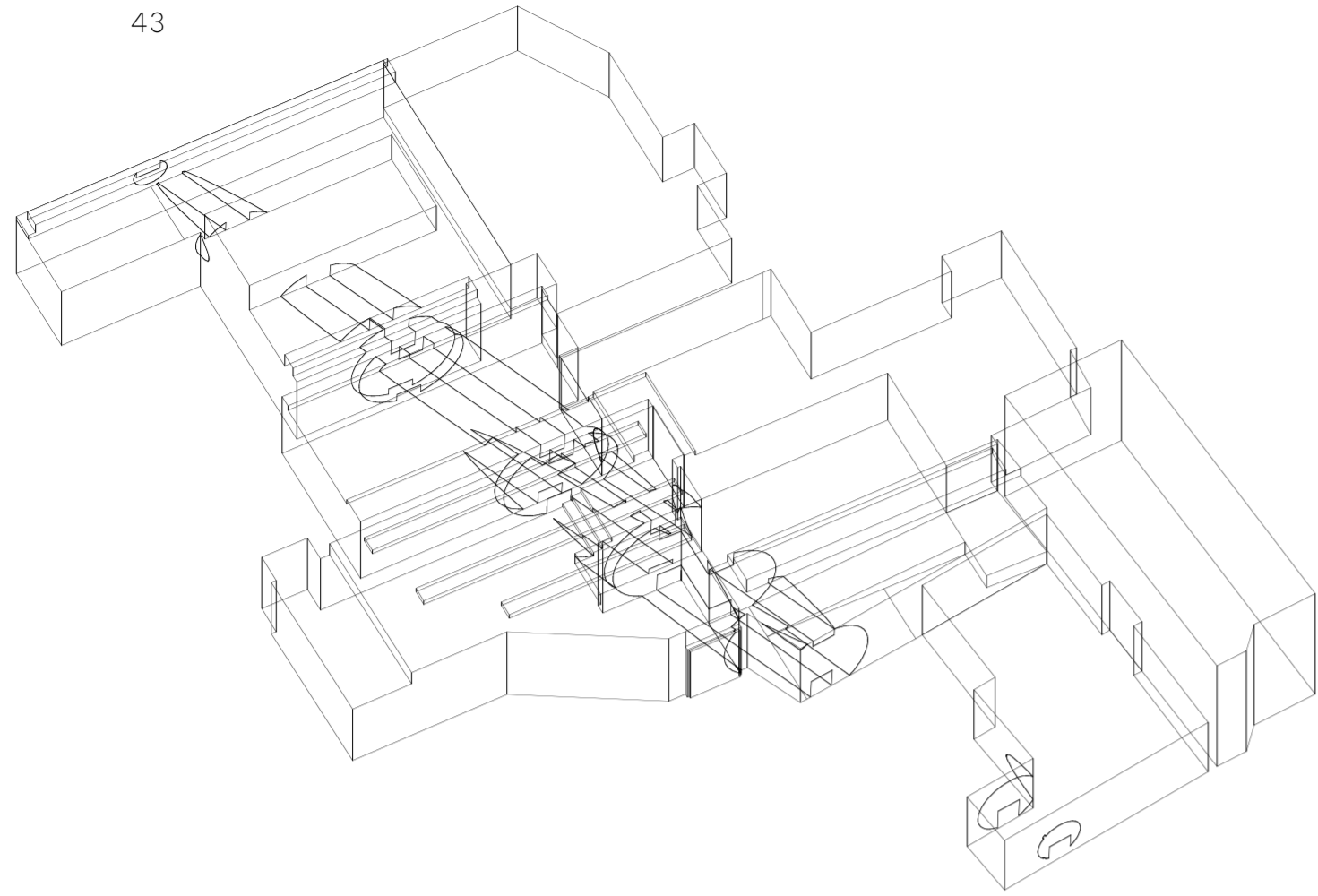


impingement no. 40, method for turning a corner, 2000



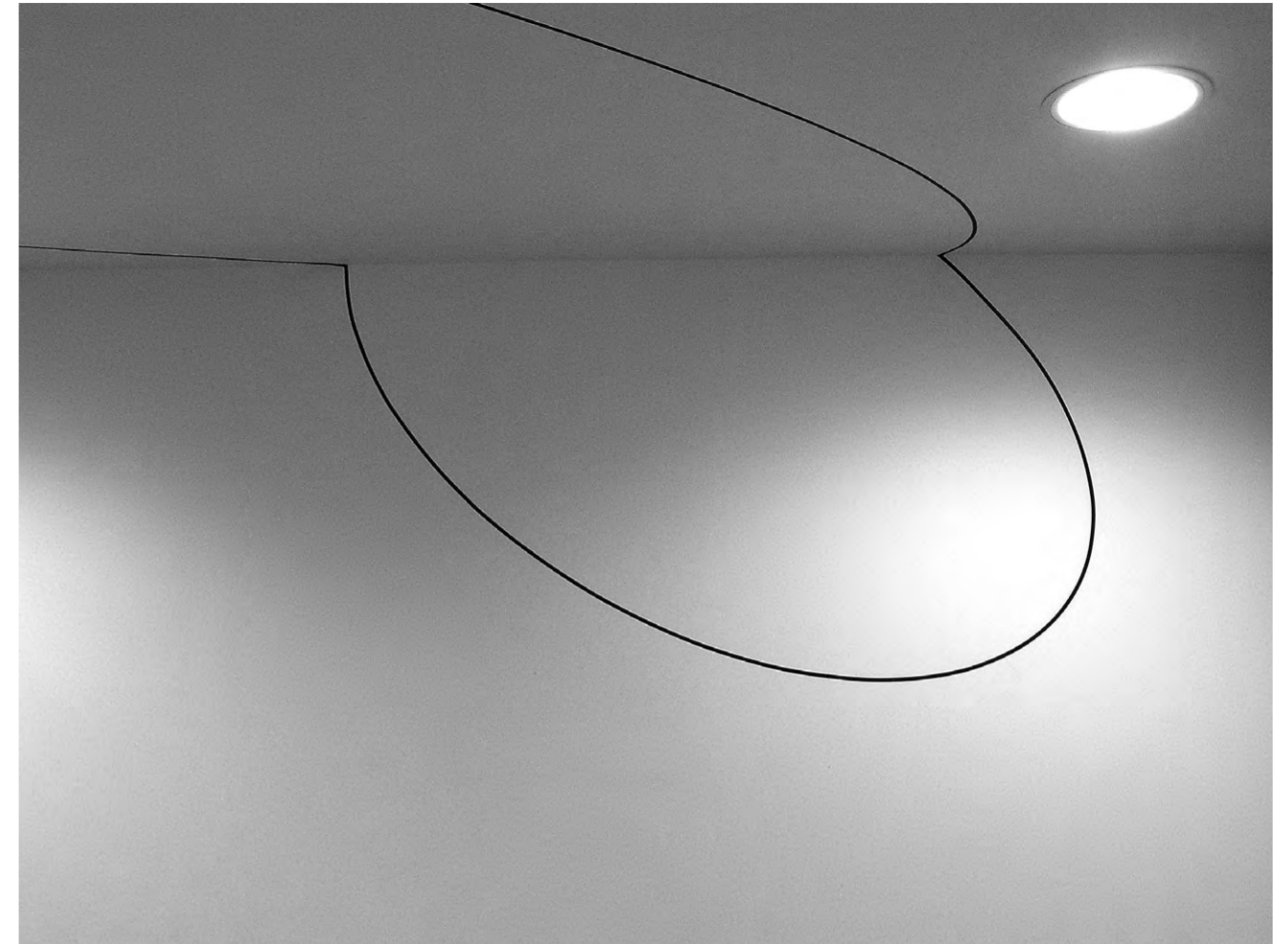
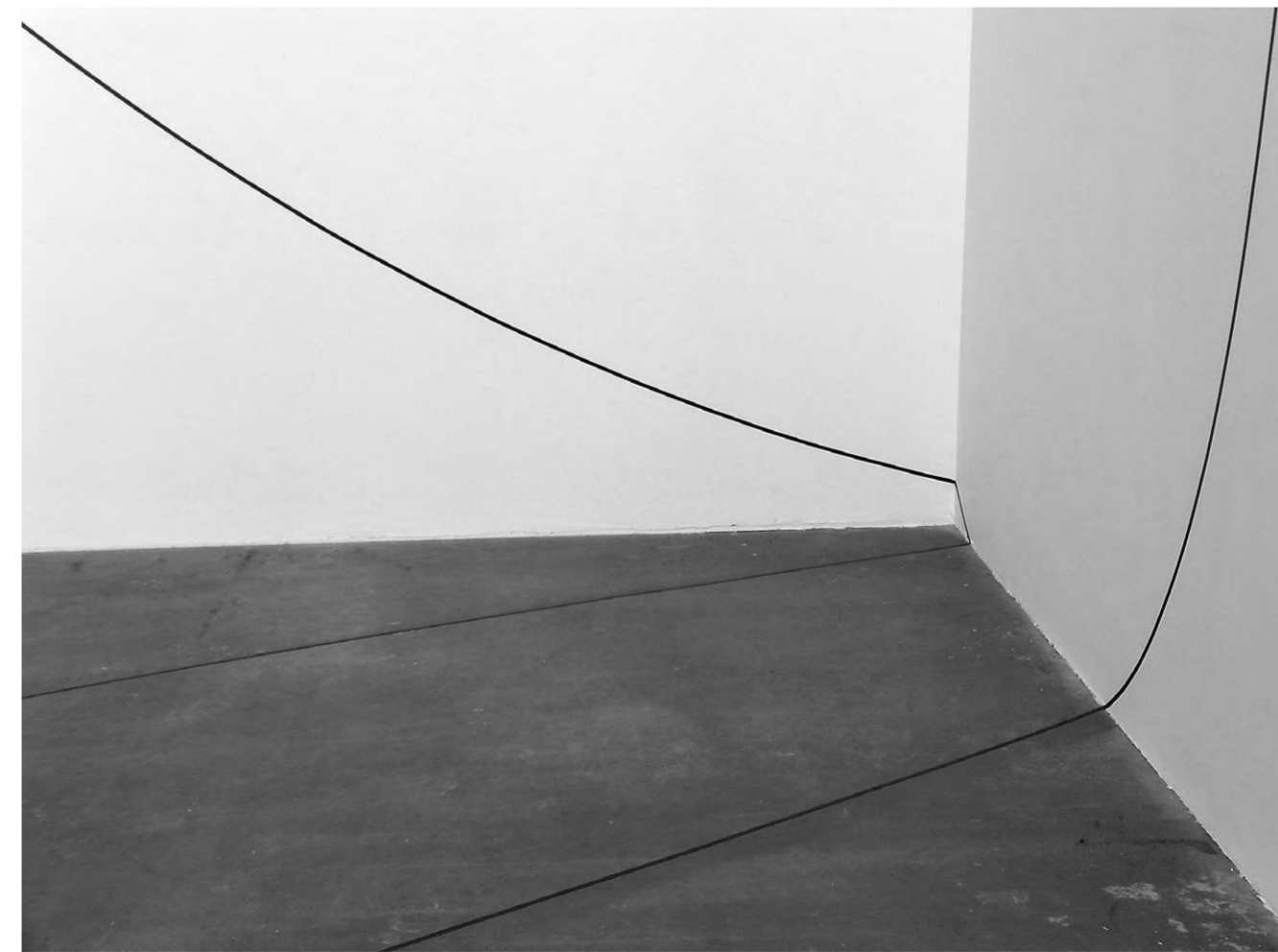
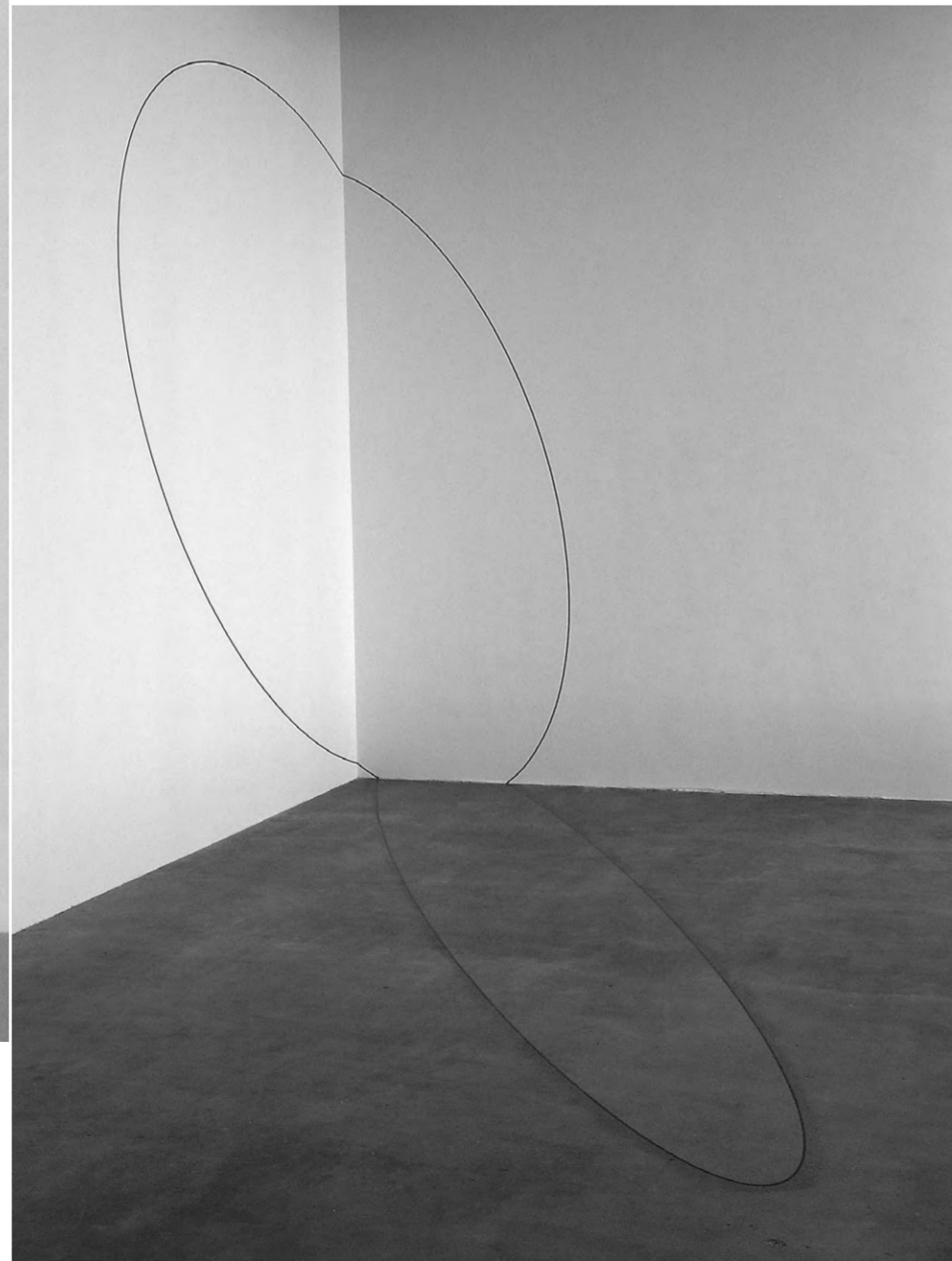
impingement no. 43, pair of tetrahedra with a common edge, 2002

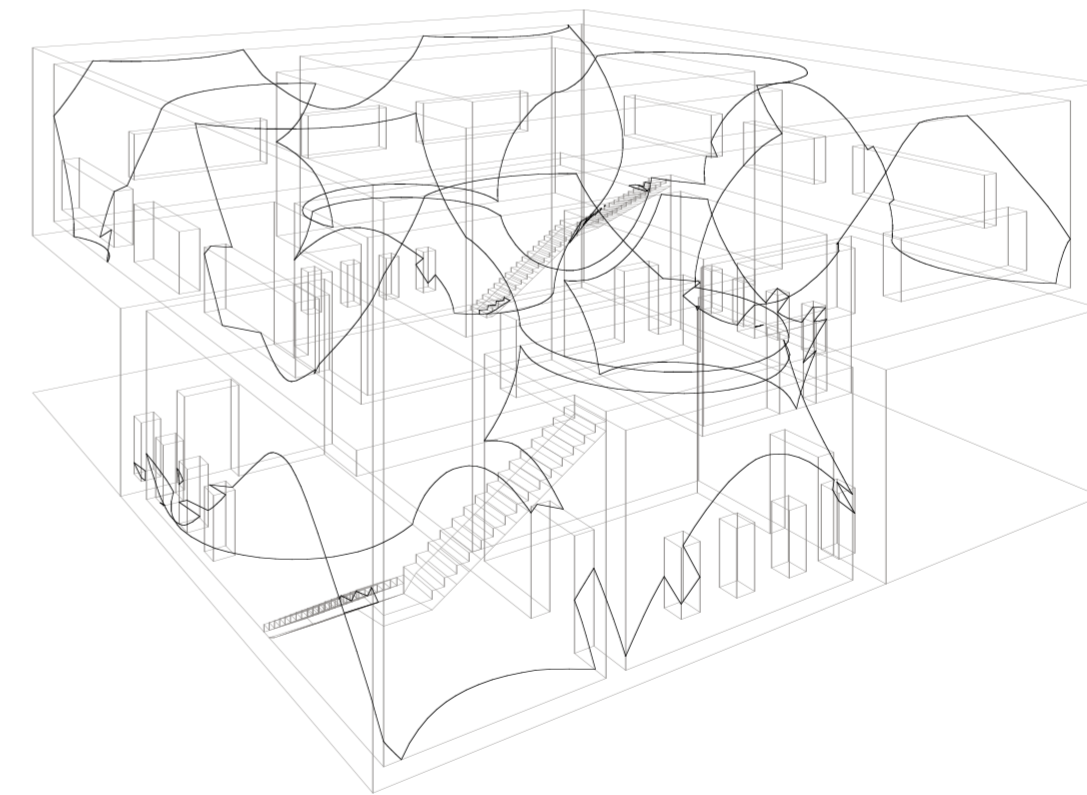
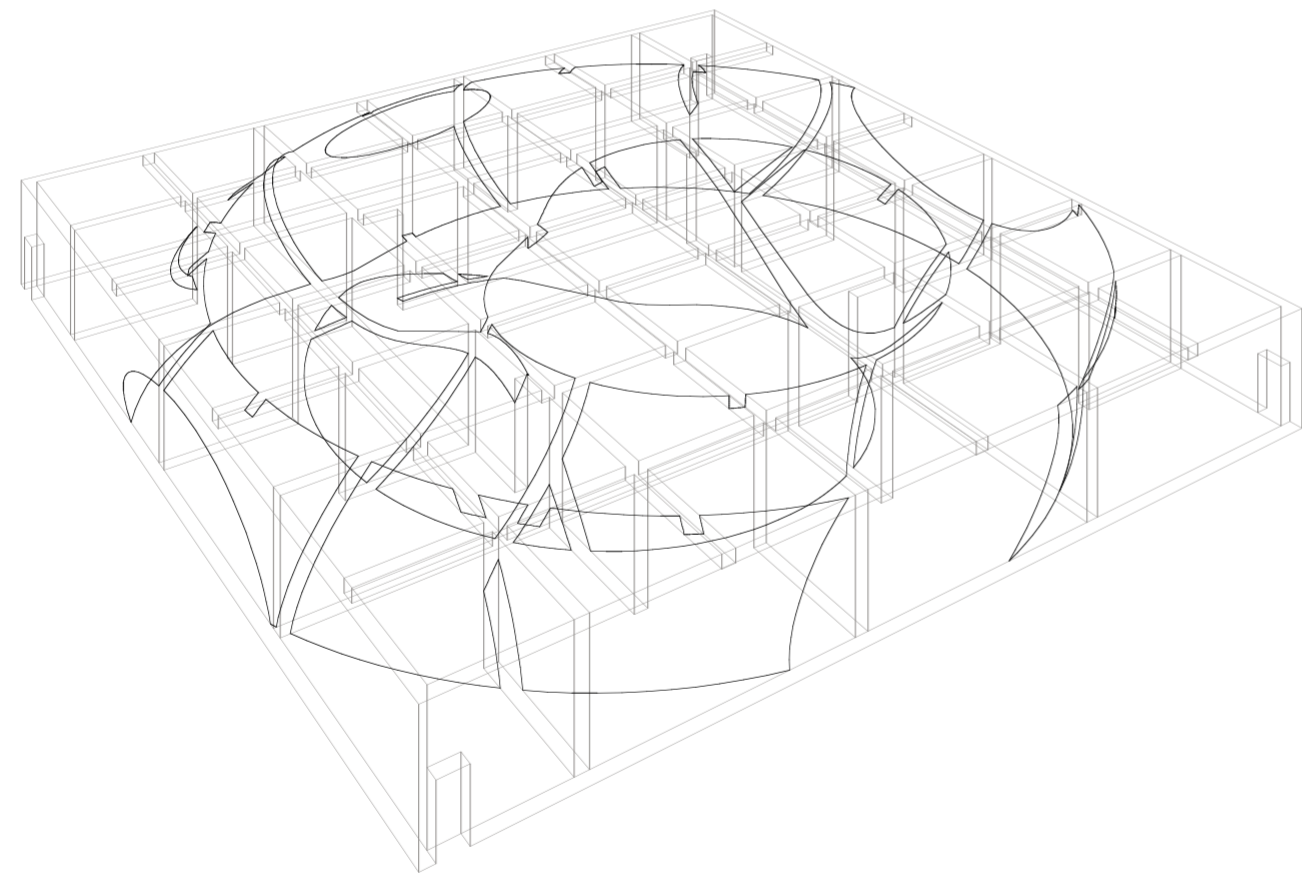
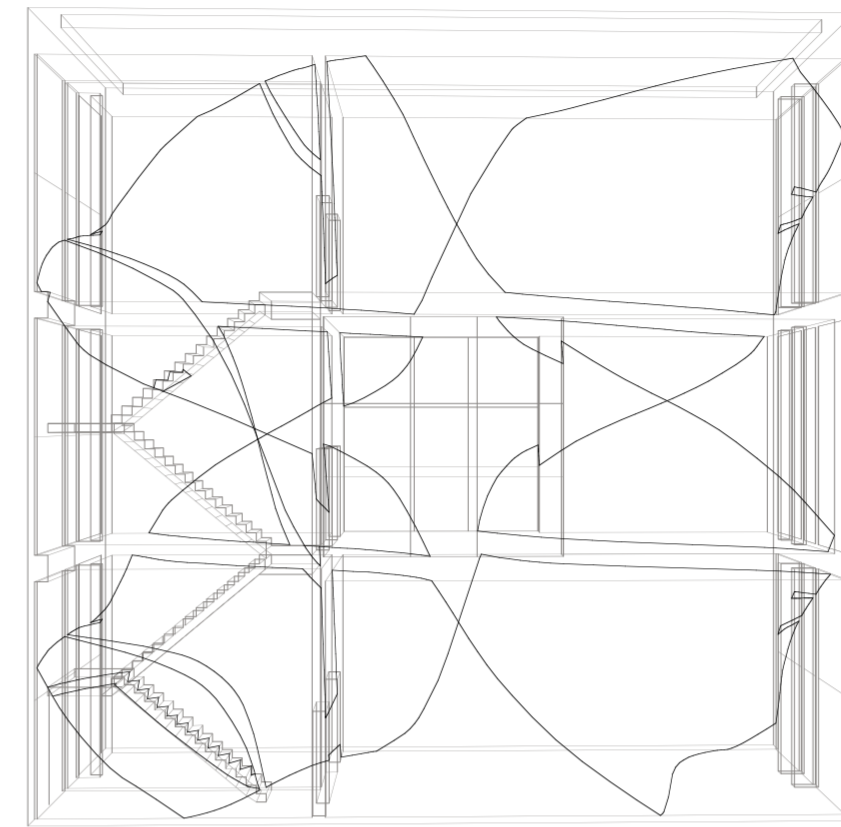
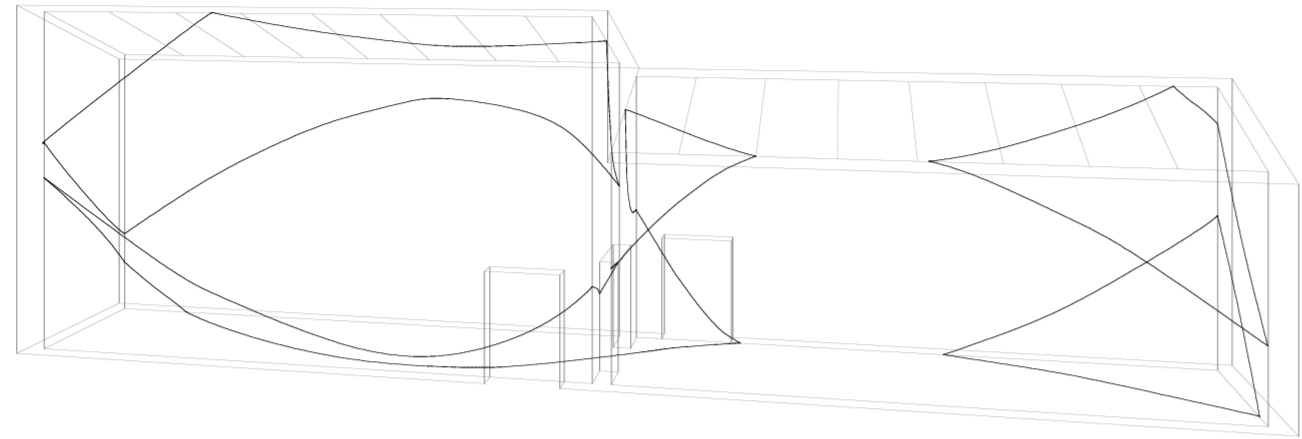
42
43



impingement no. 42, ellipsoid with pair of parallel ramped notches, 2002

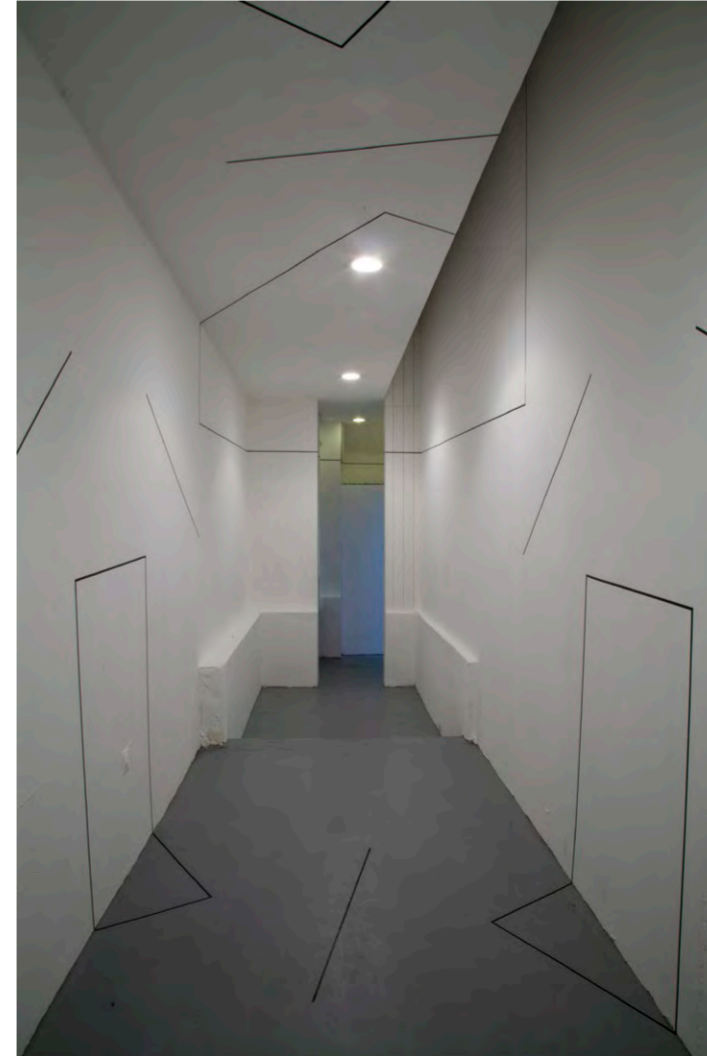
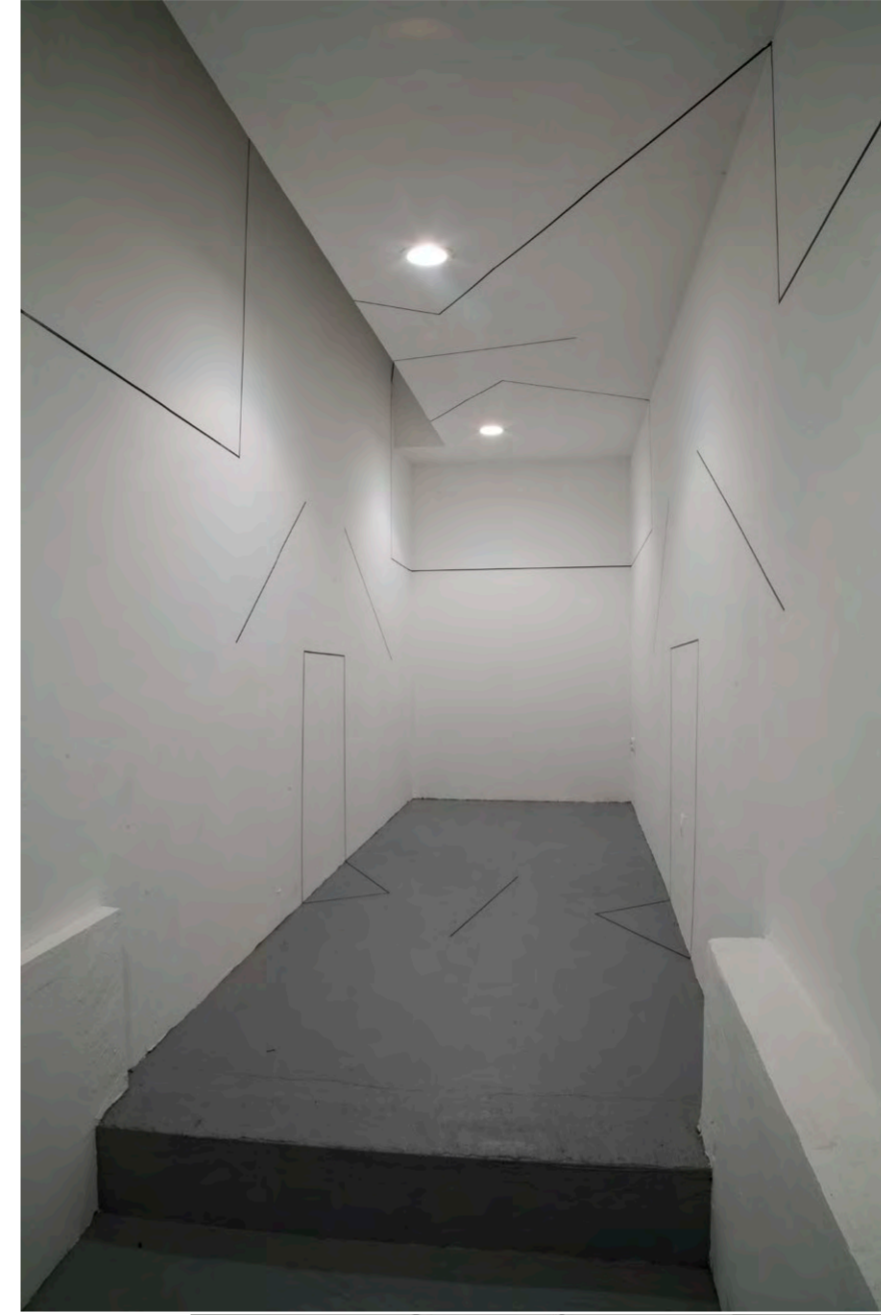
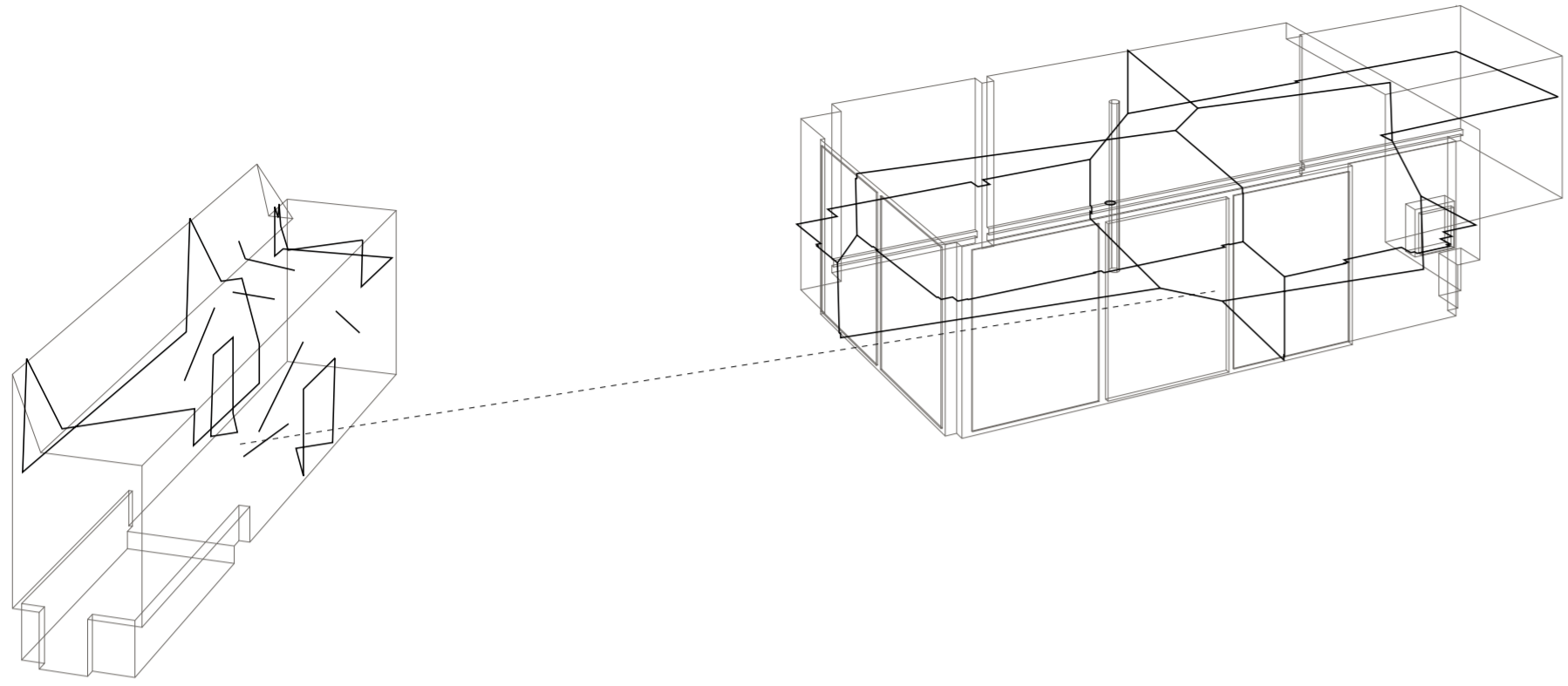
impingement no. 44, Enneper 1 surface, 2003

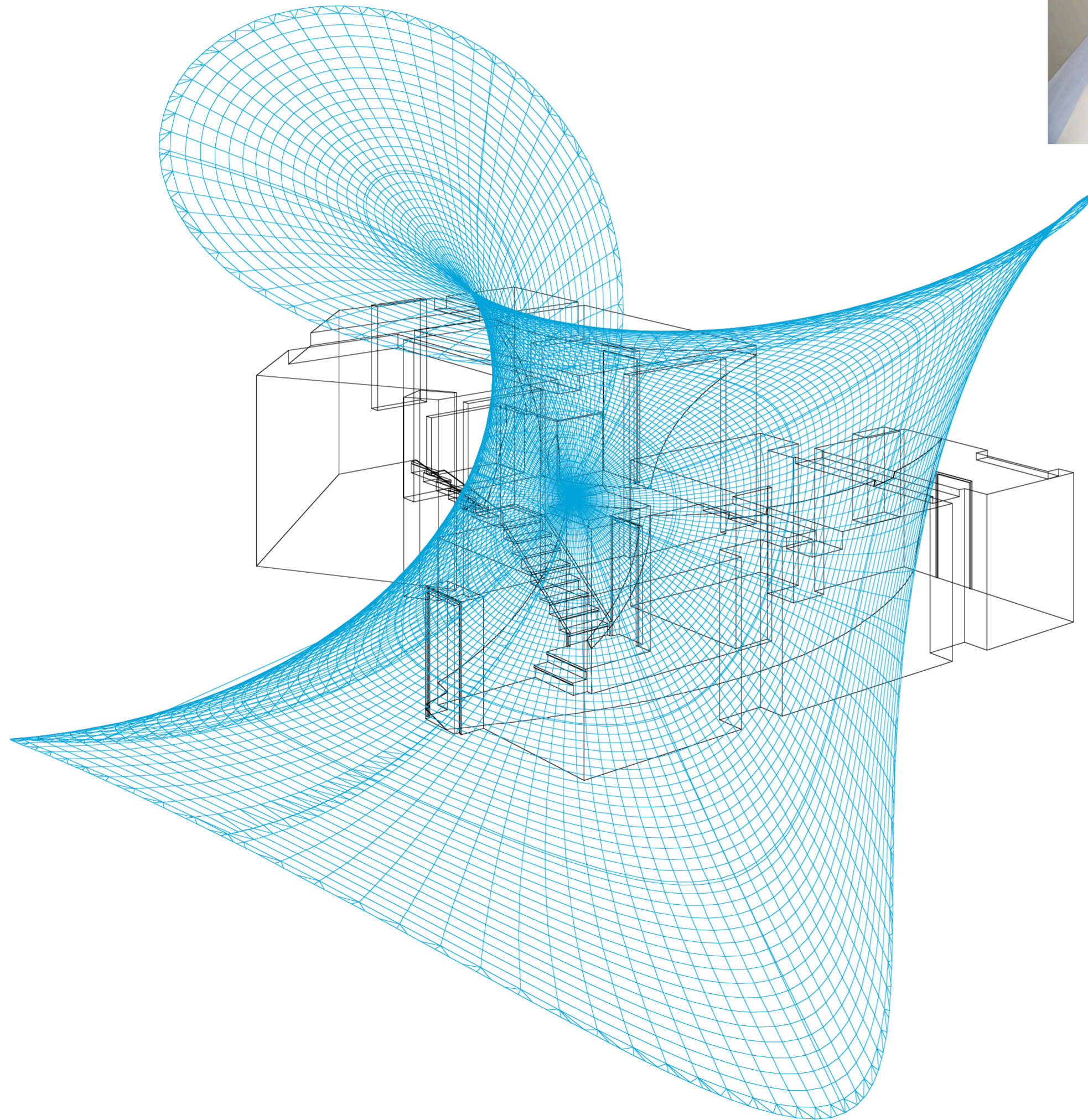


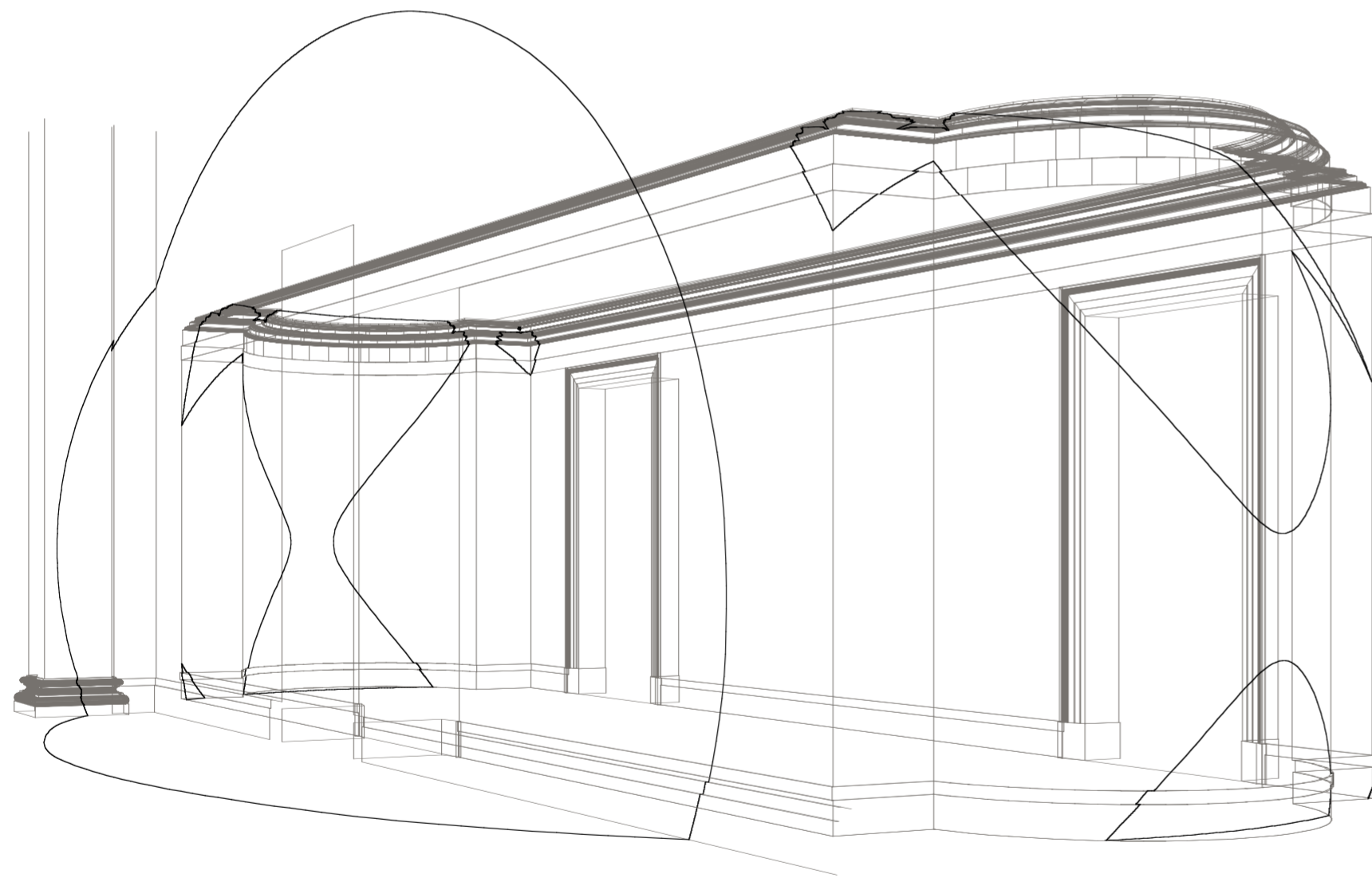


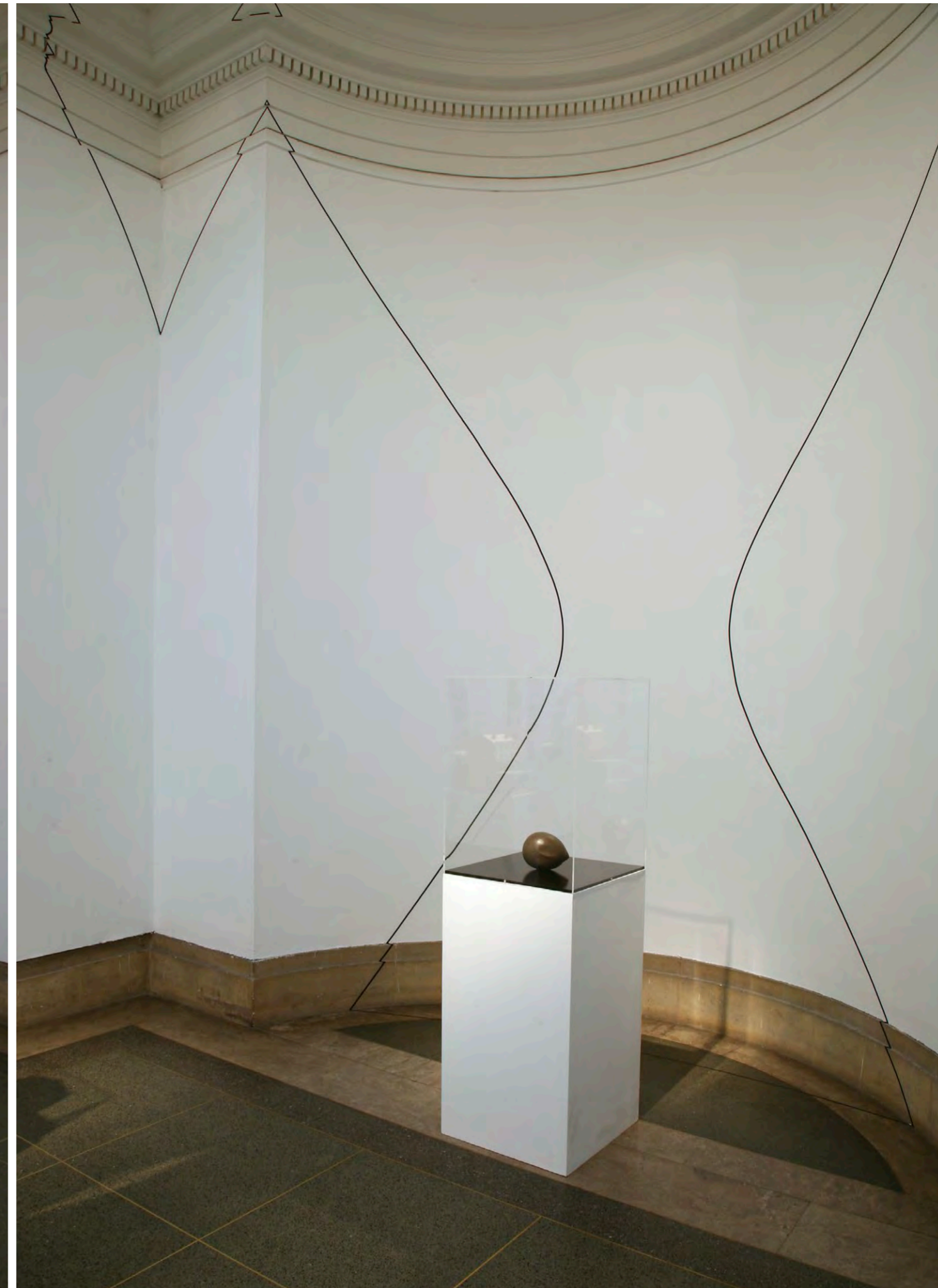
Woodley's practice raises the question of the relationship between sculpture and drawing. The artist does at times visualise his ideas through drawing, but this is by no means consistent. His works are truly site dependent. Woodley employs the tools of the draftsman: pointer, tripod, pencil, string, trammel, chalk, compass, paper stencils, laser and now even computer aided design, yet his work is decidedly sculptural, subsuming the multiple facets and surfaces of existing architectures to create his works.

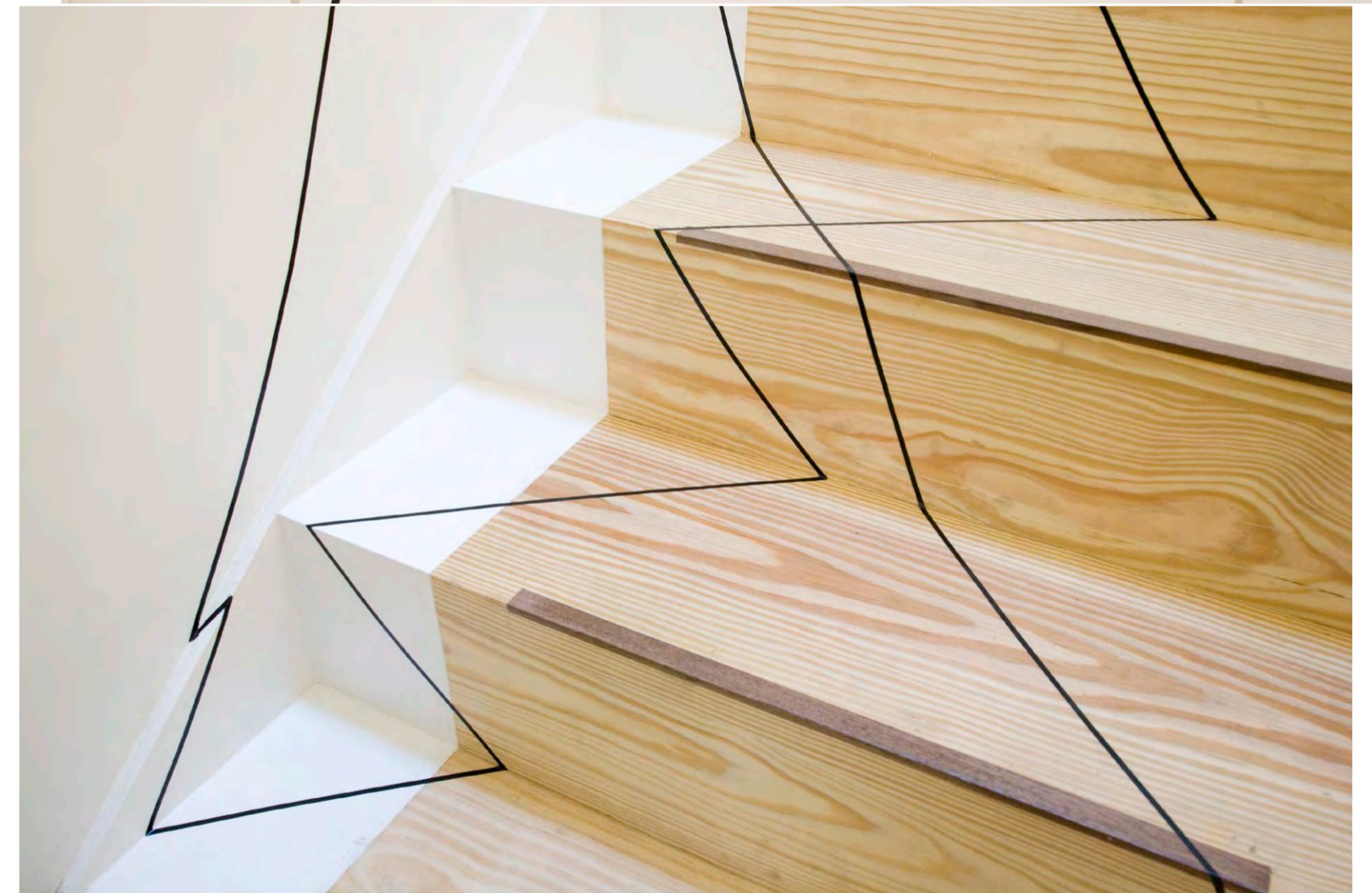
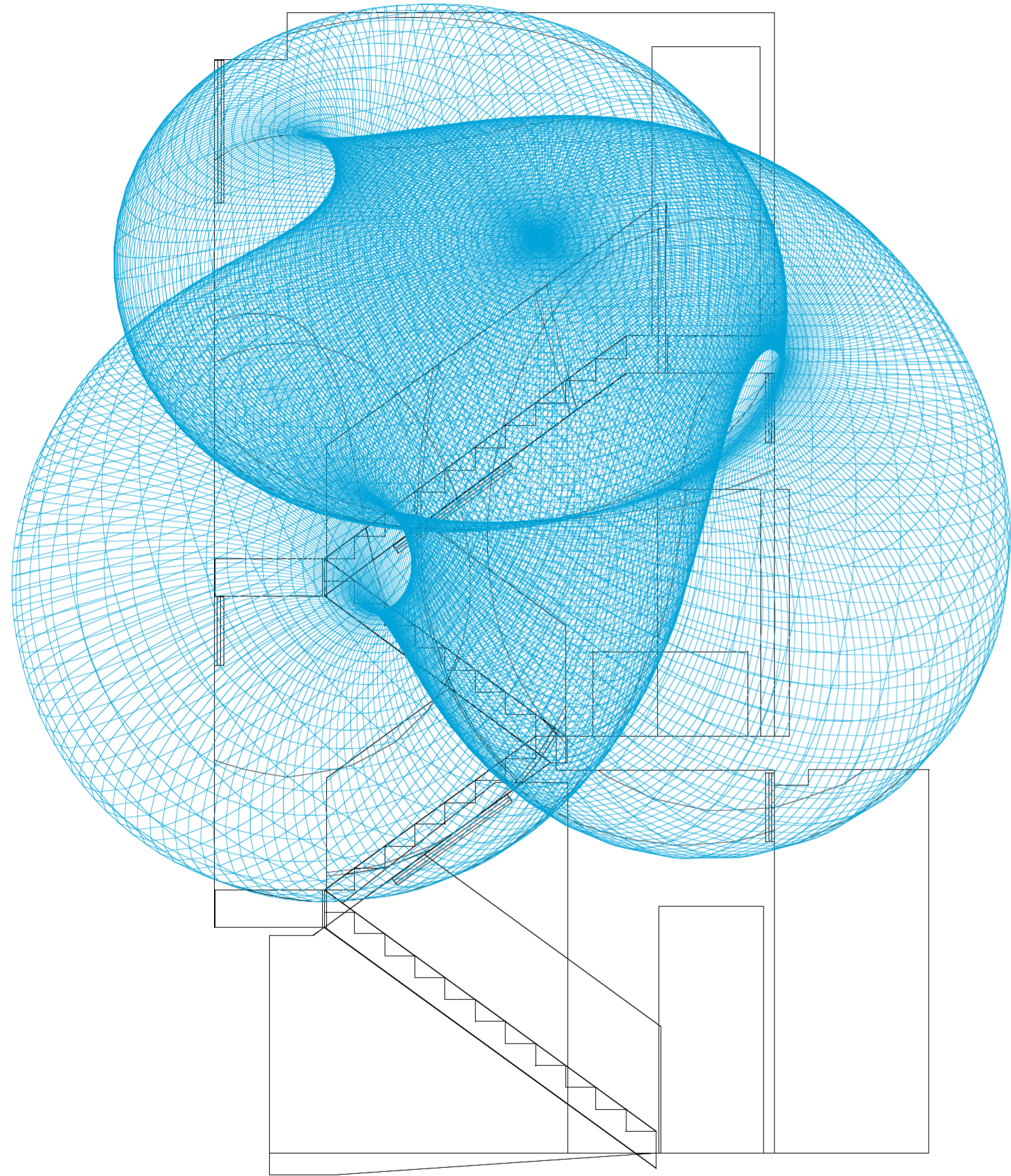
Yet, there are moments where an act of drawing becomes the work. Woodley produced a series of 'imagined' projects for the Museum Insel Hombroich in Neuss, Germany, founded by the art collector Karl-Heinrich Müller (1936 - 2007) in 1987. Considering each space as a uniquely conceived architectural language, Woodley created an idealised impingement for each of the architect-designed pavilions, including the former NATO missile base, the Raketenstation Hombroich. Four of the 13 'imaginary' impingements are shown on this spread.



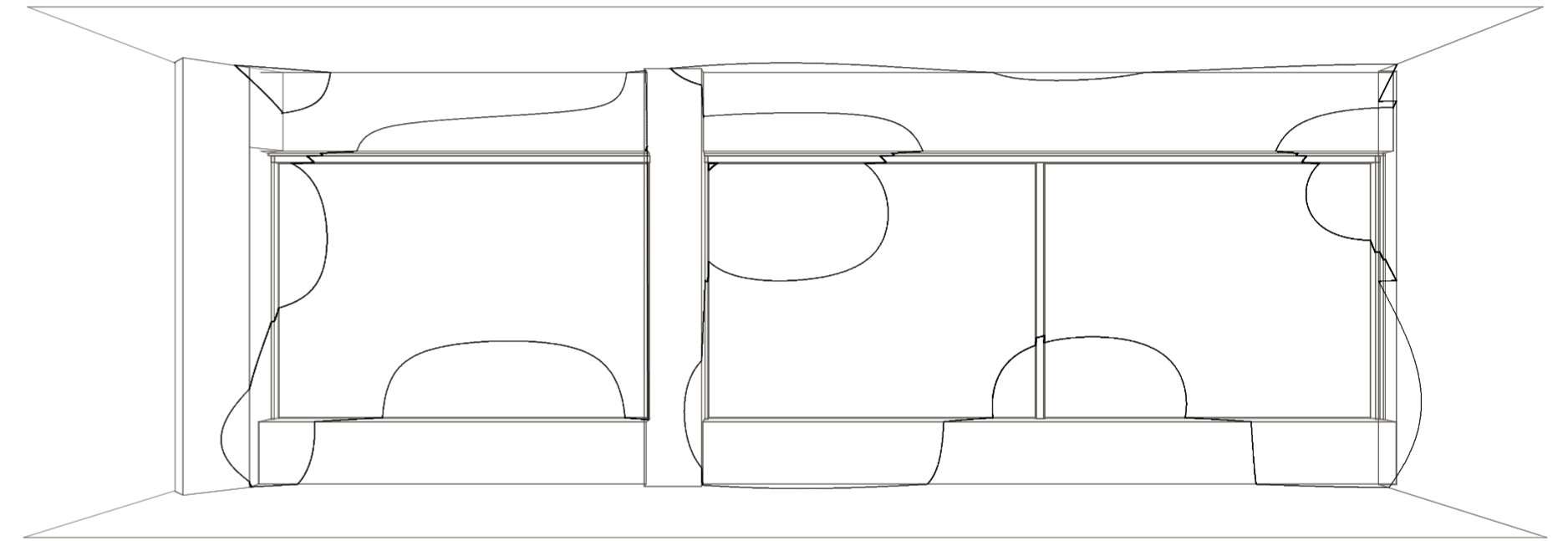
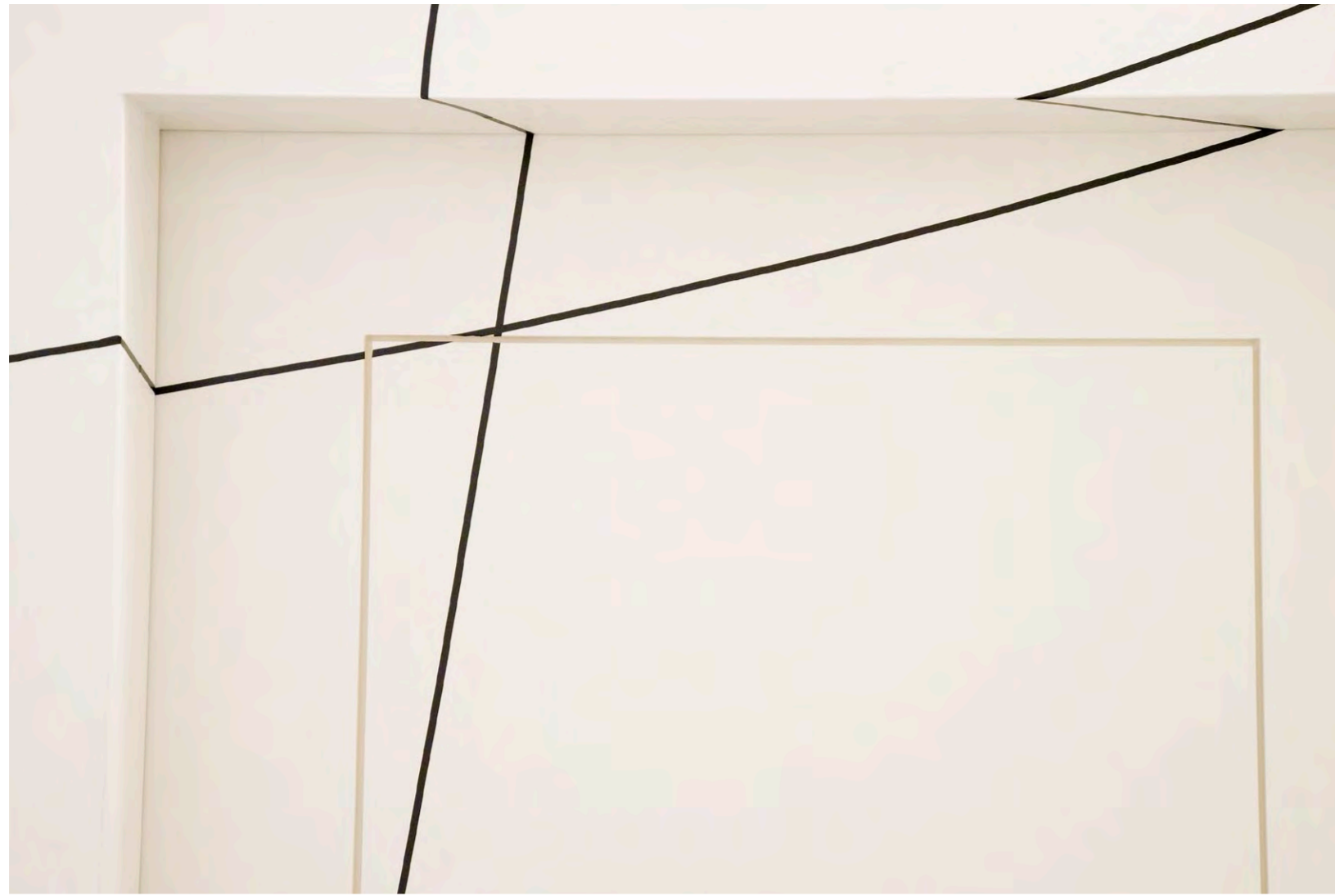


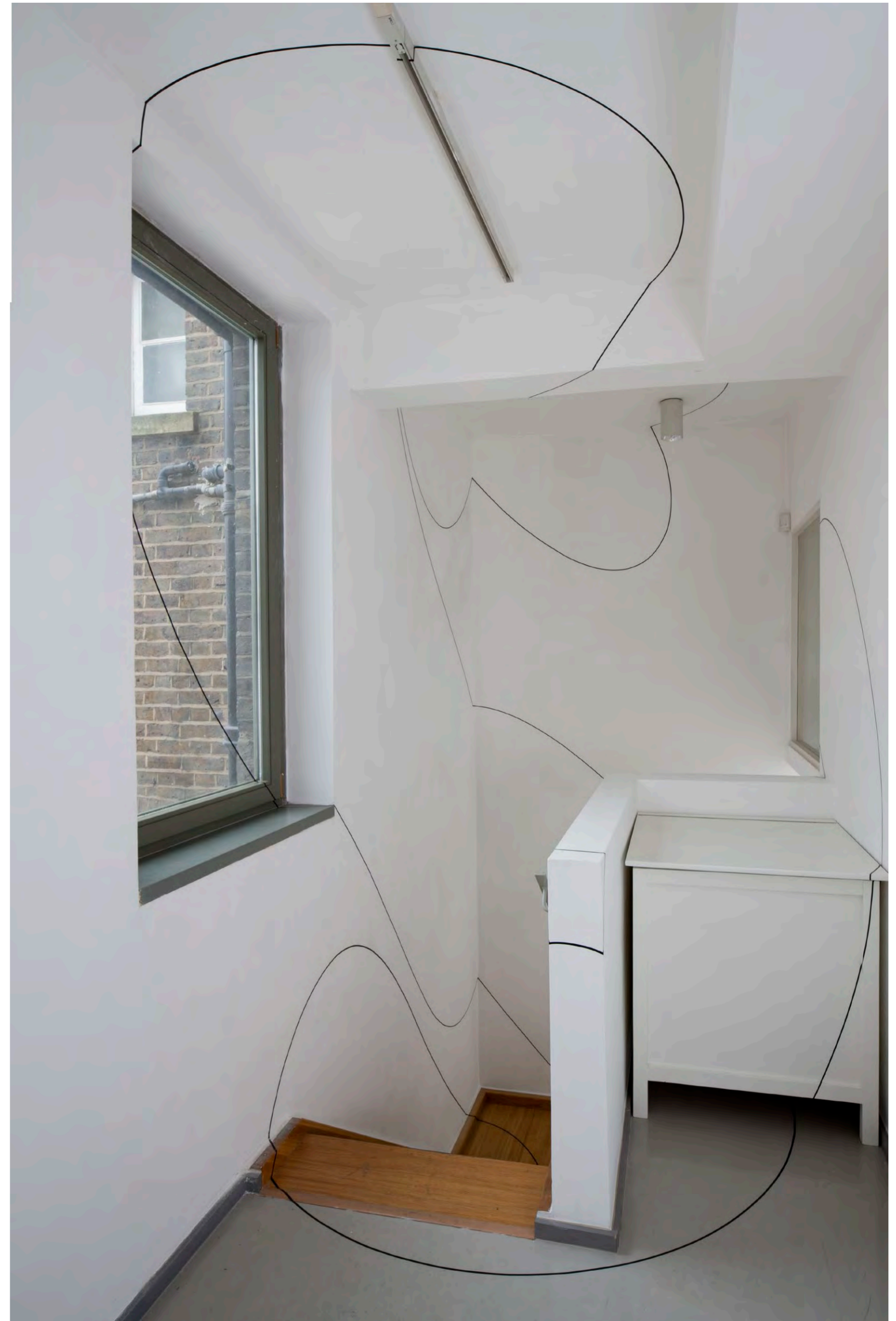
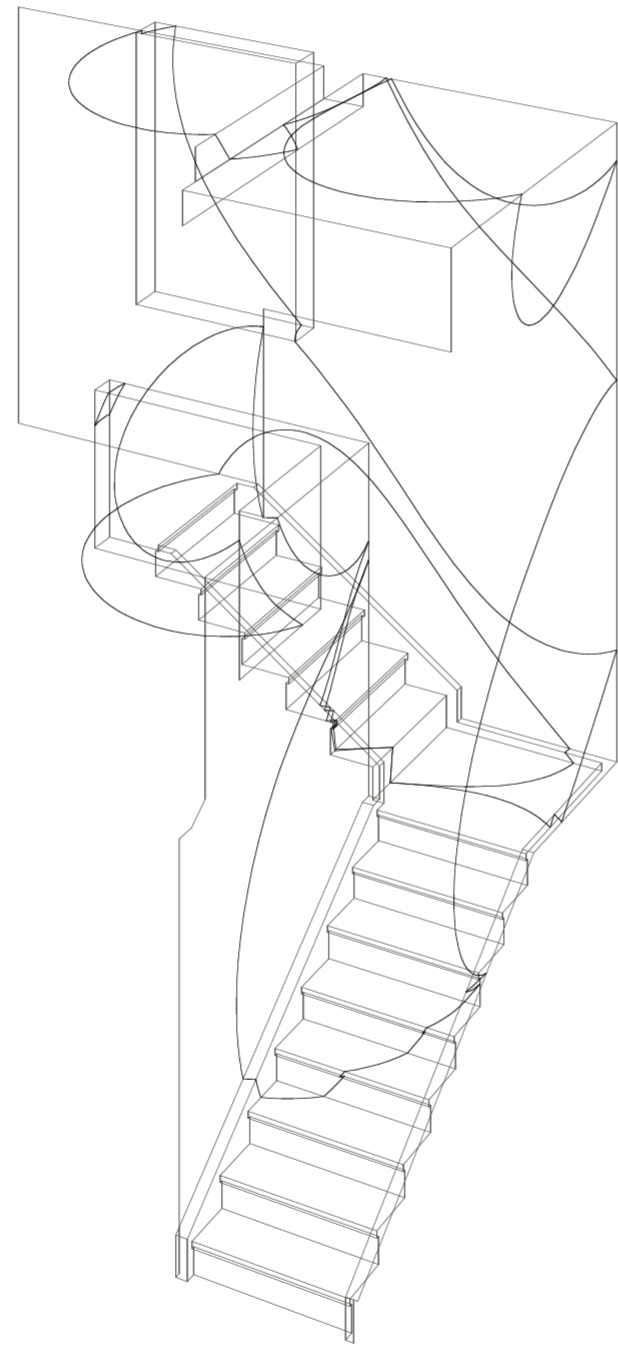
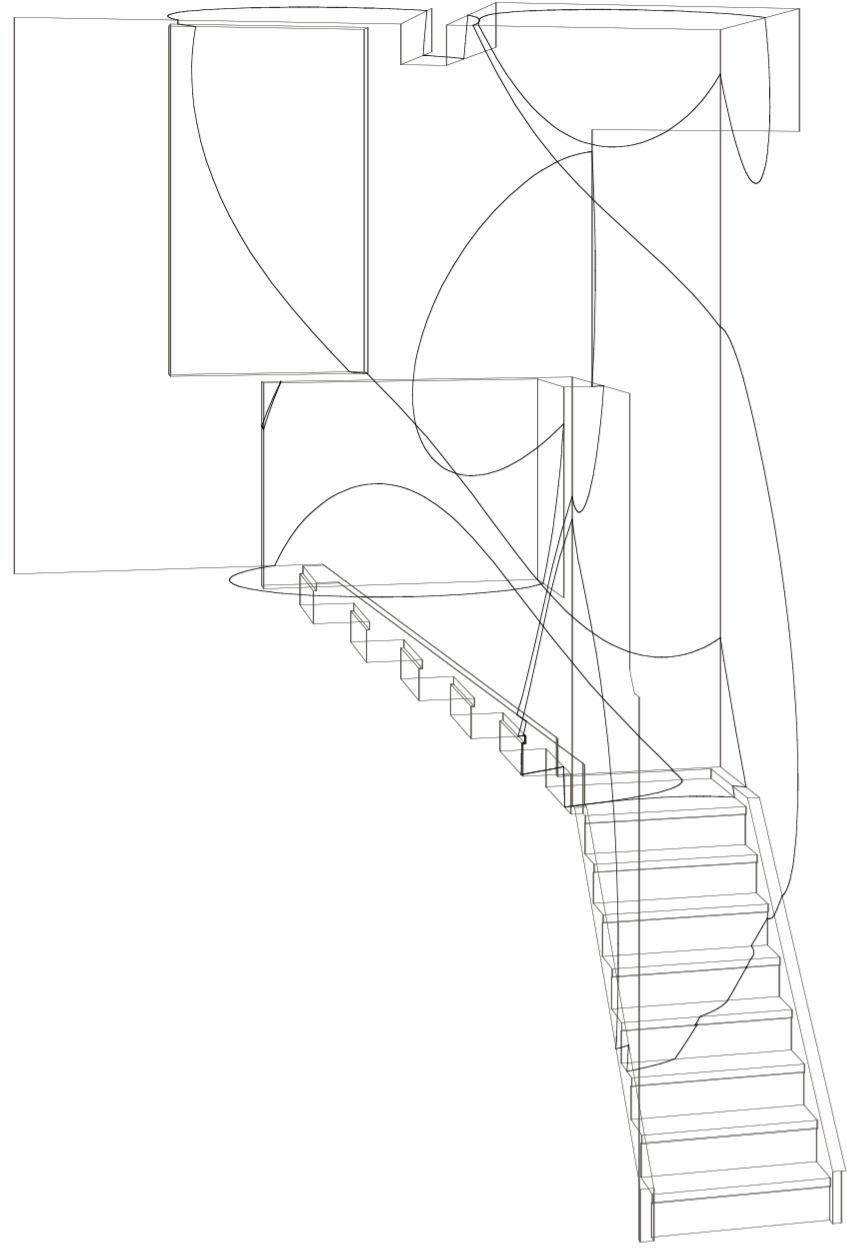


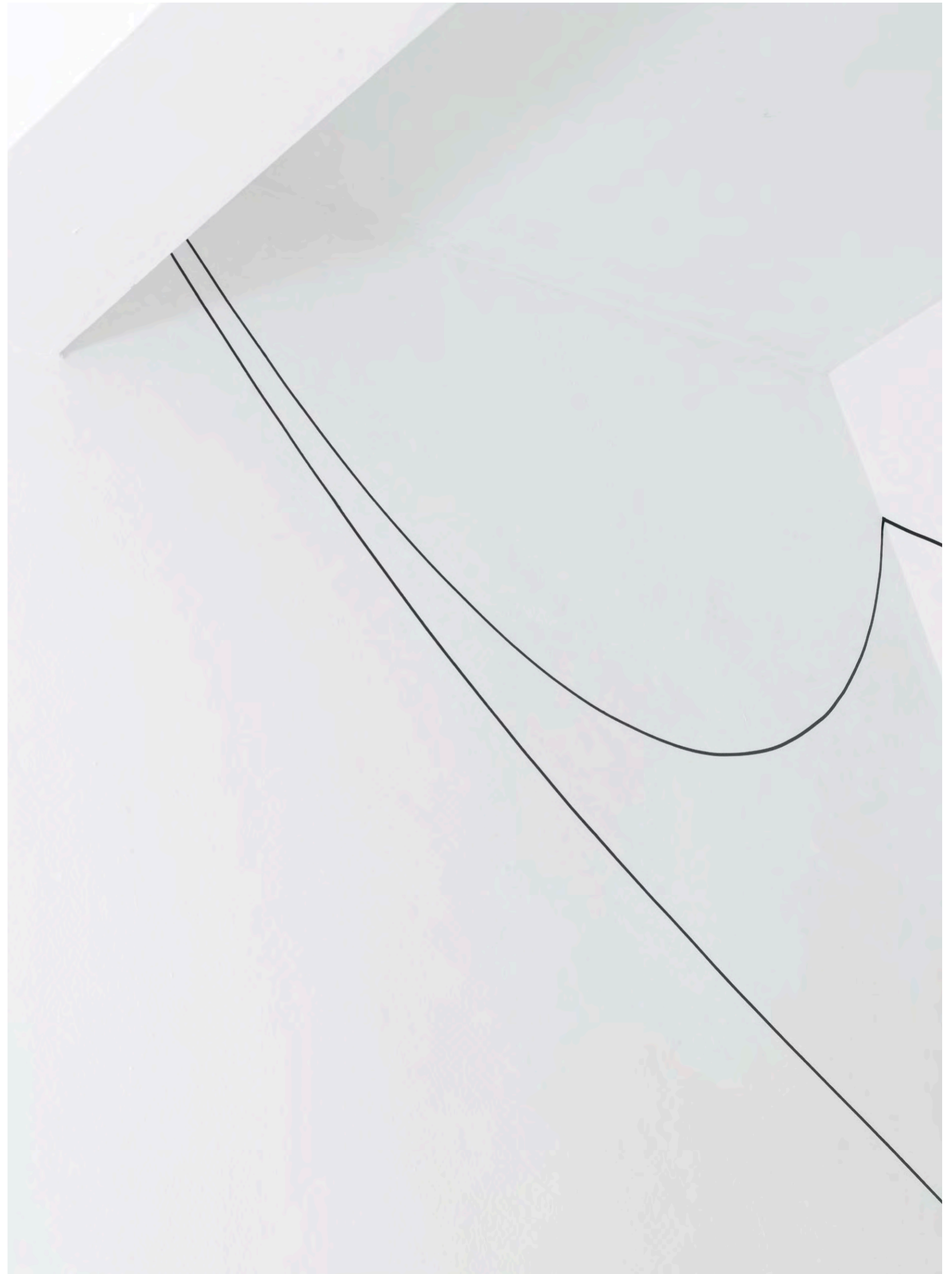


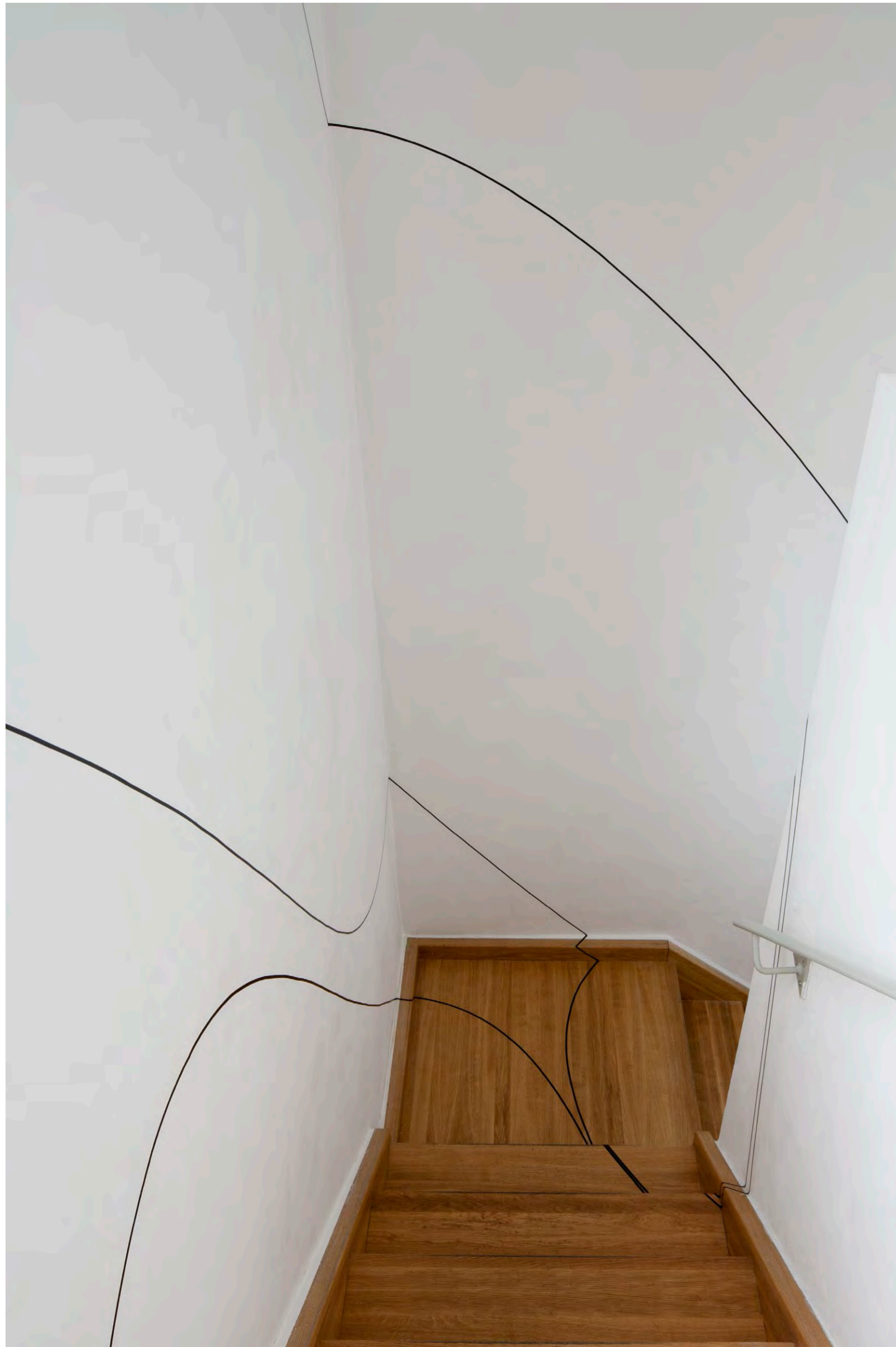


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I have always considered the works of Gary Woodley sitting comfortably within an art historical lineage with that of Dan Graham (b. 1942), Sol LeWitt (1928-2007) and Lawrence Weiner (b. 1942). Architectural proposals, renderings in physical space and the reduction of forms to their drawn or written signifiers. Woodley certainly employs these strategies in his work, strategies that have also been of central importance to architects and designers of the modernist movement, the articulation of space and light, crucial to understanding the politics and dynamics of habitable environments.

When the articulation of space is of concern to an artist, the implication is that, like in architecture, negative space is unavoidably the real issue at hand. It is in Woodley's hands that negative space becomes something physical. Through a process of manipulation and the use of semiotic encouragers, Woodley makes the imperceptible perceptible. I use the somewhat clumsy term semiotic encouragers in place of drawing here deliberately.

Woodley's Impingements might be described as drawings but I am reluctant to use the term. I have always thought that it undermines the true object of attention and stunts the experiential quality of a sustained revelation that occurs when viewing the work. The 'drawn' elements are not the work but an indexical necessity to point you towards what is (not) there. However, it is these elements that are, paradoxically, the only tangible things available for the viewer to easily describe. But, just as when describing them, Woodley's choice of words when titling these pieces is of paramount importance. The language employed, as much as the delineation of form becomes an essential component to the piece, acting as a way in, to an understanding. An 'Impingement' can be nothing other than an act of one thing asserting itself onto another. Different to an infringement or an infraction, the work does not encroach or intrude. It is, and can only be, an impingement. The slow realisation of what is impinging on to what, is where the work of Gary Woodley takes place. Unlike artists who use the material world to articulate the void, Woodley manipulates the void itself to present a form within. The immaterial as sculptural material under instruction from a visual clue, not a drawing.

I remember my first encounter with one of these works. It was as a student at Chelsea College of Art and Design in 2005 and Gary Woodley's *impingement no. 47 ellipsoid* was inaugurating Chelsea Space on the new Millbank site for the college. I knew nothing of Woodley's work prior to walking in. It's slow reveal and eventual realization happened in real time. I recall the newly built white walls and concrete floor presented an intervention seemingly embedded into the very fabric of this architect-designed interior. A black line arched and looped across all surfaces of the gallery. An uneasy geometry but continuous, disrupted only when briefly intersecting the ceiling or partially using a ledge to complete its turn.

The line seemed removed from the artist's hand however and through a slow process of realisation, brought about by my own physically shifting position, it became clear that the continual line was articulating an ellipse. Not a drawn ellipse but something mechanically or digitally made. Not a gestural free hand mark but recognisable as an architect's rendering, employing the vernacular of the cross section or a cut of some sort. A coldness that left me feeling I had tron-like, slipped into 'the grid' and physically walked into a discarded cad drawing of the gallery. The execution and the veracity of the false perspective were too perfect and too persuasive in their attempt to describe and I continued through the exhibition, led by the line that clung to the wall of a long corridor, intersecting handrails and architectural details along its path. As the larger exhibition space came into view so did the enormity of the proposition it held.

The black line was fabricated using sticky tape and was delineating a hypothetical object. More semiotic device than drawing, the tape evinced an object so big, its protrusions and bulges punctured the walls of the gallery, leaving behind its architectonic imprint. I was inside the object. Not visible but undoubtedly clear, there was an identified other space, separate from, but partially within the space of the existing gallery. Examining the proposed geometry I defined its perimeters, moulding its form in my mind and deciphering its ultimate shape. An ellipsoid, both elongated and squashed, its length exceeding that of the two gallery spaces. Their walls, floors and ceilings unable to contain the enormity of the volume. It was both the tape marks and the precision of the word that unlocked the sculpture, and once apparent, the work was unmissable. The collisions on the walls were marked but the object existed only in your mind. Had the object been real, bricks and mortar would have been everywhere, dust and carnage, the violence of it impossible to fathom. I couldn't help but think of Gordon Matta-Clark (1953-1978).

I'd always admired Matta-Clark's anarchic architectural interventions. His pointed articulation of the failings of capitalism and the built environment seemed essential. Finding some synergy between these and Woodley's Impingement, at least in terms of architectural approach, I thought about negative space as artist material. The potential, an articulation of the void, acting as an agent of political, spiritual, mathematical and philosophical enquiry.

In the exhibition catalogue for *Gordon Matta-Clark: The Space Between*, the curator Lisa Le Feuvre recounts that Anthony McCall's 1971 film *Line Describing a Cone*, which is an investigation into light thrown off by a projector in the act of projecting a film, was the inspiration for Gordon Matta Clark's *Conical Intersect*. Both pieces attempt to articulate a volume using ephemeral means. Light describing the conical volume for McCall and negative space, outlined by the cut for Matta-Clark. In both examples however, the representation of the volume is perceptible. The signifiers employed to articulate the form are visible.

Not long before my encounter with Gary Woodley's *impingement no. 47*, I had also seen first hand, for the first time, the work of Anish Kapoor. The solidity of heavy stone and marble and the highly engineered masses of steel and polished aluminium seemed planted and immovable. Tasked, however, with presenting us with a void, they used the enormous to articulate a deep sense of nothingness, used the solid mass of the here and now to articulate the infinite and the empty. The void as subject, not as material.

Something different was happening with Gary Woodley's proposition. Sol LeWitt, Lawrence Weiner and Dan Graham seemed in pursuit of a utopia somehow, employing the rhetoric of serious architectural concerns. Likewise with Gordon Matta-Clark's social agenda and Anish Kapoor's spiritual yearning, in their various ways they strived towards a utopian vision. In each case, on a formal level, the purpose was to articulate negative space. Woodley's practice stood distinctly separate. Matta Clark engaged in a process of removal, dismembering existing structures to expose the void. Kapoor, providing material excess, left physical and poetic gaps to describe the infinite within. Both pursue the challenge of making the imperceptible perceptible but both render the nothingness the focus of the work. The solid put to work to articulate the absence. Making the absence the focus of our attention.

Rather than wrestling material to articulate a void, Woodley wrestles the void, to expose its potential as material. The empty space made malleable but not the intended focus of the viewer's attention. The shape that has emerged from nothing is what we are here to see and this is an extraordinary feat of sculpture. Putting the immaterial to task to realise a 'real' volume.

Without undermining the status of objects, one could consider an artwork as simply the detritus of an idea. In some rational line of thinking, perhaps the object can only hope to be a vehicle to move ideas from one consciousness to another, in much the same way that language does. It could be argued that the life of an artwork exists as a truly ephemeral economy occupying the space between intention and interpretation, dependant on the articulation of a form?

The remarkable feat that Woodley achieves is that the necessity for that vehicle is seemingly negated. The idea and the form are one and the same thing.

In her essay notes to the plates, Lisa Lefevre describes how photography lies at the heart of Gordon Matta-Clarks work. She suggests 'In order to consider photography as an element of Matta-Clarks practice, the photograph needs to be thought about in terms of the index. This indexical quality defines the photograph as directly representing the presence of something, or indeed its once-presence, by its absence.' She continues 'The photograph is always a representation of something, acting - in semiotic terms - like a shifter in its reliance for definition on the event or object to which it refers.'

It is in this sense we might understand the role of the tape marks left by Gary Woodley. For Matta-Clark, the photograph is not the work but crucial to an understanding of it. For Woodley the tape operates in the same way. An indexical necessity and semiotic device that guides your reading. To me, the tape and the 'drawing' it leaves is not the work. The diaphanous volume that emerges over time and that occupies the space you are inhabiting is. Its immateriality does not communicate an absence. It instead insists a presence of incorporeal form, consuming the environment it is in, bursting through the walls and floors and it surrounds you. An impingement of an immaterial space on to the physically contained one you currently inhabit. Direct from one consciousness to another, an impingement on the viewer's mind direct from the artists.

It is in this way that Gary Woodley's practice offers a complex enquiry into the nature of perception and space. The very site where art exists. That ephemeral, intangible space between intention and interpretation. Woodley's impingements are sites. They are architectures in fact. Maybe even the most utopian of all structures. Structures that cannot be commoditised, re purposed or torn down. They exist eternally as long as there is a dialogue between one consciousness and another.

Lynton Talbot, 2015

68		Architectonic Drawings	1993	no .24	<i>interlocking rectangular volumes with stopped corridors</i> Galerie Lydie Rekow, Crest, France
69		Impingements chronology, title and location		no .25	<i>rectangular volume with three corridors</i> Cairn Gallery, Nailsworth, Gloucestershire
1982	no .1	<i>adjacent spheres</i> S.East Gallery, London (not open to public)	1994	no .26	<i>two closed curves for Daniil Kharms</i> Wilhelmsbad Theatre, Hanau, Germany
1985	no .2	<i>passing sphere i</i> Downs Court, Hackney (private)		no .27	<i>cruciform meander</i> Pfalzgalerie, Kaiserslautern, Germany
	no .3	<i>passing sphere ii</i> Downs Court, Hackney (private)	1996	no .28	<i>tri-cusped double conic undulation disrupted</i> A, London
	no .4	<i>sphere with a volume equal to that of the room</i> Exhibiting Space, London		no .29	<i>tri-cusped conic undulation disrupted</i> Kunstmuseum, Thun, Switzerland
1986	no .5	<i>passing sphere iii</i> Cannizaro Park, London		no .30	<i>an array of elements about two x,y,z axes</i> Martha Stevns Gallery, Fressingfield, Suffolk
	no .6	<i>passing sphere iv</i> Galerie Hoffmann, Germany		no .31	<i>diagonal</i> Kettles Yard, Cambridge
1987	no .7	<i>two ellipsoids</i> Actualites, London		no .32	<i>two cones with a common apex</i> School of Fine Arts, Budapest, Hungary
	no .8	<i>two intersecting planes</i> Limehouse Cut, London	1997	no .33	<i>the x,y,z axes disrupted ii</i> Galerie Lydie Rekow, Crest, France
	no .9	<i>a sphere of 50 metres diameter</i> Riverside Studios, London	1998	no .34	<i>bi-cusped double conic undulation disrupted</i> Sint-Lukasstichting, Brussels, Belgium
	no .10	<i>a plane through three spaces</i> Reading University Gallery	1999	no .35	<i>stopped corridor</i> Bauhaus Stichting, Dessau, Germany
1988	no .11	<i>parallel planes and spheric corridor</i> Cartwright Hall, Bradford		no .36	<i>bi-cusped conic undulation disrupted</i> Galerie Rytmogam, Bad Ischl, Austria
	no .12	<i>parallel planes ii</i> Musée Cantonales, Sion, Switzerland	2000	no .37	<i>torus of elliptical section with a möbius transformation</i> Chelsea College of Art, London
	no .13	<i>the x,y,z axes disrupted</i> Galerie Niggendijker, Groningen, Netherlands		no .38	<i>a bi-cusped and a tri-cusped conic undulation, with a common apex but of differing pitch</i> Feeringbury Manor, Feering, Essex
	no .14	<i>passing sphere v</i> Kunstverein, Ingolstadt, Germany		no .39	<i>this earth is a flower</i> International Artists Museum, Bydgoszcz, Poland
	no .15	<i>parallel planes</i> De Fabriek, Eindhoven, Netherlands		no .39a	<i>planar section</i> Trinity Hospital, Greenwich, London
1989	no .16	<i>niche with ellipsoid</i> Small Mansion Arts Centre, London		no .40	<i>method for turning a corner</i> Kammerhofgalerie, Gmunden, Austria
	no .17	<i>three planes: 67.5°, 45°, 22.5°</i> Schloss Buchberg, Gars am Kamp, Austria		no .41	<i>helix fourfold</i> Gorchums museum, Gorinchem, Netherlands
	no .18	<i>two planes: 10°, 100°</i> The Water Tower, Vlissingen, Netherlands	2002	no .42	<i>ellipsoid with pair of parallel ramped notches</i> <i>A Measure of Reality</i> , Kettles Yard, Cambridge
	no .19	<i>two sets of planes intersecting</i> Galerie Dionysus, Rotterdam, Netherlands		no .43	<i>pair of tetrahedra with a common edge</i> Essor Gallery, London
1990	no .20	<i>adjacent spheres ii</i> Curwen Gallery, London	2003	no .44	<i>Enneper 1 surface</i> The Gallery, Grange House, Guernsey
	no .21	<i>two planes: 10°, 100° ii</i> Kunsthau, Nürnberg, Germany		no .45	<i>trace</i> Weymouth, Dorset
	no .22	<i>tri-cusped undulation segmented</i> Cairn Gallery, Nailsworth, Gloucestershire	2004	no .46	<i>spiral of elliptical section</i> Morley Gallery, London
1992	no .23	<i>cubic volume with stopped corridor</i> Scavi Archeologici, Verona ,Italy	2005	no .47	<i>ellipsoid</i> ChelseaSpace, London

70	2007	no . 48	<i>transformer</i> Woburn Research Space, UCL, London
71		no . 49	<i>project franchise</i> RC de Riumte, Ijmuiden and Beverwijk, Netherlands
		no . 50	<i>sphere with a volume 4 times that of the room</i> Primary Space, Dalry School, Scotland
		no . 51	<i>Enneper surface</i> <i>Presque Rien</i> , Laure Genillard, London
	2008	no . 52	<i>twisted elliptical section torus</i> <i>On your marks</i> , Pippy Houldsworth Gallery, London
	2009	no . 53	<i>ellipsoid</i> Kettles Yard at Tate Britain
	2010	no . 54	<i>elliptical helix</i> <i>Material lightness</i> , Flowers Central, London
		no . 55	<i>double conic meander</i> <i>Wish is in design</i> , RC de Ruimte, h Amsterdam, Netherlands
		no . 56	<i>boy's surface</i> <i>Nothing is forever</i> , South London Gallery
		no . 57	for Ilya Chashnik <i>Parallel remix</i> , Leonard Hutton Gallery, New York, USA
	2011	no . 58	<i>loxodrome</i> Cairn Gallery, Pittenweem, Scotland
	2012	no . 59	<i>wave-window</i> The Slade School and Construction, Derwent London Gallery
		no . 60	<i>wave wall</i> <i>A wall is a surface</i> , Leandakatelouise, Shoreditch, London
	2014	no . 61	<i>points of contact</i> No Format, London
		no . 62	<i>double helix</i> <i>Sukima – schema</i> , Laure Genillard, London
	2015	no . 63	<i>tetrahedron, octahedron, icosahedron</i> Laure Genillard, London

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