the architectonic hypotenuse;
art versus architecture
in new york city

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Introduction
The Architectonic Hypotenuse

In triadic terms, the hypotenuse is hailed as a fundamental value – without it, the opposite or the adjacent, the triangle could not be named as such. Pythagoreans have used trigonometry to define these components; forming links between lines in the interest of keeping these shapes complete, eternally expected to vary only in angle or length.

Although triadics will always be of importance, the exponential search to find the hypotenuse as a means of linking the opposite and adjacent is a short – sighted venture, up for criticism. As demonstrated in (Figure One), if the two were allowed to exist freely, a plethora of opportunity and question could arise – why does a 'shape' require impenetrability? Would the opposite exist in one plane, the adjacent in another, or would they run parallel, never truly touching yet headed in the same direction? Would a thousand new links form, in different lengths, curvatures, directions and angles, redefining what a 'shape' could be?
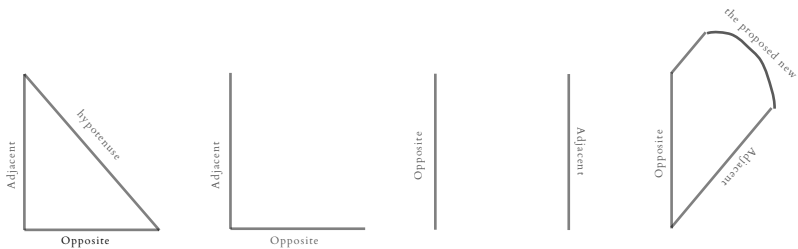
Figure One – Questioning the Hypotenuse
(Liddle, 2022)

Subsequently, if one was to replace pythagoreans with professionals, the opposite with the architect and the adjacent with the artist, an almost identical pattern would be replicated. The hypotenuse linking the two disciplines is constantly under the pressure of definition, with scholars arguing for centuries over it's length.

As demonstrated in (Figure Two), if these scholars became less focused on the varied existences of this supposed link and discounted it altogether, much like the trialetic theory, a plethora of opportunity and question would arise. Perhaps art and architecture could also run parallel, sometimes linking, curving and weaving together in a much more productive, organic manner than to have a constant hypotenuse, dragging them together or forcing them apart.
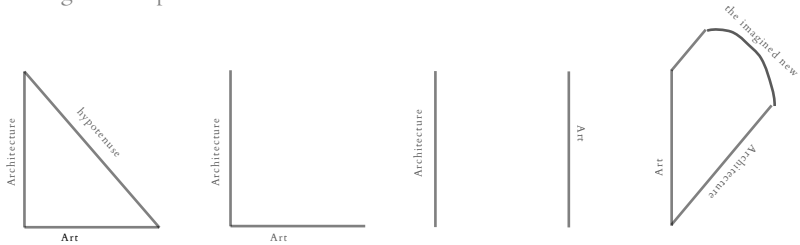
Studies have traditionally focused on this push and pull between the professions, rather than evaluating the possibility that simultaneously, both could exist and not exist within each, depending on the context. This is regressive because architecture is typically put in a box as restricted as the three sided triangle, which has a butterfly effect over how the profession is taught, received and practiced. As a result, the existing research caters to an incomplete narrative that is inadequate for use by professionals when considering a progressive future for both art and architecture.

This paper aims to function in two ways; primarily, to explore this realm of art vs architecture as an oxymoronic parallel existing today within New York City, with an ancillary focus on the aforementioned imagined, progressive design system that would exist free from the design hypotenuse.

This study will contribute to the body of knowledge surrounding art and architecture by providing a contemporary perspective, incorporating a new, theoretical model for a progressive future, which has the potential to help address an educational reform, greater accessibility to both professions, and force open the dialogue on the benefit of collaboration and hybridity.

Despite this, there are a number of limitations to this paper. In terms of scope, this study is mainly focused on one geographic area – although research can be generalised, examples are bespoke to New York City and are perhaps not seamlessly transferrable. Furthermore, the qualitative research method could be criticised for being overly subjective; however, research is only significant if it reaches the correct audience, and there is no guarantee this this paper will do so. Examination in full breadth is also not possible, due to the length of the paper required.

Chapter One
The Definitive Oxymoron

In order to properly explore how a practice is defined, one must first establish the primary instance of it's existence. Calibrated Erosion Phenomena (Bednarik, 1992) has successfully dated the first known example of human artistic endeavour, Petroglyphs, to the Acheulian Period of the Lower Paleolithic, circa 700,000 BCE – 300,000 BCE. Petroglyphs, commonly referred to as 'rock art', represent a larger artistic typology with multiple denominations; notably, animal representations (Figure Three), geocontourglyphs (Figure Four), and the ever – abstruse cupules (Figure Six). Despite a rapidly expanding study addressing formation (Nelh 1986; Bednarik et al. 2005; Kumar & Ram 2014; Bednarik 2008) identification (Clegg 2007; Bednarik 1994; Cairns & Branagan 1992) and morphology (Gilbert 2000) of cupules, most research has concentrated on identifying the purpose of cupule formation.

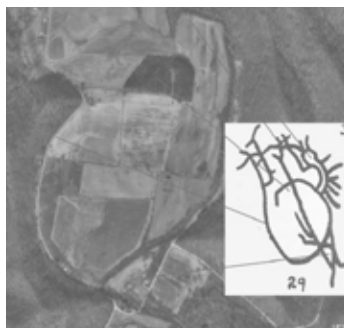*Figure Three*
(Gregorson, H, 2004)

Figure Five

Figure Six

Notably speculative, this body of research has led to declarations that cupules could 'symbolise game mats' (Odak 1992) or 'constellation records' (Cairns & Branagan 1992). However, interpretations most commonly surround an ethnographic analogy. Whilst not an exhaustive selection, the ethnographic sources reviewed describe cupules as 'areas used to search for antidotes and medicines' (Callahan 2004), as 'early lithophones' (Bednarik et al. 2005), and as a 'role in ceremonies celebrating fertility' (Stevenson 1887: 540; Fewkes 1891: 9–10; Heizer 1953; Hedges 1983a; 1983b). Whilst cupules are probably as nuanced and diverse in meaning and function as the myriad of cultures in which they are found, the ethnographic examples do point towards an interesting point of departure: that 'cupules are not just features to be used, but also artefacts of practice – the act of creating a cupule can be as important as the resulting cupule itself' (Bednarik 2008).

Holistically speaking, art is not just an additive process; this theory of the cupule as an artistic practice as opposed to an artistic result lends itself to the theory of trialectical (Soja 1996) (Figure Eight) 1 as opposed to dialectical thinking, borrowed from the philosopher Henri Lefebvre– thirdspace in particular, which outlines the way in which we choose or happen to experience existing things, despite associated societal rules; it would therefore be astute to categorise the cupule as an art of exploration. This can be further linked to one of three generally accepted definitions of art, 'Cultivation of mental powers for sociable communication – The Art of Genius', (Kant 1790). This is outlined in (Figure Seven).

Unlike cupules, animal representations have a clear narrative, in which transient things viewed as significant are reproduced in a more permanent art form; these forms can be categorised as the art of replication, reminiscent of Soja's firstspace (Soja 1996). Firstspace is concerned with the physical objects that exist, can be quantifiably measured, and 'seen' in the real world. Again, this can further be linked to the second of three generally accepted definitions of art, 'all art is mimetic by nature; art is an imitation of life', (Plato 373BC).

Lastly, geocontourglyphs, engravings consistent territorial markings, are inherently linked to the art of expression, in which art is created in order to convey a message; in this case, relating to a set of rules or an intended structure, created with the intention of receipt by others. Much like secondspace (Soja 1996), where the use of the physical first space is governed by a set of unwritten societal expectations surrounding use, the presence of geocontourglyphs coherently exhibits the third accepted definition of art–'Art is an attempt to grasp at universal truths in individual happenstances – The Art of Personal Expression' (Aristotle 1961).

Animal Representations	Cupules	Geocontourglyphs
ART OF REPLICATION	ART OF EXPLORATION	ART OF EXPRESSION
FirstSpace	Thirdspace	SecondSpace
Plato – Mimesis	Kant – Genius	Aristotle – Expression

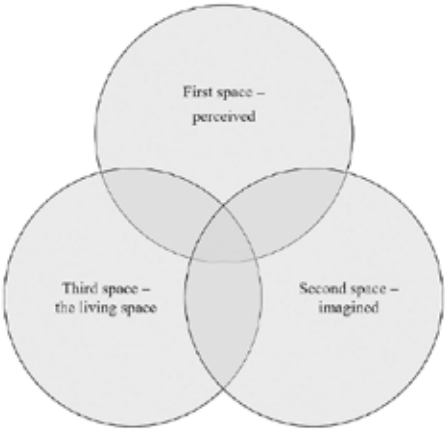*Figure Seven*
(Liddle, A, 2022)

Figure Eight
(Soja, E, 1996))

Consequently, from the origins of the petroglyph alone, three clear definitions of art as expression, replication and exploration can be derived, and applied spatially theory of trialetics. Theoretically, anything that fits into any one of those categories should be considered as art. However, as said art developed and evolved over time, developing styles synonymous with place and context, what began as a simple set of easily categorisable petroglyphs morphed into a genre, with many subdivisions emerging to suit new discoveries, norms and possibilities; with that, came the birth of the polymath.

Imhotep (2667 BC – 2648 BC), the first recorded polymath, was the embodiment of a master of all crafts; governing breakthrough science, scribing, philosophy, art, astronomy, medicine, mathematics, history and architecture (Wildung 1977). Credited as the likely architect of the first Egyptian major structure, Djoser's Step Pyramid (Figure Nine), Imhotep was later recognised as the first recorded practitioner of architecture.

Figure Nine

The pyramids of Djoser required numerous different skills to design, plan, map and build, so Imhotep would've capitalised on his knowledge across a great breadth of subjects including the following. Philosophy was required to understand, analyse and articulate the human need for the pyramid – prior to the pyramids, Pharaohs were buried in mastaba tombs, large rectangular monuments that Imhotep philosophised to be insufficient resting places for those perceived to be at the top of the Egyptian hierarchy. Secondly, great artistic skill and expertise was required to imagine and create a completely new form to be the successor of the mastaba tombs, with a spirit that was not an eyesore whilst still being an obvious visual indicator of power, wealth and status. Following this, there was an obvious requirement for Imhotep to pioneer the practices of both maths and physics to realise the building in a sense of first space, and through the use of this broad set of disciplines, a successful 'model' for building was produced, which we now know to be coined as architecture.

This first example by Imhotep of an architectonic response to a societal need, much like the first instances of art, can be defined adeptly by Vitruvius as 'Commodity, firmness, delight' (Vetruvius 27BC). This essentially drills architecture as an origin down something that provides a physical, saleable asset, that is situated and sparks delight, and again, anything that fits into this category should be considered as architecture. However, in the same way that art progressed to address changing a changing trialetic state, architecture too evolved, developing styles synonymous with place

The and context; the post republican empire of Ancient Rome being per-
haps the most significant instance of such, where classic definitions even
began to garner new interpretations. The second interpretation of the
phrase coined during this period by Vetruvius, and conceivably borrowed
from Aristotle, was that the practice and physical embodiment of archi-
tecture was, for the first time, referred to and defined in Gestalt terms as
a whole, rather than just the sum of it's multidisciplinary parts, such as
during the era of Imhotep (Vetruvius 27BC). This observation has had a
lasting effect on architecture throughout history and is still widely refer-
enced today, often used not only as a way to describe firstspace in a sense
conceivable to us in terms of thirdspace, but as a means of justifying why
and how architecture exists as it's own practice, separately to other disci-
plines, that cannot fulfil the scope of architecture alone – only as a multi-
disciplinary group.

The Polymath

The Multidisciplinary Architect

The Polymath Continuum
(Liddle, 2022)

Chapter Two
Divergence & Convergence

As societies, ideologies, practices and subjects became more saturated in every sense, subject matter across all areas became increasingly broad and complex. Multidisciplinary architects became increasingly metacognitively aware (Flavell 1970) that the idea of encompassing a true polymath was no longer conceivable, and subsequently, true of Aristotle's 'Metaphysics' which begins 'All men by nature, desire to know' (Aristotle circa 335 & 323 BC), a general shift in attitude occurred.

Men decided to focus not on achieving the impossible by trying to stay at the forefront of every expanding subject as 'one of the greats, a polymath', but instead to achieve status as 'the absolute greatest' in a single chosen subject.

This goes hand in hand with the theory that men are egotistical (Freud 1923). As one of the greats, it is highly plausible that another 'great' would be stronger in one subject area than their counterpart, but said counterpart would likely be stronger in a different area than the aforementioned great, so, effectively, talent imbalances net off, and greats will always remain level. However, if one was to focus solely on one subject, one would be head to head with others, in that subject and that subject only, to be named as the very best at that singular craft.

If this prospect of superiority wasn't enough to satisfy architects, there was still a push to be the best of everything, in polymath fashion – without having to learn everything. Consequently, an ethically ambiguous loophole was discovered – by arguing that one's chosen profession is somehow superior or better than other professions, in this instance architecture over art, one then places ones-self at the top of the rankings of all subjects, becoming the modern polymath, just because that subject is seen as the most difficult to master/ most important over others.

It is from this that architects developed the regressive narrative that architecture should be considered as far more complex than art, as 'there are many more factors to consider' (Schumacher 2019), much more planning involved, and it supposedly has a greater impact on the first space, where, unlike most art, buildings are absolutely unavoidable, second space, where, when art can be viewed by the recipient alongside their personal context in a subjective manner, architecture usually holds strict unwritten rules that cause all users to interpret and act in the same way; like entrances, exits and stairs, and third space, where buildings are used daily and can provoke exciting responses by humans, when art cannot always be 'used' in a traditional sense.

of a pencil'.

A particularly prominent example of this in practice is that of The Empire State Building (Figure Ten), designed primarily by William F. Lamb, 1930. Lamb was an architect of his time; keen to diverge away from art, or what he referred to as 'little nemo' [an elaborately ornamental comic strip] architecture at all costs, following Louis Sullivan's 'form follows function' (Sullivan 1896) approach in earnest, with the aim of eclipsing the nearby Chrysler Building by erecting the tallest building in the world; and a sure way for Lamb to climb to the top of the profession, overcoming various technical hurdles to achieve realised heights. Lamb happily tore down the historic and beautiful Waldorf - Astoria hotel to make way for this symbol of Sky High American, and architectural, power – that happened to be modelled on the 'form of a pencil' (Lamb 1935).

Figure Ten
The Empire State Building
(Valadi, S, 2012)

Upon review, it is obvious that the use of 'form follows function' to justify how a building is 'not art' is unfounded, given that most of Sullivan's works were absolute works of art (Figure Eleven); the quote was intended as a basis, not a rule, and unfortunately misconstrued by many, such as Adolf Loos, who was determined to condemn ornament as a crime, stating 'lack of ornamentation is a sign of spiritual strength (Loos, 1918), and Le Corbusier, who declared 'the more people are cultivated, the more decoration disappears' (Le Corbusier, 1925). Furthermore, it is evident that the intricacies on display throughout the empire state, justified not to be art as 'declarations of power and wealth', are, in fact, art; the whole building is quite literally realised in art deco form.

Therefore, it is not baseless to assume that this divisive, single disciplinary approach is completely regressive. By claiming that borrowing influence from anything as another entity is wrong, architects have nowhere to gain inspiration but themselves, resulting in regurgitations, monotony and ego battles, such as buildings becoming taller and taller, when they could simply be becoming better and better for their purpose and the wellbeing of the inhabitants. This can be seen throughout the works of Corbusier, particularly Ronchamp 1955, where Frank Gehry described his paintings as unoriginal – a 'derivative of all those architects he hung out with'. To some, this type of architecture can only be referred to as building, as it does not represent true creative spirit or a pure intent; architectural success should be quantified by the extent at which a project has a positive impact on people, not how big or groundbreaking it is.
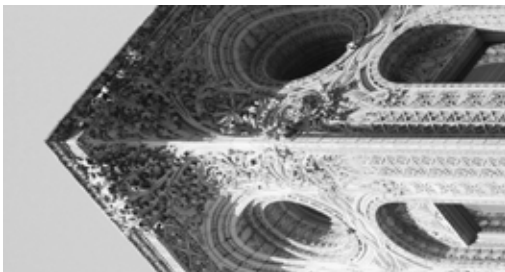

Figure Eleven
Guaranty Building
(Kemp, J, 1996)

Despite this, it is not wrong to assume that if an architect became completely concerned with the artistry of a building, it would likely fall down. However, as regressive as it is to discount architecture from art whilst creating buildings, it is equally regressive to discount art from architecture, whether that be aesthetically (Plato 373BC) or theoretically (Kant 1790).

In contrast, architect Frank Gehry is known for converging as closely as possible to artists, evident throughout several projects across New York. Notably, Gehry's entire career was founded on a love for art; whilst working in pottery, Gehry was persuaded to enrol in architecture school due to his aptitude for form. Perhaps by sheer luck, his experience at USC nurtured this connection, as the art and architecture students shared a building, enabling an early appreciation for both subjects existing in the same plane. All of Gehry's work has been 'developed directly in conversation with artists' (Gehry, 2018), perhaps the most remarkable of which is the Guggenheim Bilbao (Figure Twelve), which earned him the unexpected praise of a cultural phenomenon, the Bilbao Effect (Jeff Koons 2003), and the status as the only architect ever to receive the Harvard Arts Medal (Harvard, 2016).

Figure Twelve
Guggenheim Bilbao
(Mortim, P, 2014)

Figure Thirteen
New York
(Mortim, P, 2014)

Despite these famous projects, a common favourite remains the 'New York' building in NYC (Figure Thirteen), a twisted, unusual building, providing a welcome, playful change in the somewhat monotonous skyline. New York has received largely positive feedback, and is now regarded as an iconic building within the city's architectural landscape; on the surface, a complete success story.

However, Gehry's work is often up for criticism. The Guggenheim Bilbao and New York may be wonderfully artistic buildings, but Gehry must remember that art is subjective. Whilst 'typical' art can mostly be avoided, buildings are imposed on their cities, and residents have no escape. It is just as egotistical imposing an artistic building designed for one's personal taste on a city that has had no say in how it will look, as it is imposing a monotonous, non artistic building on a city- at least these have a chance of blending in. 'Architects must remember that they are active citizens before being architects' (Bertolino, 2020), with social responsibilities, and an architect should design with communities, rather than placing them in what he thinks is best for them, as he assumes they aren't intelligent enough to decide for themselves.

The Polymath

The Architect

The Multidisciplinary Architect

The Polymath Continuum
(Liddle, 2022)

Chapter Three
Hybrid & Collaboration

Despite being a playground for the most famously egotistical of architects, it is generally accepted that New York City 'pioneered the integration of architecture and art'. Whilst this is a bold statement, and perhaps could be more accurately presented as a pioneering the reintegration of architecture and art, it is certainly true that New York, at all levels, recognises the importance of art within all of our thirdpsace interactions. For the past 30 years the Percent for Art Programme, managed by the NYC department of cultural affairs, has allocated one percent of the budget for city funded construction projects to public art (Percent for Art, 2022). Furthermore, New York in particular houses what can only be described as a melting pot of creatives, existing within an extremely close proximity of one another - unlike other cities, networking is so dense that as an architect, it is almost impossible to navigate ones way to work without sharing creative space, whether that be sight, thought or interaction, with an artist, a fashion designer or a musician, whilst simultaneously encountering several examples of street style, which often referred to as the birthplace for original trends. For an architect to insist none of this provides any inspiration in the slightest would be unfathomable. Due to this atmosphere in modern New York, or maybe as a generation of young, forward thinking architects move into practice, the 'architect' movement is showing signs of subsiding.

Alongside this fresh atmosphere, comes the redefinition of what it means to be a successful architect. What is success? How can it be defined, or measured? Innovation, quiet development and socio- economically conscious design are becoming more prominent; perhaps a result of the ever-dividing global moral compass, where the population appears to be becoming more virtuous, yet challenges are at an all time high. The following critical appraisal examines the 'success' of Snarkitecture, a studio – sized embodiment of the new aura of hybrid discipline in New York.

Established in 2008 by Daniel Arsham and Alex Mustonen, Snarkitecture (Figure Fourteen) is a New York based collaborative practice founded between the disciplines of art and architecture. Described as 'the physical projection of a portmanteau' (Mustonen, 2017), the practice has pioneered a variety of new ways to be an architect, free from the constraints traditionally surrounding the profession.

Figure Fourteen
Snarkitecture
(Snarkitecture, 2017)

As discussed throughout this paper, countless professionals have argued over the length of the hypotenuse linking art and architecture. It therefore seems almost too rebellious to create a practice that claims not to make either, yet sit on the peripheral of both to deliver something undefined and exciting. The Snarkitecture studio is set up in a hybrid manner that pushes this to it's fullest potential, with a purpose built workshop 'lobby' (figure Fifteen) shared by both artists and architects; encouraging the blurring of lines between the two disciplines. The Studio was specifically chosen for it's nine metre tall ceilings, creating an atmosphere of 'making', allowing for in- house prefabrication and material experimentation, unlike any other studio that is not design and build. Arsham and Mustonen reinforced this idea of complete uniqueness by choosing a studio location away from any other firm; 'it started by extension of us feeling like outsiders. It gives us breathing space to experiment and create our own culture'.

Figure Fifteen
Lobby
(Snarkitecture, 2017)

It is accepted that architects often feel condemned to always design 'for' or 'because', with a specific purpose in mind. Snarkitecture are slowly pioneering a new way of thinking, where projects are designed with no 'for' in mind, allowing the evolution of truly user defined spaces to begin. Their business revolves around this approach, ignoring architecture 'norms' and striving to be unique; the emphasis is always that architecture should always be drawn for the love and fun of art and design, not to please clients or serve a particular purpose. It is because of this that Snarkitecture keep an inventory of unrealised projects – projects designed with no brief, no client, no budget, purely produced for the enjoyment of design – these ideas can then later be used when a space or client feels right. This is a completely revolutionary approach to design, not just allowing much faster project turnover times, but also an organic process that celebrates architecture as an art form.

Despite the obvious merit these innovative processes provide on an organic, pure and exploratory plane of design, there are holes in the practice that are hard to ignore. It is obvious that the principles of design utilised by Snarkitecture are positive, yet these principles have only ever been applied to rather shallow projects, with no integral influence over how citizens as a whole operate day to day; for example, Snarkitecture's typical client/project focus is a catalogue of exclusivity– high end store planning for brands such as 'Kith' (Figure Sixteen) and 'Dior', as well as Art Gallery (Dig, 2011) (Figure Seventeen) and Fashion Show design (Confetti Show, 2015) (Figure Eighteen) are not things typically accessible to the general public, and if these processes are never applied to general use buildings such as schools, offices or hospitals for the good of the general public, they will never be truly useful. Despite this, Arsham, Mustonen and Porto often favour 'The Beach' (Figure Nineteen) whilst speaking about their project output– a temporary installation that was so popular, it has now toured eight major cities around the globe. The project was free of charge, geared towards uniting communities, old and young, with the idea that anyone and everyone could enjoy the experience.

Furthermore, Snarkitecture are still a relatively new practice, and they could be garnering contacts, funds and ideas from current projects to realise more community - central projects in the future – because of this, they cannot be overly criticised at present, and it would not be obtuse to describe them as a successful practice in terms of achieving harmony between art and architecture.

Figure Sixteen
Kith
(Snarkitecture, 2020)

Figure Eighteen
Confetti Show
(Snarkitecture, 2015)

Figure Seventeen
Dig
(Snarkitecture, 2011)

Figure Nineteen
The Beach
(Snarkitecture, Ongoing)

The Polymath

The Architect

The Multidisciplinary Architect

The Collabprative Architect

The Polymath Continuum
(Liddle, 2022)

Chapter Four
Future Modelling & Conclusion

By all counts, referring to the polymath continuum, it is correct to assume that achieving true polymath status is no longer possible. Practice as an Architect is proven to be counterproductive, and work as the collaborative architect is only useful when it is accessible on a universal scale. As such, it is vital to imagine a design system in which this hybrid approach would be implemented, for the purpose of modelling a progressive future for the profession, devoid of any discordance between art and architecture.

In order to create a formula that equates to this imagined 'success', one must first establish the will of the people to achieve this success – architects have to want to explore multi- disciplines in order to improve their work. Secondly, the educational system that has the potential to unite most architects and designers needs to cater to this success, by providing an environment in which collaboration can thrive – for example, by using multidisciplinary buildings, and marking work using teams made up of professionals from a wide range of disciplines. Thirdly, an employment reform would be required, in which 'design practices' would be established, made up of employees specialising in a number of different areas. The aim behind the 'design practice' would be to form the same breadth of knowledge as a traditional polymath, via a team of united specialists, as opposed to one individual. Through this model, works as progressive as the Pyramid of Djoser could again be produced, defying traditional monotony by pioneering an age of new answers, new questions and new solutions.

The Polymath   The Architect   Polymathic Teams

The Multidisciplinary Architect   The Collaborative Architect

The Polymath Continuum
(Liddle, 2022)

Bibliograohy

B Yousuf, O. & Mir, R.N., (2019). A survey on the Internet of Things se-curity: State-of-art, architecture, issues and countermeasures. Information and computer security, 27(2), pp.292–323.

Vlack, D. & Appelbaum, R., (1974). Art deco architecture in New York, (1920-1940) 1st ed., New York: Harper & Row.

Saletnik, J., (2018). Branden W. Joseph. Experimentations: John Cage in Music, Art, and Architecture. New York: Bloomsbury Academic, (2016). 217 pp. Critical inquiry, 44(4), pp.806–807.

Trumble, R. & van Riemsdijk, M., (2016). Commodification of art versus creativity: The Antagonist Art Movement in the expanding arts scene of New York City. City, culture and society, 7(3), pp.155–160.

Barie Fez-Barringten, 2010. Framing the art [A] vs. architecture argument. Body, space & technology journal, 9(1), pp.Body, space & technology jour-nal, 2010–07-01, Vol.9 (1).

Bahamón & Bahamón, Alejandro, (2004). New York : architecture & de-sign, Köln ; London: Daab.

Johnson, A., Willis, C. & Berenholtz, R., (2003). New York architecture : a history, New York: Universe.

Davidts, W., Holden, S. & Paine, A., (2019). Trading between architecture and art : strategies and practices of exchange, Valiz.

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