

Lines of Place: Architecture and Landscapes in Ink

Jing Nie*

Department of Fine Arts, Hongik University, Seoul04066, Korea
niejing2222@naver.com

Mengzhen Wan

Department of Fine Arts, Hongik University, Seoul04066, Korea
wanmengzhen_7@naver.com

Abstract: This paper review explores the use of ink sketches to depict buildings and natural landscapes. Ink, valued for its versatility and emotional expression is ideal, for capturing the essence of a location by not portraying its features but also the rich tapestry of human experiences within both man made and natural environments. Artists, architects, and designers leverage ink to represent and delve into landscapes in ways; this study delves into this creative process. Through an analysis of techniques, styles, and conceptual frameworks in ink drawings this research aims to illuminate how the lines drawn connect with the reality they portray. Drawing from insights from studies and real-world examples as supporting evidence it also seeks to underscore the importance of ink illustrations as tools for detailing and expressing creativity thereby nurturing an appreciation for how drawing, landscape design and architecture intersect, in creative pursuits.

Keywords: Ink Sketches; Buildings; Natural Landscapes; Artists; Architects

1. INTRODUCTION

1.1 The significance of Ink Sketches, in Architecture and Landscapes

Research in academia regarding the role of ink sketches in portraying landscapes and architecture has uncovered a narrative about the evolution of visual communication (Amoroso & Holland, 2022). This narrative tracks the progression of systems from their simplest to their ancient forms reflecting the cognitive journey towards logical thinking (Báez Mezquita, 2020). Mostly interesting are the types of projections depicted in architectural sketches, which pay homage to past structures through material and linguistic allusions define current spatial layouts and propose future concepts (Kavas, 2017). Moreover, there has been an advancement in landscape representation, that blends innovations with sociological and cultural nuances. This fusion has equipped artists with an array of tools to experiment with enabling them to portray landscape elements in novel and captivating ways (Barlozzini, 2018). Viewing ink sketches through a lens reveals their role, in both depicting and shaping our perceptions of

architectural and landscape forms.

1.2 Scope of the Study

The objective of this study is to examine the diverse uses and outcomes of ink in design, namely in the areas of place architecture and landscapes, in order to obtain a thorough understanding of its multifaceted importance. Gypsum ink compositions have been utilised in 3D printing to act as catalysts for creating top-notch outdoor landscape objects. The formulations provide a diverse selection of design possibilities and a large array of colour changes that allow for expressive outcomes (Zhang et al., 13 april 2016). In the realm of graphic design, ink assumes a pivotal role in seamlessly integrating traditional Chinese attributes, such as ink art, with contemporary graphic creations. This combination not only improves the aesthetic appeal but also facilitates the dissemination of cultural heritage, enhancing the quality of graphic design material and fostering a heightened awareness of traditional culture (Carlson, 2021). Furthermore, advancements in rendering technology, specifically GPU approaches, have revolutionised the production of pen-and-ink-style geomorphological graphics. These developments facilitate the rapid creation of detailed representations, which are essential for understanding the movement and changes visible to the naked eye on a landscape's surface (Silverman et al., 2007). By examining its various applications, this article aims to highlight the critical role of ink in the creation of architectural and landscape designs. The utilitarian functionality of ink seamlessly blends with its visual appeal.

2. THE EVOLUTION OF ARCHITECTURE AND LANDSCAPE INK DRAWING

Ink painting is an essential component in documenting architectural history, since it serves to link the narratives of different civilizations and time eras (Díez, 2020; Hryniewicz; Purini, 2017). Ink has long been a potent method for encapsulating the fundamental nature of architectural thoughts and landscapes, spanning from the intricate renderings of ancient civilizations to the visionary blueprints of modernist architects. The artistic creations of renowned individuals such as Leonardo da Vinci and Albrecht Durer serve as prime examples of the extensive tradition of ink drawing, demonstrating its capacity to seamlessly blend meticulous craftsmanship with imaginative self-expression (Koževnikova, 2015). Ink drawings have not only been used for portrayal, but also as a medium for architects and

archaeologists to communicate their ideas and goals. Each stroke of the pen reveals subtle depths of reflection and intention, reflecting the numerous aspects that shape the realm of architectural practice. Ink often documents the process of bringing an idea to life, as concepts emerge on the blank surface of the drafting table. However, ink drawing holds greater importance than only its visual appeal; it encapsulates the fundamental transition from conceptualising projects on paper to their physical construction, blurring the line between reality and representation. Architects skillfully handle the ever-changing interaction between different elements, striving to bring the vivid representations in their drawings to life. Through the fusion of imagination and physicality, ink drawings serve as plans for converting abstract ideas into concrete constructions, ultimately shaping the constructed world for future generations (Figure 1, 2).

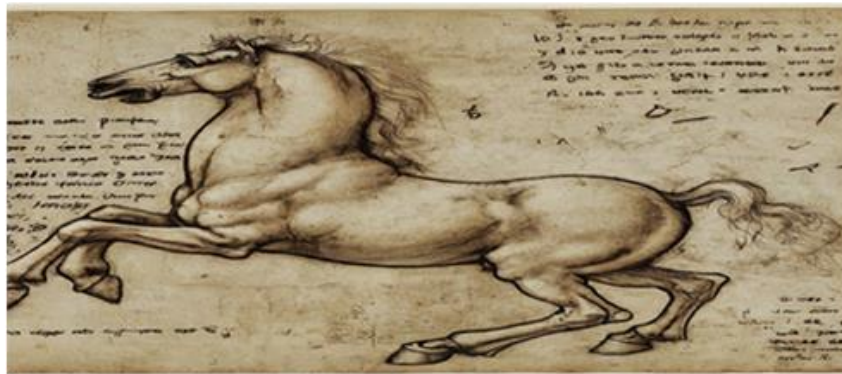


Figure 1: Ink Drawing by Leonardo da Vinci's style



Figure 2: Albrecht Durer ink art

3. CUSTOMS AND METHODS OF TRADITIONAL INK DRAWING

Modern art cannot overstate the historical and cultural significance of traditional ink drawing styles and techniques. Many modern painters still

see value in these time-honored methods, which they include in their work. Graphic designers rely heavily on the unique charm and understated elegance of ink art to help localize designs and spread traditional culture (Wang, 2023; Xu, 2023). Leonardo da Vinci, Salvador Dali, and Pablo Picasso are just a few of the famous artists who have used ink as a medium on its own, helping to shape the development of ink drawing and establish it as a distinct art form throughout history (Koževnikova, 2015). Modern and contemporary ink artwork conservation requires painstaking adherence to both the artist's original intent and the materials used. Because of this, manufacturers and historical-technical experts play an essential role in protecting these works of art. Ingeniously merging the long history of traditional ink drawing with the cutting-edge methods used by contemporary artists creates a lively tapestry of creative expression. This process not only preserves cultural legacies but also drives artistic innovation. Traditional ink drawing, apart from its visual allure, functions as a concrete representation of cultural heritage, encapsulating the ideals, convictions, and artistic customs of historical and contemporary societies. The enduring significance of this work in contemporary art signifies a profound admiration for artistry and genuineness in a world that is becoming progressively digitized. Moreover, the renewed enthusiasm for conventional ink drawing among modern artists highlights an expanding acknowledgment of the medium's potential for self-reflection and reflection. In this era of swift technological progress and constant connectivity, artists who wish to reconnect with themselves and their environment may find solace in the meditative practice of ink drawing. Contemporary artists not only uphold the legacy of this esteemed tradition, but also strive to expand the boundaries of artistic expression. By virtue of their expertise in applying ink and unwavering commitment to its enduring allure, they guarantee the ongoing development of the art form and engross audiences for future generations (Figure 3-9).

3.1 Chronology: The Development of Conventional Ink Illustration



Figure 3: Cave paintings and natural pigment in early art



Figure 4: Ancient Egyptian civilization ink art made from soot, minerals, and binders (Early Egyptian Hieroglyphic Writing on Papyrus)



Figure 5: Islamic Ink Art: Calligraphy and Geometric Patterns in Manuscripts and Architecture (700-1500 CE)



Figure 6: Renaissance era ink art



Figure 7: Baroque to Romanticism era ink art



Figure 8: Eastern and Western Influence in 19th-Century Ink Art



Figure 9: 20th Century and Beyond Comics and Illustration Ink

3.2 Conventional Ink Sketching Methods and Practices

Ink drawing techniques have a long and diverse historical heritage that encompasses different cultures and time periods. Artists in ancient times used metal oxides and hydroxides to create rock art depictions (Koževnikova, 2015). During the Middle Ages, people primarily used ink to write on paper and parchment, particularly for official documents and manuscripts (Yurt, 2020). Ink drawing techniques underwent significant development from the 15th to the 20th centuries. Esteemed artists like Leonardo da Vinci, Albrecht Durer, and Pablo Picasso embraced ink as a key medium for their artworks (Hu, 2023). The ink's adaptability enabled these painters to explore line, texture, and shading, leading to stunning compositions that still serve as inspiration for modern makers. During the late 20th century, ink painting in China gained prominence as an important kind of art, reflecting deep philosophical and cultural influences. In this context, particular importance was given to spiritual forms and artistic purposes, highlighting the unique approach of ink as a medium (Mello & Suarez, 2012) (Table 1). The art of ink painting in China, known for its focus on spontaneity and the balanced interaction between ink and paper, has made a lasting impact on the international art community. The rich tapestry of traditional ink painting techniques is woven from their different

historical origins, which show how they have evolved and adapted over the years.

Table 1: Evolution of Traditional Ink Drawing Techniques

Period/Region	Materials/Mediums	Notable Uses	Key Artists/Movements
Prehistoric Times	Metal oxides and hydroxides on rock	Rock art, symbolic depictions	N/A (largely unknown)
Medieval Times	Ink (often iron gall) on paper and parchment	Manuscripts, official documents, religious text illumination	N/A (scribe-based)
Years 15th to 20th century	Variety of inks on paper	Sketches, studies, finished artworks, illustration	Leonardo da Vinci, Albrecht Durer, Pablo Picasso
Late 20th Century China	Ink on paper (often rice paper or Xuan paper)	Spontaneous, expressive paintings focused on form and spirit	Chinese ink painting movement

3.3 The development of Ink Architecture and Nature Illustrations

Ink painting has significantly impacted the depiction of architecture and landscapes in artwork. For generations, Chinese artists have utilised tools like brushes and ink to craft landscape scenes using detailed techniques. This age-old method not only captures aspects of nature but also reflects the cultural and philosophical ideals ingrained in the landscapes (Ma, 2022). Over time, artistic representations of landscapes have remained a theme, offering insight into society's perceptions of the world.(Contell & Abad, 2019).

Contemporary research is increasingly focused on exploring areas, in relation to their surrounding environments highlighting the role of nature in architectural design(Báez Mezquita, 2020). This shift towards recognizing the interconnectedness between built structures and their surroundings reflects an acknowledgment of sustainability and urban planning principles. Additionally, the use of drawings as a communication tool has played a role in shaping landscape architecture concepts. Illustrations serve as means of conveying design ideas and visions(Báez Mezquita, 2020). Artists and architects enrich the representation of

architecture and landscapes through a mix of drawing techniques and modern approaches enabling them to capture not the physical aspects but also the essence and ambiance of the place. The integration of methods underscores the evolution of ink drawing as a way to depict architecture and landscapes bridging traditional practices, with innovative forms of artistic expression. The advent of the digital era has completely transformed the process of creating and disseminating ink drawings, hence expanding the opportunities for artists to explore and cooperate through various technological instruments. Ink painting remains a media that effectively conveys the interrelationship of individuals, architecture, and the natural environment in contemporary society.

4. RENOWNED INK-USING DESIGNERS

Many well-known artists and architects have embraced ink as a tool in their creative endeavors. Over the course of history, ink has played a role in the works of celebrated painters and builders, leaving enduring impressions in the realms of art and architecture. Leonardo da Vinci's complex drawings, famous for their precise focus on detail and unmatched anatomical accuracy (Koževnikova, 2015), serve as lasting evidence of the adaptability of ink. Ancient civilizations adeptly used ink to create rock art, expertly portraying everyday activities, religious ceremonies, and diverse cultural traditions (Mello & Suarez, 2012). This enabled present-day viewers to gain a significant understanding of past periods through the inked illustrations.

During the Middle Ages, people extensively used ink to meticulously write manuscripts and official documents on parchment and paper. Ink played a crucial role in shaping the intellectual environment of the time by serving as a means of communication, record-keeping, and preserving information. Furthermore, the International Conference on Architectural Graphic Expression played a role in spreading many scientific works on architecture and drawing, thereby increasing the importance of ink in academic discussions.

Throughout art history, famous artists like Titian, Albrecht Durer, Marc Chagall, Pablo Picasso, and Salvador Dali have skillfully utilized the expressive power of ink (Leonida & Leonida, 2014). Their superb ink drawings go beyond simple depiction, infusing each brushstroke with a deep emotional resonance, limitless creativity, and insightful societal critique. The various examples presented here highlight the lasting

importance of ink as a versatile and durable medium in the overlapping fields of art and architecture, ranging from evocative landscapes to introspective portraits.

5. THE LANGUAGE OF LINES: INK EXPRESSIVITY

The Language of Lines: Expressive Potential of Ink” show explores expressive possibilities in the medium of ink as well as highlights the intricate nature of lines. A picture’s lines are all about emotions, stories, and things that make the image subject matter. The theory of colour is significant in the art industry as it enables artists to manipulate tones in order to elicit specific feelings. Contemporary improvements in ink processes provide a wide range of choices, spanning from conventional to digital mediums. The evolution and advancements in paint materials have had a significant influence on both technology and society, ultimately defining the expressive qualities of ink. This blend of ink art transcends temporal borders, highlighting the significance of colour, artistic styles, and historical context.

5.1 Analyzing the Quality of Lines, Texture and Strokes, in Ink Illustrations

An essential aspect of artistic expression that enhances the aesthetic appeal and emotional resonance of a work of art is the examination of the qualities of ink lines, including their texture and their ability to form distinct marks. For example, the Inkthetics model using deep learning techniques has indicated a strong correlation with human judgment for evaluating Chinese ink drawing aesthetics at 0.843 (Zhang et al., 2020).

Well-known contemporary Chinese calligraphers like Wang Dongling and Qiu Zhenzhong incorporate lines into their works to infuse them with power and minute emotions, thus underscoring the importance of line as an expression (Ma, 2022). To create water animation painstakingly after traditional Chinese painting emphasizes one thing: the vital role played by ink lines in achieving this artistic or technical perfection. It is significant for designers to know how abstract forms, especially lines, carry powerful emotions so as to create patterns that bring out specific emotional responses (Urquhart & Wodehouse, 2022). Moreover, modern artists continue exploring innovative ways such as digital manipulation and experimenting with mixed media that push the boundaries of line-based creativity, thus cultivating a vibrant, ever-changing milieu for creative exploration.

5.2 An Exploration of the Influence of Architectural Styles on Landscapes

Architecture covers a diverse range of styles and approaches, each of which has a distinct impact on the visual and practical aspects of buildings and landscapes. These styles have an impact on everything, from the details of the design to its practical usefulness. Some individuals prioritize the safety and comfort of the people inside buildings, making sure that the buildings are designed to satisfy their requirements (Kim & Reed, 2021). Nevertheless, the phenomenon of globalization has resulted in a homogeneity in architectural designs on a global scale, giving rise to worries regarding the erosion of regional distinctiveness and local identity. Structural design is the fundamental basis of architectural innovation, combining art, technology, and materials to produce buildings that are both efficient and visually pleasing. The method is guided by the notion of "form follows function," which highlights the importance of aligning a building's design with its intended purpose (Teuffel, 2011). In addition, architects are confronted with the task of incorporating natural components into structures while also ensuring their ability to withstand natural forces such as wind and earthquakes, as environmental consciousness continues to expand. Novel approaches, such as adaptive systems and shape-morphing elements, are being investigated to tackle these difficulties (Coburn et al., 2022). Exploring the connection between architecture and human experience, neuroscience reveals how design influences well-being. Biophilic design, which integrates natural components into constructed settings, is renowned for its capacity to diminish stress and improve general well-being. Architects are progressively integrating scientific knowledge into their designs, shifting towards more compassionate and human-focused approaches. Examining various study methods and approaches uncovers a complex web of variables that encompass both practical elements and deep effects on human experiences and overall welfare. Maintaining a harmonious equilibrium between innovation and preservation is essential to ensuring that the constructed surroundings accurately represent our ambitions and our inherent relationship with the surrounding world.

5.3 Interpreting the Emotional and Cultural Meaning of Ink Drawings

Ink drawings play a significant role in the portrayal of emotions and cultural expressions. They have existed for an extended period, depicting the emotions and sentiments of both past and present individuals. Ink drawings in the traditional style evolve in accordance with the prevailing

thoughts and emotions of individuals. In the field of graphic design, ink is employed to emulate the aesthetic of traditional Chinese art and enhance its visual appeal (Wang, 2023). Contemporary artists, such as Yoshitomo Nara, draw upon their childhood emotions and memories as a source of inspiration to create artwork that evokes emotional responses in viewers. Contemporary ink art in China combines traditional techniques with modern concepts, bridging the gap between the past and the present (Camargo, 2020). Throughout history, individuals have utilised art as a means of expressing their thoughts and emotions, hence promoting comprehension and connection among people.

6. THE DOCUMENTATION AND INTERPRETATION OF INK DRAWINGS

Throughout history, ink sketches have played a significant role in portraying various elements of life. At first, community historians greatly appreciated these photographs since they served as valuable tools for documenting objects and the environment, thus enhancing comprehension. Throughout the years, our understanding of ink has undergone substantial transformation. Currently, we employ advanced techniques like hyperspectral imaging to analyse ink in novel ways. These strategies are extremely important for authenticating documents. Identifying the ink type used (Abrar & Iqbal, 2023). There's also something called questioned document inspection, which has been around for a long time. This is where we really pay attention to the ink used in documents to find out if they're authentic.

As technology becomes better, this process keeps improving, making it easier to identify if something is legitimate or not (Weyermann & Techabowornkiat, 2019). In the past, people frequently used ink for many purposes, including formal paperwork and everyday record-keeping. Gaining knowledge about the specific ink used can be highly beneficial in safeguarding and repairing these documents in case they are damaged. Currently, sophisticated techniques such as vibrational spectroscopy are used to analyse the components of ink. These technologies enable us to discern the metals and other chemicals present in both the ink and the paper it is applied to. This provides us with valuable knowledge about the techniques and methods used in writing and drawing. (Goltz, 2012). Creating ink drawings goes beyond producing images; it involves gaining insight into our history and safeguarding it for the future (Table 2).

Table 2: Evolution of Ink Analysis Techniques

Time Period	Ink Analysis Techniques	Significance
Early History	Manual observation and comparison	Basic analysis for local historians
20th Century	Introduction of questioned document examination	Increased emphasis on ink composition for authenticity determination
Present	Hyperspectral imaging, atomic and vibrational spectroscopy	Advanced scientific methods for authentication and preservation

7. INVESTIGATING HOW INK SKETCHES CONVEY BUILDINGS AND NATURE

Throughout the history of natural features, ink sketches have held significant value. These drawings provide a depiction that faithfully captures the spirit of ancient locations and their surroundings (Pirinu et al., 2022). These artworks are evidence, providing perspectives on how cultural landscapes were perceived and portrayed. They shed light on how people from that time and future generations idealised these areas. (Domingo Santos et al., 2020). Ink sketches establish a connection between the surroundings and their historical context, blending conventional and digital survey methods. They create a chart that intricately links past events with understandings. (Valente et al., 2019). Moreover, ink sketches are more than images; they have been essential in recording accurate, measurable information and studying the trends and features of cultural terrains. This enhances our understanding of the evolving relationships between people and their environments throughout history (Figure 10).



Figure 10: Ink Drawings during Documentation of old Landscape

7.1 Creating Ink Drawings to Preserve Artefacts.

Ink sketches have a significant role in preserving and conserving history, providing crucial functions in safeguarding our cultural heritage. These sketches serve as historical documents, providing vital insights into the past and aiding restoration projects (Ferretti et al., 2022). The analysis of drawings allows us to track the development of technology, which serves as evidence of societal advancement (Cardaci et al., 2015). In addition, ink drawings have a long history that dates back to a time when they were employed to portray important events, customs, and remarkable architectural works. We aim to raise awareness and protect our heritage through this resource. Gaining a comprehensive understanding of the behaviour and deterioration processes of ink is crucial for conservation endeavours, particularly in relation to iron gall inks. Using specific procedures, it is possible to identify age markers in ancient ink samples. The procedure has a substantial role in safeguarding texts and artwork (Rovida & Rovida, 2013). Ink sketches play a crucial role in preserving and valuing urban heritage. They serve as instruments in several endeavours focused on the conservation of cultural heritage.

8. CASE STUDY ILLUSTRATING THE INTERPRETIVE NATURE OF INK DRAWINGS IN CAPTURING THE ESSENCE OF PLACE

The case study demonstrates how ink drawings can capture the essence of a place through a lens. Artists use ink drawings to connect with locations, forming strong bonds between themselves, the environment, and the viewers (Ruzinskaite, 2015).. The relationship between artists and North Queensland is showcased in their artwork, as they skillfully portray the region and express their connection to nature. Throughout history, art and geography have intertwined, with explorers relying on artists to represent geographical features (Lavoie, 2005). This collaboration showcases the approach to depicting landscapes, not only by documenting physical locations but also by offering insights into the unique characteristics and advancements associated with a particular area. By exploring terrains through art, we gain an understanding and interpretation of diverse landscapes.

8.1 North Queensland Painting; A Case Study, on the Spiritual Bond

The case study shows how ink drawings can effectively encapsulate the fundamental nature of a location from a visual perspective. Artists employ

ink drawings as a means of establishing profound connections between themselves, the environment, and the spectators. Artists demonstrate their deep connection to nature and their portrayal of the North Queensland region through their skilled artwork. Explorers have long relied on artists to depict geographical characteristics, establishing a long-standing interconnection between art and geography. This partnership demonstrates a method of representing landscapes that goes beyond simply recording physical locations. It also provides insight into the distinctive features and progress associated with a particular area. Through artistic exploration, we acquire comprehension and interpretation of many environments.

9. CONCLUSION

Ink sketches have undeniably played a role in documenting events, offering tangible visual depictions of remarkable architectural marvels and cultural settings. Through portrayals of landmarks, artists have captured the essence of these places, enabling spectators to journey through time and immerse themselves in the rich cultural heritage portrayed in these drawings. Furthermore, ink sketches carry cultural value that extends beyond their historical significance. They serve as platforms for expressing emotions and cultural narratives, bridging the gap between traditional and contemporary artistic styles. In doing so, they encompass perspectives fostering a deeper understanding and appreciation for cultural diversity and human experiences. Looking ahead to the future, ink art presents prospects for exploration. By embracing techniques such as enhancements, one can delve into boundless avenues for artistic discovery and self-expression. Through the integration of technology, artists can push the boundaries of ink drawing, opening up possibilities for interpreting and actively engaging with the concept of place. Ultimately, ink drawing stands as a testament to the enduring impact of art in its capacity to document, communicate, and transcend boundaries.

References

- Abrar, A., & Iqbal, H. (2023). Quantitative Ink Analysis: Estimating the Number of Inks in Documents through Hyperspectral Imaging. *arXiv preprint arXiv:2306.05784*.
- Amoroso, N., & Holland, M. (2022). *Representing landscapes: one hundred years of visual communication*. Routledge.
- Báez Mezquita, J. M. (2020). Drawing Architecture in the Landscape: The Graphic Analysis of Monuments in Their Natural Surroundings. In *Graphical Heritage: Volume 3-Mapping, Cartography and Innovation in Education* (pp. 119-131). Springer.

- Barlozzini, P. (2018). THE REPRESENTATION OF LANDSCAPE: SOME CONSIDERATIONS ON ITS ORIGINS. *International Journal of Design & Nature and Ecodynamics*, 12(4), 428-437.
- Camargo, R. (2020). Drawing in Personal Training and as a Cultural Practice of Knowledge Circulation. *Formazione & insegnamento*, 18(2), 022-035.
- Cardaci, A., Liuzzo, M., & Versaci, A. (2015). The role of drawing in the conservation project: the case study of the Lombardy castle in Enna. *DisegnareCon*, 8(14), 8-1-8.13.
- Carlson, C. S. (2021). *The Sound of Ink* Faculty of Engineering and the Built Environment, University of the ...].
- Coburn, A., Weinberger, A., & Chatterjee, A. (2022). How architectural design influences emotions, physiology, and behavior. In *The Routledge International Handbook of Neuroaesthetics* (pp. 194-217). Routledge.
- Contell, M. S., & Abad, S. I. (2019). Graphic styles for the representation of the landscape. *DisegnareCon*, 12(22), 26-21-26.10.
- Díez, I. O. (2020). La influencia mutua de arqueólogos y arquitectos en la representación gráfica de la arquitectura histórica desde mediados del siglo XVIII hasta el primer tercio del XX. *Veleia*(37), 57-78.
- Domingo Santos, J., Moreno Álvarez, C., & Infantes Pérez, A. (2020). A Drawing, a Map. Subjective Cartography of the Territory. The Monastery of San Paio in Ribeira Sacra. Graphical Heritage: Volume 3-Mapping, Cartography and Innovation in Education,
- Ferretti, A., Sabatini, F., & Degano, I. (2022). A model iron gall ink: an in-depth study of ageing processes involving gallic acid. *Molecules*, 27(23), 8603.
- Goltz, D. M. (2012). A review of instrumental approaches for studying historical inks. *Analytical letters*, 45(4), 314-329.
- Hryniewicz, M. Cartography and landscape painting of the 17th and 18th centuries as iconographic sources Kartografia i malarstwo pejzażowe XVII, XVIII wieku jako źródła ikonograficzne.
- Hu, M. (2023). A Study of the Development History and Stylistic Features of Chinese Ink Painting. *Pacific International Journal*, 6(1), 71-76.
- Kavas, K. R. (2017). Environmental representation: Bridging the drawings and historiography of Mediterranean vernacular architecture. *Journal of Human Sciences*, 14(4), 3472-3485.
- Kim, A. A., & Reed, D. A. (2021). Interdisciplinary Approach to Building Functionality for Weather Hazards. *Risk Analysis*, 41(7), 1213-1217.
- Koževnikova, J. (2015). Evolution of Ink Drawing in History of Art. ARTS AND MUSIC IN CULTURAL DISCOURSE. Proceedings of the International Scientific and Practical Conference,
- Lavoie, C. (2005). Sketching the landscape: Exploring a sense of place. *Landscape Journal*, 24(1), 13-31.
- Leonida, M. D., & Leonida, M. D. (2014). Inks Prepared and Used by Iconographers. *The Materials and Craft of Early Iconographers*, 67-77.
- Ma, C. (2022). Morphological Structural Element Optimization for Automatic Line Characterization of Ink Drawings. *Security and Communication Networks*, 2022.

- Mello, V. M., & Suarez, P. A. (2012). The expressive ink formulations through history. *Revista Virtual de Química*, 4(1), 2-12.
- Pirinu, A., Sanna, G., & Scalas, L. (2022). Graphical documentation of the historical city of Cagliari (Italy). *Architecture, Civil Engineering, Environment*, 15(4), 63-71.
- Purini, F. (2017). Osservazioni elementari sul disegno. *disegno*(1), 059-072.
- Rovida, E., & Rovida, E. (2013). Archives of Historical Drawings. *Machines and Signs: A History of the Drawing of Machines*, 211-225.
- Ruzinskaite, J. (2015). *Place branding: the need for an evaluative framework* University of Huddersfield].
- Silverman, A., George, S., Somji, S., Kato, K., Krantz, B., Mogilevsky, A., Harper, M. D., To, Q. B., Smimov, V., & Westbrook, B. M. (2007). Ink editing architecture. In: Google Patents.
- Teuffel, P. (2011). From adaptive to high-performance structures. ISSS 2011 6th International Symposium on Steel Structures, Seoul,
- Urquhart, L., & Wodehouse, A. (2022). The creation of emotionally attuned patterns through an analysis of line. International Conference on-Design Computing and Cognition,
- Valente, R., Oreni, D., Barazzetti, L., Roncoroni, F., & Previtali, M. (2019). Documentation of historical architectures through the combined use of digital surveying techniques. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 42(2), 1121-1125.
- Wang, Y. (2023). Analysis of the Application of Ink Art in Graphic Design Imagery. *Journal of Contemporary Educational Research*, 7(1), 40-45.
- Weyermann, C., & Techabowornkiat, K.-u. (2019). Emerging approaches in the analysis of inks on questioned documents. *Emerging technologies for the analysis of forensic traces*, 157-178.
- Xu, J. (2023). Case application data research of traditional ink art elements in packaging design. *Applied Mathematics and Nonlinear Sciences*, 8(2), 469-478.
- Yurt, D. (2020). OSMANLI KUMAŞ SANATINDA AHŞAP KALIP BASKI TEKNİĞİ. *The Journal of Social Science*, 4(8), 605-616.
- Zhang, J., Miao, Y., Zhang, J., & Yu, J. (2020). Inkthetics: a comprehensive computational model for aesthetic evaluation of Chinese ink paintings. *IEEE Access*, 8, 225857-225871.
- Zhang, W., Zhao, F., & Ma, G. (13 april 2016). 3D printing gypsum ink and preparation method thereof.