Urban Scenography—How City and Building Are Connected

MAUREEN ZELL
Northeastern University

What counts… is the position of the spectator and the direction in which he is looking.
— Camillo Sitte

In a simplistic way, architecture may be defined as the art of building while city planning may be defined as the art of building arrangement. Both definitions imply a certain artistic intention regarding a building's look. In the case of city planning, this artistic intention manifests itself in the space surrounding a building. This includes the space of the street as well as the voids between buildings. Since it is where the viewing of all buildings takes place, the space or void network illustrated by the solid void relationship of the Nolli map, is the most critical and active space in the city. While this may seem somewhat obvious, in most buildings designed today the space of the leftover, the street and the sidewalk, is forgotten. Several urban design strategies can be shown to enhance, enlarge and integrate existing spaces and buildings through an understanding of the visual effect. How much and what is seen, as well as the position of viewing, can be designed into the street space. This paper will examine urban design strategies that take into account the design of void space to enhance the visual effect of a building. These strategies transcend traditional two-dimensional planning and expand on the actual three-dimensional quality of the leftover space.

Three techniques of building arrangement, i.e. the essence of city planning, that create experiential visual effects will be discussed: 1) the selective destruction of the city, so that an existing building is reframed relative to the newly developed open space (Florentine Duomo) 2) the creation of a new building as the object of views in the city (examples include the Schauspielhaus and the Altes Museum) 3) the arrangement of a new building as the framing device for another object building (examples include the entry court to the Altes Museum and the Morse and Stiles residential colleges at Yale University). By examining these particular urban design strategies, one can begin to understand how buildings can integrate into a much larger context.

The nature of the city during the pre-Renaissance was that of a dense, continuously built-up urban fabric with narrow streets. New buildings of significance required carving out the existing fabric causing the destruction of pre-14th century buildings. The existing medieval fabric was physically opened to allow for the insertion of new monuments with their piazzas; I am calling this *constructive destruction*. (Figure 1) Trecento planners used a strict scientific urban design methodology that employed views to design and to locate new monuments and new public spaces in the city. This medieval use of visual effects as a planning device predates the emergence of perspectival theories in the Renaissance. ''Theoretical ideas about space and vision that affected the piazza were not trecento novelties, but current versions of antique science absorbed in medieval thought, widely published and disseminated.'' Trecento planners integrated new structures into the urban fabric with a conscious knowledge of how these monumental public buildings would be viewed and experienced within the city.

To fully understand how visual effects were used as an urban design tool in the 14th century, it is first necessary to comprehend piazza development and its relationship to the new public monuments. The space around the monument was as thoughtfully designed as the monumental building itself. This reflected a three-dimensional understanding of the void as space rather than a two-dimensional planning mass. ''The piazza was neither a neutral, functionalist void nor merely a place of passage and encounter, but a highly valued and

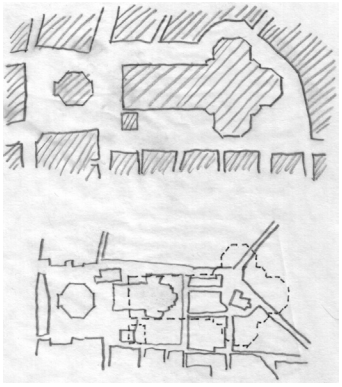

Fig. 1. Constructive destruction of Florence.

expensive artifact intimately bound up with the monument.'' The monument could not be understood without the space around it; the relationship was reciprocal. The piazza revealed the monument's position within the city, directly establishing its authority, its hierarchy and its relevance. The piazza produced a frame in which the monument could be viewed. ''…Without the piazza, the monument tended to float aimlessly in the choppy topographic sea of the city.''

As one of three Florentine trecento piazza design principles, trecento planners used visual effect to generate the size, shape and location of the monument and piazza. Ideal views were geometrically constructed ''in a manner controlling the viewing distance from the building in coordination with the vertical and often horizontal angles of vision. The building was consciously designed according to how it would be perceived visually from a pedestrian eye level.

In establishing their scientific methodology to urban design, the planners took into account ideal heights, widths and angles that would create an ideal viewpoint from a highly considered location, and thus a very specific visual effect. The planners deemed a 45° angle ideal for viewing. Defining the space around the monument and dimensional control were highly important. These ideal angles and views were applied to the layout of the Duomo in Florence. (Figures 3)

The design of the Duomo and piazza adjacent to the Baptistery in Florence, achieves experiential visual effects in two ways: first, by locating the Duomo based on the scientific method, and second, by carving out the existing city fabric to obtain better views and the necessary air around the monument. The Duomo, the new cathedral, and its piazza drastically changed the medieval fabric around the existing Baptistery, which, at the time, was spatially restricted by the Romanesque cathedral of S. Reparata and the Hospital of S. Giovanni

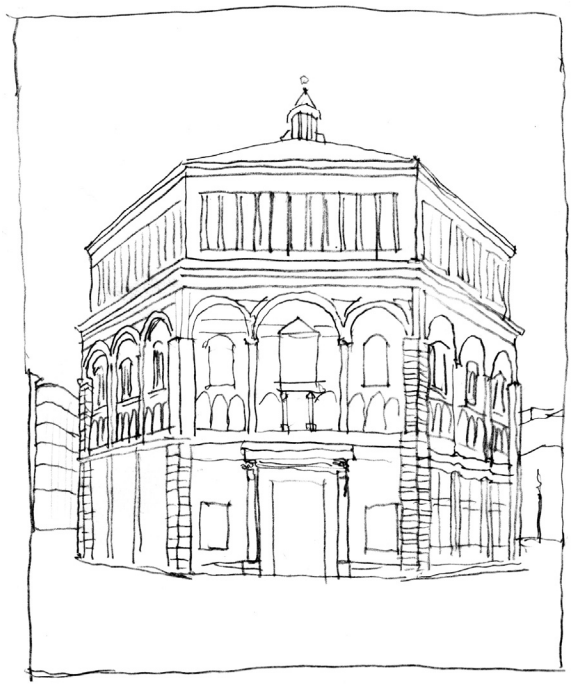

Fig. 2. Ideal view of the Baptistery from the Duomo.

Evangelista. Considering both stationary and dynamic positions with oblique perspectival views and axial perspectival views between the Duomo, Baptistery and the piazza, the trecento planners established the best physical location for the Duomo. The desire to construct an ideal axial view from the Duomo to the Baptistery dominated the rationale for its final location. The building was sited based on the visual perception of the entire Baptistery, including the roof and lantern, from the doorway of the Duomo. (Figure 2)

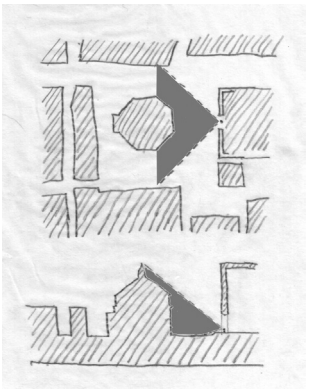

Fig. 3. Geometric 45° view analysis — horizontal and vertical.

Dynamic positions in the city occurred in the voids, which included the street network. Typical of the medieval town were the winding, curving streets, often responding to the local topography. The streets leading to the Duomo acted as view corridors into the piazza. It

was not until the point of intersection between the street and the piazza that a full view of the Duomo was provided. ''This bound the piazza in an experiential way into the street network, making the ideal view an integral part of one's movement through the city and heightening its dramatic effect (one does not see the monument until the piazza entry, except over rooftops, for the view is almost never aligned with the street axis [as] in seventeenth century fashion).'' The combination of carving urban space to establish perspectival views in the street and the 45°angle scientific method used to site the building integrated the Duomo and the piazza firmly into the context of the city.

The second technique of arranging buildings based on visual perception is found in two works by Karl Friedrich Schinkel. Much like the trecento planners, Schinkel understood that the city was a place of engagement and interaction and that the urban dwellers were active viewers on the stage set of the city. Schinkel, trained as a landscape and panorama painter, a set designer and an architect, understood perspectival effects and used them in all his professional fields. His sensitivity to Stimmung (sentiment or feeling) in his set designs won high praise. ''By dint of their particular Stimmung, the new pictorial scenes struck their viewers in powerfully affective ways that are more akin to music than to words.'' Schinkel was able to convey similar feelings in his architecture and their representations. His intense interest in set design manifested itself into architectural form when he combined ideas of imagination and audience with typical stage sets into a building design. ''As he analyzed the mechanisms of optical illusion and studied the psychology of performance, he wound up redesigning the entire theater.''

The Schauspielhaus, a theater that Schinkel redesigned in 1821, replaced the National Theater that burned down four years earlier in Berlin. Schinkel's urban agenda paralleled the same spatial rhetoric as the trecento planners in that both stressed the importance of the relationship between monument and piazza and, more importantly, designing for visual effect. Schinkel utilized the second technique of visual design in the city by creating a building that became the object of the views. In addition, the building itself acts as a proscenium once inside, and thus exemplifies the third view technique, using buildings as framing devices. By understanding views and the perceptual relationship between building and piazza, Schinkel was able to develop the new theater as a stage set in the public square. ''The Schauspielhaus was to 'rise above ordinary urban buildings' and be 'plainly recognizable as a theater and nothing else.''' (Figure 4) Several attributes about the architecture and siting reinforced Schinkel's urban agenda. ''The Schauspielhaus thus enjoys undeniable pride of place on the Gendarmenmarkt. It rises over a rusticated pedestal that is markedly higher than the platforms of the two flanking churches, and it overshadows their porches with a grandiose stylobate and steep flight of stairs.''

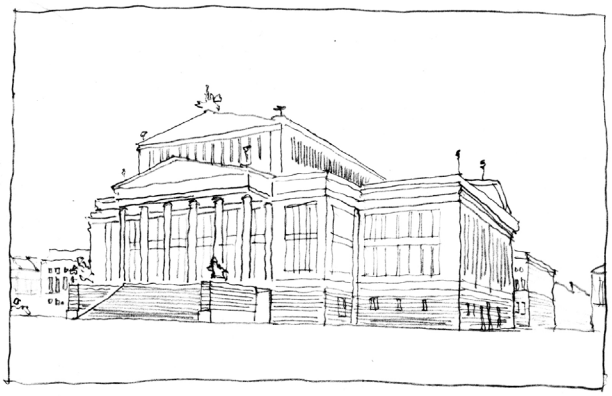

Fig. 4. View of Schauspielhaus.

Camillo Sitte, a late 19th century planner who adhered to much of medieval town planning and promoted visual and artistic effect in the city, was an advocate for theatrical effects in the city. He observed ''it was not enough that the production of effects in theater scenery be cherished as an art in itself; the architect was also supposed to position his buildings, colonnades, monuments, fountains, obelisks and the like according to the same rules.'' Schinkel employed these Sittesque ideas into his theater design. This occurred at two scales, the urban scale with his piazza design and the building scale in the details of his interior architecture culminating at the detail of the stage curtain.

The sequence begins as the visitor enters into the piazza from the adjoining street system, seeing the theater as the focal point of the space. One then approaches the building, ascends the grand staircase into the great hall and stops at the stage with the view of the proscenium. Each moment along the sequence is a consciously framed view. By design, the sequence does not conclude at stage edge but continues through the proscenium and curtain. Schinkel's perceptual understanding of his architecture and three-dimensional urban space is illustrated in his painted proscenium curtain revealed on opening night of the Schauspielhaus Theater. The curtain rose for the first time and there before the audience was a view of the theater in its urban context. ''The architect had created much more than an attractive representation of the building that the audience was occupying at the moment of its inauguration. He put before their eyes his very conception of the Schauspielhaus and its presence in the city.'' (Figure 5)

The sequence of framed views came full circle, from the city to the stage and back to the city with a painted view of the theater. The focused one point perspective emphasized the visual effect of the theater as an important building in the piazza and the city.

Fig. 5. View of Schauspielhaus proscenium curtain.

Like the Schauspielhaus, Schinkel's Altes Museum also frames, and is in turn framed by, adjacent buildings. Through a strong and controlled experiential sequence beginning in the museum forecourt, Schinkel utilizes the second and third view based planning strategy. The site strategy had been associated with landscape garden design and had a clear perspectival agenda, but again Schinkel incorporated these ideas of visual effect, controlled views and contained space into the architecture itself. Never constructed as it was proposed, Schinkel's site design created a large urban square with the museum building defining an edge between the square and the Lustgarten. Schinkel blurred the distinction between architecture and landscape while using garden elements to regularize and camouflage structures adjacent to the museum building. His site design established rows of trees to help frame the museum. The center of the square was occupied by landscape elements including flowerbeds and fountains. (Figure 6)

Schinkel's site strategy orchestrated the experience of the viewer entering the new square. ''As one approached the square from Unter den Linden, the palace was to remain visible the whole time.'' Schinkel left a gap in a row of trees to allow for a view onto the portico of the cathedral to open up. ''Schinkel was careful, however, not to 'give away' the whole square at that point: walking towards the Schlossbrucke, one would see the cathedral portico, but not the museum, which was still covered by trees. One would next see the half-circular south end of the lawn, gently bending

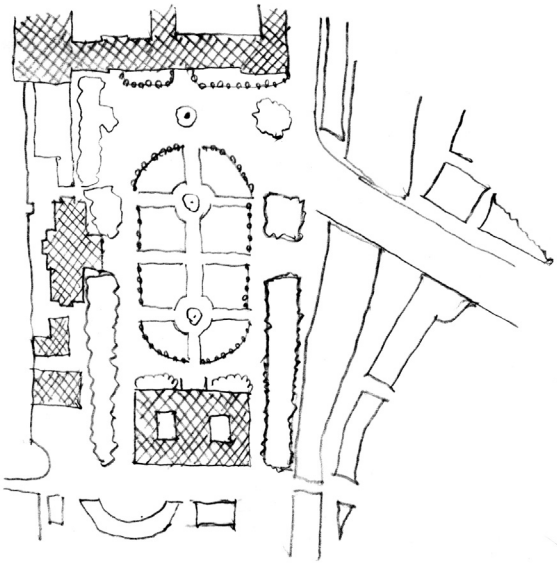

Fig. 6. Site plan, Altes Museum.

one's route to walk along the north façade of the palace. At that point, the museum building would become suddenly visible in its entirety.'' The visual effect that Schinkel created extended beyond the building itself. This constructed experience continued into the museum, onto the second level with a view of the urban square and the city beyond. The entire sequence culminated with a framed view out through the columns of the museum into the city. (Figure 7) Schinkel first frames the museum as the object and then the city as the object from within the architecture.

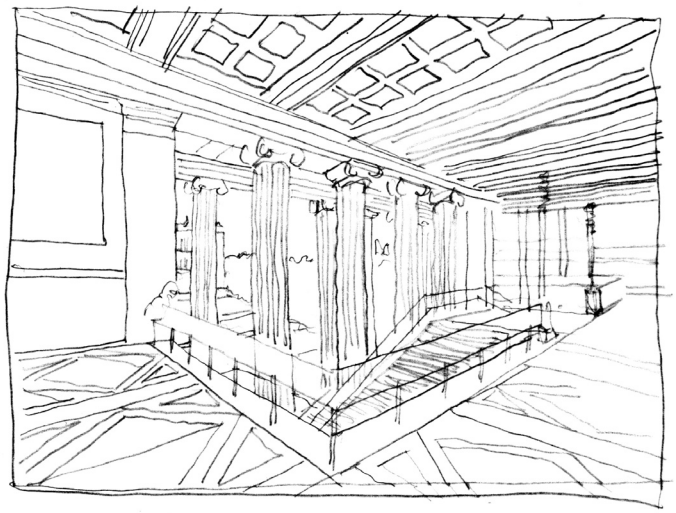

Fig. 7. View from inside the Altes Museum.

Schinkel exploits techniques and terminology from landscape gardening. ''Thus, the approach to the Lustgarten and the museum applies the main technique of

the landscape garden, namely controlled approach, disguise, surprise, contrasts, and the staging of scenic features (in this case the civic and royal monuments of the Prussian capital).'' Schinkel develops in both the Altes Museum and the Schauspielhaus highly controlled visual effects based on a specific experience intended for the viewer.

The third viewing technique of new buildings becoming framing devices for existing buildings became part of the agenda for Eero Saarinen in his design for the Morse and Stiles Residential Colleges at Yale University in New Haven. Yale's campus is divided into residential colleges designed directly into the gridded city fabric. The typical gothic style residential college façade negotiates the street edge of the city. While each residential college also provides a private interior courtyard, students, nevertheless, must traverse through the city for classes. Saarinen's design for the new residential college embraced Yale's tradition but expanded the public nature of the buildings. (Figure 8)

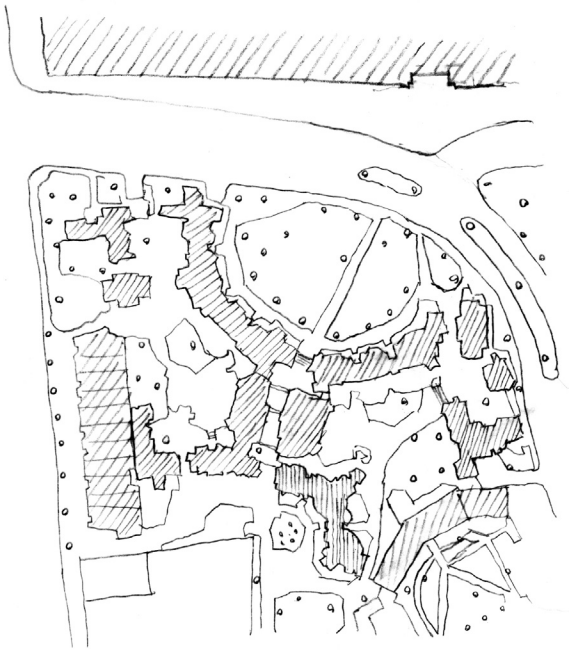

Fig. 8. Morse and Stiles site plan.

In his site planning, Saarinen balanced public and private needs. His design solutions utilized visual effects to create public spaces out of private buildings. Within the new college, Saarinen maintained private interior courtyard spaces but used the entire college as flanking sides to a newly created public pedestrian street. This public private relationship exemplifies the importance of program in relationship to users and thus visual effect. Though this precedent is fundamentally private, Saarinen is careful to design not only the visual effects but also major new spaces as public. Saarinen's implementation of experiential design strategies underlies his understanding of planning as three-dimensional.

As with Schinkel, Saarinen's planning strategy emphasized the experiential three-dimensional sequence over a purely two-dimensional planning strategy. He understood the street network system in an experiential way, similar to medieval curved streets emphasizing visual effect, making an ideal view of the adjacent gymnasium an integral part of one's movement through the residential college. Saarinen was a Sitte follower and defined Sitte's work as having: ''1) an emphasis on the informal nature of classical and medieval town building; 2) an emphasis on the coherent organism of town, achieved through proper correlation of building units; 3) a stress on the function of plazas and streets as organic, spatial enclosures.''

Saarinen's massing strategy for the residential college created an internal public circulation path that included a direct connection to the adjacent Payne Whitney Gymnasium, the existing retail context and the adjacent graduate colleges. The circulation was medieval in nature, not direct or axial but rather one that meandered through the college affording glimpses of the gymnasium. This is reminiscent of the Duomo in Florence which was only seen over rooftops before reaching the piazza. The circulation path varied both horizontally (meandering) and vertically. Saarinen designed stairs into the sequence to constantly change the vantage point of the viewer, thus changing the degree and extent of gymnasium viewable. Understanding the dynamic nature of the viewer, Saarinen's sequence culminated in a final view of the gymnasium at the edge of a newly created forecourt. (Figure 9) The oblique approach through the forecourt ultimately aligns with the entry doors of the gymnasium.

In addition to the circulation, Saarinen thoughtfully designed two public spaces, one as the forecourt to the gymnasium and the other as an internal public square where commercial meets college. The gymnasium forecourt lay on the residential college side separated by a public street. The size and shape of the forecourt allows for adequate pedestrian level views. The forecourt space enables a transition in scale between the two sets of buildings. It is also spatially defined by the gymnasium and residential college edge, another medieval planning device. The more internal public space was surrounded by the new college, existing retail and commercial space and an existing graduate college with its own offset tower.

Fig. 9. Morse and Stiles College framing gymnasium.

By designing complimentary towers in the new structure, a dining wing, and making visual connections to existing towers, Saarinen was able to integrate the building masses. He formally and materially connected the adjacent gymnasium to the new residential college. The forms and materials of the residential college mimic the form and material of the gymnasium tower by abstracting its neo-Gothic architecture into purer, simpler masses. Saarinen emphasized the collapsing of space and the layering of forms through his sequence of views. The gymnasium folds into the building mass of the residential college, visually becoming a single overall image. The new residential college creates a clear spatial connection by framing the former with the latter. Additional massing connections are made to the equally ornate graduate college tower. Views to this tower can be seen from the gymnasium and inside the internal public courtyard space.

These three urban design strategies of building arrangement use three-dimensional based design to create, extend, integrate and enhance buildings in the city context. These constructed scenes instill a particular perception and experience of a place. Visual effects have been shown to create hierarchy, organize spatial continuity and sequences and create spatial connections. The strategy establishes a connection between the building and the urban fabric, something often missing in architecture today. Many buildings planned for today's cities are conceived of as single objects unconnected to the context. Understanding street networks, pedestrian level views, the three-dimensional quality of the space between buildings enables designers to integrate new buildings into the cityscape. The suggestion made here is not to create every building as an object building emphasized by views and visual effects but to understand that perhaps public buildings need to make more of an extension into the city fabric. In reference to the need for object buildings as well as background buildings in the city, historian Vincent Scully quipped, if we had a row of Guggenheims on 5th Avenue we'd have the strip. Contemporary planners and architects should recognize the value of understanding the city at a pedestrian level, how buildings are viewed from the street, how public spaces can make extensions into the street network and vice versa. Although buildings in the city are static, adjacent spaces should be dynamically designed as a three-dimensional space, transcending the 2-dimensional planning traditions.

> *Whatever the eye can encompass at once should be harmonious and that which one cannot see is of no concern. Thus one is guided by actual effects and can never err.*
>
> — Camillo Sitte

BIBLIOGRAPHY

Collins, George and Christiane Crasemann Collins. *Camillo Sitte: The Birth of Modern City Planning*. New York: Rizzoli, 1986.

Forster, Kurt. ''Only Things that Stir the Imagination: Schinkel as a Scenographer.'' in John Zukowsky, ed., *Karl Friedrich Schinkel The Drama of Architecture,* The Art Institute of Chicago, 1994, 18 — 35.

Trachtenberg, Marvin. *Dominion of the Eye*. Cambridge University Press, 1997.

Vogtherr, Christoph Martin. ''Views and Approaches: Schinkel and Landscape Gardening.'' in John Zukowsky, ed., *Karl Friedrich Schinkel The Drama of Architecture,* The Art Institute of Chicago, 1994, 68 — 83.

NOTES

[1] George Collins. *Camillo Sitte: The Birth of Modern City Planning* (New York: Rizzoli, 1986) pg. 124.

[2] Marvin Trachtenberg. Dominion of the Eye (Cambridge University Press, 1997) pg. 20. Trachtenberg makes a compelling argument for this scenographic urban design occurring pre-Renaissance, in the trecento era. Further explanation can be found in his book.

[3] Ibid, pg. xvii.

[4] Ibid, pg. 19.

[5] Ibid, pg. 18.

[6] Ibid, pg. 19.

[7] ''Trecento spatial order is far from obvious to the modern eye. It rarely takes simple geometric shape, and it had neither an explicit ancient architectural model nor a codified theory such as we later find in the writings of Alberti and Filarete. Yet a body of evidence

indicates that the trecento devised a highly evolved set of specific procedures, preferences, and principles that governed the shaping of its squares and provided them with a powerful form of spatial order and visuality. While some factors involved were not unrelated to actual Renaissance practice — and, indeed, may be a basis for it — as a whole, trecento urbanism constituted an integral, distinct, and powerful chapter in the history of rational urban planning. (Trachtenberg, pg. 14).

[8] The two other principles are 1)The monument gives form to the space around it and 2) the space of the piazza takes on its own internal or abstract order.

[9] Ibid, pg. 19, The point of viewing was generally set at ground level and not eye level.

[10] For verticals, the 45° angle meant that the ideal height of a building being viewed and the distance away from the building were the same. Horizontal ideal views were also established under the 45° angle methodology that combined two 45° angles to create a clear 90° horizontal viewing angle.

[11] Ibid, pg. 38.

[12] In determining the distance between the Duomo and the Baptistery, trecento planners would have used the 45° angle to set the ideal viewing point. It was resolved that the distance 72 braccia away (the total height of the Baptistery including the lantern) was too close; the Baptistery could not be seen in full view. Therefore, the new location was determined to be the distance at which the Baptistery could be seen in full view, including the roof and lantern, from the Duomo entry. The distance of the Duomo to the Baptistery reinforced the horizontal field of vision. The view engaged the urban context as a framing device to the Baptistery thus establishing the ideal 45°/90° field of vision. The west façade of the Duomo located the new piazza edge to the Baptistery. Ironically this 45° angle view was taken at eye level and not at the ground as was typical at the time.

[13] Ibid, pg. 20.

[14] Forster, pg. 28.

[15] Ibid, pg. 19.

[16] Ibid, pg. 30.

[17] Ibid, pg. 30-31.

[18] Collins, pg. 217.

[19] Forster, pg. 30.

[20] Ibid, pg. 31 The particular point of view that Schinkel represented was actually an imaginary one (the view was technically obstructed) from the royal castle. Schinkel clearly had a conceptual understanding of architecture that was conveyed through his drawings.

[21] Vogtherr, pg. 79.

[22] Ibid, pg. 80.

[23] Stylistic changes occur between interior courtyard facades and exterior street facades.

[24] Collins, pg. 106.

[25] It is interesting to note that the site plan of the residential college does not include the adjacent gymnasium, the building to which it has such a clear and conscious spatial relationship.

[26] Collins, pg. 287.

[27] Camillo Sitte, an urban designer from the 19th century, wrote extensively about artistic effect as the basis for city planning. He rejected the idea of traffic systems and technical issues as being the means to design cities. His ideas are interwoven into this paper. He drew from similar medieval precedents like the Duomo and had followers in architects like Eero Saarinen. Many of his ideas parallel those discussed here and continue to be promoted and relevant to planning in cities today.